

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
88213 2001 AF₂										198558 2004 XE₁₄₈ (continuation)									
1 22	15 21.31	+ 1 0.6	0.880	1.131	57.0	21.4	74 W	46*	47*	5 1	16 37.18	-15 3.1	1.737	2.659	10.9	19.5	150 W	30	79
2 1	16 14.99	- 0 2.4	0.787	1.041	63.4	21.2	71 W	44*	47*	5 11	16 29.72	-14 47.5	1.642	2.618	7.2	19.2	161 W	30	79
2 11	17 19.16	- 1 12.3	0.725	0.941	71.3	21.1	65 W	40*	44*	5 21	16 20.18	-14 33.1	1.571	2.576	3.4	18.9	171 W	30	79
2 21	18 32.66	- 2 29.1	0.705	0.828	79.9	21.0	56 W	35*	39*	5 31	16 9.46	-14 21.9	1.527	2.533	3.7	18.8	171 E	31	78
3 2	19 50.56	- 3 44.1	0.739	0.706	86.6	21.0	45 W	26*	33*	6 10	15 58.72	-14 16.6	1.511	2.490	7.9	18.9	160 E	31	78
3 12	21 7.32	- 4 40.4	0.833	0.576	87.7	20.9	35 W	17*	26*	6 20	15 49.14	-14 19.5	1.519	2.446	12.4	19.1	149	31	78
3 22	22 21.84	- 4 48.1	0.988	0.455	77.7	20.4	26 W	8*	20*	6 30	15 41.73	-14 32.4	1.549	2.402	16.5	19.2	138	30	79
3 27	22 59.28	- 4 17.3	1.084	0.410	66.9	20.0	22 W	4*	16*	7 10	15 37.17	-14 56.4	1.596	2.357	20.0	19.4	128 E	30	79
4 1	23 37.21	- 3 12.6	1.185	0.388	52.7	19.6	18 W	—	12*	7 20	15 35.73	-15 31.1	1.656	2.313	22.9	19.5	118 E	29*	80
4 6	0 14.96	+ 1 31.8	1.283	0.393	37.6	19.4	14 W	—	8*	7 30	15 37.48	-16 15.5	1.725	2.267	25.1	19.6	109 E	27*	80
4 11	0 51.26	+ 0 36.2	1.371	0.425	24.9	19.4	10 W	—	4*	8 9	15 42.30	-17 7.9	1.799	2.222	26.6	19.7	101 E	25*	81
4 13	1 5.13	+ 1 31.8	1.404	0.443	21.0	19.4	9 W	—	2*	8 19	15 49.96	-18 6.3	1.874	2.177	27.7	19.8	93 E	23*	82*
4 15	1 18.59	+ 2 28.6	1.435	0.464	17.9	19.4	8 W	—	—	8 29	16 0.28	-19 8.6	1.949	2.132	28.2	19.8	86 E	22*	79*
4 17	1 31.61	+ 3 25.7	1.465	0.487	15.4	19.5	7 W	—	—	9 8	16 13.02	-20 12.3	2.021	2.087	28.3	19.9	79 E	20*	73*
4 19	1 44.20	+ 4 22.5	1.494	0.511	13.6	19.6	7 W	—	—	9 18	16 28.02	-21 15.2	2.089	2.043	28.1	19.9	73 E	19*	67*
4 21	1 56.37	+ 5 18.5	1.522	0.536	12.3	19.7	7 E	—	—	9 28	16 45.12	-22 14.6	2.151	1.999	27.6	19.9	68 E	17*	62*
4 26	2 25.09	+ 7 32.7	1.589	0.600	10.9	20.0	6 E	—	—	10 8	17 4.16	-23 8.2	2.209	1.956	26.9	19.9	62 E	16*	56*
5 1	2 51.62	+ 9 36.0	1.654	0.665	10.7	20.3	7 E	—	—	10 18	17 25.03	-23 53.5	2.260	1.914	26.0	19.9	57 E	16*	51*
5 6	3 16.28	+11 26.9	1.717	0.729	10.6	20.6	8 E	—	1*	10 28	17 47.58	-24 27.8	2.305	1.873	24.9	19.8	52 E	15*	46*
5 11	3 39.34	+13 5.2	1.778	0.791	10.4	20.8	8 E	—	2*	11 7	18 11.64	-24 48.7	2.344	1.834	23.6	19.8	48 E	15*	41*
5 16	4 1.04	+14 31.4	1.838	0.850	9.9	21.0	8 E	—	2*	11 17	18 37.06	-24 54.0	2.378	1.797	22.3	19.7	44 E	14*	36*
5 21	4 21.56	+15 46.1	1.896	0.907	9.3	21.2	8 E	—	2*	11 27	19 3.63	-24 41.7	2.406	1.762	20.9	19.7	40 E	14*	32*
5 26	4 41.06	+16 50.2	1.952	0.960	8.5	21.4	8 E	—	2*	12 7	19 31.12	-24 10.2	2.430	1.729	19.4	19.6	36 E	13*	27*
5 31	4 59.65	+17 44.5	2.007	1.011	7.7	21.5	8 E	—	2*	12 17	19 59.30	-23 18.5	2.450	1.699	17.9	19.5	32 E	13*	23*
										12 27	20 27.93	-22 6.2	2.467	1.672	16.4	19.5	29 E	12*	19*
										1 6	20 56.79	-20 33.8	2.482	1.649	14.8	19.4	25 E	11*	16*
										1 16	21 25.69	-18 42.2	2.496	1.630	13.3	19.3	22 E	10*	13*
134371 1995 RH										236716 2007 FV₄₂									
1 22	15 28.95	+ 3 2.4	3.086	2.959	18.6	21.5	73 W	48*	44*	1 22	15 53.25	-11 27.1	1.727	1.549	34.4	21.5	63 W	32*	47*
2 1	15 39.04	+ 3 7.9	2.940	2.942	19.3	21.4	80 W	48*	51*	2 1	16 25.38	-12 54.5	1.609	1.488	36.8	21.3	65 W	31*	52*
2 11	15 47.95	+ 3 24.7	2.790	2.923	19.7	21.2	88 W	48	56*	2 11	16 59.76	-14 7.8	1.500	1.429	39.3	21.1	66 W	29*	55*
2 21	15 55.44	+ 3 52.7	2.639	2.903	19.8	21.1	95 W	49	59*	2 21	17 36.49	-15 3.3	1.402	1.373	41.7	21.0	68 W	28*	57*
3 2	16 1.21	+ 4 31.3	2.490	2.882	19.6	21.0	103 W	50	59	3 2	18 15.45	-15 36.8	1.317	1.320	44.1	20.8	68 W	26*	59*
3 12	16 4.98	+ 5 19.0	2.347	2.861	18.9	20.8	111 W	50	59	3 12	18 56.36	-15 44.6	1.246	1.272	46.5	20.7	68 W	25*	60*
3 22	16 6.45	+ 6 13.9	2.212	2.838	17.8	20.6	120 W	51	58	3 22	19 38.75	-15 24.1	1.190	1.230	48.6	20.5	68 W	23*	60*
4 1	16 5.38	+ 7 12.5	2.088	2.815	16.3	20.4	128 W	52	57	4 1	20 21.87	-14 34.7	1.147	1.195	50.5	20.5	67 W	21*	60*
4 11	16 1.63	+ 8 10.1	1.980	2.791	14.4	20.2	136 W	53	56	4 11	21 4.91	-13 18.7	1.119	1.169	51.9	20.4	67 W	20*	60*
4 16	15 58.76	+ 8 36.7	1.933	2.779	13.4	20.1	140 W	54	55	4 21	21 47.08	-11 40.7	1.103	1.152	52.9	20.4	66 W	18*	59*
4 21	15 55.25	+ 9 0.8	1.891	2.766	12.4	20.0	144 W	54	55	4 26	22 7.62	-10 45.5	1.100	1.148	53.2	20.4	66 W	18*	59*
4 26	15 51.16	+ 9 21.4	1.855	2.753	11.5	19.9	147 W	54	55	5 1	22 27.69	- 9 47.5	1.098	1.146	53.3	20.4	66 W	17*	59*
5 1	15 46.56	+ 9 37.7	1.824	2.740	10.8	19.9	149 W	55	54	5 6	22 47.24	- 8 47.5	1.098	1.147	53.3	20.4	66 W	17*	59*
5 6	15 41.55	+ 9 48.7	1.800	2.727	10.3	19.8	151 W	55	54	5 11	23 6.24	- 7 46.6	1.100	1.150	53.3	20.4	66 W	17*	59*
5 11	15 36.23	+ 9 53.9	1.782	2.713	10.2	19.8	152 W	55	54	5 16	23 24.65	- 6 45.5	1.104	1.156	53.1	20.4	66 W	17*	59*
5 21	15 25.18	+ 9 44.6	1.765	2.686	11.1	19.8	149 E	55	54	5 21	23 42.44	- 5 45.1	1.108	1.165	52.8	20.4	66 W	17*	59*
5 31	15 14.48	+ 9 7.5	1.772	2.657	13.1	19.8	144 E	54	55	5 31	0 16.12	- 3 49.5	1.117	1.189	52.0	20.4	68 W	18*	59*
6 10	15 5.14	+ 8 4.0	1.803	2.628	15.6	19.9	136 E	53	56	6 10	0 47.21	- 2 4.6	1.126	1.223	51.0	20.5	69 W	20*	60*
6 20	14 57.89	+ 6 37.8	1.853	2.598	18.1	20.1	127 E	52	57	6 20	1 15.72	- 0 33.9	1.133	1.264	49.8	20.5	72 W	22*	61*
6 30	14 53.20	+ 4 53.8	1.919	2.567	20.3	20.2	119 E	50*	59	6 30	1 41.58	+ 0 39.8	1.135	1.311	48.5	20.6	75 W	26*	61*
7 10	14 51.21	+ 2 57.2	1.997	2.536	22.1	20.3	110 E	47*	61	7 10	2 4.74	+ 1 35.2	1.132	1.363	47.0	20.6	79 W	30*	61*
7 20	14 51.88	+ 0 52.2	2.083	2.504	23.4	20.4	102 E	43*	63	7 20	2 25.09	+ 2 11.3	1.122	1.418	45.3	20.6	83 W	35*	62*
7 30	14 55.05	+ 1 17.6	2.174	2.471	24.2	20.5	95 E	39*	65	7 30	2 42.41	+ 2 27.7	1.107	1.477	43.4	20.6	88 W	40*	62
8 9	15 0.53	+ 3 29.7	2.266	2.437	24.5	20.6	87 E	35*	67*	8 9	2 56.44	+ 2 24.7	1.086	1.538	41.1	20.6	94 W	44*	62
8 19	15 8.10	+ 5 41.9	2.359	2.403	24.5	20.6	80 E	31*	67*	8 19	3 6.85	+ 2 2.8	1.061	1.599	38.4	20.6	101 W	46*	62
8 29	15 17.57	+ 7 52.9	2.448	2.369	24.1	20.6	74 E	28*	63*	8 29	3 13.20	+ 1 23.3	1.034	1.662	35.1	20.5	109 W	46	63
9 8	15 28.79	-10 1.3	2.533	2.334	23.4	20.7	67 E	25*	59*	9 8	3 15.16	+ 0 28.7	1.008	1.724	31.2	20.4	118 W	45	64
9 18	15 41.61	-12 6.1	2.611	2.298	22.5	20.7	61 E	22*	53*	9 18	3 12.45	- 0 36.8	0.987	1.787	26.5	20.3	128 W	44	65
9 28	15 55.95	-14 6.3	2.682	2.262	21.3	20.7	55 E	20*	48*	9 28	3 9.36	- 1 11.8	0.980	1.818	23.9	20.3	133 W	44	65
10 8	16 11.72	-16 0.7	2.746	2.226	19.9	20.6	49 E	17*	42*	9 28	3 5.18	- 1 46.7	0.977	1.849	21.2	20.2	138 W	43	66
10 18	16 28.85	-17 48.4	2.800	2.190	18.3	20.6	44 E	15*	37*	10 3	3 0.03	- 2 20.3	0.978	1.879	18.4	20.2	144 W	43	66
10 28	16 47.30	-19 28.3	2.844	2.153	16.6	20.5	38 E	13*	31*	10 8	2 54.06	- 2 51.4	0.983	1.910	15.6	20.1	149 W	42	67
11 7	17 7.01	-20 59.2	2.879	2.117	14.7	20.4	33 E	11*	26*	10 13	2 47.45	- 3 18.8	0.993	1.940	13.0	20.1	154 W	42	67
11 17	17 27.96	-22 20.1	2.903	2.081	12.8	20.4	28 E	9*	20*	10 18	2 40.42	- 3 41.2	1.009	1.970	10.7	20.1	158 W	41	68
11 27	17 50.07	-23 29.6	2.918	2.044	10.8	20.3	23 E	7*	15*	10 23	2 33.22	- 3 57.7	1.032	2.000	9.1				

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

2020	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45° - 26°	20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45° - 26°
136874 1998 FH₇₄									474443 2003 QJ₅								
<i>(continuation)</i>									<i>(continuation)</i>								
5 1	17 0.39	+ 1 59.5	1.237	2.110	17.9	18.6	140 W	47 62	12 12	0 22.80	-13 40.3	1.739	2.132	27.1	21.1	99 E	31 77*
5 11	16 47.57	+ 5 38.8	1.078	2.001	16.1	18.1	147 W	51 58	12 17	0 28.64	-13 22.0	1.821	2.154	27.0	21.2	96 E	32 76*
5 16	16 38.74	+ 7 40.5	1.008	1.944	15.7	17.9	149 W	53 56	12 22	0 34.72	-12 59.3	1.903	2.177	26.8	21.3	92 E	32 73*
5 21	16 28.15	+ 9 48.2	0.946	1.886	16.2	17.7	149 W	55 54	12 27	0 41.03	-12 32.9	1.986	2.200	26.5	21.4	89 E	32 70*
5 26	16 15.77	+11 59.4	0.891	1.826	17.6	17.6	147 W	57 52	241596 1998 XM₂								
5 31	16 1.67	+14 10.5	0.845	1.764	20.2	17.5	143 E	59 50	1 22	17 9.23	-27 14.7	2.424	1.825	21.4	21.5	43 W	12* 36*
6 5	15 46.00	+16 17.1	0.807	1.701	23.6	17.4	138 E	61 48	2 1	17 35.55	-26 24.8	2.304	1.782	23.8	21.4	47 W	13* 40*
6 10	15 29.05	+18 14.8	0.776	1.636	27.7	17.4	131 E	63 46	2 11	18 2.13	-25 10.3	2.180	1.737	26.2	21.3	51 W	14* 44*
6 15	15 11.20	+19 59.2	0.753	1.569	32.3	17.3	124 E	65 44	2 21	18 28.92	-23 28.6	2.054	1.692	28.6	21.2	55 W	16* 48*
6 20	14 52.91	+21 27.0	0.735	1.500	37.2	17.3	117 E	66 43	3 2	18 55.81	-21 17.2	1.928	1.646	30.9	21.0	59 W	18* 52*
6 25	14 34.65	+22 36.4	0.723	1.429	42.2	17.3	109 E	68* 41	3 12	19 22.77	-18 33.3	1.803	1.600	33.3	20.9	62 W	19* 55*
6 30	14 16.82	+23 27.6	0.715	1.355	47.3	17.3	102 E	67* 41	3 22	19 49.80	-15 14.5	1.682	1.553	35.6	20.7	65 W	22* 58*
7 5	13 59.64	+24 2.2	0.709	1.279	52.5	17.3	94 E	64* 40	4 1	20 16.91	-11 18.7	1.567	1.507	37.9	20.6	68 W	25* 60*
7 10	13 43.19	+24 22.6	0.704	1.200	57.8	17.3	86 E	59* 40	4 11	20 44.23	- 6 44.8	1.460	1.462	40.1	20.4	70 W	28* 60*
7 15	13 27.34	+24 31.5	0.699	1.118	63.2	17.3	79 E	54* 39	4 21	21 11.93	+ 1 33.2	1.364	1.418	42.3	20.3	72 W	31* 59*
7 20	13 11.80	+24 31.5	0.692	1.032	69.0	17.3	71 E	49* 39*	5 1	21 40.23	+ 4 12.8	1.281	1.376	44.4	20.1	73 W	35* 56*
7 25	12 56.03	+24 25.0	0.683	0.943	75.5	17.3	64 E	44* 37*	5 6	21 54.70	+ 7 16.6	1.245	1.356	45.4	20.1	73 W	37* 54*
7 30	12 39.22	+24 13.2	0.672	0.849	82.8	17.3	56 E	38* 33*	5 11	22 9.46	+10 26.0	1.212	1.337	46.4	20.0	73 W	40* 52*
8 4	12 20.23	+23 55.6	0.659	0.752	91.7	17.3	48 E	33* 28*	5 16	22 24.56	+13 39.6	1.183	1.318	47.3	20.0	73 W	42* 49*
8 9	11 57.52	+23 27.7	0.647	0.649	103.0	17.5	39 E	26* 22*	5 21	22 40.04	+16 55.4	1.158	1.300	48.2	19.9	73 W	44* 46*
8 11	11 47.01	+23 11.4	0.643	0.607	108.4	17.6	35 E	23* 19*	5 26	22 55.97	+20 11.6	1.137	1.284	49.0	19.9	73 W	46* 43*
8 13	11 35.50	+22 50.5	0.640	0.564	114.5	17.8	30 E	20* 15*	5 31	23 12.40	+23 25.7	1.119	1.268	49.8	19.8	73 W	48* 40*
8 15	11 22.94	+22 23.5	0.639	0.521	121.3	18.2	26 E	17* 11*	6 5	23 29.41	+26 35.6	1.105	1.254	50.5	19.8	72 W	50* 37*
8 17	11 9.31	+21 48.3	0.642	0.477	129.1	18.6	21 E	14* 7*	6 10	23 47.04	+29 39.1	1.094	1.240	51.1	19.8	72 W	52* 34*
8 19	10 54.71	+21 2.6	0.649	0.433	137.7	19.4	17 E	10* 3*	6 15	0 5.35	+32 33.9	1.085	1.229	51.6	19.7	71 W	54* 31*
8 21	10 39.44	+20 4.1	0.662	0.390	147.0	20.5	12 E	6*	6 20	0 24.37	+35 18.0	1.080	1.218	52.1	19.7	71 W	56* 29*
474443 2003 QJ₅									6 25	0 44.10	+37 49.6	1.076	1.209	52.4	19.7	71 W	57* 26*
1 22	16 53.25	- 5 47.7	2.440	1.968	22.7	21.5	51 W	33* 32*	7 30	1 4.54	+40 6.8	1.073	1.202	52.7	19.7	70 W	58* 24*
2 1	17 17.73	- 4 53.3	2.320	1.924	24.6	21.4	55 W	35* 36*	7 5	1 25.63	+42 8.4	1.072	1.197	52.9	19.7	70 W	59* 22*
2 11	17 42.62	- 3 39.2	2.204	1.882	26.5	21.3	58 W	36* 41*	7 10	1 47.30	+43 53.3	1.072	1.193	53.0	19.7	70 W	60* 20*
2 21	18 7.82	- 2 5.2	2.091	1.842	28.2	21.2	62 W	38* 44*	7 15	2 9.42	+45 21.1	1.072	1.191	53.1	19.7	69 W	61* 19*
3 2	18 33.21	- 0 11.3	1.983	1.803	29.9	21.1	65 W	39* 47*	7 20	2 31.82	+46 31.2	1.072	1.191	53.1	19.7	69 W	62* 17*
3 12	18 58.66	+ 2 0.9	1.882	1.766	31.4	20.9	68 W	41* 49*	7 25	2 54.28	+47 23.6	1.071	1.192	53.0	19.7	70 W	63* 16*
3 22	19 24.08	+ 4 29.4	1.788	1.731	32.8	20.8	70 W	42* 50*	7 30	3 16.59	+47 58.6	1.070	1.196	52.9	19.7	70 W	63* 16*
4 1	19 49.31	+ 7 11.1	1.701	1.699	34.2	20.7	73 W	44* 51*	8 4	3 38.52	+48 16.9	1.067	1.201	52.7	19.7	70 W	64* 15*
4 11	20 14.26	+10 1.9	1.621	1.670	35.4	20.6	75 W	46* 51*	8 9	3 59.86	+48 19.3	1.064	1.207	52.6	19.7	71 W	65* 15*
4 21	20 38.84	+12 57.5	1.547	1.645	36.5	20.5	77 W	48* 49*	8 14	4 20.41	+48 7.1	1.059	1.216	52.3	19.7	72 W	66* 15*
5 1	21 2.91	+15 52.9	1.478	1.623	37.6	20.4	79 W	50* 48*	8 19	4 40.01	+47 41.2	1.052	1.226	52.1	19.7	73 W	67* 16*
5 6	21 14.73	+17 18.9	1.445	1.613	38.0	20.4	80 W	51* 46*	8 24	4 58.50	+47 3.1	1.043	1.237	51.8	19.7	74 W	68* 16*
5 11	21 26.40	+18 42.9	1.413	1.605	38.4	20.3	81 W	53* 45*	8 29	5 15.80	+46 13.7	1.033	1.250	51.4	19.7	75 W	69* 17*
5 16	21 37.88	+20 4.4	1.382	1.598	38.8	20.3	82 W	54* 44	9 3	5 31.86	+45 14.3	1.021	1.264	51.1	19.6	77 W	71* 18*
5 21	21 49.17	+21 22.8	1.351	1.592	39.2	20.2	83 W	55* 43	9 8	5 46.64	+44 5.9	1.007	1.279	50.6	19.6	79 W	73* 19*
5 26	22 0.24	+22 37.5	1.320	1.587	39.5	20.2	85 W	57* 41	9 18	6 12.25	+41 25.8	0.973	1.313	49.4	19.6	83 W	77* 21*
5 31	22 11.06	+23 47.7	1.290	1.583	39.7	20.1	86 W	58* 40	9 28	6 32.50	+38 18.4	0.932	1.351	47.9	19.5	89 W	80* 25*
6 5	22 21.62	+24 53.0	1.260	1.580	39.9	20.1	87 W	60* 39	10 8	6 47.33	+34 46.6	0.887	1.391	45.7	19.4	95 W	80* 29*
6 10	22 31.89	+25 52.9	1.230	1.578	40.0	20.0	89 W	62* 38	10 13	6 52.64	+32 51.8	0.863	1.413	44.3	19.3	99 W	78 31*
6 15	22 41.83	+26 46.7	1.200	1.578	40.1	20.0	90 W	64* 37	10 18	6 56.51	+30 51.2	0.839	1.434	42.7	19.3	102 W	76 33*
6 20	22 51.41	+27 33.9	1.169	1.579	40.0	19.9	92 W	66* 36	10 23	6 58.87	+28 44.4	0.815	1.456	40.9	19.2	107 W	74 35*
6 25	23 0.57	+28 13.7	1.138	1.581	39.9	19.9	94 W	68* 36	10 28	6 59.70	+26 31.4	0.792	1.479	38.7	19.1	111 W	72 37
6 30	23 9.27	+28 45.4	1.107	1.584	39.6	19.8	96 W	70* 35	11 7	6 56.67	+21 47.3	0.750	1.524	33.6	18.9	122 W	67 42
7 5	23 17.46	+29 8.4	1.076	1.588	39.3	19.7	99 W	72* 35	11 17	6 47.42	+16 42.8	0.719	1.570	27.4	18.7	133 W	62 47
7 10	23 25.10	+29 21.8	1.044	1.593	38.7	19.7	101 W	74* 35	11 27	6 32.71	+11 31.6	0.706	1.617	20.5	18.5	145 W	57 52
7 15	23 32.11	+29 24.9	1.013	1.600	38.1	19.6	104 W	74* 35	12 2	6 23.87	+ 9 0.8	0.708	1.640	17.2	18.4	150 W	54 55
7 20	23 38.43	+29 16.4	0.981	1.607	37.2	19.5	107 W	74 35	12 7	6 14.45	+ 6 38.3	0.717	1.663	14.4	18.4	155 W	52 57
7 25	23 43.99	+28 55.3	0.950	1.616	36.1	19.4	111 W	74 35	12 12	6 4.81	+ 4 27.6	0.732	1.686	12.6	18.4	158 W	49 60
7 30	23 48.75	+28 20.2	0.920	1.626	34.7	19.3	114 W	73 36	12 17	5 55.34	+ 2 31.8	0.753	1.708	12.0	18.5	159 W	48 61
8 4	23 52.66	+27 30.1	0.891	1.636	33.1	19.2	118 W	72 37	12 22	5 46.39	+ 0 53.0	0.782	1.731	12.7	18.6	157 E	46 63
8 9	23 55.70	+26 23.7	0.863	1.648	31.2	19.1	123 W	71 38	12 27	5 38.25	- 0 28.2	0.817	1.754	14.3	18.8	154 E	45 64
8 14	23 57.83	+25 0.0	0.837	1.661	29.0	19.0	127 W	70 39	1 1	5 31.14	- 1 32.1	0.857	1.776	16.3	19.0	149 E	43 66
8 19	23 59.05	+23 18.0	0.814	1.674	26.4	18.9	133 W	68 41	1 6	5 25.17	- 2 19.8	0.903	1.798	18.4	19.2	145 E	43 66
8 29	23 59.02	+18 58.7	0.778	1.703	20.3	18.6	144 W	64 45	1 11	5 20.40	- 2 53.1	0.953	1.820	20.4	19.4	140 E	42 67
9 8	23 56.39	+13 35.6	0.763	1.736	13.1	18.4	157 W	59 50	1 16	5 16.85	- 3 13.7	1.008	1.841	22.1	19.6	135 E	42 67
9 18	23 52.34	+ 7 35.5	0.772	1.771	5.5	18.1	170 W	53 56	6130 Hutton								
9 23	23 50.24	+ 4 34.3	0.787	1.789	2.9	18.0	175 E	50 59	1 22	17 9.64	- 4 11.4	2.706	2.164	19.6	21.4	47 W	33* 2

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

2020	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
495960 2007 MT₂₀										341816 2007 YK									
<i>(continuation)</i>										<i>(continuation)</i>									
5 11	4 42.96	+15 39.5	1.894	1.028	21.4	21.3	22 E	7*	14*	3 2	22 26.60	-15 37.7	2.594	1.629	6.3	21.1	10 W	—	3*
5 16	5 4.87	+15 36.7	1.939	1.076	21.0	21.4	22 E	6*	15*	3 12	22 54.37	-14 34.2	2.532	1.587	8.8	21.1	14 W	—	7*
496861 2000 BE₁₉										380282 2002 AO₁₄₈									
1 22	19 43.07	-25 9.4	2.544	1.579	5.4	21.5	9 W	—	3*	2 1	20 47.23	-23 56.8	7.383	6.413	1.3	21.5	9 E	—	3*
2 1	20 13.69	-24 6.3	2.449	1.498	7.7	21.4	12 W	—	6*	2 11	21 1.95	-22 40.7	7.407	6.443	1.7	21.5	11 W	—	5*
2 11	20 45.80	-22 36.6	2.350	1.415	9.9	21.3	14 W	—	8*	3 2	21 9.08	-22 3.4	7.384	6.458	2.9	21.6	19 W	—	13*
2 21	21 19.43	-20 36.9	2.251	1.331	12.1	21.1	16 W	—	10*	3 21	21 15.93	-21 27.2	7.338	6.472	4.0	21.7	27 W	—	21*
3 2	21 54.61	-18 4.1	2.154	1.247	14.0	20.9	18 W	—	11*	159467 2000 QK₂₅									
3 12	22 31.37	-14 55.9	2.063	1.163	15.6	20.8	18 W	—	12*	1 22	20 51.65	-17 28.6	2.435	1.473	6.2	21.5	9 E	2*	1*
3 22	23 9.77	-11 11.1	1.981	1.081	16.8	20.5	18 W	—	12*	2 1	21 22.39	-15 39.0	2.414	1.440	4.6	21.3	7 E	—	—
4 1	23 49.87	-6 51.2	1.913	1.004	17.2	20.3	17 W	—	11*	2 11	21 53.30	-13 30.2	2.392	1.410	3.1	21.2	4 E	—	—
4 6	0 10.58	-4 29.6	1.885	0.969	17.1	20.2	17 W	—	10*	3 2	22 24.36	-11 4.2	2.370	1.382	1.8	21.0	2 E	—	—
4 11	0 31.74	-2 1.5	1.861	0.936	16.7	20.1	16 W	—	9*	3 2	22 55.53	-8 23.5	2.349	1.358	1.1	20.9	1 E	—	—
4 16	0 53.38	+0 31.7	1.842	0.906	16.1	20.0	14 W	—	8*	3 12	23 26.80	-5 31.3	2.330	1.337	1.7	20.9	2 W	—	—
4 21	1 15.50	+3 8.2	1.828	0.880	15.1	19.9	13 W	—	7*	3 22	23 58.23	-2 31.4	2.314	1.321	2.8	20.9	4 W	—	—
4 26	1 38.09	+5 46.0	1.819	0.859	13.9	19.8	12 W	—	5*	4 1	0 29.85	+0 32.3	2.301	1.308	3.8	21.0	5 W	—	—
5 1	2 1.16	+8 22.7	1.814	0.842	12.4	19.7	10 W	—	4*	4 11	1 1.71	+3 35.3	2.292	1.301	4.9	21.0	6 W	—	—
5 6	2 24.69	+10 55.8	1.814	0.831	10.7	19.6	9 W	—	3*	4 21	1 33.85	+6 33.3	2.288	1.298	5.8	21.0	8 W	—	1*
5 11	2 48.64	+13 22.8	1.818	0.826	8.8	19.5	7 W	—	1*	5 1	2 6.28	+9 21.8	2.287	1.301	6.8	21.1	9 W	—	2*
5 16	3 12.97	+15 41.0	1.827	0.827	6.9	19.4	6 W	—	—	5 11	2 38.98	+11 56.5	2.291	1.308	7.7	21.1	10 W	—	4*
5 21	3 37.60	+17 48.1	1.840	0.834	5.0	19.3	4 W	—	—	5 21	3 11.91	+14 13.9	2.298	1.320	8.6	21.2	11 W	—	5*
5 26	4 2.43	+19 42.1	1.857	0.846	3.2	19.3	3 W	—	—	5 31	3 44.96	+16 10.9	2.307	1.336	9.5	21.3	13 W	—	7*
5 31	4 27.33	+21 21.3	1.878	0.864	1.5	19.3	1 W	—	—	6 10	4 17.95	+17 45.3	2.319	1.356	10.4	21.4	14 W	—	8*
6 5	4 52.15	+22 44.7	1.902	0.887	0.3	19.2	0 W	—	—	6 20	4 50.72	+18 55.8	2.332	1.380	11.4	21.4	16 W	—	9*
6 10	5 16.77	+23 51.8	1.929	0.914	1.3	19.4	1 E	—	—	481775 2008 SX₇									
6 15	5 41.03	+24 42.7	1.959	0.945	2.3	19.6	2 E	—	—	1 22	20 59.41	-18 57.1	2.288	1.335	8.0	21.4	11 E	2*	3*
6 20	6 4.78	+25 17.7	1.992	0.978	3.0	19.8	3 E	—	—	2 1	21 33.41	-15 53.4	2.266	1.304	7.0	21.3	9 E	1*	1*
6 25	6 27.91	+25 37.9	2.027	1.014	3.6	19.9	4 E	—	—	2 11	22 7.17	-12 25.9	2.250	1.280	6.2	21.2	8 E	—	—
6 30	6 50.32	+25 44.4	2.064	1.052	3.9	20.0	4 E	—	—	2 21	22 40.61	-8 39.7	2.241	1.265	5.4	21.1	7 E	—	—
7 5	7 11.91	+25 38.5	2.103	1.092	4.1	20.2	4 E	—	—	3 2	23 13.71	-4 40.6	2.240	1.259	4.7	21.1	6 E	—	—
7 10	7 32.66	+25 21.8	2.143	1.133	4.2	20.3	5 E	—	—	3 12	23 46.46	-0 35.5	2.248	1.261	4.0	21.0	5 E	—	—
7 15	7 52.53	+24 55.5	2.184	1.174	4.1	20.4	5 E	—	—	3 22	0 18.95	+3 28.9	2.264	1.273	3.4	21.0	4 E	—	—
7 20	8 11.53	+24 21.2	2.226	1.216	4.0	20.5	5 E	—	—	4 1	0 51.22	+7 26.0	2.289	1.293	2.8	21.1	4 E	—	—
7 25	8 29.66	+23 40.2	2.267	1.258	3.9	20.6	5 E	—	—	4 11	1 23.31	+11 9.9	2.320	1.321	2.3	21.1	3 E	—	—
7 30	8 46.96	+22 53.5	2.309	1.300	3.8	20.7	5 E	—	—	4 21	1 55.26	+14 35.9	2.359	1.356	2.0	21.2	3 W	—	—
8 4	9 3.46	+22 2.4	2.350	1.343	3.8	20.9	5 E	—	—	5 1	2 27.04	+17 40.3	2.402	1.397	2.2	21.3	3 W	—	—
8 9	9 19.21	+21 7.7	2.391	1.385	3.9	21.0	5 E	—	—	5 11	2 58.58	+20 20.3	2.448	1.443	2.8	21.4	4 W	—	—
8 14	9 34.25	+20 10.2	2.431	1.427	4.1	21.1	6 W	—	—	259485 2003 SS₂₁₅									
8 19	9 48.64	+19 10.7	2.469	1.468	4.5	21.2	7 W	—	—	1 22	20 59.62	-19 24.7	2.842	1.885	5.7	21.4	11 E	2*	3*
8 24	10 2.41	+18 9.7	2.506	1.509	5.0	21.3	7 W	1*	—	2 1	21 24.51	-17 52.8	2.830	1.856	3.7	21.3	7 E	—	—
8 29	10 15.62	+17 7.8	2.541	1.550	5.6	21.4	9 W	2*	—	2 11	21 49.48	-16 8.1	2.812	1.828	2.1	21.1	4 E	—	—
140158 2001 SX₁₆₉										3 22	23 4.60	-9 50.2	2.727	1.752	5.0	21.1	9 W	—	2*
1 22	20 17.41	-19 34.8	2.535	1.551	0.6	21.5	1 E	—	—	3 22	23 29.72	-7 28.1	2.692	1.730	6.9	21.2	12 W	—	6*
2 1	20 43.79	-18 7.8	2.588	1.605	1.7	21.7	3 W	—	—	4 1	23 54.92	-5 1.1	2.655	1.710	8.8	21.2	15 W	—	9*
2 11	21 8.65	-16 32.0	2.631	1.655	4.0	22.0	7 W	—	1*	341816 2007 YK									
2 21	21 32.17	-14 49.6	2.662	1.702	6.3	22.2	11 W	—	5*	1 22	20 42.73	-17 57.2	2.771	1.799	3.9	21.4	7 E	—	—
3 2	21 54.51	-13 2.7	2.680	1.744	8.6	22.3	15 W	—	9*	2 1	21 7.67	-17 40.7	2.740	1.757	1.7	21.1	3 E	—	—
488474 1999 HD₁										2 11	21 33.28	-17 11.6	2.699	1.715	1.7	21.0	3 W	—	—
1 22	20 22.57	-11 33.8	1.686	0.728	11.7	21.5	9 E	2*	—	2 21	21 59.58	-16 30.5	2.650	1.672	3.9	21.1	7 W	—	—
1 27	20 49.98	-10 16.9	1.657	0.703	13.0	21.4	9 E	3*	—	464798 2004 JX₂₀									
2 1	21 17.97	-8 52.5	1.630	0.683	14.8	21.4	10 E	4*	—	1 22	20 22.63	-21 36.1	2.057	1.075	2.5	21.4	3 E	—	—
2 6	21 46.42	-7 22.3	1.605	0.668	17.0	21.4	11 E	5*	—	2 1	21 0.51	-19 54.3	2.027	1.045	2.7	21.3	3 E	—	—
2 11	22 15.19	-5 47.9	1.583	0.660	19.7	21.4	13 E	7*	—	2 11	21 38.68	-17 38.8	1.992	1.009	3.3	21.2	3 E	—	—
2 16	22 44.12	-4 11.3	1.564	0.659	22.6	21.4	15 E	9*	1*	2 21	22 17.24	-14 49.9	1.952	0.968	4.1	21.2	4 E	—	—
464798 2004 JX₂₀										3 2	22 56.40	-11 28.3	1.908	0.923	4.7	21.0	4 E	—	—
1 22	20 22.63	-21 36.1	2.057	1.075	2.5	21.4	3 E	—	—	3 12	23 36.40	-7 35.7	1.861	0.874	5.3	20.9	5 E	—	—
2 1	21 0.51	-19 54.3	2.027	1.045	2.7	21.3	3 E	—	—	3 22	0 17.65	+3 14.5	1.813	0.825	5.9	20.7	5 E	—	—
2 11	21 38.68	-17 38.8	1.992	1.009	3.3	21.2	3 E	—	—	4 1	1 0.63	+1 30.6	1.764	0.776	7.1	20.6	6 E	—	—
2 21	22 17.24	-14 49.9	1.952	0.968	4.1	21.2	4 E	—	—	4 11	1 45.90	+6 31.7	1.715	0.731	9.6	20.5	7 E	—	1*
3 2	22 56.40	-11 28.3	1.908	0.923	4.7	21.0	4 E	—	—	4 21	2 34.06	+11 36.8	1.666	0.694	13.7	20.5	9 E	—	3*
3 12	23 36.40	-7 35.7	1.861	0.874	5.3	20.9	5 E	—	—	5 1	3 25.59	+16 28.4	1.616	0.670	19.2	20.5	13 E	3*	5*
3 22	0 17.65	+3 14.5	1.813	0.825	5.9	20.7	5 E	—	—	5 11	4 20.64	+20 43.6	1.566	0.662	25.5	20.6	16 E	7*	7*
4 1	1 0.63	+1 30.6	1.764	0.776	7.1	20.6	6 E	—	—	5 21	5 18.78	+23 58.0	1.519	0.672	31.8	20.8	20 E	10*	10*
4 11	1 45.90	+6 31.7	1.715	0.731	9.6	20.5	7 E	—	1*	5 31	6 18.78	+25 50.9	1.477	0.698	37.2	21.0	25 E	13*	13*
4 21	2 34.06	+11 36.8	1.666	0.694	13.7	20.5	9 E	—	3*	6 10	7 18.74	+26 11.3	1.444	0.736	41.3	21.2	29 E	15*	16*
5 1	3 25.59	+16 28.4	1.616	0.670	19.2	20.5	13 E	3*	5*	6 20	8 16.61	+25 1.1	1.423	0.782	43.9	21.3	32 E	17*	20*
5 11	4 20.64	+20 43.6	1.566	0.662	25.5	20.6	16 E	7*	7*	6 30	9 1								

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
259485 2003 SS₂₁₅										115916 2003 WB₈									
<i>(continuation)</i>										<i>(continuation)</i>									
4 11	0 20.24	-2 31.2	2.615	1.692	10.6	21.2	18 W	—	12*	1 6	22 50.03	-20 58.7	3.824	3.301	13.5	20.4	51 E	22*	41*
4 21	0 45.72	-0 0.5	2.575	1.676	12.4	21.2	21 W	—	15*	1 16	23 0.46	-19 49.6	3.880	3.248	12.2	20.3	44 E	20*	34*
5 1	1 11.41	+2 28.6	2.534	1.663	14.2	21.2	24 W	—	18*	162269 1999 VO₆									
5 11	1 37.33	+4 53.8	2.493	1.653	15.9	21.2	27 W	—	21*	1 22	21 28.87	+7 56.6	2.693	1.949	16.2	21.5	33 E	27*	—
5 21	2 3.51	+7 12.8	2.452	1.645	17.5	21.2	29 W	2*	23*	2 1	21 47.58	+8 27.5	2.732	1.930	14.3	21.4	29 E	22*	—
5 31	2 29.95	+9 23.4	2.410	1.640	19.1	21.3	32 W	4*	26*	2 11	22 6.39	+9 8.7	2.755	1.905	12.5	21.3	25 E	16*	—
6 10	2 56.61	+11 23.4	2.369	1.638	20.6	21.3	35 W	7*	28*	2 21	22 25.37	+9 58.6	2.762	1.873	10.9	21.3	21 E	11*	—
6 20	3 23.46	+13 11.0	2.327	1.638	22.1	21.3	37 W	10*	30*	3 2	22 44.60	+10 56.1	2.751	1.836	9.7	21.2	18 W	8*	—
6 30	3 50.41	+14 44.6	2.284	1.642	23.5	21.3	40 W	14*	31*	3 12	23 4.16	+11 59.7	2.723	1.793	9.1	21.1	17 W	9*	—
7 10	4 17.33	+16 3.0	2.241	1.648	24.8	21.3	43 W	19*	32*	3 22	23 24.20	+13 8.1	2.677	1.742	9.2	21.0	16 W	10*	—
7 20	4 44.10	+17 5.5	2.196	1.658	26.1	21.3	46 W	23*	33*	4 1	23 44.88	+14 20.1	2.614	1.685	10.1	20.9	17 W	11*	2*
7 30	5 10.56	+17 51.9	2.149	1.670	27.3	21.3	49 W	28*	34*	4 11	0 6.41	+15 34.1	2.535	1.621	11.7	20.8	19 W	12*	6*
8 9	5 36.51	+18 22.6	2.100	1.684	28.5	21.3	52 W	33*	35*	4 21	0 29.10	+16 48.4	2.439	1.549	13.8	20.7	22 W	12*	10*
8 19	6 1.79	+18 38.5	2.048	1.701	29.5	21.3	56 W	38*	35*	5 1	0 53.32	+18 1.0	2.329	1.469	16.3	20.6	24 W	13*	14*
8 29	6 26.18	+18 40.9	1.992	1.720	30.5	21.3	60 W	43*	36*	5 11	1 19.58	+19 9.1	2.206	1.380	19.2	20.4	27 W	13*	16*
9 8	6 49.51	+18 31.7	1.932	1.741	31.3	21.3	64 W	48*	37*	5 16	1 33.68	+19 40.4	2.140	1.332	20.8	20.3	28 W	13*	18*
9 18	7 11.61	+18 13.2	1.869	1.764	31.9	21.2	68 W	52*	38*	5 21	1 48.58	+20 9.0	2.071	1.281	22.4	20.2	29 W	14*	19*
9 28	7 32.24	+17 48.1	1.801	1.789	32.4	21.2	73 W	56*	39*	5 26	2 4.40	+20 34.1	2.000	1.228	24.2	20.1	30 W	14*	20*
10 8	7 51.24	+17 19.5	1.729	1.815	32.6	21.2	78 W	59*	41*	5 31	2 21.28	+20 54.9	1.927	1.172	26.0	20.0	30 W	14*	20*
10 18	8 8.37	+16 50.5	1.654	1.843	32.5	21.1	84 W	61*	43*	6 5	2 39.40	+21 10.0	1.853	1.113	27.9	19.8	31 W	14*	21*
10 28	8 23.37	+16 25.1	1.576	1.871	32.1	21.0	91 W	61	45*	6 10	2 58.97	+21 17.9	1.779	1.050	30.0	19.7	31 W	13*	21*
11 7	8 35.94	+16 7.0	1.497	1.900	31.1	20.9	98 W	61	46*	6 15	3 20.21	+21 16.9	1.705	0.984	32.1	19.5	31 W	13*	21*
11 17	8 45.74	+16 0.3	1.418	1.930	29.6	20.8	105 W	61	48*	6 20	3 43.40	+21 4.5	1.632	0.915	34.3	19.3	30 W	12*	21*
11 27	8 52.35	+16 9.1	1.342	1.961	27.4	20.6	114 W	61	48	6 25	4 8.22	+20 38.1	1.561	0.842	36.5	19.1	30 W	11*	20*
12 7	8 55.39	+16 36.9	1.272	1.992	24.4	20.5	123 W	62	47	6 30	4 36.79	+19 54.4	1.495	0.764	38.6	18.8	28 W	10*	19*
12 17	8 54.54	+17 25.5	1.212	2.023	20.5	20.3	134 W	62	47	7 5	5 7.66	+18 50.4	1.434	0.683	40.5	18.6	26 W	8*	18*
12 27	8 49.73	+18 33.9	1.167	2.055	15.7	20.1	146 W	64	45	7 10	5 41.80	+17 23.5	1.382	0.598	41.7	18.2	23 W	5*	16*
1 1	8 45.96	+19 14.0	1.152	2.071	13.0	19.9	152 W	64	45	7 15	6 19.63	+15 33.8	1.339	0.510	41.7	17.8	19 W	1*	13*
1 6	8 41.40	+19 56.9	1.142	2.087	10.2	19.8	158 W	65	44	7 20	7 1.65	+13 26.4	1.308	0.423	39.3	17.3	15 W	—	9*
1 11	8 36.19	+20 41.3	1.138	2.102	7.2	19.7	164 W	66	43	7 22	7 19.76	+12 33.8	1.298	0.390	37.5	17.0	14 W	—	7*
1 16	8 30.54	+21 25.8	1.141	2.118	4.3	19.6	171 W	66	43	7 24	7 38.66	+11 42.6	1.289	0.360	35.2	16.8	12 W	—	5*
210389 2007 VA₁₄₉										115916 2003 WB₈									
1 22	21 6.18	-15 28.8	2.610	1.668	7.8	21.4	13 E	6*	3*	8 24	7 58.34	+10 55.5	1.280	0.334	32.7	16.5	10 W	—	3*
2 1	21 33.60	-13 24.9	2.634	1.673	5.9	21.4	10 E	1*	—	8 28	8 18.72	+10 15.4	1.272	0.314	30.9	16.3	9 W	—	—
2 11	22 0.40	-11 10.0	2.655	1.680	4.1	21.3	7 E	1*	—	8 30	8 39.64	+9 45.3	1.261	0.301	31.0	16.2	9 E	—	—
2 21	22 26.60	-8 46.9	2.675	1.689	2.2	21.2	4 E	—	—	8 1	9 0.80	+9 27.6	1.249	0.298	33.6	16.3	9 E	—	1*
3 2	22 52.21	-6 17.9	2.692	1.701	0.5	21.1	1 E	—	—	8 3	9 21.86	+9 23.0	1.236	0.304	38.3	16.4	11 E	—	4*
3 12	23 17.28	-3 45.7	2.707	1.715	1.7	21.3	3 W	—	—	8 5	9 42.49	+9 30.3	1.221	0.319	43.8	16.6	13 E	—	6*
3 22	23 41.85	-1 12.5	2.718	1.731	3.6	21.4	6 W	—	—	8 7	10 2.49	+9 46.7	1.206	0.342	48.9	16.9	15 E	—	9*
8 9	10 21.76	+10 9.4	1.191	0.369	53.1	17.2	17 E	1*	11*	8 11	10 40.32	+10 35.5	1.179	0.401	56.4	17.4	19 E	3*	13*
8 13	10 58.20	+11 3.0	1.168	0.434	58.7	17.6	21 E	6*	14*	8 15	11 15.45	+11 30.2	1.160	0.469	60.3	17.8	24 E	8*	16*
8 17	11 32.12	+11 56.0	1.154	0.504	61.2	18.0	26 E	11*	17*	8 19	11 48.25	+12 19.6	1.151	0.539	61.6	18.2	28 E	13*	19*
8 24	12 26.37	+13 6.2	1.153	0.626	61.1	18.5	33 E	19*	22*	8 29	13 1.56	+13 33.4	1.167	0.710	59.3	18.7	37 E	23*	24*
9 3	13 34.00	+13 42.2	1.192	0.790	56.9	18.9	41 E	27*	26*	9 8	13 34.00	+13 42.2	1.192	0.790	56.9	18.9	41 E	27*	26*
9 8	14 3.87	+13 35.3	1.226	0.866	54.3	19.1	44 E	31*	28*	9 13	14 31.35	+13 16.1	1.267	0.938	51.7	19.3	47 E	33*	29*
9 13	14 31.35	+13 16.1	1.267	0.938	51.7	19.3	47 E	33*	29*	9 18	14 56.69	+12 47.9	1.314	1.006	49.1	19.4	49 E	36*	30*
9 23	15 20.10	+12 13.7	1.366	1.071	46.7	19.6	51 E	37*	31*	9 28	15 41.80	+11 36.0	1.421	1.132	44.4	19.7	52 E	39*	31*
10 3	16 2.02	+10 56.6	1.479	1.191	42.3	19.9	53 E	40*	31*	10 3	16 2.02	+10 56.6	1.479	1.191	42.3	19.9	53 E	40*	31*
10 8	16 20.94	+10 16.9	1.540	1.246	40.3	20.0	54 E	41*	31*	10 13	16 38.74	+9 38.2	1.602	1.298	38.5	20.1	54 E	41*	30*
10 13	16 38.74	+9 38.2	1.602	1.298	38.5	20.1	54 E	41*	30*	10 18	16 55.57	+9 1.3	1.666	1.348	36.7	20.2	54 E	41*	30*
10 18	16 55.57	+9 1.3	1.666	1.348	36.7	20.2	54 E	41*	30*	10 23	17 11.57	+8 26.8	1.730	1.395	35.1	20.4	54 E	42*	29*
10 23	17 11.57	+8 26.8	1.730	1.395	35.1	20.4	54 E	42*	29*	11 7	17 55.49	+7 1.8	1.925	1.523	30.7	20.7	52 E	41*	24*
11 7	17 55.49	+7 1.8	1.925	1.523	30.7	20.7	52 E	41*	24*	11 17	18 22.18	+6 22.4	2.053	1.598	28.0	20.8	49 E	40*	20*
11 17	18 22.18	+6 22.4	2.053	1.598	28.0	20.8	49 E	40*	20*	11 27	18 47.29	+5 57.6	2.177	1.665	25.6	21.0	47 E	39*	16*
12 7	19 11.13	+5 47.2	2.296	1.724	23.3	21.1	44 E	37*	11*	12 7	19 11.13	+5 47.2	2.296	1.724	23.3	21.1	44 E	37*	11*
12 17	19 33.92	+5 50.5	2.406	1.776	21.1	21.2	40 E	34*	5*	12 27	19 33.92	+5 50.5	2.406	1.776	21.1	21.2	40 E	34*	5*
1 6	20 16.96	+6 35.6	2.598	1.862	17.0	21.3	34 E	27*	—	1 6	20 16.96	+6 35.6	2.598	1.862	17.0	21.3	34 E	27*	—
1 16	20 37.43	+7 15.3	2.676	1.895	15.3	21.4	30 E	22*	—	1									

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
31669 1999 JT₆										223178 2003 AA₄									
<i>(continuation)</i>										<i>(continuation)</i>									
5 1	0 38.76	+ 3 27.3	2.904	2.143	15.2	20.7	34 W	—	28*	4 1	0 13.19	+ 7 52.0	3.678	2.692	2.9	21.0	8 W	1*	—
5 11	0 57.67	+ 1 31.7	2.768	2.074	17.6	20.6	38 W	3*	32*	4 11	0 29.06	+ 9 0.5	3.635	2.664	4.6	21.0	12 W	3*	5*
5 21	1 17.37	+ 0 25.8	2.627	2.003	20.0	20.5	43 W	5*	37*	4 21	0 45.09	+10 8.4	3.577	2.636	6.6	21.1	17 W	5*	10*
5 31	1 38.01	+ 2 24.9	2.480	1.929	22.4	20.4	47 W	8*	40*	5 1	1 1.29	+11 14.9	3.506	2.607	8.6	21.1	23 W	7*	16*
6 10	1 59.79	+ 4 25.3	2.330	1.854	24.9	20.2	50 W	12*	43*	5 11	1 17.63	+12 18.7	3.422	2.576	10.7	21.1	28 W	9*	21*
6 20	2 22.97	+ 6 26.7	2.180	1.777	27.4	20.1	54 W	16*	45*	5 21	1 34.12	+13 18.8	3.326	2.545	12.7	21.1	34 W	11*	26*
6 30	2 47.84	+ 8 28.5	2.030	1.697	30.0	19.9	57 W	21*	46*	5 31	1 50.74	+14 14.0	3.219	2.514	14.7	21.1	39 W	14*	30*
7 10	3 14.79	+10 29.5	1.884	1.617	32.6	19.7	59 W	26*	46*	6 10	2 7.46	+15 3.2	3.101	2.481	16.7	21.0	44 W	18*	34*
7 20	3 44.28	+12 28.3	1.743	1.534	35.4	19.5	61 W	31*	45*	6 20	2 24.26	+15 45.0	2.975	2.448	18.5	21.0	50 W	22*	38*
7 25	4 0.13	+13 26.0	1.675	1.493	36.8	19.4	62 W	33*	45*	6 30	2 41.08	+16 18.1	2.840	2.414	20.3	20.9	55 W	27*	41*
7 30	4 16.81	+14 22.0	1.610	1.451	38.3	19.3	62 W	35*	44*	7 10	2 57.86	+16 41.2	2.699	2.380	22.0	20.8	61 W	33*	43*
8 4	4 34.39	+15 15.5	1.547	1.410	39.8	19.2	63 W	37*	43*	7 20	3 14.51	+16 52.7	2.553	2.345	23.5	20.7	67 W	39*	44*
8 9	4 52.94	+16 5.9	1.488	1.368	41.3	19.1	63 W	39*	42*	7 30	3 30.92	+16 51.0	2.402	2.310	24.8	20.6	72 W	45*	46*
8 14	5 12.53	+16 52.3	1.432	1.326	42.9	19.0	63 W	41*	41*	8 9	3 46.94	+16 34.3	2.249	2.274	25.9	20.4	78 W	50*	47*
8 19	5 33.20	+17 33.4	1.380	1.285	44.4	18.9	63 W	42*	40*	8 19	4 2.40	+16 0.7	2.095	2.237	26.8	20.3	84 W	54*	48*
8 24	5 54.96	+18 7.9	1.333	1.244	46.0	18.7	62 W	43*	39*	8 29	4 17.04	+15 8.2	1.942	2.201	27.3	20.1	91 W	58*	49*
8 29	6 17.81	+18 34.4	1.291	1.204	47.6	18.7	62 W	44*	37*	9 8	4 30.62	+13 54.5	1.791	2.164	27.5	19.9	97 W	59*	50*
9 3	6 41.73	+18 51.4	1.253	1.165	49.1	18.6	61 W	45*	36*	9 18	4 42.80	+12 17.3	1.644	2.127	27.3	19.6	104 W	57	52
9 8	7 6.61	+18 57.3	1.222	1.127	50.6	18.5	60 W	45*	34*	9 28	4 53.16	+10 14.5	1.505	2.090	26.5	19.4	111 W	55	54
9 13	7 32.33	+18 50.7	1.196	1.091	52.0	18.4	59 W	45*	33*	10 8	5 1.31	+ 7 44.7	1.375	2.053	25.2	19.1	119 W	53	56
9 18	7 58.69	+18 30.5	1.177	1.056	53.2	18.3	57 W	45*	31*	10 18	5 6.74	+ 4 47.4	1.257	2.016	23.4	18.8	127 W	50	59
9 23	8 25.46	+17 56.1	1.164	1.024	54.2	18.3	56 W	44*	29*	10 28	5 9.02	+ 1 25.4	1.155	1.980	21.1	18.5	134 W	46	63
9 28	8 52.39	+17 7.5	1.157	0.994	54.9	18.2	54 W	43*	28*	11 2	5 8.88	+ 0 22.9	1.110	1.962	19.9	18.4	138 W	45	64
10 3	9 19.25	+16 5.1	1.157	0.968	55.3	18.2	53 W	42*	26*	11 7	5 7.86	+ 2 14.3	1.070	1.944	18.7	18.2	141 W	43	66
10 8	9 45.80	+14 50.0	1.162	0.946	55.4	18.1	51 W	41*	25*	11 12	5 5.98	+ 4 6.9	1.036	1.926	17.6	18.1	144 W	41	68
10 13	10 11.84	+13 23.8	1.174	0.927	55.2	18.1	50 W	40*	23*	11 17	5 3.26	+ 5 58.6	1.007	1.909	16.8	18.0	146 W	39	70
10 18	10 37.20	+11 48.5	1.190	0.913	54.6	18.1	48 W	39*	22*	11 22	4 59.80	+ 7 46.7	0.983	1.892	16.4	17.9	147 W	37	72
10 23	11 1.78	+10 6.1	1.211	0.904	53.8	18.1	47 W	38*	21*	11 27	4 55.74	+ 9 28.6	0.965	1.875	16.4	17.9	148 W	36	73
10 28	11 25.48	+ 8 18.9	1.236	0.901	52.6	18.1	46 W	37*	20*	12 2	4 51.24	+11 1.6	0.953	1.858	16.9	17.8	147 W	34	75
11 2	11 48.30	+ 6 28.9	1.263	0.902	51.3	18.1	45 W	36*	20*	12 7	4 46.47	+12 23.7	0.946	1.841	17.9	17.8	145 E	33	76
11 7	12 10.22	+ 4 38.0	1.293	0.909	49.8	18.1	44 W	35*	20*	12 12	4 41.66	+13 32.8	0.944	1.825	19.2	17.9	142 E	31	78
11 12	12 31.26	+ 2 47.8	1.324	0.921	48.3	18.1	44 W	35*	20*	12 17	4 37.04	+14 27.6	0.946	1.810	20.8	17.9	139 E	31	78
11 17	12 51.44	+ 0 59.9	1.356	0.937	46.8	18.2	44 W	34*	20*	12 22	4 32.82	+15 7.5	0.953	1.794	22.5	17.9	136 E	30	79
11 22	13 10.79	+ 0 44.6	1.388	0.958	45.3	18.2	44 W	33*	20*	12 27	4 29.21	+15 32.6	0.963	1.779	24.2	18.0	132 E	29	80
11 27	13 29.35	+ 2 24.6	1.420	0.983	44.0	18.3	44 W	33*	21*	1 1	4 26.36	+15 43.7	0.977	1.765	25.9	18.1	128 E	29	80
12 7	14 4.25	+ 5 28.7	1.481	1.042	41.6	18.5	45 W	32*	23*	1 6	4 24.38	+15 41.7	0.993	1.751	27.5	18.1	125 E	29	80
12 17	14 36.43	+ 8 9.4	1.534	1.111	39.8	18.6	46 W	31*	27*	1 11	4 23.36	+15 27.7	1.012	1.738	29.0	18.2	121 E	30	79
12 27	15 6.08	+10 25.5	1.578	1.187	38.5	18.8	49 W	30*	31*	1 16	4 23.36	+15 3.2	1.032	1.725	30.4	18.3	118 E	30	79
1 6	15 33.34	+12 18.1	1.611	1.267	37.6	19.0	52 W	29*	36*	463664 2014 JY₂₄									
1 16	15 58.30	+13 49.1	1.632	1.350	37.0	19.1	56 W	29*	42*	1 22	22 56.24	+18 32.5	1.710	1.120	33.1	21.4	38 E	18*	28*
										2 1	23 23.14	+13 54.9	1.642	1.021	34.4	21.1	36 E	19*	25*
										2 11	23 51.63	+ 8 37.9	1.560	0.923	36.6	20.9	34 E	20*	22*
										2 21	0 22.02	+ 2 36.4	1.466	0.830	40.2	20.6	33 E	23*	19*
										2 21	0 54.74	+ 4 13.4	1.359	0.749	45.6	20.4	33 E	23*	16*
										3 7	1 12.14	+ 7 56.2	1.302	0.717	49.0	20.3	33 E	25*	15*
										3 12	1 30.36	+11 49.7	1.242	0.691	53.0	20.2	34 E	26*	14*
										3 17	1 49.55	+15 52.3	1.180	0.673	57.0	20.2	35 E	28*	13*
										3 22	2 9.92	+20 1.5	1.118	0.664	62.0	20.2	36 E	29*	12*
										3 27	2 31.79	+24 13.9	1.056	0.666	66.4	20.2	38 E	31*	11*
										4 1	2 55.59	+28 25.3	0.996	0.677	70.4	20.2	40 E	33*	10*
										4 3	3 5.79	+30 4.4	0.973	0.684	71.8	20.2	41 E	34*	10*
										4 5	3 16.43	+31 42.1	0.951	0.693	73.1	20.2	41 E	35*	10*
										4 7	3 27.58	+33 17.9	0.929	0.702	74.3	20.3	42 E	36*	9*
										4 9	3 39.29	+34 51.3	0.908	0.713	75.3	20.3	44 E	37*	9*
										4 11	3 51.60	+36 21.8	0.888	0.725	76.1	20.3	45 E	39*	9*
										4 13	4 4.58	+37 48.6	0.868	0.738	76.8	20.3	46 E	40*	9*
										4 15	4 18.27	+39 11.0	0.850	0.752	77.3	20.3	47 E	41*	9*
										4 17	4 32.71	+40 28.2	0.833	0.767	77.6	20.3	48 E	42*	10*
										4 19	4 47.93	+41 39.2	0.817	0.783	77.7	20.3	50 E	44*	10*
										4 21	5 3.94	+42 43.1	0.803	0.799	77.7	20.3	51 E	45*	10*
										4 23	5 20.72	+43 38.9	0.789	0.816	77.5	20.4	52 E	46*	11*
										4 25	5 38.24	+44 25.3	0.778	0.834	77.2	20.4	54 E	48*	11*
										4 27	5 56.41	+45 1.6	0.767	0.852	76.7	20.4	55 E	49*	12*
										4 29	6 15.12	+45 26.7	0.758	0.870	76.1	20.4	57 E	51*	13*
										5 1	6 34.22	+45 40.0	0.751	0.889	75.3	20.4	59 E	52*	14*
										5 3	6 53.55	+45 40.9	0.745	0.908	74.4	20.4	60 E	54*	15*
										5 5	7 12.90	+45 29.2	0.741	0.927	73.5	20.4	62 E	55*	16*
										5 7	7 32.09	+45 5.1	0.739	0.946	72.4	20.4	63 E	56*	17*
										5 9	7 50.93	+44 28.9	0.738	0.966	71.3	20.4	65 E	58*	18*
										5 11	8 9.25	+43 41.5	0.739	0.985	70.1	20.4	67 E	59*	19*
										5 13	8 26.93	+42 43.7	0.741	1.005	68.8	20.4	68 E	60*	21*
										5 15	8 43.86	+41 36.7	0.745	1.025	67.5	20.4	70 E	60*	22*
										5 17	8 59.97	+40 21.8	0.751	1.045	66.2	20.4	71 E	61*	23*
										5 19	9 15.24	+39 0.2	0.759	1.065	64.9	20.4	72 E	61*	25*
										5 21	9 29.66	+37 33.3	0.768	1.084	63.6	20.5	74 E	61*	26*
										5 23	9 43.24	+36 2.3	0.779	1.104	62.3	20.5	75 E	61*	28*
										5 25	9 56.00	+34 28.3	0.791	1.124	61.0	20.5	76 E	61*	30*
										5 27	10 8.00	+32 52.3	0.805	1.144	59.7	20.6	77 E	60*	31*
										5 29	10 19.27	+31 15.4	0.820	1.163	58.5	20.6	78 E	60*	33*

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

2020	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	2020	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
463664 2014 JY ₂₄ (continuation)										307161 2002 DY ₃									
5 31	10 29.87	+29 38.1	0.836	1.183	57.2	20.6	79 E	59*	34	1 22	23 40.43	+16 39.2	1.483	1.351	40.3	21.5	63 E	54*	21*
6 2	10 39.85	+28 1.3	0.853	1.202	56.1	20.7	80 E	58*	36	2 1	0 3.23	+19 49.1	1.503	1.311	40.3	21.5	59 E	52*	17*
6 4	10 49.25	+26 25.4	0.872	1.222	54.9	20.7	80 E	57*	38	2 11	0 28.49	+23 3.2	1.514	1.272	40.3	21.4	57 E	50*	13*
6 6	10 58.13	+24 50.9	0.892	1.241	53.8	20.8	81 E	55*	39	2 21	0 56.58	+26 17.1	1.517	1.235	40.5	21.4	54 E	48*	11*
6 8	11 6.53	+23 18.1	0.913	1.260	52.8	20.8	81 E	54*	41	3 2	1 27.97	+29 25.2	1.512	1.200	40.9	21.3	52 E	46*	9*
6 10	11 14.49	+21 47.3	0.935	1.279	51.8	20.9	82 E	53*	42	3 12	2 3.10	+32 18.6	1.501	1.168	41.4	21.2	51 E	45*	8*
6 15	11 32.75	+18 10.1	0.994	1.326	49.4	21.0	83 E	49*	46	3 22	2 42.34	+34 46.0	1.487	1.140	42.0	21.2	50 E	44*	9*
6 20	11 49.06	+14 47.9	1.058	1.372	47.3	21.2	83 E	46*	49	4 1	3 25.73	+36 33.5	1.472	1.116	42.7	21.1	49 E	43*	10*
6 25	12 3.83	+11 40.9	1.126	1.418	45.3	21.3	83 E	43*	52	4 11	4 12.63	+37 26.1	1.458	1.099	43.4	21.1	49 E	42*	12*
6 30	12 17.40	+8 48.4	1.198	1.462	43.5	21.5	82 E	40*	55*	4 21	5 1.73	+37 11.3	1.447	1.087	43.9	21.1	49 E	43*	14*
1 22	23 25.72	+4 37.4	1.230	1.016	50.9	21.5	53 E	42*	25*	5 1	5 51.13	+35 42.8	1.443	1.083	44.2	21.1	49 E	41*	18*
1 27	23 41.55	+5 47.3	1.198	0.979	52.6	21.4	52 E	42*	24*	5 11	6 38.88	+33 2.9	1.446	1.085	44.2	21.1	49 E	38*	22*
2 1	23 58.35	+6 59.2	1.164	0.946	54.5	21.3	51 E	41*	23*	5 21	7 23.63	+29 21.7	1.458	1.094	43.9	21.1	49 E	35*	26*
2 6	0 16.18	+8 12.2	1.126	0.916	56.6	21.2	51 E	41*	23*	5 31	8 4.79	+24 54.3	1.479	1.109	43.2	21.1	49 E	30*	30*
2 11	0 35.11	+9 24.9	1.087	0.890	58.9	21.1	51 E	41*	22*	6 10	8 42.40	+19 56.5	1.510	1.130	42.2	21.2	48 E	25*	34*
2 16	0 55.21	+10 35.7	1.046	0.868	61.3	21.1	50 E	41*	23*	6 20	9 16.92	+14 42.7	1.550	1.157	41.0	21.3	48 E	20*	37*
2 21	1 16.56	+11 42.9	1.004	0.852	63.8	21.0	51 E	41*	23*	6 30	9 48.97	+9 24.0	1.598	1.187	39.5	21.4	48 E	15*	39*
2 26	1 39.24	+12 44.5	0.962	0.842	66.2	21.0	51 E	41*	24*	7 10	10 19.12	+4 8.7	1.652	1.221	37.8	21.4	47 E	10*	41*
3 2	2 3.29	+13 38.3	0.921	0.838	68.4	20.9	52 E	42*	25*	461912 2006 RG ₂									
3 7	2 28.74	+14 22.1	0.882	0.840	70.3	20.9	53 E	42*	27*	1 22	23 41.47	+1 49.5	1.631	1.318	37.1	21.4	54 E	38*	32*
3 12	2 55.59	+14 53.7	0.845	0.849	71.8	20.9	54 E	43*	29*	2 1	0 4.43	+1 35.7	1.601	1.234	38.0	21.2	50 E	38*	27*
3 17	3 23.81	+15 11.0	0.813	0.863	72.8	20.9	56 E	43*	31*	2 11	0 30.05	+5 19.4	1.561	1.154	39.1	21.0	48 E	37*	24*
3 22	3 53.28	+15 12.3	0.785	0.883	73.1	20.9	58 E	44*	34*	2 21	0 58.71	+9 19.7	1.511	1.083	40.8	20.9	46 E	37*	21*
3 27	4 23.80	+14 56.4	0.763	0.908	72.7	20.8	60 E	44*	36*	3 2	1 30.97	+13 32.6	1.456	1.022	42.9	20.7	45 E	36*	19*
4 1	4 55.05	+14 22.9	0.748	0.937	71.7	20.8	63 E	45*	39*	3 12	2 7.47	+17 49.9	1.396	0.977	45.4	20.6	44 E	37*	18*
4 6	5 26.63	+13 32.3	0.740	0.970	70.1	20.8	66 E	45*	43*	3 22	2 48.96	+21 58.4	1.338	0.949	48.0	20.5	45 E	38*	18*
4 11	5 58.06	+12 26.3	0.740	1.006	68.1	20.9	69 E	45*	46*	4 1	3 36.01	+25 38.9	1.286	0.943	50.4	20.5	47 E	39*	19*
4 16	6 28.90	+11 7.8	0.748	1.044	65.7	20.9	72 E	44*	49*	4 6	4 1.65	+27 10.9	1.265	0.947	51.4	20.5	48 E	40*	19*
4 21	6 58.72	+9 40.0	0.764	1.084	63.1	20.9	74 E	43*	51*	4 11	4 28.58	+28 26.4	1.247	0.958	52.1	20.5	49 E	41*	20*
4 26	7 27.21	+8 6.7	0.788	1.126	60.4	21.0	77 E	42*	54*	4 16	4 56.60	+29 22.2	1.233	0.973	52.5	20.5	50 E	41*	22*
5 1	7 54.15	+6 31.0	0.819	1.169	57.7	21.1	79 E	41*	56*	4 21	5 25.42	+29 55.9	1.225	0.992	52.6	20.6	52 E	42*	23*
5 6	8 19.42	+4 55.6	0.857	1.213	55.2	21.2	81 E	40*	58*	4 26	5 54.67	+30 5.9	1.223	1.016	52.4	20.6	53 E	43*	25*
5 11	8 43.02	+3 22.6	0.901	1.257	52.7	21.3	82 E	38*	60*	5 1	6 23.89	+29 51.6	1.227	1.044	51.9	20.7	55 E	43*	26*
5 16	9 5.01	+1 53.1	0.951	1.301	50.5	21.4	83 E	36*	62*	5 6	6 52.66	+29 13.9	1.237	1.075	51.1	20.7	56 E	43*	28*
1 22	23 35.80	+8 34.5	0.120	0.925	116.4	20.3	57 E	46*	25*	5 11	7 20.57	+28 14.8	1.254	1.109	50.1	20.8	57 E	43*	30*
1 23	23 50.32	+12 52.8	0.116	0.935	112.1	20.0	62 E	51*	25*	5 16	7 47.32	+26 57.3	1.278	1.146	48.9	20.9	59 E	42*	32*
1 24	0 6.11	+17 21.4	0.114	0.944	107.5	19.7	66 E	57*	24*	5 21	8 12.71	+25 24.8	1.308	1.184	47.6	20.9	60 E	41*	35*
1 25	0 23.21	+21 53.6	0.112	0.954	102.6	19.4	71 E	62*	23*	5 26	8 36.63	+23 40.8	1.344	1.224	46.2	21.0	61 E	40*	37*
1 26	0 41.61	+26 21.7	0.112	0.963	97.5	19.2	76 E	67*	23*	5 31	8 59.05	+21 48.8	1.387	1.266	44.7	21.1	61 E	38*	39*
1 27	1 1.22	+30 37.6	0.113	0.973	92.5	19.0	81 E	72*	22*	6 5	9 20.01	+19 51.8	1.434	1.308	43.1	21.2	62 E	36*	41*
1 28	1 21.90	+34 34.1	0.116	0.983	87.7	18.9	86 E	78*	21*	6 10	9 39.60	+17 52.3	1.487	1.352	41.6	21.3	62 E	34*	42*
1 29	1 43.41	+38 5.8	0.119	0.992	83.0	18.8	90 E	82*	20*	6 15	9 57.92	+15 52.4	1.545	1.395	40.0	21.5	62 E	32*	44*
1 30	2 5.43	+41 9.3	0.124	1.002	78.7	18.7	94 E	86*	18*	350523 2000 EA ₁₄									
1 31	2 27.60	+43 43.7	0.129	1.011	74.7	18.7	98 E	89	17*	2 1	2 9.32	+1 36.5	0.325	0.980	81.4	21.5	80 E	47*	52*
2 1	2 49.55	+45 49.6	0.135	1.021	71.1	18.7	101 E	89	16*	2 6	2 38.26	+3 57.5	0.325	0.995	78.9	21.4	82 E	49*	52*
2 2	3 10.92	+47 29.5	0.142	1.030	67.8	18.7	104 E	88	16*	2 11	3 7.21	+6 13.9	0.328	1.011	76.4	21.4	85 E	51*	52*
2 3	3 31.41	+48 46.2	0.150	1.040	64.9	18.8	107 E	86	15*	2 16	3 35.91	+8 21.9	0.334	1.028	73.8	21.4	87 E	53*	51*
2 4	3 50.81	+49 43.3	0.158	1.049	62.3	18.8	110 E	85	14*	2 21	4 4.12	+10 18.5	0.344	1.044	71.3	21.4	90 E	55*	51*
2 5	4 8.97	+50 23.8	0.166	1.058	60.0	18.9	112 E	85	14*	2 26	4 31.62	+12 1.5	0.357	1.061	68.9	21.4	91 E	57	50*
2 6	4 25.82	+50 51.0	0.175	1.068	58.0	18.9	113 E	84	13	3 2	4 58.25	+13 29.3	0.372	1.078	66.7	21.5	93 E	58	50*
2 7	4 41.37	+51 7.5	0.184	1.077	56.1	19.0	115 E	84	13	515767 2015 JA ₂									
2 8	4 55.66	+51 15.5	0.194	1.086	54.5	19.1	116 E	84	13	2 1	2 15.08	+1 11.5	0.277	0.980	83.0	21.2	81 E	46*	53*
2 9	5 8.76	+51 16.9	0.204	1.095	53.1	19.2	117 E	84	13	2 3	2 29.40	+4 28.2	0.280	0.992	80.5	21.1	83 E	49	52*
2 10	5 20.74	+51 13.2	0.214	1.104	51.8	19.3	118 E	84	13	2 5	2 43.47	+7 38.6	0.285	1.004	78.1	21.1	86 E	53	50*
2 11	5 31.72	+51 5.5	0.224	1.114	50.6	19.4	119 E	84	13	2 7	2 57.27	+10 40.5	0.291	1.017	75.7	21.1	88 E	56	48*
2 12	5 41.79	+50 54.9	0.234	1.123	49.6	19.4	120 E	84	13	2 9	3 10.76	+13 32.1	0.298	1.028	73.6	21.1	90 E	59	46*
2 13	5 51.03	+50 42.0	0.245	1.132	48.7	19.5	121 E	84	13	2 11	3 23.92	+16 12.3	0.307	1.040	71.5	21.1	91 E	61	45*
2 14	5 59.54	+50 27.4	0.256	1.141	47.8	19.6	121												

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

2020	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45° - 26°	2020	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45° - 26°
455195 2000 SR₁₇₈									463360 2012 TU <i>(continuation)</i>								
2 1	9 52.65	- 2 25.8	2.802	3.721	6.3	22.9	156 W	43 66	3 2	9 14.76	+29 30.8	0.827	1.749	17.5	22.3	148 E	75 34
2 11	9 44.77	- 1 48.4	2.774	3.731	4.3	22.8	164 W	43 66	3 7	9 6.25	+29 6.7	0.834	1.728	20.6	22.4	142 E	74 35
2 21	9 36.72	- 1 0.3	2.777	3.740	4.0	22.7	165 E	44 65	506808 2007 MG₆								
3 2	9 29.16	- 0 5.2	2.810	3.748	5.7	22.9	158 E	45 64	2 1	10 16.52	-10 4.1	2.829	3.687	8.6	22.9	146 W	35 74
3 12	9 22.69	+ 0 52.5	2.873	3.755	8.0	23.0	148 E	46 63	2 11	10 9.03	- 9 43.6	2.745	3.660	6.7	22.7	155 W	35 74
452651 2005 UP₂₃₁									2 21	10 0.81	- 9 6.0	2.689	3.632	5.4	22.6	160 E	36 73
2 1	9 56.25	+10 24.8	1.830	2.789	5.7	23.1	164 W	55 54	3 2	9 52.52	- 8 13.4	2.663	3.604	5.8	22.6	159 E	37 72
2 6	9 51.32	+10 50.6	1.815	2.791	3.6	23.0	170 W	56 53	3 12	9 44.86	- 7 9.8	2.667	3.574	7.5	22.6	152 E	38 71
2 11	9 46.17	+11 17.8	1.809	2.794	1.4	22.8	176 W	56 53	477912 2011 LO₁₇								
2 16	9 40.94	+11 45.4	1.809	2.796	1.2	22.8	176 E	57 52	2 1	10 17.31	-10 25.2	3.013	3.866	8.3	23.5	146 W	35 74
2 21	9 35.78	+12 12.8	1.818	2.798	3.3	23.0	171 E	57 52	2 11	10 9.96	-10 15.3	2.928	3.839	6.5	23.3	154 W	35 74
2 26	9 30.81	+12 39.2	1.834	2.799	5.5	23.1	164 E	58 51	2 21	10 1.89	- 9 49.4	2.871	3.810	5.3	23.2	159 E	35 74
3 2	9 26.18	+13 4.0	1.857	2.801	7.6	23.2	158 E	58 51	3 2	9 53.74	- 9 9.3	2.844	3.781	5.6	23.2	158 E	36 73
486858 2014 KK₁									3 12	9 46.16	- 8 18.4	2.846	3.752	7.2	23.3	152 E	37 72
2 1	9 59.92	+12 1.4	1.431	2.391	6.7	22.2	163 W	57 52	469634 2004 SZ₁₉								
2 6	9 55.18	+12 40.8	1.403	2.380	4.2	22.0	170 W	58 51	2 1	10 19.11	- 8 21.9	1.412	2.301	13.5	22.5	147 W	37 72
2 11	9 50.04	+13 22.2	1.382	2.368	1.6	21.8	176 W	58 51	2 11	10 8.57	- 6 12.7	1.368	2.312	9.3	22.3	158 W	39 70
2 16	9 44.67	+14 4.5	1.369	2.356	1.2	21.7	177 E	59 50	2 21	9 56.98	- 3 32.1	1.352	2.321	6.4	22.2	165 E	41 68
2 21	9 39.23	+14 46.6	1.363	2.344	3.9	21.9	171 E	60 49	3 2	9 45.78	- 0 33.1	1.366	2.328	7.7	22.3	162 E	44 65
2 26	9 33.92	+15 27.2	1.364	2.332	6.6	22.0	164 E	60 49	3 12	9 36.34	+ 2 27.6	1.410	2.333	11.6	22.5	152 E	47 62
3 2	9 28.92	+16 5.4	1.371	2.319	9.3	22.1	158 E	61 48	493045 2014 SA₂₆₃								
3 7	9 24.39	+16 40.2	1.385	2.307	11.8	22.2	152 E	62 47	2 1	10 19.50	+20 39.5	2.330	3.272	6.0	22.4	160 W	66 43
3 12	9 20.47	+17 11.0	1.405	2.294	14.2	22.3	146 E	62 47	2 6	10 14.72	+20 59.3	2.310	3.273	4.5	22.3	165 W	66 43
447172 2005 NQ₇₆									2 11	10 9.67	+21 18.0	2.298	3.273	3.2	22.2	169 W	66 43
2 1	10 1.94	+11 33.0	1.719	2.676	6.3	22.4	163 W	57 52	2 16	10 4.44	+21 34.9	2.294	3.273	2.8	22.2	171 W	67 42
2 6	9 57.15	+12 7.2	1.700	2.675	4.0	22.3	169 W	57 52	2 21	9 59.16	+21 49.6	2.298	3.273	3.4	22.2	169 E	67 42
2 11	9 52.09	+12 42.8	1.688	2.673	1.6	22.1	176 W	58 51	2 26	9 53.94	+22 1.5	2.309	3.272	4.8	22.3	164 E	67 42
2 16	9 46.88	+13 18.7	1.684	2.671	0.8	22.0	178 E	58 51	3 2	9 48.92	+22 10.2	2.329	3.272	6.3	22.4	159 E	67 42
2 21	9 41.67	+13 54.1	1.688	2.670	3.1	22.2	172 E	59 50	3 7	9 44.20	+22 15.6	2.355	3.271	7.9	22.5	153 E	67 42
2 26	9 36.62	+14 28.1	1.698	2.667	5.5	22.3	165 E	59 50	405352 2003 WM₂₇								
3 2	9 31.87	+14 59.9	1.717	2.665	7.7	22.5	159 E	60 49	2 1	10 20.10	+12 42.0	2.294	3.233	6.3	22.3	159 W	58 51
504827 2010 KZ₁₁₇									2 11	10 11.15	+13 26.2	2.255	3.234	2.7	22.1	171 W	58 51
2 1	10 3.82	+ 0 33.3	1.542	2.476	9.3	22.6	156 W	46 63	2 21	10 1.49	+14 11.0	2.248	3.235	1.4	22.0	176 E	59 50
2 11	9 48.30	- 0 28.5	1.456	2.422	6.1	22.3	165 W	45 64	3 2	9 52.01	+14 51.5	2.272	3.234	5.0	22.3	163 E	60 49
2 21	9 30.96	- 1 18.7	1.402	2.367	6.7	22.2	164 E	44 65	3 12	9 43.56	+15 24.0	2.325	3.233	8.5	22.5	151 E	60 49
3 2	9 13.49	- 1 56.4	1.379	2.310	10.9	22.3	154 E	43 66	499140 2009 RL₁								
3 12	8 57.73	- 2 23.2	1.386	2.252	15.9	22.4	142 E	43 66	2 1	10 20.13	+ 3 22.3	2.666	3.582	6.7	23.3	155 W	48 61
489508 2007 OL₁₀									2 11	10 12.31	+ 3 57.2	2.614	3.580	3.8	23.1	166 W	49 60
2 1	10 4.35	+18 30.6	2.036	2.993	5.4	23.2	163 W	64 45	2 21	10 3.85	+ 4 39.9	2.592	3.576	1.9	23.0	173 E	50 59
2 6	9 59.33	+18 55.5	2.009	2.983	3.6	23.0	169 W	64 45	3 2	9 55.44	+ 5 26.6	2.603	3.572	3.9	23.1	166 E	50 59
2 11	9 54.00	+19 19.8	1.991	2.973	2.2	22.9	173 W	64 45	3 12	9 47.81	+ 6 13.4	2.644	3.567	6.9	23.3	155 E	51 58
2 16	9 48.50	+19 42.8	1.980	2.962	2.4	22.9	173 E	65 44	438429 2006 WN₁								
2 21	9 42.95	+20 3.8	1.976	2.951	3.9	23.0	168 E	65 44	2 1	10 20.72	+ 4 7.5	2.114	3.036	7.8	23.5	155 W	49 60
2 26	9 37.51	+20 22.2	1.981	2.940	5.8	23.1	162 E	65 44	2 11	10 11.00	+ 4 55.0	2.071	3.041	4.2	23.3	167 W	50 59
3 2	9 32.30	+20 37.4	1.993	2.928	7.8	23.2	156 E	66 43	2 21	10 0.50	+ 5 51.3	2.059	3.044	2.0	23.1	174 E	51 58
504505 2008 MH₁									3 2	9 50.19	+ 6 51.0	2.078	3.045	4.9	23.3	165 E	52 57
2 1	10 5.04	+ 7 38.5	3.281	4.222	4.5	24.4	160 W	53 56	3 12	9 41.02	+ 7 48.5	2.128	3.045	8.6	23.5	153 E	53 56
2 11	9 57.19	+ 8 10.8	3.233	4.212	1.9	24.2	172 W	53 56	326732 2003 HB₆								
2 21	9 48.95	+ 8 46.6	3.217	4.201	1.5	24.2	173 E	54 55	2 1	10 22.10	+ 8 5.7	2.984	3.909	5.7	23.4	157 W	53 56
3 2	9 40.92	+ 9 22.9	3.234	4.189	4.1	24.3	162 E	54 55	2 11	10 14.54	+ 8 55.1	2.910	3.883	2.8	23.2	169 W	54 55
3 12	9 33.67	+ 9 57.0	3.282	4.176	6.7	24.5	151 E	55 54	2 21	10 6.22	+ 9 49.3	2.867	3.855	0.6	22.9	178 E	55 54
141614 2002 JV₁₅									3 2	9 57.77	+10 44.5	2.856	3.826	3.6	23.1	166 E	56 53
2 1	10 5.76	+ 1 27.7	1.553	2.488	9.1	22.8	156 W	46 63	3 12	9 49.88	+11 36.7	2.877	3.796	6.6	23.3	154 E	57 52
2 11	9 52.45	+ 2 39.8	1.519	2.492	4.9	22.6	168 W	48 61	467527 2007 LA₁₅								
2 21	9 38.47	+ 4 6.2	1.516	2.494	4.4	22.6	169 E	49 60	2 1	10 22.35	+ 8 7.0	1.443	2.380	9.4	22.8	157 W	53 56
3 2	9 25.30	+ 5 37.9	1.545	2.493	8.4	22.8	158 E	51 58	2 6	10 16.79	+ 8 54.0	1.420	2.382	6.8	22.7	163 W	54 55
3 12	9 14.27	+ 7 5.8	1.602	2.490	12.8	23.1	146 E	52 57	2 11	10 10.75	+ 9 44.2	1.405	2.384	4.1	22.5	170 W	55 54
253069 2002 TG₁₁₀									2 16	10 4.41	+10 36.1	1.398	2.385	1.3	22.3	177 W	56 53
2 1	10 5.93	+27 30.5	2.210	3.157	5.9	22.6	161 W	73 36	2 21	9 57.94	+11 28.5	1.398	2.385	1.7	22.3	176 E	56 53
2 6	10 1.01	+28 0.6	2.209	3.168	4.9	22.5	164 W	73 36	2 26	9 51.54	+12 20.0	1.405	2.385	4.4	22.5	169 E	57 52
2 11	9 55.91	+28 27.7	2.215	3.178	4.6	22.5	165 W	73 36	3 2	9 45.42	+13 9.2	1.420	2.384	7.2	22.7	163 E	58 51
2 16	9 50.72	+28 51.1	2.228	3.188	5.0	22.6	164 E	74 35	3 7	9 39.75	+13 55.1	1.442	2.383	9.7	22.8	156 E	59 50
2 21	9 45.60	+29 10.3	2.249	3.198	5.9	22.7	161 E	74 35	416282 2003 KE₃₁								
2 26	9 40.66	+29 24.9	2.277	3.208	7.1	22.7	156 E	74 35	2 1	10 22.39	+ 9 14.3	1.940	2.874	7.6	22.6	157 W	54 55
3 2	9 36.02	+29 34.9	2.313	3.218	8.5	22.8	151 E	75 34									

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

2020	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	2020	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°		
488698 2003 XV₁₀										423190 2004 NM₁₈											
2	1	10 23.20	+23 25.1	1.463	2.407	8.6	22.6	159 W	68	41	2	1	10 39.51	+ 3 40.9	2.594	3.488	7.9	21.9	151 W	49	60
2	6	10 14.52	+24 9.8	1.447	2.409	6.5	22.5	164 W	69	40	2	11	10 32.11	+ 4 23.7	2.558	3.512	4.8	21.8	163 W	49	60
2	11	10 5.28	+24 51.1	1.438	2.410	5.1	22.4	167 W	70	39	2	21	10 23.93	+ 5 14.0	2.552	3.536	1.7	21.6	174 W	50	59
2	16	9 55.73	+25 27.5	1.438	2.411	5.2	22.4	167 W	70	39	3	2	10 15.68	+ 6 7.4	2.577	3.559	2.5	21.7	171 E	51	58
2	21	9 46.14	+25 57.7	1.446	2.410	6.7	22.5	164 E	71	38	3	12	10 8.07	+ 6 59.4	2.634	3.581	5.6	21.9	159 E	52	57
2	26	9 36.77	+26 20.8	1.462	2.409	8.8	22.6	158 E	71	38	3	22	10 1.68	+ 7 46.3	2.719	3.603	8.4	22.1	148 E	53	56
3	2	9 27.90	+26 36.5	1.485	2.407	11.1	22.8	152 E	72	37	447334 2005 YA₄₇										
3	7	9 19.75	+26 45.0	1.516	2.403	13.4	22.9	146 E	72	37	2	1	10 39.95	+ 5 4.5	1.578	2.489	10.9	21.9	152 W	50	59
393359 1998 ME₃										2	11	10 30.23	+ 5 36.0	1.553	2.515	6.2	21.6	164 W	51	58	
2	1	10 26.49	+12 31.4	1.906	2.841	7.7	23.4	157 W	58	51	2	21	10 19.38	+ 6 17.0	1.555	2.542	1.9	21.4	175 W	51	58
2	6	10 21.93	+13 8.0	1.864	2.824	5.6	23.3	164 W	58	51	3	2	10 8.63	+ 7 1.4	1.587	2.567	4.1	21.6	169 E	52	57
2	11	10 16.90	+13 46.4	1.830	2.806	3.5	23.1	170 W	59	50	3	12	9 59.20	+ 7 42.8	1.647	2.591	8.5	21.9	157 E	53	56
2	16	10 11.50	+14 26.0	1.803	2.789	1.6	22.9	176 W	59	50	3	22	9 51.97	+ 8 16.5	1.732	2.615	12.5	22.2	146 E	53	56
2	21	10 5.85	+15 5.6	1.784	2.771	1.7	22.9	175 E	60	49	488498 2000 QJ₁₁₇										
2	26	10 0.11	+15 44.4	1.773	2.752	3.7	23.0	170 E	61	48	2	1	10 40.53	+10 3.6	2.801	3.708	6.8	22.5	153 W	55	54
3	2	9 54.43	+16 21.4	1.769	2.733	6.0	23.1	163 E	61	48	2	11	10 33.67	+11 17.4	2.752	3.715	3.8	22.3	165 W	56	53
3	7	9 48.96	+16 55.7	1.773	2.714	8.3	23.2	157 E	62	47	2	21	10 25.95	+12 34.5	2.735	3.722	0.9	22.1	177 W	58	50
450003 2015 PT₂₉₁										3	2	10 18.02	+13 49.9	2.750	3.728	2.8	22.2	169 E	59	50	
2	1	10 26.98	+ 5 53.7	1.834	2.757	8.8	23.8	155 W	51	58	3	12	10 10.57	+14 58.5	2.797	3.734	5.9	22.5	157 E	60	49
2	11	10 17.64	+ 6 55.1	1.790	2.761	4.5	23.6	167 W	52	57	200648 2001 TU₁										
2	21	10 7.26	+ 8 5.2	1.776	2.763	1.2	23.3	177 E	53	56	2	1	10 41.16	+12 36.5	1.972	2.890	8.6	21.7	154 W	58	51
3	2	9 56.94	+ 9 16.9	1.792	2.765	4.9	23.6	166 E	54	55	2	11	10 32.29	+13 27.9	1.924	2.891	4.7	21.4	166 W	58	51
3	12	9 47.77	+10 23.5	1.838	2.765	9.1	23.8	154 E	55	54	2	21	10 22.18	+14 21.1	1.905	2.892	1.3	21.2	176 W	59	50
100085 1992 UY₄										3	2	10 11.82	+15 9.7	1.917	2.892	4.3	21.4	167 E	60	49	
2	1	10 29.81	+ 7 52.8	3.092	4.007	6.0	23.7	155 W	53	56	3	12	10 2.29	+15 48.6	1.958	2.890	8.3	21.6	155 E	61	48
2	11	10 21.88	+ 8 34.7	3.063	4.031	3.1	23.6	167 W	54	55	3	22	9 54.46	+16 14.5	2.026	2.888	11.8	21.9	144 E	61	48
2	21	10 13.41	+ 9 19.7	3.065	4.054	0.4	23.4	178 E	54	55	391938 2008 UY₃₆₆										
3	2	10 5.02	+10 4.4	3.101	4.075	2.9	23.6	168 E	55	54	2	1	10 43.84	+20 20.9	1.819	2.739	9.0	21.6	154 W	65	44
3	12	9 57.30	+10 45.5	3.168	4.096	5.7	23.8	156 E	56	53	2	6	10 39.65	+20 59.0	1.790	2.735	7.3	21.5	159 W	66	43
360436 2002 JE₇₀										2	11	10 34.95	+21 36.7	1.768	2.731	5.7	21.4	164 W	67	42	
2	1	10 32.91	+15 48.3	1.867	2.798	8.1	21.8	157 W	61	48	2	16	10 29.86	+22 13.1	1.753	2.726	4.6	21.3	167 W	67	42
2	6	10 28.89	+16 25.8	1.827	2.782	6.2	21.6	162 W	61	48	2	21	10 24.51	+22 47.0	1.746	2.721	4.4	21.3	168 W	68	41
2	11	10 24.38	+17 4.5	1.793	2.766	4.3	21.5	168 W	62	47	2	26	10 19.04	+23 17.5	1.746	2.716	5.3	21.3	165 E	68	41
2	16	10 19.48	+17 43.5	1.767	2.749	2.8	21.3	172 W	63	46	3	2	10 13.62	+23 43.7	1.753	2.710	6.8	21.4	161 E	69	40
2	21	10 14.32	+18 21.8	1.749	2.732	2.7	21.3	173 W	63	46	3	7	10 8.41	+24 5.0	1.768	2.704	8.6	21.5	156 E	69	40
2	26	10 9.03	+18 58.4	1.738	2.715	4.2	21.3	169 E	64	45	3	12	10 3.54	+24 21.1	1.789	2.698	10.4	21.6	151 E	69	40
3	2	10 3.76	+19 32.3	1.734	2.698	6.2	21.4	163 E	65	44	3	17	9 59.15	+24 31.8	1.816	2.692	12.2	21.7	145 E	70	39
3	7	9 58.67	+20 2.7	1.738	2.680	8.3	21.5	157 E	65	44	3	22	9 55.32	+24 37.2	1.848	2.686	13.9	21.8	140 E	70	39
3	12	9 53.89	+20 29.0	1.748	2.662	10.4	21.6	151 E	65	44	422648 1996 VW₆										
3	17	9 49.56	+20 50.8	1.765	2.644	12.4	21.7	145 E	66	43	2	1	10 44.04	+12 53.7	2.712	3.619	7.0	22.1	153 W	58	51
3	22	9 45.78	+21 7.9	1.787	2.625	14.3	21.8	139 E	66	43	2	11	10 36.29	+13 32.9	2.667	3.630	4.0	21.9	165 W	59	50
170178 2003 MR₂										2	21	10 27.65	+14 12.9	2.654	3.640	1.3	21.7	175 W	59	50	
2	1	10 35.30	+ 7 30.4	1.965	2.881	8.7	21.3	154 W	53	56	3	2	10 18.82	+14 49.4	2.672	3.649	3.0	21.9	169 E	60	49
2	11	10 26.81	+ 8 9.9	1.897	2.865	4.8	21.0	166 W	53	56	3	12	10 10.55	+15 19.1	2.721	3.657	6.0	22.1	157 E	60	49
2	21	10 17.00	+ 8 56.8	1.859	2.847	0.7	20.6	178 W	54	55	3	22	10 3.44	+15 39.5	2.798	3.665	8.8	22.3	146 E	61	48
3	2	10 6.86	+ 9 45.8	1.851	2.829	4.0	20.9	169 E	55	54	365224 2009 HC₈₈										
3	12	9 57.44	+10 31.2	1.872	2.810	8.2	21.1	156 E	56	53	2	1	10 45.01	+ 0 57.4	2.979	3.853	7.7	21.9	148 W	46	63
3	22	9 49.67	+11 8.4	1.920	2.790	12.1	21.3	144 E	56	53	2	11	10 38.35	+ 2 0.4	2.912	3.855	5.0	21.8	160 W	47	62
4	1	9 44.20	+11 34.6	1.990	2.769	15.3	21.5	133 E	57	52	2	21	10 30.81	+ 3 13.2	2.875	3.856	2.2	21.6	171 W	48	61
190276 4548 P-L										3	2	10 22.97	+ 4 31.6	2.871	3.856	2.0	21.6	172 E	50	59	
2	1	10 36.30	+16 11.3	1.885	2.813	8.3	21.3	156 W	61	48	3	12	10 15.48	+ 5 50.6	2.900	3.855	4.7	21.7	161 E	51	58
2	6	10 31.64	+16 36.1	1.852	2.805	6.3	21.2	162 W	62	47	3	22	10 8.89	+ 7 5.8	2.959	3.853	7.5	21.9	150 E	52	57
2	11	10 26.52	+17 1.3	1.825	2.797	4.4	21.0	167 W	62	47	283948 2004 PU₈₅										
2	16	10 21.03	+17 26.0	1.807	2.788	2.8	20.9	172 W	62	47	2	1	10 45.83	+ 8 31.7	1.973	2.878	9.4	21.7	152 W	54	55
2	21	10 15.31	+17 49.5	1.795	2.779	2.5	20.9	173 W	63	46	2	11	10 37.77	+ 9 38.1	1.932	2.893	5.4	21.5	164 W	55	54
2	26	10 9.52	+18 10.9	1.792	2.770	3.8	20.9	169 E	63	46	2	21	10 28.50	+10 50.1	1.919	2.907	1.2	21.2	176 W	56	53
3	2	10 3.81	+18 29.5	1.796	2.761	5.8	21.0	164 E	63	46	3	2	10 18.96	+12 1.0	1.938	2.920	3.2	21.4	171 E	57	52
3	7	9 58.33	+18 44.7	1.807	2.752	7.8	21.1	158 E	64	45	3	12	10 10.17	+13 4.2	1.987	2.933	7.2	21.7	158 E	58	51
3	12	9 53.22	+18 56.2	1.825	2.742	9.8	21.2	152 E	64	45	3	22	10 2.94	+13 55.3	2.062	2.944	10.8	21.9	146 E	59	50
3	17	9 48.60	+19 3.7	1.850	2.731	11.8	21.3	146 E	64	45	434019 2001 RG₉										
3	22	9 44.55	+19 7.3	1.880	2.721	13.6	21.4	140 E	64	45	2	1	10 45.83	-13 45.1	1.745	2.568	14.7	21.9	139 W	31	78
395339 2011 QS₃₃										2	11	10 37.17	-13 33.2	1.678	2.570	11.7	21.7	148 W	31	78	
2	1	10 38.41	+ 7 57.4	1.976	2.889	8.9	22.5	153 W	53	56	2	21	10 26.89	-12 51.6	1.635	2.570	9.0	21.5	156 W	32	7

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

2020	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	2020	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
348490 2005 SB₂₂₁										134863 2000 PX₅									
2 1	10 45.99	+13 37.7	2.695	3.601	7.1	21.9	153 W	59	50	2 1	10 50.04	+12 25.2	1.814	2.722	9.8	21.7	152 W	57	52
2 11	10 38.21	+14 19.4	2.651	3.612	4.1	21.7	165 W	59	50	2 6	10 45.42	+12 52.3	1.792	2.731	7.8	21.6	158 W	58	51
2 21	10 29.51	+15 1.4	2.638	3.623	1.5	21.5	174 W	60	49	2 11	10 40.34	+13 20.6	1.777	2.740	5.6	21.5	164 W	58	51
3 2	10 20.60	+15 39.3	2.656	3.633	3.1	21.6	169 E	61	48	2 16	10 34.91	+13 49.2	1.770	2.748	3.5	21.4	170 W	59	50
3 12	10 12.22	+16 9.6	2.706	3.642	6.1	21.8	157 E	61	48	2 21	10 29.27	+14 17.3	1.770	2.756	1.8	21.3	175 W	59	50
3 22	10 5.01	+16 30.1	2.784	3.650	8.9	22.0	146 E	62	47	2 26	10 23.57	+14 43.9	1.778	2.764	2.2	21.3	174 E	60	49
415473 2014 OC₁₁₂										282128 2001 NT₁₂									
2 1	10 46.02	+13 25.0	2.205	3.115	8.3	21.7	153 W	58	51	2 1	10 50.34	+2 35.8	1.728	2.617	11.5	21.5	148 W	48	61
2 6	10 42.44	+14 2.8	2.174	3.114	6.5	21.6	159 W	59	50	2 11	10 43.06	+3 37.4	1.650	2.600	7.4	21.2	160 W	49	60
2 11	10 38.47	+14 41.8	2.150	3.113	4.8	21.4	165 W	60	49	2 21	10 34.01	+4 55.2	1.599	2.582	3.0	20.9	172 W	50	59
2 16	10 34.17	+15 21.4	2.133	3.111	3.1	21.3	170 W	60	49	3 2	10 24.14	+6 22.7	1.577	2.564	2.7	20.8	173 E	51	58
2 21	10 29.66	+16 0.6	2.124	3.109	2.0	21.2	174 W	61	48	3 12	10 14.64	+7 51.2	1.585	2.545	7.3	21.1	161 E	53	56
2 26	10 25.04	+16 38.6	2.123	3.107	2.5	21.3	172 E	62	47	3 22	10 6.59	+9 12.5	1.619	2.525	11.8	21.3	149 E	54	55
3 2	10 20.43	+17 14.6	2.130	3.105	4.0	21.4	167 E	62	47	4 1	10 0.86	+10 20.3	1.677	2.504	15.7	21.5	137 E	55	54
3 7	10 15.96	+17 47.8	2.145	3.102	5.8	21.5	162 E	63	46	161972 2007 JJ₄₀									
3 12	10 11.72	+18 17.7	2.166	3.100	7.5	21.6	156 E	63	46	2 1	10 50.78	+1 38.1	2.029	2.908	10.5	21.5	147 W	47	62
3 17	10 7.82	+18 43.9	2.194	3.097	9.2	21.7	150 E	64	45	2 11	10 43.54	+2 37.0	1.958	2.903	6.8	21.3	159 W	48	61
3 22	10 4.34	+19 6.1	2.229	3.093	10.8	21.8	144 E	64	45	2 21	10 34.85	+3 49.9	1.915	2.896	3.0	21.0	171 W	49	60
399356 2000 WG₁₂										464271 2015 TO₆₇									
2 1	10 46.66	+3 40.7	2.066	2.957	9.8	21.9	149 W	49	60	2 1	10 54.21	+12 33.6	1.747	2.652	10.4	22.0	151 W	58	51
2 11	10 38.38	+4 22.2	2.026	2.978	6.0	21.7	162 W	49	60	2 6	10 49.97	+12 56.6	1.718	2.653	8.4	21.9	157 W	58	51
2 21	10 28.99	+5 13.2	2.015	2.999	2.2	21.5	173 W	50	59	2 11	10 45.21	+13 21.1	1.695	2.655	6.2	21.7	163 W	58	51
3 2	10 19.40	+6 8.4	2.034	3.018	2.7	21.5	172 E	51	58	2 16	10 40.03	+13 46.2	1.679	2.656	4.1	21.6	169 W	59	50
3 12	10 10.55	+7 2.0	2.083	3.037	6.4	21.8	160 E	52	57	2 21	10 34.56	+14 11.0	1.671	2.657	2.2	21.5	174 W	59	50
3 22	10 3.22	+7 49.5	2.161	3.054	9.9	22.0	148 E	53	56	2 26	10 28.94	+14 34.7	1.670	2.657	2.1	21.5	174 E	60	49
408742 2014 OF₁₁₂										357126 2001 XR₂₄₆									
2 1	10 47.35	+10 13.2	2.271	3.174	8.4	21.7	152 W	55	54	2 1	10 47.42	+1 46.2	1.981	2.866	10.4	21.8	148 W	47	62
2 11	10 38.85	+10 42.4	2.214	3.174	4.9	21.4	164 W	56	53	2 11	10 39.10	+2 17.8	1.928	2.876	6.7	21.6	160 W	47	62
2 21	10 29.14	+11 15.1	2.186	3.173	1.1	21.2	176 W	56	53	2 21	10 29.49	+3 1.5	1.903	2.884	3.0	21.4	171 W	48	61
3 2	10 19.08	+11 46.7	2.189	3.171	2.9	21.3	171 E	57	52	3 2	10 19.53	+3 52.6	1.908	2.892	3.0	21.4	171 E	49	60
3 12	10 9.61	+12 13.0	2.224	3.169	6.6	21.5	158 E	57	52	3 12	10 10.24	+4 45.2	1.944	2.898	6.6	21.7	160 E	50	59
3 22	10 1.51	+12 31.0	2.286	3.165	10.0	21.7	147 E	58	51	3 22	10 2.50	+5 33.8	2.007	2.904	10.3	21.9	149 E	51	58
496868 2000 OA₅₁										488524 2001 QV₃₂₇									
2 1	10 47.61	-4 6.3	1.674	2.544	12.9	22.2	145 W	41	68	2 1	10 48.19	+25 14.8	2.553	3.457	7.5	22.0	153 W	70	39
2 11	10 39.44	-3 57.2	1.570	2.503	9.3	21.9	156 W	41	68	2 6	10 44.42	+25 49.6	2.525	3.454	6.4	21.9	157 W	71	38
2 21	10 29.11	-3 26.2	1.492	2.461	5.9	21.6	165 W	42	67	2 11	10 40.27	+26 23.3	2.504	3.450	5.4	21.8	161 W	71	38
3 2	10 17.58	-2 35.2	1.442	2.418	5.3	21.4	167 E	42	67	2 16	10 35.81	+26 54.9	2.490	3.446	4.9	21.8	163 W	72	37
3 12	10 6.16	-1 29.8	1.420	2.373	8.7	21.5	159 E	44	65	2 21	10 31.15	+27 23.9	2.485	3.443	4.8	21.8	163 W	72	37
3 22	9 56.18	-0 17.8	1.424	2.328	13.3	21.7	148 E	45	64	2 26	10 26.38	+27 49.3	2.486	3.438	5.3	21.8	161 E	73	36
380161 2000 LD₁₆										401009 2011 RM₃									
2 1	10 48.44	-0 43.5	2.776	3.640	8.5	22.4	147 W	44	65	2 1	10 56.75	+13 50.3	1.941	2.841	9.8	22.4	151 W	59	50
2 11	10 41.42	-0 15.8	2.687	3.621	5.8	22.2	158 W	45	64	2 11	10 48.21	+14 35.1	1.877	2.834	6.1	22.2	162 W	60	49
2 21	10 33.29	+0 23.3	2.626	3.600	3.2	22.0	168 W	45	64	2 21	10 38.00	+15 21.4	1.842	2.826	2.5	22.0	173 W	60	49
3 2	10 24.64	+1 10.9	2.596	3.578	2.5	21.9	171 E	46	63	3 2	10 27.10	+16 2.7	1.837	2.817	3.8	22.0	169 E	61	48
3 12	10 16.22	+2 2.9	2.598	3.555	5.0	22.0	162 E	47	62	3 12	10 16.67	+16 33.5	1.861	2.807	7.7	22.2	158 E	62	47
3 22	10 8.68	+2 55.1	2.630	3.532	8.0	22.2	151 E	48	61	3 22	10 7.70	+16 50.5	1.913	2.796	11.5	22.4	146 E	62	47
499116 2009 HF₇₈										306607 2000 OD₂									
2 1	10 48.53	+4 40.6	1.475	2.376	12.2	21.9	149 W	50	59	2 1	10 59.94	+4 45.1	2.145	3.019	10.3	21.8	147 W	50	59
2 11	10 41.81	+5 28.6	1.384	2.340	7.7	21.5	161 W	50	59	2 11	10 52.78	+5 44.0	2.085	3.027	6.7	21.6	159 W	51	58
2 21	10 32.91	+6 33.3	1.319	2.304	2.7	21.1	174 W	52	57	2 21	10 44.21	+6 52.8	2.052	3.034	2.7	21.4	172 W	52	57
3 2	10 22.83	+7 48.3	1.281	2.267	3.2	21.0	173 E	53	56	3 2	10 35.02	+8 5.8	2.050	3.039	1.4	21.3	176 E	53	56
3 12	10 12.96	+9 4.6	1.270	2.231	8.7	21.3	160 E	54	55	3 12	10 26.14	+9 16.2	2.079	3.044	5.4	21.5	163 E	54	55
3 22	10 4.63	+10 13.2	1.284	2.194	13.9	21.4	148 E	55	54	3 22	10 18.42	+10 18.6	2.137	3.048	9.1	21.8	151 E	55	54

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

2020	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45° - 26°	2020	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45° - 26°				
252091 2000 UP₃₀									488476 1999 RN₂₃₉												
2	11	0.50	-2 15.3	2.344	3.189	10.6	22.1	143 W	43	66	2	11	9.31	-0 50.0	2.250	3.088	11.3	22.2	142 W	44	65
2	11	10 51.82	-1 31.1	2.213	3.137	7.6	21.9	155 W	43	66	2	11	11 1.97	-0 41.1	2.150	3.066	8.2	22.0	154 W	44	65
2	21	10 41.18	-0 28.8	2.111	3.082	4.2	21.5	167 W	45	64	2	21	10 52.86	-0 19.0	2.076	3.043	4.8	21.7	165 W	45	64
3	2	10 29.26	+0 48.5	2.042	3.025	2.8	21.3	171 E	46	63	3	2	10 42.68	+0 14.1	2.033	3.019	2.4	21.5	173 E	45	64
3	12	10 17.03	+2 15.3	2.005	2.966	6.0	21.4	162 E	47	62	3	12	10 32.36	+0 54.1	2.020	2.993	4.7	21.6	166 E	46	63
3	22	10 5.55	+3 44.5	2.001	2.905	10.0	21.6	150 E	49	60	3	22	10 22.84	+1 35.9	2.038	2.967	8.4	21.8	154 E	47	62
151525 2002 RA₅₀									417422 2006 KZ₄₂												
2	1	11 1.99	+7 50.4	1.722	2.608	11.7	21.4	148 W	53	56	2	1	11 10.02	-12 11.8	2.237	3.019	13.2	22.3	135 W	33	76
2	11	10 54.63	+8 52.8	1.651	2.599	7.5	21.1	160 W	54	55	2	11	11 3.66	-12 10.0	2.139	3.006	10.7	22.1	146 W	33	76
2	21	10 45.31	+10 5.4	1.606	2.589	2.9	20.8	172 W	55	54	2	21	10 55.58	-11 46.4	2.066	2.992	8.0	21.9	155 W	33	76
3	2	10 35.01	+11 20.7	1.591	2.579	2.3	20.7	174 E	56	53	3	2	10 46.46	-11 1.4	2.020	2.977	6.0	21.8	162 E	34	75
3	12	10 24.93	+12 30.3	1.605	2.567	7.0	21.0	162 E	58	51	3	12	10 37.19	-9 58.4	2.002	2.961	6.1	21.7	161 E	35	74
3	22	10 16.21	+13 27.6	1.645	2.554	11.4	21.2	149 E	58	51	3	22	10 28.70	-8 43.2	2.014	2.945	8.4	21.8	155 E	36	73
4	1	10 9.75	+14 8.3	1.710	2.541	15.3	21.4	138 E	59	50											
458964 2011 WM₂									313591 2003 MB₇												
2	1	11 2.04	+43 34.0	0.829	1.718	20.4	22.1	143 W	89	20	2	1	11 10.78	-2 36.0	2.558	3.382	10.6	21.7	141 W	42	67
2	6	10 53.25	+44 42.0	0.835	1.735	19.2	22.1	145 W	90	19	2	11	11 3.44	-2 24.6	2.479	3.385	7.7	21.5	152 W	43	66
2	11	10 43.39	+45 35.0	0.846	1.751	18.5	22.1	146 W	90	18	2	21	10 54.69	-2 0.6	2.427	3.387	4.7	21.3	164 W	43	66
2	16	10 32.90	+46 11.1	0.862	1.767	18.4	22.2	146 W	89	18	3	2	10 45.19	-1 26.2	2.406	3.389	2.6	21.1	171 E	44	65
2	21	10 22.30	+46 28.9	0.883	1.782	18.8	22.2	144 W	89	18	3	12	10 35.74	-0 45.2	2.416	3.389	4.1	21.2	166 E	44	65
2	26	10 12.10	+46 28.5	0.909	1.797	19.7	22.4	142 E	89	18	3	22	10 27.11	-0 2.1	2.457	3.388	7.0	21.4	155 E	45	64
3	2	10 2.77	+46 11.1	0.939	1.811	20.8	22.5	140 E	89	18	468004 2012 XD₁₇										
3	7	9 54.65	+45 38.9	0.974	1.825	22.0	22.6	136 E	89	18	2	1	11 11.01	+41 0.1	1.217	2.086	16.7	22.2	142 W	86	23
3	12	9 47.95	+44 54.3	1.012	1.839	23.3	22.8	133 E	90	19	2	6	11 5.49	+42 18.0	1.203	2.087	15.9	22.2	145 W	87	22
376779 2000 LU₂₅									455740 2005 JA₁₄												
2	1	11 2.58	-35 35.1	3.102	3.682	13.5	21.9	119 W	9	80	2	1	11 11.30	+10 59.0	1.921	2.796	11.2	21.4	146 W	56	53
2	11	10 55.64	-36 2.6	3.000	3.669	12.5	21.8	126 W	9	80	2	11	11 3.88	+11 29.3	1.822	2.762	7.6	21.2	158 W	56	53
2	21	10 47.24	-36 4.3	2.916	3.656	11.5	21.6	132 W	9	80	2	16	10 51.29	+44 30.0	1.193	2.086	15.4	22.1	146 W	88	21
3	2	10 38.04	-35 37.6	2.853	3.641	10.7	21.6	137 E	9	80	2	21	10 43.03	+45 19.3	1.196	2.085	15.8	22.1	145 W	90	19
3	12	10 28.85	-34 42.9	2.813	3.626	10.3	21.5	139 E	10	81	2	26	10 34.41	+45 54.9	1.205	2.083	16.5	22.2	143 W	89	18
3	22	10 20.47	-33 23.3	2.798	3.610	10.4	21.5	139 E	12	83	3	2	10 25.81	+46 16.1	1.219	2.082	17.6	22.2	141 E	89	18
394804 2008 RS₆₈									457400 2009 HC₈₂												
2	1	11 2.80	+8 10.7	1.857	2.740	11.1	22.4	148 W	53	56	2	1	11 11.91	+27 44.8	2.509	3.378	9.2	21.5	147 W	73	36
2	11	10 55.26	+9 16.0	1.805	2.752	7.1	22.2	160 W	54	55	2	6	11 2.73	+28 51.4	2.444	3.348	7.9	21.3	152 W	74	35
2	21	10 46.09	+10 28.8	1.781	2.764	2.8	22.0	172 W	55	54	2	11	10 52.52	+29 56.8	2.390	3.317	6.9	21.2	156 W	75	34
3	2	10 36.23	+11 41.9	1.787	2.775	2.1	21.9	174 E	57	52	2	16	10 41.39	+30 59.0	2.346	3.286	6.2	21.1	159 W	76	33
3	12	10 26.79	+12 47.8	1.823	2.785	6.4	22.2	162 E	58	51	2	21	10 29.48	+31 56.1	2.314	3.255	6.3	21.1	159 W	77	32
3	22	10 18.71	+13 41.1	1.886	2.793	10.3	22.5	150 E	59	50	2	26	10 17.00	+32 46.1	2.293	3.223	7.2	21.1	156 E	78	31
249006 2007 PR₁₆									244694 2003 QQ₅												
2	1	11 2.98	+11 22.9	2.142	3.026	9.8	21.6	148 W	56	53	2	1	11 11.96	+1 57.8	2.091	2.939	11.6	21.7	143 W	47	62
2	11	10 55.85	+12 34.2	2.086	3.033	6.3	21.4	160 W	58	51	2	11	11 5.94	+2 58.4	1.998	2.922	8.2	21.4	155 W	48	61
2	21	10 47.24	+13 49.7	2.058	3.039	2.8	21.2	171 W	59	50	2	21	10 58.11	+4 14.3	1.931	2.904	4.3	21.1	167 W	49	60
3	2	10 37.95	+15 2.5	2.061	3.044	2.8	21.2	171 E	60	49	3	2	10 49.16	+5 40.3	1.894	2.885	0.6	20.8	178 E	51	58
3	12	10 28.94	+16 6.3	2.094	3.049	6.3	21.4	160 E	61	48	3	12	10 40.01	+7 9.1	1.888	2.865	4.4	21.1	167 E	52	57
3	22	10 21.06	+16 56.3	2.156	3.052	9.7	21.6	149 E	62	47	3	22	10 31.61	+8 33.3	1.911	2.845	8.6	21.3	155 E	54	55
489512 2007 PT₂₂									207943 1979 MN₄												
2	1	11 3.95	+16 10.7	2.180	3.068	9.5	22.5	149 W	61	48	2	1	11 12.73	-2 44.6	2.291	3.115	11.6	21.5	141 W	42	67
2	11	10 55.43	+16 50.9	2.113	3.061	6.2	22.2	161 W	62	47	2	11	11 5.75	-2 18.0	2.219	3.125	8.5	21.3	152 W	43	66
2	21	10 45.29	+17 30.3	2.075	3.054	3.2	22.0	170 W	63	46	2	21	10 57.23	-1 36.6	2.173	3.133	5.1	21.1	164 W	43	66
3	2	10 34.40	+18 3.0	2.068	3.045	3.8	22.0	168 E	63	46	3	2	10 47.90	-0 43.7	2.157	3.141	2.5	20.9	172 E	44	65
3	12	10 23.81	+18 24.3	2.091	3.035	7.0	22.2	158 E	63	46	3	12	10 38.63	+0 15.6	2.171	3.147	4.1	21.0	167 E	45	64
3	22	10 14.46	+18 31.5	2.142	3.025	10.4	22.4	147 E	64	45	3	22	10 30.25	+1 15.7	2.216	3.153	7.4	21.3	156 E	46	63
349930 2009 XH₁₇									298767 2004 NS₃												
2	1	11 5.85	+3 49.6	1.701	2.572	12.6	22.1	145 W	49	60	2	1	11 7.24	+16 25.1	1.794	2.683	11.1	21.4	148 W	61	48
2	11	10 57.70	+4 30.1	1.652	2.591	8.4	21.8	157 W	50	59	2	6	11 3.56	+16 52.0	1.752	2.674	9.3	21.3	154 W	62	47
2	21	10 47.79	+5 22.6	1.629	2.609	3.8	21.6	170 W	50	59	2	11	10 59.27	+17 19.9	1.717	2.664	7.4	21.1	160 W	62	47
3	2	10 37.15	+6 20.9	1.635	2.625	1.4	21.5	176 E	51	58	2	16	10 54.43	+17 48.0	1.689	2.655	5.6	21.0	165 W	63	46
3	12	10 27.02	+7 17.8	1.671	2.641	5.9	21.8	164 E	52	57	2	21	10 49.15	+18 15.3	1.668	2.645	4.2	20.9	169 W	63	46
3	22	10 18.43	+8 7.2	1.735	2.655	10.2	22.1	152 E	53	56	2	26	10 43.58	+18 40.8	1.654	2.634	3.7	20.8	170 W	64	45
298767 2004 NS₃									207943 1979 MN₄												
2	1	11 7.24	+16 25.1	1.794	2.683	11.1	21.4	148 W	61	48	2	1	11 12.73	-2 44.6	2.291	3.115	11.6	21.5	141 W	42	67
2	6	11 3.56	+16 52.0	1.752	2.674	9.3	21.3	154 W	62	47	2	11	11 5.75	-2 18.0	2.219	3.125	8.5	21.3	152 W	43	66
2	11	10 59.27	+17 19.9	1.717	2.664	7.4	21.1	160 W	62	47	2	21	10 57.23	-1 36.6	2.173	3.133	5.1	21.1	164 W	43	66
2	16	10 54.43	+17 48.0	1.689	2.655	5.6	21.0	165 W	63	46	3	2	10 47.90	-0 43.7	2.157	3.141	2.5	20.9	172 E	44	65
2	21	10 49.15	+18 15.3	1.668	2.645	4.2	20.9	169 W	63	46	3	12	10 38.63	+0 15.6	2.171	3.147	4.1	21.0			

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

2020	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	2020	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°		
421650 2014 OG₃₃₈										497578 2006 FA₄₇ (continuation)											
2	11	14.09	+9 25.2	2.362	3.221	10.0	21.4	145 W	54	55	8	19	13 38.63	-2 27.6	1.720	1.459	36.0	21.3	58 E	21*	50*
2	11	11 7.46	+10 30.5	2.315	3.247	6.8	21.2	157 W	56	53	8	24	13 51.88	-3 59.0	1.735	1.451	35.6	21.3	57 E	21*	49*
2	21	10 59.45	+11 40.5	2.297	3.273	3.3	21.0	169 W	57	52	8	29	14 5.45	-5 30.1	1.750	1.443	35.3	21.3	56 E	20*	48*
3	2	10 50.78	+12 49.5	2.309	3.297	1.7	20.9	174 E	58	51	9	3	14 19.36	-7 0.6	1.765	1.437	34.9	21.3	55 E	19*	47*
3	12	10 42.26	+13 51.6	2.352	3.320	4.6	21.2	164 E	59	50	9	8	14 33.59	-8 29.7	1.781	1.432	34.4	21.3	53 E	19*	46*
3	22	10 34.65	+14 42.4	2.425	3.343	7.8	21.4	153 E	60	49	9	13	14 48.16	-9 57.0	1.797	1.429	34.0	21.3	53 E	18*	45*
464755 2003 SA₂₂₀																					
2	1	11 18.17	-21 0.4	1.764	2.495	18.1	21.7	128 W	24	85	9	18	15 3.06	-11 21.9	1.815	1.427	33.5	21.3	52 E	18*	45*
2	11	11 10.62	-20 50.1	1.725	2.543	15.1	21.5	138 W	24	85	9	23	15 18.28	-12 43.7	1.833	1.426	33.0	21.3	51 E	17*	44*
2	21	11 1.26	-20 6.6	1.705	2.590	12.0	21.5	147 W	25	84	9	28	15 33.81	-14 1.7	1.853	1.427	32.4	21.3	50 E	17*	43*
3	2	10 51.11	-18 51.4	1.710	2.636	9.5	21.4	154 E	26	83	10	3	15 49.62	-15 15.5	1.874	1.429	31.8	21.3	49 E	17*	42*
3	12	10 41.37	-17 11.2	1.742	2.682	8.6	21.4	156 E	28	81	10	8	16 5.71	-16 24.3	1.896	1.432	31.2	21.3	48 E	16*	41*
3	22	10 33.07	-15 15.9	1.801	2.726	9.6	21.6	153 E	30	79	10	13	16 22.04	-17 27.7	1.920	1.437	30.5	21.3	47 E	16*	40*
405562 2005 OJ₃																					
2	1	11 18.37	-2 27.8	1.898	2.723	13.6	22.4	139 W	43	66	10	18	16 38.59	-18 25.1	1.945	1.443	29.8	21.3	46 E	16*	39*
2	11	11 10.22	-1 47.8	1.871	2.779	9.8	22.2	151 W	43	66	10	23	16 55.33	-19 16.2	1.971	1.451	29.0	21.4	45 E	16*	38*
2	21	11 0.58	+0 52.4	1.871	2.833	5.7	22.1	164 W	44	65	11	2	17 12.20	-20 0.5	1.999	1.460	28.3	21.4	44 E	16*	37*
3	2	10 50.39	+0 13.0	1.900	2.887	2.4	22.0	173 E	45	64	11	7	17 29.17	-20 37.8	2.028	1.470	27.5	21.4	43 E	15*	36*
3	12	10 40.70	+1 21.5	1.960	2.939	4.1	22.2	168 E	46	63	11	12	18 46.18	-21 8.0	2.059	1.481	26.6	21.4	42 E	15*	34*
3	22	10 32.37	+2 26.7	2.050	2.990	7.6	22.5	156 E	47	62	11	17	18 20.17	-21 46.3	2.125	1.506	25.8	21.4	41 E	15*	33*
277039 2005 CF₄₁										322913 2002 CM₁											
2	1	11 18.86	+13 49.5	1.713	2.584	12.6	22.5	145 W	59	50	2	1	11 21.56	-43 47.9	2.527	3.013	17.9	22.0	110 W	1	72
2	6	11 14.17	+14 50.8	1.681	2.590	10.5	22.4	151 W	60	49	2	6	11 15.89	-44 48.1	2.498	3.027	17.4	22.0	113 W	-	71
2	11	11 8.77	+15 54.5	1.656	2.595	8.4	22.2	157 W	61	48	2	11	11 9.45	-45 40.3	2.473	3.042	16.9	22.0	116 W	-	70
2	16	11 2.77	+16 59.2	1.639	2.600	6.4	22.1	163 W	62	47	2	16	11 2.31	-46 23.8	2.452	3.056	16.4	22.0	119 W	-	70
2	21	10 56.30	+18 3.3	1.629	2.604	4.7	22.0	168 W	63	46	2	21	10 54.61	-46 57.5	2.436	3.069	16.0	21.9	121 W	-	69
2	26	10 49.51	+19 5.2	1.628	2.607	4.1	22.0	169 W	64	45	3	2	10 46.49	-47 20.9	2.424	3.083	15.5	21.9	123 W	-	69
3	2	10 42.59	+20 3.4	1.635	2.610	4.9	22.1	167 E	65	44	3	7	10 38.16	-47 33.6	2.417	3.096	15.2	21.9	125 E	-	68
3	7	10 35.73	+20 56.5	1.649	2.612	6.7	22.2	162 E	66	43	3	12	10 29.83	-47 35.6	2.416	3.109	14.9	21.9	126 E	-	68
3	12	10 29.10	+21 43.6	1.672	2.613	8.7	22.3	157 E	67	42	3	17	10 21.71	-47 27.4	2.419	3.121	14.7	21.9	127 E	-	69
3	17	10 22.87	+22 24.0	1.701	2.614	10.8	22.4	151 E	67	42	3	22	10 13.98	-47 9.5	2.428	3.133	14.6	21.9	127 E	-	69
277172 2005 OB										354365 2003 LX₂											
2	1	11 19.04	-2 14.7	1.928	2.752	13.5	22.0	139 W	43	66	2	1	11 24.30	+0 52.4	1.622	2.458	15.0	21.3	140 W	46	63
2	11	11 12.03	-2 4.2	1.826	2.731	10.1	21.7	151 W	43	66	2	11	11 19.42	+1 38.3	1.502	2.414	11.3	21.0	151 W	47	62
2	21	11 2.80	+1 36.6	1.750	2.709	6.3	21.5	163 W	43	66	2	21	11 11.80	+2 46.7	1.404	2.369	6.8	20.6	164 W	48	61
3	2	10 52.09	+0 54.1	1.701	2.686	3.0	21.2	172 E	44	65	3	2	11 2.01	+4 13.9	1.333	2.323	1.7	20.2	176 W	49	60
3	12	10 40.96	+0 1.6	1.683	2.661	4.6	21.3	168 E	45	64	3	7	10 56.63	+5 2.2	1.309	2.300	1.5	20.1	176 E	50	59
3	22	10 30.57	+0 54.5	1.693	2.636	8.8	21.4	156 E	46	63	3	12	10 51.12	+5 51.9	1.291	2.276	4.3	20.2	170 E	51	58
497578 2006 FA₄₇																					
2	1	11 21.03	+9 14.4	1.413	2.282	14.8	21.2	144 W	54	55	3	17	10 45.68	+6 41.8	1.280	2.252	7.1	20.3	164 E	52	57
2	11	11 16.83	+10 44.1	1.304	2.238	10.8	20.8	155 W	56	53	3	22	10 40.48	+7 30.5	1.276	2.228	10.0	20.4	157 E	53	56
2	21	11 9.69	+12 33.9	1.219	2.192	6.1	20.4	166 W	58	51	3	27	10 35.70	+8 16.7	1.278	2.204	12.7	20.5	151 E	53	56
3	2	11 0.22	+14 34.5	1.160	2.146	3.5	20.1	172 W	60	49	4	1	10 31.49	+8 59.1	1.286	2.179	15.3	20.6	145 E	54	55
3	7	10 54.96	+15 34.8	1.141	2.123	5.1	20.1	169 E	61	48	4	6	10 25.97	+9 37.1	1.299	2.155	17.8	20.7	139 E	55	54
3	12	10 49.60	+16 32.6	1.128	2.100	7.7	20.2	164 E	62	47	4	11	10 20.27	+10 9.8	1.316	2.130	20.1	20.7	133 E	55	54
3	17	10 44.34	+17 26.3	1.122	2.077	10.5	20.3	158 E	62	47	4	16	10 23.40	+10 37.0	1.337	2.105	22.2	20.8	128 E	56	53
3	22	10 39.38	+18 14.5	1.121	2.053	13.3	20.4	152 E	63	46	4	21	10 22.41	+10 58.5	1.361	2.079	24.1	20.9	122 E	56	53
3	27	10 34.92	+18 56.0	1.126	2.030	16.1	20.5	146 E	64	45	5	1	10 22.31	+11 14.1	1.387	2.054	25.8	21.0	117 E	56	53
4	1	10 31.13	+19 30.0	1.137	2.006	18.7	20.5	140 E	64	45	5	5	10 23.10	+11 24.0	1.416	2.028	27.3	21.0	113 E	56	53
4	6	10 28.15	+19 56.1	1.151	1.983	21.2	20.6	134 E	65	44	5	6	10 24.75	+11 28.2	1.445	2.003	28.6	21.1	108 E	56	53
4	11	10 26.05	+20 14.4	1.169	1.959	23.5	20.7	129 E	65	44	5	11	10 27.22	+11 27.0	1.475	1.977	29.7	21.1	104 E	55*	53
4	16	10 24.90	+20 24.9	1.189	1.936	25.5	20.8	124 E	65	44	5	16	10 30.45	+11 20.6	1.506	1.951	30.7	21.2	100 E	54*	53
4	21	10 24.72	+20 28.1	1.212	1.912	27.4	20.8	119 E	65	44	5	21	10 34.42	+11 9.1	1.536	1.925	31.5	21.2	96 E	52*	53
4	26	10 25.51	+20 24.1	1.237	1.889	29.1	20.9	114 E	65	44	5	26	10 39.09	+10 52.8	1.567	1.899	32.2	21.2	92 E	49*	53
5	1	10 27.26	+20 13.4	1.263	1.865	30.5	21.0	110 E	65	44	5	31	10 44.40	+10 31.9	1.596	1.874	32.8	21.3	89 E	46*	53
5	6	10 29.91	+19 56.4	1.290	1.842	31.8	21.0	106 E	65	44	6	5	10 50.31	+10 6.5	1.625	1.848	33.2	21.3	86 E	44*	54
5	11	10 33.42	+19 33.7	1.317	1.819	32.9	21.1	102 E	64	44	6	10	10 56.78	+9 36.9	1.652	1.822	33.5	21.3	82 E	41*	54
5	16	10 37.73	+19 5.4	1.344	1.796	33.8	21.1	98 E	62	45	6	15	11 3.77	+9 3.3	1.678	1.796	33.8	21.3	79 E	38*	55*
5	21	10 42.80	+18 31.9	1.371	1.774	34.6	21.2	95 E	59	45	6	20	11 11.26	+8 25.7	1.703	1.771	34.0	21.3	77 E	35*	55*
5	26	10 48.57	+17 53.3	1.398	1.751	35.3	21.2	92 E	56	46	6	25	11 19.22	+7 44.3	1.726	1.745	34.1	21.3	74 E	33*	55*
5	31	10 54.99	+17 10.1	1.424	1.729	35.9	21.2	89 E	53	47	6	30	11 27.63	+6 59.3	1.748	1.720	34.1	21.3	71 E	30*	55*
6	5	11 2.01	+16 22.3	1.449	1.707	36.3	21.2	86 E	50	48	7	5	11 36.46	+6 10.9	1.768	1.695	34.1	21.3	69 E	28*	54*
6	10	11 9.57	+15 30.2	1.473	1.686	36.7	21.3														

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°-26°	2020	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°-26°		
354365 2003 LX₂									425450 2010 EV₄₅										
<i>(continuation)</i>																			
10 3	15 21.83	-13 52.7	1.930	1.361	29.4	20.9	42 E	14* 35*	2 1	12 3.20	+ 7 31.6	0.779	1.621	26.3	21.3	133 W	53	56	
10 8	15 38.17	-14 54.6	1.937	1.354	29.0	20.9	41 E	14* 34*	2 6	12 7.67	+ 8 13.4	0.724	1.595	24.8	21.1	137 W	53	56	
10 13	15 54.91	-15 52.3	1.944	1.348	28.6	20.9	40 E	14* 33*	2 11	12 11.56	+ 9 6.6	0.673	1.570	23.1	20.8	141 W	54	55	
10 18	16 12.01	-16 45.3	1.953	1.344	28.2	20.8	40 E	14* 32*	2 16	12 14.79	+10 12.0	0.626	1.545	21.1	20.6	146 W	55	54	
10 23	16 29.45	-17 32.9	1.962	1.341	27.7	20.8	39 E	14* 32*	2 21	12 17.28	+11 30.2	0.582	1.520	19.1	20.3	150 W	57	52	
10 28	16 47.18	-18 14.5	1.973	1.341	27.2	20.8	38 E	14* 31*	3 2	12 19.87	+14 43.8	0.506	1.470	15.1	19.8	157 W	60	49	
11 2	17 5.17	-18 49.6	1.986	1.342	26.7	20.8	37 E	14* 30*	3 12	12 19.20	+18 37.8	0.446	1.422	13.6	19.4	160 W	64	45	
11 7	17 23.35	-19 17.7	2.000	1.344	26.2	20.8	37 E	14* 29*	3 22	12 15.66	+22 48.7	0.403	1.376	16.8	19.2	156 W	68	41	
11 12	17 41.68	-19 38.6	2.016	1.348	25.6	20.8	36 E	15* 28*	3 27	12 13.18	+24 49.3	0.387	1.353	19.9	19.2	152 E	70	39	
11 17	18 0.10	-19 51.9	2.034	1.354	25.0	20.9	35 E	15* 27*	4 1	12 10.58	+26 40.1	0.375	1.331	23.5	19.2	148 E	72	37	
11 22	18 18.54	-19 57.5	2.053	1.362	24.4	20.9	35 E	15* 25*	4 6	12 8.17	+28 16.7	0.365	1.311	27.3	19.2	143 E	73	36	
11 27	18 36.93	-19 55.4	2.075	1.371	23.7	20.9	34 E	15* 24*	4 11	12 6.26	+29 36.1	0.357	1.291	31.1	19.2	138 E	75	34	
12 2	18 55.21	-19 45.8	2.098	1.382	23.0	20.9	33 E	16* 23*	4 16	12 5.12	+30 36.0	0.351	1.272	34.8	19.3	134 E	76	33	
12 7	19 13.32	-19 28.8	2.123	1.394	22.2	20.9	32 E	16* 22*	4 21	12 5.01	+31 15.0	0.347	1.254	38.3	19.3	129 E	76	33	
12 12	19 31.22	-19 4.8	2.150	1.407	21.4	20.9	31 E	16* 20*	4 26	12 6.16	+31 32.4	0.344	1.238	41.5	19.4	125 E	77	32	
12 17	19 48.85	-18 34.2	2.178	1.422	20.6	21.0	30 E	16* 19*	5 1	12 8.74	+31 28.4	0.341	1.223	44.4	19.4	122 E	76	33	
12 22	20 6.18	-17 57.3	2.208	1.438	19.8	21.0	29 E	16* 18*	5 6	12 12.80	+31 3.6	0.339	1.209	47.0	19.4	119 E	76	33	
12 27	20 23.16	-17 14.9	2.240	1.455	18.9	21.0	29 E	16* 16*	5 11	12 18.33	+30 18.6	0.337	1.197	49.2	19.5	116 E	75	34	
1 1	20 39.78	-16 27.3	2.273	1.473	18.0	21.1	28 E	16* 15*	5 16	12 25.29	+29 13.8	0.335	1.187	51.1	19.5	114 E	74	35	
1 6	20 56.03	-15 35.3	2.307	1.493	17.1	21.1	26 E	15* 14*	5 21	12 33.63	+27 49.3	0.333	1.179	52.7	19.5	112 E	73	36	
1 11	21 11.89	-14 39.3	2.342	1.513	16.1	21.1	25 E	15* 12*	5 26	12 43.29	+26 5.3	0.331	1.172	53.9	19.5	111 E	71	38	
1 16	21 27.36	-13 39.9	2.378	1.534	15.2	21.1	24 E	14* 11*	5 31	12 54.20	+24 2.0	0.330	1.168	54.7	19.5	110 E	69	40	
277529 2005 XL₆₆									310435 2000 AV₁₅₆										
2 1	11 39.86	+13 59.2	2.102	2.928	12.4	21.4	140 W	59	50	2 1	12 6.31	+ 9 37.0	2.314	3.071	13.6	21.4	133 W	55	54
2 11	11 33.79	+15 19.3	2.035	2.939	9.3	21.2	151 W	60	49	2 11	12 2.00	+10 36.3	2.235	3.089	10.8	21.3	144 W	56	53
2 21	11 25.64	+16 43.8	1.994	2.949	6.0	21.0	162 W	62	47	2 21	11 55.58	+11 43.5	2.181	3.106	7.7	21.1	155 W	57	52
3 2	11 16.08	+18 4.7	1.983	2.958	4.1	20.9	168 W	63	46	3 2	11 47.51	+12 52.9	2.153	3.122	4.6	20.9	165 W	58	51
3 12	11 6.06	+19 14.1	2.001	2.966	5.6	21.0	163 E	64	45	3 12	11 38.52	+13 57.7	2.155	3.137	3.4	20.9	169 W	59	50
3 22	10 56.59	+20 6.3	2.049	2.973	8.7	21.2	153 E	65	44	4 1	11 21.19	+15 31.1	2.249	3.164	8.6	21.0	162 E	60	49
4 1	10 48.56	+20 38.2	2.123	2.978	11.8	21.4	142 E	66	43	4 11	11 14.43	+15 53.0	2.335	3.176	11.5	21.5	141 E	61	48
232691 2004 AR₁									190716 2001 KH₃₂										
2 1	11 42.96	+ 4 0.4	0.800	1.661	24.0	21.5	137 W	49	60	2 1	12 10.65	+ 2 20.2	2.060	2.795	15.7	21.4	130 W	47	62
2 11	11 26.28	+ 4 28.6	0.789	1.720	16.2	21.3	151 W	49	60	2 11	12 7.22	+ 3 0.7	1.956	2.791	12.9	21.1	141 W	48	61
2 21	11 6.40	+ 5 13.9	0.801	1.776	7.8	21.1	166 W	50	59	2 21	12 1.33	+ 3 56.1	1.872	2.787	9.4	20.9	153 W	49	60
3 2	10 46.11	+ 6 4.8	0.839	1.830	1.0	20.9	178 E	51	58	3 2	11 53.33	+ 5 2.8	1.814	2.782	5.4	20.7	165 W	50	59
3 12	10 28.28	+ 6 49.2	0.904	1.880	8.1	21.5	164 E	52	57	3 12	11 43.95	+ 6 14.5	1.784	2.776	1.7	20.4	175 W	51	58
3 22	10 14.74	+ 7 20.1	0.994	1.928	14.4	22.0	151 E	52	57	3 17	11 39.03	+ 6 50.0	1.781	2.772	2.1	20.4	174 E	52	57
189166 2002 TW₂₂₆									399714 2004 VK₂₇										
2 1	11 51.23	- 0 25.1	1.808	2.584	16.2	21.3	133 W	45	64	2 1	12 22.17	- 9 24.9	1.886	2.552	19.1	21.5	122 W	36	73
2 11	11 47.44	+ 0 15.1	1.699	2.567	12.9	21.1	144 W	45	64	2 11	12 20.98	- 9 43.9	1.753	2.525	16.8	21.2	132 W	35	74
2 21	11 41.05	+ 1 14.9	1.612	2.549	8.9	20.8	156 W	46	63	2 21	12 17.02	- 9 43.9	1.635	2.498	13.7	20.9	143 W	35	74
3 2	11 32.49	+ 2 31.3	1.550	2.530	4.3	20.5	169 W	48	61	3 2	12 10.34	- 9 22.5	1.538	2.469	10.0	20.6	154 W	36	73
3 7	11 27.66	+ 3 13.6	1.529	2.520	1.9	20.3	175 W	48	61	3 12	12 1.45	- 8 39.9	1.465	2.440	5.8	20.3	166 W	36	73
3 12	11 22.64	+ 3 57.4	1.516	2.510	0.7	20.1	178 E	49	60	3 17	11 56.44	- 8 11.4	1.439	2.425	4.0	20.2	170 W	37	72
3 17	11 17.57	+ 4 41.4	1.510	2.499	3.2	20.3	172 E	50	59	3 22	11 51.22	- 7 38.8	1.419	2.410	3.3	20.1	172 E	37	72
3 22	11 12.61	+ 5 24.6	1.512	2.489	5.8	20.4	165 E	50	59	3 27	11 45.97	- 7 3.2	1.407	2.395	4.3	20.1	170 E	38	71
3 27	11 7.92	+ 6 5.7	1.520	2.478	8.2	20.6	159 E	51	58	4 1	11 40.85	- 6 25.7	1.401	2.380	6.4	20.2	165 E	39	70
4 1	11 3.62	+ 6 43.8	1.535	2.467	10.6	20.7	153 E	52	57	4 6	11 36.03	- 5 47.3	1.402	2.364	8.7	20.3	159 E	39	70
4 6	10 59.85	+ 7 18.0	1.555	2.456	12.8	20.8	147 E	52	57										
4 11	10 56.68	+ 7 47.9	1.582	2.444	14.9	20.9	141 E	53	56										
4 16	10 54.17	+ 8 12.9	1.613	2.432	16.8	21.0	135 E	53	56										
4 21	10 52.38	+ 8 32.9	1.648	2.420	18.5	21.1	130 E	54	55										
4 26	10 51.32	+ 8 47.8	1.687	2.408	20.1	21.1	125 E	54	55										
5 1	10 51.00	+ 8 57.6	1.729	2.396	21.4	21.2	120 E	54	55										
5 6	10 51.40	+ 9 2.5	1.774	2.383	22.5	21.3	115 E	54	55										
5 11	10 52.49	+ 9 2.6	1.820	2.371	23.5	21.4	110 E	54	55										
5 16	10 54.23	+ 8 58.2	1.868	2.358	24.3	21.5	106 E	53	55										
185702 1998 HK₃																			
2 1	11 51.84	+40 10.5	1.437	2.250	17.8	21.4	136 W	85	24										
2 6	11 47.14	+41 4.6	1.402	2.240	16.9	21.3	139 W	86	23										
2 11	11 41.17	+41 55.1	1.372	2.229	16.1	21.2	141 W	87	22										
2 16	11 33.99	+42 39.8	1.347	2.218	15.5	21.1	143 W	88	21										
2 21	11 25.73	+43 16.2	1.328	2.207	15.2	21.1	144 W	88	21										
2 26	11 16.62	+43 41.9	1.315	2.195	15.3	21.0	144 W	89	20										
3 2	11 6.95	+43 55.1	1.308	2.183	15.8	21.0	143 W	89	20										
3 7	10 57.09	+43 54.5	1.306	2.171	16.6	21.1	141 E	89	20										
3 12	10 47.40	+43 39.7	1.310	2.158	17.7	21.1	139 E												

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°-26°	20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°-26°
399714 2004 VK₂₇ (continuation)									30785 Greeley (continuation)								
4 11	11 31.65	5 9.4	1.410	2.348	11.1	20.4	153 E	40 69	3 17	11 55.34	3 5.7	1.709	2.703	1.0	20.1	177 W	48 61
4 16	11 27.82	4 33.0	1.423	2.332	13.4	20.5	147 E	40 69	3 22	11 49.90	3 32.4	1.698	2.691	2.1	20.1	174 E	49 60
4 21	11 24.65	3 59.0	1.441	2.316	15.6	20.6	142 E	41 68	3 27	11 44.48	3 58.3	1.694	2.679	4.4	20.3	168 E	49 60
4 26	11 22.21	3 28.4	1.465	2.300	17.6	20.7	136 E	42 67	4 1	11 39.21	4 22.4	1.698	2.666	6.7	20.4	162 E	49 60
5 1	11 20.54	3 1.7	1.492	2.283	19.5	20.7	131 E	42 67	4 6	11 34.24	4 43.9	1.708	2.653	8.9	20.5	156 E	50 59
5 6	11 19.66	2 39.5	1.523	2.267	21.1	20.8	126 E	42 67	4 11	11 29.69	5 2.4	1.725	2.639	11.0	20.6	150 E	50 59
5 11	11 19.56	2 21.9	1.557	2.250	22.6	20.9	121 E	43 66	4 16	11 25.64	5 17.4	1.748	2.626	13.0	20.7	144 E	50 59
5 16	11 20.23	2 9.2	1.594	2.233	24.0	21.0	116 E	43 66	4 21	11 22.19	5 28.5	1.776	2.612	14.9	20.8	138 E	50 59
5 21	11 21.65	2 1.3	1.632	2.216	25.1	21.0	112 E	42 66	4 26	11 19.38	5 35.6	1.809	2.597	16.6	20.8	133 E	51 58
5 26	11 23.78	1 58.3	1.672	2.199	26.1	21.1	107 E	41 66	5 1	11 17.27	5 38.4	1.846	2.583	18.1	20.9	127 E	51 58
5 31	11 26.58	1 59.9	1.713	2.182	26.9	21.2	103 E	40 66	5 6	11 15.85	5 37.1	1.887	2.568	19.5	21.0	122 E	51 58
6 5	11 30.02	2 6.2	1.754	2.165	27.5	21.2	99 E	38 66	5 11	11 15.13	5 31.7	1.930	2.553	20.6	21.1	117 E	51 58
6 10	11 34.04	2 16.7	1.795	2.147	28.1	21.3	96 E	35 66	5 16	11 15.08	5 22.5	1.976	2.537	21.6	21.2	112 E	50 59
6 15	11 38.62	2 31.3	1.837	2.130	28.5	21.3	92 E	33 67	5 21	11 15.69	5 9.5	2.023	2.522	22.5	21.2	108 E	49 59
6 20	11 43.71	2 49.9	1.878	2.113	28.7	21.4	89 E	31 67	5 26	11 16.93	4 52.8	2.071	2.506	23.2	21.3	103 E	47 59
6 25	11 49.29	3 12.1	1.919	2.095	28.9	21.4	85 E	28 67*	5 31	11 18.77	4 32.8	2.121	2.490	23.7	21.3	99 E	45 59
6 30	11 55.33	3 37.8	1.959	2.078	29.0	21.4	82 E	26 67*	6 5	11 21.17	4 9.5	2.170	2.473	24.1	21.4	95 E	42 60
7 5	12 1.78	4 6.7	1.998	2.060	29.0	21.4	79 E	24 66*	6 10	11 24.09	3 43.2	2.220	2.457	24.4	21.4	91 E	40 60
7 10	12 8.64	4 38.5	2.036	2.042	28.9	21.5	76 E	22 65*	6 15	11 27.50	3 14.1	2.269	2.440	24.6	21.5	87 E	37 61
7 15	12 15.87	5 13.1	2.073	2.025	28.7	21.5	73 E	20 64*	6 20	11 31.36	2 42.2	2.317	2.422	24.6	21.5	84 E	34 61*
7 20	12 23.46	5 50.2	2.108	2.007	28.5	21.5	70 E	19 62*	236104 2005 QJ₇₁								
7 25	12 31.41	6 29.6	2.142	1.990	28.2	21.5	68 E	17 60*	2 1	12 35.58	3 44.9	1.724	2.392	20.5	21.4	122 W	41 68
7 30	12 39.68	7 11.1	2.175	1.972	27.8	21.5	65 E	16 58*	2 11	12 34.85	2 6.4	1.641	2.420	17.5	21.2	133 W	43 66
8 4	12 48.28	7 54.4	2.206	1.955	27.4	21.5	62 E	15 56*	2 21	12 31.25	0 1.8	1.576	2.447	13.7	21.0	144 W	45 64
8 9	12 57.19	8 39.4	2.236	1.938	26.9	21.5	60 E	14 54*	3 2	12 25.05	2 23.6	1.534	2.474	9.2	20.8	156 W	47 62
8 14	13 6.40	9 25.6	2.264	1.921	26.4	21.5	58 E	13 51*	3 12	12 16.94	4 59.8	1.519	2.499	4.8	20.6	168 W	50 59
8 19	13 15.92	10 13.0	2.290	1.904	25.9	21.5	55 E	12 49*	3 22	12 7.88	7 33.9	1.534	2.524	3.2	20.6	172 W	53 56
8 24	13 25.75	11 1.3	2.315	1.887	25.3	21.5	53 E	11 47*	4 1	11 59.02	9 53.0	1.578	2.548	7.0	20.8	162 E	55 54
8 29	13 35.87	11 50.2	2.339	1.870	24.7	21.4	51 E	10 45*	4 11	11 51.43	11 47.1	1.651	2.571	11.1	21.1	150 E	57 52
9 3	13 46.29	12 39.5	2.360	1.854	24.1	21.4	49 E	10 43*	4 21	11 45.86	13 11.8	1.747	2.593	14.7	21.4	139 E	58 51
9 8	13 57.01	13 28.7	2.381	1.837	23.4	21.4	46 E	9 40*	65674 1988 SM								
9 13	14 8.03	14 17.8	2.400	1.822	22.7	21.4	44 E	9 38*	2 1	12 35.78	1 17.2	1.378	2.089	23.2	21.5	123 W	46 63
9 18	14 19.36	15 6.4	2.417	1.806	22.0	21.4	42 E	8 36*	2 11	12 33.93	1 0.8	1.253	2.064	20.2	21.2	134 W	46 63
9 23	14 31.00	15 54.2	2.433	1.791	21.3	21.3	40 E	8 34*	2 21	12 28.04	1 0.2	1.144	2.036	16.0	20.8	145 W	46 63
9 28	14 42.93	16 40.8	2.448	1.775	20.5	21.3	38 E	8 32*	3 2	12 17.86	1 14.8	1.054	2.007	10.8	20.4	158 W	46 63
10 3	14 55.17	17 26.0	2.461	1.761	19.8	21.3	37 E	7 30*	3 12	12 3.85	1 41.0	0.988	1.975	4.4	19.9	171 W	47 62
10 8	15 7.71	18 9.3	2.474	1.747	19.0	21.2	35 E	7 29*	3 17	11 55.78	1 56.7	0.964	1.959	1.1	19.6	178 W	47 62
10 13	15 20.56	18 50.4	2.485	1.733	18.2	21.2	33 E	7 27*	3 22	11 47.29	2 12.6	0.948	1.942	2.8	19.7	175 E	47 62
10 18	15 33.71	19 29.1	2.495	1.719	17.4	21.2	31 E	6 25*	3 27	11 38.69	2 27.7	0.938	1.924	6.4	19.9	168 E	47 62
10 23	15 47.16	20 4.8	2.504	1.707	16.6	21.1	29 E	6 23*	4 1	11 30.29	2 40.6	0.935	1.907	10.0	20.0	161 E	48 61
10 28	16 0.89	20 37.4	2.511	1.694	15.7	21.1	28 E	6 21*	4 6	11 22.36	2 50.5	0.938	1.888	13.5	20.1	154 E	48 61
11 2	16 14.89	21 6.3	2.519	1.682	14.9	21.1	26 E	6 19*	4 11	11 15.15	2 56.5	0.946	1.869	16.9	20.2	147 E	48 61
11 7	16 29.14	21 51.3	2.525	1.671	14.1	21.0	24 E	6 18*	4 21	11 3.63	2 54.8	0.978	1.830	23.0	20.5	135 E	48 61
11 12	16 43.65	21 52.1	2.531	1.660	13.2	21.0	23 E	5 16*	5 1	10 56.64	2 33.2	1.024	1.789	28.0	20.7	124 E	48 61
11 17	16 58.38	22 8.3	2.536	1.650	12.4	20.9	21 E	5 14*	5 11	10 54.29	1 51.7	1.078	1.747	32.0	20.8	114 E	47 62
11 22	17 13.32	22 19.7	2.540	1.641	11.5	20.9	19 E	5 12*	5 21	10 56.20	0 51.8	1.136	1.703	35.1	21.0	105 E	44 63
11 27	17 28.42	22 26.0	2.544	1.633	10.7	20.9	18 E	5 10*	5 31	11 1.88	0 25.2	1.193	1.658	37.4	21.1	97 E	39 64
12 2	17 43.67	22 26.9	2.547	1.625	9.8	20.8	16 E	4 9*	6 10	11 10.79	1 57.9	1.248	1.611	39.1	21.2	90 E	33 66
12 7	17 59.03	22 22.4	2.550	1.617	8.9	20.8	15 E	4 7*	6 20	11 22.49	3 45.0	1.298	1.563	40.3	21.2	84 E	27 68*
12 12	18 14.48	22 12.4	2.553	1.611	8.1	20.7	13 E	3 5*	6 30	11 36.67	5 45.7	1.341	1.515	41.2	21.3	79 E	22 68*
12 17	18 29.98	21 56.6	2.556	1.605	7.2	20.7	12 E	3 4*	7 10	11 53.12	7 58.6	1.376	1.466	41.8	21.3	74 E	17 66*
12 22	18 45.49	21 35.2	2.558	1.601	6.3	20.6	10 E	2 2*	7 20	12 11.74	10 22.4	1.404	1.417	42.2	21.2	70 E	13 63*
12 27	19 0.99	21 8.1	2.561	1.597	5.5	20.6	9 E	1 *	7 30	12 32.55	12 55.5	1.423	1.369	42.6	21.2	66 E	10 60*
1 1	19 16.44	20 35.5	2.563	1.593	4.6	20.6	8 E	1 *	8 9	12 55.62	15 35.5	1.434	1.322	42.9	21.2	63 E	8 57*
1 6	19 31.81	19 57.5	2.565	1.591	3.8	20.5	6 E	—	8 19	13 21.16	18 19.3	1.438	1.277	43.3	21.1	60 E	6 51*
1 11	19 47.08	19 14.2	2.567	1.590	3.0	20.5	5 E	—	8 29	13 49.41	21 2.8	1.435	1.234	43.7	21.0	58 E	5 51*
1 16	20 2.23	18 26.0	2.569	1.589	2.3	20.4	4 E	—	9 8	14 20.66	23 40.0	1.427	1.195	44.1	21.0	56 E	5 49*
74644 1999 RK₆₃									9 18	14 55.19	26 3.3	1.414	1.161	44.6	20.9	54 E	4 47*
2 1	12 23.90	6 36.6	2.473	3.122	15.3	21.4	123 W	38 71	9 28	15 33.16	28 3.4	1.400	1.133	45.1	20.8	53 E	5 47*
2 11	12 20.87	6 31.8	2.362	3.128	13.1	21.2	134 W	38 71	10 8	16 14.48	29 29.0	1.386	1.111	45.6	20.8	53 E	6 46*
2 21	12 15.67	6 11.9	2.270	3.134	10.4	21.0	145 W	39 70	10 18	16 58.67	30 9.0	1.374	1.097	45.9	20.7	52 E	8 46*
3 2	12 8.56	5 37.4	2.202	3.138	7.1	20.8	157 W	39 70	10 28	17 44.82	29 54.2	1.367	1.092	46.0	20.7	52 E	10 46*
3 12	12 0.12	4 50.7	2.162	3.142	3.5	20.6	169 W	40 69	11 7	18 31.63	28 39.6	1.367	1.095	45.8	20.7	52 E	12 46*
3 22	11 51.08	3 56.0	2.151	3.145	1.6	20.5	175 E	41 68	11 17	19 17.76	26 26.5	1.377	1.106	45.3	20.7	53 E	16 46*
3 27	11 46.60	3 27.2	2.157	3.146	3.0	20.6	171 E	42 67	11 27	20 2.13	23 22.1	1.398	1.125	44.4	20.8	53 E	19 44*
4 1	11 42.29	2 58.4	2.171	3.146													

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

2020	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45° - 26°	20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45° - 26°
413989 2007 EL₈₈									238518 2004 TC₁₂₁								
<i>(continuation)</i>																	
3 2	12 40.79	-41 55.8	0.554	1.385	35.9	19.9	125 W	3 74	2 1	12 39.19	-6 56.4	1.825	2.465	20.3	21.4	120 W	38 71
3 7	12 36.04	-42 0.8	0.488	1.353	34.8	19.5	129 W	3 74	2 11	12 39.30	-7 24.1	1.690	2.439	18.2	21.1	129 W	38 71
3 12	12 28.71	-41 40.8	0.425	1.320	33.4	19.1	133 W	3 74	2 21	12 36.53	-7 35.7	1.570	2.413	15.3	20.8	140 W	37 72
3 14	12 24.90	-41 23.2	0.400	1.307	32.7	19.0	135 W	4 75	3 2	12 30.79	-7 29.5	1.468	2.386	11.5	20.5	151 W	38 71
3 16	12 20.52	-40 58.5	0.375	1.293	32.0	18.8	136 W	4 75	3 12	12 22.40	-7 5.4	1.389	2.358	7.0	20.2	163 W	38 71
3 18	12 15.51	-40 25.4	0.351	1.279	31.2	18.6	138 W	5 76	3 22	12 12.10	-6 25.5	1.336	2.329	2.6	19.8	174 W	39 70
3 20	12 9.81	-39 42.1	0.327	1.264	30.4	18.4	140 W	5 76	3 27	12 6.59	-6 1.2	1.319	2.315	2.4	19.8	174 E	39 70
3 22	12 3.34	-38 46.3	0.304	1.249	29.5	18.2	142 E	6 77	4 1	12 1.07	-5 35.0	1.310	2.300	4.4	19.9	170	39 70
3 24	11 56.03	-37 35.2	0.281	1.235	28.6	18.0	144 E	7 78	4 6	11 55.72	-5 8.2	1.307	2.285	7.0	20.0	164	40 69
3 26	11 47.81	-36 5.2	0.259	1.219	27.8	17.7	145 E	9 80	4 11	11 50.71	-4 41.7	1.311	2.270	9.6	20.1	158	40 69
3 28	11 38.57	-34 11.8	0.237	1.204	27.0	17.5	147 E	11 82	4 16	11 46.19	-4 16.5	1.320	2.255	12.1	20.2	152	41 68
3 30	11 28.23	-31 49.2	0.217	1.188	26.6	17.3	148 E	13 84	4 21	11 42.28	-3 53.6	1.335	2.240	14.5	20.3	146	41 68
4 1	11 16.68	-28 50.2	0.198	1.172	26.6	17.0	148 E	16 87	4 26	11 39.08	-3 33.7	1.355	2.225	16.8	20.4	140	41 68
4 2	11 10.42	-27 4.4	0.188	1.164	26.9	16.9	148 E	18 89	5 1	11 36.67	-3 17.6	1.380	2.210	18.8	20.5	135	42 67
4 3	11 3.82	-25 6.0	0.179	1.156	27.4	16.8	148 E	20 89	5 11	11 34.30	-2 58.0	1.440	2.179	22.4	20.7	125	42 67
4 4	10 56.86	-22 53.9	0.171	1.148	28.2	16.7	147	22 87	5 21	11 35.19	-2 56.5	1.511	2.148	25.2	20.8	115	42* 67
4 5	10 49.53	-20 26.8	0.163	1.139	29.4	16.6	146	25 84	5 31	11 39.16	-3 13.1	1.589	2.116	27.3	21.0	107	39* 67
4 6	10 41.83	-17 43.4	0.156	1.131	31.0	16.6	144	27 82	6 10	11 45.87	-3 47.0	1.670	2.085	28.8	21.1	99	35* 68
4 7	10 33.72	-14 42.9	0.149	1.122	33.0	16.5	142	30 79	6 20	11 55.00	-4 36.3	1.752	2.053	29.7	21.2	92	31* 69
4 8	10 25.22	-11 24.6	0.143	1.114	35.5	16.5	140	34 75	6 30	12 6.24	-5 39.4	1.833	2.022	30.1	21.2	85	26* 69*
4 9	10 16.30	-7 48.5	0.137	1.105	38.5	16.4	137	37 72	7 10	12 19.33	-6 54.4	1.911	1.990	30.1	21.3	79	22* 69*
4 10	10 6.97	+ 3 55.4	0.133	1.097	41.8	16.4	133	41 68	7 20	12 34.08	-8 19.5	1.985	1.959	29.9	21.3	74	18* 66*
4 11	9 57.21	+ 0 12.9	0.129	1.088	45.6	16.5	129	45 64	7 30	12 50.34	-9 52.9	2.055	1.929	29.3	21.4	68	15* 62*
4 12	9 47.04	+ 4 33.6	0.126	1.079	49.8	16.5	125	50 59	8 9	13 8.00	-11 32.5	2.120	1.899	28.6	21.4	64	13* 57*
4 13	9 36.45	+ 9 2.7	0.125	1.071	54.2	16.6	120	54 55	8 19	13 27.00	-13 16.4	2.179	1.870	27.6	21.4	59	11* 53*
4 14	9 25.47	+ 13 35.5	0.124	1.062	58.8	16.7	115	59 50	8 29	13 47.31	-15 2.6	2.234	1.842	26.5	21.4	55	10* 49*
4 15	9 14.11	+ 18 6.7	0.124	1.053	63.4	16.8	110	63 46	9 8	14 8.91	-16 48.6	2.284	1.815	25.3	21.3	50	8* 44*
4 16	9 2.39	+ 22 31.2	0.126	1.044	68.1	17.0	105	68 41	9 18	14 31.81	-18 32.1	2.328	1.789	24.0	21.3	46	7* 40*
4 17	8 50.35	+ 26 44.4	0.128	1.035	72.6	17.2	100	72* 37	9 28	14 56.00	-20 10.4	2.369	1.765	22.6	21.3	43	7* 36*
4 18	8 38.02	+ 30 42.5	0.131	1.026	77.0	17.3	96	75* 33	10 8	15 21.46	-21 40.8	2.405	1.742	21.1	21.2	39	6* 33*
4 19	8 25.44	+ 34 23.1	0.136	1.016	81.1	17.5	91	76* 30	10 18	15 48.17	-23 0.3	2.437	1.722	19.5	21.2	35	6* 29*
4 20	8 12.67	+ 37 44.6	0.140	1.007	85.0	17.7	87	76* 26	10 28	16 16.04	-24 6.1	2.466	1.703	17.9	21.1	32	5* 26*
4 21	7 59.76	+ 40 46.6	0.146	0.998	88.6	17.9	83	75* 23	11 7	16 44.95	-24 55.4	2.491	1.687	16.2	21.1	28	5* 22*
4 22	7 46.77	+ 43 29.4	0.152	0.989	91.9	18.1	79	72* 20*	11 17	17 14.73	-25 25.6	2.515	1.673	14.5	21.0	25	5* 19*
4 23	7 33.74	+ 45 53.7	0.159	0.979	95.0	18.4	76	70* 18*	11 27	17 45.15	-25 34.8	2.536	1.661	12.8	21.0	22	4* 15*
4 24	7 20.75	+ 48 0.7	0.166	0.970	97.8	18.6	73	67* 15*	12 7	18 15.95	-25 21.6	2.556	1.653	11.0	20.9	19	4* 12*
4 25	7 7.84	+ 49 51.7	0.173	0.960	100.4	18.8	70	64* 13*	12 17	18 46.84	-24 45.4	2.574	1.647	9.2	20.9	16	3* 8*
4 26	6 55.08	+ 51 28.2	0.181	0.951	102.7	18.9	67	61* 11*	12 27	19 17.56	-23 46.5	2.591	1.644	7.4	20.8	12	2* 5*
4 27	6 42.50	+ 52 51.5	0.190	0.941	104.9	19.1	65	58* 8*	1 6	19 47.84	-22 26.0	2.606	1.644	5.5	20.7	9	—
4 28	6 30.16	+ 54 3.0	0.198	0.931	106.9	19.3	62	56* 6*	1 16	20 17.51	-20 45.5	2.621	1.646	3.7	20.6	6	—
4 29	6 18.11	+ 55 3.8	0.207	0.922	108.7	19.5	60	54* 5*	85118 1971 UU								
4 30	6 6.36	+ 55 55.2	0.215	0.912	110.3	19.7	58	51* 3*	2 1	12 47.60	-6 54.5	3.058	3.622	13.9	21.4	118 W	38 71
5 1	5 54.95	+ 56 38.0	0.224	0.902	111.8	19.8	56	49* 1*	2 11	12 45.79	-6 45.2	2.927	3.622	12.4	21.3	128 W	38 71
5 2	5 43.92	+ 57 13.3	0.234	0.892	113.2	20.0	54	47* —	2 21	12 42.08	-6 23.4	2.813	3.621	10.3	21.1	139 W	39 70
5 3	5 33.26	+ 57 41.7	0.243	0.883	114.5	20.1	53	45* —	3 2	12 36.61	-5 49.3	2.721	3.619	7.7	20.9	151 W	39 70
5 4	5 23.01	+ 58 4.0	0.253	0.873	115.7	20.2	51	43* —	3 12	12 29.72	-5 4.8	2.655	3.616	4.7	20.7	163 W	40 69
5 5	5 13.16	+ 58 20.9	0.262	0.863	116.8	20.4	50	42* —	3 22	12 21.91	-4 12.8	2.619	3.613	1.5	20.5	175 W	41 68
5 6	5 3.73	+ 58 32.7	0.272	0.853	117.8	20.5	48	40* —	4 1	12 13.81	-3 17.2	2.614	3.608	2.0	20.5	173 E	42 67
5 7	4 54.72	+ 58 40.1	0.282	0.843	118.7	20.6	47	38* —	4 11	12 6.10	-2 22.7	2.640	3.603	5.2	20.7	161 E	43 66
5 8	4 46.13	+ 58 43.5	0.292	0.833	119.5	20.7	46	37* —	4 21	11 59.38	-1 33.5	2.695	3.596	8.2	20.9	149 E	43 66
5 9	4 37.96	+ 58 43.1	0.302	0.823	120.2	20.8	45	35* —	5 1	11 54.12	-0 53.0	2.775	3.589	10.8	21.1	138	44 65
5 10	4 30.20	+ 58 39.4	0.312	0.813	120.9	20.9	44	34* —	5 11	11 50.59	-0 23.6	2.875	3.581	12.9	21.2	127 E	45 64
5 11	4 22.85	+ 58 32.6	0.322	0.803	121.5	21.0	43	32* —	5 21	11 48.91	-0 6.1	2.992	3.572	14.6	21.4	117 E	45* 64
5 13	4 9.37	+ 58 10.6	0.343	0.783	122.5	21.2	41	30* —	5 31	11 49.05	-0 0.6	3.120	3.562	15.7	21.5	108 E	43* 64
5 15	3 57.44	+ 57 39.0	0.365	0.764	123.3	21.3	39	27* —	350536 2000 QY₆₉								
5 17	3 47.00	+ 56 59.0	0.387	0.744	123.7	21.4	38	24* —	2 1	12 59.91	-2 15.6	0.739	1.472	36.8	21.5	117 W	43 66
5 19	3 37.98	+ 56 11.8	0.409	0.725	123.9	21.5	36	23* —	2 11	12 52.53	-6 25.1	0.677	1.494	31.9	21.2	127 W	39 70
238519 2004 TC₁₃₃									2 21	12 37.81	-10 40.9	0.627	1.516	25.7	20.9	138 W	34 75
2 1	12 38.19	+ 0 57.0	2.291	2.944	16.3	21.4	123 W	46 63	3 2	12 15.56	-14 45.0	0.596	1.535	18.9	20.6	150 W	30 79
2 11	12 36.02	+ 1 18.5	2.174	2.942	14.1	21.2	133 W	46 63	3 12	11 47.84	-18 9.2	0.588	1.554	13.8	20		

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°-26°	2020	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°-26°
470317 2007 PJ₂₁ (continuation)									318050 2004 FC₃₂ (continuation)								
4 6	12 25.16	-17 39.8	1.170	2.154	6.5	19.5	166 E	27 82	4 1	13 45.72	+21 46.3	0.511	1.463	20.3	19.1	149 W	67 42
4 11	12 18.86	-17 36.3	1.151	2.129	8.0	19.5	163 E	27 82	4 6	13 42.27	+22 25.5	0.490	1.444	20.7	19.0	149 W	67 42
4 16	12 12.74	-17 29.0	1.139	2.104	10.2	19.6	158 E	28 81	4 11	13 38.04	+22 50.7	0.471	1.425	21.6	18.9	148 W	68 41
4 21	12 7.01	-17 18.6	1.132	2.079	12.6	19.6	153 E	28 81	4 16	13 33.24	+22 58.8	0.455	1.407	22.9	18.8	147 E	68 41
4 26	12 1.86	-17 6.3	1.131	2.054	15.1	19.7	148 E	28 81	4 21	13 28.16	+22 47.0	0.442	1.390	24.7	18.8	145 E	68 41
5 1	11 57.48	-16 53.4	1.134	2.029	17.6	19.7	143 E	28 81	4 26	13 23.14	+22 13.5	0.432	1.373	26.7	18.8	142 E	67 42
5 6	11 53.96	-16 40.9	1.143	2.004	20.0	19.8	137 E	28 81	5 1	13 18.53	+21 17.3	0.425	1.358	29.0	18.8	139 E	66 43
5 11	11 51.40	-16 30.0	1.154	1.979	22.2	19.9	132 E	28 81	5 6	13 14.65	+19 58.6	0.420	1.344	31.3	18.8	136 E	65 44
5 16	11 49.82	-16 21.4	1.169	1.955	24.3	19.9	127 E	29 80	5 11	13 11.73	+18 18.7	0.416	1.330	33.6	18.8	133 E	63 46
5 21	11 49.27	-16 15.9	1.187	1.931	26.2	20.0	123 E	29* 80	5 16	13 9.94	+16 19.2	0.415	1.318	35.8	18.9	130 E	61 48
5 31	11 51.21	-16 16.6	1.229	1.883	29.5	20.1	114 E	27* 80	5 21	13 9.40	+14 2.0	0.416	1.307	37.9	18.9	127 E	59 50
6 10	11 56.99	-16 34.7	1.275	1.837	32.1	20.2	106 E	24* 81	5 26	13 10.22	+11 29.7	0.418	1.298	39.9	19.0	125 E	56 53
6 20	12 6.27	-17 10.4	1.323	1.793	34.0	20.3	99 E	21* 81	5 31	13 12.40	+8 44.6	0.422	1.289	41.7	19.0	122 E	54 55
6 30	12 18.76	-18 2.9	1.371	1.751	35.4	20.4	93 E	17* 82	6 5	13 15.92	+5 49.4	0.428	1.283	43.3	19.1	120 E	51 58
7 10	12 34.13	-19 10.3	1.418	1.711	36.4	20.4	88 E	14* 81*	6 10	13 20.72	+2 47.0	0.435	1.277	44.7	19.1	118 E	48* 61
7 20	12 52.19	-20 29.9	1.463	1.674	37.0	20.4	83 E	11* 77*	6 15	13 26.75	-0 20.3	0.444	1.273	45.9	19.2	116 E	44* 64
7 30	13 12.80	-21 58.4	1.506	1.640	37.3	20.5	78 E	9* 72*	6 20	13 33.97	-3 30.1	0.454	1.271	46.9	19.3	114 E	40* 68
8 9	13 35.81	-23 32.1	1.548	1.610	37.4	20.5	75 E	7* 68*	6 25	13 42.34	-6 40.1	0.467	1.270	47.7	19.4	112 E	37* 71
8 19	14 1.17	-25 6.5	1.588	1.584	37.2	20.5	71 E	6* 64*	6 30	13 51.81	-9 48.1	0.481	1.271	48.3	19.4	111 E	33* 74
8 29	14 28.79	-26 36.8	1.629	1.563	36.8	20.5	68 E	6* 61*	7 5	14 2.32	-12 51.9	0.497	1.273	48.7	19.5	110 E	30* 77
9 8	14 58.52	-27 57.6	1.670	1.546	36.3	20.5	65 E	6* 58*	7 10	14 13.80	-15 49.5	0.514	1.277	49.0	19.6	109 E	26* 80
9 18	15 30.16	-29 3.7	1.713	1.535	35.5	20.6	63 E	6* 56*	7 15	14 26.23	-18 39.1	0.534	1.283	49.1	19.7	108 E	23* 83
9 28	16 3.41	-29 50.0	1.760	1.529	34.6	20.6	60 E	7* 53*	7 20	14 39.57	-21 19.4	0.555	1.290	49.1	19.8	107 E	21* 85
10 8	16 37.81	-30 12.2	1.810	1.529	33.5	20.6	58 E	8* 51*	7 30	15 8.79	-26 6.7	0.605	1.307	48.7	20.0	105 E	16* 90
10 18	17 12.87	-30 7.3	1.865	1.534	32.3	20.6	55 E	9* 49*	8 9	15 40.93	-30 3.3	0.662	1.331	47.9	20.2	103 E	13* 86
10 28	17 48.03	-29 34.1	1.926	1.545	30.9	20.7	53 E	10* 47*	8 19	16 15.32	-33 4.9	0.728	1.358	46.9	20.4	101 E	10* 83
11 7	18 22.72	-28 32.9	1.992	1.561	29.3	20.7	50 E	12* 44*	8 24	16 33.13	-34 14.8	0.764	1.374	46.4	20.6	101 E	10* 82
11 17	18 56.50	-27 5.7	2.064	1.581	27.6	20.8	48 E	14* 41*	8 29	16 51.20	-35 11.0	0.802	1.390	45.8	20.7	100 E	9* 81
11 27	19 29.04	-25 15.5	2.140	1.607	25.9	20.9	45 E	15* 37*	9 3	17 9.40	-35 53.7	0.842	1.407	45.1	20.8	99 E	8* 80
12 7	20 0.13	-23 6.3	2.222	1.636	24.0	20.9	42 E	17* 33*	9 8	17 27.61	-36 23.7	0.884	1.425	44.5	20.9	98 E	8* 80
12 17	20 29.69	-20 41.9	2.308	1.670	22.0	21.0	39 E	18* 29*	9 13	17 45.73	-36 41.4	0.928	1.444	43.8	21.0	97 E	8* 79
12 27	20 57.73	-18 6.0	2.396	1.706	20.0	21.1	36 E	19* 24*	9 18	18 3.67	-36 47.7	0.974	1.463	43.1	21.1	95 E	8* 79*
1 6	21 24.33	-15 22.3	2.486	1.746	17.9	21.1	33 E	19* 20*	9 23	18 21.35	-36 43.5	1.022	1.483	42.4	21.3	94 E	8* 79*
1 16	21 49.60	-12 33.7	2.577	1.788	15.7	21.2	30 E	18* 16*	9 28	18 38.71	-36 29.6	1.072	1.504	41.7	21.4	93 E	8* 79*
									10 3	18 55.66	-36 6.9	1.124	1.524	41.0	21.5	92 E	9* 79*
159612 2002 AV₁₇									382503 2001 RE₈								
2 1	13 3.59	+3 43.0	2.395	2.983	17.0	21.4	118 W	49 60	2 1	13 27.52	-32 10.8	1.001	1.501	40.5	21.4	98 W	13 84
2 11	13 3.35	+4 29.9	2.271	2.980	15.2	21.2	128 W	49 60	2 6	13 38.21	-34 9.1	0.952	1.484	40.9	21.3	100 W	11 82
2 21	13 0.73	+5 31.2	2.164	2.977	12.7	21.0	138 W	51 58	2 11	13 49.15	-36 7.1	0.904	1.468	41.2	21.1	102 W	9 80
3 2	12 55.73	+6 43.8	2.077	2.973	9.8	20.8	149 W	52 57	2 16	14 0.36	-38 4.5	0.858	1.451	41.5	21.0	103 W	7 78
3 12	12 48.65	+8 2.6	2.015	2.967	6.7	20.6	160 W	53 56	2 21	14 11.87	-40 0.6	0.813	1.434	41.7	20.9	105 W	5 76
3 22	12 40.03	+9 21.0	1.982	2.961	4.4	20.4	167 W	54 55	2 26	14 23.71	-41 54.9	0.769	1.418	42.0	20.7	107 W	3 74
3 27	12 35.39	+9 57.7	1.976	2.957	4.3	20.4	167 W	55 54	3 2	14 35.93	-43 46.5	0.727	1.401	42.2	20.6	108 W	1 72
4 1	12 30.67	+10 31.5	1.978	2.953	5.1	20.5	165 E	56 53	3 7	14 48.59	-45 34.5	0.686	1.385	42.4	20.4	110 W	- 70
4 6	12 26.02	+11 1.7	1.987	2.949	6.5	20.5	161 E	56 53	3 12	15 1.74	-47 18.0	0.647	1.369	42.6	20.3	111 W	- 69
4 11	12 21.53	+11 27.6	2.003	2.945	8.1	20.6	156 E	56 53	3 17	15 15.42	-48 56.1	0.609	1.353	42.7	20.1	113 W	- 67
4 16	12 17.31	+11 48.8	2.025	2.940	9.7	20.7	150 E	57 52	3 22	15 29.64	-50 27.3	0.573	1.337	42.8	20.0	114 W	- 66
4 21	12 13.45	+12 5.0	2.054	2.935	11.3	20.8	145 E	57 52	3 27	15 44.41	-51 50.0	0.538	1.322	42.9	19.8	116 W	- 64
4 26	12 10.04	+12 16.1	2.088	2.930	12.8	20.9	140 E	57 52	4 1	15 59.73	-53 2.5	0.504	1.307	43.0	19.7	117 W	- 63
5 1	12 7.14	+12 22.1	2.128	2.924	14.2	21.0	135 E	57 52	4 6	16 15.58	-54 2.9	0.471	1.293	42.9	19.5	118 W	- 62
5 6	12 4.78	+12 23.1	2.172	2.919	15.5	21.1	129 E	57 52	4 11	16 31.89	-54 49.2	0.440	1.279	42.8	19.3	120 W	- 61
5 11	12 2.99	+12 19.4	2.220	2.913	16.6	21.1	124 E	57 52	4 16	16 48.49	-55 19.1	0.409	1.266	42.6	19.1	121 W	- 61
5 16	12 1.78	+12 11.2	2.272	2.907	17.6	21.2	120 E	57 52	4 21	17 5.12	-55 29.8	0.380	1.253	42.3	18.9	123 W	- 61
5 21	12 1.15	+11 58.9	2.326	2.900	18.5	21.3	115 E	57 52	4 26	17 21.49	-55 18.3	0.352	1.242	41.7	18.7	125 W	- 61
5 26	12 1.09	+11 42.7	2.383	2.893	19.2	21.4	110 E	56* 52	5 1	17 37.29	-54 41.0	0.325	1.231	40.9	18.5	127 W	- 61
5 31	12 1.58	+11 23.0	2.441	2.886	19.8	21.4	106 E	55* 53	5 3	17 43.37	-54 18.0	0.315	1.226	40.5	18.4	128 W	- 62
6 5	12 2.60	+11 0.1	2.500	2.879	20.2	21.5	101 E	53* 53	5 5	17 49.28	-53 50.0	0.305	1.222	40.1	18.3	129 W	- 62
310522 2000 YS₆₆									318050 2004 FC₃₂								
2 1	13 8.75	+2 35.4	2.341	2.912	17.7	21.5	116 W	48 61	2 1	13 12.91	+12 6.4	1.027	1.722	30.4	21.2	118 W	57 52
2 11	13 8.25	+3 18.4	2.242	2.936	15.7	21.3	126 W	48 61	2 11	13 25.83	+12 59.1	0.911	1.677	29.1	20.9	124 W	58 51
2 21	13 5.30	+4 14.9	2.157	2.960	13.1	21.2	137 W	49 60	2 21	13 36.64	+14 16.8	0.806	1.633	27.4	20.5	131 W	59 50
3 2	12 59.99	+5 22.0	2.093	2.982	10.1	21.0	148 W	50 59	3 2	13 44.65	+15 58.0	0.713	1.589	25.2	20.1	137 W	61 48
3 12	12 52.69	+6 34.3	2.054	3.003	6.8	20.9	159 W	52 57	3 7	13 47.40	+16 55.6	0.671	1.567	24.1	19.9	140 W	62 47
3 22	12 44.01	+7 45.6	2.043	3.023	4.2	20.7	167 W	53 56	3 12	13 49.20	+17 56.2	0.633	1.545	22.9	19.7	143 W	63 46
4 1	12 34.78	+8 49.1	2.061	3.042	4.4	20.8	167 E	54 55	3 17	13 49.98	+18 58.1	0.597	1.524	21.9	19.6	145 W	64 45
4 11																	

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

2020	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45° - 26°	20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45° - 26°
382503 2001 RE₈									276274 2002 SS₄₁								
<i>(continuation)</i>									<i>(continuation)</i>								
7 5	18 45.73	+7 43.4	0.192	1.186	25.9	16.9	149 E	53	3 12	13 53.29	-8 27.6	1.040	1.924	18.5	19.7	142 W	37
7 10	18 44.77	+12 0.5	0.206	1.191	29.5	17.1	145 E	57	3 17	13 49.97	-4 37.1	0.978	1.900	15.7	19.4	149 W	40
7 15	18 44.27	+15 19.3	0.222	1.197	32.4	17.4	141 E	60	3 22	13 45.46	-0 15.2	0.925	1.876	12.9	19.2	155 W	45
7 20	18 44.39	+17 46.2	0.240	1.204	34.7	17.6	138 E	63	3 27	13 39.77	+4 34.8	0.883	1.851	10.8	18.9	160 W	50
7 25	18 45.31	+19 28.6	0.260	1.213	36.5	17.9	135 E	64	4 1	13 32.95	+9 45.9	0.853	1.827	10.3	18.8	161 W	55
7 30	18 47.09	+20 34.4	0.280	1.222	37.8	18.1	132 E	66	4 3	13 29.94	+11 53.9	0.845	1.817	10.8	18.8	160 W	57
8 4	18 49.76	+21 10.5	0.302	1.232	38.8	18.3	131 E	66	4 5	13 26.78	+14 2.8	0.839	1.807	11.7	18.8	159 W	59
8 9	18 53.28	+21 22.6	0.324	1.243	39.4	18.5	129 E	66	4 7	13 23.48	+16 11.8	0.834	1.797	12.8	18.8	156 W	61
8 14	18 57.62	+21 15.2	0.347	1.255	39.9	18.7	127 E	66	4 9	13 20.07	+18 19.9	0.832	1.787	14.2	18.9	154 W	63
8 19	19 2.77	+20 52.1	0.372	1.268	40.1	18.9	126 E	66	4 11	13 16.55	+20 26.4	0.832	1.778	15.7	18.9	151 E	65
8 24	19 8.71	+20 17.0	0.397	1.281	40.3	19.0	125 E	65	4 13	13 12.94	+22 30.4	0.834	1.768	17.3	19.0	148 E	68
8 29	19 15.39	+19 33.0	0.423	1.295	40.3	19.2	124 E	65	4 15	13 9.27	+24 31.2	0.838	1.758	19.0	19.0	145 E	70
9 3	19 22.74	+18 42.6	0.451	1.309	40.3	19.3	123 E	64	4 17	13 5.54	+26 28.1	0.844	1.748	20.7	19.1	142 E	71
9 8	19 30.68	+17 48.1	0.479	1.324	40.3	19.5	122 E	63	4 19	13 1.80	+28 20.6	0.851	1.738	22.3	19.1	139 E	73
9 13	19 39.17	+16 50.9	0.509	1.339	40.3	19.7	121 E	62	4 21	12 58.05	+30 8.3	0.860	1.729	23.9	19.2	136 E	75
9 18	19 48.16	+15 52.8	0.540	1.355	40.2	19.8	119 E	61	4 26	12 48.82	+34 14.1	0.888	1.704	27.7	19.3	128 E	79
9 23	19 57.62	+14 55.2	0.573	1.371	40.2	20.0	118 E	60	5 1	12 40.08	+37 45.3	0.924	1.680	31.0	19.5	121 E	83
9 28	20 7.48	+13 59.6	0.608	1.387	40.1	20.1	117 E	59	5 6	12 32.13	+40 42.9	0.964	1.656	33.8	19.6	114 E	86
10 3	20 17.68	+13 6.8	0.644	1.403	40.1	20.3	115 E	58	5 11	12 25.19	+43 10.0	1.008	1.632	36.1	19.8	108 E	88
10 8	20 28.16	+12 17.5	0.681	1.420	40.0	20.4	114 E	57	5 16	12 19.45	+45 10.5	1.054	1.609	37.9	19.9	102 E	90
10 13	20 38.89	+11 32.3	0.721	1.437	39.9	20.6	112 E	57	5 21	12 15.00	+46 48.4	1.101	1.585	39.3	20.0	97 E	88
10 18	20 49.84	+10 51.8	0.762	1.453	39.9	20.7	111 E	56	5 26	12 11.90	+48 7.7	1.147	1.563	40.4	20.1	92 E	86*
10 23	21 0.97	+10 16.3	0.805	1.470	39.8	20.8	109 E	55	5 31	12 10.16	+49 11.9	1.192	1.540	41.1	20.1	88 E	82*
10 28	21 12.24	+9 46.1	0.850	1.486	39.7	21.0	107 E	55	6 5	12 9.73	+50 3.9	1.234	1.518	41.7	20.2	84 E	78*
11 2	21 23.61	+9 21.3	0.896	1.503	39.5	21.1	105 E	54	6 10	12 10.56	+50 46.1	1.274	1.497	42.0	20.2	81 E	75*
11 7	21 35.05	+9 1.9	0.944	1.519	39.4	21.2	103 E	54	6 15	12 12.59	+51 20.3	1.310	1.477	42.2	20.3	78 E	71*
11 12	21 46.54	+8 47.6	0.994	1.536	39.2	21.4	101 E	54	6 20	12 15.77	+51 47.9	1.342	1.457	42.3	20.3	75 E	68*
456237 2006 MM₆									487580 2015 BA₉₂								
2 1	13 41.81	-20 14.3	1.809	2.208	26.0	21.5	100 W	25	6 25	12 20.05	+52 10.1	1.370	1.438	42.4	20.3	72 E	66*
2 11	13 50.64	-22 0.7	1.660	2.173	25.6	21.3	108 W	23	6 30	12 25.38	+52 27.8	1.394	1.419	42.4	20.3	70 E	64*
2 21	13 57.50	-23 41.7	1.517	2.137	24.7	21.0	115 W	21	7 5	12 31.73	+52 41.8	1.413	1.402	42.3	20.3	68 E	62*
3 2	14 1.88	-25 15.2	1.384	2.101	23.1	20.7	124 W	20	7 15	12 47.37	+52 59.7	1.435	1.371	42.4	20.3	65 E	59*
3 12	14 3.28	-26 37.9	1.262	2.066	20.9	20.4	132 W	18	7 20	12 56.67	+53 3.9	1.439	1.357	42.5	20.3	64 E	58*
3 17	14 2.73	-27 13.8	1.207	2.048	19.5	20.2	137 W	18	7 30	13 18.32	+53 2.5	1.431	1.334	42.9	20.3	63 E	57*
3 22	14 1.30	-27 45.2	1.155	2.030	17.9	20.1	141 W	17	8 9	13 44.21	+52 45.8	1.404	1.316	43.0	20.2	64 E	58*
3 27	13 58.97	-28 11.2	1.107	2.013	16.2	19.9	146 W	17	8 19	14 14.72	+52 7.2	1.359	1.304	44.6	20.2	65 E	59*
4 1	13 55.78	-28 30.8	1.065	1.995	14.4	19.7	150 W	16	8 24	14 31.83	+51 36.9	1.332	1.301	45.1	20.1	66 E	60*
4 6	13 51.81	-28 43.3	1.026	1.978	12.5	19.6	155 W	16	8 29	14 50.21	+50 57.2	1.301	1.299	45.7	20.1	67 E	61*
4 11	13 47.18	-28 48.2	0.994	1.960	10.8	19.4	158 W	16	9 3	15 9.85	+50 5.9	1.269	1.299	46.2	20.0	68 E	62*
4 16	13 42.04	-28 44.7	0.966	1.943	9.5	19.3	161 W	16	9 8	15 30.71	+49 0.8	1.235	1.301	46.7	20.0	70 E	64*
4 21	13 36.59	-28 32.9	0.944	1.926	8.9	19.2	163 E	16	9 13	15 52.71	+47 39.3	1.201	1.304	47.1	20.0	72 E	66*
4 26	13 31.08	-28 13.1	0.927	1.910	9.3	19.2	162 E	17	9 18	16 15.70	+45 58.9	1.168	1.309	47.4	19.9	74 E	68*
5 1	13 25.78	-27 46.0	0.915	1.893	10.6	19.2	160 E	17	9 23	16 39.49	+43 57.4	1.137	1.316	47.6	19.9	76 E	70*
5 6	13 20.93	-27 13.2	0.909	1.877	12.5	19.2	156 E	18	9 28	17 3.81	+41 33.1	1.109	1.324	47.6	19.8	78 E	71*
5 11	13 16.73	-26 36.0	0.908	1.861	14.8	19.3	152 E	18	10 3	17 28.36	+38 45.5	1.086	1.334	47.5	19.8	79 E	73*
5 16	13 13.36	-25 56.3	0.912	1.846	17.2	19.3	147 E	19	10 8	17 52.84	+35 35.5	1.070	1.345	47.2	19.8	81 E	73*
5 21	13 10.97	-25 15.7	0.919	1.830	19.6	19.4	143 E	20	10 13	18 16.97	+32 5.7	1.062	1.357	46.8	19.8	82 E	73*
5 26	13 9.63	-24 36.0	0.931	1.815	21.9	19.5	138 E	20	10 18	18 40.50	+28 21.0	1.062	1.371	46.2	19.8	83 E	71*
5 31	13 9.41	-23 58.6	0.946	1.801	24.1	19.6	133 E	21	10 23	19 3.24	+24 27.5	1.072	1.386	45.6	19.8	84 E	68*
6 5	13 10.29	-23 24.7	0.964	1.787	26.1	19.7	129 E	22*	10 28	19 25.05	+20 32.3	1.091	1.402	44.8	19.8	84 E	65*
6 10	13 12.27	-22 55.1	0.984	1.773	28.0	19.8	125 E	22*	11 2	19 45.84	+16 42.1	1.121	1.419	44.1	19.9	84 E	61*
6 20	13 19.29	-22 10.1	1.032	1.747	31.2	19.9	117 E	21*	11 7	20 5.59	+13 2.7	1.160	1.437	43.2	20.0	83 E	58*
6 30	13 30.10	-21 45.3	1.085	1.723	33.6	20.1	110 E	20*	11 12	20 24.31	+9 38.3	1.207	1.456	42.3	20.1	82 E	55*
7 10	13 44.20	-21 39.0	1.143	1.702	35.5	20.2	104 E	19*	11 17	20 42.06	+6 31.9	1.263	1.476	41.4	20.2	81 E	52*
7 20	14 1.13	-21 48.1	1.204	1.683	36.7	20.3	98 E	17*	11 22	20 58.90	+3 44.8	1.325	1.497	40.4	20.3	79 E	49*
7 30	14 20.55	-22 8.7	1.268	1.666	37.5	20.4	93 E	16*	11 27	21 14.87	+1 16.9	1.393	1.518	39.3	20.4	77 E	46*
8 9	14 42.10	-22 36.5	1.333	1.653	37.8	20.5	88 E	15*	12 2	21 30.07	-0 52.4	1.465	1.540	38.2	20.5	75 E	44*
8 19	15 5.50	-23 7.0	1.400	1.643	37.8	20.6	84 E	15*	12 7	21 44.56	-2 44.5	1.541	1.562	37.0	20.6	73 E	42*
8 29	15 30.49	-23 36.1	1.469	1.636	37.5	20.7	80 E	15*	12 12	21 58.42	-4 20.9	1.619	1.585	35.8	20.7	70 E	41*
9 8	15 56.81	-23 59.9	1.540	1.633	36.9	20.8	77 E	15*	12 17	22 11.72	-5 43.1	1.699	1.608	34.5	20.8	68 E	39*
9 18	16 24.21	-24 14.9	1.613	1.632	36.1	20.9	73 E	16*	12 22	22 24.52	-6 52.6	1.781	1.632	33.1	20.9	65 E	38*
9 28	16 52.42	-24 18.1	1.688	1.635	35.1	20.9	70 E	16*	12 27	22 36.87	-7 51.0	1.862	1.656	31.8	21.0	62 E	36*
10 8	17 21.16	-24 7.1	1.766	1.642	33.9	21.0	66 E	17*	1 1	22 48.83	-8 39.8	1.943	1.680	30.4	21.1	60 E	35*
10 18	17 50.16	-23 40.6	1.846	1.651	32.5	21.1	63 E	18*	1 6	23 0.43	-9 20.0	2.024	1.704	29.0	21.2	57 E	34*
10 28	18 19.16	-22 57.6	1.928	1.664	31.0	21.2	60 E	19*	1 11	23 11.72	-9 52.8	2.103	1.728	27.6	21.2	54 E	32*
11 7	18 47.92	-21 58.1	2.013	1.680	29.4	21.2	56 E	20*	1 16	23 22.75	-10 19.3	2.181	1.753	26.2</			

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
487580 2015 BA₉₂										133819 2003 XS									
<i>(continuation)</i>										<i>(continuation)</i>									
3 10	17 35.43	+35 17.9	0.327	1.043	72.1	20.2	90 W	79*	28*	9 8	14 16.81	-18 18.0	2.505	2.057	22.9	20.8	53 E	8*	47*
3 12	17 58.06	+36 5.7	0.322	1.024	75.6	20.2	86 W	77*	26*	9 18	14 35.53	-19 46.6	2.547	2.012	21.7	20.7	48 E	7*	42*
3 14	18 21.62	+36 38.1	0.318	1.004	79.2	20.3	83 W	75*	25*	9 28	14 55.73	-21 14.3	2.581	1.967	20.3	20.6	43 E	6*	37*
3 16	18 45.77	+36 53.0	0.317	0.983	82.8	20.4	79 W	71*	23*	10 8	15 17.39	-22 38.8	2.606	1.923	18.8	20.6	38 E	5*	32*
3 18	19 10.11	+36 49.5	0.317	0.963	86.6	20.5	75 W	68*	22*	10 18	15 40.56	-23 57.5	2.622	1.879	17.2	20.5	34 E	4*	28*
3 20	19 34.22	+36 27.5	0.319	0.942	90.3	20.6	71 W	64*	21*	10 28	16 5.23	-25 7.9	2.631	1.836	15.6	20.4	30 E	3*	24*
3 22	19 57.73	+35 47.7	0.323	0.921	93.9	20.7	67 W	61*	20*	11 7	16 31.37	-26 6.8	2.634	1.793	13.9	20.3	26 E	2*	20*
3 24	20 20.30	+34 52.2	0.329	0.900	97.4	20.9	63 W	57*	19*	11 17	16 58.95	-26 51.4	2.629	1.752	12.2	20.1	22 E	1*	16*
3 26	20 41.70	+33 43.1	0.337	0.878	100.8	21.0	60 W	53*	19*	11 27	17 27.85	-27 18.6	2.620	1.712	10.5	20.0	18 E	1*	12*
3 28	21 1.80	+32 23.2	0.347	0.856	103.9	21.2	56 W	50*	18*	12 7	17 57.90	-27 25.4	2.606	1.674	8.8	19.9	15 E	—	9*
3 30	21 20.56	+30 55.3	0.358	0.835	106.8	21.4	53 W	46*	18*	12 17	18 28.88	-27 9.4	2.588	1.638	7.1	19.8	12 E	—	6*
										12 27	19 0.52	-26 28.8	2.569	1.605	5.5	19.6	9 E	—	3*
										1 6	19 32.51	-25 22.4	2.548	1.574	4.0	19.5	6 E	—	—
										1 16	20 4.58	-23 50.2	2.527	1.547	2.7	19.3	4 E	—	—
45164 1999 XK₁₂₇										358060 2006 HR₄₉									
2 1	13 50.07	-6 15.7	2.730	3.111	17.9	21.4	103 W	39	70	2 1	13 53.54	-4 52.5	1.519	1.989	28.8	21.5	103 W	40	69*
2 11	13 52.99	-5 59.2	2.575	3.096	17.1	21.2	113 W	39	70	2 11	14 7.03	-5 16.4	1.365	1.937	28.6	21.2	110 W	40	69
2 21	13 53.85	-5 28.7	2.429	3.080	15.6	21.0	123 W	40	69	2 21	14 19.40	-5 24.3	1.218	1.884	27.9	20.8	117 W	40	69
3 2	13 52.46	-4 43.7	2.296	3.064	13.6	20.8	133 W	40	69	3 2	14 30.25	-5 14.0	1.081	1.832	26.6	20.5	124 W	40	69
3 12	13 48.77	-3 45.3	2.183	3.046	10.9	20.6	144 W	41	68	3 12	14 39.17	-4 44.2	0.956	1.780	24.6	20.1	132 W	40	69
3 22	13 42.92	-2 39.3	2.092	3.027	7.8	20.4	156 W	42	67	3 22	14 45.65	-3 54.1	0.842	1.728	21.8	19.7	140 W	41	68
4 1	13 35.29	-1 19.3	2.027	3.007	4.5	20.1	166 W	44	65	4 1	14 49.15	-2 44.7	0.743	1.678	18.3	19.2	148 W	42	67
4 6	13 31.01	-0 40.3	2.006	2.997	3.2	20.0	170 W	44	65	4 6	14 49.69	-2 4.2	0.700	1.653	16.3	19.0	152 W	43	66
4 11	13 26.55	-0 1.7	1.992	2.987	2.8	20.0	171 W	45	64	4 11	14 49.40	-1 21.1	0.660	1.629	14.3	18.8	156 W	44	65
4 16	13 22.01	+0 35.4	1.985	2.976	3.8	20.0	169 E	46	63	4 16	14 48.28	-0 36.4	0.625	1.605	12.4	18.5	160 W	44	65
4 21	13 17.51	+1 10.5	1.986	2.965	5.4	20.1	164 E	46	63	4 21	14 46.37	+0 8.0	0.593	1.581	10.9	18.3	163 W	45	64
4 26	13 13.15	+1 42.6	1.994	2.954	7.2	20.2	158 E	47	62	4 26	14 43.79	+0 50.1	0.566	1.559	10.3	18.2	164 W	46	63
5 1	13 9.06	+2 11.1	2.009	2.942	9.0	20.3	153 E	47	62	5 1	14 40.70	+1 27.6	0.544	1.536	10.8	18.1	163 W	46	63
5 11	13 1.98	+2 55.8	2.057	2.918	12.4	20.4	142 E	48	61	5 6	14 37.30	+1 58.3	0.525	1.515	12.4	18.0	161 E	47	62
5 21	12 56.81	+3 22.3	2.127	2.894	15.3	20.6	131 E	48	61	5 11	14 33.84	+2 20.1	0.510	1.494	14.9	18.0	158 E	47	62
5 31	12 53.87	+3 30.5	2.212	2.868	17.7	20.7	121 E	49	60	5 16	14 30.54	+2 31.1	0.499	1.475	17.7	18.1	154 E	48	61
6 10	12 53.22	+3 21.4	2.309	2.841	19.4	20.9	111 E	47*	61	5 21	14 27.67	+2 30.1	0.491	1.456	20.8	18.1	149 E	48	61
6 20	12 54.79	+2 57.0	2.413	2.813	20.7	21.0	102 E	44*	61	5 31	14 24.22	+1 48.4	0.484	1.422	26.8	18.2	141 E	47	62
6 30	12 58.43	+2 19.4	2.521	2.785	21.4	21.1	94 E	40*	62	6 10	14 25.01	+0 14.8	0.486	1.393	32.3	18.3	133 E	45	64
7 10	13 3.94	+1 30.7	2.628	2.755	21.6	21.1	86 E	35*	62	6 20	14 30.74	-2 4.2	0.496	1.369	36.8	18.5	126 E	43	66
7 20	13 11.11	+0 32.9	2.733	2.725	21.5	21.2	79 E	31*	62*	6 25	14 35.54	-3 27.8	0.503	1.359	38.7	18.5	123 E	42*	67
7 30	13 19.79	-0 32.4	2.832	2.693	21.0	21.2	72 E	27*	60*	6 30	14 41.64	-4 59.1	0.512	1.351	40.3	18.6	121 E	40*	69
8 9	13 29.79	+1 43.5	2.925	2.661	20.2	21.3	65 E	24*	55*	7 5	14 48.98	-6 36.2	0.522	1.345	41.7	18.7	118 E	38*	71
8 19	13 41.00	-2 59.1	3.009	2.627	19.2	21.3	59 E	21*	50*	7 10	14 57.50	-8 17.7	0.533	1.340	42.9	18.7	116 E	36*	72
8 29	13 53.31	-4 17.9	3.084	2.593	18.0	21.2	52 E	19*	45*	7 15	15 7.14	-10 2.0	0.546	1.337	43.9	18.8	114 E	34*	74
9 8	14 6.64	-5 38.6	3.148	2.558	16.6	21.2	46 E	17*	39*	7 20	15 17.86	-11 47.5	0.560	1.336	44.6	18.9	113 E	32*	76
9 18	14 20.94	-7 0.2	3.200	2.522	15.0	21.2	40 E	15*	33*	7 25	15 29.60	-13 32.6	0.576	1.336	45.2	19.0	111 E	30*	78
9 28	14 36.16	-8 21.3	3.241	2.485	13.3	21.1	35 E	13*	28*	7 30	15 42.29	-15 15.6	0.594	1.338	45.6	19.0	110 E	29*	79
10 8	14 52.26	-9 40.9	3.269	2.447	11.5	21.0	29 E	11*	22*	8 4	15 55.83	-16 54.9	0.613	1.342	45.8	19.1	109 E	27*	81
10 18	15 9.22	-10 57.8	3.285	2.409	9.7	20.9	24 E	9*	16*	8 9	16 10.15	-18 29.0	0.635	1.348	45.9	19.2	107 E	26*	82
10 28	15 27.03	-12 10.8	3.289	2.370	7.8	20.8	19 E	8*	10*	8 19	16 40.72	-21 16.6	0.685	1.364	45.7	19.4	105 E	23*	85
11 7	15 45.66	-13 18.6	3.280	2.331	5.9	20.7	14 E	5*	5*	8 29	17 13.27	-23 29.9	0.743	1.386	45.1	19.6	103 E	21*	87
11 17	16 5.11	-14 20.0	3.259	2.290	4.1	20.5	10 E	3*	—	9 8	17 46.87	-25 3.8	0.812	1.414	44.3	19.8	102 E	20*	89
11 27	16 25.34	-15 13.6	3.227	2.250	2.9	20.4	7 E	—	—	9 13	18 3.80	-25 35.5	0.850	1.430	43.8	19.9	100 E	19*	90
12 7	16 46.33	-15 58.4	3.183	2.209	3.1	20.3	7 W	—	—	9 18	18 20.70	-25 57.2	0.891	1.447	43.2	20.0	99 E	19*	90
12 17	17 8.05	-16 33.0	3.129	2.167	4.5	20.4	10 W	4*	—	9 23	18 37.47	-26 9.2	0.934	1.466	42.7	20.1	98 E	19	90
12 27	17 30.44	-16 56.3	3.066	2.125	6.4	20.4	14 W	7*	2*	9 28	18 54.04	-26 12.0	0.979	1.485	42.0	20.3	97 E	19	90
1 6	17 53.44	-17 7.3	2.994	2.083	8.5	20.4	18 W	9*	7*	10 3	19 10.34	-26 6.1	1.028	1.505	41.4	20.4	96 E	19	90*
1 16	18 17.00	-17 5.2	2.915	2.042	10.6	20.3	23 W	11*	12*	10 8	19 26.32	-25 52.3	1.078	1.526	40.7	20.5	94 E	19	88*
133819 2003 XS										353985 2000 JW₆₀									
2 1	13 50.56	-12 21.3	2.511	2.871	19.7	21.4	101 W	33	76	2 1	13 53.56	-14 17.6	1.446	1.884	31.0	21.4	100 W	31	78*
2 11	13 54.08	-12 58.5	2.346	2.844	19.0	21.2	110 W	32	77	2 11	14 8.27	-15 48.4	1.314	1.849	30.8	21.2	106 W	29	80
2 21	13 55.40	-13 25.9	2.188	2.816	17.7	21.0	120 W	32	77	2 21	14 21.78	-17 10.1	1.187	1.815	30.2	20.9	113 W	28	81
3 2	13 54.22	-13 42.0	2.042	2.787	15.8	20.7	130 W	31	78	3 2	14 33.64	-18 21.2	1.069	1.782	28.9	20.6	120 W	27	82
3 12	13 50.38	-13 45.5	1.912	2.757	13.1	20.5	141 W	31	78	3 12	14 43.36	-19 20.1	0.960	1.750	26.9	20.2	127 W	26	83
3 22	13 43.87	-13 35.5	1.803	2.725	9.7	20.2	152 W	31	78	3 22	14 50.38	-20 4.9	0.862	1.720	24.1	19.9	135 W	25	84
4 1	13 35.01	-13 11.8	1.717	2.693	5.8	19.9	164 W	32	77	4 1	14 54.12	-20 33.0	0.777	1.691	20.2	19.5	144 W	24	85
4 11	13 24.54	-12 36.3	1.660	2.660	1.7	19.5	175 W	32	77	4 11	14 54.31	-20 42.2	0.705	1.665	15.4	19.1	154 W	24	85
4 16	13 19.01	-12 15.2	1.64																

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°-26°	20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°-26°	
353985 2000 JW₆₀ (continuation)									239390 2007 TA₁₅ (continuation)									
5 6	14 41.84	-19 37.0	0.601	1.609	2.5	18.1	176 E	25 84	6 10	13 21.70	-0 59.7	1.430	2.124	24.5	20.1	120 E	44*	65
5 11	14 38.47	-19 12.5	0.594	1.600	5.1	18.2	172 E	26 83	6 20	13 24.04	+0 5.0	1.500	2.084	27.2	20.2	110 E	43*	64
5 16	14 35.36	-18 46.7	0.591	1.592	8.4	18.3	167 E	26 83	6 30	13 29.30	+0 41.5	1.576	2.043	29.1	20.3	102 E	41*	63
5 21	14 32.74	-18 21.1	0.592	1.584	11.8	18.5	161 E	27 82	7 10	13 37.18	+0 54.1	1.653	2.002	30.4	20.4	94 E	39*	63
5 26	14 30.86	-17 57.1	0.598	1.578	15.1	18.6	156 E	27 82	7 20	13 47.40	+0 46.8	1.728	1.961	31.2	20.5	87 E	36*	63
5 31	14 29.87	-17 36.2	0.607	1.572	18.3	18.7	151 E	27 82	7 30	13 59.74	+0 23.3	1.799	1.921	31.5	20.5	81 E	34*	63*
6 5	14 29.90	-17 19.5	0.619	1.567	21.2	18.9	146 E	28 81	8 9	14 13.96	-0 12.6	1.866	1.880	31.4	20.6	75 E	32*	61*
6 10	14 30.98	-17 7.5	0.635	1.563	23.8	19.0	142 E	28 81	8 19	14 29.92	-0 58.1	1.926	1.840	31.1	20.6	70 E	30*	58*
6 20	14 36.37	-16 58.9	0.675	1.558	28.4	19.3	133 E	28 81	8 29	14 47.52	-1 50.1	1.979	1.801	30.5	20.6	65 E	29*	54*
6 30	14 45.89	-17 10.7	0.725	1.556	32.0	19.5	126 E	28* 81	9 8	15 6.66	-2 46.0	2.026	1.763	29.8	20.6	61 E	28*	50*
7 10	14 59.06	-17 39.5	0.782	1.558	34.6	19.8	119 E	27* 82	9 18	15 27.31	-3 43.2	2.065	1.726	29.0	20.5	56 E	27*	46*
7 20	15 15.31	-18 20.2	0.847	1.564	36.5	20.0	114 E	26* 82	9 28	15 49.43	-4 39.1	2.099	1.691	28.1	20.5	53 E	27*	42*
7 30	15 34.14	-19 7.8	0.918	1.573	37.6	20.2	109 E	24* 83	10 8	16 12.96	-5 31.2	2.126	1.658	27.2	20.5	49 E	26*	38*
8 9	15 55.03	-19 57.0	0.996	1.586	38.3	20.4	104 E	23* 84	10 18	16 37.90	-6 17.1	2.149	1.626	26.2	20.4	46 E	26*	34*
8 19	16 17.55	-20 43.2	1.080	1.602	38.5	20.6	100 E	23* 85	10 28	17 4.18	-6 54.0	2.168	1.598	25.3	20.4	43 E	26*	30*
8 29	16 41.35	-21 22.7	1.169	1.621	38.3	20.8	96 E	22* 85	11 7	17 31.70	-7 19.8	2.184	1.572	24.3	20.3	41 E	26*	26*
9 8	17 6.07	-21 52.3	1.264	1.643	37.8	21.0	92 E	22* 84*	11 17	18 0.36	-7 32.3	2.199	1.549	23.3	20.3	38 E	26*	22*
9 18	17 31.40	-22 9.8	1.364	1.668	37.0	21.2	88 E	22* 81*	11 27	18 30.00	-7 29.6	2.214	1.530	22.3	20.2	36 E	26*	18*
9 28	17 57.11	-22 13.5	1.470	1.695	36.0	21.4	84 E	22* 78*	12 7	19 0.42	-7 10.6	2.230	1.515	21.2	20.2	34 E	25*	14*
2 1	13 59.26	+11 51.6	2.976	3.392	16.2	21.4	107 W	57 52*	12 17	19 31.42	-6 34.8	2.248	1.504	20.2	20.1	32 E	24*	10*
2 11	14 0.27	+12 18.7	2.825	3.372	15.3	21.2	116 W	57 52	12 27	20 2.75	-5 42.4	2.270	1.497	19.0	20.1	30 E	23*	7*
2 21	13 59.11	+12 54.7	2.684	3.351	14.0	21.1	125 W	58 51	1 6	20 34.17	-4 34.7	2.295	1.495	17.7	20.1	28 E	21*	4*
3 2	13 55.59	+13 36.9	2.559	3.329	12.3	20.9	134 W	59 50	1 16	21 5.49	-3 13.3	2.325	1.497	16.4	20.1	25 E	19*	2*
3 12	13 49.72	+14 21.0	2.454	3.307	10.3	20.7	144 W	59 50	306399 1996 AX₁									
3 22	13 41.68	+15 1.7	2.372	3.283	8.3	20.5	152 W	60 49	2 1	14 5.60	-24 20.3	2.762	2.990	19.2	21.5	94 W	21	86*
4 1	13 31.90	+15 32.7	2.318	3.259	7.0	20.4	156 W	61 48	2 11	14 8.50	-25 5.5	2.650	3.024	18.6	21.4	103 W	20	89
4 6	13 26.58	+15 42.8	2.302	3.246	6.9	20.4	157 W	61 48	2 21	14 9.05	-25 39.6	2.542	3.056	17.4	21.3	112 W	19	90
4 11	13 21.11	+15 48.5	2.293	3.233	7.3	20.4	156 W	61 48	3 2	14 7.09	-26 0.4	2.443	3.087	15.8	21.1	122 W	19	90
4 16	13 15.60	+15 49.4	2.291	3.220	8.0	20.4	154 E	61 48	3 12	14 2.63	-26 5.6	2.357	3.117	13.6	21.0	133 W	19	90
4 21	13 10.17	+15 45.1	2.296	3.207	9.0	20.4	150 E	61 48	3 22	13 55.88	-25 53.1	2.290	3.146	10.9	20.9	143 W	19	90
5 1	12 59.97	+15 20.6	2.327	3.180	11.3	20.5	142 E	60 49	4 1	13 47.33	-25 21.8	2.246	3.174	7.9	20.7	154 W	20	89
5 11	12 51.27	+14 35.7	2.381	3.152	13.7	20.7	132 E	60 49	4 11	13 37.74	-24 32.5	2.228	3.201	5.2	20.6	163 W	20	89
5 21	12 44.57	+13 33.0	2.456	3.124	15.8	20.8	123 E	59 50	4 21	13 28.00	-23 28.7	2.240	3.226	4.1	20.6	167 E	22	87
5 31	12 40.11	+12 15.6	2.545	3.094	17.5	20.9	114 E	57* 52	5 1	13 19.01	-22 15.7	2.282	3.251	5.8	20.7	161 E	23	86
6 10	12 37.95	+10 46.7	2.646	3.064	18.7	21.0	105 E	54* 53	5 11	13 11.52	-21 0.4	2.352	3.274	8.5	20.9	151 E	24	85
6 20	12 37.96	+9 9.2	2.752	3.033	19.5	21.1	96 E	48* 55	5 21	13 5.98	-19 48.9	2.447	3.297	11.1	21.1	141 E	25	84
6 30	12 39.97	+7 25.0	2.861	3.000	19.8	21.2	88 E	42* 57	5 31	13 2.61	-18 46.0	2.564	3.318	13.3	21.3	131 E	26	83
7 10	12 43.79	+5 35.9	2.969	2.968	19.7	21.2	80 E	36* 58*	276825 2004 PM₁₀₁									
7 20	12 49.18	+3 43.1	3.074	2.934	19.3	21.3	73 E	30* 57*	2 1	14 7.37	-19 28.0	1.928	2.240	26.0	21.5	95 W	26	82*
7 30	12 55.99	+1 47.4	3.172	2.899	18.6	21.3	65 E	25* 54*	2 11	14 17.07	-21 14.0	1.776	2.208	25.9	21.2	102 W	24	85
8 9	13 4.04	-0 10.5	3.262	2.864	17.6	21.3	58 E	21* 50*	2 21	14 24.98	-22 57.3	1.629	2.175	25.3	21.0	110 W	22	87
8 19	13 13.20	-2 10.2	3.341	2.828	16.3	21.3	52 E	18* 44*	3 2	14 30.60	-24 37.1	1.489	2.141	24.1	20.7	118 W	20	89
8 29	13 23.37	-4 11.3	3.410	2.791	14.9	21.2	45 E	14* 38*	3 12	14 33.41	-26 11.9	1.359	2.108	22.2	20.5	127 W	19	90
9 8	13 34.46	-6 13.3	3.466	2.754	13.2	21.2	39 E	11* 32*	3 17	14 33.59	-26 56.7	1.298	2.091	21.0	20.3	131 W	18	89
9 18	13 46.42	-8 16.0	3.509	2.715	11.5	21.1	32 E	8* 26*	3 22	14 31.87	-27 39.1	1.242	2.074	19.6	20.1	136 W	17	88
9 28	13 59.21	-10 19.1	3.537	2.676	9.6	21.0	26 E	6* 20*	3 27	14 31.19	-28 18.4	1.189	2.057	18.1	20.0	140 W	17	88
10 8	14 12.78	-12 22.1	3.551	2.637	7.6	20.9	20 E	3* 14*	4 1	14 28.54	-28 53.8	1.140	2.040	16.3	19.8	145 W	16	87
10 18	14 27.15	-14 24.7	3.550	2.596	5.5	20.8	14 E	— 8*	4 6	14 24.95	-29 24.5	1.096	2.023	14.5	19.6	150 W	16	87
10 28	14 42.30	-16 26.6	3.534	2.555	3.3	20.6	9 E	— 2*	4 11	14 20.46	-29 49.7	1.057	2.006	12.6	19.5	154 W	15	86
11 7	14 58.23	-18 27.3	3.503	2.514	1.2	20.4	3 E	— —	4 16	14 15.18	-30 8.5	1.023	1.989	10.8	19.3	158 W	15	86
11 17	15 14.99	-20 26.5	3.458	2.472	1.5	20.4	4 W	— —	4 21	14 9.24	-30 20.0	0.994	1.972	9.4	19.2	161 W	15	86
11 27	15 32.58	-22 23.6	3.398	2.430	3.7	20.4	9 W	— 3*	4 26	14 2.87	-30 23.9	0.971	1.956	8.7	19.1	163 E	15	86
12 7	15 51.03	-24 18.2	3.326	2.387	6.0	20.5	15 W	2* 8*	5 1	13 56.33	-30 20.1	0.954	1.939	9.0	19.0	163 E	15	86
12 17	16 10.41	-26 9.8	3.242	2.344	8.4	20.5	20 W	4* 13*	5 6	13 49.89	-30 9.2	0.942	1.922	10.2	19.0	160 E	15	86
12 27	16 30.73	-27 58.0	3.146	2.301	10.7	20.5	26 W	6* 19*	5 11	13 43.81	-29 52.0	0.936	1.906	12.2	19.1	157 E	15	86
1 6	16 52.06	-29 42.1	3.041	2.257	13.0	20.4	31 W	6* 25*	5 16	13 38.34	-29 29.8	0.935	1.889	14.5	19.1	152 E	16	87
1 16	17 14.46	-31 21.6	2.927	2.214	15.3	20.4	36 W	6* 30*	5 21	13 33.68	-29 4.1	0.939	1.873	16.9	19.2	148 E	16	87
239390 2007 TA₁₅									5 26	13 30.02	-28 36.5	0.947	1.857	19.3	19.3	143 E	16	87
2 1	14 2.81	-21 55.2	2.307	2.588	22.3	21.5	95 W	23 85*	5 31	13 27.46	-28 8.8	0.959	1.841	21.7	19.4	138 E	17	88
2 11	14 10.02	-22 8.7	2.141	2.558	22.0	21.3	103 W	23 86	6 5	13 26.07	-27 42.3	0.974	1.826	23.9	19.5	133 E	17	88
2 21	14 15.22	-22 5.5	1.979	2.526	21.2	21.0	112 W	23 86	6 10	13 25.85	-27 18.3	0.993	1.810	25.9	19.6	129 E	16*	89
3 2	14 18.02	-21 42.1	1.824	2.494	19.7	20.8	122 W	23 86	6 20	13 26.79	-26 57.4	1.013	1.795	27.8	19.6	124 E	16*	89
3 12	14 18.10	-20 54.6	1.682	2.460	17.5	20.5	132 W	24 85	6 30	13 28.86	-26 40.4	1.036	1.780	29.5	19.7	120 E	17*	89
3 22	14 15.27	-19 39.2	1.555</															

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
276825 2004 PM₁₀₁										216639 2003 GK₂₁									
<i>(continuation)</i>										<i>(continuation)</i>									
12 7	20 21.47	-12 16.8	2.127	1.637	26.5	21.0	48 E	21*	37*	3 22	14 19.13	-5 53.7	1.520	2.414	13.2	20.6	146 W	39	70
12 17	20 49.24	-17 55.2	2.205	1.656	24.7	21.1	45 E	23*	32*	4 1	14 10.24	-5 8.7	1.475	2.430	8.8	20.4	158 W	40	69
12 27	21 16.09	-15 22.8	2.284	1.676	22.8	21.1	41 E	23*	27*	4 6	14 4.97	-4 44.7	1.461	2.438	6.6	20.3	164 W	40	69
1 6	21 42.04	-12 42.2	2.364	1.699	20.8	21.1	38 E	23*	23*	4 11	13 59.35	-4 20.8	1.454	2.446	4.4	20.1	169 W	41	68
1 16	22 7.14	-9 55.6	2.443	1.725	18.9	21.2	35 E	23*	19*	4 16	13 53.51	-3 57.8	1.454	2.453	3.0	20.1	173 W	41	68
129989 1999 VS₅										364136 2006 CJ									
2 1	14 8.36	-12 2.9	2.139	2.465	23.4	21.4	97 W	33	75*	2 1	14 21.06	-27 17.2	0.588	1.141	59.7	21.5	89 W	18	83*
2 11	14 16.58	-12 39.1	1.970	2.425	23.1	21.2	105 W	32	77	2 6	14 36.08	-30 18.9	0.528	1.120	61.7	21.3	90 W	15	84*
2 21	14 23.01	-13 4.2	1.807	2.384	22.3	20.9	114 W	32	77	2 11	14 54.88	-33 51.9	0.470	1.094	64.4	21.0	90 W	11	81*
3 2	14 27.20	-13 16.8	1.652	2.342	20.8	20.7	123 W	32	77	2 16	15 19.93	-38 3.3	0.413	1.064	68.2	20.8	89 W	7	77*
3 12	14 28.77	-13 15.5	1.509	2.300	18.6	20.4	132 W	32	77	2 21	15 55.66	-42 54.0	0.361	1.028	73.6	20.6	86 W	2	72*
3 22	14 27.35	-12 59.0	1.381	2.257	15.5	20.0	143 W	32	77	2 26	16 49.90	-47 59.0	0.317	0.988	81.1	20.5	80 W	-	65*
4 1	14 22.75	-12 26.5	1.272	2.213	11.5	19.7	154 W	33	76	3 2	18 12.38	-51 38.5	0.284	0.943	91.4	20.6	72 W	-	56*
4 11	14 15.17	-11 38.9	1.184	2.169	6.6	19.2	166 W	33	76	3 7	19 57.76	-50 39.9	0.269	0.891	104.2	20.9	61 W	-	44*
4 16	14 10.45	-11 10.3	1.148	2.147	3.8	19.0	172 W	34	75	158299 2001 UC₁₂₆									
4 21	14 5.27	-10 39.5	1.120	2.124	1.2	18.8	177 W	34	75	2 1	14 23.60	-2 52.2	1.976	2.307	25.1	21.5	97 W	42	66*
4 26	13 59.81	-10 7.2	1.097	2.102	2.4	18.8	175 E	35	74	2 11	14 33.63	-2 54.3	1.825	2.277	24.8	21.2	104 W	42	67
5 1	13 54.27	-9 34.8	1.081	2.079	5.3	18.9	169 E	35	74	2 21	14 41.88	-2 41.6	1.679	2.246	24.1	21.0	112 W	42	67
5 6	13 48.85	-9 3.2	1.071	2.056	8.4	19.0	163 E	36	73	3 2	14 47.91	-2 13.6	1.542	2.215	22.7	20.8	120 W	43	66
5 11	13 43.74	-8 33.8	1.067	2.034	11.4	19.1	157 E	36	73	3 12	14 51.31	-1 30.6	1.414	2.183	20.6	20.5	129 W	43	66
5 16	13 39.12	-8 7.6	1.068	2.011	14.3	19.2	151 E	37	72	3 22	14 51.67	-0 34.3	1.300	2.151	17.9	20.2	139 W	44	65
5 21	13 35.14	-7 45.5	1.075	1.989	17.1	19.3	145 E	37	72	4 1	14 48.69	+0 31.8	1.203	2.118	14.5	19.8	148 W	46	63
5 31	13 29.59	-7 16.6	1.100	1.943	22.2	19.4	134 E	38	71	4 6	14 45.96	+1 6.4	1.162	2.102	12.7	19.7	153 W	46	63
6 10	13 27.69	-7 10.8	1.138	1.899	26.4	19.6	124 E	38*	71	4 11	14 42.45	+1 40.9	1.126	2.085	10.9	19.5	157 W	47	62
6 20	13 29.53	-7 28.0	1.185	1.854	29.9	19.7	115 E	36*	71	4 16	14 38.23	+2 13.9	1.095	2.068	9.4	19.4	160 W	47	62
6 30	13 35.01	-8 6.8	1.236	1.811	32.6	19.8	107 E	33*	72	4 21	14 33.43	+2 44.2	1.071	2.052	8.4	19.3	163 W	48	61
7 10	13 43.81	-9 4.3	1.290	1.768	34.6	19.9	99 E	30*	73	4 26	14 28.20	+3 10.4	1.052	2.035	8.3	19.2	163 W	48	61
7 20	13 55.64	-10 17.2	1.344	1.727	36.0	20.0	93 E	27*	74	5 1	14 22.72	+3 31.1	1.038	2.019	9.2	19.2	161 E	49	60
7 30	14 10.26	-11 42.2	1.396	1.688	36.9	20.1	87 E	25*	75*	5 6	14 17.20	+3 45.3	1.031	2.002	10.9	19.3	158 E	49	60
8 9	14 27.42	-13 15.8	1.446	1.650	37.5	20.1	82 E	22*	73*	5 11	14 11.84	+3 52.2	1.029	1.985	13.0	19.3	154 E	49	60
8 19	14 46.96	-14 54.2	1.494	1.615	37.7	20.1	78 E	20*	70*	5 21	14 2.33	+3 42.4	1.040	1.952	17.7	19.5	144 E	49	60
8 29	15 8.79	-16 33.9	1.539	1.583	37.7	20.2	74 E	19*	67*	5 31	13 55.49	+3 0.9	1.069	1.920	22.2	19.6	134 E	48	61
9 8	15 32.77	-18 10.7	1.582	1.554	37.5	20.2	70 E	18*	64*	6 10	13 52.07	+1 50.9	1.111	1.887	26.1	19.8	125 W	47	62
9 18	15 58.82	-19 40.4	1.623	1.529	37.0	20.2	66 E	17*	60*	6 20	13 52.28	+0 17.3	1.164	1.856	29.3	20.0	117 E	45*	64
9 28	16 26.82	-20 58.6	1.664	1.508	36.4	20.2	63 E	17*	57*	6 30	13 56.08	-1 34.8	1.222	1.825	31.8	20.1	109 E	41*	66
10 8	16 56.57	-22 0.8	1.704	1.491	35.7	20.2	60 E	17*	54*	7 10	14 3.17	-3 40.5	1.285	1.795	33.7	20.2	102 E	37*	68
10 18	17 27.82	-22 43.1	1.746	1.479	34.8	20.2	58 E	17*	51*	7 20	14 13.24	-5 55.8	1.349	1.767	34.9	20.3	96 E	33*	70
10 28	18 0.26	-23 1.9	1.789	1.472	33.7	20.2	55 E	17*	48*	7 30	14 26.02	-8 17.4	1.414	1.739	35.7	20.4	90 E	29*	72*
11 7	18 33.46	-22 54.9	1.836	1.470	32.6	20.2	53 E	18*	45*	8 9	14 41.25	-10 41.8	1.479	1.714	36.1	20.5	85 E	26*	73*
11 17	19 7.00	-22 20.8	1.886	1.473	31.3	20.3	51 E	19*	42*	8 19	14 58.72	-13 6.0	1.543	1.690	36.1	20.6	80 E	23*	71*
11 27	19 40.46	-21 20.1	1.940	1.481	29.9	20.3	48 E	20*	39*	8 29	15 18.33	-15 27.1	1.606	1.668	35.9	20.6	75 E	21*	68*
12 2	19 57.02	-20 40.2	1.968	1.487	29.1	20.3	47 E	20*	37*	9 8	15 39.92	-17 41.8	1.667	1.649	35.4	20.6	71 E	19*	65*
12 7	20 13.43	-19 54.4	1.998	1.494	28.4	20.3	46 E	21*	35*	9 18	16 3.42	-19 46.9	1.728	1.632	34.7	20.7	67 E	18*	61*
12 12	20 29.64	-19 2.9	2.029	1.502	27.6	20.3	45 E	22*	33*	9 28	16 28.70	-21 39.1	1.787	1.618	33.8	20.7	64 E	17*	58*
12 17	20 45.63	-18 6.4	2.061	1.512	26.7	20.4	44 E	22*	32*	10 8	16 55.63	-23 14.9	1.846	1.607	32.7	20.7	60 E	16*	54*
12 22	21 1.37	-17 5.2	2.094	1.522	25.9	20.4	43 E	22*	30*	10 18	17 24.02	-24 31.4	1.905	1.599	31.5	20.8	57 E	15*	51*
12 27	21 16.84	-15 59.8	2.128	1.534	25.0	20.4	41 E	23*	28*	10 28	17 53.64	-25 25.6	1.963	1.594	30.2	20.8	54 E	15*	47*
1 1	21 32.04	-14 50.7	2.164	1.546	24.2	20.5	40 E	23*	26*	11 7	18 24.17	-25 55.5	2.022	1.592	28.8	20.8	51 E	15*	44*
1 6	21 46.95	-13 38.5	2.200	1.560	23.2	20.5	39 E	23*	24*	11 17	18 55.28	-25 59.8	2.081	1.593	27.3	20.8	48 E	15*	40*
1 11	22 1.58	-12 23.7	2.237	1.574	22.3	20.5	37 E	23*	23*	11 27	19 26.63	-25 38.2	2.141	1.597	25.7	20.8	45 E	15*	37*
1 16	22 15.94	-11 6.6	2.275	1.589	21.4	20.5	36 E	23*	21*	12 7	19 57.85	-24 51.4	2.201	1.605	24.1	20.9	42 E	15*	33*
200597 2001 RA₇₇										237551 2000 WQ₁₉									
2 1	14 8.51	-7 27.5	2.446	2.773	20.6	21.5	99 W	38	71*	2 1	14 31.30	+30 50.7	1.246	1.763	32.9	21.4	104 W	76	32*
2 11	14 12.56	-7 32.1	2.321	2.787	19.7	21.3	108 W	37	72	2 6	14 35.69	+31 27.1	1.191	1.749	32.7	21.3	107 W	76	32*
2 21	14 14.32	-7 24.0	2.202	2.800	18.3	21.2	118 W	38	71	2 11	14 39.17	+32 9.2	1.136	1.734	32.5	21.1	109 W	77	32*
3 2	14 13.54	-7 3.0	2.093	2.812	16.2	21.0	128 W	38	71	2 16	14 41.61	+32 57.0	1.082	1.718	32.2	21.0	112 W	78	31
3 12	14 10.17	-6 29.9	2.000	2.823	13.5	20.8	139 W	39	70	2 21	14 42.82	+33 50.1	1.029	1.702	31.8	20.9	115 W	79	30
3 22	14 4.30	-5 46.4	1.926	2.833	10.1	20.6	150 W	39	70	2 26	14 42.61	+34 47.7	0.978	1.685	31.3	20.7	118 W	80	29
4 1	13 56.33	-4 55.6	1.877	2.842	6.4	20.4	162 W	40	69	3 2	14 40.77	+35 48.5	0.928	1.668	30.8	20.6	121 W	81	28
4 6	13 51.78	-4 29.0	1.862	2.846	4.5	20.3	167 W	41	68	3 7	14 37.05	+36 50.8	0.880	1.649	30.2	20.4	123 W	82	27
4 11	13 46.98	-4 2.4	1.855	2.850	2.9	20.2	172 W	41	68	3 12	14 31.23	+37 52.1	0.834	1.630	29.5	20.3	126 W	83	26
4 16	13 42.06	-3 36.6	1.855	2.854	2.3	20.2	173 W	41	68	3 17	14 23.05	+38 49.0	0.792	1.611	29.0	20.1	128 W	84	25
4 21	13 37.15	-3 12.3	1.862	2.857	3.4	20.3	170 E	42	67	3 22</									

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

2020	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45° - 26°	20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45° - 26°				
237551 2000 WQ ₁₉ (continuation)									237551 2000 WQ ₁₉ (continuation)												
4	6	13 25.21	+40 6.5	0.656	1.526	28.6	19.6	133 W	85	24	11	9	23 11.30	-24 1.7	0.354	1.167	52.2	18.3	111 E	21	88
4	11	13 5.93	+39 16.9	0.633	1.503	29.5	19.5	132 E	84	25	11	11	23 13.69	-20 1.1	0.367	1.178	51.2	18.4	112 E	25	84
4	13	12 58.03	+38 46.8	0.625	1.494	30.1	19.5	132 E	84	25	11	13	23 16.04	-16 16.2	0.382	1.188	50.4	18.5	112 E	29	80
4	15	12 50.11	+38 10.7	0.619	1.485	30.7	19.4	131 E	83	26	11	15	23 18.38	-12 47.0	0.398	1.199	49.7	18.5	112 E	32	77
4	17	12 42.23	+37 28.4	0.613	1.475	31.4	19.4	130 E	82	27	11	17	23 20.72	-9 33.1	0.416	1.210	49.1	18.6	112 E	35	74
4	19	12 34.46	+36 40.1	0.607	1.466	32.1	19.4	129 E	82	27	11	19	23 23.07	-6 33.7	0.435	1.220	48.6	18.7	112 E	38	71
4	21	12 26.86	+35 46.0	0.603	1.456	33.0	19.4	128 E	81	28	11	21	23 25.44	-3 48.0	0.455	1.231	48.2	18.9	112 E	41	68
4	26	12 8.91	+33 6.8	0.596	1.431	35.4	19.4	125 E	78	31	11	23	23 27.83	-1 15.0	0.476	1.242	47.8	19.0	111 E	44	65
5	1	11 52.93	+29 58.5	0.594	1.407	38.1	19.4	121 E	75	34	11	25	23 30.25	+1 6.3	0.498	1.253	47.5	19.1	111 E	46	63
5	6	11 39.24	+26 28.4	0.597	1.381	40.9	19.5	116 E	71	38	11	27	23 32.71	+3 17.0	0.520	1.263	47.2	19.2	110 E	48	61
5	11	11 27.89	+22 44.0	0.604	1.355	43.8	19.6	112 E	68	41	11	29	23 35.20	+5 18.1	0.544	1.274	46.9	19.3	109 E	50	59
5	16	11 18.76	+18 51.8	0.614	1.329	46.6	19.6	107 E	64*	45	12	1	23 37.74	+7 10.4	0.567	1.285	46.7	19.4	109 E	52	57*
5	21	11 11.65	+14 57.0	0.627	1.303	49.3	19.7	103 E	58*	49	12	3	23 40.31	+8 54.8	0.592	1.295	46.4	19.5	108 E	54	55*
5	26	11 6.34	+11 3.3	0.642	1.276	51.8	19.8	98 E	52*	53	12	5	23 42.93	+10 32.1	0.617	1.306	46.2	19.6	107 E	56	53*
5	31	11 2.58	+7 13.2	0.659	1.249	54.0	19.9	94 E	46*	57	12	7	23 45.60	+12 2.9	0.642	1.317	46.0	19.7	106 E	57	51*
6	5	11 0.10	+3 27.9	0.676	1.223	56.1	19.9	90 E	39*	61	12	12	23 52.48	+15 25.8	0.706	1.343	45.4	19.9	104 E	60	47*
6	10	10 58.70	-0 11.8	0.693	1.196	58.0	20.0	87 E	33*	64	12	17	23 59.69	+18 20.5	0.773	1.369	44.7	20.1	102 E	63	43*
6	20	10 58.40	-7 15.2	0.727	1.143	61.2	20.1	80 E	21*	69*	12	22	0 7.23	+20 53.4	0.840	1.394	44.1	20.3	99 E	66	40*
6	30	11 0.51	-14 0.3	0.755	1.092	63.8	20.1	74 E	10*	68*	12	27	0 15.11	+23 9.1	0.909	1.420	43.4	20.5	97 E	68	37*
7	10	11 4.03	-20 31.5	0.774	1.044	66.1	20.2	70 E	—	63*	1	1	0 23.30	+25 11.1	0.977	1.444	42.7	20.7	95 E	70	33*
7	20	11 8.30	-26 52.8	0.783	1.002	68.2	20.2	66 E	—	55*	1	6	0 31.82	+27 2.0	1.046	1.468	42.0	20.9	93 E	72	30*
7	30	11 12.78	-33 7.9	0.779	0.966	70.2	20.1	64 E	—	47*	1	11	0 40.66	+28 44.0	1.115	1.492	41.2	21.0	90 E	74	28*
8	9	11 17.03	-39 19.1	0.761	0.939	72.4	20.1	62 E	—	40*	2	1	14 40.66	+19 3.8	1.439	1.865	31.5	21.4	99 W	64	43*
8	19	11 20.91	-45 29.8	0.728	0.923	74.6	20.0	62 E	—	33*	2	11	14 44.82	+20 54.7	1.309	1.851	30.7	21.1	107 W	66	43*
8	24	11 22.75	-48 37.0	0.706	0.919	75.7	20.0	62 E	—	30*	2	21	14 44.92	+23 21.2	1.183	1.831	29.4	20.9	115 W	68	41
8	29	11 24.58	-51 47.2	0.681	0.918	76.7	20.0	62 E	—	27*	3	2	14 39.48	+26 23.4	1.064	1.805	27.5	20.5	123 W	71	38
9	3	11 26.51	-55 2.1	0.652	0.921	77.7	19.9	63 E	—	25*	3	12	14 26.64	+29 53.8	0.959	1.772	25.3	20.2	130 W	75	34
9	8	11 28.74	-58 24.4	0.621	0.926	78.6	19.8	64 E	—	23*	3	17	14 16.80	+31 43.9	0.913	1.753	24.3	20.1	134 W	77	32
9	10	11 29.79	-59 48.2	0.608	0.929	78.9	19.8	65 E	—	22*	3	22	14 4.36	+33 31.6	0.872	1.733	23.6	19.9	136 W	79	30
9	12	11 30.97	-61 14.2	0.594	0.932	79.1	19.8	65 E	—	22*	3	27	13 49.25	+35 11.0	0.837	1.710	23.3	19.8	137 W	80	29
9	14	11 32.32	-62 42.6	0.580	0.936	79.4	19.7	66 E	—	21*	4	1	13 31.58	+36 34.8	0.810	1.686	23.7	19.7	137 W	82	27
9	16	11 33.89	-64 13.9	0.565	0.940	79.5	19.7	67 W	—	21*	4	6	13 11.77	+37 35.9	0.789	1.660	24.8	19.6	136 W	83	26
9	18	11 35.74	-65 48.5	0.551	0.945	79.7	19.7	68 W	—	22*	4	11	12 50.53	+38 8.5	0.775	1.632	26.6	19.6	133 E	83	26
9	20	11 37.96	-67 26.9	0.536	0.950	79.7	19.6	69 W	—	23*	4	13	12 41.83	+38 12.6	0.771	1.621	27.5	19.6	132 E	83	26
9	22	11 40.68	-69 9.5	0.521	0.956	79.8	19.6	70 W	—	24*	4	15	12 33.12	+38 11.5	0.768	1.609	28.5	19.6	130 E	83	26
9	24	11 44.07	-70 56.9	0.505	0.962	79.7	19.5	71 W	—	24*	4	17	12 24.47	+38 5.0	0.767	1.597	29.6	19.6	128 E	83	26
9	26	11 48.43	-72 49.6	0.490	0.968	79.6	19.5	72 W	—	24*	4	19	12 15.93	+37 53.4	0.766	1.584	30.7	19.6	126 E	83	26
9	28	11 54.21	-74 48.3	0.475	0.974	79.4	19.4	73 W	—	25*	4	21	12 7.57	+37 36.7	0.767	1.571	31.9	19.7	124 E	83	26
9	29	11 57.89	-75 50.0	0.467	0.978	79.2	19.4	74 W	—	25*	4	26	11 47.79	+36 34.5	0.771	1.537	34.9	19.7	119 E	82	27
9	30	12 2.27	-76 53.3	0.459	0.981	79.1	19.3	74 W	—	25*	5	1	11 30.11	+35 7.4	0.781	1.502	37.9	19.8	114 E	80	29
10	1	12 7.60	-77 58.3	0.452	0.985	78.9	19.3	75 W	—	25*	5	6	11 14.82	+33 21.3	0.794	1.464	41.0	19.8	108 E	78	31
10	2	12 14.21	-79 4.9	0.444	0.989	78.6	19.3	76 W	—	25*	5	11	11 1.95	+31 22.0	0.810	1.424	43.9	19.9	102 E	76*	33
10	3	12 22.60	-80 13.0	0.437	0.992	78.4	19.2	76 W	—	25*	5	16	10 51.37	+29 14.1	0.827	1.381	46.6	20.0	97 E	72*	35
10	4	12 33.56	-81 22.5	0.429	0.996	78.1	19.2	77 W	—	25*	5	21	10 42.84	+27 1.0	0.845	1.336	49.2	20.0	92 E	67*	37
10	5	12 48.44	-82 32.7	0.422	1.000	77.8	19.1	78 E	—	25*	5	26	10 36.08	+24 45.3	0.862	1.289	51.7	20.0	86 E	60*	39
10	6	13 9.54	-83 42.7	0.414	1.004	77.5	19.1	79 E	—	25*	5	31	10 30.78	+22 28.5	0.878	1.239	54.0	20.1	81 E	54*	42
10	7	13 41.13	-84 50.3	0.407	1.008	77.1	19.1	79 E	—	26*	6	5	10 26.65	+20 11.4	0.892	1.186	56.3	20.1	77 E	48*	44*
10	8	14 30.87	-85 50.9	0.400	1.012	76.7	19.0	80 E	—	27*	6	10	10 23.40	+17 54.6	0.903	1.130	58.7	20.1	72 E	42*	45*
10	9	15 49.35	-86 34.3	0.393	1.016	76.3	19.0	81 E	—	28*	6	15	10 20.74	+15 38.1	0.910	1.071	61.1	20.0	67 E	36*	46*
10	10	17 34.47	-86 44.3	0.387	1.021	75.8	18.9	82 E	—	29*	6	20	10 18.41	+13 21.7	0.913	1.009	63.6	20.0	63 E	30*	46*
10	11	19 12.44	-86 12.2	0.380	1.025	75.3	18.9	83 E	—	30*	6	25	10 16.10	+11 5.6	0.911	0.943	66.5	19.9	58 E	24*	46*
10	12	20 19.59	-85 8.4	0.374	1.029	74.7	18.8	84 E	—	31	6	30	10 13.42	+8 50.0	0.903	0.873	69.8	19.8	54 E	19*	44*
10	13	21 1.74	-83 46.1	0.367	1.034	74.1	18.8	85 E	—	32	7	5	10 9.89	+6 36.1	0.889	0.800	73.8	19.7	49 E	14*	41*
10	14	21 29.00	-82 12.6	0.361	1.038	73.5	18.7	86 E	—	34	7	10	9 47.87	+4 26.5	0.869	0.722	78.9	19.6	44 E	8*	38*
10	15	21 47.64	-80 31.2	0.356	1.042	72.8	18.7	87 E	—	35	7	15	9 57.43	+2 27.0	0.843	0.640	85.4	19.6	39 E	3*	33*
10	16	22 1.07	-78 43.7	0.350	1.047	72.1	18.6	88 E	—	37	7	20	9 46.26	+0 50.1	0.812	0.555	94.1	19.5	33 E	—	27*
10	17	22 11.18	-76 51.0	0.345	1.052	71.4	18.6	89 E	—	39	7	22	9 40.36	+0 22.7	0.800	0.520	98.5	19.5	30 E	—	24*
10	18	22 19.07	-74 53.4	0.341	1.056	70.6	18.6	91 E	—	41	7	24	9 33.47	+0 5.5	0.787	0.486	103.4	19.6	28 E	—	20*
10	19	22 25.41	-72 51.5	0.336	1.061	69.8	18.5	92 E	—	43	7	26	9 25.49	+0 1.9	0.776	0.451	108.9	19.7	25 E	—	1

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
141525 2002 FV₅										144861 2004 LA₁₂									
<i>(continuation)</i>										<i>(continuation)</i>									
8 21	8 36.40	+23 49.6	1.106	0.437	66.2	18.7	23 W	16*	6*	4 26	14 28.31	+33 49.0	2.074	2.853	15.1	20.1	133 W	79	30
8 23	8 44.29	+25 0.5	1.149	0.471	61.3	18.8	24 W	18*	5*	5 1	14 21.73	+34 39.8	2.060	2.818	15.9	20.1	130 E	80	29
8 25	8 52.54	+25 58.7	1.190	0.505	57.3	18.9	25 W	19*	4*	5 6	14 15.01	+35 21.0	2.051	2.782	16.8	20.1	127 E	80	29
8 27	9 0.96	+26 46.1	1.229	0.540	53.9	19.0	26 W	20*	3*	5 11	14 8.29	+35 51.9	2.047	2.745	17.7	20.1	124 E	81	28
8 29	9 9.43	+27 24.3	1.266	0.575	51.1	19.1	26 W	20*	3*	5 16	14 1.74	+36 12.5	2.048	2.708	18.7	20.1	121 E	81	28
8 31	9 17.86	+27 54.7	1.301	0.609	48.7	19.2	27 W	21*	2*	5 21	13 55.49	+36 22.9	2.052	2.670	19.7	20.1	117 E	81	28
9 2	9 26.20	+28 18.4	1.335	0.642	46.7	19.3	28 W	22*	1*	5 26	13 49.71	+36 23.2	2.060	2.632	20.7	20.1	113 E	81	28
9 4	9 34.40	+28 36.5	1.367	0.675	44.9	19.4	28 W	22*	1*	5 31	13 44.49	+36 14.3	2.070	2.593	21.6	20.1	110 E	81	28
9 6	9 42.44	+28 49.7	1.398	0.708	43.4	19.6	29 W	23*	—	6 5	13 39.93	+35 56.8	2.082	2.553	22.5	20.1	106 E	81	28
9 8	9 50.31	+28 58.7	1.427	0.740	42.0	19.7	29 W	23*	—	6 10	13 36.08	+35 31.6	2.096	2.513	23.3	20.1	102 E	81*	28
9 13	10 9.17	+29 6.9	1.494	0.817	39.4	19.9	31 W	24*	—	6 15	13 33.00	+34 59.5	2.110	2.472	24.0	20.1	98 E	79*	29
9 18	10 26.86	+28 59.8	1.553	0.889	37.5	20.1	33 W	26*	—	6 20	13 30.69	+34 21.3	2.125	2.430	24.6	20.1	95 E	76*	30
9 23	10 43.43	+28 42.3	1.605	0.958	36.0	20.3	34 W	27*	—	6 30	13 28.43	+32 49.6	2.154	2.345	25.7	20.1	88 E	68*	31
9 28	10 58.96	+28 18.0	1.651	1.023	35.0	20.5	36 W	29*	—	7 10	13 29.19	+31 1.8	2.179	2.257	26.4	20.1	81 E	62*	33
10 3	11 13.56	+27 49.2	1.691	1.085	34.2	20.6	38 W	30*	—	7 20	13 32.76	+29 1.7	2.197	2.166	26.9	20.0	75 E	56*	35*
10 8	11 27.33	+27 17.8	1.724	1.143	33.6	20.8	39 W	32*	—	7 30	13 38.93	+26 51.9	2.205	2.071	27.2	19.9	69 E	51*	36*
10 13	11 40.36	+26 45.3	1.753	1.198	33.3	20.9	41 W	34*	—	8 9	13 47.50	+24 34.2	2.202	1.974	27.4	19.8	64 E	46*	35*
10 18	11 52.72	+26 12.8	1.775	1.250	33.0	21.0	43 W	36*	—	8 19	13 58.32	+22 9.2	2.187	1.873	27.5	19.7	59 E	43*	34*
10 23	12 4.47	+25 41.1	1.793	1.300	32.9	21.1	45 W	38*	—	8 29	14 11.33	+19 36.8	2.159	1.769	27.6	19.5	54	40*	32*
10 28	12 15.68	+25 11.0	1.805	1.347	32.8	21.2	47 W	41*	1*	9 8	14 26.49	+16 56.5	2.116	1.661	27.7	19.4	50 E	37*	29*
11 2	12 26.38	+24 43.0	1.812	1.391	32.9	21.3	50 W	43*	3*	9 18	14 43.90	+14 7.0	2.061	1.549	28.0	19.2	46	34*	27*
11 7	12 36.63	+24 17.7	1.814	1.433	33.0	21.4	52 W	46*	4*	9 28	15 3.70	+11 6.6	1.992	1.434	28.5	18.9	43	32*	24*
11 12	12 46.46	+23 55.5	1.812	1.473	33.1	21.4	54 W	48*	6*	10 8	15 26.15	+7 52.5	1.911	1.316	29.3	18.7	40	30*	21*
11 17	12 55.87	+23 36.8	1.805	1.510	33.2	21.5	57 W	51*	7*	10 18	15 51.61	+4 21.3	1.820	1.195	30.5	18.4	38 E	28*	19*
										10 28	16 20.57	+0 28.4	1.720	1.072	32.2	18.1	35 E	26*	17*
155370 1988 TX										311151 2004 SK₂₆									
2 1	14 52.14	-16 48.4	2.494	2.612	22.1	21.4	86 W	28	73*	11 2	16 36.55	-1 37.9	1.667	1.011	33.3	17.9	34 E	25*	16*
2 11	15 1.67	-17 18.4	2.331	2.587	22.4	21.3	94 W	28	80*	11 7	16 53.65	-3 51.8	1.614	0.950	34.6	17.8	33	23*	16*
2 21	15 9.65	-17 38.6	2.170	2.561	22.2	21.1	102 W	27	82	11 12	17 11.96	-6 14.1	1.559	0.891	36.1	17.6	32 E	22*	16*
3 2	15 15.69	-17 48.2	2.013	2.533	21.5	20.9	110 W	27	82	11 17	17 31.59	-8 45.4	1.504	0.834	37.9	17.4	31 E	21*	16*
3 12	15 19.44	-17 46.1	1.862	2.505	20.2	20.7	119 W	27	82	11 27	18 15.14	-14 17.3	1.393	0.732	42.5	17.1	30 E	18*	17*
3 22	15 20.52	-17 31.4	1.723	2.476	18.2	20.4	129 W	27	82	12 7	19 4.87	-20 26.1	1.284	0.658	48.9	16.9	30	14*	20*
4 1	15 18.62	-17 2.8	1.597	2.446	15.3	20.1	140 W	28	81	12 17	20 1.07	-26 53.3	1.180	0.629	56.5	16.8	32 E	10*	25*
4 11	15 13.68	-16 19.9	1.490	2.415	11.7	19.8	151 W	29	80	12 19	20 13.11	-28 9.5	1.160	0.630	58.0	16.8	33 E	9*	26*
4 21	15 5.91	-15 23.3	1.405	2.383	7.2	19.5	163 W	30	79	12 21	20 25.43	-29 24.1	1.141	0.633	59.4	16.8	34 E	8*	27*
4 26	15 1.15	-14 50.6	1.372	2.367	4.8	19.3	169 W	30	79	12 23	20 38.03	-30 36.8	1.123	0.638	60.8	16.8	34 E	8*	28*
5 1	14 55.98	-14 15.8	1.345	2.350	2.3	19.1	175 W	31	78	12 25	20 50.93	-31 46.8	1.105	0.646	62.0	16.9	35 E	7*	29*
5 6	14 50.54	-13 39.5	1.326	2.334	1.3	18.9	177 E	31	78	12 27	21 4.12	-32 53.7	1.087	0.655	63.1	16.9	36 E	6*	30*
5 11	14 45.01	-13 2.8	1.312	2.317	3.5	19.1	172 E	32	77	12 29	21 17.63	-33 56.9	1.071	0.666	64.1	16.9	38 E	6*	31*
5 16	14 39.55	-12 26.6	1.306	2.300	6.2	19.2	166 E	33	76	12 31	21 31.45	-34 55.8	1.055	0.679	64.9	17.0	39 E	5*	33*
5 21	14 34.34	-11 51.9	1.306	2.282	8.9	19.3	160 E	33	76	1 2	21 45.58	-35 49.8	1.040	0.694	65.6	17.0	40 E	4*	34*
5 26	14 29.54	-11 19.7	1.312	2.265	11.5	19.4	154 E	34	75	1 4	22 0.02	-36 38.3	1.026	0.710	66.1	17.0	41 E	4*	35*
5 31	14 25.29	-10 50.9	1.324	2.247	14.0	19.5	148 E	34	75	1 6	22 14.77	-37 20.7	1.013	0.727	66.5	17.1	43 E	4*	37*
6 10	14 18.86	-10 6.1	1.362	2.211	18.5	19.6	136 E	35	74	1 8	22 29.79	-37 56.7	1.001	0.745	66.7	17.1	44 E	4*	38*
6 20	14 15.55	-9 40.7	1.416	2.174	22.2	19.8	126 E	35*	74	1 10	22 45.06	-38 25.7	0.990	0.765	66.7	17.1	46 E	3*	40*
6 30	14 15.54	-9 35.3	1.481	2.137	25.2	20.0	116 E	34*	74	1 12	23 0.54	-38 47.2	0.981	0.785	66.6	17.2	47 E	3*	41*
7 10	14 18.72	-9 48.7	1.553	2.099	27.5	20.1	108 E	32*	74	1 14	23 16.19	-39 1.1	0.972	0.806	66.4	17.2	49 E	3*	43*
7 20	14 24.84	-10 18.2	1.629	2.061	29.1	20.2	100 E	30*	74	1 16	23 31.93	-39 7.0	0.965	0.828	66.0	17.2	50 E	4*	44*
7 30	14 33.65	-11 1.2	1.705	2.023	30.1	20.3	93 E	28*	75	2 1	14 54.06	+3 34.2	2.518	2.725	21.2	21.4	91 W	49	57*
8 9	14 44.88	-11 54.5	1.780	1.984	30.6	20.4	86 E	25*	75*	2 11	15 0.89	+3 35.4	2.368	2.707	21.1	21.3	99 W	49	60*
8 19	14 58.29	-12 55.1	1.852	1.946	30.8	20.4	80 E	23*	71*	2 21	15 5.79	+3 47.2	2.221	2.689	20.5	21.1	107 W	49	60*
8 29	15 13.73	-14 0.5	1.920	1.907	30.6	20.4	74 E	22*	67*	3 2	15 8.39	+4 8.8	2.080	2.670	19.5	20.9	116 W	49	60
9 8	15 31.05	-15 7.5	1.983	1.869	30.1	20.4	69 E	21*	62*	3 12	15 8.35	+4 38.0	1.948	2.650	17.8	20.7	125 W	50	59
9 18	15 50.13	-16 13.6	2.040	1.832	29.5	20.4	64 E	19*	57*	3 22	15 5.41	+5 11.8	1.830	2.629	15.6	20.5	135 W	50	59
9 28	16 10.89	-17 16.0	2.092	1.795	28.6	20.4	59 E	19*	52*	4 1	14 59.43	+5 45.6	1.730	2.607	13.0	20.2	144 W	51	58
10 8	16 33.25	-18 12.0	2.137	1.759	27.6	20.4	55 E	18*	48*	4 6	14 55.35	+6 0.6	1.688	2.595	11.5	20.1	149 W	51	58
10 18	16 57.12	-18 58.7	2.178	1.724	26.5	20.4	50 E	17*	43*	4 11	14 50.62	+6 13.2	1.651	2.584	10.2	20.0	15		

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
311151 2004 SK₂₆ (continuation)										317379 2002 OW₂₂ (continuation)									
10 18	15 54.30	-24 41.1	2.716	2.012	17.4	20.8	37 E	5*	31*	10 18	16 41.51	-1 22.9	2.444	1.923	22.6	20.3	48 E	31*	32*
10 28	16 15.74	-26 30.5	2.745	1.979	15.6	20.7	32 E	3*	26*	10 28	17 2.97	-2 35.9	2.463	1.881	21.6	20.3	44 E	29*	28*
11 7	16 38.70	-28 10.6	2.765	1.946	13.8	20.6	28 E	2*	22*	11 7	17 25.75	-3 39.5	2.478	1.840	20.5	20.2	40 E	28*	23*
11 17	17 3.17	-29 39.3	2.776	1.913	12.0	20.6	24 E	—	18*	11 17	17 49.79	-4 32.1	2.487	1.800	19.3	20.1	37 E	27*	18*
11 27	17 29.15	-30 54.6	2.779	1.881	10.3	20.4	20 E	—	14*	11 27	18 14.99	-5 12.1	2.493	1.761	18.2	20.1	34 E	25*	14*
12 7	17 56.54	-31 53.9	2.773	1.850	8.7	20.3	16 E	—	10*	12 7	18 41.25	-5 38.3	2.496	1.725	17.0	20.0	31 E	23*	9*
12 17	18 25.26	-32 35.0	2.760	1.820	7.4	20.2	14 E	—	7*	12 17	19 8.44	-5 49.6	2.498	1.690	15.7	19.9	28 E	21*	5*
12 27	18 55.11	-32 55.9	2.741	1.790	6.5	20.1	12 E	—	5*	12 27	19 36.41	-5 45.4	2.497	1.657	14.4	19.8	25 E	19*	1*
1 6	19 25.88	-32 54.6	2.717	1.763	6.2	20.1	11 E	—	3*	1 6	20 5.01	-5 26.0	2.497	1.627	13.1	19.7	22 E	16*	—
1 16	19 57.29	-32 29.9	2.689	1.737	6.5	20.0	12 E	—	1*	1 16	20 34.09	-4 51.6	2.497	1.601	11.7	19.6	19 E	13*	—
360280 2000 UH₁₆										390733 2003 OS									
2 1	15 6.84	-1 2.6	2.828	2.944	19.5	21.5	87 W	44	59*	2 1	15 10.36	+14 20.9	1.986	2.228	26.2	21.4	91 W	59	45*
2 11	15 13.11	-1 13.5	2.675	2.931	19.6	21.4	95 W	44	64*	2 11	15 25.30	+16 32.1	1.869	2.209	26.4	21.3	96 W	62	46*
2 21	15 17.60	-1 15.8	2.522	2.918	19.2	21.2	104 W	44	65	2 21	15 38.91	+19 8.3	1.761	2.189	26.2	21.1	102 W	64	45*
3 2	15 19.98	-1 10.1	2.373	2.903	18.4	21.0	113 W	44	65	3 2	15 50.78	+22 8.0	1.662	2.168	25.9	21.0	107 W	67	42
3 12	15 19.96	0 57.8	2.234	2.888	16.9	20.8	122 W	44	65	3 12	16 0.48	+25 27.1	1.574	2.146	25.5	20.8	111 W	70	39
3 22	15 17.32	0 40.8	2.106	2.871	14.9	20.6	132 W	44	65	3 22	16 7.53	+28 59.2	1.499	2.124	25.1	20.7	115 W	74	35
4 1	15 11.92	0 21.9	1.996	2.854	12.3	20.4	142 W	45	64	4 1	16 11.39	+32 34.8	1.437	2.101	24.8	20.5	118 W	78	31
4 11	15 3.91	0 4.8	1.908	2.835	9.4	20.2	153 W	45	64	4 11	16 11.67	+36 1.2	1.389	2.078	24.7	20.4	120 W	81	28
4 21	14 53.71	+0 6.3	1.845	2.816	6.6	20.0	161 W	45	64	4 16	16 10.38	+37 36.7	1.369	2.066	24.8	20.4	120 W	83	26
5 1	14 42.09	+0 7.0	1.811	2.795	5.5	19.9	165 W	45	64	4 21	16 8.13	+39 4.6	1.353	2.054	24.9	20.4	120 W	84	25
5 11	14 30.09	0 6.1	1.805	2.774	7.3	19.9	159 W	45	64	4 26	16 4.95	+40 22.9	1.340	2.042	25.2	20.3	120 W	85	24
5 21	14 18.80	0 34.9	1.828	2.751	10.6	20.1	150 W	44	65	5 1	16 0.94	+41 29.8	1.330	2.030	25.5	20.3	120 W	86	23
5 31	14 9.17	1 19.4	1.875	2.728	14.0	20.2	140 W	44	65	5 6	15 56.22	+42 23.9	1.322	2.018	25.9	20.3	119 W	87	22
6 10	14 1.86	2 18.3	1.944	2.703	16.9	20.4	129 E	43	66	5 6	15 50.93	+43 3.9	1.317	2.005	26.3	20.3	118 W	88	21
6 20	13 57.18	-3 29.4	2.029	2.678	19.3	20.6	119 E	41*	67	5 16	15 45.28	+43 29.0	1.315	1.993	26.8	20.3	117 W	88	21
6 30	13 55.21	-4 50.5	2.126	2.651	21.1	20.7	110 E	38*	69	5 21	15 39.46	+43 38.4	1.314	1.981	27.3	20.3	116 E	89	20
7 10	13 55.82	-6 19.5	2.230	2.624	22.3	20.8	101 E	34*	70	5 26	15 33.72	+43 32.0	1.316	1.968	27.9	20.3	115 E	89	20
7 20	13 58.80	-7 54.6	2.337	2.596	23.0	20.9	93 E	30*	72	5 31	15 28.28	+43 10.1	1.319	1.956	28.4	20.3	113 E	88	21
7 30	14 3.95	-9 34.4	2.445	2.567	23.2	21.0	85 E	26*	73*	6 5	15 23.34	+42 33.2	1.324	1.943	29.0	20.3	112 E	88	21
8 9	14 11.01	-11 17.7	2.549	2.537	23.0	21.0	78 E	22*	69*	6 10	15 19.05	+41 42.4	1.330	1.930	29.6	20.3	110 E	87	22
8 19	14 19.82	-13 3.5	2.649	2.506	22.4	21.1	71 E	19*	64*	6 15	15 15.53	+40 38.5	1.337	1.918	30.2	20.4	108 E	86	23
8 29	14 30.21	-14 50.7	2.742	2.475	21.5	21.1	64 E	16*	58*	6 20	15 12.87	+39 22.8	1.346	1.905	30.7	20.4	107 E	84	25
9 8	14 42.06	-16 38.6	2.827	2.442	20.4	21.1	58 E	13*	52*	6 25	15 11.13	+37 56.3	1.356	1.893	31.3	20.4	105 E	83	26
9 18	14 55.29	-18 26.2	2.902	2.409	19.1	21.1	52 E	11*	46*	6 30	15 10.32	+36 20.3	1.367	1.880	31.8	20.4	103 E	81	28
9 28	15 9.82	-20 12.7	2.966	2.375	17.5	21.1	46 E	9*	40*	7 5	15 10.43	+34 36.2	1.379	1.868	32.3	20.4	101 E	79*	29
10 8	15 25.62	-21 57.1	3.019	2.340	15.9	21.0	40 E	6*	34*	7 10	15 11.44	+32 45.0	1.392	1.855	32.7	20.4	100 E	77*	31
10 18	15 42.66	-23 38.3	3.060	2.305	14.1	20.9	34 E	4*	28*	7 15	15 13.31	+30 47.7	1.406	1.843	33.1	20.5	98 E	74*	33
10 28	16 0.95	-25 15.3	3.089	2.269	12.2	20.9	29 E	2*	23*	7 20	15 15.99	+28 45.2	1.421	1.831	33.5	20.5	96 E	71*	35
11 7	16 20.46	-26 46.9	3.105	2.233	10.3	20.8	24 E	—	18*	7 25	15 19.46	+26 38.6	1.437	1.819	33.9	20.5	94 E	68*	37
11 17	16 41.22	-28 11.7	3.110	2.196	8.3	20.6	19 E	—	13*	7 30	15 23.66	+24 28.7	1.454	1.807	34.2	20.5	92 E	65*	40
11 27	17 3.21	-29 28.4	3.102	2.159	6.5	20.5	14 E	—	8*	8 4	15 28.54	+22 16.3	1.472	1.795	34.4	20.5	90 E	62*	42
12 7	17 26.41	-30 35.4	3.082	2.122	4.9	20.4	11 E	—	4*	8 9	15 34.05	+20 2.2	1.491	1.783	34.6	20.6	89 E	59*	44
12 17	17 50.80	-31 31.4	3.052	2.084	4.0	20.3	9 E	—	—	8 14	15 40.17	+17 47.1	1.511	1.772	34.8	20.6	87 E	57*	46
12 27	18 16.32	-32 14.7	3.012	2.047	4.3	20.2	9 W	—	—	8 19	15 46.86	+15 31.5	1.532	1.760	34.9	20.6	85 E	54*	48*
1 6	18 42.89	-32 43.8	2.963	2.009	5.6	20.2	12 W	—	4*	8 24	15 54.09	+13 16.3	1.554	1.749	35.0	20.6	83 E	52*	50*
1 16	19 10.41	-32 57.4	2.906	1.972	7.4	20.2	15 W	—	8*	8 29	16 1.83	+11 2.0	1.577	1.739	35.0	20.6	81 E	50*	52*
317379 2002 OW₂₂										120900 1998 SP₂₅									
2 1	15 9.37	-8 15.4	2.825	2.896	19.8	21.5	84 W	37	64*	2 1	15 11.80	-15 21.7	2.365	2.425	23.7	21.4	82 W	30	68*
2 11	15 18.19	-7 31.9	2.655	2.869	20.1	21.3	92 W	37	69*	2 11	15 23.64	-16 10.0	2.213	2.403	24.2	21.3	89 W	29	76*
2 21	15 25.57	-6 31.6	2.487	2.840	20.0	21.1	101 W	38	71*	2 21	15 34.17	-16 51.4	2.060	2.380	24.4	21.1	96 W	28	81*
3 2	15 31.20	-5 13.3	2.324	2.811	19.4	21.0	109 W	40	69	3 2	15 43.03	-17 25.7	1.910	2.356	24.1	20.9	104 W	28	81
3 12	15 34.80	-3 36.3	2.170	2.781	18.3	20.7	118 W	41	68										
3 22	15 36.09	-1 40.9	2.028	2.750	16.7	20.5	127 W	43	66										
4 1	15 34.84	+0 31.0	1.904	2.718	14.6	20.3	137 W	46	63										
4 6	15 33.24	+1 41.9	1.850	2.702	13.5	20.2	141 W	47	62										
4 11	15 31.00	+2 55.0	1.801	2.685	12.3	20.1	145 W	48	61										
4 16	15 28.14	+4 9.4	1.758	2.668	11.2	20.0	149 W	49	60										
4 21	15 24.71	+5 23.9	1.722	2.651	10.3	19.9	152 W	50	59										
4 26	15 20.78	+6 37.1	1.692	2.634	9.6	19.8	154 W	52	57										
5 1	15 16.44	+7 47.7	1.669	2.616	9.4	19.7	155 W	53	56										
5 6	15 11.81	+8 54.1	1.653	2.598	9.8	19.7	154 W	54	55										
5 11	15 7.01	+9 55.3	1.644	2.580	10.5	19.7	152 E	55	54										
5 16	15 2.16	+10 50.1	1.641	2.562	11.7	19.7	149 E	56	53										
5 21	14 57.39	+11 37.5	1.644	2.544	13.0	19.8	145 E	57	52										
5 31	14 48.66	+12 47.9	1.667	2.506	16.0	19.9	137 E	58	51										
6 10	14 41.71	+13 25.3	1.710	2.468	18.9														

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45° - 26°	2020	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45° - 26°
120900 1998 SP₂₅									241109 2007 MB₁₀								
<i>(continuation)</i>																	
3 12	15 49.85	-17 53.2	1.764	2.332	23.2	20.7	112 W	27 82	2 1	15 23.59	-14 8.9	1.852	1.927	30.1	21.4	79 W	31 65*
3 22	15 54.18	-18 14.1	1.626	2.307	21.7	20.4	121 W	27 82	2 11	15 43.44	-15 5.5	1.721	1.898	31.2	21.2	84 W	30 71*
4 1	15 55.59	-18 28.4	1.499	2.281	19.4	20.1	131 W	27 82	2 21	16 2.96	-15 51.6	1.592	1.869	31.9	21.0	90 W	29 77*
4 11	15 53.73	-18 36.1	1.386	2.255	16.2	19.8	141 W	26 83	3 2	16 21.89	-16 26.9	1.466	1.842	32.4	20.8	95 W	29 80*
4 21	15 48.46	-18 36.9	1.290	2.228	12.2	19.5	152 W	26 83	3 12	16 39.96	-16 51.8	1.345	1.815	32.5	20.6	101 W	28 81
5 1	15 40.00	-18 30.7	1.215	2.201	7.4	19.2	164 W	26 83	3 22	16 56.86	-17 7.2	1.229	1.790	32.2	20.4	107 W	28 81
5 6	15 34.80	-18 25.2	1.187	2.187	4.7	19.0	170 W	27 82	4 1	17 12.14	-17 14.5	1.119	1.766	31.4	20.1	113 W	28 81
5 11	15 29.15	-18 18.3	1.164	2.173	1.9	18.7	176 W	27 82	4 11	17 25.36	-17 16.1	1.017	1.743	30.0	19.8	119 W	28 81
5 16	15 23.22	-18 10.4	1.148	2.159	1.1	18.6	178 E	27 82	4 21	17 36.01	-17 14.9	0.923	1.723	27.9	19.5	127 W	28 81
5 21	15 17.20	-18 1.8	1.139	2.145	4.0	18.8	172 E	27 82	5 1	17 43.50	-17 14.4	0.839	1.704	25.0	19.2	134 W	28 81
5 26	15 11.32	-17 53.3	1.135	2.131	6.9	18.9	165 E	27 82	5 11	17 47.41	-17 18.8	0.767	1.687	21.1	18.9	143 W	28 81
5 31	15 5.78	-17 45.5	1.138	2.117	9.8	19.0	159 E	27 82	5 21	17 47.43	-17 31.7	0.709	1.673	16.2	18.5	153 W	27 82
6 5	15 0.76	-17 39.0	1.146	2.102	12.5	19.2	153 E	27 82	5 31	17 43.75	-17 56.0	0.666	1.661	10.4	18.2	163 W	27 82
6 10	14 56.42	-17 34.5	1.160	2.088	15.2	19.3	147 E	27 82	6 5	17 40.79	-18 12.7	0.651	1.656	7.3	18.0	168 W	27 82
6 20	14 50.17	-17 33.1	1.200	2.060	19.9	19.5	136 E	27 82	6 10	17 37.31	-18 32.2	0.640	1.652	4.4	17.8	173 W	26 83
6 30	14 47.60	-17 44.4	1.255	2.031	23.8	19.6	126 E	27* 82	6 15	17 33.50	-18 54.4	0.634	1.648	2.7	17.7	176 E	26 83
7 10	14 48.78	-18 9.2	1.321	2.003	26.8	19.8	117 W	26* 82	6 20	17 29.63	-19 18.8	0.632	1.646	4.4	17.8	173 E	26 83
7 20	14 53.52	-18 46.4	1.394	1.974	29.1	20.0	109 E	24* 83	6 25	17 25.96	-19 45.0	0.636	1.643	7.5	17.9	168 E	25 84
7 30	15 1.53	-19 34.1	1.470	1.946	30.7	20.1	101 E	22* 84	6 30	17 22.75	-20 12.6	0.643	1.642	10.7	18.1	163 E	25 84
8 9	15 12.49	-20 29.8	1.549	1.919	31.8	20.2	95 E	20* 84	7 5	17 20.23	-20 41.2	0.655	1.641	13.8	18.2	157 E	24 85
8 19	15 26.07	-21 30.4	1.627	1.892	32.3	20.3	88 E	18* 82*	7 10	17 18.54	-21 10.4	0.671	1.641	16.7	18.4	152 E	24 85
8 29	15 42.06	-22 33.1	1.704	1.865	32.5	20.4	83 E	17* 77*	7 15	17 17.82	-21 39.7	0.691	1.641	19.4	18.6	147 E	23 86
9 8	16 0.20	-23 34.8	1.778	1.840	32.3	20.4	77 E	16* 71*	7 20	17 18.14	-22 8.7	0.714	1.643	21.9	18.7	143 E	23 86
9 18	16 20.32	-24 32.3	1.850	1.815	31.8	20.5	72 E	15* 66*	7 30	17 22.04	-23 5.0	0.770	1.647	26.2	19.0	134 E	22 87
9 28	16 42.27	-25 22.7	1.919	1.792	31.1	20.5	67 E	14* 61*	8 9	17 30.13	-23 56.4	0.836	1.655	29.5	19.3	127 E	21 88
10 8	17 5.83	-26 3.0	1.984	1.770	30.2	20.5	63 E	14* 57*	8 19	17 41.92	-24 40.3	0.912	1.665	31.9	19.6	120 E	20 89
10 18	17 30.84	-26 30.4	2.046	1.750	29.1	20.5	59 E	14* 53*	8 29	17 56.88	-25 14.1	0.996	1.677	33.5	19.8	113 E	20 89
10 28	17 57.08	-26 42.4	2.104	1.731	27.9	20.5	55 E	14* 48*	9 8	18 14.39	-25 35.8	1.087	1.692	34.6	20.1	108 E	19 90
11 7	18 24.30	-26 36.9	2.160	1.714	26.6	20.5	51 E	14* 44*	9 18	18 33.86	-25 43.5	1.184	1.709	35.0	20.3	102 E	19 90
11 17	18 52.27	-26 12.3	2.212	1.700	25.2	20.5	47 E	14* 40*	9 23	18 44.19	-25 41.7	1.235	1.719	35.1	20.4	100 E	19 90
11 27	19 20.70	-25 27.7	2.262	1.687	23.7	20.5	43 E	15* 36*	9 28	18 54.83	-25 36.1	1.287	1.729	35.1	20.5	97 E	19 90
12 7	19 49.34	-24 22.8	2.310	1.676	22.1	20.5	40 E	15* 31*	10 3	19 5.71	-25 26.6	1.340	1.739	35.0	20.6	95 E	20 89*
12 17	20 17.94	-22 58.0	2.355	1.668	20.5	20.5	36 E	15* 27*	10 8	19 16.79	-25 13.1	1.395	1.750	34.8	20.7	92 E	20 86*
12 27	20 46.32	-21 14.6	2.399	1.663	18.8	20.5	33 E	15* 23*	10 13	19 28.03	-24 55.8	1.450	1.761	34.5	20.8	90 E	20 84*
1 6	21 14.31	-19 14.2	2.441	1.660	17.1	20.4	30 E	15* 19*	10 18	19 39.39	-24 34.6	1.507	1.773	34.2	20.9	88 E	20 81*
1 16	21 41.82	-16 59.0	2.481	1.659	15.3	20.4	26 E	14* 16*	10 23	19 50.83	-24 9.5	1.564	1.785	33.8	20.9	85 E	21 79*
239875 2000 KQ₇₈									325102 2008 EY₅								
2 1	15 19.23	-19 37.1	2.164	2.195	26.1	21.4	79 W	25 69*	2 1	15 26.49	-28 11.2	0.556	1.000	72.3	21.4	75 W	17 69*
2 11	15 35.45	-20 18.4	2.014	2.165	27.0	21.2	85 W	25 76*	2 6	15 38.49	-29 24.7	0.526	1.010	72.2	21.3	77 W	16 71*
2 21	15 50.92	-20 48.7	1.866	2.134	27.6	21.0	91 W	24 82*	2 11	15 52.11	-30 42.2	0.493	1.017	72.4	21.1	79 W	14 73*
3 2	16 5.33	-21 7.4	1.719	2.103	27.8	20.8	98 W	24 85	2 16	16 7.84	-32 3.7	0.458	1.019	73.1	21.0	81 W	13 74*
3 12	16 18.35	-21 13.8	1.577	2.072	27.6	20.6	105 W	24 85	2 21	16 26.34	-33 28.8	0.422	1.016	74.2	20.9	81 W	12* 75*
3 22	16 29.60	-21 7.4	1.439	2.041	26.8	20.3	113 W	24 85	2 26	16 48.64	-34 55.7	0.386	1.009	76.1	20.7	82 W	10* 74*
4 1	16 38.59	-20 47.6	1.310	2.010	25.4	20.1	120 W	24 85	3 2	17 16.17	-36 19.2	0.350	0.997	78.8	20.6	81 W	8* 73*
4 11	16 44.85	-20 14.3	1.190	1.979	23.2	19.8	129 W	25 84	3 7	17 50.87	-37 28.1	0.315	0.981	82.8	20.4	79 W	7* 70*
4 21	16 47.91	-19 27.0	1.083	1.949	20.2	19.4	138 W	26 83	3 12	18 34.85	-37 58.6	0.285	0.960	88.3	20.4	75 W	5* 66*
5 1	16 47.42	-18 26.1	0.990	1.919	16.2	19.1	148 W	27 82	3 14	18 55.36	-37 51.5	0.274	0.951	91.1	20.4	73 W	4* 64*
5 11	16 43.40	-17 13.2	0.915	1.890	11.4	18.7	158 W	28 81	3 16	19 17.49	-37 28.4	0.264	0.940	94.1	20.4	70 W	3* 61*
5 16	16 40.19	-16 33.2	0.884	1.876	8.8	18.5	164 W	28 81	3 18	19 41.06	-36 46.1	0.256	0.929	97.6	20.5	68 W	2* 59*
5 21	16 36.31	-15 51.7	0.859	1.862	6.2	18.3	169 W	29 80	3 20	20 5.76	-35 41.3	0.249	0.917	101.3	20.6	65 W	2* 56*
5 26	16 31.94	-15 9.6	0.839	1.848	4.2	18.1	172 W	30 79	3 22	20 31.13	-34 12.2	0.244	0.904	105.3	20.7	61 W	1* 52*
5 31	16 27.28	-14 28.2	0.825	1.835	4.2	18.1	172 E	31 78	3 23	20 43.90	-33 18.4	0.243	0.897	107.4	20.8	59 W	— 51*
6 5	16 22.56	-13 48.5	0.816	1.822	6.3	18.1	169 E	31 78	3 24	20 56.63	-32 18.4	0.242	0.890	109.5	20.9	57 W	— 49*
6 10	16 18.00	-13 11.6	0.812	1.809	9.1	18.2	164 E	32 77	3 25	21 9.26	-31 12.7	0.241	0.883	111.6	21.0	55 W	— 47*
6 15	16 13.82	-12 38.8	0.813	1.796	12.1	18.4	158 E	32 77	3 26	21 21.70	-30 1.5	0.241	0.875	113.8	21.1	53 W	— 45*
6 20	16 10.21	-12 10.8	0.819	1.784	15.1	18.5	153 E	33 76	3 27	21 33.92	-28 45.5	0.242	0.868	116.0	21.3	51 W	— 43*
6 25	16 7.35	-11 48.5	0.829	1.772	18.0	18.6	147 E	33 76	3 28	21 45.84	-27 25.3	0.243	0.860	118.2	21.4	49 W	— 41*
6 30	16 5.38	-11 32.2	0.843	1.761	20.7	18.7	142 E	33 76	463480 2013 PC₇₄								
7 10	16 4.37	-11 17.8	0.881	1.739	25.5	18.9	133 E	34 75	2 1	15 45.39	-28 5.7	1.943	1.872	29.9	21.4	71 W	17* 65*
7 20	16 7.39	-11 25.8	0.930	1.720	29.3	19.1	124 E	34* 75	2 6	15 57.71	-28 50.9	1.880	1.855	30.6	21.3	73 W	16* 67*
7 30	16 14.37	-11 52.1	0.987	1.702	32.3	19.3	116 E	33* 76	2 11	16 10.18	-29 32.8	1.819	1.839	31.3	21.3	76 W	15* 69*
8 9	16 24.96	-12 31.5	1.049	1.687	34.5	19.5	110 E	32* 77	2 16	16 22.78	-30 11.4	1.758	1.824	32.0	21.2	78 W	15* 72*
8 19	16 38.72	-13 18.4	1.116	1.674	36.0	19.6	104 E	31* 77	2 21	16 35.47	-30 46.3	1.697	1.808	32.6	21.1	80 W	14* 74*
8 29	16 55.29	-14 8.0	1.186	1.664	36.9	19.8	98 E	30* 78	2 26	16 48.24	-31 17.4	1.637	1.793	33.1	21.0	82 W	

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°-26°	2020	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°-26°
463480 2013 PC₇₄ (continuation)									310395 1998 TM₁₅ (continuation)								
3 22	17 51.94	-32 50.6	1.354	1.726	35.2	20.6	93 W	12* 83*	3 12	17 40.59	-25 36.5	1.381	1.644	37.1	21.1	86 W	19* 80*
3 27	18 4.34	-32 56.3	1.301	1.714	35.4	20.5	96 W	12* 83*	3 22	18 3.27	-25 42.0	1.295	1.645	37.3	20.9	91 W	19* 85*
4 1	18 16.50	-32 57.5	1.249	1.703	35.6	20.4	98 W	12* 83	4 1	18 24.27	-25 35.5	1.210	1.647	37.1	20.8	96 W	19* 90*
4 6	18 28.36	-32 54.5	1.198	1.692	35.6	20.3	100 W	12* 83	4 11	18 43.21	-25 19.6	1.126	1.650	36.5	20.6	102 W	19* 89
4 11	18 39.87	-32 47.2	1.149	1.682	35.6	20.2	103 W	12* 83	4 21	18 59.61	-24 57.5	1.046	1.655	35.4	20.4	108 W	20* 89
4 16	18 50.95	-32 35.9	1.102	1.672	35.4	20.1	105 W	12* 83	5 1	19 12.92	-24 32.6	0.969	1.660	33.6	20.2	114 W	20* 89
4 21	19 1.53	-32 20.8	1.055	1.664	35.1	20.0	108 W	12* 84	5 11	19 22.62	-24 8.3	0.897	1.667	31.0	20.0	122 W	21* 88
4 26	19 11.53	-32 2.0	1.011	1.656	34.7	19.9	110 W	13* 84	5 21	19 28.12	-23 47.7	0.833	1.674	27.6	19.8	130 W	21 88
5 1	19 20.86	-31 39.8	0.968	1.649	34.2	19.7	113 W	13* 84	5 31	19 28.94	-23 32.8	0.778	1.682	23.1	19.5	139 W	21 88
5 6	19 29.47	-31 14.3	0.927	1.642	33.5	19.6	116 W	14* 85	6 10	19 24.96	-23 23.7	0.735	1.691	17.5	19.2	150 W	22 87
5 11	19 37.28	-30 46.0	0.887	1.637	32.6	19.5	119 W	14* 85	6 15	19 21.28	-23 20.8	0.719	1.696	14.4	19.0	155 W	22 87
5 16	19 44.21	-30 15.0	0.850	1.632	31.6	19.4	122 W	15* 86	6 20	19 16.63	-23 18.3	0.707	1.701	11.0	18.9	161 W	22 87
5 21	19 50.16	-29 41.5	0.815	1.628	30.3	19.2	126 W	15* 86	6 25	19 11.21	-23 15.9	0.700	1.707	7.5	18.7	167 W	22 87
5 31	19 58.83	-28 28.0	0.751	1.623	27.1	18.9	133 W	17 88	6 30	19 5.28	-23 13.0	0.698	1.712	3.9	18.5	173 W	22 87
6 10	20 2.92	-27 6.3	0.698	1.621	22.9	18.4	142 W	18 89	7 5	18 59.15	-23 9.4	0.701	1.718	0.3	18.3	179 W	22 87
6 20	20 2.29	-25 37.1	0.657	1.623	17.7	18.4	151 W	19 90	7 10	18 53.10	-23 4.7	0.709	1.723	3.4	18.6	174 E	22 87
6 25	20 0.32	-24 49.8	0.642	1.625	14.7	18.2	156 W	20 89	7 15	18 47.42	-22 59.0	0.722	1.729	6.9	18.8	168 E	22 87
6 30	19 57.43	-24 0.8	0.631	1.628	11.5	18.1	161 W	21 88	7 20	18 42.36	-22 52.4	0.739	1.735	10.3	19.0	162 E	22 87
7 5	19 53.84	-23 10.4	0.625	1.632	8.1	17.9	167 W	22 87	7 25	18 38.14	-22 45.2	0.762	1.741	13.4	19.2	157 E	22 87
7 10	19 49.75	-22 19.1	0.623	1.636	4.6	17.7	173 W	23 86	7 30	18 34.93	-22 37.7	0.789	1.748	16.3	19.4	151 E	22 87
7 15	19 45.44	-21 27.4	0.625	1.642	1.1	17.5	178 W	24 85	8 9	18 31.78	-22 22.4	0.854	1.760	21.4	19.7	141 E	23 86
7 20	19 41.16	-20 36.3	0.633	1.648	2.4	17.7	176 E	24 85	8 19	18 32.99	-22 7.3	0.933	1.773	25.3	20.1	131 E	23 86
7 25	19 37.21	-19 46.4	0.645	1.655	5.9	17.9	170 E	25 84	8 29	18 38.26	-21 52.0	1.023	1.787	28.3	20.4	123 E	23 86
7 30	19 33.81	-18 58.5	0.662	1.663	9.2	18.1	165 E	26 83	9 8	18 47.00	-21 35.0	1.121	1.800	30.4	20.6	115 E	23 86
8 4	19 31.15	-18 13.2	0.683	1.672	12.3	18.3	160 E	27 82	9 18	18 58.58	-21 14.4	1.226	1.814	31.7	20.9	108 E	24 85
8 9	19 29.35	-17 30.8	0.708	1.681	15.1	18.5	154 E	27 82	9 28	19 12.48	-20 48.2	1.336	1.827	32.5	21.1	102 E	24 85
8 19	19 28.55	-16 15.7	0.772	1.701	20.1	18.9	145 E	29 80	10 8	19 28.17	-20 14.9	1.449	1.841	32.7	21.3	96 E	25 84*
8 29	19 31.58	-15 12.3	0.849	1.725	24.0	19.3	136 E	30 79	10 18	19 45.26	-19 33.3	1.565	1.854	32.5	21.5	90 E	25 80*
9 8	19 38.11	-14 17.4	0.939	1.750	27.0	19.6	128 E	31 78	474436 2003 GF₅₃								
9 18	19 47.57	-13 27.4	1.040	1.778	29.1	19.9	121 E	32 77	2 1	16 9.47	-13 48.7	2.303	2.147	25.3	21.4	68 W	31* 55*
9 28	19 59.45	-12 38.6	1.149	1.807	30.4	20.2	114 E	32 77	2 11	16 29.26	-12 51.7	2.147	2.101	26.8	21.3	74 W	32* 61*
10 8	20 13.20	-11 48.0	1.267	1.838	31.2	20.5	108 E	33 76	2 21	16 48.94	-11 30.9	1.992	2.056	28.2	21.1	79 W	33* 65*
10 18	20 28.39	-10 53.3	1.392	1.870	31.4	20.7	102 E	34 75	3 2	17 8.32	-9 43.5	1.841	2.011	29.4	20.9	85 W	35* 69*
10 28	20 44.66	-9 53.1	1.522	1.904	31.3	20.9	96 E	35 73*	3 12	17 27.25	-7 27.1	1.696	1.966	30.4	20.7	90 W	37* 70*
11 7	21 1.69	-8 46.4	1.656	1.938	30.8	21.2	91 E	36 69*	3 22	17 45.54	-4 39.4	1.559	1.923	31.1	20.5	95 W	40* 69*
11 17	21 19.27	-7 33.0	1.795	1.973	30.0	21.3	85 E	37 64*	4 1	18 2.93	-1 18.9	1.431	1.881	31.6	20.3	100 W	44* 65
190059 2004 RW₃₀₆									4 11	18 19.19	+2 34.3	1.315	1.840	31.9	20.1	104 W	48* 61
2 1	15 55.93	-13 57.9	3.095	2.937	18.6	21.4	72 W	31* 58*	4 21	18 34.06	+6 58.3	1.211	1.801	32.0	19.9	108 W	52* 57
2 11	16 6.98	-14 9.2	2.925	2.904	19.5	21.3	79 W	31* 60*	4 26	18 40.86	+9 20.4	1.165	1.782	32.0	19.7	110 W	54 55
2 21	16 17.02	-14 12.4	2.753	2.870	20.1	21.2	87 W	31 73*	5 1	18 47.19	+11 48.0	1.122	1.763	32.1	19.6	112 W	57 52
3 2	16 25.80	-14 7.6	2.579	2.836	20.4	21.0	95 W	31 78*	5 6	18 53.02	+14 19.8	1.082	1.746	32.1	19.5	113 W	59 50
3 12	16 33.04	-13 54.9	2.408	2.801	20.2	20.9	103 W	31 78	5 11	18 58.30	+16 54.5	1.046	1.729	32.2	19.4	114 W	62 47
3 22	16 38.45	-13 34.7	2.242	2.765	19.6	20.6	111 W	31 78	5 16	19 3.00	+19 30.4	1.014	1.712	32.2	19.4	115 W	65 44
4 1	16 41.70	-13 7.2	2.083	2.728	18.4	20.4	120 W	32 77	5 21	19 7.06	+22 5.7	0.985	1.696	32.3	19.3	116 W	67 42
4 11	16 42.52	-12 33.6	1.937	2.690	16.6	20.2	130 W	32 77	5 26	19 10.44	+24 38.3	0.959	1.681	32.5	19.2	117 W	70 39
4 21	16 40.68	-11 55.1	1.805	2.652	14.2	19.9	140 W	33 76	5 31	19 13.17	+27 6.0	0.936	1.667	32.7	19.1	117 W	72 37
5 1	16 36.10	-11 13.5	1.692	2.613	11.1	19.6	150 W	34 75	6 5	19 15.13	+29 26.6	0.916	1.654	32.9	19.1	118 W	74 35
5 11	16 29.02	-10 31.7	1.602	2.574	7.7	19.3	160 W	34 75	6 10	19 16.42	+31 38.3	0.899	1.641	33.1	19.0	118 W	77 32
5 21	16 19.96	-9 53.2	1.536	2.534	4.9	19.1	168 W	35 74	6 15	19 17.01	+33 39.0	0.883	1.630	33.4	19.0	118 W	79 30
5 31	16 9.81	-9 22.1	1.497	2.493	5.5	19.0	166 E	36 73	6 20	19 16.94	+35 26.7	0.870	1.619	33.7	18.9	118 W	80 29
6 10	15 59.72	-9 2.3	1.484	2.452	9.1	19.1	157 E	36 73	6 25	19 10.14	+36 59.6	0.859	1.609	33.9	18.9	118 W	82 27
6 20	15 50.82	-8 56.8	1.495	2.411	13.3	19.3	147 E	36 73	6 30	19 15.14	+38 16.2	0.849	1.601	34.1	18.9	118 W	83 26
6 30	15 44.07	-9 6.9	1.526	2.369	17.2	19.4	136 E	36 73	7 5	19 13.67	+39 15.6	0.841	1.593	34.4	18.9	118 W	84 25
7 10	15 40.10	-9 32.5	1.575	2.327	20.6	19.5	126 E	35 74	7 10	19 12.00	+39 56.9	0.833	1.587	34.5	18.8	118 E	85 24
7 20	15 39.18	-10 11.8	1.635	2.285	23.3	19.7	117 E	34* 74	7 15	19 10.32	+40 19.5	0.827	1.582	34.6	18.8	118 E	85 24
7 30	15 41.36	-11 2.7	1.704	2.242	25.4	19.8	108 E	33* 75	7 20	19 8.81	+40 22.9	0.821	1.577	34.7	18.8	118 E	85 24
8 9	15 46.50	-12 2.5	1.777	2.200	27.0	19.9	100 E	31* 76	7 25	19 7.67	+40 7.2	0.817	1.574	34.7	18.8	118 E	85 24
8 19	15 54.39	-13 8.5	1.853	2.158	27.9	19.9	93 E	29* 77*	7 30	19 7.09	+39 32.8	0.813	1.573	34.7	18.8	118 E	85 24
8 29	16 4.84	-14 18.1	1.928	2.116	28.4	20.0	86 E	27* 76*	8 4	19 7.22	+38 40.4	0.811	1.572	34.6	18.8	118 E	84 25
9 8	16 17.63	-15 28.6	2.000	2.074	28.6	20.0	80 E	25* 72*	8 9	19 8.16	+37 30.9	0.810	1.572	34.4	18.8	119 E	83 26
9 18	16 32.57	-16 37.7	2.069	2.033	28.3	20.1	74 E	23* 66*	8 14	19 10.01	+36 5.3	0.810	1.574	34.2	18.7	119 E	81 28
9 28	16 49.51	-17 42.9	2.134	1.993	27.8	20.1	68 E	22* 61*	8 19	19 12.81	+34 24.8	0.812	1.577	34.0	18.8	119 E	79 30
10 8	17 8.30	-18 41.7	2.193	1.953	27.1	20.1	63 E	21* 56*	8 24	19 16.59	+32 31.1	0.816	1.581	33.8	18.8	120 E	78 31
10 18	17 28.79	-19 31.9	2.248	1.915	26.2	20.1	58 E	20* 51*	8 29	19 21.36	+30 26.1	0.822	1.586				

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45° - 26°	20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45° - 26°
474436 2003 GF₅₃ (continuation)									168714 2000 JQ₁₀ (continuation)								
12 2	22 29.24	-24 14.1	1.603	1.858	32.0	20.5	88 E	43 59*	9 3	21 55.27	+ 0 16.7	0.554	1.549	10.0	17.2	165 E	45 64
12 7	22 40.16	-2 2.0	1.674	1.879	31.5	20.6	86 E	43 57*	9 8	21 54.21	- 0 22.4	0.566	1.554	12.1	17.4	161 E	45 64
12 12	22 50.97	-2 13.4	1.747	1.900	31.0	20.7	83 E	43 55*	9 13	21 53.83	- 1 2.6	0.583	1.560	14.5	17.5	157 E	44 65
12 17	23 1.68	-2 18.7	1.820	1.921	30.3	20.8	80 E	43 53*	9 18	21 54.24	- 1 42.0	0.603	1.566	17.0	17.7	153 E	43 66
12 22	23 12.27	-2 18.6	1.895	1.942	29.7	20.9	78 E	43 51*	9 23	21 55.54	- 2 18.7	0.627	1.573	19.4	17.8	149 E	43 66
12 27	23 22.75	-2 13.7	1.971	1.964	28.9	21.0	75 E	43 49*	9 28	21 57.73	- 2 51.5	0.655	1.581	21.6	18.0	144 E	42 67
1 1	23 33.11	-2 4.6	2.046	1.986	28.2	21.1	73 E	43* 47*	10 3	22 0.80	- 3 19.3	0.685	1.590	23.6	18.2	140 E	42 67
1 6	23 43.37	-1 51.8	2.122	2.008	27.4	21.2	70 E	43* 44*	10 8	22 4.70	- 3 41.5	0.720	1.600	25.5	18.4	136 E	41 68
1 11	23 53.51	-1 35.7	2.199	2.031	26.5	21.2	67 E	43* 42*	10 18	22 14.74	- 4 8.1	0.797	1.621	28.5	18.7	129 E	41 68
1 16	0 3.57	-1 16.8	2.274	2.053	25.6	21.3	65 E	42* 40*	10 28	22 27.37	- 4 10.2	0.885	1.645	30.8	19.0	122 E	41 68
85165 1988 TV₂									238503 2004 SF₅₄								
2 1	16 25.03	-24 14.8	3.578	3.249	15.7	21.5	63 W	20* 55*	2 1	17 8.41	-16 47.8	2.333	1.925	24.4	21.5	54 W	24* 43*
2 11	16 35.83	-24 38.9	3.421	3.229	16.7	21.4	71 W	20* 64*	2 11	17 32.59	-16 42.6	2.215	1.892	26.3	21.4	58 W	25* 49*
2 21	16 45.63	-24 58.9	3.257	3.208	17.6	21.3	78 W	20* 72*	2 21	17 56.93	-16 21.3	2.096	1.859	28.1	21.3	63 W	25* 53*
3 2	16 54.19	-25 15.1	3.089	3.185	18.1	21.2	86 W	20* 80*	3 2	18 21.31	-15 43.6	1.978	1.828	29.9	21.2	67 W	26* 58*
3 12	17 1.26	-25 27.7	2.919	3.162	18.2	21.1	95 W	20* 89*	3 12	18 45.61	-14 49.5	1.861	1.797	31.5	21.1	71 W	26* 62*
3 22	17 6.59	-25 37.0	2.751	3.138	18.0	20.9	104 W	19 90	3 22	19 9.70	-13 39.5	1.747	1.767	32.9	20.9	75 W	27* 66*
4 1	17 9.86	-25 43.1	2.588	3.113	17.2	20.7	113 W	19 90	4 1	19 33.44	-12 14.4	1.635	1.738	34.3	20.8	78 W	28* 69*
4 11	17 10.82	-25 45.8	2.433	3.088	15.9	20.5	122 W	19 90	4 11	19 56.71	-10 35.9	1.528	1.711	35.5	20.6	82 W	29* 71*
4 21	17 9.27	-25 44.8	2.292	3.061	14.0	20.3	132 W	19 90	4 21	20 19.42	- 8 45.7	1.424	1.686	36.5	20.5	86 W	31* 72*
5 1	17 5.10	-25 38.9	2.167	3.034	11.5	20.1	143 W	19 90	5 1	20 41.41	- 6 46.3	1.325	1.663	37.3	20.3	90 W	33* 71*
5 11	16 58.44	-25 27.1	2.063	3.005	8.4	19.8	154 W	20 89	5 11	21 2.57	- 4 41.0	1.230	1.642	37.9	20.1	94 W	35* 69
5 21	16 49.69	-25 8.4	1.985	2.976	4.8	19.6	166 W	20 89	5 21	21 22.75	- 2 33.0	1.141	1.623	38.2	20.0	98 W	38* 67
5 26	16 44.74	-24 56.3	1.955	2.961	2.9	19.4	172 W	20 89	5 31	21 41.75	- 0 26.9	1.056	1.607	38.1	19.8	102 W	41* 64
5 31	16 39.55	-24 42.5	1.933	2.946	1.1	19.2	177 W	20 89	6 10	21 59.36	+ 1 32.4	0.976	1.595	37.7	19.6	106 W	44* 62
6 5	16 34.27	-24 27.1	1.918	2.931	1.6	19.3	175 E	21 88	6 15	22 7.56	+ 2 27.8	0.938	1.589	37.2	19.5	109 W	46* 62
6 10	16 29.01	-24 10.4	1.911	2.915	3.6	19.4	170 E	21 88	6 20	22 15.29	+ 3 19.4	0.902	1.585	36.7	19.4	111 W	47* 61
6 15	16 23.91	-23 52.9	1.910	2.900	5.6	19.5	164 E	21 88	6 25	22 22.51	+ 4 6.2	0.867	1.581	36.0	19.3	114 W	48* 60
6 20	16 19.09	-23 34.9	1.916	2.884	7.6	19.6	158 E	21 88	6 30	22 29.16	+ 4 47.3	0.833	1.578	35.1	19.1	117 W	50* 59
6 25	16 14.67	-23 16.8	1.929	2.868	9.5	19.6	152 E	22 87	7 5	22 35.20	+ 5 21.8	0.801	1.576	34.0	19.0	120 W	50 59
6 30	16 10.75	-22 59.3	1.947	2.851	11.3	19.7	147 E	22 87	7 10	22 40.58	+ 5 48.9	0.770	1.575	32.8	18.9	123 W	51 58
7 10	16 4.68	-22 27.6	2.001	2.818	14.6	19.9	136 E	23 86	7 15	22 45.23	+ 6 7.4	0.742	1.575	31.3	18.8	126 W	51 58
7 20	16 1.25	-22 2.3	2.072	2.784	17.4	20.0	125 E	23* 86	7 20	22 49.09	+ 6 16.3	0.715	1.575	29.6	18.6	130 W	51 58
7 30	16 0.59	-21 45.2	2.156	2.749	19.5	20.1	115 E	23* 86	7 25	22 52.12	+ 6 14.5	0.690	1.576	27.6	18.5	134 W	51 58
8 9	16 2.63	-21 36.5	2.249	2.714	21.0	20.3	106 E	22* 86	7 30	22 54.30	+ 6 1.4	0.668	1.578	25.3	18.4	138 W	51 58
8 19	16 7.19	-21 35.4	2.347	2.678	22.0	20.4	98 E	21* 86	8 9	22 56.15	+ 4 59.2	0.633	1.585	20.0	18.1	148 W	50 59
8 29	16 14.08	-21 40.8	2.446	2.641	22.5	20.4	90 E	20* 83*	8 19	22 54.90	+ 3 9.6	0.611	1.595	13.8	17.8	158 W	48 61
9 8	16 23.05	-21 50.9	2.543	2.603	22.5	20.5	82 E	19* 76*	8 29	22 51.51	+ 0 41.5	0.605	1.608	7.1	17.6	169 W	46 63
9 18	16 33.89	-22 3.9	2.637	2.565	22.2	20.5	75 E	18* 69*	9 3	22 49.47	- 0 41.1	0.609	1.615	4.3	17.4	173 W	44 65
9 28	16 46.45	-22 18.0	2.725	2.527	21.6	20.5	68 E	18* 62*	9 8	22 47.46	- 2 5.7	0.618	1.623	3.7	17.5	174 E	43 66
10 8	17 0.52	-22 31.1	2.806	2.487	20.7	20.5	61 E	17* 55*	9 13	22 45.68	- 3 29.3	0.632	1.632	6.0	17.6	170 E	42 67
10 18	17 15.98	-22 41.4	2.878	2.447	19.5	20.5	55 E	16* 49*	9 18	22 44.31	- 4 48.9	0.650	1.642	9.0	17.8	165 E	40 69
10 28	17 32.68	-22 47.3	2.940	2.407	18.1	20.5	49 E	15* 42*	9 23	22 43.51	- 6 2.2	0.673	1.652	12.1	18.1	160 E	39 70
11 7	17 50.50	-22 47.1	2.992	2.367	16.6	20.4	43 E	14* 36*	9 28	22 43.40	- 7 7.3	0.701	1.663	15.0	18.3	155 E	38 71
11 17	18 9.31	-22 39.3	3.033	2.326	14.9	20.4	37 E	13* 30*	10 3	22 44.02	- 8 3.0	0.733	1.674	17.7	18.5	149 E	37 72
11 27	18 29.00	-22 22.5	3.063	2.285	13.2	20.3	32 E	12* 23*	10 8	22 44.02	- 8 48.9	0.769	1.686	20.1	18.7	145 E	36 73
12 7	18 49.44	-21 55.5	3.083	2.244	11.3	20.2	26 E	11* 17*	10 18	22 50.47	- 9 50.8	0.852	1.711	24.1	19.0	135 E	35 74
12 17	19 10.54	-21 17.3	3.091	2.202	9.3	20.1	21 E	9* 12*	10 28	22 58.36	-10 15.1	0.948	1.738	27.1	19.4	127 E	35 74
12 27	19 32.18	-20 27.2	3.088	2.161	7.3	20.0	16 E	6* 7*	11 7	23 8.61	-10 7.0	1.055	1.767	29.3	19.7	119 E	35 74
1 6	19 54.24	-19 24.6	3.076	2.120	5.2	19.8	11 E	4* 2*	11 12	23 14.47	- 9 52.6	1.111	1.781	30.0	19.9	116 E	35 74
1 16	20 16.66	-18 9.2	3.054	2.080	3.1	19.6	7 E	-	11 17	23 20.75	- 9 32.1	1.170	1.796	30.6	20.0	112 E	35 74
168714 2000 JQ₁₀									294349 2007 VC₉₂								
2 1	16 57.42	-22 4.3	2.416	2.032	23.6	21.5	56 W	20* 48*	2 1	17 19.58	-27 27.0	2.240	1.782	25.2	21.5	50 W	13* 44*
2 11	17 20.41	-22 16.5	2.285	1.995	25.5	21.4	61 W	20* 53*	2 11	17 48.40	-28 12.1	2.142	1.757	27.1	21.4	54 W	13* 48*
2 21	17 43.59	-22 14.4	2.153	1.959	27.3	21.2	65 W	20* 58*	2 21	18 17.76	-28 38.7	2.045	1.733	28.9	21.3	58 W	12* 52*
3 2	18 6.83	-21 57.4	2.020	1.922	29.0	21.1	70 W	21* 63*	3 2	18 47.42	-28 46.0	1.949	1.711	30.5	21.2	61 W	11* 55*
3 12	18 29.98	-21 24.9	1.888	1.886	30.5	21.0	75 W	21* 68*	2 1	17 19.58	-27 27.0	2.240	1.782	25.2	21.5	50 W	13* 44*
3 22	18 52.94	-20 37.0	1.757	1.850	31.9	20.8	79 W	22* 72*	2 11	17 48.40	-28 12.1	2.142	1.757	27.1	21.4	54 W	13* 48*
4 1	19 15.54	-19 33.7	1.629	1.815	33.2	20.6	84 W	23* 77*	2 21	18 17.76	-28 38.7	2.045	1.733	28.9	21.3	58 W	12* 52*
4 11	19 37.64	-18 15.6	1.505	1.781	34.2	20.5	88 W	24* 80*									

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45° - 26°	20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45° - 26°
294349 2007 VC₉₂ (continuation)									476807 2008 UP₁₈₈ (continuation)								
3 12	19 17.11	-28 34.0	1.855	1.691	32.1	21.1	65 W	11* 59*	3 12	19 16.47	-29 21.7	2.047	1.862	29.0	21.1	65 W	10* 59*
3 22	19 46.58	-28 3.0	1.764	1.673	33.6	21.1	68 W	11* 62*	3 22	19 44.52	-29 45.6	1.927	1.826	30.6	21.0	69 W	9* 62*
4 1	20 15.53	-27 14.3	1.675	1.658	34.9	21.0	72 W	10* 65*	4 1	20 13.09	-29 58.9	1.811	1.793	32.2	20.8	73 W	8* 66*
4 11	20 43.71	-26 9.9	1.590	1.646	36.0	20.9	75 W	11* 69*	4 11	20 42.06	-30 1.8	1.700	1.762	33.6	20.7	77 W	7* 69*
4 21	21 10.91	-24 52.3	1.507	1.636	37.0	20.8	78 W	11* 72*	4 21	21 11.27	-29 55.1	1.595	1.733	34.8	20.5	80 W	7* 72*
5 1	21 36.86	-23 24.4	1.427	1.629	37.8	20.7	82 W	12* 76*	5 1	21 40.49	-29 39.9	1.496	1.707	35.9	20.4	84 W	6* 75*
5 11	22 1.39	-21 49.5	1.350	1.625	38.3	20.5	86 W	14* 80*	5 11	22 9.46	-29 17.7	1.404	1.684	36.8	20.3	87 W	6* 79*
5 21	22 24.31	-20 11.2	1.276	1.624	38.6	20.4	90 W	15* 83*	5 21	22 37.91	-28 50.6	1.319	1.664	37.5	20.1	90 W	6* 82*
5 31	22 45.38	-18 33.2	1.204	1.626	38.5	20.3	94 W	18* 83	5 31	23 5.49	-28 21.1	1.240	1.648	37.9	20.0	93 W	7* 86*
6 10	23 4.36	-16 58.8	1.134	1.631	38.0	20.2	99 W	21* 81	6 10	23 31.82	-27 51.9	1.169	1.636	38.1	19.8	97 W	8* 88*
6 20	23 20.97	-15 31.6	1.068	1.639	37.0	20.0	104 W	24* 80	6 20	23 56.51	-27 26.2	1.103	1.627	37.9	19.7	100 W	10* 89
6 30	23 34.81	-14 14.8	1.004	1.650	35.5	19.9	110 W	28* 78	6 30	0 19.05	-27 6.9	1.043	1.623	37.4	19.6	104 W	12* 89
7 10	23 45.47	-13 10.9	0.944	1.664	33.3	19.7	116 W	31* 77	7 10	0 38.96	-26 56.3	0.988	1.622	36.6	19.4	108 W	15* 89
7 20	23 52.46	-12 21.8	0.890	1.680	30.3	19.5	124 W	33* 76	7 15	0 47.76	-26 54.9	0.962	1.624	36.0	19.3	110 W	16* 89
7 30	23 55.29	-11 48.2	0.843	1.699	26.4	19.3	132 W	33* 76	7 20	0 55.68	-26 56.2	0.938	1.626	35.2	19.3	113 W	16* 89
8 9	23 53.73	-11 28.7	0.806	1.719	21.5	19.1	142 W	34 75	7 25	1 2.63	-27 0.2	0.915	1.630	34.4	19.2	115 W	17* 89
8 19	23 47.87	-11 19.5	0.782	1.742	15.8	18.8	152 W	34 75	7 30	1 8.55	-27 6.6	0.893	1.634	33.4	19.1	118 W	18* 89
8 24	23 43.55	-11 16.9	0.776	1.754	12.7	18.7	158 W	34 75	8 4	1 13.36	-27 14.9	0.873	1.640	32.2	19.0	120 W	18* 89
8 29	23 38.53	-11 14.2	0.776	1.767	9.5	18.6	163 W	34 75	8 9	1 16.98	-27 24.7	0.854	1.646	31.0	19.0	123 W	18 89
9 3	23 33.03	-11 10.5	0.780	1.779	6.5	18.5	168 W	34 75	8 14	1 19.36	-27 35.3	0.837	1.653	29.5	18.9	126 W	17 88
9 8	23 27.30	-11 5.0	0.789	1.793	4.2	18.4	173 W	34 75	8 19	1 20.42	-27 45.5	0.822	1.662	28.0	18.8	130 W	17 88
9 13	23 21.57	-10 56.9	0.804	1.806	4.0	18.5	173 E	34 75	8 24	1 20.14	-27 54.1	0.809	1.671	26.3	18.7	133 W	17 88
9 18	23 16.11	-10 45.7	0.824	1.820	6.1	18.7	169 E	34 75	8 29	1 18.54	-27 59.3	0.798	1.681	24.5	18.7	136 W	17 88
9 28	23 6.86	-10 12.6	0.880	1.849	11.5	19.1	158 E	35 74	9 3	1 15.69	-27 59.4	0.791	1.692	22.7	18.6	140 W	17 88
10 8	23 0.79	-9 25.3	0.956	1.879	16.5	19.5	148 E	36 73	9 8	1 11.68	-27 52.9	0.787	1.703	20.9	18.6	143 W	17 88
10 18	22 58.34	-8 25.6	1.050	1.909	20.5	19.8	138 E	37 72	9 13	1 6.68	-27 38.0	0.787	1.716	19.2	18.5	146 W	17 88
10 28	22 59.46	-7 15.1	1.159	1.940	23.6	20.2	129 E	38 71	9 18	1 0.91	-27 13.4	0.790	1.729	17.7	18.5	148 W	18 89
11 7	23 3.73	-5 55.8	1.280	1.972	25.8	20.5	120 E	39 70	9 23	0 54.63	-26 37.9	0.799	1.743	16.6	18.5	150 W	18 89
11 17	23 10.62	-4 29.2	1.411	2.004	27.2	20.8	112 E	41 68	9 28	0 48.17	-25 51.2	0.811	1.757	15.9	18.5	151 W	19 90
11 27	23 19.68	-2 56.2	1.549	2.036	28.0	21.0	105 E	42 67*	10 3	0 41.80	-24 53.6	0.829	1.772	15.8	18.6	151 W	20 89
12 7	23 30.44	-1 18.1	1.693	2.069	28.2	21.3	98 E	44 63*	10 8	0 35.79	-23 46.1	0.851	1.788	16.2	18.7	150 E	21 88
12 17	23 42.58	+ 0 24.3	1.840	2.101	27.9	21.5	91 E	45 58*	10 13	0 30.36	-22 30.0	0.879	1.804	17.0	18.8	148 E	23 86
168889 2000 WM₉₅									347514 1999 SP₁₄								
2 1	17 30.95	-24 45.5	2.953	2.406	17.7	21.5	48 W	15* 41*	2 1	17 48.03	-22 23.0	2.413	1.837	21.9	21.5	44 W	16* 36*
2 11	17 50.09	-24 50.1	2.824	2.377	19.5	21.4	54 W	16* 47*	2 11	18 15.72	-21 35.1	2.303	1.796	24.0	21.4	48 W	16* 40*
2 21	18 8.99	-24 45.7	2.689	2.347	21.3	21.3	60 W	16* 53*	2 21	18 43.66	-20 24.2	2.195	1.756	26.1	21.3	51 W	17* 44*
3 2	18 27.51	-24 32.6	2.547	2.316	22.9	21.2	65 W	17* 59*	3 2	19 11.68	-18 49.6	2.089	1.719	28.1	21.2	55 W	18* 48*
3 12	18 45.51	-24 11.3	2.402	2.285	24.3	21.1	71 W	17* 65*	3 12	19 39.59	-16 51.5	1.987	1.684	30.0	21.1	58 W	19* 51*
3 22	19 2.85	-23 42.4	2.254	2.254	25.5	21.0	77 W	18* 71*	3 22	20 7.26	-14 30.4	1.890	1.652	31.8	21.0	61 W	21* 54*
4 1	19 19.35	-23 6.9	2.105	2.221	26.5	20.8	83 W	19* 77*	4 1	20 34.54	-11 47.9	1.797	1.624	33.5	20.9	64 W	22* 56*
4 11	19 34.83	-22 25.8	1.955	2.189	27.2	20.7	89 W	20* 83*	4 11	21 1.33	-8 46.5	1.712	1.599	35.0	20.8	66 W	24* 58*
4 21	19 49.10	-21 40.5	1.808	2.156	27.6	20.5	96 W	21* 86	4 21	21 27.56	-5 28.9	1.632	1.578	36.4	20.7	69 W	26* 59*
5 1	20 1.89	-20 52.5	1.663	2.123	27.6	20.3	103 W	22* 85	5 1	21 53.16	-1 59.1	1.558	1.562	37.7	20.6	71 W	28* 60*
5 11	20 12.92	-20 3.6	1.524	2.090	27.1	20.0	110 W	24* 84	5 11	22 18.08	+ 1 38.7	1.491	1.551	38.8	20.6	74 W	31* 59*
5 21	20 21.87	-19 15.7	1.391	2.057	26.0	19.8	117 W	25* 83	5 21	22 42.27	+ 5 20.0	1.429	1.544	39.6	20.5	76 W	35* 57*
5 31	20 28.31	-18 31.0	1.266	2.025	24.3	19.5	125 W	26* 83	5 26	22 54.07	+ 7 10.4	1.400	1.543	39.9	20.5	78 W	37* 56*
6 10	20 31.86	-17 51.5	1.152	1.992	21.7	19.2	133 W	27 82	5 31	23 5.65	+ 9 0.0	1.372	1.543	40.2	20.4	79 W	39* 55*
6 20	20 32.13	-17 19.2	1.051	1.960	18.3	18.8	143 W	28 81	6 5	23 17.00	+10 48.0	1.345	1.544	40.4	20.4	80 W	41* 53*
6 30	20 28.89	-16 55.3	0.966	1.928	13.9	18.4	153 W	28 81	6 10	23 28.12	+12 34.0	1.319	1.546	40.5	20.3	82 W	43* 51
7 10	20 22.33	-16 39.9	0.899	1.897	8.6	18.0	164 W	28 81	6 15	23 38.97	+14 17.6	1.294	1.550	40.6	20.3	83 W	46* 50
7 20	20 13.15	-16 31.7	0.852	1.866	3.0	17.6	175 W	28 81	6 20	23 49.54	+15 58.2	1.269	1.554	40.6	20.3	85 W	49* 48
7 25	20 7.98	-16 29.6	0.837	1.851	2.2	17.5	176 E	29 80	6 25	23 59.78	+17 35.2	1.245	1.560	40.6	20.2	87 W	52* 46
7 30	20 2.74	-16 28.3	0.827	1.837	4.7	17.6	171 E	29 80	6 30	0 9.67	+19 8.3	1.221	1.568	40.4	20.2	88 W	54* 45
8 4	19 57.66	-16 27.5	0.822	1.823	7.9	17.7	166 E	29 80	7 5	0 19.17	+20 36.9	1.198	1.576	40.2	20.2	90 W	58* 43
8 9	19 52.98	-16 26.7	0.823	1.809	11.0	17.9	160 E	29 80	7 10	0 28.24	+22 0.9	1.175	1.585	39.8	20.1	92 W	61* 42
8 14	19 48.90	-16 25.9	0.828	1.795	14.1	18.0	154 E	29 80	7 15	0 36.83	+23 19.8	1.152	1.596	39.4	20.1	95 W	64* 41
8 19	19 45.63	-16 24.7	0.838	1.782	17.1	18.1	149 E	29 80	7 20	0 44.87	+24 33.2	1.129	1.607	38.9	20.0	97 W	67* 39
8 29	19 42.03	-16 20.2	0.869	1.757	22.4	18.3	138 E	29 80	7 25	0 52.30	+25 40.7	1.106	1.620	38.2	20.0	99 W	69* 38
9 8	19 42.80	-16 11.5	0.913	1.734	26.8	18.5	129 E	29 80	7 30	0 59.05	+26 41.9	1.084	1.634	37.4	19.9	102 W	71* 37
9 18	19 47.92	-15 56.9	0.967	1.712	30.3	18.7	121 E	29 80	8 4	1 5.07	+27 36.4	1.061	1.648	36.5	19.9	105 W	73 36
9 28	19 57.08	-15 34.4	1.028	1.693	33.0	18.9	113 E	29 80	8 9	1 10.29	+28 23.8	1.040	1.663	35.4	19.8	108 W	73 36
10 8	20 9.73	-15 1.8	1.094	1.677	34.9	19.1	106 E	30 79	8 14	1 14.63	+29 3.7	1.019	1.679	34.1	19.8	111 W	74 35
10 18	20 25.29	-14 17.4	1.164	1.663	36.1	19.2	100 E	31 78	8 19	1 18.01	+29 35.3	0.998	1.696	32.7	19.7	115 W	75 34
10 28	20 43.23	-13 19.8	1.237	1.651	36.8	19.3	95 E	32 76*	8 24	1 20.39	+29 57.9	0.979	1.714				

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°-26°	2020	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°-26°
347514 1999 SP₁₄ (continuation)									87024 2000 JS₆₆ (continuation)								
9 8	1 21.37	+30 6.0	0.931	1.770	25.1	19.4	132 W	75 34	5 31	2 9.57	+19 48.8	1.704	1.022	33.0	21.3	33 W	15* 23*
9 13	1 19.72	+29 46.8	0.920	1.790	22.7	19.4	137 W	75 34	6 10	2 48.18	+21 44.2	1.730	1.046	32.4	21.4	34 W	16* 23*
9 18	1 17.21	+29 15.8	0.913	1.811	20.2	19.3	141 W	74 35	6 20	3 26.40	+23 3.2	1.752	1.073	32.0	21.4	34 W	17* 22*
9 23	1 13.99	+28 33.2	0.909	1.831	17.6	19.2	147 W	74 35	484199 2006 WS₁								
9 28	1 10.27	+27 39.7	0.909	1.853	14.9	19.2	152 W	73 36	2 1	18 53.33	-32 8.0	1.326	0.702	46.5	21.4	31 W	— 25*
10 3	1 6.26	+26 36.3	0.915	1.874	12.4	19.1	156 W	72 37	2 6	19 27.43	-30 17.1	1.357	0.680	43.8	21.3	29 W	— 22*
10 8	1 2.17	+25 24.7	0.925	1.896	10.2	19.1	160 W	70 39	2 11	19 59.81	-27 53.2	1.392	0.664	40.6	21.2	26 W	— 20*
10 13	0 58.22	+24 7.1	0.941	1.919	8.6	19.1	163 E	69 40	2 16	20 30.27	-25 2.8	1.431	0.656	36.9	21.2	23 W	— 17*
10 18	0 54.60	+22 45.7	0.964	1.941	8.1	19.1	164 E	68 41	2 21	20 58.76	-21 52.5	1.472	0.655	32.9	21.1	21 W	— 15*
10 23	0 51.49	+21 23.2	0.992	1.964	8.7	19.2	163 E	66 43	2 26	21 25.38	-18 29.2	1.516	0.662	29.0	21.1	19 W	— 13*
10 28	0 49.02	+20 2.0	1.026	1.987	10.1	19.4	159 E	65 44	3 2	21 50.27	-14 58.9	1.560	0.677	25.4	21.1	17 W	— 11*
11 2	0 47.27	+18 44.3	1.065	2.010	11.9	19.6	155 E	64 45	3 7	22 13.65	-11 26.5	1.604	0.699	22.1	21.1	15 W	— 9*
11 7	0 46.26	+17 31.7	1.111	2.033	13.8	19.8	151 E	63 46	3 12	22 35.69	-7 56.3	1.648	0.726	19.4	21.2	14 W	— 8*
11 12	0 46.01	+16 25.4	1.161	2.056	15.7	19.9	146 E	61 48	3 17	22 56.61	-4 31.1	1.692	0.758	17.3	21.3	13 W	1* 7*
11 17	0 46.52	+15 26.3	1.217	2.080	17.4	20.1	141 E	60 49	3 22	23 16.57	-1 13.2	1.736	0.793	15.7	21.4	12 W	1* 6*
11 27	0 49.68	+13 50.8	1.341	2.127	20.4	20.5	131 E	59 50	3 27	23 35.70	+1 56.1	1.779	0.830	14.5	21.5	12 W	2* 5*
12 7	0 55.36	+12 45.3	1.481	2.174	22.5	20.8	122 E	58 51	162882 2001 FD₅₈								
12 17	1 3.15	+12 6.7	1.633	2.221	23.9	21.1	114 E	57 52	2 1	19 10.17	-26 9.2	1.886	1.087	23.2	21.4	26 W	3* 20*
12 27	1 12.68	+11 50.8	1.794	2.269	24.6	21.4	106 E	57 51*	2 6	19 32.03	-25 20.9	1.832	1.038	24.5	21.2	26 W	3* 20*
369955 2013 MK₃									2 11	19 54.76	-24 17.2	1.780	0.988	25.6	21.1	26 W	2* 20*
2 1	17 48.60	-21 59.6	2.458	1.878	21.4	21.5	44 W	16* 36*	2 16	20 18.39	-22 56.1	1.730	0.935	26.6	20.9	25 W	2* 19*
2 11	18 15.02	-22 16.9	2.355	1.846	23.4	21.4	48 W	16* 41*	2 21	20 42.90	-21 16.0	1.684	0.881	27.4	20.8	24 W	1* 18*
2 21	18 41.86	-22 19.0	2.251	1.815	25.4	21.3	52 W	16* 45*	2 26	21 8.30	-19 15.3	1.641	0.825	27.9	20.6	23 W	1* 17*
3 2	19 8.96	-22 5.7	2.147	1.786	27.3	21.2	56 W	16* 49*	3 2	21 34.60	-16 52.6	1.602	0.767	27.9	20.4	21 W	— 15*
3 12	19 36.21	-21 37.3	2.043	1.758	29.1	21.2	59 W	15* 53*	3 12	22 29.95	-10 59.1	1.540	0.652	25.7	19.9	17 W	— 11*
3 22	20 3.46	-20 54.5	1.941	1.732	30.8	21.1	63 W	15* 57*	3 22	23 29.50	-3 39.4	1.500	0.547	18.4	19.2	10 W	— 4*
4 1	20 30.59	-19 58.2	1.841	1.708	32.4	21.0	66 W	15* 60*	4 1	0 34.10	+4 38.0	1.473	0.476	4.2	18.3	2 W	— —
4 11	20 57.46	-18 50.2	1.745	1.686	33.9	20.9	70 W	16* 64*	4 3	0 47.65	+6 19.1	1.468	0.469	2.4	18.2	1 W	— —
4 21	21 23.97	-17 32.2	1.651	1.667	35.3	20.7	73 W	16* 67*	4 5	1 1.41	+7 59.1	1.463	0.465	4.9	18.3	2 E	— —
5 1	21 49.98	-16 6.8	1.561	1.650	36.4	20.6	77 W	17* 70*	4 7	1 15.34	+9 37.3	1.458	0.464	8.6	18.4	4 E	— —
5 11	22 15.38	-14 36.6	1.474	1.636	37.4	20.5	80 W	18* 73*	4 9	1 29.42	+11 12.9	1.452	0.467	12.5	18.6	6 E	— —
5 21	22 40.05	-13 4.6	1.391	1.625	38.2	20.4	84 W	20* 75*	4 11	1 43.64	+12 45.1	1.446	0.472	16.3	18.7	8 E	1* —
5 31	23 3.83	-11 34.0	1.312	1.618	38.8	20.3	87 W	22* 75*	4 13	1 57.96	+14 13.4	1.441	0.480	19.9	18.9	9 E	3* —
6 10	23 26.55	-10 8.3	1.237	1.614	39.0	20.2	91 W	25* 74	4 15	2 12.35	+15 37.0	1.436	0.491	23.3	19.0	11 E	5* —
6 20	23 47.99	-8 50.7	1.165	1.613	38.9	20.0	95 W	28* 73	4 17	2 26.80	+16 55.7	1.431	0.505	26.4	19.2	13 E	6* 1*
6 30	0 7.84	-7 44.9	1.096	1.615	38.4	19.9	100 W	31* 72	4 19	2 41.27	+18 9.0	1.427	0.520	29.1	19.3	15 E	8* 2*
7 10	0 25.78	-6 54.0	1.032	1.620	37.4	19.7	105 W	35* 71	4 21	2 55.73	+19 16.6	1.423	0.537	31.5	19.5	16 E	9* 4*
7 20	0 41.38	-6 20.7	0.971	1.629	35.8	19.6	110 W	37* 70	4 26	3 31.72	+21 39.9	1.419	0.586	36.1	19.8	20 E	13* 6*
7 30	0 54.09	-6 7.5	0.914	1.641	33.6	19.4	116 W	39* 70	5 1	4 7.13	+23 26.1	1.422	0.641	39.0	20.1	24 E	15* 9*
8 9	1 3.41	-6 15.2	0.864	1.656	30.7	19.2	124 W	39 70	5 6	4 41.55	+24 36.5	1.433	0.698	40.4	20.3	27 E	17* 12*
8 19	1 8.80	-6 43.3	0.821	1.674	26.9	19.0	132 W	38 71	5 11	5 14.60	+25 14.2	1.452	0.756	40.9	20.5	29 E	19* 15*
8 24	1 9.88	-7 4.0	0.803	1.684	24.7	18.9	136 W	38 71	5 16	5 46.00	+25 23.2	1.479	0.813	40.6	20.7	32 E	20* 17*
8 29	1 9.87	-7 28.1	0.788	1.694	22.2	18.8	141 W	38 71	5 21	6 15.53	+25 8.2	1.512	0.869	39.9	20.9	33 E	20* 19*
9 3	1 8.80	-7 54.6	0.777	1.706	19.7	18.7	145 W	37 72	5 26	6 43.13	+24 33.7	1.551	0.924	38.8	21.0	35 E	20* 21*
9 8	1 6.71	-8 22.2	0.769	1.717	17.0	18.6	150 W	37 72	5 31	7 8.78	+23 44.0	1.595	0.977	37.6	21.2	36 E	20* 23*
9 13	1 3.70	-8 49.5	0.765	1.729	14.3	18.5	155 W	36 73	6 5	7 32.57	+22 42.9	1.643	1.028	36.2	21.3	37 E	19* 24*
9 18	0 59.92	-9 14.9	0.765	1.742	11.7	18.4	159 W	36 73	6 10	7 54.64	+21 33.5	1.694	1.077	34.7	21.4	37 E	18* 25*
9 23	0 55.56	-9 36.8	0.770	1.755	9.5	18.4	163 W	35 74	330809 2008 VK₁₄								
9 28	0 50.87	-9 53.7	0.781	1.769	8.1	18.4	166 W	35 74	2 1	19 38.40	-23 37.8	1.825	0.949	19.7	21.4	19 W	1* 13*
10 3	0 46.08	-10 4.5	0.796	1.783	7.9	18.4	166 W	35 74	2 6	20 3.44	-22 10.5	1.798	0.913	19.6	21.3	18 W	1* 12*
10 8	0 41.43	-10 8.3	0.817	1.797	9.0	18.5	164 E	35 74	2 11	20 28.69	-20 25.7	1.775	0.880	19.1	21.1	17 W	— 11*
10 18	0 33.34	-9 54.2	0.873	1.827	13.0	18.9	156 E	35 74	2 16	20 54.03	-18 24.1	1.756	0.849	18.4	21.0	16 W	— 10*
10 28	0 27.93	-9 11.8	0.949	1.859	17.3	19.2	146 E	36 73	2 21	21 19.36	-16 6.7	1.743	0.822	17.3	20.9	14 W	— 8*
11 7	0 25.79	-8 5.6	1.041	1.891	21.0	19.6	137 E	37 72	2 26	21 44.59	-13 35.4	1.734	0.799	15.9	20.8	13 W	— 7*
11 12	0 25.96	-7 25.4	1.094	1.907	22.5	19.8	133 E	38 71	3 2	22 9.63	-10 52.6	1.730	0.781	14.1	20.7	11 W	— 5*
11 17	0 26.92	-6 41.3	1.149	1.924	23.8	19.9	128 E	38 71	3 7	22 34.45	-8 1.0	1.731	0.769	12.2	20.6	9 W	— 3*
11 22	0 28.64	-5 53.9	1.208	1.941	25.0	20.1	124 E	39 70	3 12	22 59.00	-5 3.8	1.736	0.763	10.1	20.5	8 W	— 1*
11 27	0 31.06	-5 3.7	1.269	1.958	25.9	20.3	120 E	40 69	3 17	23 23.28	-2 4.1	1.745	0.763	7.9	20.4	6 W	— —
12 7	0 37.76	-3 17.1	1.399	1.992	27.3	20.5	112 E	42 67	3 22	23 47.28	+0 54.7	1.759	0.770	6.0	20.3	5 W	— —
12 17	0 46.58	-1 24.6	1.538	2.027	28.0	20.8	105 E	44 65*	3 27	0 10.98	+3 49.8	1.777	0.783	4.4	20.3	3 W	— —
12 27	0 57.15	+0 31.5	1.682	2.062	28.2	21.0	98 E	46 61*	4 1	0 34.38	+6 38.4	1.798	0.802	3.6	20.3	3 W	— —
1 6	1 9.14	+2 29.0	1.830	2.097	28.0	21.3	91 E	47 56*	4 6	0 57.47	+9 18.3	1.823	0.825	3.6	20.4	3 W	— —
1 16	1 22.28	+4 26.6	1.981	2.132	27.4	21.5	85 E	49 51*	4 11	1 20.24	+11 47.6	1.851	0.853	4.1	20.6	4 E	— —
87024 2000 JS₆₆									4 16	1 42.68	+14 5.2	1.882	0.884	4.8	20.7	4 E	— —
2 1	18 7.33	-22 17.6	1.674	1.110	34.5	21.5	40 W	14* 32*	4 21	2 4.77	+16 10.2	1.915	0.918	5.3	20.9	5 E	— —
2 11	18 49.67	-20 22.8	1.634	1.081	35.8	21.4	40 W	14* 33*	4 26	2 26.49	+18 2.2	1.952	0.954	5.7	21.0	5 E	— —
2 21	19 31.97	-17 44.0</															

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

2020	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°		
425755 2011 CP₄										523808 2007 ML₂₄											
<i>(continuation)</i>										<i>(continuation)</i>											
2	5	21 45.52	-14 45.8	1.073	0.174	55.8	19.6	8 E	1*	1*	10	23	16 59.79	+16 50.7	0.700	0.820	81.4	20.9	55 E	46*	21*
2	6	21 59.67	-14 1.2	1.054	0.205	65.4	20.2	11 E	3*	3*	10	28	17 2.42	+16 54.0	0.680	0.787	84.9	20.9	52 E	45*	17*
2	7	22 12.83	-13 16.3	1.035	0.237	71.6	20.7	13 E	5*	4*	11	2	17 3.38	+16 40.4	0.655	0.752	89.4	20.9	49 E	43*	13*
2	8	22 25.25	-12 30.9	1.017	0.268	75.8	21.0	15 E	6*	6*	11	7	17 2.18	+16 0.8	0.625	0.716	95.1	20.9	46 E	40*	8*
2	9	22 37.12	-11 44.7	1.001	0.299	78.6	21.3	17 E	8*	8*	11	12	16 58.26	+14 40.9	0.591	0.678	102.2	21.1	42 E	36*	3*
											11	17	16 51.03	+12 20.5	0.556	0.641	111.2	21.3	37 E	31*	—
513181 2005 BS₂₇										58070 1034 T-2											
2	1	20 54.74	-19 23.1	1.796	0.812	2.4	21.5	2 W	—	—	2	1	21 26.56	-11 42.3	3.454	2.487	3.8	21.4	10 E	3*	—
2	2	21 17.93	-16 41.5	1.768	0.782	1.2	21.3	1 E	—	—	2	11	21 44.28	-10 23.4	3.438	2.456	1.8	21.3	5 E	—	—
2	11	21 41.14	-13 45.0	1.742	0.756	2.0	21.2	2 E	—	—	2	21	22 2.15	-8 57.8	3.409	2.423	1.5	21.2	4 W	—	—
2	16	22 4.40	-10 35.1	1.717	0.732	4.2	21.3	3 E	—	—	3	2	22 20.14	-7 26.1	3.368	2.390	3.3	21.3	8 W	—	1*
2	21	22 27.77	-7 14.1	1.693	0.713	6.9	21.4	5 E	—	—	3	12	22 38.25	-5 49.2	3.315	2.357	5.4	21.3	13 W	1*	6*
2	26	22 51.32	-3 44.6	1.671	0.699	9.9	21.3	7 E	1*	—	3	22	22 56.48	-4 7.8	3.251	2.323	7.6	21.3	18 W	3*	12*
3	2	23 15.14	-0 10.0	1.650	0.690	13.1	21.4	9 E	3*	—	4	1	23 14.83	-2 22.6	3.176	2.289	9.8	21.3	23 W	4*	17*
											4	11	23 33.32	-0 34.7	3.092	2.254	11.9	21.3	28 W	6*	21*
											4	21	23 52.00	+1 15.2	3.000	2.219	14.1	21.3	32 W	8*	26*
											5	1	0 10.88	+3 5.9	2.900	2.183	16.2	21.3	37 W	10*	30*
											5	11	0 30.00	+4 56.3	2.794	2.148	18.2	21.2	42 W	12*	35*
											5	21	0 49.40	+6 45.6	2.683	2.112	20.2	21.2	46 W	15*	38*
											5	31	1 9.12	+8 32.2	2.568	2.077	22.1	21.1	51 W	18*	41*
											6	10	1 29.19	+10 15.1	2.449	2.042	24.0	21.0	55 W	22*	44*
											6	20	1 49.64	+11 52.8	2.328	2.007	25.8	20.9	59 W	26*	46*
											6	30	2 10.46	+13 23.7	2.205	1.972	27.5	20.8	63 W	31*	47*
											7	10	2 31.66	+14 46.4	2.081	1.938	29.0	20.7	68 W	36*	47*
											7	20	2 53.21	+15 59.3	1.958	1.905	30.5	20.6	72 W	42*	47*
											8	9	3 15.01	+17 0.5	1.836	1.873	31.8	20.4	76 W	47*	46*
											8	19	3 36.98	+17 48.5	1.716	1.842	32.9	20.3	80 W	52*	46*
											8	29	3 58.95	+18 21.8	1.598	1.812	33.8	20.1	85 W	57*	46*
											9	8	4 41.93	+18 39.2	1.372	1.758	34.9	19.8	94 W	63*	45
											9	18	5 2.33	+18 21.7	1.265	1.734	34.9	19.5	99 W	63*	46
											9	28	5 21.43	+17 46.8	1.164	1.712	34.6	19.3	104 W	63	46
											10	8	5 38.78	+16 55.3	1.068	1.693	33.7	19.1	110 W	62	47
											10	18	5 53.82	+15 49.1	0.979	1.676	32.3	18.8	116 W	61	48
											10	28	6 5.91	+14 31.1	0.898	1.662	30.2	18.6	123 W	60	49
											11	7	6 14.50	+13 6.1	0.827	1.651	27.2	18.3	130 W	58	51
											11	12	6 17.31	+12 22.6	0.795	1.647	25.4	18.2	134 W	57	52
											11	22	6 19.05	+11 39.8	0.766	1.643	23.4	18.0	139 W	57	52
											11	27	6 19.72	+10 58.8	0.740	1.641	21.2	17.9	143 W	56	53
											12	2	6 18.00	+9 46.4	0.700	1.638	16.4	17.6	152 W	55	54
											12	7	6 15.77	+9 17.2	0.687	1.638	13.9	17.4	157 W	54	55
											12	12	6 12.80	+8 54.2	0.677	1.639	11.6	17.3	161 W	54	55
											12	17	6 9.32	+8 38.3	0.672	1.640	9.7	17.2	164 W	54	55
											12	22	6 5.56	+8 29.9	0.672	1.642	8.9	17.2	165 W	53	56
											12	27	6 1.82	+8 29.4	0.677	1.646	9.3	17.3	164 E	53	56
											1	1	5 58.33	+8 36.4	0.687	1.650	10.8	17.4	162 E	54	55
											1	6	5 55.33	+8 50.5	0.701	1.654	12.9	17.5	158 E	54	55
											1	11	5 53.01	+9 10.9	0.720	1.660	15.3	17.6	154 E	54	55
											1	16	5 51.54	+9 36.6	0.744	1.666	17.7	17.8	149 E	55	54
											482039 2009 WH₇₈										
											2	1	21 39.50	-15 55.5	2.652	1.695	6.2	21.4	11 E	2*	3*
											2	11	22 6.14	-13 28.0	2.654	1.680	4.4	21.3	8 E	—	—
											2	21	22 32.50	-10 49.7	2.653	1.669	2.7	21.2	4 E	—	—
											3	2	22 58.57	-8 2.8	2.651	1.661	1.1	21.1	2 E	—	—
											3	12	23 24.38	-5 10.0	2.648	1.656	1.3	21.1	2 W	—	—
											3	22	23 49.99	-2 13.8	2.644	1.654	2.9	21.2	5 W	—	—
											4	1	0 15.44	+0 43.2	2.640	1.655	4.6	21.3	8 W	—	2*
											4	11	0 40.78	+3 38.2	2.634	1.659	6.3	21.4	11 W	—	5*
											4	21	1 6.07	+6 29.0	2.628	1.666	8.0	21.5	13 W	—	7*
											436763 2012 FN₅₂										
											2	1	22 0.91	-24 46.5	2.315	1.403	11.9	21.3	17 E	—	11*
											2	11	22 30.40	-22 15.3	2.223	1.298	11.6	21.0	15 E	—	9*
											2	21	23 1.74	-19 11.9	2.125	1.191	11.7	20.7	14 E	—	8*
											3	2	23 35.18	-15 30.7	2.021	1.082	12.3	20.4	13 E	—	7*
											3	7	23 52.76	-13 24.2	1.969	1.027	12.7	20.3	13 E	—	7*
											3	12	0 10.99	-11 6.0	1.916	0.974	13.2	20.1	13 E	—	7*
											3	17	0 29.92	-8 35.7	1.864	0.921	13.9	20.0	13 E	—	7*
											3	22	0 49.60	-5 52.7	1.814	0.870	14.6	19.8	13 E	—	7*
											4	1	1 31.48	+0 11.5	1.717	0.777	16.9	19.5	13 E	—	7*
											4	11	2 17.17	+7 1.2	1.628	0.705	20.9	19.3	15 E	3*	8*
											4	21	3 7.26	+14 18.1	1.551	0.666	27.1	19.3	18 E	8*	8*
											4	26	3 34.13	+17 56.0	1.518	0.663	30.7	19.3	20 E	10*	9*
											5	1	4 2.29	+21 25.9	1.489	0.670	34.2	19.4	22 E	13*	9*
											5	6	4 31.76	+24 41.1	1.465	0.688	37.4	19.5	25 E	16*	10*
											5	11	5 2.50	+27 35.3	1.447	0.716	40.1	19.7	27 E	18*	11*

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
436763 2012 FN₅₂										220038 2002 RW₄₀									
<i>(continuation)</i>										<i>(continuation)</i>									
5 16	5 34.36	+30 2.8	1.436	0.751	42.0	19.8	30 E	21*	12*	4 11	1 42.32	+10 59.1	2.644	1.652	3.9	21.1	6 E	—	—
5 21	6 7.05	+31 58.9	1.433	0.793	43.2	19.9	32 E	23*	13*	4 21	2 8.83	+13 29.6	2.662	1.660	2.2	21.0	4 E	—	—
5 26	6 40.13	+33 21.0	1.437	0.839	43.7	20.1	35 E	25*	14*	5 1	2 35.63	+15 48.4	2.679	1.672	0.5	20.9	1 E	—	—
5 31	7 13.05	+34 8.1	1.450	0.888	43.7	20.2	37 E	27*	16*	5 11	3 2.69	+17 53.5	2.695	1.686	1.4	21.0	2 W	—	—
6 5	7 45.21	+34 21.6	1.470	0.940	43.2	20.4	39 E	29*	17*	5 21	3 29.99	+19 43.2	2.708	1.703	3.1	21.1	5 W	—	—
6 10	8 16.11	+34 4.5	1.497	0.993	42.4	20.5	41 E	30*	19*	5 31	3 57.43	+21 16.2	2.720	1.722	4.8	21.3	8 W	—	2*
6 15	8 45.34	+33 21.1	1.532	1.047	41.3	20.6	43 E	30*	21*	6 10	4 24.89	+22 31.5	2.728	1.743	6.5	21.4	11 W	—	4*
6 20	9 12.67	+32 16.4	1.573	1.102	40.0	20.8	44 E	31*	23*	6 20	4 52.25	+23 28.5	2.733	1.767	8.2	21.5	14 W	—	7*
6 25	9 38.03	+30 55.2	1.619	1.156	38.6	20.9	45 E	31*	24*	474263 2001 TO₄₆									
6 30	10 1.42	+29 21.9	1.671	1.210	37.2	21.0	46 E	31*	26*	2 1	23 3.84	-16 59.3	2.812	2.029	14.4	21.5	31 E	14*	22*
7 5	10 22.98	+27 40.5	1.727	1.264	35.7	21.2	46 E	30*	27*	2 11	23 24.74	-15 23.1	2.820	1.986	12.8	21.4	26 E	11*	18*
7 10	10 42.84	+25 54.1	1.788	1.317	34.2	21.3	47 E	29*	28*	2 21	23 46.27	-13 39.2	2.818	1.943	11.3	21.3	23 E	7*	15*
7 15	11 1.20	+24 5.1	1.851	1.370	32.7	21.4	47 E	29*	29*	3 2	0 8.40	-11 48.6	2.808	1.902	10.0	21.2	19 E	4*	13*
491842 2013 AB₅₃										3 12	0 31.15	-9 52.5	2.790	1.861	8.8	21.1	17 E	—	11*
2 1	22 15.38	-10 57.5	2.266	1.387	14.4	21.5	20 E	12*	8*	3 22	0 54.55	-7 52.1	2.766	1.820	8.1	21.0	15 E	—	9*
2 11	22 46.59	-8 21.1	2.243	1.344	13.5	21.4	18 E	10*	7*	4 1	1 18.62	-5 48.7	2.736	1.782	7.7	20.9	14 E	—	7*
2 21	23 18.53	-5 29.0	2.223	1.308	12.6	21.3	17 E	9*	6*	4 11	1 43.40	-3 44.1	2.703	1.745	7.7	20.8	14 E	—	5*
3 2	23 51.20	-2 24.9	2.206	1.278	11.9	21.2	15 E	8*	5*	4 21	2 8.91	-1 39.9	2.668	1.709	8.1	20.8	14 E	—	3*
3 12	0 24.55	+0 46.7	2.195	1.257	11.4	21.1	14 E	7*	5*	5 1	2 35.19	+0 21.9	2.631	1.676	8.8	20.7	15 E	—	1*
3 22	0 58.58	+4 0.4	2.191	1.245	10.9	21.1	14 E	6*	4*	5 11	3 2.23	+2 19.1	2.595	1.646	9.6	20.7	16 W	—	3*
4 1	1 33.23	+7 10.0	2.194	1.241	10.4	21.0	13 E	5*	4*	5 21	3 30.02	+4 9.6	2.560	1.618	10.5	20.7	17 W	—	6*
4 11	2 8.42	+10 9.3	2.207	1.247	9.9	21.0	12 E	4*	4*	5 31	3 58.51	+5 51.1	2.527	1.594	11.3	20.6	18 W	—	9*
4 21	2 44.00	+12 52.3	2.229	1.262	9.4	21.1	12 E	3*	4*	6 10	4 27.62	+7 21.4	2.496	1.573	12.2	20.6	19 W	—	11*
5 1	3 19.78	+15 14.1	2.259	1.286	8.7	21.1	11 E	2*	4*	6 20	4 57.24	+8 38.7	2.469	1.556	13.1	20.6	20 W	—	13*
5 11	3 55.49	+17 10.6	2.298	1.317	7.9	21.2	10 E	—	4*	6 30	5 27.22	+9 41.3	2.445	1.543	13.9	20.6	21 W	—	15*
5 21	4 30.84	+18 39.7	2.344	1.355	6.9	21.2	9 E	—	3*	7 10	5 57.38	+10 28.3	2.424	1.535	14.7	20.6	23 W	—	17*
5 31	5 5.52	+19 40.6	2.396	1.399	5.8	21.3	8 E	—	2*	7 20	6 27.55	+10 59.1	2.405	1.531	15.5	20.6	24 W	1*	18*
6 10	5 39.22	+20 14.1	2.452	1.448	4.6	21.4	7 E	—	1*	7 30	6 57.54	+11 14.0	2.387	1.531	16.4	20.6	25 W	5*	19*
6 20	6 11.71	+20 22.0	2.511	1.501	3.3	21.4	5 E	—	—	8 9	7 27.17	+11 13.6	2.371	1.537	17.3	20.6	27 W	9*	19*
6 30	6 42.81	+20 7.1	2.570	1.557	2.2	21.5	3 E	—	—	8 19	7 56.30	+10 59.4	2.355	1.546	18.4	20.7	29 W	13*	20*
344161 2000 YK₁₈										8 29	8 24.78	+10 33.0	2.337	1.560	19.5	20.7	31 W	17*	21*
2 1	22 19.99	-5 56.3	3.276	2.407	9.5	21.4	24 E	16*	7*	9 8	8 52.53	+9 56.7	2.317	1.578	20.6	20.7	33 W	21*	21*
2 11	22 37.43	-4 26.0	3.285	2.368	7.5	21.3	18 E	12*	3*	9 18	9 19.48	+9 12.7	2.295	1.600	21.8	20.8	36 W	24*	22*
2 21	22 55.29	-2 49.0	3.281	2.328	5.5	21.2	13 E	7*	—	9 28	9 45.57	+8 23.7	2.268	1.625	23.1	20.8	40 W	28*	23*
3 2	23 13.54	-1 6.2	3.266	2.289	3.5	21.0	8 E	2*	—	10 8	10 10.78	+7 32.3	2.237	1.654	24.4	20.9	43 W	32*	24*
3 12	23 32.19	+0 41.4	3.239	2.249	1.8	20.8	4 E	—	—	10 18	10 35.09	+6 41.2	2.200	1.685	25.6	20.9	47 W	36*	25*
3 22	23 51.25	+2 32.9	3.202	2.209	1.8	20.8	4 W	—	—	10 28	10 58.46	+5 53.1	2.157	1.719	26.8	21.0	51 W	39*	27*
4 1	0 10.76	+4 27.3	3.155	2.170	3.6	20.8	8 W	—	1*	11 7	11 20.87	+5 10.9	2.109	1.754	27.8	21.0	56 W	42*	30*
4 11	0 30.74	+6 23.4	3.100	2.130	5.6	20.9	12 W	1*	6*	11 17	11 42.27	+4 37.4	2.054	1.792	28.8	21.0	61 W	45*	33*
4 21	0 51.26	+8 20.0	3.036	2.090	7.7	20.9	16 W	2*	10*	11 27	12 2.57	+4 15.4	1.994	1.831	29.5	21.0	66 W	47*	36*
5 1	1 12.37	+10 15.7	2.966	2.051	9.8	20.9	20 W	4*	14*	12 7	12 21.67	+4 7.9	1.928	1.872	30.0	21.0	72 W	49*	40*
5 11	1 34.11	+12 9.0	2.890	2.013	11.9	20.8	24 W	6*	17*	12 17	12 39.40	+4 17.7	1.858	1.913	30.2	21.0	78 W	49	45*
5 21	1 56.56	+13 58.2	2.809	1.975	14.0	20.8	28 W	8*	21*	12 27	12 55.55	+4 47.9	1.785	1.955	30.0	20.9	85 W	50	49*
5 31	2 19.76	+15 41.6	2.723	1.938	16.1	20.8	32 W	10*	24*	1 6	13 9.87	+5 41.0	1.710	1.998	29.5	20.9	92 W	51	53*
6 10	2 43.74	+17 17.2	2.636	1.903	18.1	20.7	36 W	13*	26*	1 16	13 22.05	+6 59.2	1.637	2.040	28.4	20.8	99 W	52	55*
6 20	3 8.54	+18 43.0	2.545	1.868	20.0	20.7	39 W	17*	28*	285625 2000 RD₃₄									
6 30	3 34.14	+19 56.7	2.454	1.836	21.9	20.6	42 W	21*	30*	2 1	23 25.31	+1 19.9	2.074	1.487	26.0	21.4	41 E	32*	19*
7 10	4 0.49	+20 56.3	2.362	1.805	23.8	20.6	46 W	25*	31*	2 11	23 51.12	+4 7.5	2.085	1.448	25.1	21.4	38 E	30*	16*
7 20	4 27.52	+21 39.7	2.271	1.776	25.5	20.5	49 W	29*	32*	2 21	0 18.15	+7 0.7	2.091	1.411	24.1	21.3	36 E	28*	13*
7 30	4 55.07	+22 4.9	2.180	1.749	27.2	20.4	52 W	34*	33*	3 2	0 46.51	+9 56.5	2.095	1.378	23.2	21.2	33 E	26*	12*
8 9	5 22.96	+22 10.5	2.090	1.725	28.8	20.4	55 W	38*	33*	3 12	1 16.30	+12 50.8	2.098	1.349	22.4	21.1	31 E	24*	10*
8 19	5 50.99	+21 55.5	2.002	1.704	30.4	20.3	58 W	42*	34*	3 22	1 47.62	+15 39.0	2.100	1.324	21.6	21.1	29 E	22*	9*
8 29	6 18.88	+21 19.5	1.916	1.686	31.8	20.2	61 W	46*	35*	4 1	2 20.54	+18 15.7	2.104	1.305	20.9	21.0	28 E	21*	9*
9 8	6 46.37	+20 22.8	1.832	1.671	33.0	20.1	65 W	49*	36*	4 11	2 55.03	+20 35.1	2.110	1.291	20.1	21.0	26 E	19*	9*
9 18	7 13.22	+19 6.6	1.750	1.660	34.2	20.0	68 W	52*	37*	4 21	3 30.97	+22 31.5	2.120	1.283	19.4	21.0	25 E	18*	9*
9 28	7 39.13	+17 32.6	1.669	1.652	35.1	19.9	71 W	55*	39*	5 1	4 8.10	+23 59.6	2.135	1.281	18.6	20.9	24 E	16*	9*
10 8	8 3.90	+15 43.3	1.591	1.648	35.9	19.9	75 W	56*	41*	5 11	4 46.00	+24 55.2	2.154	1.285	17.8	20.9	23 E	14*	10*
10 18	8 27.28	+13 41.7	1.514	1.647	36.4	19.8	79 W	57*	43*	5 21	5 24.17	+25 16.0	2.179	1.296	16.9	21.0	22 E	12*	10*
10 28	8 49.05	+11 31.2	1.439	1.651	36.7	19.7	83 W	56*	46*	5 31	6 2.06	+25 1.6	2.210	1.312	15.9	21.0	21 E	10*	10*
11 7	9 9.00	+9 15.7	1.366	1.658	36.7	19.6	88 W	54	50*	6 10	6 39.11	+24 13.4	2.246	1.334	14.8	21.0	20 E	7*	10*
11 17	9 26.88	+6 59.0	1.294	1.668	36.3	19.4	93 W	52	53*	6 20	7 14.91	+22 54.9	2.287	1.361	13.6	21.1	18 E	5*	10*
11 27	9 42.37	+4 45.8	1.223	1.682	35.4	19.3	99 W	50	57*	6 30	7 49.17	+21 10.2	2.333	1.392	12.3	21.1	17 E	3*	10*
12 7	9 55.18	+2 40.5	1.156	1.700	34.1	19.2	105 W	48	61*	7 10	8 21.72	+19 4.4	2.382	1.427	10.8	21.1	15 E	1*	9*
12 17	10 4.89	+0 48.4	1.091	1.720	32.1	19.0	112 W	46	63	7 20	8 52.								

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

2020	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45° - 26°	2020	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45° - 26°
391508 2007 RV₁₇ (continuation)									15504 1999 RG₃₃								
3 22	2 48.33	+12 40.2	0.846	0.676	81.0	20.7	42 E	31* 23*	2 11	10 39.34	+45 15.5	12.805	13.637	2.3	23.6	146 W	90 19
3 27	3 14.42	+15 59.9	0.777	0.696	85.1	20.7	44 E	33* 24*	2 21	10 35.78	+45 30.7	12.790	13.613	2.4	23.6	145 W	89 18
4 1	3 43.07	+19 31.1	0.715	0.726	87.8	20.8	47 E	36* 24*	3 2	10 32.12	+45 40.9	12.801	13.588	2.6	23.6	141 E	89 18
4 6	4 15.12	+23 9.1	0.661	0.763	89.0	20.8	50 E	40* 24*	3 12	10 28.53	+45 45.6	12.836	13.564	2.9	23.6	136 E	89 18
4 11	4 51.47	+26 44.2	0.617	0.806	88.5	20.7	54 E	44* 25*	3 22	10 25.15	+45 44.8	12.895	13.539	3.3	23.6	129 E	89 18
4 16	5 32.70	+30 0.2	0.585	0.854	86.3	20.6	58 E	48* 26*	5370 Taranis								
4 21	6 18.61	+32 35.2	0.565	0.905	82.8	20.5	63 E	53* 27*	2 11	10 39.75	- 0 17.4	4.506	5.435	3.8	22.4	158 W	45 64
4 26	7 7.64	+34 8.0	0.560	0.958	78.3	20.5	69 E	58* 28*	2 21	10 33.93	+ 0 24.4	4.466	5.438	2.1	22.3	168 W	45 64
5 1	7 56.98	+34 27.1	0.568	1.012	73.2	20.5	74 E	62* 29*	3 2	10 27.92	+ 1 10.8	4.458	5.440	1.5	22.2	171 E	46 63
5 3	8 16.10	+34 14.5	0.575	1.034	71.2	20.5	76 E	63* 30*	3 12	10 22.09	+ 1 59.5	4.482	5.441	3.0	22.3	163 E	47 62
5 5	8 34.60	+33 51.6	0.584	1.056	69.1	20.5	78 E	64* 30*	3 22	10 16.79	+ 2 47.7	4.538	5.442	4.8	22.5	153 E	48 61
5 7	8 52.34	+33 19.4	0.595	1.079	67.1	20.5	80 E	65* 31	344076 1998 HJ₃								
5 9	9 9.25	+32 39.5	0.608	1.101	65.2	20.5	82 E	66* 31	2 11	10 42.57	- 1 19.5	2.099	3.033	7.3	23.3	157 W	44 65
5 11	9 25.26	+31 53.0	0.622	1.123	63.3	20.6	83 E	66* 32	2 21	10 30.85	- 0 19.2	2.015	2.989	3.9	23.1	168 W	45 64
5 13	9 40.35	+31 1.4	0.638	1.145	61.5	20.6	85 E	67* 33	3 2	10 18.09	+ 0 55.2	1.964	2.944	3.5	22.9	169 E	46 63
5 15	9 54.53	+30 5.8	0.656	1.168	59.7	20.7	86 E	66* 34	3 12	10 5.36	+ 2 17.7	1.946	2.895	7.0	23.1	159 E	47 62
5 17	10 7.83	+29 7.4	0.675	1.190	58.1	20.7	87 E	66* 35	3 22	9 53.77	+ 3 41.0	1.958	2.845	11.1	23.2	147 E	49 60
5 19	10 20.29	+28 7.0	0.696	1.212	56.6	20.8	88 E	66* 36	168791 2000 SQ₄₃								
5 21	10 31.95	+27 5.5	0.718	1.234	55.1	20.8	89 E	65* 37	2 11	10 42.71	+ 5 55.5	2.327	3.277	5.5	23.6	161 W	51 58
5 23	10 42.88	+26 3.5	0.741	1.256	53.7	20.9	90 E	64* 38	2 21	10 33.60	+ 6 57.4	2.270	3.254	1.9	23.3	174 W	52 57
5 25	10 53.12	+25 1.5	0.765	1.278	52.4	21.0	91 E	64* 39	3 2	10 14.85	+ 8 4.0	2.245	3.231	2.2	23.3	173 E	53 56
5 27	11 2.75	+23 59.9	0.790	1.300	51.2	21.1	92 E	63* 40	3 12	10 23.35	+ 9 9.6	2.252	3.206	5.9	23.5	161 E	54 55
5 29	11 11.79	+22 59.1	0.816	1.322	50.0	21.1	91 E	62* 41	3 22	10 5.92	+10 9.1	2.289	3.180	9.5	23.6	148 E	55 54
5 31	11 20.32	+21 59.3	0.842	1.343	49.0	21.2	92 E	61* 42	456938 2007 YV₅₆								
6 5	11 39.65	+19 35.0	0.913	1.397	46.5	21.4	93 E	58* 44	2 11	10 43.84	+18 13.1	0.881	1.847	8.9	22.7	163 W	63 46
6 10	11 56.62	+17 19.2	0.987	1.450	44.4	21.6	93 E	55* 47	2 16	10 33.11	+19 25.4	0.903	1.882	5.9	22.6	169 W	64 45
6 15	12 11.76	+15 12.0	1.066	1.502	42.5	21.8	92 E	53* 49	2 21	10 22.55	+20 28.7	0.933	1.915	5.0	22.7	170 W	65 44
6 20	12 25.46	+13 13.1	1.147	1.553	40.8	22.0	92 E	50* 51	2 26	10 12.54	+21 21.7	0.971	1.948	6.7	22.9	167 E	66 43
496324 2013 KU₁									3 2	10 3.38	+22 3.7	1.015	1.979	9.3	23.1	161 E	67 42
2 11	10 23.95	- 4 21.0	2.851	3.783	5.7	22.4	158 W	41 68	3 7	9 55.31	+22 35.0	1.066	2.009	12.1	23.4	155 E	68 41
2 21	10 16.16	- 3 40.5	2.831	3.796	3.8	22.3	165 W	41 68	3 12	9 48.43	+22 56.5	1.123	2.039	14.7	23.6	149 E	68 41
3 2	10 8.34	- 2 50.6	2.842	3.809	3.8	22.3	165 E	42 67	491234 2011 UW₁₉₂								
3 12	10 1.11	- 1 55.3	2.884	3.821	5.7	22.5	157 E	43 66	2 11	10 44.35	+ 8 18.6	1.997	2.951	5.9	22.7	162 W	53 56
3 22	9 55.02	- 0 58.9	2.955	3.832	8.1	22.6	147 E	44 65	2 16	10 39.97	+ 8 51.4	1.972	2.946	3.9	22.2	168 W	54 55
523663 2012 OZ									2 21	10 35.30	+ 9 25.7	1.954	2.940	1.8	22.0	175 W	54 55
2 11	10 29.15	+24 13.0	1.895	2.856	5.5	24.2	164 W	69 40	2 26	10 30.47	+10 0.5	1.944	2.934	0.4	21.9	179 E	55 54
2 16	10 23.85	+25 11.4	1.897	2.864	4.9	24.2	166 W	70 39	3 2	10 25.61	+10 35.1	1.942	2.927	2.5	22.0	173 E	56 53
2 21	10 18.38	+26 5.8	1.907	2.872	5.2	24.2	165 W	71 38	3 7	10 20.84	+11 8.6	1.947	2.921	4.6	22.2	166 E	56 53
2 26	10 12.89	+26 55.3	1.924	2.880	6.2	24.3	162 E	72 37	3 12	10 16.29	+11 40.3	1.960	2.914	6.7	22.3	160 E	57 52
3 2	10 7.53	+27 39.1	1.949	2.888	7.7	24.4	157 E	73 36	3 17	10 12.05	+12 9.6	1.980	2.907	8.6	22.4	154 E	57 52
3 7	10 2.45	+28 16.5	1.982	2.895	9.3	24.5	152 E	73 36	3 22	10 8.24	+12 35.9	2.006	2.900	10.5	22.5	148 E	58 51
3 12	9 57.76	+28 47.5	2.020	2.902	10.9	24.6	147 E	74 35	523665 2012 RF₁₅								
469441 2002 GP₁₂₆									2 11	10 45.44	+15 12.7	1.927	2.885	5.7	24.1	163 W	60 49
2 11	10 31.18	+15 47.8	1.879	2.848	4.7	22.2	166 W	61 48	2 16	10 40.19	+15 43.9	1.908	2.883	3.9	24.0	169 W	61 48
2 16	10 26.33	+16 12.7	1.843	2.824	2.9	22.1	172 W	61 48	2 21	10 34.64	+16 14.4	1.896	2.880	2.5	23.9	173 W	61 48
2 21	10 21.15	+16 37.2	1.815	2.800	2.1	22.0	174 W	62 47	2 26	10 28.94	+16 43.4	1.893	2.877	2.6	23.9	172 E	62 47
2 26	10 15.78	+17 0.5	1.794	2.777	3.2	22.0	171 E	62 47	3 2	10 23.24	+17 10.1	1.897	2.873	4.2	24.0	168 E	62 47
3 2	10 10.35	+17 21.9	1.781	2.752	5.1	22.1	166 E	62 47	3 7	10 17.67	+17 33.8	1.909	2.869	6.1	24.1	162 E	63 46
3 7	10 5.03	+17 40.5	1.775	2.728	7.2	22.2	160 E	63 46	3 12	10 12.38	+17 53.8	1.928	2.865	8.0	24.2	156 E	63 46
3 12	9 59.95	+17 55.8	1.776	2.703	9.4	22.2	154 E	63 46	494667 2001 WX₁								
3 17	9 55.25	+18 7.5	1.784	2.678	11.4	22.3	148 E	63 46	2 11	10 49.31	-12 4.8	5.098	5.957	5.1	23.6	148 W	33 76
3 22	9 51.03	+18 15.3	1.797	2.653	13.4	22.4	142 E	63 46	2 21	10 43.73	-11 54.0	5.043	5.961	3.9	23.5	156 W	33 76
523593 2001 TZ₁									3 2	10 37.89	-11 34.5	5.019	5.964	3.1	23.5	161 E	33 76
2 11	10 31.77	-25 22.7	2.073	2.883	13.3	23.7	138 W	20 89	3 12	10 32.14	-11 8.0	5.025	5.967	3.3	23.5	160 E	34 75
2 16	10 26.57	-24 42.4	2.044	2.886	12.2	23.6	142 W	20 89	3 22	10 26.78	-10 36.4	5.061	5.969	4.3	23.6	153 E	34 75
2 21	10 21.18	-23 52.9	2.021	2.888	11.3	23.5	145 W	21 88	306421 1998 QB₁								
2 26	10 15.73	-22 54.6	2.005	2.890	10.5	23.5	148 E	22 87	2 11	10 53.08	+ 9 47.5	2.135	3.082	6.2	22.9	160 W	55 54
3 2	10 10.37	-21 48.2	1.995	2.892	10.1	23.5	149 E	23 86	2 16	10 48.51	+10 15.6	2.110	3.079	4.3	22.7	167 W	55 54
3 7	10 5.22	-20 34.9	1.994	2.893	10.0	23.5	150 E	24 85	2 21	10 43.64	+10 44.7	2.093	3.076	2.3	22.6	173 W	56 53
3 12	10 0.41	-19 16.0	1.999	2.894	10.3	23.5	149 E	26 83	2 26	10 38.58	+11 13.9	2.083	3.072	0.8	22.5	177 W	56 53
390536 1999 KK₁									3 2	10 33.47	+11 42.4	2.082	3.069	2.1	22.6	174 E	57 52
2 11	10 32.65	+20 4.6	1.945	2.910	5.0	22.4	165 W	65 44	3 7	10 28.41	+12 9.6	2.088	3.064	4.0	22.7	167 E	57 52
2 16	10 27.28	+20 42.8	1.923	2.898	3.8	22.3	169 W	66 43	3 12	10 23.55	+12 34.9	2.102	3.060	6.0	22.8	161 E	