

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

19/21	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°	19/20	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°										
<b>363067 2000 CO<sub>101</sub></b>										<b>514041 2014 MQ<sub>18</sub></b> (continuation)																			
12 23	21 59.11	+29 51.4	0.405	0.982	78.4	19.8	78 E	71*	16*	6 10	5 6.04	+48 29.1	3.522	2.642	9.5	21.0	26 W	16*	—	6 10	5 6.04	+48 29.1	3.522	2.642	9.5	21.0	26 W	16*	—
12 28	22 14.46	+32 36.9	0.402	0.984	78.1	19.8	78 E	72*	13*	6 20	5 30.93	+48 56.6	3.584	2.707	9.5	21.1	26 W	17*	—	6 20	5 30.93	+48 56.6	3.584	2.707	9.5	21.1	26 W	17*	—
1 2	22 31.00	+35 17.3	0.399	0.987	77.8	19.8	79 E	73*	11*	6 30	5 55.16	+49 14.9	3.635	2.771	9.7	21.2	27 W	20*	—	7 10	6 18.60	+49 25.4	3.673	2.834	10.2	21.2	30 W	22*	—
1 7	22 48.99	+37 51.8	0.396	0.990	77.4	19.8	79 E	73*	8*	7 10	6 18.60	+49 25.4	3.673	2.834	10.2	21.2	30 W	22*	—	7 20	6 41.14	+49 29.8	3.698	2.895	10.9	21.3	33 W	26*	—
1 12	23 8.71	+40 18.9	0.391	0.994	77.0	19.7	80 E	74*	7*	7 30	7 2.68	+49 29.7	3.711	2.955	11.8	21.4	36 W	30*	—	8 9	7 23.13	+49 27.0	3.709	3.014	12.7	21.5	41 W	34*	—
1 17	23 30.52	+42 36.7	0.387	0.999	76.5	19.7	81 E	74*	6*																				
1 22	23 54.76	+44 42.3	0.382	1.004	76.0	19.7	82 E	74*	5*																				
1 27	0 21.73	+46 32.1	0.377	1.010	75.4	19.6	83 E	74*	5*																				
2 1	0 51.58	+48 1.4	0.372	1.016	74.7	19.6	84 E	75*	5*																				
2 6	1 24.22	+49 4.3	0.368	1.022	73.9	19.6	85 E	76*	6*																				
2 11	1 59.20	+49 34.9	0.364	1.029	73.1	19.5	86 E	77*	7*																				
2 13	2 13.68	+49 36.7	0.363	1.032	72.8	19.5	87 E	78*	8*																				
2 15	2 28.35	+49 32.3	0.363	1.034	72.5	19.5	87 E	78*	9*																				
2 17	2 43.13	+49 21.4	0.362	1.037	72.1	19.5	87 E	79*	9*																				
2 19	2 57.95	+49 4.0	0.362	1.040	71.8	19.5	88 E	80*	10*																				
2 21	3 12.74	+48 40.0	0.362	1.043	71.4	19.5	88 E	80*	11*																				
2 23	3 27.41	+48 9.5	0.362	1.046	71.0	19.5	89 E	81*	12*																				
2 25	3 41.90	+47 32.7	0.363	1.049	70.7	19.5	89 E	82*	13*																				
2 27	3 56.14	+46 49.9	0.364	1.052	70.3	19.5	89 E	83*	15*																				
2 29	4 10.08	+46 1.3	0.365	1.055	69.9	19.5	90 E	84*	16*																				
3 2	4 23.67	+45 7.3	0.367	1.058	69.6	19.5	90 E	84*	17*																				
3 4	4 36.87	+44 8.5	0.369	1.061	69.2	19.5	90 E	85*	18*																				
3 6	4 49.66	+43 5.1	0.371	1.064	68.9	19.5	91 E	85*	20*																				
3 8	5 2.01	+41 57.8	0.374	1.067	68.5	19.5	91 E	84*	21*																				
3 10	5 13.93	+40 46.9	0.377	1.070	68.2	19.5	91 E	84*	22*																				
3 12	5 25.40	+39 33.0	0.380	1.073	67.8	19.5	91 E	83*	24*																				
3 17	5 52.22	+36 18.2	0.391	1.080	67.0	19.6	92 E	80*	27*																				
3 22	6 16.55	+32 54.7	0.403	1.087	66.3	19.6	92 E	77*	31*																				
3 27	6 38.71	+29 28.3	0.418	1.095	65.6	19.7	92 E	73*	35*																				
4 1	6 59.01	+26 3.6	0.434	1.102	65.0	19.8	92 E	70*	38*																				
4 6	7 17.73	+22 43.7	0.452	1.109	64.4	19.9	91 E	66*	41*																				
4 11	7 35.12	+19 30.6	0.472	1.116	63.9	20.0	91 E	62*	44*																				
4 16	7 51.42	+16 25.6	0.493	1.122	63.4	20.1	91 E	59*	48*																				
4 21	8 6.86	+13 29.0	0.514	1.128	63.0	20.2	90 E	55*	51*																				
5 1	8 35.80	+ 8 0.9	0.560	1.140	62.1	20.3	88 E	47*	56*																				
5 11	9 2.95	+ 3 3.1	0.607	1.150	61.3	20.5	87 E	40*	61*																				
5 21	9 29.07	+ 1 29.0	0.654	1.158	60.6	20.7	85 E	33*	65*																				
5 31	9 54.78	+ 5 40.3	0.700	1.165	59.9	20.8	83 E	26*	69*																				
6 10	10 20.50	+ 9 35.0	0.743	1.169	59.2	20.9	82 E	20*	72*																				
6 20	10 46.61	+13 15.5	0.784	1.172	58.6	21.0	80 E	14*	73*																				
6 30	11 13.50	+16 44.0	0.822	1.173	58.1	21.1	79 E	10*	72*																				
7 10	11 41.43	+20 0.9	0.856	1.173	57.7	21.2	77 E	6*	71*																				
7 20	12 10.75	+23 5.1	0.887	1.170	57.3	21.2	76 E	3*	69*																				
7 30	12 41.75	+25 55.2	0.914	1.165	56.9	21.3	74 E	1*	66*																				
8 9	13 14.65	+28 27.6	0.938	1.158	56.7	21.3	73 E	—	64*																				
8 19	13 49.65	+30 38.0	0.959	1.150	56.5	21.4	71 E	—	62*																				
8 29	14 26.80	+32 21.1	0.977	1.140	56.3	21.4	70 E	1*	61*																				
9 8	15 5.95	+33 30.9	0.992	1.129	56.3	21.4	69 E	2*	60*																				
9 18	15 46.73	+34 1.3	1.005	1.117	56.2	21.4	67 E	3*	59*																				
9 28	16 28.58	+33 47.9	1.016	1.103	56.3	21.4	66 E	5*	59*																				
10 8	17 10.72	+32 47.3	1.026	1.089	56.3	21.4	65 E	8*	58*																				
10 18	17 52.40	+30 59.2	1.034	1.074	56.4	21.4	64 E	11*	58*																				
10 28	18 33.00	+28 25.5	1.041	1.059	56.5	21.4	63 E	14*	57*																				
11 7	19 12.06	+25 10.4	1.047	1.044	56.6	21.3	62 E	18*	54*																				
11 17	19 49.46	+21 19.4	1.052	1.030	56.7	21.3	61 E	22*	51*																				
11 27	20 25.28	+16 58.6	1.054	1.017	56.9	21.3	60 E	27*	47*																				
12 7	20 59.75	+12 14.5	1.056	1.005	57.1	21.3	59 E	31*	43*																				
12 17	21 33.28	+ 7 13.3	1.055	0.995	57.3	21.3	58 E	36*	38*																				
12 27	22 6.35	+ 2 0.9	1.052	0.988	57.5	21.3	58 E	40*	33*																				
1 6	22 39.49	+ 3 16.6	1.048	0.982	57.8	21.2	58 E	44*	28*																				
1 16	23 13.31	+ 8 32.8	1.042	0.980	58.1	21.2	58 E	47*	24*																				
<b>514041 2014 MQ<sub>18</sub></b>										<b>470951 2009 LS</b>																			
12 23	21 59.25	+ 5 6.8	1.533	1.419	38.7	18.7	64 E	48*	32*	12 23	21 59.32	+ 7 21.1	0.482	0.898	85.3	19.2	65 E	50*	31*	12 23	21 59.32	+ 7 21.1	0.482	0.898	85.3	19.2	65 E	50*	31*
1 2	22 24.54	+10 8.8	1.652	1.486	36.0	18.9	63 E	51*	25*	12 25	22 12.92	+ 5 4.4	0.476	0.897	85.7	19.2	65 E	48*	33*	12 27	22 26.57	+ 2 42.3	0.472	0.896	86.1	19.2	65 E	46*	35*
1 12	22 49.17	+14 43.0	1.777	1.556	33.5	19.1	61 E	52*	20*	12 27	22 26.57	+ 2 42.3	0.472	0.896	86.1	19.2	65 E	46*	35*	12 29	22 40.22	+ 0 16.4	0.469	0.895	86.3	19.1	65 E	44*	38*
1 22	23 13.43	+18 52.8	1.905	1.629	31.1	19.3	59 E	52*	15*	12 31	22 53.80	+ 2 11.7	0.469	0.895	86.3	19.1	65 E	42*	40*	1 2	23 7.24	+ 4 40.3	0.470	0.895	86.2	19.1	65 E	40*	43*
2 1	23 37.56	+22 41.3	2.037	1.703	28.8	19.5	56 E	50*	10*	1 4	23 20.48	+ 7 7.6	0.473	0.896	86.0	19.2	65 E	37*	45*	1 6	23 33.48	+ 9 32.0	0.478	0.897	85.6	19.2	65 E	35*	47*
2 11	0 1.69	+26 10.9	2.170	1.778	26.7	19.6	54 E	48*	7*	1 8	23 46.19	+11 52.1	0.484	0.899	85.0	19.2	66 E	33*	49*	1 10	23 58.57	+14 6.9	0.493	0.901	84.4	19.2	66 E	31*	51*
2 21	0 25.94	+29 23.0	2.303	1.854	24.6	19.8	51 E	45*	4*	1 12	0 10.59	+16 15.4	0.502	0.903	83.6	19.2	66 E	28*	53*	1 17	0 38.99	+21 6.2	0.531	0.911	81.5	19.3	66 E	24*	56*
3 2	0 50.40	+32 19.1	2.437	1.929	22.6	19.9	49 E	41*	1*	1 22	1 4.96	+25 11.9	0.565	0.921	79.0	19.3	67 E	20*	59*	1 27	1 28.64	+28 35.5	0.602	0.933	76.4	19.4	67 E	16*	60*
3 12	1 15.12	+34 59.9	2.568	2.004	20.8	20.1	46 E	38*	—	2 1	1 50.27	+31 22.9	0.641	0.948	73.8	19.5	67 E	13*	61*	2 2	1 50.27	+31 22.9	0.641	0.948	73.8	19.5	67 E	13*	61*
3 22	1 40.13	+37 25.7	2.698	2.079	19.0	20.2	43 E	35*	—	2 6	2 10.14	+33 40.2	0.679	0.964	71.4	19.6	68 E	11*	62*	2 11	2 10.14	+33 40.2	0.679	0.964	71.4	19.6	68 E	11*	62*
4 1	2 5.46	+39 36.9	2.824	2.153	17.3	20.3	40 E	32*	—	2 16	2 28.58	+35 32.8	0.716	0.982	69.0	19.7	68 E	9*	62*	2 21	3 2.44	+38 20.9	0.784	1.021	64.9	19.8	69 E	5*	62*
4 11	2 31.05	+41 33.7	2.945	2.226	15.7	20.4	37 E	29*	—	2 26	3 18.44	+39 22.7	0.814	1.042	63.1	19.9	70 E	4*	62*	3 2	3 34.15								

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

19/21	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°	19/21	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°		
<b>122463 2000 QP<sub>148</sub></b>										<b>7888 1993 UC</b>											
<i>(continuation)</i>										<i>(continuation)</i>											
1	22	23 22.89	-8 19.9	2.165	1.661	25.8	19.3	47 E	30*	30*	4	11	0 39.49	-1 44.5	3.149	2.190	6.4	19.8	14 W	-	7*
2	1	23 48.75	-5 55.8	2.262	1.696	23.8	19.3	44 E	29*	27*	4	21	0 58.42	-0 30.7	3.034	2.108	8.9	19.7	19 W	-	12*
2	11	0 13.84	-3 31.5	2.359	1.732	21.7	19.4	41 E	27*	24*	5	1	1 18.40	+0 42.9	2.908	2.024	11.4	19.7	23 W	-	17*
2	21	0 38.26	-1 9.2	2.455	1.770	19.7	19.5	37 E	25*	22*	5	11	1 39.62	+1 55.1	2.774	1.938	14.0	19.6	28 W	-	22*
3	2	1 2.11	+1 9.1	2.550	1.808	17.6	19.5	33 E	22*	19*	5	21	2 2.30	+3 4.8	2.632	1.849	16.7	19.4	32 W	-	26*
3	12	1 25.47	+3 21.5	2.642	1.847	15.5	19.6	30 E	19*	17*	5	31	2 26.69	+4 10.6	2.486	1.758	19.4	19.3	35 W	1*	29*
3	22	1 48.42	+5 26.7	2.730	1.886	13.4	19.6	26 E	16*	15*	6	10	2 53.11	+5 10.6	2.339	1.665	22.2	19.1	38 W	3*	32*
4	1	2 11.03	+7 23.5	2.813	1.926	11.3	19.7	22 E	12*	12*	6	20	3 21.92	+6 2.8	2.194	1.570	25.0	18.9	41 W	6*	34*
4	11	2 33.32	+9 11.0	2.891	1.966	9.3	19.7	18 E	8*	10*	6	30	3 53.51	+6 44.4	2.054	1.473	27.8	18.7	42 W	8*	36*
4	21	2 55.33	+10 48.3	2.962	2.005	7.3	19.7	15 E	3*	8*	7	10	4 28.27	+7 12.3	1.923	1.376	30.5	18.5	43 W	11*	36*
5	1	3 17.08	+12 15.0	3.025	2.045	5.4	19.7	11 E	-	5*	7	20	5 6.52	+7 23.3	1.806	1.278	33.2	18.3	44 W	13*	36*
5	11	3 38.56	+13 30.5	3.080	2.084	3.7	19.7	8 E	-	2*	7	30	5 48.41	+7 13.9	1.707	1.181	35.6	18.1	43 W	14*	35*
5	21	3 59.76	+14 34.8	3.126	2.122	2.8	19.7	6 E	-	-	8	9	6 33.80	+6 42.3	1.631	1.088	37.5	17.9	41 W	15*	33*
5	31	4 20.66	+15 27.8	3.163	2.160	3.3	19.8	7 W	-	-	8	19	7 22.19	+5 48.6	1.581	1.001	38.5	17.6	38 W	15*	30*
6	10	4 41.20	+16 9.4	3.189	2.197	4.7	19.9	10 W	-	4*	8	29	8 12.72	+4 36.4	1.559	0.925	38.2	17.4	34 W	15*	26*
6	20	5 1.35	+16 39.9	3.205	2.234	6.4	20.1	14 W	-	8*	9	3	8 38.45	+3 55.1	1.558	0.893	37.5	17.3	33 W	14*	24*
6	30	5 21.05	+16 59.6	3.209	2.270	8.3	20.2	19 W	-	12*	9	8	9 4.31	+3 11.5	1.564	0.865	36.3	17.2	31 W	14*	22*
7	10	5 40.24	+17 9.0	3.201	2.305	10.1	20.3	23 W	5*	16*	9	18	9 30.16	+2 26.4	1.576	0.843	34.8	17.2	29 W	13*	20*
7	20	5 58.86	+17 8.8	3.182	2.339	11.9	20.4	28 W	10*	20*	9	13	9 55.87	+1 40.6	1.592	0.828	33.0	17.1	27 W	13*	18*
7	30	6 16.82	+16 59.4	3.151	2.372	13.7	20.5	34 W	16*	23*	9	28	10 46.38	+0 9.3	1.639	0.818	28.7	17.0	23 W	12*	14*
8	9	6 34.05	+16 41.9	3.108	2.404	15.3	20.5	39 W	22*	26*	10	8	11 34.99	-1 18.5	1.698	0.838	24.6	17.0	20 W	11*	10*
8	19	6 50.47	+16 17.1	3.053	2.435	16.9	20.6	44 W	28*	29*	10	18	12 21.09	-2 40.0	1.765	0.883	21.4	17.1	19 W	11*	7*
8	29	7 5.99	+15 46.0	2.987	2.466	18.3	20.6	50 W	34*	32*	10	28	13 4.29	-3 52.5	1.835	0.949	19.6	17.3	19 W	12*	4*
9	8	7 20.48	+15 9.7	2.909	2.495	19.6	20.6	56 W	40*	35*	11	7	13 44.48	-4 53.4	1.908	1.029	18.8	17.5	20 W	13*	3*
9	18	7 33.84	+14 29.6	2.822	2.523	20.7	20.6	63 W	46*	38*	11	17	14 21.73	-5 40.7	1.981	1.118	18.7	17.8	21 W	15*	3*
9	28	7 45.91	+13 47.1	2.725	2.550	21.6	20.6	69 W	51*	41*	11	27	14 56.16	-6 13.1	2.051	1.213	19.0	18.0	24 W	17*	3*
10	8	7 56.54	+13 3.7	2.620	2.576	22.2	20.5	76 W	55*	44*	12	7	15 27.97	-6 30.0	2.117	1.310	19.6	18.3	26 W	20*	5*
10	18	8 5.51	+12 21.2	2.509	2.601	22.4	20.4	84 W	57*	47*	12	17	15 57.33	-6 31.5	2.176	1.408	20.3	18.5	30 W	22*	8*
10	28	8 12.59	+11 41.6	2.395	2.624	22.2	20.4	92 W	57	50*	12	27	16 24.40	-6 17.9	2.227	1.505	21.0	18.8	33 W	25*	12*
11	7	8 17.54	+11 7.0	2.279	2.647	21.6	20.3	101 W	56	52*	1	6	16 49.30	-5 49.9	2.269	1.602	21.8	19.0	37 W	28*	16*
11	17	8 20.08	+10 39.8	2.166	2.669	20.4	20.1	110 W	56	53	1	16	17 12.12	-5 8.5	2.300	1.696	22.7	19.1	42 W	30*	22*
11	27	8 19.94	+10 22.4	2.060	2.689	18.6	20.0	120 W	55	54											
12	7	8 16.99	+10 17.1	1.965	2.708	16.1	19.8	130 W	55	54											
12	17	8 11.22	+10 25.4	1.886	2.726	13.0	19.6	142 W	55	54											
12	27	8 2.91	+10 48.0	1.829	2.743	9.3	19.4	153 W	56	53											
1	6	7 52.71	+11 23.4	1.799	2.759	5.5	19.2	165 W	56	53											
1	16	7 41.59	+12 9.1	1.798	2.773	3.2	19.1	171 E	57	52											
<b>278635 2008 RQ<sub>1</sub></b>										<b>215120 1999 JG<sub>4</sub></b>											
12	23	21 59.91	-7 32.9	1.974	1.691	29.9	21.2	59 E	36*	39*	12	23	22 2.82	-4 58.1	2.151	1.876	27.2	20.9	61 E	38*	38*
1	2	22 25.42	-5 33.2	2.061	1.707	28.3	21.3	55 E	36*	34*	1	2	22 25.04	-3 14.7	2.270	1.909	25.4	21.0	56 E	39*	33*
1	12	22 50.67	-3 26.0	2.149	1.725	26.6	21.3	52 E	36*	30*	1	12	22 46.88	-1 26.3	2.388	1.942	23.5	21.1	52 E	38*	28*
1	22	23 15.61	-1 13.8	2.238	1.745	24.9	21.4	48 E	35*	26*	1	22	23 8.35	+0 25.7	2.504	1.976	21.5	21.2	47 E	36*	23*
2	1	23 40.27	+1 1.2	2.328	1.769	23.0	21.5	45 E	34*	22*	2	1	23 29.49	+2 19.9	2.617	2.010	19.5	21.3	43 E	33*	19*
<b>213895 2003 TF<sub>6</sub></b>										<b>282052 1999 SO<sub>2</sub></b>											
12	23	22 0.81	-18 7.8	2.156	1.794	26.9	20.8	56 E	25*	43*	12	23	22 3.22	-3 46.3	2.212	1.940	26.4	19.7	61 E	40*	38*
1	2	22 24.87	-15 50.7	2.260	1.821	25.0	20.9	52 E	26*	38*	1	2	22 19.73	-1 21.8	2.268	1.901	25.4	19.6	56 E	40*	31*
1	12	22 48.24	-13 27.9	2.363	1.849	23.1	21.0	48 E	27*	33*	1	12	22 37.36	+1 11.3	2.317	1.863	24.2	19.6	51 E	39*	24*
1	22	23 10.96	-11 1.4	2.465	1.878	21.2	21.1	44 E	26*	29*	1	22	22 56.08	+3 52.7	2.358	1.826	23.0	19.6	46 E	37*	19*
2	1	23 33.13	-8 33.1	2.563	1.908	19.1	21.1	39 E	25*	25*	2	1	23 15.85	+6 41.8	2.392	1.791	21.7	19.5	42 E	35*	14*
2	11	23 54.80	-6 5.0	2.658	1.938	17.1	21.2	35 E	23*	21*	2	11	23 36.69	+9 37.4	2.420	1.758	20.4	19.5	38 E	32*	10*
2	21	0 16.03	-3 38.4	2.749	1.969	15.0	21.2	31 E	20*	18*	2	21	23 58.65	+12 38.1	2.442	1.728	19.2	19.4	35 E	29*	7*
3	2	0 36.90	-1 14.8	2.835	2.000	12.9	21.2	27 E	16*	15*	3	2	0 21.82	+15 41.9	2.459	1.700	18.0	19.3	32 E	26*	4*
3	12	0 57.47	+1 4.5	2.914	2.032	10.8	21.2	23 E	13*	12*	3	12	0 46.30	+18 46.2	2.472	1.675	16.8	19.3	29 E	23*	1*
3	22	1 17.78	+3 18.6	2.986	2.063	8.7	21.2	18 E	9*	9*	3	22	1 12.22	+21 47.7	2.483	1.654	15.7	19.2	27 E	20*	-
4	1	1 37.88	+5 26.5	3.051	2.094	6.6	21.2	14 E	4*	6*	4	1	1 39.71	+24 43.0	2.492	1.636	14.7	19.2	24 E	18*	-
4	11	1 57.81	+7 27.3	3.107	2.126	4.6	21.2	10 E	-	3*	4	11	2 8.83	+27 27.5	2.502	1.622	13.7	19.1	23 E	16*	-
4	21	2 17.58	+9 20.5	3.154	2.157	2.8	21.2	6 E	-	-	4	21	2 39.65	+29 56.4	2.512	1.612	12.8	19.1	21 E	14*	-
5	1	2 37.21	+11 5.4	3.191	2.187	1.9	21.1	4 E	-	-	5	1	3 12.10	+32 5.1	2.524	1.606	11.9	19.1	19 E	13*	-
5	11	2 56.68	+12 41.6	3.219	2.218	2.9	21.3	6 W	-	-	5	11	3 45.99	+33 48.6	2.538	1.605	11.0	19.0	18 E	11*	-
5	21	3 16.01	+14 8.7	3.235	2.248	4.7	21.4	10 W	-	4*	5	21	4 21.00	+35 3.0	2.554	1.607	10.1	19.0	16 E	10*	-
<b>331991 2005 FD<sub>3</sub></b>										<b>7888 1993 UC</b>											
12	23	22 1.33	-39 42.5	2.850	2.381	19.1	21.3	52 E	4*	46*	12	23	22 2.27	-11 36.8	3.344	2.944	16.5	20.9	58 E	32*	41*
1	2	22 21.65	-38 10.6	2.957	2.411	17.6	21.4	48 E	5*	42*	1	2	22 12.50	-11 13.8	3.413	2.885	15.2	20.9	50 E	30*	33*
1	12	22 41.77	-36 33.3	3.055	2.441	16.2	21.4	44 E	5*	38*	1	12	2								

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

19/21	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°	19/21	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°
<b>282052 1999 SO<sub>2</sub></b> (continuation)										<b>83992 2002 MG<sub>3</sub></b> (continuation)									
8 29	9 30.40	+22 8.9	2.757	1.834	10.5	19.5	19 W	13*	1*	8 9	6 50.25	+28 31.9	3.166	2.419	14.2	20.9	36 W	27*	16*
9 8	9 52.61	+19 27.8	2.760	1.871	12.0	19.6	23 W	16*	4*	8 19	7 8.50	+28 10.7	3.118	2.452	15.8	21.0	41 W	33*	18*
9 18	10 13.42	+16 43.8	2.756	1.910	13.6	19.7	26 W	20*	7*	8 29	7 25.78	+27 44.4	3.058	2.484	17.3	21.0	47 W	38*	20*
9 28	10 32.94	+13 58.8	2.743	1.950	15.2	19.8	31 W	24*	10*	9 8	7 42.00	+27 14.7	2.988	2.515	18.7	21.0	53 W	44*	23*
10 8	10 51.26	+11 14.4	2.722	1.990	16.8	19.9	35 W	28*	14*	9 18	7 57.05	+26 43.1	2.906	2.546	19.9	21.0	59 W	51*	25*
10 18	11 8.45	+ 8 31.5	2.691	2.032	18.4	19.9	40 W	32*	17*	9 28	8 10.80	+26 11.3	2.815	2.576	20.8	21.0	66 W	57*	27*
10 28	11 24.53	+ 5 51.2	2.651	2.074	19.9	20.0	45 W	35*	22*	10 8	8 23.09	+25 41.0	2.715	2.604	21.5	21.0	73 W	62*	30*
11 7	11 39.51	+ 3 14.2	2.600	2.117	21.3	20.0	51 W	38*	27*	10 18	8 33.76	+25 14.1	2.608	2.632	21.9	20.9	80 W	67*	32*
11 17	11 53.34	+ 0 41.1	2.540	2.160	22.5	20.1	57 W	40*	33*	10 28	8 42.57	+24 52.6	2.497	2.659	21.9	20.9	88 W	70*	35*
11 27	12 5.93	+ 1 47.6	2.471	2.203	23.5	20.1	63 W	41*	39*	11 7	8 49.28	+24 38.1	2.383	2.685	21.5	20.8	97 W	70	37*
12 7	12 17.15	+ 4 11.3	2.393	2.246	24.3	20.1	69 W	41*	46*	11 17	8 53.61	+24 32.4	2.270	2.710	20.6	20.7	106 W	70	39*
12 17	12 26.84	+ 6 29.7	2.309	2.289	24.7	20.1	77 W	39	54*	11 27	8 55.23	+24 36.4	2.162	2.734	19.0	20.5	115 W	70	39
12 27	12 34.73	+ 8 42.1	2.219	2.331	24.8	20.0	84 W	36	63*	12 7	8 53.92	+24 50.4	2.063	2.757	16.9	20.4	126 W	70	39
1 6	12 40.57	+10 47.9	2.126	2.374	24.5	20.0	92 W	34	71*	12 17	8 49.52	+25 13.2	1.979	2.779	14.0	20.2	137 W	70	39
1 16	12 44.02	+12 45.9	2.033	2.416	23.6	19.9	101 W	32	77*	12 27	8 42.11	+25 41.8	1.914	2.800	10.6	20.0	148 W	71	38
<b>377052 2002 TB<sub>142</sub></b>										<b>479325 2013 TV<sub>5</sub></b>									
12 23	22 4.98	+21 40.5	2.243	1.872	25.7	20.9	56 E	22*	45*	1 1	8 37.40	+25 56.8	1.891	2.810	8.7	19.9	154 W	71	38
1 2	22 26.56	+19 27.6	2.290	1.838	24.6	20.9	51 E	23*	40*	1 6	8 32.15	+26 11.5	1.874	2.820	6.7	19.8	160 W	71	38
1 12	22 48.73	+17 2.9	2.331	1.806	23.4	20.8	47 E	23*	35*	1 16	8 26.47	+26 25.1	1.865	2.830	4.7	19.7	166 W	71	38
1 22	23 11.40	+14 27.3	2.369	1.777	22.1	20.8	43 E	23*	30*	1 16	8 20.49	+26 37.0	1.863	2.839	3.0	19.6	171 W	72	37
2 1	23 34.51	+11 42.3	2.403	1.750	20.7	20.7	39 E	22*	26*	<b>170648 2003 YA<sub>114</sub></b>									
2 11	23 58.01	+ 8 49.6	2.434	1.726	19.3	20.7	35 E	21*	23*	12 23	22 6.21	+17 8.5	0.649	0.997	69.8	20.8	72 E	60*	26*
2 21	0 21.89	+ 5 51.3	2.462	1.705	17.9	20.6	32 E	19*	20*	12 28	22 21.07	+20 10.3	0.643	0.997	69.9	20.8	72 E	62*	23*
3 2	0 46.16	+ 2 49.7	2.489	1.688	16.4	20.6	29 E	17*	18*	1 2	22 36.89	+23 11.2	0.637	0.998	70.0	20.8	73 E	64*	20*
3 12	1 10.85	+ 0 12.8	2.514	1.675	14.9	20.6	26 E	14*	15*	1 7	22 53.86	+26 10.4	0.631	1.002	69.9	20.8	73 E	66*	17*
3 22	1 35.96	+ 3 13.5	2.539	1.665	13.4	20.5	23 E	12*	13*	1 12	23 12.20	+29 6.3	0.625	1.007	69.7	20.7	74 E	67*	15*
4 1	2 1.55	+ 6 9.6	2.564	1.659	11.8	20.5	20 E	9*	11*	1 17	23 32.15	+31 57.0	0.619	1.014	69.3	20.7	75 E	68*	13*
4 11	2 27.61	+ 8 58.3	2.590	1.658	10.2	20.4	17 E	6*	9*	1 22	23 53.99	+34 40.1	0.613	1.022	68.9	20.7	76 E	70*	12*
4 21	2 54.14	+11 37.0	2.615	1.660	8.6	20.4	14 E	4*	7*	1 27	0 17.96	+37 12.5	0.609	1.032	68.2	20.7	77 E	71*	11*
5 1	3 21.15	+14 3.1	2.641	1.666	7.0	20.3	12 E	1*	5*	2 1	0 44.24	+39 30.2	0.606	1.044	67.4	20.7	78 E	72*	10*
5 11	3 48.56	+16 14.4	2.668	1.677	5.3	20.3	9 E	—	2*	2 6	1 12.88	+41 28.6	0.604	1.057	66.5	20.7	79 E	73*	10*
5 21	4 16.30	+18 9.0	2.694	1.691	3.7	20.2	6 E	—	—	2 11	1 43.75	+43 2.5	0.605	1.071	65.4	20.7	81 E	74*	11*
5 31	4 44.28	+19 45.5	2.720	1.709	2.1	20.2	4 E	—	—	2 16	2 16.46	+44 7.2	0.609	1.086	64.2	20.7	82 E	75*	12*
6 10	5 12.33	+21 2.9	2.744	1.730	1.2	20.2	2 W	—	—	2 21	2 50.39	+44 39.3	0.616	1.102	63.0	20.7	83 E	77*	13*
6 20	5 40.32	+22 1.0	2.767	1.754	2.1	20.3	4 W	—	—	2 26	3 24.72	+44 37.2	0.626	1.119	61.7	20.7	84 E	78*	15*
6 30	6 8.06	+22 39.9	2.788	1.781	3.7	20.4	7 W	—	—	3 2	3 58.53	+44 1.8	0.639	1.137	60.4	20.8	86 E	80*	17*
7 10	6 35.38	+23 0.5	2.805	1.811	5.5	20.6	10 W	1*	2*	3 7	4 31.03	+42 56.4	0.656	1.155	59.0	20.8	86 E	80*	19*
7 20	7 2.14	+23 3.9	2.818	1.843	7.2	20.7	13 W	4*	4*	3 12	5 1.63	+41 25.6	0.677	1.173	57.7	20.9	87 E	81*	21*
7 30	7 28.18	+22 51.8	2.826	1.878	9.0	20.8	17 W	8*	6*	3 17	5 30.03	+39 35.1	0.702	1.192	56.5	21.0	88 E	80*	24*
8 9	7 53.40	+22 26.1	2.829	1.914	10.7	20.9	21 W	12*	8*	3 22	5 56.16	+37 30.5	0.730	1.212	55.3	21.0	88 E	79*	26*
8 19	8 17.71	+21 49.0	2.826	1.952	12.5	21.1	25 W	16*	10*	3 27	6 20.12	+35 16.9	0.762	1.231	54.1	21.1	88 E	77*	28*
8 29	8 41.04	+21 2.6	2.815	1.991	14.2	21.1	29 W	21*	12*	4 1	6 42.10	+32 58.5	0.796	1.251	53.0	21.2	88 E	74*	31*
9 8	9 3.34	+20 9.4	2.797	2.031	15.8	21.2	33 W	26*	13*	4 6	7 2.29	+30 38.5	0.834	1.270	51.9	21.3	87 E	72*	33*
9 18	9 24.61	+19 11.4	2.770	2.072	17.3	21.3	38 W	30*	15*	4 11	7 20.94	+28 19.0	0.874	1.289	50.9	21.4	87 E	69*	36*
9 28	9 44.80	+18 11.2	2.735	2.113	18.8	21.4	43 W	35*	17*	<b>340666 2006 RO<sub>36</sub></b>									
10 8	10 3.88	+17 10.9	2.690	2.155	20.2	21.4	48 W	40*	20*	12 23	22 6.49	+10 7.3	1.995	1.719	29.5	21.1	59 E	34*	41*
10 18	10 21.84	+16 12.7	2.637	2.198	21.4	21.5	54 W	45*	23*	1 2	22 28.84	+ 7 36.8	2.049	1.696	28.5	21.1	55 E	35*	36*
10 28	10 38.59	+15 19.0	2.576	2.241	22.5	21.5	59 W	50*	26*	1 12	22 51.85	+ 4 56.6	2.101	1.675	27.3	21.1	51 E	35*	30*
11 7	10 54.09	+14 32.1	2.506	2.284	23.3	21.5	66 W	54*	29*	1 22	23 15.46	+ 2 8.7	2.150	1.658	26.1	21.0	48 E	35*	26*
11 17	11 8.22	+13 54.1	2.428	2.327	23.9	21.5	72 W	57*	33*	2 1	23 39.64	+ 0 45.2	2.198	1.645	24.8	21.0	44 E	34*	22*
11 27	11 20.83	+13 27.5	2.345	2.370	24.2	21.5	79 W	58*	38*	2 11	0 4.37	+ 3 42.4	2.245	1.636	23.4	21.0	41 E	33*	19*
12 7	11 31.75	+13 14.5	2.257	2.412	24.1	21.4	87 W	58	42*	2 21	0 29.65	+ 6 40.4	2.291	1.630	21.9	21.0	38 E	30*	16*
12 17	11 40.75	+13 17.2	2.167	2.455	23.5	21.3	95 W	58	46*	3 2	0 55.50	+ 9 36.2	2.338	1.629	20.4	21.0	35 E	28*	14*
12 27	11 47.56	+13 37.4	2.077	2.497	22.5	21.3	103 W	59	49*	3 12	1 21.93	+12 26.9	2.385	1.632	18.9	21.0	32 E	25*	12*
1 6	11 51.92	+14 16.2	1.992	2.538	20.9	21.1	113 W	59	50*	3 22	1 48.95	+15 9.3	2.433	1.638	17.3	21.0	29 E	22*	10*
1 16	11 53.57	+15 13.4	1.915	2.580	18.8	21.0	122 W	60	49	4 1	2 16.55	+17 40.6	2.481	1.649	15.7	21.0	27 E	20*	8*
<b>83992 2002 MG<sub>3</sub></b>										4 11	2 44.68	+19 57.9	2.530	1.664	14.1	21.0	24 E	17*	7*
12 23	22 5.56	+ 8 15.4	1.878	1.626	31.6	19.5	60 E	35*	40*	4 21	3 13.29	+21 58.9	2.580	1.682	12.4	21.0	21 E	14*	6*
1 2	22 30.90	+ 5 23.3	1.969	1.649	29.9	19.6	57 E	37*	35*	5 1	3 42.26	+23 41.5	2.630	1.703	10.7	21.0	18 E	11*	4*
1 12	22 55.79	+ 2 29.4	2.063	1.675	28.1	19.6	53 E	38*	30*	5 11	4 11.43	+25 4.2	2.679	1.728	9.0	21.0	16 E	8*	3*
1 22	23 20.27	+ 0 24.4	2.158	1.703	26.3	19.7	50 E	37*	26*	5 21	4 40.64	+26 6.2	2.728	1.755	7.3	21.0	13 E	6*	1*
2 1	23 44.40	+ 3 16.1	2.255	1.733	24.4	19.8	47 E	36*	22*	5 31	5 9.68	+26 47.2	2.776	1.785	5.6	21.0	10 E	3*	—
2 11	0 8.25	+ 6 4.0	2.351	1.764	22.5	19.9	43 E	34*	19*	6 10	5 38.33	+27 7.6	2.821	1.817	3.9	21.0	7 E	1*	—
2 21	0 31.86	+ 8 46.4	2.447																

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

2020	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°-26°	19/21	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°-26°
<b>340666 2006 RO<sub>36</sub></b> (continuation)									<b>340666 2006 RO<sub>36</sub></b> (continuation)								
2 3	0 14.28	-19 1.3	0.397	0.761	112.8	19.5	45 E	19* 37*	11 19	12 1.77	+ 9 19.4	0.417	0.863	94.6	19.0	61 W	49* 27*
2 5	0 17.27	-21 7.1	0.397	0.754	114.3	19.6	44 E	16* 36*	11 21	12 9.13	+ 6 9.7	0.419	0.855	95.6	19.0	59 W	46* 29*
2 7	0 19.69	-23 13.4	0.396	0.747	115.8	19.7	43 E	14* 36*	11 23	12 16.57	+ 3 0.1	0.423	0.846	96.4	19.0	58 W	43* 31*
2 9	0 21.49	-25 19.2	0.397	0.741	117.1	19.8	42 E	11* 36*	11 25	12 24.13	- 0 8.2	0.428	0.838	97.2	19.1	57 W	41* 33*
2 11	0 22.63	-27 23.7	0.397	0.735	118.2	19.8	41 E	8* 35*	11 27	12 31.80	- 3 13.9	0.434	0.829	97.8	19.1	56 W	38* 34*
2 13	0 23.07	-29 25.8	0.399	0.729	119.2	19.9	40 E	5* 34*	11 29	12 39.63	- 6 15.9	0.441	0.821	98.3	19.1	55 W	35* 36*
2 15	0 22.77	-31 24.1	0.401	0.723	120.1	20.0	39 E	2* 33*	12 1	12 47.61	- 9 13.1	0.450	0.812	98.7	19.2	55 W	33* 37*
2 17	0 21.71	-33 17.6	0.404	0.719	120.7	20.0	39 E	— 32*	12 3	12 55.78	-12 4.4	0.460	0.804	98.9	19.2	54 W	30* 38*
2 19	0 19.86	-35 5.0	0.408	0.714	121.1	20.0	38 E	— 31*	12 5	13 4.14	-14 49.2	0.471	0.796	98.9	19.2	53 W	28* 39*
2 21	0 17.22	-36 45.2	0.412	0.710	121.3	20.1	38 E	— 29*	12 7	13 12.72	-17 26.6	0.483	0.788	98.9	19.3	52 W	25* 40*
2 23	0 13.81	-38 16.9	0.417	0.707	121.3	20.1	38 E	— 28*	12 12	13 35.15	-23 25.0	0.519	0.769	97.9	19.3	51 W	19* 41*
2 25	0 9.66	-39 39.1	0.422	0.704	121.0	20.1	38 E	— 26*	12 17	13 59.09	-28 29.6	0.561	0.751	96.1	19.4	49 W	14* 42*
2 27	0 4.84	-40 50.8	0.428	0.701	120.6	20.1	38 E	— 24*	12 22	14 24.59	-32 39.2	0.608	0.735	93.7	19.4	48 W	10* 42*
2 29	23 59.42	-41 51.2	0.435	0.699	120.0	20.1	38 E	— 23*	12 22	14 24.59	-32 39.2	0.608	0.735	93.7	19.4	48 W	10* 42*
3 2	23 53.52	-42 39.7	0.442	0.698	119.2	20.0	38 E	— 21*	12 27	14 51.55	-35 55.1	0.659	0.721	90.8	19.4	47 W	7* 41*
3 3	23 47.26	-43 16.0	0.449	0.697	118.2	20.0	38 E	— 19*	1 1	15 19.77	-38 19.8	0.713	0.710	87.4	19.4	46 W	4* 40*
3 4	23 40.79	-43 39.7	0.457	0.697	117.1	19.9	39 E	— 17*	1 6	15 48.88	-39 56.8	0.768	0.702	83.8	19.4	45 W	2* 39*
3 6	23 34.25	-43 51.1	0.465	0.697	115.8	19.9	39 E	— 15*	1 8	16 0.67	-40 23.1	0.791	0.700	82.3	19.4	45 W	1* 39*
3 10	23 27.80	-43 50.5	0.474	0.698	114.5	19.9	40 E	— 13*	1 10	16 12.50	-40 42.5	0.814	0.698	80.7	19.4	45 W	1* 38*
3 12	23 21.56	-43 38.2	0.483	0.699	113.1	19.8	40 W	— 13*	1 12	16 24.33	-40 55.5	0.836	0.697	79.2	19.4	44 W	— 38*
3 14	23 15.66	-43 15.1	0.492	0.701	111.6	19.8	41 W	— 16*	1 14	16 36.12	-41 2.2	0.859	0.697	77.7	19.4	44 W	— 37*
3 16	23 10.19	-42 42.0	0.501	0.704	110.1	19.7	42 W	— 18*	1 14	16 36.12	-41 2.2	0.859	0.697	77.7	19.4	44 W	— 37*
3 18	23 5.23	-41 59.6	0.511	0.707	108.6	19.7	42 W	— 20*	1 16	16 47.85	-41 2.9	0.881	0.697	76.1	19.4	43 W	— 37*
3 20	23 0.81	-41 9.0	0.520	0.710	107.0	19.6	43 W	— 22*									
3 22	22 56.97	-40 11.1	0.530	0.714	105.4	19.6	44 W	— 24*									
3 24	22 53.70	-39 6.8	0.540	0.719	103.9	19.6	44 W	— 26*									
3 26	22 51.00	-37 56.7	0.549	0.724	102.3	19.5	45 W	— 28*									
3 28	22 48.85	-36 41.9	0.559	0.729	100.8	19.5	46 W	— 30*									
3 30	22 47.21	-35 22.8	0.568	0.735	99.3	19.5	47 W	— 32*									
4 1	22 46.07	-34 0.1	0.577	0.741	97.8	19.5	47 W	— 34*									
4 6	22 45.13	-30 21.3	0.599	0.758	94.3	19.4	49 W	— 38*									
4 11	22 46.51	-26 30.2	0.621	0.776	91.0	19.4	51 W	— 41*									
4 16	22 49.73	-22 31.8	0.640	0.796	88.0	19.4	52 W	— 45*									
4 21	22 54.38	-18 29.5	0.658	0.816	85.2	19.4	54 W	3* 47*									
4 26	23 0.13	-14 25.6	0.675	0.837	82.7	19.5	56 W	7* 50*									
5 1	23 6.73	-10 21.9	0.689	0.859	80.4	19.5	57 W	11* 51*									
5 6	23 14.02	- 6 19.4	0.703	0.880	78.3	19.5	59 W	15* 52*									
5 11	23 21.87	- 2 18.9	0.714	0.902	76.4	19.5	60 W	18* 52*									
5 21	23 38.92	+ 5 34.1	0.734	0.942	73.1	19.6	63 W	26* 51*									
5 31	23 57.45	+13 13.4	0.748	0.980	70.4	19.6	66 W	34* 47*									
6 10	0 17.38	+20 36.4	0.759	1.014	68.1	19.6	68 W	41* 42*									
6 20	0 38.89	+27 41.1	0.765	1.044	66.3	19.7	70 W	49* 36*									
6 30	1 2.30	+34 24.9	0.767	1.069	64.8	19.7	72 W	56* 30*									
7 5	1 14.89	+37 37.9	0.767	1.079	64.2	19.7	73 W	59* 26									
7 10	1 28.21	+40 44.7	0.766	1.089	63.7	19.7	74 W	63* 23									
7 15	1 42.39	+43 44.8	0.763	1.097	63.3	19.7	75 W	65* 20									
7 20	1 57.54	+46 37.5	0.760	1.103	63.0	19.7	75 W	68* 17									
7 25	2 13.82	+49 22.0	0.756	1.108	62.7	19.6	76 W	69* 15									
7 30	2 31.42	+51 57.6	0.750	1.112	62.6	19.6	76 W	70* 12									
8 4	2 50.59	+54 23.0	0.744	1.115	62.5	19.6	77 W	71* 10									
8 9	3 11.54	+56 37.2	0.736	1.116	62.5	19.6	77 W	71* 7									
8 14	3 34.50	+58 38.6	0.727	1.115	62.6	19.6	78 W	70* 5									
8 19	3 59.65	+60 25.2	0.716	1.114	62.8	19.5	78 W	69* 4*									
8 24	4 27.08	+61 54.5	0.705	1.111	63.1	19.5	78 W	68* 2*									
8 29	4 56.77	+63 4.1	0.692	1.106	63.5	19.5	79 W	67* 1*									
8 31	5 9.24	+63 25.7	0.686	1.104	63.7	19.5	79 W	67* —									
9 2	5 22.01	+63 43.6	0.680	1.102	63.9	19.4	79 W	66* —									
9 4	5 35.05	+63 57.5	0.674	1.099	64.2	19.4	79 W	66* —									
9 6	5 48.32	+64 7.3	0.668	1.097	64.4	19.4	79 W	66* —									
9 8	6 1.78	+64 12.9	0.662	1.094	64.7	19.4	79 W	65* —									
9 10	6 15.36	+64 14.1	0.655	1.090	65.0	19.4	79 W	65* —									
9 12	6 29.02	+64 10.8	0.648	1.087	65.3	19.3	79 W	65* —									
9 14	6 42.69	+64 2.9	0.641	1.083	65.7	19.3	79 W	64* —									
9 16	6 56.32	+63 50.3	0.634	1.080	66.0	19.3	79 W	64* —									
9 18	7 9.85	+63 32.9	0.626	1.075	66.4	19.3	79 W	64* —									
9 20	7 23.23	+63 10.8	0.619	1.071	66.8	19.3	79 W	64* —									
9 22	7 36.40	+62 43.7	0.611	1.067	67.3	19.2	79 W	64* —									
9 24	7 49.33	+62 11.7	0.603	1.062	67.7	19.2	78 W	64* —									
9 26	8 1.97	+61 34.8	0.594	1.057	68.2	19.2	78 W	64* —									
9 28	8 14.32	+60 52.9	0.586	1.052	68.8	19.2	78 W	64* —									
10 3	8 43.72	+58 46.2	0.565	1.039	70.2	19.1	78 W	64* —									
10 8	9 10.95	+56 7.3	0.543	1.024	71.9	19.0	77 W										

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

19/21	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°	19/20	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°
<b>114326 2002 XO<sub>59</sub></b>										<b>292227 2006 ST<sub>59</sub></b>									
<i>(continuation)</i>																			
11 7	11 41.02	+ 8 46.0	2.553	2.108	22.0	19.9	53 W	43*	24*	12 23	22 9.83	- 5 4.4	1.871	1.659	31.6	20.2	62 E	39*	40*
11 17	11 58.51	+ 8 13.1	2.488	2.148	23.2	19.9	59 W	47*	27*	1 2	22 35.47	- 3 8.5	1.961	1.675	30.1	20.3	59 E	39*	35*
11 27	12 14.99	+ 7 51.3	2.414	2.187	24.1	19.9	65 W	50*	32*	1 12	23 0.87	- 1 5.7	2.051	1.694	28.5	20.4	55 E	39*	31*
12 7	12 30.35	+ 7 42.7	2.333	2.225	24.8	19.9	71 W	52*	36*	1 22	23 26.00	+ 1 1.6	2.143	1.715	26.7	20.4	52 E	39*	27*
12 17	12 44.45	+ 7 49.9	2.247	2.264	25.2	19.9	78 W	53*	41*	2 1	23 50.89	+ 3 11.0	2.236	1.738	24.9	20.5	48 E	37*	23*
12 27	12 57.05	+ 8 15.1	2.156	2.301	25.2	19.8	86 W	53*	46*	2 11	0 15.52	+ 5 20.4	2.328	1.763	23.0	20.6	44 E	35*	20*
1 6	13 7.95	+ 9 0.3	2.065	2.339	24.8	19.8	93 W	54	50*	2 21	0 39.92	+ 7 27.6	2.420	1.790	21.1	20.6	41 E	32*	18*
1 16	13 16.83	+ 10 7.3	1.974	2.375	23.9	19.7	102 W	55	53*	3 2	1 4.14	+ 9 30.9	2.510	1.817	19.1	20.7	37 E	29*	16*
<b>69239 1978 XT</b>										<b>96631 1999 FP<sub>59</sub></b>									
12 23	22 9.60	- 8 10.4	1.871	1.637	31.7	19.5	61 E	36*	41*	12 23	22 9.86	- 11 37.4	1.536	1.343	39.2	21.1	60 E	32*	43*
1 2	22 34.74	- 6 6.0	1.927	1.623	30.7	19.5	57 E	36*	36*	12 28	22 25.92	- 10 0.5	1.572	1.356	38.4	21.2	59 E	34*	41*
1 12	23 0.38	- 3 50.6	1.984	1.614	29.5	19.5	54 E	37*	32*	1 2	22 41.66	- 8 21.9	1.608	1.370	37.5	21.2	58 E	35*	39*
1 22	23 26.40	+ 1 26.7	2.042	1.608	28.2	19.5	51 E	36*	28*	1 7	22 57.09	- 6 42.3	1.646	1.385	36.6	21.3	57 E	36*	37*
2 1	23 52.76	+ 1 2.9	2.100	1.607	26.9	19.6	47 E	36*	25*	1 12	23 12.23	- 5 2.4	1.685	1.400	35.7	21.3	56 E	37*	35*
2 11	0 19.38	+ 3 35.0	2.159	1.611	25.4	19.6	44 E	34*	22*	1 17	23 27.10	- 3 22.7	1.726	1.415	34.7	21.4	55 E	37*	33*
2 21	0 46.24	+ 6 6.7	2.220	1.618	23.9	19.6	41 E	32*	20*	1 22	23 41.72	- 1 43.6	1.768	1.431	33.8	21.4	54 E	38*	32*
3 2	1 13.32	+ 8 34.8	2.283	1.630	22.3	19.6	39	30*	18*	1 27	23 56.13	- 0 5.5	1.811	1.447	32.8	21.5	53 E	38*	30*
3 12	1 40.58	+ 10 56.2	2.347	1.646	20.6	19.7	36 E	27*	16*	12 23	22 9.86	- 11 37.4	1.536	1.343	39.2	21.1	60 E	32*	43*
3 22	2 8.01	+ 13 8.4	2.413	1.665	18.9	19.7	33 E	24*	15*	12 28	22 25.92	- 10 0.5	1.572	1.356	38.4	21.2	59 E	34*	41*
4 1	2 35.57	+ 15 8.9	2.480	1.688	17.1	19.7	30 E	21*	14*	1 2	22 41.66	- 8 21.9	1.608	1.370	37.5	21.2	58 E	35*	39*
4 11	3 3.19	+ 16 55.6	2.547	1.714	15.3	19.7	27 E	18*	12*	1 7	22 57.09	- 6 42.3	1.646	1.385	36.6	21.3	57 E	36*	37*
4 21	3 30.79	+ 18 27.0	2.615	1.743	13.5	19.8	24	15*	11*	1 12	23 12.23	- 5 2.4	1.685	1.400	35.7	21.3	56 E	37*	35*
5 1	3 58.30	+ 19 42.1	2.681	1.775	11.6	19.8	21 E	11*	10*	1 17	23 27.10	- 3 22.7	1.726	1.415	34.7	21.4	55 E	37*	33*
5 11	4 25.57	+ 20 40.0	2.746	1.809	9.7	19.8	18 E	8*	8*	1 22	23 41.72	- 1 43.6	1.768	1.431	33.8	21.4	54 E	38*	32*
5 21	4 52.52	+ 21 20.8	2.809	1.845	7.8	19.8	14 E	4*	6*	1 27	23 56.13	- 0 5.5	1.811	1.447	32.8	21.5	53 E	38*	30*
5 31	5 19.02	+ 21 44.5	2.869	1.883	5.8	19.8	11 E	1*	4*	12 23	22 9.86	- 11 37.4	1.536	1.343	39.2	21.1	60 E	32*	43*
6 10	5 44.94	+ 21 51.9	2.925	1.922	3.9	19.8	7 E	—	1*	12 28	22 25.92	- 10 0.5	1.572	1.356	38.4	21.2	59 E	34*	41*
6 20	6 10.19	+ 21 43.8	2.975	1.963	2.0	19.8	4 E	—	—	1 2	22 41.66	- 8 21.9	1.608	1.370	37.5	21.2	58 E	35*	39*
6 30	6 34.68	+ 21 21.4	3.020	2.004	0.9	19.8	2 W	—	—	1 7	22 57.09	- 6 42.3	1.646	1.385	36.6	21.3	57 E	36*	37*
7 10	6 58.33	+ 20 46.1	3.058	2.046	2.4	19.9	5 W	—	—	1 12	23 12.23	- 5 2.4	1.685	1.400	35.7	21.3	56 E	37*	35*
7 20	7 21.10	+ 19 59.2	3.088	2.089	4.2	20.1	9 W	—	2*	1 17	23 27.10	- 3 22.7	1.726	1.415	34.7	21.4	55 E	37*	33*
7 30	7 42.95	+ 19 2.3	3.109	2.132	6.1	20.3	13 W	3*	5*	1 22	23 41.72	- 1 43.6	1.768	1.431	33.8	21.4	54 E	38*	32*
8 9	8 3.85	+ 17 56.9	3.122	2.175	8.0	20.4	17 W	7*	8*	1 27	23 56.13	- 0 5.5	1.811	1.447	32.8	21.5	53 E	38*	30*
8 19	8 23.80	+ 16 44.3	3.124	2.219	9.9	20.5	22 W	12*	11*	12 23	22 9.86	- 11 37.4	1.536	1.343	39.2	21.1	60 E	32*	43*
8 29	8 42.77	+ 15 26.2	3.116	2.262	11.7	20.7	27 W	17*	14*	12 28	22 25.92	- 10 0.5	1.572	1.356	38.4	21.2	59 E	34*	41*
9 8	9 0.76	+ 14 3.9	3.097	2.306	13.4	20.7	32 W	22*	17*	1 2	22 41.66	- 8 21.9	1.608	1.370	37.5	21.2	58 E	35*	39*
9 18	9 17.77	+ 12 38.8	3.066	2.349	15.1	20.8	37 W	27*	20*	1 7	22 57.09	- 6 42.3	1.646	1.385	36.6	21.3	57 E	36*	37*
9 28	9 33.75	+ 11 12.2	3.024	2.392	16.6	20.9	43 W	32*	24*	1 12	23 12.23	- 5 2.4	1.685	1.400	35.7	21.3	56 E	37*	35*
10 8	9 48.66	+ 9 45.5	2.971	2.434	18.0	20.9	49 W	37*	27*	1 17	23 27.10	- 3 22.7	1.726	1.415	34.7	21.4	55 E	37*	33*
10 18	10 2.47	+ 8 20.1	2.907	2.476	19.3	21.0	55 W	42*	31*	1 22	23 41.72	- 1 43.6	1.768	1.431	33.8	21.4	54 E	38*	32*
10 28	10 15.07	+ 6 57.3	2.833	2.518	20.3	21.0	62 W	45*	35*	1 27	23 56.13	- 0 5.5	1.811	1.447	32.8	21.5	53 E	38*	30*
11 7	10 26.37	+ 5 38.6	2.749	2.559	21.1	21.0	69 W	48*	40*	12 23	22 9.86	- 11 37.4	1.536	1.343	39.2	21.1	60 E	32*	43*
11 17	10 36.21	+ 4 25.6	2.657	2.599	21.6	20.9	76 W	49*	46*	12 28	22 25.92	- 10 0.5	1.572	1.356	38.4	21.2	59 E	34*	41*
11 27	10 44.43	+ 3 20.0	2.559	2.639	21.8	20.9	84 W	48	51*	1 2	22 41.66	- 8 21.9	1.608	1.370	37.5	21.2	58 E	35*	39*
12 7	10 50.82	+ 2 23.7	2.457	2.678	21.6	20.8	92 W	47	57*	1 7	22 57.09	- 6 42.3	1.646	1.385	36.6	21.3	57 E	36*	37*
12 17	10 55.17	+ 1 38.4	2.354	2.716	20.9	20.8	101 W	47	61*	1 12	23 12.23	- 5 2.4	1.685	1.400	35.7	21.3	56 E	37*	35*
12 27	10 57.23	+ 1 6.4	2.254	2.753	19.6	20.7	110 W	46	63	1 17	23 27.10	- 3 22.7	1.726	1.415	34.7	21.4	55 E	37*	33*
1 6	10 56.86	+ 0 64.6	2.162	2.790	17.7	20.5	120 W	46	63	1 22	23 41.72	- 1 43.6	1.768	1.431	33.8	21.4	54 E	38*	32*
1 16	10 53.94	+ 0 49.5	2.081	2.826	15.2	20.4	131 W	46	63	1 27	23 56.13	- 0 5.5	1.811	1.447	32.8	21.5	53 E	38*	30*
<b>168378 1997 ET<sub>30</sub></b>										<b>459451 2012 WG<sub>32</sub></b>									
12 23	22 9.82	- 13 31.8	1.795	1.541	33.2	20.4	59 E	30*	43*	12 23	22 10.56	- 2 20.8	2.325	2.081	25.0	19.3	63 E	41*	38*
12 28	22 24.09	- 11 53.5	1.855	1.570	32.0	20.5	58 E	32*	41*	1 2	22 30.07	- 0 41.1	2.468	2.128	23.2	19.4	59 E	41*	33*
1 2	22 37.85	- 10 16.0	1.917	1.599	30.8	20.6	56 E	33*	39*	1 12	22 49.27	+ 1 2.0	2.610	2.174	21.3	19.5	54 E	40*	27*
1 7	22 51.16	- 8 39.4	1.979	1.628	29.6	20.6	55 E	33*	36*	1 22	23 8.17	+ 2 47.4	2.748	2.221	19.4	19.6	49 E	38*	22*
1 12	23 4.04	- 7 4.3	2.043	1.658	28.5	20.7	53 E	34*	34*	2 1	23 26.80	+ 4 34.2	2.881	2.268	17.4	19.7	43 E	35*	18*
1 17	23 16.55	- 5 30.8	2.108	1.687	27.3	20.8	52	34*	32*	2 11	23 45.16	+ 6 21.5	3.007	2.315	15.3	19.8	38 E	31*	13*
1 22	23 28.73	- 3 59.0	2.173	1.717	26.1	20.8	50 E	34*	30*	2 21	0 3.26	+ 8 8.4	3.127	2.362	13.2	19.8	33 E	27*	10*
1 27	23 40.60	- 2 29.1	2.238	1.746	2														



EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

19/21	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°	19/21	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°
<b>306866 2001 SN<sub>268</sub></b>										<b>203471 2002 AU<sub>4</sub></b>									
<i>(continuation)</i>										<i>(continuation)</i>									
6 20	4 57.91	+27 42.5	2.579	1.609	8.5	19.3	14 W	5*	3*	2 16	2 32.91	+14 59.1	0.847	1.112	58.7	21.4	74 E	57*	37*
6 30	5 30.81	+28 6.9	2.547	1.592	9.9	19.3	16 W	7*	5*	2 21	2 49.43	+17 34.8	0.885	1.127	57.4	21.5	74 E	58*	36*
7 10	6 4.03	+28 3.9	2.519	1.580	11.2	19.3	18 W	9*	6*	<b>141535 2002 GG<sub>5</sub></b>									
7 20	6 37.18	+27 32.7	2.492	1.573	12.6	19.3	20 W	11*	7*	12 23	22 13.62	-10 38.9	2.184	1.910	26.7	20.7	61 E	33*	43*
7 30	7 9.85	+26 34.3	2.468	1.571	13.9	19.3	22 W	14*	8*	1 2	22 35.13	- 8 43.9	2.306	1.943	24.9	20.8	56 E	34*	37*
8 9	7 41.69	+25 10.5	2.446	1.574	15.2	19.4	24 W	16*	9*	1 12	22 56.24	- 6 44.5	2.426	1.975	23.0	20.9	52 E	34*	32*
8 19	8 12.42	+23 24.1	2.425	1.582	16.4	19.4	26 W	18*	10*	1 22	23 16.97	- 4 42.3	2.544	2.008	21.0	21.0	47 E	33*	28*
8 29	8 41.86	+21 18.6	2.405	1.595	17.7	19.4	29 W	21*	11*	2 1	23 37.36	- 2 38.5	2.657	2.042	19.0	21.0	42 E	30*	23*
9 8	9 9.91	+18 57.8	2.385	1.612	19.0	19.5	31 W	24*	13*	2 11	23 57.44	- 0 34.6	2.766	2.075	16.9	21.1	38 E	27*	19*
9 18	9 36.54	+16 25.3	2.364	1.634	20.2	19.5	34 W	27*	15*	2 21	0 17.25	+ 1 28.2	2.868	2.109	14.8	21.1	33 E	24*	16*
9 28	10 1.76	+13 44.9	2.341	1.660	21.5	19.6	37 W	29*	17*	3 2	0 36.84	+ 3 28.9	2.963	2.142	12.6	21.2	28 E	20*	13*
10 8	10 25.61	+10 59.9	2.316	1.690	22.7	19.6	41 W	32*	19*	3 12	0 56.22	+ 5 26.3	3.050	2.175	10.5	21.2	23 E	16*	10*
10 18	10 48.14	+ 8 13.0	2.286	1.723	23.9	19.7	44 W	35*	22*	3 22	1 15.43	+ 7 19.7	3.129	2.207	8.3	21.2	19 E	11*	7*
10 28	11 9.40	+ 5 26.8	2.252	1.759	25.0	19.7	48 W	37*	25*	4 1	1 34.50	+ 9 8.1	3.198	2.240	6.1	21.2	14 E	6*	4*
11 7	11 29.39	+ 2 43.7	2.213	1.798	26.1	19.8	53 W	39*	29*	4 11	1 53.44	+10 50.7	3.256	2.272	3.9	21.1	9 E	2*	1*
11 17	11 48.13	+ 0 5.2	2.168	1.838	27.0	19.8	58 W	40*	34*	4 21	2 12.25	+12 27.0	3.304	2.303	1.8	21.0	4 E	—	—
11 27	12 5.55	+ 2 27.0	2.117	1.881	27.8	19.8	63 W	41*	39*	5 1	2 30.95	+13 56.4	3.341	2.334	0.6	21.0	1 W	—	—
12 7	12 21.57	+ 4 51.6	2.060	1.925	28.4	19.8	68 W	40*	46*	5 11	2 49.50	+15 18.3	3.366	2.364	2.6	21.2	6 W	—	—
12 17	12 36.06	+ 7 7.6	1.997	1.971	28.7	19.8	74 W	38	53*	5 21	3 7.90	+16 32.4	3.379	2.393	4.6	21.3	11 W	—	5*
12 27	12 48.80	+ 9 13.7	1.929	2.017	28.7	19.8	81 W	36	60*	5 31	3 26.11	+17 38.4	3.379	2.422	6.7	21.5	16 W	1*	10*
1 6	12 59.58	+11 9.2	1.858	2.065	28.4	19.8	88 W	34	68*	<b>230136 2001 PH<sub>10</sub></b>									
1 16	13 8.06	+12 52.9	1.783	2.113	27.6	19.7	95 W	32	75*	12 23	22 13.77	-13 28.1	1.969	1.705	30.0	20.4	60 E	31*	44*
<b>334631 2002 VU<sub>99</sub></b>										1 2	22 37.59	-11 25.2	2.031	1.691	28.8	20.4	56 E	32*	39*
12 23	22 11.87	- 1 40.6	2.093	1.883	28.0	20.3	64 E	42*	38*	1 12	23 1.80	- 9 11.0	2.092	1.679	27.5	20.5	52 E	32*	35*
1 2	22 28.48	+ 0 48.0	2.157	1.851	27.0	20.3	59 E	43*	31*	1 22	23 26.29	- 6 47.6	2.151	1.671	26.2	20.5	49 E	32*	31*
1 12	22 46.25	+ 3 24.2	2.214	1.820	25.9	20.3	54 E	42*	25*	2 1	23 51.03	- 4 17.2	2.209	1.666	24.7	20.5	45 E	31*	27*
1 22	23 5.10	+ 6 7.6	2.264	1.791	24.7	20.3	50 E	41*	20*	2 11	0 15.98	- 1 42.6	2.266	1.663	23.2	20.5	42 E	29*	24*
2 1	23 25.03	+ 8 57.5	2.308	1.763	23.5	20.3	45	38*	15*	2 21	0 41.13	+ 0 53.8	2.322	1.664	21.6	20.5	38 E	27*	21*
2 11	23 46.04	+11 52.6	2.344	1.736	22.2	20.2	42	35*	11*	3 2	1 6.51	+ 3 29.2	2.378	1.669	20.0	20.5	35 E	25*	19*
2 21	0 8.19	+14 51.3	2.376	1.712	20.9	20.2	38	32*	7*	3 12	1 32.09	+ 6 0.9	2.432	1.676	18.4	20.5	32 E	22*	17*
3 2	0 31.57	+17 51.6	2.402	1.690	19.7	20.1	35	29*	5*	3 22	1 57.91	+ 8 26.4	2.487	1.686	16.7	20.5	29 E	19*	15*
3 12	0 56.28	+20 50.8	2.425	1.671	18.5	20.1	32	26*	2*	4 1	2 23.96	+10 43.3	2.540	1.699	14.9	20.5	26 E	16*	14*
3 22	1 22.44	+23 45.6	2.444	1.654	17.4	20.0	30	23*	—	4 11	2 50.21	+12 49.3	2.593	1.715	13.2	20.5	23 E	13*	12*
4 1	1 50.16	+26 32.5	2.462	1.640	16.3	20.0	27	21*	—	4 21	3 16.64	+14 42.6	2.644	1.733	11.4	20.5	20 E	10*	10*
4 11	2 19.50	+29 7.2	2.479	1.630	15.2	20.0	25	19*	—	5 1	3 43.21	+16 21.7	2.694	1.754	9.6	20.5	17 E	6*	8*
4 21	2 50.49	+31 25.2	2.496	1.622	14.2	19.9	23	17*	—	5 11	4 9.82	+17 45.3	2.742	1.777	7.7	20.5	14 E	3*	6*
5 1	3 23.05	+33 21.9	2.513	1.618	13.2	19.9	21	15*	—	5 21	4 36.40	+18 52.5	2.787	1.802	5.9	20.5	11 E	—	4*
5 11	3 56.94	+35 53.0	2.532	1.617	12.2	19.9	20	13*	—	5 31	5 2.83	+19 43.0	2.829	1.829	4.1	20.4	7 E	—	1*
5 21	4 31.83	+35 55.0	2.551	1.619	11.1	19.9	18	12*	—	6 10	5 28.99	+20 16.7	2.867	1.857	2.5	20.4	5 E	—	—
5 26	4 49.50	+36 14.2	2.562	1.622	10.6	19.9	17	11*	—	6 20	5 54.77	+20 34.1	2.901	1.887	1.5	20.4	3 W	—	—
5 31	5 7.23	+36 25.5	2.573	1.625	10.1	19.9	16	10*	—	6 30	6 20.06	+20 35.8	2.929	1.918	2.4	20.5	5 W	—	—
6 5	5 24.95	+36 28.6	2.584	1.630	9.6	19.9	16	9*	—	7 10	6 44.74	+20 22.8	2.951	1.949	4.1	20.7	8 W	—	2*
6 10	5 42.58	+36 23.6	2.595	1.634	9.1	19.8	15	8*	—	7 20	7 8.75	+19 56.4	2.967	1.982	5.9	20.8	12 W	1*	5*
6 15	6 0.05	+36 10.8	2.607	1.640	8.6	19.8	14	8*	—	7 30	7 32.00	+19 18.0	2.975	2.015	7.8	20.9	16 W	5*	7*
6 20	6 17.32	+35 50.2	2.619	1.647	8.2	19.8	13	7*	—	8 9	7 54.42	+18 29.1	2.975	2.049	9.6	21.1	20 W	9*	10*
6 25	6 34.30	+35 22.3	2.631	1.654	7.7	19.8	13	6*	—	8 19	8 16.00	+17 31.3	2.966	2.083	11.4	21.2	24 W	14*	12*
6 30	6 50.96	+34 47.4	2.643	1.662	7.3	19.8	12	5*	—	8 29	8 36.68	+16 26.2	2.949	2.118	13.2	21.2	29 W	19*	15*
7 10	7 23.13	+33 18.5	2.666	1.680	6.7	19.9	11	4*	—	9 8	8 56.45	+15 15.5	2.921	2.152	14.9	21.3	33 W	24*	17*
7 20	7 53.62	+31 27.2	2.688	1.701	6.4	19.9	11	3*	—	9 18	9 15.29	+14 0.8	2.884	2.187	16.6	21.4	38 W	28*	20*
7 30	8 22.35	+29 17.7	2.708	1.724	6.6	19.9	11	3*	—	9 28	9 33.16	+12 43.8	2.837	2.221	18.1	21.4	44 W	33*	23*
8 9	8 49.31	+26 53.8	2.724	1.749	7.3	20.0	13	6*	—	10 8	9 50.03	+11 26.2	2.779	2.255	19.6	21.5	49 W	38*	26*
8 19	9 14.60	+24 18.9	2.736	1.776	8.4	20.1	15	9*	—	10 18	10 5.85	+10 9.6	2.712	2.289	20.9	21.5	55 W	43*	29*
8 29	9 38.35	+21 36.1	2.742	1.805	9.7	20.2	18	12*	—	10 28	10 20.54	+ 8 55.8	2.635	2.323	22.0	21.5	61 W	47*	33*
9 8	10 0.66	+18 47.9	2.743	1.836	11.2	20.3	21	15*	3*	11 7	10 34.02	+ 7 46.7	2.550	2.356	22.9	21.5	68 W	50*	37*
9 18	10 21.70	+15 56.3	2.736	1.867	12.8	20.4	24	18*	5*	11 17	10 46.15	+ 6 44.0	2.457	2.389	23.5	21.5	74 W	51*	42*
9 28	10 41.57	+13 3.2	2.721	1.900	14.5	20.5	28	22*	9*	11 27	10 56.75	+ 5 49.9	2.358	2.421	23.8	21.4	82 W	51	47*
10 8	11 0.35	+10 10.0	2.697	1.933	16.2	20.6	33	25*	12*	12 7	11 5.64	+ 5 6.5	2.255	2.453	23.7	21.3	90 W	50	52*
10 18	11 18.14	+ 7 17.5	2.665	1.968	17.9	20.6	37	29*	16*	12 17	11 12.57	+ 4 36.0	2.150	2.484	23.1	21.2	98 W	50	57*
10 28	11 34.97	+ 4 26.8	2.623	2.002	19.5	20.7	42	33*	20*	12 27	11 17.25	+ 4 20.9	2.046	2.515	22.0	21.1	107 W	49	60*
11 7	11 50.84	+ 1 38.6	2.571	2.038	21.0	20.7	48	36*	25*	1 6	11 19.46	+ 4 23.0	1.947	2.545	20.2	21.0	117 W	49	60
11 17	12 5.74	+ 1 6.8	2.511	2.073	22.4	20.8	53	38*	31*	1 16	11 18.95	+ 4 44.0	1.858	2.574	17.8	20.8	127 W	50	59
11 27	12 19.59	+ 3 48.7	2.441	2.108	23.6	20.8	59	38*	37*	<b>163249 2002 GT</b>									
12 7	12 32.30	+ 6 27.1	2.363	2.144	24.6	20.8	65	38*	44*	12 23	22 14.05	-12 4.3	0.992	0.996	59.3	20.6	61 E	32*	44*
12 17	12 43.71	+ 9 1.8	2.278	2.1															

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

19/21	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°	19/21	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°
<b>101037 1998 QX<sub>90</sub></b>										<b>141765 2002 MP<sub>3</sub></b> (continuation)									
12 23	22 14.14	-13 43.4	1.941	1.681	30.5	20.0	60 E	30*	45*	7 20	8 58.10	+31 11.6	3.136	2.185	7.8	20.9	17 E	11*	1*
1 2	22 39.77	-11 41.0	2.027	1.694	28.9	20.0	56 E	31*	40*	7 25	9 9.06	+30 54.0	3.169	2.211	7.3	21.0	16 E	10*	—
1 12	23 5.05	-9 29.2	2.115	1.710	27.3	20.1	53 E	32*	35*	7 30	9 19.86	+30 34.5	3.198	2.235	6.9	21.0	15 E	9*	—
1 22	23 29.95	-7 10.9	2.202	1.729	25.5	20.2	49 E	32*	32*	8 4	9 30.48	+30 13.5	3.224	2.260	6.7	21.0	15 E	9*	—
2 1	23 54.49	-4 48.6	2.290	1.750	23.7	20.2	46 E	31*	28*	8 8	9 40.95	+29 51.3	3.247	2.284	6.6	21.1	15 E	8*	—
2 11	0 18.68	-2 25.1	2.377	1.773	21.9	20.3	42 E	29*	25*	8 14	9 51.25	+29 27.9	3.267	2.308	6.8	21.1	16 E	8*	—
2 21	0 42.57	-0 2.5	2.464	1.798	20.0	20.3	38 E	27*	22*	8 19	10 1.39	+29 3.7	3.284	2.331	7.0	21.1	16 E	7*	—
3 2	1 6.20	+2 17.0	2.548	1.824	18.1	20.4	35 E	24*	20*	8 24	10 11.38	+28 38.8	3.298	2.353	7.4	21.2	18 W	7*	—
3 12	1 29.61	+4 31.4	2.631	1.852	16.1	20.4	31 E	21*	17*	8 29	10 21.22	+28 13.5	3.308	2.376	7.9	21.2	19 W	9*	—
3 22	1 52.84	+6 39.2	2.710	1.882	14.1	20.4	27 E	17*	15*	9 3	10 30.90	+27 48.0	3.314	2.397	8.5	21.3	21 W	12*	—
4 1	2 15.92	+8 38.9	2.785	1.912	12.1	20.5	24 E	13*	13*	9 8	10 40.44	+27 22.4	3.318	2.419	9.2	21.3	23 W	14*	—
4 11	2 38.85	+10 29.3	2.856	1.944	10.1	20.5	20 E	9*	11*	9 13	10 49.84	+26 57.1	3.318	2.439	9.9	21.4	25 W	16*	—
4 21	3 1.66	+12 9.3	2.922	1.976	8.1	20.5	16 E	5*	8*	9 18	10 59.10	+26 32.1	3.315	2.460	10.6	21.4	27 W	19*	—
5 1	3 24.32	+13 38.2	2.981	2.009	6.2	20.5	12 E	1*	6*	9 23	11 8.22	+26 7.8	3.309	2.480	11.3	21.5	29 W	21*	—
5 11	3 46.81	+14 55.5	3.034	2.042	4.3	20.4	9 E	—	3*	<b>100922 1998 KR<sub>61</sub></b>									
5 21	4 9.12	+16 0.7	3.080	2.076	2.8	20.4	6 E	—	—	12 23	22 15.22	-18 25.3	2.593	2.246	22.0	20.2	59 E	26*	46*
5 31	4 31.18	+16 53.7	3.118	2.109	2.4	20.5	5 W	—	—	1 2	22 33.16	-16 50.2	2.726	2.279	20.2	20.3	53 E	26*	40*
6 10	4 52.93	+17 34.4	3.146	2.143	3.4	20.6	7 W	—	1*	1 12	22 50.97	-15 10.6	2.854	2.310	18.4	20.3	48 E	25*	35*
6 20	5 14.33	+18 3.2	3.166	2.177	5.1	20.7	11 W	—	5*	1 22	23 8.62	-13 27.8	2.974	2.342	16.4	20.4	42 E	24*	29*
6 30	5 35.30	+18 20.4	3.176	2.211	6.9	20.8	15 W	—	9*	2 1	23 26.12	-11 42.7	3.085	2.373	14.5	20.4	37 E	21*	25*
7 10	5 55.78	+18 26.5	3.176	2.244	8.7	21.0	20 W	3*	13*	2 11	23 43.45	-9 56.7	3.187	2.403	12.4	20.5	32 E	18*	20*
7 20	6 15.69	+18 22.2	3.166	2.277	10.5	21.1	24 W	8*	16*	2 21	0 0.60	-8 10.7	3.279	2.433	10.4	20.5	26	14*	16*
7 30	6 34.95	+18 8.4	3.144	2.310	12.3	21.1	29 W	14*	19*	3 2	0 17.58	-6 25.6	3.359	2.462	8.4	20.5	21	9*	13*
8 9	6 53.50	+17 46.0	3.111	2.343	14.1	21.2	34 W	19*	22*	3 12	0 34.39	-4 42.6	3.428	2.490	6.4	20.4	16	4*	9*
8 19	7 11.26	+17 16.0	3.068	2.375	15.7	21.3	39 W	25*	25*	3 22	0 51.04	-3 2.3	3.484	2.518	4.7	20.4	12 E	—	6*
8 29	7 28.14	+16 39.6	3.013	2.406	17.2	21.3	45 W	31*	28*	4 1	1 7.52	+1 25.6	3.528	2.544	3.4	20.4	9 E	—	2*
9 8	7 44.07	+15 58.1	2.947	2.437	18.6	21.3	51 W	37*	31*	4 11	1 23.84	+0 6.7	3.558	2.571	3.2	20.4	8 E	—	—
9 18	7 58.94	+15 12.8	2.871	2.467	19.9	21.3	57 W	42*	33*	4 21	1 39.98	+1 34.0	3.575	2.596	4.2	20.5	11 W	—	2*
9 28	8 12.63	+14 25.3	2.786	2.496	21.0	21.3	63 W	47*	36*	5 1	1 55.93	+2 55.6	3.579	2.620	5.8	20.6	15 W	—	8*
10 8	8 25.02	+13 37.3	2.691	2.525	21.8	21.3	70 W	52*	40*	5 11	2 11.66	+4 10.9	3.569	2.644	7.6	20.7	20 W	—	13*
10 18	8 35.95	+12 50.4	2.589	2.553	22.3	21.3	77 W	55*	43*	5 21	2 27.14	+5 19.4	3.546	2.667	9.4	20.8	25 W	—	19*
10 28	8 45.22	+12 6.6	2.482	2.581	22.5	21.2	84 W	57*	46*	5 31	2 42.34	+6 20.7	3.509	2.689	11.1	20.9	31 W	—	25*
11 7	8 52.62	+11 28.2	2.371	2.607	22.3	21.1	92 W	56	49*	6 10	2 57.19	+7 14.2	3.460	2.710	12.8	20.9	36 W	4*	30*
11 17	8 57.90	+10 57.4	2.259	2.633	21.6	21.0	101 W	56	52*	6 20	3 11.63	+7 59.8	3.399	2.730	14.4	21.0	42 W	9*	35*
11 27	9 0.79	+10 36.7	2.150	2.658	20.4	20.9	110 W	56	53*	6 30	3 25.57	+8 37.0	3.325	2.750	15.9	21.0	48 W	14*	40*
12 7	9 1.08	+10 28.4	2.048	2.682	18.5	20.8	120 W	55	54	7 10	3 38.90	+9 5.6	3.241	2.768	17.3	21.0	54 W	21*	44*
12 17	8 58.59	+10 34.2	1.957	2.705	16.0	20.6	131 W	56	53	7 20	3 51.52	+9 25.5	3.146	2.786	18.5	21.0	60 W	27*	47*
12 27	8 53.36	+10 55.4	1.883	2.728	12.7	20.4	142 W	56	53	8 9	4 3.26	+9 36.6	3.042	2.802	19.4	20.9	67 W	34*	50*
1 6	8 45.69	+11 31.0	1.831	2.749	9.0	20.2	154 W	57	52	8 19	4 23.42	+9 32.7	2.813	2.833	20.6	20.8	81 W	46*	54*
1 16	8 36.18	+12 18.8	1.805	2.770	4.9	20.0	166 W	57	52	8 29	4 31.41	+9 18.1	2.692	2.846	20.8	20.7	88 W	51*	55*
<b>141765 2002 MP<sub>3</sub></b>										<b>434052 2001 UP<sub>17</sub></b>									
12 23	22 14.91	-40 15.0	1.260	1.064	49.2	18.7	55 E	4*	49*	12 23	22 15.26	-4 2.7	1.748	1.584	33.9	20.9	64 E	40*	40*
12 28	22 40.36	-38 2.8	1.246	1.069	49.6	18.7	56 E	6*	50*	1 2	22 44.22	-2 17.0	1.864	1.632	31.8	21.1	61 E	41*	36*
1 2	23 4.99	-35 27.6	1.236	1.077	49.8	18.7	57 E	9*	51*	1 12	23 11.83	-0 26.5	1.985	1.683	29.7	21.2	58 E	41*	33*
1 7	23 28.66	-32 31.6	1.229	1.088	49.8	18.7	58 E	12*	51*	1 22	23 38.22	+1 25.9	2.111	1.736	27.5	21.3	55 E	40*	29*
1 12	23 51.29	-29 17.7	1.226	1.101	49.6	18.7	59 E	15*	52*	2 1	0 3.53	+3 18.2	2.239	1.789	25.3	21.5	51 E	39*	26*
1 17	0 12.87	-25 49.3	1.228	1.117	49.3	18.7	59 E	18*	52*	<b>396730 2003 KX<sub>16</sub></b>									
1 22	0 33.43	-22 10.2	1.236	1.135	48.8	18.8	60 E	22*	51*	12 23	22 15.32	-32 2.5	1.153	1.012	53.6	20.8	56 E	12*	49*
1 27	0 53.05	-18 24.4	1.250	1.156	48.1	18.8	61 E	25*	50*	12 28	22 26.13	-29 56.8	1.121	0.960	55.8	20.7	54 E	14*	47*
2 1	1 11.80	-14 36.1	1.269	1.178	47.3	18.9	61 E	29*	49*	1 2	22 37.02	-27 39.9	1.084	0.907	58.4	20.6	52 E	16*	44*
2 6	1 29.77	-10 48.8	1.295	1.202	46.3	18.9	62 E	32*	48*	1 7	22 47.85	-25 9.9	1.040	0.854	61.6	20.4	50 E	17*	41*
2 11	1 47.06	-7 6.0	1.326	1.228	45.3	19.0	62 E	35*	46*	1 12	22 58.41	-22 24.8	0.992	0.802	65.5	20.3	48 E	19*	39*
2 16	2 3.74	+3 30.2	1.363	1.255	44.1	19.1	62 E	37*	45*	1 17	23 8.41	-19 21.9	0.937	0.750	70.3	20.2	46 E	21*	36*
2 21	2 19.92	+0 3.7	1.405	1.283	42.9	19.1	62 E	39*	43*	1 22	23 17.45	-15 58.2	0.877	0.702	76.2	20.1	44 E	22*	32*
2 26	2 35.67	+3 12.0	1.451	1.312	41.6	19.2	62 E	41*	41*	1 27	23 24.88	-12 10.5	0.813	0.657	83.4	20.1	41 E	24*	28*
3 2	2 51.05	+6 16.0	1.502	1.342	40.3	19.3	61 E	43*	39*	2 1	23 29.79	-7 56.1	0.746	0.618	92.0	20.1	39 E	25*	24*
<b>434052 2001 UP<sub>17</sub></b>										<b>99321 2001 TT<sub>113</sub></b>									
3 12	3 20.92	+11 46.7	1.615	1.403	37.6	19.5	60 E	44*	36*	12 23	22 16.42	-10 28.6	1.921	1.692	30.8	20.8	62 E	34*	44*
3 22	3 49.90	+16 28.1	1.739	1.467	34.9	19.7	57 E	44*	32*	1 2	22 39.24	-8 5.2	1.990	1.681	29.6	20.8	5		



EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

19/21	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°	19/21	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°
<b>99321 2001 TT<sub>113</sub></b>										<b>179630 2002 PX<sub>70</sub></b>									
<i>(continuation)</i>																			
2 1	23 49.78	- 0 13.4	2.184	1.663	25.3	20.9	46 E	34*	25*	12 23	22 17.58	- 7 56.5	1.827	1.632	32.4	19.9	63 E	36*	43*
2 11	0 13.90	+ 2 30.9	2.245	1.662	23.8	20.9	43 E	32*	22*	1 2	22 43.46	- 5 49.5	1.911	1.644	31.0	20.0	59 E	37*	38*
2 21	0 38.36	+ 5 15.1	2.304	1.662	22.2	20.9	39 E	30*	19*	1 12	23 9.14	- 3 35.0	1.996	1.659	29.4	20.1	56 E	38*	34*
3 2	1 3.16	+ 7 56.8	2.361	1.665	20.5	20.9	36 E	28*	16*	1 22	23 34.60	- 1 15.6	2.083	1.677	27.8	20.2	53 E	38*	30*
3 12	1 28.35	+10 33.6	2.417	1.670	18.8	20.9	33 E	25*	14*	2 2 1	23 59.83	+ 1 6.0	2.170	1.697	26.0	20.2	49 E	37*	26*
3 22	1 53.93	+13 3.0	2.471	1.677	17.0	20.9	30 E	22*	12*	2 11	0 24.85	+ 3 27.5	2.259	1.720	24.2	20.3	46 E	35*	23*
4 1	2 19.95	+15 23.0	2.523	1.687	15.3	20.9	26 E	19*	10*	2 21	0 49.67	+ 5 46.4	2.347	1.745	22.3	20.3	42 E	32*	21*
4 11	2 46.37	+17 31.2	2.572	1.698	13.5	20.9	23 E	16*	9*	3 2	1 14.34	+ 8 0.7	2.435	1.772	20.4	20.4	39 E	30*	19*
4 21	3 13.19	+19 25.9	2.620	1.712	11.6	20.9	20 E	12*	7*	3 12	1 38.87	+10 8.4	2.521	1.800	18.5	20.4	35 E	26*	17*
5 1	3 40.35	+21 5.4	2.665	1.727	9.8	20.9	17 E	9*	5*	3 22	2 3.28	+12 7.9	2.606	1.830	16.5	20.5	31 E	23*	15*
5 11	4 7.76	+22 28.2	2.707	1.743	8.0	20.8	14 E	6*	3*	4 1	2 27.60	+13 57.9	2.687	1.861	14.4	20.5	28 E	19*	13*
5 21	4 35.33	+23 33.3	2.746	1.762	6.1	20.8	11 E	3*	1*	4 11	2 51.82	+15 37.1	2.765	1.893	12.4	20.5	24 E	15*	11*
5 31	5 2.92	+24 20.3	2.782	1.781	4.2	20.8	7 E	—	—	4 21	3 15.92	+17 4.5	2.838	1.925	10.3	20.5	20 E	11*	9*
6 10	5 30.37	+24 48.9	2.813	1.802	2.4	20.7	4 E	—	—	5 1	3 39.89	+18 19.6	2.906	1.959	8.3	20.6	16 E	7*	7*
6 20	5 57.56	+24 59.3	2.839	1.824	0.9	20.6	2 E	—	—	5 11	4 3.67	+19 21.7	2.968	1.993	6.2	20.5	12 E	3*	4*
6 30	6 24.33	+24 52.3	2.861	1.847	1.8	20.7	3 W	—	—	5 21	4 27.23	+20 10.7	3.024	2.027	4.1	20.5	8 E	—	1*
7 10	6 50.53	+24 28.8	2.876	1.870	3.6	20.9	7 W	—	—	5 31	4 50.49	+20 46.6	3.071	2.062	2.2	20.5	4 E	—	—
7 20	7 16.07	+23 50.0	2.886	1.895	5.5	21.0	10 W	3*	1*	6 10	5 13.39	+21 9.5	3.111	2.096	0.9	20.4	2 W	—	—
7 30	7 40.84	+22 57.6	2.889	1.919	7.4	21.2	14 W	6*	4*	6 20	5 35.86	+21 19.7	3.142	2.131	2.3	20.6	5 W	—	—
8 9	8 4.79	+21 53.1	2.884	1.944	9.2	21.3	18 W	10*	6*	6 30	5 57.83	+21 17.9	3.163	2.165	4.3	20.8	9 W	—	3*
8 19	8 27.87	+20 38.2	2.872	1.970	11.1	21.4	22 W	14*	8*	7 10	6 19.21	+21 4.7	3.175	2.200	6.3	20.9	14 W	6*	7*
8 29	8 50.05	+19 14.8	2.851	1.995	12.9	21.4	26 W	18*	11*	7 20	6 39.97	+20 41.0	3.176	2.234	8.2	21.0	18 W	6*	10*
<b>101811 1999 JQ<sub>6</sub></b>										<b>227126 2005 OP<sub>4</sub></b>									
12 23	22 16.46	-23 11.3	3.115	2.721	17.8	20.4	58 E	21*	48*	12 23	22 18.49	-15 5.3	1.899	1.654	31.2	20.5	61 E	29*	46*
1 2	22 28.18	-21 5.8	3.201	2.693	16.5	20.4	51 E	22*	40*	1 2	22 43.06	-12 15.4	1.972	1.655	29.9	20.6	57 E	31*	41*
1 12	22 40.63	-18 58.0	3.276	2.664	15.0	20.3	44 E	21*	34*	1 12	23 7.53	- 9 18.3	2.045	1.659	28.4	20.6	53 E	32*	36*
1 22	22 53.69	-16 47.8	3.339	2.635	13.3	20.3	38 E	19*	27*	1 22	23 31.90	- 6 16.6	2.119	1.667	26.9	20.6	50 E	33*	32*
2 1	23 7.26	-14 35.3	3.388	2.604	11.5	20.2	32 E	16*	21*	2 1	23 56.19	- 3 12.7	2.193	1.677	25.3	20.7	47 E	32*	28*
2 11	23 21.25	-12 20.6	3.425	2.573	9.6	20.2	26 E	13*	16*	2 11	0 20.40	- 0 9.3	2.268	1.690	23.6	20.7	43 E	31*	24*
2 21	23 35.60	-10 3.8	3.447	2.541	7.7	20.1	20 E	8*	12*	2 21	0 44.58	+ 2 51.2	2.343	1.706	21.8	20.8	40 E	29*	21*
3 2	23 50.27	- 7 45.2	3.455	2.508	5.7	19.9	14 E	4*	7*	3 2	1 8.79	+ 5 46.8	2.417	1.724	20.0	20.8	36 E	27*	19*
3 12	0 5.24	- 5 24.9	3.450	2.474	3.7	19.8	9 E	—	3*	3 12	1 33.05	+ 8 35.1	2.490	1.745	18.1	20.8	33 E	24*	16*
3 22	0 20.49	- 3 3.2	3.430	2.440	2.1	19.7	5 E	—	—	3 22	1 57.40	+11 14.4	2.563	1.767	16.2	20.9	30 E	21*	14*
4 1	0 36.04	- 0 40.2	3.398	2.405	2.2	19.6	5 W	—	—	4 1	2 21.88	+13 43.0	2.633	1.792	14.3	20.9	26 E	18*	12*
4 11	0 51.88	+ 1 43.7	3.352	2.369	3.9	19.7	9 W	—	3*	4 11	2 46.48	+15 59.4	2.701	1.818	12.3	20.9	23 E	15*	9*
4 21	1 8.04	+ 4 8.4	3.295	2.333	6.0	19.7	14 W	—	8*	4 21	3 11.20	+18 2.4	2.765	1.846	10.3	20.9	19 E	11*	7*
5 1	1 24.55	+ 6 33.6	3.226	2.296	8.2	19.7	19 W	—	13*	5 1	3 36.03	+19 51.2	2.826	1.876	8.3	20.9	16 E	8*	5*
5 11	1 41.44	+ 8 59.0	3.146	2.259	10.4	19.7	24 W	2*	18*	5 11	4 0.89	+21 25.0	2.883	1.906	6.3	20.9	12 E	4*	3*
5 21	1 58.76	+11 24.6	3.058	2.221	12.6	19.7	29 W	6*	22*	5 21	4 25.73	+22 43.4	2.934	1.938	4.3	20.9	8 E	1*	—
5 31	2 16.57	+13 49.9	2.960	2.184	14.7	19.7	33 W	10*	26*	5 31	4 50.49	+23 46.4	2.979	1.970	2.4	20.8	5 E	—	—
6 10	2 34.91	+16 14.8	2.855	2.146	16.9	19.6	38 W	14*	29*	6 10	5 15.04	+24 34.0	3.017	2.003	0.8	20.7	2 E	—	—
6 20	2 53.88	+18 39.2	2.744	2.108	19.0	19.6	42 W	19*	31*	6 20	5 39.30	+25 6.8	3.048	2.036	2.0	20.9	4 W	—	—
6 30	3 13.52	+21 2.7	2.628	2.070	21.0	19.5	47 W	25*	32*	6 30	6 3.17	+25 25.3	3.072	2.069	3.9	21.1	8 W	—	—
7 10	3 33.93	+23 25.1	2.507	2.032	23.0	19.4	51 W	31*	33*	7 10	6 26.54	+25 30.5	3.086	2.103	5.8	21.2	12 W	4*	3*
7 20	3 55.21	+25 46.1	2.384	1.994	24.9	19.3	56 W	38*	33*	7 20	6 49.34	+25 23.5	3.092	2.137	7.8	21.4	17 W	8*	6*
7 30	4 17.44	+28 5.3	2.259	1.957	26.6	19.2	60 W	44*	32*	7 30	7 11.45	+25 5.5	3.088	2.171	9.7	21.5	21 W	12*	8*
8 9	4 40.72	+30 22.2	2.134	1.921	28.3	19.1	64 W	51*	30*	<b>422666 1999 TK<sub>233</sub></b>									
8 19	5 5.16	+32 36.5	2.010	1.885	29.9	19.0	68 W	57*	29*	12 23	22 18.60	- 4 57.2	1.811	1.643	32.6	21.0	64 E	39*	42*
8 29	5 30.84	+34 47.4	1.887	1.850	31.3	18.9	72 W	63*	27*	1 2	22 44.49	- 2 48.1	1.909	1.668	31.0	21.1	61 E	40*	37*
9 3	5 44.17	+35 51.3	1.827	1.834	32.0	18.8	74 W	65*	26*	1 12	23 9.93	- 0 34.4	2.010	1.696	29.2	21.2	57 E	41*	32*
9 8	5 57.84	+36 54.1	1.768	1.817	32.6	18.7	76 W	68*	25*	1 22	23 34.92	+ 1 41.4	2.112	1.726	27.4	21.3	54 E	40*	28*
9 13	6 11.85	+37 55.5	1.710	1.801	33.2	18.6	78 W	71*	24*	2 1	23 59.52	+ 3 57.3	2.216	1.758	25.5	21.4	50 E	39*	25*
9 18	6 26.20	+38 55.6	1.654	1.785	33.7	18.6	80 W	73*	23*	<b>6047 1991 TB<sub>1</sub></b>									
9 23	6 40.88	+39 54.1	1.598	1.770	34.2	18.5	82 W	75*	22*	12 23	22 18.84	+18 2.3	0.717	1.057	64.0	19.5	75 E	62*	27*
9 28	6 55.89	+40 50.9	1.544	1.755	34.6	18.4	84 W	78*	21*	1 2	22 33.53	+22 56.3	0.710	1.017	66.7	19.4	72 E	63*	19*
10 3	7 11.20	+41 45.8	1.492	1.741	35.0	18.3	86 W	80*	20*	1 12	22 50.81	+28 3.6	0.690	0.983	69.5	19.4	69 E	63*	12*
10 8	7 26.81	+42 38.8	1.441	1.727	35.3	18.2	88 W	82*	19*	1 22	23 11.35	+33 24.2	0.659	0.959	72.3	19.3	68 E	62*	6*
10 13	7 42.68	+43 29.7	1.392	1.714	35.6	18.1	90 W	84*	19*	1 27	23 23.30	+36 9.5	0.639	0.950	73.6	19.3	68 E	61*	3*
10 18	7 58.75	+44 18.5	1.345	1.701	35.8	18.1	92 W	86*	18*	2 1	23 36.77	+38 57.9	0.616	0.945	75.0	19.2	68 E	60*	1*
10 23	8 14.97	+45 5.1	1.300	1.689	36.0	18.0	94 W	88*	17*	2 6	23 52.17	+41 48.8	0.592	0.942	76.2	19.2	68 E	59*	—
10 28	8 31.28	+45 49.4	1.257	1.678	36.1	17.9	96 W	89*	16*	2 11	0 10.12	+44 40.7	0.566	0.943	77.3	19.1	69 E	58*	—
11 2	8 47.62	+46 31.5	1.215	1.667	36.2	17.8	98 W	88	15*										
11 7	9 3.89	+47 11.4	1.176	1.657	36.2	17.7	99 W	88	15*										
11 12	9 20.00	+47 49.5	1.138	1.648	36.1	17.6	101 W	87	14*										
11 17	9 35.83	+48 26.0	1.102	1.639	36.0	17.6	103 W	87	14*										
11 22	9 51.24																		

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

19/20	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°	19/21	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°
<b>6047 1991 TB<sub>1</sub></b>										<b>376817 2001 AT<sub>43</sub></b>									
<i>(continuation)</i>										<i>(continuation)</i>									
2 13	0 18.20	+45 49.2	0.555	0.943	77.7	19.1	69E	58*	—	6 10	6 35.56	+22 11.4	2.819	1.888	10.1	20.7	19E	5*	11*
2 15	0 26.88	+46 57.4	0.544	0.945	78.0	19.1	69E	58*	—	6 20	6 59.69	+20 47.5	2.885	1.923	8.0	20.7	15E	1*	8*
2 17	0 36.24	+48 4.8	0.533	0.947	78.3	19.1	70E	58*	—	6 30	7 22.87	+19 13.6	2.945	1.959	5.9	20.7	11E	—	5*
2 19	0 46.36	+49 11.1	0.522	0.949	78.6	19.0	70E	58*	—	7 10	7 45.10	+17 30.8	2.997	1.995	4.1	20.7	8E	—	2*
2 21	0 57.33	+50 15.9	0.511	0.952	78.8	19.0	71E	59*	—	7 20	8 6.43	+15 40.1	3.040	2.031	2.7	20.6	5E	—	—
2 23	1 9.24	+51 18.6	0.500	0.955	78.9	19.0	71E	59*	—	7 30	8 26.90	+13 42.4	3.075	2.066	2.7	20.7	5W	—	—
2 25	1 22.19	+52 18.4	0.489	0.959	79.0	18.9	72E	59*	—	8 9	8 46.54	+11 38.7	3.100	2.102	4.0	20.8	8W	—	2*
2 27	1 36.27	+53 14.5	0.479	0.963	79.0	18.9	73E	60*	—	8 19	9 5.40	+9 29.7	3.115	2.137	5.8	21.0	12W	—	6*
2 29	1 51.55	+54 5.7	0.468	0.967	79.0	18.8	73E	61*	—	8 29	9 23.51	+7 16.2	3.120	2.172	7.7	21.1	17W	4*	10*
3 2	2 8.10	+54 50.8	0.458	0.972	78.8	18.8	74E	62*	—	9 8	9 40.90	+4 58.8	3.114	2.207	9.6	21.2	21W	9*	13*
3 4	2 25.94	+55 28.3	0.448	0.977	78.6	18.8	75E	63*	—	9 18	9 57.58	+2 38.2	3.097	2.241	11.4	21.3	26W	13*	17*
3 6	2 45.06	+55 56.6	0.438	0.983	78.3	18.7	76E	64*	—	9 28	10 13.56	+0 15.0	3.069	2.274	13.2	21.4	31W	17*	21*
3 8	3 5.37	+56 13.9	0.429	0.989	77.9	18.7	77E	65*	1*	10 8	10 28.83	+2 10.2	3.030	2.306	15.0	21.5	37W	22*	25*
3 10	3 26.71	+56 18.4	0.421	0.995	77.5	18.6	78E	66*	2*	<b>223050 2002 TS<sub>91</sub></b>									
3 12	3 48.82	+56 8.5	0.413	1.002	76.9	18.6	79E	68*	3*	12 23	22 19.63	+7 50.5	1.815	1.631	32.6	20.8	63E	36*	43*
3 13	4 0.08	+55 57.8	0.410	1.006	76.6	18.5	80E	69*	4*	1 2	22 44.87	+5 20.3	1.898	1.643	31.2	20.9	60E	38*	38*
3 14	4 11.42	+55 42.9	0.406	1.009	76.2	18.5	80E	70*	5*	1 12	23 9.98	+2 44.8	1.984	1.658	29.6	21.0	57E	39*	33*
3 15	4 22.79	+55 23.9	0.403	1.013	75.9	18.5	81E	71*	5*	1 22	23 34.92	+0 6.6	2.071	1.676	28.0	21.0	53E	39*	29*
3 16	4 34.15	+55 0.6	0.400	1.016	75.5	18.5	82E	72*	6*	2 1	23 59.72	+2 32.1	2.159	1.697	26.3	21.1	50E	38*	26*
3 17	4 45.44	+54 33.1	0.397	1.020	75.1	18.5	82E	73*	7*	2 11	0 24.39	+5 8.9	2.247	1.719	24.5	21.2	46E	36*	22*
3 18	4 56.64	+54 1.3	0.395	1.024	74.7	18.4	83E	74*	8*	2 21	0 48.95	+7 41.5	2.336	1.744	22.6	21.2	43E	34*	20*
3 19	5 7.69	+53 25.2	0.393	1.028	74.2	18.4	83E	75*	9*	3 2	1 13.45	+10 8.2	2.424	1.771	20.7	21.3	39E	31*	17*
3 20	5 18.56	+52 45.1	0.391	1.032	73.7	18.4	84E	76*	10*	3 12	1 37.90	+12 27.1	2.512	1.800	18.8	21.3	36E	28*	15*
3 21	5 29.21	+52 0.9	0.389	1.036	73.3	18.4	85E	77*	11*	3 22	2 2.33	+14 36.7	2.597	1.830	16.8	21.4	32E	24*	13*
3 22	5 39.62	+51 12.8	0.387	1.040	72.8	18.4	85E	78*	12*	4 1	2 26.76	+16 35.7	2.679	1.861	14.8	21.4	28E	21*	11*
3 24	5 59.62	+49 25.8	0.385	1.048	71.7	18.3	87E	80*	14*	4 11	2 51.17	+18 22.9	2.758	1.894	12.7	21.4	25E	17*	9*
3 26	6 18.43	+47 25.9	0.385	1.057	70.6	18.3	88E	82*	16*	4 21	3 15.55	+19 57.6	2.833	1.927	10.7	21.5	21E	13*	7*
3 28	6 35.99	+45 14.9	0.385	1.066	69.5	18.3	89E	83*	19*	5 1	3 39.86	+21 19.0	2.903	1.961	8.6	21.5	17E	9*	5*
3 30	6 52.31	+42 55.2	0.387	1.075	68.3	18.3	91E	84*	21*	5 11	4 4.04	+22 26.8	2.967	1.995	6.5	21.5	13E	5*	3*
4 1	7 7.41	+40 28.9	0.389	1.084	67.1	18.3	92E	83*	24	5 21	4 28.05	+23 20.7	3.024	2.030	4.5	21.4	9E	2*	—
4 3	7 21.38	+37 58.2	0.394	1.094	65.9	18.3	93E	82*	26	5 31	4 51.80	+24 0.9	3.073	2.065	2.4	21.4	5E	—	—
4 4	7 34.29	+35 25.1	0.399	1.103	64.8	18.3	94E	80*	29	6 10	5 15.22	+24 27.5	3.115	2.100	0.7	21.3	2E	—	—
4 7	7 46.24	+32 51.5	0.406	1.113	63.6	18.3	95E	77*	31	6 20	5 38.22	+24 41.1	3.148	2.135	1.9	21.5	4W	—	—
4 9	7 57.32	+30 18.9	0.414	1.123	62.5	18.4	96E	75*	34	<b>82913 2001 QN<sub>103</sub></b>									
4 11	8 7.62	+27 48.6	0.423	1.133	61.5	18.4	97E	72*	36	12 23	22 19.99	+9 22.8	2.067	1.840	28.4	19.1	63E	35*	44*
4 13	8 17.23	+25 21.7	0.433	1.143	60.5	18.4	97E	70*	39	1 2	22 42.06	+6 59.4	2.191	1.877	26.6	19.2	59E	36*	38*
4 15	8 26.22	+22 59.0	0.444	1.153	59.5	18.5	98E	68*	41	1 12	23 3.62	+4 35.0	2.314	1.915	24.6	19.3	54E	36*	33*
4 17	8 34.66	+20 41.3	0.456	1.163	58.6	18.5	99E	65*	43	1 22	23 24.71	+2 10.9	2.437	1.954	22.7	19.4	50E	36*	28*
4 19	8 42.62	+18 28.8	0.469	1.174	57.7	18.6	99E	63*	46	2 1	23 45.41	+0 12.0	2.557	1.994	20.6	19.5	45E	34*	24*
4 21	8 50.15	+16 21.8	0.484	1.184	56.9	18.6	99E	61*	48	2 11	0 5.77	+2 32.5	2.673	2.033	18.5	19.5	41E	31*	20*
4 26	9 7.41	+11 28.8	0.522	1.210	55.0	18.8	100E	55*	53	2 21	0 25.83	+4 49.6	2.785	2.073	16.4	19.6	36E	28*	16*
5 1	9 22.92	+7 9.8	0.565	1.237	53.3	19.0	100E	51*	57	3 2	0 45.65	+7 2.6	2.892	2.114	14.3	19.6	32E	24*	13*
5 6	9 37.10	+3 21.5	0.611	1.264	51.9	19.2	100E	46*	61	3 12	1 5.27	+9 10.7	2.991	2.154	12.1	19.7	27E	20*	10*
5 11	9 50.30	+0 0.1	0.660	1.291	50.6	19.3	99E	42*	64	3 22	1 24.72	+11 13.1	3.082	2.193	9.9	19.7	22E	15*	7*
5 16	10 2.75	+2 58.3	0.712	1.318	49.4	19.5	98E	38*	67	4 1	1 44.04	+13 9.2	3.165	2.233	7.8	19.7	18E	11*	4*
5 21	10 14.67	+5 37.4	0.766	1.344	48.3	19.7	97E	34*	70	4 11	2 3.23	+14 58.6	3.239	2.272	5.6	19.7	13E	6*	1*
5 26	10 26.19	+8 0.3	0.821	1.371	47.3	19.8	96E	31*	72	4 21	2 22.30	+16 40.7	3.302	2.311	3.5	19.6	8E	2*	—
5 31	10 37.42	+10 9.9	0.877	1.397	46.3	20.0	95E	27*	74	5 1	2 41.26	+18 15.2	3.354	2.349	1.6	19.6	4E	—	—
6 5	10 48.44	+12 8.3	0.935	1.423	45.4	20.2	94E	24*	76	5 11	3 0.08	+19 41.7	3.394	2.387	1.4	19.6	3W	—	—
6 10	10 59.30	+13 57.3	0.994	1.448	44.5	20.3	92E	21*	78	5 21	3 18.75	+21 0.2	3.423	2.424	3.2	19.8	8W	—	1*
6 15	11 10.06	+15 38.3	1.053	1.473	43.6	20.4	91E	18*	80*	5 31	3 37.23	+22 10.4	3.439	2.460	5.2	20.0	13W	2*	5*
6 20	11 20.77	+17 12.7	1.113	1.498	42.7	20.6	89E	16*	81*	6 10	3 55.46	+23 12.4	3.442	2.495	7.2	20.1	18W	6*	9*
6 25	11 31.47	+18 41.5	1.174	1.522	41.9	20.7	88E	13*	81*	6 20	4 13.39	+24 6.3	3.432	2.530	9.1	20.2	23W	9*	14*
6 30	11 42.18	+20 5.5	1.235	1.545	41.0	20.8	86E	11*	80*	6 30	4 30.94	+24 52.3	3.409	2.564	11.0	20.3	29W	14*	17*
7 5	11 52.92	+21 25.3	1.296	1.568	40.2	20.9	84E	9*	78*	7 10	4 48.03	+25 30.8	3.374	2.597	12.7	20.4	34W	20*	20*
7 10	12 3.70	+22 41.3	1.357	1.591	39.4	21.0	83E	7*	77*	7 20	5 4.58	+26 2.3	3.325	2.630	14.4	20.4	40W	26*	23*
7 15	12 14.54	+23 54.1	1.418	1.613	38.5	21.1	81E	5*	74*	7 30	5 20.44	+26 27.4	3.265	2.661	15.9	20.5	46W	32*	26*
7 20	12 25.47	+25 3.9	1.480	1.634	37.7	21.2	79E	4*	72*	8 9									

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

19/20	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°	19/21	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°
<b>328969 2010 VH<sub>173</sub></b>										<b>2044 Wirt (continuation)</b>									
12 23	22 20.38	-12 33.5	1.863	1.645	31.8	21.4	62 E	32*	45*	9 28	8 37.70	+31 33.6	1.763	1.569	34.4	16.5	62 W	55*	20*
1 2	22 45.28	-9 59.3	1.947	1.656	30.3	21.5	58 E	33*	40*	10 3	8 54.83	+31 39.4	1.729	1.565	34.9	16.7	64 W	57*	19*
1 12	23 9.94	-7 18.8	2.031	1.669	28.8	21.5	55 E	34*	36*	10 8	9 11.97	+31 40.6	1.695	1.561	35.4	16.7	65 W	58*	19*
1 22	23 34.36	-4 34.6	2.116	1.684	27.1	21.6	51 E	34*	31*	10 13	9 29.05	+31 37.4	1.663	1.559	35.9	16.6	66 W	60*	18*
2 1	23 58.57	-1 48.9	2.201	1.701	25.4	21.6	48 E	34*	28*	10 18	9 46.02	+31 30.1	1.632	1.558	36.3	16.6	68 W	61*	18*
<b>264431 2000 SP<sub>74</sub></b>										<b>86450 2000 CK<sub>33</sub></b>									
12 23	22 21.20	-12 51.1	1.936	1.710	30.5	21.4	62 E	32*	46*	10 28	10 19.39	+31 4.9	1.573	1.559	37.0	16.5	71 W	64*	18*
1 2	22 43.84	-10 29.8	2.003	1.696	29.4	21.4	58 E	33*	40*	11 7	10 51.65	+30 28.6	1.519	1.564	37.5	16.5	74 W	67*	18*
1 12	23 6.89	-7 59.4	2.067	1.684	28.1	21.5	54 E	33*	35*	11 17	11 22.43	+29 46.0	1.468	1.574	37.7	16.4	77 W	70*	19*
1 22	23 30.31	-5 21.6	2.128	1.674	26.7	21.5	50 E	33*	31*	11 27	11 51.35	+29 2.1	1.420	1.587	37.8	16.4	80 W	72*	21*
2 1	23 54.05	-2 38.5	2.188	1.667	25.3	21.5	46 E	33*	27*	12 7	12 18.13	+28 21.9	1.374	1.604	37.7	16.3	84 W	73*	23*
2 11	0 18.12	+0 7.6	2.246	1.663	23.8	21.5	43 E	31*	24*	12 17	12 42.48	+27 50.2	1.329	1.624	37.3	16.3	88 W	73*	26*
2 21	0 42.50	+2 54.3	2.302	1.661	22.2	21.5	39 E	29*	21*	12 27	13 4.08	+27 31.2	1.284	1.648	36.6	16.2	92 W	73	29*
3 2	1 7.25	+5 39.3	2.356	1.661	20.6	21.5	36 E	27*	18*	1 6	13 22.62	+27 27.7	1.240	1.675	35.6	16.1	97 W	72	32*
3 12	1 32.37	+8 20.0	2.409	1.664	18.9	21.5	33 E	24*	16*	1 16	13 37.69	+27 41.8	1.196	1.704	34.3	16.1	102 W	73	34*
3 22	1 57.89	+10 53.9	2.461	1.670	17.2	21.5	30 E	21*	14*										
4 1	2 23.83	+13 18.7	2.511	1.678	15.5	21.5	27 E	18*	12*	12 23	22 21.89	-66 31.8	0.234	0.885	108.3	18.8	59 E	—	41*
4 11	2 50.17	+15 32.2	2.559	1.688	13.7	21.5	23 E	15*	10*	12 24	22 42.19	-66 19.1	0.227	0.893	107.1	18.7	60 E	—	42*
4 21	3 16.90	+17 32.4	2.606	1.701	11.9	21.5	20 E	12*	9*	12 25	23 2.92	-65 54.9	0.221	0.900	105.7	18.6	62 E	—	44*
5 1	3 43.98	+19 17.5	2.651	1.716	10.1	21.4	17 E	9*	7*	12 26	23 23.79	-65 18.4	0.215	0.908	104.3	18.5	63 E	—	46*
5 11	4 11.31	+20 46.1	2.693	1.732	8.2	21.4	14 E	5*	5*	12 27	23 44.47	-64 28.7	0.209	0.916	102.8	18.4	65 E	—	47*
5 21	4 38.79	+21 57.1	2.733	1.751	6.4	21.4	11 E	2*	3*	12 28	0 4.67	-63 25.5	0.204	0.923	101.2	18.3	67 E	—	49*
5 31	5 6.31	+22 49.9	2.770	1.771	4.5	21.3	8 E	—	1*	12 29	0 24.12	-62 8.4	0.199	0.931	99.5	18.1	69 E	—	51*
6 10	5 33.71	+23 24.3	2.803	1.793	2.6	21.3	5 E	—	—	12 30	0 42.62	-60 37.7	0.194	0.938	97.7	18.0	71 E	—	53*
6 20	6 0.86	+23 40.6	2.832	1.816	0.8	21.2	1 E	—	—	12 31	1 0.05	-58 53.7	0.190	0.946	95.8	17.9	73 E	—	56*
6 30	6 27.60	+23 39.4	2.856	1.840	1.2	21.3	2 W	—	—	1 1	1 16.34	-56 56.9	0.186	0.953	93.9	17.8	75 E	—	58*
7 10	6 53.80	+23 21.7	2.875	1.866	3.1	21.5	6 W	—	—	1 2	1 31.45	-54 48.2	0.183	0.960	91.8	17.7	77 E	—	61*
										222931 2002 NQ <sub>7</sub>									
12 23	22 21.39	-8 35.7	1.546	1.414	38.5	20.7	63 E	36*	44*	1 3	1 45.43	-52 28.4	0.180	0.968	89.7	17.6	80 E	—	63*
12 28	22 37.05	-7 21.3	1.577	1.421	37.8	20.8	62 E	37*	42*	1 4	1 58.31	-49 58.6	0.177	0.975	87.5	17.5	82 E	—	66*
1 2	22 52.60	-6 4.1	1.610	1.429	37.2	20.8	61 E	38*	40*	1 5	2 10.16	-47 20.2	0.175	0.982	85.3	17.4	85 E	—	69*
1 7	23 8.03	-4 44.8	1.645	1.439	36.4	20.9	60 E	38*	38*	1 6	2 21.07	-44 34.5	0.174	0.989	83.0	17.3	87 E	—	71*
1 12	23 23.31	-3 23.9	1.680	1.450	35.7	20.9	59 E	39*	37*	1 7	2 31.11	-41 43.0	0.173	0.996	80.7	17.2	89 E	3	74
1 17	23 38.46	-2 2.0	1.718	1.462	34.9	20.9	58 E	40*	35*	1 8	2 40.37	-38 47.1	0.173	1.003	78.4	17.1	92 E	6	77
1 22	23 53.47	-0 39.6	1.757	1.476	34.1	21.0	57 E	40*	34*	1 9	2 48.91	-35 48.5	0.173	1.010	76.2	17.1	94 E	9	80
1 27	0 8.33	+0 42.7	1.797	1.490	33.2	21.0	56 E	40*	32*	1 10	2 56.82	-32 48.7	0.174	1.017	73.9	17.0	96 E	12	83
2 1	0 23.05	+2 4.5	1.839	1.505	32.3	21.1	55 E	40*	31*	1 11	3 4.15	-29 49.1	0.175	1.024	71.8	17.0	98 E	15	86
2 6	0 37.63	+3 25.3	1.883	1.521	31.4	21.1	54 E	40*	30*	1 12	3 10.97	-26 51.2	0.177	1.031	69.7	17.0	101 E	18	89
2 11	0 52.07	+4 44.7	1.927	1.539	30.5	21.2	52 E	40*	29*	1 13	3 17.33	-23 56.2	0.180	1.037	67.7	16.9	103 E	21	88
2 16	1 6.38	+6 2.2	1.973	1.557	29.6	21.2	51 E	39*	28*	1 14	3 23.28	-21 5.2	0.183	1.044	65.8	16.9	104 E	24	85
2 21	1 20.56	+7 17.6	2.020	1.575	28.7	21.3	50 E	38*	27*	1 15	3 28.85	-18 19.0	0.186	1.051	64.1	16.9	106 E	27	82
2 26	1 34.63	+8 30.5	2.068	1.595	27.7	21.3	48 E	37*	26*	1 16	3 34.10	-15 38.3	0.190	1.057	62.4	16.9	108 E	29	80
3 2	1 48.57	+9 40.7	2.117	1.615	26.7	21.4	47 E	36*	25*	1 17	3 39.04	-13 3.7	0.195	1.064	60.9	17.0	109 E	32	77
3 7	2 2.41	+10 47.8	2.167	1.635	25.7	21.4	46 E	35*	24*	1 18	3 43.72	-10 35.5	0.199	1.070	59.5	17.0	110 E	34	75
3 12	2 16.13	+11 51.8	2.217	1.656	24.7	21.5	44 E	34*	23*	1 19	3 48.16	-8 14.0	0.205	1.076	58.2	17.0	112 E	37	72
										2044 Wirt									
12 23	22 21.73	-30 55.3	2.923	2.532	19.1	18.4	57 E	14*	50*	1 20	3 52.39	-5 59.2	0.210	1.082	57.0	17.0	113 E	39	70
1 2	22 35.64	-28 33.2	2.989	2.496	17.9	18.4	51 E	15*	44*	1 21	3 56.42	-3 51.1	0.216	1.089	56.0	17.1	114 E	41	68
1 12	22 50.26	-26 7.9	3.046	2.460	16.6	18.4	46 E	15*	38*	1 22	4 0.28	-1 49.6	0.223	1.095	55.0	17.1	114 E	43	66
1 22	23 5.45	-23 39.6	3.093	2.422	15.1	18.3	40 E	14*	32*	1 24	4 7.54	+1 54.3	0.236	1.107	53.4	17.2	115 E	47	62
2 1	23 21.13	-21 8.3	3.128	2.384	13.6	18.2	35 E	13*	27*	1 26	4 14.28	+5 14.4	0.251	1.119	52.1	17.4	116 E	50	59
2 11	23 37.21	-18 34.5	3.153	2.345	12.0	18.2	30 E	10*	22*	1 28	4 20.61	+8 12.9	0.267	1.130	51.1	17.5	117 E	53	56
2 21	23 53.66	-15 58.3	3.167	2.306	10.3	18.1	25 E	7*	18*	1 30	4 26.60	+10 52.2	0.283	1.141	50.3	17.6	117 E	56	53
3 2	0 10.46	-13 20.0	3.170	2.266	8.7	18.0	20 E	3*	14*	2 1	4 32.31	+13 14.4	0.300	1.152	49.7	17.7	117 E	58	51
3 12	0 27.59	-10 40.1	3.163	2.226	7.2	17.9	16 E	—	10*	2 3	4 37.79	+15 21.6	0.318	1.163	49.3	17.9	117 E	60	49
3 22	0 45.06	-7 58.9	3.145	2.185	5.9	17.8	13 E	—	7*	2 5	4 43.07	+17 15.6	0.336	1.173	49.0	18.0	116 E	62	47
4 1	1 2.91	-5 16.8	3.117	2.145	5.1	17.7	11 E	—	3*	2 7	4 48.19	+18 58.0	0.355	1.184	48.7	18.1	116 E	64	45
4 11	1 21.15	-2 34.5	3.079	2.104	5.2	17.6	11 E	—	—	2 9	4 53.19	+20 30.1	0.374	1.193	48.5	18.3	115 E	66	43
4 21	1 39.84	+0 7.8	3.033	2.063	6.0	17.6	12 W	—	3*	2 11	4 58.08	+21 53.3	0.394	1.203	48.4	18.4	114 E	67	42
5 1	1 59.03	+2 49.5	2.979	2.022	7.4	17.5	1												

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

19/21	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	$45^\circ$	$-26^\circ$	19/21	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	$45^\circ$	$-26^\circ$
<b>86450 2000 CK<sub>33</sub></b>										<b>331484 1998 UX</b>									
<i>(continuation)</i>										<i>(continuation)</i>									
5 26	9 6.76	+30 53.8	1.374	1.332	43.9	21.2	66 E	49*	32*	3 22	2 29.24	+18 24.7	2.416	1.764	21.0	20.4	39 E	32*	16*
5 31	9 18.94	+30 7.0	1.402	1.320	43.6	21.2	64 E	47*	32*	4 1	2 56.02	+19 7.6	2.503	1.790	19.0	20.4	36 E	28*	16*
6 5	9 31.13	+29 16.1	1.426	1.306	43.3	21.2	62 E	44*	33*	4 11	3 22.48	+19 40.1	2.588	1.818	17.0	20.5	32 E	23*	15*
6 10	9 43.33	+28 21.1	1.447	1.291	43.1	21.2	60 E	41*	33*	4 21	3 48.57	+20 1.5	2.669	1.847	14.9	20.5	28 E	19*	14*
6 15	9 55.54	+27 22.0	1.465	1.274	42.8	21.2	59 E	39*	33*	5 1	4 14.25	+20 11.1	2.747	1.877	12.9	20.5	25 E	14*	12*
6 20	10 7.78	+26 18.8	1.479	1.255	42.7	21.2	57 E	37*	34*	5 11	4 39.45	+20 8.5	2.819	1.908	10.8	20.5	21 E	10*	11*
6 25	10 20.06	+25 11.5	1.490	1.235	42.5	21.2	55 E	35*	34*	5 21	5 4.13	+19 53.8	2.886	1.940	8.8	20.5	17 E	5*	9*
6 30	10 32.38	+24 0.0	1.498	1.213	42.5	21.1	54 E	33*	34*	5 31	5 28.24	+19 26.9	2.946	1.973	6.8	20.5	13 E	—	7*
7 5	10 44.75	+22 44.3	1.502	1.189	42.4	21.1	52 E	31*	34*	6 10	5 51.71	+18 48.1	3.000	2.007	5.0	20.5	10 E	—	4*
7 10	10 57.20	+21 24.2	1.502	1.163	42.5	21.1	51 E	29*	34*	6 20	6 14.53	+17 57.9	3.046	2.041	3.5	20.5	7 E	—	1*
7 15	11 9.73	+19 59.5	1.498	1.136	42.7	21.0	49 E	27*	34*	6 30	6 36.65	+16 56.8	3.083	2.075	3.0	20.5	6 E	—	—
7 20	11 22.38	+18 30.1	1.491	1.107	43.0	21.0	47 E	26*	34*	7 10	6 58.04	+15 45.4	3.112	2.110	3.8	20.6	8 W	—	1*
7 25	11 35.16	+16 55.8	1.479	1.077	43.4	20.9	47 E	25*	33*	7 20	7 18.69	+14 24.5	3.132	2.144	5.3	20.8	11 W	—	5*
7 30	11 48.09	+15 16.3	1.463	1.044	43.9	20.8	46 E	24*	33*	7 30	7 38.58	+12 54.8	3.142	2.179	7.1	20.9	15 W	—	9*
8 4	12 1.19	+13 31.4	1.443	1.011	44.7	20.7	44 E	22*	33*	8 9	7 57.69	+11 17.0	3.142	2.213	8.8	21.0	20 W	4*	13*
8 9	12 14.48	+11 40.6	1.419	0.975	45.6	20.6	43 E	21*	33*	8 19	8 16.01	+9 31.8	3.132	2.247	10.6	21.1	24 W	8*	17*
8 14	12 27.99	+9 43.4	1.390	0.939	46.8	20.5	42 E	20*	32*	8 29	8 33.54	+7 40.2	3.112	2.281	12.4	21.2	29 W	13*	20*
8 19	12 41.74	+7 39.4	1.357	0.901	48.2	20.4	42 E	19*	32*	9 8	8 50.23	+5 42.8	3.081	2.314	14.1	21.3	34 W	18*	24*
8 24	12 55.76	+5 27.9	1.319	0.862	50.1	20.3	41 E	18*	32*	9 18	9 6.08	+3 40.3	3.040	2.347	15.7	21.3	39 W	23*	28*
8 29	13 10.03	+3 8.2	1.276	0.822	52.3	20.2	40 E	17*	32*	9 28	9 21.04	+1 33.6	2.988	2.380	17.2	21.4	45 W	27*	32*
9 3	13 24.56	+0 39.6	1.228	0.783	55.0	20.1	39 E	16*	32*	10 8	9 35.05	-0 36.7	2.927	2.411	18.5	21.4	50 W	31*	36*
9 8	13 39.30	+1 58.9	1.175	0.743	58.3	20.0	39 E	15*	31*	10 18	9 48.04	-2 49.7	2.856	2.443	19.8	21.4	56 W	34*	41*
9 13	13 54.18	+4 48.4	1.117	0.705	62.3	19.9	38 E	14*	31*	10 28	9 59.90	-5 4.6	2.777	2.473	20.8	21.4	62 W	36*	46*
9 18	14 9.06	+7 50.1	1.054	0.668	67.2	19.8	38 E	12*	31*	11 7	10 10.51	-7 20.3	2.691	2.503	21.6	21.4	68 W	36*	51*
9 23	14 23.70	+11 5.2	0.986	0.635	72.9	19.7	37 E	11*	31*	11 17	10 19.70	-9 35.9	2.598	2.532	22.2	21.4	75 W	35*	58*
9 28	14 37.71	+14 34.7	0.914	0.607	79.7	19.7	37 E	8*	30*	11 27	10 27.26	-11 49.7	2.500	2.561	22.4	21.3	82 W	33	65*
10 3	14 50.49	+18 19.4	0.839	0.585	87.4	19.7	36 E	6*	30*	12 7	10 32.96	-14 0.1	2.400	2.588	22.4	21.2	90 W	31	72*
10 8	15 1.26	+22 19.4	0.763	0.571	95.9	19.8	35 E	3*	29*	12 17	10 36.53	-16 4.5	2.300	2.615	21.9	21.2	97 W	29	79*
10 13	15 8.98	+26 33.0	0.688	0.567	104.9	20.0	33 E	—	27*	12 27	10 37.71	-17 59.7	2.203	2.641	21.0	21.1	105 W	27	82*
10 18	15 12.46	+30 56.3	0.618	0.571	113.8	20.3	32 E	—	24*	1 6	10 36.28	-19 41.3	2.112	2.666	19.7	20.9	114 W	25	84*
10 20	15 12.38	+32 42.6	0.591	0.576	117.1	20.5	31 E	—	23*	1 16	10 32.14	-21 4.3	2.032	2.691	18.0	20.8	122 W	24	85*
10 22	15 11.34	+34 28.5	0.566	0.582	120.3	20.7	30 E	—	21*	<b>102997 1998 XF<sub>94</sub></b>									
10 24	15 9.27	+36 13.0	0.542	0.589	123.1	20.8	30 E	—	20*	12 23	22 22.83	-30 10.3	1.919	1.623	30.8	18.8	58 E	14*	51*
10 26	15 6.10	+37 55.1	0.519	0.597	125.7	21.0	29 E	—	18*	12 28	22 36.53	-28 48.8	1.943	1.617	30.4	18.8	56 E	15*	49*
10 28	15 1.79	+39 33.6	0.498	0.607	127.9	21.1	29 E	—	16*	1 2	22 50.19	-27 22.7	1.966	1.612	29.9	18.8	55 E	17*	47*
10 30	14 56.33	+41 7.2	0.478	0.617	129.6	21.2	29 E	—	14*	1 7	23 3.78	-25 52.3	1.990	1.608	29.3	18.8	53 E	18*	45*
11 1	14 49.70	+42 34.5	0.460	0.629	130.9	21.3	29 E	—	12*	1 12	23 17.30	-24 18.0	2.013	1.604	28.8	18.8	52 E	18*	43*
11 3	14 41.96	+43 54.3	0.443	0.641	131.6	21.3	29 E	—	9*	1 17	23 30.73	-22 40.1	2.037	1.602	28.3	18.8	50 E	19*	41*
11 5	14 33.18	+45 5.3	0.427	0.654	131.8	21.3	29 W	—	10*	1 22	23 44.07	-20 59.2	2.061	1.600	27.7	18.8	49 E	20*	40*
11 7	14 23.47	+46 6.3	0.413	0.668	131.5	21.3	30 W	—	13*	1 27	23 57.32	-19 15.7	2.085	1.599	27.1	18.8	48 E	21*	38*
11 9	14 13.00	+46 56.5	0.400	0.682	130.8	21.2	31 W	—	16*	2 1	0 10.49	-17 30.1	2.109	1.599	26.5	18.8	46 E	21*	37*
11 11	14 1.93	+47 35.2	0.388	0.697	129.6	21.0	33 W	—	19*	2 6	0 23.57	-15 42.8	2.134	1.600	25.9	18.8	45 E	21*	35*
11 13	13 50.48	+48 2.4	0.377	0.712	128.1	20.9	35 W	—	22*	2 11	0 36.57	-13 54.4	2.160	1.602	25.3	18.9	44 E	21*	34*
11 15	13 38.85	+48 17.9	0.366	0.727	126.2	20.7	36 W	—	25*	2 21	1 2.34	-10 15.9	2.213	1.608	23.9	18.9	41 E	21*	31*
11 17	13 27.22	+48 22.3	0.357	0.743	124.2	20.5	38 W	—	28*	3 2	1 27.89	-6 38.5	2.268	1.617	22.5	18.9	39 E	20*	29*
11 19	13 15.78	+48 16.1	0.348	0.759	122.0	20.3	41 W	—	31*	3 12	1 53.26	-3 5.8	2.326	1.630	21.0	18.9	36 E	19*	26*
11 21	13 4.66	+48 0.1	0.340	0.774	119.6	20.1	43 W	—	34*	3 22	2 18.52	+0 19.1	2.386	1.645	19.4	18.9	33 E	17*	24*
11 23	12 53.97	+47 35.2	0.333	0.790	117.1	19.9	45 W	—	37*	4 1	2 43.73	+3 33.4	2.448	1.664	17.7	19.0	30 E	15*	21*
11 25	12 43.79	+47 2.4	0.325	0.806	114.6	19.8	48 W	—	40*	4 11	3 8.91	+6 34.6	2.511	1.685	15.9	19.0	27 E	12*	19*
11 27	12 34.13	+46 2.5	0.318	0.822	112.0	19.6	51 W	—	43*	4 21	3 34.10	+9 21.1	2.574	1.708	14.0	19.0	24 E	9*	17*
12 2	12 12.29	+44 17.3	0.301	0.862	105.5	19.2	57 W	—	51*	5 1	3 59.31	+11 51.5	2.636	1.734	12.1	19.0	21 E	6*	14*
12 7	11 53.21	+41 42.4	0.284	0.901	98.8	18.8	65 W	3	58*	5 11	4 24.50	+14 4.7	2.696	1.762	10.1	19.0	18 E	3*	11*
12 12	11 35.85	+38 40.7	0.268	0.939	91.9	18.5	72 W	6	66*	5 21	4 49.66	+16 0.4	2.754	1.791	8.1	19.0	14 E	—	8*
12 17	11 19.04	+35 8.6	0.250	0.975	84.7	18.1	81 W	10	74*	5 31	5 14.73	+17 38.5	2.808	1.822	6.0	19.0	11 E	—	5*
12 19	11 12.23	+33 33.2	0.244	0.990	81.6	18.0	84 W	11	78*	6 10	5 39.63	+18 59.1	2.856	1.854	4.0	19.0	7 E	—	1*
12 21	11 5.26	+31 50.6	0.237	1.004	78.4	17.8	88 W	13	82*	6 20	6 4.31	+20 3.0	2.899	1.887	2.2	18.9	4 E	—	—
12 23	10 58.09	+30 0.0	0.230	1.017	75.1	17.7	92 W	15	85*	6 30	6 28.69	+20 51.1	2.935	1.921	1.6	19.0	3 W	—	—
12 25	10 50.67	+28 0.4	0.224	1.031	71.6	17.5	96 W	17	88*	7 10	6 52.68	+21 24.3	2.964	1.955	3.0	19.1	6 W	—	—
12 27	10 42.96	+25 50.8	0.217	1.044	67.9	17.4	100 W	19	90*	7 20	7 16.23	+21 44.0	2.984	1.990	5.0	19.3	10 W	1*	2*
12 29	10 34.91	+23 30.5	0.211	1.057	64.0	17.2	105 W	21	88*	7 30	7 39.24	+21 51.8	2.995	2.026	7.0	19.4	14 W	6*	5*
12 31	10 26.51	+20 58.7	0.206	1.070	59.9	17.1	110 W	24	85*	8 9	8 1.68	+21 49.3	2.997	2.061	9.0	19.6	19 W	10*	7*
1 2	10 17.73	+18 15.0	0.201	1.083	55.6	16.9	115 W	27	82*	8 19	8 23.49	+21 38.1	2.988	2.097	11.0	19.7	23 W	15*	9*
1 4	10 8.58	+15 19.3	0.197	1.095	51.1	16.8	120 W	30	79*	8 29	8 44.64	+21 20.2	2.969	2.132	12.9</				

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

19/21	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°	19/21	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°	
<b>177279 2003 WD<sub>142</sub></b>										<b>261879 2006 GO<sub>53</sub></b> ( <i>continuation</i> )										
12	22 24.67	-15 49.3	2.126	1.873	27.6	20.8	62 E	29*	48*	3	22	1 59.60	+25 37.0	2.825	2.118	16.5	20.6	37 E	31*	7*
1	2 22 44.36	-13 31.0	2.183	1.839	26.6	20.8	57 E	30*	42*	4	1	2 22.56	+26 37.7	2.928	2.155	14.5	20.6	33 E	27*	5*
1	12 23 4.87	-11 2.8	2.234	1.808	25.5	20.8	52 E	30*	36*	4	11	2 45.32	+27 31.2	3.024	2.191	12.4	20.6	28 E	22*	3*
1	22 23 26.11	-8 25.8	2.281	1.778	24.3	20.8	48 E	30*	31*	4	21	3 7.89	+28 16.9	3.111	2.226	10.4	20.7	24 E	18*	1*
2	1 23 48.02	-5 41.2	2.323	1.751	22.9	20.7	44 E	29*	27*	5	1	3 30.22	+28 54.3	3.190	2.261	8.4	20.7	19 E	13*	—
2	11 0 10.55	-2 50.9	2.362	1.727	21.5	20.7	40 E	28*	23*	5	11	3 52.27	+29 22.9	3.258	2.296	6.4	20.7	15 E	9*	—
2	21 0 33.71	+0 3.1	2.398	1.705	20.1	20.7	36 E	25*	20*	5	21	4 14.00	+29 42.6	3.316	2.329	4.7	20.6	11 E	5*	—
3	2 0 57.52	+2 58.8	2.431	1.687	18.6	20.6	33 E	23*	17*	5	31	4 35.36	+29 53.3	3.362	2.362	3.4	20.6	8 E	1*	—
3	12 1 21.98	+5 53.6	2.462	1.673	17.1	20.6	30 E	20*	15*	6	10	4 56.28	+29 54.9	3.396	2.394	3.3	20.7	8 W	2*	—
3	22 1 47.14	+8 44.9	2.492	1.661	15.5	20.5	27 E	18*	13*	6	20	5 16.71	+29 47.6	3.417	2.425	4.4	20.8	11 W	4*	—
4	1 2 13.01	+11 29.9	2.521	1.654	14.0	20.5	24 E	15*	11*	6	30	5 36.57	+29 31.8	3.424	2.456	6.1	20.9	15 W	7*	3*
4	11 2 39.60	+14 5.7	2.550	1.650	12.4	20.5	21 E	12*	9*	7	10	5 55.81	+29 7.8	3.419	2.485	7.9	21.0	20 W	11*	7*
4	21 3 6.90	+16 29.7	2.578	1.651	10.8	20.4	18 E	9*	7*	7	20	6 14.35	+28 36.1	3.399	2.513	9.8	21.1	25 W	16*	10*
5	1 3 34.88	+18 39.0	2.607	1.655	9.1	20.4	15 E	7*	5*	7	30	6 32.14	+27 57.4	3.366	2.541	11.6	21.2	30 W	21*	14*
5	11 4 3.43	+20 31.4	2.635	1.663	7.5	20.3	12 E	4*	4*	8	9	6 49.08	+27 12.1	3.319	2.567	13.4	21.2	36 W	26*	17*
5	21 4 32.45	+22 4.9	2.664	1.675	5.8	20.3	10 E	1*	2*	8	19	7 5.12	+26 21.1	3.258	2.593	15.1	21.3	42 W	32*	20*
5	31 5 1.76	+23 18.0	2.692	1.690	4.2	20.3	7 E	—	—	8	29	7 20.15	+25 25.1	3.185	2.617	16.6	21.3	48 W	38*	23*
6	10 5 31.17	+24 10.0	2.720	1.709	2.5	20.2	4 E	—	—	9	8	7 34.09	+24 25.0	3.099	2.640	18.0	21.3	54 W	44*	26*
6	20 6 0.46	+24 40.6	2.746	1.731	1.0	20.1	2 E	—	—	9	18	7 46.82	+23 21.5	3.002	2.663	19.3	21.3	61 W	50*	29*
6	30 6 29.41	+24 50.4	2.771	1.755	1.4	20.2	2 W	—	—	9	28	7 58.19	+22 15.8	2.895	2.684	20.2	21.3	68 W	56*	32*
7	10 6 57.81	+24 40.5	2.793	1.783	2.9	20.4	5 W	—	—	10	8	8 8.05	+21 8.6	2.780	2.704	20.9	21.2	75 W	61*	36*
7	20 7 25.48	+24 12.6	2.812	1.813	4.7	20.5	8 W	1*	—	10	18	8 16.20	+20 1.2	2.658	2.723	21.3	21.1	83 W	64*	39*
7	30 7 52.28	+23 28.6	2.827	1.845	6.4	20.7	12 W	5*	1*	10	28	8 22.39	+18 54.4	2.532	2.742	21.2	21.0	91 W	64	42*
8	9 8 18.10	+22 30.9	2.838	1.879	8.1	20.8	15 W	8*	3*	11	7	8 26.38	+17 49.5	2.406	2.759	20.7	20.9	100 W	63	45*
8	19 8 42.90	+21 21.6	2.843	1.914	9.9	20.9	19 W	12*	5*	11	17	8 27.88	+16 47.6	2.282	2.775	19.6	20.8	110 W	62	47*
8	29 9 6.61	+20 3.4	2.841	1.951	11.6	21.0	23 W	16*	7*	11	27	8 26.63	+15 49.6	2.165	2.789	17.9	20.6	120 W	61	48
9	8 9 29.24	+18 38.5	2.833	1.989	13.3	21.1	27 W	20*	9*	12	7	8 22.48	+14 56.6	2.061	2.803	15.5	20.5	131 W	60	49
9	18 9 50.81	+17 9.2	2.817	2.028	15.0	21.2	31 W	24*	11*	12	17	8 15.44	+14 9.2	1.975	2.816	12.4	20.3	142 W	59	50
9	28 10 11.30	+15 37.5	2.792	2.068	16.6	21.3	36 W	29*	14*	12	27	8 5.80	+13 28.0	1.911	2.828	8.8	20.1	154 W	58	51
10	8 10 30.73	+14 5.7	2.759	2.108	18.1	21.4	41 W	33*	16*	1	6	7 54.28	+12 53.2	1.876	2.838	5.0	19.9	165 W	58	51
10	18 10 49.11	+12 35.5	2.716	2.149	19.5	21.4	46 W	38*	19*	1	16	7 41.85	+12 24.9	1.872	2.848	3.0	19.7	171 E	57	52
10	28 11 6.40	+11 8.9	2.664	2.190	20.8	21.5	52 W	42*	23*	<b>118337 1999 BQ<sub>9</sub></b>										
11	7 11 22.57	+9 47.7	2.604	2.231	22.0	21.5	57 W	46*	27*	12	23	22 25.57	-29 26.8	3.568	3.167	15.3	20.8	58 E	15*	51*
11	17 11 37.55	+8 33.5	2.534	2.272	22.9	21.5	63 W	49*	31*	1	2	22 36.37	-27 43.9	3.672	3.157	14.1	20.8	52 E	16*	44*
11	27 11 51.23	+7 28.2	2.457	2.313	23.6	21.5	70 W	51*	36*	1	12	22 47.85	-26 0.1	3.763	3.146	12.8	20.8	45 E	15*	37*
12	7 12 14.37	+6 33.6	2.372	2.354	24.1	21.5	77 W	52*	42*	1	22	22 59.87	-24 15.5	3.842	3.134	11.3	20.8	39 E	13*	31*
12	17 12 14.10	+5 51.2	2.282	2.395	24.1	21.4	84 W	51*	48*	2	1	23 12.31	-22 30.6	3.906	3.122	9.8	20.8	33 E	10*	25*
12	27 12 22.87	+5 22.9	2.189	2.435	23.8	21.4	92 W	50*	53*	2	11	23 25.07	-20 45.7	3.956	3.108	8.3	20.7	27 E	6*	20*
1	6 12 29.55	+5 10.0	2.096	2.475	23.0	21.3	101 W	50*	57*	2	21	23 38.07	-19 1.3	3.990	3.093	6.8	20.7	22 E	2*	16*
1	16 12 33.85	+5 13.7	2.004	2.515	21.6	21.2	110 W	50	59	3	2	23 51.26	-17 17.8	4.008	3.078	5.6	20.6	18 E	—	11*
<b>217726 1999 WN</b>										3	12	0 4.57	-15 35.8	4.010	3.061	4.8	20.6	15 E	—	7*
12	23 22 25.15	-13 49.1	1.874	1.666	31.6	20.5	62 E	31*	47*	3	22	0 17.97	-13 55.6	3.996	3.044	4.8	20.5	15 E	—	3*
1	2 22 49.64	-11 13.8	1.954	1.672	30.2	20.6	59 E	32*	42*	4	1	0 31.41	-12 17.7	3.967	3.025	5.6	20.5	17 W	—	4*
1	12 23 14.00	-8 31.4	2.035	1.681	28.7	20.6	55 E	33*	37*	4	11	0 44.86	-10 42.8	3.922	3.006	6.8	20.6	21 W	—	10*
1	22 23 38.21	-5 44.6	2.116	1.692	27.1	20.7	52 E	34*	33*	4	21	0 58.29	-9 11.2	3.862	2.986	8.3	20.6	25 W	—	16*
2	1 0 2.31	+2 55.7	2.197	1.706	25.5	20.7	48 E	33*	29*	5	1	1 11.66	-7 43.5	3.788	2.964	9.9	20.6	31 W	—	22*
2	11 0 26.28	+0 7.2	2.278	1.722	23.7	20.8	45 E	32*	26*	5	11	1 24.93	-6 20.3	3.700	2.942	11.6	20.6	36 W	—	29*
2	21 0 50.18	+2 38.7	2.359	1.740	21.9	20.8	41 E	30*	23*	5	21	1 38.05	-5 2.1	3.600	2.919	13.3	20.6	41 W	—	35*
3	2 1 14.05	+5 19.8	2.439	1.760	20.1	20.9	38 E	27*	20*	5	31	1 50.98	-3 49.3	3.488	2.895	14.9	20.5	47 W	2*	41*
3	12 1 37.92	+7 54.2	2.517	1.783	18.2	20.9	34 E	25*	17*	6	10	2 3.65	-2 42.5	3.366	2.870	16.4	20.5	53 W	6*	47*
3	22 2 1.82	+10 20.2	2.593	1.806	16.2	20.9	30 E	21*	15*	6	20	2 15.97	-1 42.1	3.233	2.844	17.8	20.4	59 W	12*	52*
4	1 2 25.79	+12 36.2	2.667	1.832	14.3	21.0	27 E	18*	13*	6	30	2 27.85	-0 48.6	3.093	2.817	19.1	20.4	65 W	18*	56*
4	11 2 49.81	+14 41.0	2.737	1.858	12.3	21.0	23 E	14*	11*	7	10	2 39.16	-0 2.4	2.945	2.789	20.2	20.3	71 W	24*	60*
4	21 3 13.89	+16 33.4	2.803	1.886	10.2	21.0	20 E	11*	9*	7	20	2 49.76	+0 36.0	2.792	2.761	21.1	20.2	78 W	30*	62*
5	1 3 38.00	+18 12.6	2.865	1.915	8.2	21.0	16 E	7*	6*	7	30	2 59.45	+1 6.5	2.635	2.731	21.7	20.0	84 W	36*	63*
5	11 4 2.11	+19 38.0	2.921	1.944	6.2	21.0	12 E	3*	4*	8	9	3 8.00	+1 28.8	2.476	2.701	22.0	19.9	92 W	42*	63
5	21 4 26.15	+20 49.3	2.971	1.974	4.1	20.9	8 E	—	1*	8	19	3 15.15	+1 43.1	2.316	2.669	22.0	19.7	99 W	45*	62
5	31 4 50.07	+21 46.3	3.015	2.005	2.1	20.9	4 E	—	—	8	29	3 20.55	+1 49.5	2.160	2.637	21.5	19.5	107 W	47*	62
6	10 5 13.77	+22 29.0	3.051	2.036	0.3	20.7	1 E	—	—	9	8	3 23.85	+1 48.8	2.009	2.604	20.5	19.3	115 W	47	62
6	20 5 37.19	+22 57.9	3.079	2.067	2.0	21.0	4 W	—	—	9	18	3 24.65	+1 42.3	1.866	2.571	18.8	19.1	124 W	47	62
6	30 6 0.22	+23 13.5	3.099	2.098	4.0	21.1	8 W	—	1*	9	28	3 22.58	+1 32.1	1.735	2.536	16.5	18.8	134 W	47	62
7	10 6 22.78	+23 16.6	3.109	2.129	6.0	21.3	13 W	3*	5*	10	8	3 17.40	+1 21.3	1.622	2.501	13.5	18.5	144 W	46	63
7	20 6 44.80	+23 8.1	3.111	2.161	8.0	21.4	17 W	7*	8*	10	18	3 9.12	+1 14.1	1.529	2.465					

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

19/21	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°	19/21	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°
<b>236095 2005 NB</b>										<b>3392 Setouchi</b>									
(continuation)																			
2 1	0 17.47	+ 8 14.3	2.040	1.701	28.8	19.6	56 E	45*	26*	12 23	22 26.74	+17 31.1	2.526	2.486	22.6	18.9	76 E	62*	29*
2 11	0 44.05	+ 9 23.7	2.147	1.733	26.9	19.7	52 E	42*	24*	1 2	22 40.87	+17 27.0	2.617	2.462	22.1	18.9	70 E	59*	24*
2 21	1 10.07	+10 32.7	2.255	1.766	24.9	19.8	49 E	39*	23*	1 12	22 56.08	+17 38.2	2.704	2.437	21.2	18.9	64 E	56*	19*
3 2	1 35.58	+11 39.5	2.363	1.801	22.8	19.8	45 E	36*	21*	1 22	23 12.21	+18 2.8	2.784	2.411	20.2	18.9	58 E	51*	15*
3 12	2 0.59	+12 42.1	2.469	1.837	20.7	19.9	41 E	32*	20*	2 1	23 29.17	+18 39.1	2.857	2.385	19.1	18.9	52 E	46*	11*
3 22	2 25.15	+13 39.1	2.573	1.874	18.6	20.0	37 E	28*	18*	2 11	23 46.87	+19 25.2	2.921	2.357	17.8	18.9	47 E	41*	7*
4 1	2 49.30	+14 29.1	2.673	1.912	16.5	20.0	33 E	23*	17*	2 21	0 5.25	+20 19.3	2.976	2.329	16.3	18.9	42 E	35*	4*
4 11	3 13.04	+15 11.1	2.768	1.951	14.3	20.1	29 E	19*	15*	3 2	0 24.29	+21 19.5	3.021	2.300	14.8	18.8	36 E	30*	1*
4 21	3 36.38	+15 44.2	2.858	1.990	12.2	20.1	25 E	14*	14*	3 12	0 43.96	+22 23.9	3.056	2.270	13.2	18.8	32 E	25*	—
5 1	3 59.31	+16 7.8	2.941	2.029	10.1	20.1	21 E	9*	12*	3 22	1 4.26	+23 30.5	3.081	2.239	11.6	18.7	27 E	20*	—
5 11	4 21.83	+16 21.4	3.016	2.069	8.1	20.1	17 E	4*	9*	4 1	1 25.20	+24 37.5	3.096	2.208	10.0	18.6	23 E	16*	—
5 21	4 43.90	+16 24.7	3.083	2.108	6.2	20.1	13 E	—	7*	4 11	1 46.79	+25 42.9	3.101	2.175	8.5	18.5	19 E	11*	—
5 31	5 5.50	+16 17.5	3.140	2.147	4.5	20.1	10 E	—	4*	4 21	2 9.04	+26 44.7	3.096	2.143	7.1	18.4	15 E	7*	—
6 10	5 26.60	+15 59.8	3.189	2.187	3.5	20.2	8 E	—	—	5 1	2 31.95	+27 41.0	3.081	2.110	6.0	18.3	13 W	4*	—
6 20	5 47.15	+15 31.9	3.227	2.225	3.7	20.2	8 W	—	—	5 11	2 55.52	+28 29.7	3.057	2.076	5.5	18.3	11 W	5*	—
6 30	6 7.13	+14 53.9	3.254	2.263	4.8	20.3	11 W	—	4*	5 21	3 19.72	+29 8.9	3.023	2.042	5.7	18.2	12 W	6*	—
7 10	6 26.48	+14 6.2	3.271	2.301	6.4	20.5	15 W	—	9*	5 31	3 44.51	+29 36.6	2.981	2.008	6.6	18.2	13 W	7*	—
7 20	6 45.17	+13 9.2	3.276	2.338	8.1	20.6	19 W	—	13*	6 10	4 9.83	+29 50.9	2.931	1.973	8.0	18.2	16 W	8*	3*
7 30	7 3.16	+12 3.4	3.269	2.375	9.9	20.7	24 W	4*	17*	6 20	4 35.60	+29 50.0	2.873	1.939	9.7	18.2	19 W	10*	6*
8 9	7 20.40	+10 49.4	3.252	2.411	11.6	20.8	29 W	10*	21*	6 30	5 1.70	+29 32.1	2.807	1.905	11.6	18.2	22 W	13*	9*
8 19	7 36.86	+ 9 27.7	3.222	2.446	13.3	20.9	34 W	15*	25*	7 10	5 28.00	+28 55.8	2.736	1.871	13.6	18.1	26 W	15*	12*
8 29	7 52.47	+ 7 58.9	3.181	2.480	14.9	20.9	39 W	21*	29*	7 20	5 54.38	+27 59.7	2.658	1.837	15.6	18.1	29 W	18*	14*
9 8	8 7.17	+ 6 23.7	3.129	2.514	16.4	21.0	45 W	26*	32*	7 30	6 20.69	+26 42.8	2.575	1.804	17.6	18.1	33 W	22*	16*
9 18	8 20.90	+ 4 42.9	3.066	2.546	17.7	21.0	50 W	31*	36*	8 9	6 46.80	+25 4.3	2.488	1.772	19.7	18.0	36 W	25*	19*
9 28	8 33.56	+ 2 57.1	2.993	2.578	18.9	21.0	56 W	35*	41*	8 19	7 12.61	+23 3.4	2.398	1.741	21.7	18.0	40 W	29*	21*
10 8	8 45.03	+ 1 7.2	2.911	2.609	19.9	21.0	63 W	39*	45*	8 29	7 38.02	+20 39.9	2.305	1.711	23.7	17.9	43 W	32*	23*
10 18	8 55.20	+ 0 45.7	2.820	2.639	20.7	21.0	69 W	41*	50*	9 8	8 2.97	+17 53.6	2.211	1.683	25.7	17.8	46 W	35*	26*
10 28	9 3.88	+ 2 40.6	2.723	2.668	21.2	20.9	76 W	42*	55*	9 18	8 27.43	+14 44.6	2.117	1.657	27.6	17.8	50 W	37*	29*
11 7	9 10.89	+ 4 35.9	2.622	2.696	21.4	20.9	84 W	40*	61*	9 28	8 51.38	+11 13.4	2.023	1.633	29.4	17.7	53 W	39*	32*
11 17	9 16.02	+ 6 29.9	2.518	2.723	21.3	20.8	91 W	39	67*	10 8	9 14.86	+ 7 20.9	1.931	1.611	31.1	17.6	56 W	40*	35*
11 27	9 19.03	+ 8 20.0	2.414	2.749	20.8	20.7	99 W	37	72*	10 18	9 37.89	+ 3 8.1	1.842	1.591	32.7	17.5	60 W	40*	39*
12 7	9 19.69	+10 3.0	2.315	2.775	19.8	20.6	107 W	35	74	10 28	10 0.52	+ 1 23.1	1.758	1.574	34.1	17.4	63 W	39*	43*
12 17	9 17.83	+11 35.1	2.222	2.799	18.4	20.5	116 W	33	76	11 7	10 22.82	+ 6 10.0	1.678	1.561	35.4	17.3	66 W	37*	48*
12 27	9 13.41	+12 51.3	2.142	2.822	16.6	20.4	125 W	32	77	11 17	10 44.87	+11 9.7	1.604	1.550	36.5	17.3	69 W	33*	53*
1 6	9 6.58	+13 46.4	2.077	2.844	14.5	20.3	133 W	31	78	11 22	10 55.80	+13 43.1	1.569	1.546	37.0	17.2	70 W	31*	56*
1 16	8 57.77	+14 15.6	2.032	2.865	12.4	20.2	141 W	31	78	11 27	11 6.69	+16 18.0	1.535	1.543	37.4	17.2	72 W	29*	59*
<b>54718 2001 HB<sub>61</sub></b>																			
12 23	22 25.89	+21 42.3	1.773	1.543	33.6	18.7	60 E	23*	50*	12 2	11 17.55	+18 53.8	1.503	1.541	37.8	17.1	73 W	26	62*
12 28	22 40.29	+20 20.0	1.807	1.548	33.0	18.7	59 E	24*	48*	12 7	11 28.37	+21 30.1	1.473	1.539	38.1	17.1	75 W	23	64*
1 2	22 54.53	+18 53.9	1.842	1.555	32.3	18.7	58 E	25*	46*	12 12	11 39.15	+24 6.0	1.443	1.539	38.4	17.1	76 W	21	67*
1 7	23 8.58	+17 24.8	1.877	1.562	31.6	18.8	56 E	26*	44*	12 17	11 49.90	+26 41.0	1.415	1.539	38.6	17.0	77 W	18	70*
1 12	23 22.46	+15 53.1	1.914	1.570	30.8	18.8	55 E	27*	42*	12 22	12 0.60	+29 14.3	1.389	1.540	38.8	17.0	79 W	16	72*
1 17	23 36.15	+14 19.5	1.951	1.579	30.1	18.8	54 E	28*	40*	12 27	12 11.25	+31 45.1	1.363	1.542	38.9	17.0	80 W	13	74*
1 22	23 49.68	+12 44.3	1.989	1.589	29.3	18.9	52 E	28*	38*	1 1	12 21.83	+34 13.0	1.339	1.545	39.0	16.9	82 W	11	76*
1 27	0 3.04	+11 8.2	2.028	1.599	28.5	18.9	51 E	29*	37*	1 6	12 32.34	+36 37.2	1.315	1.549	39.1	16.9	83 W	8	76*
2 1	0 16.25	+ 9 31.6	2.068	1.611	27.7	18.9	49 E	29*	35*	1 11	12 42.72	+38 57.3	1.292	1.554	39.1	16.9	85 W	6	76*
2 11	0 42.23	+ 6 18.8	2.149	1.636	26.0	19.0	47 E	29*	32*	1 16	12 52.94	+41 12.6	1.270	1.559	39.0	16.8	87 W	4	74*
2 21	1 7.70	+ 3 9.6	2.233	1.665	24.2	19.1	44 E	28*	29*	<b>269719 1998 QH<sub>56</sub></b>									
3 2	1 32.76	+ 0 6.6	2.319	1.696	22.4	19.1	41 E	26*	27*	12 23	22 27.37	+16 11.3	1.724	1.536	34.5	21.2	62 E	28*	48*
3 12	1 57.47	+ 2 47.5	2.407	1.729	20.5	19.2	38 E	24*	24*	12 28	22 40.13	+16 4.0	1.765	1.534	33.8	21.3	60 E	28*	46*
3 22	2 21.90	+ 5 30.7	2.494	1.763	18.6	19.3	34 E	21*	22*	1 2	22 52.92	+15 51.4	1.805	1.532	33.0	21.3	58 E	28*	44*
4 1	2 46.11	+ 8 1.7	2.581	1.800	16.6	19.3	31 E	18*	20*	1 7	23 5.72	+15 33.8	1.843	1.530	32.2	21.3	56 E	28*	42*
4 11	3 10.11	+10 19.0	2.667	1.838	14.6	19.4	28 E	15*	17*	1 12	23 18.53	+15 11.8	1.879	1.528	31.4	21.3	54 E	27*	41*
4 21	3 33.93	+12 22.0	2.749	1.876	12.6	19.4	24 E	11*	15*	1 17	23 31.35	+14 45.7	1.914	1.526	30.7	21.3	52 E	27*	39*
5 1	3 57.56	+14 10.2	2.828	1.916	10.5	19.4	20 E	7*	12*	1 22	23 44.20	+14 15.9	1.948	1.524	29.9	21.4	50 E	26*	38*
5 11	4 20.98	+15 43.4	2.902	1.956	8.5	19.5	17 E	3*	10*	1 27	23 57.06	+13 42.6	1.979	1.522	29.1	21.4	49 E	26*	36*
5 21	4 44.16	+17 1.7	2.971	1.996	6.4	19.5	13 E	—	6*	2 1	0 9.95	+13 6.2	2.009	1.521	28.3	21.4	47 E	25*	35*
5 31	5 7.05	+18 5.4	3.032	2.037	4.5	19.4	9 E	—	3*	2 6	0 22.86	+12 27.2	2.038	1.519	27.6	21.4	46 E	24*	34*
6 10	5 29.59	+18 54.9	3.086	2.078	2.7	19.4	6 E	—	—	2 11	0 35.80	+11 45.7	2.064	1.517	26.8	21.4	44 E	23*	33*
6 20	5 51.74	+19 31.0	3.131	2.119	1.9	19.4	4 W	—	—	2 16	0 48.78	+11 2.2	2.089	1.516	26.1	21.4	43 E	22*	32*
6 30	6 13.43	+19 54.6	3.167	2.159	3.0	19.6	6 W	—	—	2 21	1 1.81	+10 16.9	2.112	1.514	25.4	21.4	41 E	21*	31*
7 10	6 34.60	+20 6.5	3.192	2.199	4.7	19.7	10 W	—	4*	2 26	1 14.90	+ 9 30.1	2.134	1.513	24.8	21.4	40 E	20*	30*
7 20	6 55.20	+20 8.0	3.207	2.239	6.6	19.9	15 W	3*	7*	3 2	1 28.05	+ 8 42.1	2.154	1.512	24.2	21.4	39 E		

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

19/21	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	$45^\circ$	$-26^\circ$	19/21	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	$45^\circ$	$-26^\circ$		
<b>269719 1998 QH<sub>56</sub></b>										<b>100952 1998 QR<sub>5</sub></b>											
<i>(continuation)</i>										<i>(continuation)</i>											
6	5	5 54.79	+ 4 6.1	2.376	1.504	15.8	21.3	24 E	—	16*	11	27	12 13.45	- 9 40.6	2.687	2.325	21.2	20.8	58 W	33*	41*
6	10	6 9.51	+ 4 22.3	2.386	1.505	15.3	21.3	23 E	—	15*	12	7	12 25.27	-12 2.8	2.604	2.359	22.2	20.8	65 W	33*	48*
6	15	6 24.22	+ 4 35.0	2.396	1.506	14.8	21.3	22 E	—	13*	12	17	12 35.88	-14 21.4	2.514	2.392	23.0	20.8	72 W	31	56*
6	20	6 38.93	+ 4 44.2	2.405	1.507	14.3	21.3	21 E	—	12*	12	27	12 45.02	-16 35.9	2.417	2.425	23.4	20.7	79 W	28	65*
6	25	6 53.60	+ 4 49.9	2.415	1.507	13.8	21.3	21 E	—	11*	1	6	12 52.47	-18 45.6	2.317	2.457	23.5	20.7	86 W	26	74*
6	30	7 8.22	+ 4 52.1	2.425	1.508	13.2	21.3	20 E	—	9*	1	16	12 57.88	-20 49.2	2.215	2.488	23.2	20.6	94 W	24	83*
7	5	7 22.79	+ 4 50.9	2.434	1.509	12.7	21.3	19 E	—	8*											
7	10	7 37.29	+ 4 46.4	2.444	1.511	12.1	21.3	18 E	—	6*											
7	15	7 51.72	+ 4 38.7	2.453	1.512	11.5	21.3	17 E	—	4*	12	23	22 28.77	-40 29.4	1.965	1.661	30.0	20.8	58 E	4*	52*
7	20	8 6.07	+ 4 28.0	2.461	1.513	10.9	21.2	16 E	—	3*	12	28	22 41.48	-39 14.1	1.974	1.641	29.8	20.7	56 E	5*	50*
7	25	8 20.32	+ 4 14.3	2.469	1.514	10.3	21.2	15 E	—	1*	1	2	22 54.35	-37 53.6	1.982	1.620	29.6	20.7	54 E	6*	48*
7	30	8 34.48	+ 3 58.0	2.477	1.516	9.7	21.2	15 W	—	1*	1	7	23 7.36	-36 27.9	1.987	1.599	29.4	20.7	53 E	7*	47*
8	4	8 48.54	+ 3 39.0	2.484	1.517	9.1	21.2	14 W	—	2*	1	12	23 20.49	-34 56.9	1.990	1.579	29.2	20.7	52 E	8*	45*
8	9	9 2.50	+ 3 17.8	2.490	1.519	8.6	21.2	13 W	—	3*	1	17	23 33.72	-33 20.7	1.992	1.559	29.0	20.6	50 E	9*	44*
8	14	9 16.36	+ 2 54.4	2.495	1.521	8.2	21.2	12 W	—	3*	1	22	23 47.02	-31 39.3	1.993	1.539	28.9	20.6	49 E	10*	43*
8	19	9 30.13	+ 2 29.0	2.499	1.522	7.8	21.2	12 W	—	4*	1	27	0 0.41	-29 52.7	1.993	1.519	28.7	20.6	48 E	11*	42*
8	24	9 43.81	+ 2 2.0	2.502	1.524	7.6	21.2	11 W	—	4*	2	1	0 13.86	-28 1.1	1.992	1.500	28.6	20.5	47 E	12*	40*
8	29	9 57.39	+ 1 33.4	2.503	1.526	7.5	21.2	11 W	—	5*	2	6	0 27.37	-26 4.8	1.991	1.481	28.5	20.5	46 E	12*	39*
9	3	10 10.88	+ 1 3.6	2.503	1.528	7.5	21.2	11 W	—	5*	2	11	0 40.94	-24 3.8	1.989	1.463	28.3	20.5	45 E	13*	38*
9	8	10 24.30	+ 0 32.8	2.502	1.530	7.7	21.2	12 W	—	6*	2	21	1 8.23	-19 49.3	1.986	1.427	28.1	20.4	43 E	14*	36*
9	13	10 37.66	+ 0 1.1	2.500	1.532	8.1	21.2	12 W	—	6*	3	2	1 35.79	-15 20.6	1.984	1.395	27.7	20.3	41 E	14*	34*
9	18	10 50.95	+ 0 31.2	2.495	1.534	8.6	21.2	13 W	1*	7*	3	12	2 3.64	-10 41.7	1.985	1.365	27.3	20.3	39 E	15*	32*
9	23	11 4.19	+ 1 3.7	2.489	1.536	9.2	21.2	14 W	3*	7*	3	17	2 17.70	- 8 19.9	1.988	1.351	27.0	20.3	38 E	15*	31*
9	28	11 17.39	+ 1 36.4	2.482	1.538	9.9	21.3	15 W	5*	8*	3	22	2 31.86	- 5 57.3	1.992	1.339	26.7	20.2	37 E	15*	30*
10	3	11 30.56	+ 2 8.9	2.472	1.540	10.7	21.3	17 W	7*	8*	3	27	2 46.15	- 3 34.7	1.997	1.327	26.3	20.2	36 E	14*	29*
10	8	11 43.70	+ 2 40.9	2.461	1.542	11.6	21.3	18 W	9*	9*	4	1	3 0.56	+ 1 12.8	2.003	1.317	25.8	20.2	35 E	14*	27*
10	13	11 56.83	+ 3 12.4	2.448	1.544	12.5	21.3	20 W	11*	9*	4	6	3 15.11	+ 1 7.6	2.011	1.308	25.3	20.2	34 E	14*	26*
10	18	12 9.97	+ 3 43.0	2.433	1.546	13.4	21.4	21 W	12*	10*	4	11	3 29.81	+ 3 25.9	2.021	1.300	24.8	20.1	33 E	13*	25*
10	23	12 23.11	+ 4 12.4	2.416	1.549	14.4	21.4	23 W	14*	10*	4	16	3 44.67	+ 5 41.4	2.032	1.293	24.2	20.1	32 E	13*	24*
10	28	12 36.26	+ 4 40.3	2.398	1.551	15.5	21.4	25 W	16*	11*	4	21	3 59.71	+ 7 53.2	2.044	1.287	23.5	20.1	31 E	13*	23*
11	2	12 49.44	+ 5 6.5	2.378	1.553	16.5	21.4	26 W	18*	12*	5	1	4 30.37	+12 3.6	2.072	1.281	22.1	20.1	29 E	11*	20*
11	7	13 2.65	+ 5 30.8	2.356	1.555	17.5	21.4	28 W	19*	13*	5	11	5 1.82	+15 52.1	2.105	1.280	20.5	20.1	26 E	10*	18*
11	12	13 15.90	+ 5 52.9	2.332	1.557	18.6	21.5	30 W	21*	14*	5	21	5 34.11	+19 14.7	2.140	1.284	18.8	20.1	24 E	9*	15*
11	17	13 29.20	+ 6 12.4	2.307	1.559	19.6	21.5	32 W	23*	15*	5	31	6 7.22	+22 8.0	2.177	1.294	17.1	20.1	22 E	9*	13*
11	22	13 42.54	+ 6 29.1	2.280	1.561	20.7	21.5	34 W	24*	16*	6	10	6 41.02	+24 29.7	2.215	1.309	15.4	20.1	20 E	8*	11*
11	27	13 55.93	+ 6 42.7	2.252	1.563	21.7	21.5	36 W	26*	17*	6	20	7 15.38	+26 18.3	2.254	1.329	14.0	20.1	18 E	8*	8*
12	2	14 9.37	+ 6 52.9	2.222	1.565	22.7	21.5	38 W	27*	18*	6	30	7 50.05	+27 33.6	2.291	1.353	12.8	20.1	17 E	8*	6*
12	7	14 22.87	+ 6 59.5	2.192	1.567	23.7	21.5	40 W	28*	20*	7	10	8 24.74	+28 16.0	2.328	1.382	11.9	20.2	16 E	8*	4*
12	12	14 36.41	+ 7 2.1	2.160	1.569	24.7	21.5	42 W	29*	22*	7	20	8 59.18	+28 27.1	2.363	1.413	11.4	20.2	16 E	8*	3*
12	17	14 50.00	+ 7 0.6	2.127	1.571	25.7	21.5	44 W	31*	23*	7	30	9 33.07	+28 9.4	2.397	1.447	11.1	20.3	16 E	10*	1*
12	22	15 3.61	+ 6 54.5	2.093	1.573	26.6	21.5	46 W	32*	25*	8	9	10 6.17	+27 26.3	2.429	1.484	11.1	20.4	16 E	10*	—
12	27	15 17.25	+ 6 43.7	2.059	1.575	27.5	21.5	48 W	33*	27*	8	19	10 38.33	+26 21.3	2.460	1.522	11.3	20.5	17 E	11*	—
1	1	15 30.91	+ 6 27.9	2.024	1.577	28.4	21.5	50 W	34*	29*	8	29	11 9.43	+24 58.5	2.490	1.562	11.6	20.6	18 E	12*	—
1	6	15 44.56	+ 6 7.1	1.989	1.578	29.2	21.5	52 W	34*	31*	9	8	11 39.43	+23 22.2	2.518	1.603	12.0	20.7	19 E	12*	—
1	11	15 58.21	+ 5 40.9	1.953	1.580	30.0	21.4	53 W	35*	33*	9	18	12 8.34	+21 36.3	2.545	1.644	12.5	20.8	21 E	12*	—
1	16	16 11.83	+ 5 9.2	1.918	1.582	30.8	21.4	55 W	36*	35*	9	28	12 36.21	+19 44.9	2.570	1.685	13.0	20.8	22 E	12*	—
<b>100952 1998 QR<sub>5</sub></b>										<b>330250 2006 RF<sub>19</sub></b>											
12	23	22 27.94	+ 6 59.4	1.742	1.708	33.1	19.6	72 E	51*	37*	10	8	13 3.09	+17 51.5	2.593	1.726	13.5	20.9	24 E	12*	—
1	2	22 48.25	+ 9 5.8	1.802	1.685	32.5	19.6	67 E	52*	31*	10	18	13 29.05	+15 59.2	2.613	1.767	14.1	21.0	26 W	12*	—
1	12	23 9.98	+11 20.7	1.859	1.665	31.8	19.6	63 E	52*	26*	10	28	13 54.16	+14 11.2	2.629	1.808	14.7	21.1	28 W	16*	—
1	22	23 33.05	+13 42.0	1.913	1.648	31.0	19.6	59 E	51*	21*	11	7	14 18.45	+12 29.8	2.641	1.848	15.4	21.2	30 W	20*	—
2	1	23 57.44	+16 7.3	1.965	1.634	30.0	19.6	56 E	49*	18*	11	17	14 41.98	+10 57.0	2.649	1.887	16.2	21.3	32 W	24*	—
2	11	0 23.11	+18 33.7	2.016	1.623	29.0	19.6	53 E	46*	15*	11	27	15 4.75	+ 9 34.6	2.650	1.925	17.0	21.3	35 W	28*	—
2	21	0 50.05	+20 57.8	2.065	1.615	27.9	19.7	50 E	44*	13*	12	7	15 26.75	+ 8 23.9	2.645	1.962	17.9	21.4	38 W	32*	—
3	2	1 18.25	+23 15.9	2.115	1.611	26.7	19.7	47 E	41*	11*	12	17	15 47.97	+ 7 25.8	2.632	1.998	18.9	21.5	41 W	35*	4*
3	12	1 47.65	+25 24.2	2.166	1.610	25.5	19.7	44 E	38*	10*	12	23	22 30.50	-13 16.8	1.854	1.673	31.9	20.3	64 E	31*	48*
3	22	2 18.17	+27 18.6	2.217	1.612	24.2	19.7	41 E	35*	9*	1	2	22 54.30	-10 10.4	1.950	1.693	30.3	20.4	60 E	34*	42*
4	1	2 49.66	+28 55.6	2.271	1.618	22.8	19.7	39 E	33*	9*	1	12	23 17.67	- 7 3.0	2.049	1.716	28.6	20.5	57 E	35*	37*
4	11	3 21.89	+30 12.0	2.325	1.627	21.3	19.7	36 E	30*	8*	1	22	23 40.65	- 3 56.8	2.148	1.741	26.8	20.6	53 E	36*	32*
4	21	3 54.58	+31 5.4	2.382	1.640	19.8	19.8	33 E	27*	8*	2	1	0 3.34	- 0 53.2	2.247	1.767	24.9	20.6	49 E	35*	28*
5	1	4 27.42	+31 34.3	2.439	1.65																

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

19/21	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°	19/21	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°		
<b>470069 2006 ST<sub>278</sub></b>										<b>337607 2001 TB<sub>13</sub></b> (continuation)											
12	23	22 30.54	- 2 44.0	1.804	1.699	32.4	21.1	68 E	42*	43*	3	22	1 38.68	- 1 4.9	2.572	1.704	13.4	20.9	23 E	9*	16*
1	2	22 55.05	- 0 52.8	1.906	1.720	30.9	21.2	64 E	43*	38*	4	1	2 3.88	+ 0 35.5	2.565	1.669	12.3	20.8	21 E	6*	14*
1	12	23 19.34	+ 1 4.0	2.009	1.744	29.3	21.3	60 E	43*	33*	4	11	2 30.00	+ 2 13.9	2.554	1.637	11.4	20.7	19 E	2*	13*
1	22	23 43.40	+ 3 4.1	2.113	1.770	27.6	21.4	56 E	42*	29*	4	21	2 57.06	+ 3 48.2	2.540	1.607	10.6	20.6	17 E	—	11*
2	1	0 7.24	+ 5 5.6	2.217	1.797	25.8	21.5	52 E	41*	26*	5	1	3 25.05	+ 5 15.9	2.525	1.581	10.1	20.6	16 E	—	10*
<b>26120 1991 VZ<sub>2</sub></b>																					
12	23	22 31.53	- 10 1.9	1.629	1.510	36.3	18.5	65 E	35*	47*	5	11	3 53.91	+ 6 34.8	2.511	1.559	9.8	20.5	15 E	—	8*
1	2	22 58.66	- 6 52.3	1.701	1.521	35.0	18.6	62 E	37*	42*	5	21	4 23.56	+ 7 42.3	2.499	1.541	9.6	20.5	15 E	—	6*
1	12	23 25.56	- 3 38.5	1.776	1.536	33.6	18.7	60 E	39*	37*	6	10	5 24.70	+ 9 15.4	2.482	1.517	9.3	20.4	14 E	—	3*
1	22	23 52.24	- 0 24.0	1.856	1.556	32.0	18.8	57 E	40*	33*	6	30	6 27.00	+ 9 43.4	2.480	1.511	9.1	20.4	14 W	—	2*
2	1	0 18.74	+ 2 48.2	1.939	1.579	30.4	18.8	54 E	40*	30*	7	10	6 58.01	+ 9 31.9	2.485	1.516	9.0	20.4	14 W	—	4*
2	11	0 45.08	+ 5 54.9	2.026	1.605	28.6	18.9	51 E	40*	26*	7	20	7 28.66	+ 9 4.4	2.494	1.525	9.0	20.4	14 W	—	6*
2	21	1 11.31	+ 8 53.4	2.116	1.635	26.8	19.0	48 E	38*	24*	7	30	7 58.75	+ 8 22.1	2.505	1.538	9.1	20.4	14 W	—	7*
3	2	1 37.47	+ 11 41.5	2.209	1.667	25.0	19.1	45 E	36*	21*	8	9	8 28.12	+ 7 27.0	2.517	1.556	9.4	20.5	14 W	—	8*
3	12	2 3.58	+ 14 17.1	2.302	1.701	23.1	19.2	42 E	34*	19*	8	19	8 56.69	+ 6 21.2	2.530	1.578	9.8	20.5	15 W	—	9*
3	22	2 29.66	+ 16 38.9	2.397	1.738	21.1	19.2	39 E	31*	17*	8	29	9 24.38	+ 5 7.0	2.542	1.603	10.6	20.6	17 W	2*	11*
4	1	2 55.71	+ 18 45.6	2.491	1.776	19.1	19.3	36 E	27*	16*	9	8	9 51.16	+ 3 47.0	2.552	1.632	11.5	20.7	19 W	6*	12*
4	11	3 21.71	+ 20 36.3	2.584	1.816	17.1	19.4	32 E	24*	14*	9	18	10 17.04	+ 2 23.4	2.559	1.664	12.7	20.8	21 W	9*	13*
4	21	3 47.61	+ 22 10.5	2.675	1.856	15.0	19.4	29 E	20*	12*	9	28	10 42.04	+ 0 58.5	2.561	1.698	14.1	20.9	24 W	13*	14*
5	1	4 13.36	+ 23 28.1	2.763	1.898	12.9	19.5	25 E	16*	10*	10	8	11 6.17	- 0 25.5	2.557	1.735	15.5	21.0	28 W	17*	16*
5	11	4 38.87	+ 24 29.1	2.846	1.940	10.9	19.5	21 E	12*	8*	10	18	11 29.48	- 1 46.7	2.546	1.773	17.0	21.1	31 W	20*	18*
5	21	5 4.06	+ 25 13.8	2.925	1.982	8.8	19.5	17 E	9*	6*	10	28	11 51.96	- 3 3.0	2.527	1.813	18.6	21.2	36 W	24*	20*
5	31	5 28.85	+ 25 42.9	2.997	2.025	6.7	19.5	13 E	5*	4*	11	7	12 13.63	- 4 12.7	2.501	1.854	20.1	21.2	40 W	28*	23*
6	10	5 53.15	+ 25 57.1	3.062	2.067	4.6	19.5	9 E	2*	1*	11	17	12 34.49	- 5 14.1	2.465	1.897	21.6	21.3	45 W	31*	26*
6	20	6 16.87	+ 25 57.5	3.119	2.110	2.7	19.5	6 E	—	—	11	27	12 54.47	- 6 5.3	2.420	1.940	22.9	21.3	50 W	33*	31*
6	30	6 39.94	+ 25 45.2	3.167	2.152	1.3	19.4	3 E	—	—	12	7	13 13.53	- 6 44.7	2.367	1.983	24.2	21.4	56 W	35*	35*
7	10	7 2.29	+ 25 21.4	3.206	2.194	2.2	19.6	5 W	—	—	12	17	13 31.56	- 7 10.8	2.304	2.027	25.2	21.4	61 W	37*	41*
7	20	7 23.89	+ 24 47.5	3.234	2.236	4.0	19.8	9 W	2*	—	12	27	13 48.40	- 7 21.6	2.234	2.071	26.1	21.4	68 W	37*	47*
7	30	7 44.69	+ 24 4.8	3.251	2.277	6.0	19.9	14 W	6*	2*	1	6	14 3.90	- 7 15.8	2.157	2.115	26.6	21.4	74 W	38	53*
8	9	8 4.65	+ 23 14.7	3.257	2.317	7.9	20.0	18 W	11*	5*	1	16	14 17.84	- 6 51.7	2.075	2.158	26.8	21.4	81 W	38	60*
8	19	8 23.76	+ 22 18.6	3.251	2.357	9.8	20.2	23 W	16*	8*	<b>249886 2001 RY<sub>11</sub></b>										
8	29	8 42.00	+ 21 17.9	3.232	2.396	11.7	20.3	29 W	21*	11*	12	23	22 32.53	+ 25 37.3	0.738	1.141	58.5	19.1	82 E	70*	24*
9	8	8 59.33	+ 20 13.9	3.201	2.434	13.4	20.3	34 W	26*	14*	12	28	22 57.32	+ 26 38.8	0.748	1.157	57.5	19.2	83 E	71*	24*
9	18	9 15.75	+ 19 8.2	3.157	2.471	15.1	20.4	40 W	32*	17*	1	2	23 22.62	+ 27 29.1	0.761	1.174	56.4	19.2	84 E	72*	24*
9	28	9 31.19	+ 18 2.2	3.101	2.507	16.6	20.4	46 W	37*	20*	1	7	23 48.16	+ 28 7.6	0.778	1.191	55.2	19.2	84 E	73*	24*
10	8	9 45.62	+ 16 57.3	3.033	2.543	18.0	20.5	52 W	43*	23*	1	12	0 13.68	+ 28 33.9	0.799	1.209	54.1	19.3	85 E	73*	24*
10	18	9 58.96	+ 15 55.0	2.954	2.578	19.2	20.5	59 W	48*	27*	1	17	0 38.92	+ 28 48.4	0.824	1.228	52.9	19.4	85 E	73*	25*
10	28	10 11.11	+ 14 57.1	2.864	2.611	20.2	20.5	65 W	53*	31*	1	22	1 3.65	+ 28 52.0	0.853	1.248	51.8	19.4	85 E	73*	26*
11	7	10 21.94	+ 14 5.1	2.765	2.644	21.0	20.5	73 W	56*	35*	1	27	1 27.71	+ 28 46.1	0.885	1.268	50.7	19.5	85 E	73*	27*
11	17	10 31.31	+ 13 20.7	2.659	2.676	21.4	20.4	80 W	58*	40*	2	1	1 50.94	+ 28 32.1	0.922	1.288	49.6	19.6	85 E	73*	27*
11	27	10 38.99	+ 12 46.0	2.548	2.707	21.4	20.3	88 W	58*	44*	2	6	2 34.62	+ 28 11.4	0.961	1.308	48.6	19.7	84 E	72*	28*
12	7	10 44.78	+ 12 22.7	2.435	2.737	20.9	20.2	97 W	57*	48*	2	11	2 13.26	+ 27 45.4	1.004	1.329	47.6	19.8	84 E	71*	29*
12	17	10 48.42	+ 12 12.5	2.323	2.765	20.0	20.1	106 W	57*	51*	2	16	2 55.03	+ 27 15.2	1.050	1.350	46.6	19.9	83 E	70*	30*
12	27	10 49.66	+ 12 16.7	2.216	2.793	18.4	20.0	116 W	57*	52*	2	21	3 14.53	+ 26 42.0	1.099	1.371	45.6	20.0	82 E	69*	31*
1	6	10 48.30	+ 12 35.9	2.119	2.820	16.2	19.9	127 W	58*	51*	2	26	3 33.16	+ 26 6.5	1.150	1.392	44.6	20.1	81 E	68*	32*
1	16	10 44.25	+ 13 9.5	2.037	2.846	13.4	19.7	138 W	58*	51*	3	2	3 50.98	+ 25 29.5	1.203	1.412	43.6	20.2	80 E	66*	33*
<b>178293 1990 SN</b>																					
12	23	22 31.64	- 7 50.7	1.599	1.500	36.8	20.5	66 E	37*	46*	3	7	4 8.05	+ 24 51.2	1.257	1.433	42.7	20.3	78 E	65*	34*
1	2	22 57.83	- 4 37.9	1.665	1.504	35.7	20.6	63 E	39*	41*	3	12	4 24.43	+ 24 12.1	1.314	1.454	41.7	20.4	77 E	63*	34*
1	12	23 24.14	- 1 21.1	1.734	1.511	34.4	20.6	60 E	41*	36*	3	17	4 40.18	+ 23 32.3	1.371	1.474	40.7	20.5	75 E	61*	35*
1	22	23 50.56	+ 1 56.6	1.805	1.523	33.0	20.7	58 E	42*	32*	3	22	4 55.37	+ 22 52.0	1.429	1.494	39.8	20.6	74 E	59*	36*
2	1	0 17.13	+ 5 12.1	1.880	1.538	31.5	20.7	55 E	42*	28*	3	27	5 10.06	+ 22 11.1	1.489	1.513	38.8	20.7	72 E	57*	37*
2	11	0 43.84	+ 8 22.3	1.957	1.557	30.0	20.8	52 E	41*	25*	4	1	5 24.30	+ 21 29.6	1.548	1.533	37.8	20.8	70 E	54*	37*
2	21	1 10.72	+ 11 24.3	2.037	1.579	28.3	20.9	49 E	40*	22*	4	6	5 38.12	+ 20 47.6	1.608	1.552	36.9	20.9	69 E	52*	38*
3	2	1 37.82	+ 14 15.6	2.119	1.605	26.6	21.0	46 E	38*	20*	4	11	5 51.56	+ 20 4.9	1.668	1.571	35.9	21.0	67 E	49*	38*
3	12	2 5.13	+ 16 53.7	2.203	1.632	24.8	21.0	43 E	36*	18*	4	16	6 4.65	+ 19 21.5	1.727	1.589	34.9	21.0	65 E	47*	39*
3	22	2 32.63	+ 19 16.8	2.288	1.662	22.9	21.1	41 E	33*	17*	4	21	6 17.44	+ 18 37.2	1.787	1.607	33.9	21.1	63 E	44*	39*
4	1	3 0.32	+ 21 23.2	2.374	1.695	21.0	21.2	38 E	30*	15*	4	26	6 29.95	+ 17 52.1	1.846	1.624	32.9	21.2	61 E	41*	39*
4	11	3 28.11	+ 23 11.7	2.460	1.728	19.1	21.2	34 E	27*	14*	5	1	6 42.21	+ 17 6.0	1.904	1.641	31.9	21.2	60 E	38*	39*
4	21	3 55.94	+ 24 41.5	2.545	1.764	17.2	21.3	31 E	23*	12*	5	6	6 54.23	+ 16 18.8	1.961	1.658	30.9	21.3	58 E	35*	40*
5	1	4 23.69	+ 25 52.3	2.628	1.800	15.2	21.3	28 E	20*	11*	5	11	7 6.02	+ 15 30.6	2.018	1.674	29.9	21.3	56 E	32*	40*
5	11	4 51.23																			



EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

19/21	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°	19/21	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°
<b>306367 Nut</b>										<b>9992 1997 TG<sub>19</sub></b>									
<i>(continuation)</i>										<i>(continuation)</i>									
5 26	2 52.96	+18 17.2	2.348	1.427	13.2	19.0	19 W	4*	12*	5 31	3 31.52	+19 17.0	3.432	2.463	5.9	19.7	14 W	1*	8*
5 31	3 8.77	+19 25.9	2.280	1.369	14.4	18.9	20 W	5*	12*	6 10	3 49.18	+20 20.0	3.421	2.490	7.9	19.8	20 W	4*	12*
6 5	3 25.62	+20 32.7	2.213	1.310	15.6	18.8	20 W	5*	13*	6 20	4 6.61	+21 15.2	3.398	2.515	9.9	19.9	25 W	9*	17*
6 10	3 43.62	+21 36.6	2.147	1.251	16.8	18.6	21 W	6*	13*	6 30	4 23.74	+22 2.7	3.361	2.539	11.8	20.0	31 W	13*	20*
6 15	4 2.89	+22 36.1	2.082	1.191	17.8	18.5	21 W	7*	12*	7 10	4 40.48	+22 42.7	3.311	2.562	13.6	20.0	36 W	19*	24*
6 20	4 23.54	+23 29.8	2.020	1.131	18.7	18.4	21 W	7*	12*	7 20	4 56.74	+23 15.5	3.249	2.585	15.2	20.1	42 W	25*	27*
6 25	4 45.65	+24 15.3	1.961	1.071	19.5	18.2	21 W	8*	11*	7 30	5 12.42	+23 41.7	3.175	2.606	16.8	20.1	48 W	32*	29*
6 30	5 9.29	+24 50.4	1.906	1.012	20.1	18.0	20 W	8*	10*	8 9	5 27.38	+24 1.9	3.090	2.626	18.2	20.1	54 W	39*	31*
7 5	5 34.47	+25 12.2	1.855	0.953	20.3	17.8	19 W	8*	9*	8 19	5 41.48	+24 16.8	2.994	2.645	19.4	20.1	60 W	45*	33*
7 10	6 1.18	+25 17.7	1.809	0.896	20.2	17.7	18 W	8*	8*	8 29	5 54.54	+24 27.4	2.889	2.663	20.4	20.0	67 W	52*	35*
7 15	6 29.30	+25 3.8	1.769	0.842	19.6	17.5	16 W	7*	6*	9 8	6 6.38	+24 34.8	2.775	2.680	21.2	20.0	74 W	59*	36*
7 20	6 58.64	+24 27.6	1.735	0.791	18.4	17.2	14 W	6*	4*	9 18	6 16.76	+24 40.1	2.656	2.696	21.6	19.9	81 W	65*	37*
7 25	7 28.93	+23 27.0	1.708	0.745	16.5	17.0	12 W	4*	2*	9 28	6 25.42	+24 44.8	2.532	2.711	21.7	19.8	89 W	69*	38*
7 30	7 59.83	+22 0.8	1.687	0.706	13.8	16.8	10 W	2*	—	10 8	6 32.07	+24 50.2	2.406	2.725	21.3	19.7	98 W	70	39*
8 4	8 30.95	+20 9.1	1.673	0.677	10.3	16.5	7 W	—	—	10 18	6 36.37	+24 57.5	2.282	2.738	20.4	19.6	107 W	70	39*
8 9	9 1.93	+17 53.7	1.666	0.658	6.1	16.3	4 W	—	—	10 28	6 37.99	+25 7.6	2.163	2.749	18.9	19.4	116 W	70	39*
8 14	9 32.40	+15 18.1	1.664	0.652	1.8	16.0	1 W	—	—	11 7	6 36.66	+25 20.9	2.054	2.760	16.8	19.3	126 W	70	39*
8 19	10 2.08	+12 27.1	1.668	0.658	3.2	16.1	2 E	—	—	11 17	6 32.18	+25 36.8	1.959	2.769	14.0	19.1	137 W	71	38
8 24	10 30.75	+ 9 26.1	1.679	0.677	7.3	16.4	5 E	—	—	11 27	6 24.64	+25 53.4	1.883	2.778	10.5	18.9	149 W	71	38
8 29	10 58.30	+ 6 20.6	1.695	0.706	10.8	16.7	8 E	—	2*	12 7	6 14.50	+26 8.1	1.833	2.785	6.4	18.6	162 W	71	38
9 3	11 24.66	+ 3 15.7	1.718	0.745	13.5	16.9	10 E	—	4*	12 12	6 8.71	+26 13.9	1.818	2.788	4.3	18.5	168 W	71	38
9 8	11 49.87	+ 0 15.5	1.747	0.791	15.5	17.2	12 E	—	6*	12 17	6 2.62	+26 18.2	1.811	2.791	2.1	18.4	174 W	71	38
9 13	12 13.97	+ 2 37.1	1.783	0.841	16.7	17.4	14 E	—	8*	12 22	5 56.40	+26 20.8	1.811	2.794	1.1	18.3	177 E	71	38
9 18	12 37.02	+ 5 19.6	1.824	0.896	17.3	17.6	15 E	—	9*	12 27	5 50.24	+26 21.8	1.819	2.796	2.9	18.4	172 E	71	38
9 23	12 59.07	+ 7 50.9	1.871	0.953	17.4	17.8	17 E	—	11*	1 1	5 44.29	+26 21.1	1.835	2.798	5.0	18.6	166 E	71	38
9 28	13 20.19	+10 10.1	1.923	1.012	17.2	18.0	17 E	—	11*	1 6	5 38.72	+26 18.9	1.858	2.800	7.1	18.7	159 E	71	38
10 8	13 59.89	+14 11.9	2.038	1.131	15.9	18.3	18 E	—	12*	1 11	5 33.64	+26 15.7	1.889	2.802	9.1	18.8	153 E	71	38
10 18	14 36.58	+17 27.4	2.164	1.251	13.9	18.6	18 E	—	12*	1 16	5 29.19	+26 11.6	1.925	2.803	11.0	18.9	147 E	71	38
10 28	15 10.61	+20 1.8	2.295	1.368	11.6	18.8	16 E	—	10*	<b>326498 2002 JE<sub>10</sub></b>									
11 2	15 26.72	+21 5.4	2.361	1.426	10.4	18.9	15 E	—	9*	12 23	22 33.72	+18 30.7	2.035	1.813	28.9	20.9	63 E	26*	51*
11 7	15 42.29	+22 0.9	2.427	1.484	9.2	19.0	14 E	—	8*	1 2	22 55.98	+15 36.5	2.148	1.843	27.2	21.0	59 E	28*	45*
11 12	15 57.33	+22 48.9	2.492	1.540	7.9	19.1	12 E	—	6*	1 12	23 17.62	+12 41.9	2.262	1.874	25.3	21.1	55 E	30*	40*
11 17	16 11.88	+23 30.1	2.556	1.596	6.7	19.2	11 E	—	5*	1 22	23 38.73	+ 9 48.4	2.376	1.906	23.5	21.2	50 E	30*	35*
11 27	16 39.58	+24 34.4	2.679	1.705	4.2	19.3	7 E	—	1*	2 1	23 59.41	+ 6 57.5	2.487	1.939	21.5	21.3	46 E	29*	30*
12 7	17 5.53	+25 18.0	2.792	1.810	2.0	19.4	4 E	—	—	2 11	0 19.71	+ 4 10.3	2.595	1.972	19.5	21.3	42 E	28*	26*
12 17	17 29.89	+25 44.4	2.894	1.912	1.6	19.5	3 W	—	—	2 21	0 39.71	+ 1 27.9	2.700	2.006	17.4	21.4	37 E	25*	22*
12 27	17 52.73	+25 56.5	2.982	2.011	3.6	19.8	7 W	—	1*	3 2	0 59.48	+ 1 8.8	2.800	2.039	15.3	21.4	33 E	22*	19*
1 6	18 14.12	+25 57.0	3.055	2.106	5.9	20.1	13 W	—	6*	3 12	1 19.06	+ 3 39.1	2.893	2.073	13.2	21.5	28 E	18*	15*
1 16	18 34.13	+25 48.2	3.111	2.199	8.1	20.3	18 W	2*	12*	3 22	1 38.51	+ 6 2.2	2.980	2.107	11.0	21.5	24 E	14*	12*
12 23	22 33.04	+18 3.5	1.442	1.567	37.9	19.8	78 E	63*	30*	4 1	1 57.86	+ 8 17.7	3.059	2.141	8.8	21.5	19 E	10*	9*
1 2	23 5.24	+18 48.7	1.523	1.595	36.7	19.9	76 E	63*	27*	4 11	2 17.12	+10 25.0	3.129	2.174	6.7	21.5	15 E	6*	6*
1 12	23 37.19	+19 34.5	1.615	1.628	35.3	20.0	73 E	62*	25*	4 21	2 36.32	+12 23.7	3.190	2.207	4.5	21.4	10 E	1*	3*
1 22	0 8.59	+20 19.3	1.716	1.664	33.8	20.2	70 E	61*	24*	5 1	2 55.48	+14 13.6	3.241	2.240	2.4	21.4	5 E	—	—
2 1	0 39.25	+21 1.9	1.826	1.703	32.2	20.3	67 E	59*	23*	5 11	3 14.56	+15 54.3	3.281	2.272	0.9	21.3	2 E	—	—
2 11	1 9.04	+21 41.1	1.943	1.745	30.4	20.5	64 E	56*	22*	5 21	3 33.56	+17 25.8	3.310	2.304	2.2	21.5	5 W	—	—
2 21	1 37.89	+22 15.9	2.066	1.788	28.6	20.6	60 E	52*	21*	<b>101952 1999 RY<sub>31</sub></b>									
3 2	2 5.84	+22 45.4	2.193	1.834	26.6	20.7	56 E	49*	20*	12 23	22 33.76	+15 38.8	2.269	2.036	25.7	20.5	64 E	29*	50*
3 12	2 32.87	+23 9.0	2.322	1.881	24.6	20.8	52 E	45*	19*	1 2	22 52.64	+13 17.7	2.405	2.074	23.9	20.6	59 E	30*	43*
3 22	2 59.02	+23 25.9	2.452	1.930	22.5	21.0	48 E	40*	19*	1 12	23 11.21	+10 56.4	2.539	2.112	22.1	20.7	54 E	31*	37*
4 1	3 24.35	+23 35.6	2.581	1.979	20.3	21.1	43 E	36*	18*	1 22	23 29.49	+ 8 35.9	2.669	2.150	20.1	20.8	49 E	30*	32*
4 11	3 48.87	+23 37.8	2.706	2.029	18.1	21.1	39 E	31*	17*	2 1	23 47.53	+ 6 16.8	2.794	2.187	18.1	20.9	44 E	29*	27*
4 21	4 12.63	+23 32.1	2.827	2.079	15.9	21.2	35 E	25*	16*	2 11	0 5.34	+ 3 59.9	2.911	2.224	16.0	20.9	38 E	26*	23*
5 1	4 35.64	+23 18.5	2.942	2.129	13.6	21.3	30 E	20*	15*	2 21	0 22.95	+ 1 45.9	3.022	2.260	13.9	21.0	33 E	22*	19*
5 11	4 57.90	+22 56.7	3.050	2.180	11.4	21.3	25 E	15*	13*	3 2	0 40.40	+ 0 24.7	3.123	2.296	11.7	21.0	28 E	18*	15*
5 21	5 19.45	+22 26.9	3.149	2.230	9.2	21.3	21 E	9*	11*	3 12	0 57.70	+ 2 31.2	3.214	2.331	9.5	21.0	23 E	14*	11*
5 31	5 40.27	+21 49.2	3.239	2.280	6.9	21.4	16 E	4*	8*	3 22	1 14.87	+ 4 33.0	3.295	2.366	7.4	21.0	18 E	9*	8*
6 10	6 0.36	+21 3.7	3.318	2.330	4.8	21.4	11 E	—	5*	4 1	1 31.93	+ 6 29.8	3.365	2.399	5.2	21.0	13 E	4*	4*
6 20	6 19.74	+20 10.8	3.385	2.379	2.8	21.3	7 E	—	1*	4 11	1 48.87	+ 8 21.1	3.422	2.432	3.1	20.9	7 E	—	1*
6 30	6 38.38	+19 10.7	3.441	2.428	1.7	21.3	4 E	—	—	4 21	2 5.70	+10 6.4	3.467	2.464	1.2	20.8	3 E	—	—
7 10	6 56.27	+18 3.7	3.483	2.476	2.7	21.5	7 W	—	—	5 1	2 22.43	+11 45.4	3.499	2.495	1.7	20.9	4 W	—	—
<b>9992 1997 TG<sub>19</sub></b>										5 11	2 39.01	+13 17.9	3.517	2.525	3.7	21.1	9 W	—	3*
12 23	22 33.55	+10 41.4	2.132	1.943	27.4	18.9	65 E	34*	48*	5 21	2 55.44	+14 43.7	3.522	2.555	5.7	21.2	14 W	—	8*
1 2	22 53.48	+ 8 30.6	2.264	1.978	25.7	19.0	61 E	35*	41*	5 31	3 11.68	+16 2.5	3.513	2.583	7.7	21.3	20 W	2*	13*
1 12	23																		

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

19/21	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°	19/20	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°
<b>9564 Jeffwynn</b>										<b>455215 2001 PM<sub>35</sub></b>									
<i>(continuation)</i>										<i>(continuation)</i>									
5 1	3 11.14	+6 30.5	3.247	2.275	5.5	18.7	13 E	—	6*	3 12	3 10.04	+29 35.0	1.903	1.686	31.4	20.8	62 E	55*	21*
5 11	3 30.47	+7 14.7	3.292	2.311	5.0	18.7	12 E	—	3*	3 17	3 26.19	+29 21.0	1.959	1.706	30.5	20.8	61 E	53*	21*
5 21	3 49.54	+7 49.9	3.326	2.347	5.3	18.8	12 W	—	—	3 22	3 41.98	+29 4.0	2.017	1.726	29.6	20.9	59 E	51*	22*
5 31	4 8.32	+8 15.5	3.348	2.382	6.3	18.9	15 W	—	5*	3 27	3 57.42	+28 44.1	2.076	1.746	28.6	21.0	57 E	49*	22*
6 10	4 26.75	+8 31.2	3.360	2.417	7.6	19.0	18 W	—	11*	4 1	4 12.49	+28 21.4	2.135	1.767	27.7	21.0	55 E	47*	22*
6 20	4 44.81	+8 36.9	3.360	2.451	9.1	19.1	22 W	—	16*	4 6	4 27.19	+27 56.2	2.196	1.789	26.7	21.1	53 E	45*	23*
6 30	5 2.42	+8 32.3	3.348	2.484	10.7	19.2	27 W	—	21*	4 11	4 41.53	+27 28.6	2.257	1.812	25.6	21.1	51 E	42*	23*
7 10	5 19.50	+8 17.5	3.325	2.517	12.2	19.2	32 W	2*	26*	4 16	4 55.51	+26 58.6	2.319	1.834	24.6	21.2	50 E	40*	23*
7 20	5 36.01	+7 52.6	3.291	2.549	13.8	19.3	37 W	8*	30*	4 21	5 9.14	+26 26.4	2.380	1.858	23.6	21.2	48 E	37*	23*
7 30	5 51.83	+7 17.8	3.246	2.580	15.2	19.4	42 W	14*	34*	4 26	5 22.44	+25 52.2	2.442	1.881	22.5	21.3	46 E	34*	23*
8 9	6 6.88	+6 33.3	3.190	2.610	16.6	19.4	47 W	20*	38*	5 1	5 35.40	+25 16.1	2.503	1.905	21.4	21.3	44 E	32*	23*
8 19	6 21.07	+5 39.7	3.124	2.640	17.8	19.4	53 W	26*	42*	5 6	5 48.04	+24 38.0	2.563	1.930	20.3	21.4	42 E	29*	23*
8 29	6 34.25	+4 37.3	3.048	2.668	18.9	19.4	59 W	31*	46*	5 11	6 0.37	+23 58.2	2.623	1.954	19.2	21.4	40 E	26*	23*
9 8	6 46.31	+3 26.8	2.964	2.696	19.8	19.4	65 W	36*	49*	5 16	6 12.40	+23 16.6	2.683	1.979	18.1	21.5	38 E	23*	23*
9 18	6 57.09	+2 9.1	2.873	2.723	20.5	19.4	71 W	40*	53*	<b>185851 2000 DP<sub>107</sub></b>									
9 28	7 6.41	+0 45.1	2.775	2.748	20.9	19.3	78 W	43*	57*	12 23	22 34.92	-4 26.6	1.202	1.238	47.5	20.9	68 E	40*	45*
10 8	7 14.07	+0 43.9	2.673	2.773	21.0	19.3	85 W	44*	61*	12 28	22 52.42	-2 14.7	1.249	1.267	46.0	20.9	68 E	42*	43*
10 18	7 19.86	+2 16.1	2.570	2.797	20.8	19.2	93 W	43*	65*	1 2	23 9.17	-0 7.9	1.299	1.296	44.5	21.0	68 E	44*	40*
10 28	7 23.53	+3 49.4	2.467	2.821	20.3	19.1	100 W	41	68*	1 7	23 25.26	+1 53.7	1.352	1.325	43.1	21.1	67 E	46*	38*
11 7	7 24.89	+5 20.5	2.368	2.843	19.3	19.0	109 W	40	69	1 12	23 40.76	+3 49.8	1.406	1.353	41.7	21.2	66 E	47*	36*
11 17	7 23.76	+6 45.8	2.277	2.864	17.9	18.9	117 W	38	71	1 17	23 55.76	+5 40.5	1.462	1.381	40.4	21.3	65 E	48*	34*
11 27	7 20.06	+8 0.3	2.198	2.884	16.2	18.8	125 W	37	72	1 22	0 10.34	+7 26.1	1.520	1.408	39.0	21.4	64 E	49*	32*
12 2	7 17.29	+8 31.8	2.164	2.894	15.2	18.7	130 W	36	73	1 27	0 24.55	+9 6.6	1.578	1.435	37.8	21.5	63 E	49*	31*
12 7	7 13.95	+8 58.6	2.135	2.903	14.2	18.7	134 W	36	73	<b>216947 1999 TM<sub>258</sub></b>									
12 12	7 10.10	+9 20.1	2.111	2.913	13.2	18.6	137 W	35	73	12 23	22 36.23	-6 20.8	1.847	1.732	31.7	21.2	68 E	38*	46*
12 17	7 5.79	+9 35.6	2.092	2.922	12.3	18.6	141 W	35	74	1 2	22 59.55	-4 9.5	1.951	1.753	30.2	21.3	64 E	40*	41*
12 22	7 1.14	+9 44.6	2.079	2.931	11.5	18.5	144 W	35	74	1 12	23 22.69	+1 53.9	2.056	1.777	28.6	21.4	60 E	40*	36*
12 27	6 56.25	+9 46.8	2.072	2.939	10.8	18.5	146 W	35	74	1 22	23 45.63	+0 23.8	2.161	1.801	26.8	21.5	56 E	40*	31*
1 1	6 51.24	+9 42.1	2.072	2.947	10.4	18.5	147 W	35	74	2 1	0 8.41	+2 41.8	2.266	1.827	25.0	21.5	52 E	39*	27*
1 6	6 46.22	+9 30.6	2.078	2.955	10.3	18.5	148 E	35	74	<b>99942 Apophis</b>									
1 11	6 41.33	+9 12.6	2.091	2.963	10.5	18.5	147 E	36	73	12 23	22 36.46	-13 9.3	0.460	0.895	86.8	20.3	65 E	32*	49*
1 16	6 36.67	+8 48.4	2.111	2.971	10.9	18.6	145 E	36	73	12 28	23 5.27	-10 57.7	0.453	0.912	85.1	20.3	68 E	34*	50*
<b>223042 2002 TN<sub>56</sub></b>										1 2	23 33.54	-8 37.3	0.448	0.930	83.2	20.2	70 E	36*	50*
12 23	22 33.97	+5 18.8	1.759	1.656	33.3	20.2	68 E	39*	45*	1 7	0 1.10	-6 11.6	0.448	0.946	81.2	20.2	72 E	39*	50*
1 2	22 57.57	+3 44.9	1.821	1.638	32.5	20.2	63 E	40*	40*	1 12	0 27.82	-3 44.2	0.451	0.963	79.2	20.2	74 E	41*	50*
1 12	23 21.94	+1 58.8	1.882	1.622	31.5	20.3	60 E	40*	36*	1 17	0 53.63	-1 18.2	0.457	0.978	77.2	20.1	76 E	44*	50*
1 22	23 46.96	+0 3.2	1.941	1.610	30.4	20.3	56 E	40*	32*	1 22	1 18.50	+1 3.8	0.466	0.993	75.3	20.2	77 E	46*	50*
2 1	0 12.56	+1 59.5	1.999	1.601	29.2	20.3	52 E	39*	29*	1 27	1 42.45	+3 19.6	0.477	1.007	73.5	20.2	79 E	48*	49*
2 11	0 38.66	+4 6.2	2.057	1.595	27.9	20.3	49 E	37*	26*	2 1	2 5.51	+5 27.7	0.491	1.021	71.8	20.2	80 E	50*	48*
2 21	1 5.23	+6 14.0	2.114	1.593	26.5	20.3	46 E	35*	24*	2 11	2 49.16	+9 17.0	0.523	1.045	69.0	20.3	81 E	54*	47*
3 2	1 32.24	+8 19.9	2.172	1.594	25.0	20.4	43 E	33*	22*	2 21	3 29.98	+12 28.5	0.560	1.064	66.8	20.4	82 E	57*	45*
3 12	1 59.66	+10 20.7	2.229	1.599	23.5	20.4	40 E	30*	21*	3 2	4 8.64	+15 2.9	0.600	1.080	65.2	20.6	81 E	58*	44*
3 22	2 27.44	+12 13.6	2.287	1.607	21.9	20.4	37 E	27*	20*	3 12	4 45.60	+17 2.0	0.641	1.091	64.0	20.7	81 E	59*	43*
4 1	2 55.54	+13 56.1	2.345	1.619	20.3	20.4	34 E	24*	18*	3 22	5 21.25	+18 28.3	0.681	1.097	63.1	20.8	79 E	59*	42*
4 11	3 23.87	+15 25.8	2.403	1.634	18.6	20.4	31 E	21*	17*	4 1	5 55.92	+19 24.1	0.720	1.099	62.6	20.9	78 E	57*	42*
4 21	3 52.35	+16 40.6	2.462	1.651	17.0	20.4	29 E	17*	16*	4 11	6 29.77	+19 51.2	0.755	1.096	62.4	21.0	76 E	55*	42*
5 1	4 20.87	+17 39.3	2.520	1.672	15.2	20.5	26 E	14*	15*	4 21	7 2.92	+19 51.7	0.786	1.089	62.4	21.1	74 E	52*	42*
5 11	4 49.28	+18 20.7	2.577	1.695	13.5	20.5	23 E	10*	14*	5 1	7 35.49	+19 27.3	0.811	1.076	62.7	21.1	72 E	49*	43*
5 21	5 17.45	+18 44.6	2.634	1.720	11.7	20.5	20 E	6*	12*	5 11	8 7.51	+18 39.8	0.830	1.060	63.2	21.2	70 E	45*	43*
5 31	5 45.25	+18 50.8	2.689	1.748	10.0	20.5	17 E	3*	10*	5 21	8 39.01	+17 31.2	0.842	1.039	64.1	21.2	67 E	40*	44*
6 10	6 12.52	+18 39.9	2.742	1.777	8.2	20.5	14 E	—	8*	5 31	9 10.10	+16 3.3	0.845	1.014	65.4	21.2	65 E	36*	45*
6 20	6 39.17	+18 12.9	2.792	1.808	6.5	20.5	12 E	—	6*	6 10	9 40.78	+14 18.7	0.839	0.986	67.1	21.1	63 E	32*	46*
6 30	7 5.10	+17 30.8	2.838	1.840	4.8	20.5	9 E	—	3*	6 20	10 11.10	+12 19.7	0.823	0.954	69.3	21.1	61 E	28*	47*
7 10	7 30.22	+16 35.1	2.880	1.873	3.5	20.5	6 E	—	—	6 30	10 41.11	+10 9.4	0.796	0.921	72.2	21.1	60 E	25*	47*
7 20	7 54.52	+15 27.3	2.917	1.907	2.8	20.5	5 W	—	—	7 10	11 10.71	+7 51.5	0.759	0.886	75.9	21.0	58 E	22*	47*
7 30	8 17.94	+14 9.1	2.948	1.942	3.4	20.6	6 W	—	—	7 20	11 39.78	+5 30.8	0.711	0.852	80.6	20.9	56 E	20*	46*
8 9	8 40.50	+12 42.0	2.972	1.978	4.7	20.8	9 W	—	3*	7 30	12 7.93	+3 12.8	0.652	0.819	86.5	20.9	54 E	19*	45*
8 19	9 2.19	+11 7.6	2.988	2.013	6.4	20.9	13 W	1*	6*	8 9	12 34.34	+1 5.3	0.584	0.790	93.9	20.9	51 E	17*	43*
8 29	9 23.05	+9 27.5	2.996	2.049	8.1	21.0	17 W	6*	9*	8 19	12 57.61	+0 43.0	0.509	0.767	103.1	20.9	48 E	16*	40*
9 8	9 43.07	+7 43.0	2.996	2.085	9.9	21.2	21 W	10*	12*	8 29	13 15.33	-2 1.7	0.431	0.752	114.6	21.2	43 E	14*	36*
9 18	10 2.30	+5 55.6	2.986	2.121	11.7	21.2	25 W	15*	15*	<b>6063 Jason</b>									
9 28	10 20.73	+4 6.5	2.965	2.157	13.5	21.3	30 W	19*	18*	12 23	22 36.54	-9 23.9	2.940	2.705	19.5	21.4	67 E	35*	48*
10 8	10 38.38	+2 17.0	2.935	2.193	15.2	21.4	35 W	23*	21*	1 2	22 45.01	-8 37.9	3.008	2.634	18.6	21.3	59 E	35*	40*
10 18	10 55.23	+0 28.3	2.894	2.228	16.8	21.4	40 W	28*	24*	1 12	22 54.84	-7 42.6							

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

19/21	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°	19/20	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°										
<b>6063 Jason</b>										<b>481085 2005 SA<sub>135</sub></b>																			
<i>(continuation)</i>										<i>(continuation)</i>																			
5 26	3 12.56	+15 45.5	2.164	1.215	12.5	18.7	15 W	—	9*	5 11	4 27.88	+35 37.1	2.500	1.635	14.8	20.8	24 E	18*	—	5 11	4 27.88	+35 37.1	2.500	1.635	14.8	20.8	24 E	18*	—
5 31	3 30.48	+16 49.8	2.094	1.149	13.6	18.6	15 W	—	9*	5 21	5 2.82	+36 3.7	2.530	1.639	13.5	20.8	22 E	16*	—	5 21	5 2.82	+36 3.7	2.530	1.639	13.5	20.8	22 E	16*	—
6 5	3 49.79	+17 51.6	2.025	1.082	14.5	18.4	15 W	—	9*	5 31	5 37.79	+35 59.4	2.562	1.646	12.2	20.8	20 E	14*	—	6 10	6 12.24	+35 24.5	2.594	1.656	10.8	20.7	18 E	12*	—
6 10	4 10.63	+18 49.5	1.957	1.014	15.3	18.2	15 W	—	9*	6 10	6 12.24	+35 24.5	2.594	1.656	10.8	20.7	18 E	12*	—	6 20	6 45.71	+34 21.0	2.627	1.670	9.4	20.7	16 E	9*	—
6 15	4 33.19	+19 41.8	1.892	0.945	15.8	18.0	15 W	—	8*	6 20	6 45.71	+34 21.0	2.627	1.670	9.4	20.7	16 E	9*	—	6 30	7 17.84	+32 51.7	2.660	1.686	8.0	20.7	13 E	7*	—
6 20	4 57.63	+20 26.1	1.830	0.876	15.9	17.8	14 W	—	7*	6 30	7 17.84	+32 51.7	2.660	1.686	8.0	20.7	13 E	7*	—	7 10	7 48.38	+31 0.2	2.692	1.705	6.6	20.7	11 E	5*	—
6 25	5 24.07	+20 59.7	1.772	0.808	15.4	17.5	12 W	—	6*	7 10	7 48.38	+31 0.2	2.692	1.705	6.6	20.7	11 E	5*	—	7 20	8 17.26	+28 50.2	2.722	1.727	5.4	20.7	9 E	3*	—
6 30	5 52.61	+21 19.0	1.718	0.741	14.2	17.2	10 W	—	4*	7 20	8 17.26	+28 50.2	2.722	1.727	5.4	20.7	9 E	3*	—	7 30	8 44.48	+26 25.5	2.750	1.751	4.7	20.7	8 E	1*	—
7 5	6 23.28	+21 20.4	1.669	0.677	12.0	16.9	8 W	—	2*	8 9	9 10.09	+23 49.5	2.775	1.777	4.6	20.8	8 W	1*	—	8 19	9 34.23	+21 5.1	2.795	1.804	5.3	20.9	10 W	3*	—
7 10	6 55.99	+21 0.1	1.625	0.619	8.5	16.5	5 W	—	—	8 29	9 57.02	+18 14.9	2.809	1.834	6.6	21.0	12 W	6*	—	9 8	10 18.59	+15 21.0	2.817	1.864	8.2	21.1	15 W	9*	—
7 15	7 30.51	+20 14.6	1.585	0.570	3.9	16.0	2 W	—	—	9 18	10 39.08	+12 25.1	2.819	1.896	9.9	21.2	19 W	13*	3*	10 8	11 17.20	+6 32.8	2.796	1.963	13.5	21.4	27 W	20*	10*
7 20	8 4.41	+19 1.6	1.549	0.535	4.8	15.9	3 E	—	—	10 18	11 34.99	+3 38.4	2.771	1.997	15.3	21.5	32 W	24*	14*	12 23	22 37.12	+26 10.6	0.766	1.169	56.6	19.2	83 E	71*	24*
7 25	8 63.07	+17 20.8	1.516	0.518	12.6	16.1	6 E	—	—	12 28	22 27.50	+27 28.1	0.798	1.124	58.6	19.3	78 E	69*	19*	1 2	22 19.02	+28 43.8	0.826	1.080	60.4	19.3	73 E	66*	13*
7 30	9 19.73	+15 14.8	1.486	0.522	20.9	16.4	11 E	—	4*	1 7	22 11.31	+29 57.6	0.851	1.036	61.9	19.3	68 E	62*	7*	1 12	22 4.03	+31 8.9	0.870	0.993	63.3	19.3	64 E	58*	2*
8 4	9 55.71	+12 48.2	1.461	0.546	28.4	16.7	15 E	—	9*	1 17	21 56.88	+32 16.5	0.884	0.952	64.7	19.3	61 E	53*	—	1 22	21 49.63	+33 18.7	0.891	0.912	66.1	19.3	58 E	47*	—
8 9	10 30.51	+10 7.1	1.444	0.587	34.2	17.0	19 E	2*	13*	1 27	21 42.07	+34 13.0	0.892	0.875	67.7	19.2	55 E	42*	—	2 1	21 34.03	+34 56.1	0.886	0.842	69.5	19.2	53 E	36*	—
8 14	11 3.86	+7 17.6	1.436	0.639	38.1	17.2	23 E	4*	17*	2 11	21 25.45	+35 23.9	0.872	0.812	71.6	19.2	51 E	31*	—	2 16	21 25.45	+35 23.9	0.872	0.812	71.6	19.2	51 E	31*	—
8 19	11 35.63	+4 25.5	1.440	0.700	40.2	17.5	27 E	5*	20*	2 11	21 25.45	+35 23.9	0.872	0.812	71.6	19.2	51 E	31*	—	2 21	21 16.37	+35 31.4	0.851	0.787	73.9	19.1	50 W	31*	—
8 24	12 5.78	+1 36.1	1.455	0.765	41.0	17.7	30 E	7*	23*	2 16	21 6.98	+35 13.1	0.823	0.769	76.6	19.1	49 W	35*	—	2 21	21 6.98	+35 13.1	0.823	0.769	76.6	19.1	49 W	35*	—
8 29	12 34.31	+1 6.4	1.482	0.832	40.8	18.0	33 E	8*	26*	2 21	20 57.59	+34 23.7	0.788	0.757	79.6	19.1	49 W	38*	—	2 26	20 48.62	+32 57.7	0.746	0.752	82.7	19.0	49 W	41*	—
9 3	13 1.24	+3 38.7	1.519	0.901	39.9	18.2	35 E	9*	29*	3 2	20 40.50	+30 49.6	0.700	0.754	85.8	19.0	49 W	43*	4*	3 7	20 33.67	+27 53.6	0.650	0.764	88.8	19.0	50 W	44*	11*
9 8	13 26.62	+5 59.0	1.565	0.970	38.5	18.3	37 E	10*	30*	3 12	20 28.50	+24 3.2	0.597	0.781	91.3	19.0	52 W	45*	18*	3 17	20 25.23	+19 9.8	0.543	0.803	93.3	18.9	54 W	44*	26*
9 18	14 13.05	+10 0.0	1.682	1.106	35.1	18.7	39 E	11*	33*	3 22	20 24.00	+13 2.1	0.491	0.831	94.3	18.8	56 W	41*	34*	4 1	20 27.85	+3 56.3	0.401	0.899	92.3	18.5	64 W	30*	53*
9 28	14 54.30	+13 9.4	1.823	1.238	31.4	19.0	40 E	12*	34*	4 6	20 33.12	+15 8.4	0.369	0.938	88.8	18.2	70 W	21*	63*	4 11	20 41.01	+27 52.8	0.351	0.979	83.5	18.0	76 W	9*	69*
10 8	15 31.17	+15 33.6	1.978	1.365	27.8	19.3	40 E	12*	33*	4 16	20 52.16	+41 16.2	0.350	1.022	77.1	17.9	83 W	—	67*	4 21	21 7.96	+54 4.2	0.365	1.065	70.6	17.8	89 W	—	59*
10 13	15 48.20	+16 31.1	2.060	1.427	26.0	19.4	39 E	12*	32*	4 21	21 7.96	+54 4.2	0.365	1.065	70.6	17.8	89 W	—	59*	4 22	21 11.90	+56 27.7	0.370	1.074	69.4	17.8	90 W	—	57*
10 18	16 4.41	+17 20.2	2.143	1.487	24.3	19.5	38 E	12*	31*	4 23	21 16.18	+58 46.8	0.375	1.083	68.2	17.8	92 W	—	55*	4 24	21 20.84	+61 1.3	0.382	1.092	67.0	17.9	93 W	—	53*
10 23	16 19.88	+18 1.8	2.226	1.546	22.6	19.7	37 E	12*	30*	4 25	21 25.95	+63 11.1	0.388	1.101	65.8	17.9	94 W	—	51*	4 26	21 31.56	+65 15.8	0.395	1.109	64.7	17.9	94 W	—	49*
10 28	16 34.67	+18 36.5	2.310	1.603	20.9	19.8	35 E	12*	29*	4 27	21 37.77	+67 15.4	0.403	1.118	63.7	17.9	95 W	—	47*	4 28	21 44.68	+69 9.7	0.411	1.127	62.6	18.0	96 W	—	45*
11 2	16 48.84	+19 5.1	2.393	1.660	19.3	19.9	34 E	12*	28*	4 29	21 52.44	+70 58.8	0.419	1.136	61.6	18.0	97 W	—	43*	4 30	22 1.19	+72 42.3	0.428	1.145	60.7	18.0	98 W	—	42*
11 7	17 2.45	+19 28.2	2.475	1.715	17.7	20.0	32 E	12*	27*	5 1	22 11.17	+74 20.4	0.437	1.154	59.8	18.1	98 W	—	40*	5 2	22 22.65	+75 52.8	0.446	1.163	58.9	18.1	99 W	—	39*
11 12	17 15.55	+19 46.2	2.557	1.769	16.2	20.1	30 E	11*	22*	5 3	22 35.97	+77 19.4	0.456	1.172	58.1	18.1	99 W	—	37*	5 4	22 51.57	+78 39.7	0.466	1.181	57.3	18.2	100 W	—	36*
11 17	17 28.18	+19 59.8	2.636	1.822	14.7	20.1	28 E	11*	20*	5 5	23 10.00	+79 53.6	0.477	1.190	56.5	18.2	100 W	—	34*	5 6	23 31.93	+81 0.2	0.487	1.199	55.8	18.3	101 W	—	33*
11 27	17 52.17	+20 14.9	2.789	1.925	11.8	20.3	23 E	10*	15*	5 7	23 58.05	+81 58.8	0.498	1.208	55.1	18.3	101 W	—	32*	5 8	0 29.01	+82 48.3	0.509	1.217	54.4	18.3	101 W	—	30*
12 7	18 14.63	+20 16.2	2.932	2.023	9.0	20.4	19 E	8*	9*	5 9	1 5.04	+83 27.3	0.520	1.226	53.8	18.4	102 W	—	29*	5 10	1 45.58	+83 54.7	0.532	1.234	53.2	18.4	102 W	—	28*
12 17	18 35.74	+20 5.9	3.061	2.117	6.2	20.4	14 E	5*	4*	5 11	2 28.93	+84 9.6	0.543	1.243	52.6	18.5	102 W	—	27*	5 12	3 12.47	+84 12.4	0.555	1.252	52.0	18.5	102 W	—	26*
12 27	18 55.64	+19 46.0	3.177	2.208	3.7	20.5	8 E	2*	—	5 13	3 53.52	+84 4.1	0.567	1.261	51.5	18.6	103 E	—	27*	5 14	4 30.25	+83 47.0	0.579	1.270	50.9	18.6	103 E	—	28*
1 6	19 14.40	+19 17.9	3.275	2.295	1.5	20.5	4 E	—	—	5 15	5 1.96	+83 23.2	0.591	1.279	50.4	18.7	103 E	—	29*	5 16	5 28.83	+82 54.9	0.603	1.288	49.9	18.7	103 E	—	30*
1 16	19 32.10	+18 43.1	3.357	2.379	2.1	20.7																							

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

19/20	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°	19/21	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°
<b>88959 2001 TZ<sub>44</sub></b>										<b>1865 Cerberus</b>									
<i>(continuation)</i>										<i>(continuation)</i>									
5 25	7 28.71	-77 59.4	0.717	1.367	46.2	19.1	103 E	—	35*	7 28	14 6.56	+30 7.6	0.416	0.998	80.4	17.7	76 E	58*	34*
5 26	7 35.61	-77 29.3	0.730	1.375	45.9	19.2	103 E	—	36*	7 30	14 22.53	+29 6.4	0.421	1.014	78.1	17.7	78 E	59*	35*
5 27	7 41.94	-77 0.2	0.743	1.384	45.5	19.2	103 E	—	36*	8 1	14 37.75	+28 0.2	0.427	1.031	75.9	17.7	80 E	60*	36
5 28	7 47.79	-76 32.0	0.756	1.392	45.2	19.2	103 E	—	37*	8 3	14 52.21	+26 50.2	0.435	1.047	73.7	17.7	82 E	61*	37
5 29	7 53.24	-76 4.9	0.769	1.401	44.9	19.3	103 E	—	37*	8 5	15 5.91	+25 37.4	0.443	1.062	71.7	17.7	84 E	61*	38
5 30	7 58.34	-75 38.8	0.782	1.410	44.6	19.3	103 E	—	38*	8 7	15 18.87	+24 22.7	0.453	1.078	69.7	17.7	86 E	62*	40
5 31	8 3.14	-75 13.6	0.795	1.418	44.3	19.4	103 E	—	38*	8 9	15 31.14	+23 7.0	0.463	1.093	67.8	17.7	87 E	62*	41
6 1	8 7.68	-74 49.5	0.808	1.427	44.0	19.4	102 E	—	38*	8 11	15 42.74	+21 50.9	0.474	1.109	66.1	17.8	89 E	61*	42
6 2	8 12.01	-74 26.2	0.821	1.435	43.7	19.4	102 E	—	39*	8 13	15 53.73	+20 35.2	0.486	1.124	64.4	17.8	90 E	61*	43
6 3	8 16.13	-74 3.9	0.835	1.444	43.4	19.5	102 E	—	39*	8 15	16 4.15	+19 20.1	0.499	1.138	62.8	17.8	91 E	61*	45
6 4	8 20.09	-73 42.5	0.848	1.452	43.1	19.5	102 E	—	39*	8 17	16 14.03	+18 6.3	0.512	1.153	61.4	17.9	92 E	60*	46
6 5	8 23.90	-73 22.0	0.861	1.460	42.8	19.6	102 E	—	40*	8 19	16 23.44	+16 53.9	0.527	1.167	60.0	17.9	93 E	59*	47
6 6	8 27.57	-73 2.4	0.874	1.469	42.5	19.6	102 E	—	40*	8 24	16 45.10	+14 0.9	0.565	1.201	57.0	18.1	95 E	57*	50
6 7	8 31.13	-72 43.5	0.887	1.477	42.3	19.6	102 E	—	40*	8 29	17 4.57	+11 21.1	0.606	1.234	54.4	18.2	96 E	55*	53
6 8	8 34.59	-72 25.5	0.900	1.485	42.0	19.7	102 E	—	40*	9 3	17 22.29	+ 8 55.1	0.651	1.266	52.3	18.3	97 E	53*	55
6 9	8 37.96	-72 8.2	0.914	1.494	41.8	19.7	101 E	—	40*	9 8	17 38.64	+ 6 43.0	0.698	1.296	50.5	18.5	97 E	51*	57
6 10	8 41.24	-71 51.7	0.927	1.502	41.5	19.7	101 E	—	41*	9 18	18 8.37	+ 2 57.6	0.799	1.351	47.7	18.8	96 E	48*	61
6 12	8 47.61	-71 20.9	0.953	1.518	41.0	19.8	101 E	—	41*	9 28	18 35.43	- 0 0.7	0.907	1.400	45.5	19.1	94 E	45*	64*
6 14	8 53.75	-70 52.9	0.979	1.535	40.6	19.9	101 E	—	41*	10 8	19 0.77	- 2 18.0	1.020	1.443	43.8	19.4	91 E	43*	65*
6 16	8 59.72	-70 27.4	1.006	1.551	40.1	20.0	100 E	—	41*	10 13	19 12.99	- 3 13.1	1.078	1.462	43.0	19.5	90 E	42*	65*
6 18	9 5.54	-70 4.5	1.032	1.567	39.7	20.0	100 E	—	41*	10 18	19 25.00	- 4 0.0	1.136	1.480	42.3	19.6	88 E	41*	65*
6 20	9 11.26	-69 43.8	1.058	1.583	39.3	20.1	99 E	—	42*	10 23	19 36.83	- 4 39.2	1.195	1.497	41.5	19.7	86 E	40*	64*
6 22	9 16.88	-69 25.4	1.084	1.599	38.9	20.1	99 E	—	42*	10 28	19 48.51	- 5 11.2	1.255	1.512	40.8	19.8	84 E	40*	62*
6 24	9 22.45	-69 9.1	1.110	1.615	38.5	20.2	99 E	—	42*	11 7	20 11.50	- 5 55.6	1.373	1.537	39.3	20.0	79 E	39*	59*
6 26	9 27.96	-68 54.8	1.136	1.630	38.1	20.3	98 E	—	42*	11 17	20 34.13	- 6 16.5	1.490	1.557	37.8	20.2	75 E	39*	55*
6 28	9 33.44	-68 42.3	1.162	1.646	37.7	20.3	98 E	—	41*	11 27	20 56.50	- 6 16.6	1.603	1.572	36.2	20.3	70 E	38*	50*
6 30	9 38.89	-68 31.6	1.188	1.661	37.4	20.4	98 E	—	41*	12 7	21 18.67	- 5 58.6	1.711	1.581	34.5	20.4	65 E	38*	44*
7 5	9 52.49	-68 12.0	1.252	1.699	36.5	20.5	96 E	—	41*	12 17	21 40.72	- 5 24.5	1.813	1.584	32.8	20.5	61 E	38*	39*
7 10	10 6.17	-68 1.4	1.315	1.736	35.7	20.7	95 E	—	41*	12 27	22 2.69	- 4 36.4	1.906	1.582	31.0	20.6	56 E	37*	33*
7 15	10 20.05	-67 58.7	1.378	1.772	34.9	20.8	94 E	—	40*	1	6 22 24.66	- 3 36.2	1.991	1.575	29.1	20.6	51 E	36*	29*
7 20	10 34.26	-68 3.0	1.440	1.808	34.1	20.9	93 E	—	39*	1 16	22 46.69	- 2 25.4	2.064	1.561	27.2	20.6	47 E	34*	24*
7 25	10 48.87	-68 13.3	1.501	1.843	33.4	21.0	92 E	—	39*	<b>85818 1998 XM<sub>4</sub></b>									
7 30	11 3.97	-68 28.8	1.562	1.876	32.7	21.1	91 E	—	38*	12 23	22 37.78	+37 48.1	2.085	2.290	25.4	20.0	89 E	82*	16*
8 4	11 19.63	-68 48.6	1.622	1.910	32.1	21.2	90 E	—	37*	1 2	22 57.24	+34 59.0	2.173	2.272	25.4	20.0	83 E	76*	15*
8 9	11 35.96	-69 11.9	1.681	1.942	31.5	21.3	89 E	—	37*	1 12	23 16.78	+32 36.4	2.267	2.253	25.1	20.1	77 E	70*	13*
8 14	11 53.06	-69 37.9	1.740	1.973	30.8	21.4	87 E	—	36*	1 22	23 36.33	+30 38.3	2.363	2.231	24.5	20.1	70 E	64*	12*
8 19	12 11.04	-70 5.8	1.798	2.004	30.3	21.5	86 E	—	36*	2 1	23 55.86	+29 2.1	2.459	2.207	23.6	20.2	64 E	58*	10*
<b>1865 Cerberus</b>										2 11	0 15.36	+27 44.9	2.551	2.181	22.4	20.2	57 E	51*	8*
12 23	22 37.73	- 3 52.8	1.561	1.518	37.2	20.2	69 E	41*	45*	2 21	0 34.82	+26 43.1	2.636	2.152	20.9	20.2	51 E	45*	7*
1 2	22 57.58	- 3 13.3	1.636	1.488	36.3	20.3	64 E	41*	40*	3 2	0 54.30	+25 53.7	2.712	2.121	19.1	20.2	44 E	38*	5*
1 12	23 18.19	- 2 19.4	1.699	1.453	35.3	20.3	59 E	40*	35*	3 12	1 13.79	+25 13.5	2.777	2.088	17.1	20.1	38 E	32*	4*
1 22	23 39.57	- 1 13.5	1.750	1.411	34.2	20.2	54 E	38*	31*	3 22	1 33.34	+24 39.6	2.828	2.053	14.9	20.0	32 E	26*	2*
2 1	0 1.80	+ 0 2.6	1.786	1.363	33.1	20.2	49 E	36*	27*	4 1	1 53.00	+24 9.4	2.865	2.015	12.6	20.0	26 E	20*	—
2 11	0 24.96	+ 1 27.0	1.809	1.310	32.1	20.1	45 E	33*	24*	4 11	2 12.79	+23 40.1	2.885	1.974	10.0	19.8	20 E	14*	—
2 21	0 49.22	+ 2 57.7	1.815	1.250	31.3	20.0	41 E	30*	22*	4 21	2 32.78	+23 9.3	2.889	1.932	7.4	19.7	14 E	8*	—
3 2	1 14.80	+ 4 33.2	1.805	1.184	30.6	19.8	37 E	27*	20*	5 1	2 53.02	+22 34.6	2.876	1.887	4.7	19.5	9 E	3*	—
3 12	1 41.95	+ 6 11.6	1.778	1.112	30.4	19.6	34 E	24*	19*	5 11	3 13.55	+21 53.4	2.846	1.840	2.2	19.2	4 E	—	—
3 22	2 11.01	+ 7 50.8	1.734	1.034	30.7	19.4	32 E	21*	18*	5 21	3 34.44	+21 3.4	2.798	1.790	2.4	19.2	4 W	—	—
4 1	2 42.41	+ 9 28.8	1.671	0.952	31.9	19.2	30 E	19*	18*	5 31	3 55.78	+20 1.8	2.734	1.739	5.1	19.2	9 W	—	2*
4 11	3 16.60	+ 11 3.0	1.589	0.865	34.4	19.0	29 E	16*	18*	6 10	4 17.63	+18 45.6	2.654	1.685	8.2	19.2	14 W	—	7*
4 21	3 54.10	+ 12 31.3	1.488	0.778	38.6	18.7	29 E	15*	19*	6 20	4 40.13	+17 11.7	2.560	1.629	11.5	19.2	19 W	—	12*
5 1	4 35.36	+ 13 52.5	1.365	0.696	45.5	18.5	29 E	14*	20*	6 30	5 3.40	+15 16.3	2.453	1.572	14.8	19.2	23 W	2*	17*
5 11	5 20.46	+ 15 9.0	1.221	0.627	55.7	18.3	31 E	13*	22*	7 10	5 27.63	+12 55.2	2.336	1.513	18.3	19.1	28 W	4*	21*
5 21	6 8.86	+ 16 32.1	1.058	0.584	69.4	18.2	33 E	13*	24*	7 15	5 40.18	+ 11 33.6	2.275	1.483	20.0	19.0	30 W	5*	23*
5 26	6 33.96	+ 17 23.0	0.973	0.576	77.0	18.3	34 E	14*	24*	7 20	5 53.06	+ 10 3.9	2.213	1.453	21.7	19.0	32 W	6*	25*
5 31	6 59.52	+ 18 24.8	0.888	0.579	84.7	18.4	35 E	15*	25*	7 25	6 6.91	+ 8 25.3	2.150	1.422	23.4	18.9	34 W	7*	27*
6 5	7 25.55	+ 19 41.2	0.805	0.591	91.9	18.5	36 E	16*	25*	7 30	6 19.99	+ 6 37.4	2.086	1.392	25.1	18.9	36 W	8*	29*
6 10	7 52.33	+ 21 14.5	0.727	0.613	98.2	18.6	37 E	18*	25*	8 9	6 48.82	+ 2 31.6	1.962	1.331	28.4	18.7	39 W	9*	32*
6 15	8 20.32	+ 23 5.0	0.655	0.642	103.0	18.7	38 E	20*	25*	8 19	7 20.07	- 2 16.2	1.846	1.270	31.5	18.6	41 W	10*	35*
6 20	8 50.23	+ 25 10.5	0.592	0.677	106.2	18.8	40 E	22*	25*	8 29	7 54.37	- 7 43.9	1.745	1.211	34.3	18.4	42 W	9*	36*
6 22	9 2.91	+ 26 3.8	0.569	0.692	107.0	18.8	41 E	24*	25*	9 3	8 12.88	- 10 40.0	1.703	1.182	35.5	18.4	43 W	8*	37*
6 24	9 16.07	+ 26 58.0	0.548	0.708	107.4	18.8	42 E	25*	25*	9 8	8 32.42	- 13 41.7	1.666	1.154	36.5	18.3	43 W	7*	37*
6 26	9 29.78	+ 27 52.5	0.528	0.72															

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

19/21	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°	19/21	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°
<b>85818 1998 XM<sub>4</sub></b> (continuation)										<b>283887 2004 BZ<sub>68</sub></b> (continuation)									
11 22	14 43.71	-33 44.9	1.852	0.985	20.2	17.7	20 W	—	13*	5 31	4 2.03	+ 6 21.3	2.682	1.739	9.9	20.2	17 W	—	8*
11 27	15 4.71	-32 37.4	1.879	0.997	18.6	17.7	19 W	—	13*	6 10	4 29.42	+ 6 44.4	2.632	1.708	11.4	20.2	19 W	—	11*
12 2	15 24.58	-31 19.7	1.903	1.012	17.5	17.7	18 W	—	12*	6 20	4 57.53	+ 6 54.0	2.584	1.680	12.8	20.1	22 W	—	14*
12 7	15 43.41	-29 53.1	1.925	1.030	16.8	17.8	18 W	—	12*	6 30	5 26.24	+ 6 48.9	2.537	1.656	14.2	20.1	24 W	—	17*
12 12	16 1.27	-28 19.1	1.942	1.049	16.7	17.8	18 W	1*	12*	7 10	5 55.38	+ 6 28.3	2.494	1.635	15.4	20.1	25 W	—	19*
12 17	16 18.26	-26 38.6	1.957	1.071	17.0	17.9	19 W	3*	12*	7 20	6 24.78	+ 5 52.3	2.455	1.617	16.6	20.1	27 W	—	21*
12 22	16 34.46	-24 52.3	1.968	1.095	17.8	18.0	20 W	5*	12*	7 30	6 54.25	+ 5 1.2	2.420	1.604	17.6	20.1	29 W	1*	23*
12 27	16 49.94	-23 0.7	1.976	1.120	18.8	18.1	21 W	8*	13*	8 9	7 23.59	+ 3 56.3	2.389	1.596	18.6	20.1	30 W	4*	24*
1	17 4.80	-21 4.2	1.980	1.147	19.9	18.2	23 W	10*	14*	8 19	7 52.62	+ 2 39.3	2.362	1.591	19.5	20.1	32 W	8*	25*
1	17 19.08	-19 3.1	1.982	1.174	21.2	18.3	26 W	12*	15*	8 29	8 21.19	+ 1 12.3	2.338	1.592	20.3	20.1	33 W	11*	26*
1	17 32.86	-16 57.6	1.980	1.203	22.5	18.4	28 W	15*	16*	9 8	8 49.17	+ 0 22.1	2.316	1.596	21.1	20.1	35 W	14*	27*
1	17 46.17	-14 47.6	1.977	1.232	23.8	18.4	30 W	17*	18*	9 18	9 16.47	+ 2 1.5	2.294	1.606	22.0	20.1	37 W	17*	28*
<b>127552 2002 YF<sub>5</sub></b>										<b>3635 Kreutz</b>									
12 23	22 37.80	-18 26.9	1.835	1.657	32.2	19.5	64 E	26*	52*	12 23	22 38.21	+ 5 0.0	1.870	1.839	30.7	18.7	73 E	50*	40*
1	22 59.25	-14 3.7	1.919	1.664	30.8	19.5	60 E	30*	45*	1	22 58.71	+ 5 24.9	1.960	1.829	29.8	18.8	68 E	49*	35*
1	23 20.43	-9 44.8	2.006	1.674	29.3	19.6	56 E	33*	39*	1	23 19.85	+ 6 3.7	2.047	1.818	28.7	18.8	63 E	48*	31*
1	23 41.45	-5 31.6	2.094	1.686	27.6	19.7	52 E	34*	33*	1	23 41.53	+ 6 53.8	2.130	1.808	27.4	18.9	58 E	46*	27*
2	0 2.41	-1 25.4	2.183	1.702	25.8	19.7	49 E	35*	28*	2	0 3.70	+ 7 52.9	2.208	1.797	26.0	18.9	53 E	43*	24*
2	11 0 23.38	+ 2 32.8	2.271	1.720	23.9	19.8	45 E	34*	24*	2	11 0 26.30	+ 8 58.5	2.281	1.786	24.4	18.9	48 E	39*	21*
2	21 0 44.46	+ 6 22.1	2.358	1.741	22.0	19.8	41 E	32*	19*	2	21 0 49.33	+ 10 8.1	2.349	1.775	22.7	18.9	44 E	36*	19*
3	2 1 5.75	+ 10 1.5	2.444	1.764	20.0	19.9	37 E	30*	16*	3	2 1 12.78	+ 11 19.5	2.411	1.764	21.0	18.9	40 E	32*	17*
3	12 1 27.32	+ 13 30.4	2.526	1.788	18.0	19.9	34 E	27*	12*	3	12 1 36.64	+ 12 30.4	2.466	1.753	19.2	18.9	35 E	28*	15*
3	22 1 49.25	+ 16 47.9	2.606	1.815	16.0	19.9	30 E	24*	9*	3	22 2 0.94	+ 13 38.5	2.515	1.743	17.3	18.8	31 E	23*	13*
4	1 2 11.61	+ 19 53.4	2.681	1.844	14.1	20.0	27 E	20*	6*	4	1 2 25.67	+ 14 41.7	2.557	1.732	15.4	18.8	27 E	19*	12*
4	11 2 34.45	+ 22 46.1	2.752	1.873	12.2	20.0	23 E	17*	4*	4	1 2 50.84	+ 15 38.0	2.592	1.722	13.5	18.7	24 E	15*	11*
4	21 2 57.79	+ 25 25.2	2.818	1.904	10.4	20.0	20 E	14*	1*	4	21 3 16.44	+ 16 25.3	2.621	1.712	11.6	18.7	20 E	11*	9*
5	1 3 21.67	+ 27 50.1	2.878	1.936	8.7	20.0	17 E	11*	—	5	1 3 42.44	+ 17 2.0	2.644	1.703	9.8	18.6	17 E	7*	8*
5	11 3 46.05	+ 30 0.1	2.931	1.969	7.3	20.0	14 E	8*	—	5	11 4 8.80	+ 17 26.3	2.660	1.694	8.0	18.5	13 E	3*	6*
5	21 4 10.92	+ 31 54.7	2.979	2.003	6.3	20.1	12 E	6*	—	5	21 4 35.45	+ 17 36.9	2.670	1.686	6.4	18.5	11 E	—	4*
5	31 4 36.19	+ 33 33.6	3.019	2.037	5.8	20.1	12 E	4*	—	5	31 5 2.34	+ 17 32.4	2.675	1.678	5.0	18.4	8 E	—	2*
6	10 5 1.77	+ 34 56.6	3.052	2.071	6.0	20.2	12 W	5*	—	6	10 5 29.37	+ 17 12.0	2.674	1.671	4.2	18.3	7 E	—	—
6	20 5 27.53	+ 36 3.7	3.077	2.106	6.7	20.3	14 W	8*	—	6	20 5 56.44	+ 16 35.2	2.669	1.665	4.2	18.3	7 E	—	—
6	30 5 53.32	+ 36 55.4	3.095	2.140	7.8	20.4	17 W	11*	—	6	30 6 23.48	+ 15 41.6	2.659	1.659	4.9	18.3	8 W	—	—
7	10 6 18.98	+ 37 32.4	3.104	2.175	9.1	20.5	20 W	14*	—	7	10 6 50.37	+ 14 31.3	2.645	1.654	6.2	18.4	10 W	—	3*
7	20 6 44.35	+ 37 55.7	3.104	2.210	10.6	20.6	24 W	17*	—	7	20 7 17.06	+ 13 4.9	2.628	1.650	7.6	18.4	12 W	—	6*
7	30 7 9.26	+ 38 6.6	3.095	2.244	12.0	20.6	27 W	21*	1*	8	22* 7 30 7 43.47	+ 11 23.0	2.607	1.647	9.1	18.5	15 W	—	9*
8	9 7 33.56	+ 38 6.8	3.078	2.278	13.5	20.7	32 W	26*	3*	8	9 8 9.55	+ 9 26.8	2.583	1.645	10.7	18.5	17 W	—	11*
8	19 7 57.13	+ 37 58.1	3.051	2.312	15.0	20.8	36 W	30*	4*	8	19 8 35.29	+ 7 17.6	2.557	1.643	13.2	18.5	20 W	3*	14*
8	29 8 19.84	+ 37 42.5	3.015	2.346	16.3	20.8	41 W	35*	5*	8	29 9 0.67	+ 4 57.0	2.527	1.643	12.7	18.6	23 W	6*	16*
9	8 41.60	+ 37 22.3	2.969	2.378	17.7	20.9	46 W	40*	7*	9	8 9 25.72	+ 2 26.9	2.496	1.643	15.2	18.6	25 W	9*	18*
9	18 9 2.35	+ 36 59.8	2.915	2.411	18.9	20.9	51 W	45*	8*	9	18 9 50.46	+ 0 11.0	2.461	1.645	16.7	18.6	28 W	12*	20*
9	28 9 21.97	+ 36 37.5	2.852	2.443	20.0	20.9	56 W	50*	10*	9	28 10 14.92	+ 2 54.5	2.425	1.647	18.2	18.6	31 W	15*	22*
10	8 9 40.41	+ 36 17.9	2.781	2.474	20.9	20.9	62 W	56*	11*	10	8 10 39.16	+ 5 41.5	2.385	1.650	19.6	18.7	34 W	17*	24*
10	18 9 57.57	+ 36 3.6	2.702	2.505	21.6	20.9	68 W	62*	13*	10	18 11 3.23	+ 8 29.9	2.342	1.654	21.1	18.7	37 W	19*	27*
10	28 10 13.31	+ 35 57.2	2.617	2.535	22.2	20.9	74 W	68*	15*	10	28 11 27.18	+ 11 17.5	2.297	1.659	22.5	18.7	40 W	21*	29*
11	7 10 27.51	+ 36 1.4	2.527	2.564	22.4	20.8	81 W	75*	17*	11	7 11 51.07	+ 14 1.9	2.247	1.665	23.9	18.7	43 W	23*	32*
11	17 10 39.96	+ 36 18.5	2.433	2.592	22.4	20.8	88 W	80*	20*	11	17 12 14.92	+ 16 41.3	2.194	1.671	25.3	18.7	46 W	25*	35*
11	27 10 50.39	+ 36 50.8	2.339	2.620	22.0	20.7	95 W	82*	22*	11	27 12 38.76	+ 19 13.2	2.137	1.679	26.7	18.7	50 W	27*	39*
12	7 10 58.50	+ 37 39.5	2.246	2.647	21.3	20.6	103 W	83*	24*	12	7 13 2.58	+ 21 35.8	2.075	1.686	28.0	18.7	54 W	29*	43*
12	17 11 3.90	+ 38 45.2	2.158	2.673	20.1	20.5	111 W	84*	24*	12	17 13 26.36	+ 23 47.0	2.008	1.695	29.3	18.6	57 W	31*	48*
12	27 11 6.13	+ 40 6.2	2.078	2.698	18.6	20.4	119 W	85*	24*	12	27 13 50.00	+ 25 44.8	1.937	1.704	30.5	18.6	62 W	33*	53*
1	111 5.94	+ 40 51.2	2.043	2.711	17.6	20.3	123 W	86	23	1	6 14 13.38	+ 27 27.8	1.861	1.713	31.6	18.6	66 W	35*	58*
1	6 11 4.81	+ 41 38.2	2.011	2.723	16.7	20.3	127 W	87	22	1	16 14 36.34	+ 28 54.3	1.780	1.723	32.6	18.5	71 W	37*	64*
1	11 11 2.71	+ 42 26.2	1.984	2.735	15.7	20.2	131 W	87	22	<b>45764 2000 LV</b>									
1	16 10 59.63	+ 43 14.0	1.961	2.746	14.7	20.2	135 W	88	21	12 23	22 38.57	+ 1 38.0	1.776	1.713	32.7	18.5	70 E	43*	44*
<b>324322 2006 HB<sub>62</sub></b>										1	2 23 2.45	+ 0 27.1	1.876	1.733	31.3	18.6	66 E	44*	39*
12 23	22 37.82	-10 35.3	1.817	1.687	32.3	21.4	67 E	34*	48*	1	12 23 26.29	+ 2 36.1	1.978	1.756	29.8	18.7	62 E	45*	34*
1	23 1.88	-8 26.2	1.910	1.699	30.9	21.5	63 E	36*	43*	1	22 23 50.04	+ 4 47.0	2.083	1.781	28.2	18.8	59 E	45*	30*
1	12 23 25.80	-6 10.1	2.003	1.714	29.4	21.6	59 E	37*	39*	2	1 0 13.70	+ 6 57.9	2.188	1.808	26.4	18.9	55 E	43*	26*
1	22 23 49.55	-3 49.4	2.097	1.731	27.7	21.6	55 E	37*	34*	2	11 0 37.26	+ 9 6.8	2.293	1.838	24.6	19.0	51 E	41*	23*
2	1 0 13.15	-1 26.5	2.190	1.750	26.0	21.7	51 E	36*	31*	2	21 1 0 7.33	+ 11 11.8	2.399	1.868	22.7	19.0	47 E	38*	20*
<b>283887 2004 BZ<sub>68</sub></b>										3	2 1 24.14	+ 13 11.5	2.502	1.900	20.8	19.1	43 E	35*	18*
12 23	22 37.91	-7 32.0	2.609	2.414	22.1	21.3	68 E	37*	47*	3	12 1 47.48	+ 15 4.3	2.604	1.934	18.8	19.2	39 E	31*	16*
1	22 51.57	-7 19.9	2.691	2.370	21.2														

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

19/21	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°	19/21	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°
<b>45764 2000 LV</b> (continuation)										<b>189694 2001 SF<sub>276</sub></b> (continuation)									
5 11	4 5.81	+23 0.9	3.117	2.148	6.3	19.3	14 E	6*	3*	4 21	4 21.62	+31 27.5	2.398	1.735	21.3	20.6	39 E	32*	13*
5 21	4 28.31	+23 41.3	3.178	2.185	4.2	19.3	9 E	2*	—	5 1	4 52.59	+31 16.0	2.477	1.759	19.5	20.7	36 E	28*	13*
5 31	4 50.51	+24 10.0	3.231	2.222	2.2	19.2	5 E	—	—	5 11	5 22.80	+30 44.9	2.555	1.785	17.6	20.7	32 E	24*	12*
6 10	5 12.33	+24 27.2	3.273	2.258	0.7	19.2	1 W	—	—	5 21	5 52.05	+29 55.5	2.633	1.813	15.6	20.7	29 E	20*	12*
6 20	5 33.72	+24 33.4	3.305	2.295	2.2	19.4	5 W	—	—	5 31	6 20.21	+28 49.5	2.708	1.842	13.6	20.8	25 E	15*	11*
6 30	5 54.60	+24 28.9	3.327	2.331	4.2	19.5	10 W	1*	2*	6 10	6 47.19	+27 28.6	2.780	1.873	11.5	20.8	22 E	11*	10*
7 10	6 14.90	+24 14.6	3.337	2.367	6.2	19.7	15 W	5*	6*	6 20	7 12.98	+25 54.7	2.847	1.906	9.4	20.8	18 E	7*	8*
7 20	6 34.55	+23 51.1	3.335	2.402	8.2	19.8	20 W	9*	9*	6 30	7 37.57	+24 9.7	2.910	1.939	7.3	20.8	14 E	3*	6*
7 30	6 53.49	+23 19.2	3.322	2.437	10.0	19.9	25 W	14*	13*	7 10	8 0.99	+22 15.3	2.966	1.973	5.1	20.8	10 E	—	3*
8 9	7 11.64	+22 40.1	3.296	2.471	11.9	20.0	30 W	19*	16*	7 20	8 23.31	+20 12.9	3.016	2.008	3.0	20.7	6 E	—	—
8 19	7 28.96	+21 54.6	3.257	2.505	13.6	20.0	36 W	25*	19*	7 30	8 44.59	+18 4.0	3.058	2.043	0.8	20.6	2 E	—	—
8 29	7 45.37	+21 3.8	3.207	2.538	15.2	20.1	41 W	31*	22*	8 9	9 4.88	+15 49.8	3.091	2.079	1.3	20.7	3 W	—	—
9 8	8 0.79	+20 8.9	3.145	2.571	16.7	20.1	47 W	37*	25*	8 19	9 24.27	+13 31.3	3.115	2.115	3.4	20.9	7 W	—	—
9 18	8 15.15	+19 11.2	3.071	2.603	18.1	20.2	54 W	43*	28*	8 29	9 42.82	+11 9.5	3.129	2.151	5.5	21.1	12 W	3*	4*
9 28	8 28.33	+18 11.9	2.986	2.634	19.3	20.2	60 W	48*	31*	9 8	10 0.55	+8 45.2	3.133	2.187	7.6	21.2	17 W	8*	7*
10 8	8 40.22	+17 12.4	2.892	2.664	20.2	20.1	67 W	53*	34*	9 18	10 17.54	+6 19.1	3.126	2.223	9.6	21.3	22 W	12*	11*
10 18	8 50.69	+16 14.2	2.789	2.694	20.8	20.1	74 W	57*	38*	9 28	10 33.79	+3 51.9	3.107	2.259	11.5	21.4	27 W	17*	15*
10 28	8 59.54	+15 18.8	2.680	2.723	21.2	20.1	82 W	60*	42*	<b>334073 2001 PL<sub>59</sub></b>									
11 7	9 6.58	+14 27.9	2.567	2.751	21.1	20.0	90 W	59	45*	12 23	22 40.07	-4 51.3	1.739	1.667	33.5	19.5	69 E	40*	46*
11 17	9 11.59	+13 43.3	2.452	2.778	20.6	19.9	99 W	59	49*	1 2	22 56.60	-1 27.1	1.789	1.623	33.0	19.5	64 E	42*	39*
11 27	9 14.32	+13 6.7	2.339	2.804	19.6	19.8	108 W	58	51*	1 12	23 14.67	+2 4.0	1.833	1.583	32.4	19.5	60 E	44*	32*
12 7	9 14.55	+12 39.8	2.233	2.830	17.9	19.6	118 W	58	51	1 22	23 34.24	+5 41.7	1.870	1.545	31.7	19.5	56 E	44*	26*
12 17	9 12.12	+12 23.7	2.137	2.855	15.7	19.5	128 W	57	52	2 1	23 55.33	+9 25.1	1.903	1.510	30.9	19.4	52 E	43*	21*
12 27	9 7.04	+12 19.3	2.057	2.879	12.8	19.3	140 W	57	52	2 11	0 18.04	+13 12.5	1.930	1.480	30.1	19.4	49 E	41*	17*
1 6	8 59.55	+12 26.0	1.999	2.902	9.3	19.1	152 W	57	52	2 21	0 42.51	+17 1.2	1.954	1.454	29.3	19.3	46 E	40*	13*
1 16	8 50.17	+12 42.2	1.967	2.924	5.4	18.9	164 W	58	51	3 2	1 8.97	+20 48.0	1.975	1.433	28.6	19.3	44 E	38*	11*
<b>6172 Prokofeana</b>										3 12	1 37.61	+24 27.9	1.994	1.418	27.8	19.3	42 E	36*	9*
12 23	22 39.11	-2 24.6	1.559	1.532	37.1	18.6	70 E	42*	44*	3 22	2 8.67	+27 55.1	2.015	1.408	27.1	19.3	40 E	34*	7*
1 2	23 5.55	+1 35.4	1.602	1.504	36.7	18.6	66 E	43*	41*	4 1	2 42.29	+31 2.8	2.037	1.404	26.4	19.3	39 E	33*	6*
1 12	23 33.13	+0 30.0	1.646	1.480	36.2	18.6	63 E	42*	37*	4 6	3 0.07	+32 26.9	2.049	1.405	26.1	19.3	38 E	32*	6*
1 22	0 1.65	+0 48.4	1.690	1.462	35.5	18.6	60 E	42*	35*	4 11	3 18.47	+33 43.2	2.062	1.406	25.7	19.3	38 E	32*	6*
2 1	0 30.96	+2 16.8	1.735	1.450	34.6	18.6	57 E	41*	32*	4 16	3 37.44	+34 50.8	2.077	1.410	25.3	19.3	37 E	31*	6*
2 11	1 0.90	+3 51.3	1.782	1.444	33.6	18.7	54 E	40*	31*	4 21	3 56.94	+35 48.7	2.093	1.415	24.9	19.3	36 E	30*	6*
2 21	1 31.33	+5 28.0	1.831	1.445	32.5	18.7	52 E	38*	30*	4 26	4 16.88	+36 36.3	2.110	1.421	24.5	19.3	36 E	30*	6*
3 2	2 2.16	+7 3.3	1.884	1.451	31.3	18.7	49 E	36*	29*	5 1	4 37.15	+37 12.9	2.129	1.429	24.0	19.3	35 E	29*	6*
3 12	2 33.24	+8 33.2	1.940	1.464	30.0	18.8	47 E	34*	29*	5 6	4 57.64	+37 38.1	2.149	1.438	23.5	19.4	35 E	28*	7*
3 22	3 4.44	+9 54.5	2.001	1.482	28.6	18.8	45 E	32*	28*	5 11	5 18.22	+37 51.6	2.171	1.449	23.0	19.4	34 E	28*	7*
4 1	3 35.63	+11 4.3	2.065	1.505	27.2	18.9	43 E	29*	28*	5 16	5 38.75	+37 53.4	2.195	1.460	22.4	19.4	33 E	27*	8*
4 11	4 6.66	+12 0.2	2.134	1.534	25.6	18.9	41 E	26*	28*	5 21	5 59.12	+37 43.9	2.220	1.473	21.8	19.4	33 E	26*	8*
4 21	4 37.35	+12 40.7	2.207	1.567	24.0	19.0	39 E	22*	27*	5 26	6 19.18	+37 23.4	2.247	1.487	21.1	19.5	32 E	25*	9*
5 1	5 7.57	+13 4.8	2.284	1.604	22.4	19.1	37 E	19*	27*	5 31	6 38.84	+36 52.5	2.276	1.503	20.4	19.5	31 E	24*	9*
5 11	5 37.15	+13 12.2	2.364	1.644	20.7	19.2	35 E	15*	26*	6 5	6 58.00	+36 12.1	2.306	1.519	19.7	19.5	30 E	22*	9*
5 21	6 5.98	+13 3.3	2.446	1.687	19.0	19.2	33 E	11*	25*	6 10	7 16.59	+35 22.9	2.337	1.536	18.9	19.5	29 E	21*	10*
5 31	6 33.94	+12 38.9	2.530	1.733	17.2	19.3	30 E	8*	24*	6 15	7 34.57	+34 25.9	2.370	1.554	18.1	19.6	28 E	20*	10*
6 10	7 0.95	+12 0.1	2.614	1.781	15.4	19.4	28 E	2*	22*	6 20	7 51.91	+33 21.9	2.404	1.573	17.3	19.6	27 E	18*	10*
6 20	7 26.97	+11 8.5	2.699	1.830	13.6	19.5	25 E	—	19*	6 25	8 8.60	+32 12.0	2.439	1.593	16.5	19.6	26 E	17*	10*
6 30	7 51.99	+10 5.4	2.781	1.880	11.8	19.5	22 E	—	16*	6 30	8 24.64	+30 57.0	2.474	1.613	15.6	19.7	25 E	16*	10*
7 10	8 16.00	+8 52.6	2.861	1.931	10.0	19.6	19 E	—	13*	7 5	8 40.03	+29 37.7	2.510	1.634	14.7	19.7	24 E	14*	10*
7 20	8 39.02	+7 31.5	2.937	1.983	8.3	19.6	16 E	—	9*	7 10	8 54.82	+28 14.9	2.546	1.656	13.7	19.7	23 E	13*	10*
7 30	9 1.10	+6 3.6	3.007	2.035	6.8	19.6	14 E	—	5*	7 15	9 0.02	+26 49.3	2.583	1.678	12.8	19.7	21 E	12*	9*
8 9	9 22.26	+4 30.5	3.071	2.088	5.5	19.7	11 E	—	—	7 20	9 22.67	+25 21.5	2.620	1.701	11.8	19.8	20 E	10*	9*
8 19	9 42.57	+2 53.2	3.128	2.140	4.8	19.7	10 W	—	1*	7 25	9 35.81	+23 52.0	2.656	1.724	10.8	19.8	19 E	9*	8*
8 29	10 2.07	+1 13.1	3.176	2.192	4.9	19.8	11 W	—	4*	7 30	9 48.46	+22 21.3	2.692	1.747	9.8	19.8	17 E	8*	7*
9 8	10 20.79	+0 28.8	3.214	2.244	5.8	20.0	13 W	—	7*	8 9	10 12.45	+19 18.1	2.763	1.795	7.8	19.8	14 E	6*	4*
9 18	10 38.77	-2 11.6	3.241	2.295	7.1	20.1	16 W	2*	10*	8 19	10 34.90	+16 14.4	2.829	1.843	5.8	19.8	11 E	3*	1*
9 28	10 56.04	-3 54.2	3.256	2.346	8.7	20.2	21 W	7*	13*	8 29	10 56.05	+13 12.2	2.889	1.892	3.9	19.8	7 E	1*	—
10 8	11 12.60	-5 35.7	3.260	2.396	10.3	20.3	25 W	12*	17*	9 8	11 16.09	+10 12.9	2.943	1.942	2.6	19.9	5 E	—	—
10 18	11 28.45	-7 15.3	3.250	2.445	12.0	20.4	31 W	16*	20*	9 18	11 35.19	+7 17.6	2.989	1.991	2.9	20.0	6 W	—	—
10 28	11 43.57	-8 52.3	3.227	2.494	13.6	20.5	36 W	21*	25*	9 28	11 53.46	+4 26.9	3.025	2.041	4.4	20.1	9 W	3*	—
11 7	11 57.91	-10 25.7	3.191	2.542	15.1	20.6	42 W	24*	29*	10 8	12 11.02	+1 41.3	3.050	2.090	6.3	20.3	13 W	7*	—
11 17	12 11.42	-11 54.8	3.141	2.589	16.5	20.6	48 W	27*	34*	10 18	12 27.93	-0 59.0	3.064	2.139	8.3	20.5	18 W	11*	4*
11 27	12 23.98	-13 18.7	3.079	2.635	17.8	20.7	55 W	29*	40*	10 28	12 44.23	-3 33.5	3.065	2.188	10.3	20.6	23 W	15*	9*
12 7	12 35.48	-14 36.6	3.006	2.681	18.9	20.7	62 W	30*	47*	11 7	12 59.94	-6 2.3	3.054	2.235	12.3	20.7	29 W	19*	13*
12 17	1																		

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

19/21	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°	19/21	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°
<b>181704 1989 NA</b>										<b>310560 2001 QL<sub>142</sub></b>									
<i>(continuation)</i>										<i>(continuation)</i>									
2 11	0 33.71	- 7 43.4	2.608	2.022	19.9	20.4	44 E	26*	31*	1 12	23 41.68	-18 50.2	1.643	1.407	36.6	21.1	59 E	25*	47*
2 21	0 53.82	- 5 5.8	2.735	2.076	17.8	20.5	40 E	24*	27*	1 17	23 55.03	-17 43.5	1.702	1.429	35.3	21.2	57 E	26*	45*
3 2	1 13.39	- 2 35.8	2.857	2.130	15.7	20.6	35 E	21*	24*	1 22	0 7.91	-16 36.0	1.759	1.449	34.0	21.2	55 E	26*	44*
3 12	1 32.51	+ 0 14.1	2.975	2.183	13.5	20.6	31 E	18*	20*	1 27	0 20.42	-15 28.1	1.814	1.468	32.8	21.3	54 E	26*	42*
3 22	1 51.23	+ 1 58.9	3.085	2.237	11.4	20.7	26 E	14*	17*	2 1	0 32.59	-14 19.9	1.868	1.485	31.6	21.4	52 E	26*	41*
4 1	2 9.63	+ 4 2.9	3.187	2.290	9.3	20.7	22 E	9*	14*	2 6	0 44.49	-13 11.9	1.920	1.501	30.5	21.4	51 E	26*	39*
4 11	2 27.71	+ 5 57.5	3.281	2.343	7.3	20.8	17 E	4*	10*	2 11	0 56.17	-12 4.1	1.969	1.515	29.4	21.5	49 E	25*	38*
4 21	2 45.51	+ 7 42.8	3.364	2.395	5.4	20.8	13 E	—	7*	2 16	1 7.66	-10 56.8	2.017	1.528	28.3	21.5	47 E	25*	36*
5 1	3 3.02	+ 9 18.7	3.436	2.447	3.8	20.8	9 E	—	3*	<b>372858 2010 VB<sub>171</sub></b>									
5 11	3 20.24	+10 45.2	3.496	2.497	3.0	20.8	7 E	—	—	12 23	22 41.89	-11 45.9	1.782	1.666	32.9	21.4	67 E	33*	50*
5 21	3 37.16	+12 2.3	3.543	2.547	3.5	20.9	9 W	—	1*	1 2	23 5.17	- 8 57.8	1.869	1.674	31.6	21.5	63 E	35*	44*
5 31	3 53.74	+13 10.4	3.576	2.597	4.9	21.1	13 W	—	6*	1 12	23 28.43	- 6 5.6	1.957	1.685	30.2	21.5	59 E	37*	39*
6 10	4 9.93	+14 9.5	3.596	2.645	6.6	21.2	17 W	—	11*	1 22	23 51.65	- 3 11.6	2.044	1.697	28.6	21.7	56 E	37*	34*
6 20	4 25.69	+15 0.1	3.602	2.693	8.4	21.3	23 W	1*	16*	2 1	0 14.88	- 0 17.7	2.132	1.712	27.0	21.7	52 E	37*	30*
6 30	4 40.95	+15 42.6	3.593	2.739	10.1	21.4	28 W	6*	21*	<b>130395 2000 LX<sub>25</sub></b>									
<b>141690 2002 JM<sub>143</sub></b>										12 23	22 42.50	+ 3 13.8	2.067	2.014	27.9	19.5	73 E	48*	42*
12 23	22 41.21	- 6 16.4	1.946	1.837	30.0	21.3	69 E	39*	47*	1 2	23 2.59	+ 3 31.0	2.202	2.042	26.5	19.7	68 E	47*	37*
1 2	23 2.89	- 4 17.3	2.070	1.870	28.3	21.4	64 E	40*	41*	1 12	23 22.59	+ 4 1.3	2.336	2.070	24.9	19.8	62 E	46*	33*
1 12	23 24.29	- 2 14.8	2.194	1.903	26.6	21.5	60 E	40*	36*	1 22	23 42.46	+ 4 41.9	2.467	2.099	23.1	19.9	57 E	44*	28*
1 22	23 45.40	+ 0 10.5	2.316	1.936	24.7	21.6	55 E	40*	32*	2 1	0 2.20	+ 5 30.5	2.594	2.127	21.3	19.9	52 E	41*	25*
2 1	0 6.29	+ 1 54.1	2.437	1.970	22.8	21.7	51 E	38*	27*	2 11	0 21.81	+ 6 24.8	2.716	2.154	19.3	20.0	46 E	37*	21*
<b>159889 2004 TR<sub>14</sub></b>										2 21	0 41.28	+ 7 22.8	2.830	2.182	17.3	20.1	41 E	32*	18*
12 23	22 41.55	-42 12.5	2.395	2.083	24.1	20.6	60 E	3*	54*	3 2	1 0.63	+ 8 22.7	2.937	2.208	15.2	20.1	36 E	28*	15*
1 2	22 59.71	-38 25.0	2.465	2.071	23.0	20.6	55 E	6*	49*	3 12	1 19.88	+ 9 22.7	3.035	2.235	13.0	20.1	30 E	22*	13*
1 12	23 17.65	-34 37.9	2.531	2.059	21.8	20.6	51 E	8*	45*	3 22	1 39.03	+10 21.5	3.123	2.261	10.8	20.1	25 E	17*	10*
1 22	23 35.38	-30 51.9	2.593	2.045	20.4	20.6	47 E	10*	40*	4 1	1 58.10	+11 17.7	3.200	2.286	8.6	20.1	20 E	12*	8*
2 1	23 52.95	-27 7.8	2.650	2.029	19.0	20.6	42 E	11*	36*	4 11	2 17.07	+12 10.0	3.265	2.311	6.4	20.1	15 E	7*	5*
2 11	0 10.40	-23 26.2	2.700	2.012	17.4	20.6	38 E	10*	31*	4 21	2 35.96	+12 57.4	3.319	2.335	4.2	20.0	10 E	1*	2*
2 21	0 27.78	-19 47.5	2.744	1.994	15.8	20.6	33 E	9*	27*	5 1	2 54.75	+13 38.9	3.360	2.359	2.3	20.0	5 E	—	—
3 2	0 45.14	-16 12.2	2.781	1.974	14.1	20.5	29 E	6*	23*	5 11	3 13.42	+14 13.6	3.389	2.382	1.5	19.9	4 E	—	—
3 12	1 2.52	-12 40.6	2.809	1.953	12.4	20.4	25 E	3*	19*	5 21	3 31.94	+14 40.9	3.404	2.404	3.0	20.1	7 W	—	1*
3 22	1 20.00	- 9 12.9	2.828	1.931	10.6	20.4	21 E	—	15*	5 31	3 50.27	+14 59.9	3.407	2.425	5.0	20.2	12 W	—	6*
4 1	1 37.63	- 5 49.2	2.838	1.907	9.0	20.3	17 E	—	11*	6 10	4 8.37	+15 10.2	3.397	2.446	7.1	20.3	17 W	—	11*
4 11	1 55.47	- 2 29.6	2.838	1.882	7.5	20.2	14 E	—	7*	6 20	4 26.19	+15 11.3	3.373	2.465	9.1	20.4	22 W	1*	16*
4 21	2 13.61	+ 0 46.0	2.828	1.856	6.4	20.1	12 E	—	3*	6 30	4 43.65	+15 2.8	3.338	2.484	11.0	20.5	28 W	5*	21*
5 1	2 32.12	+ 3 57.6	2.808	1.829	6.1	20.0	11 W	—	—	7 10	5 0.68	+14 44.4	3.289	2.502	12.9	20.5	33 W	10*	25*
5 11	2 51.10	+ 7 5.3	2.778	1.802	6.7	20.0	12 W	—	3*	7 20	5 17.22	+14 16.0	3.229	2.519	14.6	20.6	39 W	16*	30*
5 21	3 10.66	+10 9.2	2.737	1.773	8.0	20.0	14 W	—	7*	7 30	5 33.14	+13 37.3	3.158	2.536	16.3	20.6	44 W	21*	33*
5 31	3 30.92	+13 9.4	2.687	1.743	9.8	20.0	17 W	—	11*	8 9	5 48.35	+12 48.4	3.076	2.551	17.8	20.6	50 W	27*	37*
6 10	3 52.02	+16 6.0	2.628	1.713	11.9	20.0	20 W	1*	14*	8 19	6 2.73	+11 49.2	2.985	2.565	19.2	20.6	56 W	33*	41*
6 20	4 14.15	+18 58.8	2.560	1.683	14.2	20.0	24 W	6*	16*	8 29	6 16.14	+10 39.9	2.884	2.579	20.3	20.6	63 W	39*	44*
6 30	4 37.49	+21 47.5	2.485	1.652	16.5	20.0	27 W	11*	18*	9 8	6 28.42	+ 9 20.7	2.777	2.592	21.3	20.5	69 W	43*	47*
7 10	5 2.29	+24 31.7	2.404	1.620	18.9	19.9	31 W	17*	19*	9 18	6 39.41	+ 7 52.0	2.663	2.603	22.0	20.5	76 W	47*	51*
7 20	5 28.83	+27 10.1	2.317	1.589	21.3	19.9	35 W	22*	19*	9 28	6 48.88	+ 6 14.3	2.545	2.614	22.3	20.4	83 W	49*	55*
7 30	5 57.40	+29 41.0	2.227	1.559	23.7	19.8	38 W	28*	18*	10 8	6 56.60	+ 4 28.4	2.426	2.624	22.4	20.3	90 W	49*	58*
8 4	6 12.56	+30 52.7	2.182	1.543	24.8	19.8	40 W	30*	17*	10 18	7 2.32	+ 2 35.6	2.307	2.633	22.0	20.2	98 W	48	61*
8 9	6 28.34	+32 1.5	2.136	1.528	26.0	19.8	41 W	33*	17*	10 28	7 5.75	+ 0 37.7	2.192	2.641	21.2	20.1	106 W	46	63
8 14	6 44.79	+33 6.7	2.090	1.514	27.1	19.7	43 W	35*	16*	11 7	7 6.64	+ 1 22.3	2.084	2.648	20.0	19.9	114 W	44	65
8 19	7 1.95	+34 7.7	2.045	1.499	28.2	19.7	44 W	37*	15*	11 17	7 4.77	- 3 20.5	1.986	2.654	18.3	19.8	123 W	42	67
8 24	7 19.83	+35 3.8	2.001	1.485	29.2	19.6	46 W	39*	14*	11 22	7 2.76	- 4 17.2	1.943	2.656	17.3	19.7	127 W	41	68
8 29	7 38.43	+35 54.1	1.957	1.471	30.2	19.6	47 W	41*	13*	11 27	7 0.07	- 5 11.2	1.904	2.659	16.2	19.6	131 W	40	69
9 3	7 57.76	+36 37.8	1.915	1.457	31.2	19.6	48 W	42*	11*	12 2	6 56.70	- 6 1.8	1.870	2.661	15.2	19.5	135 W	39	70
9 8	8 17.80	+37 13.9	1.875	1.444	32.1	19.5	50 W	44*	10*	12 7	6 52.73	- 6 47.9	1.841	2.663	14.1	19.5	139 W	38	71
9 13	8 38.51	+37 41.6	1.836	1.431	33.0	19.5	51 W	45*	9*	12 12	6 48.20	- 7 28.7	1.817	2.664	13.1	19.4	142 W	38	71
9 18	8 59.79	+37 59.8	1.799	1.419	33.8	19.4	52 W	46*	8*	12 17	6 43.22	- 8 3.4	1.800	2.666	12.3	19.3	145 W	37	72
9 23	9 21.55	+38 7.9	1.765	1.408	34.6	19.4	53 W	47*	7*	12 22	6 37.92	- 8 31.1	1.789	2.667	11.6	19.3	147 W	36	73
9 28	9 43.66	+38 5.0	1.733	1.397	35.3	19.4	54 W	47*	5*	12 27	6 32.42	- 8 51.4	1.784	2.668	11.3	19.3	148 W	36	73
10 3	10 5.99	+37 50.9	1.704	1.386	36.0	19.3	54 W	48*	4*	1 1	6 26.87	- 9 4.0	1.786	2.669	11.4	19.3	148 E	36	