

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°
437844 1999 MN										488726 2004 PZ₁₀₄									
<i>(continuation)</i>										<i>(continuation)</i>									
6 24	18 10.58	-27 51.6	0.105	1.121	4.0	17.1	176 E	17	88	7 30	0 38.92	+12 0.6	0.786	1.508	38.2	19.7	113 W	57	52
6 25	17 51.83	-28 3.5	0.104	1.120	6.5	17.2	173 E	17	88	8 4	0 49.11	+12 38.2	0.747	1.495	37.8	19.6	115 W	58	51
6 26	17 33.04	-28 5.7	0.105	1.119	10.5	17.4	168 E	17	88	8 9	0 59.11	+13 8.9	0.710	1.483	37.2	19.4	118 W	58	51
6 27	17 14.50	-27 58.3	0.105	1.118	14.8	17.6	164 E	17	88	8 14	1 8.87	+13 31.7	0.674	1.472	36.5	19.3	120 W	59	50
6 28	16 56.48	-27 41.9	0.107	1.117	19.2	17.8	159 E	17	88	8 19	1 18.29	+13 45.6	0.641	1.462	35.6	19.1	123 W	59	50
6 29	16 39.19	-27 17.7	0.109	1.116	23.4	17.9	154 E	18	89	8 24	1 27.29	+13 49.8	0.610	1.454	34.4	19.0	126 W	59	50
6 30	16 22.80	-26 47.0	0.111	1.114	27.5	18.1	150 E	18	89	8 29	1 35.77	+13 43.4	0.581	1.446	33.1	18.8	129 W	59	50
7 1	16 7.42	-26 11.3	0.114	1.112	31.5	18.3	145 E	19	90	9 3	1 43.66	+13 25.9	0.555	1.439	31.5	18.7	132 W	58	51
7 2	15 53.11	-25 32.0	0.118	1.111	35.2	18.4	141 E	19	90	9 8	1 50.83	+12 56.9	0.531	1.434	29.7	18.5	135 W	58	51
7 3	15 39.88	-24 50.5	0.121	1.109	38.8	18.6	137 E	20	89	9 18	2 2.58	+11 23.5	0.490	1.426	25.2	18.2	143 W	56	53
7 4	15 27.71	-24 7.9	0.125	1.106	42.1	18.8	133 E	21	88	9 28	2 10.43	+ 9 7.0	0.461	1.424	19.4	17.9	151 W	54	55
7 5	15 16.55	-23 25.1	0.130	1.104	45.2	18.9	130 E	22*	87	10 8	2 14.34	+ 6 21.1	0.446	1.426	13.7	17.6	160 W	51	58
7 6	15 6.35	-22 42.8	0.135	1.102	48.1	19.1	126 E	22*	87	10 13	2 14.98	+ 4 53.9	0.443	1.430	10.8	17.5	164 W	50	59
7 7	14 57.02	-22 1.5	0.140	1.099	50.9	19.2	123 E	23*	86	10 18	2 14.94	+ 3 28.4	0.445	1.434	8.5	17.4	168 W	48	61
7 8	14 48.50	-21 21.5	0.145	1.096	53.5	19.4	120 E	23*	85	10 23	2 14.43	+ 2 8.5	0.450	1.440	7.5	17.4	169 W	47	62
7 9	14 40.73	-20 43.2	0.150	1.093	55.9	19.5	117 E	23*	85	10 28	2 13.70	+ 0 57.3	0.460	1.446	8.3	17.5	168 W	46	63
7 10	14 33.62	-20 6.7	0.155	1.090	58.2	19.6	114 E	23*	84	11 2	2 12.98	+ 0 2.7	0.473	1.454	10.4	17.7	165 E	45	64
7 12	14 21.17	-18 59.1	0.167	1.083	62.3	19.9	109 E	23*	83	11 7	2 12.47	+ 0 49.7	0.491	1.463	13.0	17.8	161 E	44	65
7 14	14 10.68	-17 58.8	0.178	1.076	66.0	20.1	105 E	23*	82	11 17	2 12.73	+ 1 42.7	0.537	1.484	18.2	18.3	152 E	43	66
7 16	14 1.80	-17 5.1	0.190	1.068	69.4	20.4	101 E	23*	81	11 27	2 10.53	+ 1 42.9	0.597	1.509	22.9	18.7	144 E	43	66
7 18	13 54.20	-16 17.5	0.202	1.059	72.4	20.6	97 E	22*	80	12 7	2 21.16	+ 1 0.1	0.670	1.538	26.6	19.1	136 E	44	65
7 20	13 47.65	-15 35.1	0.214	1.050	75.2	20.8	93 E	22*	80	12 12	2 25.00	+ 0 26.2	0.711	1.553	28.1	19.3	132 E	45	64
7 22	13 41.93	-14 57.2	0.226	1.039	77.8	21.0	90 E	21*	79*	12 17	2 29.50	+ 0 14.3	0.755	1.570	29.4	19.4	129 E	45	64
7 24	13 36.90	-14 23.0	0.237	1.029	80.3	21.1	86 E	20*	77*	12 22	2 34.62	+ 1 0.0	0.801	1.586	30.5	19.6	125 E	46	63
7 26	13 32.39	-13 52.0	0.249	1.017	82.6	21.3	83 E	19*	75*	12 27	2 40.30	+ 1 49.7	0.850	1.604	31.4	19.8	122 E	47	62
7 28	13 28.31	-13 23.5	0.261	1.005	84.9	21.5	80 E	19*	73*	1 1	2 46.50	+ 2 42.3	0.901	1.622	32.1	20.0	119 E	48	61
515030 2009 UM₁₃₀										301907 1998 XB₉									
5 21	22 12.74	-24 37.0	1.733	2.064	29.3	21.3	94 W	13*	88*	5 21	22 14.54	-13 43.0	2.523	2.711	21.9	21.3	90 W	22*	77*
5 31	22 29.94	-24 23.2	1.596	2.025	29.6	21.1	99 W	14*	88	5 31	22 22.51	-12 34.5	2.341	2.660	22.2	21.1	97 W	26*	77
6 10	22 46.26	-24 19.0	1.463	1.986	29.6	20.9	105 W	16*	88	6 10	22 29.02	-11 29.1	2.161	2.609	22.1	20.9	105 W	29*	75
6 20	23 1.46	-24 27.1	1.338	1.949	29.1	20.7	111 W	17*	88	6 20	22 33.77	-10 27.8	1.987	2.557	21.5	20.7	113 W	33*	74
6 30	23 15.21	-24 50.1	1.221	1.911	28.3	20.4	117 W	19*	89	6 30	22 36.43	- 9 31.8	1.821	2.504	20.3	20.4	121 W	35*	74
7 10	23 27.12	-25 29.8	1.112	1.875	26.9	20.1	123 W	19*	89	7 10	22 36.64	- 8 42.0	1.665	2.450	18.4	20.1	130 W	36	73
7 20	23 36.68	-26 27.0	1.015	1.840	25.1	19.8	130 W	19	90	7 20	22 34.05	- 7 59.4	1.524	2.395	15.7	19.8	140 W	37	72
7 25	23 40.38	-27 1.8	0.970	1.823	23.9	19.7	133 W	18	89	7 30	22 28.40	- 7 24.7	1.401	2.340	12.2	19.4	151 W	38	71
7 30	23 43.27	-27 40.2	0.929	1.806	22.7	19.5	137 W	17	88	8 9	22 19.74	- 6 57.9	1.299	2.285	7.8	19.0	162 W	38	71
8 4	23 45.28	-28 21.1	0.891	1.790	21.4	19.4	140 W	17	88	8 19	22 8.49	- 6 38.1	1.221	2.228	3.2	18.6	173 W	38	71
8 9	23 46.34	-29 3.7	0.856	1.774	20.1	19.2	143 W	16	87	8 29	21 55.69	- 6 23.2	1.169	2.172	4.2	18.5	171 E	39	70
8 14	23 46.41	-29 46.6	0.825	1.759	18.7	19.1	146 W	15	86	9 8	21 42.83	- 6 10.2	1.143	2.115	9.8	18.7	159 E	39	70
8 19	23 45.44	-30 27.8	0.798	1.744	17.5	18.9	149 W	15	86	9 18	21 31.51	- 5 55.8	1.141	2.058	15.4	18.8	147 E	39	70
8 24	23 43.48	-31 5.2	0.775	1.730	16.5	18.8	151 W	14	85	9 28	21 23.15	- 5 36.8	1.159	2.001	20.5	18.9	136 E	39	70
8 29	23 40.62	-31 36.6	0.756	1.717	15.8	18.7	152 W	13	84	10 8	21 18.60	- 5 10.5	1.192	1.944	24.9	19.1	125 E	40	69
9 3	23 36.97	-31 59.4	0.742	1.704	15.5	18.7	153 W	13	84	10 18	21 18.14	- 4 34.8	1.235	1.888	28.5	19.2	115 E	40	69
9 8	23 32.74	-32 11.9	0.731	1.691	15.8	18.6	153 W	13	84	10 28	21 21.75	- 3 48.0	1.284	1.833	31.3	19.3	107 E	41	68
9 13	23 28.15	-32 12.0	0.725	1.679	16.6	18.6	152 W	13	84	11 7	21 29.06	- 2 48.5	1.335	1.779	33.4	19.4	99 E	42	66*
9 18	23 23.46	-31 58.5	0.723	1.669	17.8	18.6	150 E	13	84	11 17	21 39.72	- 1 35.5	1.385	1.727	34.9	19.4	92 E	43	62*
9 23	23 19.00	-31 30.8	0.724	1.658	19.3	18.7	147 E	13	84	11 27	21 53.35	+ 0 8.0	1.433	1.677	35.9	19.5	86 E	45	56*
9 28	23 15.02	-30 48.9	0.730	1.649	21.0	18.7	144 E	14	85	12 7	22 9.60	+ 1 34.2	1.478	1.629	36.6	19.5	80 E	47	50*
10 3	23 11.75	-29 53.7	0.739	1.640	22.8	18.8	141 E	15	86	12 17	22 28.22	+ 3 31.0	1.518	1.585	36.9	19.5	75 E	48*	43*
10 8	23 9.35	-28 46.2	0.752	1.632	24.6	18.9	137 E	16	87	12 27	22 49.02	+ 5 41.7	1.555	1.544	37.0	19.5	71 E	50*	37*
10 13	23 7.93	-27 28.1	0.768	1.625	26.4	19.0	134 E	18	89	1 6	23 11.84	+ 8 4.7	1.587	1.508	36.9	19.6	67 E	51*	32*
10 18	23 7.56	-26 0.6	0.788	1.619	28.1	19.1	130 W	19	90	1 16	23 36.63	+10 37.7	1.618	1.476	36.7	19.5	64 E	51*	28*
10 23	23 8.25	-24 25.4	0.810	1.614	29.7	19.2	127 E	21	88	465040 2006 QN₆₂									
10 28	23 9.99	-22 44.1	0.835	1.610	31.1	19.3	123 E	22	87	5 21	22 17.85	- 8 51.8	1.263	1.577	39.9	21.4	87 W	26*	73*
11 2	23 12.70	-20 57.9	0.862	1.607	32.3	19.4	120 E	24	85	5 31	22 41.89	- 7 1.2	1.185	1.565	40.4	21.2	90 W	29*	71
11 7	23 16.31	-19 8.0	0.891	1.604	33.4	19.5	117 E	26	83	6 10	23 4.96	- 5 15.2	1.112	1.557	40.6	21.1	94 W	31*	69
11 12	23 20.75	-17 15.4	0.923	1.603	34.4	19.6	114 E	28	81	6 20	23 26.84	- 3 37.8	1.043	1.553	40.4	20.9	98 W	35*	68
11 17	23 25.96	-15 20.9	0.957	1.602	35.2	19.7	111 E	30	79	6 30	23 47.19	- 2 13.4	0.979	1.553	39.8	20.8	102 W	38*	66
11 22	23 31.85	-13 25.1	0.993	1.603	35.9	19.8	108 E	32	77	7 10	0 5.66	+ 1 6.2	0.918	1.557	38.6	20.6	107 W	42*	65
11 27	23 38.36	-11 28.8	1.030	1.604	36.4	19.9	105 W	34	75	7 20	0 21.78	+ 0 20.0	0.862	1.565	36.8	20.4	113 W	44*	64
12 2	23 45.41	- 9 32.3	1.070	1.607	36.8	20.0	103 E	35	74*	7 30	0 34.97	+ 0 1.3	0.812	1.577	34.3	20.3	119 W	45	64
12 7	23 52.95	- 7 36.3	1.111	1.610	37.0	20.1	100 E	3											

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°		
465040 2006 QN₆₂ (continuation)									455514 2003 WF₉₈										
10 18	0 22.49	-7 0.9	0.822	1.779	13.1	19.9	156 E	38 71	5 21	22 28.33	+5 35.1	1.389	1.563	39.6	21.5	80 W	37*	58*	
10 28	0 19.45	-6 57.3	0.903	1.814	17.8	20.3	146 E	38 71	5 31	22 46.43	+10 39.8	1.308	1.552	40.4	21.3	83 W	43*	53	
11 7	0 19.56	-6 26.0	1.000	1.850	21.6	20.7	137 E	39 70	6 10	23 3.83	+15 58.4	1.233	1.541	41.1	21.2	86 W	50*	48	
11 17	0 22.71	-5 32.0	1.112	1.887	24.4	21.0	128 E	39 70	6 20	23 20.52	+21 28.1	1.164	1.532	41.6	21.1	89 W	57*	43	
11 27	0 28.58	-4 20.3	1.235	1.925	26.4	21.4	120 E	41 68	6 30	23 36.40	+27 4.6	1.100	1.523	41.9	21.0	92 W	65*	37	
385395 2002 VO₁₄									427494 2002 BK₂₆										
5 21	22 24.98	+19 2.4	2.053	2.059	28.5	21.4	76 W	48*	45*	5 21	22 34.43	-29 12.8	1.424	1.761	35.1	21.4	91 W	6*	83*
5 31	22 40.61	+22 34.5	1.930	2.018	29.7	21.2	80 W	53*	41	5 31	22 49.16	-27 21.8	1.311	1.744	35.3	21.2	96 W	10*	89*
6 10	22 56.01	+26 13.1	1.810	1.976	30.7	21.1	84 W	59*	38	6 10	23 1.57	-25 28.4	1.199	1.727	35.1	21.0	102 W	13*	89
6 20	23 11.15	+29 56.6	1.695	1.935	31.6	20.9	87 W	65*	34	6 20	23 11.25	-23 32.1	1.087	1.709	34.3	20.8	109 W	18*	88
6 30	23 25.96	+33 42.1	1.584	1.894	32.5	20.8	91 W	72*	30	6 30	23 17.60	-21 31.4	0.980	1.690	32.8	20.5	116 W	22*	86
7 10	23 40.37	+37 26.6	1.478	1.854	33.2	20.6	94 W	79*	27	7 5	23 19.32	-20 28.4	0.927	1.681	31.8	20.3	120 W	24*	84
7 20	23 54.24	+41 6.5	1.377	1.815	33.7	20.4	98 W	86*	23	7 10	23 19.92	-19 23.1	0.877	1.671	30.4	20.1	124 W	25*	83
7 25	0 0.89	+42 53.2	1.328	1.796	33.9	20.3	99 W	88	21	7 15	23 19.29	-18 14.6	0.829	1.661	28.8	20.0	128 W	27	82
7 30	0 7.31	+44 37.0	1.280	1.778	34.1	20.2	101 W	90	19	7 20	23 17.29	-17 2.4	0.783	1.652	26.8	19.8	133 W	28	81
8 4	0 13.48	+46 17.0	1.233	1.759	34.3	20.1	103 W	89	18	7 25	23 13.80	-15 45.4	0.740	1.642	24.4	19.6	138 W	29	80
8 9	0 19.33	+47 52.7	1.187	1.741	34.3	20.0	104 W	87	16	7 30	23 8.75	-14 22.8	0.700	1.632	21.7	19.3	144 W	31	78
8 14	0 24.81	+49 23.1	1.142	1.724	34.4	19.9	106 W	86	15	8 9	22 53.84	-11 17.3	0.634	1.613	14.9	18.9	156 W	34	75
8 19	0 29.85	+50 47.2	1.098	1.707	34.3	19.8	108 W	84	13	8 19	22 33.09	-7 44.6	0.588	1.594	6.9	18.4	169 W	37	72
8 24	0 34.37	+52 3.9	1.055	1.691	34.2	19.7	110 W	83	12	8 29	22 8.87	-3 54.4	0.568	1.575	4.9	18.2	172 E	41	68
8 29	0 38.33	+53 11.9	1.013	1.675	34.0	19.6	112 W	82	11	9 3	21 56.67	-1 59.0	0.568	1.565	9.0	18.4	166 E	43	66
9 3	0 41.67	+54 10.0	0.972	1.660	33.8	19.4	114 W	81	10	9 8	21 45.08	0 7.5	0.573	1.556	13.5	18.5	159 E	45	64
9 8	0 44.32	+54 56.6	0.932	1.646	33.4	19.3	116 W	80	9	9 13	21 34.54	+1 37.6	0.585	1.547	17.8	18.7	152 E	47	62
9 13	0 46.25	+55 30.0	0.893	1.632	32.9	19.2	118 W	79	8	9 18	21 25.40	+3 14.7	0.602	1.538	21.8	18.9	145 E	48	61
9 18	0 47.46	+55 48.1	0.855	1.619	32.2	19.1	121 W	79	8	9 28	21 12.14	+6 3.9	0.647	1.521	28.6	19.2	133 E	51	58
9 23	0 48.02	+55 48.6	0.818	1.606	31.4	18.9	123 W	79	8	10 8	21 5.72	+8 24.2	0.704	1.505	33.8	19.5	123 E	53	56
9 28	0 48.04	+55 29.5	0.783	1.595	30.5	18.8	126 W	80	9	10 18	21 5.53	+10 24.0	0.768	1.489	37.5	19.8	115 E	55	54
10 3	0 47.70	+54 48.5	0.750	1.585	29.3	18.7	129 W	80	9	10 23	21 7.51	+11 19.4	0.801	1.482	38.9	19.9	111 E	56	53
10 8	0 47.21	+53 43.5	0.720	1.575	28.1	18.5	132 E	81	10	10 28	21 10.70	+12 13.1	0.834	1.475	40.0	20.0	107 E	57	52
10 13	0 46.78	+52 12.7	0.691	1.566	26.7	18.4	135 E	83	12	11 2	21 14.98	+13 6.0	0.868	1.469	40.9	20.1	104 E	58	51*
10 18	0 46.68	+50 14.8	0.667	1.558	25.2	18.2	138 E	85	14	11 7	21 20.26	+13 58.7	0.901	1.463	41.7	20.2	101 E	59	49*
10 23	0 47.15	+47 49.7	0.646	1.552	23.7	18.1	141 E	87	16	11 12	21 26.45	+14 51.6	0.934	1.457	42.2	20.3	98 E	60	48*
10 28	0 48.39	+44 59.0	0.629	1.546	22.4	18.0	144 E	90	19	11 17	21 33.49	+15 45.4	0.966	1.452	42.6	20.4	96 E	61	45*
11 2	0 50.48	+41 45.6	0.617	1.541	21.3	17.9	146 E	87	22										
11 7	0 53.47	+38 14.1	0.611	1.538	20.9	17.9	146 E	83	26										
11 12	0 57.35	+34 30.5	0.611	1.535	21.0	17.9	146 E	80	29										
11 17	1 2.11	+30 41.9	0.617	1.534	21.9	17.9	145 E	76	33										
11 22	1 7.68	+26 56.0	0.629	1.534	23.3	18.0	142 E	72	37										
11 27	1 13.97	+23 19.3	0.647	1.534	25.0	18.1	139 E	68	41										
12 2	1 20.89	+19 57.1	0.671	1.536	26.9	18.3	135 E	65	44										
12 7	1 28.34	+16 53.0	0.700	1.539	28.8	18.4	131 E	62	47										
12 12	1 36.25	+14 9.0	0.734	1.543	30.5	18.6	127 E	59	50										
12 17	1 44.55	+11 45.7	0.772	1.548	32.1	18.7	123 E	57	52										
12 22	1 53.19	+9 42.6	0.814	1.555	33.4	18.9	119 E	55	54										
12 27	2 2.12	+7 58.6	0.859	1.562	34.6	19.1	116 E	53	56										
1 1	2 11.28	+6 31.9	0.907	1.570	35.4	19.2	112 E	52	57										
1 6	2 20.63	+5 20.7	0.958	1.579	36.1	19.4	109 E	50	59*										
1 11	2 30.16	+4 23.3	1.010	1.589	36.6	19.5	106 E	49	59*										
1 16	2 39.84	+3 37.8	1.064	1.600	36.9	19.7	103 E	49	60*										

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°
427494 2002 BK₂₆ (continuation)									500815 2013 GU₈₇ (continuation)								
11 27	21 49.87	+17 36.6	1.029	1.443	43.1	20.5	91 E	63 41*	10 28	0 38.61	- 6 40.2	0.939	1.866	15.5	20.1	150 E	38 71
12 7	22 8.98	+19 33.7	1.089	1.435	43.3	20.6	87 E	65 36*	11 7	0 36.38	- 6 45.8	1.026	1.895	19.7	20.4	140 E	38 71
12 17	22 30.57	+21 36.7	1.146	1.430	43.2	20.7	84 E	67* 30*	11 17	0 37.27	- 6 21.3	1.129	1.924	23.0	20.8	131 E	39 70
12 27	22 54.52	+23 44.7	1.201	1.426	42.9	20.8	81 E	68* 26*	11 27	0 41.15	- 5 32.2	1.245	1.955	25.4	21.1	122 E	39 70
1 6	23 20.68	+25 55.5	1.254	1.425	42.5	20.9	78 E	69* 22*	12 7	0 47.61	- 4 24.2	1.370	1.985	27.0	21.4	114 E	41 68
1 16	23 49.02	+28 5.6	1.306	1.426	41.9	21.0	76 E	68* 18*	464817 2004 SK₂₉								
509192 2006 OD₇									5 21	22 57.56	-13 19.0	1.586	1.722	35.3	21.4	80 W	17* 72*
5 21	22 38.51	+ 9 54.4	0.863	1.157	58.0	21.4	76 W	39* 53*	5 31	23 18.51	-11 1.6	1.490	1.707	36.2	21.3	84 W	20* 73*
5 26	22 57.22	+ 9 19.9	0.836	1.149	58.9	21.3	76 W	38* 54*	6 10	23 38.47	- 8 42.8	1.397	1.694	36.8	21.2	88 W	24* 73*
5 31	23 16.51	+ 8 35.9	0.809	1.142	59.8	21.3	77 W	37* 55*	6 20	23 57.33	- 6 24.1	1.307	1.684	37.1	21.0	92 W	29* 70
6 5	23 36.39	+ 7 42.0	0.784	1.135	60.6	21.2	77 W	36* 56*	6 30	0 14.86	- 4 7.8	1.220	1.676	37.1	20.9	97 W	34* 68
6 10	23 56.89	+ 6 37.7	0.761	1.129	61.4	21.2	77 W	34* 57*	7 10	0 30.82	- 1 55.4	1.136	1.670	36.6	20.7	102 W	39* 66
6 15	0 17.96	+ 5 23.0	0.740	1.124	62.1	21.1	78 W	33* 58*	7 20	0 44.86	+ 0 11.5	1.056	1.666	35.7	20.5	107 W	44* 64
6 20	0 39.56	+ 3 57.9	0.722	1.120	62.7	21.1	78 W	32* 59*	7 30	0 56.52	+ 2 10.9	0.980	1.665	34.1	20.3	113 W	47* 62
6 25	1 1.60	+ 2 23.1	0.706	1.117	63.2	21.0	79 W	30* 61*	8 9	1 5.31	+ 4 1.4	0.910	1.667	31.8	20.1	120 W	49 60
6 30	1 23.95	+ 0 39.6	0.693	1.114	63.5	21.0	79 W	29* 62*	8 19	1 10.62	+ 5 41.0	0.847	1.671	28.6	19.8	128 W	51 58
7 5	1 46.48	+ 1 11.0	0.684	1.113	63.8	21.0	79 W	27* 64*	8 29	1 11.91	+ 7 7.6	0.794	1.677	24.5	19.6	137 W	52 57
7 10	2 9.05	- 3 6.7	0.678	1.113	63.9	21.0	79 W	26* 66*	9 8	1 8.94	+ 8 19.0	0.752	1.686	19.3	19.3	146 W	53 56
7 15	2 31.47	- 5 5.4	0.675	1.114	63.9	20.9	80 W	25* 67*	9 18	1 1.96	+ 9 12.6	0.725	1.697	13.2	19.0	157 W	54 55
7 20	2 53.56	- 7 5.0	0.676	1.115	63.7	20.9	80 W	23* 69*	9 28	0 52.05	+ 9 47.7	0.716	1.710	6.7	18.7	169 W	55 54
7 25	3 15.16	- 9 3.5	0.679	1.118	63.4	21.0	80 W	22* 70*	10 3	0 46.57	+ 9 59.1	0.720	1.718	3.8	18.6	173 W	55 54
7 30	3 36.11	-10 59.0	0.686	1.122	63.0	21.0	80 W	21* 71*	10 8	0 41.09	+10 6.9	0.728	1.725	3.1	18.6	175 E	55 54
8 4	3 56.31	-12 50.2	0.694	1.126	62.5	21.0	80 W	21* 72*	10 13	0 35.87	+10 12.1	0.742	1.734	5.5	18.8	170 E	55 54
8 9	4 15.68	-14 36.2	0.704	1.132	62.0	21.0	80 W	20* 73*	10 18	0 31.16	+10 15.7	0.761	1.742	8.5	19.0	165 E	55 54
8 14	4 34.15	-16 16.6	0.715	1.138	61.4	21.0	80 W	19* 73*	10 23	0 27.18	+10 18.7	0.785	1.752	11.5	19.2	159 E	55 54
8 19	4 51.66	-17 51.4	0.727	1.145	60.7	21.1	81 W	19* 74*	10 28	0 24.07	+10 22.2	0.814	1.761	14.3	19.4	154 E	55 54
8 24	5 8.20	-19 20.8	0.739	1.153	60.0	21.1	81 W	18* 74*	11 2	0 21.93	+10 27.1	0.847	1.771	16.9	19.6	149 E	55 54
8 29	5 23.75	-20 44.8	0.751	1.162	59.2	21.1	81 W	18* 75*	11 7	0 20.78	+10 34.0	0.885	1.782	19.3	19.8	144 E	56 53
9 3	5 38.33	-22 3.9	0.762	1.171	58.4	21.2	81 W	18* 75*	11 17	0 21.47	+10 55.5	0.971	1.803	23.3	20.1	134 E	56 53
9 8	5 51.96	-23 18.7	0.772	1.181	57.7	21.2	82 W	18* 76*	11 27	0 25.87	+11 29.2	1.070	1.826	26.2	20.4	125 E	56 53
9 13	6 4.64	-24 29.7	0.781	1.191	56.9	21.2	83 W	18* 77*	12 7	0 33.45	+12 15.2	1.180	1.851	28.3	20.7	117 E	57 52
9 18	6 16.37	-25 37.4	0.788	1.202	56.1	21.2	83 W	17* 77*	12 17	0 43.67	+13 12.0	1.298	1.876	29.6	21.0	110 E	58 51*
9 23	6 27.15	-26 42.1	0.793	1.213	55.4	21.2	84 W	17* 78*	12 27	0 56.06	+14 18.2	1.422	1.902	30.3	21.3	103 E	59 48*
9 28	6 36.98	-27 43.9	0.797	1.224	54.6	21.2	85 W	17* 79*	1 6	1 10.18	+15 31.4	1.552	1.928	30.4	21.5	96 E	61 45*
10 3	6 45.86	-28 43.0	0.798	1.236	53.9	21.2	86 W	16* 80*	4034 Vishnu								
10 8	6 53.78	-29 39.5	0.796	1.248	53.1	21.2	87 W	15* 81*	5 21	23 10.90	+ 1 36.6	1.327	1.381	43.8	21.4	71 W	27* 58*
10 13	7 0.69	-30 33.6	0.793	1.261	52.3	21.2	89 W	14 82*	5 31	23 39.21	+ 4 3.0	1.217	1.337	46.5	21.2	73 W	30* 58*
10 18	7 6.54	-31 24.9	0.787	1.273	51.5	21.2	90 W	14 83*	6 10	0 10.33	+ 6 36.1	1.109	1.286	49.5	21.0	74 W	32* 56*
10 23	7 11.28	-32 12.8	0.778	1.286	50.7	21.2	92 W	13 83*	6 20	0 45.40	+ 9 14.4	1.007	1.229	52.9	20.8	75 W	35* 54*
10 28	7 14.83	-32 56.6	0.768	1.298	49.8	21.1	94 W	12 83	6 30	1 25.79	+11 53.6	0.913	1.167	57.0	20.6	74 W	37* 51*
11 2	7 17.14	-33 35.4	0.755	1.311	48.8	21.1	96 W	11 82	7 10	2 13.08	+14 24.3	0.834	1.098	61.7	20.4	72 W	39* 49*
11 7	7 18.12	-34 8.3	0.740	1.323	47.8	21.1	99 W	11 82	7 15	2 39.73	+15 31.5	0.802	1.062	64.4	20.3	70 W	39* 47*
11 12	7 17.66	-34 33.5	0.724	1.336	46.6	21.0	101 W	10 81	7 20	3 8.48	+16 29.3	0.775	1.024	67.1	20.3	68 W	40* 45*
11 17	7 15.68	-34 49.0	0.706	1.348	45.4	20.9	104 W	10 81	7 25	3 39.21	+17 14.2	0.755	0.985	70.0	20.2	66 W	39* 44*
11 22	7 12.11	-34 52.0	0.688	1.360	43.9	20.8	107 W	10 81	7 30	4 11.68	+17 42.9	0.743	0.945	72.8	20.2	63 W	38* 42*
11 27	7 6.96	-34 39.3	0.669	1.372	42.4	20.8	110 W	10 81	8 4	4 45.46	+17 52.7	0.739	0.905	75.5	20.2	60 W	37* 40*
12 2	7 0.25	-34 7.7	0.650	1.384	40.6	20.7	114 W	11 82	8 9	5 19.99	+17 42.2	0.745	0.863	77.8	20.2	56 W	36* 37*
12 7	6 52.11	-33 13.5	0.632	1.395	38.7	20.6	118 W	12 83	8 14	5 54.65	+17 11.9	0.760	0.822	79.6	20.2	53 W	34* 35*
12 12	6 42.73	-31 52.9	0.615	1.407	36.7	20.5	121 W	13 84	8 19	6 28.89	+16 23.8	0.784	0.781	80.6	20.2	50 W	32* 33*
12 17	6 32.44	-30 2.6	0.601	1.417	34.6	20.4	125 W	15 86	8 24	7 2.28	+15 21.0	0.817	0.741	80.7	20.1	46 W	30* 31*
12 22	6 21.67	-27 40.7	0.590	1.428	32.5	20.3	129 W	17 88	8 29	7 34.60	+14 7.0	0.860	0.703	79.8	20.1	43 W	28* 28*
12 27	6 10.92	-24 47.4	0.582	1.438	30.6	20.2	132 E	20 89	9 3	8 5.81	+12 44.9	0.910	0.668	77.8	20.0	40 W	26* 26*
1 1	6 0.63	-21 25.6	0.580	1.448	29.1	20.2	134 E	24 85	9 8	8 36.00	+11 17.2	0.967	0.638	74.6	20.0	38 W	24* 24*
1 6	5 51.22	-17 40.4	0.583	1.458	28.1	20.2	136 E	27 82	9 13	9 5.32	+ 9 45.2	1.030	0.614	70.3	19.9	35 W	23* 22*
1 11	5 43.00	-13 38.6	0.591	1.467	27.8	20.2	136 E	31 78	9 18	9 33.88	+ 8 9.9	1.097	0.597	65.1	19.8	33 W	21* 19*
1 16	5 36.23	- 9 28.5	0.606	1.476	28.1	20.3	135 E	36 73	9 23	10 1.77	+ 6 31.7	1.167	0.590	59.3	19.7	30 W	20* 17*
500815 2013 GU₈₇									9 28	10 28.99	+ 4 51.5	1.237	0.591	53.2	19.7	28 W	18* 15*
5 21	22 42.99	- 3 58.0	1.486	1.637	37.4	21.4	79 W	27* 66*	10 3	10 55.50	+ 3 9.9	1.305	0.602	47.3	19.7	26 W	17* 13*
5 31	23 5.37	- 2 7.5	1.407	1.633	38.1	21.3	83 W	30* 66*	10 8	11 21.20	+ 1 28.2	1.372	0.621	41.8	19.7	24 W	16* 12*
6 10	23 26.86	- 0 24.2	1.330	1.631	38.4	21.2	87 W	33* 64	10 13	11 46.04	- 0 12.5	1.435	0.647				

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°
422699 2000 PD ₃ (continuation)									267871 2003 WW ₁₅₂								
7 15	3 44.49	+25 47.6	1.075	0.938	60.2	20.4	53 W	35* 32*	5 31	0 0.25	+11 38.7	2.668	2.429	22.3	21.4	65 W	32* 49*
7 20	4 15.21	+27 16.2	1.086	0.906	60.6	20.3	51 W	35* 29*	6 10	0 14.26	+12 50.3	2.524	2.398	23.6	21.3	71 W	36* 50*
7 25	4 46.36	+28 18.0	1.103	0.878	60.4	20.3	49 W	35* 27*	6 20	0 27.82	+13 55.5	2.375	2.366	24.8	21.2	77 W	41* 50*
7 30	5 17.49	+28 51.7	1.127	0.854	59.8	20.3	47 W	34* 24*	6 30	0 40.77	+14 52.0	2.224	2.334	25.6	21.0	83 W	47* 49
8 4	5 48.16	+28 57.9	1.157	0.836	58.6	20.2	45 W	33* 22*	7 10	0 52.98	+15 37.8	2.071	2.301	26.2	20.9	90 W	52* 48
8 9	6 17.97	+28 38.2	1.192	0.823	57.0	20.2	43 W	32* 21*	7 20	1 4.24	+16 10.0	1.918	2.268	26.4	20.7	96 W	57* 48
8 14	6 46.62	+27 55.3	1.230	0.817	54.9	20.2	41 W	32* 19*	7 30	1 14.27	+16 25.3	1.767	2.235	26.2	20.5	104 W	61* 48
8 19	7 13.88	+26 52.5	1.271	0.817	52.7	20.2	40 W	31* 18*	8 4	1 18.73	+16 25.4	1.693	2.218	25.9	20.4	107 W	61* 48
8 24	7 39.64	+25 33.5	1.315	0.824	50.3	20.2	39 W	30* 17*	8 9	1 22.77	+16 19.7	1.621	2.201	25.4	20.2	111 W	61 48
8 29	8 3.86	+24 1.8	1.359	0.837	47.8	20.3	38 W	29* 17*	8 14	1 26.33	+16 7.7	1.550	2.184	24.8	20.1	115 W	61 48
9 3	8 26.55	+22 20.5	1.403	0.856	45.5	20.3	37 W	29* 16*	8 19	1 29.36	+15 48.5	1.481	2.166	24.0	20.0	120 W	61 48
9 8	8 47.79	+20 32.7	1.447	0.880	43.3	20.4	37 W	29* 16*	8 24	1 31.80	+15 21.5	1.414	2.149	23.0	19.8	124 W	60 49
9 13	9 7.67	+18 40.6	1.489	0.908	41.3	20.5	37 W	28* 16*	8 29	1 33.61	+14 45.9	1.350	2.132	21.7	19.6	129 W	60 49
9 18	9 26.27	+16 46.3	1.531	0.941	39.6	20.6	37 W	28* 16*	9 3	1 34.75	+14 1.2	1.290	2.115	20.2	19.5	133 W	59 50
9 23	9 43.70	+14 51.4	1.570	0.977	38.2	20.7	37 W	29* 17*	9 8	1 35.18	+13 6.7	1.233	2.097	18.5	19.3	139 W	58 51
9 28	10 0.06	+12 57.2	1.607	1.015	36.9	20.8	37 W	29* 17*	9 18	1 33.82	+10 46.5	1.132	2.063	14.3	19.0	150 W	56 53
10 3	10 15.45	+11 4.5	1.641	1.055	35.9	20.9	38 W	29* 18*	9 28	1 29.60	+7 45.6	1.053	2.028	9.1	18.6	161 W	53 56
10 8	10 29.97	+9 14.1	1.673	1.097	35.1	21.0	39 W	30* 19*	10 8	1 23.10	+4 11.9	0.999	1.994	3.6	18.1	173 W	49 60
10 13	10 43.68	+7 26.3	1.701	1.140	34.4	21.1	40 W	31* 20*	10 13	1 19.29	+2 17.8	0.982	1.977	2.9	18.0	174 W	47 62
10 18	10 56.67	+5 41.6	1.727	1.183	34.0	21.2	42 W	31* 21*	10 18	1 15.34	+0 22.6	0.971	1.960	5.1	18.1	170 E	45 64
10 23	11 8.97	+4 0.2	1.749	1.228	33.6	21.3	43 W	32* 23*	10 23	1 11.45	-1 30.5	0.968	1.943	8.2	18.2	164 E	43 66
10 28	11 20.64	+2 22.2	1.768	1.272	33.3	21.4	45 W	33* 25*	10 28	1 7.81	-3 18.5	0.971	1.927	11.4	18.4	157 E	42 67
11 2	11 31.73	+0 47.8	1.784	1.317	33.2	21.4	47 W	34* 26*	11 2	1 4.61	-4 58.8	0.980	1.911	14.5	18.5	151 E	40 69
469329 1999 YJ ₅									136773 1996 TR ₆								
5 21	23 39.18	+4 4.2	2.280	2.040	26.4	21.4	63 W	25* 52*	5 31	0 1.28	+18 47.3	1.393	1.300	44.1	21.5	63 W	37* 42*
5 31	23 55.36	+7 23.7	2.141	1.997	28.1	21.3	68 W	30* 53*	6 5	0 16.56	+19 50.4	1.377	1.302	44.4	21.5	64 W	38* 41*
6 10	0 11.54	+10 54.4	2.003	1.955	29.7	21.2	73 W	35* 52*	6 10	0 31.83	+20 47.7	1.360	1.304	44.7	21.5	65 W	39* 41*
6 20	0 27.79	+14 37.4	1.867	1.912	31.2	21.0	77 W	42* 49*	6 15	0 47.07	+21 38.9	1.343	1.307	45.1	21.4	66 W	40* 41*
6 30	0 44.12	+18 33.2	1.735	1.871	32.5	20.8	81 W	49* 45	6 20	1 2.27	+22 23.6	1.325	1.311	45.3	21.4	67 W	41* 40*
7 10	1 0.63	+22 42.7	1.607	1.830	33.6	20.6	85 W	57* 41	6 25	1 17.41	+23 1.5	1.306	1.316	45.6	21.4	68 W	43* 40*
7 20	1 17.36	+27 6.5	1.487	1.790	34.6	20.5	89 W	65* 37	6 30	1 32.46	+23 32.3	1.287	1.321	45.9	21.4	69 W	44* 40*
7 30	1 34.36	+31 44.1	1.373	1.751	35.4	20.3	93 W	73* 32	7 5	1 47.40	+23 55.6	1.266	1.327	46.1	21.4	70 W	46* 39*
8 4	1 42.98	+34 7.8	1.320	1.732	35.7	20.2	95 W	77* 30	7 10	2 2.20	+24 11.3	1.245	1.334	46.3	21.4	71 W	48* 39*
8 9	1 51.71	+36 34.6	1.269	1.713	36.0	20.1	97 W	81* 27	7 15	2 16.83	+24 19.2	1.223	1.341	46.4	21.3	73 W	49* 39*
8 14	2 0.54	+39 4.1	1.220	1.695	36.2	20.0	98 W	84* 25	7 20	2 31.25	+24 18.9	1.201	1.349	46.5	21.3	74 W	51* 39*
8 19	2 9.47	+41 35.9	1.174	1.678	36.5	19.9	100 W	87 22	7 25	2 45.39	+24 10.4	1.177	1.358	46.6	21.3	76 W	53* 40*
8 24	2 18.51	+44 9.3	1.130	1.661	36.6	19.8	102 W	89 20	8 4	3 29.23	+23 53.3	1.153	1.367	46.6	21.3	78 W	55* 40*
8 29	2 27.66	+46 43.7	1.088	1.644	36.7	19.7	103 W	88 17	8 9	3 12.71	+23 27.5	1.127	1.376	46.5	21.2	80 W	56* 40*
9 3	3 36.92	+49 18.3	1.049	1.628	36.8	19.6	105 W	86 15	8 9	3 25.80	+22 53.0	1.101	1.386	46.4	21.2	82 W	58* 41*
9 8	2 46.29	+51 52.2	1.013	1.613	36.9	19.5	106 W	83 12	8 14	3 38.42	+22 9.5	1.075	1.396	46.2	21.1	84 W	59* 42*
9 13	2 55.74	+54 24.6	0.979	1.599	36.9	19.4	107 W	81 10	8 19	3 50.52	+21 17.0	1.048	1.407	45.9	21.1	86 W	60* 43
9 18	3 5.22	+56 54.1	0.947	1.585	36.9	19.3	109 W	78 7	8 24	4 2.04	+20 15.2	1.021	1.418	45.5	21.0	89 W	61* 44
9 23	3 14.69	+59 19.6	0.917	1.572	36.9	19.2	110 W	76 5	8 29	4 12.92	+19 4.1	0.993	1.429	44.9	21.0	91 W	62* 45
9 28	3 24.08	+61 39.7	0.890	1.560	36.9	19.1	111 W	73 2	9 3	4 23.10	+17 43.6	0.965	1.441	44.3	20.9	94 W	61* 46
10 3	3 33.28	+63 53.3	0.864	1.549	36.8	19.0	112 W	71 -	9 8	4 32.52	+16 13.8	0.938	1.453	43.6	20.9	97 W	61* 48
10 8	3 42.15	+65 59.1	0.840	1.539	36.6	18.9	113 W	69 -	9 13	4 41.11	+14 34.6	0.911	1.465	42.6	20.8	100 W	60* 49
10 13	3 50.45	+67 55.9	0.818	1.529	36.4	18.9	114 W	67 -	9 18	4 48.79	+12 46.0	0.884	1.477	41.6	20.7	103 W	58 51
10 18	3 57.89	+69 42.1	0.798	1.521	36.2	18.8	116 W	65 -	9 23	4 55.48	+10 48.4	0.858	1.489	40.4	20.6	106 W	56 53
10 20	4 0.55	+70 21.3	0.790	1.518	36.1	18.8	116 W	65 -	9 28	5 1.12	+8 42.2	0.834	1.502	39.0	20.5	109 W	54 55
10 22	4 3.00	+70 58.5	0.782	1.515	36.0	18.7	116 W	64 -	10 3	5 5.65	+6 27.9	0.810	1.514	37.5	20.5	113 W	51 58
10 24	4 5.23	+71 33.6	0.775	1.513	35.9	18.7	117 W	63 -	10 8	5 8.99	+4 6.6	0.789	1.526	35.8	20.4	117 W	49 60
10 26	4 7.19	+72 6.6	0.768	1.510	35.7	18.7	117 W	63 -	10 13	5 11.07	+1 39.4	0.770	1.539	34.0	20.3	120 W	47 62
10 28	4 8.88	+72 37.2	0.761	1.508	35.6	18.7	118 W	62 -	10 18	5 11.83	-0 51.7	0.754	1.552	32.1	20.2	124 W	44 65
10 30	4 10.27	+73 5.5	0.754	1.506	35.4	18.6	118 W	62 -	10 23	5 11.24	-3 24.3	0.741	1.564	30.1	20.1	128 W	42 67
11 1	4 11.34	+73 31.4	0.747	1.504	35.3	18.6	119 W	61 -	10 28	5 9.32	-5 55.6	0.731	1.576	28.1	20.1	132 W	39 70
11 3	4 12.07	+73 54.7	0.741	1.502	35.1	18.6	120 W	61 -	11 2	5 6.13	-8 22.1	0.725	1.589	26.3	20.0	135 W	37 72
11 5	4 12.46	+74 15.3	0.735	1.501	34.9	18.6	120 W	61 -	11 7	5 1.74	-10 40.4	0.723	1.601	24.7	20.0	138 W	34 75
11 7	4 12.48	+74 33.1	0.729	1.499	34.7	18.5	121 W	60 -	11 12	4 56.31	-12 46.8	0.726	1.613	23.4	19.9	140 W	32 77
11 12	4 10.99	+75 4.6	0.714	1.496	34.1	18.5	122 W	60 -	11 17	4 50.05	-14 38.0	0.733	1.625	22.5	20.0	141 W	30 79
11 17	4 7.58	+75 15.8	0.701	1.495	33.5	18.4	123 W</										

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°
136773 1996 TR ₆ (continuation)									470215 2006 WP ₂₉ (continuation)								
12 27	4 4.05	-18 4.3	0.937	1.714	27.5	20.8	126 E	27 82	12 22	8 20.64	- 2 27.9	0.647	1.524	25.9	18.3	137 W	43 66
1 1	4 1.95	-17 20.5	0.977	1.724	28.5	20.9	123 E	28 81	12 27	8 18.78	- 0 14.5	0.634	1.539	22.4	18.2	143 W	45 64
1 6	4 0.92	-16 28.0	1.019	1.734	29.4	21.0	120 E	29 80	1 1	8 15.95	+ 2 15.9	0.625	1.556	18.5	18.1	150 W	47 62
1 11	4 0.91	-15 28.8	1.063	1.743	30.3	21.1	117 E	30 79	1 6	8 12.30	+ 5 0.5	0.621	1.573	14.4	18.0	157 W	50 59
1 16	4 1.88	-14 24.3	1.109	1.752	31.0	21.3	114 E	31 78	1 11	8 8.05	+ 7 55.0	0.624	1.591	10.3	17.8	163 W	53 56
									1 16	8 3.46	+10 54.1	0.632	1.610	6.4	17.7	169 W	56 53
163348 2002 NN ₄									285567 2000 OM								
5 31	0 50.08	- 8 50.3	0.052	0.991	114.8	18.1	63 W	8* 56*	5 31	1 18.57	+29 57.5	0.348	0.801	118.5	20.6	44 W	30* 24*
6 1	0 30.56	-10 37.2	0.047	0.998	108.9	17.6	69 W	11* 62*	6 2	1 9.85	+28 11.4	0.347	0.821	114.1	20.3	48 W	32* 27*
6 2	0 6.80	-12 39.3	0.043	1.004	102.1	17.0	76 W	13* 69*	6 4	1 1.98	+26 24.3	0.348	0.842	109.8	20.1	51 W	33* 31*
6 3	23 37.89	-14 54.7	0.040	1.011	94.0	16.5	84 W	16* 76*	6 6	0 54.86	+24 37.1	0.349	0.863	105.6	19.9	55 W	35* 34*
6 4	23 3.15	-17 15.8	0.037	1.017	84.6	15.9	93 W	19* 81	6 8	0 48.40	+22 50.6	0.350	0.885	101.6	19.8	59 W	36* 37*
6 5	22 22.65	-19 28.3	0.035	1.024	74.1	15.5	104 W	21* 83	6 10	0 42.50	+21 5.2	0.352	0.907	97.7	19.6	62 W	37* 40*
6 6	21 37.85	-21 12.5	0.034	1.030	62.8	15.1	115 W	22* 85	6 15	0 29.60	+16 48.0	0.356	0.961	88.4	19.4	71 W	40* 46*
6 7	20 51.72	-22 12.2	0.034	1.036	51.4	14.8	127 W	23* 86	6 20	0 18.34	+12 38.9	0.361	1.016	79.8	19.2	80 W	42* 51*
6 8	20 7.77	-22 23.7	0.036	1.042	40.6	14.6	138 W	23 86	6 25	0 7.72	+ 8 34.7	0.366	1.071	71.6	19.1	88 W	43* 55
6 9	19 28.65	-21 56.7	0.039	1.048	31.0	14.5	148 W	23 86	6 30	23 57.02	+ 4 32.2	0.371	1.126	63.6	19.0	97 W	44* 59
6 10	18 55.45	-21 6.5	0.042	1.054	22.8	14.4	156 W	24 85	7 5	23 45.76	+ 0 29.7	0.378	1.179	55.9	18.9	106 W	43* 64
6 11	18 28.01	-20 6.3	0.046	1.060	15.9	14.4	163 W	25 84	7 10	23 33.61	- 3 32.5	0.386	1.232	48.2	18.8	115 W	41* 68
6 12	18 5.57	-19 4.7	0.051	1.066	10.5	14.4	169 W	26 83	7 15	23 20.45	- 7 31.7	0.397	1.285	40.6	18.7	125 W	37 72
6 13	17 47.22	-18 6.4	0.056	1.071	6.8	14.5	173 W	27 82	7 20	23 6.31	-11 23.2	0.412	1.336	33.2	18.7	134 W	34 75
6 14	17 32.13	-17 13.3	0.061	1.077	5.7	14.7	174 W	28 81	7 25	22 51.44	-15 0.4	0.432	1.386	26.1	18.7	143 W	30 79
6 15	17 19.63	-16 26.0	0.067	1.082	7.2	14.9	172 E	29 80	7 30	22 36.29	-18 16.9	0.458	1.435	19.5	18.7	152 W	27 82
6 16	17 9.17	-15 44.2	0.073	1.088	9.6	15.2	170 E	29 80	8 4	22 21.36	-21 7.6	0.489	1.483	13.7	18.7	160 W	24 85
6 17	17 0.35	-15 7.5	0.079	1.093	12.0	15.5	167 E	30 79	8 9	22 7.15	-23 30.0	0.527	1.530	9.4	18.8	166 W	22 87
6 18	16 52.85	-14 35.3	0.085	1.098	14.3	15.8	165 E	30 79	8 14	21 54.08	-25 24.2	0.571	1.576	7.6	18.9	168 W	20 89
6 19	16 46.43	-14 7.2	0.091	1.103	16.4	16.0	162 E	31 78	8 19	21 42.48	-26 52.1	0.621	1.621	8.9	19.2	166 E	18 89
6 20	16 40.90	-13 42.5	0.098	1.108	18.3	16.2	160 E	31 78	8 24	21 32.58	-27 56.7	0.676	1.664	11.5	19.6	161 E	17 88
6 22	16 31.93	-13 2.0	0.111	1.118	21.7	16.6	156 E	32 77	8 29	21 24.44	-28 41.7	0.737	1.707	14.4	19.9	155 E	16 87
6 24	16 25.10	-12 30.8	0.124	1.128	24.6	17.0	152 E	32 77	9 3	21 18.04	-29 10.6	0.802	1.749	16.9	20.2	150 E	16 87
6 26	16 19.84	-12 7.0	0.137	1.137	27.1	17.3	149 E	33 76	9 8	21 13.26	-29 26.5	0.872	1.789	19.2	20.5	144 E	16 87
6 28	16 15.79	-11 48.9	0.151	1.146	29.3	17.6	147 E	33 76	9 13	21 9.98	-29 32.2	0.946	1.829	21.1	20.8	139 E	15 86
6 30	16 12.68	-11 35.3	0.165	1.154	31.3	17.8	144 E	33 76	9 18	21 8.04	-29 29.7	1.023	1.867	22.7	21.1	134 E	16 87
7 2	16 10.32	-11 25.4	0.179	1.162	33.0	18.1	141 E	34 75	9 23	21 7.30	-29 20.5	1.103	1.905	24.0	21.3	129 E	16 87
7 4	16 8.58	-11 18.5	0.193	1.170	34.6	18.3	139 E	34 75	401847 1999 WW ₁₉								
7 6	16 7.34	-11 14.2	0.208	1.177	36.1	18.5	137 E	34 75	5 31	1 20.80	+ 8 49.1	2.598	2.059	21.4	21.5	48 W	16* 39*
7 8	16 6.53	-11 11.9	0.223	1.184	37.4	18.7	135 E	34 75	6 10	1 41.43	+11 14.9	2.471	2.007	23.4	21.4	52 W	20* 41*
7 10	16 6.09	-11 11.4	0.237	1.191	38.6	18.9	133 E	34 75	6 20	2 2.85	+13 40.8	2.343	1.957	25.4	21.3	56 W	25* 42*
7 15	16 6.32	-11 16.3	0.275	1.207	41.3	19.3	128 E	34 75	6 30	2 25.17	+16 5.4	2.217	1.908	27.2	21.2	59 W	30* 43*
7 20	16 8.08	-11 28.0	0.313	1.220	43.5	19.7	124 E	34 75	7 10	2 48.47	+18 27.4	2.092	1.860	29.1	21.0	63 W	36* 42*
7 25	16 11.07	-11 44.4	0.351	1.231	45.4	20.0	120 E	33* 76	7 20	3 12.88	+20 45.0	1.971	1.815	30.8	20.9	66 W	42* 41*
7 30	16 15.05	-12 4.0	0.390	1.240	47.0	20.3	117 E	33* 76	7 30	3 38.42	+22 56.1	1.854	1.772	32.4	20.8	69 W	48* 40*
8 4	16 19.85	-12 25.8	0.429	1.247	48.4	20.6	113 E	32* 76	8 9	4 5.15	+24 58.3	1.742	1.733	33.9	20.6	73 W	53* 38*
8 9	16 25.34	-12 48.8	0.468	1.253	49.6	20.8	110 E	32* 77	8 19	4 33.04	+26 49.3	1.635	1.696	35.3	20.5	76 W	59* 36*
8 14	16 31.43	-13 12.4	0.507	1.256	50.6	21.0	107 E	31* 77	8 24	4 47.38	+27 39.8	1.584	1.679	35.9	20.4	77 W	61* 35*
8 19	16 38.08	-13 36.3	0.545	1.257	51.5	21.2	104 E	31* 78	8 29	5 1.95	+28 26.4	1.535	1.664	36.5	20.3	79 W	63* 35*
8 24	16 45.24	-14 0.0	0.582	1.256	52.3	21.3	101 E	30* 78	9 3	5 16.73	+29 8.9	1.487	1.649	37.1	20.2	80 W	66* 34*
8 29	16 52.86	-14 23.0	0.618	1.252	53.0	21.5	98 E	29* 78	9 8	5 31.68	+29 47.2	1.440	1.635	37.6	20.2	82 W	68* 33*
470215 2006 WP ₂₉									9 13	5 46.75	+30 21.0	1.396	1.623	38.0	20.1	83 W	70* 33*
5 31	0 51.17	- 6 49.9	2.104	1.846	28.8	21.4	61 W	10* 55*	9 18	6 1.89	+30 50.1	1.352	1.611	38.4	20.0	85 W	71* 32*
6 10	1 16.05	- 5 56.7	1.981	1.800	30.7	21.3	65 W	12* 58*	9 23	6 17.01	+31 14.5	1.311	1.601	38.7	20.0	87 W	73* 32*
6 20	1 41.80	- 5 10.8	1.862	1.756	32.5	21.1	68 W	15* 61*	9 28	6 32.07	+31 34.2	1.270	1.593	39.0	19.9	88 W	75* 31*
6 30	2 8.42	- 4 34.3	1.748	1.712	34.1	21.0	71 W	18* 62*	10 3	6 46.98	+31 49.4	1.232	1.585	39.1	19.8	90 W	76* 31*
7 10	2 35.89	- 4 8.6	1.642	1.670	35.7	20.9	74 W	21* 64*	10 8	7 1.68	+32 0.2	1.194	1.579	39.2	19.7	92 W	77* 31*
7 20	3 4.13	- 3 55.4	1.542	1.630	37.2	20.7	76 W	25* 65*	10 13	7 16.07	+32 6.9	1.158	1.575	39.2	19.7	94 W	77* 31*
7 30	3 32.99	- 3 55.6	1.451	1.592	38.6	20.6	78 W	28* 65*	10 18	7 30.07	+32 10.0	1.124	1.571	39.1	19.6	95 W	77 31*
8 9	4 2.26	- 4 9.4	1.368	1.556	39.9	20.4	80 W	31* 66*	10 23	7 43.57	+32 9.9	1.091	1.570	38.9	19.5	98 W	77 31*
8 19	4 31.65	- 4 36.5	1.293	1.524	41.1	20.3	82 W	33* 67*	10 28	7 56.50	+32 7.2	1.059	1.569	38.6	19.4	100 W	77 31*
8 29	5 0.80	- 5 15.4	1.225	1.496	42.1	20.2	83 W	35* 67*	11 2	8 8.79	+32 2.5	1.028	1.570	38.2	19.4	102 W	77 31*
9 8	5 29.36	- 6 3.5	1.164	1.472	43.0	20.0	85 W	36* 68*	11 7	8 20.33	+31 56.5	0.998	1.573	37.6	19.3	104 W	77 32*
9 18	5 56.97	- 6 57.8	1.108	1.452	43.7	19.9	87 W	37* 69*	11 12	8 31.04	+31 49.8	0.970	1.577	36.9	19.2	107 W	77 32*
9 23	6 10.29	- 7 26.1	1.081	1.444	44.0	19.9	88 W	37* 69*	11 17	8 40.82	+31 43.2	0.943	1.582	36.0	19.1	110 W	77 32*
9 28	6 23.23	- 7 54.3	1.055	1.437	44.2	19.8	89 W	37* 70*	11 22	8 49.57	+31 37.4	0.917	1.589	34.9	19.1	113 W	77 32*
10 3	6 35.75	- 8 21.8	1.030	1.431	44.3	19.7	90 W	36* 71*	11 27	8 57.24	+31 32.7	0.893	1.597	33.6	19.0	116 W	77 32
10 8	6 47.83	- 8 48.2	1.005	1.427	44.4	19.7	91 W	36* 71*	12 2	9 3.73	+31 29.7	0.870	1.606	32.2	18.9	120 W	76 33
10 13																	

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°
415949 2001 XY₁₀										485512 2011 TB₁₀									
<i>(continuation)</i>										<i>(continuation)</i>									
6 8	3 18.14	+ 4 25.0	0.910	0.536	85.0	20.7	32 W	—	26*	7 10	4 37.88	+ 7 35.0	2.415	1.779	22.1	21.2	41 W	9*	34*
6 10	3 27.33	+ 4 24.5	0.949	0.540	80.9	20.7	32 W	—	25*	7 20	5 5.18	+ 7 1.3	2.318	1.737	24.0	21.1	44 W	13*	37*
6 12	3 36.43	+ 4 31.0	0.988	0.545	77.1	20.6	32 W	—	25*	7 30	5 33.19	+ 6 8.8	2.226	1.696	25.8	21.1	47 W	16*	38*
6 14	3 45.42	+ 4 43.6	1.026	0.551	73.3	20.6	31 W	—	25*	8 9	6 1.77	+ 4 57.3	2.138	1.658	27.4	21.0	49 W	19*	40*
6 16	3 54.31	+ 5 1.1	1.064	0.559	69.7	20.6	31 W	—	25*	8 19	6 30.79	+ 3 27.1	2.057	1.624	29.0	20.9	51 W	22*	42*
6 18	4 3.08	+ 5 22.8	1.101	0.568	66.3	20.6	31 W	—	25*	8 29	7 0.05	+ 1 39.4	1.983	1.593	30.4	20.8	53 W	25*	43*
6 20	4 11.73	+ 5 47.9	1.137	0.578	63.1	20.6	30 W	—	24*	9 8	7 29.38	- 0 23.5	1.917	1.565	31.6	20.7	55 W	27*	44*
6 25	4 32.86	+ 7 0.8	1.224	0.607	55.9	20.7	30 W	—	24*	9 18	7 58.61	- 2 38.5	1.856	1.542	32.8	20.7	56 W	28*	45*
6 30	4 53.27	+ 8 21.6	1.303	0.641	49.9	20.8	29 W	—	23*	9 28	8 27.56	- 5 1.8	1.802	1.524	33.8	20.6	58 W	29*	46*
7 5	5 13.00	+ 9 44.4	1.375	0.678	45.0	20.9	28 W	—	22*	10 8	8 56.07	- 7 29.1	1.754	1.511	34.6	20.5	59 W	30*	48*
7 10	5 32.13	+ 11 5.3	1.440	0.716	41.1	21.0	28 W	2*	21*	10 18	9 24.05	- 9 56.1	1.708	1.503	35.4	20.5	61 W	30*	49*
7 15	5 50.71	+ 12 21.9	1.498	0.754	38.0	21.1	27 W	4*	21*	10 28	9 51.34	- 12 18.5	1.665	1.500	36.1	20.5	63 W	30*	51*
7 20	6 8.82	+ 13 32.9	1.549	0.793	35.6	21.2	27 W	6*	20*	11 2	10 4.70	- 13 26.7	1.644	1.501	36.4	20.4	64 W	29*	52*
7 25	6 26.51	+ 14 37.5	1.594	0.830	33.8	21.3	27 W	8*	20*	11 7	10 17.85	- 14 32.4	1.622	1.503	36.7	20.4	65 W	29*	53*
7 30	6 43.83	+ 15 35.6	1.633	0.867	32.5	21.4	27 W	10*	19*	11 12	10 30.78	- 15 35.0	1.601	1.507	37.0	20.4	66 W	29*	54*
140333 2001 TD₂										488461 1996 FS₁									
5 31	2 51.91	- 3 45.8	0.616	0.625	109.6	21.1	36 W	—	28*	5 31	2 58.43	+ 19 17.3	1.116	0.421	65.1	20.9	22 W	6*	14*
6 2	2 49.37	- 4 0.9	0.633	0.643	105.2	20.9	38 W	—	30*	6 2	3 16.53	+ 18 13.8	1.139	0.395	61.8	20.7	20 W	4*	13*
6 4	2 47.47	- 4 7.5	0.650	0.662	101.3	20.9	40 W	—	33*	6 4	3 34.93	+ 17 11.4	1.164	0.374	57.6	20.5	18 W	1*	12*
6 6	2 46.15	- 4 6.9	0.667	0.681	97.7	20.8	42 W	—	35*	6 6	3 53.60	+ 16 12.1	1.191	0.357	52.6	20.3	16 W	—	10*
6 8	2 45.35	- 4 0.5	0.683	0.700	94.4	20.8	43 W	—	37*	6 8	4 12.50	+ 15 18.1	1.219	0.348	47.1	20.1	15 W	—	9*
6 10	2 44.99	+ 3 49.3	0.699	0.719	91.4	20.7	45 W	—	39*	6 10	4 31.48	+ 14 31.0	1.247	0.345	41.6	20.0	13 W	—	7*
6 12	2 45.02	+ 3 34.1	0.714	0.738	88.7	20.7	47 W	—	40*	6 12	4 50.38	+ 13 51.8	1.275	0.350	36.6	19.9	12 W	—	5*
6 14	2 45.38	+ 3 15.8	0.728	0.758	86.2	20.7	48 W	1*	42*	6 14	5 9.01	+ 13 20.4	1.302	0.363	32.6	19.9	11 W	—	3*
6 16	2 46.04	- 2 54.9	0.742	0.777	84.0	20.7	49 W	3*	43*	6 16	5 27.17	+ 12 56.2	1.328	0.381	29.8	20.0	11 W	—	1*
6 18	2 46.94	- 2 31.9	0.754	0.796	81.9	20.8	51 W	4*	45*	6 18	5 44.75	+ 12 37.9	1.354	0.404	28.1	20.1	11 W	—	—
6 20	2 48.06	- 2 7.2	0.765	0.815	80.0	20.8	52 W	6*	46*	6 20	6 1.67	+ 12 24.2	1.380	0.431	27.1	20.3	11 E	—	—
6 25	2 51.58	- 1 0.5	0.790	0.862	75.8	20.8	55 W	10*	49*	6 22	6 17.87	+ 12 13.7	1.406	0.460	26.7	20.5	12 E	—	2*
6 30	2 55.83	+ 0 10.8	0.808	0.907	72.4	20.9	58 W	14*	51*	6 24	6 33.37	+ 12 5.6	1.432	0.491	26.5	20.6	12 E	—	4*
7 5	3 0.54	+ 1 24.1	0.821	0.950	69.6	20.9	61 W	18*	53*	6 26	6 48.16	+ 11 58.9	1.459	0.524	26.3	20.8	13 E	—	5*
7 10	3 5.50	+ 2 38.3	0.828	0.992	67.2	20.9	64 W	22*	54*	6 28	7 2.28	+ 11 53.1	1.486	0.557	26.2	21.0	14 E	—	6*
7 15	3 10.56	+ 3 52.5	0.830	1.032	65.1	21.0	67 W	26*	55*	6 30	7 15.75	+ 11 47.7	1.514	0.590	25.9	21.1	15 E	—	8*
7 20	3 15.56	+ 5 6.3	0.827	1.070	63.3	21.0	70 W	30*	55*	7 5	7 46.82	+ 11 34.0	1.587	0.674	25.0	21.5	16 E	—	10*
7 25	3 20.38	+ 6 19.4	0.819	1.106	61.6	21.0	73 W	34*	55*	7 10	8 14.59	+ 11 18.3	1.662	0.756	23.8	21.8	17 E	—	11*
7 30	3 24.92	+ 7 32.0	0.808	1.140	60.0	21.0	76 W	38*	55*	7 15	8 39.53	+ 10 59.6	1.740	0.836	22.2	22.1	18 E	—	12*
8 4	3 29.08	+ 8 44.4	0.792	1.172	58.5	20.9	80 W	42*	55*	7 20	9 2.09	+ 10 38.1	1.820	0.913	20.5	22.3	18 E	—	12*
8 9	3 32.75	+ 9 56.9	0.773	1.202	56.9	20.9	83 W	46*	54*	5 31	3 5.36	+ 8 59.4	0.504	0.594	134.7	21.0	25 W	—	19*
8 14	3 35.79	+ 11 10.0	0.750	1.230	55.4	20.8	87 W	50*	53	6 2	2 57.13	+ 10 12.8	0.516	0.605	129.3	20.5	27 W	1*	21*
8 19	3 38.07	+ 12 24.0	0.725	1.256	53.7	20.8	91 W	54*	52	6 4	2 49.99	+ 11 28.2	0.530	0.618	124.0	20.1	30 W	4*	24*
8 24	3 39.40	+ 13 39.6	0.698	1.280	51.9	20.7	95 W	57*	50	6 6	2 43.94	+ 12 44.5	0.545	0.633	118.8	19.8	33 W	8*	26*
8 29	3 39.59	+ 14 57.4	0.669	1.302	49.9	20.6	100 W	60*	49	6 8	2 38.94	+ 14 0.5	0.561	0.648	114.0	19.6	36 W	11*	28*
9 3	3 38.43	+ 16 18.1	0.639	1.322	47.6	20.4	104 W	61	48	6 10	2 34.91	+ 15 15.8	0.578	0.665	109.4	19.5	38 W	13*	29*
9 8	3 35.63	+ 17 42.1	0.608	1.340	45.1	20.3	110 W	63	46	6 15	2 28.48	+ 18 17.9	0.621	0.709	99.4	19.2	44 W	20*	32*
9 13	3 30.86	+ 19 9.4	0.577	1.357	42.1	20.1	115 W	64	45	6 20	2 26.12	+ 21 8.9	0.663	0.757	91.1	19.1	48 W	26*	33*
9 18	3 23.76	+ 20 39.8	0.547	1.372	38.7	19.9	121 W	66	43	6 25	2 26.58	+ 23 48.4	0.703	0.806	84.4	19.1	52 W	31*	33*
9 23	3 13.95	+ 22 11.7	0.519	1.384	34.8	19.7	128 W	67	42	6 30	2 28.92	+ 26 17.1	0.738	0.857	78.8	19.2	56 W	36*	33*
9 28	3 1.11	+ 23 42.6	0.493	1.396	30.5	19.5	135 W	69	40	7 5	2 32.48	+ 28 36.2	0.769	0.908	74.1	19.2	59 W	41*	32*
10 3	2 45.07	+ 25 8.2	0.472	1.405	25.6	19.3	143 W	70	39	7 10	2 36.76	+ 30 47.0	0.795	0.958	70.2	19.3	62 W	46*	31*
10 8	2 25.91	+ 26 22.2	0.455	1.412	20.6	19.1	150 W	71	38	7 15	2 41.39	+ 32 50.6	0.816	1.008	66.8	19.3	66 W	50*	30*
10 13	2 4.12	+ 27 17.8	0.445	1.418	15.9	18.9	157 W	72	37	7 20	2 46.08	+ 34 48.1	0.833	1.056	63.8	19.4	69 W	55*	29*
10 18	1 40.71	+ 27 49.0	0.441	1.422	12.7	18.7	162 W	73	36	7 25	2 50.57	+ 36 40.4	0.846	1.104	61.1	19.4	72 W	60*	27*
10 20	1 31.20	+ 27 53.9	0.442	1.423	12.3	18.7	162 E	73	36	7 30	2 54.65	+ 38 28.1	0.854	1.150	58.7	19.5	75 W	64*	26*
10 22	1 21.74	+ 27 54.5	0.444	1.424	12.4	18.7	162 E	73	36	8 4	2 58.14	+ 40 11.8	0.859	1.195	56.4	19.5	79 W	69*	24
10 24	1 12.45	+ 27 51.1	0.447	1.425	13.1	18.8	161 E	73	36	8 9	3 0.85	+ 41 52.0	0.860	1.238	54.2	19.5	82 W	74*	22
10 26	1 3.39	+ 27 43.8	0.451	1.425	14.2	18.8	159 E	73	36	8 14	3 2.57	+ 43 29.0	0.858	1.280	52.1	19.5	86 W	78*	21
10 28	0 54.66	+ 27 33.1	0.456	1.425	15.6	18.9	157 E	73	36	8 19	3 3.06	+ 45 2.7	0.854	1.320	50.0	19.5	90 W	83*	19
11 2	0 34.62	+ 26 54.4	0.473	1.424	20.0	19.1	151 E	72	37	8 24	3 2.10	+ 46 32.6	0.847	1.359	47.9	19.5	94 W	88*	17
11 7	0 17.62	+ 26 4.8	0.496	1.421	24.5	19.4	143 E	71	38	8 29	2 59.43	+ 47 57.8	0.839	1.397	45.7	19.5	98 W	87	16
11 12	0 3.89	+ 25 11.3	0.524	1.416	28.8	19.6	136 E	70	39	9 3	2 54.83	+ 49 17.0	0.829	1.433	43.5	19.5	102 W	86	15
11 17	23 53.34	+ 24 19.7	0.555	1.409	32.7	19.8	130 E	69	40	9 8	2 48.09	+ 50 28.3	0.820	1.468	41.2	19.4	106 W	85	14
11 22	23 45.71	+ 23 33.9	0.588	1.401	36.0	20.1	123 E	69	40	9 13	2 39.02	+ 51 28.8	0.810	1.501	38.7	19.4	111 W	84	13
11 27	23 40.61	+ 22 56.0	0.624	1.391	38.9	20.2	118 E	68	41	9 18	2 27.57	+ 52 15.1	0.801	1.533	36.2	19.3	116 W	83	12
12 2																			

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°	
141052 2001 XR₁ (continuation)																		
9 30	1 51.88	+52 44.5	0.788	1.604	29.9	19.2	127 W	82	11	7 10	6 10.85	+24 19.2	2.133	1.185	13.2	21.4	15 W	5* 6*
137671 1999 XP₃₅ (continuation)																		
7 10	6 10.85	+24 19.2	2.133	1.185	13.2	21.4	15 W	5* 6*	7 20	6 48.05	+22 12.9	2.116	1.176	14.1	21.4	16 W	6* 8*	
368184 2000 RN₇₇																		
5 31	3 59.82	+28 20.1	1.932	0.949	10.4	21.5	10 W	4*	6 5	4 23.04	+28 57.0	1.907	0.920	10.2	21.4	9 W	3*	—
439880 1999 XV₂₂₃																		
5 31	4 51.27	+20 46.0	2.751	1.742	2.7	21.5	5 E	—	6 10	5 19.03	+21 44.6	2.783	1.769	1.0	21.4	2 E	—	—
180309 2003 XR																		
5 31	5 3.62	+25 35.2	3.126	2.127	3.8	21.5	8 E	1*	6 10	5 26.64	+25 48.0	3.168	2.156	1.9	21.4	4 E	—	—
99869 2002 PF₄₆																		
5 31	5 12.79	+21 1.5	4.356	3.360	2.8	21.4	9 E	—	6 10	5 26.41	+21 14.3	4.355	3.342	1.1	21.3	3 E	—	3*
86964 2000 JV₂																		
5 31	5 13.26	+19 35.2	3.963	2.969	3.3	21.5	10 E	—	6 10	5 28.63	+19 58.4	3.998	2.988	1.6	21.4	5 E	—	4*
220124 2002 TE₆₆																		
5 31	3 14.80	+ 5 48.3	2.046	1.202	20.6	21.5	25 W	—	6 10	3 51.16	+ 4 46.1	1.953	1.145	23.7	21.4	27 W	—	18*
334673 2003 AL₁₈																		
5 31	5 45.45	+29 3.3	2.462	1.530	11.8	21.4	18 E	10*	6 10	6 15.60	+28 11.5	2.427	1.470	10.2	21.2	15 E	7*	5*
137671 1999 XP₃₅																		
5 31	3 38.52	+26 31.5	2.218	1.251	10.6	21.5	13 W	5*	6 10	4 16.29	+26 54.9	2.195	1.231	11.1	21.4	14 W	5*	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°
334673 2003 AL₁₈ (continuation)										436568 2011 HB₅₃									
10 8	13 13.17	-16 7.9	1.950	0.990	11.3	19.9	11 E	-	3*	5 31	17 42.47	-21 53.0	2.981	3.965	4.1	23.1	164 W	23	86
10 13	13 34.27	-18 20.9	1.953	0.998	11.8	20.0	12 E	-	3*	6 10	17 31.99	-22 14.0	2.938	3.951	1.1	22.9	176 W	23	86
10 18	13 55.79	-20 24.4	1.960	1.009	12.1	20.0	12 E	-	4*	6 20	17 21.08	-22 33.2	2.927	3.937	2.0	22.9	172 E	22	87
10 23	14 17.69	-22 17.0	1.969	1.022	12.3	20.1	13 E	-	5*	6 30	17 10.48	-22 50.4	2.949	3.920	5.0	23.1	160 E	22	87
10 28	14 39.89	-23 57.4	1.982	1.038	12.4	20.1	13 E	-	5*	7 10	17 0.88	-23 5.7	3.000	3.903	7.8	23.3	148 E	22	87
11 2	15 2.32	-25 24.6	1.999	1.057	12.4	20.2	13 E	-	6*	163667 2002 WC₁									
11 7	15 24.88	-26 37.9	2.018	1.078	12.2	20.2	13 E	-	6*	5 31	17 42.82	-27 43.5	1.968	2.952	5.8	24.0	163 W	17	88
11 12	15 47.44	-27 37.0	2.040	1.100	11.9	20.3	13 E	-	6*	6 5	17 36.70	-27 46.0	1.977	2.978	3.8	23.9	169 W	17	88
11 17	16 9.88	-28 21.9	2.065	1.125	11.5	20.3	13 E	-	7*	6 10	17 30.50	-27 46.5	1.992	3.004	2.1	23.8	174 W	17	88
11 22	16 32.08	-28 52.9	2.092	1.150	11.0	20.4	13 E	-	6*	6 15	17 24.35	-27 44.9	2.016	3.029	1.7	23.8	175 E	17	88
11 27	16 53.91	-29 10.4	2.121	1.177	10.4	20.5	12 E	-	6*	6 20	17 18.40	-27 41.6	2.047	3.054	3.1	24.0	171 E	17	88
12 2	17 15.27	-29 15.3	2.152	1.205	9.8	20.5	12 E	-	6*	6 25	17 12.78	-27 36.6	2.085	3.078	4.8	24.1	165 E	17	88
12 7	17 36.08	-29 8.5	2.184	1.233	9.0	20.6	11 E	-	5*	6 30	17 7.60	-27 30.5	2.130	3.103	6.6	24.3	159 E	17	88
12 12	17 56.27	-28 51.0	2.217	1.262	8.2	20.6	11 E	-	5*	214869 2007 PA₈									
12 17	18 15.79	-28 23.8	2.251	1.292	7.3	20.7	10 E	-	4*	5 31	17 45.83	-21 14.8	3.648	4.627	3.7	22.9	163 W	24	85
12 22	18 34.60	-27 48.1	2.286	1.322	6.4	20.7	9 E	-	3*	6 10	17 37.84	-21 10.8	3.603	4.614	1.3	22.7	174 W	24	85
12 27	18 52.70	-27 4.8	2.321	1.352	5.5	20.7	8 E	-	2*	6 20	17 29.54	-21 6.3	3.590	4.601	1.4	22.7	174 E	24	85
1 1	19 10.08	-26 15.1	2.355	1.382	4.6	20.8	6 E	-	-	6 30	17 21.45	-21 1.4	3.607	4.587	3.8	22.8	162 E	24	85
1 6	19 26.76	-25 19.7	2.389	1.413	3.6	20.8	5 E	-	-	7 10	17 14.08	-20 56.7	3.654	4.572	6.1	23.0	151 E	24	85
1 11	19 42.76	-24 19.5	2.423	1.443	2.7	20.8	4 E	-	-	508825 2001 SK₁₆₉									
1 16	19 58.11	-23 15.3	2.455	1.473	1.9	20.8	3 E	-	-	5 31	17 48.55	+ 1 41.1	3.815	4.720	6.2	24.2	150 W	47	62
147431 2003 JA										6 10	17 41.74	+ 1 57.7	3.784	4.718	5.4	24.1	154 W	47	62
5 31	5 47.04	+24 6.9	2.505	1.566	11.1	21.5	17 E	7*	8*	6 20	17 34.66	+ 2 3.6	3.780	4.715	5.4	24.1	154 E	47	62
6 10	6 17.16	+24 38.3	2.528	1.567	9.4	21.4	15 E	4*	6*	6 30	17 27.76	+ 1 58.3	3.805	4.711	6.2	24.1	150 E	47	62
6 20	6 47.47	+24 47.1	2.548	1.569	7.8	21.4	12 E	2*	4*	7 10	17 21.47	+ 1 42.3	3.856	4.707	7.5	24.2	143 E	47	62
6 30	7 17.75	+24 33.4	2.565	1.571	6.1	21.3	10 E	1*	2*	523801 1993 TQ₂									
7 10	7 47.80	+23 58.1	2.578	1.575	4.6	21.2	7 E	-	-	5 31	17 55.38	-32 4.5	1.826	2.796	7.5	24.0	159 W	13	84
7 20	8 17.48	+23 2.2	2.589	1.579	3.3	21.2	5 E	-	-	6 5	17 49.04	-32 11.6	1.810	2.800	5.6	23.9	164 W	13	84
7 30	8 46.64	+21 47.5	2.596	1.585	2.5	21.1	4 E	-	-	6 10	17 42.38	-32 15.5	1.801	2.804	4.0	23.8	169 W	13	84
8 9	9 15.19	+20 16.0	2.600	1.591	2.8	21.2	4 W	-	-	6 15	17 35.55	-32 16.1	1.799	2.807	3.2	23.7	171 W	13	84
8 19	9 43.10	+18 29.8	2.600	1.598	4.0	21.3	6 W	-	-	6 20	17 28.72	-32 13.3	1.805	2.810	3.8	23.8	169 E	13	84
8 29	10 10.35	+16 31.4	2.597	1.606	5.4	21.3	9 W	3*	-	6 25	17 22.09	-32 7.2	1.818	2.813	5.3	23.9	165 E	13	84
9 8	10 36.95	+14 23.1	2.589	1.614	7.1	21.4	11 W	5*	-	6 30	17 15.80	-31 58.3	1.837	2.815	7.1	24.0	160 E	13	84
377603 2005 QW₁₆₀										7 5	17 10.01	-31 46.9	1.864	2.817	8.9	24.1	155 E	13	84
5 31	17 27.17	-21 38.6	2.182	3.179	4.0	23.0	167 W	23	86	320276 2007 RL₉₅									
6 10	17 17.20	-21 34.2	2.142	3.157	0.5	22.7	178 W	23	86	5 31	17 55.78	-19 52.6	2.038	3.012	6.5	22.6	160 W	25	84
6 20	17 6.95	-21 28.6	2.132	3.135	3.6	22.9	169 E	24	85	6 10	17 45.92	-19 47.0	2.012	3.020	2.8	22.4	172 W	25	84
6 30	16 57.35	-21 22.5	2.150	3.111	7.3	23.1	157 E	24	85	6 20	17 35.52	-19 41.9	2.014	3.027	2.0	22.4	174 E	25	84
7 10	16 49.23	-21 17.7	2.193	3.086	10.7	23.2	146 E	24	85	6 30	17 25.55	-19 37.8	2.045	3.032	5.0	22.6	163 E	25	84
415780 2000 WO₁₀										7 10	17 16.92	-19 35.5	2.104	3.037	9.1	22.8	152 E	25	84
5 31	17 29.83	-21 4.5	2.322	3.316	4.1	22.6	167 W	24	85	382529 2001 SE₃₁₃									
6 10	17 19.24	-21 22.3	2.303	3.317	0.6	22.3	178 W	24	85	5 31	17 58.91	-20 26.7	2.006	2.978	6.8	23.2	160 W	25	84
6 20	17 8.50	-21 38.8	2.314	3.318	3.3	22.6	169 E	23	86	6 10	17 49.32	-20 30.2	1.940	2.947	3.0	22.9	171 W	24	85
6 30	16 58.49	-21 54.0	2.355	3.317	6.8	22.8	157 E	23	86	6 20	17 38.68	-20 34.0	1.901	2.915	1.7	22.7	175 E	24	85
7 10	16 49.99	-22 8.8	2.423	3.314	9.9	23.0	146 E	23	86	6 30	17 27.99	-20 38.0	1.892	2.882	5.6	22.9	164 E	24	85
523589 2001 HA₄										7 10	17 18.29	-20 42.6	1.909	2.848	9.6	23.1	152 E	24	85
5 31	17 32.06	-44 58.9	3.699	4.631	5.5	24.3	154 W	-	71	523657 2012 DJ₄									
6 5	17 26.36	-45 0.9	3.693	4.641	5.0	24.3	157 W	-	71	5 31	17 59.10	-10 38.7	1.403	2.367	9.9	23.6	156 W	34	75
6 10	17 20.57	-44 59.5	3.694	4.651	4.7	24.3	158 W	-	71	6 10	17 47.02	-10 24.9	1.359	2.355	6.4	23.4	165 W	35	74
6 15	17 14.79	-44 54.4	3.702	4.660	4.7	24.3	158 E	-	71	6 20	17 33.76	-10 23.4	1.342	2.341	6.0	23.4	166 E	35	74
6 20	17 9.11	-44 46.0	3.718	4.669	4.9	24.3	157 E	-	71	6 30	17 20.80	-10 35.0	1.351	2.325	9.4	23.5	158 E	34	75
6 25	17 3.64	-44 34.3	3.742	4.678	5.4	24.4	154 E	-	71	7 10	17 9.55	-10 59.3	1.385	2.307	13.7	23.7	147 E	34	75
6 30	16 58.45	-44 19.7	3.772	4.686	6.1	24.4	151 E	1	72	519824 2013 JY₃₅									
415710 1998 WC₂										5 31	18 2.50	+ 7 51.1	1.409	2.301	15.4	22.7	143 W	53	56
5 31	17 34.94	+ 6 45.3	2.259	3.162	9.9	23.4	147 W	52	57	6 5	17 54.06	+ 8 50.0	1.398	2.305	14.5	22.7	145 W	54	55
6 10	17 24.86	+ 7 28.5	2.289	3.205	9.3	23.4	149 W	52	57	6 10	17 45.22	+ 9 40.4	1.393	2.309	14.1	22.6	146 W	55	54
6 20	17 15.00	+ 7 48.7	2.346	3.247	9.7	23.5	147 E	53	56	6 15	17 36.19	+10 21.4	1.396	2.311	14.1	22.6	146 W	55	54
6 30	17 6.11	+ 7 46.7	2.427	3.288	11.0	23.7	142 E	53	56	6 20	17 27.18	+10 52.2	1.405	2.313	14.6	22.7	145 E	56	53
7 10	16 58.78	+ 7 25.3	2.532	3.328	12.5	23.9	135 E	52	57	6 25	17 18.43	+11 12.5	1.421	2.313	15.5	22.7	143 E	56	53
507799 2014 BV₅₇										6 30	17 10.14	+11 22.6	1.444	2.313	16.6	22.8	139 E	56	53
5 31	17 39.31	-61 48.3	2.646	3.471	11.2	22.6	138 W	-	54	7 5	17 2.48	+11 23.1	1.472	2.312	17.9	22.9	136 E	56	53
6 5	17 30.97	-62 0.3	2.625	3.464	10.9	22.6	140 W	-	54	333888 1998 ST₄									
6 10	17 22.23	-62 4.8	2.609	3.456	10.7	22.5	141 W	-	54	5 31	18 9.06	-17 53.2	3.560	4.510	5.1	23.2	157 W	27	82
6 15	17 13.34	-62 1.4	2.598	3.449	10.7	22.5	141 E	-	54	6 10	18 1.52	-17 42.6	3.512	4.509	2.8	23.0	168 W	27	82
6 20	17 4.58	-61 50.1	2.594	3.441	10.8	22.5	141 E	-	54	6 20	17 53.48	-17 33.4	3.494	4.507	1.3	22.9	174 E	27	82
6 25	16 56.21	-61 31.2	2.595	3.432	11.1	22.5	140 E	-	54	6 30	17 45.45	-17 25.9	3.508	4.503	3.0	23.0	167 E	28	81
6 30	16 48.47	-61 5.3	2.603	3.424	11.5	22.6	138 E	-	5										

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°
426082 2012 DG ₃₁										436654 2011 RR ₁₂ (continuation)									
5 31	18 26.25	+20 49.0	0.632	1.495	31.8	21.3	129 W	66	43	7 20	17 36.54	- 5 42.7	0.642	1.575	23.1	20.4	143 E	39	70
6 5	18 19.68	+20 35.5	0.618	1.500	30.2	21.2	132 W	66	43	7 30	17 28.08	- 6 24.1	0.650	1.530	29.4	20.6	132 E	39	70
6 10	18 12.18	+20 1.9	0.606	1.504	28.7	21.2	135 W	65	44	8 9	17 24.81	- 7 29.1	0.666	1.485	35.0	20.7	123 E	38	71
6 15	18 4.01	+19 6.7	0.597	1.508	27.4	21.1	137 W	64	45	8 19	17 27.05	- 8 50.4	0.688	1.441	39.7	20.9	115 E	36	73
6 20	17 55.48	+17 49.2	0.591	1.511	26.3	21.0	139 W	63	46	8 29	17 34.70	-10 20.8	0.711	1.398	43.6	21.0	107 E	35*	74
6 25	17 46.97	+16 9.8	0.588	1.514	25.7	21.0	140 E	61	48	9 8	17 47.37	-11 53.6	0.735	1.356	46.8	21.1	101 E	33*	76
6 30	17 38.84	+14 10.6	0.590	1.517	25.5	21.0	140 E	59	50	9 18	18 4.66	-13 22.7	0.756	1.317	49.4	21.1	96 E	31*	77*
7 5	17 31.43	+11 54.6	0.596	1.519	25.8	21.1	139 E	57	52	9 28	18 26.21	-14 42.4	0.775	1.281	51.4	21.2	91 E	30*	77*
7 10	17 24.97	+ 9 25.7	0.605	1.521	26.6	21.1	138 E	54	55	10 8	18 51.64	-15 47.0	0.791	1.249	53.1	21.2	88 E	29*	76*
7 15	17 19.65	+ 6 48.1	0.619	1.523	27.7	21.2	136 E	52	57	10 18	19 20.58	-16 30.8	0.805	1.221	54.3	21.2	85 E	28*	74*
7 20	17 15.61	+ 4 5.6	0.637	1.524	29.1	21.3	133 E	49	60	10 28	19 52.65	-16 48.5	0.819	1.199	55.2	21.3	82 E	28	71*
7 25	17 12.90	+ 1 22.1	0.658	1.525	30.7	21.4	130 E	46	63	11 7	20 27.30	-16 35.3	0.832	1.182	55.7	21.3	80 E	28	69*
6322 1991 CQ																			
5 31	18 26.75	+14 23.9	2.678	3.462	12.1	21.8	134 W	59	50	11 17	21 3.95	-15 48.0	0.847	1.173	55.8	21.3	79 E	29	66*
6 10	18 18.66	+14 54.4	2.654	3.483	11.1	21.7	139 W	60	49	11 27	21 41.97	-14 25.3	0.866	1.170	55.6	21.3	78 E	31	63*
6 20	18 9.81	+15 2.3	2.652	3.504	10.4	21.7	141 W	60	49	12 7	22 20.62	-12 29.1	0.889	1.174	54.9	21.4	77 E	33	61*
6 30	18 0.89	+14 46.5	2.675	3.524	10.4	21.7	141 E	60	49	12 17	22 59.31	-10 3.5	0.920	1.186	54.0	21.5	77 E	35	58*
7 10	17 52.58	+14 8.3	2.720	3.543	11.1	21.8	138 E	59	50	491585 2012 SL ₆									
7 20	17 45.45	+13 10.9	2.789	3.560	12.0	21.9	133 E	58	51	5 31	18 39.07	-29 21.2	2.116	3.040	9.4	21.7	151 W	16	87
475462 2006 SW ₅										6 10	18 30.57	-29 33.7	2.022	3.002	6.1	21.4	162 W	15	86
5 31	18 28.69	-38 38.8	1.346	2.282	12.8	22.1	150 W	6	77	6 20	18 20.19	-29 40.3	1.955	2.964	2.9	21.1	172 W	15	86
6 5	18 21.19	-38 54.3	1.337	2.297	10.7	22.0	155 W	6	77	6 30	18 8.85	-29 38.6	1.915	2.924	3.1	21.1	171 E	15	86
6 10	18 13.07	-39 4.0	1.334	2.312	8.8	21.9	160 W	6	77	7 10	17 57.66	-29 27.8	1.905	2.884	6.7	21.2	161 E	16	87
6 15	18 4.58	-39 7.1	1.337	2.327	7.4	21.9	163 W	6	77	7 20	17 47.73	-29 9.2	1.920	2.842	10.5	21.4	149 E	16	87
6 20	17 55.99	-39 3.4	1.347	2.341	6.7	21.9	164 W	6	77	7 30	17 39.98	-28 45.2	1.959	2.800	14.0	21.5	138 E	16	87
6 25	17 47.58	-38 52.9	1.363	2.355	7.1	22.0	163 E	6	77	367684 2010 OS ₂₂									
6 30	17 39.63	-38 36.4	1.386	2.368	8.3	22.1	160 E	6	77	5 31	18 39.79	-20 13.3	1.709	2.637	11.0	22.2	150 W	25	84
7 5	17 32.36	-38 14.7	1.416	2.381	9.9	22.2	156 E	7	78	6 10	18 26.32	-19 56.4	1.622	2.609	6.6	21.8	163 W	25	84
7 10	17 25.92	-37 49.0	1.451	2.394	11.7	22.3	151 E	7	78	6 20	18 10.44	-19 37.4	1.565	2.579	2.1	21.5	175 W	25	84
7 15	17 20.44	-37 20.4	1.492	2.406	13.5	22.5	146 E	8	79	6 30	17 53.51	-19 15.6	1.539	2.545	4.3	21.5	169 E	26	83
284114 2005 TZ ₅₁										7 10	17 37.16	-18 52.2	1.544	2.508	9.4	21.8	156 E	26	83
5 31	18 30.34	-27 20.7	1.670	2.613	10.3	21.8	153 W	18	89	7 20	17 22.86	-18 29.8	1.576	2.468	14.2	22.0	143 E	27	82
6 10	18 19.57	-27 2.1	1.584	2.577	6.0	21.4	165 W	18	89	337228 2000 FL ₁									
6 20	18 6.65	-26 34.6	1.525	2.540	1.6	21.1	176 W	18	89	5 31	18 40.49	-38 3.6	3.230	4.126	7.5	21.6	148 W	7	78
6 30	17 52.87	-25 57.3	1.495	2.502	4.2	21.1	170 E	19	90	6 5	18 35.82	-38 38.6	3.193	4.121	6.5	21.5	153 W	6	77
7 10	17 39.75	-25 12.0	1.492	2.462	9.1	21.3	157 E	20	89	6 10	18 30.72	-39 12.0	3.162	4.116	5.5	21.4	157 W	6	77
7 20	17 28.64	-24 22.5	1.514	2.420	13.8	21.5	145 E	21	88	6 15	18 25.23	-39 43.1	3.139	4.110	4.8	21.4	160 W	5	76
382893 2004 PC ₈₈										6 20	18 19.46	-40 11.5	3.124	4.104	4.3	21.3	162 W	5	76
5 31	18 31.19	-55 59.3	2.907	3.736	10.2	22.1	139 W	-	60	6 25	18 13.50	-40 36.7	3.116	4.098	4.2	21.3	163 E	4	75
6 5	18 24.80	-56 12.4	2.878	3.733	9.6	22.1	142 W	-	60	6 30	18 7.47	-40 58.5	3.116	4.092	4.6	21.3	161 E	4	75
6 10	18 17.88	-56 20.3	2.854	3.729	9.1	22.0	145 W	-	60	7 5	18 1.47	-41 16.8	3.124	4.085	5.3	21.4	158 E	4	75
6 15	18 10.55	-56 22.3	2.837	3.725	8.7	22.0	146 W	-	60	7 10	17 55.62	-41 31.5	3.139	4.078	6.2	21.4	154 E	3	74
6 20	18 3.01	-56 18.0	2.826	3.720	8.5	22.0	147 W	-	60	7 15	17 50.02	-41 42.7	3.161	4.071	7.2	21.5	150 E	3	74
6 25	17 55.44	-56 7.3	2.821	3.716	8.6	22.0	147 E	-	60	7 20	17 44.76	-41 50.7	3.191	4.064	8.3	21.5	145 E	3	74
6 30	17 48.03	-55 50.4	2.823	3.711	8.8	22.0	146 E	-	60	153542 2001 SS ₁₀₇									
7 5	17 40.98	-55 27.4	2.832	3.706	9.2	22.0	144 E	-	61	5 31	18 44.67	- 3 52.5	3.432	4.288	8.1	21.8	143 W	41	68
7 10	17 34.43	-54 59.1	2.846	3.701	9.7	22.0	142 E	-	61	6 10	18 38.16	- 3 23.2	3.391	4.312	6.4	21.7	152 W	42	67
7 15	17 28.51	-54 26.0	2.867	3.695	10.4	22.1	139 E	-	62	6 20	18 30.90	- 3 3.1	3.377	4.335	5.1	21.7	158 W	42	67
7 20	17 23.31	-53 48.9	2.893	3.689	11.1	22.1	136 E	-	62	6 30	18 23.37	- 2 52.8	3.391	4.357	4.7	21.7	159 E	42	67
314005 2004 UK										7 10	18 16.07	- 2 52.2	3.433	4.379	5.5	21.7	156 E	42	67
5 31	18 33.26	+ 5 54.1	2.282	3.122	12.2	21.5	139 W	51	58	7 20	18 9.46	- 3 0.8	3.504	4.400	7.0	21.9	148 E	42	67
6 10	18 25.19	+ 6 25.0	2.225	3.117	10.6	21.4	146 W	51	58	425250 2009 WG ₅₄									
6 20	18 15.94	+ 6 35.7	2.193	3.112	9.5	21.3	150 W	52	57	5 31	18 46.01	-32 36.7	0.648	1.603	19.3	22.3	149 W	12	83
6 30	18 6.28	+ 6 24.0	2.185	3.104	9.6	21.3	150 E	51	58	6 5	18 37.77	-34 6.5	0.647	1.622	15.8	22.2	154 W	11	82
7 10	17 57.04	+ 5 50.7	2.203	3.096	10.7	21.3	146 E	51	58	6 10	18 28.33	-35 29.4	0.651	1.641	12.5	22.1	160 W	10	81
7 20	17 48.96	+ 4 58.1	2.245	3.087	12.4	21.4	139 E	50	59	6 15	18 18.05	-36 42.4	0.660	1.659	10.0	22.0	164 W	8	79
508594 2017 OJ ₆₁										6 20	18 7.42	-37 43.2	0.674	1.677	8.7	22.1	165 W	7	78
5 31	18 35.76	-26 27.3	1.297	2.241	12.4	21.9	152 W	19	90	6 25	17 56.93	-38 30.8	0.694	1.695	9.3	22.2	164 E	6	77
6 10	18 27.45	-26 41.4	1.221	2.212	7.8	21.5	163 W	18	89	6 30	17 47.09	-39 5.3	0.719	1.712	11.2	22.3	161 E	6	77
6 20	18 16.53	-26 51.2	1.169	2.182	2.8	21.1	174 W	18	89	7 5	17 38.31	-39 27.8	0.749	1.729	13.6	22.5	156 E	6	77
6 30	18 4.30	-26 53.5	1.141	2.152	3.9	21.1	172 E	18	89	7 10	17 30.86	-39 40.1	0.784	1.746	16.2	22.8	151 E	5	76
7 10	17 52.51	-26 47.4	1.137	2.122	9.4	21.3	160 E	18	89	344184 2001 DT ₁₀₅									
7 20	17 42.78	-26 34.4	1.156	2.091	14.7	21.5	149 E	18	89	5 31	18 46.83	-14 34.3	2.470	3.368	9.4	21.7	147 W	30	79
436654 2011 RR ₁₂										6 10	18 39.70	-14 30.4	2.384	3.347	6.5	21.5	158 W	30	79
5 31	18 37.54	- 9 12.8	0.854	1.793	17.8	21.2	147 W	36	73	6 20	18 31.16	-14 31.9	2.324	3.324	3.7	21.3	168 W	30	79
6 5	18 34.08	- 8 30.5	0.811	1.772	15.6	20.9	152 W	36	73	6 30	18 21.86								

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

2020		α_{2000}	δ_{2000}	Δ	r	β	V	ψ	$45^\circ-26^\circ$	2020		α_{2000}	δ_{2000}	Δ	r	β	V	ψ	$45^\circ-26^\circ$		
523648 2010 WP₈																					
5	31	18 50.80	-23 22.6	1.535	2.455	12.6	21.9	148 W	22	87	5	31	18 50.80	-23 22.6	1.535	2.455	12.6	21.9	148 W	22	87
6	5	18 44.71	-22 58.5	1.521	2.474	10.3	21.8	154 W	22	87	6	5	18 44.71	-22 58.5	1.521	2.474	10.3	21.8	154 W	22	87
6	10	18 38.08	-22 33.6	1.512	2.492	7.8	21.7	161 W	22	87	6	10	18 38.08	-22 33.6	1.512	2.492	7.8	21.7	161 W	22	87
6	15	18 31.09	-22 8.0	1.510	2.510	5.3	21.6	167 W	23	86	6	15	18 31.09	-22 8.0	1.510	2.510	5.3	21.6	167 W	23	86
6	20	18 23.90	-21 41.7	1.516	2.527	2.8	21.5	173 W	23	86	6	20	18 23.90	-21 41.7	1.516	2.527	2.8	21.5	173 W	23	86
6	25	18 16.72	-21 15.1	1.528	2.544	0.9	21.4	178 W	24	85	6	25	18 16.72	-21 15.1	1.528	2.544	0.9	21.4	178 W	24	85
6	30	18 9.73	-20 48.5	1.548	2.561	2.6	21.6	173 E	24	85	6	30	18 9.73	-20 48.5	1.548	2.561	2.6	21.6	173 E	24	85
7	5	18 3.11	-20 22.3	1.576	2.577	5.0	21.8	167 E	25	84	7	5	18 3.11	-20 22.3	1.576	2.577	5.0	21.8	167 E	25	84
7	10	17 57.00	-19 57.1	1.610	2.593	7.3	21.9	161 E	25	84	7	10	17 57.00	-19 57.1	1.610	2.593	7.3	21.9	161 E	25	84
7	15	17 51.50	-19 33.1	1.651	2.608	9.5	22.1	155 E	25	84	7	15	17 51.50	-19 33.1	1.651	2.608	9.5	22.1	155 E	25	84
7	20	17 46.72	-19 10.7	1.698	2.623	11.5	22.2	149 E	26	83	7	20	17 46.72	-19 10.7	1.698	2.623	11.5	22.2	149 E	26	83
7	25	17 42.70	-18 50.3	1.751	2.637	13.3	22.4	143 E	26	83	7	25	17 42.70	-18 50.3	1.751	2.637	13.3	22.4	143 E	26	83
490791 2010 VE₁																					
5	31	18 52.06	-29 48.7	1.087	2.018	15.6	22.4	148 W	15	86	5	31	18 52.06	-29 48.7	1.087	2.018	15.6	22.4	148 W	15	86
6	5	18 46.08	-30 21.3	1.080	2.040	12.8	22.3	154 W	15	86	6	5	18 46.08	-30 21.3	1.080	2.040	12.8	22.3	154 W	15	86
6	10	18 39.33	-30 51.4	1.080	2.061	10.0	22.2	159 W	14	85	6	10	18 39.33	-30 51.4	1.080	2.061	10.0	22.2	159 W	14	85
6	15	18 32.00	-31 17.9	1.084	2.082	7.3	22.1	165 W	14	85	6	15	18 32.00	-31 17.9	1.084	2.082	7.3	22.1	165 W	14	85
6	20	18 24.35	-31 39.9	1.095	2.103	5.0	22.0	170 W	13	84	6	20	18 24.35	-31 39.9	1.095	2.103	5.0	22.0	170 W	13	84
6	25	18 16.65	-31 56.9	1.113	2.123	4.1	22.0	171 W	13	84	6	25	18 16.65	-31 56.9	1.113	2.123	4.1	22.0	171 W	13	84
6	30	18 9.20	-32 8.7	1.136	2.144	5.1	22.2	169 E	13	84	6	30	18 9.20	-32 8.7	1.136	2.144	5.1	22.2	169 E	13	84
7	5	18 2.24	-32 15.7	1.166	2.163	7.2	22.3	165 E	13	84	7	5	18 2.24	-32 15.7	1.166	2.163	7.2	22.3	165 E	13	84
7	10	17 55.96	-32 18.3	1.202	2.183	9.5	22.5	159 E	13	84	7	10	17 55.96	-32 18.3	1.202	2.183	9.5	22.5	159 E	13	84
7	15	17 50.52	-32 17.1	1.244	2.202	11.7	22.7	154 E	13	84	7	15	17 50.52	-32 17.1	1.244	2.202	11.7	22.7	154 E	13	84
483506 2002 XU₆₆																					
5	31	18 52.30	-35 39.8	1.458	2.372	13.6	21.9	147 W	9	80	5	31	18 52.30	-35 39.8	1.458	2.372	13.6	21.9	147 W	9	80
6	5	18 47.68	-35 18.6	1.395	2.340	11.8	21.7	152 W	10	81	6	5	18 47.68	-35 18.6	1.395	2.340	11.8	21.7	152 W	10	81
6	10	18 42.09	-34 52.0	1.338	2.309	9.7	21.5	157 W	10	81	6	10	18 42.09	-34 52.0	1.338	2.309	9.7	21.5	157 W	10	81
6	15	18 35.61	-34 19.1	1.287	2.277	7.6	21.3	163 W	11	82	6	15	18 35.61	-34 19.1	1.287	2.277	7.6	21.3	163 W	11	82
6	20	18 28.36	-33 39.0	1.242	2.245	5.6	21.1	167 W	11	82	6	20	18 28.36	-33 39.0	1.242	2.245	5.6	21.1	167 W	11	82
6	25	18 20.54	-32 51.2	1.204	2.213	4.4	20.9	170 W	12	83	6	25	18 20.54	-32 51.2	1.204	2.213	4.4	20.9	170 W	12	83
6	30	18 12.40	-31 55.5	1.172	2.180	4.8	20.8	170 E	13	84	6	30	18 12.40	-31 55.5	1.172	2.180	4.8	20.8	170 E	13	84
7	5	18 4.19	-30 52.2	1.148	2.148	6.7	20.9	166 E	14	85	7	5	18 4.19	-30 52.2	1.148	2.148	6.7	20.9	166 E	14	85
7	10	17 56.19	-29 42.1	1.130	2.115	9.3	20.9	160 E	15	86	7	10	17 56.19	-29 42.1	1.130	2.115	9.3	20.9	160 E	15	86
7	15	17 48.64	-28 26.5	1.119	2.082	12.2	21.0	154 E	17	88	7	15	17 48.64	-28 26.5	1.119	2.082	12.2	21.0	154 E	17	88
7	20	17 41.80	-27 6.9	1.114	2.049	15.1	21.0	148 E	18	89	7	20	17 41.80	-27 6.9	1.114	2.049	15.1	21.0	148 E	18	89
7	25	17 35.84	-25 45.3	1.115	2.016	18.0	21.1	142 E	19	90	7	25	17 35.84	-25 45.3	1.115	2.016	18.0	21.1	142 E	19	90
8	4	17 27.13	-23 2.3	1.131	1.950	23.3	21.2	131 E	22	87	8	4	17 27.13	-23 2.3	1.131	1.950	23.3	21.2	131 E	22	87
8	9	17 24.49	-21 43.6	1.145	1.917	25.6	21.3	125 E	23	86	8	9	17 24.49	-21 43.6	1.145	1.917	25.6	21.3	125 E	23	86
8	14	17 23.01	-20 28.1	1.162	1.884	27.8	21.3	120 E	25	84	8	14	17 23.01	-20 28.1	1.162	1.884	27.8	21.3	120 E	25	84
8	19	17 22.67	-19 16.3	1.181	1.851	29.7	21.4	115 E	26*	83	8	19	17 22.67	-19 16.3	1.181	1.851	29.7	21.4	115 E	26*	83
8	24	17 23.46	-18 8.4	1.202	1.819	31.5	21.4	110 E	27*	82	8	24	17 23.46	-18 8.4	1.202	1.819	31.5	21.4	110 E	27*	82
8	29	17 25.30	-17 4.4	1.224	1.786	33.0	21.5	106 E	28*	81	8	29	17 25.30	-17 4.4	1.224	1.786	33.0	21.5	106 E	28*	81
52340 1992 SY																					
5	31	18 52.49	-34 33.8	2.023	2.925	10.9	22.3	147 W	10	81	5	31	18 52.49	-34 33.8	2.023	2.925	10.9	22.3	147 W	10	81
6	5	18 46.85	-34 50.7	2.008	2.944	9.2	22.3	152 W	10	81	6	5	18 46.85	-34 50.7	2.008	2.944	9.2	22.3	152 W	10	81
6	10	18 40.67	-35 5.0	1.999	2.963	7.5	22.2	158 W	10	81	6	10	18 40.67	-35 5.0	1.999	2.963	7.5	22.2	158 W	10	81
6	15	18 34.10	-35 16.1	1.997	2.981	5.9	22.1	162 W	10	81	6	15	18 34.10	-35 16.1	1.997	2.981	5.9	22.1	162 W	10	81
6	20	18 27.29	-35 23.5	2.003	2.999	4.7	22.1	166 W	10	81	6	20	18 27.29	-35 23.5	2.003	2.999	4.7	22.1	166 W	10	81
6	25	18 20.39	-35 27.0	2.016	3.017	4.1	22.1	168 W	10	81	6	25	18 20.39	-35 27.0	2.016	3.017	4.1	22.1	168 W	10	81
6	30	18 13.59	-35 26.6	2.036	3.034	4.4	22.1	167 E	10	81	6	30	18 13.59	-35 26.6	2.036	3.034	4.4	22.1	167 E	10	81
7	5	18 7.04	-35 22.4	2.063	3.051	5.5	22.2	163 E	10	81	7	5	18 7.04	-35 22.4	2.063	3.051	5.5	22.2	163 E	10	81
7	10	18 0.89	-35 14.8	2.098	3.068	6.9	22.4	159 E	10	81	7	10	18 0.89	-35 14.8	2.098	3.068	6.9	22.4	159 E	10	81
7	15	17 55.24	-35 4.3	2.139	3.084	8.4	22.5	154 E	10	81	7	15	17 55.24	-35 4.3	2.139	3.084	8.4	22.5	154 E	10	81
306749 2000 YS₂																					
5	31	18 52.57	-29 32.5	1.607	2.523	12.4	21.6	148 W	15	86	5	31	18 52.57	-29 32.5	1.607	2.523	12.4	21.6	148 W	15	86
6	5	18 47.96	-29 52.8	1.582	2.530	10.4	21.5	153 W	15	86	6	5	18 47.96	-29 52.8	1.582	2.530	10.4	21.5	153 W	15	86
6	10	18 42.69	-30 11.9	1.563	2.537	8.3	21.4	159 W	15	86	6	10	18 42.69	-30 11.9	1.563	2.537	8.3	21.4	159 W	15	86
6	15	18 36.87	-30 29.2	1.551	2.544	6.2	21.3	164 W	15	86	6	15	18 36.87	-30 29.2	1.551	2.544	6.2	21.3	164 W	15	86
6	20	18 30.65	-30 44.1	1.545	2.550	4.3	21.2	169 W	14	85	6	20	18 30.65	-30 44.1	1.545	2.550	4.3	21.2	169 W	14	85
6	25	18 24.22	-30 56.0	1.545	2.556	3.1	21.1	172 W	14	85	6	25	18 24.22	-30 56.0	1.545	2.556	3.1	21.1	172 W	14	85
6	30	18 17.76	-31 4.7	1.553	2.562	3.5	21.1	171 E	14	85	6	30	18 17.76	-31 4.7	1.553	2.562	3.5	21.1	171 E	14	85
7	5	18 11.48	-31 10.2	1.568	2.568	5.2	21.3	167 E	14	8											

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°
422719 2001 AU₁										491007 2011 GL₆₂									
(continuation)										(continuation)									
7 5	18 33.52	-22 45.1	1.357	2.371	2.3	20.2	175 E	22	87	6 20	18 31.73	+12 20.4	0.795	1.720	20.8	21.2	143 W	57	52
7 10	18 27.19	-22 31.2	1.347	2.352	5.0	20.3	168 E	22	87	6 25	18 18.15	+13 14.2	0.765	1.693	21.0	21.1	143 W	58	51
7 15	18 21.05	-22 16.3	1.343	2.332	7.7	20.4	162 E	23	86	6 30	18 3.46	+13 53.3	0.740	1.664	22.1	21.0	142 E	59	50
7 20	18 15.31	-22 0.7	1.346	2.312	10.3	20.5	156 E	23	86	7 5	17 48.09	+14 15.5	0.722	1.633	24.0	21.0	139 E	59	50
7 25	18 10.11	-21 44.7	1.355	2.292	12.8	20.6	150 E	23	86	7 10	17 32.52	+14 19.3	0.710	1.601	26.5	21.0	135 E	59	50
7 30	18 5.62	-21 28.8	1.369	2.271	15.1	20.7	144 E	24	85	7 15	17 17.28	+14 4.6	0.703	1.567	29.6	21.0	130 E	59	50
8 4	18 1.92	-21 13.2	1.387	2.251	17.3	20.8	139 E	24	85	7 20	17 2.83	+13 32.5	0.702	1.531	32.9	21.0	125 E	59	50
8 9	17 59.10	-20 58.3	1.411	2.230	19.4	20.9	133 E	24	85	7 25	16 49.59	+12 45.0	0.704	1.493	36.4	21.1	119 E	59	50
8 14	17 57.18	-20 44.2	1.437	2.209	21.2	20.9	128 E	24	85	7 30	16 37.79	+11 45.0	0.709	1.452	39.8	21.1	114 E	57	52
8 19	17 56.20	-20 31.1	1.467	2.188	22.9	21.0	123 E	24	85	8 4	16 27.55	+10 35.3	0.717	1.410	43.2	21.2	108 E	55	53
8 24	17 56.16	-20 19.1	1.500	2.167	24.3	21.1	118 E	25	84	8 9	16 18.87	+9 18.5	0.725	1.366	46.5	21.2	102 E	53	55
8 29	17 57.04	-20 8.0	1.534	2.146	25.6	21.2	113 E	25	84	8 14	16 11.69	+7 56.5	0.733	1.319	49.7	21.3	97 E	51	56
9 3	17 58.79	-19 57.8	1.570	2.124	26.7	21.2	109 E	25	84	8 19	16 5.88	+6 30.9	0.741	1.270	52.8	21.3	91 E	48	57
9 8	18 1.40	-19 48.2	1.607	2.103	27.6	21.3	105 E	25	84	8 24	16 1.28	+5 2.9	0.746	1.218	56.0	21.3	86 E	45	59*
9 13	18 4.80	-19 39.1	1.644	2.081	28.4	21.3	101 E	25	84	8 29	15 57.69	+3 33.2	0.749	1.163	59.1	21.3	81 E	42	59*
9 18	18 8.96	-19 30.1	1.682	2.060	29.0	21.4	97 E	25	84	9 3	15 54.87	+2 2.1	0.749	1.106	62.4	21.3	76 E	40	58*
9 23	18 13.85	-19 21.0	1.720	2.038	29.5	21.4	93 E	25	83*	9 8	15 52.54	+0 29.6	0.745	1.046	66.0	21.3	72 E	37	56*
9 28	18 19.42	-19 11.5	1.757	2.016	29.8	21.4	90 E	26	80*	9 13	15 50.40	+1 4.9	0.737	0.983	70.0	21.3	67 E	34	53*
10 3	18 25.61	-19 1.3	1.794	1.994	30.0	21.5	86 E	26	77*	9 18	15 48.03	+2 42.1	0.724	0.916	74.5	21.2	62 E	31	50*
10 8	18 32.39	-18 50.1	1.830	1.972	30.2	21.5	83 E	26	74*	9 23	15 44.89	+4 23.0	0.706	0.847	80.0	21.2	56 E	28	46*
										9 28	15 40.14	+6 8.9	0.682	0.774	86.8	21.2	50 E	24	41*
										10 3	15 32.60	+8 1.1	0.655	0.697	95.4	21.2	44 E	20	35*
										10 8	15 20.54	+10 0.1	0.625	0.618	106.9	21.4	36 E	15	28*
163412 2002 RV₂₅										461363 2000 GQ₁₄₈									
5 31	19 9.11	-71 12.2	1.845	2.573	18.6	21.6	126 W	-	45	5 31	19 14.75	-40 42.8	5.672	6.492	5.6	21.5	141 W	4	75
6 2	19 5.09	-71 42.3	1.833	2.568	18.5	21.6	126 W	-	44	6 10	19 10.41	-41 1.4	5.599	6.495	4.5	21.4	150 W	4	75
6 4	19 0.55	-72 11.2	1.821	2.562	18.5	21.6	127 W	-	44	6 20	19 5.24	-41 15.5	5.551	6.498	3.5	21.3	157 W	4	75
6 6	18 55.49	-72 38.7	1.811	2.557	18.4	21.6	127 W	-	43	6 30	18 59.53	-41 23.9	5.531	6.502	2.9	21.3	161 W	4	75
6 8	18 49.90	-73 4.7	1.800	2.551	18.3	21.6	128 W	-	43	7 10	18 53.65	-41 25.8	5.539	6.505	3.0	21.3	160 E	4	75
6 10	18 43.77	-73 28.9	1.791	2.546	18.3	21.5	128 W	-	43	7 20	18 47.98	-41 20.8	5.576	6.508	3.8	21.4	155 E	4	75
6 12	18 37.11	-73 51.2	1.783	2.540	18.3	21.5	128 W	-	42	7 30	18 42.86	-41 9.4	5.639	6.511	4.9	21.4	147 E	4	75
6 14	18 29.94	-74 11.4	1.775	2.534	18.3	21.5	128 W	-	42										
6 16	18 22.30	-74 29.2	1.767	2.528	18.3	21.5	129 W	-	42	288592 2004 JW₂₀									
6 18	18 14.24	-74 44.5	1.761	2.523	18.4	21.5	129 W	-	41	5 31	19 28.30	-2 44.8	0.594	1.485	29.8	21.7	133 W	42	67
6 20	18 5.81	-74 57.1	1.755	2.517	18.4	21.5	128 W	-	41	6 5	19 18.73	+0 50.1	0.560	1.481	27.0	21.5	138 W	44	65
6 22	17 57.09	-75 7.0	1.750	2.511	18.5	21.5	128 E	-	41	6 10	19 6.86	+1 6.9	0.530	1.475	24.0	21.3	143 W	46	63
6 24	17 48.18	-75 14.0	1.746	2.504	18.6	21.5	128 E	-	41	6 15	18 52.71	+3 3.2	0.505	1.467	21.9	21.1	147 W	48	61
6 26	17 39.18	-75 18.1	1.743	2.498	18.8	21.5	128 E	-	41	6 20	18 36.49	+4 54.3	0.485	1.457	20.5	21.0	150 W	50	59
6 28	17 30.18	-75 19.2	1.740	2.492	18.9	21.4	127 E	-	41	6 25	18 18.67	+6 35.1	0.472	1.445	20.6	20.9	150 W	52	57
6 30	17 21.30	-75 17.5	1.738	2.486	19.1	21.4	127 E	-	41	6 30	17 59.94	+8 0.3	0.465	1.431	22.4	20.9	148 E	53	56
										7 5	17 41.12	+9 6.4	0.464	1.415	25.6	21.0	143 E	54	55
										7 10	17 23.01	+9 51.4	0.468	1.398	29.5	21.1	137 E	55	54
										7 15	17 6.28	+10 15.8	0.477	1.378	33.8	21.2	131 E	55	54
										7 20	16 51.43	+10 21.4	0.490	1.356	38.1	21.3	125 E	55	54
										7 25	16 38.71	+10 11.3	0.505	1.332	42.2	21.5	118 E	55	54
										333305 2000 VB₃₅									
										5 31	19 30.85	-13 38.1	2.317	3.134	12.8	21.4	137 W	31	78
										6 10	19 25.59	-13 18.7	2.205	3.108	10.2	21.1	147 W	32	77
										6 20	19 18.30	-13 5.9	2.116	3.080	7.2	20.9	158 W	32	77
										6 30	19 9.44	-13 0.1	2.052	3.052	4.2	20.7	167 W	32	77
										7 10	18 59.74	-13 1.1	2.017	3.023	3.4	20.6	170 E	32	77
										7 20	18 50.06	-13 8.4	2.010	2.993	6.0	20.7	162 E	32	77
										7 30	18 41.29	-13 20.9	2.030	2.963	9.4	20.8	152 E	32	77
										8 9	18 34.24	-13 37.4	2.074	2.931	12.6	21.0	141 E	31	78
										8 19	18 29.41	-13 56.7	2.139	2.899	15.4	21.1	130 E	31	78
										8 29	18 27.12	-14 17.5	2.219	2.866	17.7	21.2	120 E	31	78
										9 8	18 27.45	-14 38.2	2.311	2.832	19.4	21.4	111 E	30	79
										9 18	18 30.29	-14 57.6	2.410	2.798	20.6	21.5	102 E	30	79
										497168 2004 SG₅									
										5 31	19 36.85	-32 33.3	1.377	2.236	17.7	21.5	138 W	12	83
										6 10	19 33.16	-33 48.4	1.271	2.197	14.3	21.1	148 W	11	82
										6 20	19 25.51	-35 7.7	1.184	2.157	10.5	20.8	157 W	10	81
										6 30	19 14.22	-36 21.9	1.119	2.116	7.4	20.5	164 W	9	80
										7 10	19 0.46	-37 20.4	1.077	2.075	7.6	20.4	164 E	8	79
										7 15	18 53.21	-37 40.9	1.066	2.054	9.2	20.4	161 E	7	78
										7 20	18 46.09	-37 54.7	1.060	2.033	11.4	20.5	157 E	7	78
										7 25	18 39.39	-38 1.5	1.059	2.012	13.8	20.5	152 E	7	78
										7 30	18 33.38	-38 1.7	1.063	1.991	16.3	20.6	147 E	7	78
										8 4	18 28.29	-37 55.9	1.073	1.970	18.7	20.7	141 E	7	78
										8 9	18 24.27	-37 45.1	1.086	1.949	21.0	20.8	136 E	7	78
										8 14	18 21.44	-37 30.0	1.102	1.928	23.2	20.8	131		

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°
497168 2004 SG₅ (continuation)									491770 2012 WP₉ (continuation)								
9 23	18 42.29	-34 11.3	1.306	1.762	34.3	21.3	99 E	11 82	8 24	19 24.60	-30 36.4	1.244	2.097	19.3	20.4	137 E	14 85
9 28	18 49.55	-33 39.6	1.335	1.742	34.9	21.4	95 E	11 82	8 29	19 22.89	-30 37.3	1.264	2.076	21.4	20.4	132 E	14 85
10 3	18 57.60	-33 6.0	1.364	1.722	35.5	21.4	92 E	12 82*	9 8	19 22.54	-30 28.8	1.315	2.036	24.8	20.6	122 E	15 86
10 8	19 6.36	-32 30.1	1.392	1.703	35.9	21.4	89 E	12 81*	9 18	19 26.26	-30 8.2	1.374	1.997	27.5	20.7	113 E	15 86
10 13	19 15.78	-31 51.6	1.420	1.684	36.3	21.5	86 E	13* 80*	9 28	19 33.85	-29 36.8	1.440	1.959	29.6	20.8	105 E	15 86
10 18	19 25.79	-31 10.1	1.447	1.665	36.5	21.5	84 E	14* 77*	10 8	19 44.86	-28 54.7	1.508	1.921	31.0	20.9	98 E	16 87
162195 1999 RK₄₅									488788 2004 XF₄₂								
5 31	19 42.38	-16 4.2	0.992	1.853	22.8	21.6	135 W	29 80	5 31	20 49.96	-24 7.6	1.364	2.079	24.7	21.4	121 W	20* 88
6 5	19 31.80	-16 33.2	0.990	1.896	19.1	21.5	142 W	28 81	6 10	20 55.82	-24 53.5	1.243	2.045	22.5	21.1	130 W	20* 89
6 10	19 20.31	-17 3.5	0.993	1.939	15.3	21.5	150 W	28 81	6 20	20 58.69	-25 58.4	1.134	2.011	19.6	20.8	138 W	19 89
6 15	19 8.20	-17 33.8	1.003	1.980	11.4	21.4	157 W	27 82	6 30	20 58.09	-27 22.3	1.041	1.977	15.9	20.4	148 W	18 89
6 20	18 55.81	-18 3.1	1.021	2.019	7.6	21.3	165 W	27 82	7 5	20 56.42	-28 10.2	1.000	1.960	13.8	20.3	153 W	17 88
6 25	18 43.52	-18 30.5	1.047	2.058	4.0	21.2	172 W	26 83	7 10	20 53.83	-29 1.0	0.965	1.943	11.6	20.1	157 W	16 87
6 30	18 31.69	-18 55.3	1.080	2.095	2.1	21.2	176 E	26 83	7 15	20 50.36	-29 53.3	0.934	1.926	9.5	19.9	162 W	15 86
7 5	18 20.64	-19 17.4	1.122	2.132	4.4	21.5	171 E	26 83	7 20	20 46.07	-30 45.6	0.909	1.910	7.8	19.8	165 W	14 85
7 10	18 10.60	-19 36.7	1.171	2.167	7.4	21.8	164 E	25 84	7 25	20 41.13	-31 35.9	0.890	1.893	6.9	19.6	167 W	13 84
7 15	18 1.71	-19 53.7	1.227	2.200	10.2	22.0	157 E	25 84	7 30	20 35.74	-32 22.6	0.875	1.877	7.5	19.6	166 E	13 84
7 20	17 54.08	-20 8.8	1.290	2.233	12.8	22.3	151 E	25 84	8 4	20 30.14	-33 3.9	0.866	1.860	9.1	19.6	163 E	12 83
7 25	17 47.72	-20 22.3	1.358	2.265	15.0	22.5	145 E	25 84	8 9	20 24.59	-33 38.4	0.863	1.844	11.5	19.7	159 E	11 82
303959 2005 YW₁₉₅									467550 2007 TY₉₂								
5 31	19 49.69	-60 56.3	1.896	2.647	17.5	21.4	128 W	- 55	5 31	19 56.54	- 8 15.0	1.205	2.005	23.1	21.2	129 W	37 72
6 5	19 43.58	-61 34.9	1.876	2.658	16.7	21.4	131 W	- 54	6 10	19 57.52	- 7 13.5	1.102	1.974	20.3	20.9	138 W	38 71
6 10	19 36.01	-62 7.8	1.861	2.669	15.9	21.3	134 W	- 54	6 20	19 55.28	- 6 25.6	1.013	1.943	16.8	20.6	146 W	39 70
6 15	19 27.09	-62 33.2	1.851	2.680	15.2	21.3	136 W	- 53	6 30	19 49.89	- 5 56.8	0.941	1.912	12.8	20.2	155 W	39 70
6 20	19 17.08	-62 49.7	1.845	2.690	14.6	21.3	138 W	- 53	7 10	19 41.95	- 5 51.8	0.888	1.882	9.3	19.9	163 W	39 70
6 25	19 6.30	-62 56.0	1.845	2.701	14.1	21.3	140 W	- 53	7 20	19 32.55	- 6 13.2	0.855	1.853	8.5	19.8	164 E	39 70
6 30	18 55.18	-62 51.3	1.850	2.711	13.9	21.3	140 W	- 53	7 30	19 23.30	- 6 59.5	0.842	1.825	11.7	19.8	159 E	38 71
7 5	18 44.16	-62 35.4	1.861	2.720	13.9	21.3	140 E	- 53	8 4	19 19.28	- 7 30.4	0.844	1.812	14.1	19.9	154 E	37 72
7 10	18 33.64	-62 8.8	1.877	2.730	14.0	21.3	139 E	- 54	8 9	19 15.93	- 8 5.2	0.849	1.799	16.6	20.0	150 E	37 72
7 15	18 23.97	-61 32.2	1.898	2.739	14.4	21.4	138 E	- 54	8 14	19 13.38	- 8 42.9	0.859	1.786	19.1	20.1	145 E	36 73
7 20	18 15.43	-60 47.0	1.925	2.748	14.9	21.4	136 E	- 55	8 19	19 11.77	- 9 22.6	0.873	1.773	21.5	20.2	140 E	36 73
7 25	18 8.21	-59 54.7	1.957	2.757	15.5	21.5	134 E	- 56	8 24	19 11.19	- 10 3.0	0.891	1.761	23.7	20.3	136 E	35 74
7 30	18 2.38	-58 56.9	1.993	2.765	16.1	21.6	131 E	- 57	8 29	19 11.68	- 10 43.2	0.911	1.749	25.8	20.4	131 E	34 75
491770 2012 WP₉									498761 2008 UH₃₃								
5 31	20 21.58	-23 54.3	1.697	2.450	19.2	21.4	128 W	21* 88	5 31	20 51.56	-10 50.0	0.998	1.717	31.7	21.3	117 W	34* 75
6 10	20 22.35	-24 32.4	1.565	2.409	16.7	21.1	137 W	20 89	6 10	21 2.10	- 9 36.4	0.907	1.697	29.8	21.0	124 W	35* 74
6 20	20 20.11	-25 22.9	1.449	2.367	13.5	20.8	147 W	20 89	6 20	21 9.88	- 8 34.7	0.825	1.678	27.1	20.7	131 W	36 73
6 30	20 14.78	-26 23.7	1.354	2.326	9.6	20.4	158 W	19 90	6 30	21 14.45	- 7 50.8	0.753	1.662	23.6	20.4	139 W	37 72
7 5	20 11.02	-26 56.6	1.314	2.305	7.5	20.2	163 W	18 89	7 10	21 15.62	- 7 30.4	0.694	1.647	19.1	20.1	148 W	37 72
7 10	20 6.62	-27 29.9	1.280	2.284	5.4	20.1	168 W	18 89	7 20	21 13.41	- 7 37.9	0.649	1.635	13.7	19.7	158 W	37 72
7 15	20 1.69	-28 2.9	1.252	2.263	3.8	19.9	172 W	17 88	7 30	21 8.47	- 8 14.3	0.619	1.625	7.9	19.4	167 W	37 72
7 20	19 56.38	-28 34.4	1.231	2.242	3.6	19.8	172 E	16 87	8 4	21 5.38	- 8 42.0	0.611	1.621	5.5	19.2	171 W	36 73
7 25	19 50.86	-29 3.5	1.216	2.221	5.1	19.9	169 E	16 87	8 9	21 2.14	- 9 14.7	0.607	1.617	4.7	19.2	173 E	36 73
7 30	19 45.34	-29 29.4	1.207	2.200	7.4	20.0	164 E	16 87	8 14	20 58.99	- 9 51.1	0.607	1.615	6.2	19.2	170 E	35 74
8 4	19 40.04	-29 51.4	1.204	2.179	9.9	20.0	158 E	15 86	8 19	20 56.16	- 10 29.6	0.612	1.613	8.9	19.4	166 E	35 74
8 9	19 35.14	-30 9.2	1.206	2.158	12.4	20.1	153 E	15 86	8 24	20 53.88	- 11 8.5	0.622	1.611	11.9	19.5	161 E	34 75
8 14	19 30.84	-30 22.6	1.214	2.138	14.8	20.2	147 E	15 86	8 29	20 52.35	- 11 46.1	0.635	1.611	14.9	19.7	156 E	33 76
8 19	19 27.28	-30 31.6	1.227	2.117	17.2	20.3	142 E	14 85	9 3	20 51.69	- 12 21.3	0.653	1.610	17.8	19.8	151 E	33 76
391595 2007 UR₂									491770 2012 WP₉								
5 31	20 52.27	-31 34.1	0.779	1.572	33.2	21.3	122 W	13* 84	9 13	20 53.28	- 13 20.0	0.699	1.612	22.9	20.1	141 E	32 77
6 5	20 57.52	-32 20.9	0.744	1.568	31.8	21.2	126 W	12* 84	9 18	20 55.58	- 13 42.1	0.726	1.614	25.1	20.3	137 E	31 78
6 10	21 1.77	-33 13.7	0.710	1.565	30.2	21.0	129 W	12* 83	9 28	21 3.09	- 14 9.6	0.791	1.620	28.7	20.6	129 E	31 78
6 15	21 4.87	-34 12.5	0.679	1.561	28.4	20.9	133 W	11 82	10 8	21 14.05	- 14 13.9	0.865	1.629	31.5	20.9	122 E	31 78
6 20	21 6.69	-35 16.9	0.651	1.557	26.4	20.7	137 W	10 81	10 18	21 27.79	- 13 55.7	0.947	1.640	33.4	21.2	115 E	31 78
6 25	21 7.11	-36 26.0	0.625	1.553	24.3	20.6	141 W	9 80	10 28	21 43.75	- 13 16.1	1.037	1.653	34.6	21.4	109 E	32 77
6 30	21 6.04	-37 38.2	0.602	1.549	22.1	20.4	145 W	7 78									

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°
391595 2007 UR₂									503984 2004 TT₉₉								
<i>(continuation)</i>									<i>(continuation)</i>								
7 5	21 3.42	-38 51.3	0.583	1.545	20.0	20.3	149 W	6 77	7 20	21 50.79	-9 37.4	0.628	1.594	18.2	19.7	151 W	35 74
7 10	20 59.25	-40 2.7	0.567	1.541	18.0	20.1	152 W	5 76	7 30	21 49.48	-10 1.0	0.593	1.587	12.2	19.4	161 W	35 74
7 15	20 53.61	-41 9.2	0.555	1.537	16.4	20.0	155 W	4 75	8 4	21 47.78	-10 21.4	0.581	1.585	9.0	19.2	166 W	35 74
7 20	20 46.67	-42 7.1	0.547	1.532	15.5	20.0	156 W	3 74	8 9	21 45.57	-10 46.4	0.574	1.583	5.6	19.0	171 W	34 75
7 25	20 38.80	-42 53.2	0.542	1.528	15.5	19.9	156 W	2 73	8 14	21 43.03	-11 14.7	0.570	1.582	2.4	18.8	176 W	34 75
7 30	20 30.46	-43 24.9	0.542	1.524	16.3	20.0	155 E	2 73	8 19	21 40.38	-11 44.8	0.571	1.582	2.2	18.8	177 E	33 76
8 4	20 22.17	-43 40.8	0.546	1.520	17.9	20.0	153 E	1 72	8 24	21 37.87	-12 15.2	0.576	1.583	5.4	19.0	172 E	33 76
8 9	20 14.41	-43 40.6	0.553	1.515	20.0	20.1	149 E	1 72	8 29	21 35.75	-12 44.1	0.586	1.585	8.8	19.2	166 E	32 77
8 14	20 7.64	-43 25.2	0.563	1.511	22.3	20.2	145 E	2 73	9 3	21 34.21	-13 10.1	0.600	1.587	12.0	19.4	161 E	32 77
8 19	20 2.21	-42 56.0	0.577	1.507	24.8	20.3	141 E	2 73	9 8	21 33.39	-13 32.3	0.617	1.591	15.1	19.6	156 E	31 78
8 24	19 58.36	-42 15.2	0.594	1.503	27.1	20.5	137 E	3 74	9 13	21 33.39	-13 49.6	0.639	1.595	17.9	19.8	151 E	31 78
8 29	19 56.19	-41 25.0	0.613	1.499	29.4	20.6	133 E	4 75	9 18	21 34.29	-14 1.7	0.664	1.600	20.5	19.9	146 E	31 78
9 3	19 55.70	-40 27.4	0.635	1.494	31.4	20.7	129 E	5 76	9 28	21 38.90	-14 8.4	0.725	1.612	24.9	20.3	137 E	31 78
9 8	19 56.78	-39 24.1	0.658	1.490	33.3	20.9	126 E	6 77	10 8	21 46.97	-13 52.0	0.797	1.627	28.3	20.6	129 E	31 78
9 13	19 59.31	-38 16.3	0.684	1.486	35.0	21.0	122 E	7 78	10 18	21 57.99	-13 14.1	0.880	1.644	30.8	20.9	122 E	32 77
9 18	20 3.17	-37 5.0	0.710	1.483	36.5	21.1	119 E	8 79	10 28	22 11.42	-12 16.6	0.972	1.664	32.6	21.2	116 E	33 76
9 23	20 8.22	-35 50.8	0.738	1.479	37.8	21.2	115 E	9 80	11 7	22 26.66	-11 2.2	1.072	1.686	33.6	21.5	110 E	34 75
9 28	20 14.32	-34 34.2	0.768	1.475	39.0	21.3	112 E	10 81									
10 3	20 21.30	-33 15.4	0.798	1.471	39.9	21.4	109 E	12 83									
275742 2001 HL₁₈									264932 2002 VV₃₄								
5 31	20 56.81	-41 53.5	2.394	3.054	16.4	21.4	122 W	3* 74	5 31	21 13.85	-39 22.4	2.683	3.290	15.7	21.5	119 W	5* 77
6 5	20 56.41	-42 42.6	2.348	3.059	15.5	21.3	126 W	2* 73	6 10	21 13.52	-40 56.3	2.578	3.292	14.2	21.4	127 W	4* 75
6 10	20 55.22	-43 33.4	2.306	3.063	14.6	21.3	130 W	1* 72	6 20	21 10.38	-42 37.1	2.490	3.293	12.5	21.2	136 W	2 73
6 15	20 53.21	-44 25.1	2.268	3.067	13.7	21.2	134 W	1 72	7 30	21 4.30	-44 19.0	2.422	3.293	10.7	21.1	143 W	1 72
6 20	20 50.37	-45 16.8	2.236	3.071	12.7	21.1	138 W	- 71	6 10	20 55.47	-45 54.4	2.378	3.292	9.1	21.0	149 W	- 70
6 25	20 46.70	-46 7.5	2.208	3.075	11.7	21.1	142 W	- 70	7 20	20 44.37	-47 15.3	2.360	3.291	8.4	20.9	152 W	- 69
6 30	20 42.24	-46 56.1	2.186	3.078	10.8	21.0	145 W	- 69	7 30	20 31.97	-48 14.6	2.368	3.288	8.8	21.0	150 E	- 68
7 5	20 37.05	-47 41.4	2.171	3.081	10.0	21.0	148 W	- 68	8 9	20 19.52	-48 48.0	2.401	3.284	10.2	21.0	145 E	- 67
7 10	20 31.24	-48 22.3	2.161	3.084	9.5	20.9	150 W	- 68	8 19	20 8.29	-48 55.5	2.459	3.280	12.0	21.2	138 E	- 67
7 15	20 24.91	-48 57.9	2.158	3.087	9.2	20.9	151 W	- 67	8 29	19 59.35	-48 39.7	2.537	3.274	13.8	21.3	130 E	- 67
7 20	20 18.22	-49 27.2	2.161	3.089	9.2	20.9	151 W	- 67	9 8	19 53.36	-48 5.8	2.632	3.268	15.3	21.4	121 E	- 68
7 25	20 11.36	-49 49.6	2.171	3.091	9.5	21.0	150 E	- 66									
7 30	20 4.53	-50 4.7	2.187	3.093	10.1	21.0	148 E	- 66	317096 2001 TD₃₆								
8 4	19 57.93	-50 12.6	2.209	3.095	10.8	21.1	145 E	- 66	5 31	21 13.99	-26 48.2	1.493	2.146	25.0	21.3	116 W	17* 89
8 9	19 51.72	-50 13.5	2.237	3.097	11.7	21.1	142 E	- 66	6 10	21 20.29	-27 4.0	1.367	2.115	23.3	21.0	124 W	18* 89
8 14	19 46.06	-50 7.8	2.270	3.098	12.7	21.2	138 E	- 66	6 20	21 23.59	-27 32.6	1.252	2.083	20.9	20.7	133 W	17 88
8 19	19 41.08	-49 56.2	2.309	3.099	13.6	21.3	134 E	- 66	6 30	21 23.40	-28 13.5	1.150	2.050	17.7	20.4	142 W	17 88
8 24	19 36.89	-49 39.4	2.352	3.100	14.5	21.3	130 E	- 66	7 10	21 19.42	-29 3.0	1.064	2.018	13.8	20.0	152 W	16 87
8 29	19 33.54	-49 18.2	2.400	3.100	15.3	21.4	126 E	- 67	7 15	21 15.99	-29 29.0	1.028	2.002	11.7	19.9	157 W	16 87
9 3	19 31.07	-48 53.4	2.451	3.100	16.1	21.5	122 E	- 67	7 20	21 11.65	-29 54.2	0.997	1.986	9.6	19.7	161 W	15 86
									7 25	21 6.51	-30 17.2	0.972	1.970	7.8	19.6	165 W	15 86
									7 30	21 0.76	-30 36.6	0.952	1.954	6.8	19.5	167 W	14 85
									8 4	20 54.60	-30 50.9	0.937	1.938	7.1	19.4	166 E	14 85
									8 9	20 48.28	-30 59.2	0.928	1.922	8.6	19.4	164 E	14 85
									8 14	20 42.05	-31 0.5	0.925	1.906	10.8	19.5	159 E	14 85
									8 19	20 36.21	-30 54.6	0.926	1.891	13.3	19.6	155 E	14 85
									8 24	20 31.00	-30 41.5	0.933	1.875	15.9	19.7	149 E	14 85
									8 29	20 26.66	-30 21.6	0.944	1.860	18.5	19.8	144 E	15 86
									9 3	20 23.32	-29 55.5	0.959	1.845	20.9	19.9	139 E	15 86
									9 8	20 21.08	-29 24.1	0.978	1.830	23.2	20.0	134 E	16 87
									9 13	20 19.99	-28 48.1	1.000	1.815	25.3	20.1	130 E	16 87
									9 18	20 20.07	-28 8.1	1.025	1.801	27.2	20.1	125 E	17 88
									9 28	20 23.63	-26 38.3	1.081	1.773	30.3	20.3	117 E	18 89
									10 8	20 31.27	-24 57.9	1.144	1.746	32.8	20.5	109 E	20 89
									10 18	20 42.38	-23 8.0	1.211	1.721	34.5	20.6	102 E	22 87
									10 28	20 56.37	-21 8.8	1.280	1.698	35.6	20.7	96 E	24 85*
									11 7	21 12.65	-18 59.9	1.351	1.677	36.2	20.9	90 E	26 79*
									11 17	21 30.75	-16 41.1	1.422	1.658	36.4	20.9	85 E	28 72*
									11 27	21 50.30	-14 12.3	1.494	1.641	36.3	21.0	80 E	31 65*
									12 7	22 10.96	-11 34.0	1.565	1.627	35.9	21.1	76 E	33 58*
									12 17	22 32.52	-8 46.9	1.635	1.616	35.2	21.2	71 E	36* 51*
									12 27	22 54.81	-5 52.4	1.706	1.607	34.4	21.2	67 E	39* 45*
									1 6	23 17.70	-2 52.0	1.776	1.602	33.3	21.3	64 E	41* 40*
									1 16	23 41.15	+ 0 12.1	1.846	1.599	32.2	21.3	60 E	42* 35*
									514105 2015 BT₉₂								
									5 31	21 16.92	-10 12.7	0.882	1.566	37.1	21.3	111 W	33* 74
									6 10	21 26.79	-7 23.9	0.810	1.564	35.2	21.1	117 W	37* 71
									6 20	21 33.06	-4 35.2	0.745	1.562	32.5	20.8	124 W	40* 69
									6 30	21 35.20	-1 52.8	0.687	1.561	29.1	20.5	132 W	43 66
									7 10	21 32.94	+ 0 35.2	0.639	1.561	24.8	20.2	140 W	46 63
									7 15	21 30.14	+ 1 40.6	0.619	1.561	22.5	20.1	144 W	47 62
									7 20	21 26.29	+ 2 38.3	0.603	1.561	20.0	20.0	148 W	48 61
									7 25	21 21.54	+ 3 26.9	0.590	1.562	17.7	19.8	152 W	48 61
									7 30	21 16.09	+ 4 5.1	0.582	1.563	15.6	19.7	155 W	49 60
									8 4	21 10.18	+ 4 32.2	0.577	1.564	14.1	19.7	158 W	5

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

Table with columns for date (20/21), alpha2000, delta2000, Delta, r, beta, V, psi, 45-26 degrees. It contains multiple sections for different minor planets: 514105 2015 BT92, 427584 2003 RK11, 334038 2001 CK20, 508779 1999 VB138, 505657 2014 SR339, 508779 1999 VB138, and 454177 2013 GJ35. Each section lists observation data for various dates, including right ascension, declination, magnitude, and position.

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	$45^\circ-26^\circ$	20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	$45^\circ-26^\circ$	
505657 2014 SR339 (continuation)									505657 2014 SR339 (continuation)									
9 29	21 57.72	-80 48.2	0.412	1.116	63.4	19.1	95 E	—	1 12	13 10.93	-45 20.5	0.249	0.966	86.7	18.5	79 W	—	68*
9 30	21 54.32	-81 20.5	0.416	1.111	64.0	19.1	94 E	—	1 14	13 17.26	-42 7.4	0.240	0.972	85.6	18.3	80 W	3	71*
10 1	21 50.75	-81 51.6	0.421	1.107	64.6	19.1	93 E	—	136900 1998 HL49									
10 2	21 46.98	-82 21.4	0.425	1.102	65.2	19.2	92 E	—	5 31	21 54.62	+ 1 38.5	1.714	2.111	28.4	21.3	98 W	41*	62
10 3	21 42.99	-82 50.1	0.429	1.097	65.7	19.2	91 E	—	6 10	22 2.63	+ 3 31.3	1.534	2.045	28.7	21.0	105 W	46*	60
10 4	21 38.75	-83 17.7	0.433	1.093	66.3	19.2	90 E	—	6 20	22 9.05	+ 5 27.5	1.359	1.975	28.6	20.7	112 W	50*	59
10 5	21 34.21	-83 44.3	0.437	1.088	66.8	19.2	90 E	—	6 30	22 13.42	+ 7 26.0	1.189	1.901	27.9	20.3	119 W	52*	57
10 6	21 29.34	-84 9.9	0.441	1.083	67.3	19.3	89 E	—	7 10	22 15.20	+ 9 25.3	1.028	1.824	26.7	19.9	126 W	54	55
10 7	21 24.07	-84 34.5	0.445	1.079	67.8	19.3	88 E	—	7 20	22 13.55	+ 11 22.5	0.878	1.743	24.9	19.4	134 W	56	53
10 8	21 18.33	-84 58.3	0.448	1.074	68.3	19.3	87 E	—	7 25	22 11.12	+ 12 18.6	0.807	1.701	23.7	19.1	138 W	57	52
10 9	21 12.03	-85 21.2	0.452	1.070	68.7	19.3	86 E	—	7 30	22 7.41	+ 13 11.9	0.739	1.658	22.5	18.8	141 W	58	51
10 10	21 5.04	-85 43.3	0.456	1.065	69.2	19.4	86 E	—	8 4	22 2.26	+ 14 1.0	0.675	1.614	21.2	18.5	145 W	59	50
10 11	20 57.22	-86 4.5	0.459	1.061	69.6	19.4	85 E	—	8 9	21 55.47	+ 14 44.1	0.615	1.569	20.1	18.2	148 W	60	49
10 12	20 48.37	-86 25.0	0.463	1.056	70.0	19.4	84 E	—	8 14	21 46.83	+ 15 18.8	0.558	1.523	19.3	17.9	150 W	60	49
10 13	20 38.22	-86 44.6	0.466	1.052	70.5	19.4	83 E	—	8 19	21 36.15	+ 15 42.2	0.506	1.476	19.3	17.6	151 E	61	48
10 14	20 26.41	-87 3.4	0.469	1.047	70.9	19.4	83 E	—	8 24	21 23.30	+ 15 50.4	0.458	1.428	20.4	17.4	150 E	61	48
10 15	20 12.49	-87 21.3	0.472	1.043	71.3	19.5	82 E	—	8 29	21 8.21	+ 15 39.4	0.415	1.379	23.0	17.2	148 E	61	48
10 16	19 55.81	-87 38.2	0.475	1.039	71.6	19.5	81 E	—	9 3	20 50.86	+ 15 5.1	0.376	1.329	27.1	17.0	143 E	60	49
10 17	19 35.53	-87 54.0	0.478	1.034	72.0	19.5	81 E	—	9 8	20 31.30	+ 14 2.8	0.342	1.278	32.7	16.9	137 E	59	50
10 18	19 10.54	-88 8.3	0.481	1.030	72.4	19.5	80 E	—	9 13	20 9.65	+ 12 28.7	0.312	1.226	39.7	16.8	129 E	57	52
10 19	18 39.59	-88 20.9	0.483	1.026	72.8	19.5	80 E	—	9 18	19 46.08	+ 10 19.9	0.285	1.174	47.9	16.7	120 E	55	54
10 20	18 1.49	-88 31.1	0.486	1.022	73.1	19.5	79 E	—	9 23	19 20.66	+ 7 35.3	0.263	1.120	57.4	16.7	110 E	53	56
10 21	17 15.98	-88 38.4	0.488	1.018	73.5	19.5	79 E	—	9 28	18 53.18	+ 4 15.3	0.244	1.067	68.2	16.8	99 E	49	60
10 22	16 24.81	-88 42.1	0.490	1.014	73.8	19.6	78 E	—	10 3	18 23.06	+ 0 21.5	0.229	1.013	80.3	16.9	87 E	45*	61*
10 23	15 32.14	-88 41.7	0.493	1.010	74.1	19.6	77 E	—	10 8	17 49.45	- 4 1.4	0.217	0.960	94.1	17.3	73 E	38*	57*
10 24	14 42.92	-88 37.5	0.495	1.006	74.5	19.6	77 E	—	10 10	17 34.84	- 5 52.4	0.214	0.939	100.1	17.4	68 E	35*	54*
10 25	14 0.50	-88 30.1	0.496	1.002	74.8	19.6	76 E	—	10 12	17 19.51	- 7 45.2	0.212	0.917	106.4	17.7	62 E	31*	50*
10 26	13 25.73	-88 20.2	0.498	0.998	75.1	19.6	76 W	—	10 14	17 3.45	- 9 38.0	0.211	0.897	112.9	18.0	56 E	27*	45*
10 27	12 57.87	-88 8.5	0.500	0.994	75.4	19.6	75 W	—	10 16	16 46.71	- 11 29.0	0.211	0.876	119.6	18.4	50 E	23*	40*
10 28	12 35.66	-87 55.6	0.501	0.990	75.7	19.6	75 W	—	10 18	16 29.38	- 13 15.9	0.212	0.856	126.6	19.0	44 E	19*	35*
10 29	12 17.85	-87 41.8	0.502	0.986	76.1	19.6	75 W	—	10 20	16 11.61	- 14 56.4	0.215	0.835	133.7	19.7	37 E	15*	30*
10 30	12 3.44	-87 27.4	0.504	0.983	76.4	19.6	74 W	—	10 22	15 53.61	- 16 28.1	0.219	0.816	140.8	20.5	31 E	10*	24*
10 31	11 51.67	-87 12.4	0.505	0.979	76.7	19.6	74 W	—	326364 2000 VC2									
11 1	11 41.95	-86 57.1	0.505	0.976	77.0	19.7	73 W	—	5 31	22 2.48	- 36 2.4	2.591	3.067	18.3	21.4	108 W	5*	80
11 2	11 33.86	-86 41.5	0.506	0.972	77.3	19.7	73 W	—	6 10	22 5.96	- 37 20.4	2.474	3.068	17.2	21.3	117 W	6*	79
11 3	11 27.07	-86 25.6	0.507	0.969	77.6	19.7	73 W	—	6 20	22 6.89	- 38 51.5	2.368	3.067	15.7	21.2	125 W	6*	77
11 4	11 21.35	-86 9.4	0.507	0.966	77.9	19.7	72 W	—	6 30	22 4.96	- 40 32.4	2.278	3.065	14.0	21.0	133 W	4	75
11 5	11 16.52	-85 53.1	0.507	0.962	78.2	19.7	72 W	—	7 10	21 59.99	- 42 17.2	2.207	3.063	12.1	20.9	141 W	3	74
11 6	11 12.42	-85 36.6	0.508	0.959	78.5	19.7	71 W	—	7 20	21 52.00	- 43 58.0	2.157	3.059	10.5	20.8	147 W	1	72
11 7	11 8.95	-85 19.9	0.508	0.956	78.7	19.7	71 W	—	7 30	21 41.39	- 45 25.4	2.132	3.054	9.6	20.7	150 W	—	71
11 8	11 6.01	-85 3.1	0.507	0.953	79.0	19.7	71 W	—	8 9	21 29.05	- 46 30.4	2.133	3.048	9.8	20.7	149 W	—	69
11 9	11 3.54	-84 46.0	0.507	0.950	79.3	19.7	70 W	—	8 19	21 16.24	- 47 7.1	2.158	3.041	11.1	20.8	145 E	—	69
11 10	11 1.48	-84 28.8	0.507	0.947	79.6	19.7	70 W	—	8 29	21 4.37	- 47 13.6	2.207	3.033	12.9	20.9	138 E	—	69
11 11	10 59.79	-84 11.4	0.506	0.944	79.9	19.7	70 W	—	9 8	20 54.66	- 46 52.4	2.277	3.024	14.8	21.0	130 E	—	69
11 12	10 58.41	-83 53.8	0.505	0.942	80.2	19.7	70 W	—	9 18	20 47.89	- 46 8.3	2.363	3.014	16.5	21.1	122 E	—	70
11 13	10 57.32	-83 36.1	0.504	0.939	80.5	19.7	69 W	—	9 28	20 44.41	- 45 7.1	2.464	3.003	17.9	21.3	113 E	—	71
11 14	10 56.49	-83 18.1	0.503	0.936	80.8	19.7	69 W	—	10 8	20 44.14	- 43 53.9	2.573	2.991	18.8	21.4	105 E	1	72
11 15	10 55.90	-83 0.0	0.502	0.934	81.0	19.7	69 W	—	10 18	20 46.81	- 42 32.5	2.689	2.978	19.4	21.5	97 E	2	73
11 16	10 55.52	-82 41.6	0.501	0.932	81.3	19.7	69 W	—	515013 2009 SN69									
11 17	10 55.35	-82 22.9	0.499	0.929	81.6	19.7	68 W	—	5 31	22 13.76	- 9 4.5	1.378	1.817	33.6	21.5	98 W	30*	73
11 18	10 55.37	-82 4.1	0.498	0.927	81.9	19.7	68 W	—	6 10	22 30.92	- 7 39.0	1.266	1.789	33.6	21.3	103 W	33*	72
11 19	10 55.56	-81 44.9	0.496	0.925	82.2	19.7	68 W	—	6 20	22 46.97	- 6 20.0	1.160	1.764	33.2	21.0	108 W	36*	70
11 20	10 55.92	-81 25.5	0.494	0.923	82.5	19.7	68 W	—	6 30	23 1.61	- 5 11.3	1.061	1.741	32.3	20.8	114 W	39*	69
11 21	10 56.44	-81 5.9	0.492	0.921	82.7	19.7	68 W	—	7 10	23 14.53	- 4 16.8	0.969	1.720	30.8	20.5	120 W	41*	68
11 22	10 57.11	-80 45.9	0.490	0.919	83.0	19.7	68 W	—	7 20	23 25.31	- 3 40.9	0.885	1.702	28.5	20.2	127 W	41	68
11 23	10 57.92	-80 25.6	0.487	0.918	83.3	19.7	67 W	—	7 30	23 33.45	- 3 27.6	0.811	1.686	25.4	19.9	134 W	42	67
11 24	10 58.87	-80 5.0	0.485	0.916	83.6	19.7	67 W	—	8 9	23 38.59	- 3 40.0	0.749	1.674	21.4	19.6	143 W	41	68
11 25	10 59.95	-79 44.0	0.482	0.915	83.8	19.7	67 W	—	8 19	23 40.42	- 4 18.7	0.700	1.664	16.4	19.3	152 W	41	68
11 26	11 1.16	-79 22.7	0.479	0.913	84.1	19.7	67 W	—	8 24	23 40.12	- 4 47.1	0.681	1.661	13.6	19.2	157 W	40	69
11 27	11 2.49	-79 1.0	0.477	0.912	84.4	19.6	67 W	—	8 29	23 39.10	- 5 20.2	0.667	1.658	10.5	19.0	163 W	40	69
11 29	11 5.48	-78 16.5	0.470	0.910	84.9	19.6	67 W	—	9 3	23 37.48	- 5 56.6	0.657	1.656	7.4	18.8	168 W	39	70
12 1	11 8.90	-77 30.3	0.464	0.908	85.5	19.6	67 W	—	9 8	23 35.40	- 6 34.8	0.651	1.655	4.4	18.6	173 W	38	71
12 3	11 12.71	-76 42.3	0.456	0.906	86.0	19.6	67 W	—	9 13	23 33.03	- 7 13.0	0.650	1.655	2.4	18.5	176 W	38	71
12 5	11 16.88	-75 52.4	0.449	0.905	86.5	19.6	66 W	—	9 18	23 30.58	- 7 49.3	0.654	1.656	4.0	18.6			

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°
523633 2009 XR₂ (continuation)									436771 2012 JG₁₁								
11 2	9 47.48	+32 35.3	0.596	1.086	64.8	20.0	82 W	74* 23*	5 31	23 11.79	+18 30.9	1.028	1.234	52.3	21.4	74 W	45* 45*
11 7	9 54.18	+28 25.9	0.583	1.097	64.0	19.9	84 W	72* 28*	6 5	23 28.30	+19 47.7	0.981	1.211	53.9	21.3	75 W	46* 44*
11 17	10 4.57	+19 40.7	0.555	1.122	61.8	19.8	89 W	65 38*	6 10	23 46.07	+21 2.4	0.934	1.186	55.7	21.2	75 W	47* 43*
11 27	10 10.83	+10 23.3	0.530	1.152	58.7	19.6	94 W	55 50*	6 15	0 5.33	+22 13.8	0.888	1.159	57.7	21.1	75 W	48* 42*
12 7	10 12.57	+0 43.3	0.510	1.186	54.9	19.5	100 W	46 62*	6 20	0 26.38	+23 20.0	0.844	1.130	59.9	21.0	74 W	48* 41*
12 12	10 11.49	-4 9.4	0.503	1.205	52.7	19.5	103 W	41 68*	6 25	0 49.51	+24 18.6	0.801	1.100	62.3	20.9	73 W	48* 40*
12 17	10 8.93	-8 59.2	0.499	1.224	50.4	19.4	107 W	36 73	6 30	1 15.03	+25 6.1	0.762	1.068	65.0	20.9	72 W	48* 39*
12 22	10 4.79	-13 41.3	0.496	1.243	48.1	19.4	110 W	31 78	7 5	1 43.22	+25 38.0	0.726	1.034	68.0	20.8	71 W	48* 38*
12 27	9 58.98	-18 10.5	0.497	1.264	45.7	19.3	113 W	27 82	7 10	2 14.21	+25 49.3	0.695	0.998	71.3	20.7	68 W	47* 37*
1 1	9 51.46	-22 21.4	0.501	1.284	43.5	19.3	116 W	23 86	7 15	2 47.92	+25 34.2	0.670	0.961	74.7	20.7	66 W	45* 37*
1 6	9 42.27	-26 8.3	0.508	1.305	41.4	19.3	119 W	19 90	7 20	3 23.95	+24 47.7	0.653	0.922	78.3	20.6	63 W	42* 36*
1 11	9 31.53	-29 26.1	0.518	1.326	39.5	19.4	121 W	16 87	7 25	4 1.56	+23 27.3	0.646	0.882	81.8	20.6	59 W	40* 36*
1 16	9 19.53	-32 10.6	0.531	1.347	37.9	19.4	123 W	13 84	7 30	4 39.79	+21 34.7	0.648	0.841	84.9	20.7	56 W	36* 35*
5 31	22 45.33	-9 0.8	2.197	2.426	24.7	21.5	90 W	26* 73	8 4	5 17.64	+19 16.3	0.662	0.799	87.4	20.7	52 W	33* 34*
6 10	22 56.27	-9 15.6	2.037	2.392	24.9	21.3	98 W	29* 73	8 9	5 54.30	+16 42.3	0.688	0.757	88.9	20.7	48 W	29* 33*
6 20	23 6.08	-9 49.8	1.880	2.358	24.6	21.1	105 W	31* 74	8 14	6 29.27	+14 4.1	0.726	0.716	89.3	20.7	45 W	26* 32*
6 30	23 14.49	-10 47.9	1.729	2.322	23.8	20.8	113 W	32* 75	8 19	7 2.42	+11 31.5	0.775	0.676	88.2	20.7	42 W	23* 30*
7 10	23 21.22	-12 14.4	1.586	2.287	22.3	20.6	121 W	33* 76	8 24	7 33.90	+9 11.5	0.835	0.638	85.6	20.6	39 W	20* 29*
7 20	23 25.90	-14 13.4	1.456	2.251	20.2	20.3	130 W	31 78	8 29	8 4.03	+7 7.9	0.903	0.604	81.5	20.5	36 W	18* 27*
7 30	23 28.12	-16 47.3	1.342	2.214	17.3	20.0	139 W	28 81	9 3	8 33.19	+5 21.9	0.978	0.577	76.1	20.4	34 W	16* 25*
8 9	23 27.56	-19 54.3	1.246	2.177	14.1	19.7	149 W	25 84	9 8	9 1.72	+3 52.3	1.058	0.557	69.4	20.3	31 W	15* 22*
8 14	23 26.17	-21 38.1	1.207	2.158	12.5	19.5	153 W	23 86	9 13	9 29.81	+2 36.5	1.139	0.547	62.0	20.2	29 W	13* 20*
8 19	23 24.03	-23 26.7	1.174	2.139	11.1	19.4	156 W	22 87	9 18	9 57.50	+1 31.5	1.221	0.548	54.3	20.1	26 W	12* 18*
8 24	23 21.17	-25 17.7	1.147	2.120	10.1	19.3	158 W	20 89	9 23	10 24.72	+0 34.1	1.299	0.558	46.9	20.1	24 W	11* 15*
8 29	23 17.68	-27 8.7	1.127	2.101	9.9	19.2	159 W	18 89	9 28	10 51.30	+0 18.2	1.372	0.579	40.1	20.1	22 W	11* 13*
9 3	23 13.66	-28 56.7	1.113	2.082	10.5	19.2	158 W	16 87	10 3	11 17.09	-1 7.3	1.440	0.607	34.4	20.1	20 W	10* 11*
9 8	23 9.26	-30 39.1	1.106	2.063	11.9	19.2	155 W	14 85	10 8	11 41.98	-1 54.2	1.503	0.641	29.8	20.2	19 W	10* 9*
9 13	23 4.64	-32 13.4	1.104	2.044	13.7	19.3	151 E	13 84	10 18	12 28.98	-3 23.3	1.613	0.719	23.6	20.4	17 W	9* 5*
9 18	23 0.02	-33 37.3	1.109	2.025	15.8	19.3	147 E	11 82	10 28	13 12.39	-4 45.3	1.705	0.803	20.5	20.7	16 W	10* 3*
9 23	22 55.61	-34 49.3	1.118	2.006	17.9	19.4	142 E	10 81	11 7	13 52.71	-5 58.2	1.782	0.886	19.4	21.0	17 W	11* 2*
9 28	22 51.64	-35 48.5	1.133	1.987	20.1	19.5	137 E	9 80	11 17	14 30.47	-6 59.8	1.846	0.964	19.2	21.2	19 W	13* 1*
10 3	22 48.29	-36 34.6	1.151	1.969	22.1	19.5	132 E	8 79	11 27	15 6.11	-7 48.2	1.899	1.037	19.7	21.5	21 W	14* 2*
10 8	22 45.71	-37 7.9	1.173	1.950	24.0	19.6	128 E	8 79	5 31	23 21.19	+5 49.9	0.288	0.987	87.0	21.4	77 W	34* 57*
10 13	22 44.01	-37 29.0	1.198	1.931	25.7	19.7	123 E	8 79	6 5	23 7.38	+4 36.2	0.286	1.029	79.0	21.2	85 W	37* 59
10 18	22 43.28	-37 38.6	1.225	1.913	27.2	19.8	118 E	7 78	6 10	22 53.15	+3 18.6	0.283	1.070	71.3	21.0	93 W	40* 61
10 23	22 43.57	-37 37.5	1.254	1.894	28.6	19.8	114 E	7 78	6 15	22 37.85	+1 53.5	0.279	1.109	63.6	20.8	102 W	43* 62
10 28	22 44.87	-37 26.8	1.284	1.876	29.8	19.9	110 E	8 79	6 20	22 20.95	+0 17.4	0.276	1.146	55.7	20.6	111 W	44* 64
11 2	22 47.16	-37 7.3	1.315	1.858	30.8	20.0	106 E	8 79	6 25	22 2.18	+1 31.6	0.274	1.181	47.5	20.4	121 W	43* 66
11 7	22 50.39	-36 39.8	1.347	1.840	31.7	20.0	103 E	8 79	6 30	21 41.63	-3 33.0	0.275	1.215	39.0	20.3	131 W	41 68
11 12	22 54.51	-36 5.1	1.378	1.823	32.4	20.1	99 E	9 80	7 5	21 19.73	-5 43.3	0.279	1.247	30.4	20.1	142 W	39 70
11 17	22 59.47	-35 23.6	1.410	1.805	33.0	20.1	96 E	10 81	7 10	20 57.24	-7 56.8	0.287	1.278	21.8	20.0	152 W	37 72
11 22	23 5.20	-34 35.8	1.441	1.789	33.5	20.2	93 E	10 81	7 15	20 35.13	-10 6.4	0.301	1.306	13.8	19.9	162 W	35 74
11 27	23 11.63	-33 42.3	1.472	1.772	33.8	20.2	90 E	10 81	7 20	20 14.41	-12 6.0	0.321	1.334	7.2	19.8	171 W	33 76
12 2	23 18.69	-32 43.4	1.502	1.756	34.1	20.2	87 E	12 81*	7 25	19 55.92	-13 51.4	0.346	1.359	5.9	19.9	172 E	31 78
12 7	23 26.32	-31 39.4	1.531	1.740	34.3	20.2	85 E	13 79*	7 30	19 40.19	-15 21.1	0.376	1.383	10.3	20.3	166 E	30 79
12 12	23 34.47	-30 30.5	1.559	1.725	34.4	20.3	82 E	14 76*	8 4	19 27.40	-16 35.6	0.411	1.405	15.3	20.8	159 E	28 81
12 17	23 43.09	-29 17.1	1.587	1.710	34.5	20.3	80 E	16 73*	8 9	19 17.45	-17 36.9	0.450	1.425	19.8	21.1	152 E	27 82
12 22	23 52.13	-27 59.2	1.613	1.695	34.5	20.3	77 E	17 70*	8 14	19 10.13	-18 27.0	0.492	1.444	23.7	21.5	145 E	27 82
12 27	0 1.56	-26 37.3	1.639	1.681	34.4	20.3	75 E	18 67*	8 19	19 5.16	-19 7.8	0.538	1.462	27.0	21.8	139 E	26 83
1 1	0 11.33	-25 11.6	1.663	1.668	34.3	20.3	73 E	20 65*	6 10	1 24.70	-40 12.8	1.194	1.465	43.4	21.4	83 W	- 63*
1 6	0 21.40	-23 42.2	1.688	1.656	34.2	20.4	71 E	21 62*	6 15	1 40.77	-38 49.8	1.158	1.440	44.4	21.3	83 W	- 64*
1 11	0 31.77	-22 9.5	1.711	1.644	34.0	20.4	69 E	23* 60*	6 20	1 56.27	-37 21.9	1.122	1.415	45.4	21.2	83 W	- 66*
1 16	0 42.40	-20 33.6	1.734	1.632	33.8	20.4	67 E	24* 57*	6 25	2 11.19	-35 49.4	1.087	1.391	46.5	21.2	83 W	- 67*
5 31	23 10.64	-15 9.1	2.825	2.951	20.1	21.4	87 W	18* 78*	6 30	2 25.56	-34 12.1	1.052	1.367	47.5	21.1	83 W	- 69*
6 10	23 16.68	-14 11.3	2.652	2.918	20.3	21.3	95 W	22* 78	7 5	2 39.40	-32 29.7	1.017	1.343	48.7	21.0	83 W	- 71*
6 20	23 21.11	-13 19.5	2.481	2.883	20.1	21.1	103 W	26* 77	7 10	2 52.76	-30 42.0	0.982	1.320	49.8	20.9	83 W	- 72*
6 30	23 23.63	-12 34.5	2.314	2.848	19.4	20.9	111 W	30* 77	7 15	3 5.67	-28 48.4	0.946	1.298	51.0	20.8	83 W	1* 74*
7 10	23 23.94	-11 56.5	2.154	2.812	18.1	20.7	121 W	33* 76	7 20	3 18.17	-26 48.2	0.911	1.276	52.2	20.7	83 W	4* 75*
7 20	23 21.71	-11 25.6	2.006	2.775	16.2	20.4	130 W	34 75	7 25</								

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°	
489885 2008 HY₃₇									66063 1998 RO₁									
<i>(continuation)</i>																		
10 10	7 13.51	+45 29.9	0.462	1.120	62.9	19.3	93 W	87* 13*	6 10	1 42.09	+10 0.7	1.685	1.329	37.0	21.3	52 W	19*	42*
10 12	7 24.33	+47 58.4	0.464	1.123	62.6	19.3	93 W	86* 15*	6 20	2 10.90	+13 58.5	1.537	1.241	41.2	21.1	54 W	24*	41*
10 14	7 35.79	+50 21.3	0.468	1.126	62.2	19.3	93 W	84* 12*	6 30	2 45.42	+18 21.2	1.392	1.142	46.0	20.9	54 W	28*	38*
10 16	7 47.92	+52 37.7	0.473	1.129	61.8	19.3	93 W	82* 10*	7 10	3 28.66	+23 4.6	1.259	1.030	51.5	20.6	52 W	32*	34*
10 18	8 0.76	+54 46.9	0.478	1.133	61.4	19.4	94 W	79* 8*	7 20	4 24.91	+27 44.0	1.149	0.902	57.9	20.3	49 W	34*	27*
10 20	8 14.33	+56 48.3	0.484	1.137	60.9	19.4	94 W	77* 5*	7 22	4 38.13	+28 34.4	1.132	0.875	59.2	20.2	48 W	34*	26*
10 22	8 28.63	+58 41.2	0.491	1.141	60.5	19.4	94 W	75* 3*	7 24	4 52.09	+29 21.2	1.116	0.847	60.5	20.1	47 W	33*	25*
10 24	8 43.67	+60 25.4	0.499	1.145	60.0	19.4	94 W	74* 1*	7 26	5 6.78	+30 3.5	1.101	0.818	61.8	20.1	45 W	33*	23*
10 26	8 59.43	+62 0.5	0.507	1.150	59.5	19.5	94 W	72* —	7 28	5 22.21	+30 40.2	1.089	0.788	63.1	20.0	44 W	32*	21*
10 28	9 15.86	+63 26.5	0.516	1.155	59.0	19.5	95 W	70* —	7 30	5 38.36	+31 10.3	1.079	0.758	64.3	19.9	42 W	32*	20*
10 30	9 32.88	+64 43.2	0.525	1.160	58.5	19.5	95 W	69* —	8 1	5 55.20	+31 32.5	1.072	0.727	65.5	19.9	41 W	31*	18*
11 1	9 50.40	+65 51.0	0.535	1.166	58.0	19.6	95 W	68* —	8 3	6 12.66	+31 45.6	1.067	0.695	66.5	19.8	39 W	30*	16*
11 3	10 8.29	+66 49.9	0.545	1.172	57.5	19.6	95 W	66* —	8 5	6 30.67	+31 48.5	1.065	0.662	67.3	19.7	37 W	29*	15*
11 5	10 26.41	+67 40.5	0.555	1.178	57.0	19.6	95 W	65* —	8 7	6 49.13	+31 40.3	1.066	0.629	68.0	19.6	35 W	27*	13*
11 7	10 44.59	+68 23.3	0.565	1.184	56.5	19.7	95 W	64* —	8 9	7 7.92	+31 19.9	1.069	0.595	68.3	19.5	33 W	26*	11*
11 8	10 53.66	+68 41.9	0.571	1.187	56.2	19.7	95 W	64* —	8 11	7 26.93	+30 46.6	1.076	0.560	68.3	19.4	31 W	24*	9*
11 9	11 2.68	+68 58.9	0.576	1.191	55.9	19.7	95 W	63* —	8 13	7 46.03	+29 59.7	1.087	0.524	67.9	19.3	29 W	22*	8*
11 10	11 11.63	+69 14.1	0.582	1.194	55.7	19.7	95 W	63* —	8 15	8 5.11	+28 58.9	1.100	0.489	66.8	19.1	26 W	20*	6*
11 11	11 20.50	+69 27.9	0.587	1.197	55.4	19.7	95 W	63* —	8 17	8 24.10	+27 43.6	1.117	0.453	65.5	18.9	24 W	18*	4*
11 12	11 29.27	+69 40.2	0.592	1.201	55.1	19.8	95 W	62* —	8 19	8 42.91	+26 13.5	1.137	0.417	62.2	18.7	21 W	15*	3*
11 13	11 37.92	+69 51.1	0.598	1.204	54.9	19.8	96 W	62* —	8 24	9 29.05	+21 20.5	1.197	0.335	49.2	18.0	15 W	9*	—
11 14	11 46.43	+70 0.8	0.604	1.208	54.6	19.8	96 W	62* —	8 29	10 13.83	+14 47.3	1.259	0.283	24.9	17.0	7 W	1*	—
11 15	11 54.80	+70 9.4	0.609	1.212	54.3	19.8	96 W	61* —	9 3	10 56.18	+7 3.4	1.296	0.290	6.8	16.5	2 E	—	—
11 16	12 3.01	+70 16.9	0.615	1.215	54.1	19.8	96 W	61* —	9 8	11 34.48	-0 36.7	1.305	0.351	27.9	17.6	9 E	—	3*
11 17	12 11.05	+70 23.4	0.620	1.219	53.8	19.9	96 W	61* —	9 10	11 48.75	-3 28.4	1.305	0.384	33.4	18.0	12 E	—	6*
11 19	12 26.59	+70 33.9	0.631	1.227	53.3	19.9	96 W	60* —	9 12	12 2.56	-6 11.7	1.306	0.418	37.5	18.3	15 E	—	8*
11 21	12 41.38	+70 41.6	0.642	1.234	52.7	19.9	96 W	60* —	9 14	12 16.02	-8 46.3	1.307	0.454	40.5	18.6	17 E	—	10*
11 23	12 55.39	+70 47.1	0.653	1.242	52.2	20.0	96 W	60* —	9 16	12 29.19	-11 12.4	1.310	0.490	42.6	18.8	19 E	—	12*
11 25	13 8.63	+70 51.0	0.664	1.250	51.7	20.0	96 W	59* —	9 18	12 42.14	-13 30.2	1.314	0.526	44.1	19.0	21 E	—	14*
11 27	13 21.09	+70 53.8	0.675	1.258	51.1	20.0	97 W	59* —	9 23	13 13.76	-18 39.1	1.332	0.613	45.6	19.4	26 E	—	18*
11 29	13 32.80	+70 56.0	0.686	1.267	50.6	20.1	97 W	59* —	9 28	13 44.57	-22 59.1	1.361	0.696	45.3	19.7	30 E	—	22*
12 1	13 43.80	+70 58.0	0.696	1.275	50.1	20.1	97 W	59* —	10 3	14 14.64	-26 33.4	1.399	0.774	44.1	20.0	33 E	—	25*
12 3	13 54.11	+71 0.1	0.707	1.284	49.6	20.1	97 W	59* —	10 8	14 43.90	-29 25.6	1.446	0.848	42.4	20.2	35 E	—	27*
12 5	14 3.78	+71 2.7	0.717	1.293	49.1	20.2	98 W	59* —	10 13	15 12.22	-31 40.1	1.499	0.917	40.4	20.4	37 E	—	29*
12 7	14 12.83	+71 6.1	0.727	1.302	48.6	20.2	98 W	59* —	10 18	15 39.45	-33 21.6	1.557	0.982	38.4	20.6	38 E	—	30*
12 9	14 21.29	+71 10.3	0.737	1.311	48.1	20.2	98 W	59* —	10 23	16 5.48	-34 34.9	1.619	1.042	36.4	20.7	38 E	—	31*
12 11	14 29.21	+71 15.7	0.746	1.320	47.6	20.3	98 W	59* —	10 28	16 30.23	-35 24.3	1.684	1.100	34.4	20.9	39 E	—	32*
12 13	14 36.60	+71 22.4	0.756	1.329	47.1	20.3	99 W	59* —	11 2	16 53.67	-35 53.7	1.750	1.153	32.4	21.0	39 E	—	33*
12 15	14 43.48	+71 30.6	0.765	1.338	46.6	20.3	99 W	59* —	11 7	17 15.82	-36 6.7	1.817	1.204	30.5	21.1	38 E	—	32*
12 17	14 49.88	+71 40.2	0.774	1.347	46.1	20.3	99 W	59* —	11 12	17 36.74	-36 6.3	1.884	1.251	28.7	21.2	37 E	—	31*
12 22	15 3.83	+72 11.2	0.796	1.371	44.9	20.4	100 W	59* —	11 17	17 56.48	-35 54.8	1.951	1.296	26.9	21.3	36 E	—	30*
12 27	15 14.99	+72 52.7	0.817	1.395	43.7	20.5	101 W	59* —	11 22	18 15.13	-35 34.3	2.017	1.337	25.2	21.4	35 E	1*	29*
1	15 23.32	+73 44.9	0.837	1.420	42.6	20.5	102 W	59* —	11 27	18 32.78	-35 6.4	2.081	1.376	23.5	21.5	34 E	1*	28*
1	15 28.57	+74 47.5	0.856	1.444	41.5	20.6	103 W	59* —	497135 2004 QD₂₀									
1	15 30.14	+76 0.0	0.874	1.469	40.4	20.6	104 W	58* —	6 10	1 48.86	+44 20.1	0.367	0.809	114.0	19.9	47 W	39*	13*
1	15 26.88	+77 20.0	0.892	1.494	39.4	20.7	105 W	57* —	6 12	1 35.52	+44 44.2	0.378	0.828	108.9	19.7	50 W	42*	15*
6 10	1 24.94	+19 51.0	1.277	1.049	50.6	21.4	53 W	29*	6 14	1 23.37	+45 1.1	0.388	0.848	104.2	19.5	54 W	46*	16*
6 15	1 46.41	+21 56.0	1.254	1.022	51.8	21.4	52 W	30*	6 16	1 12.32	+45 12.7	0.399	0.869	99.8	19.4	57 W	49*	17*
6 20	2 9.27	+23 54.1	1.234	0.994	53.0	21.3	51 W	30*	6 18	1 2.26	+45 20.3	0.410	0.889	95.8	19.3	61 W	52*	18*
6 25	2 33.60	+25 42.3	1.217	0.965	54.1	21.2	50 W	31*	6 20	0 53.06	+45 24.8	0.421	0.911	92.0	19.3	64 W	55*	18*
6 30	2 59.45	+27 17.3	1.204	0.935	55.1	21.2	49 W	31*	6 22	0 44.60	+45 27.1	0.431	0.932	88.4	19.2	67 W	58*	18*
7 5	3 26.82	+28 35.7	1.194	0.903	55.9	21.1	47 W	31*	6 24	0 36.75	+45 27.5	0.442	0.954	85.0	19.2	69 W	60*	19*
7 10	3 55.63	+29 33.8	1.190	0.871	56.6	21.0	46 W	31*	6 26	0 29.42	+45 26.4	0.452	0.977	81.9	19.2	72 W	63*	19
7 15	4 25.68	+30 8.3	1.189	0.838	57.1	21.0	44 W	31*	6 28	0 22.51	+45 24.0	0.462	0.999	78.9	19.2	75 W	66*	19
7 20	4 56.69	+30 16.2	1.194	0.806	57.2	20.9	42 W	30*	7 30	0 15.93	+45 20.3	0.471	1.021	76.1	19.2	77 W	68*	19
7 25	5 28.31	+29 55.8	1.204	0.773	56.9	20.8	40 W	28*	7 2	0 9.61	+45 15.3	0.480	1.044	73.4	19.2	80 W	71*	19
7 30	6 0.14	+29 6.1	1.220	0.742	56.2	20.7	37 W	27*	7 4	0 3.50	+45 9.1	0.489	1.067	70.8	19.2	82 W	74*	19
8 4	6 31.84	+27 47.8	1.240	0.711	54.9	20.6	35 W	25*	7 6	23 57.54	+45 1.4	0.498	1.089	68.3	19.2	85 W	76*	19
8 9	7 3.10	+26 2.4																

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°
455174 1999 TD₂₀₇										250697 2005 QY₁₅₁ (continuation)									
6 10	1 49.92	+19 21.8	2.328	1.802	24.5	21.5	47 W	24*	34*	7 20	4 55.62	+26 31.4	1.729	1.188	34.9	20.8	42 W	27*	24*
6 20	2 14.46	+22 41.9	2.234	1.770	26.3	21.4	50 W	29*	33*	7 30	5 40.27	+28 11.8	1.649	1.116	37.2	20.6	42 W	30*	22*
6 30	2 40.33	+25 57.6	2.144	1.740	27.9	21.3	53 W	34*	32*	8 9	6 29.41	+28 59.3	1.583	1.045	39.0	20.4	40 W	31*	19*
7 10	3 7.67	+29 5.5	2.059	1.714	29.5	21.2	56 W	39*	31*	8 14	6 55.44	+28 57.6	1.556	1.010	39.8	20.4	40 W	31*	17*
7 20	3 36.58	+32 1.4	1.978	1.693	30.9	21.2	59 W	45*	29*	8 19	7 22.20	+28 36.2	1.535	0.975	40.3	20.3	39 W	30*	16*
7 30	4 7.03	+34 41.2	1.902	1.675	32.2	21.1	62 W	50*	26*	8 24	7 49.45	+27 53.6	1.518	0.942	40.7	20.2	37 W	30*	14*
8 9	4 38.90	+37 0.6	1.831	1.662	33.3	21.0	64 W	54*	24*	8 29	8 16.92	+26 48.9	1.506	0.910	40.7	20.1	36 W	29*	13*
8 19	5 11.89	+38 55.8	1.764	1.654	34.3	20.9	67 W	59*	22*	9 3	8 44.35	+25 22.2	1.500	0.881	40.5	20.0	35 W	28*	11*
8 29	5 45.48	+40 24.5	1.702	1.650	35.0	20.9	70 W	63*	21*	9 8	9 11.49	+23 34.1	1.499	0.853	40.0	19.9	33 W	26*	10*
9 8	6 19.04	+41 25.7	1.642	1.652	35.6	20.8	73 W	66*	20*	9 13	9 38.14	+21 26.1	1.504	0.829	39.1	19.8	31 W	25*	9*
9 18	6 51.82	+42 0.6	1.585	1.658	36.0	20.8	76 W	70*	19*	9 18	10 4.15	+19 0.6	1.513	0.809	37.8	19.8	30 W	23*	8*
9 28	7 23.02	+42 12.2	1.529	1.669	36.2	20.7	80 W	73*	18*	9 23	10 29.42	+16 20.2	1.527	0.793	36.2	19.7	28 W	22*	7*
10 8	7 51.97	+42 5.4	1.474	1.684	36.1	20.6	83 W	77*	18*	9 28	10 53.90	+13 28.0	1.546	0.781	34.3	19.6	26 W	20*	6*
10 18	8 18.05	+41 46.0	1.419	1.704	35.8	20.6	88 W	82*	19*	10 3	11 17.61	+10 27.3	1.567	0.775	32.2	19.6	24 W	18*	5*
10 28	8 40.73	+41 20.0	1.363	1.728	35.0	20.5	93 W	86*	20*	10 8	11 40.59	+7 21.3	1.592	0.774	29.9	19.6	23 W	16*	5*
11 7	8 59.59	+40 53.2	1.308	1.756	33.9	20.4	99 W	86	21*	10 13	12 2.90	+4 13.1	1.620	0.779	27.6	19.5	21 W	15*	4*
11 12	9 7.45	+40 41.2	1.280	1.771	33.2	20.4	102 W	86	22*	10 18	12 24.61	+1 5.6	1.649	0.789	25.4	19.5	20 W	13*	4*
11 17	9 14.17	+40 30.7	1.253	1.787	32.3	20.3	105 W	86	22*	10 23	12 45.79	-1 58.6	1.680	0.803	23.3	19.6	19 W	12*	4*
11 22	9 19.69	+40 22.1	1.226	1.804	31.3	20.3	109 W	85	23*	10 28	13 6.50	+4 57.2	1.712	0.822	21.5	19.6	18 W	11*	4*
11 27	9 23.95	+40 15.6	1.200	1.821	30.1	20.2	112 W	85	23*	11 2	13 26.82	-7 48.5	1.745	0.845	19.8	19.6	17 W	10*	5*
12 2	9 26.91	+40 11.1	1.176	1.839	28.7	20.1	116 W	85	24*	11 7	13 46.81	-10 31.1	1.778	0.872	18.5	19.7	16 W	9*	5*
12 7	9 28.51	+40 8.5	1.153	1.858	27.2	20.1	121 W	85	24	11 12	14 6.52	-13 3.9	1.812	0.901	17.4	19.8	16 W	8*	5*
12 12	9 28.69	+40 7.2	1.131	1.878	25.5	20.0	125 W	85	24	11 17	14 25.97	-15 26.3	1.845	0.932	16.6	19.9	16 W	7*	6*
12 17	9 27.42	+40 6.4	1.113	1.898	23.6	19.9	130 W	85	24	11 27	15 4.24	-19 37.7	1.910	0.999	15.7	20.1	16 W	6*	7*
12 22	9 24.73	+40 5.1	1.097	1.918	21.5	19.9	134 W	85	24	12 7	15 41.70	-23 4.1	1.972	1.069	15.5	20.3	17 W	5*	9*
12 27	9 20.69	+40 1.9	1.085	1.939	19.3	19.8	139 W	85	24	12 17	16 18.36	-25 46.9	2.030	1.140	15.9	20.5	19 W	4*	11*
1 1	9 15.40	+39 55.4	1.077	1.961	17.0	19.7	144 W	85	24	12 27	16 54.06	-27 48.9	2.081	1.212	16.6	20.7	21 W	3*	14*
1 6	9 9.05	+39 44.1	1.074	1.983	14.8	19.7	149 W	85	24	1 6	17 28.64	-29 13.9	2.125	1.281	17.6	20.9	23 W	3*	17*
1 11	9 1.87	+39 26.7	1.076	2.005	12.6	19.6	154 W	84	25	1 16	18 1.94	-30 6.3	2.159	1.348	18.8	21.1	26 W	2*	20*
1 16	8 54.14	+39 2.3	1.084	2.028	10.7	19.6	157 W	84	25	4450 Pan									
6 10	2 22.47	+24 54.5	0.825	0.639	86.8	21.5	39 W	22*	25*	6 10	3 30.17	+14 30.3	0.458	0.635	135.8	20.8	26 W	3*	19*
6 12	2 34.01	+25 5.5	0.856	0.630	84.7	21.4	38 W	21*	24*	6 15	3 13.08	+14 52.2	0.494	0.668	121.1	19.6	34 W	10*	27*
6 14	2 45.42	+25 13.5	0.888	0.623	82.5	21.4	37 W	21*	23*	6 20	3 2.64	+15 29.9	0.535	0.708	108.8	19.1	41 W	16*	32*
6 16	2 56.69	+25 18.7	0.919	0.617	80.1	21.4	37 W	20*	23*	6 25	2 57.23	+16 18.2	0.576	0.753	98.9	18.9	47 W	21*	35*
6 18	3 7.85	+25 21.4	0.952	0.613	77.7	21.3	36 W	20*	22*	6 30	2 55.32	+17 12.5	0.615	0.801	90.8	18.8	52 W	26*	38*
6 20	3 18.89	+25 21.7	0.984	0.610	75.1	21.3	35 W	19*	22*	7 5	2 55.71	+18 9.4	0.650	0.851	84.1	18.8	56 W	30*	40*
6 25	3 46.00	+25 13.0	1.065	0.612	68.6	21.3	34 W	18*	21*	7 10	2 57.52	+19 6.7	0.680	0.902	78.6	18.8	60 W	35*	41*
6 30	4 12.33	+24 52.5	1.146	0.624	62.1	21.3	33 W	17*	20*	7 15	3 0.12	+20 3.0	0.704	0.954	73.9	18.8	64 W	39*	41*
7 5	4 37.73	+24 21.9	1.223	0.647	56.2	21.3	32 W	17*	20*	7 20	3 3.04	+20 57.4	0.724	1.006	69.8	18.9	68 W	44*	41*
7 10	5 2.08	+23 42.7	1.297	0.678	51.0	21.4	31 W	16*	19*	7 25	3 5.91	+21 49.2	0.739	1.057	66.1	18.9	72 W	48*	41*
6 10	2 34.52	-3 37.8	2.222	1.701	25.9	21.5	47 W	-	41*	7 30	3 8.47	+22 38.3	0.749	1.108	62.8	18.9	76 W	52*	41*
6 20	2 59.08	-1 14.8	2.161	1.686	27.2	21.4	49 W	4*	43*	8 4	3 10.49	+23 24.3	0.755	1.158	59.7	18.9	80 W	57*	41*
6 30	3 23.44	+1 2.2	2.101	1.674	28.5	21.4	52 W	9*	45*	8 9	3 11.79	+24 7.2	0.757	1.207	56.8	19.0	85 W	61*	40*
7 10	3 47.57	+3 12.4	2.040	1.666	29.7	21.3	54 W	15*	47*	8 14	3 12.17	+24 46.6	0.756	1.254	53.9	19.0	89 W	65*	39
7 20	4 11.41	+5 15.3	1.978	1.661	30.9	21.3	57 W	21*	47*	8 19	3 11.44	+25 22.1	0.752	1.301	50.9	18.9	94 W	68*	39
7 30	4 34.87	+7 10.6	1.915	1.660	32.0	21.3	60 W	27*	48*	8 24	3 9.44	+25 53.2	0.746	1.346	47.9	18.9	99 W	71*	38
8 9	4 57.87	+8 58.8	1.850	1.662	33.0	21.2	63 W	33*	48*	8 29	3 6.02	+26 19.0	0.738	1.390	44.8	18.9	104 W	71	38
8 19	5 20.31	+10 40.9	1.782	1.667	33.9	21.2	67 W	39*	47*	9 3	3 1.06	+26 38.5	0.730	1.433	41.4	18.8	110 W	72	37
8 29	5 42.02	+12 18.4	1.712	1.676	34.7	21.1	71 W	45*	47*	9 8	2 54.49	+26 50.4	0.722	1.475	37.9	18.8	116 W	72	37
9 8	6 2.87	+13 53.5	1.639	1.688	35.2	21.1	75 W	51*	46*	9 8	2 46.28	+26 53.2	0.715	1.515	34.1	18.7	122 W	72	37
9 18	6 22.65	+15 29.2	1.563	1.703	35.5	21.0	80 W	56*	46*	9 13	2 36.49	+26 45.2	0.710	1.554	30.0	18.6	129 W	72	37
9 28	6 41.11	+17 8.9	1.486	1.721	35.5	20.9	85 W	60*	45*	9 18	2 25.31	+26 24.9	0.708	1.592	25.8	18.5	136 W	71	38
10 8	6 57.98	+18 57.4	1.407	1.742	35.0	20.8	91 W	64*	44*	9 23	2 13.08	+25 51.4	0.711	1.629	21.4	18.5	144 W	71	38
10 18	7 12.88	+20 59.4	1.328	1.765	34.0	20.7	98 W	66*	43*	10 3	2 0.20	+25 5.0	0.718	1.665	17.0	18.4	151 W	70	39
10 28	7 25.33	+23 20.7	1.252	1.791	32.4	20.5	105 W	68	41*	10 8	1 47.18	+24 6.8	0.732	1.699	12.8	18.3	158 W	69	40
11 7	7 34.78	+26 6.0	1.181	1.819	30.0	20.4	113 W	71	38	10 13	1 34.49	+22 59.1	0.752	1.733	9.2	18.3	164 W	68	41
11 12	7 38.17	+27 38.8	1.148	1.833	28.5	20.3	118 W	73	36	10 18	1 22.59	+21 45.1	0.779	1.765					

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°
424965 2009 AM₁₅ (continuation)										297300 1998 SC₁₅ (continuation)									
6 28	4 32.89	+16 47.4	1.152	0.537	62.0	20.0	28 W	7*	20*	7 5	6 2.04	+17 22.2	1.751	0.803	17.9	20.9	14 W	—	8*
6 30	4 41.25	+15 57.3	1.185	0.558	59.0	20.0	28 W	6*	21*	7 10	6 28.83	+16 49.5	1.741	0.782	16.6	20.8	13 W	—	7*
7 5	5 2.05	+14 8.4	1.262	0.611	52.8	20.2	29 W	5*	22*	7 15	6 55.91	+16 5.0	1.736	0.766	15.1	20.7	11 W	—	5*
7 10	5 22.33	+12 37.3	1.331	0.664	48.1	20.3	29 W	5*	23*	7 20	7 23.12	+15 9.2	1.734	0.754	13.5	20.6	10 W	—	4*
7 15	5 41.90	+11 18.3	1.394	0.716	44.5	20.5	30 W	5*	23*	7 25	7 50.28	+14 3.3	1.735	0.747	11.8	20.5	9 W	—	2*
7 20	6 0.70	+10 7.6	1.450	0.766	41.8	20.7	30 W	5*	24*	7 30	8 17.23	+12 48.5	1.740	0.745	10.3	20.4	8 W	—	1*
7 25	6 18.73	+9 2.7	1.500	0.813	39.6	20.8	31 W	6*	24*	8 4	8 43.82	+11 26.4	1.748	0.749	9.0	20.4	7 W	—	—
7 30	6 36.04	+8 1.8	1.544	0.859	37.9	20.9	31 W	6*	25*	8 9	9 9.93	+9 58.4	1.759	0.759	8.1	20.4	6 W	—	—
8 4	6 52.68	+7 3.7	1.583	0.901	36.6	21.1	32 W	7*	25*	8 14	9 35.46	+8 26.3	1.774	0.773	7.8	20.4	6 E	—	—
8 9	7 8.73	+6 7.3	1.617	0.940	35.6	21.2	33 W	8*	26*	8 19	10 0.35	+6 51.7	1.791	0.792	7.9	20.5	6 E	—	—
8 14	7 24.24	+5 12.2	1.646	0.977	34.9	21.3	33 W	10*	27*	8 24	10 24.53	+5 15.8	1.811	0.815	8.2	20.6	7 E	—	—
8 19	7 39.28	+4 17.7	1.671	1.011	34.3	21.4	34 W	11*	27*	8 29	10 47.99	+3 40.2	1.833	0.841	8.6	20.7	7 E	—	—
8 24	7 53.88	+3 23.6	1.691	1.042	34.0	21.4	35 W	12*	28*	9 3	11 10.71	+2 5.7	1.858	0.870	9.0	20.8	8 E	—	1*
496327 2013 MY₆										467351 2003 KO₂									
6 10	3 45.90	-14 53.8	1.954	1.404	29.9	21.4	44 W	—	30*	6 10	4 1.22	+23 19.5	1.242	0.396	47.1	20.7	17 W	5*	8*
6 20	4 21.39	-12 47.2	1.879	1.328	31.4	21.2	43 W	—	31*	6 12	4 18.70	+22 48.0	1.265	0.380	42.0	20.5	15 W	3*	7*
6 30	4 58.19	-10 29.0	1.816	1.249	32.5	21.1	41 W	—	31*	6 14	4 36.41	+22 11.6	1.288	0.368	36.4	20.4	12 W	1*	5*
7 10	5 36.10	-7 58.9	1.765	1.169	33.3	20.9	39 W	—	30*	6 16	4 54.28	+21 31.0	1.310	0.360	30.5	20.2	10 W	—	4*
7 20	6 14.98	-5 17.0	1.726	1.088	33.5	20.7	36 W	—	28*	6 18	5 12.24	+20 47.1	1.329	0.356	24.6	20.0	8 W	—	2*
7 30	6 54.74	-2 24.0	1.698	1.008	33.1	20.5	33 W	—	26*	6 20	5 30.16	+20 0.6	1.346	0.357	19.4	19.9	7 W	—	1*
8 9	7 35.50	+0 38.8	1.678	0.933	31.9	20.2	29 W	—	23*	6 22	5 47.92	+19 12.5	1.361	0.363	15.7	19.8	6 W	—	—
8 19	8 17.64	+3 48.2	1.663	0.865	30.1	20.0	25 W	4*	19*	6 24	6 5.43	+18 23.5	1.374	0.373	14.4	19.9	5 W	—	—
8 24	8 39.39	+5 23.6	1.657	0.836	29.0	19.9	24 W	6*	17*	6 26	6 22.58	+17 34.3	1.384	0.387	15.5	20.0	6 E	—	—
8 29	9 1.70	+6 57.8	1.652	0.811	28.0	19.8	22 W	8*	15*	6 28	6 39.30	+16 45.2	1.393	0.404	17.9	20.2	7 E	—	—
9 3	9 24.66	+8 29.4	1.647	0.790	27.0	19.7	21 W	9*	12*	6 30	6 55.55	+15 56.7	1.401	0.423	20.8	20.4	9 E	—	1*
9 8	9 48.32	+9 56.1	1.642	0.774	26.2	19.6	20 W	11*	9*	7 5	7 34.05	+13 58.3	1.418	0.478	27.2	20.9	12 E	—	6*
9 13	10 12.73	+11 15.6	1.638	0.765	25.8	19.6	19 W	12*	7*	7 10	8 9.54	+12 5.0	1.436	0.537	31.4	21.3	16 E	—	10*
9 18	10 37.87	+12 25.4	1.635	0.761	25.7	19.5	19 W	13*	4*	7 15	8 42.28	+10 16.9	1.457	0.597	33.8	21.6	19 E	—	13*
9 23	11 3.67	+13 23.0	1.633	0.764	26.0	19.6	19 W	13*	1*	7 20	9 12.55	+8 34.1	1.481	0.654	34.9	21.9	22 E	—	16*
9 28	11 30.00	+14 6.3	1.634	0.774	26.4	19.6	20 W	14*	—	87684 2000 SY₂									
10 3	11 56.67	+14 33.8	1.637	0.789	27.0	19.7	21 W	14*	—	6 10	4 21.83	+31 57.7	0.674	0.401	140.5	20.2	15 W	8*	—
10 8	12 23.45	+14 44.7	1.644	0.809	27.6	19.7	22 W	14*	—	6 11	4 15.29	+31 43.5	0.673	0.415	136.7	19.8	16 W	9*	2*
10 13	12 50.09	+14 39.3	1.654	0.835	28.0	19.8	23 W	14*	—	6 12	4 9.17	+31 25.4	0.673	0.430	132.8	19.4	18 W	11*	4*
10 18	13 16.34	+14 18.8	1.670	0.864	28.2	19.9	24 W	14*	—	6 13	4 3.51	+31 4.2	0.675	0.445	129.0	19.1	20 W	12*	6*
10 23	13 41.98	+13 45.1	1.690	0.896	28.2	20.1	25 W	13*	—	6 14	3 58.32	+30 40.6	0.678	0.460	125.3	18.8	22 W	13*	8*
10 28	14 6.82	+13 0.4	1.714	0.931	28.0	20.2	26 W	13*	—	6 15	3 53.62	+30 15.2	0.681	0.476	121.8	18.6	23 W	14*	10*
11 2	14 30.74	+12 7.3	1.743	0.968	27.6	20.3	27 E	13*	—	6 16	3 49.38	+29 48.6	0.685	0.491	118.5	18.5	25 W	15*	11*
11 7	14 53.66	+11 8.3	1.777	1.006	27.0	20.4	27 E	14*	—	6 17	3 45.60	+29 21.1	0.690	0.507	115.4	18.3	27 W	16*	13*
11 12	15 15.54	+10 5.8	1.814	1.046	26.2	20.5	28 E	15*	—	6 18	3 42.24	+28 53.3	0.695	0.522	112.4	18.2	28 W	17*	15*
11 17	15 36.38	+9 1.8	1.854	1.086	25.3	20.6	28 E	15*	—	6 19	3 39.29	+28 25.2	0.700	0.538	109.6	18.1	30 W	17*	16*
11 22	15 56.19	+7 58.1	1.897	1.126	24.4	20.7	28 E	15*	—	6 20	3 36.71	+27 57.3	0.706	0.553	107.0	18.1	31 W	18*	17*
11 27	16 15.01	+6 56.1	1.941	1.167	23.4	20.8	28 E	15*	—	6 22	3 32.55	+27 2.3	0.717	0.584	102.2	17.9	34 W	20*	20*
12 2	16 32.90	+5 56.7	1.987	1.207	22.5	20.9	28 W	14*	—	6 24	3 29.54	+26 9.3	0.729	0.614	98.0	17.9	37 W	21*	22*
12 7	16 49.93	+5 0.7	2.033	1.247	21.5	21.0	28 W	15*	—	6 26	3 27.50	+25 18.7	0.740	0.644	94.3	17.9	39 W	22*	25*
12 12	17 6.15	+4 8.6	2.079	1.287	20.6	21.1	27 W	16*	—	6 28	3 26.25	+24 30.6	0.751	0.673	90.9	17.8	41 W	23*	27*
12 17	17 21.61	+3 20.7	2.125	1.326	19.7	21.1	27 W	16*	—	6 30	3 25.66	+23 45.0	0.761	0.701	88.0	17.8	44 W	25*	28*
12 22	17 36.37	+2 37.2	2.169	1.365	18.9	21.2	27 W	17*	—	7 2	3 25.60	+23 1.6	0.771	0.729	85.3	17.8	46 W	26*	30*
12 27	17 50.49	+1 58.0	2.212	1.403	18.3	21.3	27 W	18*	—	7 4	3 25.99	+22 20.4	0.779	0.756	82.9	17.9	48 W	27*	32*
1 1	18 4.00	+1 23.1	2.252	1.440	17.7	21.4	26 W	19*	—	7 6	3 26.73	+21 41.1	0.787	0.782	80.8	17.9	49 W	28*	33*
1 6	18 16.96	+0 52.4	2.290	1.476	17.3	21.5	26 W	20*	—	7 8	3 27.78	+21 3.4	0.794	0.808	78.8	17.9	51 W	29*	35*
228368 2000 WK₁₀										297300 1998 SC₁₅									
6 10	3 48.07	+12 9.7	0.743	0.441	115.7	20.5	23 W	—	17*	6 10	3 57.02	+17 12.9	1.853	0.950	20.2	21.4	19 W	1*	12*
6 12	3 49.44	+12 11.5	0.792	0.442	107.3	20.1	25 W	—	18*	6 15	4 20.49	+17 35.9	1.826	0.917	20.2	21.3	18 W	—	12*
6 14	3 51.93	+12 23.7	0.842	0.447	99.4	19.9	26 W	1*	20*	6 20	4 44.81	+17 49.1	1.802	0.885	20.0	21.2	17 W	—	11*
6 16	3 55.38	+12 44.2	0.893	0.456	91.9	19.7	27 W	2*	20*	6 25	5 9.90	+17 51.8	1.781	0.856	19.6	21.1	16 W	—	10*
6 18	3 59.63	+13 10.9	0.942	0.468	85.1	19.6	27 W	3*	21*	6 30	5 35.68	+17 42.9	1.764	0.828	18.8	21.0	15 W	—	9*
6 20	4 4.51	+13 42.0	0.991	0.484	78.9	19.6	28 W	4*	21*	7 5	4 49.71	+18 1.7	1.302	0.663	50.4	20.0	30 W	10*	22*
6 22	4 9.87	+14 15.9	1.038	0.503	73.4	19.6	28 W	4*	22*	7 10	5 5.30	+19 16.0	1.383	0.733	45.7	20.2	31 W	12*	22*
6 24	4 15.59	+14 51.4	1.084	0.524	68.5	19.6	29 W	5*	22*	7 15	5 20.49	+20 20.8	1.455	0.8					

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°
87684 2000 SY₂										283889 2004 BL₈₉									
<i>(continuation)</i>										511600 2015 AZ₂₄₅									
10 20	2 49.56	-28 24.8	0.504	1.410	28.4	16.6	138 W	17	88	6 10	5 22.61	+24 55.8	3.514	2.501	1.2	21.5	3 E	—	—
10 22	2 41.76	-29 31.3	0.507	1.410	28.6	16.6	137 W	15	86	6 20	5 42.01	+24 56.6	3.489	2.476	1.4	21.5	3 W	—	—
10 24	2 33.81	-30 31.8	0.511	1.410	28.9	16.7	137 W	14	85	6 30	6 1.65	+24 48.4	3.452	2.450	3.4	21.6	8 W	—	—
10 26	2 25.77	-31 26.1	0.515	1.410	29.5	16.7	136 W	14	85	7 10	6 21.45	+24 30.9	3.402	2.423	5.5	21.6	13 W	4*	4*
10 28	2 17.70	-32 13.9	0.521	1.409	30.1	16.7	135 W	13	84	7 20	6 41.34	+24 3.6	3.341	2.396	7.6	21.7	18 W	8*	8*
11 2	1 57.86	-33 44.7	0.538	1.405	32.2	16.9	131 E	11	82	511600 2015 AZ₂₄₅									
11 7	1 39.23	-34 36.2	0.561	1.399	34.7	17.0	126 E	10	81	6 10	5 36.34	+1 44.7	3.001	2.094	10.5	21.5	22 E	—	9*
11 12	1 22.55	-34 53.1	0.587	1.390	37.3	17.2	122 E	10	81	6 20	5 52.01	+0 51.5	2.911	2.011	11.2	21.3	23 W	—	5*
11 17	1 8.28	-34 41.5	0.615	1.379	39.8	17.3	117 E	10	81	6 30	6 8.75	-0 17.4	2.804	1.924	12.6	21.2	24 W	—	11*
11 22	0 56.56	-34 7.9	0.646	1.366	42.2	17.5	112 E	11	82	7 10	6 26.71	-1 44.6	2.679	1.833	14.6	21.1	27 W	—	16*
11 27	0 47.34	-33 18.3	0.677	1.350	44.4	17.6	107 E	12	83	7 20	6 46.13	-3 33.1	2.541	1.737	17.0	20.9	30 W	—	21*
12 2	0 40.39	-32 17.3	0.709	1.331	46.4	17.7	102 E	13	84	7 30	7 7.36	-5 46.2	2.392	1.636	19.7	20.8	33 W	—	25*
12 7	0 35.45	-31 8.4	0.739	1.310	48.2	17.8	98 E	14	85	8 9	7 30.89	-8 27.6	2.234	1.529	22.7	20.6	36 W	—	28*
12 12	0 32.26	-29 54.1	0.769	1.286	49.8	17.9	94 E	15	86*	8 19	7 57.51	-11 40.7	2.074	1.418	26.0	20.3	38 W	—	31*
12 17	0 30.58	-28 35.9	0.796	1.259	51.4	18.0	89 E	16	83*	8 29	8 28.30	-15 27.3	1.916	1.300	29.4	20.1	39 W	—	32*
12 22	0 30.18	-27 15.2	0.821	1.230	52.9	18.1	85 E	18	79*	9 3	8 45.73	-17 32.3	1.840	1.239	31.1	19.9	39 W	—	32*
12 27	0 30.83	-25 52.8	0.843	1.198	54.3	18.1	82 E	19	74*	9 8	9 4.85	-19 43.8	1.768	1.176	32.9	19.8	39 W	—	32*
1 1	0 32.35	-24 29.3	0.861	1.163	55.8	18.1	78 E	21	69*	9 13	9 25.94	-21 59.5	1.700	1.113	34.6	19.6	39 W	—	31*
1 6	0 34.56	-23 4.8	0.875	1.124	57.3	18.1	74 E	22	65*	9 18	9 49.31	-24 15.9	1.638	1.047	36.2	19.4	38 W	—	30*
1 11	0 37.30	-21 39.5	0.885	1.083	59.0	18.1	71 E	23	61*	9 23	10 15.25	-26 27.8	1.583	0.981	37.6	19.3	37 W	—	28*
1 16	0 40.44	-20 13.2	0.889	1.038	60.8	18.1	67 E	25	57*	9 28	10 43.98	-28 27.7	1.536	0.913	38.7	19.1	35 W	—	25*
357439 2004 BL₈₆										10 3	11 15.58	-30 6.5	1.498	0.845	39.4	18.9	32 W	—	22*
6 10	4 31.26	+10 37.1	1.856	0.923	17.6	21.5	16 W	—	9*	10 8	11 49.83	-31 13.5	1.470	0.778	39.4	18.7	30 W	—	18*
6 15	4 54.13	+11 57.5	1.856	0.912	16.5	21.4	15 W	—	8*	10 10	12 4.16	-31 28.9	1.462	0.751	39.1	18.6	28 W	—	17*
6 20	5 17.24	+13 11.8	1.859	0.903	15.3	21.4	14 W	—	7*	10 12	12 18.77	-31 36.8	1.455	0.724	38.7	18.5	27 W	—	15*
6 25	5 40.51	+14 18.9	1.865	0.899	14.0	21.3	12 W	—	6*	10 14	12 33.61	-31 36.6	1.450	0.698	38.0	18.4	26 W	—	13*
6 30	6 3.87	+15 17.9	1.874	0.898	12.5	21.3	11 W	—	4*	10 16	12 48.59	-31 27.8	1.446	0.673	37.2	18.2	24 W	—	11*
7 5	6 27.22	+16 8.1	1.886	0.900	11.0	21.2	10 W	—	3*	10 18	13 3.64	-31 10.0	1.444	0.648	36.1	18.1	23 W	—	10*
7 10	6 50.48	+16 48.8	1.900	0.906	9.4	21.2	8 W	—	2*	10 20	13 18.67	-30 42.8	1.443	0.624	34.8	18.0	21 W	—	8*
7 15	7 13.56	+17 19.8	1.916	0.916	7.9	21.2	7 W	—	1*	10 22	13 33.61	-30 6.2	1.443	0.602	33.2	17.9	19 W	—	6*
7 20	7 36.38	+17 40.9	1.934	0.929	6.5	21.2	6 W	—	—	10 24	13 48.38	-29 20.0	1.444	0.580	31.3	17.8	18 W	—	4*
7 25	7 58.85	+17 52.1	1.953	0.945	5.2	21.2	5 W	—	—	10 26	14 2.90	-28 24.5	1.445	0.561	29.2	17.6	16 E	—	2*
7 30	8 20.91	+17 53.9	1.974	0.964	4.2	21.2	4 W	—	—	10 28	14 17.12	-27 19.8	1.447	0.543	26.9	17.5	14 E	—	2*
8 4	8 42.49	+17 46.6	1.996	0.985	3.6	21.2	4 W	—	—	11 2	14 50.97	-24 1.8	1.452	0.510	21.0	17.2	11 E	—	3*
8 9	9 3.56	+17 30.9	2.019	1.008	3.5	21.3	3 W	—	—	11 7	15 22.08	-20 1.4	1.453	0.496	17.5	17.0	9 E	—	3*
8 14	9 24.07	+17 7.6	2.042	1.034	3.7	21.4	4 W	—	—	11 12	15 50.47	-15 34.3	1.448	0.504	20.1	17.1	10 E	—	2*
8 19	9 44.02	+16 37.2	2.066	1.060	4.3	21.5	5 W	—	—	11 17	16 16.60	-10 55.9	1.437	0.532	26.4	17.4	14 E	—	8*
513572 2010 VX₃₉										11 22	16 41.15	-6 18.0	1.421	0.577	32.9	17.7	18 E	—	12*
6 10	4 36.08	+20 27.7	2.072	1.082	8.5	21.4	9 W	—	3*	11 27	17 4.82	-1 46.8	1.404	0.632	38.1	18.1	23 W	—	17*
6 15	4 57.03	+21 36.5	2.060	1.067	8.3	21.4	9 W	—	2*	12 2	17 28.17	+2 34.5	1.388	0.694	41.8	18.3	28 E	—	21*
6 20	5 18.51	+22 35.8	2.050	1.056	8.1	21.3	8 W	—	2*	12 7	17 51.62	+6 44.8	1.377	0.759	44.1	18.6	32 E	—	25*
6 25	5 40.44	+23 24.7	2.043	1.047	7.9	21.3	8 W	—	1*	12 12	18 15.43	+10 43.1	1.371	0.827	45.4	18.8	37 E	—	29*
6 30	6 2.73	+24 2.1	2.038	1.040	7.6	21.3	8 W	—	—	12 17	18 39.74	+14 28.2	1.372	0.895	45.7	19.0	41 E	—	32*
7 5	6 25.25	+24 27.4	2.036	1.037	7.4	21.3	7 W	—	—	12 22	19 4.57	+17 58.3	1.381	0.962	45.4	19.2	44 E	—	35*
7 10	6 47.91	+24 40.2	2.037	1.036	7.1	21.2	7 W	—	—	12 27	19 29.84	+21 11.7	1.398	1.029	44.7	19.3	47 E	—	37*
7 15	7 10.55	+24 40.2	2.040	1.039	6.9	21.2	7 W	—	—	1 1	19 55.41	+24 6.7	1.425	1.095	43.5	19.4	50 E	—	40*
7 20	7 33.06	+24 27.6	2.046	1.044	6.7	21.3	7 W	1*	—	1 6	20 21.07	+26 42.1	1.460	1.159	42.2	19.6	52 E	—	42*
7 25	7 55.31	+24 2.9	2.053	1.052	6.6	21.3	7 W	1*	—	1 11	20 46.59	+28 57.6	1.503	1.222	40.7	19.7	54 E	—	43*
7 30	8 17.18	+23 26.7	2.064	1.063	6.6	21.3	7 W	1*	—	1 16	21 11.73	+30 53.7	1.555	1.283	39.1	19.9	55 E	—	44*
8 4	8 38.57	+22 39.9	2.076	1.076	6.5	21.3	7 W	1*	—	133577 2003 UB₅₀									
8 9	8 59.41	+21 43.6	2.090	1.092	6.6	21.4	7 W	1*	—	6 10	6 2.71	+22 0.7	3.520	2.533	4.5	21.4	11 E	—	5*
8 14	9 19.66	+20 38.9	2.107	1.109	6.6	21.4	7 W	1*	—	6 20	6 21.20	+22 5.3	3.558	2.550	2.5	21.4	6 E	—	—
162120 1998 SH₃₆										6 30	6 39.57	+22 1.5	3.583	2.566	0.5	21.2	1 E	—	—
6 10	4 42.27	+21 54.6	1.639	0.645	11.5	21.3	7 W	—	1*	7 10	6 57.73	+21 49.7	3.593	2.581	1.8	21.4	5 W	—	—
6 15	5 14.44	+22 35.2	1.598	0.591	7.9	20.9	5 W	—	—	7 20	7 15.65	+21 30.4	3.591	2.596	3.9	21.5	10 W	1*	2*
6 20	5 48.90	+22 52.3	1.557	0.542	2.8	20.4	2 W	—	—	120708 1997 MA₂									
6 25	6 25.38	+22 41.0	1.516	0.502	4.7	20.3	2 E	—	—	6 10	6 17.32	+21 53.8	3.346	2.378	6.3	21.5	15 E	2*	7*
6 30	7 3.32	+21 57.5	1.473	0.476	13.6	20.5	6 E	—	—	6 20	6 37.24	+21 46.6	3.407	2.412	4.1	21.4	10 E	—	3*
7 5	7 41.89	+20 40.6	1.427	0.467	23.6	20.7	11 E	—	4*	6 30	6 56.79	+21 30.0	3.456	2.445	2.1	21.4	5 E	—	—
7 10	8 20.19	+18 52.5	1.380	0.477	33.5	21.0	15 E	1*	8*	7 10	7 15.91	+21 4.7	3.493	2.477	0.5	21.3	1 W	—	—
7 15	8 57.46	+16 38.2	1.334	0.504	42.0	21.3	19 E	2*	13*	7 20	7 34.56	+20 31.7	3.518	2.508	2.2	21.5	6 W	—	—
483508 2003 CR₁										184266 2004 VW₁₄									
6 10	4 51.20	+27 29.4	1.788	0.789	8.7	21.4	7 W	1*	—	6 10	6 17.79	+23 41.4	1.843	0.899	16.7	21.4	15 E	4*	7*
6 15	5 19.68	+27 41.2	1.807	0.802	6.9	21.4	5 W	—	—	6 15	6 42.79	+23 37.1	1.811	0.878	18.3	21.4	16 E	4*	8*
6 20	5 47.61	+27 30.4	1.828	0.819	5.5	21.4	4 W	—	—	6 20	7 8.41	+23 17.1	1.782	0.861	20.0	21.3			

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°
307064 2002 AR₅										177651 2004 XM₁₄									
<i>(continuation)</i>										<i>(continuation)</i>									
7 20	7 56.44	+19 53.5	2.866	1.850	0.5	21.0	1 W	—	—	12 2	0 16.79	-67 59.1	0.580	1.042	68.1	18.8	79 E	—	48
7 30	8 20.28	+19 37.3	2.859	1.848	2.3	21.2	4 W	—	—	12 3	0 26.16	-66 13.0	0.582	1.054	67.1	18.8	80 E	—	50
8 9	8 44.05	+19 9.9	2.842	1.845	4.6	21.3	8 W	2*	—	12 4	0 34.25	-64 25.8	0.585	1.066	66.0	18.8	81 E	—	52
8 19	9 7.75	+18 32.1	2.816	1.841	6.8	21.4	12 W	6*	1*	12 5	0 41.33	-62 38.0	0.588	1.078	64.9	18.8	82 E	—	53
8 29	9 31.38	+17 45.0	2.780	1.836	9.1	21.4	17 W	10*	3*	12 6	0 47.56	-60 50.2	0.592	1.090	63.9	18.8	83 E	—	55
9 8	9 54.93	+16 50.0	2.735	1.829	11.3	21.5	21 W	14*	5*	12 7	0 53.10	-59 2.6	0.596	1.102	62.9	18.8	85 E	—	57
357022 1999 YG₃										192642 1999 RD₃₂									
6 10	6 28.67	+23 8.4	1.952	1.028	17.1	21.4	17 E	5*	9*	6 10	7 1.33	+24 3.8	3.298	2.413	10.1	21.5	25 E	11*	15*
6 20	7 4.58	+19 25.8	1.910	0.980	17.3	21.3	17 E	1*	10*	6 20	7 17.65	+23 25.8	3.261	2.323	8.2	21.3	19 E	6*	10*
6 30	7 40.33	+15 5.8	1.861	0.938	18.6	21.2	17 E	—	11*	6 30	7 34.91	+22 39.3	3.206	2.230	6.1	21.0	13 E	2*	—
7 10	8 16.25	+10 11.9	1.807	0.903	20.9	21.1	18 E	—	12*	7 10	7 53.12	+21 42.8	3.135	2.134	3.9	20.8	8 E	—	2*
7 20	8 52.86	+ 4 49.3	1.751	0.877	24.2	21.1	21 E	—	13*	7 20	8 12.29	+20 35.0	3.048	2.034	1.7	20.5	3 E	—	—
7 30	9 30.82	+ 0 53.6	1.695	0.864	27.8	21.1	23 E	—	14*	7 30	8 32.49	+19 14.2	2.946	1.932	0.7	20.2	1 W	—	—
8 9	10 10.83	+ 6 44.8	1.645	0.863	31.4	21.1	26 E	—	15*	8 9	8 53.79	+17 38.5	2.832	1.826	3.1	20.2	6 W	—	—
8 19	10 53.60	-12 28.3	1.604	0.875	34.5	21.2	29 E	—	16*	8 19	9 16.37	+15 45.7	2.706	1.716	5.6	20.1	10 W	2*	1*
8 29	11 39.53	-17 44.5	1.578	0.899	36.6	21.2	32 E	—	17*	8 29	9 40.42	+13 33.1	2.570	1.602	8.1	19.9	13 W	6*	3*
9 8	12 28.46	-22 12.6	1.571	0.933	37.6	21.3	34 E	—	18*	9 8	10 6.24	+10 57.8	2.428	1.485	10.7	19.8	16 W	8*	5*
9 18	13 19.54	-25 35.2	1.585	0.974	37.4	21.5	36 E	—	19*	9 18	10 34.26	+ 7 56.1	2.283	1.364	13.2	19.5	18 W	10*	7*
177651 2004 XM₁₄										458062 2009 YO									
6 10	6 44.45	+35 34.2	2.535	1.653	14.1	21.4	23 E	16*	5*	6 10	7 39.90	+ 0 33.4	1.414	0.948	45.8	21.3	42 E	1*	36*
6 20	7 8.01	+35 50.2	2.504	1.588	12.7	21.2	20 E	14*	2*	6 15	7 53.81	+ 0 7.4	1.364	0.896	48.1	21.1	41 E	—	35*
6 30	7 33.16	+35 53.4	2.453	1.516	11.7	21.1	18 E	12*	—	6 20	8 8.56	+ 0 17.2	1.308	0.844	51.0	21.0	40 E	—	34*
7 10	8 0.07	+35 41.1	2.383	1.436	11.5	20.9	16 E	10*	—	6 25	8 24.22	+ 0 38.2	1.245	0.791	54.6	20.9	39 E	—	33*
7 20	8 28.97	+35 9.1	2.295	1.347	12.0	20.7	16 E	10*	—	6 30	8 40.87	+ 0 51.9	1.176	0.740	59.0	20.7	39 E	—	32*
7 30	9 0.13	+34 11.5	2.190	1.250	13.3	20.5	16 E	9*	—	7 5	8 58.55	+ 0 52.5	1.101	0.691	64.5	20.6	38 E	—	31*
8 4	9 16.64	+33 30.5	2.131	1.197	14.2	20.3	17 E	9*	—	7 10	9 17.28	+ 0 31.8	1.021	0.646	71.2	20.5	37 E	—	31*
8 9	9 33.84	+32 39.7	2.070	1.142	15.3	20.2	17 E	9*	—	7 12	9 25.04	+ 0 15.0	0.988	0.629	74.2	20.5	37 E	—	30*
8 14	9 51.77	+31 37.2	2.005	1.084	16.5	20.1	18 E	10*	—	7 14	9 32.95	+ 0 8.0	0.954	0.614	77.5	20.4	36 E	—	30*
8 19	10 10.48	+30 21.0	1.937	1.023	17.8	19.9	18 E	10*	—	7 16	9 40.97	+ 0 38.3	0.920	0.600	81.0	20.4	36 E	—	29*
8 24	10 30.01	+28 48.5	1.866	0.959	19.2	19.7	18 E	10*	—	7 18	9 49.09	+ 1 16.9	0.885	0.587	84.8	20.4	35 E	—	29*
8 29	10 50.39	+26 56.4	1.794	0.892	20.7	19.5	18 E	10*	—	7 20	9 57.28	+ 2 5.2	0.851	0.575	88.7	20.5	34 E	—	28*
9 3	11 11.67	+24 41.0	1.720	0.822	22.3	19.3	18 E	10*	—	7 22	10 5.48	+ 3 4.4	0.817	0.566	92.8	20.5	34 E	1*	28*
9 8	11 33.88	+21 57.2	1.646	0.749	23.9	19.1	18 E	10*	—	7 24	10 13.67	+ 4 15.7	0.783	0.558	97.1	20.6	33 E	2*	27*
9 13	11 57.01	+18 39.1	1.570	0.673	25.6	18.8	17 E	10*	—										
9 18	12 21.04	+14 39.5	1.494	0.596	27.6	18.5	16 E	10*	—										
9 23	12 45.83	+ 9 49.3	1.417	0.518	30.1	18.1	15 E	9*	—										
9 28	13 11.05	+ 3 58.4	1.338	0.444	34.2	17.8	14 E	8*	3*										
10 3	13 35.84	+ 3 1.6	1.253	0.384	41.8	17.5	15 E	5*	7*										
10 8	13 58.54	-11 7.7	1.160	0.350	54.7	17.5	17 E	1*	10*										
10 10	14 6.54	-14 35.1	1.121	0.348	60.9	17.6	18 E	—	12*										
10 12	14 13.76	-18 5.8	1.081	0.352	67.2	17.8	19 E	—	13*										
10 14	14 20.17	-21 37.0	1.041	0.363	73.1	17.9	20 E	—	14*										
10 16	14 25.84	-25 6.4	1.002	0.379	78.4	18.1	22 E	—	14*										
10 18	14 30.86	-28 32.5	0.964	0.400	82.8	18.3	23 E	—	15*										
10 20	14 35.39	-31 54.7	0.928	0.424	86.4	18.5	25 E	—	15*										
10 22	14 39.56	-35 13.0	0.894	0.451	89.2	18.7	27 E	—	15*										
10 24	14 43.56	-38 27.7	0.861	0.480	91.2	18.8	29 E	—	15*										
10 26	14 47.52	-41 39.7	0.831	0.510	92.5	18.9	31 E	—	16*										
10 28	14 51.62	-44 49.5	0.803	0.541	93.3	19.0	33 E	—	16*										
10 30	14 56.03	-47 58.0	0.776	0.572	93.6	19.1	35 E	—	16*										
11 1	15 0.95	-51 5.9	0.751	0.604	93.6	19.1	37 E	—	17*										
11 3	15 6.63	-54 13.9	0.728	0.635	93.2	19.1	40 E	—	17*										
11 5	15 13.38	-57 22.2	0.706	0.666	92.5	19.1	42 E	—	18*										
11 7	15 21.63	-60 31.3	0.686	0.697	91.6	19.1	45 E	—	19*										
11 8	15 26.50	-62 6.0	0.676	0.712	91.0	19.1	46 E	—	20*										
11 9	15 32.01	-63 40.7	0.667	0.727	90.4	19.1	47 E	—	20*										
11 10	15 38.28	-65 15.4	0.658	0.742	89.8	19.1	49 E	—	21*										
11 11	15 45.47	-66 49.8	0.650	0.757	89.1	19.1	50 E	—	22*										
11 12	15 53.79	-68 23.7	0.642	0.772	88.4	19.1	51 E	—	22*										
11 13	16 3.51	-69 56.6	0.635	0.786	87.6	19.1	53 E	—	23*										
11 14	16 14.96	-71 28.1	0.628	0.801	86.8	19.1	54 E	—	24*										
11 15	16 28.59	-72 57.3	0.621	0.815	85.9	19.0	55 E	—	24*										
11 16	16 44.92	-74 23.3	0.615	0.830	85.0	19.0	57 E	—	25*										
11 17	17 4.66	-75 44.5	0.609	0.844	84.1	19.0	58 E	—	26*										
11 18	17 28.57	-76 59.0	0.604	0.858	83.2	19.0	60 E	—	27*										
11 19	17 57.44	-78 4.0	0.599	0.872	82.2	19.0	61 E	—	28*										
11 20	18 31.74	-78 56.2	0.594	0.886	81.2	18.9	62 E	—	29*										
11 21	19 11.21	-79 31.8	0.590	0.899	80.2	18.9	64 E	—	30*										
11 22	19 54.35	-79 47.2	0.587	0.913	79.1	18.9	65 E	—	31*										
11 23	20 38.43	-79 40.4	0.584	0.926	78.1	18.9	67 E	—	32*										
11 24	21 20.39	-79 11.7	0.581	0.940	77.0	18.9	68 E	—	33*										
11 25	21 57.92	-78 23.5	0.579	0.953	75.9	18.9	69 E	—	34*										
11 26	22 30.08	-77 19.3	0.578	0.966	74.8	18.8	71 E	—	35*										
11 27	22 56.96	-76 2.6	0.577	0.979	73.7	18.8	72 E	—	36*										
11 28	23 19.22	-74 36.5	0.576	0.992	72.6	18.8	74 E	—	37*										
11 29	23 37.64	-73 3.4	0.576	1.004	71.5	18.8	75 E	—	38*										
11 30	23 52.98	-71 25.3	0.577	1.017	70.3	18.8	76 E	—	39*										
12 1	0 5.87	-69 43.5	0.578	1.030															

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°
458062 2009 YO										355770 2008 RE₈₀									
<i>(continuation)</i>										<i>(continuation)</i>									
7 26	10 21.78	+ 5 40.4	0.750	0.552	101.4	20.7	32 E	4*	26*	9 8	13 6.47	- 0 0.5	1.871	1.125	27.0	21.1	30 E	11*	23*
7 28	10 29.75	+ 7 19.3	0.719	0.549	105.7	20.8	31 E	5*	25*	9 18	13 43.14	- 2 28.9	1.883	1.137	26.6	21.2	30 E	12*	23*
7 30	10 37.53	+ 9 13.2	0.689	0.548	109.9	20.9	30 E	7*	24*	9 28	14 19.93	- 4 52.5	1.901	1.155	26.1	21.2	30 E	13*	22*
8 4	10 55.73	+15 3.2	0.624	0.554	118.9	21.4	29 E	12*	20*	10 8	14 56.78	- 7 6.1	1.925	1.176	25.4	21.2	30 E	14*	22*
8 9	11 11.52	+22 13.8	0.575	0.573	124.0	21.7	28 E	17*	14*	10 18	15 33.60	- 9 5.4	1.956	1.202	24.5	21.3	30 E	15*	21*
8 14	11 24.39	+30 9.1	0.544	0.604	123.8	21.6	30 E	23*	8*	10 28	16 10.27	-10 46.3	1.994	1.231	23.4	21.4	30 E	15*	20*
8 19	11 34.24	+38 3.1	0.530	0.642	119.0	21.3	34 E	28*	1*	11 7	16 46.61	-12 6.0	2.038	1.263	22.2	21.4	29 E	16*	18*
8 24	11 41.33	+45 18.5	0.529	0.687	111.8	21.0	39 E	31*	—	11 17	17 22.44	-13 2.5	2.088	1.296	20.8	21.5	28 E	16*	16*
8 29	11 46.12	+51 37.0	0.535	0.736	104.1	20.7	45 E	34*	—	343158 2009 HC₈₂									
9 3	11 49.22	+56 57.8	0.545	0.787	96.7	20.5	51 E	36*	—	6 10	8 16.75	+27 33.0	3.083	2.417	16.1	21.4	41 E	26*	24*
9 8	11 51.26	+61 29.6	0.557	0.839	90.1	20.4	56 E	37*	—	6 20	8 20.13	+26 29.6	3.111	2.324	13.7	21.3	33 E	18*	19*
9 10	11 51.91	+63 7.2	0.561	0.860	87.6	20.4	59 E	37*	—	6 30	8 24.58	+25 25.6	3.111	2.228	11.0	21.1	25 E	12*	14*
9 12	11 52.53	+64 39.9	0.565	0.881	85.2	20.4	61 E	38*	—	7 10	8 29.87	+24 20.4	3.082	2.128	7.9	20.8	17 E	6*	7*
9 14	11 53.13	+66 8.2	0.569	0.902	83.0	20.4	63 E	38*	—	7 20	8 35.83	+23 12.9	3.022	2.025	4.6	20.5	9 E	1*	1*
9 16	11 53.74	+67 33.1	0.572	0.923	80.8	20.3	65 E	38*	—	7 30	8 42.31	+22 2.1	2.929	1.917	1.9	20.2	4 E	—	—
9 18	11 54.40	+68 55.2	0.575	0.943	78.8	20.3	67 E	39*	—	8 9	8 49.22	+20 46.6	2.803	1.805	4.5	20.1	8 W	2*	—
9 20	11 55.12	+70 15.2	0.578	0.964	76.8	20.3	69 E	39*	—	8 19	8 56.51	+19 24.3	2.644	1.688	9.1	20.1	15 W	8*	3*
9 22	11 55.93	+71 33.6	0.580	0.984	74.9	20.3	71 W	40*	—	8 29	9 4.16	+17 52.3	2.450	1.567	14.4	19.9	23 W	15*	9*
9 24	11 56.83	+72 51.2	0.582	1.005	73.0	20.3	73 W	41*	—	9 3	9 8.14	+17 1.2	2.341	1.504	17.3	19.8	26 W	18*	11*
9 26	11 57.87	+74 8.4	0.583	1.025	71.2	20.3	75 W	42*	—	9 8	9 12.27	+16 5.7	2.227	1.440	20.4	19.7	30 W	21*	14*
9 28	11 59.06	+75 25.6	0.584	1.045	69.4	20.3	77 W	43*	—	9 13	9 16.57	+15 4.5	2.097	1.374	23.8	19.6	33 W	24*	16*
9 30	12 0.45	+76 43.3	0.585	1.065	67.7	20.3	80 W	44*	—	9 18	9 21.12	+13 56.1	1.962	1.307	27.5	19.5	37 W	27*	19*
10 2	12 2.08	+78 2.0	0.585	1.084	66.0	20.2	82 W	44*	—	9 23	9 26.00	+12 38.1	1.820	1.239	31.6	19.3	40 W	30*	22*
10 4	12 4.04	+79 22.0	0.585	1.103	64.3	20.2	84 W	45*	—	9 28	9 31.37	+11 7.3	1.669	1.169	36.2	19.1	44 W	33*	24*
10 6	12 6.46	+80 43.5	0.585	1.122	62.7	20.2	86 W	45*	—	10 3	9 37.49	+ 9 18.7	1.512	1.098	41.4	18.9	47 W	34*	27*
10 8	12 9.55	+82 7.1	0.585	1.141	61.0	20.2	88 W	46*	—	10 8	9 44.77	+ 7 4.5	1.348	1.026	47.4	18.7	49 W	36*	30*
10 9	12 11.47	+82 49.7	0.585	1.151	60.2	20.2	89 W	46*	—	10 10	9 48.16	+ 6 1.0	1.281	0.997	50.1	18.6	50 W	36*	31*
10 10	12 13.75	+83 32.9	0.585	1.160	59.4	20.2	90 W	46*	—	10 12	9 51.91	+ 4 50.4	1.213	0.968	53.1	18.5	51 W	36*	32*
10 11	12 16.51	+84 16.6	0.584	1.169	58.6	20.2	91 W	46*	—	10 14	9 56.11	+ 3 31.1	1.144	0.938	56.2	18.4	51 W	36*	33*
10 12	12 19.99	+85 1.0	0.584	1.178	57.8	20.2	93 W	46*	—	10 16	10 0.88	+ 2 1.5	1.075	0.909	59.6	18.3	52 W	35*	34*
10 13	12 24.58	+85 46.0	0.584	1.187	57.0	20.2	94 W	46*	—	10 18	10 6.35	+ 0 19.3	1.006	0.879	63.4	18.2	52 W	34*	35*
10 14	12 30.99	+86 31.7	0.584	1.197	56.2	20.2	95 W	46*	—	10 20	10 12.73	- 1 38.2	0.938	0.850	67.5	18.1	52 W	33*	36*
10 15	12 40.85	+87 17.8	0.584	1.206	55.4	20.2	96 W	45*	—	10 22	10 20.27	- 3 54.6	0.870	0.820	72.1	18.0	52 W	32*	37*
10 16	12 58.33	+88 4.2	0.583	1.214	54.6	20.1	97 W	45*	—	10 24	10 29.34	- 6 34.1	0.803	0.791	77.2	17.9	51 W	29*	37*
10 17	13 38.63	+88 49.8	0.583	1.223	53.8	20.1	98 E	45*	—	10 26	10 40.42	- 9 41.7	0.739	0.762	83.0	17.9	50 W	27*	38*
10 18	16 12.69	+89 27.4	0.583	1.232	53.0	20.1	99 E	45*	—	10 28	10 54.21	-13 22.7	0.678	0.733	89.4	17.8	48 W	23*	37*
10 19	21 23.53	+89 14.7	0.583	1.241	52.2	20.1	100 E	46	—	10 30	11 11.63	-17 41.6	0.623	0.705	96.6	17.9	45 W	18*	37*
10 20	22 48.40	+88 29.9	0.583	1.250	51.4	20.1	101 E	47	—	11 1	11 33.92	-22 38.8	0.576	0.677	104.5	18.0	41 W	13*	35*
10 21	23 16.33	+87 40.3	0.583	1.258	50.6	20.1	103 E	47	—	11 3	12 2.60	-28 5.6	0.539	0.650	112.7	18.3	37 W	6*	31*
10 22	23 30.13	+86 49.1	0.583	1.267	49.8	20.1	104 E	48	—	11 5	12 39.12	-33 37.6	0.516	0.624	120.5	18.6	33 W	—	26*
10 23	23 38.53	+85 56.7	0.584	1.275	49.0	20.1	105 E	49	—	11 7	13 23.85	-38 32.4	0.509	0.599	126.5	19.0	29 W	—	20*
10 24	23 44.32	+85 3.5	0.584	1.284	48.2	20.1	106 E	50	—	11 8	13 48.75	-40 30.6	0.512	0.588	128.4	19.1	28 W	—	17*
10 25	23 48.67	+84 9.4	0.584	1.292	47.4	20.1	107 E	51	—	11 9	14 14.63	-42 2.9	0.520	0.576	129.2	19.2	27 W	—	14*
10 26	23 52.14	+83 14.5	0.585	1.301	46.6	20.1	108 E	52	—	11 10	14 40.73	-43 6.8	0.532	0.565	129.0	19.2	26 W	—	10*
10 27	23 55.03	+82 19.0	0.586	1.309	45.8	20.1	109 E	53	—	11 11	15 6.26	-43 42.7	0.548	0.555	127.8	19.1	26 E	—	7*
10 28	23 57.52	+81 22.7	0.586	1.317	45.0	20.1	110 E	54	—	11 12	15 30.49	-43 52.9	0.567	0.545	125.7	19.0	27 E	—	11*
10 29	23 59.73	+80 25.8	0.587	1.325	44.3	20.1	111 E	55	—	11 13	15 52.89	-43 41.5	0.590	0.536	122.9	18.8	27 E	—	13*
10 30	0 1.74	+79 28.3	0.589	1.333	43.5	20.1	112 E	56	—	11 14	16 13.15	-43 12.8	0.616	0.528	119.6	18.6	28 E	—	16*
10 31	0 3.59	+78 30.3	0.590	1.341	42.8	20.0	113 E	56	—	11 15	16 31.15	-42 31.5	0.645	0.520	115.9	18.4	28 E	—	18*
11 1	0 5.33	+77 31.7	0.591	1.349	42.0	20.0	114 E	57	—	11 16	16 46.94	-41 41.6	0.675	0.513	111.9	18.2	29 E	—	19*
11 2	0 6.97	+76 32.6	0.593	1.357	41.3	20.0	115 E	58	—	11 17	17 0.67	-40 46.2	0.708	0.507	107.8	18.0	29 E	—	21*
11 3	0 8.55	+75 33.1	0.595	1.365	40.6	20.0	116 E	59	—	11 18	17 12.53	-39 47.8	0.742	0.501	103.6	17.9	30 E	—	22*
11 4	0 10.06	+74 33.2	0.597	1.373	39.9	20.0	117 E	60	—	11 19	17 22.71	-38 48.3	0.778	0.497	99.3	17.7	30 E	—	23*
11 5	0 11.53	+73 32.9	0.599	1.381	39.2	20.0	118 E	61	—	11 20	17 31.44	-37 48.9	0.814	0.493	95.0	17.6	30 E	—	23*
11 6	0 12.97	+72 32.4	0.601	1.388	38.5	20.0	119 E	62	—	11 21	17 38.89	-36 50.6	0.851	0.491	90.7	17.5	30 E	—	23*
11 7	0 14.37	+71 31.6	0.604	1.396	37.8	20.1	120 E	63	—	11 22	17 45.24	-35 53.8	0.889	0.489	86.5	17.4	30 E	—	23*
11 9	0 17.12	+69 29.6	0.610	1.411	36.6	20.1	122 E	66	—	11 23	17 50.63	-34 59.0	0.926	0.489	82.2	17.4	29 E	—	23*
11 11	0 19.81	+67 27.4	0.617	1.426	35.4	20.1	123 E	68	—	11 24	17 55.21	-34 6.3	0.964	0.489	78.1	17.3	29 E	—	23*
11 13	0 22.47	+65 25.4	0.625	1.441	34.3	20.1	125 E	70	—	11 25	17 59.09	-33 15.8	1.002	0.490	74.0	17.2	29 E	—	23*
11 15	0 25.11	+63 24.2	0.634	1.455	33.4	20.1	126 E	72	1	11 26	18 2.36	-32 27.5	1.040	0.493	70.0	17.2	29 E	—	23*
11 17	0 27.75	+61 24.3	0.644	1.469	32.5	20.1	127 E	74	3	11 27	18 5.11	-31 41.3	1.077	0.496	66.1	17.2	27 E	2*	21*
11 22	0 34.38	+56 33.2	0.673	1.504	30.8	20.2	129 E	78	7	11 29	18 9.33	-30 15.2	1.150						