

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

21/22	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°	21/22	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°
<b>506441 2001 AV<sub>19</sub></b>										<b>501878 2014 WF<sub>365</sub></b> (continuation)									
9 3	4 40.74	0 51.0	2.748	2.958	19.9	21.4	92 W	42*	65*	1 10	17 0.85	-33 19.1	0.529	0.616	118.3	19.5	33 W	4*	27*
9 13	4 46.50	1 12.7	2.587	2.924	19.8	21.3	99 W	44*	65	1 11	17 5.81	-32 10.3	0.544	0.606	117.3	19.4	33 W	5*	27*
9 23	4 50.41	1 39.7	2.428	2.890	19.4	21.1	107 W	43	66	1 13	17 15.32	-30 0.9	0.578	0.589	115.0	19.3	33 W	6*	26*
10 3	4 52.18	2 10.1	2.276	2.855	18.4	20.9	116 W	43	66	1 15	17 24.45	-28 2.1	0.613	0.573	112.0	19.2	33 W	8*	26*
10 13	4 51.45	2 40.9	2.133	2.819	17.0	20.7	124 W	42	67	1 17	17 33.33	-26 13.4	0.650	0.560	108.6	19.1	33 W	9*	26*
10 23	4 48.00	3 8.1	2.004	2.783	15.1	20.5	133 W	42	67	1 19	17 42.08	-24 34.2	0.688	0.549	104.8	19.0	33 W	10*	25*
10 28	4 45.22	3 18.7	1.945	2.764	13.9	20.3	138 W	42	67	1 21	17 50.76	-23 3.8	0.728	0.541	100.6	18.8	33 W	11*	25*
11 2	4 41.74	3 26.5	1.892	2.745	12.8	20.2	142 W	42	67	<b>89137 2001 UD<sub>17</sub></b>									
11 7	4 37.59	3 30.7	1.844	2.727	11.6	20.1	147 W	41	68	9 3	5 3.64	+19 39.0	2.533	2.622	22.5	21.5	84 W	60*	44*
11 12	4 32.83	3 30.5	1.803	2.707	10.4	20.0	150 W	41	68	9 13	5 12.17	+19 23.3	2.413	2.637	22.4	21.4	91 W	63*	45*
11 22	4 21.85	3 14.0	1.739	2.669	8.9	19.8	155 W	42	67	9 23	5 18.64	+19 1.5	2.291	2.651	21.9	21.3	100 W	64	45
12 2	4 9.72	2 33.4	1.703	2.629	9.1	19.8	155 E	42	67	10 3	5 22.78	+18 34.0	2.173	2.665	20.9	21.1	108 W	64	45
12 12	3 57.65	1 27.0	1.696	2.590	11.3	19.8	149 E	44	65	10 13	5 24.24	+18 1.5	2.060	2.677	19.2	21.0	118 W	63	46
12 22	3 46.87	0 2.9	1.715	2.549	14.3	19.9	140 E	45	64	10 23	5 22.82	+17 24.8	1.957	2.688	16.9	20.8	128 W	62	47
1 1	3 38.35	1 51.9	1.758	2.508	17.4	20.0	130 E	47	62	11 2	5 18.42	+16 44.7	1.869	2.699	13.9	20.6	139 W	62	47
1 6	3 35.15	2 51.9	1.787	2.487	18.9	20.1	125 E	48	61	11 12	5 11.20	+16 2.6	1.802	2.708	10.3	20.4	151 W	61	48
1 11	3 32.73	3 54.6	1.820	2.466	20.2	20.2	120 E	49	60	11 22	5 1.71	+15 20.1	1.759	2.717	6.4	20.2	162 W	60	49
1 16	3 31.10	4 59.5	1.857	2.445	21.3	20.2	115 E	50	59	11 27	4 56.37	+14 59.6	1.749	2.721	4.5	20.1	168 W	60	49
1 21	3 30.26	6 5.9	1.896	2.424	22.3	20.3	111 E	51	58	12 2	4 50.83	+14 39.9	1.745	2.724	3.1	20.0	172 W	60	49
<b>501878 2014 WF<sub>365</sub></b>										12 7	4 45.23	+14 21.5	1.749	2.728	3.0	20.0	172 E	59	50
9 3	4 52.50	5 25.4	1.900	2.122	28.4	21.5	88 W	48*	58*	12 12	4 39.73	+14 4.9	1.761	2.731	4.4	20.1	168 E	59	50
9 13	5 7.33	4 7.2	1.694	2.027	29.7	21.2	94 W	48*	60*	12 22	4 29.61	+13 38.2	1.806	2.736	8.3	20.3	156 E	59	50
9 23	5 22.23	2 22.3	1.492	1.928	30.9	20.8	99 W	47	62	1 1	4 21.43	+13 21.8	1.878	2.741	11.9	20.6	145 E	58	51
10 3	5 37.27	0 3.9	1.296	1.826	32.0	20.4	105 W	45	64	1 11	4 15.83	+13 16.7	1.973	2.745	15.1	20.8	134 E	58	51
10 8	5 44.87	1 20.6	1.201	1.773	32.6	20.2	107 W	44	65	1 21	4 13.06	+13 22.5	2.086	2.747	17.5	21.0	123 E	58	51
10 13	5 52.58	2 57.4	1.108	1.719	33.2	20.0	109 W	42	67	<b>308043 2004 TH<sub>10</sub></b>									
10 18	6 0.44	4 1.8	1.018	1.664	33.9	19.8	111 W	40	69	9 3	5 14.99	+38 58.3	1.047	1.321	48.8	21.1	80 W	72*	24*
10 23	6 8.54	6 55.3	0.931	1.608	34.7	19.5	113 W	38	71	9 5	5 24.71	+39 16.1	1.011	1.296	50.0	21.0	80 W	72*	24*
10 28	6 17.00	9 22.0	0.848	1.550	35.7	19.3	114 W	36	73	9 7	5 35.04	+39 31.8	0.975	1.272	51.3	21.0	80 W	72*	24*
11 2	6 25.96	12 11.9	0.767	1.492	37.0	19.0	115 W	33	76	9 9	5 46.04	+39 45.0	0.940	1.246	52.6	20.9	79 W	72*	23*
11 7	6 35.70	15 29.8	0.691	1.432	38.7	18.7	116 W	30	79	9 11	5 57.77	+39 54.9	0.906	1.220	54.1	20.8	79 W	72*	23*
11 12	6 46.60	19 21.7	0.619	1.371	40.9	18.5	115 W	26	83	9 13	6 10.30	+40 0.8	0.872	1.194	55.7	20.7	79 W	72*	22*
11 17	6 59.34	23 54.9	0.552	1.308	44.0	18.2	113 W	21	88	9 15	6 23.67	+40 1.6	0.839	1.167	57.4	20.6	78 W	71*	22*
11 22	7 15.01	29 18.3	0.491	1.245	48.2	17.9	110 W	16	87	9 17	6 37.95	+39 56.3	0.808	1.140	59.3	20.5	77 W	70*	21*
11 24	7 22.49	31 43.8	0.468	1.219	50.2	17.8	108 W	13	84	9 19	6 53.15	+39 43.5	0.778	1.111	61.3	20.5	76 W	69*	21*
11 26	7 30.90	34 19.0	0.447	1.193	52.5	17.8	106 W	11	82	9 21	7 9.32	+39 21.8	0.749	1.083	63.5	20.4	75 W	68*	20*
11 28	7 40.49	37 4.3	0.426	1.167	55.0	17.7	104 W	8	79	9 23	7 26.43	+38 49.3	0.721	1.053	65.8	20.3	73 W	67*	20*
11 30	7 51.56	39 59.3	0.408	1.141	57.9	17.6	102 W	5	76	9 25	7 44.45	+38 4.3	0.696	1.023	68.4	20.3	71 W	65*	19*
12 2	8 4.51	43 3.3	0.390	1.114	61.0	17.6	99 W	2	73	9 27	8 2.30	+37 4.9	0.673	0.993	71.1	20.2	69 W	63*	19*
12 3	8 11.85	44 38.1	0.382	1.101	62.6	17.5	97 W	—	71	9 29	8 22.86	+35 49.5	0.652	0.961	74.0	20.2	67 W	61*	18*
12 4	8 19.87	46 14.4	0.375	1.088	64.4	17.5	96 W	—	70	10 1	8 42.95	+34 16.6	0.634	0.929	77.1	20.1	65 W	58*	18*
12 5	8 28.66	47 51.8	0.368	1.075	66.2	17.5	94 W	—	68	10 3	9 3.38	+32 25.3	0.619	0.896	80.4	20.1	62 W	56*	17*
12 6	8 38.32	49 29.6	0.361	1.061	68.1	17.5	92 W	—	67	10 5	9 23.93	+30 15.6	0.608	0.862	83.9	20.1	59 W	53*	17*
12 7	8 48.98	51 7.1	0.355	1.048	70.1	17.5	90 W	—	65	10 7	9 44.38	+27 48.1	0.600	0.827	87.4	20.2	56 W	49*	16*
12 8	9 0.74	52 43.5	0.349	1.034	72.2	17.5	88 W	—	63	10 9	10 4.50	+25 4.7	0.597	0.791	90.9	20.2	52 W	46*	15*
12 9	9 13.75	54 17.8	0.344	1.021	74.3	17.5	86 W	—	62	10 11	10 24.13	+22 8.0	0.598	0.755	94.4	20.2	49 W	42*	15*
12 10	9 28.15	55 48.6	0.340	1.008	76.4	17.5	84 W	—	60	10 13	10 43.11	+19 1.3	0.604	0.717	97.7	20.3	45 W	39*	14*
12 11	9 44.04	57 14.6	0.336	0.994	78.7	17.6	82 W	—	59	10 15	11 1.35	+15 48.5	0.615	0.679	100.8	20.4	42 W	35*	13*
12 12	10 1.53	58 33.9	0.332	0.981	81.0	17.6	80 W	—	57*	10 17	11 18.82	+12 33.3	0.631	0.639	103.5	20.4	39 W	32*	12*
12 13	10 20.66	59 44.9	0.330	0.967	83.3	17.6	77 W	—	56*	10 19	11 35.52	+9 19.2	0.651	0.598	105.7	20.5	35 W	28*	12*
12 14	10 41.41	60 45.5	0.328	0.954	85.6	17.7	75 W	—	55*	10 21	11 51.50	+6 9.2	0.677	0.556	107.2	20.5	32 W	25*	11*
12 15	11 3.63	61 33.8	0.326	0.940	88.0	17.7	73 W	—	53*	10 23	12 6.86	+3 5.3	0.709	0.513	108.0	20.5	29 W	22*	10*
12 16	11 27.07	62 8.3	0.326	0.926	90.4	17.8	70 W	—	52*	10 25	12 21.72	+0 8.9	0.746	0.469	107.8	20.4	27 W	19*	10*
12 17	11 51.35	62 27.5	0.326	0.913	92.8	17.9	68 W	—	50*	10 27	12 36.29	+2 39.2	0.788	0.424	106.3	20.2	24 W	16*	9*
12 18	12 15.98	62 30.6	0.326	0.899	95.1	17.9	66 W	—	49*	10 29	12 50.80	+5 19.1	0.836	0.378	103.3	19.9	22 W	14*	9*
12 19	12 40.44	62 17.7	0.328	0.886	97.5	18.0	63 W	—	48*	10 31	13 5.60	+7 51.1	0.889	0.333	98.1	19.5	19 W	11*	8*
12 20	13 4.24	61 49.2	0.330	0.873	99.8	18.1	61 W	—	46*	11 2	13 21.16	+10 15.6	0.949	0.290	90.0	19.0	17 W	8*	7*
12 21	13 26.95	61 6.4	0.333	0.859	102.0	18.2	59 W	—	45*	11 4	13 38.08	+12 32.9	1.013	0.252	77.9	18.4	14 W	6*	5*
12 22	13 48.28	60 11.0	0.337	0.846	104.2	18.3	56 W	—	43*	11 6	13 57.02	+14 41.5	1.080	0.224	61.1	17.7	11 W	3*	4*
12 23	14 8.06	59 4.7	0.341	0.832	106.2	18.4	54 W	—	42*	11 8	14 18.24	+16 36.9	1.143	0.214	40.8	17.1	8 W	—	1*
12 24	14 26.23	57 49.6	0.346	0.819	108.2	18.5	52 W	—	41*	11 10	14 41.01	+18 13.0	1.196	0.224	21.2	16.8	5 W	—	—
12 25	14 42.81	56 27.5	0.352	0.806	110.1	18.6	50 W	—	39*	11 12	15 4.01	+19 26.7	1.239	0.252	8.2	16.6	2 W	—	—
12 26	14 57.89	55 0.3	0.358	0.793															

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

21/22	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°	21/22	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°
<b>366597 2002 VU<sub>107</sub></b>										<b>138847 2000 VE<sub>62</sub></b> (continuation)									
9 3	5 32.73	+27 41.9	1.642	1.715	34.9	21.5	77 W	62*	35*	10 13	7 14.77	+ 1 49.7	1.664	1.935	31.0	20.9	90 W	47*	60*
9 13	5 55.06	+27 43.5	1.575	1.736	35.0	21.4	81 W	66*	35*	10 23	7 26.79	- 1 3.0	1.539	1.910	31.2	20.7	95 W	44	64*
9 23	6 15.37	+27 32.5	1.507	1.759	34.7	21.4	86 W	70*	35*	11 2	7 36.90	- 4 13.4	1.418	1.884	31.1	20.5	101 W	41	68*
10 3	6 33.26	+27 11.9	1.437	1.784	34.1	21.3	92 W	72*	36*	11 12	7 44.64	- 7 39.9	1.302	1.855	30.6	20.2	107 W	37	72
10 13	6 48.28	+26 44.8	1.367	1.811	33.0	21.2	99 W	72*	37*	11 22	7 49.55	-11 19.1	1.195	1.825	29.8	20.0	113 W	34	75
10 23	6 59.98	+26 14.4	1.297	1.840	31.3	21.0	106 W	71	38*	11 27	7 50.78	-13 11.8	1.144	1.809	29.3	19.9	116 W	32	77
11 2	7 7.91	+25 43.7	1.231	1.871	28.9	20.9	114 W	71	38	12 2	7 51.07	-15 5.3	1.096	1.793	28.8	19.7	119 W	30	79
11 12	7 11.59	+25 14.8	1.170	1.903	25.8	20.7	123 W	70	39	12 7	7 50.37	-16 58.1	1.051	1.777	28.2	19.6	121 W	28	81
11 22	7 10.77	+24 48.8	1.119	1.936	21.7	20.5	134 W	70	39	12 12	7 48.61	-18 48.4	1.009	1.760	27.7	19.5	124 W	26	83
12 2	7 5.48	+24 25.2	1.081	1.971	16.8	20.3	145 W	69	40	12 17	7 45.77	-20 34.3	0.970	1.743	27.1	19.4	126 W	24	85
12 7	7 1.31	+24 13.8	1.069	1.988	14.0	20.2	151 W	69	40	12 22	7 41.85	-22 13.6	0.935	1.725	26.7	19.2	128 W	23	86
12 12	6 56.31	+24 2.3	1.062	2.006	11.1	20.1	157 W	69	40	12 27	7 36.85	-23 43.7	0.903	1.707	26.4	19.1	130 W	21	88
12 17	6 50.67	+23 50.5	1.061	2.023	8.0	20.0	163 W	69	40	1 1	7 30.85	-25 1.9	0.875	1.689	26.2	19.0	131 W	20	89
12 22	6 44.63	+23 38.0	1.066	2.041	4.9	19.9	170 W	69	40	1 6	7 24.02	-26 5.6	0.850	1.670	26.3	19.0	131 W	19	90
12 27	6 38.41	+23 24.9	1.077	2.059	1.8	19.7	176 W	68	41	1 11	7 16.56	-26 52.5	0.829	1.651	26.6	18.9	131 E	18	89
1 1	6 32.27	+23 11.2	1.095	2.078	1.3	19.8	177 E	68	41	1 16	7 8.77	-27 20.8	0.811	1.632	27.2	18.8	131 E	18	89
1 6	6 26.45	+22 57.2	1.119	2.096	4.3	20.0	171 E	68	41	1 21	7 0.94	-27 29.7	0.797	1.613	28.1	18.8	130 E	18	89
1 11	6 21.18	+22 43.2	1.150	2.114	7.2	20.3	164 E	68	41	<b>415713 1998 XX<sub>2</sub></b>									
1 16	6 16.62	+22 29.4	1.187	2.133	9.8	20.5	158 E	67	42	9 3	7 17.38	+ 5 23.0	0.346	0.843	108.8	21.3	52 W	29*	40*
1 21	6 12.88	+22 16.2	1.230	2.151	12.3	20.6	152 E	67	42	9 8	7 15.29	+ 5 14.7	0.344	0.872	103.3	21.1	57 W	33*	43*
<b>153474 2001 RK<sub>43</sub></b>										9 13	7 15.39	+ 5 8.3	0.340	0.898	98.6	20.9	62 W	37*	46*
9 3	5 34.42	+25 20.1	2.669	2.619	22.0	21.5	76 W	60*	37*	9 18	7 17.30	+ 5 2.8	0.334	0.921	94.6	20.7	66 W	40*	48*
9 13	5 43.86	+25 50.4	2.562	2.649	22.2	21.4	84 W	66*	37*	9 23	7 20.72	+ 4 57.0	0.326	0.942	91.2	20.6	70 W	43*	50*
9 23	5 51.36	+26 20.6	2.451	2.678	22.0	21.3	92 W	71*	37*	9 28	7 25.41	+ 4 50.4	0.316	0.960	88.3	20.4	73 W	45*	51*
10 3	5 56.62	+26 51.9	2.339	2.706	21.3	21.2	100 W	72	37	10 3	7 31.19	+ 4 42.3	0.304	0.976	85.9	20.3	77 W	47*	52*
10 13	5 59.25	+27 25.0	2.229	2.732	20.1	21.1	110 W	72	37	10 13	7 45.62	+ 4 21.2	0.273	0.999	81.9	19.9	82 W	49*	55*
10 23	5 58.93	+28 0.2	2.126	2.757	18.3	21.0	120 W	73	36	10 23	8 4.22	+ 3 53.3	0.235	1.011	79.3	19.6	87 W	49*	56*
11 2	5 55.43	+28 36.7	2.035	2.782	15.8	20.8	130 W	74	35	11 2	8 29.03	+ 3 15.7	0.193	1.013	78.4	19.1	91 W	48	58*
11 12	5 48.66	+29 12.1	1.960	2.804	12.7	20.7	142 W	74	35	11 7	8 45.23	+ 2 51.6	0.171	1.010	78.8	18.8	91 W	48	58*
11 22	5 38.93	+29 43.2	1.908	2.826	9.0	20.5	153 W	75	34	11 12	9 5.61	+ 2 22.0	0.149	1.004	80.1	18.6	91 W	47	58*
11 27	5 33.16	+29 55.9	1.891	2.836	7.0	20.4	159 W	75	34	11 17	9 32.53	+ 1 43.3	0.127	0.996	83.0	18.3	90 W	47	57*
12 2	5 26.94	+30 6.1	1.882	2.846	5.1	20.3	165 W	75	34	11 22	10 9.86	+ 0 48.5	0.107	0.985	88.3	18.1	86 W	46	55*
12 7	5 20.44	+30 13.4	1.880	2.856	3.3	20.2	170 W	75	34	11 24	10 28.92	+ 0 19.7	0.099	0.980	91.3	18.1	83 W	45	54*
12 12	5 13.83	+30 17.8	1.886	2.865	2.5	20.1	173 E	75	34	11 26	10 50.92	- 0 14.0	0.093	0.974	95.1	18.1	80 W	45	52*
12 17	5 7.30	+30 19.2	1.900	2.875	3.3	20.2	170 E	75	34	11 28	11 16.20	- 0 53.1	0.087	0.968	99.6	18.1	75 W	44	49*
12 22	5 1.02	+30 18.0	1.921	2.883	5.0	20.3	165 E	75	34	11 30	11 44.88	- 1 37.4	0.082	0.962	104.8	18.3	71 W	43*	45*
12 27	4 55.13	+30 14.3	1.950	2.892	6.9	20.5	159 E	75	34	12 2	12 16.72	- 2 26.0	0.079	0.955	110.8	18.5	65 W	41*	41*
1 1	4 49.78	+30 8.8	1.987	2.900	8.7	20.6	153 E	75	34	12 4	12 50.95	- 3 16.4	0.077	0.948	117.2	18.9	59 W	39*	36*
1 6	4 45.07	+30 2.0	2.030	2.908	10.5	20.7	148 E	75	34	12 6	13 26.27	- 4 5.5	0.077	0.940	123.8	19.4	52 W	36*	30*
1 11	4 41.08	+29 54.4	2.079	2.915	12.1	20.8	142 E	75	34	12 8	14 1.12	- 4 50.2	0.079	0.932	130.1	20.0	46 W	33*	25*
1 16	4 37.86	+29 46.5	2.133	2.923	13.5	21.0	136 E	75	34	12 10	14 34.02	- 5 28.8	0.083	0.924	135.8	20.7	41 W	30*	19*
1 21	4 35.43	+29 38.9	2.193	2.929	14.8	21.1	131 E	75	34	12 12	15 3.95	- 6 0.7	0.088	0.915	140.7	21.4	36 W	27*	15*
<b>426031 2011 QL<sub>12</sub></b>										<b>141056 2001 XV<sub>4</sub></b>									
9 3	5 53.72	+37 9.4	1.675	1.671	35.1	21.5	72 W	64*	24*	9 3	7 20.77	+20 25.6	2.259	1.813	25.8	21.4	52 W	39*	29*
9 8	6 7.02	+37 20.9	1.637	1.675	35.4	21.4	74 W	66*	24*	9 13	7 43.64	+18 0.5	2.115	1.755	28.2	21.3	56 W	42*	31*
9 13	6 20.03	+37 28.3	1.599	1.678	35.7	21.4	76 W	69*	24*	9 23	8 6.74	+15 7.8	1.970	1.696	30.6	21.1	59 W	45*	34*
9 18	6 32.67	+37 31.9	1.560	1.682	35.9	21.4	79 W	71*	24*	10 3	8 30.22	+11 44.1	1.826	1.635	33.0	21.0	63 W	46*	38*
9 23	6 44.92	+37 32.0	1.521	1.686	36.0	21.3	81 W	73*	24*	10 13	8 54.22	+ 7 45.5	1.685	1.573	35.5	20.8	66 W	46*	41*
9 28	6 56.71	+37 29.1	1.481	1.690	36.1	21.3	83 W	76*	24*	10 23	9 18.98	+ 3 8.4	1.551	1.511	37.9	20.6	69 W	45*	45*
10 3	7 7.99	+37 23.4	1.440	1.695	36.1	21.2	86 W	78*	25*	11 2	9 44.90	- 2 10.6	1.426	1.447	40.4	20.4	71 W	41*	50*
10 8	7 18.69	+37 15.6	1.399	1.699	36.0	21.2	89 W	80*	25*	11 12	10 12.49	- 8 12.5	1.314	1.384	42.9	20.2	72 W	36*	55*
10 13	7 28.77	+37 5.8	1.357	1.704	35.8	21.1	91 W	81*	25*	11 17	10 27.12	-11 28.7	1.264	1.353	44.2	20.1	73 W	33*	57*
10 18	7 38.15	+36 54.7	1.316	1.708	35.6	21.0	94 W	82*	26*	11 22	10 42.48	-14 53.9	1.218	1.322	45.5	20.0	73 W	30*	59*
10 23	7 46.79	+36 42.6	1.274	1.713	35.2	20.9	97 W	82*	26*	11 27	10 58.70	-18 26.6	1.177	1.291	46.8	19.9	73 W	27	61*
10 28	7 54.61	+36 30.0	1.231	1.718	34.7	20.9	101 W	81	27*	12 2	11 15.93	-22 4.6	1.141	1.261	48.1	19.8	72 W	23	63*
11 2	8 1.53	+36 17.3	1.189	1.723	34.0	20.8	104 W	81	27*	12 7	11 34.34	-25 45.0	1.109	1.232	49.4	19.7	72 W	19	64*
11 7	8 7.47	+36 4.8	1.148	1.728	33.2	20.7	108 W	81	28*	12 12	11 54.14	-29 24.2	1.083	1.204	50.7	19.7	71 W	16	64*
11 12	8 12.34	+35 52.8	1.107	1.733	32.1	20.6	111 W	81	28*	12 17	12 15.52	-32 57.8	1.063	1.177	51.8	19.6	70 W	12	64*
11 17	8 16.05	+35 41.4	1.067	1.738	30.9	20.5	115 W	81	28	12 22	12 38.67	-36 21.1	1.047	1.151	52.9	19.5	69 W	9	63*
11 22	8 18.52	+35 30.4	1.028	1.743	29.5	20.4	120 W	81	28	12 27	13 3.76	-39 29.2	1.036	1.126	53.9	19.5	68 W	6	62*
11 27	8 19.65	+35 20.4	0.991	1.748	27.8	20.2	124 W	80	29	1 1	13 30.84	-42 16.7	1.030	1.103	54.8	19.5	66 W	3	60*
12 2	8 19.34	+35 10.4	0.956	1.754	25.9	20.1	129 W	80	29	1 6	13 59.84	-44 38.7	1.028	1.083	55.5	19.4	65 W	—	58*
12 7	8 17.54	+34 59.9	0.924	1.759															

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

21/22	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°	21/22	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°
<b>413260 2003 TL<sub>4</sub></b>										<b>357028 2000 EJ<sub>26</sub></b> (continuation)									
9 3	7 37.27	+19 16.6	1.125	0.867	59.2	21.5	48 W	35*	27*	12 17	4 35.52	+42 2.7	0.760	1.710	12.9	20.7	157 E	87	22
9 8	8 3.66	+17 18.9	1.116	0.835	60.2	21.4	46 W	34*	26*	12 22	4 23.13	+40 59.4	0.808	1.743	14.8	21.0	153 E	86	23
9 13	8 30.63	+15 4.5	1.111	0.799	61.0	21.3	44 W	32*	25*	12 27	4 13.36	+39 53.7	0.862	1.775	17.0	21.2	148 E	85	24
9 18	8 58.14	+12 34.7	1.112	0.762	61.5	21.2	42 W	30*	24*	1 1	4 6.04	+38 49.1	0.921	1.806	19.2	21.5	143 E	84	25
9 23	9 26.19	+9 51.5	1.119	0.724	61.6	21.1	39 W	28*	23*	1 6	4 0.93	+37 48.3	0.985	1.835	21.2	21.7	138 E	83	26
9 28	9 54.81	+6 57.8	1.134	0.684	61.1	21.0	37 W	25*	22*	<b>312070 2007 TA<sub>19</sub></b>									
10 3	10 24.03	+3 56.8	1.155	0.644	59.8	20.9	34 W	23*	20*	9 3	8 9.92	+36 21.6	0.235	0.862	122.8	21.0	46 W	40*	10*
10 8	10 53.94	+0 52.3	1.184	0.604	57.5	20.7	31 W	20*	18*	9 5	7 55.23	+34 53.4	0.222	0.882	119.1	20.6	50 W	43*	14*
10 13	11 24.66	-2 11.6	1.219	0.567	54.0	20.6	27 W	16*	16*	9 7	7 39.94	+33 4.5	0.209	0.901	115.2	20.3	54 W	47*	18*
10 18	11 56.33	-5 10.8	1.261	0.533	49.1	20.4	24 W	13*	13*	9 9	7 24.08	+30 53.0	0.198	0.919	110.9	19.9	59 W	50*	23*
10 23	12 29.03	-8 1.0	1.306	0.506	42.7	20.2	20 W	10*	10*	9 11	7 7.66	+28 17.0	0.188	0.938	106.3	19.6	63 W	54*	28*
10 28	13 2.76	-10 38.1	1.353	0.488	35.0	19.9	16 W	7*	7*	9 13	6 50.71	+25 15.1	0.179	0.956	101.3	19.3	69 W	56*	33*
11 2	13 37.34	-12 58.1	1.399	0.480	26.5	19.7	12 W	4*	4*	9 18	6 6.29	+15 45.6	0.161	1.000	87.2	18.5	84 W	58*	47*
11 7	14 12.40	-14 57.4	1.442	0.485	18.0	19.6	9 W	1*	1*	9 23	5 19.89	+4 7.7	0.154	1.041	71.7	17.9	100 W	49	60
11 12	14 47.44	-16 33.8	1.480	0.502	10.1	19.4	5 W	—	—	9 28	4 33.32	-7 47.7	0.160	1.081	56.8	17.6	116 W	37	72
11 17	15 21.99	-17 46.7	1.515	0.528	3.7	19.3	2 W	—	—	10 3	3 48.99	-17 51.0	0.177	1.118	45.1	17.6	128 W	27	82
11 22	15 55.63	-18 36.7	1.546	0.560	3.6	19.4	2 E	—	—	10 5	3 32.41	-21 4.7	0.187	1.132	41.7	17.7	131 W	24	85
11 27	16 28.10	-19 5.5	1.576	0.597	7.5	19.8	5 E	—	—	10 7	3 16.67	-23 50.2	0.198	1.146	39.0	17.7	134 W	21	88
12 2	16 59.25	-19 15.1	1.605	0.637	10.7	20.1	7 E	—	—	10 9	3 1.87	-26 8.9	0.211	1.159	36.9	17.8	136 W	19	90
12 7	17 28.98	-19 8.0	1.633	0.677	13.0	20.4	9 E	2*	—	10 11	2 48.06	-28 3.4	0.224	1.173	35.4	18.0	137 W	17	88
12 12	17 57.29	-18 46.4	1.662	0.717	14.6	20.6	11 E	4*	—	10 13	2 35.28	-29 36.3	0.239	1.185	34.5	18.1	138 W	15	86
12 17	18 24.20	-18 12.5	1.691	0.756	15.6	20.8	12 E	5*	1*	10 15	2 23.51	-30 50.5	0.254	1.198	33.9	18.2	138 W	14	85
12 22	18 49.76	-17 28.5	1.720	0.793	16.3	21.0	13 E	6*	1*	10 17	2 12.76	-31 48.6	0.270	1.210	33.7	18.4	138 W	13	84
12 27	19 14.08	-16 35.9	1.749	0.829	16.6	21.1	14 E	7*	1*	10 19	2 2.96	-32 33.2	0.287	1.222	33.7	18.5	137 W	12	83
1 1	19 37.22	-15 36.4	1.778	0.862	16.6	21.2	14 E	8*	1*	10 21	1 54.08	-33 6.2	0.305	1.234	33.9	18.7	136 W	12	83
1 6	19 59.31	-14 31.2	1.807	0.893	16.4	21.3	15 E	8*	1*	10 23	1 46.07	-33 29.4	0.322	1.245	34.3	18.8	135 E	12	83
1 11	20 20.41	-13 21.4	1.835	0.921	16.1	21.4	15 E	9*	1*	10 25	1 38.86	-33 44.4	0.341	1.256	34.7	19.0	134 E	11	82
1 16	20 40.64	-12 8.0	1.862	0.948	15.6	21.5	15 E	9*	—	10 27	1 32.41	-33 52.5	0.360	1.266	35.2	19.1	133 E	11	82
<b>508918 2004 BG<sub>86</sub></b>										<b>488799 2005 EE<sub>38</sub></b>									
9 3	7 41.05	-20 48.1	0.403	0.838	103.1	20.6	54 W	5*	47*	9 3	8 22.36	-1 30.3	2.151	1.482	24.4	21.5	37 W	13*	30*
9 5	7 34.84	-23 43.6	0.417	0.861	98.2	20.5	58 W	5*	51*	9 13	8 51.91	-2 35.6	2.102	1.456	25.5	21.4	38 W	16*	31*
9 7	7 29.09	-26 24.9	0.431	0.883	93.7	20.4	61 W	5*	54*	9 23	9 21.58	-3 44.8	2.053	1.432	26.6	21.3	40 W	18*	31*
9 9	7 23.73	-28 53.3	0.446	0.906	89.6	20.4	64 W	4*	57*	10 3	9 51.39	-4 55.2	2.004	1.410	27.7	21.3	41 W	21*	31*
9 11	7 18.69	-31 10.2	0.461	0.929	85.8	20.4	67 W	4*	59*	10 13	10 21.35	-6 4.0	1.954	1.391	29.0	21.2	42 W	23*	31*
9 13	7 13.91	-33 16.6	0.477	0.952	82.3	20.4	70 W	4*	61*	10 23	10 51.51	-7 8.1	1.902	1.375	30.3	21.2	44 W	25*	32*
9 15	7 9.33	-35 13.9	0.493	0.974	79.2	20.4	72 W	3*	63*	11 2	11 21.92	-8 4.7	1.849	1.363	31.6	21.2	46 W	27*	32*
9 17	7 4.89	-37 3.1	0.509	0.997	76.2	20.4	74 W	3*	64*	11 12	11 52.62	-8 50.3	1.794	1.355	33.1	21.1	48 W	29*	33*
9 19	7 0.53	-38 44.9	0.525	1.019	73.5	20.4	76 W	2*	66*	11 22	12 23.62	-9 21.7	1.738	1.350	34.5	21.1	51 W	31*	34*
9 21	6 56.22	-40 20.3	0.540	1.041	71.0	20.4	78 W	2*	67*	12 2	12 54.94	-9 35.7	1.680	1.349	35.9	21.0	53 W	33*	36*
9 23	6 51.90	-41 49.8	0.556	1.062	68.6	20.5	80 W	1*	67*	12 12	13 26.50	-9 28.7	1.622	1.353	37.3	21.0	56 W	33*	38*
9 25	6 47.53	-43 14.0	0.572	1.084	66.4	20.5	82 W	—	68*	12 22	13 58.18	-8 57.6	1.564	1.360	38.5	21.0	59 W	35*	40*
9 27	6 43.08	-44 33.2	0.587	1.105	64.4	20.5	84 W	—	68*	1 1	14 29.81	-7 59.9	1.507	1.371	39.6	20.9	63 W	36*	43*
9 29	6 38.50	-45 48.0	0.602	1.126	62.4	20.6	85 W	—	68*	1 11	15 1.11	-6 33.3	1.453	1.386	40.4	20.9	66 W	38*	46*
10 1	6 33.77	-46 58.4	0.618	1.147	60.6	20.6	87 W	—	68*	1 21	15 31.78	-4 37.2	1.403	1.404	41.1	20.9	70 W	40*	48*
10 3	6 28.85	-48 4.7	0.633	1.168	58.9	20.7	88 W	—	67*	<b>162004 1991 VE</b>									
10 8	6 15.58	-50 33.0	0.670	1.218	55.1	20.8	92 W	—	65	9 3	8 33.57	+21 39.5	1.966	1.281	27.0	21.4	35 W	27*	15*
10 13	6 0.75	-52 36.7	0.706	1.267	51.7	20.9	95 W	—	63	9 8	8 49.23	+20 50.5	1.908	1.248	28.6	21.3	36 W	28*	16*
10 18	5 44.32	-54 15.0	0.742	1.314	48.8	21.0	97 W	—	62	9 13	9 5.44	+19 54.0	1.849	1.212	30.2	21.3	37 W	29*	16*
10 23	5 26.45	-55 26.9	0.779	1.360	46.2	21.1	99 W	—	61	9 18	9 22.28	+18 49.1	1.788	1.174	31.9	21.2	38 W	30*	16*
10 28	5 7.54	-56 11.4	0.815	1.405	43.9	21.2	101 W	—	60	9 23	9 39.83	+17 34.8	1.727	1.132	33.6	21.1	39 W	31*	16*
11 2	4 48.18	-56 27.8	0.852	1.448	41.9	21.3	103 W	—	60	9 28	9 58.23	+16 9.8	1.666	1.086	35.4	20.9	39 W	31*	16*
11 7	4 29.09	-56 16.3	0.890	1.489	40.1	21.4	105 W	—	60	10 3	10 17.58	+14 32.8	1.606	1.038	37.2	20.8	39 W	31*	16*
<b>357028 2000 EJ<sub>26</sub></b>										11 12	11 52.62	-8 50.3	1.794	1.355	33.1	21.1	48 W	29*	33*
9 3	8 4.43	+19 37.8	0.493	0.717	111.7	21.4	41 W	31*	22*	11 22	12 23.62	-9 21.7	1.738	1.350	34.5	21.1	51 W	31*	34*
9 8	7 55.16	+22 3.8	0.518	0.772	100.9	21.1	49 W	35*	24*	12 2	12 54.94	-9 35.7	1.680	1.349	35.9	21.0	53 W	33*	36*
9 13	7 49.49	+24 6.5	0.542	0.828	92.1	20.9	55 W	45*	26*	12 12	13 26.50	-9 28.7	1.622	1.353	37.3	21.0	56 W	33*	38*
9 18	7 46.22	+25 52.5	0.563	0.885	84.7	20.9	61 W	52*	27*	12 22	13 58.18	-8 57.6	1.564	1.360	38.5	21.0	59 W	35*	40*
9 23	7 44.38	+27 27.4	0.581	0.942	78.5	20.8	67 W	57*	28*	1 1	14 29.81	-7 59.9	1.507	1.371	39.6	20.9	63 W	36*	43*
9 28	7 43.21	+28 55.5	0.594	0.998	73.1	20.8	72 W	63*	28*	1 11	15 1.11	-6 33.3	1.453	1.386	40.4	20.9	66 W	38*	46*
10 3	7 42.11	+30 20.2	0.603	1.053	68.2	20.8	78 W	68*	29*	1 21	15 31.78	-4 37.2	1.403	1.404	41.1	20.9	70 W	40*	48*
10 8	7 40.56	+31 44.0	0.608	1.107	63.7	20.8	83 W	73*	29*	<b>162004 1991 VE</b>									
10 13	7 38.11	+33 8.7	0.611	1.159	59.4	20.8	89 W	77*	29*	9 3	8 33.57	+21 39.5	1.966	1.281	27.0	21.4	35 W	27*	15*
10 18	7 34.39	+34 35.4	0.611	1.210	55.1	20.8	95 W	80	28*	9 8	8 49.23	+20 50.5	1.908	1.248	28.6	21.3	36 W	28*	16*
10 23	7 29.04	+36 4.3	0.609	1.260	50.9	20.7	101 W	81	28*	9 13	9 5.44</								

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

21/22	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°	2021	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°
<b>162004 1991 VE</b> (continuation)										<b>138893 2000 YH<sub>66</sub></b> (continuation)									
11 24	15 31.85	-18 13.9	1.291	0.330	20.0	17.3	7 W	—	—	10 28	1 4.16	+53 37.7	0.512	1.414	28.4	18.7	137 E	81	10
11 26	15 51.88	-19 46.1	1.291	0.312	11.4	16.9	4 W	—	—	10 29	1 0.50	+52 33.9	0.520	1.423	27.7	18.7	138 E	82	11
11 28	16 12.74	-21 11.8	1.288	0.302	1.7	16.4	1 W	—	—	10 30	0 57.15	+51 30.8	0.527	1.433	27.1	18.7	139 E	83	12
11 30	16 34.23	-22 28.3	1.281	0.299	8.7	16.7	3 E	—	—	10 31	0 54.09	+50 28.3	0.535	1.442	26.5	18.7	140 E	85	14
12 2	16 56.05	-23 33.3	1.270	0.305	18.9	17.1	6 E	—	—	11 1	0 51.28	+49 26.7	0.543	1.451	26.1	18.8	140 E	86	15
12 4	17 17.87	-24 25.1	1.256	0.319	28.1	17.5	9 E	—	2*	11 2	0 48.72	+48 26.0	0.551	1.460	25.6	18.8	140 E	87	16
12 6	17 39.46	-25 3.3	1.240	0.340	36.0	17.8	12 E	—	5*	11 4	0 44.26	+46 27.8	0.568	1.478	25.0	18.9	141 E	89	18
12 8	18 0.65	-25 28.0	1.224	0.365	42.4	18.1	14 E	1*	8*	11 6	0 40.57	+44 34.2	0.587	1.495	24.5	19.0	141 E	90	19
12 10	18 21.33	-25 39.8	1.208	0.394	47.4	18.4	17 E	3*	10*	11 8	0 37.54	+42 45.5	0.607	1.512	24.3	19.0	141 E	88	21
12 12	18 41.46	-25 59.1	1.193	0.425	51.2	18.6	20 E	4*	13*	11 10	0 35.10	+41 2.1	0.628	1.529	24.2	19.1	141 E	86	23
12 17	19 29.17	-24 54.1	1.167	0.505	56.6	19.1	25 E	8*	17*	11 12	0 33.16	+39 24.1	0.650	1.545	24.3	19.2	140 E	84	25
12 22	20 12.92	-23 16.1	1.156	0.585	58.3	19.4	30 E	12*	21*	11 14	0 31.66	+37 51.5	0.673	1.561	24.5	19.3	139 E	83	26
12 27	20 52.54	-21 1.5	1.161	0.662	57.8	19.7	35 E	16*	24*	11 16	0 30.55	+36 24.2	0.697	1.577	24.8	19.5	138 E	81	28
1	21 28.10	-18 24.3	1.179	0.735	56.2	19.9	38 E	20*	27*	11 18	0 29.78	+35 2.2	0.722	1.592	25.2	19.6	137 E	80	29
1	6 21 59.87	-15 36.4	1.210	0.804	54.0	20.1	41 E	23*	28*	11 20	0 29.32	+33 45.2	0.747	1.608	25.6	19.7	135 E	79	30
1	11 22 28.24	-12 46.6	1.251	0.868	51.5	20.3	44 E	26*	29*	11 22	0 29.12	+32 33.1	0.774	1.622	26.1	19.8	134 E	78	31
1	16 22 53.66	-10 0.5	1.299	0.928	49.0	20.4	45 E	28*	29*	11 27	0 29.65	+29 52.9	0.843	1.658	27.2	20.0	130 E	75	34
1	21 23 16.60	-7 21.5	1.352	0.984	46.6	20.6	47 E	30*	29*	12 2	0 31.37	+27 38.6	0.916	1.692	28.3	20.3	126 E	73	36
<b>162117 1998 SD<sub>15</sub></b>										<b>469737 2005 NW<sub>44</sub></b>									
9 3	8 44.94	+2 27.2	1.706	0.988	31.7	21.5	31 W	12*	24*	9 3	9 32.07	+13 36.1	1.199	0.419	53.6	20.9	19 W	11*	8*
9 13	9 26.90	+0 17.5	1.663	0.929	32.1	21.3	29 W	12*	22*	9 8	10 9.23	+11 14.2	1.281	0.403	40.3	20.6	15 W	8*	4*
9 23	10 11.39	+1 57.8	1.628	0.866	31.9	21.1	27 W	12*	19*	9 13	10 45.86	+8 29.3	1.356	0.409	26.5	20.3	10 W	4*	—
10 3	10 58.83	+4 12.5	1.601	0.800	30.8	20.9	24 W	11*	16*	9 18	11 21.08	+5 30.1	1.420	0.435	14.5	20.2	6 W	—	—
10 13	11 49.61	+6 19.6	1.582	0.737	28.4	20.6	21 W	9*	12*	9 23	11 54.32	+2 26.4	1.476	0.476	5.8	20.1	3 W	—	—
10 23	12 43.97	+8 12.0	1.572	0.679	24.6	20.3	16 W	7*	7*	9 28	12 25.42	+0 33.6	1.524	0.525	4.5	20.3	2 E	—	—
11 2	13 41.88	+9 44.8	1.568	0.635	19.5	20.0	12 W	5*	2*	10 3	12 54.51	+3 24.9	1.569	0.577	8.2	20.8	5 E	—	—
11 12	14 42.71	-10 55.7	1.570	0.613	14.8	19.7	9 W	3*	—	10 8	13 21.84	+6 4.7	1.611	0.631	11.1	21.1	7 E	—	—
11 17	15 13.81	-11 22.9	1.573	0.611	13.6	19.7	8 W	2*	—	10 13	13 47.65	+8 31.4	1.653	0.684	12.9	21.4	9 E	—	2*
11 22	15 45.10	-11 44.5	1.577	0.617	13.5	19.7	8 W	1*	—	<b>332775 2009 VO<sub>24</sub></b>									
11 27	16 16.32	-12 0.8	1.583	0.628	14.5	19.8	9 E	1*	—	9 3	10 5.80	+10 21.3	1.806	0.836	12.9	21.4	11 W	3*	2*
12 2	16 47.25	-12 11.5	1.591	0.646	15.9	19.9	10 E	4*	—	9 8	10 29.76	+8 28.1	1.810	0.832	11.3	21.3	9 W	2*	1*
12 7	17 17.68	-12 16.4	1.602	0.668	17.5	20.1	12 E	5*	—	9 13	10 53.43	+6 29.7	1.818	0.833	9.6	21.2	8 W	1*	—
12 12	17 47.40	-12 15.5	1.616	0.694	18.8	20.2	13 E	7*	—	9 18	11 16.77	+4 28.1	1.828	0.839	8.0	21.2	7 W	—	—
12 22	18 44.22	-11 56.1	1.654	0.754	20.5	20.5	16 E	10*	—	9 23	11 39.74	+2 25.0	1.842	0.849	6.5	21.2	5 W	—	—
1	19 36.98	-11 14.4	1.705	0.819	20.8	20.7	17 E	11*	—	9 28	12 2.31	+0 22.1	1.859	0.864	5.2	21.2	4 W	—	—
1	11 20 25.51	-10 13.5	1.765	0.884	20.1	21.0	18 E	12*	1*	10 3	12 24.46	+1 38.9	1.879	0.883	4.0	21.2	4 W	—	—
1	21 9.98	-8 57.7	1.832	0.946	18.7	21.2	18 E	12*	1*	10 8	12 46.18	+3 36.5	1.902	0.905	3.2	21.2	3 W	—	—
<b>138893 2000 YH<sub>66</sub></b>										<b>173458 2000 QV<sub>82</sub></b>									
9 3	9 30.21	+45 11.5	0.473	0.723	113.4	20.1	41 W	32*	—	9 3	10 48.66	+6 18.5	3.582	2.573	0.5	21.4	1 E	—	—
9 8	9 10.32	+50 53.6	0.460	0.803	102.4	19.7	51 W	41*	—	9 13	11 4.68	+4 51.0	3.593	2.592	1.9	21.6	5 W	—	—
9 13	8 47.04	+56 3.9	0.450	0.879	92.7	19.4	61 W	50*	—	9 23	11 20.44	+3 22.8	3.590	2.609	4.0	21.7	10 W	3*	1*
9 18	8 18.21	+60 47.7	0.443	0.951	83.8	19.2	70 W	57*	—	10 3	11 35.94	+1 54.7	3.573	2.625	6.0	21.8	16 W	9*	5*
9 23	7 40.15	+65 2.8	0.437	1.020	75.4	19.0	80 W	63*	—	10 13	13 7.46	+5 29.5	1.927	0.931	2.7	21.3	2 W	—	—
9 24	7 30.99	+65 49.3	0.436	1.033	73.8	19.0	82 W	64*	—	10 18	13 28.31	+7 16.9	1.954	0.959	2.4	21.3	2 W	—	—
9 25	7 21.20	+66 33.8	0.436	1.046	72.2	18.9	83 W	64*	—	10 23	13 48.72	+8 57.9	1.983	0.990	2.4	21.4	2 W	—	—
9 26	7 10.74	+67 16.2	0.435	1.060	70.6	18.9	85 W	65*	—	<b>236095 2005 NB</b>									
9 27	6 59.57	+67 56.1	0.434	1.072	69.0	18.9	87 W	65*	—	9 3	10 53.19	+8 41.0	4.025	3.070	5.3	21.5	16 E	—	2*
9 28	6 47.66	+68 33.1	0.434	1.085	67.4	18.8	89 W	65*	—	9 13	11 6.76	+9 53.3	4.031	3.067	4.7	21.5	14 W	—	4*
9 29	6 34.99	+69 6.9	0.433	1.098	65.8	18.8	91 W	65*	—	9 23	11 20.32	+11 9.2	4.022	3.062	4.8	21.5	15 W	—	8*
9 30	6 21.55	+69 37.1	0.433	1.110	64.3	18.8	93 W	65*	—	10 3	11 33.84	+12 28.2	3.996	3.057	5.7	21.5	18 W	—	12*
10 1	6 7.37	+70 3.2	0.433	1.123	62.7	18.8	95 W	65*	—	10 13	11 47.28	+13 49.6	3.955	3.050	7.0	21.5	22 W	4*	15*
10 2	5 52.49	+70 24.9	0.433	1.135	61.2	18.7	97 W	65	—	<b>102405 1999 TP<sub>172</sub></b>									
10 3	5 36.98	+70 41.8	0.433	1.147	59.6	18.7	98 W	64	—	9 3	10 54.65	+6 44.1	3.731	2.723	0.7	21.5	2 E	—	—
10 4	5 20.96	+70 53.3	0.433	1.159	58.1	18.7	100 W	64	—	9 13	11 9.57	+5 14.0	3.749	2.745	1.4	21.6	4 W	—	—
10 5	4 5.46	+70 59.3	0.433	1.171	56.6	18.7	102 W	64	—	9 23	11 24.22	+3 43.7	3.751	2.767	3.5	21.7	10 W	3*	—
10 6	4 47.95	+70 59.5	0.434	1.183	55.1	18.7	104 W	64	—	10 3	11 38.61	+2 13.8	3.738	2.787	5.5	21.8	15 W	8*	4*
10 7	4 31.31	+70 53.6	0.435	1.194	53.6	18.6	106 W	64	—	10 13	11 52.70	+0 45.2	3.710	2.806	7.5	21.9	22 W	14*	8*
10 8	4 14.82	+70 41.7	0.436	1.206	52.1	18.6	108 W	64	—	<b>335220 2005 GB<sub>27</sub></b>									
10 9	3 58.66	+70 23.9	0.437	1.217	50.6	18.6	110 W	65	—	9 3	10 59.60	+7 1.5	2.660	1.653	1.8	21.3	3 E	—	—
10 10	3 42.99	+70 0.3	0.438	1.229	49.2	18.6	111 W	65	—	9 13									

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

21/22	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°	21/22	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°										
<b>335220 2005 GB<sub>27</sub></b>										<b>374038 2004 HW</b>																			
<i>(continuation)</i>										<i>(continuation)</i>																			
12 12	15 47.45	-15 39.5	2.351	1.486	14.4	21.4	22 W	13*	9*	10 23	13 24.54	-9 4.8	2.496	1.511	4.3	20.4	7 W	—	—										
12 22	16 19.29	-16 55.5	2.329	1.491	15.9	21.5	25 W	14*	12*	11 2	13 53.66	-11 47.8	2.398	1.426	6.2	20.3	9 W	2*	—										
<b>74523 1999 GA<sub>6</sub></b>										<b>154656 2004 FE<sub>3</sub></b>																			
9 3	11 4.24	+9 25.4	3.310	2.305	1.9	21.4	4 E	—	—	9 3	11 28.56	-3 13.5	3.481	2.520	5.9	21.5	15 E	—	8*										
9 13	11 21.43	+7 20.4	3.318	2.314	1.5	21.4	3 W	—	—	9 13	11 42.39	-5 8.8	3.436	2.452	4.2	21.3	10 E	—	2*										
9 23	11 38.40	+5 14.8	3.314	2.322	3.2	21.5	7 W	1*	—	9 23	11 56.89	-7 10.8	3.374	2.382	3.0	21.1	7 W	—	—										
10 3	11 55.19	+3 9.3	3.297	2.329	5.3	21.7	12 W	6*	—	10 3	12 12.13	-9 19.7	3.297	2.310	3.5	21.0	8 W	—	2*										
10 13	12 11.82	+1 4.4	3.269	2.336	7.3	21.7	17 W	11*	4*	10 13	12 28.19	-11 35.6	3.204	2.236	5.1	21.0	12 W	—	5*										
<b>136617 1994 CC</b>										<b>163899 2003 SD<sub>220</sub></b>																			
9 3	11 13.09	+1 49.9	2.702	1.711	5.1	21.4	9 E	—	2*	9 3	11 38.09	+34 53.8	0.226	0.820	142.6	21.4	30 E	21*	—										
9 13	11 35.56	-0 32.1	2.656	1.657	3.2	21.2	5 E	—	—	9 5	11 38.25	+36 47.3	0.221	0.828	140.5	21.1	31 E	22*	—										
9 23	11 59.01	-3 1.5	2.602	1.601	1.9	21.0	3 W	—	—	9 7	11 38.20	+38 38.5	0.217	0.836	138.3	20.8	33 E	23*	—										
10 3	12 23.64	+5 37.2	2.540	1.543	2.3	20.9	3 W	—	—	9 9	11 37.94	+40 26.6	0.213	0.844	136.0	20.5	36 E	23*	—										
10 13	12 49.71	-8 17.9	2.473	1.483	3.8	20.9	6 W	—	—	9 11	11 37.51	+42 11.1	0.209	0.851	133.5	20.2	38 E	24*	—										
10 23	13 17.47	-11 1.2	2.401	1.422	5.5	20.8	8 W	—	1*	9 13	11 36.93	+43 51.2	0.206	0.859	131.1	20.0	40 E	24*	—										
11 2	13 47.25	-13 44.1	2.327	1.361	7.3	20.7	10 W	2*	2*	9 18	11 34.99	+47 40.2	0.199	0.877	124.9	19.4	46 W	27*	—										
11 12	14 19.41	-16 22.2	2.253	1.299	8.9	20.6	12 W	3*	4*	9 23	11 32.77	+50 56.2	0.194	0.895	119.1	18.9	51 W	32*	—										
11 22	14 54.28	-18 49.8	2.180	1.238	10.4	20.5	13 W	4*	5*	9 28	11 30.86	+53 39.8	0.189	0.911	113.6	18.5	56 W	37*	—										
12 2	15 32.13	-20 59.2	2.112	1.179	11.7	20.4	14 W	4*	6*	10 3	11 29.74	+55 55.3	0.184	0.926	108.7	18.2	61 W	42*	—										
12 7	15 52.22	-21 54.3	2.080	1.151	12.2	20.3	14 W	4*	6*	10 8	11 29.76	+57 48.4	0.179	0.940	104.2	17.9	66 W	46*	—										
12 12	16 13.09	-22 41.3	2.050	1.123	12.6	20.3	14 W	4*	7*	10 13	11 31.08	+59 25.0	0.172	0.953	100.2	17.6	70 W	49*	—										
12 17	16 34.69	-23 18.9	2.022	1.097	13.0	20.2	15 W	3*	7*	10 18	11 33.88	+60 50.2	0.165	0.964	96.5	17.4	74 W	52*	—										
12 22	16 56.99	-23 45.8	1.996	1.072	13.2	20.1	14 W	3*	7*	10 23	11 38.40	+62 8.7	0.156	0.974	93.2	17.1	78 W	55*	—										
12 27	17 19.90	-24 0.9	1.974	1.049	13.4	20.1	14 W	3*	7*	10 28	11 44.94	+63 25.7	0.147	0.982	90.2	16.9	81 W	57*	—										
1	17 43.32	-24 3.2	1.954	1.028	13.4	20.0	14 W	2*	7*	11 2	11 53.85	+64 47.1	0.136	0.989	87.4	16.6	85 W	58*	—										
1	18 7.12	-23 51.8	1.937	1.009	13.3	19.9	14 W	2*	7*	11 4	11 58.20	+65 22.3	0.132	0.991	86.4	16.5	86 W	59*	—										
1	18 31.16	-23 26.2	1.924	0.993	13.1	19.9	13 W	2*	6*	11 6	12 3.06	+65 59.5	0.127	0.993	85.4	16.4	87 W	59*	—										
1	18 55.29	-22 46.4	1.914	0.979	12.8	19.8	13 W	1*	6*	11 8	12 8.51	+66 39.1	0.123	0.995	84.5	16.3	88 W	59*	—										
1	19 19.36	-21 52.6	1.907	0.968	12.5	19.8	12 W	1*	6*	11 10	12 14.66	+67 21.5	0.118	0.997	83.5	16.2	90 W	59*	—										
<b>477524 2010 EH<sub>43</sub></b>										<b>120352 Gordonwong</b>																			
9 3	11 14.02	+12 46.9	2.222	1.232	6.7	21.5	8 E	2*	—	9 3	11 23.95	+8 12.0	3.636	2.645	3.4	21.4	9 E	1*	2*										
9 13	11 38.88	+7 32.3	2.227	1.229	4.3	21.4	5 E	—	—	9 13	11 39.45	+6 36.0	3.623	2.621	1.8	21.3	5 E	—	—										
9 23	12 3.16	+2 14.6	2.228	1.226	1.9	21.2	2 E	—	—	9 23	11 55.15	+4 58.4	3.595	2.597	2.0	21.3	5 W	—	—										
10 3	12 27.34	+3 4.5	2.223	1.223	1.8	21.2	2 W	—	—	10 3	12 11.04	+3 19.8	3.554	2.572	3.7	21.4	9 W	3*	—										
10 13	12 51.88	-8 23.4	2.213	1.222	4.2	21.3	5 W	—	—	10 13	12 27.11	+1 40.8	3.499	2.546	5.7	21.4	15 W	9*	—										
10 23	13 17.26	-13 40.2	2.198	1.221	6.7	21.5	8 W	—	2*	10 23	12 43.37	+0 2.3	3.432	2.520	7.8	21.4	20 W	14*	4*										
<b>5620 Jasonwheeler</b>										<b>374038 2004 HW</b>																			
9 3	11 18.90	+8 18.7	3.097	2.102	3.7	21.4	8 E	—	1*	9 3	11 28.25	+3 1.2	2.917	1.937	5.8	21.3	11 E	—	5*										
9 13	11 38.37	+6 25.2	3.052	2.050	2.2	21.2	4 E	—	—	9 13	11 48.52	+0 52.3	2.849	1.854	3.7	21.1	7 E	—	1*										
9 23	11 58.45	+4 26.4	2.997	1.998	2.2	21.1	4 W	—	—	9 23	12 10.06	+1 25.4	2.770	1.769	1.7	20.8	3 E	—	—										
10 3	12 19.23	+2 22.8	2.933	1.945	3.8	21.1	7 W	1*	—	10 3	12 33.07	-3 51.6	2.684	1.683	0.4	20.5	1 W	—	—										
10 13	12 40.79	+0 15.5	2.861	1.892	5.9	21.1	11 W	5*	—	10 13	12 57.80	-6 25.3	2.592	1.597	2.4	20.4	4 W	—	—										
10 23	13 3.23	+1 54.7	2.781	1.837	8.0	21.1	15 W	9*	—																				
11 2	13 26.69	+4 6.3	2.696	1.783	10.2	21.1	18 W	12*	3*																				
11 12	13 51.30	+6 18.0	2.607	1.728	12.3	21.0	22 W	15*	6*																				
11 22	14 17.20	+8 27.6	2.515	1.674	14.5	20.9	25 W	17*	9*																				
12 2	14 44.54	-10 33.0	2.421	1.621	16.7	20.9	28 W	19*	12*																				
12 12	15 13.45	-12 31.2	2.329	1.568	18.8	20.8	31 W	20*	15*																				
12 22	15 44.05	-14 18.8	2.239	1.517	20.9	20.7	33 W	20*	19*																				
1	16 16.40	-15 52.3	2.153	1.468	22.9	20.6	36 W	20*	22*																				
1	16 50.48	-17 7.2	2.072	1.422	24.8	20.5	37 W	20*	26*																				
1	17 26.14	-17 59.7	1.999	1.380	26.6	20.4	39 W	19*	29*																				
<b>120352 Gordonwong</b>										<b>163899 2003 SD<sub>220</sub></b>																			
9 3	11 23.95	+8 12.0	3.636	2.645	3.4	21.4	9 E	1*	2*	9 3	11 38.09	+34 53.8	0.226	0.820	142.6	21.4	30 E	21*	—										
9 13	11 39.45	+6 36.0	3.623	2.621	1.8	21.3	5 E	—	—	9 5	11 38.25	+36 47.3	0.221	0.828	140.5	21.1	31 E	22*	—										
9 23	11 55.15	+4 58.4	3.595	2.597	2.0	21.3	5 W	—	—	9 7	11 38.20	+38 38.5	0.217	0.836	138.3	20.8	33 E	23*	—										
10 3	12 11.04	+3 19.8	3.554	2.572	3.7	21.4	9 W	3*	—	9 9	11 37.94	+40 26.6	0.213	0.844	136.0	20.5	36 E	23*	—										
10 13	12 27.11	+1 40.8	3.499	2.546	5.7	21.4	15 W	9*	—	9 11	11 37.51	+42 11.1	0.209	0.851	133.5	20.2	38 E	24*	—										
10 23	12 43.37	+0 2.3	3.432	2.520	7.8	21.4	20 W	14*	4*	9 13	11 36.93	+43 51.2	0.206	0.859	131.1	20.0	40 E	24*	—										
11 2	12 59.81	+1 34.8	3.351	2.492	9.9	21.5	25 W	18*	8*	9 18	11 34.99	+47 40.2	0.199	0.877	124.9	19.4	46 W	27*	—										
11 12	13 16.42	+3 9.9	3.259	2.464	11.9	21.4	31 W	23*	12*	9 23	11 32.77	+50 56.2	0.194	0.895	119.1	18.9	51 W	32*	—										
11 22	13 33.19	+4 41.9	3.157	2.435	14.0	21.4	37 W	27*	17*	9 28	11 30.86	+53 39.8	0.189	0.911	113.6	18.5	56 W	37*	—										
12 2	13 50.10	+6 10.1	3.044	2.406	16.0	21.4	42 W	30*	22*	10 3	11 29.74	+55 55.3	0.184	0.926	108.7	18.2	61 W	42*	—										
12 12	14 7.12	+7 33.4	2.921	2.375	17.9	21.3	48 W	32*	28*	10 8	11 29.76	+57 48.4	0.179	0.940	104.2	17.9	66 W	46*	—										
12 22	14 24.20	+8 51.0	2.791	2.345	19.7	21.3	54 W	33*	35*	10 13	11 31.08	+59 25.0	0.172	0.953	100.2	17.6	70 W	49*	—										
1	14 41.29	+10 2.0	2.655	2.313	21.4	21.2	59 W	34*	41*	10 18	11 33.88	+60 50.2	0.165	0.964	96.5	17.4	74 W	52*	—										
1	14 58.30	+11 5.6	2.512	2.281	23.0	21.1	65 W	33*	48*	10 23	11 38.40	+62 8.7	0.156	0.974	93.2	17.1	78 W	55*	—										
1	15 15.13	-12 1.1	2.366	2.249	24.5	21.0	71 W	33*	56*	10 28	11 44.94	+63 25.7	0.147	0.982	90.2	16.9	81 W	57*	—										
<b>374038 2004 HW</b>										<b>120352 Gordonwong</b>																			
9 3	11 28.25	+3 1.2	2.917	1.937	5.8	21.3	11 E	—	5*	9 3	11 23.95	+8 12.0	3.636	2.645	3.4	21.4	9 E	1*	2*										
9 13	11 48.52	+0 52.3	2.849	1.854	3.7	21.1	7 E	—	1*	9 13	11 39.45	+6 36.0	3.623	2.62															

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

21/22	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°	21/22	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°
<b>163899 2003 SD<sub>220</sub></b> (continuation)										<b>162979 2001 RA<sub>12</sub></b> (continuation)									
11 30	15 32.93	+76 57.3	0.066	0.999	77.4	14.7	99 W	49*	—	12 12	18 55.12	-23 48.2	1.798	0.968	23.2	20.5	23 E	8*	15*
12 1	16 1.42	+77 9.0	0.064	0.998	77.4	14.6	99 W	48*	—	12 17	19 19.48	-22 10.3	1.811	0.988	23.3	20.6	23 E	9*	14*
12 2	16 32.74	+77 9.0	0.061	0.997	77.5	14.5	99 E	47*	—	12 22	19 42.86	-20 21.1	1.828	1.011	23.3	20.6	24 E	11*	14*
12 3	17 6.10	+76 54.2	0.059	0.997	77.6	14.4	99 E	48*	—	12 27	20 5.23	-18 23.0	1.849	1.038	23.1	20.7	25 E	13*	13*
12 4	17 40.31	+76 21.5	0.056	0.996	77.8	14.4	99 E	50*	—	1 1	20 26.59	-16 18.4	1.875	1.067	22.8	20.8	25 E	14*	12*
12 5	18 13.97	+75 28.4	0.054	0.995	78.1	14.3	99 E	52*	—	1 6	20 46.97	-14 9.5	1.905	1.098	22.4	20.9	25 E	15*	11*
12 6	18 45.80	+74 13.3	0.052	0.994	78.5	14.2	99 E	54*	—	1 11	21 6.41	-11 58.0	1.938	1.132	21.9	21.0	25 E	17*	10*
12 7	19 14.93	+72 35.4	0.050	0.993	79.1	14.1	98 E	57*	—	1 16	21 24.98	-9 45.6	1.975	1.166	21.3	21.1	25 E	17*	9*
12 8	19 40.91	+70 34.5	0.048	0.992	79.8	14.1	98 E	59*	—	1 21	21 42.73	-7 33.7	2.015	1.202	20.6	21.1	25 E	18*	8*
12 9	20 3.72	+68 10.7	0.046	0.991	80.6	14.0	97 E	62*	—	<b>69117 2003 EX<sub>2</sub></b>									
12 10	20 23.56	+65 24.1	0.044	0.990	81.6	13.9	96 E	65*	—	9 3	11 43.33	+5 56.1	4.035	3.065	4.5	21.5	14 E	2*	7*
12 11	20 40.74	+62 15.2	0.042	0.989	82.8	13.9	95 E	68*	—	9 13	11 56.32	+4 31.2	4.069	3.076	2.7	21.4	8 E	—	1*
12 12	20 55.62	+58 44.7	0.041	0.988	84.2	13.9	93 E	72*	—	9 23	12 9.32	+3 6.8	4.087	3.086	1.3	21.3	4 E	—	—
12 13	21 8.54	+54 53.5	0.039	0.987	85.8	13.9	92 E	75*	—	10 3	12 22.29	+1 43.4	4.087	3.095	2.1	21.4	6 W	—	—
12 14	21 19.79	+50 43.4	0.038	0.985	87.6	13.9	90 E	78*	1*	10 13	12 35.20	+0 21.6	4.071	3.103	3.9	21.5	12 W	6*	—
12 15	21 29.64	+46 16.5	0.037	0.984	89.6	13.9	88 E	80*	5*	<b>101402 1998 VG<sub>1</sub></b>									
12 16	21 38.29	+41 36.1	0.037	0.982	91.8	13.9	86 E	80*	9*	9 3	12 1.34	+5 41.0	3.790	2.850	6.4	21.5	18 E	5*	11*
12 17	21 45.93	+36 46.2	0.036	0.981	94.1	14.0	84 E	78*	13*	9 13	12 15.03	+4 1.4	3.805	2.833	4.5	21.4	13 E	3*	5*
12 18	21 52.70	+31 51.2	0.036	0.979	96.5	14.1	81 E	74*	17*	9 23	12 28.98	+2 21.4	3.806	2.815	2.7	21.2	8 E	1*	—
12 19	21 58.72	+26 55.9	0.037	0.978	99.0	14.2	79 E	70*	20*	10 3	12 43.17	+0 41.5	3.791	2.796	1.8	21.1	5 E	—	—
12 20	22 4.10	+22 5.1	0.037	0.976	101.4	14.4	76 E	65*	24*	10 13	12 57.57	+0 57.7	3.761	2.775	2.7	21.2	8 W	1*	—
12 21	22 8.91	+17 22.7	0.038	0.974	103.8	14.5	74 E	61*	27*	10 23	13 12.16	-2 35.6	3.716	2.754	4.6	21.2	13 W	7*	—
12 22	22 13.22	+12 52.3	0.039	0.972	106.1	14.7	72 E	57*	30*	11 2	13 26.93	-4 11.7	3.656	2.732	6.6	21.3	18 W	12*	3*
12 23	22 17.09	+8 36.2	0.040	0.970	108.3	14.9	69 E	52*	33*	11 12	13 41.84	-5 45.2	3.582	2.710	8.6	21.3	24 W	17*	7*
12 24	22 20.58	+4 36.0	0.041	0.968	110.4	15.1	67 E	48*	35*	11 22	13 56.86	-7 15.6	3.494	2.686	10.6	21.3	30 W	21*	13*
12 25	22 23.72	+0 52.4	0.043	0.966	112.3	15.3	65 E	45*	37*	12 2	14 11.96	-8 42.3	3.392	2.661	12.6	21.3	36 W	25*	18*
12 26	22 26.54	-2 34.6	0.045	0.964	114.1	15.5	63 E	41*	39*	12 12	14 27.07	-10 4.6	3.279	2.635	14.6	21.3	42 W	28*	25*
12 27	22 29.07	-5 45.6	0.047	0.962	115.8	15.7	62 E	38*	40*	12 22	14 42.13	-11 22.1	3.154	2.609	16.4	21.3	49 W	29*	32*
12 28	22 31.35	-8 41.2	0.049	0.960	117.3	15.9	60 E	35*	41*	1 1	14 57.06	-12 34.4	3.020	2.582	18.1	21.2	55 W	30*	39*
12 29	22 33.38	-11 22.5	0.051	0.958	118.8	16.1	59 E	32*	42*	1 11	15 11.76	-13 41.1	2.877	2.554	19.7	21.1	61 W	30*	47*
12 30	22 35.20	-13 50.6	0.053	0.955	120.1	16.3	57 E	30*	42*	1 21	15 26.08	-14 41.9	2.727	2.525	21.1	21.0	68 W	30*	54*
12 31	22 36.81	-16 6.5	0.056	0.953	121.4	16.5	56 E	27*	42*	<b>190866 2001 TX<sub>45</sub></b>									
1 1	22 38.22	-18 11.4	0.058	0.951	122.6	16.7	55 E	25*	42*	9 3	12 12.04	-2 0.4	3.261	2.367	9.6	21.5	23 E	2*	17*
1 2	22 39.46	-20 6.4	0.061	0.948	123.7	16.8	53 E	23*	42*	9 13	12 29.15	-3 38.3	3.270	2.334	7.7	21.4	18 E	—	12*
1 3	22 40.52	-21 52.3	0.063	0.946	124.8	17.0	52 E	21*	42*	9 23	12 46.82	-5 18.5	3.267	2.300	5.6	21.2	13 E	—	7*
1 4	22 41.41	-23 30.0	0.066	0.943	125.8	17.2	51 E	19*	42*	10 3	13 5.08	-6 59.8	3.253	2.266	3.5	21.1	8 E	—	2*
1 5	22 42.14	-25 0.4	0.069	0.941	126.8	17.4	50 E	18*	41*	10 13	13 23.94	-8 41.2	3.227	2.231	1.4	20.9	3 E	—	—
1 6	22 42.72	-26 24.1	0.072	0.938	127.7	17.5	49 E	16*	41*	10 23	13 43.44	-10 21.4	3.191	2.197	0.8	20.8	2 W	—	—
1 7	22 43.14	-27 41.8	0.074	0.935	128.6	17.7	48 E	15*	40*	11 2	14 3.61	-11 59.1	3.144	2.162	3.0	20.9	7 W	—	—
1 8	22 43.42	-28 54.0	0.077	0.932	129.5	17.8	47 E	13*	40*	11 12	14 24.48	-13 33.1	3.088	2.126	5.2	20.9	11 W	4*	1*
1 9	22 43.55	-30 1.1	0.080	0.930	130.4	18.0	46 E	12*	39*	11 22	14 46.08	-15 1.5	3.023	2.091	7.5	20.9	16 W	8*	5*
1 10	22 43.55	-31 3.7	0.083	0.927	131.2	18.2	45 E	10*	39*	12 2	15 8.44	-16 23.0	2.950	2.056	9.7	20.9	21 W	11*	9*
1 11	22 43.41	-32 2.0	0.086	0.924	132.0	18.3	44 E	9*	38*	12 12	15 31.55	-17 35.8	2.870	2.021	11.9	20.9	25 W	13*	13*
1 13	22 42.73	-33 47.4	0.092	0.918	133.6	18.6	43 E	7*	36*	12 22	15 55.40	-18 38.1	2.783	1.987	14.1	20.9	29 W	15*	18*
1 15	22 41.56	-35 19.1	0.098	0.912	135.1	18.9	41 E	4*	35*	1 1	16 19.97	-19 28.2	2.692	1.953	16.3	20.9	34 W	17*	23*
1 17	22 39.92	-36 39.0	0.105	0.905	136.6	19.2	39 E	2*	33*	1 11	16 45.18	-20 4.5	2.596	1.919	18.4	20.8	38 W	17*	28*
1 19	22 37.85	-37 48.1	0.111	0.899	138.0	19.5	38 E	—	32*	1 21	17 10.96	-20 25.4	2.497	1.887	20.5	20.8	42 W	18*	33*
1 21	22 35.40	-38 47.4	0.118	0.892	139.3	19.8	36 E	—	30*	<b>326769 2003 SE<sub>192</sub></b>									
9 3	11 38.98	+1 46.1	3.351	2.385	5.9	21.4	14 E	—	8*	9 3	12 13.31	-4 47.9	2.974	2.100	11.6	21.5	25 E	—	19*
9 13	11 56.30	+0 11.4	3.339	2.350	3.8	21.2	9 E	—	3*	9 13	12 32.25	-6 47.1	2.978	2.063	9.7	21.4	20 E	—	14*
9 23	12 14.06	+1 26.2	3.315	2.315	1.7	21.0	4 E	—	—	9 23	12 51.94	-8 48.8	2.973	2.026	7.7	21.3	16 E	—	10*
10 3	12 32.28	+3 5.8	3.280	2.279	0.5	20.9	1 W	—	—	10 3	13 12.44	-10 51.8	2.959	1.988	5.8	21.1	12 E	—	5*
10 13	12 51.01	+4 46.3	3.233	2.243	2.7	21.0	6 W	—	—	10 13	13 33.83	-12 54.7	2.935	1.950	3.8	20.9	7 E	—	1*
10 23	13 10.26	+6 26.6	3.175	2.206	4.9	21.0	11 W	4*	—	10 23	13 56.17	-14 55.7	2.904	1.912	2.1	20.8	4 E	—	—
11 2	13 30.07	+8 5.5	3.108	2.170	7.1	21.1	16 W	9*	4*	11 2	14 19.55	-16 53.0	2.865	1.875	1.6	20.7	3 W	—	—
11 12	13 50.49	+9 41.8	3.032	2.133	9.3	21.1	20 W	13*	7*	11 12	14 44.05	-18 44.5	2.819	1.837	3.2	20.7	6 W	—	—
11 22	14 11.54	+11 13.7	2.947	2.095	11.6	21.1	25 W	16*	11*	11 22	15 9.72	-20 27.7	2.768	1.801	5.1	20.7	9 W	—	2*
12 2	14 33.26	+12 40.0	2.855	2.058	13.8	21.0	30 W	19*	15*	12 2	15 36.61	-22 0.0	2.712	1.764					

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

21/22	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°	21/22	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°
<b>369295 2009 SH<sub>18</sub></b>										<b>281365 2008 CM<sub>116</sub></b>									
<i>(continuation)</i>										<i>(continuation)</i>									
1 1	18 32.22	-27 54.1	2.360	1.385	4.0	20.3	6 W	—	—	10 28	15 10.49	-27 52.1	1.971	1.099	18.6	20.0	21 E	—	13*
1 11	19 9.73	-26 56.1	2.356	1.384	4.7	20.4	7 W	—	—	11 2	15 28.47	-28 53.0	1.918	1.041	18.9	19.9	20 E	—	13*
1 21	19 46.32	-25 24.3	2.356	1.388	5.6	20.4	8 W	—	2*	11 7	15 47.91	-29 47.9	1.861	0.982	19.5	19.7	19 E	—	12*
<b>157780 7620 P-L</b>										<b>360337 2001 UR<sub>1</sub></b>									
9 3	12 27.36	-1 55.2	3.164	2.307	11.3	21.4	27 E	5*	21*	9 3	12 56.00	+10 4.5	3.843	3.033	10.1	21.5	32 E	18*	21*
9 13	12 44.22	-3 56.4	3.177	2.272	9.4	21.3	22 E	3*	16*	9 13	13 7.59	+8 4.9	3.867	2.997	8.5	21.4	26 E	15*	15*
9 23	13 1.75	-5 59.4	3.179	2.236	7.4	21.2	17 E	1*	11*	9 23	13 19.69	+6 6.7	3.876	2.960	6.9	21.3	21 E	12*	9*
10 3	13 19.97	-8 3.5	3.169	2.199	5.3	21.1	12 E	—	6*	10 3	13 32.27	+4 9.9	3.870	2.923	5.5	21.2	16 E	10*	3*
10 13	13 38.93	-10 7.7	3.150	2.163	3.2	20.9	7 E	—	1*	10 13	13 45.30	+2 15.0	3.849	2.885	4.4	21.1	13 E	7*	—
10 23	13 58.67	-12 10.8	3.120	2.126	1.1	20.7	2 E	—	—	10 23	13 58.72	+0 22.3	3.812	2.846	4.1	21.0	12 E	4*	—
11 2	14 19.24	-14 11.5	3.081	2.090	1.1	20.6	2 W	—	—	11 2	14 12.53	-1 27.9	3.760	2.806	4.8	21.0	14 W	6*	—
11 12	14 40.69	-16 8.5	3.034	2.054	3.3	20.7	7 W	—	—	11 12	14 26.69	-3 15.3	3.692	2.765	6.2	21.0	18 W	11*	—
11 22	15 3.07	-18 0.1	2.978	2.018	5.4	20.7	11 W	3*	3*	11 22	14 41.17	-4 59.4	3.610	2.723	8.0	21.0	22 W	16*	2*
12 2	15 26.42	-19 44.7	2.915	1.982	7.6	20.8	16 W	6*	7*	12 2	14 55.94	-6 40.3	3.514	2.681	9.9	21.0	28 W	21*	8*
12 12	15 50.78	-21 20.5	2.845	1.947	9.8	20.8	20 W	8*	11*	12 12	15 10.98	-8 17.6	3.404	2.638	11.9	21.0	33 W	24*	14*
12 22	16 16.13	-22 45.5	2.771	1.913	12.0	20.7	24 W	9*	15*	12 22	15 26.22	-9 51.2	3.282	2.594	13.8	20.9	39 W	26*	21*
1 1	16 42.47	-23 57.7	2.691	1.880	14.2	20.7	28 W	10*	20*	1 1	15 41.64	-11 21.3	3.148	2.550	15.8	20.9	45 W	28*	28*
1 11	17 9.72	-24 55.2	2.609	1.848	16.3	20.7	32 W	11*	24*	1 11	15 57.17	-12 48.1	3.004	2.504	17.8	20.8	51 W	29*	36*
1 21	17 37.80	-25 36.1	2.524	1.817	18.4	20.7	36 W	11*	29*	1 21	16 12.75	-14 12.0	2.852	2.459	19.6	20.7	57 W	28*	44*
<b>112127 2002 JW<sub>47</sub></b>										<b>396436 2014 EO<sub>45</sub></b>									
9 3	12 28.30	-3 49.7	2.820	1.982	13.6	21.4	28 E	3*	22*	9 3	13 3.47	-8 52.7	2.278	1.602	22.6	21.5	38 E	6*	32*
9 13	12 48.13	-6 10.0	2.832	1.950	11.8	21.3	23 E	2*	17*	9 13	13 29.27	-11 52.2	2.311	1.594	21.2	21.5	35 E	5*	29*
9 23	13 8.76	-8 31.6	2.836	1.918	9.9	21.2	19 E	—	13*	9 23	13 56.02	-14 45.4	2.344	1.590	19.7	21.4	32 E	3*	26*
10 3	13 30.25	-10 53.3	2.833	1.886	8.0	21.1	15 E	—	9*	10 3	14 23.77	-17 28.9	2.378	1.589	18.2	21.4	30 E	3*	24*
10 13	13 52.68	-13 13.4	2.823	1.855	6.1	21.0	11 E	—	5*	10 13	14 52.53	-19 59.5	2.413	1.593	16.7	21.4	27 E	2*	21*
10 23	14 16.13	-15 30.0	2.807	1.826	4.2	20.8	8 E	—	2*	10 23	15 22.25	-22 13.6	2.450	1.600	15.0	21.4	25 E	1*	19*
11 2	14 40.66	-17 40.9	2.785	1.797	2.3	20.7	4 E	—	—	11 2	15 52.82	-24 8.1	2.488	1.611	13.4	21.4	22 E	—	16*
11 12	15 6.34	-19 43.7	2.758	1.769	1.2	20.5	2 W	—	—	11 12	16 24.09	-25 40.6	2.527	1.626	11.6	21.4	19 E	—	13*
11 22	15 33.20	-21 35.8	2.726	1.743	2.3	20.5	4 W	—	—	11 22	16 55.80	-26 48.9	2.566	1.644	9.9	21.4	17 E	—	11*
12 2	16 1.25	-23 14.4	2.692	1.718	4.2	20.6	7 W	—	1*	12 2	17 27.68	-27 32.0	2.606	1.665	8.1	21.4	14 E	—	8*
12 12	16 30.43	-24 36.7	2.654	1.695	6.1	20.6	11 W	—	4*	12 12	17 59.42	-27 49.8	2.646	1.689	6.3	21.3	11 E	—	5*
12 22	17 0.63	-25 39.9	2.614	1.675	8.0	20.7	14 W	1*	7*	12 22	18 30.68	-27 42.9	2.684	1.716	4.6	21.3	8 E	—	2*
1 1	17 31.68	-26 21.5	2.572	1.656	9.9	20.7	17 W	2*	10*	1 1	19 1.20	-27 13.2	2.721	1.745	3.2	21.3	6 E	—	—
1 11	18 3.34	-26 39.8	2.530	1.640	11.8	20.7	20 W	3*	13*	1 11	19 30.74	-26 22.7	2.755	1.776	2.5	21.3	5 E	—	—
1 21	18 35.30	-26 33.5	2.487	1.627	13.6	20.7	23 W	3*	17*	1 21	19 59.11	-25 14.3	2.785	1.809	3.2	21.4	6 W	—	—
<b>108573 2001 MN<sub>4</sub></b>										<b>176069 2000 WG<sub>68</sub></b>									
9 3	12 33.33	+10 33.6	3.851	2.979	8.6	21.5	26 E	14*	16*	9 3	13 9.56	-9 29.5	2.739	2.059	18.1	21.5	39 E	6*	33*
9 13	12 45.75	+8 38.9	3.895	2.977	6.9	21.4	21 E	12*	10*	9 13	13 29.04	-11 9.6	2.777	2.031	16.3	21.4	35 E	5*	29*
9 23	12 58.40	+6 46.6	3.924	2.973	5.4	21.4	16 E	9*	4*	9 23	13 49.37	-12 49.7	2.806	2.002	14.6	21.4	30 E	4*	24*
10 3	13 11.23	+4 57.1	3.938	2.968	4.2	21.3	12 E	6*	—	10 3	14 10.60	-14 28.1	2.827	1.974	12.7	21.3	26 E	3*	20*
10 13	13 24.21	+3 10.8	3.935	2.963	3.8	21.3	11 E	4*	—	10 13	14 32.76	-16 3.0	2.841	1.946	10.8	21.2	21 E	2*	15*
10 23	13 37.30	+1 28.0	3.917	2.956	4.4	21.3	13 W	5*	—	10 23	14 55.84	-17 32.3	2.846	1.918	8.8	21.1	17 E	1*	11*
11 2	13 50.46	+0 10.9	3.882	2.949	5.7	21.4	17 W	11*	—	11 2	15 19.88	-18 54.1	2.844	1.890	6.8	21.0	13 E	—	7*
11 12	14 3.64	-1 45.5	3.831	2.941	7.4	21.4	22 W	16*	1*	11 12	15 44.86	-20 6.3	2.835	1.864	4.8	20.8	9 E	—	3*
11 22	14 16.78	-3 15.5	3.765	2.931	9.2	21.4	28 W	22*	6*	11 22	16 10.75	-21 6.6	2.819	1.838	2.7	20.7	5 E	—	—
12 2	14 29.82	-4 40.4	3.682	2.921	11.0	21.4	34 W	26*	13*	12 2	16 37.50	-21 52.8	2.798	1.813	0.7	20.4	1 E	—	—
12 12	14 42.68	-6 0.1	3.586	2.910	12.7	21.4	41 W	30*	20*	12 12	17 5.01	-22 23.1	2.772	1.789	1.4	20.5	3 W	—	—
12 22	14 55.26	-7 14.4	3.475	2.897	14.4	21.4	47 W	32*	27*	12 22	17 33.13	-22 35.5	2.740	1.766	3.5	20.6	6 W	—	—
1 1	15 7.44	-8 23.0	3.352	2.884	16.0	21.4	54 W	34*	35*	1 1	18 1.72	-22 28.9	2.705	1.745	5.5	20.6	10 W	1*	2*
1 11	15 19.10	-9 26.1	3.217	2.870	17.4	21.3	61 W	34*	43*	1 11	18 30.59	-22 2.2	2.666	1.725	7.6	20.7	13 W	3*	6*
1 21	15 30.05	-10 23.8	3.073	2.855	18.6	21.3	68 W	34*	52*	1 21	18 59.54	-21 15.1	2.625	1.707	9.6	20.7	17 W	4*	9*
<b>179775 2002 SK<sub>41</sub></b>										<b>434188 2003 AD<sub>23</sub></b>									
9 3	12 37.18	-3 57.3	2.965	2.147	13.5	21.5	30 E	5*	24*	9 3	13 11.80	+3 53.9	1.562	0.953	38.5	21.2	36 E	17*	27*
9 13	12 55.44	-5 57.0	2.982	2.112	11.6	21.4	25 E	3*	19*	9 8	13 21.98	+1 30.8	1.504	0.879	40.2	21.0	34 E	15*	26*
9 23	13 14.47	-7 58.2	2.988	2.077	9.7	21.3	20 E	1*	14*	9 13	13 32.67	-1 4.1	1.439	0.802	42.5	20.8	33 E	13*	25*
10 3	13 34.31	-9 59.7	2.986	2.041	7.7	21.2	16 E	—	10*	9 18	13 43.82	-3 53.1	1.365	0.723	45.8	20.5	31 E	11*	24*
10 13	13 55.01	-12 0.3	2.974	2.006	5.6	21.0	11 E	—	5*	9 23	13 55.28	-6 58.9	1.282	0.644	50.5	20.3	30 E	9*	23*
10 23	14 16.63	-13 58.4	2.954	1.971	3.6	20.9	7 E	—	1*	9 28	14 6.65	-10 24.5	1.088	0.567	57.2	20.0	28 E	7*	22*
11 2	14 39.22	-15 52.2	2.926	1.936	1.5	20.7	3 E	—	—	10 3	14 17.05	-14 12.1	1.084	0.494	67.1	19.8	27 E	4*	21*
11 12	15 2.84	-17 40.0	2.890	1.901	0.7	20.5	1 W	—	—	10 5	14 20.55	-15 49.1	1.038	0.468	72.2	19.8	26 E	3*	20*
11 22	15 27.52	-19 19.5	2.848	1.867	2.8	20.6	5 W	—	—	10 7	14 23.41	-17 28.7	0.992	0.444	78.1	19.7	26 E	1*	20*
12 2	15 53.30	-20 48.5	2.800	1.833	4.9	20.7	9 W	1*	1*	10 9	14 25.36	-19 10.0	0.943	0.424	84.9	19.8	25 E	—	19*
12 12	16 20.15	-22 4.8	2.747	1.801	7.0	20.7	13 W	3*	5*										
12 22	16 48.02	-23 5.8	2.690	1.770	9.1	20.7	17 W	5*	8*										
1 1	17 16.84	-23 49.5	2.630	1.740	11.2	20.7	20 W	6*	12*										
1 11	17 46.46	-24 13.6	2.568	1.712	13.3	20.7	24 W	7*	16										

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

21/22	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°	21/22	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°
<b>434188 2003 AD<sub>23</sub></b> (continuation)										<b>524392 2002 AU<sub>5</sub></b> (continuation)									
10 11	14 26.13	-20 51.1	0.894	0.408	92.4	19.9	24 E	—	18*	12 30	20 14.56	-4 0.4	0.401	0.670	131.6	20.6	31 E	24*	6*
10 13	14 25.36	-22 29.5	0.845	0.397	100.7	20.1	23 E	—	16*	1 1	20 19.93	-1 35.4	0.370	0.696	132.3	20.6	32 E	25*	5*
10 15	14 22.75	-24 1.6	0.797	0.391	109.3	20.4	22 E	—	14*	1 3	20 25.71	+1 7.9	0.339	0.722	132.3	20.5	33 E	27*	3*
10 17	14 18.08	-25 23.5	0.752	0.391	118.0	20.8	20 E	—	12*	1 5	20 32.11	+4 13.8	0.311	0.749	131.6	20.3	35 E	29*	1*
10 19	14 11.26	-26 30.4	0.709	0.397	126.2	21.4	19 E	—	9*	1 7	20 39.39	+7 47.8	0.284	0.777	130.1	20.0	37 E	31*	—
<b>216646 2003 QT<sub>56</sub></b>										<b>217105 2001 XS<sub>95</sub></b>									
9 3	13 26.32	-3 1.4	2.513	1.872	20.7	21.5	41 E	14*	34*	9 3	14 10.15	-14 56.0	2.844	2.411	20.0	21.5	55 E	12*	49*
9 13	13 47.12	-5 12.8	2.546	1.844	19.1	21.4	37 E	12*	30*	9 13	14 25.64	-16 0.1	2.901	2.369	18.8	21.4	49 E	10*	43*
9 23	14 8.86	-7 23.0	2.573	1.817	17.5	21.4	33 E	11*	26*	9 23	14 42.30	-17 5.5	2.949	2.327	17.3	21.4	44 E	9*	38*
10 3	14 31.57	-9 30.3	2.594	1.790	15.9	21.3	29 E	10*	22*	10 3	15 0.10	-18 10.7	2.986	2.284	15.7	21.3	38 E	7*	32*
10 13	14 55.31	-11 32.6	2.610	1.764	14.2	21.2	26 E	9*	19*	10 13	15 19.02	-19 13.8	3.013	2.241	14.0	21.2	33 E	6*	27*
10 23	15 20.07	-13 27.7	2.621	1.740	12.5	21.1	22 E	7*	15*	10 23	15 39.03	-20 12.9	3.030	2.198	12.2	21.1	28 E	5*	22*
11 2	15 45.87	-15 13.2	2.627	1.717	10.7	21.0	19 E	6*	11*	11 2	16 0.11	-21 6.3	3.036	2.156	10.3	21.0	23 E	4*	16*
11 12	16 12.72	-16 46.8	2.630	1.696	8.9	20.9	15 E	5*	7*	11 12	16 22.25	-21 52.0	3.033	2.113	8.3	20.9	18 E	2*	11*
11 22	16 40.52	-18 5.9	2.629	1.677	7.1	20.8	12 E	4*	4*	11 22	16 45.38	-22 28.0	3.020	2.071	6.3	20.8	13 E	1*	7*
12 2	17 9.21	-19 8.5	2.626	1.660	5.4	20.7	9 E	2*	—	12 2	17 9.45	-22 52.4	2.999	2.030	4.2	20.6	9 E	—	2*
12 12	17 38.66	-19 52.5	2.620	1.645	3.7	20.6	6 E	—	—	12 12	17 34.39	-23 3.4	2.970	1.989	2.1	20.4	4 E	—	—
12 22	18 8.66	-20 16.3	2.612	1.632	2.2	20.5	4 E	—	—	12 22	18 0.08	-22 59.4	2.933	1.949	0.2	20.1	0 W	—	—
1 1	18 39.03	-20 19.2	2.603	1.622	1.8	20.5	3 W	—	—	1 1	18 26.40	-22 38.8	2.890	1.911	2.2	20.3	4 W	—	—
1 11	19 9.53	-20 0.8	2.592	1.614	2.9	20.5	5 W	—	—	1 11	18 53.21	-22 0.7	2.842	1.874	4.3	20.3	8 W	—	1*
1 21	19 39.94	-19 21.6	2.581	1.610	4.5	20.6	7 W	—	—	1 21	19 20.34	-21 4.4	2.790	1.838	6.4	20.3	12 W	1*	5*
<b>455432 2003 RP<sub>8</sub></b>										<b>309728 2008 JF</b>									
9 3	13 35.61	-31 7.6	1.644	1.362	37.8	21.5	56 E	—	45*	9 3	14 27.21	-9 4.9	1.733	1.458	35.6	21.5	57 E	19*	50*
9 13	14 11.14	-31 16.0	1.642	1.314	37.8	21.4	53 E	—	44*	9 13	14 49.19	-12 44.7	1.747	1.408	35.2	21.4	54 E	16*	47*
9 23	14 48.47	-31 0.7	1.640	1.268	37.7	21.3	51 E	—	42*	9 23	15 13.48	-16 21.6	1.756	1.359	34.7	21.3	51 E	14*	44*
10 3	15 27.13	-30 15.4	1.637	1.225	37.6	21.2	48 E	1*	41*	10 3	15 40.33	-19 51.9	1.759	1.314	34.3	21.2	48 E	12*	42*
10 13	16 6.54	-28 55.3	1.636	1.187	37.3	21.1	46 E	4*	40*	10 13	16 10.01	-23 10.7	1.758	1.273	33.9	21.2	45 E	10*	39*
10 23	16 46.05	-26 57.9	1.636	1.155	36.9	21.1	44 E	8*	38*	10 23	16 42.77	-26 11.6	1.754	1.236	33.5	21.1	43 E	8*	37*
11 2	17 25.10	-24 23.0	1.638	1.129	36.5	21.0	43 E	12*	36*	11 2	17 18.76	-28 46.6	1.749	1.206	33.2	21.0	42 E	7*	36*
11 12	18 3.28	-21 13.2	1.641	1.110	36.0	21.0	41 E	16*	33*	11 12	17 57.98	-30 46.6	1.743	1.182	33.0	21.0	41 E	7*	35*
11 22	18 40.37	-17 32.8	1.647	1.100	35.6	20.9	40 E	20*	30*	11 22	18 40.04	-32 2.1	1.738	1.166	32.9	20.9	40 E	7*	34*
12 2	19 16.35	-13 27.4	1.656	1.099	35.1	20.9	40 E	24*	26*	12 2	19 24.20	-32 24.6	1.737	1.158	32.7	20.9	39 E	7*	33*
12 12	19 51.38	-9 3.0	1.668	1.107	34.6	21.0	40 E	27*	21*	12 12	20 9.36	-31 49.1	1.741	1.159	32.5	20.9	39 E	8*	33*
12 22	20 25.67	+4 25.9	1.685	1.124	34.2	21.0	40 E	30*	17*	12 22	20 54.23	-30 15.2	1.752	1.169	32.1	20.9	39 E	10*	32*
1 1	20 59.52	+0 17.7	1.706	1.148	33.6	21.1	40 E	33*	13*	1 1	21 37.68	-27 47.6	1.773	1.186	31.6	21.0	39 E	12*	32*
1 11	21 33.21	+5 1.8	1.735	1.179	33.0	21.1	41 E	34*	9*	1 11	22 18.94	-24 35.7	1.804	1.212	30.8	21.0	39 E	14*	31*
1 21	22 6.94	+9 40.2	1.771	1.216	32.2	21.2	41 E	35*	6*	1 21	22 57.62	-20 51.1	1.845	1.244	29.8	21.1	39 E	16*	30*
<b>351237 2004 QL<sub>12</sub></b>										<b>369986 1998 SO</b>									
9 3	13 36.02	-16 44.4	2.584	2.055	21.5	21.5	48 E	5*	42*	9 3	15 45.76	+34 18.3	0.299	0.964	89.8	21.1	73 E	63*	27*
9 13	13 54.71	-18 43.1	2.628	2.021	20.0	21.4	44 E	3*	37*	9 4	15 57.51	+32 37.8	0.299	0.974	88.0	21.0	75 E	64*	29*
9 23	14 14.72	-20 41.4	2.664	1.987	18.5	21.4	39 E	2*	33*	9 5	16 8.79	+30 53.4	0.299	0.983	86.2	21.0	77 E	65*	31*
10 3	14 36.06	-22 37.2	2.692	1.953	16.9	21.3	35 E	—	28*	9 6	16 19.58	+29 6.1	0.300	0.992	84.4	20.9	78 E	65*	33*
10 13	14 58.82	-24 28.6	2.712	1.920	15.3	21.2	31 E	—	24*	9 7	16 29.87	+27 16.8	0.302	1.001	82.7	20.9	80 E	65*	36*
10 23	15 23.00	-26 13.0	2.725	1.888	13.6	21.1	27 E	—	20*	9 8	16 39.69	+25 26.5	0.305	1.009	81.0	20.9	82 E	64*	38*
11 2	15 48.64	-27 47.7	2.732	1.857	12.0	21.1	23 E	—	16*	9 9	16 49.03	+23 35.9	0.308	1.018	79.3	20.9	83 E	64*	40*
11 12	16 15.73	-29 9.8	2.733	1.828	10.3	21.0	19 E	—	13*	9 10	16 57.91	+21 45.9	0.312	1.026	77.7	20.8	85 E	63*	42*
11 22	16 44.21	-30 16.3	2.728	1.799	8.7	20.8	16 E	—	10*	9 11	17 6.35	+19 57.1	0.317	1.034	76.2	20.8	86 E	62*	44*
12 2	17 13.94	-31 4.1	2.719	1.773	7.2	20.7	13 E	—	7*	9 12	17 14.38	+18 10.2	0.322	1.042	74.7	20.8	87 E	61*	45*
12 12	17 44.74	-31 30.5	2.706	1.748	6.0	20.6	11 E	—	4*	9 13	17 22.01	+16 25.6	0.327	1.050	73.4	20.8	88 E	59*	47*
12 22	18 16.31	-31 33.3	2.690	1.725	5.0	20.6	9 E	—	1*	9 15	17 36.16	+13 4.9	0.340	1.065	70.8	20.9	91 E	57*	51*
1 1	18 48.34	-31 10.8	2.672	1.704	4.7	20.5	8 E	—	—	9 17	17 49.00	+9 57.1	0.355	1.079	68.5	20.9	92 E	54*	54*
1 11	19 20.48	-30 22.4	2.652	1.686	5.0	20.5	9 W	—	—	9 19	18 0.68	+7 3.5	0.371	1.093	66.6	21.0	94 E	52*	57*
1 21	19 52.36	-29 8.5	2.631	1.671	5.9	20.5	10 W	—	2*	9 21	18 11.35	+4 24.0	0.389	1.106	64.8	21.1	95 E	49*	60*
<b>524392 2002 AU<sub>5</sub></b>										<b>523806 2002 WW<sub>17</sub></b>									
9 3	14 7.34	-20 42.3	1.933	1.615	31.4	21.4	57 E	7*	50*	9 3	23 33.11	-27 49.4	4.065	5.010	4.5	24.3	157 W	17	88
9 13	14 23.79	-21 41.5	1.918	1.502	31.3	21.2	51 E	5*	45*	9 13	23 25.76	-28 30.1	4.078	5.011	4.8	24.4	155 W	16	87
9 23	14 42.81	-22 47.2	1.883	1.384	31.3	21.0	46 E	4*	39*	9 23	23 18.42	-28 58.7	4.121	5.011	5.8	24.4	149 E	16	87
10 3	15 4.72	-23 55.9	1.828	1.260	31.5	20.8	41 E	4*	35*	10 3	23 11.55	-29 13.8	4.190	5.010	7.2	24.5	141 E	16	87
10 13	15 29.96	-25 3.4	1.752	1.131	32.2	20.4	37 E	3*	31*	10 13	23 5.56	-29 15.2	4.284	5.009	8.5	24.6	132 E	16	87
10 18	15 44.02	-25																	

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

2021	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	$45^\circ$ - $26^\circ$	2021	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	$45^\circ$ - $26^\circ$
<b>194386 2001 VG<sub>5</sub></b>									<b>438908 2009 XO</b>								
9 3	23 35.59	+16 35.7	2.751	3.679	7.1	22.5	153 W	62 47	9 13	0 11.34	+0 56.4	1.828	2.818	4.6	24.4	167 W	46 63
9 13	23 26.61	+15 48.1	2.706	3.669	5.3	22.3	160 W	61 48	9 18	0 5.65	+0 19.7	1.810	2.811	2.3	24.2	174 W	45 64
9 23	23 17.49	+14 45.6	2.690	3.657	4.9	22.3	162 E	60 49	9 23	23 59.78	-0 18.1	1.800	2.803	0.1	23.9	180 W	45 64
10 3	23 8.91	+13 32.8	2.704	3.644	6.3	22.4	156 E	59 50	9 28	23 53.87	-0 56.2	1.797	2.795	2.4	24.2	173 E	44 65
10 13	23 1.51	+12 14.9	2.748	3.629	8.5	22.5	147 E	57 52	10 3	23 48.05	-1 33.5	1.802	2.786	4.7	24.3	167 E	43 66
<b>466130 2012 FZ<sub>23</sub></b>									<b>477796 2011 CQ<sub>46</sub></b>								
9 3	23 37.77	+15 59.2	2.964	3.892	6.7	24.0	153 W	61 48	9 13	0 11.87	+37 4.7	2.789	3.596	10.9	22.7	138 W	82 27
9 13	23 27.97	+13 59.9	2.938	3.907	4.5	23.9	162 W	59 50	9 18	0 6.56	+37 9.3	2.764	3.596	10.3	22.6	140 W	82 27
9 23	23 18.25	+11 48.1	2.946	3.922	4.0	23.9	164 E	57 52	9 23	0 1.09	+37 7.4	2.745	3.596	9.7	22.6	143 W	82 27
10 3	23 9.25	+9 30.9	2.990	3.935	5.5	24.0	158 E	55 54	9 28	23 55.55	+36 59.2	2.732	3.596	9.3	22.6	145 E	82 27
10 13	23 1.53	+7 15.4	3.068	3.947	7.8	24.2	148 E	52 57	10 3	23 50.08	+36 44.7	2.726	3.595	9.1	22.6	145 E	82 27
<b>525933 2005 UE<sub>90</sub></b>									<b>200840 2001 XN<sub>254</sub></b>								
9 3	23 40.58	+25 1.9	2.725	3.597	9.3	22.5	145 W	70 39	9 13	0 18.91	+4 54.8	2.646	3.623	4.5	22.9	164 W	50 59
9 13	23 32.56	+24 15.9	2.668	3.586	7.6	22.4	152 W	69 40	9 23	0 10.17	+3 59.4	2.622	3.623	1.3	22.7	175 W	49 60
9 23	23 24.30	+23 9.2	2.637	3.573	6.7	22.3	155 E	68 41	10 3	0 1.27	+3 0.6	2.630	3.623	2.4	22.8	171 E	48 61
10 3	23 16.50	+21 45.6	2.635	3.560	7.1	22.3	154 E	67 42	10 13	23 52.91	+2 3.1	2.669	3.621	5.6	23.0	159 E	47 62
10 13	23 9.82	+20 10.9	2.661	3.546	8.6	22.4	148 E	65 44	10 23	23 45.72	+1 11.4	2.738	3.617	8.5	23.2	148 E	46 63
<b>507366 2011 XO<sub>3</sub></b>									<b>374188 2005 AD<sub>3</sub></b>								
9 3	23 42.66	+18 18.3	4.304	5.208	5.4	24.0	151 W	63 46	9 13	0 33.12	+24 41.0	2.479	3.367	9.4	22.6	147 W	70 39
9 13	23 35.80	+17 59.8	4.246	5.192	4.2	23.9	158 W	63 46	9 23	0 23.49	+24 10.2	2.454	3.390	7.2	22.5	155 W	69 40
9 23	23 28.74	+17 31.1	4.217	5.176	3.6	23.8	161 E	63 46	10 3	0 13.57	+23 20.5	2.456	3.413	5.8	22.5	160 E	68 41
10 3	23 21.90	+16 54.3	4.219	5.159	4.2	23.9	158 E	62 47	10 13	0 4.19	+22 16.1	2.488	3.434	6.2	22.5	158 E	67 42
10 13	23 15.68	+16 12.0	4.250	5.141	5.5	23.9	150 E	61 48	10 23	23 56.12	+21 3.1	2.549	3.454	8.0	22.7	151 E	66 43
<b>441641 2008 WZ<sub>13</sub></b>									<b>454225 2013 JQ<sub>28</sub></b>								
9 3	23 43.88	-13 58.9	1.936	2.921	5.2	22.8	165 W	31 78	9 13	0 33.51	-32 46.1	2.251	3.142	10.1	23.3	147 W	12 83
9 8	23 38.11	-14 33.1	1.941	2.934	4.0	22.7	168 W	30 79	9 18	0 28.41	-33 17.8	2.255	3.144	10.1	23.3	147 W	12 83
9 13	23 32.24	-15 4.7	1.954	2.947	3.9	22.8	169 W	30 79	9 23	0 23.12	-33 43.0	2.265	3.146	10.3	23.3	146 W	11 82
9 18	23 26.41	-15 32.7	1.974	2.959	4.7	22.8	166 E	29 80	9 28	0 17.75	-34 1.2	2.281	3.148	10.8	23.4	144 W	11 82
9 23	23 20.77	-15 56.8	2.002	2.971	6.2	23.0	161 E	29 80	10 3	0 12.44	-34 12.0	2.304	3.150	11.4	23.4	142 E	11 82
9 28	23 15.41	-16 16.3	2.037	2.982	7.8	23.1	156 E	29 80	10 8	0 7.31	-34 15.3	2.332	3.151	12.1	23.5	138 E	11 82
10 3	23 10.45	-16 31.2	2.079	2.992	9.4	23.2	151 E	28 81	10 13	0 2.49	-34 11.1	2.366	3.152	12.9	23.5	135 E	11 82
<b>463216 2012 DU<sub>30</sub></b>									<b>349063 2006 XA</b>								
9 3	23 44.44	-17 39.2	2.183	3.161	5.4	22.9	163 W	27 82	9 13	0 38.55	+18 7.1	2.463	3.380	8.2	22.5	151 W	63 46
9 8	23 39.99	-18 36.5	2.198	3.181	4.8	22.9	165 W	26 83	9 23	0 29.33	+17 17.5	2.421	3.387	5.5	22.3	161 W	62 47
9 13	23 35.46	-19 30.0	2.221	3.201	4.9	23.0	164 W	25 84	10 3	0 19.63	+16 13.2	2.410	3.392	3.8	22.2	167 E	61 48
9 18	23 30.95	-20 18.9	2.252	3.220	5.7	23.1	161 E	25 84	10 13	0 10.27	+14 58.6	2.429	3.396	4.9	22.3	163 E	60 49
9 23	23 26.57	-21 2.6	2.289	3.239	6.8	23.2	158 E	24 85	10 23	0 2.01	+13 40.3	2.479	3.399	7.5	22.5	154 E	59 50
9 28	23 22.42	-21 40.6	2.335	3.258	8.1	23.3	153 E	23 86	<b>506732 2006 VW<sub>2</sub></b>								
10 3	23 18.58	-22 12.7	2.386	3.277	9.4	23.4	148 E	23 86	9 13	0 39.12	+24 44.1	0.650	1.587	20.8	22.3	146 W	70 39
<b>376778 2000 JY<sub>8</sub></b>									<b>415267 2013 BQ<sub>45</sub></b>								
9 3	23 53.80	-21 1.9	3.182	4.141	5.0	23.2	159 W	24 85	9 18	0 31.25	+23 59.0	0.625	1.582	17.7	22.1	151 W	69 40
9 8	23 50.01	-21 35.3	3.163	4.128	4.6	23.2	161 W	23 86	9 23	0 22.43	+22 55.7	0.605	1.577	14.8	21.9	156 W	68 41
9 13	23 46.04	-22 6.6	3.151	4.115	4.6	23.2	161 W	23 86	9 28	0 13.01	+21 34.2	0.590	1.570	12.4	21.8	160 E	67 42
9 18	23 41.97	-22 35.3	3.147	4.102	4.9	23.2	159 W	22 87	10 3	0 3.41	+19 56.1	0.579	1.562	11.4	21.7	162 E	65 44
9 23	23 37.88	-23 0.8	3.150	4.089	5.6	23.2	156 E	22 87	10 8	23 54.08	+18 4.5	0.575	1.554	12.1	21.7	161 E	63 46
9 28	23 33.83	-23 22.7	3.160	4.075	6.5	23.2	153 E	22 87	10 13	23 45.49	+16 4.1	0.576	1.545	14.5	21.8	157 E	61 48
10 3	23 29.90	-23 40.8	3.177	4.062	7.5	23.3	148 E	21 88	10 18	23 37.99	+14 0.0	0.582	1.535	17.7	21.9	152 E	59 50
10 8	23 26.16	-23 54.9	3.201	4.047	8.5	23.3	143 E	21 88	10 23	23 31.83	+11 57.2	0.593	1.524	21.3	22.0	146 E	57 52
<b>486725 2014 DZ<sub>17</sub></b>									<b>349063 2006 XA</b>								
9 3	23 55.64	-9 9.1	1.483	2.466	6.8	22.2	163 W	36 73	9 13	0 50.60	+17 45.9	2.309	3.217	9.1	23.2	150 W	63 46
9 8	23 50.11	-9 33.9	1.461	2.456	4.7	22.1	168 W	35 74	9 23	0 40.64	+17 26.8	2.280	3.240	6.1	23.0	160 W	62 47
9 13	23 44.22	-9 57.9	1.446	2.446	3.2	22.0	172 W	35 74	10 3	0 30.08	+16 52.8	2.280	3.263	4.0	22.9	167 E	62 47
9 18	23 38.13	-10 20.2	1.438	2.436	3.5	22.0	172 E	35 74	10 13	0 19.81	+16 7.6	2.311	3.284	4.6	23.0	165 E	61 48
9 23	23 32.00	-10 39.8	1.437	2.426	5.2	22.0	167 E	34 75	10 23	0 10.67	+15 16.7	2.373	3.304	7.2	23.2	156 E	60 49
9 28	23 26.02	-10 56.0	1.442	2.415	7.4	22.1	162 E	34 75	<b>376707 1995 OO</b>								
10 3	23 20.34	-11 8.0	1.455	2.404	9.7	22.3	156 E	34 75	9 13	0 52.99	+19 39.3	2.851	3.741	8.2	22.6	148 W	65 44
10 8	23 15.12	-11 15.5	1.474	2.393	12.0	22.4	150 E	34 75	9 23	0 42.57	+19 12.9	2.808	3.758	5.7	22.5	158 W	64 45
10 13	23 10.50	-11 18.1	1.499	2.381	14.2	22.5	144 E	34 75	10 3	0 31.54	+18 32.2	2.796	3.772	3.9	22.4	165 E	64 45
<b>357005 1999 HA<sub>2</sub></b>									<b>509821 2008 WQ<sub>63</sub></b>								
9 3	23 59.96	-9 59.9	2.080	3.056	5.9	22.4	162 W	35 74	10 13	0 20.69	+17 40.3	2.817	3.786	4.2	22.4	164 E	63 46
9 8	23 55.48	-10 51.2	2.033	3.023	4.4	22.2	167 W	34 75	10 23	0 10.77	+16 41.9	2.870	3.797	6.3	22.6	155 E	62 47
9 13	23 50.60	-11 43.5	1.994	2.990	3.4	22.1	170 W	33 76	<b>509821 2008 WQ<sub>63</sub></b>								
9 18	23 45.42	-12 35.7	1.962	2.956	3.6	22.1	169 W	32 77	9 13	0 53.57	+6 52.3	1.841	2.787	8.7	24.2	155 W	52 57
9 23	23 40.04	-13 26.6	1.939	2.922	4.9	22.1	166 E	32 77	9 23	0 41.96	+5 42.3	1.796	2.785	4.3	24.0	168 W	51 58
9 28	23 34.58	-14 15.3	1.922	2.887	6.6	22.1	161 E	31 78	10 3	0 29.35	+4 23.7	1.781	2.781	5.6	23.7	178 E	49 60
10 3																	

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

21/22	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°-26°	2021	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°-26°
<b>376891 2001 XF<sub>104</sub></b>									<b>6178 1986 DA</b> (continuation)								
9 13	0 53.72	+19 48.6	2.435	3.328	9.3	21.4	148 W	65 44	10 23	0 43.81	+0 8.3	3.506	4.455	4.3	22.2	160 E	45 64
9 23	0 46.03	+19 15.9	2.360	3.309	6.6	21.2	158 W	64 45	11 2	0 37.47	-0 24.2	3.574	4.452	6.6	22.3	149 E	45 64
10 3	0 37.40	+18 26.4	2.312	3.290	4.4	21.0	165 W	63 46	<b>453319 2008 VM<sub>77</sub></b>								
10 13	0 28.59	+17 23.1	2.294	3.270	4.4	21.0	166 E	62 47	9 13	1 15.83	-28 9.8	1.945	2.821	12.1	21.9	144 W	17 88
10 23	0 20.44	+16 11.3	2.305	3.248	6.7	21.1	158 E	61 48	9 18	1 11.20	-28 46.5	1.928	2.816	11.6	21.9	146 W	16 87
11 2	0 13.64	+14 57.4	2.345	3.226	9.5	21.2	147 E	60 49	9 23	1 6.10	-29 17.9	1.918	2.811	11.3	21.9	147 W	16 87
11 12	0 8.74	+13 47.5	2.410	3.203	12.2	21.4	137 E	59 50	9 28	1 0.64	-29 42.8	1.914	2.806	11.3	21.8	147 W	15 86
<b>490791 2010 VE<sub>1</sub></b>									10 3	0 54.95	-30 0.5	1.916	2.801	11.6	21.9	146 W	15 86
9 13	0 53.99	-4 6.7	1.580	2.539	8.7	23.4	157 W	41 68	10 8	0 49.18	-30 10.1	1.924	2.795	12.1	21.9	144 E	15 86
9 18	0 49.10	-4 38.6	1.550	2.528	6.7	23.3	163 W	40 69	10 13	0 43.48	-30 11.2	1.938	2.789	12.9	21.9	142 E	15 86
9 23	0 43.73	-5 10.8	1.526	2.516	4.8	23.1	168 W	40 69	10 18	0 38.01	-30 3.9	1.958	2.783	13.7	22.0	138 E	15 86
9 28	0 38.00	-5 42.3	1.509	2.503	3.7	23.0	171 W	39 70	10 23	0 32.90	-29 48.3	1.983	2.776	14.7	22.0	135 E	15 86
10 3	0 32.07	-6 12.1	1.499	2.490	4.0	23.0	170 E	39 70	10 28	0 28.27	-29 24.8	2.013	2.770	15.7	22.1	131 E	16 87
10 8	0 26.09	-6 39.2	1.497	2.477	5.7	23.1	166 E	38 71	11 2	0 24.19	-28 54.0	2.048	2.763	16.6	22.2	127 E	16 87
10 13	0 20.23	-7 2.5	1.501	2.464	7.8	23.2	160 E	38 71	<b>17188 1999 WC<sub>2</sub></b>								
10 18	0 14.68	-7 21.4	1.513	2.450	10.0	23.3	155 E	38 71	9 13	1 19.84	+45 35.4	2.947	3.609	13.3	22.4	124 W	89 18
<b>397237 2006 KZ<sub>112</sub></b>									9 18	1 15.00	+45 42.3	2.899	3.606	12.7	22.3	128 W	89 18
9 13	1 2.00	-13 1.5	2.071	3.008	8.4	21.3	154 W	32 77	9 23	1 9.68	+45 42.7	2.855	3.602	12.0	22.3	132 W	89 18
9 18	0 56.52	-14 18.7	2.014	2.969	7.4	21.1	158 W	31 78	9 28	1 3.97	+45 36.1	2.817	3.597	11.3	22.2	135 W	89 18
9 23	0 50.42	-15 37.0	1.965	2.928	6.7	21.0	160 W	29 80	10 3	0 57.97	+45 22.2	2.784	3.593	10.7	22.2	138 W	90 19
9 28	0 43.75	-16 55.0	1.925	2.887	6.8	20.9	160 W	28 81	10 8	0 51.82	+45 0.8	2.757	3.587	10.2	22.1	141 E	90 19
10 3	0 36.63	-18 11.0	1.893	2.845	7.6	20.9	158 W	27 82	10 13	0 45.66	+44 32.0	2.737	3.582	9.7	22.1	143 E	90 19
10 8	0 29.19	-19 23.3	1.870	2.803	9.0	20.9	154 E	26 83	10 18	0 39.64	+43 56.2	2.723	3.576	9.5	22.1	144 E	89 20
10 13	0 21.59	-20 30.3	1.855	2.760	10.7	20.9	149 E	24 85	10 23	0 33.89	+43 14.0	2.716	3.570	9.4	22.1	144 E	88 21
10 18	0 14.00	-21 30.8	1.848	2.716	12.5	20.9	144 E	23 86	10 28	0 28.53	+42 26.0	2.716	3.563	9.6	22.1	143 E	87 22
10 23	0 6.59	-22 23.7	1.848	2.671	14.5	21.0	138 E	23 86	11 2	0 23.66	+41 33.4	2.722	3.556	9.9	22.1	142 E	87 22
10 28	23 59.53	-23 8.5	1.855	2.625	16.4	21.0	132 E	22 87	<b>488579 2002 FQ<sub>4</sub></b>								
11 2	23 52.96	-23 44.8	1.867	2.578	18.1	21.1	126 E	21 88	9 13	1 20.97	+8 43.1	0.628	1.575	19.7	21.3	148 W	54 55
11 7	23 47.01	-24 12.6	1.884	2.531	19.8	21.1	120 E	21 88	9 18	1 16.55	+4 29.8	0.618	1.588	15.3	21.1	155 W	49 60
11 12	23 41.78	-24 32.4	1.905	2.483	21.3	21.1	114 E	20 89	9 23	1 11.27	+0 8.1	0.616	1.601	11.1	21.0	162 W	45 64
11 17	23 37.35	-24 44.5	1.928	2.433	22.6	21.1	109 E	20 89	9 28	1 5.40	-4 12.6	0.621	1.613	8.3	20.9	167 W	41 68
11 22	23 33.75	-24 49.7	1.953	2.383	23.8	21.2	103 E	20 89	10 3	0 59.20	-8 22.0	0.635	1.625	8.3	20.9	166 W	37 72
11 27	23 30.99	-24 48.7	1.979	2.332	24.8	21.2	98 E	20 89	10 8	0 53.01	-12 11.3	0.657	1.637	10.9	21.1	162 E	33 76
12 2	23 29.08	-24 41.9	2.005	2.279	25.6	21.2	93 E	20 86*	10 13	0 47.14	-15 34.2	0.686	1.648	14.3	21.4	156 E	29 80
12 7	23 28.00	-24 30.1	2.031	2.226	26.3	21.2	88 E	20 80*	10 18	0 41.85	-18 27.4	0.722	1.659	17.7	21.6	150 E	27 82
12 12	23 27.74	-24 13.9	2.054	2.171	26.8	21.2	83 E	21 75*	10 23	0 37.35	-20 50.6	0.763	1.670	20.9	21.9	143 E	24 85
12 17	23 28.25	-23 53.7	2.076	2.116	27.1	21.1	79 E	21 70*	10 28	0 33.76	-22 45.1	0.809	1.681	23.6	22.1	137 E	22 87
12 22	23 29.49	-23 29.9	2.095	2.059	27.4	21.1	74 E	21 65*	11 2	0 31.17	-24 13.5	0.859	1.691	26.0	22.3	132 E	21 88
12 27	23 31.43	-23 3.1	2.110	2.000	27.5	21.1	70 E	22 60*	<b>416231 2003 AJ<sub>73</sub></b>								
1 1	23 34.04	-22 33.2	2.121	1.941	27.6	21.0	66 E	22 56*	9 13	1 21.05	+9 55.0	1.485	2.397	13.0	22.1	148 W	55 54
1 6	23 37.30	-22 0.7	2.128	1.880	27.5	20.9	62 E	23 52*	9 23	1 10.50	+9 35.3	1.416	2.383	8.3	21.8	160 W	55 54
1 11	23 41.16	-21 25.7	2.130	1.817	27.4	20.9	58 E	23 48*	10 3	0 57.70	+9 1.6	1.372	2.367	3.2	21.5	172 W	54 55
1 16	23 45.60	-20 48.2	2.127	1.753	27.3	20.8	55 E	22 45*	10 13	0 43.93	+8 18.4	1.357	2.350	3.0	21.4	173 E	53 56
1 21	23 50.61	-20 8.4	2.119	1.687	27.1	20.7	51 E	22 41*	10 23	0 30.79	+7 32.8	1.370	2.331	8.3	21.7	160 E	53 56
<b>544324 2014 UM<sub>93</sub></b>									11 2	0 19.68	+6 52.6	1.411	2.310	13.3	21.9	148 E	52 57
9 13	1 2.03	+32 35.8	1.131	1.987	20.3	21.4	137 W	78 31	<b>432655 2010 XL<sub>69</sub></b>								
9 18	0 58.04	+31 59.7	1.100	1.987	18.3	21.2	142 W	77 32	9 13	1 25.14	-19 49.0	0.886	1.812	17.9	21.7	146 W	25 84
9 23	0 53.39	+31 10.3	1.073	1.988	16.3	21.1	146 W	76 33	9 18	1 19.25	-20 53.9	0.878	1.817	16.2	21.6	150 W	24 85
9 28	0 48.24	+30 7.4	1.051	1.988	14.2	21.0	151 W	75 34	9 23	1 12.51	-21 51.7	0.875	1.823	15.0	21.6	152 W	23 86
10 3	0 42.81	+28 51.4	1.035	1.987	12.3	20.9	155 W	74 35	9 28	1 5.15	-22 40.0	0.878	1.828	14.5	21.5	153 W	22 87
10 8	0 37.32	+27 23.4	1.025	1.987	10.8	20.8	158 E	72 37	10 3	0 57.43	-23 16.8	0.886	1.832	14.7	21.6	152 W	22 87
10 13	0 32.02	+25 45.4	1.021	1.986	10.1	20.8	160 E	71 38	10 8	0 49.66	-23 40.6	0.899	1.836	15.5	21.6	151 E	21 88
10 18	0 27.15	+23 59.9	1.023	1.986	10.4	20.8	159 E	69 40	10 13	0 42.17	-23 50.6	0.918	1.840	16.9	21.7	148 E	21 88
10 23	0 22.89	+22 10.1	1.032	1.985	11.5	20.9	157 E	67 42	10 18	0 35.23	-23 47.1	0.941	1.843	18.5	21.8	144 E	21 88
10 28	0 19.39	+20 18.9	1.047	1.984	13.2	21.0	153 E	65 44	10 23	0 29.06	-23 30.9	0.969	1.846	20.3	22.0	140 E	21 88
11 2	0 16.73	+18 29.4	1.068	1.982	15.3	21.1	148 E	63 46	10 28	0 23.82	-23 3.1	1.001	1.848	22.1	22.1	136 E	22 87
11 7	0 15.00	+16 44.1	1.095	1.981	17.4	21.2	143 E	62 47	11 2	0 19.60	-22 25.2	1.037	1.850	23.8	22.2	131 E	23 86
11 12	0 14.23	+15 5.4	1.127	1.979	19.5	21.3	138 E	60 49	<b>308041 2004 TN</b>								
11 17	0 14.39	+13 34.8	1.164	1.977	21.4	21.5	133 E	59 50	9 13	1 30.13	+4 30.8	1.107	2.028	15.5	21.5	147 W	50 59
<b>285263 1998 QE<sub>2</sub></b>									9 23	1 15.66	+4 5.1	1.041	2.015	9.5	21.1	161 W	49 60
9 13	1 8.02	+24 22.9	1.924	2.786	12.8	21.6	142 W	69 40	10 3	0 57.74	+3 29.3	1.000	1.998	2.8	20.7	174 W	48 61
9 18	1 3.02	+23 59.3	1.914	2.813	11.1	21.5	147 W	69 40	10 13	0 38.30	+2 50.7	0.988	1.979	4.9	20.8	170 E	48 61
9																	

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

2021	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	$45^\circ$ - $26^\circ$	21/22	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	$45^\circ$ - $26^\circ$
<b>408795 2000 JH<sub>75</sub></b>									<b>376964 2002 HD</b> (continuation)								
9 13	1 33.56	+24 11.6	1.935	2.764	14.2	21.8	138 W	69   40	11 12	1 10.84	-14 20.9	1.786	2.598	15.1	21.1	137 E	31   78
9 23	1 26.60	+22 57.5	1.864	2.772	10.8	21.6	149 W	68   41	11 17	1 6.00	-13 39.5	1.808	2.578	16.5	21.1	132 E	31   78
10 3	1 17.95	+21 18.1	1.818	2.778	7.2	21.4	160 W	66   43	11 22	1 1.82	-12 52.3	1.835	2.557	17.9	21.2	127 E	32   77
10 13	1 8.51	+19 17.4	1.800	2.784	4.2	21.3	168 E	64   45	11 27	0 58.35	-11 59.9	1.867	2.535	19.2	21.2	122 E	33   76
10 23	0 59.35	+17 3.8	1.812	2.789	4.8	21.3	167 E	62   47	12 2	0 55.63	-11 3.0	1.902	2.514	20.4	21.3	118 E	34   75
11 2	0 51.44	+14 47.8	1.854	2.793	8.1	21.5	157 E	60   49	12 7	0 53.69	-10 2.3	1.940	2.493	21.4	21.4	113 E	35   74
									12 12	0 52.50	- 8 58.2	1.981	2.471	22.3	21.4	108 E	36   73
									12 17	0 52.06	- 7 51.4	2.024	2.449	23.0	21.5	104 E	37   72*
<b>106538 2000 WK<sub>63</sub></b>									<b>332408 2007 MM<sub>13</sub></b>								
9 13	1 36.17	+ 2 28.3	3.227	4.103	7.8	22.4	146 W	47   62	9 13	2 31.46	+54 37.9	1.444	2.020	27.9	21.4	110 W	80   9
9 23	1 28.95	+ 1 28.5	3.177	4.123	5.3	22.2	158 W	46   63	9 18	2 27.93	+55 13.3	1.377	2.002	27.4	21.2	113 W	80   9
10 3	1 20.77	+ 0 26.4	3.157	4.142	2.8	22.1	168 W	45   64	9 23	2 22.64	+55 41.1	1.311	1.982	26.8	21.1	117 W	79   8
10 13	1 12.17	+ 0 34.0	3.170	4.160	2.0	22.0	172 E	44   65	9 28	2 15.47	+55 58.8	1.248	1.962	26.0	20.9	121 W	79   8
10 23	1 3.73	- 1 28.7	3.215	4.176	4.0	22.2	163 E	44   65	10 3	2 6.37	+56 3.2	1.187	1.940	25.1	20.8	125 W	79   8
11 2	0 55.99	- 2 14.5	3.292	4.191	6.5	22.4	152 E	43   66	10 8	1 55.46	+55 50.8	1.129	1.918	24.1	20.6	128 W	79   8
									10 13	1 43.02	+55 17.6	1.076	1.894	23.1	20.4	132 W	80   9
<b>277958 2006 SP<sub>134</sub></b>									<b>304330 2006 SX<sub>217</sub></b>								
9 13	1 43.58	+10 59.2	2.520	3.371	10.6	22.0	142 W	56   53	11 7	0 37.58	+45 51.5	0.884	1.761	21.3	19.8	140 E	89   18
9 23	1 34.18	+10 22.7	2.464	3.396	7.4	21.8	154 W	55   54	11 12	0 27.94	+42 40.9	0.865	1.731	22.6	19.8	138 E	88   21
10 3	1 23.41	+ 9 37.1	2.438	3.420	3.8	21.7	179 W	55   54	11 17	0 20.26	+39 14.1	0.853	1.700	24.4	19.7	135 E	84   25
10 13	1 12.04	+ 8 45.8	2.443	3.441	0.3	21.4	179 E	54   55	11 22	0 14.58	+35 37.7	0.847	1.668	26.7	19.8	131 E	81   28
10 23	1 0.93	+ 7 53.5	2.482	3.460	3.6	21.7	167 E	53   56	11 27	0 10.79	+31 58.1	0.847	1.635	29.3	19.8	126 E	77   32
11 2	0 50.88	+ 7 4.9	2.554	3.478	6.9	22.0	155 E	52   57	12 2	0 8.78	+28 21.3	0.854	1.600	32.0	19.8	121 E	73   36
									12 7	0 8.38	+24 52.1	0.865	1.565	34.7	19.9	115 W	70   39*
<b>419464 2010 CC<sub>180</sub></b>									<b>477386 2009 VU<sub>25</sub></b>								
9 13	1 43.89	+20 50.8	1.608	2.447	16.1	22.4	138 W	66   43	9 13	2 34.83	+ 0 21.9	0.976	1.811	24.4	21.3	132 W	45   64
9 23	1 33.73	+21 15.6	1.543	2.456	12.3	22.2	149 W	66   43	9 23	2 22.89	+ 0 39.6	0.914	1.824	18.8	21.0	144 W	46   63
10 3	1 21.03	+21 18.4	1.502	2.463	8.2	22.0	159 W	66   43	10 3	2 5.74	+ 0 58.4	0.870	1.835	12.1	20.6	157 W	46   63
10 13	1 6.99	+20 58.5	1.487	2.469	5.4	21.9	167 E	66   43	10 13	1 44.76	+ 1 23.1	0.852	1.842	5.5	20.3	170 W	46   63
10 23	0 53.15	+20 19.8	1.502	2.473	6.5	21.9	164 E	65   44	10 23	1 22.65	+ 1 58.3	0.861	1.847	6.2	20.4	169 E	47   62
11 2	0 41.01	+19 30.0	1.546	2.476	10.1	22.2	154 E	65   44	11 2	1 2.42	+ 2 46.3	0.899	1.849	12.8	20.8	156 E	48   61
									11 12	0 46.43	+ 3 47.1	0.962	1.849	19.0	21.1	143 E	49   60
<b>480823 1998 YW<sub>5</sub></b>									<b>380198 2000 YZ<sub>27</sub></b>								
9 13	2 1.26	+20 35.6	0.910	1.766	24.1	22.2	134 W	66   43	9 13	2 11.60	-12 34.6	2.263	3.082	12.7	21.5	138 W	32   77
9 18	1 52.49	+19 43.7	0.892	1.790	20.6	22.0	141 W	65   44	9 23	2 4.84	-13 18.7	2.160	3.046	10.5	21.3	146 W	32   77
9 23	1 42.63	+18 40.8	0.879	1.812	16.8	21.9	149 W	64   45	10 3	1 55.79	-13 56.6	2.081	3.009	8.6	21.1	153 W	31   78
9 28	1 31.95	+17 27.4	0.872	1.833	12.8	21.8	156 W	62   47	10 13	1 44.97	-14 21.3	2.029	2.971	7.7	21.0	157 W	31   78
10 3	1 20.80	+16 5.0	0.872	1.853	8.8	21.6	163 W	61   48	10 23	1 33.25	-14 26.7	2.006	2.933	8.6	20.9	154 E	31   78
10 8	1 9.56	+14 36.0	0.880	1.872	5.1	21.5	170 W	60   49	11 2	1 21.67	-14 8.8	2.011	2.893	10.8	21.0	147 E	31   78
10 13	0 58.65	+13 3.7	0.895	1.890	3.4	21.5	174 E	58   51	11 12	1 11.27	-13 26.4	2.042	2.853	13.5	21.1	138 E	32   77
10 18	0 48.43	+11 31.5	0.918	1.906	5.5	21.7	169 E	57   52	11 22	1 2.88	-12 21.4	2.096	2.811	16.1	21.2	128 E	33   76
10 23	0 39.18	+10 2.6	0.948	1.921	8.9	21.9	163 E	55   54	12 2	0 56.99	-10 57.3	2.168	2.769	18.4	21.3	118 E	34   75
10 28	0 31.08	+ 8 39.7	0.986	1.935	12.2	22.1	156 E	54   55	12 12	0 53.80	- 9 17.9	2.253	2.726	20.1	21.4	108 E	36   73
11 2	0 24.26	+ 7 24.7	1.030	1.947	15.3	22.4	149 E	52   57									
<b>469929 2006 AK<sub>8</sub></b>									<b>376964 2002 HD</b>								
9 13	2 2.30	-68 27.7	0.527	1.287	47.2	21.9	110 W	-   48	9 13	2 15.69	-14 29.6	2.019	2.834	14.2	21.5	136 W	31   78
9 18	1 55.41	-69 58.3	0.551	1.291	47.6	22.1	109 W	-   46	9 18	2 12.60	-14 51.5	1.966	2.816	13.1	21.4	141 W	30   79
9 23	1 45.68	-71 2.3	0.574	1.293	47.9	22.2	107 W	-   45	9 23	2 8.80	-15 12.4	1.917	2.797	12.0	21.3	145 W	30   79
9 28	1 33.76	-71 40.3	0.597	1.295	48.2	22.3	105 W	-   44	9 28	2 4.34	-15 31.1	1.874	2.778	10.9	21.2	148 W	29   80
10 3	1 20.64	-71 52.7	0.619	1.297	48.5	22.3	104 W	-   44	10 3	1 59.26	-15 46.7	1.838	2.759	10.0	21.1	151 W	29   80
10 8	1 7.49	-71 40.5	0.640	1.298	48.7	22.4	103 W	-   44	10 8	1 53.64	-15 58.1	1.807	2.739	9.3	21.0	154 W	29   80
10 13	0 55.40	-71 5.3	0.659	1.299	48.9	22.5	101 E	-   45	10 13	1 47.60	-16 4.4	1.784	2.720	9.0	20.9	155 W	29   80
10 18	0 45.17	-70 9.6	0.678	1.299	49.1	22.6	100 E	-   46	10 18	1 41.28	-16 4.6	1.767	2.700	9.2	20.9	154 W	29   80
10 23	0 37.17	-68 55.8	0.696	1.298	49.3	22.6	99 E	-   47	10 23	1 34.84	-15 58.2	1.758	2.680	9.9	20.9	152 E	29   80
10 28	0 31.47	-67 26.0	0.712	1.297	49.4	22.7	98 E	-   49	10 28	1 28.41	-15 44.7	1.755	2.660	10.9	20.9	150 E	29   80
									11 2	1 22.17	-15 23.9	1.759	2.640	12.2	21.0	146 E	30   79
									11 7	1 16.27	-14 55.8	1.770	2.619	13.6	21.0	141 E	30   79
									1 11	2 14.45	+ 3 19.6	1.207	1.707	34.3	21.5	102 E	48   60*

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

21/22	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	$45^\circ$ - $26^\circ$	21/22	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	$45^\circ$ - $26^\circ$
<b>244790 2003 SQ<sub>210</sub></b>									<b>523817 2009 TK</b> (continuation)								
9 13	2 36.52	+20 36.7	1.698	2.438	19.3	21.4	127 W	66 43	10 7	5 48.59	+1 29.5	0.130	1.042	67.6	20.3	105 W	46 63
9 23	2 31.91	+20 14.1	1.639	2.474	15.9	21.2	138 W	65 44	10 8	5 51.45	-1 6.5	0.132	1.042	67.6	20.4	105 W	44 65
10 3	2 24.48	+19 33.2	1.597	2.509	11.8	21.0	149 W	65 44	10 9	5 54.16	-3 37.1	0.134	1.043	67.5	20.4	105 W	41 68
10 13	2 14.90	+18 35.0	1.579	2.544	7.2	20.8	161 W	64 45	10 10	5 56.73	-6 2.1	0.137	1.043	67.5	20.5	105 W	39 70
10 23	2 4.27	+17 23.8	1.587	2.577	2.7	20.6	173 W	62 47	10 11	5 59.15	-8 21.2	0.140	1.044	67.5	20.5	105 W	37 72
11 2	1 53.82	+16 6.3	1.624	2.610	3.2	20.8	172 E	61 48	10 12	6 1.45	-10 34.4	0.143	1.044	67.4	20.5	105 W	34 75
11 12	1 44.70	+14 50.6	1.691	2.642	7.4	21.1	160 E	60 49	10 13	6 3.62	-12 41.6	0.146	1.045	67.4	20.6	105 W	32 77
11 22	1 37.79	+13 44.2	1.784	2.672	11.3	21.4	148 E	59 50	10 18	6 12.78	-21 51.5	0.165	1.049	67.1	20.9	104 W	23 86
<b>453775 2011 HQ<sub>5</sub></b>									10 23	6 19.46	-28 56.2	0.186	1.054	66.6	21.1	104 W	16 87
9 13	2 51.64	+3 37.5	1.590	2.343	19.9	21.5	128 W	49 60	10 28	6 23.98	-34 24.0	0.209	1.061	65.8	21.3	103 W	11 82
9 23	2 47.34	+2 45.2	1.534	2.376	16.4	21.3	138 W	48 61	11 2	6 26.56	-38 38.4	0.232	1.069	64.8	21.6	103 W	6 77
10 3	2 40.01	+1 47.2	1.495	2.408	12.4	21.1	149 W	47 62	<b>73865 1997 AV</b>								
10 13	2 30.22	+0 49.5	1.480	2.440	8.3	21.0	159 W	46 63	9 13	3 42.11	+20 59.6	2.670	3.187	17.0	21.4	112 W	66 43
10 23	2 19.02	+0 0.7	1.491	2.470	5.4	20.9	167 W	45 64	9 23	3 41.81	+21 5.3	2.529	3.175	15.6	21.2	122 W	66 43
11 2	2 7.66	-0 37.1	1.530	2.499	6.3	21.0	164 E	44 65	10 3	3 39.09	+21 3.2	2.401	3.162	13.5	21.0	132 W	66 43
11 12	1 57.40	+0 55.1	1.597	2.527	9.7	21.3	155 E	44 65	10 13	3 33.90	+20 52.5	2.291	3.148	10.9	20.8	143 W	66 43
11 22	1 49.23	+0 53.0	1.689	2.554	13.2	21.5	144 E	44 65	10 23	3 26.43	+20 32.7	2.203	3.133	7.7	20.5	155 W	66 43
<b>392357 2010 GR<sub>66</sub></b>									11 2	3 17.15	+20 3.8	2.141	3.117	4.1	20.3	167 W	65 44
9 13	3 10.67	+8 58.4	1.798	2.483	20.1	21.3	122 W	54 55	11 7	3 12.07	+19 46.4	2.122	3.108	2.1	20.1	173 W	65 44
9 23	3 8.62	+9 57.7	1.653	2.441	17.8	21.0	132 W	55 54	11 12	3 6.85	+19 27.4	2.110	3.099	0.6	20.0	178 E	64 45
10 3	3 3.13	+11 0.2	1.524	2.398	14.6	20.6	143 W	56 53	11 17	3 1.62	+19 7.4	2.106	3.090	2.0	20.1	174 E	64 45
10 13	2 53.94	+12 6.6	1.415	2.356	10.5	20.3	155 W	57 52	11 22	2 56.51	+18 46.9	2.109	3.081	4.0	20.2	167 E	64 45
10 23	2 41.30	+13 16.9	1.332	2.313	5.4	19.9	167 W	58 51	11 27	2 51.63	+18 26.3	2.121	3.071	5.9	20.3	161 E	63 46
11 2	2 26.03	+14 29.7	1.277	2.270	0.3	19.4	179 E	59 50	12 2	2 47.09	+18 6.3	2.139	3.062	7.8	20.4	155 E	63 46
11 7	2 17.86	+15 6.4	1.262	2.248	3.2	19.6	173 E	60 49	12 12	2 39.43	+17 30.4	2.197	3.041	11.2	20.6	143 E	63 46
11 12	2 9.66	+15 43.0	1.254	2.227	6.2	19.7	166 E	61 48	12 22	2 34.09	+17 2.9	2.277	3.020	14.1	20.8	131 E	62 47
11 17	2 1.68	+16 19.7	1.253	2.205	9.2	19.8	159 E	61 48	1 1	2 31.29	+16 46.2	2.375	2.997	16.4	20.9	121 E	62 47
11 22	1 54.14	+16 56.3	1.259	2.184	12.1	19.9	152 E	62 47	1 11	2 31.06	+16 41.3	2.486	2.974	18.1	21.1	110 E	62 47*
11 27	1 47.26	+17 33.0	1.272	2.162	14.8	20.0	146 E	63 46	1 21	2 33.27	+16 47.9	2.604	2.949	19.1	21.2	101 E	62 46*
12 2	1 41.19	+18 10.1	1.291	2.140	17.3	20.1	140 E	63 46	<b>8201 1994 AH<sub>2</sub></b>								
12 12	1 31.99	+19 27.0	1.343	2.098	21.7	20.3	128 E	64 45	9 13	3 43.83	+10 3.3	2.705	3.244	16.5	21.3	114 W	55 54
12 22	1 27.06	+20 49.6	1.409	2.055	25.2	20.5	117 E	66 43	9 23	3 43.34	+9 22.0	2.522	3.188	15.2	21.1	124 W	54 55
1 1	1 26.36	+22 19.8	1.484	2.014	27.7	20.6	108 E	67 41*	10 3	3 40.47	+8 30.5	2.353	3.131	13.3	20.8	134 W	54 55
1 11	1 29.64	+23 58.6	1.564	1.973	29.5	20.7	99 E	69 37*	10 13	3 35.03	+7 29.9	2.203	3.071	10.8	20.5	145 W	52 57
1 21	1 36.52	+25 46.2	1.643	1.933	30.6	20.8	91 E	71 32*	10 23	3 27.06	+6 22.1	2.077	3.010	7.9	20.2	155 W	51 58
<b>360436 2002 JE<sub>70</sub></b>									11 2	3 16.88	+5 10.6	1.978	2.947	5.1	20.0	165 W	50 59
9 13	3 13.19	+8 16.5	1.558	2.254	22.4	21.4	122 W	53 56	11 7	3 11.15	+4 35.2	1.941	2.915	4.4	19.8	167 W	50 59
9 23	3 10.77	+7 38.9	1.504	2.298	19.0	21.3	132 W	53 56	11 12	3 5.15	+4 0.9	1.911	2.882	4.6	19.8	166 E	49 60
10 3	3 5.07	+6 53.0	1.465	2.341	15.0	21.1	143 W	52 57	11 17	2 59.00	+3 28.7	1.889	2.849	5.8	19.8	163 E	48 61
10 13	2 56.53	+6 2.9	1.446	2.384	10.5	21.0	154 W	51 58	11 22	2 52.86	+2 59.2	1.875	2.815	7.5	19.9	158 E	48 61
10 23	2 46.05	+5 14.3	1.452	2.426	6.2	20.8	165 W	50 59	12 2	2 41.13	+2 11.3	1.869	2.746	11.4	20.0	147 E	47 62
11 2	2 34.83	+4 33.2	1.484	2.467	4.1	20.8	170 W	50 59	12 12	2 31.02	+1 41.4	1.890	2.675	15.2	20.1	135 E	47 62
11 12	2 24.19	+4 4.9	1.545	2.507	6.7	21.0	163 E	49 60	12 22	2 23.32	+1 31.5	1.930	2.602	18.5	20.2	123 E	47 62
11 22	2 15.26	+3 52.8	1.632	2.547	10.5	21.4	152 E	49 60	1 1	2 18.47	+1 41.0	1.985	2.526	21.1	20.2	112 E	47 62
12 2	2 8.75	+3 57.7	1.744	2.585	13.9	21.7	141 E	49 60	1 11	2 16.61	+2 8.4	2.048	2.449	23.1	20.3	102 E	47 61*
<b>492912 2014 RX<sub>1</sub></b>									1 21	2 17.68	+2 51.1	2.112	2.368	24.5	20.3	92 E	48 57*
9 13	3 19.72	+17 25.9	1.170	1.867	28.4	21.4	118 W	62 47	<b>464984 2006 AA<sub>97</sub></b>								
9 23	3 20.58	+18 0.0	1.116	1.901	24.8	21.2	127 W	63 46	9 13	3 45.00	+12 20.8	1.181	1.828	30.4	21.5	113 W	57 52
10 3	3 17.21	+18 21.3	1.073	1.936	20.3	21.0	138 W	63 46	9 23	3 56.57	+11 59.6	1.071	1.797	28.9	21.2	120 W	57 52
10 13	3 9.78	+18 28.5	1.045	1.971	14.9	20.8	149 W	63 46	10 3	4 5.62	+11 23.1	0.969	1.767	26.7	20.9	128 W	56 53
10 23	2 59.19	+18 21.8	1.036	2.006	8.9	20.6	162 W	63 46	10 13	4 11.51	+10 32.5	0.879	1.738	23.6	20.5	136 W	56 53
11 2	2 46.94	+18 3.3	1.052	2.041	2.7	20.3	174 W	63 46	10 23	4 13.74	+9 31.4	0.801	1.711	19.7	20.2	145 W	55 54
11 7	2 40.76	+17 51.1	1.069	2.059	1.2	20.3	178 E	63 46	10 28	4 13.39	+8 58.5	0.767	1.699	17.4	20.0	149 W	54 55
11 12	2 34.88	+17 38.0	1.092	2.077	3.8	20.5	172 E	63 46	11 2	4 12.06	+8 25.3	0.738	1.686	15.0	19.8	154 W	53 56
11 17	2 29.51	+17 25.1	1.122	2.095	6.6	20.8	166 E	62 47	11 7	4 9.79	+7 53.1	0.713	1.674	12.6	19.6	158 W	53 56
11 22	2 24.79	+17 13.2	1.158	2.113	9.3	21.0	160 E	62 47	11 12	4 6.72	+7 23.3	0.692	1.663	10.3	19.5	162 W	52 57
11 27	2 20.84	+17 3.0	1.200	2.130	11.8	21.2	154 E	62 47	11 17	4 3.01	+6 57.3	0.677	1.652	8.7	19.3	165 W	52 57
12 2	2 17.74	+16 55.2	1.247	2.148	14.1	21.3	148 E	62 47	11 22	3 58.88	+6 36.6	0.666	1.642	8.2	19.3	166 W	52 57
<b>523817 2009 TK</b>									11 27	3 54.56	+6 22.3	0.660	1.633	9.1	19.3	165 E	51 58
9 13	3 32.43	+58 50.7	0.166	1.049	70.5	21.0	101 W	76 5	12 2	3 50.32	+6 15.6	0.659	1.624	11.2	19.3	161 E	51 58
9 15	3 50.07	+56 5.7	0.158	1.048	70.4	20.9	101 W	79 8	12 12	3 43.19	+6 27.0	0.670	1.608	16.6	19.6	152 E	51 58
9 17	4 6.47	+52 53.0	0.151	1.046	70.3	20.8	102 W	82 11	12 22	3 39.28	+7 11.7	0.698	1.595	22.0	19.8	143 E	52 57
9 19	4 21.59	+49 11.6	0.144	1.045	70.0	20.6	102 W	86 15	1 1	3 39.56	+8 24.5	0.740	1.585	26.8	20.1	133 E	53 56
9 21	4 35.44	+45 1.4	0.138	1.043	69.7	20.5	103 W	90 19	1 6	3 41.39	+9 9.3	0.765	1.582	28.8	20.2	129 E	54 55
9 23	4 48.07	+40 23.1	0.133	1.042	69.4	20.4	103 W	85 24	1 11	3 44.35	+9 58.3	0.793	1.579	30.6	20.3	125 E	55 54
9 25	4 59.55	+35 19.2	0.128	1.042	69.0	20.4	104 W	80 29	1 16	3 48.39	+10 50.5	0.822	1.577	32.2	20.4	121 E	56 53
9 27	5 9.94	+29 53.9	0.126	1.041	68.7	20.3	1										

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

21/22	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°-26°	21/22	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°-26°	
<b>405403 2004 PJ<sub>50</sub></b> (continuation)									<b>408982 2002 SP</b> (continuation)									
10 3	3 50.62	+33 33.0	1.199	1.960	24.4	21.1	126 W	79 30	9 30	7 51.75	+56 36.9	0.353	1.006	79.2	21.1	81 W	69*	4*
10 8	3 49.01	+34 7.9	1.174	1.976	22.6	21.0	131 W	79 30	10 1	8 9.82	+56 44.4	0.350	0.996	80.8	21.1	79 W	68*	3*
10 13	3 46.22	+34 37.9	1.153	1.992	20.5	20.9	136 W	80 29	10 2	8 28.23	+56 42.0	0.347	0.986	82.3	21.2	78 W	66*	1*
10 18	3 42.34	+35 2.0	1.136	2.008	18.3	20.8	141 W	80 29	10 3	8 46.77	+56 29.1	0.345	0.976	83.9	21.2	76 W	64*	—
10 23	3 37.44	+35 19.4	1.122	2.024	16.1	20.8	146 W	80 29	10 4	9 5.21	+56 5.7	0.344	0.966	85.6	21.2	74 W	62*	—
10 28	3 31.69	+35 29.3	1.114	2.040	13.8	20.7	151 W	80 29	10 5	9 23.34	+55 31.7	0.343	0.956	87.2	21.2	73 W	61*	—
11 2	3 25.28	+35 31.0	1.111	2.056	11.5	20.6	156 W	81 28	10 6	9 40.97	+54 47.7	0.343	0.946	88.9	21.3	71 W	59*	—
11 7	3 18.47	+35 24.3	1.114	2.072	9.6	20.5	160 W	80 29	10 7	9 57.93	+53 54.1	0.344	0.935	90.5	21.3	69 W	57*	—
11 12	3 11.54	+35 9.6	1.123	2.088	8.2	20.5	162 W	80 29	10 8	10 14.09	+52 51.8	0.345	0.925	92.2	21.4	68 W	55*	—
11 17	3 4.81	+34 47.7	1.138	2.104	7.8	20.5	163 E	80 29	10 9	10 29.39	+51 41.8	0.346	0.914	93.8	21.4	66 W	54*	—
11 22	2 58.51	+34 19.8	1.159	2.120	8.4	20.6	162 E	79 30	<b>377732 2005 XJ<sub>8</sub></b>									
11 27	2 52.87	+33 47.3	1.187	2.136	9.7	20.8	159 E	79 30	9 13	4 43.28	-5 50.7	1.956	2.357	24.8	21.5	100 W	39*	70
12 2	2 48.05	+33 12.0	1.220	2.152	11.4	20.9	154 E	78 31	9 23	4 49.79	-7 20.3	1.788	2.296	24.7	21.2	107 W	38	71
12 7	2 44.17	+32 55.4	1.260	2.168	13.3	21.1	150 E	78 31	10 3	4 54.03	-9 5.8	1.626	2.233	24.1	20.9	114 W	36	73
12 12	2 41.31	+31 59.1	1.304	2.184	15.1	21.2	145 E	77 32	10 13	4 55.39	-11 5.5	1.473	2.168	23.1	20.6	121 W	34	75
12 17	2 39.48	+31 24.4	1.354	2.200	16.8	21.4	140 E	76 33	10 23	4 53.20	-13 15.0	1.332	2.099	21.8	20.3	128 W	32	77
<b>368160 1999 HW<sub>2</sub></b>									10 28	4 50.56	-14 21.2	1.266	2.064	21.1	20.1	132 W	31	78
9 13	3 51.46	-1 20.5	2.501	3.041	17.7	21.4	113 W	44 65	11 2	4 46.78	-15 26.7	1.205	2.027	20.5	20.0	134 W	30	79
9 23	3 51.16	-3 7.3	2.421	3.074	16.1	21.3	122 W	42 67	11 7	4 41.80	-16 29.6	1.148	1.991	19.9	19.8	137 W	29	80
10 3	3 48.52	-4 59.6	2.356	3.106	14.1	21.2	131 W	40 69	11 12	4 35.61	-17 27.5	1.096	1.953	19.5	19.6	139 W	28	81
10 13	3 43.60	-6 51.9	2.311	3.138	11.9	21.1	140 W	38 71	11 17	4 28.24	-18 18.1	1.048	1.914	19.4	19.5	140 W	27	82
10 23	3 36.74	-8 37.3	2.289	3.169	9.9	21.0	147 W	36 73	11 22	4 19.76	-18 58.7	1.006	1.875	19.7	19.4	140 W	26	83
11 2	3 28.48	-10 9.1	2.294	3.198	8.6	21.0	151 W	35 74	11 27	4 10.33	-19 26.6	0.969	1.835	20.4	19.3	139 E	26	83
11 12	3 19.54	-11 20.7	2.326	3.227	8.6	21.1	151 W	34 75	12 2	4 0.17	-19 39.2	0.938	1.795	21.7	19.2	138 E	25	84
11 22	3 10.76	-12 8.1	2.386	3.255	9.7	21.2	146 E	33 76	12 7	3 49.57	-19 34.5	0.912	1.753	23.4	19.1	135 E	25	84
12 2	3 2.90	-12 30.2	2.472	3.282	11.3	21.3	139 E	32 77	12 12	3 38.88	-19 11.2	0.891	1.711	25.5	19.1	132 E	26	83
12 12	2 56.57	-12 28.3	2.580	3.308	13.0	21.5	131 E	33 76	12 17	3 28.45	-18 28.8	0.874	1.668	27.9	19.1	128 E	27	82
<b>216773 2006 BR<sub>8</sub></b>									12 22	3 18.61	-17 28.0	0.861	1.624	30.5	19.0	123 E	28	81
9 13	4 8.28	-5 8.6	2.084	2.594	21.5	21.4	109 W	40 69	12 27	3 9.63	-16 9.9	0.852	1.579	33.2	19.0	119 E	29	80
9 23	4 10.98	-7 30.0	1.971	2.585	20.3	21.2	117 W	38 71	1 1	3 1.71	-14 36.1	0.846	1.534	35.9	19.0	114 E	30	79
10 3	4 10.97	-10 4.6	1.870	2.574	18.7	21.1	125 W	35 74	1 6	2 55.02	-12 48.4	0.842	1.488	38.7	19.0	109 E	32	77
10 13	4 8.02	-12 46.0	1.787	2.562	16.9	20.9	132 W	32 77	1 11	2 49.62	-10 48.8	0.839	1.441	41.4	19.0	104 E	34	75
10 23	4 2.11	-15 24.7	1.723	2.549	15.2	20.8	138 W	30 79	1 16	2 45.51	-8 39.1	0.836	1.394	44.1	19.0	100 E	36	72*
11 2	3 53.53	-17 49.2	1.683	2.534	14.2	20.7	141 W	27 82	1 21	2 42.67	-6 20.7	0.834	1.346	46.7	19.0	95 E	39	68*
11 12	3 42.98	-19 46.7	1.666	2.518	14.1	20.6	142 W	25 84	<b>468804 2012 HF<sub>52</sub></b>									
11 22	3 31.56	-21 7.2	1.673	2.501	15.1	20.6	139 E	24 85	9 13	4 54.45	+11 46.8	1.810	2.166	27.5	21.5	96 W	56*	52
12 2	3 20.55	-21 45.7	1.703	2.482	16.9	20.7	133 E	23 86	9 23	5 1.70	+10 17.3	1.736	2.208	26.1	21.4	104 W	55	54
12 12	3 11.12	-21 42.4	1.751	2.462	18.9	20.8	126 E	23 86	10 3	5 5.92	+8 37.2	1.666	2.251	24.2	21.3	113 W	54	55
12 22	3 4.18	-21 2.5	1.815	2.440	20.8	21.0	118 E	24 85	10 13	5 6.87	+6 49.2	1.604	2.293	21.7	21.2	122 W	52	57
1 1	3 0.15	-19 53.5	1.890	2.417	22.4	21.1	110 E	25 84	10 23	5 4.49	+4 57.9	1.555	2.336	18.6	21.1	131 W	50	59
1 11	2 59.17	-18 22.7	1.973	2.392	23.6	21.2	103 E	27 82	11 2	4 58.93	+3 9.0	1.522	2.378	15.2	20.9	141 W	48	61
1 21	3 1.11	-16 37.4	2.059	2.366	24.5	21.3	96 E	28 80*	11 12	4 50.73	+1 30.1	1.510	2.419	11.8	20.8	150 W	47	62
<b>505461 2013 TZ<sub>80</sub></b>									11 22	4 40.82	+0 8.9	1.523	2.460	9.2	20.8	156 W	45	64
9 13	4 23.30	+17 9.6	1.514	2.000	29.3	21.4	103 W	62 47	12 2	4 30.37	-0 48.5	1.562	2.501	8.8	20.9	157 E	44	65
9 23	4 36.50	+17 28.7	1.377	1.959	28.8	21.1	110 W	62 47	12 12	4 20.62	-1 18.8	1.628	2.541	10.4	21.0	152 E	44	65
10 3	4 48.01	+17 41.2	1.247	1.919	27.8	20.8	117 W	63 46	12 22	4 12.62	-1 22.6	1.719	2.581	13.0	21.3	144 E	44	65
10 13	4 57.28	+17 48.3	1.126	1.879	26.0	20.5	124 W	63 46	<b>528476 2008 UD<sub>4</sub></b>									
10 23	5 3.77	+17 52.3	1.015	1.841	23.4	20.2	133 W	63 46	9 13	5 3.57	+20 17.7	1.285	1.678	36.8	21.5	93 W	65*	44
11 2	5 6.90	+17 55.3	0.916	1.804	19.8	19.8	142 W	63 46	9 23	5 19.13	+21 18.0	1.217	1.700	35.6	21.3	99 W	66	43
11 12	5 6.23	+17 59.9	0.833	1.769	15.3	19.4	152 W	63 46	10 3	5 31.83	+22 16.2	1.151	1.723	33.9	21.2	106 W	67	42
11 22	5 1.79	+18 8.9	0.768	1.736	9.7	19.0	163 W	63 46	10 13	5 41.00	+23 15.1	1.087	1.749	31.4	21.0	114 W	68	41
11 27	4 58.34	+18 15.6	0.742	1.721	6.6	18.7	168 W	63 46	10 23	5 46.05	+24 17.2	1.028	1.775	28.1	20.9	123 W	69	40
12 2	4 54.26	+18 24.0	0.722	1.706	3.6	18.5	174 W	63 46	11 2	5 46.41	+25 23.5	0.978	1.804	23.9	20.7	133 W	70	39
12 7	4 49.77	+18 34.3	0.707	1.691	2.4	18.4	176 E	64 45	11 12	5 41.77	+26 31.9	0.940	1.833	18.7	20.4	143 W	72	37
12 12	4 45.15	+18 46.7	0.697	1.678	4.9	18.5	172 E	64 45	11 17	5 37.68	+27 5.5	0.927	1.848	15.8	20.3	149 W	72	37
12 17	4 40.70	+19 1.3	0.693	1.665	8.2	18.6	166 E	64 45	11 22	5 32.55	+27 37.4	0.919	1.863	12.8	20.2	155 W	73	36
12 22	4 36.69	+19 18.2	0.693	1.653	11.7	18.7	160 E	64 45	12 2	5 26.57	+28 6.7	0.917	1.878	9.6	20.1	161 W	73	36
12 27	4 33.37	+19 37.3	0.698	1.641	15.0	18.8	154 E	65 44	12 7	5 19.97	+28 32.5	0.920	1.894	6.6	20.0	167 W	74	35
1 1	4 30.97	+19 58.8	0.708	1.631	18.2	19.0	149 E	65 44	12 12	5 13.04	+28 54.2	0.929	1.910	3.9	19.9	172 W	74	35
1 6	4 29.66	+20 22.5	0.721	1.621	21.1	19.1	144 E	65 44	12 17	5 6.12	+29 11.3	0.944	1.925	3.3	19.9	173 E	74	35
1 11	4 29.56	+20 48.2	0.738	1.612	23.8	19.2	139 E	66 43	12 22	4 59.51	+29 24.1	0.965	1.941	5.3	20.1	169 E	74	35
1 16	4 30.72	+21 15.8	0.759	1.605	26.3	19.3	134 E	66 43	12 27	4 53.47	+29 32.9	0.993	1.957	8.0	20.3	164 E	75	34
1 21	4 33.14	+21 44.8	0.782	1.598	28.5	19.4	129 E	67 42	12 27	4 48.23	+29 38.4	1.026	1.973	10.7	20.5	158 E	75	34
<b>408982 2002 SP</b>									1 1	4 43.94	+29 41.2	1.065	1.989	13.3	20.7	152 E	75	34
9 13	4 39.71	+42 31.0	0.473	1.152	60.5	21.4	95 W	87*	1 6	4 40.70	+29 42.4	1.110						

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

21/22	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	$45^\circ$	$-26^\circ$	21/22	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	$45^\circ$	$-26^\circ$
<b>251816 1999 TO<sub>81</sub></b>										<b>475665 2006 VY<sub>13</sub></b>									
<i>(continuation)</i>										<i>(continuation)</i>									
11 7	6 54.21	+27 9.0	0.895	1.652	30.5	20.4	122 W	72	37	12 2	9 12.03	+ 9 24.2	0.693	1.401	40.7	18.6	112 W	54	55
11 12	6 58.63	+27 12.8	0.864	1.655	28.8	20.2	126 W	72	37	12 7	9 28.96	+ 8 10.1	0.642	1.368	41.7	18.4	113 W	53	56
11 17	7 1.90	+27 17.3	0.835	1.658	26.9	20.1	131 W	72	37	12 12	9 46.94	+ 6 50.0	0.595	1.336	42.7	18.3	113 W	52	57
11 22	7 3.97	+27 22.7	0.809	1.662	24.8	20.0	135 W	72	37	12 22	10 26.50	+ 3 52.5	0.514	1.276	45.2	17.9	113 W	49	60
12 2	7 4.34	+27 35.4	0.766	1.673	19.7	19.7	145 W	73	36	1 1	11 11.25	+ 0 36.2	0.452	1.224	48.3	17.6	112 W	46	63
12 12	6 59.87	+27 48.2	0.738	1.686	13.7	19.5	156 W	73	36	1 11	12 0.64	- 2 44.9	0.408	1.182	51.8	17.4	109 W	42	67
12 22	6 51.70	+27 55.9	0.729	1.702	7.2	19.2	168 W	73	36	1 21	12 52.61	- 5 48.6	0.382	1.151	55.2	17.3	106 W	39	70
12 27	6 46.80	+27 56.2	0.731	1.712	4.1	19.1	173 W	73	36	<b>360698 2004 TP<sub>12</sub></b>									
1 1	6 41.75	+27 53.6	0.740	1.721	2.8	19.0	175 E	73	36	9 13	6 5.83	+17 9.4	1.677	1.781	33.7	21.5	79 W	56*	44*
1 6	6 36.88	+27 48.0	0.753	1.732	4.8	19.2	171 E	73	36	9 23	6 21.69	+14 47.2	1.592	1.801	33.7	21.4	85 W	58*	48*
1 11	6 32.48	+27 39.7	0.772	1.743	7.8	19.4	166 E	73	36	10 3	6 35.21	+12 6.3	1.506	1.821	33.3	21.3	91 W	57*	51*
1 16	6 28.79	+27 29.0	0.796	1.754	10.8	19.6	160 E	72	37	10 13	6 46.03	+ 9 7.5	1.420	1.841	32.5	21.2	98 W	54	55*
1 21	6 25.99	+27 16.4	0.825	1.766	13.7	19.8	155 E	72	37	10 23	6 53.77	+ 5 52.7	1.338	1.860	31.1	21.0	105 W	51	58
<b>85770 1998 UP<sub>1</sub></b>										11 2	6 58.03	+ 2 24.7	1.261	1.879	29.2	20.9	112 W	47	62
9 13	5 39.42	+13 16.3	0.406	1.054	72.1	21.2	85 W	55*	50*	11 12	6 58.38	- 1 10.9	1.194	1.897	26.8	20.7	120 W	44	65
9 18	5 35.70	+18 40.4	0.385	1.081	68.4	21.0	91 W	63*	45*	11 22	6 54.59	- 4 45.1	1.139	1.915	23.9	20.5	128 W	40	69
9 23	5 30.30	+24 39.5	0.366	1.107	64.2	20.8	97 W	70*	39	12 2	6 46.72	- 8 5.1	1.101	1.931	21.0	20.4	135 W	37	72
9 28	5 22.32	+31 13.6	0.349	1.132	59.7	20.6	103 W	76	33	12 7	6 41.41	- 9 34.8	1.089	1.939	19.7	20.3	138 W	35	74
10 3	5 10.39	+38 16.5	0.337	1.155	55.0	20.5	109 W	83	26	12 12	6 35.37	-10 54.7	1.082	1.947	18.6	20.3	141 W	34	75
10 5	5 4.09	+41 10.7	0.333	1.164	53.0	20.4	112 W	86	23	12 17	6 28.79	-12 3.1	1.080	1.955	17.8	20.3	142 W	33	76
10 7	4 56.70	+44 5.5	0.331	1.173	51.2	20.3	114 W	89	20	12 22	6 21.89	-12 58.8	1.084	1.963	17.5	20.3	143 W	32	77
10 9	4 48.03	+46 59.2	0.329	1.182	49.3	20.3	116 W	88	17	12 27	6 14.90	-13 40.6	1.094	1.970	17.5	20.3	143 E	31	78
10 11	4 37.88	+49 49.5	0.329	1.190	47.6	20.3	118 W	85	14	1 1	6 8.06	-14 8.4	1.108	1.977	17.9	20.3	142 E	31	78
10 13	4 26.05	+52 33.9	0.329	1.198	45.9	20.2	120 W	82	11	1 6	6 1.62	-14 22.3	1.128	1.984	18.7	20.4	140 E	31	78
10 15	4 12.34	+55 9.8	0.331	1.206	44.4	20.2	122 W	80	9	1 11	5 55.78	-14 23.1	1.153	1.990	19.6	20.5	137 E	31	78
10 17	3 56.56	+57 34.2	0.334	1.214	43.1	20.2	124 W	77	6	1 16	5 50.70	-14 12.3	1.182	1.997	20.7	20.6	134 E	31	78
10 19	3 38.62	+59 44.2	0.338	1.221	41.9	20.2	125 W	75	4	1 21	5 46.51	-13 51.4	1.216	2.003	21.8	20.7	131 E	31	78
10 21	3 18.52	+61 37.1	0.343	1.229	40.9	20.2	126 W	73	2	<b>231134 2005 TU<sub>45</sub></b>									
10 23	2 56.46	+63 10.6	0.349	1.236	40.2	20.3	127 W	72	1	9 13	7 26.19	+ 6 38.0	2.219	1.910	26.9	21.4	59 W	36*	43*
10 24	2 44.82	+63 49.5	0.352	1.239	39.8	20.3	127 W	71	—	9 23	7 47.38	+ 6 20.5	2.066	1.846	29.0	21.3	63 W	41*	44*
10 25	2 32.87	+64 23.0	0.356	1.243	39.6	20.3	127 W	71	—	10 3	8 9.32	+ 5 58.8	1.911	1.781	31.2	21.1	67 W	44*	45*
10 26	2 20.69	+64 51.0	0.360	1.246	39.3	20.3	127 W	70	—	10 13	8 32.19	+ 5 34.6	1.755	1.715	33.4	20.9	71 W	47*	47*
10 27	2 8.39	+65 13.5	0.364	1.249	39.2	20.3	127 W	70	—	10 23	8 56.31	+ 5 10.3	1.598	1.647	35.7	20.7	75 W	48*	48*
10 28	1 56.07	+65 30.7	0.369	1.253	39.0	20.4	127 E	69	—	11 2	9 22.12	+ 4 49.0	1.444	1.578	38.0	20.4	78 W	49*	49*
10 29	1 43.84	+65 42.7	0.373	1.256	38.9	20.4	127 E	69	—	11 12	9 50.19	+ 4 34.3	1.294	1.508	40.5	20.1	81 W	50*	50*
10 30	1 31.79	+65 49.7	0.378	1.259	38.9	20.4	127 E	69	—	11 22	10 21.35	+ 4 31.3	1.151	1.438	43.1	19.9	84 W	50	51*
10 31	1 20.03	+65 52.0	0.383	1.262	38.8	20.5	127 E	69	—	12 2	10 56.69	+ 4 45.2	1.019	1.369	45.9	19.6	86 W	50	51*
11 1	1 8.63	+65 50.0	0.389	1.265	38.8	20.5	127 E	69	—	12 12	11 37.47	+ 5 21.7	0.901	1.301	49.1	19.3	87 W	50	50*
11 2	0 57.66	+65 44.1	0.394	1.268	38.9	20.5	127 E	69	—	12 22	12 24.88	+ 6 24.2	0.803	1.236	52.6	19.0	87 W	51	49*
11 3	0 47.19	+65 34.5	0.400	1.271	38.9	20.6	126 E	69	—	12 27	12 51.26	+ 7 4.4	0.763	1.205	54.6	18.9	86 W	52	48*
11 4	0 37.25	+65 21.8	0.405	1.273	39.0	20.6	126 W	70	—	1 1	13 19.33	+ 7 49.0	0.731	1.174	56.5	18.8	85 W	53	46*
11 5	0 27.88	+65 6.3	0.411	1.276	39.1	20.7	126 W	70	—	1 6	13 48.81	+ 8 36.0	0.706	1.146	58.5	18.7	84 W	54	45*
11 6	0 19.07	+64 48.3	0.418	1.279	39.2	20.7	125 W	70	—	1 11	14 19.29	+ 9 22.6	0.690	1.119	60.5	18.7	82 W	54	43*
11 7	0 10.84	+64 28.4	0.424	1.282	39.4	20.7	125 E	71	—	1 16	14 50.22	+10 5.6	0.682	1.094	62.3	18.7	80 W	55*	42*
11 8	0 3.17	+64 6.7	0.430	1.284	39.5	20.8	124 E	71	—	1 21	15 21.00	+10 42.4	0.682	1.071	63.8	18.7	78 W	55*	40*
11 9	23 56.06	+63 43.6	0.437	1.287	39.7	20.8	124 E	71	—	<b>513145 2002 XY<sub>69</sub></b>									
11 10	23 49.47	+63 19.4	0.444	1.289	39.9	20.9	123 E	72	1	9 13	7 26.92	+40 6.2	1.778	1.618	34.1	21.4	64 W	58*	16*
11 11	23 43.40	+62 54.4	0.451	1.292	40.0	20.9	123 E	72	1	9 18	7 45.72	+40 10.9	1.737	1.605	34.7	21.4	65 W	59*	16*
11 12	23 37.81	+62 28.7	0.458	1.294	40.2	21.0	122 E	73	2	9 23	8 4.57	+40 7.6	1.698	1.593	35.3	21.3	67 W	61*	15*
11 13	23 32.68	+62 2.6	0.465	1.296	40.4	21.0	122 E	73	2	9 28	8 23.39	+39 56.2	1.660	1.582	35.9	21.3	68 W	62*	15*
11 14	23 27.98	+61 36.3	0.472	1.299	40.6	21.0	121 E	73	2	10 3	8 42.07	+39 36.8	1.624	1.571	36.5	21.2	69 W	63*	14*
11 15	23 23.68	+61 9.8	0.479	1.301	40.8	21.1	121 E	74	3	10 8	9 0.50	+39 9.9	1.589	1.562	37.0	21.2	70 W	64*	14*
11 16	23 19.76	+60 43.3	0.486	1.303	41.0	21.1	120 E	74	3	10 13	9 18.59	+38 35.7	1.555	1.553	37.4	21.1	71 W	65*	14*
11 17	23 16.19	+60 17.0	0.494	1.305	41.2	21.2	120 E	75	4	10 18	9 36.26	+37 54.9	1.522	1.546	37.9	21.1	72 W	66*	15*
11 18	23 12.95	+59 50.9	0.501	1.307	41.4	21.2	119 E	75	4	10 23	9 53.45	+37 8.1	1.491	1.540	38.3	21.0	74 W	68*	15*
11 19	23 10.01	+59 25.1	0.509	1.309	41.6	21.2	118 E	76	5	10 28	10 10.10	+36 15.9	1.460	1.535	38.7	21.0	75 W	69*	15*
11 20	23 7.36	+58 59.6	0.517	1.311	41.8	21.3	118 E	76	5	11 2	10 26.16	+35 19.2	1.430	1.531	39.0	21.0	76 W	70*	16*
11 21	23 4.98	+58 34.6	0.524	1.313	42.0	21.3	117 E	76	5	11 7	10 41.58	+34 18.8	1.401	1.528	39.3	20.9	77 W	71*	17*
11 22	23 2.84	+58 10.1	0.532	1.315	42.2	21.4	117 E	77	6	11 12	10 56.34	+33 15.4	1.372	1.526	39.5	20.9	79 W	72*	18*
11 24	22 59.24	+57 22.5	0.548	1.318	42.6	21.4	115 E	78	7*	11 17	11 10.40	+32 9.8	1.343	1.526	39.7	20.8	80 W	73*	19*
11 26	22 56.45	+56 37.2	0.563	1.321	43.0	21.5	114 E	78	7*	11 22	11 23.77	+31 2.8	1.315	1.526	39.8	20.8	82 W	73*	21*
11 28	22 54.37	+55 54.3	0.579	1.324	43.3	21.6	113 E	79	8*	11 27	11 36.43	+29 54.9	1.287	1.528	39.9	20.7	83 W		

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

21/22	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	$45^\circ$	$-26^\circ$	21/22	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	$45^\circ$	$-26^\circ$
<b>470691 2008 TC<sub>27</sub></b>										<b>4450 Pan</b>									
9 13	7 29.11	+58 8.3	2.176	2.073	27.3	21.5	71 W	60*	1*	9 13	8 14.58	+22 25.8	2.356	1.864	24.2	21.4	49 W	40*	23*
9 18	7 45.43	+57 54.9	2.115	2.049	27.9	21.4	72 W	62*	1*	9 23	8 36.68	+21 4.7	2.207	1.806	26.6	21.3	54 W	44*	25*
9 23	8 1.34	+57 37.3	2.053	2.025	28.5	21.4	74 W	63*	1*	10 3	8 59.34	+19 29.1	2.052	1.743	29.1	21.1	58 W	48*	27*
9 28	8 16.75	+57 15.8	1.991	2.002	29.1	21.3	76 W	65*	1*	10 13	9 22.74	+17 37.1	1.893	1.676	31.7	21.0	62 W	51*	29*
10 3	8 31.63	+56 50.8	1.927	1.978	29.7	21.2	78 W	66*	1*	10 23	9 47.17	+15 26.0	1.732	1.604	34.4	20.7	66 W	53*	32*
10 8	8 45.90	+56 22.8	1.863	1.954	30.2	21.1	80 W	68*	2*	11 2	10 13.05	+12 52.2	1.572	1.528	37.3	20.5	69 W	54*	35*
10 13	8 59.53	+55 52.2	1.798	1.930	30.8	21.0	82 W	70*	2*	11 12	10 40.94	+ 9 50.6	1.415	1.446	40.5	20.2	71 W	53*	38*
10 18	9 12.46	+55 19.4	1.732	1.906	31.3	20.9	84 W	71*	3*	11 17	10 55.89	+ 8 7.3	1.338	1.404	42.2	20.1	72 W	52*	39*
10 23	9 24.67	+54 44.6	1.666	1.882	31.8	20.8	86 W	73*	3*	11 22	11 11.68	+ 6 14.4	1.264	1.360	44.0	20.0	73 W	51*	41*
10 28	9 36.13	+54 8.4	1.599	1.858	32.3	20.7	88 W	76*	4*	11 27	11 28.49	+ 4 10.8	1.193	1.315	46.0	19.8	74 W	49*	43*
11 2	9 46.79	+53 31.2	1.532	1.834	32.8	20.6	91 W	78*	5*	12 2	11 46.50	+ 1 55.3	1.125	1.269	48.2	19.7	74 W	47*	44*
11 7	9 56.60	+52 53.2	1.464	1.810	33.2	20.5	93 W	80*	6*	12 7	12 5.93	- 0 32.7	1.061	1.222	50.6	19.5	73 W	44*	46*
11 12	10 5.49	+52 14.7	1.396	1.786	33.5	20.4	95 W	82*	7*	12 12	12 27.03	- 3 13.9	1.002	1.173	53.1	19.4	72 W	42*	48*
11 17	10 13.41	+51 35.9	1.327	1.762	33.7	20.3	98 W	83*	9*	12 17	12 50.08	- 6 7.9	0.949	1.124	55.9	19.3	71 W	39*	49*
11 22	10 20.28	+50 56.7	1.258	1.739	33.9	20.1	101 W	84*	10*	12 22	13 15.39	- 9 13.1	0.904	1.073	58.9	19.2	69 W	36*	50*
11 27	10 26.01	+50 17.3	1.189	1.716	34.0	20.0	104 W	85	11*	12 27	13 43.21	-12 25.9	0.867	1.022	62.1	19.0	67 W	33*	52*
12 2	10 30.46	+49 37.3	1.120	1.693	33.9	19.8	107 W	85	13*	1 1	14 13.73	-15 40.4	0.840	0.971	65.3	19.0	64 W	29*	50*
12 7	10 33.47	+48 56.5	1.052	1.670	33.6	19.6	110 W	86	14*	1 6	14 46.96	-18 47.7	0.823	0.919	68.5	18.9	60 W	26*	49*
12 12	10 34.84	+48 13.8	0.984	1.648	33.2	19.4	114 W	87	15*	1 11	15 22.68	-21 37.3	0.819	0.867	71.3	18.9	57 W	22*	47*
12 17	10 34.37	+47 27.7	0.917	1.626	32.5	19.2	118 W	88	16*	1 16	16 0.37	-23 58.6	0.828	0.817	73.5	18.8	53 W	19*	44*
12 22	10 31.80	+46 36.4	0.851	1.604	31.4	19.0	122 W	88	17	1 21	16 39.28	-25 42.8	0.849	0.768	74.8	18.8	49 W	16*	41*
12 27	10 26.83	+45 36.7	0.788	1.583	30.0	18.8	126 W	89	18	<b>162015 1994 TF<sub>2</sub></b>									
1 1	10 19.16	+44 24.3	0.726	1.563	28.1	18.5	132 W	89	20	9 13	8 20.39	+ 2 31.4	1.274	0.921	51.5	21.5	46 W	25*	35*
1 6	10 8.53	+42 53.0	0.669	1.543	25.6	18.2	137 W	88	21	9 18	8 44.13	+ 1 8.8	1.273	0.895	51.7	21.4	44 W	24*	34*
1 11	9 54.82	+40 54.9	0.615	1.524	22.4	17.9	144 W	86	23	9 23	9 8.22	+ 0 14.3	1.275	0.870	51.7	21.3	43 W	23*	32*
1 16	9 38.17	+38 20.6	0.568	1.506	18.5	17.6	151 W	83	26	9 28	9 32.64	- 1 36.6	1.281	0.845	51.4	21.3	41 W	22*	31*
1 21	9 19.01	+35 1.2	0.528	1.488	13.8	17.3	159 W	80	29	10 3	9 57.39	- 2 57.1	1.291	0.821	50.8	21.2	40 W	22*	29*
9 13	7 34.58	+39 9.2	0.257	0.917	103.0	19.1	63 W	56*	16*	10 8	10 22.44	- 4 14.6	1.303	0.798	50.0	21.1	38 W	21*	27*
9 15	7 12.65	+40 41.1	0.254	0.944	96.6	18.9	69 W	63*	18*	10 13	10 47.80	- 5 28.2	1.319	0.777	48.9	21.1	36 W	20*	25*
9 17	6 49.47	+41 57.7	0.251	0.972	90.3	18.6	75 W	69*	19*	10 18	11 13.44	- 6 37.1	1.337	0.758	47.5	21.0	34 W	19*	23*
9 19	6 25.25	+42 56.7	0.250	0.999	84.1	18.4	82 W	75*	20*	10 23	11 39.36	- 7 40.9	1.357	0.742	45.8	21.0	32 W	18*	21*
9 21	6 0.32	+43 36.1	0.250	1.026	77.9	18.3	88 W	82*	20*	10 28	12 5.52	- 8 39.0	1.380	0.729	43.9	20.9	31 W	17*	19*
9 23	5 35.05	+43 54.8	0.251	1.053	71.8	18.1	94 W	88*	20*	11 2	12 31.89	- 9 31.4	1.404	0.719	41.8	20.9	29 W	17*	17*
9 24	5 22.44	+43 56.2	0.253	1.066	68.8	18.1	98 W	89	20	11 7	12 58.41	-10 17.9	1.430	0.713	39.6	20.8	27 W	16*	15*
9 25	5 9.91	+43 52.3	0.254	1.080	65.9	18.0	101 W	89	20	11 12	13 25.00	-10 58.4	1.456	0.711	37.4	20.8	26 W	15*	13*
9 26	4 57.53	+43 43.4	0.256	1.093	63.0	18.0	104 W	89	20	11 17	13 51.58	-11 32.8	1.483	0.713	35.1	20.8	25 W	15*	12*
9 27	4 45.34	+43 29.5	0.258	1.106	60.1	17.9	107 W	88	21	11 22	14 18.05	-12 1.3	1.510	0.720	33.0	20.8	23 W	14*	10*
9 28	4 33.41	+43 11.0	0.261	1.119	57.3	17.9	110 W	88	21	11 27	14 44.33	-12 23.9	1.538	0.730	31.0	20.8	22 W	14*	8*
9 29	4 21.77	+42 48.0	0.264	1.132	54.5	17.9	113 W	88	21	12 2	15 10.31	-12 40.5	1.566	0.744	29.2	20.8	22 W	14*	7*
9 30	4 10.47	+42 21.0	0.267	1.145	51.8	17.8	116 W	87	22	12 7	15 35.91	-12 51.1	1.594	0.760	27.6	20.8	21 W	13*	6*
10 1	3 59.53	+41 50.3	0.271	1.157	49.1	17.8	119 W	87	22	12 12	16 1.05	-12 55.8	1.622	0.780	26.2	20.9	20 W	13*	5*
10 2	3 48.98	+41 16.3	0.275	1.170	46.5	17.8	122 W	86	23	12 17	16 25.65	-12 54.6	1.651	0.801	24.9	21.0	20 W	13*	4*
10 3	3 38.83	+40 39.3	0.279	1.183	44.0	17.8	125 W	86	23	12 22	16 49.67	-12 47.8	1.679	0.824	23.9	21.0	20 W	13*	4*
10 5	3 19.82	+39 18.2	0.289	1.208	39.1	17.8	130 W	84	25	12 27	17 13.07	-12 35.5	1.707	0.848	22.9	21.1	20 W	13*	3*
10 7	3 2.51	+37 50.0	0.300	1.233	34.4	17.8	136 W	83	26	1 1	17 35.83	-12 18.0	1.735	0.873	22.1	21.2	20 W	13*	3*
10 9	2 46.88	+36 17.6	0.313	1.257	30.1	17.8	141 W	81	28	1 6	17 57.92	-11 55.5	1.763	0.898	21.4	21.2	19 W	13*	3*
10 11	2 32.86	+34 43.4	0.327	1.281	26.1	17.8	146 W	80	29	1 11	18 19.35	-11 28.4	1.791	0.924	20.8	21.3	19 W	13*	4*
10 13	2 20.33	+33 9.4	0.342	1.305	22.4	17.8	150 W	78	31	1 16	18 40.13	-10 57.1	1.818	0.949	20.3	21.4	20 W	13*	4*
10 15	2 9.17	+31 37.1	0.359	1.329	19.1	17.9	154 W	77	32	1 21	19 0.26	-10 22.0	1.844	0.975	19.8	21.5	20 W	13*	5*
10 17	1 59.25	+30 7.8	0.376	1.352	16.2	17.9	158 W	75	34	<b>414772 2010 OC<sub>103</sub></b>									
10 19	1 50.45	+28 42.3	0.395	1.376	13.8	18.0	161 W	74	35	9 13	8 39.75	+33 14.5	1.334	1.001	48.5	21.3	48 W	42*	12*
10 21	1 42.67	+27 21.1	0.415	1.398	11.8	18.0	163 W	72	37	9 18	9 10.36	+31 33.3	1.288	0.938	50.7	21.2	46 W	40*	10*
10 23	1 35.78	+26 4.5	0.437	1.421	10.5	18.1	165 E	71	38	9 23	9 41.91	+29 14.3	1.250	0.873	52.9	21.0	44 W	38*	9*
10 28	1 21.92	+23 13.6	0.494	1.476	10.1	18.5	165 E	68	41	9 28	10 13.97	+26 14.4	1.222	0.806	54.7	20.9	41 W	35*	7*
11 2	1 11.93	+20 51.4	0.558	1.530	12.3	18.9	161 E	66	43	10 3	10 46.11	+22 32.5	1.205	0.736	56.0	20.7	38 W	32*	6*
11 7	1 4.94	+18 55.2	0.627	1.582	15.2	19.3	155 E	64	45	10 8	11 18.02	+18 9.9	1.201	0.665	56.3	20.5	34 W	28*	4*
11 12	1 0.32	+17 21.6	0.701	1.633	17.9	19.7	150 E	62	47	10 13	11 49.54	+13 9.9	1.210	0.594	55.2	20.2	29 W	23*	3*
11 17	0 57.58	+16 7.5	0.779	1.682	20.3	20.1	144 E	61	48	10 18	12 20.80	+ 7 37.1	1.232	0.525	51.7	19.9	24 W	18*	2*
11 22	0 56.33	+15 9.6	0.861	1.730	22.2	20.4	139 E	60	49	10 23	12 52.21	+ 1 37.3	1.266	0.463	45.1	19.5	19 W	13*	1*
11 27	0 56.30	+14 25.4	0.947	1.777	23.8	20.7	133 E	59	50	10 28	13 24.45	- 4 41.7	1.307	0.416	34.6	19.0	14 W	8*	—
12 2	0 57.27	+13 52.6	1.037	1.822	25.1	21.0	128 E	59	50	11 2	13 58.24	-11 5.2	1.349	0.393	21.0	18.6	8 W	2*	—
12 7	0 59.09	+13 29.6	1.129	1.866	26.0	21.3	124 E	58	51	11 4	14 12.29	-13							

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

21/22	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°	21/22	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°										
<b>153201 2000 WO<sub>107</sub></b>										<b>177651 2004 XM<sub>14</sub></b> (continuation)																			
9 13	9 28.00	+11 53.8	0.751	0.514	103.8	21.1	30 W	20*	16*	1 3	18 29.76	-21 24.9	1.319	0.354	15.9	16.7	6 W	—	—	1 3	18 29.76	-21 24.9	1.319	0.354	15.9	16.7	6 W	—	—
9 15	9 22.71	+12 29.5	0.762	0.555	98.4	21.0	33 W	23*	18*	1 5	18 47.26	-23 21.9	1.324	0.348	9.9	16.5	3 W	—	—	1 5	18 47.26	-23 21.9	1.324	0.348	9.9	16.5	3 W	—	—
9 17	9 18.48	+13 0.6	0.773	0.594	93.8	20.9	36 W	26*	19*	1 7	19 5.44	-25 9.9	1.327	0.349	8.5	16.4	3 W	—	—	1 7	19 5.44	-25 9.9	1.327	0.349	8.5	16.4	3 W	—	—
9 19	9 15.14	+13 27.8	0.783	0.632	89.8	20.9	39 W	29*	21*	1 9	19 24.20	-26 45.8	1.328	0.357	13.1	16.6	5 E	—	—	1 9	19 24.20	-26 45.8	1.328	0.357	13.1	16.6	5 E	—	—
9 21	9 12.51	+13 51.7	0.793	0.669	86.3	21.0	42 W	31*	22*	1 11	19 43.39	-28 7.4	1.326	0.371	19.2	16.9	7 E	—	—	1 11	19 43.39	-28 7.4	1.326	0.371	19.2	16.9	7 E	—	—
9 23	9 10.46	+14 12.9	0.802	0.704	83.3	21.0	44 W	34*	24*	1 13	20 2.84	-29 13.1	1.323	0.390	25.0	17.2	10 E	—	3*	1 13	20 2.84	-29 13.1	1.323	0.390	25.0	17.2	10 E	—	3*
9 28	9 7.25	+14 57.2	0.820	0.788	77.1	21.0	50 W	39*	26*	1 15	20 22.37	-30 2.3	1.319	0.413	30.0	17.5	12 E	—	6*	1 15	20 22.37	-30 2.3	1.319	0.413	30.0	17.5	12 E	—	6*
10 3	9 5.81	+15 33.1	0.830	0.865	72.3	21.1	55 W	44*	29*	1 17	20 41.82	-30 35.0	1.316	0.438	34.1	17.7	14 E	—	8*	1 17	20 41.82	-30 35.0	1.316	0.438	34.1	17.7	14 E	—	8*
10 8	9 5.32	+16 4.6	0.833	0.936	68.5	21.2	61 W	48*	31*	1 19	21 1.04	-30 51.9	1.313	0.467	37.4	17.9	17 E	—	10*	1 19	21 1.04	-30 51.9	1.313	0.467	37.4	17.9	17 E	—	10*
10 13	9 5.21	+16 34.4	0.830	1.002	65.2	21.2	66 W	53*	33*	1 21	21 19.90	-30 54.0	1.311	0.496	40.0	18.1	19 E	—	13*	1 21	21 19.90	-30 54.0	1.311	0.496	40.0	18.1	19 E	—	13*
10 18	9 5.09	+17 4.8	0.821	1.063	62.3	21.2	71 W	56*	35*	<b>365449 2010 NJ<sub>1</sub></b>																			
10 23	9 4.61	+17 37.5	0.806	1.120	59.6	21.2	76 W	60*	37*	9 13	9 37.06	+10 2.0	1.110	0.507	65.0	21.2	27 W	17*	15*	9 13	9 37.06	+10 2.0	1.110	0.507	65.0	21.2	27 W	17*	15*
10 28	9 3.49	+18 14.4	0.786	1.172	56.9	21.2	81 W	62*	39*	9 18	10 12.68	+ 8 26.5	1.181	0.470	56.9	21.0	23 W	14*	11*	9 18	10 12.68	+ 8 26.5	1.181	0.470	56.9	21.0	23 W	14*	11*
11 2	9 1.43	+18 57.1	0.763	1.221	54.2	21.1	87 W	64*	40*	9 23	10 48.22	+ 6 33.3	1.257	0.449	46.6	20.7	19 W	11*	7*	9 23	10 48.22	+ 6 33.3	1.257	0.449	46.6	20.7	19 W	11*	7*
11 7	8 58.10	+19 47.1	0.736	1.267	51.4	21.0	93 W	65	41*	9 28	11 23.38	+ 4 23.8	1.332	0.446	35.4	20.5	15 W	8*	3*	9 28	11 23.38	+ 4 23.8	1.332	0.446	35.4	20.5	15 W	8*	3*
11 12	8 53.15	+20 45.9	0.708	1.309	48.2	20.9	100 W	66	42*	10 3	11 57.59	+ 2 2.2	1.402	0.463	24.8	20.4	11 W	5*	—	10 3	11 57.59	+ 2 2.2	1.402	0.463	24.8	20.4	11 W	5*	—
11 17	8 46.22	+21 54.6	0.679	1.348	44.7	20.8	106 W	67	42*	10 8	12 30.31	+ 0 24.8	1.467	0.497	16.2	20.4	8 W	2*	—	10 8	12 30.31	+ 0 24.8	1.467	0.497	16.2	20.4	8 W	2*	—
11 22	8 36.92	+23 13.6	0.649	1.384	40.7	20.7	114 W	68	41	10 13	13 1.24	+ 2 50.6	1.526	0.542	10.2	20.4	6 W	—	—	10 13	13 1.24	+ 2 50.6	1.526	0.542	10.2	20.4	6 W	—	—
11 27	8 24.82	+24 42.2	0.622	1.417	36.2	20.5	122 W	70	39	10 18	13 30.32	+ 5 10.3	1.582	0.593	7.3	20.6	4 W	—	—	10 18	13 30.32	+ 5 10.3	1.582	0.593	7.3	20.6	4 W	—	—
12 2	8 9.53	+26 18.1	0.598	1.448	31.2	20.3	131 W	71	38	10 23	13 57.67	+ 7 20.6	1.636	0.648	6.8	20.8	4 E	—	—	10 23	13 57.67	+ 7 20.6	1.636	0.648	6.8	20.8	4 E	—	—
12 7	7 50.85	+27 56.3	0.579	1.476	25.5	20.1	140 W	73	36	10 28	14 23.45	+ 9 19.8	1.689	0.705	7.2	21.1	5 E	—	—	10 28	14 23.45	+ 9 19.8	1.689	0.705	7.2	21.1	5 E	—	—
12 12	7 28.94	+29 29.4	0.566	1.501	19.4	19.9	150 W	74	35	11 2	14 47.84	+11 7.3	1.740	0.760	7.7	21.4	6 E	—	—	11 2	14 47.84	+11 7.3	1.740	0.760	7.7	21.4	6 E	—	—
12 14	7 19.39	+30 3.2	0.564	1.510	16.9	19.8	154 W	75	34	<b>392476 2011 GD<sub>3</sub></b>																			
12 16	7 9.50	+30 34.3	0.562	1.519	14.4	19.8	157 W	76	33	9 13	9 44.43	+14 25.5	0.834	0.456	98.3	20.5	27 W	19*	11*	9 13	9 44.43	+14 25.5	0.834	0.456	98.3	20.5	27 W	19*	11*
12 18	6 59.32	+31 2.0	0.563	1.528	11.9	19.7	161 W	76	33	9 15	9 50.87	+14 53.6	0.881	0.462	91.6	20.4	27 W	20*	11*	9 15	9 50.87	+14 53.6	0.881	0.462	91.6	20.4	27 W	20*	11*
12 20	6 48.97	+31 26.0	0.564	1.536	9.6	19.6	165 W	76	33	9 17	9 57.86	+15 10.9	0.928	0.471	85.3	20.3	28 W	21*	10*	9 17	9 57.86	+15 10.9	0.928	0.471	85.3	20.3	28 W	21*	10*
12 22	6 38.52	+31 46.0	0.568	1.544	7.5	19.6	168 W	77	32	9 19	10 5.24	+15 18.7	0.974	0.483	79.4	20.2	28 W	21*	10*	9 19	10 5.24	+15 18.7	0.974	0.483	79.4	20.2	28 W	21*	10*
12 24	6 28.09	+32 1.8	0.572	1.551	6.1	19.5	170 W	77	32	9 21	10 12.88	+15 18.2	1.019	0.499	74.0	20.2	29 W	22*	9*	9 21	10 12.88	+15 18.2	1.019	0.499	74.0	20.2	29 W	22*	9*
12 26	6 17.78	+32 13.4	0.579	1.558	5.6	19.5	171 E	77	32	9 23	10 20.67	+15 10.6	1.063	0.516	69.2	20.2	29 W	22*	9*	9 23	10 20.67	+15 10.6	1.063	0.516	69.2	20.2	29 W	22*	9*
12 28	6 7.68	+32 20.8	0.587	1.565	6.3	19.6	170 E	77	32	9 25	10 28.50	+14 57.2	1.106	0.536	64.8	20.3	29 W	22*	9*	9 25	10 28.50	+14 57.2	1.106	0.536	64.8	20.3	29 W	22*	9*
12 30	5 57.89	+32 24.3	0.596	1.571	7.7	19.7	168 E	77	32	9 27	10 36.31	+14 39.0	1.147	0.558	60.9	20.3	29 W	23*	8*	9 27	10 36.31	+14 39.0	1.147	0.558	60.9	20.3	29 W	23*	8*
1 1	5 48.48	+32 24.1	0.607	1.577	9.6	19.8	164 E	77	32	9 29	10 44.03	+14 16.8	1.187	0.580	57.4	20.4	29 W	23*	8*	9 29	10 44.03	+14 16.8	1.187	0.580	57.4	20.4	29 W	23*	8*
1 6	5 27.04	+32 10.8	0.641	1.590	14.6	20.2	156 E	77	32	10 1	10 51.63	+13 51.5	1.224	0.604	54.4	20.4	29 W	23*	8*	10 1	10 51.63	+13 51.5	1.224	0.604	54.4	20.4	29 W	23*	8*
1 11	5 8.99	+31 44.4	0.682	1.601	19.2	20.5	148 E	77	32	10 3	10 59.08	+13 23.8	1.261	0.629	51.7	20.5	30 W	23*	8*	10 3	10 59.08	+13 23.8	1.261	0.629	51.7	20.5	30 W	23*	8*
1 16	4 54.46	+31 11.7	0.729	1.610	23.3	20.8	140 E	76	33	10 8	11 16.93	+12 7.3	1.345	0.693	46.2	20.7	30 W	24*	8*	10 8	11 16.93	+12 7.3	1.345	0.693	46.2	20.7	30 W	24*	8*
1 21	4 43.22	+30 37.6	0.781	1.616	26.8	21.0	132 E	76	33	10 13	11 33.64	+10 45.0	1.419	0.758	42.2	20.9	31 W	24*	8*	10 13	11 33.64	+10 45.0	1.419	0.758	42.2	20.9	31 W	24*	8*
9 13	9 30.31	+15 32.4	2.289	1.507	19.6	21.5	30 W	22*	13*	10 18	11 49.24	+ 9 21.0	1.486	0.823	39.3	21.1	32 W	25*	8*	10 18	11 49.24	+ 9 21.0	1.486	0.823	39.3	21.1	32 W	25*	8*
9 23	9 58.71	+14 10.1	2.204	1.469	21.9	21.4	33 W	25*	14*	10 23	12 3.83	+ 7 57.5	1.545	0.887	37.2	21.3	33 W	26*	9*	10 23	12 3.83	+ 7 57.5	1.545	0.887	37.2	21.3	33 W	26*	9*
10 3	10 27.92	+12 34.6	2.116	1.429	24.1	21.3	36 W	28*	15*	10 28	12 17.52	+ 6 35.9	1.597	0.950	35.7	21.5	34 W	27*	10*	10 3	10 27.92	+12 34.6	2.116	1.429	24.1	21.3	36 W	28*	15*
10 13	10 58.10	+10 46.1	2.027	1.386																									

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

21/22	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°	21/22	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°
<b>523950 1998 SZ<sub>27</sub></b>										<b>360200 1997 UF<sub>8</sub></b>									
9 13	10 23.56	+ 4 5.3	1.554	0.638	24.1	21.3	15 W	5*	7*	9 13	11 49.07	+ 9 8.8	3.831	2.838	2.9	21.4	8 E	2*	—
9 23	11 25.83	+ 1 47.7	1.507	0.537	16.3	20.6	9 W	1*	1*	9 23	12 1.92	+ 7 3.5	3.790	2.796	2.5	21.3	7 E	—	—
10 3	12 35.22	- 0 59.4	1.460	0.464	6.2	19.8	3 W	—	—	10 3	12 15.01	+ 4 56.6	3.733	2.753	3.7	21.3	10 W	4*	—
10 13	13 49.73	- 4 24.2	1.400	0.450	22.3	20.3	10 E	3*	1*	10 13	12 28.32	+ 2 48.3	3.660	2.709	5.5	21.3	15 W	9*	—
10 18	14 27.44	- 6 20.0	1.366	0.471	31.7	20.6	14 E	6*	5*	10 23	12 41.83	+ 0 38.5	3.572	2.665	7.6	21.3	21 W	14*	4*
10 23	15 4.71	- 8 20.7	1.334	0.505	39.2	20.9	19 E	9*	9*	11 2	12 55.54	+ 1 32.8	3.470	2.619	9.7	21.3	26 W	19*	9*
10 28	15 41.29	- 10 21.5	1.308	0.549	44.4	21.2	23 E	11*	13*	11 12	13 9.42	- 3 45.5	3.355	2.572	11.8	21.3	32 W	23*	14*
11 2	16 17.03	- 12 16.9	1.291	0.599	47.7	21.4	27 E	13*	17*	11 22	13 23.47	+ 5 59.9	3.227	2.525	14.0	21.3	38 W	27*	20*
<b>432509 2010 FF<sub>7</sub></b>										<b>127552 2002 YF<sub>5</sub></b>									
9 13	10 30.87	+ 10 52.4	1.044	0.267	74.5	19.3	15 W	8*	3*	9 13	11 59.43	+ 11 19.0	4.019	3.040	3.8	21.5	12 E	5*	—
9 14	10 35.31	+ 11 4.9	1.082	0.282	67.0	19.3	15 W	8*	2*	9 23	12 11.95	+ 9 30.6	4.024	3.040	3.3	21.5	10 E	3*	—
9 15	10 40.07	+ 11 11.3	1.119	0.298	60.4	19.3	15 W	9*	2*	10 3	12 24.44	+ 7 44.2	4.012	3.040	3.9	21.5	12 W	4*	—
9 16	10 45.02	+ 11 12.6	1.154	0.317	54.7	19.3	15 W	9*	1*	10 13	12 36.87	+ 6 0.4	3.983	3.039	5.3	21.5	16 W	10*	—
9 17	10 50.07	+ 11 9.8	1.188	0.336	49.9	19.4	15 W	9*	1*	10 23	12 49.20	+ 4 19.4	3.938	3.036	7.0	21.6	22 W	16*	—
9 18	10 55.14	+ 11 3.6	1.221	0.356	45.7	19.4	15 W	9*	—	<b>83120 2001 QP<sub>246</sub></b>									
9 19	11 0.19	+ 10 54.8	1.252	0.377	42.1	19.5	15 W	8*	—	9 13	12 11.84	- 2 14.5	3.414	2.447	5.5	21.5	13 E	—	7*
9 20	11 5.17	+ 10 43.9	1.282	0.398	39.0	19.6	14 W	8*	—	9 23	12 28.26	- 4 6.6	3.404	2.415	3.4	21.3	8 E	—	2*
9 21	11 10.08	+ 10 31.3	1.311	0.419	36.3	19.7	14 W	8*	—	10 3	12 45.16	- 6 0.6	3.381	2.382	1.3	21.1	3 E	—	—
9 22	11 14.89	+ 10 17.4	1.338	0.441	34.0	19.8	14 W	8*	—	10 13	13 2.56	- 7 55.6	3.345	2.349	1.0	21.0	2 W	—	—
9 23	11 19.60	+ 10 2.4	1.365	0.462	31.9	19.9	14 W	8*	—	10 23	13 20.47	- 9 50.7	3.298	2.315	3.1	21.1	7 W	—	—
9 25	11 28.71	+ 9 30.2	1.416	0.505	28.6	20.0	14 W	8*	—	11 2	13 38.94	- 11 45.2	3.239	2.280	5.3	21.2	12 W	4*	3*
9 27	11 37.38	+ 8 56.0	1.464	0.547	26.1	20.2	14 W	8*	—	11 12	13 58.00	- 13 38.0	3.170	2.245	7.6	21.2	17 W	8*	7*
9 29	11 45.64	+ 8 20.6	1.509	0.588	24.1	20.4	14 W	8*	—	11 22	14 17.68	- 15 27.9	3.091	2.209	9.8	21.2	22 W	12*	11*
10 1	11 53.52	+ 7 44.8	1.553	0.628	22.5	20.5	14 W	8*	—	12 2	14 38.02	- 17 13.9	3.003	2.174	12.0	21.2	27 W	14*	16*
10 3	12 1.04	+ 7 9.0	1.594	0.668	21.2	20.7	14 W	8*	—	12 12	14 59.03	- 18 54.8	2.906	2.138	14.2	21.2	32 W	16*	21*
10 8	12 18.47	+ 5 40.6	1.688	0.763	19.1	21.0	14 W	8*	—	12 22	15 20.75	- 20 29.2	2.803	2.102	16.3	21.1	37 W	17*	26*
10 13	12 34.24	+ 4 16.0	1.774	0.853	17.9	21.3	15 W	9*	—	1 1	15 43.17	- 21 55.8	2.693	2.066	18.5	21.1	42 W	18*	32*
10 18	12 48.66	+ 2 55.9	1.851	0.937	17.3	21.6	16 W	10*	—	1 11	16 6.29	- 23 13.3	2.578	2.030	20.6	21.0	46 W	18*	37*
10 23	13 1.98	+ 1 40.8	1.921	1.018	17.2	21.9	18 W	12*	—	1 21	16 30.08	- 24 20.3	2.460	1.994	22.6	20.9	51 W	18*	43*
<b>333480 2004 TC<sub>10</sub></b>										<b>143947 2003 YQ<sub>117</sub></b>									
9 13	10 52.92	+ 12 5.9	1.624	0.666	17.0	21.3	11 W	5*	—	9 13	12 14.70	- 9 28.3	4.256	3.316	5.5	21.5	18 E	—	11*
9 18	11 18.50	+ 8 36.9	1.639	0.664	13.4	21.2	9 W	3*	—	9 23	12 26.24	- 10 21.2	4.258	3.285	3.7	21.4	12 E	—	5*
9 23	11 43.38	+ 5 1.5	1.656	0.668	9.7	21.1	6 W	—	—	10 3	12 38.06	- 11 16.8	4.242	3.252	2.3	21.3	7 E	—	—
9 28	12 7.62	+ 1 24.2	1.675	0.679	6.1	21.0	4 W	—	—	10 13	12 50.13	- 12 14.3	4.205	3.217	2.2	21.2	7 W	—	1*
10 3	12 31.33	- 2 10.9	1.696	0.696	2.8	20.9	2 W	—	—	10 23	13 2.39	- 13 12.9	4.149	3.181	3.6	21.2	12 W	1*	5*
10 8	12 54.60	- 5 40.2	1.718	0.718	0.3	20.7	0 E	—	—	11 2	13 14.83	- 14 11.9	4.073	3.143	5.5	21.3	18 W	6*	10*
10 13	13 17.52	- 9 0.7	1.742	0.745	2.5	21.0	2 E	—	—	11 12	13 27.38	- 15 10.5	3.978	3.103	7.5	21.3	24 W	12*	15*
10 18	13 40.16	- 12 9.9	1.767	0.775	4.5	21.3	4 E	—	—	11 22	13 40.00	- 16 7.7	3.865	3.061	9.6	21.3	31 W	16*	20*
10 23	14 2.61	- 15 6.2	1.794	0.807	6.1	21.5	5 E	—	—	12 2	13 52.62	- 17 2.9	3.734	3.017	11.6	21.3	38 W	20*	26*
<b>450300 2004 QD<sub>14</sub></b>										<b>387717 2003 DN<sub>4</sub></b>									
9 13	11 7.05	+ 8 17.7	1.635	0.643	9.5	21.2	6 W	—	—	9 13	12 19.11	+ 10 6.8	1.917	0.981	15.5	21.4	15 E	8*	4*
9 18	11 34.25	+ 5 24.6	1.630	0.631	6.2	21.0	4 W	—	—	9 18	12 37.06	+ 9 10.8	1.866	0.938	16.7	21.3	16 E	9*	3*
9 23	12 1.45	+ 2 23.1	1.626	0.624	3.8	20.9	2 E	—	—	9 23	12 55.87	+ 8 7.7	1.813	0.894	18.2	21.2	16 E	10*	3*
9 28	12 28.61	+ 0 43.1	1.623	0.624	4.8	20.9	3 E	—	—	9 28	13 15.65	+ 6 56.2	1.757	0.851	20.1	21.1	17 E	11*	3*
10 3	12 55.74	+ 3 50.4	1.621	0.630	8.0	21.1	5 E	—	—	10 3	13 36.48	+ 5 35.2	1.699	0.808	22.4	21.0	18 E	11*	3*
10 8	13 22.82	- 6 54.6	1.621	0.643	11.4	21.3	7 E	—	1*	10 8	13 58.46	+ 4 3.1	1.639	0.765	25.0	20.8	19 E	12*	4*
10 13	13 49.85	- 9 52.1	1.623	0.660	14.5	21.5	10 E	—	3*	10 13	14 21.67	+ 2 18.2	1.578	0.725	28.0	20.7	20 E	13*	5*
<b>101158 1998 RA<sub>77</sub></b>										<b>118151 4391 T-3</b>									
9 13	11 32.56	+ 5 25.5	3.625	2.620	1.0	21.4	3 E	—	—	9 13	11 32.81	+ 6 55.7	3.939	2.936	1.3	21.5	4 E	—	—
9 23	11 47.99	+ 3 39.3	3.594	2.595	1.8	21.5	5 W	—	—	9 23	11 46.66	+ 5 28.4	3.923	2.927	2.2	21.5	6 W	—	—
10 3	12 3.61	+ 1 51.6	3.549	2.569	3.8	21.6	10 W	4*	—	10 3	12 0.52	+ 4 1.3	3.890	2.918	4.0	21.6	12 W	6*	—
10 13	12 19.39	+ 0 2.8	3.491	2.542	5.9	21.6	15 W	9*	2*	10 13	12 14.37	+ 2 34.8	3.842	2.907	6.0	21.7	18 W	11*	2*
10 23	12 35.34	- 1 46.3	3.420	2.515	8.1	21.6	21 W	14*	6*	10 23	12 28.16	+ 1 9.8	3.778	2.896	8.0	21.8	24 W	17*	7*
<b>272499 2005 UJ<sub>157</sub></b>										<b>360200 1997 UF<sub>8</sub></b>									
9 13	11 37.95	- 0 33.8	3.456	2.457	2.3	21.4	6 E	—	—	9 13	11 49.07	+ 9 8.8	3.831	2.838	2.9	21.4	8 E	2*	—
9 23	11 54.41	- 2 28.6	3.430	2.428	1.2	21.3	3 W	—	—	9 23	12 1.92	+ 7 3.5	3.790	2.796	2.5	21.3	7 E	—	—
10 3	12 11.20	+ 4 26.0	3.391	2.398	2.6	21.3	6 W	—	—	10 3	12 15.01	+ 4 56.6	3.733	2.753	3.7	21.3	10 W	4*	—
10 13	12 28.34	- 6 25.5	3.340	2.368	4.6	21.4	11 W	3*	3*	10 13	12 28.32	+ 2 48.3	3.660	2.709	5.5	21.3	15 W	9*	—
10 23	12 45.84	- 8 26.1	3.277	2.337	6.7	21.4	16 W	7*	7*	10 23	12 41.83	+ 0 38.5	3.572	2.665	7.6	21.3	21 W	14*	4*
11 2	13 3.74	- 10 27.2	3.203	2.305	8.9	21.4	21 W	11*	11*	11 2	12 55.54	+ 1 32.8	3.470	2.619	9.7	21.3	26 W	19*	9*
11 12	13 22.07	- 12 27.9	3.120	2.273	11.1	21.4	26 W	15*	15*	11 12	13 9.42	- 3 45.5	3.355	2.572	11.8	21.3	32 W	23*	14*
11 22	13 40.84	- 14 27.3	3.026	2.241	13.2	21.4	31 W	17*	19*	11 22	13 23.47	+ 5 59.9	3.227	2.525	14.0	21.3	38 W	27*	20*
12 2	14 0.10	- 16 24.4	2.925	2.208	15.3	21.4	36 W	20*	24*	12 2	13 37.67	- 8 16.2	3.088	2.477	16.1	21.2	44 W	29*	26*
12 12	14 19.85	- 18 18.1	2.815	2.175	17.4	21.3	41 W	21*	29*	12 12	13 51.99	- 10 34.8	2.939	2.428	18.1	21.1	50 W	30*	33*
12 22	14 40.12	- 20 7.5	2.699	2.142	19.4	21.3	46 W	21*	35*	12 22	14 6.41	- 12 56.2	2.782	2.379	20.1	21.0	56 W	30*	40*
1 1	15 0.91	- 21 51.3	2.578	2.109	21.4	21.2	51 W												

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

21/22	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°-26°	21/22	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°-26°		
<b>62047 2000 RE<sub>66</sub></b>									<b>524603 2003 QA<sub>31</sub></b>										
9 13	12 23.95	+0 51.1	3.787	2.829	5.4	21.5	15 E	2*	9*	9 13	12 50.66	-1 56.1	1.699	0.860	26.6	21.4	22 E	5*	16*
9 23	12 38.09	-0 40.5	3.786	2.802	3.4	21.4	10 E	—	3*	9 18	13 12.15	-3 49.6	1.656	0.834	28.5	21.4	23 E	6*	17*
10 3	12 52.59	-2 12.8	3.770	2.773	1.6	21.2	5 E	—	—	9 23	13 34.57	-5 45.8	1.614	0.813	30.7	21.3	24 E	7*	18*
10 13	13 7.43	-3 45.0	3.738	2.744	1.5	21.2	4 W	—	—	9 28	13 57.95	-7 43.3	1.573	0.798	32.9	21.3	26 E	7*	19*
10 23	13 22.60	-5 16.3	3.692	2.714	3.3	21.2	9 W	3*	—	10 3	14 22.30	-9 40.4	1.535	0.789	35.3	21.3	27 E	8*	20*
11 2	13 38.09	-6 46.1	3.631	2.682	5.4	21.3	15 W	8*	1*	10 8	14 47.61	-11 34.9	1.500	0.786	37.6	21.3	29 E	9*	22*
11 12	13 53.88	-8 13.6	3.556	2.650	7.5	21.3	20 W	13*	6*	10 13	15 13.84	-13 24.4	1.468	0.790	39.7	21.3	30 E	10*	23*
11 22	14 9.95	-9 37.9	3.467	2.617	9.6	21.3	26 W	17*	11*	10 18	15 40.91	-15 6.5	1.441	0.800	41.6	21.3	32 E	11*	25*
12 2	14 26.28	-10 58.4	3.366	2.584	11.7	21.3	32 W	21*	16*	10 23	16 8.71	-16 38.4	1.420	0.816	43.1	21.4	34 E	12*	27*
12 12	14 42.83	-12 14.2	3.253	2.549	13.7	21.3	38 W	24*	22*	10 28	16 37.07	-17 57.8	1.405	0.838	44.2	21.5	36 E	13*	29*
12 22	14 59.56	-13 24.6	3.130	2.514	15.7	21.2	44 W	26*	28*	<b>504012 2005 JC<sub>46</sub></b>									
1 1	15 16.43	-14 28.9	2.997	2.478	17.6	21.2	50 W	27*	35*	9 13	12 59.05	+19 35.3	3.121	2.283	12.0	21.5	28 E	22*	7*
1 11	15 33.35	-15 26.5	2.856	2.441	19.4	21.1	56 W	28*	42*	9 23	13 16.32	+16 29.3	3.094	2.226	11.0	21.4	25 E	19*	4*
1 21	15 50.23	-16 16.7	2.708	2.404	21.1	21.0	62 W	28*	50*	10 3	13 34.05	+13 22.2	3.061	2.170	10.2	21.3	22 E	16*	—
<b>306413 1997 GF<sub>22</sub></b>									10 13	13 52.27	+10 14.4	3.021	2.115	9.5	21.2	20 E	14*	—	
9 13	12 30.06	-2 41.6	2.734	1.803	9.8	21.4	18 E	1*	12*	10 23	14 11.00	+7 6.6	2.974	2.060	9.1	21.0	19 E	11*	—
9 23	12 52.08	-5 12.0	2.712	1.756	8.0	21.3	14 E	—	8*	11 2	14 30.29	+3 59.2	2.922	2.007	9.1	21.0	19 E	8*	—
10 3	13 15.16	-7 44.9	2.683	1.709	6.2	21.1	11 E	—	5*	11 12	14 50.21	+0 52.9	2.863	1.954	9.5	20.9	19 W	10*	—
10 13	13 39.45	-10 18.6	2.649	1.664	4.3	20.9	7 E	—	1*	11 22	15 10.79	-2 11.6	2.799	1.904	10.3	20.8	20 W	14*	—
10 23	14 5.07	-12 50.7	2.610	1.619	2.5	20.7	4 E	—	—	12 2	15 32.12	-5 14.0	2.730	1.855	11.5	20.7	22 W	16*	—
11 2	14 32.17	-15 18.3	2.568	1.576	0.7	20.5	1 E	—	—	12 12	15 54.27	-8 13.7	2.657	1.808	13.1	20.7	25 W	18*	4*
11 12	15 0.90	-17 38.2	2.523	1.534	1.1	20.4	2 W	—	—	12 22	16 17.34	-11 10.0	2.579	1.764	14.9	20.6	27 W	19*	10*
11 22	15 31.34	-19 46.3	2.478	1.495	2.8	20.4	4 W	—	—	1 1	16 41.43	-14 2.5	2.497	1.723	16.8	20.6	30 W	19*	16*
12 2	16 3.54	-21 38.2	2.434	1.459	4.5	20.4	7 W	—	—	1 11	17 6.65	-16 50.4	2.413	1.686	18.9	20.5	34 W	18*	22*
12 12	16 37.46	-23 9.0	2.391	1.426	6.1	20.4	9 W	—	2*	1 21	17 33.14	-19 33.1	2.328	1.653	21.0	20.5	37 W	17*	28*
12 17	16 55.00	-23 45.0	2.371	1.412	6.9	20.4	10 W	—	3*	<b>175519 2006 SR<sub>54</sub></b>									
12 22	17 12.90	-24 13.9	2.352	1.398	7.6	20.4	11 W	—	4*	9 13	13 6.86	-5 31.1	2.715	1.880	14.3	21.4	27 E	5*	21*
12 27	17 31.11	-24 35.3	2.333	1.385	8.3	20.4	12 W	1*	5*	9 23	13 28.29	-7 56.7	2.731	1.854	12.5	21.4	23 E	4*	17*
1 1	17 49.58	-24 48.7	2.316	1.374	9.0	20.4	13 W	1*	6*	10 3	13 50.56	-10 20.7	2.740	1.829	10.6	21.3	20 E	2*	14*
1 6	18 8.25	-24 53.8	2.300	1.364	9.7	20.4	14 W	1*	7*	10 13	14 13.75	-12 41.3	2.744	1.806	8.7	21.2	16 E	1*	10*
1 11	18 27.05	-24 50.4	2.285	1.355	10.4	20.4	14 W	1*	8*	10 23	14 37.89	-14 56.4	2.743	1.783	6.8	21.1	12 E	—	6*
1 16	18 45.90	-24 38.3	2.272	1.347	11.0	20.4	15 W	1*	9*	11 2	15 3.04	-17 3.7	2.737	1.762	4.9	20.9	9 E	—	3*
1 21	19 4.76	-24 17.5	2.260	1.342	11.6	20.4	16 W	1*	10*	11 12	15 29.23	-19 0.9	2.726	1.743	2.9	20.8	5 E	—	—
<b>285540 2000 GU<sub>127</sub></b>									11 22	15 56.44	-20 45.4	2.712	1.725	1.0	20.6	2 E	—	—	
9 13	12 36.75	-1 6.8	2.161	1.252	15.1	21.5	19 E	3*	13*	12 2	16 24.63	-22 14.8	2.694	1.709	1.0	20.6	2 W	—	—
9 23	13 4.42	-3 6.8	2.055	1.130	14.7	21.2	17 E	3*	10*	12 12	16 53.73	-23 26.7	2.673	1.695	3.0	20.7	5 W	—	—
10 3	13 35.79	-6 29.0	1.936	1.005	15.1	20.8	15 E	3*	9*	12 22	17 23.56	-24 19.1	2.650	1.683	4.9	20.8	8 W	—	2*
10 13	14 11.91	-9 31.7	1.807	0.880	16.9	20.4	15 E	3*	8*	1 1	17 53.94	-24 50.4	2.624	1.673	6.8	20.8	12 W	—	5*
10 18	14 32.14	-11 7.5	1.738	0.819	18.5	20.2	15 E	3*	8*	1 11	18 24.64	-24 59.5	2.597	1.666	8.7	20.9	15 W	1*	8*
10 23	14 54.08	-12 45.2	1.668	0.760	20.9	20.0	16 E	4*	9*	1 21	18 55.37	-24 46.1	2.568	1.661	10.6	20.9	18 W	2*	12*
10 28	15 17.92	-14 23.6	1.595	0.706	24.1	19.9	17 E	5*	10*	<b>188236 2002 VY</b>									
11 2	15 43.83	-16 0.9	1.521	0.657	28.2	19.7	18 E	5*	11*	9 13	13 16.29	-3 15.4	3.161	2.332	12.1	21.5	29 E	9*	22*
11 7	16 11.93	-17 34.6	1.445	0.617	33.5	19.7	20 E	6*	13*	9 23	13 32.90	-5 15.1	3.185	2.304	10.2	21.4	24 E	7*	17*
11 12	16 42.25	-19 1.4	1.369	0.589	39.7	19.6	22 E	8*	15*	10 3	13 50.20	-7 14.2	3.198	2.274	8.2	21.3	19 E	5*	12*
11 17	17 14.68	-20 17.6	1.292	0.575	46.5	19.6	25 E	9*	17*	10 13	14 8.19	-9 11.6	3.200	2.245	6.1	21.2	14 E	3*	7*
11 22	17 49.05	-21 18.9	1.219	0.578	53.2	19.7	28 E	11*	20*	10 23	14 26.89	-11 6.5	3.191	2.214	4.1	21.0	9 E	1*	2*
11 27	18 25.11	-22 0.9	1.150	0.596	59.1	19.8	31 E	12*	23*	11 2	14 46.33	-12 57.7	3.171	2.184	2.1	20.8	5 E	—	—
12 2	19 2.58	-22 18.8	1.090	0.628	63.5	19.9	35 E	14*	26*	11 12	15 6.52	-14 44.2	3.141	2.153	1.3	20.7	3 W	—	—
12 7	19 41.11	-22 8.5	1.041	0.671	66.2	20.1	39 E	16*	29*	11 22	15 27.49	-16 24.7	3.101	2.122	3.0	20.8	6 W	—	—
12 12	20 20.15	-21 27.0	1.006	0.721	67.2	20.2	42 E	19*	32*	12 2	15 49.24	-17 57.9	3.051	2.091	5.1	20.8	11 W	4*	1*
12 17	20 58.99	-20 13.8	0.984	0.777	66.7	20.3	47 E	21*	35*	12 12	16 11.78	-19 22.6	2.993	2.060	7.3	20.9	15 W	6*	5*
12 22	21 36.81	-18 31.6	0.978	0.837	65.1	20.4	51 E	24*	38*	12 22	16 35.08	-20 37.5	2.926	2.029	9.5	20.9	20 W	9*	10*
12 27	22 12.87	-16 26.1	0.986	0.899	62.7	20.5	54 E	27*	41*	1 1	16 59.14	-21 41.5	2.852	1.998	11.7	20.9	24 W	10*	15*
1 1	22 46.61	-14 5.2	1.008	0.961	59.9	20.6	58 E	30*	43*	1 11	17 23.89	-22 33.2	2.772	1.968	13.9	20.9	29 W	11*	20*
1 6	23 17.73	-11 36.6	1.043	1.024	56.8	20.7	61 E	32*	44*	1 21	17 49.26	-23 11.8	2.687	1.938	16.1	20.9	33 W	12*	25*
1 11	23 46.17	-9 7.3	1.089	1.086	53.8	20.8	63 E	35*	45*	<b>282520 2004 RW<sub>79</sub></b>									
1 16	0 12.05	-6 42.3	1.145	1.148	50.8	21.0	65 E	37*	45*	9 13	13 25.62	+3 36.3	2.981	2.173	13.6	21.4	30 E	15*	21*
1 21	0 35.58	-4 24.8	1.209	1.210	48.0	21.1	66 E	39*	45*	9 23	13 43.60	+1 21.6	2.992	2.136	11.9	21.3	26 E	13*	17*
<b>137799 1999 YB</b>									10 3	14 2.35	-0 52.5	2.994	2.099	10.2	21.2	22 E	11*	12*	
9 13	12 41.43	-4 15.6	2.110	1.226	17.2	21.5	21 E	2*	15*	10 13	14 21.90	-3 4.8	2.988	2.061	8.6	21.1	18 E	9*	8*
9 23	13 12.21	-8 0.7	2.119	1.223	16.1	21.4	20 E	1*	14*	10 23	14 42.27	-5 14.1	2.973	2.024	7.0	21.0	14 E	7*	3*
10 3	13 43.73	-11 38.0	2.129	1.222	15.1	21.4	19 E	—	13*	11 2	15 3.49	-7 19.1	2.951	1.987	5.6	20.9	11 E	5*	—
10 13	14 16.19	-15 2.8	2.139	1.223	14.0	21.4	17 E	—	11*	11 12	15 25.60	-9 18.5	2.921	1.951	4.7	20.8	9 E	3*	—
10 23	14 49.73	-18 10.3	2.150	1.225	13.0	21.4	16 E	—	10*	11 22	15 48.62	-11 10.7	2.885	1.915	4.6	20.7	9 W	1*	—
11 2	15 24.44	-20 55.8	2.162	1.229	11.														

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

21/22	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°-26°	2021	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°-26°		
<b>124146 2001 MQ<sub>12</sub></b> (continuation)									<b>446924 2002 VV<sub>17</sub></b> (continuation)										
11 2	15 35.05	-19 8.2	2.895	1.964	8.3	21.0	17 E	2*	10*	9 21	17 17.24	+15 53.9	0.217	0.995	86.2	19.9	81 E	57*	46*
11 12	15 59.06	-20 22.9	2.889	1.933	6.3	20.9	12 E	—	6*	9 23	17 37.32	+14 22.0	0.221	1.007	82.8	19.8	85 E	57*	48*
11 22	16 24.06	-21 26.5	2.876	1.903	4.2	20.8	8 E	—	2*	9 25	17 56.34	+12 47.9	0.226	1.019	79.6	19.8	88 E	57*	50*
12 2	16 50.00	-22 16.9	2.856	1.874	2.2	20.6	4 E	—	—	9 27	18 14.21	+11 14.0	0.233	1.030	76.6	19.8	90 E	56*	52*
12 12	17 16.79	-22 52.2	2.831	1.846	0.1	20.3	0 E	—	—	9 29	18 30.93	+ 9 41.9	0.240	1.042	73.9	19.8	93 E	55*	54*
12 22	17 44.30	-23 10.7	2.800	1.819	2.0	20.5	4 W	—	—	10 1	18 46.52	+ 8 13.3	0.249	1.052	71.4	19.8	95 E	53*	56*
1	18 12.40	-23 10.9	2.765	1.794	4.0	20.5	7 W	—	—	10 3	19 1.02	+ 6 49.0	0.259	1.063	69.3	19.8	97 E	52	57*
1 11	18 40.89	-22 51.9	2.726	1.770	6.1	20.6	11 W	1*	4*	10 8	19 33.04	+ 3 41.2	0.287	1.087	64.8	20.0	100 E	49	60
1 21	19 9.59	-22 13.1	2.684	1.749	8.1	20.6	15 W	2*	8*	10 13	19 59.99	+ 1 7.3	0.319	1.109	61.7	20.1	102 E	46	63
<b>508772 1998 WP<sub>7</sub></b>									<b>516423 2003 JC<sub>11</sub></b>										
9 13	14 9.55	+ 1 2.1	0.957	0.697	73.1	21.5	42 E	21*	32*	9 23	0 48.37	-24 41.2	2.831	3.751	7.1	24.2	153 W	20	89
9 18	14 31.37	+ 1 30.2	0.897	0.695	77.2	21.5	42 E	23*	32*	9 28	0 43.96	-25 6.3	2.816	3.732	7.2	24.1	152 W	20	89
9 23	14 53.61	+ 2 2.5	0.836	0.700	81.1	21.5	44 E	25*	32*	10 3	0 39.41	-25 27.2	2.808	3.713	7.6	24.1	151 W	20	89
9 28	15 16.41	+ 2 36.9	0.776	0.711	84.6	21.5	45 E	28*	31*	10 8	0 34.81	-25 43.3	2.806	3.693	8.2	24.1	148 E	19	90
10 3	15 40.02	+ 3 11.0	0.718	0.728	87.6	21.5	47 E	30*	31*	10 13	0 30.25	-25 54.1	2.812	3.673	9.0	24.2	145 E	19	90
10 8	16 4.83	+ 3 42.3	0.662	0.750	89.9	21.5	49 E	33*	32*	10 18	0 25.83	-25 59.5	2.823	3.653	9.9	24.2	141 E	19	90
10 13	16 31.31	+ 4 8.1	0.609	0.776	91.4	21.4	51 E	36*	32*	10 23	0 21.64	-25 59.5	2.841	3.633	10.8	24.2	137 E	19	90
10 18	17 0.01	+ 4 25.7	0.560	0.806	91.9	21.3	54 E	38*	33*	<b>20255 1998 FX<sub>2</sub></b>									
10 23	17 31.50	+ 4 32.3	0.517	0.838	91.3	21.2	57 E	41*	35*	9 23	0 48.47	+ 3 7.6	2.177	3.164	4.0	22.8	167 W	48	61
10 28	18 6.22	+ 4 25.2	0.481	0.873	89.6	21.1	61 E	43*	38*	9 28	0 43.78	+ 2 27.1	2.172	3.169	2.1	22.6	173 W	47	62
11 2	18 44.29	+ 4 2.8	0.454	0.909	86.7	20.9	66 E	46*	41*	10 3	0 39.00	+ 1 46.3	2.174	3.174	0.7	22.5	178 W	47	62
11 7	19 25.25	+ 3 25.6	0.436	0.945	82.9	20.8	71 E	47*	44*	10 8	0 34.23	+ 1 6.2	2.185	3.179	2.1	22.7	173 E	46	63
11 12	20 7.89	+ 2 36.7	0.430	0.983	78.4	20.7	76 E	47*	48*	10 13	0 29.60	+ 0 27.4	2.203	3.184	4.0	22.8	167 E	45	64
11 17	20 50.48	+ 1 41.9	0.435	1.020	73.5	20.6	82 E	47*	52*	10 18	0 25.20	- 0 9.1	2.229	3.188	5.8	22.9	161 E	45	64
11 22	21 31.22	+ 0 48.2	0.452	1.057	68.8	20.6	86 E	46*	56*	10 23	0 21.12	- 0 42.9	2.262	3.191	7.6	23.0	155 E	44	65
11 27	22 8.78	+ 0 1.5	0.479	1.094	64.4	20.7	90 E	45*	58*	<b>348461 2005 SH<sub>19</sub></b>									
12 2	22 42.51	+ 0 34.8	0.516	1.130	60.7	20.8	92 E	44*	60*	9 23	0 52.60	-15 45.5	3.259	4.214	4.8	23.1	160 W	29	80
12 7	23 12.39	+ 0 59.4	0.560	1.165	57.5	20.9	94 E	44*	61*	10 3	0 41.93	-16 27.4	3.257	4.210	4.7	23.1	160 W	29	80
12 12	23 38.72	+ 1 12.8	0.609	1.200	54.8	21.1	95 E	44*	62*	10 13	0 31.23	-16 56.4	3.288	4.204	6.1	23.2	153 E	28	81
12 17	0 2.00	+ 1 16.3	0.664	1.234	52.6	21.3	95 E	44*	62*	10 23	0 21.16	-17 10.2	3.350	4.197	8.0	23.3	144 E	28	81
12 22	0 22.71	+ 1 11.5	0.722	1.267	50.7	21.5	95 E	44*	62*	11 2	0 12.28	-17 8.5	3.440	4.189	9.9	23.4	134 E	28	81
<b>66400 1999 LT<sub>7</sub></b>									<b>216258 2006 WH<sub>1</sub></b>										
9 13	14 51.46	-19 23.7	1.166	1.031	54.1	21.5	56 E	11*	50*	9 23	0 52.84	+10 11.3	0.983	1.965	8.5	22.3	163 W	55	54
9 23	15 11.72	-21 31.1	1.145	0.943	56.5	21.3	52 E	9*	46*	10 3	0 38.07	+ 8 39.6	0.914	1.913	2.5	21.8	175 W	54	55
10 3	15 32.78	-23 31.5	1.096	0.841	60.5	21.1	47 E	8*	41*	10 13	0 21.46	+ 6 45.0	0.871	1.858	6.7	21.9	167 E	52	57
10 13	15 53.56	-25 19.9	1.016	0.726	67.6	20.8	42 E	6*	36*	10 23	0 5.34	+ 4 42.4	0.855	1.800	14.4	22.0	153 E	50	59
10 23	16 10.55	-26 42.9	0.900	0.600	80.4	20.6	36 E	4*	30*	11 2	23 51.93	+ 2 49.1	0.860	1.739	21.7	22.2	140 E	48	61
11 2	16 12.82	-26 55.6	0.751	0.473	106.1	20.8	27 E	1*	21*	<b>377097 2002 WQ<sub>4</sub></b>									
<b>393458 2001 WE<sub>1</sub></b>									<b>164342 2005 CP</b>										
9 13	15 1.61	-18 3.6	2.262	1.928	26.3	21.5	58 E	13*	52*	9 23	1 2.45	-21 53.3	1.058	2.006	13.0	23.2	153 W	23	86
9 23	15 21.14	-19 54.8	2.314	1.892	25.1	21.5	53 E	12*	47*	9 28	0 55.50	-23 11.2	1.072	2.018	12.9	23.2	153 W	22	87
10 3	15 42.31	-21 40.7	2.359	1.856	23.9	21.4	49 E	10*	43*	10 3	0 48.39	-24 17.0	1.092	2.030	13.5	23.3	152 W	21	88
10 13	16 5.13	-23 19.1	2.398	1.821	22.5	21.4	44 E	9*	38*	10 8	0 41.38	-25 9.4	1.118	2.041	14.6	23.4	149 E	20	89
10 23	16 29.55	-24 47.2	2.430	1.788	21.0	21.3	40 E	8*	34*	10 13	0 34.72	-25 48.0	1.150	2.051	16.1	23.5	145 E	19	90
11 2	16 55.53	-26 2.4	2.456	1.756	19.5	21.3	36 E	7*	30*	10 18	0 28.64	-26 13.0	1.187	2.061	17.6	23.7	141 E	19	90
11 12	17 23.00	-27 1.6	2.477	1.726	17.9	21.2	32 E	6*	26*	10 23	0 23.27	-26 25.0	1.229	2.070	19.2	23.8	137 E	19	90
11 22	17 51.80	-27 42.2	2.494	1.697	16.3	21.1	29 E	5*	22*	<b>530509 2011 KO<sub>4</sub></b>									
12 2	18 21.74	-28 1.7	2.506	1.671	14.7	21.0	26 E	5*	19*	9 23	1 4.04	-29 52.6	2.613	3.493	9.1	22.5	146 W	15	86
12 12	18 52.58	-27 57.9	2.515	1.647	13.1	21.0	22 E	4*	16*	9 28	0 59.00	-30 10.2	2.608	3.488	9.1	22.5	146 W	15	86
12 22	19 23.99	-27 29.4	2.522	1.626	11.5	20.9	19 E	3*	13*	10 3	0 53.80	-30 22.1	2.610	3.482	9.4	22.5	146 W	15	86
1	19 55.67	-26 35.9	2.526	1.608	10.0	20.8	17 E	2*	10*	10 8	0 48.54	-30 28.0	2.619	3.475	9.8	22.5	144 E	15	86
1 11	20 27.32	-25 17.7	2.530	1.593	8.5	20.7	14 E	—	8*	10 13	0 43.34	-30 27.4	2.634	3.469	10.4	22.6	141 E	15	86
1 21	20 58.65	-23 36.1	2.534	1.582	7.2	20.6	12 E	—	5*	10 18	0 38.32	-30 20.2	2.655	3.462	11.1	22.6	138 E	15	86
<b>277142 2005 LG<sub>8</sub></b>									<b>416071 2002 NV</b>										
9 13	15 5.91	- 2 43.3	2.523	2.128	23.0	21.4	56 E	27*	46*	9 23	1 8.22	+37 32.9	3.495	4.305	8.8	24.4	139 W	83	26
9 23	15 16.64	- 3 45.3	2.546	2.040	21.9	21.3	49 E	24*	39*	9 28	1 3.81	+37 26.3	3.465	4.307	8.1	24.3	143 W	82	27
10 3	15 29.02	- 4 47.6	2.552	1.947	20.6	21.2	43 E	22*	33*	10 3	0 59.22	+37 14.8	3.441	4.308	7.4	24.3	146 W	82	27
10 13	15 43.08	- 5 49.0	2.538	1.848	19.2	21.0	37 E	21*	27*	10 8	0 54.53	+36 58.4	3.423	4.309	6.9	24.3	149 W	82	27
10 23	15 58.86	- 6 48.2	2.503	1.743	17.7	20.8	32 E	19*	21*	10 13	0 49.85	+36 37.4	3.413	4.310	6.5	24.2	151 E	82	27
11 2	16 16.48	- 7 44.2	2.448	1.632	16.2	20.6	27 E	17*	15*	<b>446924 2002 VV<sub>17</sub></b> (continuation)									
11 12	16 36.16	- 8 35.6	2.372	1.513	14.9	20.3	23 E	15*	9*	9 1									

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

2021	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	$45^\circ$	$-26^\circ$	2021	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	$45^\circ$	$-26^\circ$
<b>416071 2002 NV</b>										<b>494997 2010 HY<sub>113</sub></b>									
<i>(continuation)</i>																			
10 18	0 45.26	+36 12.1	3.410	4.311	6.4	24.2	151 E	81	28	9 23	1 34.60	+13 45.8	1.588	2.522	10.5	22.0	153 W	59	50
10 23	0 40.84	+35 43.0	3.414	4.311	6.4	24.2	151 E	81	28	9 28	1 30.02	+13 13.1	1.578	2.538	8.2	21.9	159 W	58	51
10 28	0 36.68	+35 10.5	3.425	4.312	6.7	24.3	150 E	80	29	10 3	1 25.10	+12 37.0	1.574	2.554	5.8	21.8	165 W	58	51
<b>170502 2003 WM<sub>7</sub></b>																			
9 23	1 8.26	-1 18.0	3.683	4.651	3.7	23.7	163 W	44	65	10 8	1 19.98	+11 58.3	1.578	2.570	3.5	21.7	171 W	57	52
10 3	1 0.03	-2 8.8	3.662	4.654	1.8	23.6	171 W	43	66	10 13	1 14.81	+11 18.0	1.589	2.585	1.4	21.6	176 W	56	53
10 13	0 51.58	-2 56.7	3.674	4.655	2.5	23.6	168 E	42	67	10 18	1 9.76	+10 37.1	1.606	2.600	2.0	21.6	175 E	56	53
10 23	0 43.42	-3 38.6	3.719	4.655	4.6	23.8	158 E	41	68	10 23	1 4.95	+9 56.8	1.632	2.615	4.2	21.8	169 E	55	54
11 2	0 36.01	-4 12.1	3.795	4.654	6.8	23.9	146 E	41	68	10 28	1 0.51	+9 18.1	1.664	2.630	6.4	22.0	163 E	54	55
<b>497236 2005 EJ<sub>94</sub></b>																			
9 23	1 14.29	+17 6.4	1.458	2.404	10.2	22.5	155 W	62	47	11 2	0 56.54	+8 41.7	1.703	2.644	8.5	22.2	157 E	54	55
9 28	1 8.08	+16 43.6	1.466	2.434	7.8	22.4	161 W	62	47	11 7	0 53.14	+8 8.6	1.749	2.658	10.5	22.3	151 E	53	56
10 3	1 1.75	+16 16.4	1.481	2.464	5.6	22.4	166 W	61	48	11 12	0 50.35	+7 39.4	1.800	2.672	12.3	22.4	145 E	53	56
10 8	0 55.48	+15 45.9	1.503	2.493	4.0	22.3	170 W	61	48	<b>500769 2013 CX<sub>45</sub></b>									
10 13	0 49.45	+15 13.0	1.533	2.522	3.7	22.4	171 E	60	49	9 23	1 38.16	+21 32.0	1.984	2.883	10.7	22.2	148 W	67	42
10 18	0 43.81	+14 39.1	1.570	2.551	4.9	22.5	167 E	60	49	10 3	1 28.96	+21 1.6	1.942	2.897	7.3	22.0	158 W	66	43
10 23	0 38.69	+14 5.1	1.613	2.580	6.7	22.7	162 E	59	50	10 13	1 18.74	+20 13.7	1.928	2.909	4.3	21.8	167 W	65	44
10 28	0 34.18	+13 32.2	1.664	2.608	8.6	22.9	157 E	59	50	10 23	1 8.56	+19 12.7	1.943	2.921	4.3	21.9	167 E	64	45
<b>370061 2000 YO<sub>29</sub></b>																			
9 23	1 14.48	+73 44.5	2.508	2.937	19.2	23.0	105 W	61	-	11 2	0 59.41	+18 5.1	1.987	2.932	7.2	22.1	158 E	63	46
9 25	1 8.09	+73 46.2	2.498	2.942	19.1	23.0	106 W	61	-	11 12	0 52.11	+16 58.2	2.059	2.942	10.4	22.3	148 E	62	47
9 27	1 1.53	+73 45.8	2.488	2.947	18.9	23.0	107 W	61	-	<b>259802 2004 BJ<sub>86</sub></b>									
9 29	0 54.87	+73 43.1	2.479	2.952	18.8	23.0	108 W	61	-	9 23	1 41.21	-38 58.2	1.515	2.332	17.8	22.4	135 W	6	77
10 1	0 48.16	+73 38.2	2.469	2.957	18.6	23.0	109 W	61	-	9 28	1 35.42	-40 8.4	1.520	2.333	17.9	22.4	134 W	5	76
10 3	0 41.44	+73 30.9	2.461	2.961	18.5	23.0	110 W	61	-	10 3	1 29.05	-41 7.1	1.530	2.334	18.2	22.4	133 W	4	75
10 5	0 34.78	+73 21.2	2.453	2.966	18.3	23.0	111 E	62	-	10 8	1 22.30	-41 53.1	1.545	2.334	18.6	22.4	132 W	3	74
10 7	0 28.23	+73 9.3	2.445	2.970	18.2	22.9	112 E	62	-	10 13	1 15.39	-42 25.5	1.564	2.334	19.1	22.5	130 W	3	74
10 9	0 21.83	+72 55.0	2.438	2.974	18.0	22.9	113 E	62	-	10 18	1 8.57	-42 44.0	1.588	2.333	19.8	22.5	128 E	2	73
10 11	0 15.65	+72 38.4	2.431	2.978	17.9	22.9	114 E	62	-	10 23	1 2.06	-42 49.1	1.616	2.332	20.5	22.6	125 E	2	73
10 13	0 9.71	+72 19.6	2.425	2.982	17.7	22.9	115 E	63	-	10 28	0 56.05	-42 41.4	1.648	2.330	21.2	22.7	122 E	2	73
10 15	0 4.05	+71 58.6	2.420	2.986	17.6	22.9	115 E	63	-	11 2	0 50.70	-42 21.8	1.682	2.328	22.0	22.7	119 E	3	74
10 17	23 58.69	+71 35.6	2.415	2.990	17.4	22.9	116 E	63	-	<b>313538 2002 YB<sub>12</sub></b>									
10 19	23 53.66	+71 10.7	2.411	2.994	17.3	22.9	117 E	64	-	9 23	1 45.08	+32 23.1	1.659	2.505	15.2	22.3	139 W	77	32
10 21	23 48.98	+70 43.9	2.407	2.998	17.2	22.9	117 E	64	-	9 28	1 38.60	+32 8.0	1.634	2.516	13.5	22.2	144 W	77	32
10 23	23 44.64	+70 15.4	2.404	3.001	17.0	22.9	118 E	65	-	10 3	1 31.60	+31 44.2	1.615	2.527	11.7	22.2	149 W	77	32
10 28	23 35.34	+68 57.4	2.400	3.010	16.8	22.9	119 E	66	-	10 8	1 24.25	+31 11.7	1.603	2.537	10.1	22.1	154 W	76	33
11 2	23 28.19	+67 31.3	2.401	3.018	16.6	22.9	120 E	67	-	10 13	1 16.76	+30 30.9	1.598	2.547	8.8	22.0	157 W	76	33
11 7	23 23.07	+65 58.8	2.406	3.026	16.5	22.9	120 E	69	-	10 18	1 9.36	+29 42.5	1.600	2.556	8.0	22.0	159 E	75	34
11 12	23 19.77	+64 22.1	2.417	3.033	16.5	22.9	120 E	71	-	10 23	1 2.24	+28 48.0	1.609	2.564	7.9	22.0	159 E	74	35
<b>523775 2014 YB<sub>35</sub></b>																			
9 23	1 19.73	+12 29.3	1.832	2.781	8.3	23.1	157 W	57	52	10 28	0 55.58	+27 48.7	1.626	2.572	8.5	22.1	157 E	73	36
10 3	1 7.74	+11 56.1	1.788	2.776	4.1	22.8	169 W	57	52	11 2	0 49.54	+26 46.4	1.650	2.579	9.7	22.2	154 E	72	37
10 13	0 54.91	+11 12.2	1.775	2.770	2.0	22.7	174 E	56	53	11 7	0 44.24	+25 42.7	1.681	2.585	11.2	22.3	150 E	71	38
10 23	0 42.47	+10 23.1	1.794	2.762	5.9	22.9	163 E	55	54	11 12	0 39.76	+24 39.5	1.719	2.591	12.7	22.4	145 E	70	39
11 2	0 31.56	+9 35.5	1.842	2.752	10.1	23.2	151 E	55	54	<b>425711 2011 BZ<sub>22</sub></b>									
<b>523612 2006 BH</b>																			
9 23	1 21.84	+48 38.7	4.280	4.963	9.1	25.4	128 W	86	15	9 23	1 45.63	+48 26.6	2.695	3.388	13.8	22.0	126 W	87	16
9 28	1 17.48	+48 43.6	4.231	4.952	8.7	25.4	131 W	86	15	9 28	1 40.53	+48 43.1	2.666	3.397	13.1	21.9	130 W	86	15
10 3	1 12.86	+48 43.7	4.188	4.940	8.3	25.4	134 W	86	15	10 3	1 34.94	+48 52.6	2.641	3.405	12.4	21.9	133 W	86	15
10 8	1 8.06	+48 38.9	4.150	4.928	7.9	25.3	137 W	86	15	10 8	1 28.99	+48 54.6	2.621	3.414	11.7	21.9	136 W	86	15
10 13	1 3.16	+48 29.0	4.118	4.916	7.6	25.3	139 E	87	16	10 13	1 22.83	+48 49.1	2.607	3.422	11.1	21.8	139 W	86	15
10 18	0 58.26	+48 14.1	4.093	4.904	7.4	25.2	141 E	87	16	10 18	1 16.61	+48 36.0	2.599	3.430	10.6	21.8	141 E	86	15
10 23	0 53.45	+47 54.5	4.073	4.892	7.3	25.2	142 E	87	16	10 23	1 10.49	+48 15.6	2.597	3.437	10.2	21.8	142 E	87	16
10 28	0 48.82	+47 30.4	4.061	4.879	7.3	25.2	142 E	87	16	10 28	1 4.63	+47 48.3	2.601	3.445	10.1	21.8	143 E	87	16
<b>38071 1999 GU<sub>3</sub></b>																			
9 23	1 22.90	+8 46.8	2.159	3.110	7.1	24.2	157 W	54	55	11 2	0 59.17	+47 14.9	2.611	3.452	10.1	21.8	143 E	88	17
10 3	1 13.57	+7 24.4	2.130	3.120	3.2	23.9	170 W	52	57	11 7	0 54.22	+46 36.3	2.628	3.459	10.3	21.9	141 E	88	17
10 13	1 3.67	+5 57.3	2.132	3.129	0.9	23.8	177 E	51	58	11 12	0 49.89	+45 53.6	2.651	3.466	10.6	21.9	140 E	89	18
10 23	0 54.10	+4 32.5	2.165	3.136	4.8	24.1	165 E	50	59	<b>171486 1996 MO</b>									
11 2	0 45.68	+3 16.3	2.229	3.142	8.5	24.3	152 E	48	61	9 23	1 45.89	+5 30.5	1.512	2.448	10.8	21.9	153 W	51	58
<b>164184 2004 BF<sub>68</sub></b>																			
9 23	1 29.20	+10 30.6	1.382	2.332	10.3	22.5	155 W	56	53	10 3	1 35.47	+3 58.1	1.432	2.413	6.1	21.6	165 W	49	60
9 28	1 23.07	+9 46.6	1.364	2.338	7.6	22.4	162 W	55	54	10 13	1 22.91	+2 16.2	1.381	2.376	2.5	21.3	174 W	47	62
10 3																			

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

21/22	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°-26°	21/22	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°-26°
<b>463380 2013 BY<sub>45</sub></b> (continuation)									<b>486858 2014 KK<sub>1</sub></b> (continuation)								
10 28	1 23.28	-48 44.9	0.957	1.667	31.9	21.4	117 E	— 67	11 7	1 22.79	-1 15.8	1.418	2.343	11.2	22.3	153 E	44 65
11 2	1 18.31	-49 2.6	0.960	1.641	33.4	21.4	114 E	— 67	11 12	1 19.35	-1 27.1	1.462	2.355	13.2	22.5	147 E	44 65
11 7	1 13.95	-49 1.5	0.963	1.616	34.8	21.4	112 E	— 67	<b>490063 2008 TX<sub>99</sub></b>								
11 12	1 10.46	-48 42.2	0.967	1.590	36.1	21.4	109 E	— 67	9 23	2 7.36	+10 4.7	1.222	2.133	15.0	21.9	147 W	55 54
11 17	1 8.03	-48 6.2	0.972	1.565	37.4	21.4	106 E	— 68	9 28	2 3.56	+9 19.3	1.211	2.151	12.4	21.8	153 W	54 55
11 22	1 6.74	-47 14.8	0.976	1.541	38.6	21.4	103 E	— 69	10 3	1 59.14	+8 31.0	1.205	2.168	9.6	21.7	159 W	54 55
11 27	1 6.66	-46 8.9	0.979	1.516	39.7	21.4	101 E	— 70	10 8	1 54.27	+7 40.9	1.205	2.185	6.8	21.6	165 W	53 56
12 2	1 7.78	-44 49.7	0.982	1.493	40.8	21.4	99 E	— 71	10 13	1 49.11	+6 50.3	1.212	2.203	4.1	21.5	171 W	52 57
12 7	1 10.10	-43 17.9	0.985	1.470	41.8	21.4	96 E	2 73	10 18	1 43.86	+6 0.6	1.225	2.220	2.1	21.4	175 W	51 58
12 12	1 13.57	-41 34.5	0.987	1.447	42.7	21.4	94 E	3 74	10 23	1 38.70	+5 13.3	1.245	2.237	3.0	21.5	173 E	50 59
12 17	1 18.10	-39 40.0	0.987	1.426	43.6	21.4	93 E	5 76	10 28	1 33.79	+4 29.5	1.272	2.253	5.3	21.7	168 E	49 60
12 22	1 23.62	-37 35.0	0.987	1.405	44.4	21.4	91 E	7 78	11 2	1 29.30	+3 50.2	1.306	2.270	7.8	21.9	162 E	49 60
12 27	1 30.05	-35 19.8	0.986	1.385	45.2	21.4	89 E	10 80*	11 7	1 25.35	+3 16.4	1.346	2.286	10.2	22.1	156 E	48 61
1 1	1 37.33	-32 54.6	0.985	1.367	46.0	21.4	88 E	12 81*	11 12	1 22.03	+2 48.4	1.391	2.303	12.4	22.3	150 E	48 61
1 6	1 45.39	-30 19.7	0.984	1.349	46.7	21.4	87 E	15 81*	11 17	1 19.42	+2 26.7	1.443	2.319	14.4	22.4	144 E	47 62
1 11	1 54.18	-27 35.4	0.982	1.333	47.4	21.4	85 E	17 79*	<b>338445 2003 ET<sub>47</sub></b>								
1 16	2 3.65	-24 42.4	0.980	1.318	48.0	21.4	84 E	20 77*	9 23	2 17.15	+44 53.2	2.565	3.255	14.5	22.1	126 W	90 19
1 21	2 13.75	-21 41.0	0.979	1.304	48.5	21.3	83 E	23 74*	9 28	2 12.30	+45 20.4	2.536	3.270	13.6	22.1	130 W	90 19
<b>499116 2009 HF<sub>78</sub></b>									10 3	2 6.83	+45 41.5	2.512	3.284	12.7	22.0	134 W	89 18
9 23	1 54.01	+9 37.3	1.708	2.626	11.0	22.3	150 W	55 54	10 8	2 0.84	+45 55.8	2.494	3.298	11.9	22.0	137 W	89 18
10 3	1 45.65	+8 35.6	1.687	2.656	6.7	22.2	162 W	54 55	10 13	1 54.46	+46 2.8	2.481	3.313	11.0	22.0	141 W	89 18
10 13	1 36.11	+7 28.1	1.692	2.686	2.2	21.9	174 W	52 57	10 18	1 47.84	+46 2.5	2.474	3.326	10.3	21.9	143 W	89 18
10 23	1 26.46	+6 21.8	1.726	2.715	2.8	22.0	172 E	51 58	10 23	1 41.15	+45 54.7	2.473	3.340	9.8	21.9	145 E	89 18
11 2	1 17.73	+5 23.1	1.789	2.744	7.0	22.4	160 E	50 59	10 28	1 34.55	+45 39.8	2.479	3.353	9.4	21.9	147 E	89 18
<b>538964 2016 JV<sub>29</sub></b>									11 2	1 28.21	+45 18.2	2.492	3.366	9.3	21.9	147 E	90 19
9 23	2 1.07	+30 13.3	1.876	2.708	14.3	21.7	138 W	75 34	11 7	1 22.28	+44 50.8	2.511	3.379	9.4	22.0	146 E	90 19
10 3	1 53.78	+29 21.2	1.784	2.689	11.2	21.5	148 W	74 35	11 12	1 16.87	+44 18.6	2.537	3.392	9.8	22.0	145 E	89 20
10 13	1 44.55	+27 59.6	1.716	2.669	8.0	21.3	158 W	73 36	11 17	1 12.10	+43 42.6	2.569	3.404	10.3	22.1	142 E	89 20
10 23	1 34.43	+26 10.4	1.675	2.648	5.7	21.1	165 E	71 38	<b>412977 1990 UO</b>								
11 2	1 24.60	+24 0.1	1.663	2.626	6.6	21.1	162 E	69 40	9 23	2 25.03	+21 16.5	0.975	1.851	21.0	21.8	139 W	66 43
11 12	1 16.24	+21 39.6	1.680	2.603	9.8	21.2	153 E	67 42	9 28	2 18.24	+19 59.6	0.902	1.818	18.2	21.5	145 W	65 44
11 22	1 10.25	+19 21.3	1.724	2.579	13.5	21.4	143 E	64 45	10 3	2 9.55	+18 21.7	0.834	1.784	14.8	21.2	153 W	63 46
<b>339715 2005 SS<sub>4</sub></b>									10 8	1 58.86	+16 19.3	0.773	1.748	10.8	20.8	161 W	61 48
9 23	2 2.54	+5 28.8	1.028	1.957	15.4	21.5	149 W	50 59	10 13	1 46.19	+13 49.8	0.719	1.710	6.0	20.4	170 W	59 50
9 28	1 51.00	+4 49.5	1.032	1.992	11.6	21.4	157 W	50 59	10 18	1 31.72	+10 52.4	0.674	1.671	0.8	19.9	179 W	56 53
10 3	1 39.09	+4 9.0	1.044	2.025	7.7	21.3	164 W	49 60	10 23	1 15.77	+7 29.2	0.639	1.629	5.6	20.0	171 E	52 57
10 8	1 27.17	+3 29.0	1.064	2.058	4.2	21.2	171 W	48 61	10 28	0 58.86	+3 46.0	0.615	1.586	12.1	20.2	160 E	49 60
10 13	1 15.61	+2 51.1	1.093	2.089	2.3	21.2	175 W	48 61	11 2	0 41.61	-0 7.9	0.600	1.541	18.9	20.3	150 E	45 64
10 18	1 4.72	+2 16.8	1.130	2.119	4.6	21.4	170 E	47 62	11 4	0 34.78	-1 42.0	0.597	1.522	21.7	20.3	146 E	43 66
10 23	0 54.75	+1 47.1	1.175	2.148	7.6	21.7	163 E	47 62	11 6	0 28.04	-3 15.1	0.596	1.503	24.4	20.4	141 E	42 67
10 28	0 45.88	+1 22.2	1.228	2.176	10.5	21.9	156 E	46 63	11 8	0 21.45	-4 46.8	0.596	1.484	27.0	20.4	137 E	40 69
11 2	0 38.20	+1 3.9	1.288	2.202	13.2	22.1	150 E	46 63	11 10	0 15.04	-6 16.4	0.597	1.464	29.7	20.5	133 E	39 70
11 7	0 31.74	+0 51.0	1.354	2.228	15.5	22.3	143 E	46 63	11 12	0 8.83	-7 43.3	0.599	1.444	32.2	20.5	129 E	37 72
<b>399621 2004 GC<sub>26</sub></b>									11 17	23 54.37	-11 7.0	0.610	1.392	38.3	20.7	119 E	34 75
9 23	2 4.03	+8 51.4	1.589	2.496	12.4	21.8	148 W	54 55	11 22	23 41.59	-14 8.8	0.625	1.338	43.9	20.8	110 E	31 78
10 3	1 55.31	+8 4.6	1.556	2.519	7.9	21.6	160 W	53 56	11 27	23 30.54	-16 48.6	0.642	1.281	49.0	20.9	102 E	28 81
10 13	1 44.98	+7 11.7	1.549	2.541	3.2	21.4	172 W	52 57	12 2	23 21.15	-19 8.3	0.661	1.221	53.7	21.0	94 E	26 81*
10 23	1 34.23	+6 19.1	1.571	2.562	2.4	21.4	174 E	51 58	12 7	23 13.22	-21 11.3	0.679	1.159	58.0	21.1	86 E	24 76*
11 2	1 24.24	+5 33.2	1.621	2.582	6.9	21.7	162 E	51 58	12 12	23 6.46	-23 1.4	0.695	1.093	62.2	21.1	79 E	22 70*
11 12	1 16.05	+4 59.5	1.698	2.602	11.0	22.0	150 E	50 59	12 17	23 0.46	-24 42.7	0.708	1.024	66.3	21.1	72 E	20 64*
<b>455308 2002 FF</b>									12 22	22 54.75	-26 18.9	0.717	0.952	70.6	21.1	66 E	10* 58*
9 23	2 4.48	+8 43.2	2.224	3.118	9.9	22.4	148 W	54 55	12 27	22 48.71	-27 53.4	0.721	0.876	75.4	21.1	59 E	17* 52*
10 3	1 56.32	+8 11.1	2.172	3.129	6.4	22.3	159 W	53 56	1 1	22 41.52	-29 29.1	0.719	0.795	80.8	21.1	53 E	14* 46*
10 13	1 46.83	+7 34.1	2.149	3.139	2.7	22.0	171 W	53 56	1 6	22 31.96	-31 7.2	0.713	0.711	87.4	21.1	46 E	11* 40*
10 23	1 36.85	+6 56.1	2.156	3.148	1.7	22.0	175 E	52 57	1 11	22 18.24	-32 45.2	0.702	0.622	95.8	21.1	39 E	6* 33*
11 2	1 27.27	+6 21.7	2.194	3.156	5.3	22.2	163 E	51 58	1 16	21 57.84	-34 10.1	0.691	0.530	106.7	21.3	31 E	1* 25*
11 12	1 18.90	+5 54.7	2.262	3.163	8.8	22.5	151 E	51 58	<b>513916 2014 AR<sub>46</sub></b>								
<b>500788 2013 EP<sub>109</sub></b>									9 23	2 32.01	+51 51.9	1.291	1.983	26.3	22.4	119 W	83 12
9 23	2 4.78	+1 19.0	1.947	2.852	10.5	21.8	149 W	44 65	9 28	2 27.75	+52 37.7	1.256	1.984	25.2	22.3	123 W	82 11
10 3	1 56.40	+2 7.9	1.908	2.865	7.2	21.6	159 W	43 66	10 3	2 22.03	+53 13.6	1.224	1.985	24.1	22.3	126 W	82 11
10 13	1 46.61	+2 52.8	1.897	2.877	4.7	21.5	166 W	42 67	10 8	2 14.93	+53 37.4	1.195	1.985	22.9	22.2	129 W	81 10
10 23	1 36.35	+3 27.8	1.916	2.888	5.2	21.5	165 E	42 67	10 13	2 6.67	+53 47.3	1.169	1.986	21.7	22.1	133 W	81 10
11 2	1 26.62	+3 48.6	1.963	2													

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

21/22	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°	21/22	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°										
<b>374158 2004 UL</b>										<b>88959 2001 TZ<sub>44</sub></b>																			
<i>(continuation)</i>										<i>(continuation)</i>																			
11 12	0 11.87	-11 17.0	0.879	1.679	27.8	20.9	128 E	34	75	1 1	0 12.31	-13 5.6	1.807	1.863	31.0	21.4	78 E	32	61*	1 1	0 12.31	-13 5.6	1.807	1.863	31.0	21.4	78 E	32	61*
11 22	23 43.24	-11 55.9	0.916	1.574	35.7	21.1	111 E	33	76	1 6	0 13.51	-11 3.1	1.844	1.829	31.1	21.4	74 E	34	56*	1 6	0 13.51	-11 3.1	1.844	1.829	31.1	21.4	74 E	34	56*
12 2	23 21.67	-11 48.8	0.965	1.458	42.2	21.2	97 E	33	75*	1 11	0 15.37	-9 1.3	1.878	1.794	31.0	21.4	70 E	36*	51*	1 11	0 15.37	-9 1.3	1.878	1.794	31.0	21.4	70 E	36*	51*
12 12	23 6.61	-11 9.3	1.013	1.331	47.3	21.2	84 E	34	65*	1 16	0 17.82	-6 59.9	1.911	1.758	30.7	21.4	66 E	37*	46*	1 16	0 17.82	-6 59.9	1.911	1.758	30.7	21.4	66 E	37*	46*
12 22	22 56.51	-10 9.0	1.049	1.188	51.7	21.2	71 E	35*	53*	1 21	0 20.81	-4 59.0	1.941	1.722	30.4	21.3	62 E	38*	42*	1 21	0 20.81	-4 59.0	1.941	1.722	30.4	21.3	62 E	38*	42*
1 1	22 49.45	-8 56.3	1.064	1.028	56.0	21.0	60 E	35*	41*	<b>182231 2001 CZ<sub>20</sub></b>																			
1 11	22 43.03	-7 40.1	1.050	0.844	61.4	20.7	49 E	32*	30*	9 23	2 51.99	+14 49.6	1.779	2.587	16.0	21.5	135 W	60	49	9 23	2 51.99	+14 49.6	1.779	2.587	16.0	21.5	135 W	60	49
1 21	22 33.02	-6 38.7	0.998	0.627	70.4	20.2	37 E	26*	19*	10 3	2 48.15	+14 11.3	1.665	2.555	12.7	21.2	146 W	59	50	10 3	2 48.15	+14 11.3	1.665	2.555	12.7	21.2	146 W	59	50
<b>504819 2010 GL<sub>67</sub></b>										10 13	2 41.54	+13 18.9	1.572	2.522	8.8	20.9	157 W	58	51	10 13	2 41.54	+13 18.9	1.572	2.522	8.8	20.9	157 W	58	51
9 23	2 49.64	+16 25.1	1.742	2.552	16.1	21.3	135 W	61	48	10 23	2 32.67	+12 14.8	1.503	2.488	4.2	20.5	169 W	57	52	10 23	2 32.67	+12 14.8	1.503	2.488	4.2	20.5	169 W	57	52
10 3	2 46.72	+14 26.8	1.619	2.512	12.9	21.0	146 W	59	50	11 2	2 22.40	+11 3.8	1.463	2.454	1.6	20.3	176 E	56	53	11 2	2 22.40	+11 3.8	1.463	2.454	1.6	20.3	176 E	56	53
10 13	2 41.11	+12 1.7	1.519	2.472	8.8	20.7	158 W	57	52	11 7	2 17.12	+10 27.9	1.453	2.436	3.8	20.4	171 E	55	54	11 7	2 17.12	+10 27.9	1.453	2.436	3.8	20.4	171 E	55	54
10 23	2 33.31	+9 14.7	1.446	2.431	4.4	20.3	169 W	54	55	11 12	2 11.95	+9 53.0	1.451	2.419	6.4	20.5	164 E	55	54	11 12	2 11.95	+9 53.0	1.451	2.419	6.4	20.5	164 E	55	54
10 28	2 28.83	+7 45.9	1.421	2.410	3.0	20.2	173 W	53	56	11 17	2 7.08	+9 20.2	1.455	2.401	8.9	20.6	158 E	54	55	11 17	2 7.08	+9 20.2	1.455	2.401	8.9	20.6	158 E	54	55
11 2	2 24.14	+6 15.8	1.403	2.390	3.5	20.2	172 E	51	58	11 22	2 2.64	+8 50.5	1.466	2.383	11.3	20.7	152 E	54	55	11 22	2 2.64	+8 50.5	1.466	2.383	11.3	20.7	152 E	54	55
11 7	2 19.41	+4 46.2	1.394	2.369	5.6	20.2	167 E	50	59	11 27	1 58.75	+8 24.6	1.482	2.364	13.6	20.8	146 E	53	56	11 27	1 58.75	+8 24.6	1.482	2.364	13.6	20.8	146 E	53	56
11 12	2 14.80	+3 19.1	1.391	2.348	8.0	20.3	161 E	48	61	12 2	1 55.52	+8 3.0	1.505	2.346	15.7	20.9	140 E	53	56	12 2	1 55.52	+8 3.0	1.505	2.346	15.7	20.9	140 E	53	56
11 17	2 10.46	+1 56.4	1.396	2.327	10.6	20.4	154 E	47	62	12 7	1 53.02	+7 46.3	1.532	2.328	17.7	21.0	134 E	53	56	12 7	1 53.02	+7 46.3	1.532	2.328	17.7	21.0	134 E	53	56
11 22	2 6.55	+0 39.6	1.407	2.306	13.0	20.5	148 E	46	63	12 12	1 51.30	+7 34.8	1.563	2.309	19.5	21.1	129 E	53	56	12 12	1 51.30	+7 34.8	1.563	2.309	19.5	21.1	129 E	53	56
11 27	2 3.17	+0 30.0	1.425	2.285	15.4	20.6	142 E	44	65	12 17	1 50.39	+7 28.4	1.597	2.290	21.1	21.1	123 E	52	57	12 17	1 50.39	+7 28.4	1.597	2.290	21.1	21.1	123 E	52	57
12 2	2 0.42	-1 31.7	1.448	2.264	17.6	20.7	136 E	43	66	12 22	1 50.28	+7 27.2	1.635	2.271	22.4	21.2	118 E	52	57	12 22	1 50.28	+7 27.2	1.635	2.271	22.4	21.2	118 E	52	57
12 7	1 58.39	-2 24.8	1.475	2.243	19.5	20.8	130 E	43	66	12 27	1 50.96	+7 30.9	1.675	2.252	23.7	21.3	113 E	53	56	12 27	1 50.96	+7 30.9	1.675	2.252	23.7	21.3	113 E	53	56
12 12	1 57.11	-3 9.3	1.507	2.222	21.3	20.9	125 E	42	67	1 1	1 52.41	+7 39.2	1.716	2.233	24.7	21.4	109 E	53	56*	1 1	1 52.41	+7 39.2	1.716	2.233	24.7	21.4	109 E	53	56*
12 17	1 56.63	-3 45.2	1.542	2.202	22.9	20.9	120 E	41	68	1 6	1 54.60	+7 52.0	1.759	2.214	25.5	21.4	104 E	53	55*	1 6	1 54.60	+7 52.0	1.759	2.214	25.5	21.4	104 E	53	55*
12 22	1 56.92	-4 13.1	1.579	2.181	24.2	21.0	115 E	41	68	1 11	1 57.51	+8 8.8	1.802	2.195	26.2	21.5	100 E	53	54*	1 11	1 57.51	+8 8.8	1.802	2.195	26.2	21.5	100 E	53	54*
12 27	1 57.99	-4 33.3	1.618	2.160	25.4	21.1	110 E	40	69	<b>526336 2006 CP</b>																			
1 1	1 59.81	-4 46.5	1.658	2.139	26.3	21.1	105 E	40	69*	9 23	3 7.25	-22 45.3	1.493	2.264	20.1	21.4	129 W	22	87	9 23	3 7.25	-22 45.3	1.493	2.264	20.1	21.4	129 W	22	87
1 6	2 2.36	-4 53.1	1.699	2.118	27.1	21.2	101 E	40	68*	9 28	3 6.69	-24 11.3	1.453	2.245	19.6	21.4	131 W	21	88	9 28	3 6.69	-24 11.3	1.453	2.245	19.6	21.4	131 W	21	88
1 11	2 5.61	-4 54.0	1.741	2.098	27.7	21.2	97 E	40	67*	10 3	3 5.28	-25 36.4	1.417	2.226	19.1	21.3	133 W	19	90	10 3	3 5.28	-25 36.4	1.417	2.226	19.1	21.3	133 W	19	90
1 16	2 9.52	-4 49.6	1.782	2.077	28.2	21.3	93 E	40	65*	10 8	3 3.00	-26 58.8	1.386	2.206	18.8	21.2	135 W	18	89	10 8	3 3.00	-26 58.8	1.386	2.206	18.8	21.2	135 W	18	89
1 21	2 14.05	-4 40.7	1.823	2.057	28.6	21.3	89 E	40	63*	10 13	2 59.89	-28 16.5	1.359	2.187	18.6	21.1	136 W	17	88	10 13	2 59.89	-28 16.5	1.359	2.187	18.6	21.1	136 W	17	88
<b>26663 2000 XK<sub>47</sub></b>										10 18	2 56.00	-29 27.4	1.337	2.167	18.6	21.1	136 W	16	87	10 18	2 56.00	-29 27.4	1.337	2.167	18.6	21.1	136 W	16	87
9 23	2 50.18	+39 23.3	1.235	1.985	24.6	21.2	125 W	84	25	10 23	2 51.42	-30 29.4	1.320	2.148	18.9	21.0	136 W	15	86	10 23	2 51.42	-30 29.4	1.320	2.148	18.9	21.0	136 W	15	86
9 28	2 47.42	+40 15.7	1.175	1.965	23.4	21.0	129 W	85	24	10 28	2 46.29	-31 20.7	1.308	2.128	19.4	21.0	135 W	14	85	10 28	2 46.29	-31 20.7	1.308	2.128	19.4	21.0	135 W	14	85
10 3	2 43.24	+41 3.7	1.117	1.943	22.1	20.8	133 W	86	23	11 2	2 40.77	-31 59.7	1.300	2.108	20.1	21.0	133 W	13	84	11 2	2 40.77	-31 59.7	1.300	2.108	20.1	21.0	133 W	13	84
10 8	2 37.54	+41 45.4	1.063	1.921	20.7	20.7	137 W	87	22	11 7	2 35.06	-32 25.1	1.296	2.088	20.9	21.0	131 E	13	84	11 7	2 35.06	-32 25.1	1.296	2.088	20.9	21.0	131 E	13	84
10 13	2 30.28	+42 18.6	1.014	1.898	19.2	20.5	141 W	87	22	11 12	2 29.37	-32 36.2	1.297	2.067	21.9	21.0	129 E	12	83	11 12	2 29.37	-32 36.2	1.297	2.067	21.9	21.0	129 E	12	83
10 18	2 21.53	+42 41.0	0.969	1.874	17.7	20.3	145 W	88	21	11 17	2 23.93	-32 32.9	1.301	2.047	22.9	21.0	126 E	12	83	11 17	2 23.93	-32 32.9	1.301	2.047	22.9	21.0	126 E	12	83
10 23	2 11.45	+42 49.9	0.929	1.850	16.5	20.2	148 W	88	21	11 22	2 18.93	-32 15.3	1.308	2.027	24.0	21.0	123 E	13	84	11 22	2 18.93	-32 15.3	1.308	2.027	24.0	21.0	123 E	13	84
10 28	2 0.31	+42 43.3	0.894	1.825	15.7	20.0	1																						

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

21/22	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	$45^\circ$	$-26^\circ$	21/22	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	$45^\circ$	$-26^\circ$
<b>523801 1993 TQ<sub>2</sub></b>										<b>416224 2002 XM<sub>90</sub></b>									
<i>(continuation)</i>										<i>(continuation)</i>									
12 27	8 52.67	+52 53.3	0.218	1.157	33.9	18.3	139 W	82	11	1 11	2 8.92	+ 6 28.5	1.028	1.561	38.1	20.6	102 E	51	56*
1 1	9 4.24	+52 7.4	0.220	1.162	32.5	18.3	141 W	83	12	1 16	2 11.00	+ 8 15.6	1.052	1.535	39.4	20.6	98 E	53	54*
1 6	9 12.42	+51 3.2	0.224	1.169	30.8	18.3	143 W	84	13	1 21	2 14.13	+10 4.0	1.076	1.509	40.6	20.6	94 E	55	50*
1 11	9 17.57	+49 42.6	0.230	1.179	28.7	18.3	145 W	85	14	<b>452691 2005 YW<sub>3</sub></b>									
1 16	9 20.24	+48 7.5	0.237	1.190	26.4	18.3	147 W	87	16	9 23	3 57.16	- 6 15.5	3.209	3.817	13.1	21.4	120 W	39	70
1 21	9 21.00	+46 20.0	0.246	1.204	24.1	18.4	150 W	89	18	10 3	3 55.19	- 7 15.7	3.066	3.777	11.9	21.2	129 W	38	71
<b>20429 1998 YN<sub>1</sub></b>										10 13	3 51.27	- 8 16.3	2.942	3.737	10.4	21.1	137 W	37	72
9 23	3 43.09	+15 31.0	1.563	2.268	21.9	21.4	123 W	61	48	10 23	3 45.52	- 9 12.9	2.839	3.696	9.0	20.9	145 W	36	73
10 3	3 38.90	+15 18.6	1.451	2.260	18.7	21.1	134 W	60	49	11 2	3 38.20	-10 0.8	2.762	3.654	7.8	20.8	150 W	35	74
10 13	3 30.70	+14 55.4	1.355	2.249	14.6	20.8	145 W	60	49	11 12	3 29.76	-10 35.0	2.711	3.611	7.6	20.7	151 W	34	75
10 23	3 18.63	+14 21.5	1.280	2.235	9.5	20.5	158 W	59	50	11 22	3 20.85	-10 51.3	2.689	3.567	8.4	20.7	148 E	34	75
11 2	3 3.51	+13 38.4	1.232	2.218	3.8	20.1	171 W	59	50	12 2	3 12.17	-10 47.5	2.694	3.523	10.0	20.7	142 E	34	75
11 7	2 55.25	+13 14.7	1.219	2.209	1.5	20.0	177 W	58	51	12 12	3 4.43	-10 23.1	2.725	3.477	11.8	20.8	134 E	35	74
11 12	2 46.85	+12 50.5	1.213	2.199	3.2	20.0	173 E	58	51	12 22	2 58.19	- 9 39.5	2.776	3.431	13.7	20.9	125 E	35	74
11 17	2 38.57	+12 27.0	1.215	2.188	6.1	20.2	166 E	57	52	1 1	2 53.82	- 8 39.5	2.844	3.384	15.2	21.0	115 E	36	73
11 22	2 30.67	+12 5.1	1.224	2.177	9.2	20.3	159 E	57	52	1 11	2 51.54	- 7 26.3	2.925	3.336	16.4	21.0	106 E	38	71
11 27	2 23.36	+11 45.7	1.240	2.165	12.1	20.5	153 E	57	52	1 21	2 51.37	- 6 3.2	3.014	3.287	17.3	21.1	97 E	39	69*
12 2	2 16.81	+11 29.6	1.263	2.152	14.8	20.6	146 E	56	53	<b>378305 2007 FC<sub>1</sub></b>									
12 7	2 11.18	+11 17.6	1.291	2.139	17.4	20.7	140 E	56	53	9 23	4 0.13	+15 47.0	1.482	2.151	24.2	21.3	119 W	61	48
12 12	2 6.54	+11 10.1	1.324	2.125	19.7	20.8	133 E	56	53	10 3	3 54.93	+17 16.6	1.401	2.178	20.8	21.1	129 W	62	47
12 17	2 2.95	+11 7.4	1.361	2.110	21.7	20.9	128 E	56	53	10 13	3 45.37	+18 46.1	1.335	2.204	16.5	20.9	141 W	64	45
12 22	2 0.41	+11 9.5	1.401	2.094	23.5	21.0	122 E	56	53	10 23	3 31.69	+20 11.6	1.291	2.228	11.3	20.7	154 W	65	44
12 27	1 58.88	+11 16.3	1.444	2.078	25.1	21.1	116 E	56	53	11 2	3 14.87	+21 27.4	1.273	2.251	5.7	20.4	167 W	66	43
1 1	1 58.34	+11 27.6	1.489	2.061	26.4	21.2	111 E	56	53*	11 7	3 5.81	+21 59.8	1.275	2.262	3.1	20.3	173 W	67	42
1 6	1 58.74	+11 43.3	1.535	2.044	27.5	21.3	106 E	57	52*	11 12	2 56.68	+22 28.3	1.286	2.273	2.4	20.3	174 E	67	42
1 11	2 0.03	+12 2.9	1.582	2.025	28.4	21.4	102 E	57	51*	11 17	2 47.76	+22 52.8	1.304	2.283	4.5	20.5	170 E	68	41
1 16	2 2.14	+12 26.3	1.629	2.006	29.1	21.4	97 E	57	49*	11 22	2 39.31	+23 13.6	1.330	2.293	7.1	20.6	163 E	68	41
<b>25143 Itokawa</b>										11 27	2 31.54	+23 31.3	1.363	2.303	9.7	20.8	157 E	69	40
9 23	3 46.04	+17 46.2	0.868	1.635	31.5	21.3	122 W	63	46	12 2	2 24.63	+23 46.6	1.403	2.313	12.1	21.0	151 E	69	40
10 3	3 42.50	+17 34.2	0.804	1.652	26.6	21.0	132 W	63	46	12 7	2 18.71	+24 0.4	1.449	2.322	14.3	21.1	144 E	69	40
10 13	3 33.08	+17 4.3	0.750	1.666	20.4	20.7	144 W	62	47	12 12	2 13.84	+24 13.7	1.500	2.331	16.3	21.3	138 E	69	40
10 23	3 18.11	+16 15.3	0.713	1.678	12.8	20.3	158 W	61	48	12 17	2 10.04	+24 27.0	1.557	2.339	18.0	21.4	133 E	69	40
10 28	3 8.99	+15 44.2	0.702	1.682	8.7	20.2	165 W	61	48	<b>403242 2008 WD<sub>31</sub></b>									
11 2	2 59.19	+15 9.6	0.697	1.686	4.4	19.9	173 W	60	49	9 23	4 4.92	+19 25.9	1.391	2.051	25.9	21.4	117 W	64	45
11 7	2 49.12	+14 33.0	0.698	1.689	1.0	19.7	178 W	60	49	10 3	4 5.20	+19 45.0	1.325	2.082	22.7	21.2	127 W	65	44
11 12	2 39.22	+13 56.1	0.706	1.692	4.6	20.0	172 E	59	50	10 13	4 1.51	+19 55.6	1.270	2.114	18.7	21.0	137 W	65	44
11 17	2 29.92	+13 20.8	0.720	1.694	8.8	20.2	165 E	58	51	10 23	3 54.05	+19 57.1	1.231	2.145	13.9	20.8	149 W	65	44
11 22	2 21.53	+12 49.0	0.739	1.695	12.8	20.4	158 E	58	51	11 2	3 43.52	+19 49.2	1.213	2.176	8.4	20.6	161 W	65	44
11 27	2 14.31	+12 22.0	0.764	1.695	16.5	20.6	151 E	57	52	11 12	3 31.22	+19 32.8	1.220	2.207	2.6	20.3	174 W	65	44
12 2	2 8.42	+12 0.9	0.793	1.695	19.8	20.8	144 E	57	52	11 17	3 24.95	+19 22.4	1.234	2.222	0.5	20.2	179 E	64	45
12 7	2 3.93	+11 46.3	0.827	1.694	22.8	21.0	138 E	57	52	11 22	3 18.88	+19 11.5	1.254	2.237	3.2	20.5	173 E	64	45
12 12	2 0.86	+11 38.6	0.864	1.692	25.5	21.2	132 E	57	52	11 27	3 13.22	+19 0.6	1.281	2.252	5.9	20.7	166 E	64	45
12 17	1 59.15	+11 37.5	0.904	1.689	27.8	21.4	127 E	57	52	12 2	3 8.12	+18 50.4	1.315	2.267	8.5	20.9	160 E	64	45
<b>488901 2005 TQ<sub>78</sub></b>										12 7	3 3.72	+18 41.6	1.355	2.282	10.9	21.0	154 E	64	45
9 23	3 53.18	+19 24.9	1.398	2.085	24.7	21.5	120 W	64	45	12 12	3 0.12	+18 34.9	1.401	2.296	13.1	21.2	148 E	64	45
10 3	3 52.74	+18 53.6	1.332	2.116	21.4	21.3	130 W	64	45	12 17	2 57.38	+18 30.5	1.453	2.311	15.1	21.4	142 E	64	45
10 13	3 48.50	+18 8.8	1.280	2.146	17.2	21.1	141 W	63	46	<b>96536 1998 SO<sub>10</sub></b>									
10 23	3 40.81	+17 11.7	1.245	2.177	12.2	20.9	152 W	62	47	9 23	4 46.82	- 7 7.0	3.059	3.503	15.8	21.4	108 W	38	71
11 2	3 30.53	+16 5.8	1.233	2.206	6.7	20.7	165 W	61	48	10 3	4 45.97	- 9 5.5	2.897	3.459	15.0	21.2	116 W	36	73
11 12	3 19.02	+14 56.6	1.247	2.235	1.6	20.4	176 W	60	49	10 13	4 42.84	-11 12.2	2.750	3.414	14.0	21.1	124 W	34	75
11 17	3 13.32	+14 23.3	1.264	2.250	2.6	20.5	174 E	59	50	10 23	4 37.29	-13 22.6	2.622	3.366	12.8	20.9	132 W	32	77
11 22	3 7.91	+13 51.9	1.288	2.264	5.1	20.7	168 E	59	50	11 2	4 29.32	-15 30.1	2.516	3.317	11.7	20.7	138 W	29	80
11 27	3 2.96	+13 23.5	1.319	2.278	7.6	20.9	162 E	58	51	11 12	4 19.17	-17 26.6	2.438	3.266	11.0	20.6	141 W	28	81
12 2	2 58.60	+12 58.7	1.356	2.292	10.1	21.1	156 E	58	51	11 22	4 7.41	-19 3.3	2.387	3.212	11.2	20.5	141 W	26	83
12 7	2 54.93	+12 38.1	1.399	2.306	12.3	21.3	150 E	58	51	12 2	3 54.85	-20 13.2	2.365	3.157	12.3	20.5	137 E	25	84
12 12	2 52.03	+12 22.0	1.448	2.319	14.4	21.4	144 E	57	52	12 12	3 42.51	-20 51.8	2.368	3.100	14.0	20.5	131 E	24	85
<b>416224 2002 XM<sub>90</sub></b>										12 22	3 31.36	-20 58.8	2.394	3.040	15.8	20.6	123 E	24	85
9 23	3 53.89	- 4 53.5	1.368	2.074	24.4	21.4	121 W	40	69	1 1	3 22.19	-20 37.0	2.438	2.978	17.5	20.6	114 E	24	85
10 3	3 53.56	- 5 50.9	1.245	2.035	22.2	21.1	130 W	39	70	1 11	3 15.50	-19 51.5	2.493	2.914	19.0	20.7	105 E	25	84
10 13	3 49.14	- 6 49.5	1.136	1.995	19.4	20.8	138 W	38	71	1 21	3 11.50	-18 48.1	2.556	2.848	20.1	20.7	97 E	26	82*
10 23	3 40.25	- 7 39.8	1.043	1.952	16.3	20.4	147 W	37	72	<b>467347 2003 GR</b>									
10 28	3 34.13	- 7 58.0	1.004	1.930	14.8	20.3	150 W	37	72	9 23	4 55.11	+42 49.6	0.663	1.311	48.6	22.1	102 W	88	21
11 2	3 26.99	- 8 9.3	0.970	1.908	13.7	20.1	153 W	37	72	9 25	4 52.64	+45 23.1	0.657	1.320	47.6	22.1	103 W	90	19
11 7	3 18.99	- 8 11.8	0.942	1.885	13.1	20.0	154 W	37	72	9 27	4 49.5								

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

21/22	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	$45^\circ$ - $26^\circ$	21/22	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	$45^\circ$ - $26^\circ$		
<b>467347 2003 GR</b> (continuation)									<b>306523 1999 XR<sub>35</sub></b>										
10 16	3 13.49	+70 35.3	0.665	1.419	39.3	22.0	116 W	64	9 23	5 11.37	+16 36.4	1.370	1.853	32.0	21.3	102 W	62	47	
10 17	3 2.29	+71 25.4	0.669	1.423	39.0	22.0	116 W	64	10 3	5 27.44	+18 7.4	1.210	1.786	32.3	20.9	107 W	63	46	
10 18	2 50.20	+72 11.3	0.673	1.428	38.8	22.1	116 W	63	10 13	5 43.28	+19 57.4	1.058	1.719	32.2	20.6	113 W	65	44	
10 19	2 37.23	+72 52.8	0.678	1.432	38.6	22.1	116 W	62	10 23	5 58.89	+22 16.7	0.915	1.652	31.5	20.1	120 W	67	42	
10 20	2 23.40	+73 29.5	0.683	1.437	38.4	22.1	116 W	62	10 28	6 6.62	+23 41.5	0.847	1.619	31.0	19.9	123 W	69	40	
10 21	2 8.79	+74 1.2	0.689	1.441	38.2	22.1	116 W	61	11 2	6 14.29	+25 19.3	0.783	1.586	30.3	19.7	126 W	70	39	
10 22	1 53.51	+74 27.8	0.695	1.445	38.1	22.1	116 W	61	11 7	6 21.93	+27 12.5	0.721	1.553	29.5	19.4	129 W	72	37	
10 23	1 37.72	+74 48.9	0.701	1.450	37.9	22.2	116 E	60	11 12	6 29.55	+29 23.8	0.664	1.521	28.6	19.2	133 W	74	35	
10 24	1 21.59	+75 4.6	0.707	1.454	37.8	22.2	116 E	60	11 17	6 37.24	+31 56.2	0.611	1.489	27.5	18.9	136 W	77	32	
10 25	1 5.32	+75 14.9	0.713	1.459	37.7	22.2	116 E	60	11 22	6 45.06	+34 52.4	0.561	1.458	26.5	18.7	139 W	80	29	
10 26	0 49.15	+75 20.0	0.720	1.463	37.6	22.2	116 E	60	11 27	6 53.12	+38 14.7	0.517	1.427	25.7	18.4	141 W	83	26	
10 27	0 33.26	+75 20.0	0.727	1.467	37.5	22.3	116 E	60	12 2	7 1.59	+42 4.5	0.478	1.397	25.2	18.2	143 W	87	22	
10 28	0 17.87	+75 15.4	0.735	1.471	37.4	22.3	116 E	60	12 7	7 10.71	+46 21.3	0.444	1.368	25.3	18.0	144 W	89	18	
10 29	0 3.11	+75 6.5	0.742	1.476	37.3	22.3	116 E	60	12 12	7 20.92	+51 1.8	0.415	1.340	26.2	17.8	143 W	84	13	
10 30	23 49.12	+74 53.8	0.750	1.480	37.3	22.3	116 E	60	12 14	7 25.44	+52 59.3	0.406	1.329	26.8	17.8	142 W	82	11	
10 31	23 35.99	+74 37.6	0.758	1.484	37.2	22.4	115 E	60	12 16	7 30.30	+54 59.1	0.397	1.319	27.6	17.7	142 W	80	9	
11 1	23 23.74	+74 18.5	0.766	1.488	37.2	22.4	115 E	61	12 18	7 35.57	+57 0.5	0.389	1.308	28.5	17.7	141 W	78	7	
11 2	23 12.41	+73 56.9	0.774	1.493	37.1	22.4	115 E	61	12 20	7 41.32	+59 2.9	0.382	1.298	29.5	17.7	139 W	76	5	
11 3	23 1.98	+73 33.3	0.783	1.497	37.1	22.4	114 E	61	12 22	7 47.65	+61 5.3	0.376	1.288	30.7	17.6	138 W	74	3	
11 4	22 52.43	+73 7.9	0.792	1.501	37.1	22.5	114 E	62	12 24	7 54.69	+63 7.0	0.371	1.279	31.9	17.6	137 W	72	1	
11 5	22 43.70	+72 41.2	0.801	1.505	37.1	22.5	114 E	62	12 26	8 2.58	+65 6.9	0.366	1.269	33.3	17.6	135 W	70	—	
11 6	22 35.76	+72 13.4	0.810	1.509	37.1	22.5	113 E	63	12 28	8 11.51	+67 4.3	0.363	1.260	34.6	17.6	133 W	68	—	
11 7	22 28.55	+71 44.9	0.819	1.513	37.0	22.6	113 E	63	12 30	8 21.70	+68 57.9	0.360	1.251	36.1	17.6	132 W	66	—	
11 8	22 22.01	+71 15.8	0.828	1.517	37.0	22.6	113 E	64	1 1	8 33.42	+70 46.8	0.357	1.243	37.5	17.6	130 W	64	—	
11 9	22 16.10	+70 46.4	0.838	1.521	37.0	22.6	112 E	64	1 2	8 39.95	+71 39.1	0.356	1.238	38.2	17.7	129 W	63	—	
11 10	22 10.75	+70 16.9	0.847	1.525	37.0	22.7	112 E	65	1 3	8 46.99	+72 29.8	0.356	1.234	38.9	17.7	128 W	63	—	
11 11	22 5.93	+69 47.3	0.857	1.529	37.0	22.7	112 E	65	1 4	8 54.59	+73 18.7	0.355	1.230	39.7	17.7	127 W	62	—	
<b>416803 2005 GZ<sub>127</sub></b>									<b>358629 2007 VN<sub>166</sub></b>										
9 23	5 4.82	+6 32.1	1.457	1.954	29.9	21.3	104 W	52	57	9 23	5 17.81	+20 2.7	1.838	2.239	26.2	21.5	100 W	65	44
10 3	5 17.84	+3 52.5	1.333	1.917	29.4	21.0	110 W	49	60	10 3	5 23.05	+20 18.4	1.751	2.274	24.7	21.3	108 W	65	44
10 13	5 28.80	+0 44.4	1.220	1.882	28.5	20.8	116 W	46	63	10 13	5 25.09	+20 32.9	1.669	2.309	22.5	21.2	118 W	66	43
10 23	5 37.23	-2 50.0	1.119	1.847	27.3	20.5	122 W	42	67	10 23	5 23.63	+20 46.9	1.596	2.344	19.6	21.1	128 W	66	43
10 28	5 40.36	-4 45.4	1.073	1.830	26.6	20.4	125 W	40	69	11 2	5 18.58	+21 0.3	1.537	2.377	15.9	20.9	139 W	66	43
11 2	5 42.67	-6 45.0	1.031	1.813	25.8	20.2	127 W	38	71	11 12	5 10.18	+21 12.2	1.496	2.410	11.5	20.7	151 W	66	43
11 7	5 44.12	-8 47.1	0.993	1.797	25.1	20.1	130 W	36	73	11 22	4 59.18	+21 21.5	1.479	2.443	6.5	20.5	164 W	66	43
11 12	5 44.68	-10 49.7	0.959	1.780	24.4	20.0	132 W	34	75	11 27	4 53.08	+21 24.9	1.481	2.459	3.9	20.4	170 W	66	43
11 17	5 44.34	-12 50.6	0.929	1.765	23.8	19.9	134 W	32	77	12 2	4 46.81	+21 27.4	1.490	2.475	1.4	20.2	177 W	66	43
11 22	5 43.12	-14 47.4	0.903	1.749	23.4	19.8	135 W	30	79	12 7	4 40.57	+21 29.1	1.506	2.490	1.3	20.3	177 E	66	43
11 27	5 41.06	-16 37.3	0.882	1.734	23.2	19.7	136 W	28	81	12 12	4 34.55	+21 30.2	1.530	2.506	3.8	20.5	170 E	67	42
12 2	5 38.24	-18 17.5	0.864	1.720	23.2	19.7	137 W	27	82	12 17	4 28.94	+21 31.2	1.560	2.521	6.2	20.7	164 E	67	42
12 7	5 34.78	-19 45.3	0.851	1.706	23.4	19.6	137 W	25	84	12 22	4 23.86	+21 32.1	1.598	2.536	8.5	20.8	158 E	67	42
12 12	5 30.89	-20 58.3	0.841	1.693	23.9	19.6	136 W	24	85	12 27	4 19.44	+21 33.5	1.642	2.550	10.6	21.0	152 E	67	42
12 17	5 26.77	-21 54.8	0.835	1.680	24.6	19.6	135 E	23	86	1 1	4 15.75	+21 35.5	1.692	2.565	12.5	21.1	146 E	67	42
12 22	5 22.64	-22 33.7	0.833	1.668	25.5	19.6	133 E	22	87	1 6	4 12.85	+21 38.6	1.748	2.579	14.2	21.3	140 E	67	42
12 27	5 18.75	-22 54.4	0.834	1.656	26.5	19.6	131 E	22	87	1 11	4 10.77	+21 42.8	1.809	2.594	15.7	21.4	134 E	67	42
1 1	5 15.30	-22 57.2	0.837	1.645	27.6	19.6	129 E	22	87	<b>307197 2002 FZ<sub>1</sub></b>									
1 6	5 12.51	-22 42.6	0.843	1.635	28.7	19.7	127 E	22	87	9 23	5 45.38	+40 17.0	1.637	1.960	30.8	21.5	93 W	84*	24*
1 11	5 10.56	-22 11.9	0.851	1.626	29.9	19.7	125 E	23	86	9 28	5 51.68	+41 31.7	1.593	1.970	30.4	21.4	96 W	87*	22*
1 16	5 9.57	-21 26.9	0.862	1.617	31.0	19.7	122 E	24	85	10 3	5 57.32	+42 48.9	1.549	1.980	29.9	21.3	100 W	88	21
1 21	5 9.61	-20 29.2	0.874	1.609	32.0	19.8	120 E	25	84	10 8	6 2.19	+44 8.6	1.506	1.989	29.9	21.3	103 W	89	20
<b>497091 2003 YO<sub>6</sub></b>									10 13	6 6.19	+45 31.0	1.464	1.999	28.5	21.2	107 W	89	18	
9 23	5 7.81	+27 53.3	1.181	1.694	35.5	21.5	101 W	73	36	10 18	6 9.17	+46 55.9	1.424	2.008	27.6	21.1	111 W	88	17
9 28	5 18.09	+28 30.0	1.132	1.683	35.3	21.3	104 W	73	36	10 23	6 11.00	+48 23.3	1.386	2.016	26.6	21.0	115 W	87	16
10 3	5 28.07	+29 5.3	1.084	1.673	35.0	21.2	107 W	74	35	10 28	6 11.51	+49 52.4	1.350	2.024	25.5	21.0	119 W	85	14
10 8	5 37.65	+29 39.4	1.038	1.663	34.5	21.1	109 W	75	34	11 2	6 10.51	+51 22.3	1.317	2.032	24.3	20.9	123 W	84	13
10 13	5 46.75	+30 12.5	0.994	1.654	33.9	21.0	112 W	75	34	11 7	6 7.83	+52 51.7	1.288	2.040	23.0	20.8	127 W	82	11
10 18	5 55.30	+30 44.9	0.951	1.646	33.2	20.9	115 W	76	33	11 12	6 3.30	+54 18.7	1.262	2.047	21.6	20.7	130 W	81	10
10 23	6 3.21	+31 16.9	0.911	1.638	32.3	20.7	119 W	76	33	11 17	5 56.83	+55 40.8	1.241	2.054	20.3	20.6	134 W	79	8
10 28	6 10.37	+31 48.7	0.872	1.632	31.1	20.6	122 W	77	32	11 22	5 48.40	+56 55.5	1.224	2.060	19.0	20.6	137 W	78	7
11 2	6 16.66	+32 20.5	0.835	1.626	29.8	20.5	125 W	77	32	11 27	5 38.10	+57 59.9	1.212	2.067	17.9	20.5	140 W	77	6
11 7	6 21.97	+32 52.3	0.801	1.621	28.3	20.3	129 W	78	31	12 2	5 26.18	+58 51.0	1.206	2.072	17.1	20.5	142 W	76	5
11 12	6 26.20	+33 24.1	0.770	1.617	26.5	20.2	133 W	78	31										
11 17	6 29.27	+33 55.7	0.741	1.614	24.6	20.0	137 W	79	30										
11 22	6 31.11	+34 26.5	0.716	1.611	22.4	19.9	142 W	79	30										

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

21/22	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	$45^\circ$ - $26^\circ$	21/22	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	$45^\circ$ - $26^\circ$
<b>307197 2002 FZ<sub>1</sub></b> (continuation)									<b>390689 2002 VS<sub>91</sub></b>								
12 4	5 21.07	+59 7.2	1.205	2.075	16.9	20.5	142 W	76 5	9 23	5 52.03	+18 0.8	1.119	1.526	41.1	21.5	92 W	62* 46*
12 6	5 15.80	+59 20.8	1.205	2.077	16.7	20.5	143 W	76 5	10 3	6 18.47	+17 2.0	1.030	1.500	41.6	21.3	95 W	62* 47*
12 8	5 10.44	+59 31.8	1.205	2.079	16.5	20.5	143 W	75 4	10 13	6 44.16	+15 41.9	0.946	1.476	41.9	21.1	99 W	61 48*
12 10	5 5.01	+59 40.0	1.207	2.081	16.5	20.5	143 E	75 4	10 23	7 8.73	+14 2.8	0.867	1.455	41.9	20.8	103 W	59 50*
12 12	4 59.58	+59 45.5	1.210	2.083	16.5	20.5	143 E	75 4	11 2	7 31.75	+12 8.2	0.795	1.437	41.5	20.6	107 W	57 52*
12 14	4 54.17	+59 48.3	1.213	2.085	16.5	20.5	143 E	75 4	11 12	7 52.71	+10 3.1	0.728	1.422	40.6	20.4	111 W	55 54
12 16	4 48.85	+59 48.5	1.217	2.087	16.6	20.5	143 E	75 4	11 22	8 11.11	+7 54.4	0.667	1.412	39.1	20.1	116 W	53 56
12 18	4 43.64	+59 46.1	1.222	2.089	16.8	20.5	142 E	75 4	11 27	8 19.18	+6 51.2	0.639	1.408	38.0	20.0	118 W	52 57
12 20	4 38.60	+59 41.2	1.228	2.090	17.0	20.6	142 E	75 4	12 2	8 26.38	+5 50.4	0.612	1.405	36.8	19.9	121 W	51 58
12 22	4 33.75	+59 34.0	1.235	2.092	17.3	20.6	141 E	75 4	12 7	8 32.63	+4 53.3	0.587	1.403	35.4	19.7	124 W	50 59
12 24	4 29.13	+59 24.7	1.243	2.094	17.6	20.6	140 E	76 5	12 12	8 37.86	+4 1.5	0.564	1.402	33.7	19.6	128 W	49 60
12 26	4 24.77	+59 13.3	1.252	2.095	17.9	20.6	139 E	76 5	12 17	8 42.02	+3 16.4	0.543	1.403	31.8	19.5	131 W	48 61
12 28	4 20.68	+59 0.2	1.261	2.097	18.3	20.7	138 E	76 5	12 22	8 45.06	+2 39.5	0.524	1.404	29.7	19.3	135 W	48 61
12 30	4 16.90	+58 45.3	1.271	2.099	18.7	20.7	137 E	76 5	12 27	8 46.95	+2 12.3	0.507	1.406	27.2	19.2	139 W	47 62
1 1	4 13.42	+58 29.1	1.282	2.100	19.1	20.7	136 E	77 6	1 1	8 47.67	+1 56.2	0.492	1.410	24.6	19.0	143 W	47 62
1 6	4 6.17	+57 43.3	1.312	2.103	20.2	20.8	132 E	77 6	1 6	8 47.28	+1 52.5	0.481	1.414	21.6	18.9	148 W	47 62
1 11	4 0.97	+56 52.6	1.346	2.106	21.4	20.9	129 E	78 7	1 11	8 45.91	+2 1.9	0.472	1.419	18.6	18.8	153 W	47 62
1 16	3 57.75	+55 59.3	1.384	2.109	22.5	21.0	125 E	79 8	1 16	8 43.75	+2 24.3	0.467	1.425	15.5	18.7	157 W	47 62
1 21	3 56.37	+55 5.4	1.426	2.111	23.5	21.1	121 E	80 9	1 21	8 41.01	+2 29.1	0.465	1.433	12.6	18.6	161 W	48 61
<b>225416 1999 YC</b>									<b>415975 2001 YS<sub>2</sub></b>								
9 23	5 46.06	+18 12.9	1.870	2.171	27.5	21.5	93 W	63* 46*	9 23	6 12.81	+25 13.7	1.944	2.140	27.9	21.4	87 W	68* 38*
10 3	5 51.54	+18 53.1	1.664	2.108	27.7	21.2	102 W	64 45	10 3	6 26.89	+23 52.2	1.796	2.110	28.3	21.2	94 W	69* 40*
10 13	5 54.31	+19 44.2	1.458	2.039	27.2	20.8	111 W	65 44	10 13	6 39.16	+22 14.2	1.650	2.079	28.2	21.0	101 W	67 42*
10 23	5 53.26	+20 52.7	1.258	1.965	25.7	20.3	121 W	66 43	10 23	6 49.20	+20 18.5	1.509	2.048	27.5	20.8	108 W	65 44
10 28	5 50.79	+21 36.0	1.161	1.926	24.5	20.1	127 W	67 42	11 2	6 56.56	+18 3.9	1.375	2.017	26.3	20.5	116 W	63 46
11 2	5 46.64	+22 27.0	1.067	1.885	22.8	19.8	133 W	67 42	11 12	7 0.72	+15 29.7	1.250	1.986	24.3	20.2	124 W	60 49
11 7	5 40.42	+23 26.7	0.977	1.843	20.7	19.5	139 W	68 41	11 22	7 1.22	+12 36.0	1.139	1.956	21.5	19.9	134 W	58 51
11 12	5 31.68	+24 36.1	0.891	1.799	18.0	19.2	146 W	70 39	12 2	6 57.73	+9 25.1	1.045	1.926	18.0	19.6	143 W	54 55
11 17	5 19.86	+25 55.4	0.812	1.753	14.6	18.8	153 W	71 38	12 7	6 54.46	+7 45.1	1.006	1.911	16.1	19.4	147 W	53 56
11 22	5 4.34	+27 23.6	0.740	1.706	10.6	18.4	161 W	72 37	12 12	6 50.26	+6 3.8	0.972	1.897	14.3	19.2	152 W	51 58
11 27	4 44.47	+28 57.1	0.677	1.656	6.5	17.9	169 W	74 35	12 17	6 45.23	+4 22.8	0.944	1.882	12.7	19.1	155 W	49 60
12 2	4 19.80	+30 28.7	0.624	1.605	5.5	17.6	171 E	75 34	12 22	6 39.52	+2 44.3	0.922	1.868	11.8	19.0	157 W	48 61
12 4	4 8.57	+31 2.5	0.606	1.584	7.1	17.6	169 E	76 33	12 27	6 33.33	+1 10.3	0.906	1.854	11.6	18.9	158 W	46 63
12 6	3 56.60	+31 33.5	0.589	1.562	9.3	17.6	165 E	77 32	1 1	6 26.89	-0 17.0	0.897	1.840	12.4	18.9	156 E	45 64
12 8	3 43.96	+32 0.7	0.575	1.541	12.0	17.7	161 E	77 32	1 6	6 20.48	-1 35.5	0.894	1.827	14.0	19.0	153 E	43 66
12 10	3 30.74	+32 23.5	0.563	1.518	14.9	17.7	157 E	77 32	1 11	6 14.37	-2 43.8	0.897	1.814	16.0	19.0	149 E	42 67
12 12	3 17.04	+32 41.1	0.553	1.496	17.9	17.7	152 E	78 31	1 16	6 8.82	-3 41.1	0.905	1.801	18.3	19.1	145 E	41 68
12 14	3 3.02	+32 52.9	0.545	1.473	21.1	17.8	147 E	78 31	1 21	6 4.01	-4 27.1	0.918	1.789	20.6	19.2	140 E	41 68
12 16	2 48.80	+32 58.5	0.539	1.450	24.3	17.8	143 E	78 31	<b>170903 2004 WS<sub>2</sub></b>								
12 18	2 34.55	+32 58.0	0.534	1.426	27.6	17.8	138 E	78 31	9 23	6 13.29	+18 22.5	1.438	1.706	36.0	21.4	87 W	62* 45*
12 20	2 20.43	+32 51.3	0.532	1.402	30.9	17.9	133 E	78 31	10 3	6 33.47	+18 15.8	1.270	1.641	37.6	21.1	92 W	63* 45*
12 22	2 6.57	+32 38.9	0.531	1.377	34.1	17.9	128 E	78 31	10 13	6 54.70	+18 1.7	1.105	1.570	39.1	20.8	97 W	63 46*
12 24	1 53.10	+32 21.4	0.532	1.352	37.3	18.0	124 E	77 32	10 23	7 17.68	+17 40.1	0.942	1.495	40.8	20.3	101 W	63 46*
12 26	1 40.12	+31 59.3	0.534	1.327	40.5	18.0	119 E	77 32	10 28	7 30.18	+17 26.1	0.863	1.454	41.8	20.1	103 W	62 46*
12 28	1 27.70	+31 33.5	0.538	1.301	43.5	18.1	114 E	77 32*	11 2	7 43.65	+17 9.6	0.785	1.413	42.8	19.9	105 W	62 47*
12 30	1 15.90	+31 4.8	0.543	1.275	46.5	18.2	110 E	76 32*	11 7	7 58.41	+16 49.8	0.709	1.370	44.0	19.6	106 W	62 47*
1 1	1 4.75	+30 33.9	0.549	1.248	49.4	18.2	106 E	76 32*	11 12	8 14.90	+16 25.8	0.635	1.325	45.5	19.4	107 W	61 47*
1 6	0 39.61	+29 11.3	0.566	1.179	56.1	18.4	95 E	74 29*	11 17	8 33.81	+15 55.6	0.565	1.279	47.4	19.1	108 W	61 48*
1 11	0 18.03	+27 46.6	0.586	1.107	62.4	18.5	86 E	73* 26*	11 22	8 56.08	+15 15.7	0.497	1.232	49.9	18.8	107 W	60 49*
1 16	23 59.25	+26 23.0	0.606	1.031	68.3	18.6	77 E	68* 21*	11 24	9 6.20	+14 55.8	0.472	1.213	51.1	18.7	107 W	60 49*
1 21	23 42.41	+24 59.2	0.626	0.951	74.0	18.7	68 E	61* 17*	11 26	9 17.16	+14 33.0	0.447	1.193	52.5	18.6	106 W	60 49*
<b>495102 2011 UU<sub>106</sub></b>									11 28	9 29.08	+14 6.6	0.423	1.173	54.1	18.5	106 W	59 49*
9 23	5 49.18	+30 34.8	0.969	1.422	44.8	21.2	92 W	75* 33*	11 30	9 42.09	+13 35.9	0.400	1.153	56.0	18.3	104 W	59 50*
9 28	6 8.74	+30 10.6	0.910	1.387	46.2	21.1	93 W	75* 34*	12 2	9 56.32	+12 59.9	0.378	1.132	58.0	18.2	103 W	58 50*
10 3	6 29.30	+29 31.2	0.854	1.352	47.6	20.9	93 W	74* 34*	12 4	10 11.90	+12 17.6	0.357	1.112	60.4	18.2	101 W	57 50*
10 8	6 50.87	+28 34.0	0.801	1.317	49.2	20.8	93 W	73* 35*	12 6	10 28.96	+11 27.8	0.338	1.091	63.1	18.1	99 W	56 50*
10 13	7 13.43	+27 16.3	0.751	1.283	51.0	20.6	93 W	72* 36*	12 8	10 47.61	+10 29.4	0.321	1.070	66.2	18.0	96 W	55 50*
10 18	7 36.94	+25 35.4	0.706	1.249	52.9	20.5	93 W	71* 37*	12 10	11 7.91	+9 21.3	0.306	1.049	69.6	18.0	93 W	54 50*
10 23	8 1.32	+23 28.9	0.665	1.215	54.9	20.3	92 W	68* 38*	12 12	11 29.83	+8 2.8	0.293	1.027	73.5	18.0	90 W	53 49*
10 28	8 26.45	+20 55.2	0.630	1.182	57.2	20.2	91 W	66 40*	12 17	12 30.61	+4 3.0	0.274	0.973	84.3	18.1	80 W	49 46*
11 2	8 52.14	+17 53.9	0.600	1.150	59.6	20.1	89 W	63 42*	12 22	13 35.21	-0 33.3	0.274	0.917	95.8	18.4	68 W	44* 41*
11 7	9 18.20	+14 26.4	0.575	1.120	62.1	20.1	87 W	59 44*	12 27	14 36.07	-4 54.5	0.296	0.861	105.7	19.0	57 W	38* 35*
11 12	9 44.41	+10 36.1	0.557	1.091	64.7	20.0	85 W	56 46*	1 1	15 28.19	-8 25.5	0.336	0.805	112.4	19.5	49 W	32* 30*
11 17	10 10.60	+6 28.9	0.545	1.063	67.2	20.0	82 W	51 48*	1 3	15 46.33	-9 34.5	0.356	0.783	114.1	19.7	47 W	30* 29*
11 22	10 36.59	+2 12.0	0.540	1.038	69.5	20.0	80 W	47 50*	1 5	16 3.04	-10 35.8	0.378	0.76				