

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°
468441 2002 ON₂₄										481765 2008 ON₃ (continuation)									
1 2	20 15.55	-16 21.9	2.520	1.649	12.9	21.4	22 E	12*	9*	3 12	23 41.71	+0 14.1	2.513	1.525	3.1	20.6	5 E	—	—
1 12	20 41.17	-13 45.6	2.508	1.607	11.3	21.3	19 E	11*	5*	3 22	0 10.34	+2 55.2	2.510	1.515	1.7	20.5	3 E	—	—
1 22	21 7.10	-10 52.6	2.492	1.568	9.8	21.2	16 E	9*	1*	4 1	0 39.21	+5 35.0	2.508	1.510	0.8	20.4	1 W	—	—
2 1	21 33.36	-7 43.6	2.472	1.531	8.6	21.1	13 E	7*	—	4 11	1 8.31	+8 10.0	2.509	1.509	1.7	20.5	3 W	—	—
2 11	21 59.99	-4 20.0	2.451	1.498	7.7	21.0	12 E	5*	—	4 21	1 37.64	+10 36.9	2.513	1.513	3.1	20.6	5 W	—	—
2 21	22 27.05	-0 44.0	2.429	1.469	7.2	20.9	11 E	3*	—	5 1	2 7.18	+12 52.4	2.519	1.523	4.5	20.7	7 W	—	1*
3 2	22 54.66	+3 1.8	2.409	1.445	7.0	20.8	10 E	2*	—	5 11	2 36.83	+14 53.6	2.526	1.537	5.9	20.8	9 W	—	3*
3 12	23 22.92	+6 53.7	2.391	1.425	7.2	20.8	10 W	2*	—	5 21	3 6.53	+16 38.3	2.535	1.555	7.3	20.9	11 W	—	5*
3 22	23 51.99	+10 47.2	2.378	1.411	7.6	20.8	11 W	4*	—	5 31	3 36.15	+18 4.6	2.544	1.578	8.8	21.0	14 W	—	7*
4 1	0 22.00	+14 37.4	2.369	1.402	8.0	20.8	11 W	5*	—	6 10	4 5.52	+19 11.4	2.553	1.604	10.2	21.1	16 W	1*	10*
4 11	0 53.03	+18 18.6	2.366	1.400	8.4	20.8	12 W	6*	—	6 20	4 34.49	+19 58.3	2.561	1.634	11.7	21.2	19 W	3*	12*
4 21	1 25.17	+21 45.1	2.368	1.403	8.8	20.8	12 W	6*	—	6 30	5 2.88	+20 25.4	2.566	1.667	13.1	21.3	22 W	6*	14*
5 1	1 58.39	+24 51.2	2.377	1.412	9.1	20.8	13 W	7*	—	7 10	5 30.50	+20 33.4	2.569	1.702	14.6	21.4	25 W	9*	16*
5 11	2 32.56	+27 31.8	2.391	1.427	9.4	20.9	13 W	7*	—	231716 1999 BT₂									
5 21	3 7.46	+29 42.7	2.409	1.447	9.6	20.9	14 W	8*	—	1 2	20 37.87	-21 21.5	3.915	3.059	8.0	21.5	26 E	11*	16*
5 31	3 42.73	+31 21.3	2.431	1.472	10.0	21.0	15 W	8*	—	1 12	20 51.38	-19 57.7	3.954	3.041	6.0	21.4	19 E	8*	10*
6 10	4 17.91	+32 26.3	2.455	1.501	10.4	21.1	15 W	9*	—	1 22	21 5.01	-18 30.0	3.976	3.021	4.0	21.3	12 E	3*	4*
6 20	4 52.55	+32 58.4	2.479	1.534	11.0	21.2	17 W	10*	1*	2 1	21 18.70	-16 58.4	3.980	3.001	1.9	21.1	6 E	—	—
6 30	5 26.17	+32 59.5	2.503	1.571	11.7	21.3	18 W	11*	3*	2 11	21 32.37	-15 23.0	3.966	2.980	0.4	21.0	1 W	—	—
7 10	5 58.39	+32 32.6	2.524	1.610	12.7	21.4	20 W	13*	4*	2 21	21 45.95	-13 43.8	3.935	2.958	2.5	21.1	7 W	—	1*
259776 2004 BA₂₇										3 2	21 59.41	-12 1.0	3.887	2.934	4.6	21.2	14 W	—	8*
1 2	20 19.30	-19 50.8	3.350	2.464	8.5	21.5	22 E	10*	12*	3 12	22 12.68	-10 14.8	3.823	2.910	6.8	21.2	20 W	2*	14*
1 12	20 37.89	-19 27.3	3.367	2.436	6.4	21.4	16 E	6*	7*	3 22	22 25.74	-8 25.4	3.743	2.885	8.9	21.3	26 W	5*	20*
1 22	20 56.82	-18 55.1	3.369	2.408	4.2	21.2	10 E	2*	3*	4 1	22 38.53	-6 32.9	3.648	2.859	10.9	21.3	33 W	8*	27*
2 1	21 16.03	-18 14.9	3.358	2.378	2.1	21.1	5 E	—	—	4 11	22 51.00	-4 37.7	3.539	2.832	12.9	21.3	39 W	10*	33*
2 11	21 35.46	-17 27.4	3.333	2.349	1.3	21.0	3 E	—	—	4 21	23 3.12	-2 39.7	3.419	2.804	14.8	21.2	45 W	13*	39*
2 21	21 55.08	-16 33.3	3.296	2.318	3.1	21.0	7 W	—	1*	5 1	23 14.82	-0 39.3	3.288	2.776	16.5	21.2	52 W	17*	44*
3 2	22 14.87	-15 33.6	3.246	2.288	5.3	21.1	12 W	—	6*	5 11	23 26.04	+1 23.6	3.147	2.746	18.1	21.1	58 W	20*	49*
3 12	22 34.81	-14 29.3	3.184	2.256	7.6	21.1	17 W	—	11*	5 21	23 36.70	+3 29.0	2.998	2.715	19.6	21.0	64 W	25*	53*
3 22	22 54.91	-13 21.3	3.113	2.225	9.8	21.1	22 W	—	16*	5 31	23 46.67	+5 36.7	2.843	2.684	20.9	20.9	71 W	30*	55*
4 1	23 15.19	-12 10.9	3.032	2.193	12.1	21.1	27 W	—	21*	6 10	23 55.84	+7 46.8	2.684	2.652	21.9	20.8	77 W	35*	56*
4 11	23 35.67	-10 59.1	2.943	2.160	14.3	21.1	32 W	—	25*	6 20	0 4.03	+9 59.4	2.522	2.619	22.7	20.7	84 W	42*	54
4 21	23 56.37	-9 47.3	2.847	2.128	16.4	21.1	37 W	—	30*	6 30	0 11.01	+12 14.4	2.360	2.585	23.2	20.5	91 W	49*	52
5 1	0 17.33	-8 36.7	2.745	2.095	18.5	21.0	41 W	—	35*	7 10	0 16.53	+14 31.5	2.199	2.550	23.2	20.3	98 W	55*	49
5 11	0 38.58	-7 28.8	2.639	2.063	20.5	21.0	46 W	2*	39*	7 20	0 20.23	+16 50.3	2.043	2.515	22.9	20.1	106 W	61*	47
5 21	1 0.15	-6 24.9	2.529	2.030	22.4	20.9	50 W	3*	44*	7 30	0 21.71	+19 9.4	1.894	2.478	22.1	19.9	113 W	64	45
5 31	1 22.06	-5 26.8	2.418	1.998	24.2	20.9	54 W	6*	48*	8 9	0 20.56	+21 26.6	1.755	2.442	20.8	19.7	121 W	66	43
6 10	1 44.30	-4 35.8	2.306	1.966	26.0	20.8	58 W	8*	52*	8 19	0 16.34	+23 37.9	1.629	2.404	18.9	19.4	130 W	69	40
6 20	2 6.89	-3 53.7	2.194	1.935	27.6	20.7	62 W	12*	55*	8 24	0 12.97	+24 39.4	1.572	2.385	17.9	19.3	134 W	70	39
6 30	2 29.77	-3 22.1	2.083	1.905	29.1	20.6	66 W	15*	58*	8 29	0 8.76	+25 37.0	1.520	2.366	16.7	19.2	138 W	71	38
7 10	2 52.89	-3 2.5	1.975	1.875	30.5	20.5	69 W	19*	60*	9 3	0 3.72	+26 29.5	1.473	2.347	15.6	19.0	141 W	71	38
7 20	3 16.16	-2 56.2	1.869	1.846	31.7	20.3	73 W	24*	62*	9 8	23 57.90	+27 16.0	1.431	2.327	14.5	18.9	145 W	72	37
7 30	3 39.43	-3 4.3	1.766	1.819	32.9	20.2	76 W	28*	64*	9 13	23 51.40	+27 55.3	1.394	2.308	13.5	18.8	148 W	73	36
8 9	4 2.53	-3 27.5	1.668	1.793	33.8	20.1	80 W	31*	65*	9 18	23 44.36	+28 26.4	1.364	2.288	12.8	18.7	150 W	73	36
8 19	4 25.26	-4 6.0	1.574	1.768	34.6	20.0	83 W	34*	67*	9 23	23 36.96	+28 48.5	1.340	2.269	12.5	18.7	151 E	74	35
8 29	4 47.33	-4 59.4	1.483	1.745	35.3	19.8	87 W	36*	68*	9 28	23 29.42	+29 1.4	1.322	2.249	12.7	18.6	151 E	74	35
9 8	5 8.49	-6 6.2	1.397	1.725	35.7	19.7	90 W	37*	70*	10 3	23 21.97	+29 5.4	1.309	2.229	13.3	18.6	149 W	74	35
9 18	5 28.41	-7 24.6	1.314	1.706	36.0	19.5	94 W	37*	71*	10 8	23 14.85	+29 0.8	1.303	2.209	14.3	18.6	147 W	74	35
9 28	5 46.68	-8 51.7	1.235	1.690	36.0	19.4	98 W	36	73	10 13	23 8.27	+28 48.7	1.303	2.189	15.6	18.6	144 E	74	35
10 3	5 55.09	-9 37.1	1.197	1.683	35.9	19.3	100 W	35	74	10 18	23 2.43	+28 30.4	1.308	2.169	17.1	18.7	140 E	74	35
10 8	6 2.95	-10 23.1	1.160	1.676	35.7	19.2	102 W	35	74	10 23	22 57.50	+28 7.4	1.317	2.149	18.7	18.7	136 E	73	36
10 13	6 10.19	-11 9.0	1.123	1.670	35.5	19.1	104 W	34	75	10 28	22 53.57	+27 41.6	1.331	2.129	20.3	18.8	132 E	73	36
10 18	6 16.74	-11 54.0	1.087	1.665	35.1	19.0	106 W	33	76	11 2	22 50.71	+27 14.5	1.349	2.109	21.8	18.8	128 E	72	37
10 23	6 22.55	-12 37.1	1.052	1.660	34.6	18.9	108 W	32	77	11 7	22 48.94	+26 47.5	1.370	2.089	23.3	18.9	124 E	72	37
10 28	6 27.56	-13 17.3	1.018	1.657	34.1	18.8	111 W	32	77	11 12	22 48.27	+26 21.8	1.393	2.069	24.6	18.9	119 E	71	38
11 2	6 31.71	-13 53.3	0.984	1.654	33.4	18.8	114 W	31	78	11 17	22 48.67	+25 58.5	1.419	2.049	25.8	19.0	115 E	71	38
11 7	6 34.94	-14 23.9	0.952	1.651	32.5	18.7	116 W	31	78	11 22	22 50.11	+25 38.5	1.447	2.029	26.9	19.0	111 E	71	38*
11 12	6 37.19	-14 47.8	0.921	1.650	31.5	18.6	119 W	30	79	11 27	22 52.53	+25 22.5	1.476	2.009	27.9	19.1	108 E	70	38*
11 17	6 38.40	-15 3.1	0.892	1.649	30.4	18.4	122 W	30	79	12 7	23 0.10	+25 3.5	1.536	1.969	29.5	19.2	100 E	70	36*
11 22	6 38.57	-15 7.9	0.864	1.649	29.1	18.3	126 W	30	79	12 17	23 10.97	+25 3.2	1.598	1.931	30.6	19.3	94 E	70	33*
11 27	6 37.69	-15 0.5	0.838	1.649	27.6	18.2	129 W	30	79	12 27	23 24.76	+25 21.5	1.658	1.893	31.3	19.3	88 E	70	29*
12 2	6 35.81	-14 38.9	0.815	1.651	26.0	18.1	133 W	30	79	1 6	23 41.14	+25 57.0	1.716	1.856	31.7	19.4	82 E	70*	25*
12 7	6 33.00	-14 1.5	0.795	1.653	24.4	18.0	136 W	31	78	1 16	23 59.92	+26 47.2	1.						

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°
220169 2002 TY₂₈₃										440212 2004 OB									
<i>(continuation)</i>										<i>(continuation)</i>									
5 31	3 22.77	+21 4.6	2.656	1.705	9.5	21.3	16 W	4*	9*	2 11	0 8.40	-0 55.3	1.472	0.959	41.6	21.2	40 E	29*	22*
6 10	3 49.77	+22 49.6	2.653	1.728	11.2	21.4	19 W	6*	11*	2 21	0 51.19	+3 18.5	1.457	0.972	42.5	21.2	42 E	31*	22*
6 20	4 16.79	+24 17.1	2.648	1.752	12.8	21.5	22 W	9*	13*	3 2	1 34.72	+7 27.4	1.455	0.997	42.8	21.3	43 E	32*	23*
4197 Morpheus										477491 2010 CD₁₉									
1 2	21 4.41	-24 55.8	4.729	3.924	7.5	21.5	31 E	11*	23*	1 2	21 39.46	-1 22.8	1.847	1.381	31.5	21.4	47 E	36*	22*
1 12	21 14.04	-24 2.6	4.782	3.903	5.9	21.4	24 E	7*	16*	1 12	22 3.39	+1 20.8	1.817	1.301	31.6	21.2	44 E	35*	17*
1 22	21 24.00	-23 8.0	4.812	3.880	4.2	21.3	17 E	2*	10*	1 22	22 29.62	+4 22.8	1.776	1.224	32.1	21.0	41 E	34*	13*
2 1	21 34.19	-22 12.2	4.821	3.856	2.6	21.2	10 E	—	4*	2 1	22 58.50	+7 42.0	1.727	1.152	32.9	20.9	39 E	33*	10*
2 11	21 44.50	-21 15.7	4.808	3.831	1.9	21.2	7 E	—	—	2 21	23 30.49	+11 14.8	1.672	1.087	34.3	20.7	38 E	32*	8*
2 21	21 54.84	-20 18.8	4.772	3.804	2.7	21.2	10 W	—	2*	2 11	0 6.14	+14 54.3	1.613	1.031	36.1	20.6	38 E	32*	7*
3 2	22 5.13	-19 22.0	4.714	3.775	4.3	21.2	17 W	—	10*	3 2	0 46.06	+18 29.4	1.556	0.988	38.2	20.5	38 E	32*	7*
3 12	22 15.30	-18 25.8	4.635	3.745	6.1	21.3	24 W	—	17*	3 7	1 7.75	+20 10.3	1.529	0.972	39.4	20.4	38 E	32*	8*
3 22	22 25.26	-17 30.8	4.536	3.713	7.9	21.3	31 W	—	24*	3 12	1 30.61	+21 43.5	1.504	0.960	40.5	20.4	39 E	33*	9*
4 1	22 34.94	-16 37.6	4.417	3.680	9.6	21.3	38 W	1*	31*	3 17	1 54.62	+23 6.5	1.482	0.953	41.5	20.4	39 E	33*	10*
4 11	22 44.25	-15 47.0	4.281	3.645	11.2	21.3	45 W	3*	39*	3 22	2 19.70	+24 16.5	1.463	0.951	42.5	20.4	40 E	34*	11*
4 21	22 53.11	-14 59.8	4.130	3.608	12.8	21.2	53 W	6*	46*	3 27	2 45.68	+25 11.2	1.448	0.953	43.3	20.4	41 E	34*	13*
5 1	23 1.42	-14 16.9	3.964	3.570	14.2	21.2	60 W	9*	54*	4 1	3 12.36	+25 48.4	1.437	0.960	43.9	20.4	42 E	35*	15*
5 11	23 9.06	-13 39.2	3.787	3.530	15.4	21.1	68 W	12*	62*	4 6	3 39.45	+26 6.8	1.431	0.972	44.3	20.4	43 E	35*	16*
5 21	23 15.90	-13 7.9	3.600	3.488	16.3	21.0	76 W	15*	69*	4 11	4 6.65	+26 5.8	1.431	0.987	44.4	20.5	44 E	35*	19*
5 31	23 21.77	-12 44.2	3.407	3.445	17.0	20.8	84 W	19*	75*	4 16	4 33.65	+25 45.6	1.436	1.007	44.3	20.5	45 E	35*	21*
6 10	23 26.48	-12 29.3	3.210	3.399	17.4	20.7	92 W	23*	76*	4 21	5 0.16	+25 7.5	1.446	1.030	44.0	20.6	45 E	35*	23*
6 20	23 29.81	-12 24.8	3.013	3.352	17.3	20.5	101 W	26*	76*	4 26	5 25.93	+24 13.1	1.462	1.057	43.5	20.6	46 E	34*	25*
6 30	23 31.48	-12 32.0	2.819	3.303	16.8	20.3	110 W	30*	77*	5 1	5 50.78	+23 4.7	1.483	1.086	42.8	20.7	47 E	33*	27*
7 10	23 31.22	-12 53.1	2.632	3.252	15.8	20.1	119 W	32*	77*	5 6	6 14.56	+21 44.9	1.510	1.118	41.9	20.8	48 E	33*	30*
7 20	23 28.72	-13 25.8	2.456	3.199	14.2	19.9	129 W	32*	77*	5 11	6 37.22	+20 15.9	1.542	1.151	40.9	20.9	48 E	30*	32*
7 30	23 23.71	-14 13.0	2.297	3.143	12.0	19.6	140 W	31*	78*	5 16	6 58.75	+18 40.3	1.578	1.187	39.8	20.9	49 E	28*	33*
8 9	23 16.07	-15 11.9	2.159	3.086	9.1	19.3	151 W	30*	79*	5 21	7 19.16	+16 59.9	1.619	1.224	38.7	21.0	49 E	26*	35*
8 19	23 5.84	-16 18.6	2.047	3.027	5.9	19.0	162 W	29*	80*	5 26	7 38.50	+15 16.7	1.664	1.261	37.4	21.1	49 E	24*	37*
8 24	22 59.87	-16 53.2	2.002	2.996	4.3	18.9	167 W	28*	81*	5 31	7 56.85	+13 31.9	1.712	1.300	36.2	21.2	49 E	21*	38*
8 29	22 53.45	-17 27.3	1.965	2.965	3.3	18.8	170 W	28*	81*	6 5	8 14.26	+11 46.8	1.763	1.340	34.9	21.3	49 E	19*	39*
9 3	22 46.68	-18 0.0	1.935	2.933	3.6	18.7	170 E	27*	82*	6 10	8 30.82	+10 2.2	1.818	1.380	33.6	21.4	49 E	17*	40*
9 8	22 39.70	-18 30.4	1.914	2.901	5.0	18.7	166 E	26*	83*	6 15	8 46.60	+8 18.7	1.875	1.420	32.3	21.5	48 E	14*	40*
9 13	22 32.65	-18 57.7	1.901	2.868	6.8	18.8	160 E	26*	83*	337589 2001 SS₃₄₂									
9 18	22 25.69	-19 21.0	1.895	2.834	8.8	18.8	154 E	26*	83*	1 2	21 52.85	-18 28.6	2.300	1.726	23.1	21.5	44 E	22*	32*
9 23	22 18.98	-19 39.8	1.897	2.800	10.9	18.9	148 E	25*	84*	1 12	22 17.81	-16 6.1	2.341	1.706	21.7	21.5	40 E	21*	27*
9 28	22 12.68	-19 53.8	1.905	2.765	12.8	19.0	142 E	25*	84*	1 22	22 42.85	-13 31.8	2.380	1.690	20.2	21.4	36 E	21*	24*
10 8	22 1.74	-20 6.8	1.939	2.694	16.5	19.1	130 E	25*	84*	2 1	23 7.95	-10 47.6	2.416	1.675	18.6	21.4	33 E	20*	20*
10 18	21 53.61	-20 0.7	1.991	2.620	19.5	19.2	119 E	25*	84*	2 11	23 33.07	-7 55.7	2.450	1.664	17.0	21.4	30 E	18*	17*
10 28	21 48.65	-19 37.5	2.055	2.543	21.8	19.2	108 E	25*	84*	2 21	23 58.24	-4 58.6	2.483	1.657	15.4	21.3	26 E	16*	15*
11 7	21 46.86	-18 59.5	2.125	2.463	23.5	19.3	98 E	26*	83*	3 2	0 23.47	+1 58.8	2.515	1.652	13.8	21.3	23 E	14*	12*
11 17	21 48.07	-18 8.8	2.195	2.380	24.5	19.3	88 E	27*	76*	3 12	0 48.81	+1 0.9	2.546	1.651	12.1	21.2	20 E	11*	10*
11 27	21 52.00	-17 6.8	2.260	2.294	25.0	19.3	79 E	28*	67*	3 22	1 14.30	+3 57.9	2.576	1.653	10.4	21.2	17 E	8*	8*
12 7	21 58.34	-15 54.2	2.316	2.204	25.0	19.3	71 E	29*	57*	4 1	1 39.99	+6 49.6	2.606	1.658	8.7	21.2	15 E	6*	6*
12 17	22 6.83	-14 31.5	2.360	2.111	24.6	19.2	63 E	30*	48*	4 11	2 5.88	+9 33.4	2.636	1.667	7.0	21.1	12 E	3*	4*
12 27	22 17.22	-12 58.2	2.390	2.015	23.9	19.1	56 E	30*	40*	4 21	2 32.03	+12 7.0	2.664	1.679	5.3	21.1	9 E	—	2*
1 6	22 29.34	-11 14.2	2.404	1.914	22.9	19.0	49 E	29*	33*	5 1	2 58.41	+14 28.3	2.692	1.693	3.6	21.0	6 E	—	—
1 16	22 43.07	-9 18.7	2.400	1.809	21.8	18.8	43 E	28*	26*	5 11	3 25.00	+16 35.5	2.718	1.711	2.0	21.0	3 E	—	—
475297 2005 XS₄₈										68347 2001 KB₆₇									
1 2	21 16.27	-8 39.5	2.468	1.806	19.8	21.4	39 E	27*	20*	1 2	22 2.40	-8 49.0	0.683	0.741	87.2	21.5	49 E	31*	30*
1 12	21 39.05	-6 47.2	2.485	1.764	18.4	21.4	34 E	25*	15*	1 7	22 14.80	-10 33.7	0.644	0.708	93.3	21.5	46 E	29*	29*
1 22	22 2.54	-4 42.6	2.496	1.724	16.9	21.3	31 E	23*	11*	1 12	22 25.69	-12 49.8	0.602	0.677	100.4	21.6	43 E	25*	28*
2 1	22 26.72	-2 26.5	2.502	1.685	15.4	21.2	27 E	20*	7*	1 17	22 34.13	-15 45.2	0.560	0.649	108.7	21.8	39 E	21*	27*
2 11	22 51.57	0 0.4	2.503	1.648	13.9	21.1	24 E	17*	4*	1 22	22 38.90	-19 25.8	0.521	0.626	118.0	22.2	34 E	15*	25*
2 21	23 17.13	+2 33.8	2.501	1.614	12.5	21.0	21 E	15*	2*	292165 2006 SC₆									
3 2	23 43.44	+5 14.0	2.497	1.583	11.1	20.9	18 E	12*	—	1 2	22 33.94	-23 34.7	1.811	1.430	32.7	21.4	52 E	19*	42*
3 12	0 10.54	+7 57.1	2.492	1.556	9.7	20.8	15 E	9*	—	1 12	22 54.33	-22 15.4	1.818	1.354	32.1	21.3	47 E	19*	38*
3 22	0 38.50	+10 40.0	2.486	1.532	8.4	20.7	13 E	7*	—	1 22	23 16.20	-20 41.1	1.805	1.272	31.7	21.2	43 E	18*	34*
4 1	1 7.38	+13 19.2	2.482	1.512	7.1	20.6	11 E	5*	—	2 1	23 39.66	-18 50.3	1.771	1.182	31.7	21.0	39 E	17*	30*
4 11	1 37.18	+15 50.5	2.479	1.496	5.9	20.5	9 E	3*	—	2 11	0 4.87	-16 40.3	1.716	1.086	32.3	20.7	36 E	15*	28*
4 21	2 7.92	+18 10.1	2.478	1.486	4.7	20.4	7 E	1*	—	2 21	0 32.10	-14 6.6	1.638	0.984	34.0	20.4	34 E	14*	26*
5 1	2 39.53	+20 13.9	2.480	1.480	3.6	20.4	5 E	—	—	2 26	0 46.58	-12 38.6	1.590	0.930	35.3	20.3	33 E	13*	25*
5 11	3 11.88	+21 58.2	2.485	1.479	2.8	20.3	4 W	—	—	3 2	1 1.70	-11 1.6	1.537	0.875	37.1	20.1	32 E	13*	25*
5 21	3 44.77	+23 19.7	2.493	1.484	2.4	20.3	4 W	—	—	3 7	1 17.50	-9 13.8	1.477	0.820	39.5	20.0	32 E	13*	24*
5 31	4 17.95	+24 16.4	2.503	1.493	2.8	20.4	4 W	—	—	3 12	1 34.00	-7 13.1	1.412	0.764</					

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°	
292165 2006 SC₆ (continuation)									507119 2009 SR₁₄₃									
4 11	3 21.05	+13 25.9	0.900	0.509	86.0	19.3	30 E	19* 18*	1 12	8 23.39	+12 26.3	4.794	5.747	2.7	22.0	164 W	57	52
4 16	3 35.42	+19 17.6	0.809	0.505	96.8	19.5	30 E	21* 15*	1 22	8 17.51	+12 45.9	4.781	5.759	1.2	23.9	173 W	58	51
4 21	3 46.23	+26 1.4	0.728	0.518	106.4	19.8	30 E	22* 10*	2 1	8 11.59	+13 7.7	4.801	5.770	1.9	23.9	169 E	58	51
4 23	3 49.34	+28 55.8	0.699	0.527	109.5	20.0	30 E	23* 8*	2 11	8 6.01	+13 30.4	4.852	5.781	3.6	24.1	158 E	59	50
4 25	3 51.69	+31 56.2	0.672	0.538	112.0	20.1	30 E	24* 5*	2 21	8 1.09	+13 52.7	4.933	5.791	5.3	24.2	147 E	59	50
4 27	3 53.24	+35 1.3	0.648	0.552	113.8	20.2	30 E	24* 3*	494670 2002 MQ₁									
4 29	3 53.96	+38 9.9	0.626	0.567	115.1	20.2	31 E	25*	1 12	8 23.74	- 9 41.2	2.012	2.880	11.0	22.7	146 W	35	74
5 1	3 53.82	+41 20.3	0.607	0.584	115.6	20.3	31 E	25*	1 22	8 13.57	- 9 17.7	1.989	2.889	9.6	22.6	151 W	36	73
5 3	3 52.77	+44 31.2	0.590	0.602	115.6	20.3	33 E	25*	2 1	8 3.33	- 8 28.1	1.994	2.896	9.4	22.6	151 E	37	72
5 5	3 50.78	+47 40.8	0.575	0.621	115.0	20.2	34 E	26*	2 11	7 54.05	- 7 17.1	2.026	2.903	10.7	22.7	147 E	38	71
5 7	3 47.79	+50 47.8	0.562	0.641	113.9	20.2	36 E	26*	2 21	7 46.55	- 5 51.5	2.083	2.908	12.7	22.9	140 E	39	70
5 9	3 43.72	+53 50.9	0.552	0.661	112.4	20.1	37 E	26*	285540 2000 GU₁₂₇									
5 11	3 38.48	+56 49.0	0.543	0.683	110.5	20.0	39 E	27*	1 12	8 25.87	+10 1.4	2.570	3.519	4.9	23.7	162 W	55	54
5 13	3 31.92	+59 41.1	0.535	0.704	108.5	20.0	41 E	27*	1 22	8 14.87	+10 42.1	2.563	3.538	2.6	23.6	171 W	56	53
5 15	3 23.87	+62 26.4	0.529	0.726	106.3	19.9	44 W	28*	2 1	8 3.88	+11 27.4	2.591	3.555	3.8	23.7	166 E	56	53
5 17	3 14.05	+65 4.2	0.524	0.748	103.9	19.8	46 W	31*	2 11	7 53.76	+12 13.9	2.651	3.571	6.6	23.9	155 E	57	52
5 19	3 2.12	+67 33.8	0.520	0.770	101.5	19.7	48 W	34*	2 21	7 45.19	+12 58.8	2.741	3.585	9.4	24.1	144 E	58	51
5 21	2 47.60	+69 54.4	0.517	0.793	99.1	19.6	51 W	37*	481790 2008 TF₄									
5 22	2 39.17	+71 1.0	0.515	0.804	97.8	19.6	52 W	38*	1 12	8 30.35	-19 59.7	1.617	2.421	16.5	23.0	136 W	25	84
5 23	2 29.83	+72 5.1	0.514	0.815	96.6	19.6	53 W	40*	1 17	8 24.49	-20 2.6	1.604	2.428	15.6	23.0	138 W	25	84
5 24	2 19.48	+73 6.3	0.513	0.826	95.4	19.5	54 W	41*	1 22	8 18.40	-19 54.8	1.597	2.436	15.0	23.0	140 W	25	84
5 25	2 7.99	+74 4.4	0.512	0.838	94.2	19.5	56 W	42*	1 27	8 12.28	-19 36.2	1.595	2.442	14.6	23.0	141 E	25	84
5 26	1 55.23	+74 59.2	0.511	0.849	93.0	19.5	57 W	43*	2 1	8 6.29	-19 7.4	1.599	2.449	14.5	23.0	142 E	26	83
5 27	1 41.07	+75 50.3	0.510	0.860	91.8	19.5	58 W	45*	2 6	8 0.61	-18 29.3	1.609	2.455	14.6	23.0	141 E	27	82
5 28	1 25.36	+76 37.3	0.510	0.871	90.6	19.4	59 W	46*	2 11	7 55.40	-17 42.9	1.625	2.460	15.1	23.0	140 E	27	82
5 29	1 8.02	+77 19.8	0.509	0.882	89.4	19.4	60 W	47*	523795 2015 TQ₁₇₈									
5 30	0 48.97	+77 57.2	0.508	0.893	88.2	19.4	62 W	48*	1 12	8 31.50	+15 27.0	2.183	3.141	4.9	25.0	164 W	60	49
5 31	0 28.23	+78 28.9	0.508	0.904	87.1	19.4	63 W	49*	1 22	8 20.43	+15 58.1	2.167	3.149	1.3	24.8	176 W	61	48
6 1	0 5.91	+78 54.5	0.508	0.915	85.9	19.3	64 W	50*	2 1	8 9.20	+16 30.4	2.183	3.156	3.4	24.9	169 E	62	47
6 2	23 42.26	+79 13.3	0.507	0.926	84.8	19.3	65 W	51*	2 11	7 58.85	+17 0.6	2.231	3.161	7.1	25.2	157 E	62	47
6 3	23 17.67	+79 25.0	0.507	0.937	83.6	19.3	67 W	52*	2 21	7 50.21	+17 26.6	2.307	3.165	10.4	25.4	145 E	62	47
6 4	22 52.61	+79 29.3	0.507	0.947	82.5	19.3	68 W	53*	439889 2000 PG₅									
6 5	22 27.64	+79 26.3	0.507	0.958	81.4	19.3	69 W	54*	1 12	8 34.66	+20 6.0	2.061	3.022	4.8	24.5	165 W	65	44
6 6	22 3.28	+79 16.1	0.507	0.969	80.3	19.3	70 W	55*	1 17	8 28.85	+20 20.5	2.049	3.025	2.8	24.4	171 W	65	44
6 7	21 40.01	+78 59.2	0.507	0.979	79.2	19.2	71 W	56*	1 22	8 22.85	+20 34.6	2.045	3.029	0.8	24.2	178 W	66	43
6 8	21 18.15	+78 36.2	0.507	0.990	78.1	19.2	73 W	56*	1 27	8 16.79	+20 47.8	2.049	3.032	1.5	24.3	175 E	66	43
6 9	20 57.91	+78 7.6	0.507	1.000	77.0	19.2	74 W	57*	2 1	8 10.82	+20 59.7	2.062	3.034	3.6	24.4	169 E	66	43
6 10	20 39.36	+77 34.0	0.507	1.011	76.0	19.2	75 W	57	2 6	8 5.10	+21 9.9	2.082	3.037	5.6	24.6	163 E	66	43
6 11	20 22.49	+76 56.3	0.507	1.021	74.9	19.2	76 W	58	2 11	7 59.75	+21 18.3	2.109	3.039	7.5	24.7	156 E	66	43
6 12	20 7.22	+76 14.8	0.507	1.032	73.9	19.2	77 W	59	409034 2003 MA₂									
6 13	19 53.43	+75 30.1	0.507	1.042	72.9	19.2	79 W	60	1 12	8 37.78	+ 9 12.7	2.146	3.087	6.4	22.5	160 W	54	55
6 14	19 40.99	+74 42.6	0.508	1.052	71.8	19.2	80 W	60	1 22	8 27.36	+ 9 11.6	2.131	3.102	3.5	22.3	169 W	54	55
6 15	19 29.77	+73 52.7	0.508	1.062	70.8	19.1	81 W	61	2 1	8 16.75	+ 9 18.2	2.147	3.117	3.9	22.4	168 E	54	55
6 16	19 19.63	+73 0.7	0.509	1.072	69.8	19.1	82 W	62	2 11	8 6.95	+ 9 30.1	2.194	3.130	6.8	22.6	158 E	55	54
6 17	19 10.46	+72 6.8	0.509	1.082	68.8	19.1	83 W	63	2 21	7 58.74	+ 9 44.9	2.269	3.142	10.0	22.8	147 E	55	54
6 18	19 2.14	+71 11.3	0.510	1.092	67.8	19.1	84 W	64	393657 2004 RS₉									
6 19	18 54.58	+70 14.3	0.510	1.102	66.8	19.1	86 W	65	1 12	8 39.11	-11 45.1	2.070	2.912	11.9	22.5	142 W	33	76
6 20	18 47.69	+69 15.9	0.511	1.112	65.9	19.1	87 W	66	1 22	8 29.54	-11 42.7	2.037	2.920	10.2	22.4	148 W	33	76
6 21	18 41.40	+68 16.4	0.512	1.122	64.9	19.1	88 W	67	2 1	8 19.58	-11 13.0	2.032	2.927	9.7	22.4	150 E	34	75
6 22	18 35.64	+67 15.7	0.513	1.131	63.9	19.1	89 W	68	2 11	8 10.23	-10 19.0	2.052	2.933	10.4	22.5	148 E	35	74
6 23	18 30.36	+66 14.1	0.514	1.141	63.0	19.1	90 W	69	2 21	8 2.38	- 9 6.5	2.099	2.939	12.1	22.6	142 E	36	73
6 24	18 25.51	+65 11.5	0.515	1.150	62.0	19.1	91 W	70	359242 2009 FT									
6 25	18 21.05	+64 8.0	0.516	1.160	61.1	19.1	92 W	71	1 12	8 40.75	+30 4.8	1.631	2.584	6.7	22.5	162 W	75	34
6 26	18 16.94	+63 3.8	0.518	1.169	60.2	19.1	94 E	72	1 17	8 31.80	+30 52.9	1.631	2.598	5.0	22.5	167 W	76	33
6 27	18 13.14	+61 58.9	0.519	1.179	59.3	19.1	95 E	73	1 22	8 22.57	+31 36.0	1.640	2.610	4.4	22.4	168 W	77	32
6 28	18 9.63	+60 53.3	0.521	1.188	58.4	19.1	96 E	74	1 27	8 13.30	+32 12.8	1.657	2.622	5.3	22.5	166 E	77	32
6 29	18 6.39	+59 47.2	0.523	1.197	57.5	19.1	97 E	75	2 1	8 4.26	+32 42.8	1.683	2.633	7.0	22.7	161 E	78	31
6 30	18 3.39	+58 40.5	0.525	1.206	56.6	19.1	98 E	76	2 6	7 55.69	+33 5.9	1.716	2.644	9.0	22.8	155 E	78	31
7 2	17 58.02	+56 25.8	0.529	1.224	54.9	19.1	100 E	79	2 11	7 47.80	+33 22.2	1.758	2.653	11.0	22.9	149 E	78	31
7 4	17 53.41	+54 9.7	0.534	1.242	53.2	19.1	102 E	81	194006 2001 SG₁₀									
7 6	17 49.45	+51 52.5	0.539	1.259	51.6	19.1	104 E	83	1 12	8 41.56	+10 45.2	1.067	2.018	9.7	22.7	160 W	56	53
7 8	17 46.05	+49 34.8	0.546	1.277	50.1	19.1	106 E	85	1 17	8 33.57	+11 12.2	1.041	2.010	6.8	22.5	166 W	56	53
7 10	17 43.14	+47 17.0	0.553	1.294	48.6	19.1	107 E	88	1 22	8 24.94	+11 43.3	1.022	2.000	4.2	22.3	171 W	57	52
7 12	17 40.66	+44 59.4	0.561	1.310	47.2	19.1	109 E	90	1 27	8 15.94	+12 17.6	1.010	1.990	3.9	22.3	172 E	57	52
7 14	17 38.58	+42 42.5	0.569	1.327	45.9	19.1	110 E	98	2 1	8 6.87	+12 54.0	1.006	1.979	6.2	22.4	168 E	58	51
7 16	17 36.85	+40 26.7	0.579	1.343	44.7	19.2	112 E	85	2 6	7 58.06	+13 31.1	1.009	1.968	9.3	22.5	161 E	59	50
7 18	17 35.44	+38 12.4	0.589	1.359	43.6	19.2	113 E	83	2 11	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°
411165 2010 DF ₁ (continuation)									361861 2008 ED ₆₉								
2 1	8 9.15	+0 54.5	0.804	1.758	11.9	23.3	158 E	44 65	1 12	9 3.44	+1 0.6	3.790	4.663	6.2	23.6	149 W	46 63
2 6	7 59.35	+0 40.2	0.780	1.727	13.5	23.2	156 E	46 63	1 22	8 56.03	+1 43.6	3.757	4.689	4.3	23.5	159 W	47 62
2 11	7 49.59	+2 27.2	0.763	1.696	16.2	23.2	151 E	47 62	2 1	8 48.21	+2 35.5	3.756	4.715	3.1	23.5	165 E	48 61
523788 2015 FP ₁₁₈									488465 1998 HK ₁								
1 12	8 47.23	+14 6.7	2.330	3.273	5.8	24.3	160 W	59 50	1 12	9 4.77	+2 4.9	1.205	2.114	13.5	22.5	150 W	47 62
1 22	8 36.66	+14 45.6	2.301	3.279	2.3	24.0	172 W	60 49	1 22	8 55.03	+2 0.5	1.112	2.062	9.7	22.1	159 W	47 62
2 1	8 25.60	+15 27.1	2.303	3.283	2.2	24.0	173 E	60 49	2 1	8 42.72	+2 22.8	1.042	2.010	7.4	21.8	165 E	47 62
2 11	8 15.03	+16 7.5	2.339	3.286	5.7	24.3	161 E	61 48	2 11	8 29.34	+3 10.9	0.999	1.956	9.8	21.8	160 E	48 61
2 21	8 5.80	+16 43.9	2.404	3.287	9.1	24.5	148 E	62 47	2 21	8 16.76	+4 19.7	0.979	1.902	15.0	21.9	150 E	49 60
445267 2009 SD ₂₂₉									395402 2011 SP ₁₂₁								
1 12	8 48.63	+17 42.7	2.010	2.958	6.1	23.8	161 W	63 46	1 12	9 5.97	+9 14.4	1.951	2.867	8.7	22.7	154 W	54 55
1 17	8 43.43	+18 12.7	1.990	2.959	4.1	23.7	168 W	63 46	1 22	8 56.86	+9 51.5	1.893	2.857	5.0	22.5	165 W	55 54
1 22	8 37.92	+18 43.2	1.978	2.959	2.0	23.6	174 W	64 45	2 1	8 46.63	+10 39.0	1.865	2.845	2.4	22.3	173 E	56 53
1 27	8 32.24	+19 13.7	1.974	2.959	0.2	23.4	179 E	64 45	2 11	8 36.33	+11 32.1	1.867	2.832	5.0	22.4	165 E	57 52
2 1	8 26.53	+19 43.5	1.978	2.958	2.4	23.6	173 E	65 44	2 21	8 27.03	+12 25.9	1.898	2.819	8.9	22.6	154 E	57 52
2 6	8 20.94	+20 11.8	1.990	2.957	4.5	23.7	166 E	65 44	452314 1999 LN ₂₈								
2 11	8 15.62	+20 38.2	2.009	2.956	6.5	23.9	160 E	66 43	1 12	9 6.60	+19 11.3	2.204	3.135	6.9	24.0	157 W	64 45
518635 2008 HO ₃									1 17	9 1.79	+19 42.7	2.176	3.132	5.1	23.9	164 W	65 44
1 12	8 49.19	-0 35.2	3.157	4.042	6.9	24.1	151 W	44 65	1 22	8 56.61	+20 14.8	2.156	3.129	3.2	23.8	170 W	65 44
1 22	8 41.02	-0 10.9	3.147	4.080	5.0	24.1	159 W	45 64	1 27	8 51.16	+20 46.7	2.143	3.126	1.4	23.6	176 W	66 43
2 1	8 32.63	+0 24.6	3.167	4.116	4.2	24.1	162 E	45 64	2 1	8 45.57	+21 17.7	2.139	3.122	1.4	23.6	175 E	66 43
2 11	8 24.63	+1 8.6	3.220	4.152	5.1	24.2	158 E	46 63	2 6	8 39.98	+21 47.3	2.143	3.118	3.2	23.7	170 E	67 42
2 21	8 17.56	+1 57.9	3.303	4.186	6.8	24.3	150 E	47 62	2 11	8 34.52	+22 14.8	2.155	3.114	5.1	23.9	164 E	67 42
234061 1999 HE ₁									2 16	8 29.31	+22 39.8	2.174	3.109	7.0	24.0	157 E	68 41
1 12	8 52.59	+27 21.2	2.593	3.536	5.3	22.8	161 W	72 37	408792 2000 GF ₂								
1 17	8 47.60	+27 48.3	2.563	3.525	4.0	22.7	166 W	73 36	1 12	9 8.20	+0 2.1	0.874	1.784	17.1	22.4	148 W	45 64
1 22	8 42.28	+28 14.2	2.542	3.514	3.0	22.7	169 W	73 36	1 17	9 1.16	+0 22.9	0.838	1.774	14.4	22.2	153 W	45 64
1 27	8 36.76	+28 38.1	2.528	3.502	2.8	22.6	170 W	74 35	1 22	8 53.05	+0 54.9	0.809	1.762	11.7	22.0	159 W	46 63
2 1	8 31.15	+28 59.7	2.523	3.490	3.6	22.7	167 E	74 35	1 27	8 44.08	+1 37.9	0.785	1.750	9.6	21.8	163 W	47 62
2 6	8 25.57	+29 18.3	2.526	3.478	4.9	22.7	162 E	74 35	2 1	8 34.55	+2 31.4	0.768	1.737	8.8	21.7	164 E	48 61
2 11	8 20.16	+29 33.9	2.536	3.466	6.4	22.8	157 E	75 34	2 6	8 24.83	+3 33.8	0.757	1.723	9.9	21.7	162 E	49 60
2 16	8 15.02	+29 46.1	2.554	3.453	7.9	22.9	151 E	75 34	2 11	8 15.29	+4 43.1	0.753	1.708	12.5	21.8	158 E	50 59
420187 2011 GA ₅₅									2 16	8 6.29	+5 57.0	0.755	1.693	15.7	21.9	152 E	51 58
1 12	8 55.90	+21 0.4	1.973	2.917	6.6	22.4	160 W	66 43	2 21	7 58.17	+7 13.0	0.762	1.677	19.1	22.0	146 E	52 57
1 17	8 50.34	+21 15.2	1.937	2.902	4.6	22.2	166 W	66 43	2 26	7 51.20	+8 29.0	0.774	1.659	22.6	22.1	140 E	53 56
1 22	8 44.34	+21 29.9	1.908	2.887	2.5	22.1	173 W	66 43	523611 2005 UY ₅								
1 27	8 38.04	+21 43.8	1.887	2.871	1.1	21.9	177 W	67 42	1 12	9 8.64	+26 23.2	2.170	3.100	7.1	23.3	157 W	71 38
2 1	8 31.60	+21 56.2	1.875	2.855	2.5	22.0	173 E	67 42	1 17	9 3.57	+26 52.7	2.153	3.105	5.4	23.2	163 W	72 37
2 6	8 25.17	+22 6.8	1.870	2.839	4.6	22.1	167 E	67 42	1 22	8 58.13	+27 20.9	2.143	3.111	4.0	23.1	167 W	72 37
2 11	8 18.94	+22 15.2	1.873	2.822	6.8	22.2	160 E	67 42	1 27	8 52.45	+27 47.0	2.142	3.116	3.1	23.0	170 W	73 36
2 16	8 13.03	+22 21.1	1.884	2.805	8.9	22.3	154 E	67 42	2 1	8 46.67	+28 10.3	2.148	3.121	3.4	23.1	169 E	73 36
2 21	8 7.60	+22 24.5	1.901	2.787	10.9	22.4	148 E	67 42	2 6	8 40.95	+28 30.2	2.162	3.126	4.6	23.2	165 E	74 35
2 26	8 2.76	+22 25.3	1.925	2.769	12.8	22.5	142 E	67 42	2 11	8 35.42	+28 46.5	2.184	3.130	6.2	23.3	160 E	74 35
370688 2004 GD ₂₈									2 16	8 30.20	+28 59.0	2.214	3.134	7.8	23.4	154 E	74 35
1 12	8 57.20	-15 24.5	3.389	4.164	9.2	23.7	137 W	30 79	362310 2009 UM ₃								
1 22	8 49.57	-15 23.5	3.328	4.162	8.1	23.6	144 W	30 79	1 12	9 8.73	+6 57.5	2.749	3.647	7.3	23.5	152 W	52 57
2 1	8 41.40	-15 3.3	3.294	4.158	7.3	23.5	147 E	30 79	1 22	8 59.28	+7 37.1	2.647	3.601	4.5	23.3	163 W	53 56
2 11	8 33.29	-14 25.0	3.288	4.153	7.4	23.5	147 E	31 78	2 1	8 48.65	+8 27.2	2.577	3.554	2.5	23.1	171 E	53 56
2 21	8 25.83	-13 31.3	3.309	4.147	8.1	23.6	144 E	31 78	2 11	8 37.61	+9 24.3	2.542	3.504	4.2	23.1	165 E	54 55
461501 2003 FT ₃									2 21	8 26.99	+10 24.8	2.539	3.453	7.3	23.2	154 E	55 54
1 12	8 59.98	+11 52.6	2.265	3.190	7.1	23.4	156 W	57 52	453242 2008 RG ₁₀₆								
1 22	8 50.79	+12 28.3	2.172	3.143	3.6	23.1	168 W	57 52	1 12	9 13.78	+9 11.7	1.901	2.809	9.4	23.3	152 W	54 55
2 1	8 40.38	+13 11.7	2.111	3.093	1.7	22.9	175 E	58 51	1 22	9 4.77	+9 57.8	1.856	2.815	5.5	23.0	164 W	55 54
2 11	8 29.66	+13 58.8	2.082	3.043	5.1	23.0	164 E	59 50	2 1	8 54.63	+10 54.2	1.840	2.821	2.3	22.8	174 E	56 53
2 21	8 19.63	+14 45.7	2.083	2.991	9.0	23.2	152 E	60 49	2 11	8 44.43	+11 55.5	1.854	2.825	4.4	23.0	167 E	57 52
489615 2007 TZ ₂₄₆									2 21	8 35.23	+12 56.1	1.898	2.828	8.3	23.2	156 E	58 51
1 12	9 1.91	+31 9.5	2.208	3.140	6.9	22.6	158 W	76 33	523666 2012 RS ₁₆								
1 17	8 56.90	+31 38.4	2.188	3.138	5.6	22.5	162 W	77 32	1 12	9 14.18	+8 27.4	2.084	2.987	9.0	25.8	152 W	53 56
1 22	8 51.52	+32 5.1	2.176	3.137	4.6	22.5	165 W	77 32	1 22	9 4.38	+9 1.0	2.038	2.995	5.3	25.6	164 W	54 55
1 27	8 45.91	+32 28.7	2.171	3.136	4.4	22.5	166 W	77 32	2 1	8 53.53	+9 44.1	2.023	3.002	2.5	25.4	172 E	55 54
2 1	8 40.20	+32 48.6	2.174	3.134	4.9	22.5	164 E	78 31	2 11	8 42.67	+10 32.5	2.039	3.008	4.4	25.5	167 E	56 53
2 6	8 34.55	+33 4.3	2.185	3.132	6.0	22.5	161 E	78 31	2 21	8 32.80	+11 21.6	2.086	3.012	7.9	25.8	155 E	56 53
2 11	8 29.11	+33 15.6	2.203	3.130	7.4	22.6	156 E	78 31	435246 2007 TV ₂₄								
2 16	8 24.00	+33 22.4	2.228	3.127	8.9	22.7	151 E	78 31	1 12	9 16.28	-24 1.1	1.928	2.644	17.2	22.3	127 W	21 88
390819 2004 LE ₂									1 17	9 11.71	-24 19.3	1.894	2.643	16.4	22.3	131 W	21 88
1 12	9 2.21																

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°
435246 2007 TV₂₄ (continuation)										161995 1983 LB (continuation)									
2 16	8 38.75	-22 44.8	1.799	2.633	14.0	22.1	140 E	22	87	2 1	9 0.42	+44 6.1	2.446	3.355	7.6	22.3	153 W	89	20
2 21	8 33.71	-21 56.6	1.803	2.630	14.3	22.1	139 E	23	86	2 6	8 53.91	+44 36.1	2.455	3.351	8.2	22.3	151 E	90	19
2 26	8 29.16	-21 1.3	1.813	2.626	14.9	22.1	137 E	24	85	2 11	8 47.46	+44 59.6	2.470	3.347	9.1	22.4	148 E	90	19
3 2	8 25.23	-20 0.4	1.829	2.623	15.6	22.2	135 E	25	84	2 16	8 41.22	+45 16.4	2.493	3.342	10.0	22.5	144 E	90	19
344093 1999 RB₁₉										415884 2001 TU									
1 12	9 17.56	+8 56.2	1.930	2.832	9.6	21.8	151 W	54	55	1 12	9 24.74	-22 45.8	2.687	3.376	13.4	22.2	127 W	22	87
1 22	9 8.09	+9 24.6	1.881	2.837	5.8	21.6	163 W	54	55	1 22	9 16.70	-23 13.0	2.639	3.399	12.0	22.1	134 W	22	87
2 1	8 57.42	+10 3.1	1.861	2.841	2.5	21.4	173 W	55	54	2 1	9 7.67	-23 12.9	2.613	3.420	10.8	22.0	139 W	22	87
2 11	8 46.62	+10 47.2	1.871	2.843	4.3	21.5	168 E	56	53	2 11	8 58.44	-22 45.4	2.611	3.441	10.2	22.0	142 E	22	87
2 21	8 36.77	+11 32.4	1.912	2.844	8.1	21.7	156 E	57	52	2 21	8 49.80	-21 53.2	2.634	3.461	10.3	22.1	141 E	23	86
3 2	8 28.80	+12 14.6	1.980	2.844	11.7	22.0	144 E	57	52	3 2	8 42.45	-20 41.4	2.682	3.480	11.1	22.1	138 E	24	85
387826 2004 GD₃₉										302141 2001 SD₅									
1 12	9 17.87	+25 48.0	1.663	2.588	9.2	21.4	155 W	71	38	1 12	9 24.86	+17 3.0	1.894	2.805	9.3	22.4	153 W	62	47
1 17	9 13.30	+26 24.3	1.630	2.579	7.3	21.2	161 W	71	38	1 22	9 15.60	+17 47.1	1.816	2.779	5.2	22.1	165 W	63	46
1 22	9 8.13	+27 0.1	1.605	2.569	5.5	21.1	166 W	72	37	2 1	9 4.56	+18 35.1	1.767	2.752	0.9	21.8	177 W	64	45
1 27	9 2.49	+27 34.4	1.586	2.560	4.2	21.0	169 W	73	36	2 11	8 52.86	+19 21.2	1.749	2.723	4.1	22.0	169 E	64	45
2 1	8 56.56	+28 6.1	1.575	2.550	4.1	21.0	169 W	73	36	2 21	8 41.70	+20 0.1	1.760	2.694	8.6	22.2	156 E	65	44
2 6	8 50.51	+28 34.2	1.571	2.539	5.3	21.0	166 E	74	35	3 2	8 32.29	+20 28.6	1.799	2.663	12.7	22.4	144 E	65	44
2 11	8 44.53	+28 57.9	1.574	2.529	7.2	21.1	161 E	74	35	446855 2001 UC₇₂									
2 16	8 38.82	+29 16.8	1.585	2.518	9.3	21.2	156 E	74	35	1 12	9 25.32	+15 53.9	1.800	2.710	9.7	21.9	152 W	61	48
2 21	8 33.53	+29 30.5	1.601	2.507	11.3	21.3	150 E	75	34	1 17	9 21.06	+16 27.7	1.781	2.720	7.6	21.8	158 W	61	48
2 26	8 28.84	+29 39.1	1.624	2.496	13.4	21.4	144 E	75	34	1 22	9 16.34	+17 3.2	1.768	2.730	5.4	21.7	165 W	62	47
3 2	8 24.86	+29 42.8	1.652	2.485	15.2	21.5	139 E	75	34	1 27	9 11.29	+17 39.4	1.762	2.739	3.2	21.5	171 W	63	46
282639 2005 TC₄₆										162698 2000 UN₃₀									
1 12	9 18.73	+16 16.3	1.768	2.686	9.3	21.5	154 W	61	48	1 12	9 25.88	+43 1.6	1.835	2.720	11.0	22.4	148 W	88	21
1 17	9 14.22	+16 47.7	1.749	2.695	7.1	21.4	160 W	62	47	1 17	9 19.16	+43 55.4	1.837	2.738	10.1	22.4	151 W	89	20
1 22	9 9.28	+17 20.6	1.738	2.704	4.9	21.3	167 W	62	47	1 22	9 11.84	+44 42.7	1.846	2.756	9.5	22.4	152 W	90	19
1 27	9 4.03	+17 54.1	1.733	2.713	2.6	21.1	173 W	63	46	1 27	9 4.13	+45 22.2	1.861	2.773	9.4	22.4	153 W	90	19
2 1	8 58.62	+18 27.4	1.737	2.722	0.5	21.0	179 W	63	46	2 1	8 56.26	+45 53.0	1.884	2.790	9.7	22.4	152 W	89	18
2 6	8 53.21	+18 59.5	1.748	2.730	2.2	21.1	174 E	64	45	2 6	8 48.48	+46 14.7	1.914	2.806	10.4	22.5	149 E	89	18
2 11	8 47.95	+19 29.7	1.766	2.738	4.4	21.3	168 E	64	45	2 11	8 41.04	+46 27.4	1.950	2.822	11.3	22.6	146 E	89	18
2 16	8 42.98	+19 57.5	1.792	2.746	6.6	21.5	161 E	65	44	2 16	8 34.12	+46 31.5	1.993	2.838	12.3	22.7	142 E	88	17
2 21	8 38.43	+20 22.5	1.825	2.753	8.7	21.6	155 E	65	44	2 21	8 27.90	+46 27.9	2.041	2.853	13.4	22.8	138 E	89	18
2 26	8 34.42	+20 44.3	1.864	2.761	10.6	21.7	149 E	66	43	452592 2005 JJ₁₇₇									
3 2	8 31.02	+21 2.9	1.909	2.768	12.4	21.9	143 E	66	43	1 12	9 26.96	+21 48.9	1.986	2.897	8.9	22.5	153 W	67	42
394823 2008 SY₁₀₇										208617 2002 EB₃									
1 12	9 19.33	+6 54.5	1.887	2.782	10.2	22.3	150 W	52	57	1 12	9 27.74	+27 19.6	2.025	2.935	8.8	22.2	153 W	72	37
1 22	9 10.47	+7 18.3	1.829	2.779	6.5	22.0	161 W	52	57	1 17	9 21.45	+27 53.5	1.991	2.929	7.1	22.0	159 W	73	36
2 1	9 0.28	+7 54.8	1.799	2.776	3.4	21.8	170 W	53	56	1 22	9 14.54	+28 26.1	1.965	2.922	5.4	21.9	164 W	73	36
2 11	8 49.82	+8 40.1	1.800	2.771	4.4	21.9	168 E	54	55	1 27	9 7.16	+28 56.4	1.947	2.915	4.2	21.9	167 W	74	35
2 21	8 40.18	+9 29.3	1.830	2.766	8.1	22.1	157 E	54	55	2 1	8 59.48	+29 23.2	1.937	2.908	4.1	21.8	168 W	74	35
3 2	8 32.33	+10 17.4	1.887	2.760	11.8	22.3	145 E	55	54	2 6	8 51.67	+29 45.8	1.936	2.900	5.0	21.9	165 E	75	34
164217 2004 PT₄₂										376971 2002 KA₁									
1 12	9 19.65	+5 34.1	1.918	2.759	12.7	21.6	142 W	39	70	1 12	9 28.16	+18 40.9	1.895	2.804	9.4	21.8	152 W	64	45
1 22	9 8.69	+3 28.2	1.862	2.775	9.3	21.4	153 W	42	67	1 22	9 18.39	+19 18.4	1.840	2.801	5.3	21.6	165 W	64	45
2 1	8 56.47	+0 54.6	1.837	2.789	6.4	21.2	162 W	44	65	2 1	9 7.06	+19 56.5	1.814	2.798	1.3	21.3	176 W	65	44
2 11	8 44.14	+1 57.5	1.846	2.802	6.1	21.2	162 E	47	62	2 11	8 55.32	+20 29.9	1.819	2.793	4.0	21.5	169 E	65	44
2 21	8 32.87	+4 55.8	1.890	2.813	8.8	21.4	154 E	50	59	2 21	8 44.40	+20 54.3	1.853	2.787	8.2	21.7	156 E	66	43
3 2	8 23.63	+7 48.4	1.966	2.823	12.1	21.7	143 E	53	56	3 2	8 35.38	+21 7.8	1.915	2.780	12.0	22.0	144 E	66	43
340836 2006 VO₁₃										161995 1983 LB									
1 12	9 22.59	+24 26.0	1.821	2.740	9.0	21.4	154 W	69	40	1 12	9 23.80	+41 11.8	2.486	3.369	8.6	22.4	149 W	86	23
1 17	9 17.55	+24 56.8	1.802	2.747	7.1	21.3	160 W	70	39	1 17	9 18.64	+42 1.7	2.465	3.366	7.8	22.4	152 W	87	22
1 22	9 12.03	+25 26.8	1.790	2.754	5.2	21.2	165 W	70	39	1 22	9 12.94	+42 48.1	2.451	3.363	7.4	22.3	154 W	88	21
1 27	9 6.16	+25 55.1	1.786	2.760	3.7	21.1	170 W	71	38	1 27	9 6.82	+43 29.9	2.445	3.359	7.3	22.3	154 W	88	21
2 1	9 0.11	+26 20.8	1.789	2.766	3.2	21.1	171 W	71	38	242147 2003 BH₈₄									
2 6	8 54.05	+26 43.1	1.800	2.772	4.2	21.2	168 E	72	37	1 12	9 23.54	+2 38.1	2.526	3.364	10.1	22.3	143 W	42	67
2 11	8 48.14	+27 1.7	1.819	2.778	5.9	21.3	163 E	72	37	1 22	9 12.90	+2 40.5	2.460	3.368	7.6	22.1	153 W	42	67
2 16	8 42.55	+27 16.0	1.844	2.783	7.8	21.4	158 E	72	37	2 1	9 1.13	+2 26.4	2.426	3.369	5.7	22.0	160 W	43	66
2 21	8 37.40	+27 26.2	1.877	2.788	9.6	21.5	152 E	72	37	2 11	8 49.13	+1 57.5	2.424	3.368	5.7	22.0	160 E	43	66
2 26	8 32.83	+27 32.1	1.916	2.793	11.4	21.6	146 E	73	36	2 21	8 37.80	+1 17.1	2.454	3.366	7.6	22.1	153 E	44	65
3 2	8 28.93	+27 34.1	1.961	2.798	13.0	21.8	140 E	73	36	3 2	8 27.97	+0 29.4	2.514	3.361	10.2				

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°
416675 2004 XJ₃									182977 2002 NU₃₈								
1 12	9 28.38	-38 45.8	1.753	2.326	22.8	21.6	113 W	6 77	1 12	9 33.36	+6 9.7	2.023	2.894	10.8	21.8	146 W	51 58
1 17	9 22.74	-39 27.0	1.756	2.359	22.0	21.6	116 W	6 77	1 22	9 24.92	+6 38.4	1.956	2.893	7.3	21.6	158 W	52 57
1 22	9 16.59	-39 55.6	1.762	2.392	21.2	21.7	118 W	5 76	2 1	9 14.97	+7 20.4	1.917	2.890	3.8	21.4	169 W	52 57
1 27	9 10.12	-40 11.0	1.771	2.424	20.5	21.7	121 W	5 76	2 11	9 4.46	+8 11.8	1.909	2.887	3.3	21.3	170 E	53 56
2 1	9 3.53	-40 13.2	1.783	2.456	19.8	21.7	122 W	5 76	2 21	8 54.42	+9 7.3	1.932	2.882	6.6	21.5	160 E	54 55
2 6	8 57.01	-40 2.4	1.800	2.488	19.2	21.7	124 E	5 76	3 2	8 45.84	+10 2.0	1.983	2.876	10.3	21.7	149 E	55 54
2 11	8 50.78	-39 39.5	1.820	2.519	18.7	21.8	125 E	5 76	323498 2004 QE₁								
2 16	8 44.99	-39 5.4	1.845	2.551	18.3	21.8	126 E	6 77	1 12	9 34.37	-8 46.3	2.421	3.210	12.1	22.4	137 W	36 73
2 21	8 39.78	-38 21.4	1.873	2.582	18.0	21.9	126 E	7 78	1 22	9 27.72	-8 13.0	2.315	3.182	9.8	22.2	146 W	37 72
2 26	8 35.28	-37 29.0	1.906	2.612	17.9	21.9	126 E	8 79	2 1	9 19.63	-7 15.2	2.235	3.153	7.7	22.0	155 W	38 71
3 2	8 31.57	-36 29.7	1.944	2.643	17.8	22.0	125 E	9 80	2 11	9 10.78	-5 54.1	2.183	3.124	6.5	21.9	159 E	39 70
354368 2003 QS₄									2 21	9 2.00	-4 13.5	2.161	3.093	7.3	21.9	156 E	41 68
1 12	9 29.11	+8 6.4	1.676	2.566	11.6	22.0	148 W	53 56	3 2	8 54.14	-2 20.0	2.169	3.062	9.6	21.9	149 E	43 66
1 22	9 21.26	+8 32.5	1.590	2.537	7.6	21.7	160 W	54 55	409442 2005 QD₅								
2 1	9 11.42	+9 13.4	1.530	2.508	3.6	21.4	171 W	54 55	1 12	9 34.76	+21 50.3	2.478	3.373	8.1	21.4	151 W	67 42
2 11	9 0.65	+10 5.0	1.499	2.477	3.8	21.3	171 E	55 54	1 22	9 25.45	+22 9.2	2.441	3.395	4.8	21.2	163 W	67 42
2 21	8 50.20	+11 1.5	1.496	2.446	8.2	21.5	159 E	56 53	2 1	9 15.04	+22 25.3	2.435	3.415	2.0	21.0	173 W	67 42
3 2	8 41.37	+11 56.8	1.520	2.415	12.8	21.7	147 E	57 52	2 11	9 4.46	+22 35.2	2.462	3.435	3.1	21.2	169 E	68 41
100480 1996 UK									2 21	8 54.58	+22 36.7	2.519	3.454	6.2	21.4	158 E	68 41
1 12	9 29.26	+0 19.1	2.670	3.513	9.5	21.6	144 W	45 64	3 2	8 46.19	+22 29.3	2.606	3.472	9.2	21.6	146 E	67 42
1 22	9 21.74	+0 40.8	2.626	3.540	6.9	21.5	155 W	46 63	448110 2008 NF₅								
2 1	9 13.32	+1 16.0	2.611	3.566	4.6	21.3	163 W	46 63	1 12	9 39.10	+7 2.6	1.843	2.712	11.8	21.5	146 W	52 57
2 11	9 4.71	+2 1.9	2.627	3.591	3.9	21.3	166 E	47 62	1 22	9 30.49	+7 21.8	1.794	2.729	7.9	21.3	158 W	52 57
2 21	8 56.62	+2 54.7	2.674	3.616	5.6	21.5	159 E	48 61	2 1	9 20.34	+7 53.6	1.773	2.746	4.0	21.1	169 W	53 56
3 2	8 49.68	+3 50.2	2.751	3.639	8.0	21.7	149 E	49 60	2 11	9 9.69	+8 34.0	1.781	2.761	3.0	21.1	171 E	54 55
323137 2003 BM₈₀									2 21	8 59.68	+9 17.8	1.820	2.775	6.5	21.3	162 E	54 55
1 12	9 30.15	+21 21.8	3.267	4.163	6.3	21.5	152 W	66 43	3 2	8 51.29	+10 0.4	1.886	2.789	10.2	21.6	150 E	55 54
1 22	9 24.56	+21 49.8	3.195	4.147	3.9	21.3	163 W	67 42	348400 2005 JF₂₁								
2 1	9 18.05	+22 17.5	3.152	4.131	1.7	21.1	173 W	67 42	1 12	9 39.14	+14 12.0	2.190	3.072	9.6	22.1	149 W	59 50
2 11	9 11.16	+22 41.8	3.140	4.115	2.4	21.1	170 E	68 41	1 22	9 29.94	+15 19.8	2.155	3.103	5.9	21.9	161 W	60 49
2 21	9 4.49	+23 0.4	3.158	4.099	4.9	21.3	159 E	68 41	2 1	9 19.44	+16 31.6	2.151	3.132	1.9	21.7	174 W	62 47
3 2	8 58.61	+23 11.6	3.205	4.083	7.3	21.4	148 E	68 41	2 11	9 8.61	+17 41.3	2.179	3.160	2.2	21.7	173 E	63 46
276295 2002 TV₉₅									2 21	8 58.42	+18 43.7	2.239	3.186	6.1	22.0	160 E	64 45
1 12	9 31.00	+4 13.5	1.831	2.702	11.8	21.5	146 W	49 60	3 2	8 49.76	+19 35.3	2.328	3.211	9.5	22.3	148 E	65 44
1 22	9 22.34	+4 32.2	1.776	2.711	8.1	21.3	157 W	50 59	357037 2000 NU₂₃								
2 1	9 12.18	+5 6.7	1.749	2.718	4.7	21.1	167 W	50 59	1 12	9 40.55	+12 50.4	2.035	2.915	10.4	21.6	148 W	58 51
2 11	9 1.60	+5 53.1	1.750	2.724	4.3	21.1	168 E	51 58	1 22	9 31.53	+13 10.3	1.992	2.937	6.5	21.4	160 W	58 51
2 21	8 51.70	+6 46.2	1.782	2.729	7.4	21.3	159 E	52 57	2 1	9 21.12	+13 36.0	1.978	2.958	2.4	21.2	173 W	59 50
3 2	8 43.50	+7 40.5	1.841	2.733	11.0	21.5	148 E	53 56	2 11	9 10.31	+14 3.4	1.995	2.978	2.0	21.2	174 E	59 50
187737 2153 P-L									2 21	9 0.15	+14 28.6	2.042	2.997	6.0	21.5	162 E	59 50
1 12	9 31.13	+14 12.3	1.763	2.663	10.5	21.8	150 W	59 50	3 2	8 51.57	+14 48.7	2.118	3.015	9.6	21.8	150 E	60 49
1 22	9 21.86	+14 51.4	1.719	2.676	6.2	21.6	163 W	60 49	400559 2008 WN₆₆								
2 1	9 11.07	+15 36.0	1.704	2.688	1.6	21.3	176 W	61 48	1 12	9 40.55	+46 27.8	2.031	2.885	11.6	21.8	144 W	89 18
2 11	8 59.96	+16 20.3	1.720	2.699	3.2	21.5	171 E	61 48	1 17	9 35.28	+47 23.6	2.020	2.890	10.9	21.8	146 W	88 17
2 21	8 49.72	+16 59.5	1.765	2.709	7.6	21.7	159 E	62 47	1 22	9 29.27	+48 14.2	2.015	2.896	10.4	21.8	148 W	87 16
3 2	8 41.40	+17 29.9	1.836	2.719	11.6	22.0	147 E	62 47	1 27	9 22.67	+48 58.0	2.017	2.901	10.3	21.8	148 W	86 15
411199 2010 KW₁₁₇									2 1	9 15.68	+49 34.1	2.026	2.906	10.5	21.8	148 W	85 14
1 12	9 31.15	+20 11.9	2.175	3.077	8.7	22.3	152 W	65 44	2 6	9 8.51	+50 1.5	2.041	2.910	11.0	21.9	146 E	85 14
1 22	9 22.91	+21 13.4	2.108	3.065	5.2	22.1	164 W	66 43	2 11	9 1.40	+50 20.0	2.063	2.915	11.7	21.9	143 E	85 14
2 1	9 13.13	+22 15.7	2.072	3.053	2.1	21.8	174 W	67 42	2 16	8 54.57	+50 29.6	2.091	2.919	12.5	22.0	140 E	85 14
2 11	9 2.77	+23 12.8	2.067	3.039	3.8	21.9	168 E	68 41	2 21	8 48.21	+50 30.6	2.124	2.923	13.4	22.0	137 E	84 13
2 21	8 52.83	+23 59.7	2.092	3.025	7.4	22.1	157 E	69 40	2 26	8 42.52	+50 23.7	2.163	2.927	14.4	22.1	133 E	85 14
3 2	8 44.33	+24 33.5	2.144	3.009	10.9	22.3	145 E	70 39	3 2	8 37.62	+50 9.6	2.206	2.930	15.3	22.2	129 E	85 14
442609 2012 KU₄₂									368254 2001 XE₁₀₃								
1 12	9 32.80	+12 4.6	1.963	2.853	10.1	22.1	149 W	57 52	1 12	9 40.87	-18 55.7	2.951	3.643	12.2	21.4	128 W	26 83
1 17	9 28.14	+12 48.3	1.946	2.871	8.1	22.0	156 W	58 51	1 22	9 33.42	-19 37.2	2.872	3.644	10.8	21.3	136 W	25 84
1 22	9 23.04	+13 34.3	1.937	2.890	6.0	21.9	162 W	59 50	2 1	9 24.72	-19 56.7	2.817	3.644	9.6	21.2	142 W	25 84
1 27	9 17.63	+14 21.8	1.935	2.908	3.8	21.8	169 W	59 50	2 11	9 15.44	-19 52.9	2.787	3.643	8.8	21.1	145 E	25 84
2 1	9 12.03	+15 9.7	1.942	2.925	1.6	21.7	175 W	60 49	2 21	9 6.28	-19 26.8	2.785	3.641	8.9	21.1	145 E	26 83
2 6	9 6.39	+15 57.0	1.957	2.942	0.7	21.6	178 E	61 48	3 2	8 57.99	-18 41.3	2.808	3.639	9.7	21.2	142 E	26 83
2 11	9 0.85	+16 42.9	1.979	2.959	2.9	21.8	171 E	62 47	3 12	8 51.18	-17 41.9	2.857	3.635	11.0	21.3	136 E	27 82
2 16	8 55.54	+17 26.6	2.010	2.975	5.0	22.0	165 E	62 47	3 22	8 46.22	-16 34.2	2.927	3.631	12.4	21.4	128 E	28 81
2 21	8 50.58	+18 7.5	2.049	2.991	6.9	22.2	159 E	63 46	4 1	8 43.35	-15 24.1	3.016	3.626	13.8	21.5	120 E	30 79
2 26	8 46.08	+18 45.0	2.095	3.007	8.8	22.3	152 E	64 45	229378 2005 SN₈								
3 2	8 42.12	+19 18.9	2.147	3.													

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°
282195 2001 UD₇										193822 2001 QD₂₀									
1 12	9 44.02	+5 6.7	2.133	2.982	11.3	22.0	144 W	50	59	1 12	9 52.08	+12 11.6	1.950	2.813	11.6	21.4	145 W	57	52
1 22	9 36.47	+5 35.3	2.060	2.982	7.9	21.8	155 W	51	58	1 22	9 44.52	+13 1.1	1.891	2.824	7.8	21.2	157 W	58	51
2 1	9 27.32	+6 18.0	2.014	2.981	4.5	21.6	166 W	51	58	2 1	9 35.17	+13 59.3	1.860	2.835	3.5	20.9	170 W	59	50
2 11	9 17.42	+7 10.9	1.999	2.979	2.8	21.5	172 E	52	57	2 11	9 24.96	+15 0.4	1.858	2.844	0.9	20.8	177 E	60	49
2 21	9 7.73	+8 9.4	2.014	2.975	5.5	21.6	163 E	53	56	2 21	9 14.96	+15 58.4	1.887	2.853	5.2	21.1	165 E	61	48
3 2	8 59.20	+9 8.0	2.059	2.971	9.0	21.8	152 E	54	55	3 2	9 6.21	+16 48.3	1.945	2.860	9.2	21.3	152 E	62	47
393458 2001 WE₁										293965 2007 TG₄₅									
1 12	9 44.45	+28 2.1	2.021	2.910	10.0	21.6	149 W	73	36	1 12	9 53.89	-2 19.1	2.304	3.101	12.4	21.6	137 W	43	66
1 17	9 40.25	+28 41.4	1.998	2.916	8.4	21.5	154 W	74	35	1 22	9 47.29	-2 2.9	2.222	3.102	9.6	21.4	148 W	43	66
1 22	9 35.50	+29 19.9	1.982	2.923	6.9	21.4	159 W	74	35	2 1	9 39.09	-1 28.1	2.166	3.103	6.8	21.2	158 W	44	65
1 27	9 30.30	+29 56.4	1.973	2.929	5.6	21.4	163 W	75	34	2 11	9 30.01	-0 36.5	2.139	3.103	4.7	21.1	165 E	44	65
2 1	9 24.79	+30 30.0	1.972	2.935	4.9	21.3	165 W	75	34	2 21	9 20.90	+0 27.8	2.142	3.101	5.3	21.1	163 E	45	64
2 6	9 19.11	+30 59.8	1.978	2.941	5.0	21.3	165 W	76	33	3 2	9 12.62	+1 39.5	2.174	3.099	7.9	21.3	155 E	47	62
2 11	9 13.42	+31 25.1	1.991	2.946	5.9	21.4	162 E	76	33	3 12	9 5.93	+2 52.6	2.234	3.096	10.8	21.5	144 E	48	61
2 16	9 7.87	+31 45.4	2.012	2.952	7.2	21.5	158 E	77	32	244679 2003 OC₈									
2 21	9 2.61	+32 0.5	2.040	2.957	8.7	21.6	153 E	77	32	1 12	9 53.98	+12 58.3	2.268	3.123	10.5	21.9	145 W	58	51
2 26	8 57.76	+32 10.3	2.075	2.961	10.2	21.7	148 E	77	32	1 22	9 46.57	+13 32.2	2.201	3.130	7.1	21.7	157 W	59	50
3 2	8 53.46	+32 15.1	2.115	2.966	11.7	21.8	143 E	77	32	2 1	9 37.54	+14 12.7	2.162	3.135	3.3	21.5	169 W	59	50
3 7	8 49.77	+32 15.2	2.162	2.970	13.1	21.9	137 E	77	32	2 11	9 27.69	+14 55.5	2.153	3.140	0.6	21.3	178 E	60	49
422715 2000 WE₆										2 21	9 17.94	+15 36.0	2.176	3.143	4.5	21.6	166 E	61	48
1 12	9 45.43	+27 35.1	2.656	3.535	8.3	22.3	149 W	73	36	3 2	9 9.21	+16 10.5	2.229	3.146	8.1	21.8	153 E	61	48
1 17	9 41.55	+28 7.8	2.639	3.550	6.9	22.3	154 W	73	36	208226 2000 SO₂₂₆									
1 22	9 37.27	+28 39.6	2.630	3.566	5.7	22.2	159 W	74	35	1 12	9 55.20	+14 57.1	1.974	2.837	11.4	21.4	145 W	60	49
1 27	9 32.68	+29 9.9	2.628	3.581	4.6	22.2	163 W	74	35	1 22	9 47.71	+15 58.8	1.926	2.859	7.6	21.3	157 W	61	48
2 1	9 27.87	+29 37.8	2.633	3.596	3.9	22.1	166 W	75	34	2 1	9 38.47	+17 6.2	1.906	2.880	3.5	21.0	170 W	62	47
2 6	9 22.96	+30 2.9	2.647	3.611	3.8	22.2	166 W	75	34	2 11	9 28.42	+18 12.7	1.916	2.901	1.4	20.9	176 E	63	46
2 11	9 18.05	+30 24.6	2.669	3.625	4.4	22.2	163 E	75	34	2 21	9 18.60	+19 12.2	1.956	2.920	5.3	21.2	164 E	64	45
2 16	9 13.26	+30 42.7	2.698	3.640	5.4	22.3	160 E	76	33	3 2	9 10.04	+20 0.2	2.026	2.939	9.1	21.5	152 E	65	44
2 21	9 8.67	+30 56.8	2.734	3.654	6.6	22.4	155 E	76	33	163252 2002 GD₁₁									
2 26	9 4.40	+31 7.1	2.778	3.668	7.8	22.5	150 E	76	33	1 12	9 57.68	+20 51.4	2.096	2.962	10.8	22.2	146 W	66	43
217756 2000 QW₈										1 22	9 49.79	+22 6.9	2.011	2.944	7.4	22.0	157 W	67	42
1 12	9 45.93	+8 52.2	1.808	2.674	12.2	21.8	145 W	54	55	2 1	9 39.71	+23 25.7	1.954	2.924	4.0	21.8	168 W	68	41
1 22	9 37.89	+9 33.5	1.734	2.668	8.2	21.5	157 W	55	54	2 11	9 28.29	+24 39.9	1.927	2.903	3.5	21.7	170 E	70	39
2 1	9 27.87	+10 28.2	1.687	2.661	3.9	21.2	169 W	55	54	2 21	9 16.64	+25 42.3	1.932	2.881	6.8	21.8	160 E	71	38
2 11	9 16.84	+11 30.9	1.669	2.653	2.0	21.1	175 E	57	52	3 2	9 5.96	+26 28.2	1.966	2.857	10.5	22.0	148 E	71	38
2 21	9 6.01	+12 35.2	1.682	2.644	6.2	21.3	163 E	58	51	445024 2008 NT									
3 2	8 56.55	+13 35.0	1.723	2.633	10.5	21.6	151 E	59	50	1 12	9 58.88	+8 45.0	1.823	2.668	13.1	22.1	142 W	54	55
158853 2004 NJ₃₂										1 22	9 50.92	+9 5.5	1.768	2.688	9.2	21.9	154 W	54	55
1 12	9 46.48	+9 11.4	2.027	2.888	11.3	21.3	145 W	54	55	2 1	9 41.05	+9 37.7	1.740	2.707	4.9	21.7	166 W	55	54
1 22	9 38.89	+10 3.8	1.974	2.906	7.6	21.1	157 W	55	54	2 11	9 30.25	+10 17.0	1.741	2.726	1.5	21.5	176 E	55	54
2 1	9 29.73	+11 6.9	1.948	2.922	3.5	20.9	170 W	56	53	2 21	9 19.68	+10 58.4	1.772	2.743	4.8	21.7	167 E	56	53
2 11	9 19.91	+12 15.3	1.953	2.938	1.4	20.8	176 E	57	52	3 2	9 10.43	+11 36.8	1.832	2.760	8.9	22.0	155 E	57	52
2 21	9 10.42	+13 22.9	1.988	2.952	5.2	21.1	164 E	58	51	276297 2002 TZ₉₆									
3 2	9 2.21	+14 24.5	2.053	2.965	9.0	21.3	152 E	59	50	1 12	9 59.21	+22 4.6	1.803	2.673	12.0	21.7	146 W	67	42
487740 2015 RX₁₀₇										1 17	9 55.51	+22 43.5	1.776	2.681	10.1	21.6	151 W	68	41
1 12	9 46.65	+21 44.8	1.768	2.657	11.2	22.5	148 W	67	42	1 22	9 51.18	+23 23.3	1.756	2.689	8.2	21.5	157 W	68	41
1 17	9 42.34	+22 9.4	1.740	2.661	9.2	22.3	154 W	67	42	1 27	9 46.30	+24 3.1	1.742	2.697	6.3	21.4	162 W	69	40
1 22	9 37.43	+22 34.6	1.719	2.666	7.2	22.2	160 W	68	41	2 1	9 41.01	+24 41.6	1.735	2.704	4.7	21.4	167 W	70	39
1 27	9 32.02	+22 59.3	1.704	2.670	5.2	22.1	166 W	68	41	2 6	9 35.45	+25 17.8	1.736	2.711	3.8	21.3	170 W	70	39
2 1	9 26.26	+23 22.7	1.697	2.673	3.5	22.0	171 W	68	41	2 11	9 29.78	+25 50.8	1.744	2.718	4.2	21.4	168 E	71	38
2 6	9 20.30	+23 43.9	1.697	2.677	2.9	22.0	172 W	69	40	2 16	9 24.16	+26 19.6	1.760	2.725	5.5	21.5	165 E	71	38
2 11	9 14.33	+24 2.1	1.704	2.680	4.0	22.1	169 E	69	40	2 21	9 18.75	+26 43.8	1.783	2.731	7.3	21.6	159 E	72	37
2 16	9 8.50	+24 16.8	1.719	2.683	5.8	22.2	164 E	69	40	2 26	9 13.70	+27 3.1	1.813	2.737	9.1	21.7	154 E	72	37
2 21	9 2.97	+24 27.8	1.742	2.686	7.8	22.3	158 E	69	40	3 2	9 9.16	+27 17.3	1.849	2.743	10.9	21.8	148 E	72	37
2 26	8 57.90	+24 34.7	1.771	2.688	9.8	22.4	153 E	70	39	3 7	9 5.21	+27 26.5	1.892	2.749	12.6	21.9	143 E	72	37
455236 2001 SG₁₄₉										153958 2002 AM₃₁									
1 12	9 48.27	+19 6.6	1.737	2.621	11.6	21.7	148 W	64	45	1 12	10 1.08	+10 33.2	1.376	2.237	15.6	21.6	142 W	56	53
1 17	9 43.85	+19 24.6	1.716	2.634	9.5	21.6	154 W	64	45	1 22	9 50.10	+11 47.0	1.336	2.268	10.4	21.4	155 W	57	52
1 22	9 38.87	+19 43.4	1.701	2.647	7.3	21.5	160 W	65	44	2 1	9 36.62	+13 13.4	1.322	2.297	4.6	21.1	169 W	58	51
1 27	9 33.44	+20 2.3	1.694	2.660	5.1	21.4	166 W	65	44	2 11	9 22.16	+14 42.3	1.338	2.324	1.4	21.0	177 E	60	49
2 1	9 27.71	+20 20.4	1.693	2.672	3.0	21.3	172 W	65	44	2 21	9 8.44	+16 3.6	1.385	2.349	7.0	21.4	163 E	61	48
2 6	9 21.85	+20 37.1	1.700	2.684	1.8	21.2	175 W	66	43	3 2	8 56.96	+17 10.5	1.459	2.371	12.0	21.7	150 E	62	47
2 11	9 16.02	+20 51.5	1.715	2.696	2.9	21.3	172 E	66	43	420286 2011 RZ									
2 16	9 10.37	+21 3.4	1.737	2.708	4.9	21.5	166 E	66	43	1 12	10 10.57	+42 17.7	1.452	2.301	15.6	22.2	141 W	87	22
2 21	9 5.07	+21 12.3	1.767	2.719	7.0	21.6	160 E	66	43	1 17	10 2.63	+42 42.2	1.394	2.272	14.3	22.0	145 W	88	21
2 26	9 0.23	+21 18.2	1.803	2.730	9.0	21.8	155 E	66	43	1 22	9 53.09	+43 1.4	1.342	2.242	13.1	21.9	149 W	88	21
3 2	8 55.97	+2																	

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°										
420286 2011 RZ (continuation)										399488 2002 TA₄₆																			
3 2	8 13.75	+37 55.1	1.178	1.990	21.4	21.6	133 E	83	26	1 12	10 28.67	+22 32.4	1.808	2.630	14.2	21.5	139 W	68	41	1 17	10 25.35	+23 0.3	1.787	2.650	12.4	21.4	145 W	68	41
3 7	8 4.66	+36 17.7	1.188	1.956	23.8	21.6	127 E	81	28	1 22	10 21.35	+23 29.0	1.771	2.670	10.6	21.3	150 W	68	41	1 27	10 16.74	+23 57.7	1.762	2.690	8.7	21.3	156 W	69	40
468446 2002 XX₄										448443 2009 YL₂₄																			
1 12	10 23.46	+49 34.7	1.138	1.969	20.2	22.5	136 W	85	14	2 1	10 11.64	+24 25.2	1.759	2.709	6.9	21.2	161 W	69	40	2 2	10 6.19	+24 50.5	1.764	2.728	5.3	21.1	165 W	70	39
1 17	10 18.55	+51 21.0	1.139	1.985	19.2	22.4	138 W	84	13	2 11	10 0.54	+25 12.8	1.775	2.747	4.4	21.1	168 W	70	39	2 16	9 54.84	+25 31.3	1.794	2.766	4.6	21.2	167 E	71	38
1 22	10 12.04	+52 58.5	1.144	2.000	18.5	22.4	140 W	82	11	3 2	9 49.26	+25 45.6	1.821	2.785	5.6	21.3	164 E	71	38	3 7	9 39.03	+26 0.2	1.895	2.822	8.7	21.5	154 E	71	38
1 27	10 4.07	+54 23.9	1.155	2.014	18.2	22.5	140 W	81	10	3 7	9 34.64	+26 0.6	1.942	2.840	10.3	21.7	149 E	71	38	3 12	9 30.84	+25 56.6	1.995	2.857	11.9	21.8	144 E	71	38
2 1	9 54.94	+55 34.7	1.172	2.029	18.1	22.5	140 W	79	8	484443 2009 YL₂₄																			
2 6	9 45.05	+56 28.9	1.193	2.043	18.4	22.6	139 W	79	8	1 12	10 47.39	+5 48.1	1.128	1.913	23.2	21.4	130 W	51	58	1 22	10 43.49	+5 28.9	1.078	1.943	18.7	21.2	141 W	50	59
2 11	9 34.89	+57 5.9	1.220	2.056	19.0	22.7	137 E	78	7	2 1	10 35.92	+5 31.4	1.045	1.973	13.3	20.9	153 W	51	58	2 11	10 25.63	+5 52.4	1.034	2.003	7.3	20.7	165 W	51	58
2 16	9 24.93	+57 25.6	1.251	2.070	19.8	22.8	135 E	78	7	2 21	10 14.08	+6 25.6	1.047	2.034	2.2	20.5	175 E	51	58	2 26	10 8.38	+6 44.4	1.063	2.049	3.2	20.6	173 E	52	57
2 21	9 15.67	+57 29.1	1.286	2.083	20.6	22.9	132 E	78	7	3 2	9 58.24	+7 20.9	1.114	2.080	8.5	21.0	162 E	52	57	3 7	9 58.24	+7 20.9	1.114	2.080	8.5	21.0	162 E	52	57
2 26	9 7.50	+57 17.9	1.326	2.095	21.5	23.0	129 E	78	7	3 12	9 54.11	+7 37.0	1.148	2.095	11.1	21.2	156 E	53	56	3 17	9 50.75	+7 50.6	1.188	2.110	13.5	21.4	150 E	53	56
396707 2002 UU₃₆										198888 2005 TY₇₇																			
1 12	10 23.62	+19 15.6	0.772	1.648	22.8	21.3	140 W	64	45	1 12	10 47.76	+15 3.4	1.947	2.714	15.4	21.4	133 W	60	49	1 22	10 42.48	+15 44.6	1.870	2.731	12.1	21.2	144 W	61	48
1 22	10 19.08	+20 15.7	0.715	1.645	17.1	21.0	151 W	65	44	2 1	10 34.59	+16 34.8	1.816	2.746	8.3	21.0	156 W	62	47	2 11	10 24.70	+17 28.1	1.788	2.761	4.4	20.8	168 W	62	47
2 1	10 9.50	+21 28.4	0.675	1.641	10.7	20.6	162 W	66	43	2 21	10 13.77	+18 17.4	1.790	2.774	2.6	20.7	173 E	63	46	3 2	10 2.95	+18 56.6	1.823	2.786	5.9	20.9	163 E	64	45
2 11	9 56.16	+22 37.9	0.655	1.637	5.8	20.3	170 W	68	41	3 12	9 53.39	+19 21.5	1.883	2.798	9.7	21.1	152 E	64	45	3 22	9 45.93	+19 30.8	1.969	2.808	13.1	21.4	140 E	65	44
2 16	9 48.79	+23 5.9	0.654	1.635	6.3	20.3	169 E	68	41	385325 2002 CK₂₅																			
2 21	9 41.44	+23 27.1	0.657	1.633	8.9	20.5	165 E	68	41	1 12	10 48.05	+23 32.3	0.636	1.500	27.8	21.1	135 W	69	40	1 17	10 41.02	+21 45.3	0.602	1.499	24.5	20.9	141 W	67	42
2 26	9 34.50	+23 40.2	0.665	1.631	12.1	20.6	160 E	69	40	1 22	10 31.92	+19 47.1	0.572	1.498	20.7	20.7	147 W	65	44	1 27	10 20.86	+17 36.9	0.547	1.497	16.3	20.4	155 W	63	46
3 2	9 28.31	+23 44.8	0.679	1.629	15.5	20.8	154 E	69	40	2 1	10 8.14	+15 14.9	0.528	1.497	11.5	20.2	162 W	60	49	2 6	9 54.21	+12 42.9	0.515	1.496	6.5	19.9	170 W	58	51
3 7	9 23.15	+23 40.9	0.697	1.627	18.7	20.9	148 E	69	40	2 11	9 39.71	+10 5.0	0.510	1.496	2.9	19.7	176 W	55	54	2 16	9 25.31	+7 26.4	0.512	1.496	5.9	19.9	171 E	52	57
3 12	9 19.20	+23 29.2	0.718	1.625	21.8	21.1	143 E	68	41	2 21	9 11.67	+4 53.0	0.522	1.496	10.9	20.1	163 E	50	59	2 26	8 59.37	+2 29.8	0.538	1.496	15.8	20.4	156 E	47	62
3 17	9 16.54	+23 10.5	0.744	1.622	24.5	21.2	137 E	68	41	3 2	8 48.83	+0 19.7	0.559	1.497	20.2	20.6	149 E	45	64	3 7	8 40.24	+1 35.8	0.586	1.498	24.2	20.8	142 E	43	66
3 22	9 15.20	+22 45.6	0.772	1.620	27.0	21.4	132 E	68	41	3 12	8 33.64	+3 17.1	0.617	1.498	27.6	21.1	136 E	42	67	3 17	8 28.97	+4 45.3	0.651	1.500	30.5	21.3	130 E	40	69
439845 1998 RJ₅₄										235779 2004 VO₇₅																			
1 12	10 24.59	+0 13.5	1.582	2.360	17.9	21.5	132 W	45	64	1 12	10 48.11	+12 59.9	2.121	2.876	14.7	21.3	132 W	58	51	1 22	10 42.98	+13 29.5	2.038	2.890	11.6	21.2	144 W	58	51
1 22	10 18.80	+0 37.2	1.527	2.392	14.1	21.3	144 W	46	63	2 1	10 35.45	+14 8.5	1.978	2.904	8.0	21.0	156 W	59	50	2 11	10 26.08	+14 52.3	1.945	2.917	4.1	20.7	168 W	60	49
2 1	10 10.50	+1 24.2	1.493	2.424	9.7	21.1	156 W	46	63	2 21	10 15.71	+15 35.2	1.942	2.929	1.6	20.6	175 W	61	48	3 2	10 5.36	+16 11.7	1.970	2.939	4.9	20.8	165 E	61	48
2 11	10 0.62	+2 30.4	1.484	2.455	5.3	20.9	167 W	48	61	3 12	9 56.10	+16 37.6	2.026	2.949	8.6	21.1	154 E	62	47	3 22	9 48.69	+16 50.9	2.109	2.958	12.0	21.3	142 E	62	47
2 21	9 50.32	+3 49.2	1.503	2.484	3.7	20.9	171 E	49	60	360698 2004 TP₁₂																			
3 2	9 40.86	+5 12.0	1.552	2.514	6.9	21.2	162 E	50	59	1 12	10 49.73	-29 33.4	1.521	2.072	26.5	21.4	110 W	15	86	1 17	10 49.18	-30 32.8	1.475	2.070	25.9	21.3	113 W	14	85
3 12	9 33.31	+6 30.4	1.627	2.542	10.9	21.5	151 E	52	57	1 22	10 47.74	-31 25.3	1.430	2.069	25.1	21.2	117 W	14	85	1 27	10 45.41	-32 9.6	1.388	2.067	24.3	21.1	120 W	13	84
189700 2001 TA₄₅										207974 1996 RM₁																			
1 12	10 27.65	-10 10.8	0.954	1.727	27.4	21.3	126 W	35	74	1 12	10 28.10	+5 45.4	2.134	2.907	14.0	21.5	134 W	51	58	1 22	10 23.56	+6 27.8	2.017	2.883	11.1	21.2	146 W	51	58
1 17	10 25.45	-10 31.1	0.918	1.730	25.4	21.2	131 W	34	75	2 1	10 16.70	+7 27.7	1.922	2.859	7.5	20.9	158 W	52	57	2 11	10 16.70	+7 27.7	1.922	2.859	7.5	20.9	158 W	52	57
1 22	10 22.11	-10 41.1	0.885	1.734	23.2	21.0	136 W	34	75	2 11	10 8.00	+8 41.9	1.855	2.833	3.4	20.6	170 W	54	55	2 21	9 58.23	+10 5.1	1.819	2.806	1.4	20.4	176 E	55	54
1 27	10 17.68	-10 39.5	0.856	1.736	20.9	20.9	141 W	34	75	2 26	9 53.25	+10 47.8	1.812	2.792	3.5	20.6	170 E	56	53	3 2	9 48.39	+11 29.9	1.813	2.778	5.7	20.7	164 E	56	53
2 1	10 12.23	-10 25.3	0.831	1.739	18.3	20.7	146 W	35	74	3 7	9 43.78	+12 10.7	1.821	2.763	7.9	20.8	157 E	57	52	3 12	9 39.55	+12 49.3	1.836	2.749	10.0	20.9	151 E	58	51
2 6	10 5.93	-9 57.8	0.810	1.740	15.8	20.6	151 W	35	74	3 17	9 35.79	+13 25.0	1.857	2.734	12.0	21.0	145 E	58	51	3 22	9 32.60	+13 57.5	1.884	2.719	13.8	21.0	139 E	59	50
2 11	9 59.00	-9 16.9	0.795	1.742	13.5	20.5	156 W	36	73	3 27	9 30.02	+14 26.3	1.916	2.703	15.5	21.1	134 E	59	50	4 1	9 28.13	+14 51.1	1.953	2.688	17.0	21.2	128 E	60	49
2 16	9 51.68	-8 23.3	0.784	1.743	11.8	20.4	159 E	37	72	4 6	9 26.92	+15 12.1	1.9																

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°
360698 2004 TP₁₂ (continuation)										480936 2003 QH₅ (continuation)									
4 6	9 44.84	-21 18.3	1.216	2.015	22.2	20.7	131 E	24	85	3 12	9 4.84	-48 26.9	0.331	1.191	46.6	19.8	119 E	-	68
4 11	9 44.95	-19 35.0	1.239	2.010	23.4	20.8	127 E	25	84	3 14	8 55.84	-49 13.0	0.330	1.185	48.0	19.9	118 E	-	67
4 16	9 46.03	-17 54.7	1.266	2.004	24.7	20.9	124 E	27	82	3 16	8 46.90	-49 53.3	0.330	1.178	49.4	19.9	116 E	-	66
4 21	9 48.02	-16 18.8	1.296	1.998	25.8	20.9	120 E	29	80	3 18	8 38.10	-50 28.1	0.331	1.171	50.8	19.9	114 E	-	66
4 26	9 50.88	-14 48.5	1.329	1.991	26.9	21.0	116 E	30	79	3 20	8 29.49	-50 57.9	0.331	1.164	52.2	20.0	113 E	-	65
5 1	9 54.54	-13 24.6	1.365	1.985	27.9	21.1	113 E	31*	77	3 22	8 21.13	-51 23.0	0.332	1.157	53.6	20.0	111 E	-	65
5 6	9 58.92	-12 7.6	1.403	1.978	28.8	21.2	109 E	32*	76	3 24	8 13.06	-51 44.0	0.333	1.150	54.9	20.0	109 E	-	64
5 11	10 3.96	-10 57.9	1.444	1.971	29.6	21.3	106 E	32*	75	3 26	8 5.32	-52 1.2	0.333	1.143	56.3	20.0	108 E	-	64
5 16	10 9.59	-9 55.5	1.485	1.964	30.2	21.3	102 E	32*	74	3 28	7 57.94	-52 15.1	0.334	1.137	57.6	20.1	106 E	-	64
5 21	10 15.76	-9 0.2	1.528	1.956	30.8	21.4	99 E	31*	73	3 30	7 50.92	-52 26.3	0.335	1.130	58.8	20.1	104 E	-	64
5 26	10 22.42	-8 12.0	1.572	1.948	31.2	21.5	95 E	30*	72	4 1	7 44.27	-52 35.2	0.335	1.123	60.1	20.1	103 E	-	63
157120 2004 NH₄										480936 2003 QH₅ (continuation)									
1 12	10 53.22	+13 3.8	2.180	2.922	14.7	21.3	131 W	58	51	4 6	7 29.21	-52 50.1	0.337	1.107	63.1	20.2	99 E	-	63
1 22	10 49.15	+13 52.3	2.086	2.927	11.9	21.1	142 W	59	50	4 11	7 16.18	-52 58.2	0.337	1.091	65.9	20.3	96 E	-	63*
2 1	10 42.66	+14 52.2	2.013	2.931	8.5	20.9	154 W	60	49	4 16	7 4.88	-53 3.0	0.335	1.076	68.6	20.3	93 E	-	62*
2 11	10 34.19	+15 58.2	1.968	2.934	4.8	20.7	166 W	61	48	4 21	6 54.96	-53 6.9	0.332	1.062	71.2	20.3	91 E	-	60*
2 21	10 24.46	+17 4.0	1.952	2.936	2.2	20.5	173 W	62	47	4 26	6 46.04	-53 11.9	0.327	1.048	73.7	20.4	88 E	-	58*
3 2	10 14.46	+18 2.6	1.966	2.937	4.7	20.7	166 E	63	46	5 1	6 37.67	-53 18.9	0.321	1.035	76.1	20.4	86 E	-	55*
3 12	10 5.23	+18 48.7	2.010	2.937	8.4	20.9	154 E	64	45	5 6	6 29.41	-53 27.7	0.312	1.024	78.4	20.4	84 E	-	52*
3 22	9 57.63	+19 19.2	2.080	2.936	11.8	21.1	143 E	64	45	5 11	6 20.82	-53 36.8	0.301	1.014	80.8	20.3	82 E	-	49*
4 1	9 52.26	+19 33.5	2.172	2.934	14.7	21.3	132 E	65	44	5 16	6 11.54	-53 44.3	0.288	1.005	83.1	20.3	80 E	-	45*
237353 1207 T-2										480936 2003 QH₅ (continuation)									
1 12	10 56.01	+12 30.2	2.215	2.948	14.7	21.5	130 W	58	51	5 21	6 1.21	-53 47.8	0.273	0.997	85.3	20.3	79 E	-	41*
1 22	10 51.80	+13 1.5	2.111	2.946	12.0	21.3	142 W	58	51	5 26	5 49.41	-53 44.2	0.257	0.991	87.6	20.2	78 E	-	37*
2 1	10 45.12	+13 43.6	2.030	2.943	8.7	21.1	153 W	59	50	5 31	5 35.69	-53 28.8	0.239	0.986	89.7	20.1	77 E	-	32*
2 11	10 36.40	+14 32.1	1.974	2.939	4.9	20.8	165 W	60	49	6 2	5 29.56	-53 17.8	0.231	0.985	90.6	20.1	76 E	-	30*
2 21	10 26.33	+15 21.6	1.948	2.934	1.8	20.6	175 W	60	49	6 4	5 23.03	-53 3.2	0.224	0.984	91.4	20.0	76 E	-	28*
3 2	10 15.88	+16 5.9	1.953	2.928	4.2	20.8	167 E	61	48	6 6	5 16.07	-52 44.2	0.216	0.983	92.2	20.0	75 E	-	26*
3 12	10 6.13	+16 40.0	1.987	2.922	8.1	21.0	156 E	62	47	6 8	5 8.68	-52 20.2	0.207	0.983	93.0	20.0	75 E	-	23*
3 22	9 57.96	+17 0.9	2.049	2.914	11.6	21.2	144 E	62	47	6 10	5 0.85	-51 50.1	0.199	0.982	93.8	19.9	75 W	-	25*
4 1	9 52.03	+17 7.6	2.132	2.905	14.6	21.4	133 E	62	47	6 12	4 52.57	-51 13.2	0.191	0.982	94.6	19.8	75 W	-	27*
516155 2016 DP										480936 2003 QH₅ (continuation)									
1 12	11 5.05	+38 24.1	0.666	1.510	29.2	21.5	131 W	83	26	6 14	4 43.82	-50 28.3	0.182	0.983	95.3	19.8	74 W	-	30*
1 17	10 59.32	+40 51.7	0.641	1.511	27.0	21.3	136 W	86	23	6 16	4 34.61	-49 34.1	0.174	0.983	95.9	19.7	74 W	-	33*
1 22	10 50.74	+43 24.4	0.619	1.510	24.9	21.2	140 W	88	21	6 18	4 24.92	-48 29.0	0.165	0.984	96.5	19.6	74 W	-	36*
1 27	10 38.99	+45 55.4	0.602	1.508	23.4	21.1	143 W	89	18	6 20	4 14.77	-47 11.4	0.157	0.985	97.0	19.5	74 W	-	39*
2 1	10 23.98	+48 16.1	0.591	1.505	22.5	21.0	144 W	87	16	6 22	4 4.14	-45 39.0	0.149	0.986	97.5	19.4	74 W	-	42*
2 6	10 5.94	+50 17.0	0.585	1.499	22.6	21.0	144 W	85	14	6 24	3 53.04	-43 49.5	0.140	0.988	97.8	19.3	74 W	-	46*
2 11	9 45.56	+51 49.9	0.584	1.493	23.7	21.0	142 W	83	12	6 26	3 41.49	-41 40.0	0.132	0.990	97.9	19.2	75 W	-	50*
2 16	9 23.97	+52 49.2	0.588	1.484	25.7	21.1	139 E	82	11	6 28	3 29.49	-39 7.3	0.124	0.992	97.9	19.1	75 W	-	54*
2 21	9 2.62	+53 13.2	0.597	1.475	28.1	21.2	135 E	82	11	6 30	3 17.09	-36 7.7	0.117	0.994	97.7	18.9	76 W	-	58*
2 26	8 42.93	+53 4.2	0.610	1.463	30.9	21.3	131 E	82	11	7 2	3 4.32	-32 37.9	0.110	0.997	97.2	18.8	77 W	-	63*
3 2	8 25.95	+52 28.0	0.627	1.450	33.7	21.4	126 E	83	12	7 4	2 51.21	-28 34.4	0.104	1.000	96.5	18.6	78 W	-	68*
3 7	8 12.21	+51 31.3	0.646	1.436	36.4	21.5	121 E	83	12	7 6	2 37.82	-23 55.3	0.098	1.003	95.3	18.5	79 W	-	72*
3 12	8 1.78	+50 20.8	0.668	1.419	39.0	21.6	116 E	85	14	7 8	2 24.19	-18 40.4	0.094	1.006	93.8	18.3	81 W	-	75*
187828 1999 VX₂₁										480936 2003 QH₅ (continuation)									
1 12	11 5.23	+ 1 12.3	1.821	2.506	19.0	21.4	124 W	46	63	7 10	2 10.36	-12 52.3	0.090	1.010	91.9	18.2	83 W	-	74*
1 22	11 2.25	+ 1 21.4	1.734	2.526	16.1	21.2	135 W	46	63	7 11	2 3.37	-9 47.8	0.089	1.012	90.8	18.1	84 W	-	73*
2 1	10 56.47	+ 1 50.5	1.665	2.545	12.4	21.0	146 W	47	62	7 12	1 56.35	-6 37.7	0.088	1.013	89.6	18.0	85 W	-	70*
2 11	10 48.34	+ 2 38.1	1.619	2.563	8.1	20.8	158 W	48	61	7 13	1 49.29	-3 23.6	0.087	1.015	88.3	17.9	87 W	-	31*
2 21	10 38.60	+ 3 40.1	1.599	2.580	3.6	20.5	171 W	49	60	7 14	1 42.20	-0 7.1	0.087	1.017	87.0	17.9	88 W	-	35*
3 2	10 28.34	+ 4 49.8	1.609	2.596	2.4	20.5	174 E	50	59	7 15	1 35.09	+ 3 10.1	0.087	1.019	85.6	17.8	90 W	-	39*
3 7	10 23.40	+ 5 25.1	1.624	2.604	4.5	20.6	168 E	50	59	7 16	1 27.95	+ 6 26.3	0.087	1.022	84.2	17.8	91 W	-	44*
3 12	10 18.77	+ 5 59.3	1.647	2.611	6.7	20.8	162 E	51	58	7 17	1 20.79	+ 9 39.7	0.088	1.024	82.7	17.8	92 W	-	48*
3 17	10 14.56	+ 6 31.8	1.677	2.618	8.8	20.9	156 E	52	57	7 18	1 13.62	+12 48.7	0.089	1.026	81.3	17.7	94 W	-	52*
3 22	10 10.88	+ 7 1.9	1.713	2.625	10.8	21.0	150 E	52	57	7 19	1 6.44	+15 51.9	0.090	1.028	79.9	17.7	95 W	-	56*
3 27	10 7.80	+ 7 28.8	1.755	2.632	12.7	21.2	145 E	52	57	7 20	0 59.26	+18 48.1	0.092	1.031	78.5	17.7	96 W	-	60*
4 1	10 5.38	+ 7 52.4	1.802	2.639	14.4	21.3	139 E	53	56	7 21	0 52.08	+21 36.3	0.094	1.033	77.2	17.7	98 W	-	64*
4 6	10 3.63	+ 8 12.2	1.854	2.645	15.9	21.4	134 E	53	56	7 22	0 44.91	+24 15.9	0.096	1.035	75.9	17.7	99 W	-	67*
480936 2003 QH₅ (continuation)																			

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°		
480936 2003 QH₅ (continuation)										358453 2007 EH₈₈ (continuation)											
9	3	21 15.15	+50 58.1	0.280	1.167	49.7	19.5	118 E	84	13	2	1	10 50.33	+30 2.5	0.667	1.601	17.4	20.9	151 W	75	34
9	8	21 7.74	+49 49.2	0.304	1.184	48.2	19.7	119 E	85	14	2	6	10 36.97	+31 2.1	0.655	1.607	14.4	20.7	156 W	76	33
9	13	21 3.16	+48 28.0	0.328	1.201	46.9	19.9	119 E	87	16	2	11	10 22.19	+31 50.3	0.650	1.612	12.4	20.6	159 W	77	32
9	18	21 1.08	+46 58.2	0.353	1.219	45.7	20.0	120 E	88	17	2	16	10 6.60	+32 23.2	0.651	1.615	12.0	20.6	160 W	77	32
9	23	21 1.20	+45 23.0	0.378	1.236	44.7	20.2	120 E	90	19	2	21	9 50.94	+32 38.2	0.658	1.617	13.5	20.7	158 E	78	31
9	28	21 3.22	+43 45.2	0.403	1.253	43.9	20.3	120 E	89	20	2	26	9 35.98	+32 35.0	0.672	1.618	16.1	20.9	153 E	78	31
10	3	21 6.84	+42 6.7	0.429	1.270	43.1	20.5	120 E	87	22	3	2	9 22.37	+32 14.9	0.692	1.618	19.3	21.0	147 E	77	32
10	8	21 11.83	+40 29.0	0.456	1.286	42.5	20.6	119 E	85	24	3	7	9 10.58	+31 40.7	0.717	1.616	22.5	21.2	141 E	77	32
10	13	21 18.01	+38 53.2	0.484	1.303	42.1	20.7	119 E	84	25	3	12	9 0.83	+30 55.9	0.746	1.613	25.6	21.4	135 E	76	33
10	18	21 25.22	+37 20.5	0.512	1.319	41.7	20.9	118 E	82	27	3	17	8 53.18	+30 3.5	0.780	1.609	28.4	21.5	130 E	75	34
10	23	21 33.34	+35 51.9	0.542	1.334	41.5	21.0	117 E	81	28	512234 2015 VO₆₆										
10	28	21 42.22	+34 28.5	0.573	1.349	41.3	21.2	116 E	79	30	1	12	11 30.84	+39 5.9	0.541	1.375	35.1	21.4	126 W	84	25
11	2	21 51.73	+33 10.7	0.605	1.364	41.2	21.3	115 E	78	31	1	17	11 35.24	+42 45.0	0.494	1.350	34.5	21.1	129 W	88	21
11	7	22 1.79	+31 58.7	0.639	1.378	41.2	21.4	114 E	77	32	1	22	11 38.55	+47 4.5	0.450	1.322	34.5	20.9	131 W	88	17
112891 2002 QG₄₇										1	27	11 40.28	+52 8.4	0.412	1.292	35.2	20.7	131 W	83	12	
1	12	11 16.24	+13 52.5	1.974	2.673	17.3	21.4	126 W	59	50	2	1	11 39.59	+57 58.5	0.378	1.259	37.2	20.5	129 W	77	6
1	22	11 14.13	+14 37.6	1.858	2.661	14.7	21.2	137 W	60	49	2	3	11 38.28	+60 31.1	0.366	1.245	38.4	20.4	128 W	74	3
2	1	11 9.13	+15 37.1	1.761	2.647	11.4	20.9	148 W	61	48	2	5	11 36.13	+63 10.6	0.355	1.231	39.9	20.4	127 W	72	1
2	11	11 1.42	+16 46.2	1.687	2.633	7.7	20.7	159 W	62	47	2	7	11 32.83	+65 56.3	0.345	1.217	41.6	20.3	125 W	69	—
2	21	10 51.54	+17 57.5	1.641	2.617	4.3	20.4	169 W	63	46	2	9	11 27.92	+68 47.4	0.335	1.202	43.5	20.3	123 W	66	—
2	26	10 46.07	+18 31.3	1.628	2.609	3.7	20.4	170 W	64	45	2	11	11 20.62	+71 43.1	0.327	1.187	45.7	20.3	121 W	63	—
3	2	10 40.45	+19 2.3	1.623	2.601	4.6	20.4	168 E	64	45	2	12	11 15.67	+73 12.0	0.323	1.179	46.9	20.3	119 W	62	—
3	7	10 34.85	+19 29.7	1.626	2.592	6.3	20.5	163 E	64	45	2	13	11 9.52	+74 41.5	0.320	1.171	48.2	20.3	118 W	60	—
3	12	10 29.42	+19 52.6	1.635	2.583	8.3	20.6	158 E	65	44	2	14	11 1.78	+76 11.0	0.317	1.163	49.5	20.3	116 W	59	—
3	17	10 24.32	+20 10.7	1.651	2.574	10.3	20.7	152 E	65	44	2	15	10 51.89	+77 40.1	0.313	1.155	50.9	20.3	115 W	57	—
3	22	10 19.68	+20 23.5	1.673	2.564	12.3	20.8	147 E	65	44	2	16	10 38.99	+79 8.0	0.311	1.147	52.3	20.3	113 W	56	—
3	27	10 15.61	+20 30.9	1.701	2.555	14.2	20.9	141 E	66	43	2	17	10 21.80	+80 33.6	0.308	1.139	53.7	20.3	112 W	54	—
4	1	10 12.21	+20 33.1	1.734	2.545	16.0	21.0	135 E	66	43	2	18	9 58.28	+81 55.2	0.306	1.130	55.2	20.3	110 E	53	—
4	6	10 9.53	+20 30.3	1.771	2.534	17.6	21.1	130 E	66	43	2	19	9 25.34	+83 9.8	0.303	1.122	56.8	20.3	108 E	52	—
4	11	10 7.60	+20 22.7	1.812	2.524	19.0	21.2	125 E	65	44	2	20	8 38.81	+84 12.3	0.302	1.113	58.3	20.3	107 E	51	—
4	16	10 6.42	+20 10.7	1.857	2.513	20.2	21.3	120 E	65	44	2	21	7 35.52	+84 54.7	0.300	1.104	60.0	20.3	105 E	50	—
4	21	10 5.99	+19 54.7	1.904	2.502	21.3	21.3	115 E	65	44	2	22	6 19.52	+85 7.7	0.298	1.095	61.6	20.4	103 E	50	—
4	26	10 6.29	+19 35.0	1.953	2.491	22.2	21.4	111 E	65	44	2	23	5 5.20	+84 47.5	0.297	1.086	63.3	20.4	101 E	50	—
5	1	10 7.28	+19 11.9	2.003	2.480	23.0	21.5	106 E	64*	45	2	24	4 5.34	+83 59.5	0.296	1.077	65.0	20.4	99 E	51*	—
155928 2001 PO₄₃										2	25	3 21.82	+82 53.1	0.295	1.068	66.8	20.4	97 E	52*	—	
1	12	11 18.44	+11 12.2	2.250	2.923	16.1	21.5	125 W	56	53	2	26	2 50.91	+81 35.5	0.294	1.059	68.6	20.5	95 E	52*	—
1	22	11 15.76	+11 47.6	2.140	2.925	13.6	21.3	136 W	57	52	2	27	2 28.60	+80 11.3	0.294	1.049	70.2	20.5	93 E	53*	—
2	1	11 10.53	+12 36.1	2.049	2.925	10.6	21.1	147 W	58	51	2	28	2 12.04	+78 43.0	0.293	1.040	72.4	20.5	91 E	53*	—
2	11	11 3.00	+13 33.8	1.983	2.924	7.0	20.8	159 W	59	50	2	29	1 59.40	+77 12.2	0.293	1.030	74.0	20.6	89 E	54*	—
2	21	10 53.72	+14 35.1	1.945	2.923	3.5	20.6	170 W	60	49	3	1	1 49.48	+75 39.9	0.293	1.021	75.9	20.6	87 E	54*	—
3	2	10 43.51	+15 33.3	1.936	2.920	2.9	20.6	171 E	61	48	3	2	1 41.50	+74 6.5	0.293	1.011	77.8	20.7	85 E	54*	—
3	12	10 33.44	+16 22.0	1.958	2.916	6.3	20.8	161 E	61	48	3	3	1 34.96	+72 32.4	0.293	1.001	79.7	20.7	83 E	54*	—
3	22	10 24.47	+16 56.7	2.009	2.911	10.0	21.0	149 E	62	47	3	4	1 29.48	+70 58.0	0.294	0.991	81.7	20.8	81 E	53*	—
4	1	10 17.40	+17 15.2	2.084	2.906	13.3	21.2	138 E	62	47	3	5	1 24.83	+69 23.4	0.294	0.980	83.6	20.8	79 E	53*	—
4	11	10 12.72	+17 17.6	2.178	2.899	15.9	21.4	127 E	62	47	3	6	1 20.81	+67 48.6	0.295	0.970	85.6	20.9	77 E	52*	—
285602 2000 QG₁₆₃										3	7	1 17.29	+66 13.9	0.296	0.960	87.6	20.9	75 E	52*	—	
1	12	11 20.71	- 5 19.6	2.045	2.647	19.2	21.4	118 W	40	69	3	8	1 14.18	+64 39.1	0.297	0.949	89.6	21.0	73 E	51*	—
1	22	11 18.73	- 5 31.3	1.954	2.673	16.9	21.3	128 W	39	70	3	9	1 11.38	+63 4.3	0.298	0.939	91.7	21.1	71 E	50*	—
2	1	11 14.14	- 5 22.7	1.878	2.698	13.9	21.1	139 W	40	69	3	10	1 8.85	+61 29.5	0.299	0.928	93.7	21.2	69 E	49*	—
2	11	11 7.26	- 4 53.1	1.822	2.723	10.4	20.9	150 W	40	69	3	11	1 6.54	+59 54.8	0.300	0.917	95.8	21.2	67 E	47*	—
2	21	10 58.64	- 4 3.8	1.791	2.746	6.6	20.8	161 W	41	68	3	12	1 4.41	+58 20.1	0.302	0.906	98.0	21.3	65 E	46*	—
3	2	10 49.18	- 2 58.9	1.788	2.769	3.6	20.6	170 E	42	67	3	14	1 0.57	+55 10.7	0.305	0.883	102.3	21.5	60 E	43*	—
3	12	10 39.91	- 1 44.9	1.814	2.791	4.7	20.7	167 E	43	66	3	16	0 57.17	+52 1.2	0.310	0.861	106.7	21.7	56 E	40*	—
3	22	10 31.79	- 0 29.4	1.869	2.812	8.1	21.0	157 E	45	64	3	18	0 54.08	+48 51.5	0.315	0.837	111.2	21.9	52 E	37*	—
4	1	10 25.58	+ 0 40.8	1.951	2.832	11.5	21.2	146 E	46	63	3	20	0 51.24	+45 41.6	0.321	0.813	115.8	22.2	47 E	33*	—
4	11	10 21.69	+ 1 40.3	2.055	2.851	14.5	21.5	135 E	47	62	280488 2004 LL₃₁										
285631 2000 RB₈₄										1	12	11 32.10	- 5 4.5	2.347	2.904	17.9	21.4	115 W	40	69	
1	12	11 22.69	- 2 51.4	2.074	2.683	18.8	21.4	118 W	42	67	1	22	11 30.86	- 5 17.8	2.227	2.909	16.0	21.2	125 W	40	69
1	22	11 20.83	- 2 52.4	1.981	2.708	16.5	21.2	129 W	42	67	2	1	11 27.21	- 5 13.7	2.122	2.913	13.5	21.0	136 W	40	69
2	1	11 16.38	- 2 33.7	1.904	2.732	13.4	21.1	140 W	42	67	2	11	11 21.29	- 4 50.9	2.036	2.917	10.5	20.8	147 W	40	69
2	11	11 9.64	- 1 55.7	1.847	2.755	9.8	20.9	152 W	43	66	2	21	11 13.47	-							

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°
274138 2008 FU₆									163692 2003 CY₁₈ (continuation)								
1 12	11 49.41	-10 55.3	1.481	2.022	27.4	21.3	109 W	34 75	8 24	14 3.86	-15 59.9	0.422	0.904	91.9	19.2	63 E	13* 57*
1 17	11 50.26	-11 15.5	1.409	2.011	26.7	21.2	113 W	34 75	8 29	14 23.94	-19 58.5	0.393	0.912	92.6	19.1	64 E	11* 58*
1 22	11 50.26	-11 30.1	1.338	1.999	25.7	21.0	118 W	33 76	9 3	14 46.85	-24 15.2	0.366	0.924	92.6	18.9	66 E	9* 60*
1 27	11 49.30	-11 38.3	1.269	1.987	24.5	20.8	123 W	33 76	9 8	15 13.61	-28 46.6	0.343	0.938	91.6	18.8	69 E	7* 61*
2 1	11 47.31	-11 38.9	1.202	1.972	23.0	20.7	128 W	33 76	9 10	15 25.68	-30 37.4	0.334	0.945	90.9	18.7	70 E	6* 62*
2 6	11 44.20	-11 30.7	1.139	1.957	21.2	20.5	134 W	33 76	9 12	15 38.65	-32 28.3	0.326	0.952	90.0	18.6	71 E	5* 63*
2 11	11 39.91	-11 12.6	1.080	1.941	19.1	20.3	140 W	34 75	9 14	15 52.62	-34 18.2	0.319	0.960	89.0	18.6	73 E	4* 64*
2 16	11 34.41	-10 43.2	1.025	1.924	16.7	20.1	146 W	34 75	9 16	16 7.67	-36 5.5	0.313	0.968	87.8	18.5	74 E	4* 65*
2 21	11 27.68	-10 1.3	0.975	1.906	14.0	19.8	152 W	35 74	9 18	16 23.87	-37 48.7	0.308	0.976	86.4	18.4	76 E	3* 66*
3 2	11 10.93	-7 57.6	0.893	1.866	8.4	19.4	164 W	37 72	9 20	16 41.27	-39 25.8	0.304	0.985	84.9	18.4	78 E	2* 66*
3 12	10 51.16	-5 3.4	0.840	1.822	6.9	19.1	167 E	40 69	9 22	16 59.85	-40 54.7	0.301	0.994	83.2	18.3	79 E	2* 67*
3 22	10 30.84	-1 34.9	0.815	1.773	13.1	19.3	156 E	43 66	9 24	17 19.57	-42 13.2	0.298	1.003	81.4	18.2	81 E	1* 68*
3 27	10 21.37	+0 14.0	0.814	1.747	17.0	19.4	149 E	45 64	9 26	17 40.30	-43 19.4	0.297	1.013	79.5	18.2	84 E	1* 69*
4 1	10 12.81	+2 1.3	0.818	1.720	20.9	19.5	142 E	47 62	9 28	18 1.85	-44 11.2	0.297	1.023	77.6	18.1	86 E	— 69*
4 6	10 5.38	+3 43.9	0.828	1.692	24.7	19.6	135 E	49 60	9 30	18 23.96	-44 47.3	0.298	1.033	75.5	18.1	88 E	— 70*
4 11	9 59.24	+5 19.6	0.842	1.662	28.2	19.7	128 E	50 59	10 2	18 46.31	-45 7.0	0.300	1.044	73.5	18.0	90 E	— 70*
4 16	9 54.44	+6 47.0	0.859	1.631	31.4	19.8	122 E	52 57	10 4	19 8.57	-45 10.0	0.303	1.055	71.4	18.0	92 E	— 71*
4 21	9 51.02	+8 5.3	0.879	1.599	34.4	19.9	116 E	53 56	10 6	19 30.41	-44 56.9	0.307	1.066	69.4	18.0	94 E	— 71*
5 1	9 48.20	+10 14.3	0.922	1.531	39.5	20.0	105 E	55* 54	10 8	19 51.53	-44 28.9	0.312	1.077	67.4	18.0	96 E	1 72
5 11	9 50.22	+11 48.9	0.963	1.457	43.6	20.1	95 E	53* 52	10 10	20 11.70	-43 47.6	0.319	1.088	65.4	18.0	98 E	1 72
5 21	9 56.33	+12 54.0	0.998	1.379	47.1	20.2	87 E	49* 51	10 12	20 30.75	-42 54.8	0.326	1.100	63.5	18.0	99 E	2 73
5 26	10 0.73	+13 17.1	1.011	1.337	48.7	20.2	83 E	46* 51	10 14	20 48.61	-41 52.7	0.335	1.112	61.7	18.1	101 E	3 74
5 31	10 5.92	+13 34.5	1.022	1.294	50.2	20.2	79 E	43* 50*	10 16	21 5.24	-40 43.2	0.344	1.123	60.0	18.1	103 E	4 75
6 5	10 11.81	+13 47.0	1.029	1.250	51.8	20.2	75 E	41* 50*	10 18	21 20.66	-39 28.0	0.354	1.135	58.4	18.1	104 E	6 77
6 10	10 18.35	+13 55.2	1.031	1.205	53.3	20.1	72 E	38* 49*	10 20	21 34.93	-38 8.9	0.365	1.147	56.8	18.2	105 E	7 78
6 15	10 25.47	+13 59.5	1.030	1.158	55.0	20.1	69 E	35* 48*	10 22	21 48.11	-36 47.2	0.377	1.160	55.4	18.2	106 E	8 79
6 20	10 33.12	+14 0.5	1.023	1.110	56.7	20.0	66 E	33* 47*	10 24	22 0.29	-35 24.0	0.390	1.172	54.1	18.3	107 E	10 81
6 25	10 41.25	+13 58.7	1.012	1.061	58.7	20.0	63 E	31* 46*	10 26	22 11.56	-34 0.4	0.404	1.184	52.9	18.3	108 E	11 82
6 30	10 49.78	+13 55.0	0.995	1.011	60.9	19.9	60 E	29* 45*	10 28	22 22.00	-32 36.9	0.418	1.197	51.7	18.4	109 E	12 83
7 5	10 58.60	+13 50.1	0.973	0.959	63.5	19.8	58 E	27* 43*	10 30	22 31.70	-31 14.3	0.433	1.209	50.7	18.5	110 E	14 85
7 10	11 7.62	+13 45.1	0.944	0.908	66.6	19.7	55 E	26* 42*	11 1	22 40.74	-29 52.9	0.449	1.221	49.7	18.5	110 E	15 86
7 15	11 16.66	+13 41.1	0.909	0.856	70.2	19.6	52 E	24* 40*	11 3	22 49.18	-28 33.0	0.465	1.234	48.9	18.6	110 E	16 87
7 20	11 25.50	+13 39.9	0.868	0.805	74.7	19.5	50 E	23* 38*	11 5	22 57.09	-27 14.8	0.482	1.247	48.0	18.7	111 E	18 89
7 25	11 33.77	+13 43.6	0.820	0.755	80.2	19.5	47 E	22* 36*	11 7	23 4.53	-25 58.5	0.499	1.259	47.3	18.8	111 E	19 90
7 30	11 40.88	+13 55.1	0.766	0.708	87.0	19.4	44 E	21* 33*	11 12	23 21.40	-22 56.3	0.545	1.290	45.7	19.0	111 E	22 87
8 4	11 45.96	+14 17.9	0.707	0.664	95.4	19.5	41 E	20* 30*	11 17	23 36.32	-20 6.3	0.594	1.322	44.4	19.2	111 E	25 84
8 9	11 47.67	+14 55.7	0.644	0.626	105.8	19.7	36 E	19* 26*	11 22	23 49.79	-17 27.9	0.647	1.353	43.3	19.4	110 E	28 81
8 14	11 44.16	+15 50.7	0.581	0.597	118.6	20.1	31 E	17* 20*	11 27	0 2.17	-15 0.3	0.702	1.384	42.4	19.6	109 E	30 79
8 19	11 33.24	+16 59.8	0.523	0.578	133.7	21.2	24 E	14* 13*	12 2	0 13.70	-12 42.4	0.759	1.414	41.7	19.8	108 E	32 77
1 12	11 51.48	+7 25.1	1.297	1.938	27.2	21.2	116 W	52 57	12 7	0 24.61	-10 33.2	0.819	1.444	41.0	20.0	106 E	34 75
1 22	11 56.32	+8 5.3	1.160	1.903	25.1	20.9	125 W	53 56	12 12	0 35.03	-8 31.8	0.882	1.474	40.3	20.2	104 E	36 73*
2 1	11 57.82	+9 18.7	1.034	1.865	22.0	20.5	135 W	54 55	12 17	0 45.10	-6 37.1	0.946	1.503	39.8	20.3	102 E	38 70*
2 11	11 55.25	+11 9.0	0.922	1.824	17.7	20.1	146 W	56 53	12 22	0 54.92	-4 48.7	1.012	1.532	39.2	20.5	100 E	40 68*
2 21	11 47.96	+13 35.9	0.828	1.781	12.6	19.6	157 W	59 50	12 27	1 4.54	-3 5.8	1.080	1.560	38.6	20.7	98 E	42 65*
3 26	11 42.44	+15 0.7	0.789	1.758	10.0	19.4	162 W	60 49	1 1	1 14.01	-1 27.9	1.149	1.588	38.0	20.8	96 E	44 63*
3 2	11 35.75	+16 30.3	0.756	1.734	8.0	19.2	166 W	62 47	1 6	1 23.38	+0 5.2	1.220	1.615	37.4	21.0	94 E	45 60*
3 7	11 28.02	+18 1.7	0.730	1.710	7.7	19.0	167 W	63 46	1 11	1 32.68	+1 34.2	1.292	1.641	36.8	21.1	91 E	47 57*
3 12	11 19.48	+19 31.5	0.709	1.686	9.6	19.0	164 E	65 44	1 16	1 41.96	+2 59.2	1.364	1.667	36.1	21.3	89 E	48 55*
3 17	11 10.43	+20 56.0	0.694	1.660	12.7	19.1	158 E	66 43	152704 1998 SD₄								
3 22	11 1.22	+22 12.0	0.685	1.634	16.5	19.1	152 E	67 42	1 12	11 53.88	-11 32.5	1.129	1.704	33.4	21.3	107 W	33 76
3 27	10 52.26	+23 16.7	0.681	1.608	20.4	19.2	146 E	68 41	1 17	11 58.15	-11 50.6	1.079	1.704	32.6	21.2	111 W	33 76
4 1	10 43.95	+24 8.3	0.682	1.580	24.3	19.3	139 E	69 40	1 22	12 1.69	-12 1.2	1.030	1.703	31.5	21.1	115 W	33 76
4 6	10 36.61	+24 46.1	0.686	1.553	28.1	19.4	133 E	70 39	1 27	12 4.42	-12 3.2	0.982	1.702	30.1	20.9	120 W	33 76
4 11	10 30.49	+25 10.5	0.693	1.524	31.6	19.5	127 E	70 39	2 1	12 6.26	-11 55.5	0.936	1.700	28.6	20.8	124 W	33 76
4 16	10 25.72	+25 22.2	0.703	1.495	34.9	19.5	121 E	70 39	2 6	12 7.15	-11 36.8	0.892	1.698	26.7	20.6	129 W	33 76
4 21	10 22.40	+25 23.3	0.713	1.466	38.0	19.6	116 E	70 39	2 11	12 7.03	-11 6.3	0.851	1.696	24.5	20.4	135 W	34 75
4 26	10 20.56	+25 11.9	0.724	1.436	40.8	19.7	111 E	70 39	2 16	12 5.86	-10 22.7	0.813	1.693	22.0	20.3	140 W	35 74
5 1	10 20.15	+24 52.1	0.736	1.406	43.4	19.7	106 E	70 39	2 21	12 3.63	-9 25.2	0.778	1.691	19.1	20.1	146 W	36 73
5 6	10 21.10	+24 24.0	0.746	1.375	45.8	19.8	102 E	69* 40	3 2	11 56.15	-6 47.4	0.722	1.684	12.3	19.7	159 W	38 67
5 11	10 23.30	+23 48.5	0.755	1.344	48.0	19.8	98 E	67* 40	3 12	11 45.62	-3 19.7	0.687	1.676	4.6	19.2	172 W	42 61
5 16	10 26.66	+23 6.2	0.763	1.313	50.1	19.9	94 E	64* 41	3 22	11 33.84	+0 36.9	0.675	1.668	4.8	19.2	172 E	46 63
5 21	10 31.07	+22 17.4	0.769	1.282	52.1	19.9	91 E	61* 42	3 27	11 28.21	+2 36.2	0.678	1.663	8.9	19.4	165 E	48 61
5 26	10 36.47	+21 22.5	0.773	1.251	54.1	19.9	88 E	58* 43	4 1	11 23.14	+4 30.7	0.687	1.658	12.9	19.5	158 E	50 59
5 31	10 42.75	+20 21.6	0.775	1.219	55.9	19.9	85 E	54* 44	4 6	11 18.86	+6 16.9	0.702	1.652				

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°				
202914 1997 PA									136926 1998 MY												
<i>(continuation)</i>																					
2	21	11 39.64	-5 10.9	1.984	2.902	8.8	20.6	153 W	40	69	1	12	12 7.74	-8 50.8	2.541	2.960	18.7	21.4	106 W	36	73
3	2	11 30.45	-4 44.8	1.929	2.897	5.2	20.4	165 W	40	69	1	22	12 9.69	-9 20.5	2.382	2.936	17.7	21.2	115 W	36	73
3	12	11 20.32	-4 6.3	1.903	2.890	2.7	20.2	172 E	41	68	2	1	12 9.45	-9 35.6	2.233	2.911	16.1	21.0	125 W	35	74
3	17	11 15.21	-3 43.9	1.901	2.887	3.3	20.2	170 E	41	68	2	11	12 6.86	-9 33.5	2.098	2.886	13.9	20.8	135 W	35	74
3	22	11 10.22	-3 20.2	1.906	2.883	4.8	20.3	166 E	42	67	3	2	12 1.91	-9 12.2	1.982	2.859	11.0	20.6	146 W	36	73
3	27	11 5.49	-2 56.1	1.919	2.879	6.7	20.4	160 E	42	67	3	21	11 54.85	-8 31.0	1.889	2.831	7.6	20.3	158 W	36	73
4	1	11 1.12	-2 32.3	1.939	2.875	8.5	20.5	155 E	42	67	3	12	11 46.23	-7 31.1	1.823	2.803	4.1	20.0	168 W	37	72
4	6	10 57.22	-2 9.5	1.965	2.870	10.3	20.6	149	43	66	3	17	11 41.59	-6 55.4	1.800	2.788	3.0	19.9	172 E	38	71
4	11	10 53.85	-1 48.3	1.998	2.865	12.0	20.7	143	43	66	3	22	11 36.88	-6 16.7	1.785	2.774	3.3	19.9	171 E	39	70
4	16	10 51.05	-1 29.3	2.036	2.860	13.6	20.8	138 E	44	65	3	27	11 32.24	-5 36.1	1.778	2.759	4.7	20.0	167 E	39	70
4	21	10 48.87	-1 12.7	2.078	2.855	15.1	20.9	132 E	44	65	4	1	11 27.79	-4 54.4	1.777	2.743	6.6	20.0	161 E	40	69
4	26	10 47.32	-0 59.0	2.125	2.849	16.3	21.0	127 E	44	65	4	6	11 23.67	-4 12.8	1.784	2.728	8.6	20.1	156 E	41	68
5	1	10 46.40	-0 48.4	2.176	2.844	17.5	21.1	122 E	44	65	4	11	11 19.96	-3 32.2	1.797	2.712	10.6	20.2	150 E	41	68
5	6	10 46.11	-0 41.1	2.230	2.837	18.4	21.2	117	44	65	4	16	11 16.74	-2 53.4	1.816	2.696	12.5	20.3	144	42	67
5	11	10 46.41	-0 37.0	2.286	2.831	19.2	21.2	113	44*	65	4	21	11 14.10	-2 17.3	1.841	2.680	14.3	20.4	139 E	43	66
5	16	10 47.29	-0 36.1	2.344	2.825	19.9	21.3	108 E	43*	65	5	1	11 10.71	-1 15.4	1.904	2.647	17.4	20.5	128 E	44	65
5	21	10 48.71	-0 38.5	2.403	2.818	20.4	21.4	104 E	42*	65	5	11	11 9.93	-0 29.6	1.982	2.614	19.9	20.7	118 E	45	64
5	26	10 50.65	-0 44.0	2.464	2.811	20.8	21.4	99 E	40*	65	5	21	11 11.71	-0 1.1	2.070	2.579	21.8	20.8	109 E	44*	64
5	31	10 53.07	-0 52.7	2.525	2.804	21.1	21.5	95 E	37*	65	5	31	11 15.89	+0 10.1	2.163	2.544	23.1	20.9	100 E	41*	64
173309 1999 VK₂₂									189165 2002 TQ₉₆												
1	12	11 56.48	-9 17.1	2.548	2.998	18.2	21.5	108 W	36	73	6	10	11 22.19	+0 5.0	2.259	2.508	23.9	21.0	92 E	36*	64
1	22	11 56.37	-9 44.4	2.432	3.018	16.8	21.3	118 W	35	74	6	20	11 30.38	-0 14.9	2.353	2.471	24.2	21.1	84	31*	64*
2	1	11 53.96	-9 55.8	2.328	3.036	14.8	21.2	128 W	35	74	6	30	11 40.24	-0 48.1	2.444	2.434	24.1	21.1	77 E	26*	63*
2	11	11 49.30	-9 49.4	2.240	3.053	12.3	21.0	139 W	35	74	7	10	11 51.54	-1 33.2	2.530	2.396	23.6	21.1	71 E	22*	60*
2	21	11 42.64	-9 24.5	2.173	3.070	9.3	20.8	150 W	36	73	7	20	12 4.13	-2 28.7	2.609	2.357	22.9	21.1	64 E	18*	56*
3	2	11 34.49	-8 41.9	2.132	3.085	6.0	20.7	161 W	36	73	7	30	12 17.90	-3 33.1	2.681	2.318	21.9	21.1	59 E	15*	52*
3	12	11 25.59	-7 44.8	2.119	3.100	3.5	20.5	169 E	37	72	8	9	12 32.73	-4 45.1	2.744	2.279	20.8	21.1	53	13*	46*
3	22	11 16.80	-6 38.1	2.136	3.114	4.3	20.6	166 E	38	71	8	19	12 48.56	-6 3.2	2.797	2.239	19.4	21.1	47 E	11*	41*
4	1	11 8.94	-5 28.2	2.183	3.126	7.2	20.8	157 E	40	69	8	29	13 5.37	-7 26.2	2.841	2.199	17.9	21.0	42 E	9*	36*
4	11	11 2.69	-4 21.5	2.257	3.138	10.3	21.0	146	41	68	9	8	13 23.12	-8 52.6	2.876	2.158	16.3	20.9	37 E	7*	31*
4	21	10 58.44	-3 22.8	2.355	3.149	13.0	21.2	135 E	42	67	9	18	13 41.83	-10 21.0	2.900	2.118	14.6	20.9	32 E	6*	26*
5	1	10 56.36	-2 35.6	2.471	3.159	15.1	21.4	125 E	42	67	9	28	14 1.51	-11 49.7	2.915	2.077	12.8	20.8	27 E	5*	21*
203467 2001 YR₁₅₁									203467 2001 YR₁₅₁												
1	12	11 57.90	-0 2.7	2.401	2.908	18.4	21.5	111 W	45	64	10	8	14 22.16	-13 17.0	2.921	2.037	10.9	20.7	23	4*	17*
1	22	11 57.86	-0 18.0	2.271	2.909	16.8	21.3	121 W	45	64	10	18	14 43.83	-14 41.2	2.918	1.997	9.0	20.5	18	3*	12*
2	1	11 55.38	-0 18.9	2.153	2.908	14.5	21.1	132 W	45	64	10	28	15 6.54	-16 0.3	2.906	1.957	7.1	20.4	14 E	1*	8*
2	11	11 50.44	-0 5.1	2.053	2.907	11.6	20.9	144 W	45	64	11	7	15 30.30	-17 12.1	2.887	1.918	5.1	20.2	10 E	-	3*
2	21	11 43.24	+0 22.5	1.976	2.905	8.1	20.7	155 W	45	64	11	17	15 55.11	-18 14.4	2.861	1.880	3.2	20.1	6 E	-	-
3	2	11 34.26	+1 1.4	1.925	2.902	4.1	20.4	168 W	46	63	11	27	16 20.94	-19 5.0	2.828	1.844	1.6	19.9	3 E	-	-
3	12	11 24.32	+1 47.4	1.904	2.898	0.7	20.1	178 E	47	62	12	7	16 47.73	-19 41.5	2.791	1.808	1.8	19.8	3 W	-	-
3	17	11 19.28	+2 11.2	1.905	2.895	2.4	20.3	173 E	47	62	12	17	17 15.41	-20 1.9	2.749	1.774	3.6	19.9	6 W	-	-
3	22	11 14.37	+2 34.8	1.913	2.892	4.5	20.4	167 E	48	61	12	27	17 43.84	-20 4.2	2.703	1.742	5.5	19.9	10 W	3*	-
3	27	11 9.70	+2 57.3	1.929	2.890	6.6	20.5	161 E	48	61	1	6	18 12.84	-19 46.9	2.656	1.712	7.5	19.9	13 W	4*	4*
4	1	11 5.39	+3 18.1	1.952	2.886	8.5	20.6	155 E	48	61	1	16	18 42.26	-19 9.0	2.607	1.685	9.4	19.9	16 W	6*	7*
4	6	11 1.53	+3 36.6	1.981	2.883	10.4	20.7	149 E	49	60	189165 2002 TQ₉₆										
4	11	10 58.19	+3 52.5	2.016	2.879	12.1	20.8	143 E	49	60	1	12	12 11.16	-6 36.9	1.980	2.437	22.9	21.4	106 W	38	71
4	16	10 55.41	+4 5.5	2.056	2.875	13.7	20.9	137 E	49	60	1	22	12 15.63	-7 10.2	1.832	2.413	21.8	21.2	115 W	38	71
4	21	10 53.24	+4 15.3	2.101	2.871	15.1	21.0	132 E	49	60	2	1	12 17.68	-7 26.2	1.692	2.388	20.0	20.9	124 W	38	71
4	26	10 51.68	+4 21.8	2.151	2.867	16.4	21.1	127 E	49	60	2	11	12 17.01	-7 21.6	1.565	2.363	17.4	20.7	134 W	38	71
5	1	10 50.75	+4 24.9	2.204	2.862	17.5	21.2	122 E	49	60	2	21	12 13.43	-6 53.7	1.453	2.336	13.9	20.3	145 W	38	71
5	6	10 50.43	+4 24.6	2.260	2.857	18.4	21.3	117 E	49	60	3	2	12 7.02	-6 0.8	1.363	2.308	9.6	20.0	157 W	39	70
5	11	10 50.69	+4 21.1	2.318	2.852	19.2	21.4	112 E	49*	60	3	12	11 58.30	-4 44.9	1.297	2.280	4.7	19.7	169 W	40	69
5	16	10 51.52	+4 14.4	2.378	2.847	19.8	21.4	107 E	48*	60	3	17	11 53.36	-3 59.9	1.273	2.266	2.4	19.5	174 W	41	68
147997 1996 RH₂₆									147997 1996 RH₂₆												
1	12	12 3.72	+1 56.0	2.075	2.593	20.8	21.4	111 W	47	62	3	22	11 48.24	-3 11.5	1.257	2.251	2.2	19.4	175 E	42	67
1	22	12 5.27	+1 42.5	1.943	2.586	19.1	21.2	121 W	47	62	3	27	11 43.11	-2 21.2	1.247	2.236	4.5	19.5	170 E	43	66
2	1	12 4.15	+1 45.0	1.822	2.578	16.8	21.0	131 W	47	62	4	1	11 38.17	-1 30.4	1.244	2.221	7.2	19.6	164 E	43	66
2	11	12 0.19	+2 3.7	1.717	2.569	13.6	20.7	142 W	47	62	4	6	11 33.57	-0 40.6	1.248	2.206	10.0	19.7	158 E	44	65
2	21	11 53.48	+2 37.7	1.633	2.559	9.7	20.4	154 W	48	61	4	11	11 29.47	+0 6.8	1.257	2.191	12.6	19.8	152	45	64
3	2	11 44.42	+3 23.9	1.574	2.548	5.2	20.1	166 W	48	61	4	16	11 25.99	+0 50.6	1.272	2.176	15.1	19.9	146 E	46	63
3	7	11 39.27	+3 49.9	1.555	2.542	2.8	20.0	173 W	49	60	4	21	11 23.22	+1 30.1	1.292	2.160	17.5	20.0	140 E	46	63
3	12	11 33.88	+4 16.7	1.543	2.536	0.6	19.8														

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°										
189165 2002 TQ₉₆										337557 2001 SF₂₆₂																			
<i>(continuation)</i>										<i>(continuation)</i>																			
11 17	17 21.56	-18 58.2	2.407	1.583	16.1	20.7	26 E	11*	18*	2 1	11 44.52	+48 31.1	1.104	1.921	21.8	21.1	134 W	86	15	2 1	11 29.02	+48 40.0	1.088	1.932	20.2	21.0	137 W	86	15
11 27	17 52.12	-19 14.8	2.428	1.574	14.5	20.6	24 E	10*	14*	2 6	11 29.02	+48 40.0	1.088	1.932	20.2	21.0	137 W	86	15	2 11	11 12.02	+48 31.6	1.078	1.943	18.9	21.0	140 W	86	15
12 7	18 23.06	-19 10.0	2.450	1.568	12.9	20.6	21 E	10*	11*	2 11	11 12.02	+48 31.6	1.078	1.943	18.9	21.0	140 W	86	15	2 16	10 54.18	+48 2.6	1.074	1.953	17.9	20.9	143 W	87	16
12 17	18 54.16	-18 43.3	2.471	1.566	11.3	20.5	18 E	9*	7*	2 16	10 54.18	+48 2.6	1.074	1.953	17.9	20.9	143 W	87	16	2 21	10 36.28	+47 11.7	1.078	1.963	17.5	20.9	143 W	88	17
12 27	19 25.17	-17 55.0	2.492	1.566	9.6	20.5	15 E	7*	4*	2 21	10 36.28	+47 11.7	1.078	1.963	17.5	20.9	143 W	88	17	3 7	9 49.42	+42 41.0	1.136	1.990	19.3	21.1	138 E	88	20
1 6	19 55.83	-16 46.3	2.514	1.570	7.9	20.4	13 E	6*	1*	3 7	9 49.42	+42 41.0	1.136	1.990	19.3	21.1	138 E	88	20	3 12	9 37.58	+40 43.6	1.169	1.999	20.6	21.3	135 E	86	23
1 16	20 25.99	-15 18.8	2.536	1.577	6.3	20.4	10 E	4*	—	3 17	9 27.84	+38 39.9	1.209	2.007	22.0	21.4	131 E	84	25	3 22	9 20.13	+36 33.3	1.255	2.015	23.4	21.5	127 E	82	27
470533 2008 DF₂₃										283626 2002 CK₂₁₀																			
1 12	12 13.67	-1 45.9	1.030	1.620	35.5	21.4	107 W	43	66	1 12	12 29.98	-3 7.0	2.296	2.691	20.9	21.5	103 W	42	67*	1 22	12 32.21	-3 29.9	2.185	2.716	19.6	21.4	112 W	41	68
1 22	12 16.56	-5 14.9	0.956	1.639	32.9	21.2	115 W	40	69	2 1	12 31.93	-3 37.7	2.081	2.740	17.6	21.2	123 W	41	68	2 11	12 29.05	-3 29.5	1.991	2.763	15.0	21.0	133 W	42	67
2 1	12 14.82	-8 41.2	0.890	1.658	29.4	20.9	124 W	36	73	2 11	12 29.05	-3 29.5	1.991	2.763	15.0	21.0	133 W	42	67	3 2	12 15.96	-2 27.4	1.868	2.807	7.9	20.7	157 W	43	66
2 11	12 7.88	-11 58.7	0.836	1.678	25.1	20.7	134 W	33	76	3 2	12 15.96	-2 27.4	1.868	2.807	7.9	20.7	157 W	43	66	3 7	9 49.42	+42 41.0	1.136	1.990	19.3	21.1	138 E	88	20
2 21	11 55.66	-14 56.6	0.797	1.699	20.0	20.5	144 W	30	79	3 12	9 37.58	+40 43.6	1.169	1.999	20.6	21.3	135 E	86	23	3 17	9 27.84	+38 39.9	1.209	2.007	22.0	21.4	131 E	84	25
2 26	11 47.78	-16 13.4	0.784	1.709	17.5	20.4	149 W	29	80	3 22	9 20.13	+36 33.3	1.255	2.015	23.4	21.5	127 E	82	27	4 1	10 47.13	-19 50.4	0.854	1.782	17.2	20.6	148 E	25	84
3 2	11 39.00	-17 19.8	0.777	1.720	15.2	20.3	153 W	28	81	4 1	10 47.13	-19 50.4	0.854	1.782	17.2	20.6	148 E	25	84	4 6	10 41.55	-19 43.7	0.884	1.792	19.3	20.8	144 E	25	84
3 7	11 29.66	-18 14.4	0.776	1.730	13.5	20.2	156 W	27	82	4 11	10 37.29	-19 33.2	0.920	1.802	21.2	20.9	139 E	25	84	4 16	10 34.34	-19 20.7	0.958	1.812	23.1	21.1	135 E	26	83
3 12	11 20.13	-18 56.5	0.780	1.740	12.6	20.2	158 E	26	83	4 21	10 32.68	-19 7.7	1.000	1.822	24.7	21.2	131 E	26	83	4 26	10 32.23	-18 55.5	1.045	1.832	26.2	21.4	127 E	26	83
3 17	11 10.76	-19 26.0	0.790	1.751	12.6	20.3	157 E	26	83	5 1	11 28.77	+1 51.3	2.150	2.914	15.1	21.3	131 E	47	62	5 6	11 27.65	+1 56.9	2.211	2.922	16.2	21.4	126 E	47	62
3 22	11 1.94	-19 43.8	0.806	1.761	13.7	20.3	155 E	25	84	5 12	12 25.21	-3 43.0	1.281	1.790	32.3	21.5	104 W	41	68*	6 10	14 31.94	-3 55.8	0.314	1.262	33.6	17.7	137 E	41	68
3 27	10 53.98	-19 51.2	0.827	1.772	15.3	20.5	152 E	25	84	6 20	14 51.69	-6 0.5	0.334	1.267	36.2	17.9	133 E	39	70	6 25	15 2.88	-7 12.8	0.347	1.272	37.1	18.0	131 E	38	71
4 1	10 47.13	-19 50.4	0.854	1.782	17.2	20.6	148 E	25	84	7 30	16 35.09	-15 47.2	0.503	1.352	39.4	19.0	122 E	29*	80	7 5	15 27.34	-9 47.0	0.380	1.287	38.3	18.3	128 E	35	74
4 6	10 41.55	-19 43.7	0.884	1.792	19.3	20.8	144 E	25	84	8 9	17 3.07	-17 37.4	0.569	1.387	39.4	19.4	120 E	27	82	8 18	15 40.33	-11 4.9	0.400	1.297	38.7	18.4	127 E	34	75
4 11	10 37.29	-19 33.2	0.920	1.802	21.2	20.9	139 E	25	84	8 19	17 30.84	-19 1.9	0.647	1.426	39.3	19.7	117 E	26	83	9 8	18 24.89	-20 35.1	0.832	1.513	38.7	20.3	110 E	24	85
4 16	10 34.34	-19 20.7	0.958	1.812	23.1	21.1	135 E	26	83	9 18	17 44.57	-19 34.6	0.689	1.447	39.2	19.9	115 E	25	84	9 18	18 50.88	-20 46.8	0.940	1.560	38.1	20.7	107 E	24	85
4 21	10 32.68	-19 7.7	1.000	1.822	24.7	21.2	131 E	26	83	9 28	19 3.60	-20 44.9	0.997	1.584	37.8	20.8	105 E	24	85	9 28	19 16.13	-20 38.2	1.057	1.608	37.4	21.0	103 E	24	85
4 26	10 32.23	-18 55.5	1.045	1.832	26.2	21.4	127 E	26	83	10 3	19 28.46	-20 27.0	1.118	1.633	37.0	21.1	101 E	25	84	10 8	19 40.60	-20 11.6	1.181	1.658	36.6	21.2	99 E	25	84
5 1	11 28.77	+1 51.3	2.150	2.914	15.1	21.3	131 E	47	62	10 13	19 52.54	-19 52.3	1.247	1.683	36.1	21.4	97 E	25	84*	11 17	18 8.74	-21 58.6	2.168	1.664	26.0	21.4	47 E	17*	40*
5 6	11 27.65	+1 56.9	2.211	2.922	16.2	21.4	126 E	47	62	11 27	19 7.42	-21 52.1	2.323	1.702	22.2	21.5	41 E	17*	32*	12 7	19 36.23	-21 17.6	2.401	1.723	20.3	21.5	37 E	16*	27*
175189 2005 EC₂₂₄										412550 2014 NL₂₅																			
1 12	12 25.21	-3 43.0	1.281	1.790	32.3	21.5	104 W	41	68*	1 12	12 34.30	-0 18.7	1.688	2.135	26.7	21.4	103 W	45	64*	1 22	12 43.93	-0 39.2	1.545	2.105	25.9	21.1	111 W	44	65
1 22	12 40.57	-5 8.2	1.139	1.740	32.2	21.1	110 W	40	69	2 1	12 51.57	-0 40.6	1.409	2.075	24.5	20.9	119 W	44	65	2 11	12 56.81	-0 20.2	1.283	2.045	22.3	20.6	128 W	45	64
2 1	12 55.24	-6 23.3	1.006	1.689	31.6	20.8	116 W	39	70	2 21	12 59.19	+0 24.3	1.170	2.014	19.3	20.2	138 W	45	64	3 2	12 58.33	+1 33.4	1.072	1.984	15.3	19.9	148 W	47	62
2 11	13 9.02	-7 25.5	0.881	1.640	30.4	20.4	123 W	38	71	3 2	12 58.33	+1 33.4	1.072	1.984	15.3	19.9	148 W	47	62	3 12	12 54.19	+3 3.9	0.994	1.953	10.6	19.5	159 W	48	61
2 21	13 21.62	-8 11.5	0.766	1.590	28.6	20.0	130 W	37	72	3 17	12 50.97	+3 55.0	0.962	1.938	8.2	19.3	164 W	49	60	3 22	12 47.12	+4 48.3	0.937	1.923	6.0	19.1	168 W	50	59
3 2	13 32.64	-8 37.2	0.662	1.543	26.0	19.5	137 W	36	73	3 27	12 42.76	+5 41.8	0.917	1.908	5.0	19.0	170 W	51	58	4 1	12 38.10	+6 33.8	0.903	1.893	5.9	19.0	169 E	52	57
3 12	13 41.74	-8 39.0	0.570	1.496	22.5	19.0	145 W	36	73	4 1	12 38.10	+6 33.8	0.903	1.893	5.9	19.0	169 E	52	57	4 6	12 33.35	+7 22.1	0.895	1.879	8.1	19.1	165 E	52	57
3 22	13 48.53	-8 13.6	0.491	1.452	18.0	18.5	153 W	37	72	4 11	12 28.71	+8 5.0	0.892	1.864	10.9	19.2	159 E	53	56	4 16	12 24.40	+8 41.1	0.895	1.850	13.8	19.3	154 E	54	55
4 1	13 52.81	-7 19.8	0.426	1.411	12.5	17.9	162 W	38	71	4 21	12 20.61	+9 9.4	0.903	1.836	16.7	19.4	148 E	54	55	5 1	12 15.21	+9 39.5	0.930	1.808	22.0	19.6	138 E	55	54
4 6	13 54.08	-6 43.3	0.399	1.392	9.6	17.7	167 W	38	71	5 11	12 13.35	+9 34.0	0.972	1.781	26.5	19.8	128 E	55	54	5 21	12 15.24	+8 56.2	1.022	1.756	30.2	20.0	119 E	54	55

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°	
190166 2005 UP₁₅₆									457261 2008 RY₂₅									
<i>(continuation)</i>									<i>(continuation)</i>									
2 26	13 2.21	-8 52.0	1.049	1.908	20.0	19.7	139 W	36 73	7 10	11 39.63	-12 20.2	1.631	1.648	36.1	20.3	73 E	12*	67*
3 2	13 1.94	-8 41.4	0.984	1.878	18.1	19.5	144 W	36 73	7 20	11 55.72	-15 35.5	1.676	1.613	35.9	20.3	69 E	7*	63*
3 7	13 0.79	-8 23.3	0.923	1.847	15.9	19.2	149 W	37 72	7 30	12 13.97	-18 56.5	1.715	1.581	35.6	20.3	65 E	3*	58*
3 12	12 58.70	-7 57.4	0.867	1.817	13.4	19.0	155 W	37 72	8 9	12 34.46	-22 21.4	1.750	1.553	35.1	20.3	62 E	-	54*
3 22	12 51.72	-6 40.1	0.769	1.755	7.3	18.4	167 W	38 71	8 19	12 57.37	-25 47.7	1.781	1.530	34.6	20.3	59 E	-	50*
4 1	12 41.40	-4 50.1	0.693	1.692	0.2	17.6	180 E	40 69	8 29	13 22.96	-29 11.8	1.809	1.511	33.9	20.3	57 E	-	47*
4 11	12 29.07	-2 36.2	0.638	1.629	8.3	17.9	166 E	42 67	9 8	13 51.48	-32 28.5	1.835	1.498	33.3	20.3	55 E	-	44*
4 16	12 22.76	-1 25.1	0.618	1.597	12.7	17.9	160 E	44 65	9 18	14 23.23	-35 31.1	1.862	1.491	32.5	20.3	53 E	-	42*
4 21	12 16.75	-0 14.6	0.603	1.566	17.0	18.0	153 E	45 64	9 28	14 58.36	-38 11.7	1.891	1.489	31.7	20.3	51 E	-	40*
4 26	12 11.33	+0 52.6	0.593	1.535	21.4	18.0	146 E	46 63	10 3	15 17.16	-39 20.8	1.907	1.490	31.3	20.3	51 E	-	40*
5 1	12 6.79	+1 54.2	0.586	1.504	25.6	18.1	140 E	47 62	10 8	15 36.74	-40 21.0	1.924	1.493	30.8	20.3	50 E	-	39*
5 6	12 3.32	+2 48.2	0.582	1.473	29.6	18.2	134 E	48 61	10 13	15 57.02	-41 11.1	1.942	1.497	30.4	20.3	49 E	-	39*
5 11	12 1.06	+3 33.4	0.580	1.443	33.3	18.2	128 E	49 60	10 18	16 17.90	-41 50.2	1.962	1.502	29.8	20.3	49 E	-	39*
5 21	12 0.53	+4 34.9	0.581	1.384	40.2	18.3	118 E	50 59	10 23	16 39.25	-42 17.6	1.984	1.509	29.3	20.4	48 E	-	39*
5 31	12 5.49	+4 56.1	0.584	1.328	46.0	18.4	109 E	49* 59	10 28	17 0.89	-42 32.6	2.007	1.517	28.7	20.4	47 E	-	38*
6 10	12 15.74	+4 39.1	0.586	1.276	51.0	18.5	102 E	46* 59	11 2	17 22.66	-42 34.9	2.032	1.527	28.1	20.4	46 E	-	38*
6 20	12 30.90	+3 47.2	0.584	1.230	55.2	18.5	97 E	42* 60	11 7	17 44.36	-42 24.5	2.059	1.538	27.4	20.4	46 E	-	38*
6 30	12 50.72	+2 23.0	0.578	1.190	58.6	18.5	92 E	39* 62	11 12	18 5.85	-42 1.8	2.089	1.550	26.7	20.5	45 E	-	37*
7 10	13 15.00	+0 29.6	0.569	1.158	61.4	18.5	89 E	36* 64	11 17	18 26.95	-41 27.2	2.120	1.563	25.9	20.5	44 E	-	37*
7 20	13 43.75	+1 50.1	0.557	1.135	63.4	18.5	87 E	33* 66*	11 22	18 47.52	-40 41.7	2.153	1.577	25.2	20.5	43 E	-	36*
7 30	14 17.14	-4 32.5	0.544	1.123	64.5	18.4	87 E	32* 68*	11 27	19 7.47	-39 46.1	2.188	1.592	24.3	20.5	42 E	-	35*
8 4	14 35.63	-6 0.0	0.539	1.121	64.6	18.4	87 E	31* 70*	12 2	19 26.71	-38 41.5	2.225	1.608	23.5	20.6	41 E	-	34*
8 9	14 55.30	-7 30.2	0.535	1.122	64.5	18.4	87 E	30* 71*	12 7	19 45.20	-37 29.0	2.263	1.626	22.6	20.6	39 E	-	33*
8 14	15 16.15	-9 1.5	0.532	1.125	64.1	18.4	88 E	30* 73*	12 12	20 2.92	-36 9.8	2.303	1.644	21.7	20.6	38 E	-	32*
8 19	15 38.14	-10 32.0	0.532	1.131	63.4	18.3	89 E	30* 74*	12 17	20 19.88	-34 44.9	2.345	1.662	20.7	20.7	37 E	-	31*
8 24	16 1.18	-11 59.4	0.534	1.140	62.5	18.3	90 E	29* 75*	12 22	20 36.09	-33 15.3	2.387	1.682	19.7	20.7	35 E	-	29*
8 29	16 25.11	-13 21.1	0.539	1.152	61.3	18.3	91 E	29* 77*	12 27	20 51.58	-31 42.1	2.431	1.702	18.7	20.7	34 E	-	27*
9 3	16 49.71	-14 34.7	0.547	1.165	59.9	18.4	92 E	29* 78*	1 1	21 6.38	-30 6.0	2.475	1.723	17.7	20.8	32 E	-	25*
9 8	17 14.71	-15 37.9	0.559	1.181	58.3	18.4	93 E	28* 79*	1 6	21 20.54	-28 27.8	2.519	1.745	16.6	20.8	30 E	-	24*
9 13	17 39.84	-16 29.0	0.576	1.200	56.7	18.4	95 E	28* 80*	1 11	21 34.10	-26 48.1	2.565	1.767	15.5	20.8	29 E	-	22*
9 18	18 4.81	-17 6.9	0.596	1.220	55.0	18.5	96 E	28* 81*	1 16	21 47.11	-25 7.5	2.610	1.789	14.4	20.9	27 E	-	20*
9 23	18 29.34	-17 31.3	0.621	1.241	53.4	18.6	97 E	27* 82	243775 2000 RA₁₀₁									
9 28	18 53.19	-17 42.4	0.650	1.265	51.7	18.7	98 E	27 82	1 12	12 39.25	-20 39.2	2.123	2.395	24.2	21.5	94 W	24	82*
10 3	19 16.15	-17 41.1	0.683	1.289	50.2	18.8	98 E	27 82	1 22	12 47.58	-21 36.8	1.968	2.365	24.1	21.3	101 W	23	86
10 8	19 38.11	-17 28.6	0.721	1.315	48.7	18.9	99 E	28 81	2 1	12 54.04	-22 19.1	1.816	2.335	23.5	21.0	109 W	23	86
10 13	19 59.00	-17 6.5	0.762	1.342	47.3	19.0	99 E	28 81	2 11	12 58.26	-22 41.4	1.670	2.305	22.2	20.8	118 W	22	87
10 18	20 18.82	-16 36.1	0.808	1.370	46.0	19.2	98 E	28 81	2 21	12 59.89	-22 38.6	1.534	2.274	20.2	20.5	127 W	22	87
10 23	20 37.58	-15 58.7	0.857	1.399	44.8	19.3	98 E	29 80*	3 2	12 58.64	-22 4.2	1.410	2.242	17.4	20.2	137 W	23	86
10 28	20 55.34	-15 15.6	0.910	1.429	43.6	19.5	97 E	30 79*	3 7	12 56.92	-21 33.2	1.355	2.226	15.7	20.1	143 W	23	86
11 2	21 12.15	-14 27.9	0.965	1.459	42.5	19.6	96 E	31 78*	3 12	12 54.51	-20 52.1	1.304	2.210	13.8	19.9	148 W	24	85
11 7	21 28.08	-13 36.6	1.024	1.489	41.5	19.7	95 E	31 77*	3 17	12 51.47	-20 0.6	1.259	2.194	11.7	19.7	153 W	25	84
11 12	21 43.22	-12 42.4	1.086	1.520	40.5	19.9	94 E	32 75*	3 22	12 47.86	-18 58.6	1.219	2.178	9.5	19.5	159 W	26	83
11 17	21 57.65	-11 45.9	1.151	1.551	39.5	20.0	93 E	33 73*	3 27	12 43.84	-17 46.3	1.185	2.162	7.3	19.4	164 W	27	82
11 22	22 11.45	-10 47.6	1.218	1.583	38.6	20.2	91 E	34 71*	4 1	12 39.54	-16 24.6	1.158	2.146	5.5	19.2	168 E	29	80
11 27	22 24.68	-9 48.0	1.287	1.614	37.7	20.3	89 E	35 68*	4 6	12 35.16	-14 55.2	1.138	2.130	4.9	19.1	170 E	30	79
12 7	22 49.65	-7 46.2	1.432	1.677	35.9	20.6	86 E	37 63*	4 11	12 30.86	-13 19.8	1.125	2.114	6.0	19.2	167 E	32	77
12 17	23 13.02	-5 42.6	1.583	1.740	34.0	20.8	82 E	39 58*	4 16	12 26.82	-11 40.8	1.118	2.097	8.2	19.2	163 E	33	76
12 27	23 35.14	-3 38.9	1.739	1.802	32.2	21.0	77 E	41 52*	4 21	12 23.20	-10 0.6	1.118	2.081	10.8	19.3	157 E	35	74
1 6	23 56.26	+1 36.2	1.898	1.863	30.3	21.3	73 E	43* 47*	4 26	12 20.15	-8 21.7	1.124	2.065	13.5	19.4	151 E	37	72
1 16	0 16.61	+0 24.4	2.059	1.924	28.3	21.4	68 E	44* 42*	5 1	12 17.80	-6 46.4	1.136	2.049	16.1	19.5	146 E	38	71
457261 2008 RY₂₅									5 6	12 16.21	-5 16.7	1.153	2.033	18.6	19.6	140 E	40	69
1 12	12 36.79	+15 17.2	2.029	2.511	21.9	21.3	108 W	60 48*	5 11	12 15.43	-3 54.0	1.175	2.017	20.9	19.7	135 E	41	68
1 22	12 40.32	+14 56.1	1.861	2.463	20.9	21.0	117 W	60 49	5 16	12 15.49	-2 39.2	1.201	2.001	23.0	19.8	129 E	42	67
2 1	12 41.08	+14 44.4	1.702	2.415	19.3	20.7	126 W	60 49	5 21	12 16.37	-1 33.0	1.230	1.985	24.9	19.9	124 E	43	66
2 11	12 38.56	+14 39.9	1.557	2.366	16.9	20.4	136 W	60 49	5 31	12 20.58	+0 12.9	1.297	1.953	28.1	20.1	115 E	45*	64
2 21	12 32.33	+14 39.0	1.429	2.316	13.8	20.1	146 W	60 49	6 10	12 27.78	+1 24.7	1.370	1.922	30.4	20.2	106 E	44*	63
2 26	12 27.74	+14 38.0	1.372	2.291	11.9	19.9	151 W	60 49	6 20	12 37.60	+2 6.0	1.447	1.892	32.0	20.3	99 E	41*	62
3 2	12 22.19	+14 35.2	1.322	2.266	10.0	19.7	157 W	60 49	6 30	12 49.72	+2 20.7	1.525	1.863	33.0	20.5	92 E	39*	62
3 7	12 15.76	+14 29.6	1.278	2.241	8.1	19.5	162 W	59 50	7 10	13 3.81	+2 13.3	1.601	1.835	33.5	20.5	86 E	36*	62
3 12	12 8.55	+14 20.0	1.240	2.216	6.5	19.4	165 W	59 50	7 20	13 19.62	+1 47.7	1.676	1.808	33.6	20.6	80 E	33*	62*
3 17	12 0.72	+14 5.4	1.210	2.190	5.9	19.3	167 W	59 50	7 30	13 36.97	+1 7.6	1.747	1.783	33.4	20.7	75 E	31*	60*
3 22	11 52.47	+13 44.8	1.187	2.165	6.7	19.3	165 E	59 50	8 9	13 55.68	+0 16.3	1.814	1.760	32.9	20.7	71 E	30*	58*
3 27	11 44.05	+13 17.5	1.171	2.140	8.6	19.3	161 E	58 51	8 19	14 15.67	+0 43.0	1.877	1.738	32.2	20.7	66 E	28*	55*</

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°		
162789 2000 YF₃₃										377939 2006 HP₅₈ (continuation)											
1	12	12 45.80	+1 1.2	2.635	2.980	18.9	21.4	101 W	46	62*	5	11	14 11.88	-10 33.4	0.640	1.634	10.0	19.1	164 E	34	75
1	22	12 48.96	+1 12.0	2.508	2.994	18.0	21.3	110 W	46	63	5	16	14 9.27	-8 17.1	0.661	1.641	13.8	19.4	157 E	37	72
2	1	12 49.97	+1 38.2	2.387	3.007	16.4	21.2	120 W	47	62	5	21	14 7.47	-6 15.7	0.688	1.648	17.3	19.6	151 E	39	70
2	11	12 48.67	+2 19.5	2.280	3.018	14.3	21.0	131 W	47	62	5	26	14 6.57	-4 30.6	0.719	1.655	20.4	19.8	145 E	40	69
2	21	12 45.04	+3 14.6	2.189	3.029	11.6	20.8	142 W	48	61	5	31	14 6.58	-3 2.3	0.754	1.663	23.1	20.0	140 E	42	67
3	2	12 39.22	+4 20.8	2.121	3.039	8.5	20.6	153 W	49	60	6	5	14 7.48	-1 50.2	0.792	1.670	25.5	20.2	135 E	43	66
3	12	12 31.65	+5 32.9	2.080	3.048	5.1	20.4	164 W	51	58	6	10	14 9.22	-0 53.3	0.833	1.678	27.5	20.4	130 E	44	65
3	17	12 27.40	+6 9.3	2.070	3.052	3.6	20.3	169 W	51	58	6	15	14 11.75	-0 10.2	0.877	1.686	29.3	20.5	126 E	45	64
3	22	12 22.97	+6 44.8	2.067	3.056	2.8	20.3	171 W	52	57	6	20	14 15.02	+0 20.5	0.923	1.694	30.7	20.7	122 E	45*	64
3	27	12 18.48	+7 18.6	2.072	3.060	3.2	20.3	170 E	52	57	6	25	14 18.98	+0 40.2	0.971	1.701	31.9	20.8	118 E	45*	63
4	1	12 14.04	+7 49.9	2.085	3.063	4.6	20.4	166 E	53	56	6	30	14 23.56	+0 50.4	1.021	1.709	32.9	21.0	114 E	45*	63
4	11	12 5.71	+8 42.6	2.131	3.070	7.9	20.6	155 E	54	55	7	5	14 28.71	+0 52.3	1.071	1.717	33.6	21.1	111 E	44*	63
4	21	11 58.73	+9 19.3	2.204	3.075	11.1	20.8	144 E	54	55	7	10	14 34.36	+0 47.3	1.123	1.725	34.2	21.3	107 E	44*	63
5	1	11 53.61	+9 38.6	2.299	3.079	13.8	21.0	133 E	55	54	7	15	14 40.48	+0 36.3	1.176	1.733	34.6	21.4	104 E	43*	63
5	11	11 50.60	+9 40.7	2.412	3.082	15.9	21.2	123 E	55	54	7	20	14 47.02	+0 20.4	1.229	1.741	34.9	21.5	101 E	42*	64
5	21	11 49.75	+9 27.4	2.538	3.085	17.5	21.4	114 E	54*	55	372342 2009 DF₉₇										
124311 2001 QO₇₃										1	12	12 58.23	-3 26.0	1.775	2.121	27.5	21.4	96 W	42	65*	
1	12	12 54.23	-9 1.9	2.532	2.795	20.5	21.5	95 W	36	71*	1	22	13 9.26	-5 4.0	1.617	2.077	27.5	21.2	103 W	40	69*
1	22	12 58.71	-9 39.0	2.394	2.798	20.0	21.3	104 W	35	74	2	1	13 18.80	-6 38.9	1.465	2.033	27.0	20.9	111 W	38	71
2	1	13 1.06	-10 3.2	2.260	2.801	18.8	21.1	113 W	35	74	2	11	13 26.45	-8 10.6	1.320	1.989	25.9	20.6	118 W	37	72
2	11	13 1.04	-10 12.8	2.136	2.802	17.1	21.0	123 W	35	74	2	21	13 31.71	-9 38.9	1.185	1.945	24.0	20.2	127 W	35	74
2	21	12 58.50	-10 6.3	2.024	2.803	14.7	20.8	134 W	35	74	3	2	13 33.98	-11 3.4	1.061	1.902	21.3	19.9	136 W	34	75
3	2	12 53.44	-9 42.6	1.930	2.803	11.6	20.6	145 W	35	74	3	12	13 32.76	-12 23.6	0.953	1.859	17.6	19.5	145 W	33	76
3	12	12 46.16	-8 9.2	1.859	2.802	7.9	20.3	157 W	36	73	3	22	13 27.69	-13 37.9	0.861	1.817	12.9	19.0	156 W	31	78
3	22	12 37.25	-8 7.2	1.814	2.799	3.8	20.1	169 W	37	72	4	1	13 18.87	-14 43.8	0.789	1.776	7.6	18.6	166 W	30	79
3	27	12 32.44	-7 35.8	1.803	2.798	1.9	19.9	175 W	37	72	4	6	13 13.32	-15 13.0	0.761	1.756	5.3	18.4	171 W	30	79
4	1	12 27.57	-7 2.7	1.799	2.796	1.6	19.9	176 E	38	71	4	11	13 7.26	-15 39.4	0.739	1.737	4.5	18.2	172 E	29	80
4	6	12 22.77	-6 28.8	1.802	2.794	3.3	20.0	171 E	39	70	4	16	13 0.93	-16 2.9	0.721	1.718	6.2	18.2	169 E	29	80
4	11	12 18.16	-5 55.0	1.812	2.792	5.4	20.2	165 E	39	70	4	21	12 54.61	-16 23.8	0.709	1.699	9.1	18.3	165 E	29	80
4	16	12 13.86	-5 22.2	1.830	2.789	7.5	20.3	159 E	40	69	4	26	12 48.61	-16 42.6	0.702	1.681	12.4	18.4	159 E	28	81
4	21	12 9.97	-4 51.2	1.854	2.787	9.4	20.4	153 E	40	69	5	1	12 43.22	-17 0.0	0.700	1.664	15.7	18.5	153 E	28	81
5	1	12 3.71	-3 57.1	1.920	2.781	13.0	20.6	141 E	41	68	5	6	12 38.68	-17 17.0	0.702	1.647	19.0	18.6	148 E	28	81
5	11	11 59.80	-3 17.0	2.007	2.774	16.0	20.8	131 E	42	67	5	11	12 35.18	-17 34.4	0.708	1.630	22.1	18.7	143 E	27	82
5	21	11 58.37	-2 52.4	2.110	2.766	18.4	21.0	121 E	42*	67	5	16	12 32.84	-17 53.2	0.717	1.615	25.0	18.8	138 E	27	82
5	31	11 59.34	-2 43.8	2.223	2.757	20.1	21.1	111 E	41*	67	5	21	12 31.77	-18 13.9	0.729	1.600	27.6	18.9	133 E	27	82
6	10	12 2.51	-2 50.3	2.344	2.747	21.2	21.3	102 E	38*	67	5	31	12 33.51	-19 4.1	0.759	1.573	32.2	19.0	124 E	26*	83
6	20	12 7.64	-3 10.5	2.468	2.736	21.7	21.4	94 E	33*	67	6	10	12 40.30	-20 7.7	0.797	1.549	35.7	19.2	117 E	24*	84
450196 2002 CZ₂₈₈										6	20	12 51.68	-21 24.4	0.838	1.529	38.4	19.4	111 E	21*	85	
1	12	12 55.00	-17 34.6	2.029	2.276	25.6	21.5	91 W	27	78*	6	30	13 7.22	-22 52.4	0.883	1.514	40.3	19.5	105 E	17*	87
1	22	12 58.97	-19 54.9	1.937	2.314	24.8	21.4	100 W	25	84	7	10	13 26.44	-24 27.9	0.931	1.503	41.6	19.7	101 E	17*	88
2	1	13 0.08	-22 6.5	1.848	2.351	23.5	21.3	108 W	23	86	7	20	13 48.93	-26 6.1	0.982	1.496	42.4	19.8	97 E	12*	90
2	11	12 57.99	-24 6.0	1.767	2.387	21.5	21.2	117 W	21	88	7	30	14 14.33	-27 42.1	1.036	1.495	42.7	19.9	94 E	11*	86*
2	21	12 52.49	-25 48.6	1.697	2.423	19.1	21.0	127 W	19	90	8	9	14 42.25	-29 10.2	1.094	1.498	42.6	20.0	91 E	9*	83*
3	2	12 43.66	-27 8.0	1.643	2.457	16.2	20.9	136 W	18	89	8	19	15 12.29	-30 24.9	1.156	1.506	42.2	20.1	88 E	9*	79*
3	12	12 32.07	-27 58.2	1.610	2.491	13.1	20.8	145 W	17	88	8	24	15 27.97	-30 55.8	1.189	1.512	41.9	20.2	86 E	9*	78*
3	22	12 18.80	-28 15.4	1.600	2.525	10.6	20.7	152 W	17	88	8	29	15 44.00	-31 21.7	1.224	1.519	41.5	20.3	85 E	9*	77*
4	1	12 5.32	-27 59.9	1.616	2.557	9.5	20.7	155 E	17	88	9	3	16 0.32	-31 42.1	1.260	1.527	41.1	20.3	84 E	9*	76*
4	11	11 53.14	-27 18.2	1.659	2.588	10.4	20.8	152 E	18	89	9	8	16 16.84	-31 56.7	1.297	1.536	40.6	20.4	83 E	9*	75*
4	21	11 43.37	-26 19.7	1.727	2.619	12.5	21.0	146 E	19	90	9	13	16 33.51	-32 5.3	1.336	1.546	40.0	20.5	81 E	10*	73*
5	1	11 36.67	-25 15.2	1.817	2.648	14.9	21.2	137 E	20	89	9	18	16 50.26	-32 7.6	1.377	1.557	39.5	20.5	80 E	10*	72*
5	11	11 33.18	-24 13.8	1.926	2.677	17.1	21.5	129 E	21	88	9	23	17 7.03	-32 3.8	1.420	1.569	38.8	20.6	79 E	10*	71*
377939 2006 HP₅₈										9	28	17 23.73	-31 53.7	1.464	1.582	38.2	20.7	77 E	11*	70*	
1	12	12 56.98	-28 45.9	1.249	1.543	39.5	21.4	87 W	16	80*	10	3	17 40.32	-31 37.5	1.510	1.596	37.5	20.7	76 E	12*	69*
1	17	13 7.73	-29 52.5	1.210	1.543	39.6	21.3	89 W	15	83*	10	8	17 56.72	-31 15.4	1.557	1.611	36.7	20.8	75 E	12*	68*
1	22	13 18.25	-30 53.6	1.171	1.543	39.6	21.3	91 W	14	84*	10	13	18 12.91	-30 47.6	1.606	1.626	36.0	20.9	73 E	13*	67*
1	27	13 28.49	-31 48.7	1.132	1.544	39.5	21.2	93 W	13	84*	10	18	18 28.85	-30 14.5	1.656	1.642	35.2	20.9	72 E	14*	66*
2	1	13 38.39	-32 37.2	1.093	1.545	39.4	21.1	96 W	12	83	10	23	18 44.51	-29 36.4	1.708	1.659	34.3	21.0	70 E	14*	64*
2	6	13 47.88	-33 18.7	1.053	1.546	39.1	21.0	99 W	12	83	10	28	18 59.85	-28 53.7	1.762	1.676	33.5	21.1	69 E	15*	62*
2	11	13 56.89	-33 52.6	1.014	1.548	38.7	20.9	101 W	11	82	11	2	19 14.85	-28 6.7	1.816	1.694	32.6	21.1	67 E	16*	61*
2	16	14 5.34	-34 18.3	0.975	1.550	38.1	20.8	104 W	11	82	11	7	19 29.52	-27 15.7	1.872	1.713	31.7	21.2	65 E	17*	59*
2	21																				

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°
388839 2008 ES₇										127535 2002 XL₁₄									
<i>(continuation)</i>										<i>(continuation)</i>									
4 1	11 35.06	-9 8.1	0.652	1.634	10.5	19.7	163 E	36	73	7 20	12 54.11	-1 12.9	2.215	2.194	26.6	21.0	75 E	27*	62*
4 6	11 24.47	-10 11.2	0.674	1.639	14.4	19.9	156 E	35	74	7 30	13 6.46	-2 59.2	2.300	2.164	26.1	21.1	69 E	23*	60*
4 11	11 15.32	-11 7.5	0.701	1.645	18.0	20.1	149 E	34	75	8 9	13 20.18	-4 50.1	2.378	2.134	25.2	21.1	64 E	20*	56*
4 16	11 7.77	-11 57.9	0.733	1.650	21.3	20.4	143 E	33	76	8 19	13 35.15	-6 44.3	2.450	2.103	24.2	21.1	58 E	17*	51*
4 21	11 1.88	-12 43.4	0.769	1.655	24.2	20.6	138 E	32	77	8 29	13 51.34	-8 40.5	2.514	2.072	23.0	21.1	53 E	15*	47*
4 26	10 57.63	-13 25.3	0.808	1.661	26.7	20.7	132 E	32	77	9 8	14 8.68	-10 37.3	2.570	2.041	21.6	21.0	48 E	13*	42*
5 1	10 54.93	-14 4.9	0.850	1.666	28.8	20.9	127 E	31	78	9 18	14 27.17	-12 33.3	2.619	2.010	20.1	21.0	43 E	11*	37*
5 6	10 53.67	-14 43.2	0.895	1.671	30.6	21.1	123 E	30	79	9 28	14 46.81	-14 26.9	2.660	1.979	18.4	21.0	39 E	10*	32*
5 11	10 53.70	-15 21.0	0.941	1.675	32.1	21.2	118 E	30*	79	10 8	15 7.59	-16 16.4	2.693	1.948	16.7	20.9	34 E	8*	28*
5 16	10 54.90	-15 58.8	0.988	1.680	33.3	21.4	114 E	28*	80	10 18	15 29.55	-18 0.0	2.718	1.917	14.9	20.8	30 E	7*	23*
192686 Aljuroma										68278 2001 FC₇									
1 12	13 9.15	-19 9.9	3.234	3.343	17.1	21.5	88 W	26	76*	1 12	13 20.77	-5 17.2	1.254	1.598	38.0	21.4	90 W	40	64*
1 22	13 13.83	-20 5.6	3.062	3.318	17.1	21.3	96 W	25	84*	1 22	13 38.07	-6 35.9	1.156	1.594	37.9	21.2	96 W	38	69*
2 1	13 16.83	-20 53.3	2.893	3.293	16.8	21.2	105 W	24	85	2 1	13 53.91	-7 39.8	1.058	1.590	37.3	21.0	102 W	37	72*
2 11	13 17.91	-21 31.1	2.730	3.267	15.9	21.0	115 W	23	86	2 11	14 7.87	-8 27.2	0.963	1.584	36.2	20.8	109 W	37	72*
2 21	13 16.87	-21 56.5	2.576	3.240	14.6	20.8	124 W	23	86	2 21	14 19.41	-8 56.1	0.871	1.577	34.3	20.5	116 W	36	73
3 2	13 13.61	-22 6.9	2.438	3.212	12.7	20.6	135 W	23	86	3 2	14 27.79	-9 4.3	0.783	1.569	31.6	20.2	124 W	36	73
3 12	13 8.20	-21 59.8	2.319	3.184	10.3	20.4	145 W	23	86	3 12	14 32.22	-8 50.3	0.703	1.559	27.9	19.8	133 W	36	73
3 22	13 0.95	-21 33.5	2.222	3.154	7.6	20.2	155 W	23	86	3 22	14 31.92	-8 13.1	0.633	1.549	22.9	19.4	143 W	37	72
4 1	12 52.41	-20 47.7	2.153	3.124	5.2	20.0	164 W	24	85	4 1	14 26.29	-7 13.6	0.575	1.537	16.6	19.0	154 W	38	71
4 6	12 47.90	-20 18.1	2.129	3.109	4.5	19.9	166 E	25	84	4 6	14 21.53	-6 37.2	0.552	1.531	13.0	18.8	160 W	38	71
4 11	12 43.39	-19 44.8	2.112	3.093	4.6	19.9	166 E	25	84	4 11	14 15.63	-5 58.0	0.533	1.525	9.4	18.6	166 W	39	70
4 16	12 38.97	-19 8.3	2.102	3.077	5.4	19.9	163 E	26	83	4 16	14 8.78	-5 17.3	0.519	1.518	6.1	18.4	171 W	40	69
4 21	12 34.76	-18 29.6	2.100	3.061	6.6	19.9	159 E	27	82	4 21	14 1.29	-4 37.3	0.509	1.511	4.9	18.2	173 W	40	69
4 26	12 30.86	-17 49.4	2.105	3.045	8.1	20.0	155 E	27	82	4 26	13 53.53	-4 0.2	0.504	1.504	7.2	18.3	169 E	41	68
5 1	12 27.36	-17 8.8	2.116	3.028	9.7	20.1	150 E	28	81	5 1	13 45.90	-3 28.3	0.503	1.497	11.0	18.5	164 E	42	67
5 6	12 24.34	-16 28.6	2.133	3.012	11.2	20.1	144 E	29	80	5 6	13 38.80	-3 3.4	0.507	1.489	15.1	18.6	157 E	42	67
5 11	12 21.83	-15 49.7	2.156	2.995	12.7	20.2	139 E	29	80	5 11	13 32.54	-2 46.7	0.514	1.482	19.9	18.8	151 E	42	67
5 21	12 18.52	-14 38.2	2.217	2.961	15.4	20.3	129 E	30	79	5 21	13 23.42	-2 40.5	0.539	1.466	26.5	19.1	140 E	42	67
5 31	12 17.59	-13 39.0	2.294	2.926	17.6	20.5	119 E	31*	78	5 31	13 19.64	-3 10.8	0.575	1.450	32.6	19.4	130 E	42	67
6 10	12 18.99	-12 54.4	2.382	2.890	19.3	20.6	110 E	29*	77	6 10	13 21.21	-4 12.8	0.617	1.434	37.4	19.6	121 E	41*	68
6 20	12 22.57	-12 25.2	2.477	2.853	20.5	20.7	101 E	27*	76	6 15	13 23.82	-4 53.7	0.640	1.426	39.4	19.8	117 E	39*	69
6 30	12 28.13	-12 11.3	2.576	2.816	21.1	20.7	93 E	23*	76	6 20	13 27.55	-5 40.2	0.663	1.417	41.1	19.9	113 E	38*	70
7 10	12 35.48	-12 11.5	2.674	2.778	21.4	20.8	85 E	20*	75*	6 25	13 32.32	-6 31.6	0.687	1.409	42.6	20.0	110 E	36*	71
7 20	12 44.40	-12 24.5	2.770	2.740	21.2	20.8	78 E	17*	70*	6 30	13 38.05	-7 27.2	0.711	1.401	43.9	20.1	107 E	34*	71
7 30	12 54.75	-12 48.7	2.861	2.700	20.8	20.9	71 E	14*	64*	7 10	13 52.10	-9 28.0	0.759	1.384	46.0	20.3	101 E	31*	73
8 9	13 6.38	-13 22.5	2.945	2.660	20.0	20.9	64 E	11*	58*	7 20	14 9.19	-11 37.6	0.807	1.368	47.5	20.4	97 E	27*	76
8 19	13 19.17	-14 4.3	3.020	2.620	19.0	20.9	58 E	9*	52*	7 30	14 29.02	-13 51.7	0.853	1.353	48.6	20.5	92 E	25*	78
8 29	13 33.05	-14 52.5	3.087	2.579	17.8	20.8	51 E	8*	45*	8 9	14 51.34	-16 5.6	0.899	1.338	49.2	20.6	89 E	22*	79*
9 8	13 47.95	-15 45.4	3.143	2.537	16.4	20.8	45 E	6*	39*	8 19	15 15.97	-18 14.8	0.942	1.325	49.6	20.7	85 E	20*	78*
9 18	14 3.82	-16 41.5	3.188	2.495	14.8	20.7	39 E	5*	33*	8 29	15 42.84	-20 14.9	0.985	1.312	49.7	20.8	82 E	19*	76*
9 28	14 20.65	-17 39.2	3.221	2.453	13.1	20.7	34 E	3*	28*	9 8	16 11.77	-22 1.1	1.026	1.301	49.6	20.9	80 E	18*	75*
10 8	14 38.40	-18 37.0	3.243	2.410	11.3	20.6	28 E	2*	22*	9 18	16 42.62	-23 28.5	1.067	1.291	49.3	20.9	77 E	18*	71*
10 18	14 57.07	-19 33.1	3.253	2.367	9.4	20.5	23 E	1*	17*	9 28	17 15.20	-24 32.7	1.107	1.284	48.9	21.0	75 E	18*	69*
10 28	15 16.65	-20 25.9	3.251	2.324	7.4	20.3	18 E	—	12*	10 8	17 49.16	-25 9.7	1.148	1.278	48.3	21.0	73 E	18*	67*
11 7	15 37.11	-21 13.7	3.238	2.280	5.4	20.2	12 E	—	6*	10 18	18 24.15	-25 16.4	1.189	1.274	47.6	21.1	71 E	18*	64*
11 17	15 58.45	-21 54.6	3.214	2.237	3.2	20.0	7 E	—	1*	10 28	18 59.73	-24 51.1	1.230	1.272	46.8	21.1	69 E	19*	62*
11 27	16 20.63	-22 27.0	3.179	2.194	1.1	19.8	2 E	—	—	11 7	19 35.42	-23 53.3	1.274	1.272	45.8	21.2	67 E	20*	59*
12 7	16 43.60	-22 48.9	3.134	2.151	1.2	19.7	3 W	—	—	11 17	20 10.82	-22 24.3	1.319	1.274	44.8	21.2	65 E	22*	56*
12 17	17 7.30	-22 58.7	3.080	2.108	3.4	19.8	7 W	—	—	11 27	20 45.61	-20 26.6	1.366	1.278	43.7	21.3	63 E	24*	53*
12 27	17 31.64	-22 54.7	3.018	2.066	5.6	19.8	12 W	2*	4*	12 7	21 19.55	-18 3.9	1.415	1.284	42.5	21.3	62 E	26*	49*
1 6	17 56.52	-22 35.6	2.949	2.025	7.9	19.8	16 W	5*	9*	12 17	21 52.53	-15 20.5	1.467	1.292	41.2	21.4	60 E	29*	46*
1 16	18 21.84	-21 59.9	2.873	1.984	10.1	19.8	21 W	7*	13*	12 27	22 24.56	-12 20.8	1.521	1.302	39.8	21.5	58 E	31*	42*
127535 2002 XL₁₄										102074 1999 RW₁₄₃									
1 12	13 10.98	+0 11.3	2.349	2.619	22.0	21.4	95 W	45	61*	1 12	13 33.47	-8 0.7	2.995	3.093	18.5	21.5	86 W	37	64*
1 22	13 17.75	+0 2.6	2.199	2.604	21.6	21.2	103 W	45	64*	1 22	13 39.25	-8 13.2	2.856	3.103	18.4	21.4	95 W	37	70*
2 1	13 22.55	+0 2.0	2.054	2.589	20.7	21.0	112 W	45	64	2 1	13 43.28	-8 13.4	2.718	3.112	17.9	21.3	104 W	37	72
2 11	13 25.03	+0 14.0	1.916	2.573	19.1	20.8	121 W	45	64	2 11	13 45.34	-8 0.2	2.585	3.121	16.8	21.1	114 W	37	72
2 21	13 24.91	+0 45.9	1.790	2.556	16.8	20.6	132 W	46	63	2 21	13 45.25	-7 33.1	2.462	3.128	15.1	21.0	124 W	37	72
3 2	13 21.94	+1 32.8	1.680	2.538	13.8	20.3	142 W	47	62	3 2	13 42.90	-6 51.8	2.353	3.135	12.9	20.8	135 W	38	71
3 12	13 16.14	+2 31.8	1.591	2.519	10.2	20.1	153 W	48	61	3 12	13 38.36	-5 57.5	2.264	3.141	10.1	20.6	146 W	39	70
3 17	13 12.27	+3 4.4	1.555	2.509	8.3	19.9	159 W	48	61	3 22	13 31.90	-4 52.6	2.199	3.145	6.8	20.4	158 W	40	69
3 22	13 7.84	+3 38.0	1.526	2.499	6.3	19.8</													

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°
102074 1999 RN₁₄₃ (continuation)									362483 2010 SE₃₄ (continuation)								
5 1	12 59.45	-0 23.5	2.227	3.155	8.5	20.5	153 E	45 64	8 19	15 31.52	-27 58.2	1.299	1.663	37.5	20.1	91 E	13* 84*
5 11	12 53.39	+0 20.2	2.303	3.155	11.5	20.7	141 E	45 64	8 29	15 55.46	-28 43.2	1.375	1.662	37.4	20.2	87 E	12* 80*
5 21	12 49.20	+0 48.4	2.400	3.154	14.1	20.9	131 E	46 63	9 8	16 21.11	-29 18.7	1.453	1.663	37.0	20.3	83 E	12* 76*
5 31	12 47.08	+1 0.6	2.514	3.152	16.1	21.1	121 E	46* 63	9 18	16 48.12	-29 41.3	1.534	1.668	36.3	20.4	79 E	12* 73*
6 10	12 47.01	+0 57.9	2.639	3.150	17.5	21.2	111 E	45* 63	9 28	17 16.16	-29 48.5	1.617	1.676	35.4	20.5	75 E	13* 69*
6 20	12 48.88	+0 41.8	2.773	3.146	18.4	21.4	102 E	41* 63	10 8	17 44.84	-29 38.1	1.703	1.686	34.3	20.6	72 E	13* 66*
6 30	12 52.52	+0 14.2	2.910	3.141	18.8	21.5	94 E	37* 64	10 18	18 13.81	-29 9.1	1.792	1.699	33.0	20.7	68 E	14* 62*
133554 2003 UN₅									376950 2002 ER₉₇								
1 12	13 43.27	-13 4.8	3.008	3.037	18.7	21.5	82 W	32 66*	1 12	14 26.99	-11 51.4	1.986	1.936	29.0	21.5	73 W	33* 56*
1 22	13 50.18	-13 42.1	2.850	3.026	19.0	21.3	91 W	31 74*	1 22	14 43.08	-13 5.0	1.917	1.977	29.2	21.5	79 W	32 63*
2 1	13 55.52	-14 9.8	2.691	3.014	18.8	21.2	99 W	31 78*	2 1	14 57.37	-14 5.7	1.844	2.018	29.1	21.4	85 W	31 70*
2 11	13 59.01	-14 26.7	2.536	3.002	18.1	21.0	109 W	31 78	2 11	15 9.54	-14 53.6	1.769	2.060	28.6	21.4	92 W	30 77*
2 21	14 0.40	-14 31.4	2.388	2.988	16.9	20.9	118 W	30 79	2 21	15 19.25	-15 29.2	1.692	2.103	27.6	21.3	100 W	30 79
3 2	13 59.45	-14 22.4	2.250	2.973	15.1	20.7	129 W	31 78	3 2	15 26.09	-15 52.6	1.618	2.147	26.0	21.2	108 W	29 80
3 12	13 56.06	-13 58.8	2.129	2.958	12.6	20.4	140 W	31 78	3 12	15 29.75	-16 4.5	1.548	2.191	23.7	21.1	117 W	29 80
3 22	13 50.33	-13 20.0	2.028	2.941	9.4	20.2	151 W	32 77	3 22	15 29.99	-16 5.2	1.486	2.236	20.8	20.9	127 W	29 80
4 1	13 42.60	-12 27.1	1.952	2.923	5.7	19.9	163 W	33 76	4 1	15 26.72	-15 55.1	1.437	2.280	17.0	20.8	138 W	29 80
4 11	13 33.52	-11 23.1	1.904	2.904	1.6	19.6	175 W	34 75	4 11	15 20.28	-15 35.5	1.405	2.325	12.7	20.6	149 W	29 80
4 16	13 28.75	-10 48.4	1.891	2.894	0.8	19.5	178 E	34 75	4 21	15 11.37	-15 8.2	1.395	2.369	7.8	20.4	161 W	30 79
4 21	13 23.97	-10 12.9	1.886	2.884	2.8	19.7	172 E	35 74	4 26	15 6.31	-14 52.7	1.399	2.391	5.3	20.4	167 W	30 79
4 26	13 19.32	-9 37.5	1.887	2.874	4.9	19.8	166 E	35 74	5 1	15 1.07	-14 36.6	1.409	2.413	2.8	20.2	173 W	30 79
5 1	13 14.91	-9 2.9	1.896	2.863	7.0	19.9	160 E	36 73	5 6	14 55.83	-14 20.6	1.427	2.435	1.0	20.2	178 W	31 78
5 6	13 10.85	-8 30.1	1.912	2.853	9.0	20.0	154 E	36 73	5 11	14 50.73	-14 5.2	1.451	2.457	2.6	20.3	174 E	31 78
5 11	13 7.22	-7 59.7	1.934	2.842	10.8	20.1	148 E	37 72	5 16	14 45.92	-13 51.1	1.481	2.479	4.9	20.5	168 E	31 78
5 21	13 1.51	-7 8.2	1.995	2.819	14.2	20.3	137 E	38 71	5 21	14 41.53	-13 38.7	1.518	2.500	7.2	20.7	162 E	31 78
5 31	12 58.16	-6 31.7	2.074	2.795	17.0	20.4	126 E	38 71	5 26	14 37.65	-13 28.5	1.562	2.522	9.3	20.9	156 E	32 77
6 10	12 57.25	-6 11.5	2.167	2.770	19.2	20.6	116 E	38* 70	5 31	14 34.38	-13 20.9	1.611	2.544	11.3	21.1	151 E	32 77
6 20	12 58.70	-6 7.1	2.269	2.744	20.7	20.7	107 E	36* 70	6 10	14 31.75	-13 16.2	1.665	2.565	13.0	21.2	145 E	32 77
6 30	13 2.35	-6 17.7	2.376	2.717	21.7	20.8	98 E	32* 70	6 10	14 29.79	-13 14.4	1.725	2.586	14.6	21.4	140 E	32 77
7 10	13 7.98	-6 41.3	2.485	2.689	22.2	20.9	90 E	29* 71	6 10	14 28.71	-17 59.7	1.112	1.212	49.8	21.4	70 W	27* 58*
7 20	13 15.38	-7 16.3	2.592	2.661	22.3	21.0	83 E	25* 70*	1 17	14 49.46	-20 49.2	1.061	1.173	52.0	21.3	70 W	24* 60*
7 30	13 24.36	-8 0.8	2.696	2.631	21.9	21.0	75 E	22* 66*	1 22	15 12.42	-23 41.6	1.014	1.134	54.2	21.2	69 W	21* 61*
8 9	13 34.74	-8 53.2	2.793	2.600	21.3	21.0	69 E	19* 61*	1 27	15 37.92	-26 32.7	0.973	1.094	56.5	21.1	68 W	18* 61*
8 19	13 46.39	-9 51.7	2.883	2.569	20.4	21.1	62 E	17* 55*	2 1	16 6.28	-29 16.3	0.940	1.054	58.9	21.0	66 W	15* 60*
8 29	13 59.21	-10 54.8	2.964	2.537	19.2	21.1	56 E	15* 49*	2 6	16 37.72	-31 44.3	0.913	1.014	61.3	20.9	64 W	12* 58*
9 8	14 13.10	-12 1.0	3.036	2.503	17.9	21.0	50 E	13* 43*	2 11	17 12.18	-33 47.0	0.896	0.974	63.6	20.9	62 W	9* 56*
9 18	14 28.01	-13 8.9	3.096	2.469	16.3	21.0	44 E	11* 38*	2 16	17 49.27	-35 13.9	0.887	0.934	65.7	20.8	59 W	7* 53*
9 28	14 43.89	-14 17.2	3.146	2.434	14.7	20.9	38 E	10* 32*	2 21	18 28.10	-35 56.5	0.887	0.895	67.4	20.8	57 W	4* 50*
10 8	15 0.69	-15 24.3	3.183	2.399	12.9	20.9	32 E	8* 26*	2 26	19 7.45	-35 49.6	0.897	0.857	68.7	20.7	54 W	2* 47*
10 18	15 18.41	-16 28.8	3.208	2.362	11.0	20.8	27 E	7* 20*	3 2	19 46.01	-34 52.9	0.916	0.821	69.3	20.7	51 W	— 43*
10 28	15 37.02	-17 29.5	3.222	2.325	9.0	20.7	21 E	5* 15*	3 7	20 22.68	-33 10.5	0.944	0.788	69.2	20.7	48 W	— 40*
11 7	15 56.49	-18 24.6	3.223	2.288	6.9	20.6	16 E	3* 9*	3 12	20 56.81	-30 49.8	0.979	0.758	68.4	20.7	45 W	— 37*
11 17	16 16.80	-19 12.9	3.212	2.250	4.9	20.4	11 E	1* 4*	3 17	21 28.14	-27 59.1	1.021	0.733	66.8	20.6	43 W	— 35*
11 27	16 37.91	-19 52.9	3.189	2.211	2.8	20.2	6 E	—	3 22	21 56.78	-24 46.4	1.069	0.714	64.4	20.6	40 W	— 33*
12 7	16 59.78	-20 23.1	3.156	2.172	1.1	20.0	2 E	—	3 27	22 23.00	-21 18.9	1.121	0.700	61.4	20.6	38 W	— 31*
12 17	17 22.36	-20 42.2	3.112	2.132	2.2	20.1	5 W	—	4 1	22 47.15	-17 42.3	1.176	0.694	58.0	20.5	36 W	— 29*
12 27	17 45.59	-20 49.0	3.058	2.093	4.3	20.1	9 W	2*	4 6	23 9.57	-14 1.5	1.232	0.694	54.2	20.5	34 W	— 28*
1 6	18 9.37	-20 42.2	2.995	2.053	6.5	20.1	14 W	4* 5*	4 11	23 30.60	-10 20.7	1.289	0.702	50.5	20.6	33 W	— 26*
1 16	18 33.64	-20 21.0	2.925	2.013	8.7	20.1	18 W	6* 10*	4 16	23 50.49	-6 43.2	1.346	0.717	46.9	20.6	31 W	1* 25*
362483 2010 SE₃₄									423022 2003 TJ₂								
1 12	13 51.56	-10 37.7	2.130	2.206	26.1	21.4	81 W	34 63*	1 12	14 39.06	-13 31.4	2.009	1.900	29.0	21.5	69 W	31* 54*
1 22	14 5.42	-12 14.5	1.977	2.173	26.9	21.3	88 W	33 70*	1 22	15 1.83	-14 43.0	1.873	1.859	30.6	21.3	74 W	30* 60*
2 1	14 18.42	-13 47.0	1.825	2.139	27.3	21.1	94 W	31 76*	2 1	15 25.10	-15 42.1	1.740	1.819	32.0	21.2	78 W	29 66*
2 11	14 30.29	-15 15.2	1.677	2.106	27.4	20.9	101 W	30 79	2 11	15 48.81	-16 26.9	1.610	1.780	33.4	21.0	83 W	29 71*
2 21	14 40.66	-16 39.0	1.533	2.073	26.9	20.6	109 W	28 81	2 21	16 12.83	-16 55.5	1.485	1.743	34.5	20.8	87 W	28 76*
3 2	14 49.10	-17 58.4	1.396	2.040	25.8	20.4	116 W	27 82	3 2	16 36.98	-17 6.3	1.366	1.708	35.5	20.6	91 W	28 79*
3 12	14 55.12	-19 13.3	1.268	2.007	24.1	20.1	125 W	26 83	3 12	17 1.03	-16 58.2	1.253	1.675	36.2	20.4	96 W	28 81*
3 22	14 58.18	-20 23.2	1.152	1.975	21.5	19.7	133 W	25 84	3 22	17 24.71	-16 30.8	1.147	1.645	36.6	20.2	100 W	28 81
4 1	14 57.74	-21 26.8	1.049	1.943	18.0	19.4	143 W	24 85	4 1	17 47.62	-15 44.2	1.048	1.618	36.8	19.9	104 W	29 80
4 11	14 53.59	-22 21.8	0.963	1.912	13.7	19.0	153 W	23 86	318580 2005 GL₁₆₂								
4 21	14 45.87	-23 5.0	0.896	1.882	8.7	18.6	164 W	22 87	1 12	14 39.06	-13 31.4	2.009	1.900	29.0	21.5	69 W	31* 54*
4 26	14 40.92	-23 21.1	0.871	1.867	6.3	18.4	168 W	22 87	1 22	15 1.83	-14 43.0	1.873	1.859	30.6	21.3	74 W	30* 60*
5 1	14 35.49	-23 33.1	0.850	1.853	4.6	18.3	172 W	21 88	2 1	15 25.10	-15 42.1	1.740	1.819	32.0	21.2	78 W	29 66*
5 6	14 29.81	-23 41.2	0.836	1.839	4.9	18.2	171 E	21 88	2 11	15 48.81	-16 26.9	1.610	1.780	33.4	21.0	83 W	29 71*
5 11	14 24.13	-23 45.8	0.827	1.825	7.0	18.3	167 E	21 88	2 21	16 12.83	-16 55.5	1.485	1.743	34.5	20.8	87 W	28 76*
5 16	14 18.72	-23 47.2	0.823														

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°		
318580 2005 GL₁₆₂ (continuation)									462550 2009 CB₃										
4 11	18 9.41	-14 40.0	0.958	1.593	36.5	19.7	109 W	30 79	1 12	15 59.00	-27 50.8	0.558	0.738	97.7	21.0	48 W	14*	41*	
4 21	18 29.61	-13 20.9	0.875	1.573	35.9	19.5	113 W	32 77	1 14	15 54.18	-26 41.7	0.557	0.769	94.3	20.9	51 W	16*	44*	
5 1	18 47.70	-11 51.1	0.801	1.556	34.7	19.2	118 W	33 76	1 16	15 49.91	-25 32.7	0.556	0.800	91.2	20.9	54 W	18*	46*	
5 11	19 3.20	-10 16.6	0.735	1.544	33.0	19.0	124 W	35 74	1 18	15 46.09	-24 23.6	0.555	0.829	88.3	20.8	57 W	19*	49*	
5 16	19 9.82	-9 29.8	0.706	1.540	31.8	18.8	127 W	36 73	1 20	15 42.62	-23 14.6	0.553	0.859	85.5	20.8	60 W	21*	52*	
5 21	19 15.59	-8 44.7	0.678	1.536	30.5	18.7	130 W	36 73	1 22	15 39.42	-22 5.4	0.550	0.887	82.9	20.7	63 W	22*	54*	
5 26	19 20.46	-8 2.6	0.653	1.534	29.0	18.6	133 W	37 72	1 27	15 32.14	-19 10.3	0.543	0.955	76.7	20.7	71 W	26*	60*	
5 31	19 24.38	-7 24.6	0.631	1.533	27.3	18.4	136 W	38 71	2 1	15 25.18	-16 9.2	0.532	1.020	71.0	20.6	78 W	29	66*	
6 5	19 27.36	-6 52.1	0.611	1.532	25.4	18.3	140 W	38 71	2 6	15 17.83	-12 58.2	0.520	1.081	65.4	20.5	86 W	32	70*	
6 10	19 29.39	-6 26.1	0.594	1.534	23.3	18.2	143 W	39 70	2 11	15 9.52	-9 33.8	0.508	1.139	59.8	20.4	94 W	35	72*	
6 15	19 30.48	-6 7.8	0.580	1.536	21.0	18.1	147 W	39 70	2 16	14 59.81	-5 53.2	0.495	1.194	54.0	20.2	102 W	39	70*	
6 20	19 30.68	-5 58.1	0.569	1.539	18.6	18.0	151 W	39 70	2 21	14 48.28	-1 55.5	0.484	1.245	48.0	20.1	111 W	43	66	
6 30	19 28.89	-6 7.2	0.557	1.549	13.7	17.8	159 W	39 70	2 26	14 34.70	+ 2 17.2	0.477	1.294	41.7	20.0	120 W	47	62	
7 10	19 25.37	-6 53.4	0.560	1.563	10.0	17.7	165 W	38 71	3 2	14 19.01	+ 6 38.6	0.475	1.340	35.3	19.9	129 W	52	57	
7 20	19 21.67	-8 10.3	0.579	1.582	9.8	17.7	165 E	37 72	3 4	14 12.18	+ 8 23.4	0.476	1.358	32.7	19.8	132 W	53	56	
7 25	19 20.28	-8 56.8	0.594	1.592	11.1	17.9	162 E	36 73	3 6	14 5.07	+10 7.2	0.478	1.375	30.3	19.8	136 W	55	54	
7 30	19 19.46	-9 46.2	0.614	1.604	13.0	18.0	159 W	35 74	3 8	13 57.70	+11 49.1	0.481	1.392	27.9	19.8	139 W	57	52	
8 4	19 19.31	-10 36.8	0.638	1.616	15.1	18.2	155 E	34 75	3 10	13 50.13	+13 28.3	0.485	1.408	25.6	19.7	142 W	58	51	
8 9	19 19.93	-11 27.2	0.665	1.630	17.3	18.4	151 E	34 75	3 12	13 42.39	+15 3.9	0.491	1.424	23.5	19.7	145 W	60	49	
8 14	19 21.34	-12 16.0	0.697	1.644	19.4	18.6	147 E	33 76	3 14	13 34.52	+16 35.2	0.498	1.440	21.6	19.7	148 W	62	47	
8 19	19 23.57	-13 2.2	0.732	1.658	21.3	18.8	143 E	32 77	3 16	13 26.60	+18 1.5	0.507	1.456	20.0	19.7	150 W	63	46	
8 29	19 30.46	-14 23.5	0.813	1.690	24.7	19.1	136 E	31 78	3 18	13 18.66	+19 22.2	0.516	1.471	18.7	19.8	152 W	64	45	
9 8	19 40.27	-15 26.7	0.906	1.724	27.2	19.5	128 E	30 79	3 20	13 10.77	+20 36.8	0.528	1.485	17.7	19.8	153 W	66	43	
9 18	19 52.49	-16 10.2	1.011	1.760	29.1	19.8	122 E	29 80	3 22	13 2.99	+21 45.2	0.540	1.500	17.2	19.8	154 W	67	42	
9 28	20 6.66	-16 33.8	1.126	1.798	30.3	20.1	115 E	28 81	3 27	12 44.36	+24 7.7	0.577	1.534	17.3	20.0	153 W	69	40	
10 8	20 22.29	-16 38.4	1.250	1.837	30.9	20.4	109 E	28 81	4 1	12 27.44	+25 51.0	0.621	1.566	18.9	20.3	149 E	71	38	
10 18	20 38.96	-16 25.2	1.382	1.878	31.1	20.7	103 E	29 80	4 6	12 12.71	+26 59.5	0.671	1.596	21.3	20.6	145 E	72	37	
10 28	20 56.38	-15 55.9	1.521	1.919	30.9	21.0	97 E	29 80*	4 11	12 0.33	+27 39.4	0.727	1.624	23.7	20.9	139 E	73	36	
11 7	21 14.25	-15 12.2	1.665	1.961	30.3	21.2	92 E	30 76*	4 16	11 50.29	+27 56.6	0.787	1.651	25.9	21.2	134 E	73	36	
11 17	21 32.38	-14 15.9	1.813	2.004	29.5	21.4	86 E	31 71*	4 21	11 42.46	+27 56.3	0.851	1.675	27.9	21.4	129 E	73	36	
									4 26	11 36.62	+27 42.6	0.918	1.697	29.5	21.6	124 E	73	36	
373416 1998 QG₁									230111 2001 BE₁₀										
1 12	14 56.70	-17 17.9	1.714	1.561	34.5	21.4	64 W	27*	52*	1 12	16 5.83	-33 26.4	1.302	0.946	48.8	21.4	46 W	8*	40*
1 17	15 12.57	-18 5.1	1.660	1.537	35.6	21.3	65 W	27*	54*	1 17	16 34.06	-34 26.1	1.282	0.917	49.8	21.3	45 W	7*	39*
1 22	15 28.89	-18 47.4	1.607	1.515	36.6	21.2	67 W	26*	56*	1 22	17 3.94	-35 1.1	1.266	0.886	50.8	21.2	44 W	5*	38*
1 27	15 45.66	-19 24.1	1.557	1.493	37.6	21.1	68 W	25*	58*	1 27	17 35.21	-35 7.1	1.253	0.853	51.6	21.2	43 W	4*	37*
2 1	16 2.85	-19 54.5	1.509	1.472	38.6	21.1	69 W	25*	59*	2 1	18 7.48	-34 40.4	1.245	0.819	52.2	21.1	41 W	3*	35*
2 6	16 20.43	-20 18.0	1.463	1.452	39.5	21.0	70 W	24*	61*	2 6	18 40.29	-33 38.4	1.241	0.783	52.5	21.0	39 W	2*	33*
2 11	16 38.36	-20 34.0	1.420	1.433	40.5	20.9	71 W	24*	62*	2 11	19 13.14	-31 59.7	1.243	0.746	52.5	20.9	37 W	1*	31*
2 16	16 56.59	-20 42.0	1.379	1.416	41.4	20.9	71 W	24*	63*	2 16	19 45.61	-29 44.7	1.250	0.708	52.0	20.8	34 W	1*	28*
2 21	17 15.06	-20 41.4	1.341	1.399	42.2	20.8	72 W	23*	64*	2 21	20 17.39	-26 55.3	1.263	0.671	50.9	20.6	32 W	1*	26*
2 26	17 33.68	-20 32.1	1.305	1.385	43.1	20.8	73 W	23*	65*	2 26	20 48.30	-23 34.7	1.282	0.634	49.1	20.5	29 W	1*	23*
3 2	17 52.36	-20 13.8	1.272	1.371	43.8	20.7	73 W	23*	66*	3 2	21 18.35	-19 47.2	1.305	0.600	46.3	20.3	26 W	1*	20*
3 7	18 11.03	-19 46.6	1.241	1.359	44.6	20.6	74 W	23*	67*	3 7	21 47.66	-15 37.9	1.334	0.570	42.6	20.2	23 W	1*	17*
3 12	18 29.59	-19 10.8	1.213	1.349	45.3	20.6	75 W	23*	67*	3 12	22 16.45	-11 12.7	1.366	0.545	37.8	20.0	20 W	1*	14*
3 17	18 47.97	-18 26.6	1.187	1.340	45.9	20.6	75 W	23*	68*	3 17	22 44.97	-6 38.5	1.400	0.528	32.3	19.8	16 W	1*	10*
3 22	19 6.08	-17 34.6	1.163	1.334	46.4	20.5	76 W	24*	68*	3 22	23 13.42	- 2 2.9	1.436	0.520	26.2	19.7	13 W	1*	7*
3 27	19 23.82	-16 35.5	1.142	1.329	46.9	20.5	76 W	24*	69*	3 27	23 41.94	+ 2 26.3	1.470	0.522	20.4	19.5	10 W	1*	3*
4 1	19 41.13	-15 30.2	1.122	1.325	47.3	20.4	77 W	24*	69*	4 1	0 10.58	+ 6 41.4	1.503	0.533	15.4	19.5	8 W	1*	—
4 11	20 14.27	-13 4.7	1.088	1.325	47.9	20.4	79 W	25*	70*	4 6	0 39.31	+10 36.4	1.535	0.554	12.1	19.5	7 W	1*	—
4 21	20 45.15	-10 25.7	1.059	1.331	48.1	20.4	80 W	27*	70*	4 11	1 8.08	+14 6.7	1.566	0.581	11.0	19.6	6 W	—	—
5 1	21 13.51	-7 41.0	1.033	1.345	47.9	20.3	82 W	29*	70*	4 16	1 36.77	+17 10.0	1.596	0.613	11.6	19.8	7 W	—	—
5 11	21 39.20	-4 57.9	1.009	1.366	47.5	20.3	85 W	31*	68*	4 21	2 5.25	+19 45.4	1.627	0.648	12.8	20.0	8 E	1*	—
5 21	22 2.13	-2 22.4	0.986	1.393	46.6	20.3	88 W	34*	66	4 26	2 33.39	+21 53.0	1.657	0.685	14.0	20.2	10 E	3*	—
5 31	22 22.11	+ 0 0.1	0.961	1.426	45.3	20.2	92 W	37*	64	5 1	3 1.05	+23 34.0	1.688	0.723	15.0	20.4	11 E	5*	—
6 10	22 38.97	+ 2 5.0	0.936	1.463	43.5	20.2	97 W	41*	62	5 6	3 28.09	+24 50.1	1.720	0.760	15.6	20.5	12 E	6*	—
6 20	22 52.47	+ 3 48.1	0.909	1.505	41.2	20.1	103 W	45*	60	5 11	3 54.39	+25 43.4	1.752	0.797	16.0	20.7	13 E	6*	—
6 30	23 2.25	+ 5 4.9	0.882	1.551	38.2	20.0	109 W	49*	59	5 16	4 19.87	+26 16.0	1.784	0.832	16.1	20.8	13 E	7*	1*
7 10	23 8.05	+ 5 51.1	0.856	1.599	34.5	19.9	117 W	51*	58	5 21	4 44.45	+26 30.2	1.816	0.866	16.0	20.1	14 E	7*	2*
7 20	23 9.61	+ 6 2.7	0.833	1.650	29.9	19.8	126 W	51	58	5 26	5 8.11	+26 28.2	1.848	0.898	15.7	21.1	14 E	6*	3*
7 30	23 6.94	+ 5 36.2	0.819	1.702	24.5	19.7	136 W	51	58	5 31	5 30.81	+26 12.0	1.879	0.928	15.3	21.2	14 E	6*	4*
8 9	23 0.61	+ 4 32.1	0.816	1.755	18.3	19.5	147 W	50	59	6 5	5 52.58	+25 43.4	1.909	0.956	14.9	21.2	14 E	5*	4*
8 14	22 56.37	+ 3 47.4	0.820	1.783	15.0	19.5	153 W	49	60	6 10	6 13.44	+25 4.2	1.938	0.982	14.3				

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°
241112 2007 OF₂										242191 2003 NZ₆									
<i>(continuation)</i>										<i>(continuation)</i>									
4 21	21 3.24	-12 56.4	1.467	1.576	38.4	20.4	77 W	23*	69*	5 31	22 11.96	+11 47.3	0.506	1.135	63.3	20.0	90 W	49*	52
5 1	21 30.68	-11 13.8	1.379	1.552	39.7	20.2	79 W	24*	70*	6 5	22 29.14	+13 6.2	0.463	1.118	65.2	19.9	90 W	50*	51
5 11	21 57.81	-9 24.7	1.296	1.531	40.8	20.1	82 W	25*	71*	6 10	22 49.14	+14 30.1	0.421	1.098	67.7	19.7	90 W	50*	49
5 21	22 24.55	-7 32.3	1.218	1.514	41.7	20.0	85 W	26*	71*	6 15	23 13.01	+15 58.8	0.380	1.075	70.9	19.5	88 W	51*	48
5 31	22 50.73	-5 40.6	1.146	1.501	42.4	19.8	88 W	29*	70*	6 20	23 42.18	+17 30.2	0.341	1.049	75.1	19.4	86 W	51*	46
6 10	23 16.21	-3 54.0	1.078	1.492	42.9	19.7	91 W	31*	68	6 22	23 55.72	+18 6.4	0.327	1.038	77.1	19.3	85 W	51*	46
6 20	23 40.77	-2 16.4	1.015	1.487	43.0	19.6	94 W	34*	66	6 24	0 10.50	+18 41.4	0.314	1.026	79.4	19.3	83 W	50*	45
6 30	0 4.11	-0 52.6	0.956	1.487	42.6	19.4	98 W	38*	65	6 26	0 26.63	+19 14.3	0.301	1.014	81.9	19.3	81 W	49*	45
7 10	0 25.88	+0 13.4	0.901	1.491	41.9	19.3	102 W	41*	64	6 28	0 44.22	+19 43.9	0.290	1.002	84.7	19.3	79 W	48*	44
7 20	0 45.65	+0 57.8	0.849	1.498	40.5	19.1	107 W	44*	63	6 30	1 3.30	+20 8.7	0.280	0.989	87.7	19.3	76 W	47*	44*
7 30	1 2.83	+1 16.8	0.801	1.510	38.6	19.0	112 W	46*	63	7 2	1 23.86	+20 27.0	0.271	0.975	91.0	19.3	74 W	45*	43*
8 9	1 16.85	+1 8.5	0.758	1.526	35.8	18.8	118 W	46	63	7 4	1 45.81	+20 37.1	0.265	0.961	94.4	19.4	71 W	43*	43*
8 19	1 27.05	+0 1 8.5	0.720	1.546	32.2	18.6	125 W	46	63	7 6	2 8.94	+20 37.2	0.260	0.947	98.1	19.5	67 W	41*	42*
8 29	1 32.85	-0 32.5	0.690	1.568	27.7	18.4	134 W	44	65	7 8	2 32.94	+20 26.2	0.257	0.932	101.9	19.6	64 W	38*	41*
9 3	1 34.01	-1 13.1	0.678	1.581	25.1	18.3	138 W	44	65	7 10	2 57.41	+20 3.5	0.257	0.917	105.7	19.8	60 W	35*	40*
9 8	1 34.00	-1 58.2	0.670	1.594	22.3	18.2	143 W	43	66	7 12	3 21.89	+19 29.7	0.259	0.901	109.4	20.0	57 W	32*	38*
9 13	1 32.87	-2 46.3	0.664	1.608	19.4	18.1	148 W	42	67	7 14	3 45.92	+18 46.2	0.264	0.884	112.9	20.2	53 W	29*	37*
9 18	1 30.70	-3 35.7	0.662	1.623	16.4	18.0	153 W	41	68	7 16	4 9.12	+17 55.1	0.271	0.868	116.1	20.4	50 W	27*	36*
9 23	1 27.65	-4 24.4	0.664	1.638	13.4	18.0	158 W	41	68	7 18	4 31.17	+16 59.1	0.280	0.850	119.0	20.7	47 W	24*	34*
9 28	1 23.92	-5 10.3	0.671	1.654	10.7	17.9	162 W	40	69	7 20	4 51.87	+16 0.6	0.292	0.833	121.5	20.9	44 W	21*	33*
10 3	1 19.75	-5 51.2	0.682	1.670	8.7	17.9	165 W	39	70	7 22	5 11.12	+15 2.2	0.306	0.814	123.6	21.1	42 W	19*	31*
10 8	1 15.38	-6 25.7	0.698	1.687	7.8	17.9	167 W	39	70	7 24	5 28.93	+14 5.8	0.322	0.796	125.2	21.3	40 W	17*	30*
10 13	1 11.04	-6 52.4	0.719	1.704	8.5	18.0	165 E	38	71	7 26	5 45.35	+13 12.6	0.340	0.776	126.3	21.5	38 W	15*	29*
10 18	1 6.98	-7 10.4	0.745	1.721	10.2	18.2	162 E	38	71	162723 2000 VM₂									
10 28	1 0.49	-7 19.1	0.812	1.757	14.7	18.6	153 E	38	71	1 12	17 22.98	-21 45.6	0.538	0.580	123.2	20.0	30 W	12*	21*
11 7	0 56.94	-6 53.8	0.896	1.794	19.0	19.0	144 E	38	71	1 17	17 30.93	-23 33.7	0.628	0.568	110.6	19.4	33 W	12*	25*
11 17	0 56.64	-6 0.6	0.996	1.832	22.5	19.4	135 E	39	70	1 22	17 43.01	-24 55.5	0.721	0.571	98.5	19.0	35 W	11*	28*
11 22	0 57.70	-5 25.5	1.051	1.851	24.0	19.6	130 E	40	69	1 27	17 58.10	-25 53.6	0.814	0.589	87.6	18.9	37 W	10*	30*
11 27	0 59.51	-4 45.8	1.110	1.871	25.2	19.7	126 E	40	69	2 1	18 14.99	-26 30.6	0.904	0.621	78.1	18.9	38 W	9*	32*
12 2	1 2.02	-4 2.4	1.171	1.890	26.2	19.9	122 E	41	68	2 6	18 32.66	-26 49.3	0.987	0.662	70.3	18.9	39 W	9*	33*
12 7	1 5.16	-3 15.9	1.235	1.910	27.0	20.1	118 E	42	67	2 11	18 50.36	-26 52.8	1.064	0.711	63.9	19.1	40 W	8*	34*
12 17	1 13.13	-1 35.7	1.369	1.949	28.2	20.4	111 E	43	66	2 16	19 7.61	-26 44.2	1.134	0.765	58.9	19.2	42 W	8*	36*
12 27	1 23.04	+0 10.9	1.511	1.988	28.7	20.7	104 E	45	63*	2 21	19 24.11	-26 26.1	1.197	0.823	54.9	19.4	43 W	8*	37*
1 6	1 34.51	+2 0.9	1.658	2.027	28.8	20.9	97 E	47	60*	2 26	19 39.73	-26 1.0	1.252	0.882	51.8	19.5	44 W	8*	38*
1 16	1 47.27	+3 51.9	1.809	2.066	28.4	21.1	91 E	49	55*	3 2	19 54.40	-25 30.8	1.301	0.941	49.3	19.7	46 W	8*	40*
399325 1999 GY₅										3 7	20 8.11	-24 57.0	1.343	1.001	47.4	19.8	48 W	8*	42*
1 12	16 38.22	-37 54.8	0.738	0.636	91.1	21.5	40 W	2*	34*	3 12	20 20.91	-24 21.0	1.379	1.061	45.8	20.0	50 W	8*	44*
1 14	16 37.47	-37 7.6	0.755	0.660	87.8	21.5	42 W	3*	36*	3 17	20 32.82	-23 43.7	1.409	1.120	44.5	20.1	52 W	8*	46*
1 16	16 37.46	-36 21.1	0.771	0.685	84.8	21.5	44 W	4*	38*	3 22	20 43.89	-23 6.1	1.434	1.178	43.5	20.2	54 W	9*	48*
1 18	16 38.04	-35 35.5	0.786	0.710	82.0	21.5	46 W	6*	40*	4 1	21 3.59	-21 52.1	1.467	1.291	41.9	20.4	60 W	10*	53*
1 20	16 39.10	-34 51.0	0.800	0.735	79.6	21.5	47 W	7*	41*	4 11	21 20.23	-20 43.7	1.480	1.399	40.6	20.6	65 W	11*	59*
242191 2003 NZ₆										4 21	21 33.95	-19 44.0	1.476	1.503	39.4	20.7	72 W	13*	66*
1 12	17 21.25	-16 38.0	0.670	0.534	109.0	20.9	31 W	17*	19*	5 1	21 44.69	-18 56.2	1.456	1.601	38.1	20.8	79 W	15*	73*
1 14	17 20.70	-15 27.0	0.693	0.556	103.4	20.7	33 W	19*	21*	5 11	21 52.32	-18 22.8	1.424	1.696	36.5	20.8	87 W	18*	79*
1 16	17 21.16	-14 24.5	0.716	0.577	98.5	20.6	35 W	20*	23*	5 21	21 56.61	-18 6.2	1.383	1.785	34.4	20.8	95 W	20*	82
1 18	17 22.46	-13 29.6	0.738	0.599	94.1	20.6	37 W	22*	24*	5 31	21 57.17	-18 8.7	1.338	1.870	31.7	20.7	105 W	23*	82
1 20	17 24.42	-12 41.1	0.760	0.621	90.3	20.6	39 W	23*	25*	6 10	21 53.64	-18 31.1	1.292	1.951	28.1	20.7	115 W	25*	83
1 22	17 26.92	-11 58.2	0.782	0.643	86.8	20.6	41 W	24*	27*	6 20	21 45.73	-19 12.5	1.253	2.029	23.8	20.5	126 W	26*	83
1 24	17 29.86	-11 19.9	0.802	0.664	83.7	20.6	42 W	25*	28*	6 30	21 33.43	-20 9.0	1.226	2.102	18.5	20.4	139 W	25	84
1 26	17 33.14	-10 45.6	0.822	0.686	81.0	20.6	43 W	26*	29*	7 5	21 25.81	-20 40.6	1.220	2.137	15.6	20.3	146 W	24	85
1 28	17 36.70	-10 14.6	0.840	0.707	78.5	20.6	45 W	27*	30*	7 10	21 17.38	-21 12.8	1.220	2.172	12.6	20.3	152 W	24	85
1 30	17 40.48	-9 46.4	0.858	0.727	76.3	20.6	46 W	27*	31*	7 15	21 8.32	-21 44.3	1.226	2.205	9.5	20.2	159 W	23	86
2 1	17 44.43	-9 20.4	0.874	0.747	74.3	20.7	47 W	28*	33*	7 20	20 58.88	-22 13.8	1.239	2.238	6.4	20.1	166 W	23	86
2 6	17 54.86	-8 23.3	0.911	0.796	70.2	20.8	49 W	29*	35*	7 25	20 49.30	-22 40.3	1.259	2.269	3.5	20.0	172 W	22	87
2 11	18 5.77	-7 33.7	0.940	0.842	67.0	20.9	52 W	30*	37*	7 30	20 39.88	-23 2.8	1.287	2.300	2.0	20.0	175 W	22	87
2 16	18 16.91	-6 48.7	0.963	0.885	64.4	20.9	54 W	31*	40*	8 4	20 30.86	-23 20.9	1.323	2.331	3.8	20.2	171 E	22	87
2 21	18 28.12	-6 6.1	0.980	0.925	62.4	21.0	56 W	32*	42*	8 9	20 22.45	-23 34.5	1.365	2.360	6.3	20.4	165 E	21	88
2 26	18 39.30	-5 24.6	0.991	0.962	60.9	21.1	58 W	33*	44*	8 14	20 14.83	-23 43.8	1.415	2.388	8.8	20.6	159 E	21	88
3 2	18 50.40	-4 43.3	0.997	0.996	59.6	21.1	60 W	33*	46*	8 19	20 8.12	-23 49.0	1.472	2.416	11.1	20.8	153 E	21	88
3 7	19 1.38	-4 1.7	0.998	1.027	58.7	21.2	62 W	34*	48*	8 24	20 2.40	-23 50.6	1.535	2.443	13.2	21.0	147 E	21	88
3 12	19 12.24	-3 19.2	0.994	1.055	57.9	21.2	64 W	34*	50*	8 29	19 57.71	-23 49.3	1.603	2.469	15.0	21.2	141 E	21	88
3 17	19 22.97	-2 35.7	0.985	1.080	57.4	21.2	66 W	35*	52*	9 3	19 54.03	-23 45.3	1.676	2.495	16.6	21.4	135 E	21	88
3 22	19 33.58	-																	

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°
439437 2013 NK₄ (continuation)									433940 1995 QX₉ (continuation)								
2 21	17 52.94	-22 7.8	0.864	0.976	64.7	20.6	63 W	20* 56*	6 20	1 28.04	+ 2 13.1	1.477	1.442	40.7	20.2	68 W	23* 57*
2 26	18 0.75	-22 38.3	0.871	1.024	62.4	20.7	66 W	20* 60*	6 30	1 56.57	+ 4 9.9	1.438	1.449	41.2	20.2	70 W	26* 56*
3 2	18 8.32	-23 7.1	0.874	1.070	60.3	20.7	70 W	19* 63*	7 10	2 24.10	+ 5 52.3	1.402	1.462	41.5	20.2	72 W	31* 56*
3 7	18 15.54	-23 34.7	0.871	1.113	58.5	20.7	73 W	19* 67*	7 20	2 50.38	+ 7 18.4	1.367	1.481	41.6	20.2	75 W	36* 55*
3 12	18 22.30	-24 1.7	0.864	1.154	56.8	20.7	77 W	19* 70*	7 30	3 15.11	+ 8 27.3	1.331	1.505	41.4	20.1	79 W	40* 55*
3 17	18 28.48	-24 28.7	0.852	1.194	55.2	20.7	80 W	19* 74*	8 9	3 37.99	+ 9 19.1	1.296	1.534	40.9	20.1	82 W	45* 54*
3 22	18 33.98	-24 56.4	0.837	1.231	53.6	20.7	84 W	19* 78*	8 19	3 58.69	+ 9 54.6	1.258	1.568	40.1	20.1	87 W	50* 54*
3 27	18 38.67	-25 25.4	0.819	1.266	52.0	20.7	88 W	18* 82*	8 29	4 16.82	+10 15.2	1.218	1.605	39.0	20.0	92 W	53* 54
4 1	18 42.41	-25 56.5	0.797	1.299	50.2	20.6	92 W	18* 86*	9 8	4 31.99	+10 23.2	1.177	1.646	37.4	19.9	97 W	55* 54
4 6	18 45.08	-26 30.4	0.774	1.330	48.4	20.6	96 W	18* 89	9 18	4 43.76	+10 21.0	1.135	1.689	35.2	19.9	104 W	55 54
4 11	18 46.52	-27 7.8	0.748	1.359	46.4	20.5	101 W	17* 89	9 28	4 51.65	+10 11.8	1.093	1.735	32.4	19.8	112 W	55 54
4 16	18 46.54	-27 49.2	0.722	1.387	44.1	20.4	106 W	17* 88	10 8	4 55.29	+ 9 59.1	1.055	1.783	28.9	19.6	120 W	55 54
4 21	18 44.91	-28 35.1	0.694	1.412	41.6	20.3	111 W	16* 87	10 18	4 54.39	+ 9 46.6	1.024	1.832	24.9	19.5	130 W	55 54
4 26	18 41.39	-29 25.5	0.667	1.436	38.8	20.2	117 W	16 87	10 28	4 49.05	+ 9 38.3	1.005	1.883	19.4	19.4	141 W	55 54
5 1	18 35.73	-30 19.7	0.640	1.457	35.5	20.0	123 W	15 86	11 7	4 39.92	+ 9 37.9	1.002	1.934	13.8	19.2	152 W	55 54
5 6	18 27.70	-31 16.7	0.616	1.477	31.9	19.9	129 W	14 85	11 17	4 28.25	+ 9 48.0	1.019	1.987	8.3	19.1	163 W	55 54
5 11	18 17.14	-32 14.1	0.594	1.496	27.9	19.7	136 W	13 84	11 27	4 15.84	+10 10.1	1.062	2.039	5.3	19.1	169 W	55 54
5 16	18 3.95	-33 8.4	0.575	1.512	23.5	19.5	143 W	12 83	12 7	4 4.53	+10 44.1	1.129	2.091	7.9	19.4	163 E	56 53
5 21	17 48.26	-33 55.4	0.561	1.527	18.9	19.3	151 W	11 82	12 17	3 55.69	+11 28.5	1.221	2.144	12.2	19.8	153 E	56 53
5 26	17 30.48	-34 30.0	0.553	1.540	14.2	19.2	158 W	10 81	12 27	3 50.13	+12 21.4	1.336	2.196	16.0	20.2	142 E	57 52
5 31	17 11.34	-34 48.4	0.550	1.551	10.0	19.0	165 W	10 81	1 6	3 48.01	+13 20.2	1.469	2.248	19.0	20.6	132 E	58 51
6 2	17 3.51	-34 50.6	0.551	1.555	8.8	19.0	166 W	10 81	1 16	3 49.13	+14 22.8	1.618	2.299	21.2	20.9	122 E	59 50
6 4	16 55.69	-34 49.8	0.553	1.559	8.1	18.9	168 W	10 81	263976 2009 KD₅								
6 6	16 47.94	-34 46.1	0.556	1.563	7.9	19.0	168 E	10 81	1 12	17 44.23	-18 22.2	2.088	1.269	19.2	21.5	25 W	12* 15*
6 8	16 40.32	-34 39.5	0.561	1.566	8.4	19.0	167 E	10 81	1 22	18 18.13	-19 2.6	2.037	1.246	21.1	21.5	27 W	12* 18*
6 10	16 32.88	-34 30.3	0.566	1.569	9.3	19.1	165 E	10 81	2 1	18 53.16	-19 19.1	1.983	1.218	23.0	21.4	29 W	11* 21*
6 15	16 15.45	-33 57.5	0.583	1.576	12.9	19.3	160 E	11 82	2 11	19 29.36	-19 9.6	1.927	1.187	24.9	21.3	30 W	10* 23*
6 20	16 0.15	-33 14.4	0.606	1.581	17.0	19.5	153 E	12 83	2 21	20 6.75	-18 32.2	1.870	1.152	26.8	21.3	32 W	9* 25*
6 25	15 47.34	-32 25.9	0.635	1.584	20.9	19.7	146 E	13 84	3 2	20 45.33	-17 25.0	1.813	1.113	28.6	21.2	33 W	7* 26*
6 30	15 37.12	-31 36.7	0.668	1.585	24.6	20.0	140 E	13 84	3 12	21 25.08	-15 46.3	1.760	1.072	30.3	21.1	33 W	6* 27*
7 5	15 29.36	-30 50.0	0.705	1.585	27.8	20.2	133 E	14 85	3 22	22 6.00	-13 35.2	1.711	1.028	31.7	21.0	33 W	4* 27*
7 10	15 23.86	-30 7.9	0.744	1.584	30.6	20.4	127 E	15* 86	4 1	22 48.07	-10 52.0	1.670	0.983	32.9	20.9	32 W	3* 26*
7 15	15 20.37	-29 31.4	0.786	1.581	33.0	20.6	122 E	15* 86	4 11	23 31.23	- 7 38.3	1.639	0.938	33.6	20.7	31 W	1* 25*
7 20	15 18.67	-29 1.1	0.829	1.576	35.1	20.7	117 E	15* 87	4 21	23 05.52	- 3 58.2	1.619	0.894	33.6	20.6	30 W	- 23*
7 25	15 18.53	-28 37.0	0.873	1.569	36.8	20.9	112 E	15* 87	5 1	1 0.89	+ 0 1.8	1.611	0.853	32.9	20.5	27 W	- 21*
7 30	15 19.77	-28 18.7	0.917	1.561	38.3	21.0	108 E	15* 88	5 6	1 23.98	+ 2 6.5	1.612	0.835	32.2	20.4	26 W	- 20*
8 4	15 22.19	-28 5.6	0.962	1.551	39.5	21.1	103 E	14* 88	5 11	1 47.35	+ 4 12.4	1.616	0.818	31.3	20.3	25 W	- 19*
8 9	15 25.65	-27 57.2	1.005	1.540	40.5	21.2	99 E	14* 88	5 16	2 10.99	+ 6 18.0	1.623	0.804	30.1	20.3	23 W	- 17*
8 14	15 30.04	-27 52.8	1.048	1.527	41.3	21.3	96 E	14* 88*	5 21	2 34.91	+ 8 21.8	1.633	0.792	28.6	20.2	22 W	- 16*
8 19	15 35.26	-27 51.8	1.089	1.512	42.0	21.4	92 E	13* 85*	5 26	2 59.09	+10 21.9	1.646	0.783	27.0	20.2	21 W	- 15*
8 24	15 41.25	-27 53.7	1.129	1.495	42.5	21.5	88 E	13* 82*	5 31	3 23.50	+12 16.6	1.661	0.776	25.2	20.1	19 W	- 13*
152563 1992 BF									6 5	3 48.13	+14 4.2	1.678	0.773	23.3	20.1	18 W	- 12*
1 12	17 40.09	-26 56.6	1.496	0.743	34.9	21.5	26 W	6* 19*	6 10	4 12.93	+15 43.0	1.696	0.773	21.2	20.0	16 W	- 10*
1 17	18 11.03	-26 47.6	1.503	0.722	33.3	21.4	24 W	4* 17*	6 15	4 37.85	+17 11.7	1.716	0.776	19.2	20.0	15 W	- 9*
1 22	18 42.21	-26 11.7	1.513	0.703	31.4	21.3	22 W	3* 16*	6 20	5 2.83	+18 29.0	1.737	0.783	17.2	20.0	13 W	- 7*
1 27	19 13.30	-25 9.2	1.526	0.687	29.1	21.2	20 W	2* 14*	6 25	5 27.78	+19 33.8	1.759	0.792	15.2	20.0	12 W	- 6*
2 1	19 43.98	-23 41.1	1.542	0.674	26.5	21.1	18 W	- 12*	6 30	5 52.61	+20 25.5	1.782	0.804	13.4	20.0	11 W	- 4*
2 6	20 13.98	-21 49.9	1.560	0.666	23.5	21.0	16 W	- 10*	7 10	6 41.53	+21 28.5	1.827	0.835	10.3	20.0	8 W	- 2*
2 11	20 43.12	-19 38.4	1.579	0.662	20.4	20.9	14 W	- 7*	7 20	7 28.89	+21 38.8	1.874	0.873	8.0	20.0	7 W	-
2 16	21 11.28	-17 10.3	1.600	0.662	17.2	20.8	11 W	- 5*	7 30	8 14.10	+21 1.4	1.919	0.916	6.7	20.1	6 W	-
2 21	21 38.43	-14 29.5	1.622	0.667	14.0	20.8	9 W	- 3*	8 4	8 35.78	+20 27.1	1.941	0.938	6.4	20.2	6 W	-
2 26	22 4.56	-11 39.9	1.645	0.676	11.0	20.7	8 W	- 1*	8 9	8 56.81	+19 43.7	1.963	0.961	6.3	20.3	6 W	-
3 2	22 29.74	- 8 45.0	1.668	0.689	8.3	20.7	6 W	-	8 14	9 17.20	+18 52.2	1.985	0.984	6.4	20.3	6 W	-
3 7	22 54.02	- 5 48.3	1.692	0.706	5.9	20.6	4 W	-	8 19	9 36.95	+17 53.8	2.005	1.006	6.6	20.4	7 W	1*
3 12	23 17.52	- 2 52.5	1.716	0.725	4.0	20.6	3 W	-	8 24	9 56.08	+16 49.3	2.025	1.029	6.8	20.5	7 W	1*
3 17	23 40.32	+ 0 0.0	1.740	0.747	3.0	20.7	2 W	-	8 29	10 14.62	+15 39.8	2.044	1.051	7.1	20.6	7 W	1*
3 22	0 2.54	+ 2 47.2	1.765	0.770	3.0	20.8	2 W	-	9 3	10 32.61	+14 26.1	2.063	1.073	7.4	20.7	8 W	2*
3 27	0 24.26	+ 5 27.8	1.790	0.795	3.6	20.9	3 E	-	9 8	10 50.08	+13 9.0	2.080	1.094	7.8	20.7	8 W	2*
4 1	0 45.57	+ 8 0.4	1.815	0.820	4.4	21.0	4 E	-	9 13	11 7.08	+11 49.1	2.096	1.114	8.2	20.8	9 W	3*
4 6	1 6.52	+10 24.1	1.840	0.845	5.0	21.2	4 E	-	9 18	11 23.65	+10 27.2	2.111	1.134	8.7	20.9	10 W	3*
4 11	1 27.20	+12 38.4	1.865	0.871	5.5	21.3	5 E	-	9 23	11 39.84	+ 9 3.8	2.125	1.152	9.1	21.0	10 W	4*
4 16	1 47.65	+14 42.7	1.890	0.896	5.9	21.4	5 E	-	9 28	11 55.67	+ 7 39.5	2.137	1.170	9.6	21.0	11 W	5*
433940 1995 QX₉									10 3	12 11.20	+ 6 14.7	2.148	1.187	10.1	21.1	12 W	6*
1 12	17 41.06	-20 5.3	2.817	1.977	12.4	21.5	26 W	11* 16*	10 8	12 26.47	+ 4 49.8	2.157	1.204	10.6	21.1	13 W	7*
1 22	18 6.63	-20 26.7	2.717	1.925	14.7	21.4	30 W	12* 21*	10 13	12 41.52	+ 3 25.3	2.165	1.219	11.2	21.2	14 W	7*
2 1	18 33.08	-20 33.3	2.612	1.873	16.9	21.3	34 W	13* 26*	10 18	12 56.37	+ 2 1.						

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°
434751 2006 HV₅₇ (continuation)										90367 2003 LC₅ (continuation)									
2 11	19 57.07	-19 59.3	1.952	1.126	21.0	21.2	24 W	5*	18*	2 19	15 4.63	+63 8.3	0.313	1.122	57.2	17.5	107 W	72	1
2 16	20 18.18	-18 36.5	1.952	1.124	20.9	21.2	24 W	5*	18*	2 21	14 49.16	+63 50.9	0.322	1.136	55.3	17.5	109 W	71	—
2 21	20 38.80	-17 5.4	1.955	1.125	20.9	21.2	24 W	5*	18*	2 23	14 33.34	+64 23.7	0.332	1.150	53.6	17.6	111 W	71	—
2 26	20 58.86	-15 27.6	1.961	1.129	20.8	21.3	24 W	5*	18*	2 25	14 17.33	+64 46.9	0.343	1.163	52.0	17.6	112 W	70	—
3 2	21 18.33	-13 44.3	1.969	1.137	20.7	21.3	24 W	5*	18*	2 27	14 1.31	+65 0.4	0.353	1.177	50.5	17.7	114 W	70	—
3 7	21 37.19	-11 57.0	1.981	1.148	20.6	21.3	24 W	5*	18*	2 29	13 45.50	+65 4.7	0.364	1.190	49.1	17.7	115 W	70	—
3 12	21 55.44	-10 7.0	1.995	1.162	20.5	21.3	24 W	5*	18*	3 2	13 30.09	+65 0.1	0.375	1.203	47.8	17.8	116 W	70	—
3 17	22 13.09	-8 15.5	2.011	1.179	20.5	21.4	24 W	6*	18*	3 3	13 22.59	+64 54.6	0.380	1.210	47.2	17.8	116 W	70	—
3 22	22 30.15	-6 23.5	2.028	1.199	20.4	21.4	25 W	6*	19*	3 4	13 15.26	+64 47.0	0.386	1.216	46.6	17.8	117 W	70	—
351545 2005 TE₁₅										90367 2003 LC₅ (continuation)									
1 12	18 1.50	-28 33.8	1.624	0.792	26.7	21.5	21 W	2*	15*	3 5	13 8.12	+64 37.6	0.392	1.223	46.1	17.9	117 W	70	—
1 17	18 31.08	-28 47.6	1.640	0.790	25.1	21.4	20 W	—	14*	3 6	13 1.17	+64 26.3	0.398	1.229	45.6	17.9	118 W	71	—
1 22	19 0.41	-28 35.9	1.659	0.793	23.5	21.4	19 W	—	13*	3 7	12 54.44	+64 13.2	0.404	1.235	45.1	17.9	118 W	71	—
1 27	19 29.14	-27 59.7	1.680	0.799	21.8	21.4	18 W	—	12*	3 8	12 47.93	+63 58.5	0.409	1.242	44.6	17.9	119 W	71	—
2 1	19 56.97	-27 1.1	1.704	0.809	20.2	21.4	17 W	—	10*	3 9	12 41.66	+63 42.2	0.416	1.248	44.2	18.0	119 W	71	—
2 6	20 23.68	-25 42.9	1.730	0.823	18.7	21.4	16 W	—	9*	3 10	12 35.62	+63 24.5	0.422	1.254	43.7	18.0	119 W	72	1
2 11	20 49.12	-24 8.3	1.757	0.840	17.2	21.5	15 W	—	8*	3 11	12 29.83	+63 5.4	0.428	1.260	43.3	18.0	119 W	72	1
2 16	21 13.26	-22 20.3	1.785	0.860	15.9	21.5	14 W	—	7*	3 12	12 24.28	+62 45.0	0.434	1.266	43.0	18.1	120 W	72	1
494689 2004 JR										90367 2003 LC₅ (continuation)									
1 12	18 12.80	-4 18.0	1.848	1.053	23.9	21.4	26 W	20*	3*	3 14	12 13.90	+62 0.7	0.447	1.278	42.3	18.1	120 W	73	2
1 22	18 59.10	-2 9.8	1.738	0.948	26.4	21.1	25 W	19*	2*	3 16	12 4.48	+61 12.4	0.460	1.290	41.7	18.2	120 W	74	3
2 1	19 50.90	+0 17.1	1.654	0.850	27.8	20.8	24 W	18*	—	3 18	11 55.99	+60 20.6	0.473	1.302	41.1	18.3	121 W	75	4
2 11	20 47.82	+2 44.2	1.601	0.763	27.2	20.5	21 W	14*	—	3 20	11 48.37	+59 25.9	0.487	1.313	40.7	18.3	121 E	76	5
2 16	21 17.81	+3 49.3	1.588	0.728	26.1	20.3	19 W	12*	—	3 22	11 41.59	+58 28.9	0.501	1.324	40.3	18.4	121 E	77	6
2 21	21 48.47	+4 44.3	1.584	0.700	24.3	20.2	17 W	10*	—	3 24	11 35.58	+57 29.9	0.516	1.336	40.0	18.5	121 E	78	7
2 26	22 19.44	+5 26.2	1.587	0.680	22.0	20.0	15 W	7*	—	3 26	11 30.30	+56 29.4	0.531	1.346	39.7	18.5	120 E	79	8
3 2	22 50.33	+5 53.5	1.597	0.670	19.6	19.9	13 W	4*	—	3 28	11 25.68	+55 27.8	0.546	1.357	39.5	18.6	120 E	80	9
3 7	23 20.78	+6 6.0	1.613	0.671	17.4	19.9	12 E	4*	—	3 30	11 21.68	+54 25.4	0.561	1.368	39.3	18.7	120 E	81	10
3 12	23 50.46	+6 5.2	1.633	0.683	15.9	19.9	11 E	4*	—	4 1	11 18.23	+53 22.4	0.577	1.378	39.1	18.8	119 E	82	11
3 17	0 19.15	+5 53.3	1.657	0.704	15.3	20.0	11 E	5*	—	4 3	11 15.30	+52 19.1	0.593	1.388	39.0	18.8	119 E	83	12
3 22	0 46.69	+5 33.1	1.683	0.733	15.5	20.1	11 E	5*	1*	4 5	11 12.83	+51 15.8	0.610	1.398	39.0	18.9	118 E	84	13
3 27	1 13.03	+5 7.2	1.713	0.770	16.3	20.3	13 E	4*	4*	4 7	11 10.79	+50 12.6	0.626	1.408	38.9	19.0	118 E	85	14
4 1	1 38.17	+4 37.6	1.744	0.811	17.3	20.5	14 E	4*	6*	4 9	11 9.13	+49 9.6	0.644	1.417	38.9	19.1	117 E	86	15
4 6	2 2.14	+4 6.0	1.778	0.857	18.2	20.7	16 E	3*	9*	4 11	11 7.82	+48 6.9	0.661	1.427	38.9	19.1	117 E	87	16
4 11	2 25.01	+3 33.3	1.814	0.906	19.0	20.8	17 E	2*	11*	4 16	11 5.88	+45 32.3	0.706	1.449	39.0	19.3	115 E	89	18
4 16	2 46.86	+3 0.4	1.852	0.957	19.7	21.0	19 E	1*	13*	4 21	11 5.54	+43 1.1	0.753	1.470	39.1	19.5	113 E	88	21
4 21	3 7.77	+2 27.6	1.891	1.009	20.1	21.2	20 E	—	14*	4 26	11 6.52	+40 34.1	0.801	1.490	39.2	19.6	111 E	86	23
4 26	3 27.80	+1 54.9	1.931	1.061	20.3	21.4	22 E	—	15*	5 1	11 8.57	+38 11.4	0.850	1.509	39.3	19.8	108 E	83	26
247517 2002 QY₆										90367 2003 LC₅ (continuation)									
1 12	18 23.47	-21 19.4	1.014	0.273	75.7	19.6	16 W	5*	8*	5 6	11 46.75	+21 34.9	1.278	1.616	38.9	20.8	89 E	57*	42
1 13	18 27.52	-20 53.0	1.051	0.286	68.6	19.5	16 W	5*	8*	6 20	11 59.75	+17 57.3	1.387	1.631	38.3	21.0	84 E	50*	46
1 14	18 32.02	-20 29.0	1.086	0.301	62.3	19.5	16 W	5*	7*	6 30	12 13.60	+14 28.6	1.493	1.641	37.5	21.2	79 E	43*	50*
1 15	18 36.82	-20 7.0	1.121	0.317	56.8	19.5	16 W	5*	7*	7 10	12 28.18	+11 7.5	1.596	1.647	36.5	21.3	74 E	38*	52*
1 16	18 41.83	-19 46.7	1.153	0.334	52.0	19.5	16 W	5*	7*	7 20	12 43.42	+7 53.1	1.695	1.648	35.4	21.4	70 E	33*	53*
1 17	18 46.96	-19 27.8	1.185	0.352	47.8	19.6	15 W	5*	7*	7 30	12 59.33	+4 44.4	1.787	1.644	34.1	21.5	65 E	28*	52*
1 18	18 52.15	-19 10.0	1.214	0.370	44.2	19.7	15 W	5*	7*	190677 2001 BQ₆₁									
1 19	18 57.35	-18 53.1	1.243	0.388	41.0	19.7	15 W	5*	6*	1 12	19 6.76	-1 14.5	4.493	3.595	5.7	21.5	21 W	13*	—
1 20	19 2.53	-18 36.9	1.271	0.407	38.2	19.8	15 W	5*	6*	1 22	19 19.20	-0 53.3	4.475	3.592	6.2	21.5	23 W	17*	—
1 21	19 7.68	-18 21.3	1.297	0.425	35.7	19.9	15 W	5*	6*	2 1	19 31.44	-0 24.2	4.441	3.588	7.1	21.5	27 W	20*	5*
1 22	19 12.76	-18 6.2	1.323	0.444	33.6	19.9	14 W	5*	6*	2 11	19 43.39	+0 12.3	4.390	3.583	8.2	21.6	31 W	23*	12*
1 27	19 37.04	-16 55.4	1.437	0.535	26.0	20.3	14 W	5*	5*	2 21	19 54.95	+0 55.7	4.323	3.578	9.5	21.6	37 W	26*	20*
2 1	19 59.25	-15 48.9	1.534	0.620	21.7	20.6	13 W	4*	5*	367708 2010 TV₁₈									
2 6	20 19.56	-14 44.2	1.619	0.699	19.2	20.9	13 W	4*	5*	1 12	19 26.11	-22 17.0	2.793	1.809	0.6	21.4	1 W	—	—
2 11	20 38.23	-13 40.6	1.693	0.772	17.8	21.2	14 W	4*	6*	1 22	19 53.47	-21 10.9	2.763	1.785	2.7	21.5	5 W	—	—
2 16	20 55.53	-12 37.7	1.759	0.840	17.1	21.5	14 W	4*	7*	2 1	20 20.82	-19 47.2	2.730	1.761	4.7	21.6	8 W	—	2*
90367 2003 LC₅										2 11	20 48.02	-18 6.9	2.693	1.740	6.7	21.7	12 W	—	6*
1 12	18 35.57	+12 59.1	0.188	0.841	134.9	19.9	37 W	29*	—	2 21	21 14.99	-16 11.2	2.653	1.720	8.7	21.7	15 W	—	9*
1 13	18 31.15	+15 21.9	0.188	0.849	131.6	19.6	40 W	32*	—	155725 2000 RO₈									
1 14	18 26.67	+17 42.9	0.188	0.856	128.4	19.3	43 W	35*	—	1 12	19 31.85	-10 17.5	3.103	2.148	5.2	21.5	12 E	3*	—
1 15	18 22.14	+20 1.6	0.188	0.863	125.1	19.0	46 W	38*	—	1 22	19 52.96	-9 41.9	3.066	2.110	5.3	21.4	11 W	5*	—
1 16	18 17.56	+22 17.5	0.189	0.871	122.0	18.8	49 W	41*	—	2 1	20 14.41	-8 54.7	3.018	2.070	6.2	21.4	13 W	7*	—
1 17	18 12.94	+24 30.0	0.190	0.878	118.8	18.6	51 W	43*	—	2 11	20 36.15	-7 56.4	2.961	2.029	7.6	21.3	16 W	9*	4*
1 18	18 8.29	+26 38.8	0.191	0.886	115.8	18.4	54 W	46*	—	2 21	20 58.17	-6 47.5	2.894	1.988	9.4	21.3	19 W	10*	9*
1 19	18 3.61	+28 43.6	0.193	0.893	112.8	18.2	57 W	49*	—	3 2	21 20.49	-5 28.8	2.820	1.945	11.4	21.3	23 W	11*	14*
1 20	17 58.90	+30 44.2	0.195	0.900	109.9	18.1	59 W	51*	—	3 12	21 43.11	-4 1.2	2.739	1.902	13.5	21.3	26 W	12*	18*
1 21	17 54																		

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°
155725 2000 RO₈										276770 2004 HC									
<i>(continuation)</i>										<i>(continuation)</i>									
6 25	2 21.32	+13 31.5	1.753	1.456	35.4	20.4	56 W	25*	43*	3 4	7 40.99	-61 27.5	0.383	1.135	58.7	20.2	102 E	—	55
6 30	2 37.62	+13 59.3	1.712	1.438	36.4	20.3	57 W	27*	43*	3 6	7 42.18	-58 30.2	0.382	1.146	57.2	20.2	104 E	—	57
7 5	2 54.24	+14 21.5	1.673	1.422	37.2	20.3	58 W	28*	43*	3 8	7 43.54	-55 30.1	0.382	1.156	55.7	20.1	106 E	—	60
7 10	3 11.15	+14 37.8	1.636	1.406	38.1	20.2	59 W	29*	43*	3 10	7 45.04	-52 27.9	0.382	1.166	54.4	20.1	107 E	—	64
7 15	3 28.32	+14 47.6	1.601	1.392	38.9	20.2	59 W	31*	43*	3 12	7 46.67	-49 24.6	0.384	1.175	53.2	20.1	109 E	—	67
7 20	3 45.73	+14 50.6	1.568	1.378	39.7	20.1	60 W	32*	43*	3 14	7 48.43	-46 21.2	0.386	1.184	52.1	20.1	110 E	—	70
7 30	4 21.01	+14 34.8	1.507	1.354	41.1	20.1	61 W	35*	43*	3 16	7 50.30	-43 18.7	0.390	1.192	51.1	20.1	111 E	2	73
8 9	4 56.57	+13 49.1	1.454	1.335	42.4	20.0	63 W	37*	44*	3 18	7 52.28	-40 18.0	0.394	1.200	50.3	20.1	112 E	5	76
8 19	5 31.94	+12 33.9	1.409	1.321	43.4	19.9	64 W	39*	44*	3 20	7 54.37	-37 20.3	0.400	1.207	49.6	20.2	113 E	8	79
8 29	6 6.60	+10 51.4	1.371	1.313	44.1	19.9	65 W	40*	45*	3 22	7 56.55	-34 26.3	0.406	1.214	49.1	20.2	113 E	11	82
9 8	6 40.12	+ 8 45.9	1.340	1.310	44.7	19.8	66 W	41*	46*	3 24	7 58.83	-31 37.0	0.414	1.220	48.7	20.2	113 E	13	84
9 18	7 12.16	+ 6 22.4	1.313	1.314	45.0	19.8	68 W	42*	48*	3 26	8 1.20	-28 52.9	0.422	1.226	48.5	20.3	113 E	16	87
9 28	7 42.43	+ 3 46.6	1.290	1.323	45.1	19.8	69 W	42*	49*	3 28	8 3.66	-26 14.8	0.432	1.232	48.3	20.3	113 E	19	90
10 8	8 10.79	+ 1 4.1	1.268	1.338	45.0	19.8	71 W	42*	51*	3 30	8 6.19	-23 42.9	0.442	1.237	48.3	20.4	112 E	21	88
10 18	8 37.11	+ 1 40.0	1.245	1.358	44.7	19.8	74 W	41*	54*	4 1	8 8.80	-21 17.7	0.453	1.241	48.4	20.5	112 E	24	85
10 28	9 1.27	+ 4 21.0	1.221	1.383	44.3	19.7	77 W	40*	57*	4 6	8 15.60	-15 44.3	0.484	1.250	48.8	20.6	110 E	29	80
11 7	9 23.19	- 6 54.9	1.194	1.412	43.7	19.7	80 W	38*	60*	4 11	8 22.75	-10 52.9	0.518	1.257	49.6	20.8	107 E	34*	75
11 17	9 42.72	- 9 18.0	1.163	1.445	42.9	19.7	84 W	36	65*	4 16	8 30.20	- 6 40.7	0.556	1.261	50.5	21.0	104 E	38*	71
11 27	9 59.64	-11 26.3	1.127	1.481	41.8	19.6	89 W	34	70*	4 21	8 37.92	- 3 3.7	0.595	1.262	51.5	21.2	101 E	41*	67
12 2	10 7.05	-12 23.7	1.107	1.500	41.1	19.6	91 W	33	72*	4 26	8 45.88	+ 0 2.3	0.636	1.260	52.4	21.3	98 E	43*	64
12 7	10 13.70	-13 15.8	1.087	1.519	40.3	19.6	94 W	32	75*	5 1	8 54.06	+ 2 41.5	0.677	1.255	53.2	21.5	94 E	44*	61
12 12	10 19.55	-14 2.2	1.065	1.539	39.4	19.5	97 W	31	77*	370577 2003 UG₂₇₀									
12 17	10 24.53	-14 41.9	1.043	1.560	38.3	19.5	101 W	30	79*	1 12	19 41.24	-29 30.8	3.501	2.532	3.1	21.5	8 E	—	—
12 22	10 28.60	-15 14.1	1.020	1.581	37.1	19.4	104 W	30	79	1 22	20 0.60	-28 11.6	3.470	2.502	3.4	21.4	9 W	—	1*
12 27	10 31.71	-15 38.0	0.997	1.602	35.7	19.4	108 W	29	80	2 1	20 19.79	-26 44.4	3.425	2.471	4.9	21.5	12 W	—	6*
1 1	10 33.82	-15 52.6	0.975	1.623	34.2	19.3	112 W	29	80	2 11	20 38.72	-25 9.5	3.366	2.440	6.8	21.5	17 W	—	11*
1 6	10 34.89	-15 56.9	0.953	1.645	32.4	19.2	116 W	29	80	2 21	20 57.38	-23 26.9	3.295	2.408	8.9	21.5	22 W	—	16*
1 11	10 34.88	-15 49.8	0.932	1.667	30.4	19.2	121 W	29	80	357430 2003 YP₁₃₅									
1 16	10 33.80	-15 30.1	0.912	1.689	28.1	19.1	126 W	29	80	1 12	19 55.73	-26 32.9	3.703	2.731	2.7	21.4	7 E	—	1*
1 12	19 34.68	-23 9.6	4.012	3.029	0.5	21.3	2 E	—	—	1 22	20 14.12	-25 57.9	3.667	2.690	2.2	21.3	6 E	—	—
1 22	19 50.50	-22 25.1	3.975	2.998	1.9	21.4	6 W	—	—	2 1	20 32.76	-25 16.0	3.616	2.649	3.5	21.3	9 W	—	2*
2 1	20 6.32	-21 34.8	3.922	2.966	4.0	21.5	12 W	—	6*	2 11	20 51.57	-24 27.6	3.552	2.608	5.4	21.4	14 W	—	8*
2 11	20 22.06	-20 39.0	3.853	2.934	6.1	21.5	19 W	1*	12*	2 21	21 10.51	-23 33.0	3.474	2.565	7.5	21.4	20 W	—	13*
2 21	20 37.67	-19 37.9	3.768	2.901	8.2	21.6	25 W	3*	19*	3 2	21 29.54	-22 32.8	3.385	2.523	9.6	21.4	25 W	—	18*
1 12	19 39.24	-59 35.8	0.521	0.655	113.0	21.9	38 E	—	14*	3 12	21 48.62	-21 27.5	3.285	2.479	11.7	21.4	30 W	—	24*
1 14	19 38.20	-62 5.1	0.513	0.681	110.1	21.8	41 W	—	15*	3 22	22 7.74	-20 17.9	3.175	2.436	13.8	21.3	36 W	—	29*
1 16	19 36.94	-64 28.1	0.506	0.707	107.2	21.7	43 W	—	17*	4 1	22 26.88	-19 4.7	3.057	2.392	15.8	21.3	41 W	—	34*
1 18	19 35.53	-66 45.3	0.499	0.732	104.4	21.6	46 W	—	19*	4 11	22 46.05	-17 48.9	2.932	2.347	17.8	21.2	46 W	1*	39*
1 20	19 33.99	-68 57.3	0.493	0.757	101.8	21.5	49 W	—	21*	4 21	23 5.26	-16 31.3	2.802	2.303	19.8	21.1	51 W	3*	44*
1 22	19 32.33	-71 4.8	0.487	0.781	99.2	21.4	52 W	—	22*	5 1	23 24.50	-15 12.9	2.668	2.258	21.6	21.0	56 W	4*	49*
1 24	19 30.58	-73 8.6	0.481	0.804	96.8	21.3	54 W	—	24*	5 11	23 43.80	-13 54.9	2.530	2.213	23.4	20.9	60 W	6*	54*
1 26	19 28.71	-75 9.6	0.476	0.826	94.4	21.2	57 W	—	25*	5 21	0 3.16	-12 38.3	2.391	2.169	25.0	20.8	65 W	8*	59*
1 28	19 26.67	-77 8.4	0.470	0.848	92.1	21.2	59 W	—	26*	5 31	0 22.57	-11 24.4	2.252	2.125	26.6	20.7	70 W	11*	63*
1 30	19 24.35	-79 5.9	0.465	0.869	89.9	21.1	62 W	—	26*	6 10	0 42.03	-10 14.5	2.113	2.081	28.0	20.6	74 W	14*	67*
2 1	19 21.55	-81 2.8	0.459	0.889	87.8	21.0	64 W	—	27*	6 20	1 1.52	- 9 9.7	1.976	2.037	29.3	20.4	79 W	18*	70*
2 2	19 19.82	-82 1.2	0.456	0.899	86.8	21.0	66 W	—	27*	6 30	1 20.97	- 8 11.6	1.842	1.995	30.4	20.2	83 W	22*	71*
2 3	19 17.74	-82 59.6	0.453	0.909	85.8	21.0	67 W	—	27*	7 10	1 40.31	- 7 21.4	1.711	1.953	31.3	20.1	88 W	26*	71*
2 4	19 15.13	-83 58.3	0.451	0.919	84.7	21.0	68 W	—	27*	7 20	1 59.42	- 6 40.3	1.584	1.913	32.1	19.9	92 W	31*	71
2 5	19 11.65	-84 57.2	0.448	0.928	83.7	20.9	69 W	—	27*	7 30	2 18.12	- 6 9.4	1.463	1.874	32.6	19.7	97 W	34*	70
2 6	19 6.61	-85 56.3	0.445	0.938	82.8	20.9	71 W	—	27*	8 9	2 36.18	- 5 49.3	1.347	1.837	32.8	19.4	101 W	37*	70
2 7	18 58.48	-86 55.7	0.442	0.947	81.8	20.9	72 W	—	27*	8 19	2 53.30	- 5 40.2	1.238	1.801	32.7	19.2	106 W	39*	70
2 8	18 42.71	-87 55.2	0.439	0.956	80.8	20.8	73 W	—	27*	8 29	3 9.08	- 5 41.6	1.135	1.768	32.2	19.0	111 W	39	70
2 9	17 58.67	-88 53.6	0.436	0.965	79.9	20.8	74 W	—	27*	9 8	3 23.05	- 5 51.5	1.039	1.738	31.3	18.7	116 W	39	70
2 10	13 26.06	-89 34.1	0.433	0.973	78.9	20.8	76 W	—	26	9 18	3 34.66	- 6 6.8	0.951	1.711	29.9	18.5	122 W	39	70
2 11	8 59.66	-88 52.1	0.431	0.982	78.0	20.8	77 E	—	27	9 23	3 39.37	- 6 14.9	0.910	1.698	28.9	18.3	125 W	39	70
2 12	8 16.50	-87 51.4	0.428	0.991	77.0	20.7	78 E	—	28	9 28	3 43.26	- 6 22.1	0.871	1.686	27.8	18.2	128 W	39	70
2 13	8 1.06	-86 48.3	0.425	0.999	76.1	20.7	79 E	—	29	10 3	3 46.25	- 6 27.3	0.835	1.676	26.6	18.0	132 W	39	70
2 14	7 53.24	-85 43.8	0.422	1.007	75.2	20.7	80 E	—	30	10 8	3 48.28	- 6 29.3	0.802	1.666	25.1	17.9	135 W	39	70
2 15	7 48.54	-84 38.2	0.419	1.015	74.3	20.6	82 E	—	31	10 13	3 49.29	- 6 26.8	0.771	1.657	23.5	17.7	139 W	39	70
2 16	7 45.45	-83 31.4	0.416	1.023	73.4	20.6	83 E	—	32	10 18	3 49.24	- 6 18.2	0.744	1.649	21.7	17.6	142 W	39	70
2 17	7 43.30	-82 23.4	0.414	1.030	72.5	20.6	84 E	—	34	10 23	3 48.16	- 6 1.8	0.720	1.642	19.8	17.5	146 W	39	70
2 18	7 41.76	-81 14.3	0.411	1.038	71.5	20.6	85 E	—	35	11 2	3 43.15	- 5 0.0	0.683	1.631	16.0	17.2	153 W	40	69
2 19	7 40.63																		