

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/22		α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	20/21		α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
32897 Curtharris											247056 2000 QW ₁										
h m s											h m s										
12	27	4 39.94	- 6 22.1	2.207	3.035	11.8	18.8	141 E	39	70	12	27	4 42.14	+25 50.8	0.966	1.910	11.7	18.0	157 E	71	38
1	6	4 32.54	- 5 10.7	2.282	3.039	13.7	19.0	133 E	40	69	1	1	4 38.72	+24 11.7	1.005	1.925	14.4	18.2	151 E	69	40
1	16	4 27.34	- 3 45.1	2.377	3.042	15.5	19.1	124 E	41	68	1	6	4 36.41	+22 41.2	1.050	1.941	16.8	18.4	145 E	68	41
1	26	4 24.57	- 2 10.5	2.489	3.045	17.0	19.3	115 E	43	66	1	11	4 35.18	+21 19.9	1.101	1.956	19.0	18.6	140 E	66	43
2	5	4 24.20	- 0 31.4	2.614	3.046	18.1	19.4	107 E	44	65	1	16	4 34.98	+20 8.0	1.155	1.972	20.9	18.8	134 E	65	44
2	15	4 26.12	+ 1 8.8	2.746	3.046	18.7	19.6	98 E	46	62*	1	26	4 37.41	+18 11.0	1.276	2.004	23.9	19.2	124 E	63	46
2	25	4 30.11	+ 2 47.2	2.882	3.046	19.0	19.7	90 E	48	59*	2	5	4 43.06	+16 44.7	1.409	2.036	26.0	19.5	115 E	62	47
3	7	4 35.93	+ 4 21.9	3.019	3.044	18.8	19.8	82 E	48*	55*	2	15	4 51.32	+15 42.3	1.551	2.068	27.2	19.7	107 E	61	48
3	17	4 43.35	+ 5 51.6	3.153	3.041	18.4	19.9	74 E	46*	51*	2	20	4 56.27	+15 18.0	1.624	2.084	27.5	19.9	103 E	60	49*
3	27	4 52.17	+ 7 15.2	3.283	3.038	17.6	19.9	67 E	42*	47*	2	25	5 1.68	+14 57.2	1.698	2.100	27.7	20.0	99 E	60	49*
4	6	5 2.17	+ 8 32.2	3.405	3.033	16.6	20.0	60 E	37*	43*	3	2	5 7.51	+14 39.2	1.772	2.116	27.8	20.1	96 E	60	49*
4	16	5 13.20	+ 9 41.9	3.517	3.028	15.4	20.0	53 E	31*	39*	3	7	5 13.70	+14 23.5	1.848	2.132	27.7	20.2	92 E	59*	49*
4	26	5 25.10	+10 44.1	3.620	3.022	14.1	20.0	47 E	25*	35*	3	17	5 27.04	+13 56.5	1.999	2.164	27.3	20.4	86 E	57*	48*
5	6	5 37.73	+11 38.5	3.710	3.014	12.5	20.0	40 E	19*	31*	3	27	5 41.42	+13 32.5	2.149	2.195	26.5	20.6	79 E	54*	48*
5	16	5 50.98	+12 25.1	3.787	3.006	10.9	20.0	34 E	12*	26*	4	6	5 56.59	+13 8.6	2.296	2.226	25.5	20.7	73 E	49*	47*
5	26	6 4.74	+13 3.7	3.850	2.997	9.2	19.9	28 E	6*	21*	4	16	6 12.38	+12 42.5	2.440	2.257	24.3	20.8	68 E	43*	45*
6	5	6 18.91	+13 34.5	3.898	2.986	7.5	19.9	23 E	—	16*	4	26	6 28.62	+12 12.6	2.579	2.287	22.9	20.9	62 E	37*	44*
6	15	6 33.41	+13 57.4	3.931	2.975	5.7	19.8	17 E	—	11*	5	6	6 45.18	+11 37.6	2.712	2.316	21.3	21.0	57 E	30*	42*
6	25	6 48.15	+14 12.8	3.949	2.963	4.1	19.7	12 E	—	5*	5	16	7 1.96	+10 56.7	2.838	2.345	19.7	21.1	51 E	24*	40*
7	5	7 3.07	+14 20.8	3.951	2.950	3.0	19.6	9 E	—	—	5	26	7 18.85	+10 9.3	2.956	2.373	18.0	21.2	46 E	17*	37*
7	15	7 18.09	+14 21.7	3.937	2.936	2.9	19.6	8 W	—	1*	6	5	7 35.78	+ 9 15.2	3.066	2.401	16.2	21.2	41 E	11*	34*
7	25	7 33.13	+14 16.1	3.908	2.921	4.1	19.7	12 W	—	6*	6	15	7 52.68	+ 8 14.1	3.166	2.428	14.5	21.2	37 E	5*	30*
8	4	7 48.16	+14 4.3	3.862	2.905	5.7	19.7	17 W	2*	10*	6	25	8 9.49	+ 7 6.0	3.256	2.454	12.7	21.3	32 E	—	26*
8	14	8 3.09	+13 47.1	3.801	2.888	7.6	19.7	22 W	9*	14*	7	5	8 26.17	+ 5 51.2	3.336	2.479	10.9	21.3	28 E	—	21*
8	24	8 17.88	+13 25.1	3.726	2.870	9.4	19.8	28 W	15*	17*	7	15	8 42.70	+ 4 29.8	3.404	2.503	9.3	21.3	23 E	—	16*
9	3	8 32.45	+12 59.1	3.636	2.851	11.3	19.8	34 W	21*	21*	7	25	8 59.02	+ 3 2.2	3.461	2.527	7.7	21.3	20 E	—	11*
9	13	8 46.76	+12 30.1	3.531	2.832	13.1	19.8	40 W	28*	24*	8	4	9 15.12	+ 1 28.7	3.506	2.550	6.5	21.3	17 E	—	5*
9	23	9 0.72	+11 59.2	3.414	2.811	14.9	19.7	46 W	34*	27*	8	14	9 30.99	+ 0 10.3	3.539	2.572	5.7	21.3	15 W	—	1*
10	3	9 14.27	+11 27.7	3.286	2.789	16.5	19.7	52 W	40*	30*	8	24	9 46.60	+ 1 54.4	3.559	2.593	5.6	21.3	14 W	—	5*
10	13	9 27.32	+10 57.0	3.146	2.767	18.0	19.6	59 W	45*	33*	9	3	10 1.93	- 3 43.1	3.567	2.613	6.2	21.3	16 W	—	9*
10	23	9 39.76	+10 29.0	2.997	2.744	19.3	19.6	66 W	49*	37*	9	13	10 16.97	- 5 35.9	3.562	2.632	7.2	21.4	19 W	—	13*
11	2	9 51.48	+10 5.5	2.840	2.719	20.4	19.5	73 W	53*	40*	9	23	10 31.70	- 7 32.3	3.543	2.650	8.6	21.5	23 W	4*	17*
11	12	10 2.33	+ 9 49.1	2.678	2.694	21.2	19.3	80 W	55*	44*	363714 2004 VT ₁₆										
11	22	10 12.12	+ 9 42.4	2.512	2.668	21.7	19.2	88 W	55	48*	12	27	4 43.03	+22 3.8	1.239	2.177	10.2	21.2	157 E	67	42
12	2	10 20.64	+ 9 48.6	2.345	2.642	21.8	19.0	96 W	55	51*	1	6	4 35.76	+21 29.6	1.344	2.221	14.8	21.6	145 E	66	43
12	12	10 27.62	+10 11.5	2.180	2.614	21.3	18.8	105 W	55	53*	1	16	4 32.31	+21 5.9	1.469	2.264	18.3	22.0	134 E	66	43
12	22	10 32.75	+10 54.7	2.021	2.586	20.3	18.6	114 W	56	53	1	26	4 32.48	+20 53.0	1.610	2.306	20.8	22.3	124 E	66	43
1	1	10 35.70	+12 2.0	1.871	2.556	18.6	18.4	124 W	57	52	2	5	4 35.84	+20 49.4	1.762	2.347	22.5	22.6	114 E	66	43
1	11	10 36.12	+13 36.3	1.736	2.526	16.1	18.1	135 W	59	50	141753 2002 LL ₅₃										
1	21	10 33.75	+15 38.3	1.619	2.496	12.8	17.8	146 W	61	48	12	27	4 43.70	+10 41.0	1.281	2.204	11.7	19.4	153 E	56	53
378056 2006 TM ₇₄											1	6	4 36.96	+11 46.7	1.374	2.236	15.5	19.7	143 E	57	52
12	27	4 40.05	+22 59.3	1.487	2.419	9.4	21.2	156 E	68	41	1	16	4 33.59	+12 57.6	1.487	2.269	18.7	20.0	132 E	58	51
1	6	4 32.34	+23 7.9	1.583	2.450	13.5	21.5	144 E	68	41	1	26	4 33.61	+14 10.5	1.616	2.301	21.1	20.3	123 E	59	50
1	16	4 28.00	+23 18.5	1.701	2.480	16.8	21.8	133 E	68	41	2	5	4 36.73	+15 22.9	1.756	2.332	22.8	20.5	114 E	60	49
1	26	4 27.07	+23 32.6	1.835	2.509	19.3	22.1	123 E	69	40	2	15	4 42.57	+16 32.8	1.906	2.363	23.8	20.8	105 E	62	47*
2	5	4 29.28	+23 50.4	1.982	2.537	20.9	22.3	113 E	69	40	2	25	4 50.73	+17 38.8	2.060	2.394	24.2	21.0	97 E	63	46*
219522 2001 QH ₈₃											3	7	5 0.83	+18 39.5	2.218	2.424	24.2	21.2	90 E	63*	44*
12	27	4 40.60	+25 28.8	1.304	2.240	10.1	19.3	157 E	70	39	3	17	5 12.54	+19 34.1	2.376	2.453	23.7	21.3	82 E	61*	42*
1	1	4 37.04	+25 5.8	1.351	2.259	12.3	19.5	151 E	70	39	3	27	5 25.56	+20 21.6	2.532	2.481	22.9	21.5	76 E	58*	40*
1	6	4 34.36	+24 44.6	1.403	2.279	14.4	19.6	145 E	70	39	334057 2001 OR ₄₇										
1	11	4 32.58	+24 25.6	1.460	2.298	16.2	19.8	139 E	69	40	12	27	4 43.95	+28 31.8	1.534	2.469	8.9	20.2	157 E	74	35
1	16	4 31.70	+24 9.1	1.522	2.317	17.8	20.0	134 E	69	40	1	1	4 39.82	+28 4.1	1.578	2.485	11.0	20.4	151 E	73	36
1	26	4 32.52	+23 43.6	1.657	2.354	20.3	20.3	124 E	69	40	1	6	4 36.51	+27 37.4	1.628	2.502	12.9	20.5	146 E	73	36
2	5	4 36.41	+23 27.6	1.804	2.392	22.0	20.5	115 E	68	41	1	11	4 34.05	+27 12.0	1.684	2.518	14.6	20.7	140 E	72	37
2	15	4 42.92	+23 19.3	1.961	2.428	23.0	20.8	106 E	68	41*	1	16	4 32.46	+26 48.7	1.745	2.534	16.1	20.8	135 E	72	37
2	25	4 51.62	+23 16.5	2.123	2.464	23.4	21.0	98 E	68	40*	1	21	4 31.71	+26 27.5	1.810	2.549	17.4	20.9	129 E	71	38
3	7	5 2.08	+23 16.8	2.288	2.500	23.4	21.2	90 E	68*	40*	1	26	4 31.78	+26 8.8	1.879	2.565	18.5	21.1	124 E	71	38
3	17	5 13.99	+23 18.2	2.454	2.535	22.9	21.4	83 E	65*	38*	1	31	4 32.61	+25 52.4	1.951	2.580	19.5	21.2	119 E	71	38
134509 1999 FC ₈											2	5	4 34.16	+25 38.4	2.026	2.596	20.2	21.3	115 E	71	38
12	27	4 40.69	+13 57.0	1.824	2.741	9.1	20.8	154 E	59	50	2	10	4 36.37	+25 26.5	2.103	2.611	20.8	21.4	110 E	70	39
1	6	4 32.99	+13 55.4	1.902	2.747	12.6	21.0	142 E	59	50	24970 1998										

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20/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
24970 1998 FC₁₂ (continuation)										131823 2002 AY₉₇ (continuation)									
h m										h m									
5 16	6 33.01	+20 42.5	3.207	2.557	15.6	20.4	43 E	25*	28*	2 25	4 49.48	+27 12.8	2.115	2.456	23.5	20.6	98 E	72	36*
484535 2008 FA₆₈										332056 2005 RM₄₄									
h m										h m									
12 27	4 45.31	-18 35.8	0.821	1.648	26.4	18.8	132 E	26	83	12 27	4 46.90	+10 20.3	1.727	2.644	9.5	20.7	154 E	55	54
251365 2007 TQ₄₄₇										183581 2003 SY₈₄									
h m										h m									
1 6	4 38.24	+14 31.5	1.556	2.420	13.9	21.5	144 E	60	49	1 6	4 40.31	-9 58.7	2.517	3.253	13.1	20.5	131 E	35	74
131823 2002 AY₉₇										253841 2003 YG₁₁₈									
h m										h m									
1 1	4 42.03	+29 39.5	1.413	2.325	11.6	19.2	152 E	75	34	1 1	4 39.48	+34 47.0	1.650	2.550	11.1	20.9	150 E	80	29
391000 2005 SC₉₉										253841 2003 YG₁₁₈									
h m										h m									
1 1	4 43.70	-18 39.3	0.840	1.645	27.8	18.8	129 E	26	83	1 6	4 32.46	+34 21.3	1.654	2.518	13.2	21.0	144 E	79	30
26050 3167 T-2										131823 2002 AY₉₇									
h m										h m									
1 27	4 43.12	-18 25.0	0.883	1.641	30.2	19.0	123 E	27	82	1 1	4 42.03	+29 39.5	1.413	2.325	11.6	19.2	152 E	75	34
26050 3167 T-2										131823 2002 AY₉₇									
h m										h m									
1 16	4 44.27	-17 25.7	0.907	1.640	31.2	19.1	120 E	28	81	1 6	4 38.36	+29 18.7	1.458	2.338	13.6	19.3	146 E	74	35
251365 2007 TQ₄₄₇										131823 2002 AY₉₇									
h m										h m									
1 21	4 46.39	-16 39.0	0.934	1.640	32.1	19.2	118 E	28	81	1 11	4 35.63	+28 58.6	1.508	2.351	15.5	19.5	140 E	74	35
251365 2007 TQ₄₄₇										131823 2002 AY₉₇									
h m										h m									
2 5	4 58.33	-13 36.9	1.021	1.646	34.2	19.4	110 E	30	78	1 16	4 33.86	+28 39.6	1.564	2.363	17.1	19.6	135 E	74	35
251365 2007 TQ₄₄₇										131823 2002 AY₉₇									
h m										h m									
2 10	5 4.01	-12 27.1	1.053	1.649	34.7	19.5	108 E	33	76	1 26	4 33.11	+28 6.9	1.686	2.387	19.8	19.9	125 E	73	36
251365 2007 TQ₄₄₇										131823 2002 AY₉₇									
h m										h m									
2 15	5 10.45	-11 14.7	1.086	1.654	35.1	19.6	106 E	34	75	2 5	4 35.77	+27 41.9	1.821	2.411	21.7	20.2	115 E	73	36
251365 2007 TQ₄₄₇										131823 2002 AY₉₇									
h m										h m									
2 20	5 17.61	-10 1.0	1.120	1.659	35.4	19.7	104 E	35	74	2 15	4 41.38	+27 24.4	1.965	2.434	22.9	20.4	106 E	72	37*
251365 2007 TQ₄₄₇										131823 2002 AY₉₇									
h m										h m									
2 25	5 25.41	-8 47.1	1.156	1.665	35.6	19.8	102 E	36	73										

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
253841 2003 YG₁₁₈										163902 2003 SW₂₂₂									
<i>(continuation)</i>										<i>(continuation)</i>									
74523 1999 GA₆										374684 2006 QD₆₄									
<i>(continuation)</i>										<i>(continuation)</i>									
332026 2005 PH										508907 2003 XH₁₄									
<i>(continuation)</i>										<i>(continuation)</i>									
163902 2003 SW₂₂₂										508907 2003 XH₁₄									
<i>(continuation)</i>										<i>(continuation)</i>									

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Table with columns for date (20/22), alpha 2000, delta 2000, Delta, r, beta, V, psi, 45, -26, and corresponding values for objects 508907 2003 XH14, 430777 2004 TS10, 24693 1990 SB2, 20236 1998 BZ7, and 80250 1999 WW9. Each row contains numerical data for these parameters.

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20/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	2021	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
80250 1999 WW₉										480885 2002 AC₂₉									
<i>(continuation)</i>										<i>(continuation)</i>									
7 25	9 53.48	+15 11.8	3.366	2.467	9.4	20.8	23 E	6*	16*	3 2	3 50.65	+38 41.3	0.998	1.318	48.3	20.3	83 E	76*	21*
8 4	10 10.68	+13 42.8	3.439	2.497	7.3	20.8	18 E	3*	12*	3 7	3 55.58	+39 48.1	1.008	1.279	49.7	20.3	79 E	73*	19*
8 14	10 27.56	+12 11.0	3.501	2.526	5.3	20.8	13 E	1*	7*	3 12	4 1.72	+40 56.4	1.015	1.240	51.1	20.3	76 E	70*	17*
8 24	10 44.10	+10 37.1	3.551	2.554	3.2	20.7	8 E	—	1*	3 17	4 9.05	+42 6.1	1.019	1.201	52.5	20.3	73 E	67*	16*
9 3	11 0.33	+9 2.1	3.588	2.581	1.3	20.6	3 E	—	—	3 27	4 27.21	+44 28.3	1.012	1.123	55.4	20.2	68 E	62*	13*
9 13	11 16.25	+7 26.7	3.611	2.608	1.5	20.7	4 W	—	—	4 6	4 50.13	+46 50.2	0.987	1.048	58.8	20.1	64 E	57*	10*
9 23	11 31.84	+5 51.6	3.620	2.634	3.4	20.8	9 W	3*	—	4 16	5 18.18	+49 4.5	0.942	0.977	63.0	20.0	60 E	54*	8*
10 3	11 47.12	+4 17.8	3.615	2.659	5.4	21.0	15 W	8*	1*	4 21	5 34.24	+50 5.6	0.912	0.944	65.5	19.9	59 E	53*	7*
10 13	12 2.07	+2 45.9	3.596	2.683	7.4	21.0	20 W	14*	5*	4 26	5 51.68	+51 0.0	0.877	0.914	68.3	19.8	58 E	51*	7*
10 23	12 16.66	+1 16.8	3.562	2.706	9.4	21.1	26 W	19*	9*	5 1	6 10.52	+51 45.4	0.837	0.887	71.4	19.8	57 E	50*	6*
11 2	12 30.85	+0 8.7	3.513	2.729	11.3	21.2	32 W	24*	14*	5 6	6 30.70	+52 18.5	0.793	0.864	74.9	19.7	56 E	50*	6*
11 12	12 44.61	+1 29.8	3.451	2.750	13.0	21.2	39 W	29*	18*	5 11	6 52.15	+52 36.0	0.744	0.844	78.7	19.6	55 E	49*	6*
11 22	12 57.84	+2 45.6	3.375	2.770	14.7	21.3	45 W	33*	24*	5 16	7 14.69	+52 33.3	0.692	0.830	82.7	19.6	54 E	48*	7*
12 2	13 10.49	+3 55.4	3.286	2.790	16.2	21.3	52 W	36*	30*	5 18	7 23.95	+52 25.5	0.670	0.825	84.4	19.6	54 E	48*	7*
12 12	13 22.41	+4 58.2	3.186	2.809	17.5	21.3	59 W	38*	37*	5 20	7 33.32	+52 13.2	0.648	0.822	86.2	19.6	54 E	48*	7*
12 22	13 33.48	+5 53.2	3.075	2.827	18.6	21.2	66 W	39*	44*	5 22	7 42.78	+51 56.0	0.626	0.819	87.9	19.5	54 E	48*	8*
1 1	13 43.53	+6 39.5	2.955	2.843	19.4	21.2	74 W	38	52*	5 24	7 52.30	+51 33.5	0.603	0.817	89.7	19.5	54 E	48*	8*
1 11	13 52.35	+7 16.3	2.829	2.859	19.9	21.1	82 W	38	60*	5 26	8 1.87	+51 5.1	0.580	0.816	91.4	19.5	54 E	47*	9*
1 21	13 59.71	+7 42.7	2.700	2.874	20.0	21.0	90 W	37	67*	5 28	8 11.46	+50 30.2	0.557	0.816	93.2	19.5	54 E	47*	10*
12 27	4 57.31	+37 14.6	1.131	2.071	10.8	18.3	157 E	82	27	5 30	8 21.06	+49 48.2	0.533	0.817	95.0	19.5	53 E	47*	10*
1 1	4 52.49	+36 47.5	1.167	2.087	12.8	18.5	152 E	82	27	6 1	8 30.64	+48 58.2	0.510	0.819	96.8	19.5	53 E	47*	11*
1 6	4 48.73	+36 18.2	1.209	2.103	14.8	18.7	147 E	81	28	6 3	8 40.20	+47 59.4	0.486	0.821	98.5	19.5	53 E	46*	12*
1 11	4 46.08	+35 48.0	1.255	2.118	16.6	18.8	142 E	81	28	6 5	8 49.71	+46 50.9	0.463	0.825	100.2	19.4	53 E	46*	13*
1 16	4 44.56	+35 17.9	1.307	2.134	18.4	19.0	137 E	80	29	6 7	8 59.17	+45 31.3	0.440	0.829	101.8	19.4	53 E	45*	15*
1 21	4 44.15	+34 48.8	1.362	2.149	19.9	19.1	132 E	80	29	6 9	9 8.57	+43 59.5	0.417	0.834	103.4	19.4	53 E	45*	16*
1 26	4 44.77	+34 21.3	1.421	2.165	21.2	19.3	127 E	79	30	6 11	9 17.92	+42 13.7	0.395	0.840	104.8	19.4	53 E	44*	18*
1 31	4 46.36	+33 55.5	1.484	2.180	22.4	19.4	123 E	79	30	6 13	9 27.20	+40 12.4	0.373	0.847	106.2	19.3	53 E	43*	20*
2 5	4 48.82	+33 31.8	1.549	2.195	23.3	19.6	118 E	79	30	6 15	9 36.43	+37 53.3	0.352	0.854	107.3	19.3	53 E	42*	22*
2 10	4 52.10	+33 9.9	1.617	2.210	24.1	19.7	114 E	78	31	6 17	9 45.60	+35 14.2	0.331	0.862	108.3	19.2	54	40*	25*
2 15	4 56.11	+32 49.9	1.687	2.225	24.7	19.8	110 E	78	31	6 19	9 54.75	+32 12.5	0.312	0.871	109.0	19.2	54	39*	27*
2 20	5 0.78	+32 31.6	1.758	2.240	25.1	19.9	106 E	78	31*	6 21	10 3.87	+28 45.8	0.294	0.880	109.3	19.1	55	37*	31*
2 25	5 6.04	+32 14.7	1.831	2.255	25.4	20.0	102 E	77	32*	6 23	10 13.00	+24 51.5	0.277	0.891	109.3	19.0	56	35*	34*
3 7	5 18.05	+31 44.1	1.979	2.284	25.7	20.2	95 E	77*	32*	6 25	10 22.16	+20 27.6	0.262	0.901	108.9	18.9	57 E	32*	38*
3 17	5 31.72	+31 15.9	2.130	2.313	25.5	20.4	88 E	74*	32*	6 30	10 45.40	+7 16.2	0.233	0.930	105.3	18.5	62 E	24*	50*
3 27	5 46.68	+30 48.1	2.281	2.341	24.9	20.6	81 E	69*	32*	7 5	11 9.63	+8 19.4	0.221	0.961	98.3	18.1	69	13*	63*
4 6	6 2.61	+30 19.0	2.429	2.368	24.0	20.7	75 E	63*	31*	7 10	11 35.55	+4 7.0	0.227	0.995	89.0	17.8	78	2*	71*
4 16	6 19.27	+29 47.0	2.575	2.395	22.9	20.8	68 E	56*	31*	7 15	12 3.85	+37 44.6	0.249	1.030	79.8	17.7	86 E	—	70*
4 26	6 36.46	+29 11.1	2.716	2.421	21.6	20.9	62 E	50*	30*	7 20	12 35.18	+48 13.3	0.283	1.067	72.0	17.8	93 E	—	64*
5 6	6 53.98	+28 30.3	2.851	2.446	20.2	21.0	57 E	43*	29*	7 25	13 9.93	+55 46.8	0.325	1.105	65.8	18.0	97 E	—	59*
5 16	7 11.71	+27 44.3	2.979	2.471	18.5	21.1	51 E	36*	28*	7 27	13 24.80	+58 7.2	0.344	1.120	63.6	18.1	99 E	—	57*
5 26	7 29.51	+26 52.7	3.098	2.494	16.8	21.1	45 E	30*	26*	7 29	13 40.19	+60 7.8	0.363	1.136	61.7	18.2	100 E	—	55*
6 5	7 47.29	+25 55.4	3.209	2.517	15.0	21.2	40 E	24*	24*	7 31	13 56.05	+61 50.5	0.383	1.151	60.0	18.3	101 E	—	54*
6 15	8 4.97	+24 52.3	3.309	2.539	13.1	21.2	35 E	18*	22*	8 2	14 12.31	+63 17.4	0.403	1.167	58.3	18.4	102 E	—	52*
6 25	8 22.48	+23 43.9	3.399	2.560	11.2	21.2	29 E	14*	18*	8 4	14 28.89	+64 29.9	0.423	1.182	56.8	18.5	103 E	—	51*
7 5	8 39.76	+22 30.3	3.477	2.581	9.2	21.2	24 E	9*	15*	8 6	14 45.68	+65 29.7	0.444	1.198	55.5	18.5	103 E	—	50*
7 15	8 56.80	+21 12.0	3.543	2.600	7.2	21.1	19 E	6*	10*	8 8	15 2.57	+66 17.9	0.466	1.213	54.2	18.6	104 E	—	50*
7 25	9 13.56	+19 49.4	3.597	2.619	5.1	21.1	13 E	3*	6*	8 10	15 19.43	+66 55.9	0.487	1.229	53.0	18.7	104 E	—	49
8 4	9 30.00	+18 23.0	3.637	2.636	3.1	21.0	8 E	—	1*	8 12	15 36.15	+67 24.6	0.509	1.245	51.9	18.8	105 E	—	49
8 14	9 46.14	+16 53.4	3.663	2.653	1.4	20.9	4 E	—	—	8 14	15 52.62	+67 45.0	0.531	1.260	50.9	18.9	105 E	—	48
8 24	10 1.93	+15 21.2	3.675	2.668	1.8	21.0	5 W	—	—	8 16	16 8.72	+67 58.1	0.553	1.276	49.9	19.0	105 E	—	48
9 3	10 17.38	+13 47.1	3.672	2.683	3.6	21.1	10 W	4*	—	8 18	16 24.38	+68 4.6	0.576	1.291	49.0	19.1	106 E	—	48
9 13	10 32.47	+12 11.6	3.655	2.697	5.6	21.2	15 W	9*	2*	8 20	16 39.51	+68 5.2	0.598	1.307	48.2	19.2	106 E	—	48
9 23	10 47.19	+10 35.4	3.624	2.710	7.6	21.3	21 W	14*	5*	8 22	16 54.08	+68 0.8	0.621	1.322	47.4	19.3	106 E	—	48
10 3	11 1.51	+8 59.3	3.578	2.722	9.5	21.4	27 W	20*	9*	8 24	17 8.05	+67 51.7	0.644	1.338	46.7	19.3	106 E	—	48
10 13	11 15.39	+7 24.0	3.517	2.733	11.4	21.4	33 W	25*	13*	8 26	17 21.40	+67 38.7	0.668	1.353	46.0	19.4	106 E	—	48
10 23	11 28.80	+5 50.3	3.443	2.743	13.2	21.4	39 W	30*	18*	8 28	17 34.14	+67 22.2	0.691	1.369	45.3	19.5	106 E	—	49
11 2	11 41.69	+4 18.8	3.355	2.752	14.9	21.5	45 W	35*	22*	8 30	17 46.28	+67 2.6	0.715	1.384	44.7	19.6	105 E	—	49
11 12	11 53.96	+2 50.5	3.255	2.759	16.4	21.4	52 W	39*	27*	9 1	17 57.83	+66 40.3	0.739	1.399	44.1	19.7	105 E	—	49
11 22	12 5.52	+1 26.4	3.144	2.766	17.8	21.4	59 W	42*	33*	9 3	18 8.83	+66 15.7	0.763	1.414	43.5	19.7	105 E	—	50
12 2	12 16.27	+0 7.1	3.022	2.772	19.0	21.4	66 W	44*	40*	9 5	18 19.30	+65 49.0	0.787	1.429	43.0	19.8	105 E	—	50
12 12	12 26.02	+1 6.1	2.892	2.778	19.9	21.3	73 W	44*	47*	9 7	18 29.27	+65 20.6	0.811	1.444	42.5	19.9	105 E	—	51
12 22	12 34.59	+2 12.2	2.756	2.782	20.5	21.2													

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	20/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
60886 2000 JB₁₀										513125 1997 GC₃₂									
12 27	4 59.24	+28 50.0	1.434	2.383	8.0	19.5	160 E	74	35	12 27	5 3.71	+9 27.6	0.771	1.718	13.2	19.8	156 E	54	55
1 1	4 54.10	+28 44.4	1.471	2.395	10.2	19.7	154 E	74	35	1 6	4 53.88	+10 38.7	0.906	1.807	17.8	20.4	146 E	56	53
1 6	4 49.77	+28 37.8	1.513	2.407	12.4	19.8	148 E	74	35	1 16	4 49.54	+11 49.4	1.059	1.892	21.3	21.0	136 E	57	52
1 11	4 46.31	+28 30.6	1.561	2.418	14.3	20.0	143 E	74	35	1 26	4 49.66	+12 57.4	1.228	1.975	23.7	21.4	126 E	58	51
1 16	4 43.77	+28 23.5	1.614	2.429	16.0	20.1	137 E	73	36	2 5	4 53.26	+14 1.1	1.407	2.054	25.3	21.9	117 E	59	50
1 26	4 41.48	+28 11.3	1.734	2.451	18.8	20.4	126 E	73	36	220159 2002 TV₂₄₇									
2 5	4 42.68	+28 3.1	1.867	2.471	20.9	20.6	117 E	73	36	12 27	5 5.18	+7 58.1	1.773	2.700	8.6	21.3	156 E	53	56
2 15	4 46.98	+27 59.3	2.009	2.491	22.2	20.9	108 E	73	36*	1 6	4 57.02	+8 2.0	1.855	2.723	11.8	21.5	145 E	53	56
2 25	4 53.95	+27 59.2	2.157	2.511	22.9	21.1	99 E	73	36*	1 16	4 51.33	+8 18.9	1.961	2.745	14.7	21.8	135 E	53	56
3 7	5 3.13	+28 1.5	2.307	2.529	23.1	21.2	91 E	73*	35*	1 26	4 48.40	+8 46.2	2.085	2.766	17.0	22.0	125 E	54	55
3 17	5 14.17	+28 4.6	2.458	2.546	22.8	21.4	84 E	69*	34*	2 5	4 48.20	+9 21.0	2.222	2.786	18.7	22.2	115 E	54	55
3 27	5 26.72	+28 7.1	2.606	2.563	22.2	21.5	76 E	64*	33*	153309 2001 KB₆₈									
306600 2000 HO₂₇										12 27	5 6.08	+8 53.1	1.878	2.807	8.0	19.4	157 E	54	55
12 27	4 59.54	+16 25.5	2.764	3.700	5.4	21.3	159 E	61	48	1 6	4 56.02	+10 4.1	1.919	2.790	11.3	19.5	146 E	55	54
1 6	4 51.66	+16 7.9	2.812	3.679	8.3	21.4	147 E	61	48	1 16	4 48.14	+11 22.6	1.985	2.771	14.5	19.7	135 E	56	53
1 16	4 45.41	+15 55.7	2.886	3.656	10.8	21.6	136 E	61	48	1 26	4 42.99	+12 45.6	2.072	2.752	17.2	19.9	124 E	58	51
1 26	4 41.14	+15 49.4	2.981	3.633	12.9	21.7	125 E	61	48	2 5	4 40.76	+14 10.3	2.175	2.732	19.2	20.0	114 E	59	50
2 5	4 39.00	+15 49.2	3.092	3.609	14.4	21.9	114 E	61	48	2 15	4 41.39	+15 34.9	2.287	2.711	20.6	20.2	105 E	61	48*
137284 1999 RZ₁₈₂										2 25	4 44.73	+16 57.9	2.405	2.689	21.5	20.3	96 E	62	46*
12 27	4 59.76	+12 51.2	1.777	2.712	8.0	21.2	158 E	58	51	3 7	4 50.48	+18 18.0	2.524	2.666	21.8	20.4	87 E	62	46*
1 6	4 51.43	+13 1.4	1.858	2.731	11.5	21.4	146 E	58	51	3 17	4 58.39	+19 34.4	2.642	2.642	21.7	20.5	79 E	60	44*
1 16	4 45.67	+13 20.1	1.962	2.749	14.6	21.7	135 E	58	51	3 27	5 8.22	+20 46.0	2.755	2.618	21.2	20.6	72 E	56	38*
1 26	4 42.76	+13 46.1	2.085	2.766	17.0	21.9	125 E	59	50	4 6	5 19.72	+21 52.2	2.860	2.593	20.4	20.6	65 E	50	35*
2 5	4 42.65	+14 17.7	2.222	2.783	18.8	22.1	115 E	59	50	4 16	5 32.70	+22 52.4	2.957	2.567	19.3	20.6	58 E	44	32*
324331 2006 OE₁₂										4 26	5 46.99	+23 45.8	3.044	2.540	18.0	20.6	51 E	38	29*
12 27	5 0.30	+22 1.5	1.464	2.414	7.7	21.0	161 E	67	42	5 6	6 2.43	+24 31.8	3.120	2.512	16.5	20.6	45 E	32	26*
1 1	4 55.65	+21 58.4	1.503	2.428	10.0	21.2	155 E	67	42	5 16	6 18.90	+25 10.0	3.183	2.484	14.9	20.5	39 E	26	23*
1 6	4 51.73	+21 56.0	1.548	2.441	12.1	21.3	149 E	67	42	5 26	6 36.27	+25 39.8	3.234	2.455	13.2	20.5	34 E	20	19*
1 11	4 48.61	+21 54.5	1.598	2.455	14.0	21.5	143 E	67	42	6 5	6 54.44	+26 0.9	3.273	2.425	11.4	20.4	28 E	15	16*
1 16	4 46.34	+21 54.2	1.654	2.468	15.7	21.6	137 E	67	42	6 15	7 13.32	+26 12.9	3.298	2.395	9.5	20.3	23 E	11	12*
368477 2003 SX₂₅₃										6 25	7 32.81	+26 15.6	3.311	2.364	7.6	20.2	18 E	7	8*
12 27	5 0.89	+18 49.9	1.474	2.423	7.9	20.2	160 E	64	45	7 5	7 52.85	+26 9.0	3.311	2.333	5.8	20.1	13 E	5	4*
1 6	4 52.36	+18 38.8	1.565	2.456	12.2	20.6	148 E	64	45	7 15	8 13.35	+25 52.8	3.298	2.301	4.1	20.0	9 E	3	—
1 16	4 46.99	+18 35.0	1.678	2.488	15.7	20.9	137 E	64	45	7 25	8 34.26	+25 27.4	3.274	2.269	3.1	19.9	7 E	1	—
1 26	4 44.92	+18 38.7	1.809	2.519	18.4	21.1	126 E	64	45	8 4	8 55.53	+24 52.8	3.238	2.237	3.4	19.8	8 W	—	—
2 5	4 45.96	+18 48.9	1.954	2.549	20.3	21.4	116 E	64	45	8 14	9 17.11	+24 9.4	3.192	2.204	4.8	19.8	11 W	4*	—
228231 1998 QT₁₀₁										8 24	9 38.97	+23 17.7	3.136	2.171	6.6	19.9	14 W	8*	—
12 27	5 1.68	+20 59.7	1.247	2.200	8.4	20.1	161 E	66	43	9 3	10 1.10	+22 18.1	3.071	2.138	8.6	19.9	18 W	12*	—
1 1	4 57.40	+21 2.1	1.288	2.218	10.9	20.3	155 E	66	43	9 13	10 23.48	+21 11.5	2.997	2.105	10.6	19.9	23 W	17*	—
1 6	4 53.93	+21 5.3	1.334	2.235	13.1	20.4	149 E	66	43	9 23	10 46.10	+19 58.6	2.917	2.072	12.6	19.9	27 W	21*	1*
1 11	4 51.33	+21 9.4	1.386	2.253	15.1	20.6	143 E	66	43	10 3	11 8.99	+18 40.4	2.830	2.039	14.7	19.8	31 W	25	3*
1 16	4 49.62	+21 14.6	1.443	2.271	16.9	20.8	138 E	66	43	10 13	11 32.15	+17 18.1	2.738	2.006	16.6	19.8	35 W	29	5*
1 21	4 48.82	+21 20.9	1.504	2.288	18.5	20.9	133 E	66	43	10 23	11 55.58	+15 52.8	2.643	1.974	18.6	19.7	39 W	33	7*
1 26	4 48.89	+21 28.3	1.569	2.305	19.8	21.1	128 E	66	43	11 2	12 19.32	+14 25.9	2.544	1.943	20.5	19.7	43 W	37	9*
1 31	4 49.78	+21 36.7	1.638	2.323	20.9	21.2	123 E	67	42	11 12	12 43.37	+12 59.0	2.444	1.912	22.3	19.6	47 W	41	12*
2 5	4 51.45	+21 45.8	1.709	2.340	21.8	21.4	118 E	67	42	11 22	13 7.71	+11 33.8	2.343	1.882	24.0	19.5	51 W	44	15*
2 10	4 53.83	+21 55.6	1.783	2.357	22.6	21.5	114 E	67	42	12 2	13 32.34	+10 11.8	2.243	1.854	25.7	19.5	55 W	46	18*
435185 2007 RU₃₀										12 12	13 57.21	+8 54.9	2.143	1.826	27.3	19.4	58 W	48	22*
12 27	5 2.63	+19 54.7	1.197	2.151	8.6	19.8	161 E	65	44	12 22	14 22.25	+7 44.8	2.045	1.801	28.7	19.3	62 W	49	27*
1 6	4 56.08	+19 35.7	1.290	2.193	13.3	20.2	149 E	65	44	1 1	14 47.37	+6 42.8	1.950	1.776	30.1	19.2	65 W	49	31*
1 16	4 52.90	+19 25.8	1.404	2.236	17.0	20.6	138 E	64	45	1 11	15 12.42	+5 50.4	1.857	1.754	31.4	19.1	68 W	49	36*
1 26	4 53.15	+19 24.8	1.535	2.279	19.8	20.9	128 E	64	45	1 21	15 37.25	+5 8.4	1.768	1.734	32.6	19.0	72 W	49	41*
2 5	4 56.49	+19 30.8	1.679	2.322	21.8	21.2	119 E	65	44	306590 2000 GL₃									
2 15	5 2.51	+19 41.8	1.834	2.365	23.1	21.5	110 E	65	44	12 27	5 6.41	-36 4.8	0.630	1.394	38.6	17.4	118 E	9	80
282042 1998 SP₂										1 1	5 7.46	-36 21.3	0.641	1.391	39.3	17.4	116 E	9	80
12 27	5 2.74	+6 51.0	1.359	2.286	10.7	19.5	155 E	52	57	1 6	5 9.29	-36 16.2	0.653	1.390	39.9	17.5	115 E	9	80
1 6	4 56.04	+7 42.9	1.454	2.329	14.0	19.8	145 E	53	56	1 11	5 11.99	-35 51.0	0.664	1.391	40.3	17.5	114 E	9	80
1 16	4 52.29	+8 44.6	1.570	2.372	17.0	20.2	135 E	54	55	1 16	5 15.62	-35 7.4	0.677	1.394	40.6	17.6	113 E	10	81
1 26	4 51.62	+9 51.8	1.703	2.415	19.3	20.4	126 E	55	54	1 21	5 20.24	-34 7.1	0.689	1.398	40.7	17.6	112 E	11	82
2 5	4 53.84	+11 0.5	1.850	2.457	21.0	20.7	117 E	56	53	1 26	5 25.82	-32 52.1	0.702	1.404	40.7	17.7	112 E	12	83
2 15	4 58.62	+12 8.1	2.008	2.499	22.1	21.0	108 E	57	52	1 31	5 32.32	-31 24.1	0.716	1.412	40.5	17.7	111 E	14	85
2 25	5 6.62	+13 12.4	2.173	2.541	22.5	21.2	100 E	58	51*	2 5	5 39.68	-29 44.6	0.731	1.422	40.3	17.8	111 E	15	86
3 7	5 14.46	+14 11.7	2.342	2.582	22.6	21.4	92 E	59*	49*	2 10	5 47.86	-27 55.2	0.747	1.433	40.1	17.8	111 E	17	88
291877 2006 PB₁₈										2 15	5 56.80	-25 57.7	0.764	1.446	39.8	17.9	111 E	19	90
12 27	5 2.97	+17 0.1	1.531	2.478	7.8	20.8	160 E												

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/21	α ₂₀₀₀	δ ₂₀₀₀	Δ	r	β	V	ψ	45°	-26°	20/22	α ₂₀₀₀	δ ₂₀₀₀	Δ	r	β	V	ψ	45°	-26°
306590 2000 GL ₃ (continuation)										506779 2006 YY ₂ (continuation)									
5 26	9 48.78	+ 2 14.4	1.722	1.905	31.9	20.0	84 E	36*	62*	8 29	15 8.36	- 4 16.9	1.639	1.618	36.1	21.4	71 E	30*	59*
6 5	10 10.34	+ 2 28.9	1.874	1.961	30.6	20.2	79 E	32*	61*	9 3	15 19.91	- 6 32.4	1.703	1.645	35.0	21.5	69 E	28*	59*
6 15	10 31.19	+ 2 24.4	2.030	2.018	29.1	20.4	75 E	28*	60*	46771 1998 HM ₇									
6 25	10 51.36	+ 2 4.3	2.188	2.075	27.4	20.6	70 E	24*	58*	12 27	5 7.89	+43 29.5	1.435	2.361	10.3	17.9	155 E	88	21
7 5	11 10.90	+ 1 31.9	2.346	2.131	25.7	20.8	65 E	21*	55*	1 1	5 0.75	+43 40.7	1.474	2.377	11.9	18.0	150 E	89	20
7 15	11 29.90	+ 0 49.8	2.504	2.187	23.8	20.9	60 E	18*	52*	1 6	4 54.57	+43 45.3	1.518	2.394	13.5	18.2	145 E	89	20
7 25	11 48.41	+ 0 0.4	2.659	2.243	21.9	21.0	55 E	15*	48*	1 11	4 49.49	+43 44.5	1.569	2.410	15.1	18.3	140 E	89	20
8 4	12 6.49	- 0 54.4	2.810	2.299	19.9	21.1	50 E	13*	44*	1 16	4 45.57	+43 39.8	1.624	2.426	16.5	18.5	136 E	89	20
8 14	12 24.21	- 1 52.7	2.955	2.353	17.8	21.2	45 E	11*	39*	1 21	4 42.85	+43 32.3	1.684	2.442	17.8	18.6	131 E	89	20
8 24	12 41.61	- 2 53.1	3.093	2.407	15.6	21.3	40 E	10*	34*	1 26	4 41.29	+43 23.2	1.747	2.457	19.0	18.7	126 E	88	21
9 3	12 58.73	- 3 54.2	3.223	2.461	13.5	21.4	35 E	9*	28*	1 31	4 40.84	+43 13.2	1.814	2.473	19.9	18.9	121 E	88	21
9 13	13 15.62	- 4 54.8	3.342	2.513	11.3	21.4	29 E	7*	23*	2 5	4 41.43	+43 2.9	1.884	2.488	20.7	19.0	117 E	88	21
9 23	13 32.29	- 5 53.8	3.450	2.565	9.1	21.4	24 E	6*	17*	2 10	4 42.99	+42 52.8	1.956	2.503	21.4	19.1	112 E	88	21
10 3	13 48.77	- 6 50.1	3.545	2.615	7.0	21.5	18 E	5*	12*	2 15	4 45.45	+42 43.1	2.030	2.518	21.9	19.2	108 E	88	21*
10 13	14 5.05	- 7 42.9	3.627	2.665	4.9	21.4	13 E	3*	6*	2 20	4 48.73	+42 34.0	2.106	2.533	22.3	19.3	104 E	88	21*
10 23	14 21.14	- 8 31.2	3.695	2.714	3.0	21.4	8 E	1*	—	2 25	4 52.75	+42 25.6	2.182	2.547	22.5	19.4	100 E	87	21*
11 2	14 37.01	- 9 14.3	3.747	2.761	2.1	21.4	6 E	—	—	3 2	4 57.43	+42 17.8	2.259	2.561	22.6	19.5	96 E	87	21*
171673 2000 QB ₃₃										506779 2006 YY ₂ (continuation)									
12 27	5 7.44	+24 56.0	1.674	2.629	6.4	20.5	163 E	70	39	3 7	5 2.71	+42 10.5	2.337	2.575	22.6	19.6	92 E	85*	21*
1 1	5 2.18	+24 57.8	1.705	2.635	8.6	20.7	156 E	70	39	3 12	5 8.54	+42 3.5	2.414	2.589	22.6	19.7	89 E	82*	21*
1 6	4 57.55	+24 59.0	1.742	2.641	10.7	20.8	150 E	70	39	3 17	5 14.85	+41 56.9	2.492	2.603	22.4	19.7	85 E	79*	21*
1 11	4 53.62	+24 59.9	1.785	2.646	12.5	20.9	144 E	70	39	3 22	5 21.61	+41 50.3	2.569	2.616	22.1	19.8	82 E	75*	20*
1 16	4 50.47	+25 0.9	1.834	2.651	14.3	21.0	138 E	70	39	3 27	5 28.75	+41 43.7	2.645	2.630	21.8	19.9	78 E	72*	20*
1 21	4 48.15	+25 2.3	1.887	2.656	15.8	21.2	133 E	70	39	4 6	5 44.04	+41 29.6	2.794	2.656	21.0	20.0	72 E	65*	19*
1 26	4 46.64	+25 4.3	1.945	2.661	17.1	21.3	127 E	70	39	4 16	6 0.43	+41 13.3	2.937	2.681	19.9	20.1	65 E	59*	19*
1 31	4 45.95	+25 7.0	2.007	2.666	18.2	21.4	122 E	70	39	4 26	6 17.66	+40 53.9	3.074	2.705	18.7	20.2	59 E	52*	18*
2 5	4 46.03	+25 10.6	2.072	2.670	19.2	21.5	117 E	70	39	5 6	6 35.51	+40 30.4	3.202	2.728	17.3	20.2	54 E	46*	17*
12 27	5 7.44	- 1 40.8	0.731	1.653	17.9	19.1	149 E	43	66	5 16	6 53.81	+40 2.3	3.321	2.750	15.9	20.3	48 E	40*	16*
1 1	4 57.35	+ 0 51.1	0.716	1.626	20.0	19.1	146 E	46	63	5 26	7 12.38	+39 29.2	3.429	2.772	14.4	20.3	43 E	35*	14*
1 6	4 47.73	+ 3 38.6	0.709	1.599	22.7	19.2	141 E	49	60	6 5	7 31.08	+38 50.9	3.527	2.792	12.8	20.3	38 E	29*	12*
1 11	4 38.92	+ 6 37.3	0.707	1.572	25.7	19.2	136 E	52	57	6 15	7 49.81	+38 7.5	3.613	2.812	11.2	20.3	33 E	25*	10*
1 16	4 31.22	+ 9 43.1	0.712	1.545	28.8	19.3	131 E	55	54	6 25	8 8.45	+37 19.1	3.687	2.830	9.7	20.3	28 E	21*	7*
1 21	4 24.86	+12 51.6	0.721	1.519	32.0	19.4	125 E	58	51	7 5	8 26.92	+36 26.1	3.748	2.848	8.3	20.3	24 E	17*	4*
1 26	4 19.97	+15 59.5	0.735	1.493	34.9	19.4	120 E	61	48	7 15	8 45.17	+35 29.0	3.795	2.864	7.1	20.3	20 E	14*	—
1 31	4 16.61	+19 4.1	0.752	1.467	37.6	19.5	115 E	64	45	7 25	9 3.14	+34 28.5	3.829	2.880	6.2	20.3	18 E	12*	—
2 5	4 14.80	+22 4.0	0.771	1.442	40.1	19.6	110 E	67	42	8 4	9 20.79	+33 25.1	3.850	2.895	5.9	20.3	17 E	10*	—
2 10	4 14.53	+24 57.9	0.793	1.417	42.3	19.7	105 E	70	39*	8 14	9 38.09	+32 19.7	3.856	2.909	6.1	20.3	18 E	8*	—
2 15	4 15.80	+27 45.7	0.816	1.393	44.2	19.8	101 E	73	36*	8 24	9 55.01	+31 13.2	3.848	2.921	6.9	20.4	20 W	11*	—
2 25	4 22.80	+33 2.4	0.863	1.347	47.2	19.9	93 E	78*	30*	9 3	10 11.53	+30 6.5	3.826	2.933	8.0	20.4	24 W	16*	—
3 7	4 35.55	+37 54.6	0.908	1.305	49.4	20.0	87 E	79*	24*	9 13	10 27.64	+29 0.6	3.790	2.944	9.4	20.5	28 W	21*	—
3 17	4 54.12	+42 22.3	0.949	1.268	50.9	20.1	81 E	75*	19*	9 23	10 43.30	+27 56.8	3.740	2.954	10.8	20.5	33 W	26*	—
3 22	5 5.69	+44 26.5	0.967	1.251	51.5	20.1	79 E	73*	17*	10 3	10 58.49	+26 56.0	3.677	2.963	12.2	20.5	39 W	32*	1*
3 27	5 18.84	+46 23.7	0.984	1.236	51.9	20.1	77 E	71*	15*	10 13	11 13.17	+25 59.7	3.601	2.971	13.6	20.5	44 W	38*	4*
4 1	5 33.64	+48 13.0	0.998	1.223	52.3	20.2	75 E	69*	13*	10 23	11 27.29	+25 9.1	3.513	2.978	14.9	20.5	50 W	44*	8*
4 6	5 50.18	+49 53.3	1.011	1.211	52.6	20.2	74 E	68*	12*	11 2	11 40.78	+24 25.7	3.414	2.984	16.1	20.5	57 W	51*	11*
4 11	6 8.54	+51 23.1	1.022	1.202	52.8	20.2	73 E	66*	11*	11 12	11 53.57	+23 51.1	3.304	2.989	17.2	20.5	63 W	57*	15*
4 16	6 28.76	+52 40.8	1.031	1.194	53.0	20.2	72 E	65*	10*	11 22	12 5.53	+23 26.8	3.186	2.993	18.0	20.4	70 W	62*	20*
4 21	6 50.82	+53 44.6	1.039	1.188	53.1	20.2	71 E	65*	9*	12 2	12 16.52	+23 14.4	3.062	2.996	18.7	20.4	77 W	66*	24*
4 26	7 14.62	+54 32.1	1.045	1.185	53.2	20.2	71 E	64*	8*	12 12	12 26.37	+23 15.5	2.933	2.998	19.1	20.3	84 W	68*	29*
5 1	7 39.94	+55 1.3	1.049	1.184	53.2	20.2	70 E	64*	8*	12 22	12 34.86	+23 31.5	2.802	2.999	19.1	20.2	92 W	69*	33*
5 6	8 6.47	+55 9.7	1.052	1.184	53.2	20.2	70 E	64*	8*	1 1	12 41.74	+24 3.5	2.671	2.999	18.9	20.1	100 W	69	37*
5 11	8 33.80	+54 55.8	1.055	1.187	53.2	20.2	70 E	64*	9*	1 11	12 46.69	+24 51.8	2.544	2.998	18.2	20.0	108 W	70	39*
5 16	9 1.44	+54 18.1	1.056	1.192	53.0	20.2	70 E	64*	10*	1 21	12 49.41	+25 55.7	2.426	2.996	17.1	19.8	116 W	71	38
5 18	9 12.46	+53 56.3	1.057	1.195	53.0	20.3	71 E	65*	10*	367708 2010 TV ₁₈									
5 20	9 23.42	+53 30.5	1.058	1.198	52.9	20.3	71 E	65*	10*	12 27	5 8.10	+23 59.7	1.195	2.154	7.8	20.4	163 E	69	40
5 22	9 34.29	+53 0.9	1.059	1.201	52.8	20.3	71 E	65*	11*	1 1	5 3.35	+23 51.7	1.232	2.169	10.4	20.6	157 E	69	40
5 24	9 45.02	+52 27.5	1.059	1.205	52.7	20.3	71 E	65*	12*	1 6	4 59.44	+23 44.1	1.274	2.184	12.8	20.8	151 E	69	40
5 26	9 55.61	+51 50.3	1.060	1.208	52.5	20.3	71 E	65*	12*	1 11	4 56.44	+23 37.3	1.321	2.199	15.0	20.9	145 E	69	40</

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	20/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
385636 2005 QS ₇₅										3833 Calingasta									
12 27	5 11.16	+24 41.7	1.057	2.019	8.0	19.1	163 E	70	39	4 16	6 14.42	+14 17.8	2.696	2.498	21.9	20.5	68 E	45°	44*
1 1	5 6.72	+24 56.4	1.095	2.038	10.7	19.3	157 E	70	39	4 26	6 29.12	+14 45.8	2.851	2.535	20.5	20.6	62 E	39*	42*
1 6	5 3.15	+25 9.6	1.139	2.057	13.2	19.5	151 E	70	39	5 6	6 44.27	+15 4.1	2.998	2.570	18.9	20.7	56 E	33*	39*
1 11	5 0.54	+25 21.8	1.187	2.076	15.4	19.7	146 E	70	39	5 16	6 59.75	+15 12.7	3.138	2.604	17.3	20.8	50 E	26*	36*
1 16	4 58.92	+25 33.2	1.241	2.094	17.4	19.9	140 E	71	38	5 26	7 15.44	+15 12.2	3.269	2.637	15.5	20.8	44 E	20*	33*
2 5	4 58.64	+25 54.8	1.360	2.132	20.7	20.2	130 E	71	38	6 5	7 31.23	+15 2.8	3.389	2.668	13.6	20.9	38 E	14*	29*
2 5	5 1.98	+26 15.4	1.493	2.170	23.0	20.5	121 E	71	38	6 15	7 47.05	+14 45.1	3.497	2.699	11.7	20.9	33 E	8*	25*
2 15	5 8.46	+26 34.9	1.637	2.208	24.5	20.8	112 E	72	37	6 25	8 2.82	+14 19.7	3.594	2.728	9.8	20.9	27 E	4*	21*
2 25	5 17.57	+26 52.9	1.788	2.246	25.3	21.1	104 E	72	37*	7 5	8 18.48	+13 47.1	3.676	2.756	7.8	20.9	21 E	—	15*
3 7	5 28.80	+27 8.0	1.944	2.283	25.6	21.3	97 E	72	37*	7 15	8 33.99	+13 8.0	3.745	2.782	5.8	20.8	16 E	—	10*
501585 2014 QA ₄₃										(continuation)									
12 27	5 11.16	-7 9.8	5.149	5.980	5.4	19.3	145 E	38	71	8 4	9 4.35	+11 32.8	3.838	2.832	2.2	20.7	6 E	—	—
1 6	5 6.98	-6 27.9	5.236	6.010	6.2	19.4	139 E	39	70	8 14	9 19.14	+10 38.1	3.862	2.854	1.9	20.7	5 W	—	—
1 16	5 3.56	-5 38.3	5.348	6.040	7.1	19.5	131 E	39	70	8 24	9 33.61	+9 39.7	3.869	2.876	3.3	20.9	9 W	—	3*
1 26	5 1.11	-4 42.6	5.481	6.070	7.8	19.6	123 E	40	69	9 3	9 47.73	+8 38.4	3.860	2.896	5.1	21.0	15 W	5*	7*
2 5	4 59.72	-3 43.0	5.631	6.100	8.5	19.7	114 E	41	68	9 13	10 1.48	+7 34.9	3.834	2.915	7.0	21.1	21 W	11*	11*
2 15	4 59.43	-2 41.2	5.795	6.131	8.9	19.8	105 E	42	67	9 23	10 14.80	+6 30.1	3.792	2.933	8.9	21.1	27 W	17*	18*
2 25	5 0.25	-1 38.8	5.968	6.162	9.2	19.8	97 E	43	65*	10 3	10 27.66	+5 24.9	3.735	2.950	10.7	21.2	33 W	23*	24*
3 7	5 2.12	0 37.3	6.146	6.192	9.2	19.9	88 E	44*	62*	10 13	10 39.98	+4 20.2	3.661	2.965	12.5	21.2	40 W	29*	22*
3 17	5 4.95	0 22.3	6.325	6.223	9.0	20.0	80 E	43*	59*	10 23	10 51.70	+3 17.3	3.573	2.979	14.0	21.2	47 W	34*	27*
3 27	5 8.66	+1 19.1	6.501	6.254	8.7	20.0	71 E	39*	54*	11 2	11 2.74	+2 17.0	3.471	2.992	15.5	21.2	54 W	39*	32*
4 6	5 13.15	+2 12.4	6.670	6.286	8.2	20.1	63 E	34*	49*	11 12	11 12.97	+1 20.7	3.357	3.003	16.7	21.2	61 W	42*	37*
4 16	5 18.30	+3 1.7	6.830	6.317	7.5	20.1	56 E	27*	44*	11 22	11 22.28	+0 29.9	3.232	3.013	17.8	21.2	68 W	44*	43*
4 26	5 24.01	+3 46.6	6.978	6.348	6.8	20.1	48 W	20*	39*	12 2	11 30.50	-0 14.1	3.098	3.022	18.5	21.1	76 W	45*	49*
5 6	5 30.17	+4 26.9	7.111	6.380	5.9	20.2	41 E	12*	34*	12 12	11 37.43	-0 49.4	2.958	3.030	18.9	21.0	85 W	44*	55*
5 16	5 36.70	+5 2.6	7.228	6.411	5.0	20.2	34 E	5*	28*	12 22	11 42.88	-1 14.2	2.814	3.037	18.9	20.9	93 W	44	61*
5 26	5 43.50	+5 33.5	7.327	6.443	4.1	20.1	27 E	—	21*	1 1	11 46.60	-1 26.6	2.670	3.042	18.4	20.8	103 W	44	65*
6 5	5 50.46	+5 59.8	7.406	6.475	3.3	20.1	22 E	—	14*	1 11	11 48.35	-1 24.4	2.531	3.046	17.4	20.6	113 W	44	65
6 15	5 57.52	+6 21.4	7.466	6.507	2.8	20.1	18 E	—	7*	1 21	11 47.93	-1 5.8	2.400	3.049	15.7	20.5	123 W	44	65
6 25	6 4.57	+6 38.6	7.504	6.539	2.6	20.1	17 W	—	4*	185734 1998 WQ ₃₂									
7 5	6 11.55	+6 51.5	7.522	6.571	2.9	20.2	19 W	—	11*	12 27	5 13.34	+32 46.1	1.473	2.427	7.2	19.6	162 E	78	31
7 15	6 18.36	+7 0.5	7.519	6.603	3.6	20.2	24 W	—	18*	1 1	5 7.73	+32 51.1	1.511	2.443	9.3	19.8	156 E	78	31
7 25	6 24.92	+7 5.7	7.495	6.635	4.4	20.3	30 W	3*	24*	1 6	5 2.87	+32 53.2	1.555	2.459	11.3	19.9	151 E	78	31
8 4	6 31.16	+7 7.7	7.452	6.667	5.2	20.3	37 W	11*	30*	1 11	4 58.88	+32 52.8	1.605	2.475	13.2	20.1	145 E	78	31
8 14	6 36.98	+7 6.7	7.390	6.699	6.0	20.3	44 W	19*	35*	1 16	4 55.81	+32 50.8	1.660	2.491	14.9	20.2	139 E	78	31
8 24	6 42.29	+7 3.2	7.311	6.731	6.8	20.4	52 W	27*	40*	1 26	4 52.50	+32 44.5	1.784	2.522	17.7	20.5	129 E	78	31
9 3	6 47.02	+6 57.8	7.217	6.764	7.4	20.4	60 W	35*	44*	2 5	4 52.80	+32 37.7	1.923	2.552	19.7	20.7	119 E	78	31
9 13	6 51.08	+6 51.1	7.111	6.796	7.9	20.4	68 W	42*	48*	2 15	4 56.33	+32 32.5	2.072	2.581	21.1	21.0	110 E	78	31
9 23	6 54.37	+6 43.8	6.994	6.828	8.2	20.4	76 W	47*	52*	2 25	5 2.65	+32 29.2	2.229	2.610	21.8	21.2	101 E	77	31*
10 3	6 56.82	+6 36.5	6.872	6.861	8.4	20.3	85 W	51*	55*	3 7	5 11.29	+32 27.4	2.389	2.638	22.1	21.4	93 E	77*	31*
10 13	6 58.36	+6 30.1	6.746	6.893	8.3	20.3	94 W	52	57*	154144 2002 FA ₅									
10 23	6 58.94	+6 25.4	6.623	6.926	8.0	20.3	104 W	51	58	12 27	5 13.82	-16 34.9	1.397	2.217	17.7	20.8	137 E	28	81
11 2	6 58.54	+6 23.1	6.506	6.958	7.5	20.2	113 W	51	58	1 1	5 8.55	-15 55.2	1.426	2.228	18.4	20.9	134 E	29	80
11 12	6 57.15	+6 24.2	6.400	6.991	6.8	20.2	123 W	51	58	1 6	5 3.97	-15 7.0	1.460	2.238	19.2	20.9	132 E	30	79
11 22	6 54.85	+6 29.2	6.311	7.023	5.9	20.1	133 W	51	58	1 11	5 0.16	-14 11.5	1.499	2.248	20.0	21.0	129 E	31	78
12 2	6 51.73	+6 38.8	6.243	7.056	4.8	20.0	143 W	52	57	1 16	4 57.19	-13 10.3	1.542	2.258	20.8	21.1	125 E	32	77
12 12	6 47.95	+6 53.2	6.200	7.088	3.7	20.0	153 W	52	57	1 21	4 55.08	-12 4.8	1.589	2.268	21.6	21.2	122 E	33	76
12 22	6 43.73	+7 12.4	6.185	7.121	2.6	19.9	161 W	52	57	1 26	4 53.83	-10 56.3	1.639	2.276	22.4	21.3	118 E	34	75
1 1	6 39.30	+7 36.2	6.201	7.153	2.1	19.9	165 W	53	56	1 31	4 53.40	-9 46.0	1.691	2.285	23.1	21.4	115 E	35	74
1 11	6 34.93	+8 4.1	6.248	7.186	2.5	19.9	161 E	53	56	39557 Gielgud									
1 21	6 30.88	+8 35.3	6.327	7.219	3.5	20.0	153 E	54	55	12 27	5 13.99	+26 45.2	1.921	2.879	5.4	21.1	164 E	72	37
12 27	5 12.85	+12 42.3	1.466	2.414	8.0	19.4	160 E	58	51	1 1	5 8.59	+26 42.0	1.959	2.893	7.4	21.2	158 E	72	37
1 6	5 4.41	+12 46.2	1.552	2.449	11.9	19.7	149 E	58	51	1 6	5 3.76	+26 37.9	2.005	2.907	9.3	21.3	152 E	72	37
1 16	4 58.87	+13 0.8	1.662	2.483	15.3	20.0	138 E	58	51	1 11	4 59.61	+26 33.3	2.056	2.921	11.0	21.5	146 E	72	37
1 26	4 56.45	+13 23.9	1.790	2.517	18.0	20.3	128 E	58	51	1 16	4 56.17	+26 28.6	2.114	2.935	12.5	21.6	140 E	71	38
2 5	4 57.05	+13 53.2	1.933	2.550	19.9	20.6	118 E	59	50	79611 1998 RC ₅₂									
2 15	5 0.38	+14 26.1	2.086	2.582	21.2	20.8	109 E	59	50	12 27	5 15.64	+31 38.0	1.492	2.449	6.8	18.7	163 E	77	32
2 25	5 6.08	+15 0.4	2.246	2.613	21.9	21.0	100 E	60	49*	1 1	5 10.27	+31 28.5	1.529	2.465	8.9	18.9	157 E	76	33
3 7	5 13.78	+15 34.2	2.409	2.644	22.0	21.2	92 E	61*	48*	1 6	5 5.64	+31 17.0	1.571	2.481	10.9	19.0	152 E	76	33

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	20/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
79611 1998 RC₅₂										149592 2004 CU₅₁									
<i>(continuation)</i>										<i>(continuation)</i>									
6 25	7 51.43	+25 24.6	3.815	2.898	7.6	21.2	22 E	10*	12*	9 3	10 39.99	+11 9.1	3.673	2.668	1.5	21.2	4 W	—	—
7 5	8 7.34	+24 36.7	3.876	2.915	5.6	21.1	16 E	6*	7*	9 13	10 55.80	+10 9.6	3.681	2.693	3.5	21.3	9 W	3*	—
7 15	8 23.10	+23 44.3	3.923	2.931	3.7	21.1	11 E	2*	2*	9 23	11 11.29	+9 10.1	3.673	2.717	5.5	21.4	15 W	9*	1*
7 25	8 38.66	+22 47.8	3.954	2.945	2.0	21.0	6 E	—	—	210389 2007 VA₁₄₉									
8 4	8 53.97	+21 47.6	3.970	2.959	1.5	21.0	5 W	—	—	12 27	5 18.79	+20 30.0	1.471	2.433	6.1	20.8	165 E	65	44
8 14	9 8.99	+20 44.4	3.970	2.972	2.9	21.1	9 W	3*	—	1 1	5 13.61	+20 25.1	1.502	2.443	8.5	21.0	158 E	65	44
8 24	9 23.67	+19 38.7	3.954	2.984	4.8	21.2	14 W	8*	1*	1 6	5 9.08	+20 21.2	1.540	2.454	10.7	21.2	152 E	65	44
9 3	9 37.98	+18 31.2	3.922	2.995	6.7	21.3	20 W	14*	4*	1 11	5 5.29	+20 18.2	1.584	2.464	12.8	21.3	146 E	65	44
9 13	9 51.87	+17 22.7	3.875	3.005	8.5	21.3	26 W	19*	8*	1 16	5 2.30	+20 16.6	1.633	2.474	14.6	21.5	141 E	65	44
9 23	10 5.30	+16 14.0	3.812	3.014	10.3	21.4	33 W	25*	12*	22601 1998 HD₁₂₄									
10 3	10 18.22	+15 6.0	3.735	3.023	12.0	21.4	39 W	32*	15*	12 27	5 19.05	+19 9.5	1.685	2.645	5.7	17.1	164 E	64	45
10 13	10 30.56	+13 59.6	3.643	3.030	13.6	21.4	46 W	37*	19*	1 1	5 13.95	+19 22.5	1.718	2.657	7.9	17.3	158 E	64	45
10 23	10 42.23	+12 55.9	3.538	3.036	15.1	21.4	52 W	43*	23*	1 6	5 9.41	+19 35.7	1.758	2.668	9.9	17.4	152 E	65	44
11 2	10 53.15	+11 56.0	3.422	3.041	16.3	21.4	60 W	48*	28*	1 11	5 5.52	+19 49.2	1.805	2.680	11.7	17.5	146 E	65	44
11 12	11 3.20	+11 1.3	3.294	3.046	17.4	21.3	67 W	52*	33*	1 16	5 2.35	+20 3.0	1.857	2.691	13.4	17.7	141 E	65	44
11 22	11 12.21	+10 13.0	3.159	3.049	18.2	21.3	75 W	54*	38*	1 26	4 58.28	+20 31.7	1.977	2.712	16.2	17.9	130 E	66	43
12 2	11 20.04	+9 32.6	3.017	3.052	18.7	21.2	83 W	55	44*	2 5	4 57.26	+21 1.7	2.112	2.733	18.3	18.2	119 E	66	43
12 12	11 26.47	+9 1.6	2.871	3.053	18.8	21.1	91 W	54	49*	2 15	4 59.08	+21 32.6	2.259	2.753	19.8	18.4	110 E	67	42
12 22	11 31.26	+8 41.5	2.725	3.054	18.5	21.0	100 W	54	53*	2 25	5 3.47	+22 3.8	2.413	2.772	20.6	18.5	101 E	67	42
1 1	11 34.19	+8 33.7	2.582	3.053	17.7	20.8	109 W	54	55*	3 7	5 10.06	+22 34.3	2.570	2.790	20.8	18.7	92 E	67*	41*
1 11	11 34.98	+8 39.4	2.446	3.052	16.3	20.6	119 W	54	55	3 17	5 18.54	+23 3.0	2.728	2.807	20.6	18.8	84 E	65*	39*
1 21	11 33.47	+8 58.9	2.322	3.050	14.3	20.5	130 W	54	55	3 27	5 28.60	+23 29.2	2.883	2.823	20.1	19.0	77 E	61*	37*
152741 1998 WT₄₂										4 6	5 39.98	+23 51.7	3.033	2.838	19.3	19.1	69 E	55*	35*
12 27	5 16.06	+25 27.3	1.300	2.263	6.7	19.4	165 E	70	39	4 16	5 52.45	+24 10.0	3.176	2.852	18.2	19.1	62 E	48*	33*
1 1	5 11.21	+25 14.1	1.337	2.280	9.1	19.6	158 E	70	39	4 26	6 5.81	+24 23.4	3.311	2.866	16.8	19.2	56 E	41*	31*
1 6	5 7.14	+25 1.1	1.381	2.298	11.4	19.8	152 E	70	39	5 6	6 19.88	+24 31.2	3.436	2.878	15.4	19.2	49 E	35*	28*
1 11	5 3.91	+24 48.8	1.430	2.315	13.5	20.0	147 E	70	39	5 16	6 34.52	+24 33.3	3.549	2.890	13.8	19.2	43 E	28*	25*
1 16	5 1.58	+24 37.5	1.485	2.332	15.4	20.1	141 E	70	39	5 26	6 49.60	+24 29.4	3.650	2.901	12.0	19.2	37 E	22*	22*
1 26	4 59.62	+24 19.2	1.608	2.367	18.5	20.5	130 E	69	40	6 5	7 4.98	+24 19.3	3.738	2.910	10.2	19.2	31 E	16*	19*
2 5	5 1.04	+24 6.9	1.745	2.400	20.7	20.7	120 E	69	40	6 15	7 20.59	+24 3.1	3.812	2.919	8.3	19.2	25 E	11*	15*
2 15	5 5.46	+24 0.1	1.894	2.434	22.2	21.0	111 E	69	40	6 25	7 36.32	+23 40.9	3.872	2.927	6.4	19.2	19 E	6*	10*
2 25	5 12.43	+23 57.3	2.050	2.466	23.0	21.2	103 E	69	40*	7 5	7 52.08	+23 13.0	3.916	2.934	4.4	19.1	13 E	2*	5*
3 7	5 21.50	+23 56.8	2.210	2.498	23.3	21.4	95 E	69*	40*	7 15	8 7.83	+22 39.7	3.945	2.940	2.5	19.0	7 E	—	—
373907 2003 UE₆₃										7 25	8 23.48	+22 1.5	3.959	2.945	1.0	18.9	3 E	—	—
12 27	5 18.03	+22 57.3	1.354	2.318	6.3	20.9	165 E	68	41	8 4	8 38.98	+21 18.8	3.957	2.949	1.9	19.0	6 W	—	—
1 1	5 12.73	+23 3.2	1.392	2.335	8.8	21.1	159 E	68	41	8 14	8 54.29	+20 32.2	3.939	2.952	3.8	19.1	11 W	5*	—
1 6	5 8.17	+23 8.6	1.436	2.353	11.1	21.2	153 E	68	41	8 24	9 9.34	+19 42.5	3.905	2.954	5.8	19.2	17 W	10*	3*
1 11	5 4.44	+23 13.9	1.486	2.370	13.2	21.4	147 E	68	41	9 3	9 24.10	+18 50.4	3.856	2.955	7.7	19.2	23 W	16*	7*
1 16	5 1.59	+23 19.4	1.542	2.386	15.1	21.6	141 E	68	41	9 13	9 38.52	+17 56.8	3.792	2.956	9.6	19.3	29 W	22*	10*
482566 2012 WK₄										9 23	9 52.54	+17 2.7	3.713	2.955	11.4	19.3	36 W	28*	14*
12 27	5 18.16	+11 10.4	0.446	1.412	13.6	21.3	160 E	56	53	10 3	10 6.10	+16 9.1	3.620	2.953	13.1	19.3	42 W	34*	17*
1 1	5 9.29	+11 55.6	0.476	1.428	17.2	21.6	155 E	57	52	10 13	10 19.15	+15 17.1	3.514	2.951	14.7	19.3	49 W	40*	21*
1 6	5 2.37	+12 41.5	0.511	1.444	20.8	21.9	149 E	58	51	10 23	10 31.59	+14 28.1	3.396	2.947	16.1	19.3	55 W	46*	25*
1 11	4 57.38	+13 27.4	0.548	1.459	24.0	22.1	143 E	58	51	11 2	10 43.34	+13 43.5	3.267	2.943	17.4	19.2	62 W	51*	29*
1 16	4 54.26	+14 12.9	0.589	1.473	26.8	22.4	137 E	59	50	11 12	10 54.27	+13 4.9	3.129	2.937	18.4	19.2	70 W	55*	33*
149592 2004 CU₅₁										11 22	11 4.22	+12 34.1	2.984	2.931	19.2	19.1	77 W	57*	38*
12 27	5 18.50	+14 55.2	0.989	1.845	20.6	18.3	139 E	30	79	12 2	11 13.04	+12 12.8	2.834	2.924	19.6	19.0	85 W	57	43*
1 1	5 14.83	+13 23.2	1.015	1.862	21.0	18.4	137 E	32	77	12 12	11 20.49	+12 3.2	2.682	2.916	19.7	18.9	94 W	57	47*
1 6	5 11.92	+11 43.8	1.046	1.878	21.5	18.5	136 E	33	76	12 22	11 26.34	+12 7.1	2.531	2.906	19.3	18.7	102 W	57	50*
1 11	5 9.83	+9 59.0	1.081	1.895	22.2	18.6	133 E	35	74	1 1	11 30.32	+12 26.3	2.384	2.896	18.4	18.5	112 W	57	52*
1 16	5 8.63	+8 11.1	1.120	1.912	23.0	18.7	131 E	37	72	1 11	11 32.13	+13 2.2	2.246	2.885	16.9	18.4	122 W	58	51
1 21	5 8.33	+6 21.9	1.164	1.930	23.8	18.9	128 E	39	70	1 21	11 31.54	+13 55.0	2.121	2.873	14.8	18.2	132 W	59	50
1 26	5 8.91	+4 33.3	1.212	1.947	24.6	19.0	125 E	40	69	10860 1995 LE									
1 31	5 10.32	+2 46.7	1.263	1.965	25.4	19.1	121 E	42	67	12 27	5 20.07	+21 53.6	1.299	2.264	6.3	20.0	165 E	67	42
2 5	5 12.53	+1 3.0	1.318	1.982	26.1	19.3	118 E	44	65	1 1	5 14.60	+21 40.8	1.353	2.298	8.8	20.3	159 E	67	42
2 10	5 15.47	+0 36.9	1.377	2.000	26.6	19.4	115 E	46	63	1 6	5 10.02	+21 29.4	1.414	2.332	11.1	20.5	153 E	66	43
2 15	5 19.11	+2 12.5	1.438	2.018	27.1	19.5	111 E	47	62	1 11	5 6.37	+21 19.5	1.480	2.365	13.2	20.7	147 E	66	43
2 25	5 28.25	+5 8.9	1.568	2.054	27.8	19.8	105 E	50	59	1 16	5 3.66	+21 11.5	1.552	2.398	14.9	20.9	141 E	66	43
3 7	5 39.48	+7 44.4	1.706	2.090	28.0	20.0	98 E	53	56*	1 21	5 1.88	+21 5.4	1.629	2.431	16.5	21.1	136 E	66	43
3 17	5 52.43	+9 58.7	1.850	2.127	27.9	20.2	92 E	55*	54*	1 26	5 0.97	+21 1.0	1.710	2.463	17.8	21.2	130 E	66	43
3 27	6 6.78	+11 52.4	1.998	2.163	27.4	20.4	86 E	54*	51*	1 31	5 0.89	+20 58.4	1.794	2.495	18.8	21.4	125 E	66	43
4 6	6 22.21	+13 26.4	2.148	2.198	26.6	20.6	80 E	52*	49*	138947 2001 BA₄₀									
4 16	6 38.48	+14 41.9	2.298	2.234	25.5	20.7	74 E	49*	46*	12 27	5 20.53	+23 2.0	0.429	1.403	10.1	18.1	166 E	68	41
4 26	6 55.39	+15 39.9	2.447	2.269	24.3	20.9	68 E	44*	44*	1 1	5 7.96	+20 59.7	0.443	1.402	15.7	18.4	157 E	66	43
5 6	7 12																		

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	
138947 2001 BA₄₀										510073 2010 JF₈₈										
<i>(continuation)</i>																				
3 12	5 20.71	+10 23.6	0.854	1.296	50.0	20.7	89	E	55*	52*	12 27	5 21.41	+ 6 16.8	0.919	1.866	11.7	20.4	157 E	51	58
3 17	5 29.49	+10 17.7	0.880	1.282	50.7	20.7	86	E	54*	52*	1 1	5 14.56	+ 7 39.7	0.979	1.909	13.4	20.6	153 E	53	56
3 22	5 38.81	+10 11.7	0.903	1.267	51.4	20.8	84	E	53*	52*	1 6	5 9.01	+ 8 58.2	1.045	1.952	15.3	20.9	148 E	54	55
3 27	5 48.63	+10 5.1	0.924	1.251	52.0	20.8	81	E	51*	51*	1 11	5 4.73	+10 12.1	1.116	1.994	17.1	21.1	143 E	55	54
4 1	5 58.91	+ 9 57.4	0.943	1.234	52.6	20.9	79	E	49*	51*	1 16	5 1.69	+11 21.1	1.193	2.036	18.7	21.4	138 E	56	53
4 6	6 9.61	+ 9 48.3	0.960	1.217	53.2	20.9	77	E	48*	51*	475134 2005 UH₃₃₂									
4 11	6 20.74	+ 9 37.3	0.974	1.199	53.7	20.9	75	E	46*	51*	12 27	5 21.42	+31 54.0	1.822	2.780	5.7	21.4	164 E	77	32
4 16	6 32.27	+ 9 24.2	0.985	1.180	54.3	20.9	73	E	43*	51*	1 1	5 15.67	+32 1.7	1.855	2.792	7.5	21.5	158 E	77	32
4 21	6 44.18	+ 9 8.7	0.994	1.161	55.0	20.9	71	E	41*	50*	1 6	5 10.50	+32 6.7	1.895	2.804	9.4	21.6	152 E	77	32
4 26	6 56.46	+ 8 50.5	0.999	1.141	55.6	20.9	69	E	39*	50*	1 11	5 6.01	+32 9.5	1.942	2.816	11.1	21.8	147 E	77	32
5 1	7 9.08	+ 8 29.6	1.002	1.120	56.4	20.9	68	E	36*	50*	1 16	5 2.28	+32 10.5	1.995	2.827	12.7	21.9	141 E	77	32
5 6	7 22.06	+ 8 5.8	1.002	1.099	57.2	20.9	66	E	34*	50*	434432 2005 NG₇									
5 11	7 35.40	+ 7 39.0	0.999	1.078	58.0	20.9	65	E	31*	50*	12 27	5 21.56	-11 55.4	0.550	1.455	24.8	19.5	142 E	33	76
5 16	7 49.10	+ 7 9.3	0.993	1.057	59.0	20.8	64	E	29*	50*	1 1	5 15.39	- 9 30.6	0.547	1.449	25.5	19.5	141 E	35	74
5 21	8 3.15	+ 6 36.7	0.984	1.036	60.1	20.8	62	E	27*	50*	1 6	5 10.08	- 6 48.2	0.549	1.443	26.6	19.5	139 E	38	71
5 26	8 17.57	+ 6 1.3	0.972	1.015	61.3	20.8	61	E	24*	50*	1 11	5 5.87	- 3 52.5	0.555	1.438	28.1	19.6	136 E	41	68
5 31	8 32.35	+ 5 23.5	0.957	0.994	62.6	20.7	60	E	22*	50*	1 16	5 2.96	- 0 48.4	0.566	1.433	29.9	19.6	134 E	44	65
6 5	8 47.52	+ 4 43.5	0.940	0.973	64.0	20.7	60	E	20*	50*	1 21	5 1.46	+ 2 19.4	0.580	1.429	31.7	19.7	130 E	47	62
6 10	9 3.10	+ 4 1.9	0.920	0.953	65.6	20.6	59	E	18*	50*	1 26	5 1.43	+ 5 26.6	0.597	1.424	33.6	19.9	127 E	50	59
6 15	9 19.11	+ 3 19.1	0.897	0.934	67.4	20.6	58	E	17*	50*	1 31	5 2.84	+ 8 29.6	0.618	1.421	35.5	20.0	123 E	53	56
6 20	9 35.56	+ 2 35.8	0.871	0.916	69.3	20.5	57	E	15*	49*	2 5	5 5.65	+11 25.8	0.642	1.418	37.2	20.1	120 E	56	53
6 25	9 52.49	+ 1 52.9	0.844	0.899	71.3	20.5	57	E	14*	49*	2 10	5 9.81	+14 13.4	0.668	1.415	38.7	20.2	116 E	59	50
6 30	10 9.90	+ 1 11.6	0.814	0.883	73.5	20.5	56	E	13*	49*	2 15	5 15.28	+16 51.0	0.697	1.413	40.1	20.4	113 E	62	47
7 5	10 27.85	+ 0 33.0	0.783	0.870	75.7	20.4	56	E	13*	49*	2 25	5 29.79	+21 33.3	0.760	1.410	42.3	20.6	107 E	67	42
7 10	10 46.38	+ 0 1.7	0.750	0.858	78.1	20.4	56	E	12*	49*	3 7	5 48.51	+25 29.8	0.828	1.409	43.7	20.8	101 E	70	39
7 15	11 5.51	+ 0 31.0	0.717	0.848	80.5	20.3	55	E	13*	49*	3 17	6 10.82	+28 40.3	0.900	1.410	44.6	21.0	96 E	74*	35*
7 20	11 25.27	+ 0 53.4	0.682	0.841	82.9	20.3	55	E	13*	49*	3 27	6 36.14	+31 5.6	0.974	1.413	44.9	21.2	92 E	75*	33*
7 25	11 45.70	+ 1 7.2	0.648	0.837	85.3	20.3	55	E	14*	49*	4 6	7 3.76	+32 47.0	1.049	1.418	44.8	21.4	87 E	74*	31*
7 30	12 6.83	+ 1 10.9	0.614	0.835	87.6	20.2	55	E	15*	49*	415029 2011 UL₂₁									
8 4	12 28.70	+ 1 3.2	0.581	0.836	89.6	20.2	55	E	17*	49*	12 27	5 24.86	+32 19.8	0.621	1.590	9.7	16.4	164 E	77	32
8 9	12 51.36	+ 0 43.2	0.549	0.839	91.3	20.2	56	E	19*	49*	1 1	5 7.02	+28 54.4	0.588	1.542	14.4	16.4	157 E	74	35
8 14	13 14.83	+ 0 10.2	0.520	0.845	92.7	20.1	56	E	21*	49*	1 6	4 49.68	+24 57.1	0.564	1.494	20.2	16.4	148 E	70	39
8 24	14 4.27	+ 1 34.6	0.467	0.865	94.0	20.0	59	E	27*	48*	1 11	4 33.60	+20 36.9	0.550	1.444	26.5	16.5	139 E	66	43
9 3	14 57.06	+ 4 2.9	0.425	0.893	93.0	19.8	62	E	34*	48*	1 16	4 19.30	+16 4.9	0.543	1.395	32.8	16.6	130 E	61	48
9 13	15 53.07	+ 6 53.8	0.397	0.927	89.7	19.6	67	E	41*	48*	1 21	4 7.08	+11 32.5	0.543	1.345	39.0	16.7	121 E	57	52
9 18	16 22.06	+ 8 19.2	0.388	0.945	87.3	19.5	70	E	45*	48*	1 26	3 56.99	+ 7 8.4	0.548	1.294	44.8	16.8	112 E	52	57
9 23	16 51.49	+ 9 39.7	0.383	0.965	84.5	19.4	73	E	48*	48*	1 31	3 48.88	+ 2 57.6	0.557	1.243	50.3	16.9	104 E	48	61*
9 28	17 21.17	+10 51.8	0.381	0.986	81.4	19.3	77	E	52*	48*	2 5	3 42.54	- 0 57.8	0.568	1.193	55.2	17.0	97 E	44	64*
10 3	17 50.86	+11 52.9	0.382	1.006	78.2	19.3	80	E	54*	48*	2 10	3 37.68	- 4 38.4	0.580	1.142	59.8	17.0	90 E	40	65*
10 8	18 20.34	+12 41.5	0.387	1.028	74.9	19.2	83	E	56*	48*	2 15	3 33.99	- 8 6.1	0.592	1.091	64.0	17.1	83 E	37*	65*
10 13	18 49.34	+13 17.5	0.396	1.049	71.7	19.2	86	E	58*	48*	2 20	3 31.13	-11 23.9	0.602	1.042	68.0	17.2	78 E	33*	64*
10 18	19 17.62	+13 41.6	0.407	1.070	68.6	19.2	89	E	59*	48*	2 25	3 28.69	-14 34.9	0.609	0.993	71.8	17.2	72 E	29*	62*
10 23	19 44.96	+13 55.0	0.422	1.091	65.7	19.2	92	E	59	48*	3 2	3 26.24	-17 41.8	0.614	0.947	75.5	17.3	68 E	24*	60*
10 28	20 11.24	+13 59.6	0.440	1.112	63.1	19.3	94	E	59	48*	3 7	3 23.32	-20 46.3	0.617	0.902	79.2	17.3	63 E	19*	57*
11 2	20 36.37	+13 57.4	0.461	1.133	60.7	19.4	95	E	59	48*	3 12	3 19.39	-23 49.0	0.615	0.861	82.8	17.3	59 E	13*	53*
11 7	21 0.33	+13 50.7	0.485	1.153	58.6	19.4	97	E	59	48*	3 17	3 13.82	-26 49.0	0.611	0.824	86.5	17.3	56 E	7*	49*
11 12	21 23.14	+13 41.6	0.512	1.173	56.8	19.5	98	E	59	49*	3 22	3 5.91	-29 42.8	0.604	0.792	90.0	17.4	53 E	1*	45*
11 17	21 44.81	+13 32.0	0.541	1.192	55.2	19.7	98	E	59	49*	3 27	2 54.93	-32 23.7	0.595	0.767	93.4	17.4	50 E	-	40*
11 22	22 5.41	+13 22.9	0.572	1.210	53.9	19.8	98	E	58	48*	3 29	2 49.54	-33 22.1	0.590	0.758	94.7	17.4	49 E	-	38*
11 27	22 25.01	+13 15.3	0.606	1.228	52.7	19.9	98	E	58	48*	3 31	2 43.53	-34 16.0	0.586	0.752	95.8	17.5	48 E	-	36*
12 2	22 43.70	+13 10.0	0.642	1.245	51.8	20.0	97	E	58	48*	4 2	2 36.91	-35 4.4	0.581	0.746	96.9	17.5	48 E	-	33*
12 7	23 1.60	+13 7.5	0.680	1.261	50.9	20.2	97	E	58	47*	4 4	2 29.68	-35 46.3	0.577	0.742	97.9	17.5	47 E	-	31*
12 12	23 18.77	+13 8.2	0.720	1.276	50.1	20.3	96	E	58	47*	4 6	2 21.86	-36 20.9	0.572	0.739	98.7	17.5	47 E	-	28*
12 22	23 51.27	+13 18.8	0.803	1.305	48.8	20.5	93	E	58	45*	4 8	2 13.51	-36 47.1	0.567	0.737	99.4	17.5	47 E	-	25*
1 1	0 21.76	+13 40.7	0.891	1.330	47.7	20.8	90	E	59	43*	4 10	2 4.68	-37 4.1	0.563	0.737	100.0	17.5	46 E	-	23*
1 11	0 50.81	+14 12.2	0.983	1.351	46.6	21.0	87	E	59	41*	4 12	1 55.46	-37 11.3	0.558	0.738	100.3	17			

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45° - 26°	20/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45° - 26°		
415029 2011 UL₂₁ (continuation)									9671 Hemera (continuation)										
6 5	22 54.60	+3 23.8	0.532	1.129	63.9	17.0	88 W	38*	61	7 25	10 13.08	+8 47.3	2.347	1.555	19.1	17.7	30 E	5*	24*
6 10	22 42.41	+8 1.0	0.540	1.180	59.1	16.9	94 W	46*	56	8 4	10 40.89	+6 24.2	2.361	1.538	17.9	17.6	28 E	3*	22*
6 15	22 29.34	+12 21.2	0.550	1.231	54.5	16.9	99 W	53*	52	8 14	11 8.95	+3 51.2	2.376	1.527	16.7	17.6	26 E	2*	20*
6 20	22 15.23	+16 19.3	0.563	1.282	50.0	17.0	105 W	60*	48	8 24	11 37.21	+1 11.3	2.393	1.521	15.4	17.6	24 E	2*	18*
6 25	22 0.10	+19 50.9	0.580	1.332	45.8	17.0	110 W	65*	44	9 3	12 5.67	-1 32.2	2.414	1.521	14.1	17.5	22 E	1*	16*
6 30	21 44.09	+22 52.0	0.601	1.383	41.8	17.0	115 W	68	41	9 13	12 34.33	-4 15.9	2.438	1.526	12.7	17.5	19 E	1*	13*
7 5	21 27.45	+25 19.7	0.626	1.432	38.2	17.1	119 W	70	39	9 23	13 3.16	-6 56.2	2.466	1.537	11.2	17.5	17 E	—	11*
7 10	21 10.60	+27 12.4	0.655	1.482	35.0	17.2	123 W	72	37	10 3	13 32.17	-9 29.6	2.497	1.553	9.7	17.5	15 E	—	9*
7 15	20 54.03	+28 30.4	0.689	1.530	32.2	17.3	127 W	74	35	10 13	14 1.32	-11 53.0	2.532	1.574	8.1	17.5	13 E	—	7*
7 20	20 38.25	+29 16.1	0.727	1.578	30.0	17.4	129 W	74	35	10 23	14 30.56	-14 3.2	2.569	1.600	6.4	17.5	10 E	—	4*
7 25	20 23.70	+29 33.2	0.769	1.626	28.3	17.5	131 W	75	34	11 2	14 59.82	-15 58.0	2.608	1.630	4.7	17.4	8 E	—	1*
7 30	20 10.68	+29 26.3	0.816	1.672	27.0	17.7	132 E	74	35	11 12	15 28.99	-17 35.5	2.647	1.663	2.9	17.4	5 E	—	—
8 4	19 59.35	+28 59.9	0.867	1.718	26.2	17.9	132 E	74	35	11 22	15 57.94	-18 54.4	2.687	1.700	1.3	17.4	2 E	—	—
8 9	19 49.81	+28 18.5	0.922	1.763	25.6	18.0	131 E	73	36	12 2	16 26.53	-19 54.1	2.725	1.740	1.4	17.5	2 W	—	—
8 14	19 42.05	+27 26.4	0.981	1.808	25.4	18.2	130 E	72	37	12 12	16 54.61	-20 34.5	2.760	1.783	3.0	17.7	6 W	—	—
8 19	19 35.97	+26 27.0	1.043	1.851	25.3	18.4	129 E	71	38	12 22	17 22.01	-20 56.2	2.791	1.827	4.9	17.9	9 W	2*	—
8 24	19 31.45	+25 23.5	1.109	1.894	25.4	18.6	127	70	39	1	17 48.58	-21 0.2	2.817	1.873	6.8	18.0	13 W	4*	4*
8 29	19 28.33	+24 18.0	1.178	1.937	25.5	18.8	124	69	40	1 11	18 14.19	-20 47.9	2.837	1.921	8.8	18.2	17 W	6*	9*
9 3	19 26.47	+23 12.2	1.249	1.978	25.6	18.9	122	68	41	1 21	18 38.73	-20 21.0	2.850	1.969	10.6	18.3	22 W	8*	14*
9 8	19 25.75	+22 7.5	1.324	2.019	25.8	19.1	119	67	42	2368 Beltrovata									
9 13	19 26.03	+21 4.9	1.400	2.059	25.9	19.3	117	66	43	12 27	5 26.15	+26 19.0	1.194	2.163	6.0	17.6	167 E	71	38
9 18	19 27.20	+20 5.3	1.479	2.098	26.0	19.4	114	65	44	1 1	5 20.10	+25 56.9	1.236	2.187	8.7	17.9	160 E	71	38
9 23	19 29.14	+19 9.0	1.560	2.137	26.0	19.6	111	64	45	1 6	5 14.96	+25 35.1	1.283	2.210	11.2	18.1	154 E	71	38
10 3	19 34.97	+17 28.1	1.727	2.212	25.9	19.9	105 E	62	47	1 11	5 10.80	+25 14.2	1.337	2.233	13.4	18.3	148 E	70	39
10 13	19 42.93	+16 3.5	1.898	2.285	25.5	20.2	99	61	48*	1 16	5 7.67	+24 54.9	1.396	2.256	15.5	18.4	142 E	70	39
10 23	19 52.53	+14 56.1	2.073	2.354	24.9	20.4	94	60	47*	1 26	5 4.44	+24 22.3	1.527	2.300	18.7	18.8	131 E	69	40
11 2	20 3.39	+14 5.4	2.249	2.422	24.2	20.6	88	59*	45*	2 5	5 4.91	+23 58.1	1.674	2.343	21.1	19.1	121 E	69	40
11 12	20 15.23	+13 30.9	2.426	2.486	23.2	20.8	82	58*	41*	2 15	5 8.56	+23 41.4	1.832	2.385	22.6	19.4	112 E	69	40
11 22	20 27.81	+13 11.9	2.600	2.549	22.1	21.0	76	57*	36*	2 25	5 14.87	+23 30.6	1.997	2.425	23.4	19.6	103 E	69	40*
12 2	20 40.93	+13 7.4	2.770	2.609	20.8	21.1	70	56*	30*	3 7	5 23.32	+23 23.5	2.167	2.464	23.6	19.8	95	68	40*
12 12	20 54.46	+13 16.6	2.935	2.666	19.5	21.3	65	54*	24*	3 17	5 33.51	+23 18.0	2.337	2.501	23.4	20.0	88	67*	40*
12 22	21 8.25	+13 38.4	3.093	2.721	18.1	21.4	59	51*	17*	3 27	5 45.08	+23 12.4	2.507	2.537	22.8	20.2	80	63*	39*
1	21 22.20	+14 11.8	3.243	2.775	16.6	21.5	54	47*	11*	4 6	5 57.74	+23 5.0	2.673	2.572	21.9	20.3	73	57*	38*
264791 2002 NG₉									4 16	6 11.24	+22 54.8	2.835	2.605	20.7	20.5	67	51*	36*	
12 27	5 25.05	+30 0.2	1.771	2.733	5.2	21.1	165 E	75	34	4 26	6 25.40	+22 40.7	2.989	2.637	19.3	20.6	60	44*	35*
1	5 19.47	+29 35.1	1.802	2.745	7.2	21.2	160 E	75	34	5 6	6 40.03	+22 22.1	3.135	2.667	17.8	20.6	54	37*	33*
1 6	5 14.50	+29 9.0	1.839	2.756	9.1	21.3	154 E	74	35	5 16	6 55.01	+21 58.3	3.271	2.696	16.1	20.7	48	30*	30*
1 11	5 10.23	+28 42.6	1.884	2.767	10.9	21.5	148 E	74	35	5 26	7 10.21	+21 29.2	3.396	2.723	14.3	20.7	42	23*	28*
1 16	5 6.71	+28 16.6	1.934	2.777	12.6	21.6	142 E	73	36	6 5	7 25.52	+20 54.7	3.509	2.749	12.4	20.8	36	17*	24*
265176 2003 YV₈									6 15	7 40.88	+20 14.5	3.610	2.774	10.5	20.8	30	11*	21*	
12 27	5 25.26	+19 11.1	0.889	1.858	7.5	18.5	166 E	64	45	6 25	7 56.20	+19 29.0	3.696	2.797	8.5	20.8	24	6*	16*
1	5 20.87	+19 38.1	0.919	1.874	10.3	18.7	160 E	65	44	7 5	8 11.42	+18 38.3	3.767	2.819	6.4	20.7	18	2*	11*
1 6	5 17.31	+20 4.7	0.955	1.890	13.1	18.9	154 E	65	44	7 15	8 26.48	+17 42.6	3.824	2.839	4.4	20.7	12	—	6*
1 11	5 14.68	+20 30.8	0.997	1.906	15.6	19.1	149 E	66	43	7 25	8 41.35	+16 42.4	3.865	2.858	2.3	20.6	7 E	—	1*
1 16	5 13.07	+20 56.4	1.043	1.923	17.8	19.3	143 E	66	43	8 4	8 55.97	+15 37.9	3.889	2.875	0.6	20.5	2 W	—	—
1 26	5 12.89	+21 45.4	1.147	1.956	21.6	19.7	133 E	67	42	8 14	9 10.32	+14 29.8	3.897	2.891	2.0	20.6	6 W	—	—
2 5	5 16.52	+22 31.0	1.265	1.990	24.3	20.0	124 E	68	41	8 24	9 24.35	+13 18.4	3.899	2.906	4.0	20.7	12 W	3*	3*
2 15	5 23.48	+23 12.2	1.394	2.025	26.1	20.3	115 E	68	41	9 3	9 38.02	+12 4.4	3.864	2.919	6.0	20.8	18 W	9*	7*
2 25	5 33.24	+23 48.1	1.532	2.059	27.3	20.6	108 E	69	40	9 13	9 51.30	+10 48.4	3.822	2.931	8.0	20.9	24 W	15*	11*
3 7	5 45.25	+24 17.6	1.675	2.094	27.8	20.9	100 E	69	40*	9 23	10 4.14	+9 30.9	3.764	2.941	9.9	21.0	30 W	21*	15*
3 17	5 59.06	+24 39.6	1.823	2.129	27.8	21.1	93 E	69*	39*	10 3	10 16.48	+8 12.8	3.691	2.951	11.7	21.0	37 W	27*	19*
3 27	6 14.28	+24 53.5	1.973	2.163	27.4	21.3	87 E	67*	39*	10 13	10 28.26	+6 54.6	3.602	2.958	13.4	21.0	43 W	33*	24*
4 6	6 30.55	+24 58.6	2.123	2.197	26.7	21.4	81 E	63*	38*	10 23	10 39.38	+5 37.5	3.500	2.964	15.0	21.0	50 W	38*	28*
9671 Hemera									11 2	10 49.77	+4 22.1	3.384	2.969	16.3	21.0	57 W	42*	33*	
12 27	5 26.13	+16 41.7	1.511	2.474	5.9	17.2	165 E	62	47	11 12	10 59.28	+3 9.6	3.257	2.973	17.5	20.9	65 W	45*	39*
1 1	5 20.56	+16 33.6	1.506	2.449	8.3	17.3	159 E	62	47	11 22	11 7.78	+2 1.1	3.120	2.975	18.5	20.9	72 W	47*	44*
1 6	5 15.36	+16 27.1	1.508	2.425	10.6	17.4	153 E	61	48	12 2	11 15.08	+0 57.9	2.976	2.976	19.1	20.8	80 W	46	51*
1 11	5 10.69	+16 22.4	1.516	2.400	13.0	17.5	147 E	61	48	12 12	11 20.96	+0 1.4	2.827	2.975	19.3	20.7	89 W	45	57*
1 16	5 6.67	+16 19.7	1.529	2.375	15.1	17.5	141 E	61	48	12 22	11 25.19	+0 46.6	2.677	2.973	19.1	20.6	98 W	44	63*
1 26	5 0.99	+16 20.8	1.571	2.325	19.1	17.7	130 E	61	48	1	11 27.51	-1 24.3	2.528	2.970	18.5	20.4	107 W	44	65*
2 5	4 58.77	+16 30.3	1.627	2.275	22.3	17.8	119 E	62	47	1 11	11 27.66	-1 49.7	2.386	2.965	17.2	20.3	117 W	43	66
2 15	5 0.10	+16 47.2	1.693	2.224	24.8	17.9	109 E	62	47	1 21	11 25.42	-2 0.8	2.254	2.959	15.3	20.1	128 W	43	66
2 25	5 4.85	+17 9.7	1.764	2.173	26.6	18.0	100 E	62	47*	412575 2014 OK₆									
3 7	5 12.73	+17 35.4	1.836	2.123	27.8	18.1	92 E	63*	46*										

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	20/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°										
474277 2001 UD₁										111811 2002 CN₂₈₃																			
<i>(continuation)</i>										<i>(continuation)</i>																			
1 21	5 25.07	+56 13.7	0.725	1.567	27.7	17.3	132 E	79	8	1 26	5 23.88	+68 37.9	0.863	1.619	31.0	17.1	122 E	66	0	1 28	5 26.67	+67 47.7	0.872	1.623	31.0	17.1	122 E	67	—
1 26	5 29.48	+53 29.9	0.743	1.572	28.4	17.4	131 E	82	11	1 30	5 29.66	+66 56.6	0.881	1.627	31.1	17.1	121 E	68	—	2 1	5 32.83	+66 4.6	0.890	1.631	31.3	17.1	121 E	69	—
1 31	5 35.02	+50 45.2	0.765	1.579	29.2	17.5	128 E	84	13	2 3	5 36.15	+65 12.0	0.900	1.635	31.4	17.2	120 E	70	—	2 5	5 39.60	+64 18.8	0.910	1.640	31.5	17.2	120 E	71	—
2 5	5 41.45	+48 2.1	0.791	1.587	30.1	17.6	126 E	87	16	2 10	5 48.72	+62 3.7	0.938	1.651	31.8	17.3	118 E	73	2	2 15	5 58.37	+59 46.8	0.969	1.663	32.1	17.4	116 E	75	4
2 10	5 48.60	+45 22.6	0.821	1.595	31.0	17.7	124 E	90	19	2 20	6 8.38	+57 29.5	1.003	1.675	32.5	17.5	115 E	78	7	2 25	6 18.61	+55 12.9	1.040	1.688	32.8	17.6	113 E	80	9
2 15	5 56.36	+42 48.5	0.855	1.604	31.9	17.8	121 E	88	21	3 2	6 28.95	+52 57.7	1.080	1.702	33.1	17.7	110 E	82	11	3 7	6 39.32	+50 44.7	1.123	1.716	33.3	17.8	108 E	84	13
2 20	6 4.58	+40 20.7	0.892	1.615	32.6	18.0	118 E	85	24	3 12	6 49.70	+48 34.2	1.169	1.730	33.5	17.9	106 E	86	15	3 17	7 0.04	+46 26.7	1.218	1.745	33.7	18.0	104 E	89	18
2 25	6 13.18	+37 59.9	0.933	1.626	33.3	18.1	115 E	83	26	3 22	7 10.34	+44 22.4	1.269	1.760	33.7	18.2	101 E	89	20	3 27	7 20.55	+42 21.5	1.323	1.776	33.7	18.3	99 E	87	22
3 2	6 22.06	+35 46.4	0.977	1.638	33.9	18.2	113 E	81	28	4 1	7 30.65	+40 23.9	1.379	1.791	33.7	18.4	96 E	85*	24	4 6	7 40.65	+38 29.6	1.436	1.807	33.5	18.5	94 E	83*	26
3 7	6 31.15	+33 40.0	1.024	1.651	34.4	18.4	110 E	79	30	4 16	8 0.32	+34 50.3	1.557	1.840	33.0	18.7	89 E	76*	29	4 26	8 19.55	+31 22.4	1.684	1.874	32.3	18.9	84 E	68*	33
3 17	6 49.79	+29 47.3	1.127	1.679	35.0	18.6	104 E	75	34	5 6	8 38.32	+28 4.4	1.815	1.908	31.3	19.0	79 E	61*	36*	5 16	8 56.66	+24 54.8	1.949	1.943	30.1	19.2	75 E	53*	39*
3 27	7 8.82	+26 18.3	1.238	1.709	35.2	18.9	99 E	71	38	5 26	9 14.61	+21 52.4	2.084	1.978	28.7	19.3	70 E	45*	41*	6 5	9 32.18	+18 55.8	2.219	2.013	27.2	19.5	65 E	38*	43*
4 6	7 27.98	+23 8.5	1.357	1.742	35.0	19.1	94 E	67*	41	6 15	9 49.42	+16 4.2	2.352	2.048	25.5	19.6	60 E	31*	43*	6 25	10 6.36	+13 16.6	2.483	2.083	23.7	19.7	56 E	24*	43*
4 16	7 47.16	+20 13.7	1.483	1.777	34.4	19.3	89 E	62*	44	7 5	10 23.04	+10 32.5	2.609	2.118	21.8	19.8	51 E	19*	41*	7 15	10 39.51	+7 51.3	2.731	2.153	19.9	19.8	46 E	14*	38*
4 26	8 6.27	+17 30.1	1.612	1.814	33.5	19.5	84 E	56*	46*	7 25	10 55.78	+5 12.8	2.846	2.187	17.8	19.9	41 E	10*	34*	8 4	11 11.91	+2 36.7	2.953	2.220	15.7	19.9	36 E	6*	30*
5 6	8 25.22	+14 54.8	1.745	1.852	32.4	19.7	80 E	49*	49*	8 14	11 27.92	+0 2.7	3.053	2.253	13.6	20.0	32 E	3*	26*	8 24	11 47.84	+2 29.1	3.142	2.286	11.5	20.0	27 E	—	21*
5 16	8 43.99	+12 25.3	1.880	1.891	31.1	19.9	75 E	42*	51*	9 3	11 59.71	+4 58.8	3.222	2.317	9.4	20.0	22 E	—	16*	9 13	12 15.56	+7 26.3	3.291	2.348	7.3	20.0	17 E	—	11*
5 26	9 2.56	+9 59.8	2.015	1.931	29.6	20.0	71 E	35*	52*	9 23	12 31.39	+9 51.6	3.347	2.378	5.3	19.9	13 E	—	5*	10 3	12 47.24	+12 14.5	3.392	2.408	3.7	19.9	9 E	—	—
6 5	9 20.91	+7 37.0	2.150	1.972	28.1	20.2	66 E	28*	52*	10 13	13 3.12	+14 34.9	3.423	2.436	3.0	19.9	7 W	—	—	10 13	13 19.02	+16 52.5	3.441	2.464	3.7	20.0	9 W	—	3*
6 15	9 39.05	+5 15.9	2.284	2.014	26.4	20.3	62 E	21*	51*	10 23	13 19.02	+16 52.5	3.441	2.464	3.7	20.0	9 W	—	—	10 23	13 19.02	+16 52.5	3.441	2.464	3.7	20.0	9 W	—	3*
6 25	9 56.99	+2 56.0	2.416	2.055	24.6	20.4	57 E	16*	49*	11 2	13 34.95	+19 7.4	3.445	2.491	5.3	20.1	14 W	—	7*	11 2	14 6.82	+23 28.1	3.411	2.542	9.1	20.2	24 W	7*	12*
7 5	10 14.74	+0 36.8	2.545	2.097	22.8	20.5	53 E	10*	46*	11 12	14 22.69	+25 33.8	3.374	2.565	11.0	20.4	30 W	9*	22*	11 22	14 38.44	+27 36.5	3.323	2.588	12.8	20.4	36 W	11*	28*
7 15	10 32.33	+1 41.9	2.669	2.139	20.9	20.6	49 E	6*	43*	12 2	15 24.06	+33 27.9	3.098	2.651	17.6	20.5	55 W	10*	41*	12 12	15 4.00	+29 36.1	3.260	2.610	14.6	20.5	42 W	11*	35*
7 25	10 49.77	+4 0.0	2.788	2.181	19.0	20.7	44 E	2*	38*	1 11	15 9.29	+31 33.2	3.184	2.631	16.1	20.5	48 W	11*	41*	1 11	15 24.06	+33 27.9	3.098	2.651	17.6	20.5	55 W	10*	48*
8 4	11 7.08	+6 17.6	2.902	2.223	17.1	20.8	40 E	—	34*	1 21	15 38.31	+35 21.0	3.002	2.670	18.8	20.5	61 W	9*	55*	12 12	14 38.44	+27 36.5	3.323	2.588	12.8	20.4	36 W	11*	28*
8 14	11 24.32	+8 34.4	3.008	2.264	15.1	20.8	36 E	—	29*	12 22	14 54.00	+29 36.1	3.260	2.610	14.6	20.5	42 W	11*	35*	12 22	14 54.00	+29 36.1	3.260	2.610	14.6	20.5	42 W	11*	35*
8 24	11 41.48	+10 50.4	3.107	2.305	13.2	20.8	31 E	—	24*	1 1	15 9.29	+31 33.2	3.184	2.631	16.1	20.5	48 W	11*	41*	1 1	15 9.29	+31 33.2	3.184	2.631	16.1	20.5	48 W	11*	41*
9 3	11 58.61	+13 5.0	3.197	2.346	11.3	20.9	27 E	—	19*	1 11	15 24.06	+33 27.9	3.098	2.651	17.6	20.5	55 W	10*	48*	1 11	15 24.06	+33 27.9	3.098	2.651	17.6	20.5	55 W	10*	48*
9 13	12 15.73	+15 18.2	3.278	2.386	9.5	20.9	23 E	—	14*	1 21	15 38.31	+35 21.0	3.002	2.670	18.8	20.5	61 W	9*	55*	1 21	15 38.31	+35 21.0	3.002	2.670	18.8	20.5	61 W	9*	55*
9 23	12 32.84	+17 29.5	3.349	2.425	7.9	20.9	19 E	—	9*	12 27	5 31.39	+35 23.2	0.489	1.459	11.1	18.1	163 E	80	29	12 27	5 31.39	+35 23.2	0.489	1.459	11.1	18.1	163 E	80	29
10 3	12 49.98	+19 38.5	3.409	2.464	6.5	20.9	16 E	—	4*	1 1	5 29.54	+33 24.3	0.489	1.453	13.2	18.1	160 E	78	31	1 1	5 29.54	+33 24.3	0.489	1.453	13.2	18.1	160 E	78	31
10 13	13 7.15	+21 44.9	3.458	2.502	5.6	20.9	14 W	—	2*	1 6	5 28.63	+31 20.6	0.493	1.448	15.8	18.2	156 E	76	33	1 6	5 28.63	+31 20.6	0.493	1.448	15.8	18.2	156 E	76	33
10 23	13 24.35	+23 48.3	3.494	2.539	5.4	21.0	14 W	—	5*	1 11	5 41.55	+20 16.4	0.599	1.450	30.9	19.1	135 E	65	42	1 11	5 41.55	+20 16.4	0.599	1.450	30.9	19.1	135 E	65	42
11 2	13 41.57	+25 48.4	3.518	2.576	6.0	21.1	16 W	—	9*	1 16	5 30.23	+27 14.2	0.514	1.443	21.6	18.5	147 E	72	37	1 16	5 30.23	+27 14.2	0.514	1.443	21.6	18.5	147 E	72	37
11 12	13 58.80	+27 44.9	3.528	2.611	7.1	21.1	19 W	—	13*	1 21	5 32.87	+25 17.7	0.530	1.443	24.3	18.6	143 W	70	39	1 21	5 32.87	+25 17.7	0.530	1.443	24.3	18.6	143 W	70	39
11 22	14 16.00	+29 37.4	3.525	2.646	8.5	21.2	23 W	—	17*	1 26	5 36.70	+23 28.7	0.550	1.444	26.7	18.8	139 E	68	41	1 26	5 36.70	+23 28.7	0.550	1.444	26.7	18.8	139 E	68	41
12 2	14 33.11	+31 25.9	3.509	2.680	10.0	21.3	28 W	3*	22*	1 31	5 41.55	+21 48.1	0.573	1.447	29.0	19.0	135 E	67	42	1 31	5 41.55	+21 48.1	0.573	1.447	29.0	19.0	135 E	67	42
12 12	14 50.07	+33 10.2	3.479	2.713	11.6	21.4	34 W	4*	27*	2 5	5 47.65	+20 16.4	0.599	1.450	30.9	19.1	135 E	65	44	2 5	5 47.65	+20 16.4	0.599	1.450	30.9	19.1			

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	20/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°										
480833 1999 VC ₁										55380 2001 SB ₂₆₄																			
<i>(continuation)</i>										<i>(continuation)</i>																			
1 26	5 23.35	+19 40.1	1.173	1.996	20.3	20.3	135 E	65	44	1 16	5 14.55	+30 44.3	1.299	2.171	15.6	17.8	144 E	76	33	1 21	5 10.75	+29 34.8	1.320	2.154	17.8	17.9	138 E	75	34
2 5	5 26.93	+20 9.8	1.295	2.038	23.0	20.6	126 E	65	44	1 26	5 8.05	+28 27.0	1.345	2.136	19.9	18.0	132 E	73	36	1 31	5 6.47	+27 21.7	1.374	2.118	21.8	18.1	127 E	72	37
2 15	5 33.59	+20 38.6	1.430	2.080	24.9	20.9	118 E	66	43	2 5	5 5.98	+26 19.7	1.407	2.100	23.5	18.2	122 E	71	38	2 15	5 8.08	+24 27.0	1.481	2.065	26.3	18.3	112 E	69	40
2 25	5 42.84	+21 4.6	1.574	2.123	26.0	21.2	110 E	66	43	2 25	5 13.89	+22 49.4	1.562	2.030	28.4	18.5	103 E	68	41*	3 7	5 22.87	+21 24.6	1.646	1.995	29.7	18.6	95 E	66	42*
3 7	5 54.17	+21 26.2	1.726	2.166	26.6	21.5	102 E	66	43	3 17	5 34.51	+20 9.2	1.731	1.961	30.5	18.7	88 E	66	43*	3 17	5 48.39	+18 59.4	1.812	1.928	30.7	18.7	81 E	59*	43*
467963 2012 JT ₁₇										352143 2007 LR ₃₂																			
12 27	5 34.59	+ 2 42.1	0.947	1.889	12.1	20.6	156 E	48	61	12 27	5 35.01	+22 38.0	1.373	2.345	4.7	20.1	169 E	68	41	1 1	5 29.39	+22 13.3	1.419	2.375	7.2	20.4	162 E	67	42
1 1	5 28.82	+ 2 48.3	1.003	1.929	13.6	20.8	153 E	48	61	1 6	5 24.54	+21 50.2	1.472	2.405	9.5	20.6	156 E	67	42	1 11	5 20.51	+21 29.1	1.532	2.434	11.6	20.8	150 E	66	43
1 6	5 24.12	+ 3 1.2	1.064	1.970	15.2	21.0	148 E	48	61	1 16	5 17.37	+21 10.3	1.597	2.464	13.5	21.0	144 E	66	43	1 21	5 15.11	+20 53.9	1.668	2.492	15.1	21.1	139 E	66	43
1 11	5 20.48	+ 3 19.4	1.131	2.009	16.9	21.3	144 E	48	61	1 26	5 13.70	+20 40.0	1.743	2.521	16.5	21.3	133 E	66	43	1 31	5 13.12	+20 28.3	1.822	2.549	17.7	21.5	128 E	65	44
1 16	5 17.90	+ 3 41.9	1.202	2.049	18.4	21.5	139 E	49	60	181704 1989 NA																			
3360 Syrinx										12 27	5 35.07	+19 57.9	2.444	3.413	3.4	20.8	168 E	65	44	1 6	5 25.74	+20 19.6	2.518	3.441	6.6	21.1	156 E	65	44
12 27	5 35.01	+22 38.0	1.373	2.345	4.7	20.1	169 E	68	41	1 6	5 18.10	+20 41.1	2.621	3.468	9.5	21.3	144 E	66	43	1 26	5 12.62	+21 2.7	2.748	3.494	11.9	21.5	133 E	66	43
1 1	5 29.39	+22 13.3	1.419	2.375	7.2	20.4	162 E	67	42	2 5	5 9.47	+21 24.8	2.894	3.519	13.7	21.7	122 E	66	43	225333 1998 QB ₁₀₅									
1 6	5 24.54	+21 50.2	1.472	2.405	9.5	20.6	156 E	67	42	12 27	5 36.57	+25 52.1	1.704	2.676	4.0	19.8	169 E	71	38	1 1	5 30.28	+26 21.9	1.738	2.692	6.3	19.9	163 E	71	38
1 11	5 20.51	+21 29.1	1.532	2.434	11.6	20.8	150 E	66	43	1 6	5 24.52	+26 48.9	1.780	2.709	8.4	20.1	156 E	72	37	1 11	5 19.41	+27 13.4	1.828	2.725	10.4	20.2	150 E	72	37
1 16	5 17.37	+21 10.3	1.597	2.464	13.5	21.0	144 E	66	43	1 16	5 15.04	+27 35.5	1.883	2.740	12.2	20.4	144 E	73	36	1 26	5 8.77	+28 14.4	2.009	2.771	15.2	20.7	133 E	73	36
1 21	5 15.11	+20 53.9	1.668	2.492	15.1	21.1	139 E	66	43	2 5	5 5.82	+28 47.8	2.153	2.801	17.4	20.9	122 E	74	35	2 15	5 6.03	+29 17.9	2.310	2.830	18.9	21.1	112 E	74	35
1 26	5 13.70	+20 40.0	1.743	2.521	16.5	21.3	133 E	66	43	2 25	5 9.08	+29 45.7	2.475	2.857	19.8	21.3	102 E	75	34*	1 11	5 19.41	+27 13.4	1.828	2.725	10.4	20.2	150 E	72	37
1 31	5 13.12	+20 28.3	1.822	2.549	17.7	21.5	128 E	65	44	1 16	5 15.04	+27 35.5	1.883	2.740	12.2	20.4	144 E	73	36	1 16	5 15.04	+27 35.5	1.883	2.740	12.2	20.4	144 E	73	36
241596 1998 XM ₂										481836 2008 VW ₇₈																			
12 27	5 38.25	- 0 28.2	0.817	1.754	14.3	18.8	154 E	45	64	12 27	5 39.13	+25 11.6	1.439	2.413	4.2	19.2	170 E	70	39	1 1	5 33.62	+24 32.9	1.474	2.433	6.6	19.4	163 E	70	39
1 1	5 31.14	- 1 32.1	0.857	1.776	16.3	19.0	149 E	43	66	1 6	5 28.78	+23 55.4	1.516	2.453	8.9	19.6	157 E	69	40	1 11	5 24.70	+23 19.7	1.564	2.472	11.0	19.7	151 E	68	41
1 6	5 25.17	- 2 19.8	0.903	1.798	18.4	19.2	145 E	43	66	1 16	5 21.43	+22 46.4	1.618	2.491	13.0	19.9	145 E	68	41	1 26	5 17.45	+21 48.1	1.743	2.529	16.2	20.2	134 E	67	42
1 11	5 20.40	- 2 53.1	0.953	1.820	20.4	19.4	140 E	42	67	2 5	5 16.73	+21 1.4	1.885	2.567	18.6	20.5	124 E	66	43	2 15	5 18.96	+20 25.4	2.039	2.604	20.3	20.7	114 E	65	44
1 16	5 16.85	- 3 13.7	1.008	1.841	22.1	19.6	135 E	42	67	2 25	5 25.87	+19 58.0	2.203	2.640	21.2	21.0	105 E	65	44	3 7	5 30.64	+19 36.9	2.372	2.676	21.6	21.2	97 E	65	44*
1 21	5 14.49	- 3 23.8	1.066	1.862	23.7	19.8	130 E	42	67	3 17	5 39.28	+19 19.6	2.543	2.711	21.5	21.3	89 E	63*	44*	3 17	5 49.35	+19 4.1	2.714	2.745	21.0	21.5	81 E	59*	43*
1 26	5 13.26	- 3 25.3	1.127	1.883	25.0	20.0	126 E	42	67	384273 2009 KK ₉																			
1 31	5 13.08	- 3 19.9	1.191	1.904	26.1	20.2	122 E	42	67	12 27	5 39.29	+18 14.9	1.672	2.643	4.3	21.4	168 E	63	46	1 1	5 33.92	+18 7.3	1.700	2.654	6.4	21.6	163 E	63	46
2 5	5 13.84	- 3 9.1	1.257	1.924	27.0	20.3	118 E	42	67	1 6	5 29.03	+18 0.9	1.734	2.665	8.5	21.7	156 E	63	46	1 11	5 24.73	+17 55.9	1.776	2.676	10.4	21.8	150 E	63	46
2 10	5 15.47	- 2 54.3	1.325	1.944	27.7	20.5	114 E	42	67	1 16	5 21.10	+17 52.3	1.823	2.686	12.3	22.0	145 E	63	46	251568 2009 EL ₁₅									
2 15	5 17.90	- 2 36.5	1.394	1.963	28.2	20.6	110 E	42	67	12 27	5 39.36	+28 17.0	1.451	2.424	4.5	20.4	169 E	73	36	1 1	5 33.34	+28 11.0	1.481	2.438	6.8	20.6	163 E	73	36
2 20	5 21.04	- 2 16.6	1.465	1.982	28.6	20.8	106 E	43	66	1 6	5 27.94	+28 3.4	1.517	2.452	9.1	20.8	157 E	73	36	1 11	5 23.29	+27 54.6	1.560	2.466	11.2	20.9	151 E	73	36
2 25	5 24.82	- 1 55.6	1.536	2.001	28.9	20.9	103 E	43	66	1 16	5 19.47	+27 45.1	1.609	2.479	13.2	21.1	145 E	73	36	1 21	5 16.54	+27 35.6	1.663	2.492	14.9	21.2	139 E	73	36
3 2	5 29.17	- 1 34.1	1.608	2.020	29.0	21.0	99 E	43	66*	1 26	5 14.51	+27 26.4	1.721	2.505	16.5	21.4	134 E	72	37	1 31	5 13.38	+27 17.8	1.784	2.518	17.8	21.5	128 E	72	37
3 7	5 34.02	- 1 12.6	1.680	2.038	29.0	21.1	96 E	44	65*	435324 2007 VZ ₈																			
3 12	5 39.33	- 0 51.6	1.753	2.055	28.9	21.3	93 E	44*	64*	12 27	5 39.89	+40 48.9	1.575	2.522	7.6	20.4	160 E	86	23	1 1	5 32.67	+41 10.7	1.614	2.545	8.9	20.6	156 E	86	23
3 17	5 45.06	- 0 31.4	1.825	2.073	28.7	21.4	90 E	44*	63*	1 6	5 26.14	+41 25.7	1.659	2.567	10.5	20.7	152 E	86	23	1 6	5 26.14	+41 25.7	1.659	2.567	10.5	20.7	152 E	86	23
3 22	5 51.16	- 0 12.4	1.897	2.089	28.4	21.4	87 E	43*	63*	1 11	5 20.45	+41 34.8	1.711	2.589	12.1	20.9	147 E	87	22	1 16	5 15.72	+41 39.1	1.769	2.611	13.6	21.0	141 E	87	22
52689 1998 FF ₂										1 21	5 12.00	+41 39.6	1.832	2.633	15.0	21.1	136 E	87	22	1 21	5 12.00	+41 39.6	1.832	2.633	15.0	21.1	136 E	87	22
12 27	5 38.39	+44 15.1	1.076	2.018	10.9	21.3	157 E	89	20	1 26	5 9.32	+41 37.3	1.900	2.654	16.2	21.3	131 E	87	22	1 31	5 7.67	+41 33.0	1.972	2.676	17.3	21.4	126 E	87	22
1 1	5 28.27	+43 55.8	1.089	2.018	12.5	21.4	154 E	89	20	55380 2001 SB ₂₆₄																			
1 6	5 19.15	+43 27.4	1.107	2.017	14.4	21.5	1																						

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
489802 2008 CS₁₈₁										360209 1998 WJ₇ <i>(continuation)</i>									
12 27	5 40.29	-18 12.0	0.957	1.807	21.7	21.1	137 E	27	82	1 21	5 19.30	+42 35.1	0.501	1.395	28.6	19.0	137 E	88	21
1 1	5 34.09	-16 56.9	0.965	1.808	22.0	21.2	136 E	28	81	1 26	5 19.85	+42 46.6	0.511	1.384	31.4	19.1	133 E	88	21
1 6	5 28.54	-15 28.6	0.977	1.810	22.6	21.2	135 E	30	79	1 31	5 22.43	+42 51.5	0.523	1.374	34.0	19.2	129 E	88	21
1 11	5 23.81	-13 49.1	0.993	1.812	23.4	21.3	133 E	31	78	2 5	5 27.01	+42 50.3	0.536	1.366	36.3	19.3	125 E	88	21
1 16	5 20.04	-12 1.0	1.014	1.813	24.4	21.4	130 E	33	76	2 10	5 33.50	+42 43.5	0.551	1.359	38.3	19.4	122 E	88	21
1 21	5 17.31	-10 6.8	1.039	1.814	25.5	21.4	127 E	35	74	2 15	5 41.78	+42 31.2	0.567	1.352	40.0	19.5	118 E	88	21
474748 2005 PB₄																			
12 27	5 40.62	+27 48.3	1.862	2.835	3.7	21.5	169 E	73	36	2 20	5 51.68	+42 13.2	0.583	1.347	41.5	19.6	116 E	87	22
1 1	5 35.01	+27 40.1	1.890	2.847	5.7	21.6	163 E	73	36	2 25	6 3.01	+41 49.2	0.601	1.344	42.7	19.7	113 E	87	22
1 6	5 29.87	+27 30.7	1.926	2.858	7.6	21.7	157 E	73	36	3 2	6 15.55	+41 18.8	0.620	1.341	43.7	19.8	111 E	86	23
1 11	5 25.31	+27 20.4	1.968	2.870	9.5	21.9	151 E	72	37	3 7	6 29.09	+40 41.4	0.639	1.340	44.6	19.9	109 E	86	23
1 16	5 21.42	+27 9.7	2.017	2.881	11.2	22.0	145 E	72	37	3 12	6 43.44	+39 56.5	0.660	1.340	45.3	20.0	107 E	85	24
489235 2006 QA₅₈																			
12 27	5 40.66	-70 3.4	0.406	1.039	70.8	21.0	86 E	-	46	3 17	6 58.43	+39 4.1	0.681	1.342	45.8	20.0	105 E	84	25
1 1	5 44.86	-68 15.8	0.385	1.044	70.3	20.9	88 E	-	48	3 22	7 13.88	+38 4.0	0.703	1.344	46.2	20.1	103 E	83	26
1 6	5 49.24	-66 3.6	0.362	1.049	69.6	20.7	90 E	-	50	3 27	7 29.59	+36 56.3	0.727	1.348	46.4	20.2	102 E	82	27
1 11	5 53.94	-63 19.3	0.338	1.055	68.6	20.6	93 E	-	53	4 1	7 45.43	+35 41.1	0.752	1.354	46.6	20.3	100 E	81	28
1 16	5 59.14	-59 52.9	0.313	1.063	67.0	20.4	96 E	-	56	4 6	8 1.25	+34 19.0	0.778	1.360	46.6	20.4	99 E	79	30
1 18	6 1.40	-58 15.8	0.302	1.066	66.2	20.3	97 E	-	58	4 11	8 16.98	+32 50.5	0.805	1.368	46.5	20.5	98 E	78	31
1 20	6 3.78	-56 29.0	0.292	1.069	65.4	20.2	99 E	-	60	4 16	8 32.52	+31 16.1	0.834	1.377	46.4	20.6	97 E	76	33
1 22	6 6.29	-54 31.4	0.282	1.073	64.4	20.1	101 E	-	61	4 21	8 47.83	+29 36.6	0.865	1.386	46.2	20.6	95 E	73	34
1 24	6 8.93	-52 21.9	0.272	1.076	63.2	20.0	103 E	-	64	4 26	9 2.85	+27 52.9	0.897	1.397	45.9	20.7	94 E	71	36
1 26	6 11.70	-49 59.4	0.262	1.080	62.0	19.9	104 E	-	66	5 1	9 17.54	+26 5.8	0.931	1.409	45.5	20.8	93 E	68	38
1 28	6 14.60	-47 22.6	0.253	1.084	60.6	19.8	107 E	-	69	5 6	9 31.88	+24 15.9	0.967	1.422	45.1	20.9	92 E	65	40
1 30	6 17.64	-44 30.4	0.244	1.088	59.0	19.6	109 E	-	71	5 11	9 45.90	+22 24.1	1.004	1.436	44.7	21.0	91 E	62	42
2 1	6 20.82	-41 21.6	0.235	1.092	57.3	19.5	111 E	4	75	5 16	9 59.59	+20 30.9	1.043	1.450	44.2	21.1	90 E	59	43
2 3	6 24.15	-37 55.6	0.227	1.096	55.5	19.4	114 E	7	78	5 21	10 12.96	+18 37.0	1.084	1.465	43.7	21.2	89 E	56	45
2 5	6 27.62	-34 12.1	0.221	1.101	53.6	19.3	116 E	11	82	5 26	10 26.03	+16 43.0	1.127	1.481	43.1	21.3	87 E	53	47
2 7	6 31.23	-30 11.3	0.215	1.105	51.6	19.2	119 E	15	86	5 31	10 38.80	+14 49.5	1.172	1.498	42.5	21.4	86 E	49	49
2 9	6 35.00	-25 54.4	0.210	1.110	49.6	19.1	121 E	19	90	6 5	10 51.30	+12 56.7	1.218	1.515	41.8	21.5	85 E	46	51
2 11	6 38.93	-21 23.7	0.207	1.114	47.6	19.0	123 E	24	85	264285 1998 QM									
2 13	6 43.02	-16 42.3	0.205	1.119	45.8	18.9	126 E	28	81	12 27	5 41.70	+39 44.6	1.829	2.779	6.5	20.3	161 E	85	24
2 15	6 47.27	-11 54.4	0.204	1.124	44.2	18.9	128 E	33	76	1 1	5 35.29	+39 18.4	1.854	2.789	7.6	20.4	158 E	84	25
2 17	6 51.67	-7 4.8	0.205	1.129	42.8	18.9	129 E	38	71	1 6	5 29.47	+38 48.4	1.885	2.799	9.0	20.5	153 E	84	25
2 19	6 56.23	-2 18.4	0.208	1.134	41.9	18.9	130 E	43	66	1 11	5 24.37	+38 15.6	1.923	2.809	10.5	20.6	149 E	83	26
2 21	7 0.94	+2 20.0	0.212	1.138	41.2	18.9	131 E	47	62	1 16	5 20.07	+37 40.9	1.968	2.819	12.0	20.7	143 E	83	26
2 23	7 5.79	+6 46.6	0.218	1.144	41.0	19.0	131 E	52	57	1 21	5 16.64	+37 5.2	2.018	2.829	13.4	20.9	138 E	82	27
2 25	7 10.77	+10 58.1	0.225	1.149	41.0	19.1	130 E	56	53	1 26	5 14.09	+36 29.5	2.073	2.838	14.7	21.0	133 E	81	28
2 27	7 15.87	+14 52.4	0.234	1.154	41.3	19.2	130 E	60	49	1 31	5 12.42	+35 54.3	2.133	2.847	15.8	21.1	128 E	81	28
3 1	7 21.09	+18 28.6	0.243	1.159	41.8	19.3	129 E	63	46	2 5	5 11.59	+35 20.2	2.197	2.856	16.8	21.2	123 E	80	29
3 3	7 26.42	+21 46.2	0.254	1.164	42.4	19.4	128 E	67	42	2 10	5 11.57	+34 47.6	2.265	2.864	17.7	21.3	118 E	80	29
3 5	7 31.84	+24 45.7	0.266	1.169	43.1	19.5	126 E	70	39	2 15	5 12.32	+34 16.6	2.336	2.873	18.4	21.4	113 E	79	30
3 7	7 37.35	+27 27.7	0.279	1.175	43.8	19.7	125 E	72	37	2 20	5 13.79	+33 47.4	2.409	2.881	19.0	21.5	109 E	79	30
3 9	7 42.95	+29 53.3	0.292	1.180	44.5	19.8	124 E	75	34	484279 2007 JL₄₀									
3 11	7 48.63	+32 3.7	0.307	1.185	45.2	19.9	122 E	77	32	12 27	5 42.45	+5 18.0	1.928	2.870	6.9	21.4	159 E	50	59
3 13	7 54.38	+34 0.1	0.321	1.191	45.8	20.1	121 E	79	30	1 6	5 33.44	+5 30.7	1.997	2.900	9.3	21.6	152 E	51	58
3 15	8 0.19	+35 43.7	0.337	1.196	46.4	20.2	119 E	81	28	1 16	5 26.30	+5 56.4	2.092	2.929	12.0	21.9	142 E	51	58
3 17	8 6.06	+37 15.6	0.352	1.202	46.9	20.3	118 E	82	27	1 26	5 21.54	+6 32.2	2.209	2.958	14.4	22.1	132 E	52	57
3 19	8 11.97	+38 37.1	0.368	1.207	47.4	20.4	117 E	84	25	2 5	5 19.31	+7 14.7	2.344	2.985	16.3	22.3	122 E	52	57
3 21	8 17.92	+39 48.9	0.385	1.212	47.9	20.5	115 E	85	24	173458 2000 QV₈₂									
3 23	8 23.90	+40 52.1	0.401	1.218	48.3	20.7	114 E	86	23	12 27	5 43.66	+9 18.9	0.954	1.917	8.6	18.4	163 E	54	55
3 25	8 29.89	+41 47.5	0.418	1.223	48.6	20.8	113 E	87	22	1 1	5 38.89	+9 36.2	0.980	1.931	10.4	18.5	159 E	55	54
3 27	8 35.90	+42 35.8	0.435	1.229	48.9	20.9	112 E	88	21	1 6	5 34.79	+9 57.7	1.011	1.945	12.6	18.7	154 E	55	54
3 29	8 41.90	+43 17.6	0.452	1.234	49.1	21.0	111 E	88	21	1 11	5 31.47	+10 22.7	1.047	1.959	14.8	18.9	150 E	55	54
3 31	8 47.89	+43 53.5	0.470	1.239	49.3	21.1	110 E	89	20	1 16	5 29.03	+10 50.5	1.089	1.974	16.8	19.1	144 E	56	53
4 2	8 53.86	+44 24.1	0.487	1.245	49.5	21.2	109 E	89	20	1 21	5 27.53	+11 20.3	1.135	1.988	18.7	19.2	140 E	56	53
4 4	8 59.82	+44 49.7	0.505	1.250	49.6	21.3	108 E	90	19	1 26	5 26.97	+11 51.6	1.185	2.003	20.5	19.4	135 E	57	52
4 6	9 5.75	+45 10.8	0.522	1.255	49.7	21.3	107 E	90	19	2 5	5 28.57	+12 55.7	1.295	2.032	23.3	19.7	125 E	58	51
4 11	9 20.45	+45 46.1	0.567	1.268	49.9	21.5	104 E	89	18	2 15	5 33.49	+13 58.9	1.418	2.062					

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	20/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
73575 4789 P-L										224926 2007 DA₄₁ (continuation)									
12 27	5 44.44	+24 52.6	1.774	2.749	3.2	21.1	171 E	70	39	4 26	6 20.67	- 4 44.5	1.343	1.276	45.1	20.4	64 E	23*	55*
1 1	5 38.72	+24 49.9	1.796	2.756	5.4	21.2	165 E	70	39	5 6	6 44.86	- 3 10.6	1.318	1.207	46.8	20.3	61 E	19*	53*
1 6	5 33.43	+24 46.3	1.825	2.763	7.5	21.4	158 E	70	39	5 16	7 11.90	- 1 39.7	1.282	1.138	49.0	20.2	58 E	16*	51*
1 11	5 28.69	+24 42.1	1.862	2.770	9.5	21.5	152 E	70	39	5 26	7 41.93	- 0 9.5	1.236	1.069	51.5	20.0	56 E	14*	49*
1 16	5 24.61	+24 37.7	1.904	2.776	11.4	21.6	146 E	70	39	6 5	8 15.06	+ 1 24.3	1.183	1.003	54.6	19.9	54 E	12*	47*
428658 2008 GJ₈₂										992 1997 TG₁₉									
12 27	5 45.70	+14 40.2	1.959	2.927	4.1	21.5	168 E	60	49	6 10	8 32.85	+ 2 14.0	1.154	0.972	56.3	19.8	53 E	12*	46*
1 6	5 35.85	+14 54.5	2.017	2.947	7.5	21.7	157 E	60	49	6 15	8 51.46	+ 3 6.6	1.123	0.942	58.1	19.7	52 E	12*	45*
1 16	5 27.84	+15 13.8	2.102	2.966	10.8	22.0	146 E	60	49	6 20	9 10.88	+ 4 2.8	1.092	0.915	60.1	19.6	51 E	12*	44*
1 26	5 22.25	+15 37.4	2.212	2.984	13.6	22.2	134 E	61	48	6 25	9 31.10	+ 5 3.6	1.060	0.890	62.1	19.6	51 E	13*	43*
2 5	5 19.30	+16 4.3	2.340	3.002	15.8	22.4	124 E	61	48	7 5	10 13.78	+ 7 21.6	0.998	0.849	66.2	19.5	50 E	15*	42*
65682 1990 QU₂										992 1997 TG₁₉									
12 27	5 48.03	+10 36.3	1.295	2.258	6.6	18.8	165 E	56	53	7 30	12 10.75	+14 38.2	0.861	0.823	74.1	19.3	51 E	27*	38*
1 6	5 37.84	+11 8.0	1.354	2.286	10.2	19.1	156 E	56	53	8 4	12 35.31	+16 12.0	0.840	0.832	74.7	19.3	52 E	30*	37*
1 16	5 30.21	+11 49.8	1.437	2.313	14.1	19.4	145 E	57	52	8 9	13 0.15	+17 42.5	0.821	0.846	74.9	19.3	54 E	34*	36*
1 26	5 25.81	+12 38.3	1.541	2.340	17.4	19.7	135 E	58	51	8 14	13 25.27	+19 7.1	0.804	0.863	74.7	19.3	55 E	37*	35*
2 5	5 24.73	+13 30.1	1.662	2.366	20.1	20.0	125 E	59	50	8 19	13 50.66	+20 23.3	0.790	0.884	74.1	19.3	57 E	40*	35*
2 15	5 26.79	+14 22.5	1.796	2.391	21.9	20.2	115 E	59	50	8 24	14 16.32	+21 28.5	0.779	0.909	73.2	19.3	59 E	44*	34*
2 25	5 31.68	+15 13.1	1.939	2.416	23.1	20.4	107 E	60	49	8 29	14 42.26	+22 20.5	0.770	0.935	71.9	19.3	62 E	47*	34*
3 7	5 38.96	+16 0.1	2.087	2.440	23.7	20.6	98 E	61	48*	9 3	15 8.47	+22 57.6	0.763	0.965	70.3	19.3	64 E	50*	34*
3 17	5 48.26	+16 42.0	2.239	2.463	23.8	20.8	91 E	61*	47*	9 8	15 34.93	+23 18.5	0.760	0.995	68.6	19.3	67 E	53*	34*
3 27	5 59.25	+17 17.7	2.390	2.486	23.5	21.0	84 E	59*	45*	9 13	16 1.54	+23 22.8	0.759	1.028	66.6	19.3	70 E	56*	35*
4 6	6 11.59	+17 46.4	2.540	2.507	22.9	21.1	77 E	55*	44*	9 18	16 28.20	+23 10.4	0.762	1.061	64.5	19.3	72 E	58*	36*
4 16	6 25.04	+18 7.4	2.687	2.528	21.9	21.2	70 E	49*	42*	9 23	16 54.74	+22 42.1	0.768	1.095	62.3	19.3	75 E	60*	36*
4 26	6 39.37	+18 20.3	2.828	2.548	20.7	21.3	64 E	43*	40*	9 28	17 21.00	+21 59.1	0.778	1.130	60.1	19.4	78 E	61*	38*
5 6	6 54.37	+18 24.9	2.962	2.567	19.4	21.4	58 E	37*	38*	10 3	17 46.80	+21 3.5	0.793	1.164	57.8	19.4	80 E	62*	39*
5 16	7 9.89	+18 21.1	3.088	2.586	17.9	21.4	52 E	30*	35*	10 8	18 11.99	+19 57.7	0.812	1.199	55.7	19.5	82 E	63*	40*
5 26	7 25.79	+18 8.9	3.206	2.603	16.2	21.5	46 E	24*	33*	10 13	18 36.41	+18 44.8	0.836	1.234	53.5	19.5	84 E	63*	41*
263903 2009 FQ₃₅										992 1997 TG₁₉									
12 27	5 49.32	+28 56.6	1.274	2.250	4.1	19.6	170 E	74	35	10 18	18 59.94	+17 27.9	0.865	1.268	51.6	19.6	86 E	62*	43*
1 1	5 43.07	+29 0.8	1.302	2.265	6.6	19.7	165 E	74	35	10 23	19 22.50	+16 9.7	0.899	1.303	49.7	19.7	87 E	61*	44*
1 6	5 37.45	+29 2.2	1.337	2.281	9.0	19.9	159 E	74	35	10 28	19 44.04	+14 52.7	0.938	1.336	48.0	19.8	87 E	60*	45*
1 11	5 32.60	+29 1.4	1.378	2.296	11.3	20.1	153 E	74	35	11 2	20 4.57	+13 39.1	0.982	1.370	46.4	19.9	88 E	59	46*
1 16	5 28.64	+28 58.9	1.424	2.312	13.4	20.3	147 E	74	35	11 7	20 24.10	+12 30.4	1.030	1.402	44.9	20.0	88 E	58	46*
1 26	5 23.60	+28 51.3	1.533	2.342	17.1	20.6	136 E	74	35	11 12	20 42.68	+11 28.0	1.083	1.435	43.6	20.1	87 E	56	47*
2 5	5 22.38	+28 42.9	1.659	2.371	19.8	20.9	125 E	74	35	11 17	21 0.34	+10 32.5	1.139	1.466	42.3	20.3	87 E	56	47*
2 15	5 24.66	+28 35.5	1.798	2.399	21.7	21.1	116 E	74	35	11 22	21 17.16	+ 9 44.1	1.199	1.497	41.2	20.4	86 E	55	46*
2 25	5 30.02	+28 29.4	1.945	2.427	23.0	21.4	107 E	73	36	12 2	21 48.51	+ 8 28.7	1.327	1.556	39.0	20.6	83 E	53	45*
344072 1997 CY₁										992 1997 TG₁₉									
12 27	5 49.43	+59 45.5	1.413	2.277	15.0	21.4	143 E	75	4	12 12	22 17.27	+ 7 40.2	1.466	1.613	36.9	20.9	80 E	53	43*
12 29	5 44.61	+59 28.0	1.417	2.279	15.1	21.4	143 E	76	5	12 22	22 43.91	+ 7 15.3	1.610	1.667	34.9	21.1	76 E	52*	40*
12 31	5 39.98	+59 8.5	1.423	2.282	15.3	21.4	142 E	76	5	1 1	23 8.83	+ 7 10.0	1.759	1.717	32.8	21.3	71 E	51*	36*
1 2	5 35.57	+58 47.0	1.429	2.284	15.4	21.4	142 E	76	5	1 11	23 32.41	+ 7 20.6	1.908	1.764	30.7	21.5	67 E	50*	33*
1 4	5 31.39	+58 23.8	1.437	2.287	15.7	21.4	141 E	77	6	992 1997 TG₁₉									
1 6	5 27.46	+57 58.9	1.445	2.289	16.0	21.5	140 E	77	6	12 27	5 50.24	+26 21.8	1.819	2.796	2.9	18.5	172 E	71	38
1 11	5 18.83	+56 50.6	1.470	2.295	16.8	21.5	138 E	78	7	1 1	5 44.29	+26 21.1	1.835	2.798	5.0	18.7	166 E	71	38
1 16	5 11.99	+55 35.8	1.501	2.300	17.8	21.6	135 E	79	8	1 6	5 38.72	+26 18.9	1.858	2.800	7.1	18.8	159 E	71	38
1 21	5 6.93	+54 16.9	1.536	2.305	18.8	21.7	131 E	81	10	1 11	5 33.64	+26 15.7	1.889	2.802	9.1	18.9	153 E	71	38
1 26	5 3.58	+52 56.3	1.576	2.309	19.9	21.8	127 E	82	11	1 16	5 29.19	+26 11.6	1.925	2.803	11.0	19.0	147 E	71	38
224926 2007 DA₄₁										992 1997 TG₁₉									
12 27	5 49.97	-19 42.4	1.074	1.909	20.9	20.1	136 E	25	84	1 26	5 22.44	+26 2.5	2.016	2.805	14.2	19.3	136 E	71	38
1 1	5 40.46	-20 27.6	1.073	1.891	22.1	20.1	134 E	25	84	2 5	5 18.79	+25 53.9	2.126	2.806	16.8	19.5	125 E	71	38
1 6	5 31.29	-20 56.6	1.078	1.873	23.5	20.1	131 E	24	85	2 15	5 18.22	+25 47.5	2.250	2.805	18.7	19.7	114 E	71	38
1 11	5 22.75	-21 9.9	1.087	1.854	25.1	20.2	127 E	24	85	2 25	5 20.53	+25 43.6	2.383	2.804	20.0	19.8	105 E	71	38
1 16	5 15.07	-21 8.5	1.100	1.834	26.7	20.2	123 E	24	85	3 7	5 25.39	+25 42.0	2.520	2.801	20.6	20.0	96 E	71	38*
1 21	5 8.46	-20 54.2	1.116	1.813	28.3	20.3	119 E	24	85	3 17	5 32.47	+25 41.6	2.659	2.798	20.8	20.1	87 E	69*	37*
1 26	5 3.01	-20 28.8	1.135	1.792	29.8	20.3	115 E	25	84	3 27	5 41.44	+25 41.4	2.795	2.793	20.6	20.2	80 E	64*	36*
1 31	4 58.79	-19 54.4	1.156	1.770	31.3	20.4	111 E	25	84	4 6	5 52.00	+25 40.1	2.927	2.787	20.0	20.3	72 E	58*	35*
2 5	4 55.80	-19 12.6	1.177	1.747	32.6	20.4	107 E	26	83	4 16	6 3.90	+25 36.6	3.052	2.780	19.1	20.3	65 E	51*	33*
2 10	4 54.04	-18 25.2	1.199	1.723	33.8	20.5	104 E	27	82	4 26	6 16.91	+25 29.9	3.168	2.772	18.0	20.4	58 E	44*	31*
2 15	4 53.46	-17 33.4	1.221	1.698	35.0	20.5	100 E	27	82	5 6	6 30.83	+25 19.0	3.274	2.763	16.6	20.4	52 E	37*	29*
2 20	4 54.03	-16 38.6	1.243	1.673	36.0	20.6	96 E	28	80*	5 16	6 45.50	+25 3.2	3.369	2.753	15.1	20.4	45 E	30*	27*
2 25	4 55.66	-15 41.9	1.264	1.646	36.9	20.6	93 E	29	78*	5 26	7 0.78	+24 41.8	3.451	2.741	13.5	20.4	39 E	24*	24*
3 2	4 58.28	-14 44.1	1.283	1.619	37.7	20.6	90 E	30	76*	6 5	7 16.52	+24 14.5	3.521	2.729	11.7	20.3	33 E	18*	21*
3 7	5 1.85	-13 45.7	1.301	1.592	38.5	20.6	87 E	31*	74*	6 15	7 32.64	+23 40.9	3.577	2.715	9.9	20.3	27 E		

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	20/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
9992 1997 TG₁₉ (continuation)										46818 1998 MZ₂₄ (continuation)									
12 2	12 7.06	+1 37.8	2.496	2.328	23.3	19.6	69 W	46*	41*	2 25	5 35.72	+10 15.8	1.838	2.329	24.0	18.5	107 E	55	54
12 12	12 21.18	+0 10.2	2.344	2.297	24.5	19.5	75 W	45*	47*	3 7	5 43.11	+10 11.9	1.997	2.366	24.5	18.7	99 E	55	54*
12 22	12 34.68	-1 12.6	2.189	2.265	25.4	19.3	82 W	44	53*	3 17	5 52.35	+10 10.8	2.158	2.403	24.4	18.9	92 E	55*	53*
1 1	12 47.40	-2 29.1	2.032	2.232	26.1	19.2	88 W	43	59*	3 27	6 3.09	+10 9.7	2.320	2.439	24.0	19.1	85 E	53*	52*
1 11	12 59.12	-3 37.9	1.876	2.199	26.4	19.0	95 W	41	65*	4 6	6 15.01	+10 6.2	2.480	2.474	23.3	19.2	78 E	48*	51*
1 21	13 9.56	-4 37.4	1.723	2.165	26.3	18.8	103 W	40	69*	4 16	6 27.87	+9 58.9	2.636	2.508	22.3	19.4	72 E	43*	50*
329374 2001 WK₅										474225 2001 DB₄									
12 27	5 50.92	+17 52.8	1.481	2.456	3.7	19.6	171 E	63	46	12 27	5 54.10	+72 55.5	0.870	1.682	26.5	18.8	130 E	62	—
1 1	5 45.48	+17 42.1	1.512	2.475	5.9	19.7	165 E	63	46	12 29	5 50.12	+72 16.0	0.874	1.688	26.2	18.8	131 E	63	—
1 6	5 40.55	+17 32.9	1.551	2.493	8.1	19.9	159 E	63	46	12 31	5 46.60	+71 33.7	0.878	1.694	26.0	18.8	131 E	63	—
1 11	5 36.25	+17 25.5	1.595	2.512	10.2	20.1	153 E	62	47	1 2	5 43.53	+70 48.9	0.883	1.700	25.8	18.9	131 E	64	—
1 16	5 32.67	+17 19.8	1.647	2.530	12.2	20.2	147 E	62	47	1 4	5 40.91	+70 1.8	0.888	1.706	25.7	18.9	131 E	65	—
1 26	5 27.84	+17 14.0	1.765	2.566	15.5	20.5	136 E	62	47	1 6	5 38.74	+69 12.6	0.894	1.712	25.5	18.9	131 E	66	—
2 5	5 26.14	+17 14.6	1.901	2.601	18.0	20.8	126 E	62	47	1 8	5 36.99	+68 21.4	0.901	1.718	25.4	18.9	131 E	67	—
2 15	5 27.38	+17 20.3	2.051	2.636	19.7	21.1	116 E	62	47	1 10	5 35.64	+67 28.6	0.908	1.724	25.3	18.9	131 E	68	—
2 25	5 31.25	+17 29.4	2.210	2.669	20.8	21.3	107 E	62	47	1 12	5 34.68	+66 34.2	0.916	1.731	25.3	19.0	131 E	68	—
3 7	5 37.35	+17 39.9	2.376	2.702	21.3	21.5	98 E	63	46*	1 14	5 34.08	+65 38.7	0.925	1.737	25.3	19.0	131 E	69	—
215120 1999 JG₄										37308 2001 OP₁₆									
12 27	5 51.70	+19 42.2	1.838	2.814	2.9	20.6	172 E	65	44	12 27	5 54.31	+28 25.0	1.489	2.466	3.3	20.0	172 E	73	36
1 1	5 46.12	+19 32.0	1.856	2.819	4.9	20.7	166 E	65	44	1 1	5 47.81	+28 29.2	1.515	2.480	5.5	20.2	166 E	73	36
1 6	5 40.91	+19 22.4	1.881	2.823	7.0	20.8	160 E	64	45	1 6	5 41.82	+28 30.8	1.548	2.494	7.8	20.4	160 E	74	35
1 11	5 36.18	+19 13.6	1.914	2.827	9.0	21.0	153 E	64	45	1 11	5 36.50	+28 30.3	1.588	2.507	10.0	20.5	154 E	74	35
1 16	5 32.03	+19 5.8	1.953	2.831	10.8	21.1	147 E	64	45	1 16	5 31.96	+28 28.2	1.634	2.521	12.0	20.7	148 E	73	36
1 21	5 28.53	+18 59.2	1.998	2.835	12.5	21.2	141 E	64	45	1 21	5 28.29	+28 25.1	1.686	2.534	13.9	20.8	142 E	73	36
1 26	5 25.74	+18 53.8	2.048	2.838	14.0	21.3	136 E	64	45	1 26	5 25.51	+28 21.3	1.743	2.546	15.5	21.0	136 E	73	36
1 31	5 23.67	+18 49.6	2.104	2.841	15.4	21.4	130 E	64	45	1 31	5 23.64	+28 17.3	1.804	2.559	17.0	21.1	131 E	73	36
7335 1989 JA										46818 1998 MZ₂₄									
12 27	5 51.97	+36 8.3	1.502	2.467	5.7	20.3	165 E	81	28	12 27	5 53.34	+15 30.1	1.123	2.097	4.9	16.5	169 E	60	49
1 1	5 43.38	+36 17.6	1.529	2.479	7.4	20.4	161 E	81	28	1 1	5 47.21	+14 33.8	1.155	2.117	7.4	16.7	164 E	60	49
1 6	5 35.42	+36 21.1	1.562	2.492	9.3	20.6	156 E	81	28	1 6	5 41.81	+13 43.4	1.194	2.137	10.0	16.9	158 E	59	50
1 11	5 28.27	+36 19.7	1.603	2.503	11.3	20.7	150 E	81	28	1 11	5 37.24	+12 59.2	1.239	2.156	12.4	17.1	152 E	58	51
1 16	5 22.10	+36 14.4	1.650	2.515	13.2	20.9	144 E	81	28	1 16	5 33.58	+12 21.4	1.289	2.176	14.6	17.3	146 E	57	52
1 21	5 16.98	+36 6.2	1.703	2.525	15.0	21.0	138 E	81	28	1 26	5 29.11	+11 23.9	1.406	2.215	18.3	17.6	135 E	56	53
1 26	5 12.96	+35 56.2	1.761	2.536	16.5	21.1	133 E	81	28	2 5	5 28.24	+10 47.0	1.539	2.253	21.0	17.9	125 E	56	53
1 31	5 10.03	+35 45.2	1.823	2.545	17.9	21.3	127 E	81	28	2 15	5 30.60	+10 26.0	1.684	2.292	22.9	18.2	116 E	55	54
2 5	5 8.15	+35 33.9	1.889	2.554	19.1	21.4	122 E	81	28										
165765 2001 QW₂₃₆																			
12 27	5 52.32	+11 14.5	1.555	2.520	5.5	21.0	166 E	56	53										
1 6	5 41.50	+11 33.5	1.603	2.536	8.8	21.2	157 E	57	52										
1 16	5 32.79	+12 1.9	1.677	2.551	12.5	21.5	146 E	57	52										
1 26	5 26.92	+12 37.5	1.774	2.565	15.8	21.8	135 E	58	51										
2 5	5 24.14	+13 17.8	1.889	2.578	18.4	22.0	124 E	58	51										
481918 2009 BE₇₇																			
12 27	5 52.66	-14 59.8	1.064	1.930	18.7	20.6	141 E	30	79										
1 1	5 40.96	-15 50.1	1.023	1.873	20.5	20.5	138 E	29	80										
1 6	5 28.66	-16 27.8	0.988	1.815	22.9	20.5	134 E	29	80										
1 11	5 16.10	-16 51.1	0.959	1.756	25.7	20.4	129 E	28	81										
1 16	5 3.62	-16 59.3	0.936	1.696	28.7	20.4	124 E	28	81										
1 21	4 51.57	-16 52.5	0.917	1.634	32.0	20.3	118 E	28	81										
1 26	4 40.25	-16 31.5	0.902	1.571	35.3	20.3	113 E	28	81										
1 31	4 29.86	-15 57.7	0.889	1.506	38.8	20.3	107 E	29	80										
2 5	4 20.53	-15 12.8	0.877	1.440	42.2	20.2	101 E	30	79										
2 10	4 12.32	-14 18.4	0.866	1.372	45.7	20.2	95 E	31	78*										
2 15	4 5.22	-13 16.1	0.853	1.303	49.3	20.2	90 E	32	74*										
2 20	3 59.13	-12 7.3	0.839	1.232	53.0	20.1	84 E	33*	70*										
2 25	3 53.87	-10 52.7	0.822	1.159	57.0	20.1	79 E	34*	65*										
3 2	3 49.21	-9 32.9	0.801	1.084	61.3	20.0	74 E	33*	61*										
3 7	3 44.80	-8 7.5	0.776	1.008	66.1	19.9	68 E	33*	56*										
3 12	3 40.20	-6 35.3	0.746	0.931	71.7	19.8	63 E	31*	51*										
3 17	3 34.74	-4 54.6	0.711	0.852	78.5	19.8	57 E	29*	46*										
3 22	3 27.42	-3 1.8	0.671	0.773	87.0	19.7	51 E	26*	40*										
3 27	3 16.73	-1 05.7	0.628	0.694	97.9	19.8	44 E	22*	34*										
4 1	3 0.47	+1 42.6	0.585	0.618	112.4	20.2	35 E	16*	26*										
4 6	2 36.11	+4 46.3	0.549	0.548	131.7	21.4	24 E	10*	16*										

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	20/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
1204 Renzia										82913 2001 QN₁₀₃									
12 27	5 55.28	+26 28.1	1.573	2.552	2.7	15.3	173 E	71	38	12 27	5 58.58	+29 24.9	2.043	3.020	2.7	19.2	172 E	74	35
1 1	5 49.30	+26 25.4	1.598	2.565	5.0	15.5	167 E	71	38	1 1	5 52.84	+29 20.7	2.063	3.028	4.3	19.4	167 E	74	35
1 6	5 43.79	+26 21.3	1.630	2.578	7.3	15.6	161 E	71	38	1 6	5 47.43	+29 14.4	2.090	3.036	6.1	19.5	161 E	74	35
1 11	5 38.88	+26 16.1	1.669	2.591	9.4	15.8	154 E	71	38	1 11	5 42.48	+29 6.5	2.125	3.044	7.9	19.6	155 E	74	35
1 16	5 34.68	+26 10.1	1.714	2.604	11.4	16.0	148 E	71	38	1 16	5 38.08	+28 57.4	2.166	3.051	9.6	19.7	149 E	74	35
1 26	5 28.69	+25 57.7	1.822	2.629	14.8	16.2	137 E	71	38	1 26	5 31.26	+28 37.1	2.267	3.065	12.5	20.0	137 E	74	35
2 5	5 26.00	+25 46.3	1.948	2.652	17.5	16.5	126 E	71	38	2 5	5 27.27	+28 16.4	2.388	3.078	14.9	20.2	127 E	73	36
2 15	5 26.48	+25 37.3	2.088	2.675	19.3	16.7	116 E	71	38	2 15	5 26.14	+27 57.3	2.525	3.090	16.7	20.4	116 E	73	36
2 25	5 29.84	+25 30.8	2.238	2.697	20.6	16.9	107 E	71	38	2 25	5 27.68	+27 40.8	2.672	3.101	17.8	20.5	106 E	73	36
3 7	5 35.65	+25 26.1	2.393	2.718	21.2	17.1	98 E	70	38*	3 7	5 31.60	+27 26.9	2.825	3.111	18.4	20.7	97 E	72	36*
3 17	5 43.55	+25 22.3	2.551	2.738	21.3	17.3	90 E	69*	38*	3 17	5 37.59	+27 15.2	2.981	3.120	18.6	20.8	89 E	71*	36*
3 27	5 53.19	+25 18.1	2.709	2.757	21.0	17.4	82 E	65*	37*	3 27	5 45.34	+27 4.6	3.135	3.129	18.3	20.9	80 E	66*	35*
4 6	6 4.24	+25 12.2	2.863	2.775	20.4	17.5	75 E	59*	36*	4 6	5 54.56	+26 54.3	3.284	3.136	17.7	21.0	73 E	59*	34*
4 16	6 16.43	+25 3.8	3.012	2.792	19.4	17.6	68 E	53*	35*	4 16	6 5.01	+26 43.1	3.427	3.142	16.9	21.1	65 E	52*	32*
4 26	6 29.55	+24 51.8	3.154	2.808	18.3	17.7	61 E	46*	33*	4 26	6 16.47	+26 30.2	3.561	3.147	15.7	21.1	58 E	45*	30*
5 6	6 43.39	+24 35.5	3.287	2.823	16.9	17.7	54 E	39*	31*	5 6	6 28.73	+26 14.8	3.685	3.151	14.4	21.1	51 E	37*	28*
5 16	6 57.78	+24 14.4	3.410	2.837	15.4	17.8	48 E	32*	29*	5 16	6 41.66	+25 56.1	3.797	3.154	13.0	21.2	44 E	30*	25*
5 26	7 12.59	+23 48.2	3.523	2.850	13.7	17.8	42 E	25*	26*	5 26	6 55.09	+25 33.8	3.895	3.156	11.3	21.1	38 E	23*	22*
6 5	7 27.68	+23 16.5	3.623	2.862	12.0	17.8	36 E	19*	23*	6 5	7 8.90	+25 7.3	3.979	3.157	9.6	21.1	31 E	17*	19*
6 15	7 42.96	+22 39.4	3.710	2.873	10.1	17.8	30 E	13*	19*	6 15	7 22.99	+24 36.5	4.048	3.157	7.8	21.1	25 E	11*	15*
6 25	7 58.33	+21 56.9	3.783	2.883	8.2	17.8	24 E	8*	15*	6 25	7 37.25	+24 1.2	4.101	3.156	6.0	21.0	19 E	6*	10*
7 5	8 13.72	+21 9.1	3.842	2.892	6.3	17.7	18 E	4*	10*	7 5	7 51.61	+23 21.5	4.138	3.154	4.1	20.9	13 E	2*	5*
7 15	8 29.06	+20 16.2	3.886	2.900	4.3	17.6	12 E	1*	5*	7 15	8 5.99	+22 37.4	4.159	3.152	2.2	20.8	7 E	—	—
7 25	8 44.29	+19 18.7	3.914	2.907	2.2	17.5	6 E	—	—	7 25	8 20.32	+21 49.2	4.162	3.148	0.7	20.7	2 E	—	—
8 4	8 59.37	+18 16.9	3.928	2.913	0.4	17.4	1 E	—	—	8 4	8 34.53	+20 57.1	4.149	3.143	2.0	20.8	6 W	—	—
8 14	9 14.25	+17 11.3	3.925	2.918	1.9	17.5	6 W	—	—	8 14	8 48.58	+20 1.5	4.120	3.137	3.9	20.9	12 W	5*	1*
8 24	9 28.88	+16 2.5	3.907	2.922	3.9	17.6	11 W	5*	1*	8 24	9 2.39	+19 2.9	4.073	3.130	5.8	21.0	18 W	11*	5*
9 3	9 43.23	+14 51.0	3.873	2.925	5.9	17.7	17 W	10*	5*	9 3	9 15.92	+18 1.8	4.011	3.122	7.7	21.0	25 W	17*	9*
9 13	9 57.26	+13 37.6	3.823	2.927	7.9	17.8	23 W	16*	9*	9 13	9 29.12	+16 58.7	3.932	3.113	9.6	21.1	31 W	23*	13*
9 23	10 10.92	+12 22.9	3.758	2.928	9.8	17.8	30 W	22*	12*	9 23	9 41.91	+15 54.6	3.839	3.103	11.4	21.1	37 W	29*	16*
10 3	10 24.17	+11 7.7	3.679	2.928	11.6	17.9	36 W	28*	16*	10 3	9 54.23	+14 50.0	3.731	3.092	13.0	21.1	44 W	35*	20*
10 13	10 36.95	+9 52.9	3.585	2.927	13.3	17.9	42 W	33*	20*	10 13	10 6.00	+13 46.0	3.610	3.080	14.6	21.0	51 W	41*	24*
10 23	10 49.17	+8 39.4	3.478	2.925	14.9	17.9	49 W	39*	24*	10 23	10 17.12	+12 43.5	3.477	3.067	16.0	21.0	58 W	47*	28*
11 2	11 0.77	+7 28.3	3.359	2.922	16.4	17.8	56 W	43*	29*	11 2	10 27.48	+11 43.6	3.334	3.054	17.2	20.9	65 W	51*	33*
11 12	11 11.63	+6 20.7	3.229	2.918	17.6	17.8	63 W	47*	34*	11 12	10 36.94	+10 47.7	3.181	3.039	18.1	20.9	73 W	54*	38*
11 22	11 21.61	+5 17.8	3.090	2.913	18.6	17.7	70 W	49*	40*	11 22	10 45.33	+9 57.0	3.023	3.023	18.8	20.8	81 W	55*	43*
12 2	11 30.57	+4 20.9	2.944	2.907	19.4	17.6	78 W	49*	46*	12 2	10 52.46	+9 13.1	2.860	3.006	19.1	20.6	89 W	54	48*
12 12	11 38.30	+3 31.7	2.793	2.900	19.8	17.5	86 W	49*	52*	12 12	10 58.09	+8 37.7	2.697	2.988	19.1	20.5	97 W	54	52*
12 22	11 44.57	+2 51.7	2.640	2.892	19.8	17.4	95 W	48*	57*	12 22	11 1.97	+8 12.5	2.535	2.969	18.5	20.3	107 W	53	55*
1 1	11 49.15	+2 22.5	2.487	2.883	19.4	17.3	104 W	47*	61*	1 1	11 3.82	+7 59.1	2.380	2.949	17.4	20.1	116 W	53	56
1 11	11 51.72	+2 6.1	2.340	2.873	18.3	17.1	113 W	47	62	1 11	11 3.38	+7 59.1	2.235	2.928	15.7	19.9	127 W	53	56
1 21	11 52.06	+2 4.0	2.201	2.861	16.7	16.9	123 W	47	62	1 21	11 0.47	+8 13.0	2.105	2.907	13.2	19.7	137 W	53	56
101487 1998 WB₄₀										162039 1996 JG									
12 27	5 55.99	+42 49.8	1.649	2.594	7.6	19.7	160 E	88	21	12 27	5 58.59	+33 2.0	0.549	1.526	7.2	19.6	169 E	78	31
1 1	5 48.34	+43 8.8	1.678	2.610	8.6	19.8	157 E	88	21	1 1	5 46.46	+32 44.7	0.606	1.574	10.1	20.0	164 E	78	31
1 6	5 41.22	+43 20.7	1.714	2.626	9.9	19.9	153 E	88	21	1 6	5 37.11	+32 22.9	0.668	1.621	13.3	20.4	158 E	77	32
1 11	5 34.83	+43 26.1	1.757	2.642	11.4	20.0	148 E	88	21	1 11	5 30.22	+31 59.4	0.735	1.667	16.3	20.8	152 E	77	32
1 16	5 29.31	+43 26.2	1.806	2.658	12.9	20.2	143 E	88	21	1 16	5 25.50	+31 36.2	0.806	1.712	18.8	21.2	146 E	77	32
1 21	5 24.78	+43 21.8	1.860	2.674	14.3	20.3	138 E	88	21	1 21	5 22.66	+31 14.3	0.882	1.756	20.9	21.5	140 E	76	33
1 26	5 21.28	+43 14.3	1.920	2.689	15.5	20.4	133 E	88	21	269881 2000 GF₁₅									
1 31	5 18.81	+43 4.4	1.983	2.704	16.7	20.5	128 E	88	21	12 27	6 0.23	+29 51.4	2.129	3.105	2.6	21.1	172 E	75	34
2 5	5 17.37	+42 53.0	2.051	2.719	17.7	20.7	123 E	88	21	1 1	5 54.59	+29 52.2	2.144	3.109	4.2	21.2	167 E	75	34
2 10	5 16.90	+42 40.7	2.121	2.734	18.5	20.8	119 E	88	21	1 6	5 49.23	+29 51.0	2.167	3.113	5.9	21.3	161 E	75	34
2 15	5 17.36	+42 28.1	2.195	2.748	19.2	20.9	114 E	87	22	1 11	5 44.27	+29 47.9	2.197	3.117	7.6	21.4	155 E	75	34
2 20	5 18.70	+42 15.5	2.271	2.762	19.7	21.0	109 E	87	22	1 16	5 39.83	+29 43.1	2.234	3.120	9.3	21.5	149 E	75	34
2 25	5 20.83	+42 3.2	2.348	2.776	20.1	21.1	105 E	87	22	4995 Griffin									
3 2	5 23.69	+41 51.2	2.427	2.790	20.4	21.2	101 E	87	22*	12 27	6 0.38	+58 28.8	0.809	1.709	19.5	15.2	145 E	77	6
3 7	5 27.21	+41 39.7	2.506	2.803	20.6	21.3	97 E	87	22*	1 1	5 52.90	+56 46.6	0.821	1.721					

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/22		α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°-26°	20/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°-26°									
4995 Griffin (continuation)										143651 2003 QO ₁₀₄ (continuation)																	
		h m			° ' "								h m			° ' "											
5	16	8	10.96	+18	39.0	2.385	2.176	25.1	18.2	66	E	41*	42*	2	10	5	13.33	+33	7.3	2.016	2.633	19.2	20.6	118	E	78	31
5	26	8	27.97	+16	49.4	2.527	2.212	23.5	18.3	61	E	34*	42*	2	15	5	12.13	+32	58.6	2.058	2.610	20.4	20.7	113	E	78	31
6	5	8	44.84	+14	58.7	2.664	2.248	21.8	18.4	55	E	27*	41*	2	20	5	11.84	+32	50.4	2.102	2.587	21.3	20.7	108	E	78	31
6	15	9	1.55	+13	6.4	2.796	2.284	20.0	18.5	50	E	20*	39*	2	25	5	12.42	+32	42.9	2.147	2.564	22.1	20.8	103	E	78	31*
6	25	9	18.08	+11	12.3	2.921	2.320	18.1	18.6	45	E	15*	37*	3	2	5	13.84	+32	36.1	2.193	2.540	22.7	20.8	99	E	78	31*
7	5	9	34.40	+9	16.2	3.038	2.355	16.2	18.6	40	E	9*	33*	3	7	5	16.03	+32	30.0	2.239	2.515	23.2	20.9	94	E	77*	31*
7	15	9	50.53	+7	18.1	3.147	2.390	14.2	18.7	35	E	5*	29*	3	12	5	18.97	+32	24.7	2.285	2.490	23.5	20.9	90	E	76*	31*
7	25	10	6.44	+5	18.0	3.246	2.424	12.2	18.7	30	E	1*	24*	3	17	5	22.60	+32	20.0	2.331	2.465	23.7	20.9	86	E	74*	30*
8	4	10	22.14	+3	16.3	3.335	2.457	10.2	18.7	25	E	—	19*	3	22	5	26.89	+32	15.8	2.375	2.439	23.8	20.9	82	E	71*	30*
8	14	10	37.65	+1	12.9	3.413	2.489	8.2	18.7	21	E	—	14*	3	27	5	31.78	+32	12.0	2.417	2.413	23.8	20.9	78	E	68*	29*
8	24	10	52.96	—	0 51.7	3.478	2.521	6.3	18.7	16	E	—	9*	4	1	5	37.24	+32	8.2	2.458	2.386	23.7	21.0	74	E	64*	29*
9	3	11	8.09	—	2 57.5	3.532	2.552	4.6	18.7	12	E	—	3*	4	6	5	43.22	+32	4.4	2.496	2.359	23.6	21.0	71	E	61*	28*
9	13	11	23.03	—	5 4.0	3.572	2.583	3.5	18.7	9	W	—	—	4	11	5	49.71	+32	0.3	2.532	2.332	23.3	21.0	67	E	57*	27*
9	23	11	37.78	—	7 11.0	3.599	2.612	3.5	18.7	9	W	—	2*	4	16	5	56.67	+31	55.7	2.566	2.304	23.0	21.0	64	E	54*	27*
10	3	11	52.33	—	9 18.1	3.611	2.641	4.5	18.8	12	W	—	6*	4	21	6	4.07	+31	50.3	2.597	2.275	22.6	20.9	60	E	50*	26*
10	13	12	6.68	—	11 25.2	3.610	2.669	6.1	18.9	17	W	3*	10*	4	26	6	11.89	+31	44.0	2.625	2.246	22.1	20.9	57	E	47*	25*
10	23	12	20.80	—	13 31.8	3.594	2.696	7.9	19.0	22	W	7*	15*	5	1	6	20.09	+31	36.5	2.650	2.217	21.6	20.9	54	E	44*	25*
11	2	12	34.65	—	15 37.7	3.564	2.722	9.7	19.1	27	W	11*	19*	5	6	6	28.66	+31	27.5	2.672	2.187	21.1	20.9	51	E	40*	24*
11	12	12	48.18	—	17 42.6	3.520	2.747	11.4	19.1	33	W	15*	24*	5	11	6	37.58	+31	16.9	2.691	2.157	20.5	20.8	48	E	37*	23*
11	22	13	1.33	—	19 46.3	3.463	2.772	13.1	19.2	39	W	17*	30*	5	16	6	46.83	+31	4.4	2.707	2.126	19.9	20.8	46	E	34*	22*
12	2	13	14.01	—	21 48.6	3.392	2.795	14.6	19.2	46	W	19*	36*	5	21	6	56.40	+30	49.8	2.719	2.095	19.2	20.8	43	E	31*	21*
12	12	13	26.11	—	23 49.3	3.309	2.818	16.1	19.2	52	W	19*	43*	5	26	7	6.26	+30	33.0	2.728	2.063	18.5	20.7	40	E	28*	20*
12	22	13	37.47	—	25 48.2	3.216	2.839	17.3	19.2	59	W	19*	51*	5	31	7	16.40	+30	13.6	2.734	2.031	17.8	20.7	38	E	26*	19*
1	1	13	47.93	—	27 45.3	3.113	2.860	18.3	19.2	66	W	17*	59*	6	5	7	26.81	+29	51.5	2.737	1.998	17.1	20.6	35	E	23*	18*
1	11	13	57.25	—	29 40.2	3.002	2.880	19.1	19.2	73	W	15*	67*	6	10	7	37.48	+29	26.5	2.737	1.965	16.4	20.5	33	E	21*	17*
1	21	14	5.18	—	31 32.7	2.886	2.898	19.6	19.1	81	W	13	75*	6	15	7	48.39	+28	58.4	2.734	1.932	15.6	20.5	31	E	18*	16*
55043 2001 QL ₅₉										302111 2001 MM ₃																	
12	27	6	0.70	+18	22.2	1.457	2.436	2.9	17.9	173	E	63	46	6	25	8	10.91	+27	52.1	2.718	1.864	14.1	20.3	27	E	14*	14*
1	1	5	55.11	+18	34.3	1.483	2.452	5.0	18.0	167	E	64	45	7	5	8	34.29	+26	31.2	2.691	1.795	12.6	20.2	23	E	11*	11*
1	6	5	49.95	+18	46.8	1.516	2.468	7.3	18.2	161	E	64	45	7	15	8	58.50	+24	54.1	2.654	1.725	11.1	20.0	19	E	9*	9*
1	11	5	45.36	+18	59.5	1.556	2.484	9.5	18.4	155	E	64	45	8	4	9	49.24	+22	46.2	2.553	1.581	8.3	19.6	16	E	7*	6*
1	16	5	41.45	+19	12.4	1.602	2.500	11.5	18.5	150	E	64	45	8	14	10	15.82	+18	13.1	2.492	1.508	7.2	19.4	11	E	3*	1*
1	26	5	35.93	+19	38.6	1.711	2.532	15.0	18.8	138	E	65	44	8	24	10	43.26	+15	19.2	2.427	1.436	6.2	19.2	9	E	2*	—
2	5	5	33.61	+20	5.2	1.839	2.562	17.7	19.1	128	E	65	44	9	3	11	11.65	+12	4.2	2.360	1.366	5.4	19.0	7	E	1*	—
2	15	5	34.37	+20	31.6	1.981	2.592	19.7	19.3	118	E	66	43	9	13	11	41.17	+8	28.1	2.292	1.297	4.9	18.8	6	E	—	—
2	25	5	37.95	+20	57.1	2.134	2.622	21.0	19.6	109	E	66	43	9	23	12	11.96	+4	32.2	2.227	1.232	4.4	18.6	5	E	—	—
3	7	5	43.94	+21	20.7	2.293	2.650	21.6	19.8	100	E	66	43*	10	3	12	44.28	+0	18.8	2.166	1.171	4.0	18.4	5	E	—	—
3	17	5	51.99	+21	41.5	2.455	2.678	21.8	19.9	92	E	66*	42*	10	8	13	1.10	—	1 53.0	2.138	1.144	3.7	18.3	4	E	—	—
3	27	6	1.74	+21	58.5	2.618	2.705	21.5	20.1	84	E	63*	41*	10	13	13	18.40	—	4 7.4	2.112	1.118	3.4	18.2	4	E	—	—
4	6	6	12.88	+22	11.0	2.779	2.731	20.9	20.2	77	E	58*	40*	10	18	13	36.22	—	6 23.2	2.088	1.095	3.1	18.1	3	E	—	—
4	16	6	25.15	+22	18.3	2.935	2.756	20.0	20.3	70	E	52*	38*	10	23	13	54.60	—	8 39.5	2.066	1.074	2.7	18.0	3	E	—	—
4	26	6	38.31	+22	19.9	3.086	2.781	18.8	20.4	63	E	46*	36*	10	28	14	13.56	—	10 54.8	2.048	1.056	2.3	17.9	2	E	—	—
5	6	6	52.15	+22	15.4	3.229	2.804	17.5	20.5	57	E	39*	34*	11	2	14	33.14	—	13 7.8	2.032	1.041	1.8	17.9	2	E	—	—
5	16	7	6.53	+22	4.5	3.364	2.827	16.0	20.6	50	E	32*	32*	11	7	14	53.35	—	15 16.9	2.020	1.030	1.5	17.8	2	E	—	—
5	26	7	21.30	+21	47.3	3.487	2.849	14.3	20.6	44	E	25*	29*	11	12	15	14.20	—	17 20.2	2.011	1.022	1.4	17.8	1	E	—	—
6	5	7	36.32	+21	23.7	3.600	2.870	12.6	20.6	38	E	19*	26*	11	17	15	35.66	—	19 16.1	2.005	1.017	1.6	17.8	2	E	—	—
6	15	7	51.50	+20	54.0	3.700	2.890	10.8	20.6	32	E	13*	22*	11	22	15	57.69	—	21 2.7	2.003	1.017	2.1	17.8	2	E	—	—
6	25	8	6.75	+20	18.3	3.787	2.909	8.9	20.6	26	E	9*	18*	11	27	16	20.24	—	22 38.6	2.004	1.020	2.6	17.8	3	E	—	—
7	5	8	21.99	+19	37.0	3.860	2.927	6.9	20.6	20	E	4*	13*	12	2	16	43.22	—	24 2.1	2.009	1.027	3.2	17.9	3	E	—	—
7	15	8	37.16	+18	50.6	3.919	2.945	4.9	20.5	14	E	1*	8*	12	7	17	6.52	—	25 12.2	2.018	1.037	3.7	18.0	4	E	—	—
7	25	8	52.19	+17	59.4	3.962	2.961	2.9	20.4	9	E	—	2*	12	12	17	29.99	—	26 7.9	2.030	1.051	4.2	18.0	4	E	—	—
8	4	9	7.05	+17	4.2	3.990	2.977	0.9	20.3	3	E	—	—	12	17	17	53.47	—	26 48.8	2.045	1.068	4.5	18.1	5	E	—	—
8	14	9	21.68	+16	5.4	4.002	2.991	1.2	20.4	3	W	—	—	12	22	18	16.81	—	27 14.9	2.063	1.088	4.8	18.2	5	E	—	—
8	24	9	36.05	+15	3.7	3.998	3.005	3.2	20.5	9	W	3*	—	12	27	18	39.86	—	27 26.6	2.08							

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	20/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
302111 2001 MM₃ (continuation)										106988 2000 YE₁₀₁ (continuation)									
7 15	7 34.51	0 44.5	4.707	3.786	5.9	21.1	22 W	—	4*	7 5	8 30.36	+29 25.5	3.978	3.060	7.2	20.7	22 E	13*	9*
7 25	7 45.75	1 24.2	4.716	3.798	5.9	21.1	22 W	—	10*	7 15	8 46.02	+28 41.5	4.045	3.089	5.6	20.6	17 E	9*	4*
8 4	7 56.82	2 11.1	4.709	3.808	6.3	21.2	24 W	—	16*	7 25	9 1.48	+27 54.5	4.097	3.116	4.2	20.6	13 E	7*	—
8 14	8 7.63	3 4.9	4.686	3.818	7.1	21.2	28 W	—	21*	8 4	9 16.71	+27 5.4	4.134	3.143	3.5	20.6	11 E	5*	—
8 24	8 18.11	4 5.2	4.646	3.827	8.1	21.2	32 W	3*	26*	8 14	9 31.65	+26 14.7	4.154	3.169	3.8	20.6	12 W	3*	—
9 3	8 28.18	5 11.6	4.591	3.835	9.1	21.2	37 W	9*	31*	8 24	9 46.27	+25 23.4	4.158	3.194	4.8	20.7	15 W	8*	—
9 13	8 37.74	6 23.9	4.520	3.842	10.2	21.3	43 W	15*	36*	9 3	10 0.53	+24 32.4	4.145	3.218	6.2	20.8	20 W	14*	—
9 23	8 46.69	7 41.3	4.436	3.848	11.3	21.3	49 W	21*	41*	9 13	10 14.40	+23 42.5	4.116	3.241	7.8	20.9	26 W	20*	—
10 3	8 54.93	8 3.4	4.339	3.854	12.3	21.3	55 W	25*	46*	9 23	10 27.83	+22 54.9	4.071	3.264	9.4	20.9	32 W	26*	4*
10 13	9 2.33	10 29.3	4.231	3.859	13.2	21.2	62 W	29*	51*	10 3	10 40.77	+22 10.6	4.011	3.285	10.9	21.0	38 W	32*	7*
10 23	9 8.75	11 58.3	4.113	3.863	13.9	21.2	69 W	31*	57*	10 13	10 53.16	+21 30.8	3.936	3.305	12.3	21.0	45 W	39*	11*
11 2	9 14.04	13 29.0	3.988	3.866	14.4	21.2	76 W	31*	63*	10 23	11 4.92	+20 57.0	3.848	3.325	13.6	21.0	52 W	45*	14*
11 12	9 18.03	15 0.2	3.858	3.868	14.7	21.1	83 W	30*	70*	11 2	11 15.98	+20 30.3	3.746	3.343	14.7	21.0	59 W	52*	18*
11 22	9 20.55	16 29.9	3.726	3.870	14.8	21.0	91 W	29	76*	11 12	11 26.21	+20 12.4	3.634	3.361	15.6	21.0	66 W	58*	23*
12 2	9 21.44	17 55.7	3.595	3.871	14.6	20.9	99 W	27	82*	11 22	11 35.49	+20 4.8	3.514	3.378	16.3	21.0	74 W	62*	27*
12 12	9 20.57	19 14.8	3.469	3.871	14.1	20.8	107 W	26	83	12 2	11 43.65	+20 8.8	3.387	3.394	16.7	20.9	82 W	65*	32*
12 22	9 17.86	20 23.7	3.352	3.870	13.3	20.7	115 W	25	84	12 12	11 50.51	+20 25.9	3.257	3.409	16.8	20.8	90 W	65	36*
1 1	9 13.34	21 18.6	3.247	3.868	12.3	20.6	123 W	24	85	12 22	11 55.87	+20 57.2	3.126	3.423	16.5	20.7	99 W	66	40*
1 11	9 7.18	21 55.5	3.160	3.866	11.2	20.5	130 W	23	86	1 1	11 59.48	+21 43.0	3.000	3.436	15.8	20.6	108 W	67	42*
1 21	8 59.75	22 11.2	3.092	3.863	10.2	20.4	136 W	23	86	1 11	12 1.13	+22 43.2	2.882	3.448	14.7	20.5	118 W	68	41
										1 21	12 0.63	+23 55.9	2.776	3.459	13.1	20.4	127 W	69	40
58070 1034 T-2										220240 2002 XF₂₃									
12 27	6 1.82	+8 29.4	0.677	1.646	9.3	17.3	164 E	53	56	12 27	6 2.42	+30 26.8	1.326	2.303	3.6	19.5	171 E	75	34
1 1	5 58.33	+8 36.4	0.687	1.650	10.8	17.4	162 E	54	55	1 1	5 56.18	+30 7.3	1.351	2.320	5.5	19.6	167 E	75	34
1 6	5 55.33	+8 50.5	0.701	1.654	12.9	17.5	158 E	54	55	1 6	5 50.50	+29 45.7	1.383	2.336	7.8	19.8	161 E	75	34
1 11	5 53.01	+9 10.9	0.720	1.660	15.3	17.6	154 E	54	55	1 11	5 45.53	+29 22.6	1.422	2.352	10.0	20.0	155 E	74	35
1 16	5 51.54	+9 36.6	0.744	1.666	17.7	17.8	149 E	55	54	1 16	5 41.40	+28 58.9	1.467	2.368	12.1	20.1	150 E	74	35
1 21	5 51.02	+10 6.5	0.771	1.673	19.9	18.0	145 E	55	54	1 26	5 35.88	+28 12.1	1.573	2.400	15.8	20.4	138 E	73	36
1 26	5 51.50	+10 39.5	0.802	1.681	22.1	18.1	140 E	56	53	2 5	5 34.03	+27 29.2	1.697	2.432	18.6	20.7	128 E	72	37
1 31	5 52.99	+11 14.4	0.837	1.689	24.0	18.3	136 E	56	53	2 15	5 35.57	+26 51.8	1.836	2.462	20.7	21.0	118 E	72	37
2 5	5 55.46	+11 50.3	0.875	1.699	25.7	18.4	132 E	57	52	2 25	5 40.11	+26 20.0	1.985	2.492	22.0	21.2	109 E	71	38
2 10	5 58.88	+12 26.2	0.916	1.708	27.2	18.6	128 E	57	52	3 7	5 47.12	+25 52.5	2.141	2.522	22.7	21.4	101 E	71	38*
2 15	6 3.18	+13 1.5	0.960	1.719	28.5	18.7	124 E	58	51										
2 25	6 14.19	+14 7.2	1.055	1.741	30.5	19.0	117 E	59	50	308117 2004 XD₆₁									
3 7	6 27.88	+15 3.1	1.158	1.766	31.8	19.3	110 E	60	49	12 27	6 3.07	+52 24.4	1.481	2.387	11.6	19.2	151 E	83	12
3 17	6 43.70	+15 46.6	1.268	1.793	32.6	19.6	104 E	61	48	1 1	5 55.01	+51 55.8	1.507	2.407	12.0	19.2	149 E	83	12
3 27	7 1.15	+16 16.0	1.385	1.822	32.8	19.8	98 E	61	48	1 6	5 47.78	+51 19.2	1.540	2.427	12.6	19.3	147 E	84	13
4 6	7 19.78	+16 30.4	1.506	1.852	32.7	20.0	93 E	60	47	1 11	5 41.58	+50 36.0	1.579	2.446	13.5	19.4	144 E	84	13
4 16	7 39.21	+16 29.8	1.631	1.883	32.2	20.2	88 E	58*	47*	1 16	5 36.54	+49 47.9	1.624	2.466	14.6	19.5	141 E	85	14
4 26	7 59.17	+16 14.6	1.759	1.916	31.4	20.4	83 E	54*	48*	1 21	5 32.73	+48 56.5	1.674	2.485	15.7	19.7	137 E	86	15
5 6	8 19.37	+15 45.5	1.889	1.949	30.4	20.5	78 E	49*	48*	1 26	5 30.13	+48 3.4	1.728	2.505	16.7	19.8	133 E	87	16
5 16	8 39.65	+15 3.6	2.021	1.983	29.2	20.7	73 E	43*	48*	1 31	5 28.70	+47 9.8	1.788	2.524	17.7	19.9	129 E	88	17
5 26	8 59.87	+14 10.1	2.152	2.018	27.9	20.8	69 E	37*	48*	2 5	5 28.35	+46 16.6	1.851	2.543	18.6	20.0	124 E	89	18
6 5	9 19.90	+13 6.3	2.283	2.053	26.4	20.9	64 E	32*	47*	2 10	5 29.01	+45 24.5	1.918	2.562	19.4	20.1	120 E	89	19
6 15	9 39.70	+11 53.4	2.413	2.088	24.8	21.1	59 E	26*	46*	2 15	5 30.60	+44 34.0	1.989	2.580	20.1	20.3	116 E	90	19
6 25	9 59.21	+10 32.9	2.540	2.124	23.0	21.2	55 E	21*	44*	2 20	5 33.01	+43 45.4	2.062	2.599	20.7	20.4	112 E	89	20
7 5	10 18.42	+9 6.0	2.663	2.159	21.2	21.2	46 E	17*	41*	2 25	5 36.17	+42 59.0	2.137	2.617	21.1	20.5	108 E	88	21
7 15	10 37.33	+7 34.0	2.782	2.195	19.3	21.3	40 E	13*	38*	3 2	5 39.98	+42 14.5	2.215	2.635	21.4	20.6	104 E	87	22
7 25	10 55.95	+5 57.9	2.895	2.230	17.4	21.4	41 E	10*	34*	3 7	5 44.37	+41 32.1	2.294	2.653	21.6	20.7	100 E	87	22*
8 4	11 14.29	+4 19.0	3.002	2.265	15.4	21.4	36 E	8*	30*	3 12	5 49.27	+40 51.5	2.374	2.671	21.7	20.8	96 E	86	23*
8 14	11 32.38	+2 38.3	3.102	2.300	13.3	21.4	31 E	6*	25*	3 17	5 54.63	+40 12.6	2.455	2.689	21.7	20.9	92 E	84*	24*
8 24	11 50.24	+0 56.6	3.194	2.334	11.2	21.5	27 E	4*	21*	3 22	6 0.38	+39 35.2	2.537	2.706	21.6	20.9	89 E	81*	24*
9 3	12 7.90	+0 44.9	3.276	2.368	9.1	21.5	22 E	2*	16*	3 27	6 6.48	+38 59.1	2.619	2.724	21.4	21.0	85 E	77*	24*
9 13	12 25.38	+2 25.6	3.348	2.401	6.9	21.4	17 E	—	11*	4 1	6 12.87	+38 24.1	2.700	2.741	21.1	21.1	82 E	74*	25*
9 23	12 42.71	+4 4.4	3.409	2.434	4.7	21.4	12 E	—	5*	4 6	6 19.51	+37 50.0	2.782	2.758	20.8	21.1	78 E	70*	25*
10 3	12 59.88	+5 40.7	3.458	2.466	2.6	21.3	6 E	—	—	4 11	6 26.38	+37 16.5	2.862	2.774	20.4	21.2	75 E	66*	25*
10 13	13 16.92	+7 13.5	3.495	2.498	0.5	21.2	1 E	—	—	4 16	6 33.44	+36 43.5	2.942	2.791	19.9	21.3	71 E	63*	25*
10 23	13 33.81	+8 42.3	3.519	2.528	1.8	21.4	5 W	—	—	4 21	6 40.66	+36 10.8	3.021	2.807	19.4	21.3	68 E	59*	25*

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°		
38074 1999 GX₁₉										141079 2001 XS₃₀											
<i>(continuation)</i>										<i>(continuation)</i>											
2	5	5 33.63	+16 59.6	2.069	2.779	16.4	19.8	127 E	62	47	4	2	0 17.16	+11 17.3	1.422	0.465	20.6	17.8	9 W	3*	—
2	15	5 32.67	+17 21.8	2.195	2.786	18.4	20.0	117 E	62	47	4	4	0 27.17	+12 38.5	1.470	0.510	18.6	18.0	9 W	3*	—
2	25	5 34.47	+17 45.3	2.331	2.793	19.8	20.2	107 E	63	46	4	6	0 36.79	+13 51.2	1.517	0.554	17.1	18.2	9 W	3*	—
3	7	5 38.73	+18 8.8	2.473	2.798	20.5	20.3	99 E	63	46*	4	8	0 46.01	+14 56.7	1.562	0.596	15.8	18.4	9 W	3*	—
3	17	5 45.16	+18 31.1	2.617	2.802	20.8	20.5	90 E	63	45*	4	10	0 54.88	+15 56.0	1.605	0.637	14.8	18.6	9 W	3*	—
3	27	5 53.44	+18 50.9	2.761	2.805	20.6	20.6	82 E	60	43*	4	12	1 3.42	+16 50.0	1.646	0.677	13.9	18.7	9 W	3*	—
4	6	6 3.28	+19 7.2	2.901	2.808	20.1	20.7	75 E	55	42*	4	14	1 11.64	+17 39.4	1.687	0.716	13.1	18.9	9 W	3*	—
4	16	6 14.44	+19 19.1	3.035	2.809	19.3	20.7	68 E	48	40*	4	16	1 19.57	+18 24.7	1.726	0.753	12.4	19.0	9 W	3*	—
4	26	6 26.68	+19 25.8	3.162	2.809	18.2	20.8	61 E	42	38*	4	21	1 38.28	+20 3.1	1.819	0.842	11.0	19.3	9 W	3*	—
5	6	6 39.81	+19 26.6	3.279	2.809	16.9	20.8	54 E	35	35*	4	26	1 55.59	+21 24.3	1.905	0.925	9.9	19.6	9 W	3*	—
5	16	6 53.66	+19 21.2	3.386	2.807	15.5	20.8	48 E	28	32*	5	1	2 11.74	+22 32.2	1.986	1.003	9.0	19.8	9 W	3*	—
5	26	7 8.09	+19 9.1	3.481	2.804	13.9	20.8	42 E	21	29*	5	6	2 26.90	+23 29.5	2.061	1.077	8.6	20.0	9 W	3*	—
6	5	7 22.97	+18 50.2	3.564	2.801	12.1	20.8	35 E	15	25*	5	11	2 41.22	+24 18.1	2.129	1.146	8.4	20.2	10 W	3*	—
6	15	7 38.20	+18 24.3	3.634	2.796	10.3	20.8	30 E	9	21*	5	16	2 54.80	+24 59.7	2.192	1.211	8.6	20.4	10 W	4*	—
6	25	7 53.66	+17 51.6	3.690	2.790	8.4	20.7	24 E	5	17*	5	21	3 7.75	+25 35.1	2.249	1.273	9.0	20.6	11 W	5*	—
7	5	8 9.29	+17 12.1	3.732	2.783	6.5	20.7	18 E	1	12*	5	26	3 20.12	+26 5.4	2.301	1.331	9.6	20.8	13 W	5*	2*
7	15	8 25.02	+16 26.1	3.760	2.776	4.5	20.6	12 E	—	6*	5	31	3 31.98	+26 31.2	2.346	1.386	10.4	20.9	14 W	6*	4*
7	25	8 40.78	+15 33.8	3.773	2.767	2.6	20.5	7 E	—	1*	6	5	3 43.40	+26 52.9	2.386	1.439	11.3	21.1	16 W	7*	5*
8	4	8 56.52	+14 35.6	3.771	2.758	1.0	20.3	3 E	—	—	6	10	3 54.40	+27 11.2	2.420	1.489	12.3	21.2	18 W	8*	7*
8	14	9 12.20	+13 32.1	3.754	2.747	2.0	20.4	5 W	—	—	6	15	4 5.01	+27 26.3	2.448	1.536	13.3	21.3	20 W	10*	9*
8	24	9 27.77	+12 23.6	3.722	2.735	3.9	20.5	11 W	2*	3*	6	20	4 15.26	+27 38.4	2.470	1.581	14.3	21.5	23 W	12*	11*
9	3	9 43.21	+11 10.8	3.676	2.723	6.0	20.6	16 W	8*	7*	274069 2007 VU₁₈₈										
9	13	9 58.48	+9 54.3	3.616	2.709	8.0	20.6	22 W	13*	10*	12	27	6 5.15	+17 27.0	1.263	2.242	3.2	20.0	173 E	62	47
9	23	10 13.54	+8 34.7	3.542	2.695	10.0	20.6	28 W	19*	14*	1	1	5 59.26	+17 35.8	1.285	2.255	5.3	20.1	168 E	63	46
10	3	10 28.37	+7 13.0	3.455	2.679	11.9	20.7	34 W	24*	17*	1	6	5 53.82	+17 45.5	1.313	2.268	7.7	20.3	162 E	63	46
10	13	10 42.92	+5 49.7	3.354	2.663	13.8	20.6	40 W	29*	21*	1	11	5 48.99	+17 56.0	1.347	2.281	10.1	20.5	156 E	63	46
10	23	10 57.14	+4 26.1	3.243	2.646	15.6	20.6	46 W	34*	25*	1	16	5 44.88	+18 7.2	1.388	2.294	12.3	20.7	150 E	63	46
11	2	11 10.98	+3 2.8	3.120	2.627	17.3	20.6	52 W	38*	29*	1	21	5 41.60	+18 19.1	1.434	2.307	14.4	20.8	144 E	63	46
11	12	11 24.37	+1 41.1	2.987	2.608	18.9	20.5	58 W	42*	34*	1	26	5 39.20	+18 31.5	1.486	2.319	16.2	21.0	139 E	64	45
11	22	11 37.21	+0 22.1	2.846	2.588	20.2	20.4	65 W	43*	40*	1	31	5 37.67	+18 44.3	1.542	2.332	17.8	21.1	133 E	64	45
12	2	11 49.39	+0 52.8	2.698	2.567	21.4	20.3	72 W	44*	46*	2	5	5 37.02	+18 57.4	1.601	2.344	19.3	21.2	128 E	64	45
12	12	12 0.76	+2 2.2	2.545	2.545	22.3	20.2	79 W	43	52*	2	10	5 37.21	+19 10.7	1.665	2.356	20.5	21.4	123 E	64	45
12	22	12 11.13	+3 4.4	2.388	2.523	22.9	20.1	86 W	42	59*	518441 2004 FC₆										
1	1	12 20.29	+3 57.6	2.230	2.499	23.1	19.9	94 W	41	64*	12	27	6 5.73	+38 57.9	1.260	2.222	7.0	20.6	164 E	84	25
1	11	12 27.93	+4 39.6	2.073	2.475	22.9	19.7	102 W	40	68*	1	1	5 58.22	+39 3.3	1.250	2.203	8.3	20.6	161 E	84	25
1	21	12 33.76	+5 8.1	1.920	2.450	22.1	19.5	111 W	40	69	1	6	5 50.92	+39 1.9	1.246	2.185	10.2	20.6	157 E	84	25
141079 2001 XS₃₀										518441 2004 FC₆											
12	27	6 5.09	+9 35.2	0.558	1.482	21.3	18.3	147 E	35	74	1	11	5 44.13	+38 54.2	1.249	2.166	12.4	20.7	152 E	84	25
12	29	5 55.10	+10 46.2	0.545	1.462	22.8	18.3	145 E	34	75	1	16	5 38.09	+38 40.7	1.257	2.147	14.7	20.8	146 E	84	25
12	31	5 44.60	+11 56.2	0.533	1.442	24.6	18.3	142	33	76	1	21	5 33.02	+38 22.6	1.271	2.128	16.9	20.9	141 E	83	26
1	2	5 33.66	+13 4.5	0.523	1.422	26.7	18.3	139 E	32	77	1	26	5 29.06	+38 1.1	1.290	2.110	19.0	20.9	136 E	83	26
1	4	5 22.34	+14 10.2	0.515	1.401	29.1	18.3	136 E	31	78	1	31	5 26.30	+37 37.1	1.312	2.091	21.0	21.0	130 E	83	26
1	6	5 10.72	+15 12.7	0.508	1.379	31.6	18.3	133 E	30	79	2	5	5 24.76	+37 11.7	1.338	2.072	22.8	21.1	125 E	82	27
1	8	4 58.89	+16 11.1	0.503	1.357	34.3	18.3	129 E	29	80	2	10	5 24.44	+36 45.7	1.368	2.053	24.5	21.2	121 E	82	27
1	10	4 46.94	+17 5.0	0.500	1.335	37.1	18.3	125 E	28	81	2	15	5 25.32	+36 19.7	1.399	2.034	25.9	21.3	116 E	81	28
1	12	4 34.97	+17 53.8	0.499	1.312	40.0	18.4	121 E	27	82	2	20	5 27.36	+35 54.0	1.432	2.015	27.2	21.3	111 E	81	28
1	14	4 23.09	+18 37.3	0.498	1.288	42.9	18.4	117 E	26	83	2	25	5 30.46	+35 28.9	1.467	1.997	28.3	21.4	107 E	80	29
1	16	4 11.36	+19 15.5	0.499	1.264	45.8	18.4	113 E	26	83	3	2	5 34.57	+35 4.4	1.502	1.978	29.2	21.4	103 E	80	29
1	21	3 43.22	+20 28.3	0.507	1.202	53.0	18.6	103 E	25	84	3	7	5 39.61	+34 40.3	1.538	1.959	30.0	21.5	99 E	80	29*
1	26	3 17.23	+21 12.8	0.519	1.137	59.9	18.7	93 E	24	83*	168378 1997 ET₃₀										
1	31	2 53.55	+21 35.6	0.535	1.067	66.6	18.8	84 E	23	75*	12	27	6 6.31	+32 51.7	2.053	3.026	3.3	21.1	170 E	78	31
2	5	2 31.82	+21 43.1	0.551	0.993	73.1	18.9	75 E	23	66*	1	1	5 59.78	+32 51.4	2.070	3.033	4.5	21.2	166 E	78	31
2	10	2 11.39	+21 40.0	0.567	0.914	79.8	19.1	66 E	22	58*	1	6	5 53.55	+32 48.0	2.094	3.039	6.1	21.3	161 E	78	31
2	15	1 51.35	+21 29.3	0.583	0.830	86.8	19.2	57 E	19	50*	1	11	5 47.77	+32 41.8	2.126	3.045	7.8	21.4	155 E	78	31
2	20	1 30.57	+21 10.6	0.597	0.740	94.7	19.3	48 E	15	42*	1	16	5 42.56	+32 33.2	2.164	3.051	9.5	21.5	149 E	78	31
2	25	1 7.75	+20 39.1	0.613	0.644	103.9	19.5	39 E	10	33*	426534 2013 RV₆₇										
2	27	0 57.75	+20 20.6	0.620	0.603	108.1	19.6	35 E	7	29*	12	27	6 7.88	+28 36.7	1.554	2.534	2.5	21.0	174 E	74	35
3	1	0 47.15	+19 56.9	0.629	0.561	112.7	19.8	31 E	5	25*	1	1	6 1.49	+28 47.1	1.574	2.545	4.4	21.2	169 E	74	35
3	3	0 35.88	+19 26.5	0.639	0.517	117.7	20.0	28 E	—	21*	1	6	5 55.47	+28 54.7	1.600	2.555	6.6	21.4	163 E	74	35
3	5	0 23.94	+18 47.3	0.651	0.473	123.1	20.2	24 E	—	17*	1	11	5 49.98	+28 59.8	1.634	2.566	8.8	21.5	156 E	74	35
3	7	0 11.38	+17 56.5	0.668	0.427	128.7	20.6	20 E	—	13*	1	16	5 45.16	+29 2.7	1.674	2.576	10.9	21.7	150 E	74	35
3	9	23 58.37	+16 50.9	0.689																	

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°										
509192 2006 OD₇ (continuation)										370829 2004 VL₅₅ (continuation)																			
1 31	5 25.41	+ 2 37.8	0.686	1.500	31.7	20.7	127 E	48	61	2 10	6 13.63	-21 55.5	0.758	1.506	35.0	20.3	119 E	23	86										
2 5	5 24.87	+ 6 14.8	0.723	1.507	33.2	20.9	123 E	51	58	2 15	6 18.13	-21 28.5	0.797	1.525	35.3	20.5	117 E	24	85										
2 10	5 25.72	+ 9 35.2	0.764	1.514	34.7	21.0	119 E	55	54	2 20	6 23.47	-20 54.1	0.838	1.544	35.4	20.6	115 E	24	85										
2 15	5 27.86	+12 38.4	0.808	1.520	36.0	21.2	115 E	58	51	2 25	6 29.55	-20 14.3	0.879	1.564	35.5	20.7	113 E	25	84										
2 20	5 31.19	+15 24.8	0.855	1.526	37.1	21.4	112 E	60	49	3 2	6 36.29	-19 30.8	0.922	1.585	35.5	20.9	112 E	25	84										
376995 2002 PP₁₃₈										259776 2004 BA₂₇																			
12 27	6 11.08	+16 53.9	1.655	2.633	2.6	20.9	173 E	62	47	12 27	6 15.52	- 8 35.0	0.751	1.669	18.2	17.7	148 E	36	73										
1 1	6 5.38	+16 45.1	1.674	2.645	4.2	21.0	169 E	62	47	1 1	6 10.75	- 6 31.4	0.752	1.675	17.5	17.7	149 E	38	71										
1 6	6 0.00	+16 37.6	1.700	2.656	6.2	21.2	163 E	62	47	1 6	6 6.32	- 4 15.3	0.759	1.681	17.4	17.7	149 E	41	68										
1 11	5 55.08	+16 31.6	1.734	2.667	8.2	21.3	157 E	62	47	1 11	6 2.46	- 1 50.2	0.771	1.688	17.9	17.8	148 E	43	66										
1 16	5 50.73	+16 27.0	1.774	2.678	10.2	21.4	151 E	61	48	1 16	5 59.36	+ 0 40.2	0.788	1.696	18.9	17.9	146 E	46	63										
317683 2003 MS										189283 2005 TX₁₄																			
12 27	6 11.22	+27 23.6	1.702	2.683	1.8	20.8	175 E	72	37	12 27	6 15.45	-12 31.4	0.480	1.400	24.3	18.9	144 E	32	77										
1 1	6 4.97	+27 17.1	1.720	2.693	3.7	21.0	170 E	72	37	1 1	6 11.95	-15 26.7	0.500	1.406	26.3	19.0	141 E	30	79										
1 6	5 59.05	+27 8.8	1.745	2.703	5.8	21.1	164 E	72	37	1 6	6 8.97	-17 46.6	0.524	1.414	28.2	19.2	137 E	27	82										
1 11	5 53.62	+26 59.0	1.777	2.712	7.9	21.3	158 E	72	37	1 11	6 6.72	-19 33.1	0.552	1.423	29.9	19.4	134 E	25	84										
1 16	5 48.81	+26 48.2	1.816	2.721	9.9	21.4	152 E	72	37	1 16	6 5.35	-20 49.5	0.582	1.433	31.3	19.5	131 E	24	85										
200182 1999 OT₃										321950 2010 TJ₁₇₀																			
12 27	6 11.65	+18 23.6	1.037	2.018	2.8	20.4	174 E	63	46	12 27	6 15.56	+22 28.2	1.524	2.507	0.8	20.4	178 E	67	42										
1 1	6 4.99	+18 7.4	1.064	2.038	5.1	20.6	169 E	63	46	1 1	6 9.40	+22 22.0	1.540	2.516	3.3	20.7	172 E	67	42										
1 6	5 58.94	+17 53.1	1.097	2.058	7.9	20.8	163 E	63	46	1 6	6 3.56	+22 15.4	1.563	2.526	5.7	20.8	165 E	67	42										
1 11	5 53.68	+17 41.1	1.136	2.078	10.6	21.0	157 E	63	46	1 11	5 58.20	+22 8.5	1.593	2.535	8.0	21.0	159 E	67	42										
1 16	5 49.34	+17 31.5	1.182	2.097	13.1	21.2	151 E	63	46	1 16	5 53.47	+22 1.8	1.629	2.544	10.2	21.1	153 E	67	42										
1 21	5 45.97	+17 24.2	1.232	2.117	15.3	21.4	145 E	62	47	1 21	5 49.46	+21 55.3	1.672	2.552	12.2	21.3	147 E	67	42										
112380 2002 NN₂₇										370829 2004 VL₅₅																			
12 27	6 12.18	+18 31.8	1.664	2.644	2.0	21.0	175 E	64	45	12 27	6 15.45	-12 31.4	0.480	1.400	24.3	18.9	144 E	32	77										
1 1	6 6.43	+18 39.2	1.685	2.658	3.7	21.1	170 E	64	45	1 1	6 11.95	-15 26.7	0.500	1.406	26.3	19.0	141 E	30	79										
1 6	6 1.00	+18 46.9	1.713	2.672	5.8	21.3	164 E	64	45	1 6	6 8.97	-17 46.6	0.524	1.414	28.2	19.2	137 E	27	82										
1 11	5 56.01	+18 54.8	1.748	2.685	7.9	21.4	158 E	64	45	1 11	6 6.72	-19 33.1	0.552	1.423	29.9	19.4	134 E	25	84										
1 16	5 51.60	+19 3.1	1.790	2.698	9.9	21.6	152 E	64	45	1 16	6 5.35	-20 49.5	0.582	1.433	31.3	19.5	131 E	24	85										
86819 2000 GK₁₃₇										370829 2004 VL₅₅																			
12 27	6 12.40	+ 7 23.6	1.434	2.395	6.6	20.6	164 E	52	57	12 27	6 15.45	-12 31.4	0.480	1.400	24.3	18.9	144 E	32	77										
1 6	5 59.32	+ 8 3.5	1.501	2.441	8.6	20.8	158 E	53	56	1 1	6 11.95	-15 26.7	0.500	1.406	26.3	19.0	141 E	30	79										
1 16	5 48.62	+ 8 53.8	1.595	2.485	12.1	21.1	148 E	54	55	1 6	6 8.97	-17 46.6	0.524	1.414	28.2	19.2	137 E	27	82										
1 26	5 41.07	+ 9 50.4	1.713	2.527	15.3	21.4	137 E	55	54	1 11	5 58.20	+22 8.5	1.593	2.535	8.0	21.0	159 E	67	42										
2 5	5 36.85	+10 49.3	1.851	2.568	17.9	21.7	127 E	56	53	1 16	5 53.47	+22 1.8	1.629	2.544	10.2	21.1	153 E	67	42										
475198 2005 VC₁										370829 2004 VL₅₅																			
12 27	6 12.94	+ 8 6.3	1.527	2.489	6.0	20.7	165 E	53	56	12 27	6 15.45	-12 31.4	0.480	1.400	24.3	18.9	144 E	32	77										
1 6	6 1.49	+ 7 26.1	1.589	2.528	8.4	20.9	158 E	52	57	1 1	6 11.95	-15 26.7	0.500	1.406	26.3	19.0	141 E	30	79										
1 16	5 52.12	+ 7 4.3	1.678	2.566	11.7	21.2	148 E	52	57	1 6	6 8.97	-17 46.6	0.524	1.414	28.2	19.2	137 E	27	82										
1 26	5 45.55	+ 6 58.7	1.790	2.603	14.8	21.5	138 E	52	57	1 11	5 58.20	+22 8.5	1.593	2.535	8.0	21.0	159 E	67	42										
2 5	5 41.99	+ 7 5.5	1.921	2.639	17.3	21.7	127 E	52	57	1 16	5 53.47	+22 1.8	1.629	2.544	10.2	21.1	153 E	67	42										
508798 2000 QB₁₄₉										370829 2004 VL₅₅																			
12 27	6 13.62	+31 17.9	1.322	2.300	3.5	20.7	172 E	76	33	12 27	6 15.45	-12 31.4	0.480	1.400	24.3	18.9	144 E	32	77										
1 1	6 6.95	+31 3.3	1.342	2.313	5.0	20.8	168 E	76	33	1 1	6 11.95	-15 26.7	0.500	1.406	26.3	19.0	141 E	30	79										
1 6	6 0.74	+30 45.7	1.368	2.326	7.1	20.9	163 E	76	33	1 6	6 8.97	-17 46.6	0.524	1.414	28.2	19.2	137 E	27	82										
1 11	5 55.19	+30 25.7	1.401	2.339	9.4	21.1	157 E	75	34	1 11	5 58.20	+22 8.5	1.593	2.535	8.0	21.0	159 E	67	42										
1 16	5 50.43	+30 4.0	1.440	2.351	11.5	21.3	151 E	75	34	1 16	5 53.47	+22 1.8	1.629	2.544	10.2	21.1	153 E	67	42										
1 21	5 46.57	+29 41.6	1.485	2.364	13.6	21.4	146 E	75	34	1 21	5 49.46	+21 55.3	1.672	2.552	12.2	21.3	147 E	67	42										
189283 2005 TX₁₄										370829 2004 VL₅₅																			
12 27	6 15.31	+24 6.3	1.760	2.743	0.7	19.4	178 E	69	40	12 27	6 15.45	-12 31.4	0.480	1.400	24.3	18.9	144 E	32	77										
1 1	6 9.32	+23 48.3	1.780	2.756	3.0	19.7	172 E	69	40	1 1	6 11.95	-15 26.7	0.500	1.406	26.3	19.0	141 E	30	79										
1 6	6 3.66	+23 29.9	1.807	2.769	5.2	19.8	165 E	68	41	1 6	6 8.97	-17 46.6	0.524	1.414	28.2	19.2	137 E	27	82										
1 11	5 58.46	+23 11.4	1.841	2.781	7.3	20.0	159 E	68	41	1 11	5 58.20	+22 8.5	1.593	2.535	8.0	21.0	159 E	67	42										
1 16	5 53.83	+22 53.1	1.882	2.793	9.3	20.1	153 E	68	41	1 16	5 53.47	+22 1.8	1.629	2.544	10.2	21.1	153 E	67	42										
1 26	5 46.63	+22 18.6	1.983	2.817	12.7	20.4	141 E	67	42	1 21	5 49.46	+21 55.3	1.672	2.552	12.2	21.3	147 E	67	42										
2 5	5 42.40	+21 48.4	2.106	2.840	15.5	20.6	130 E	67	42	2 5	5 46.24	+21 49.3	1.721	2.561	14.1	21.4	141 E	67	42										
2 15	5 41.13	+21 23.4	2.245	2.862	17.5	20.9	119 E	66	43																				
2 25	5 42.61	+21 3.2	2.396	2.883	18.9	21.1	110 E	66	43																				
3 7	5 46.51	+20 46.9	2.553	2.903	19.6	21.2	100 E	66	43*																				
3 17	5 52.50	+20 33.2	2.714	2.922	19.9	21.4	92 E	65*	43*																				