

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

21/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°-26°	2021	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°-26°	
163732 2003 KP₂									277473 2005 WD₁ (continuation)									
2 25	16 47.88	+8 52.9	3.211	3.321	17.3	21.5	88 W	54* 52*	6 16	14 14.83	-73 26.8	0.739	1.548	33.4	18.6	123 E	-	43
3 7	16 54.24	+10 50.6	3.027	3.263	17.6	21.3	95 W	56 53*	6 17	14 3.86	-73 38.7	0.741	1.543	33.9	18.6	122 E	-	42
3 17	16 59.12	+13 5.8	2.847	3.204	17.7	21.1	102 W	58 51	6 18	13 52.89	-73 48.1	0.743	1.537	34.5	18.6	121 E	-	42
3 27	17 2.22	+15 37.6	2.677	3.142	17.5	20.9	109 W	61 48	6 19	13 41.99	-73 55.0	0.745	1.532	35.0	18.6	120 E	-	42
4 6	17 3.25	+18 23.7	2.520	3.080	17.1	20.8	115 W	63 46	6 20	13 31.21	-73 59.5	0.748	1.527	35.6	18.6	119 E	-	42
4 16	17 1.88	+21 20.2	2.378	3.015	16.7	20.6	121 W	66 43	6 21	13 20.62	-74 1.8	0.750	1.521	36.1	18.7	118 E	-	42
4 26	16 57.86	+24 20.5	2.255	2.949	16.2	20.4	125 W	69 40	6 22	13 10.27	-74 2.0	0.753	1.516	36.6	18.7	117 E	-	42
5 1	16 54.81	+25 49.5	2.202	2.915	16.1	20.3	126 W	71 38	6 23	13 0.21	-74 0.3	0.756	1.511	37.1	18.7	116 E	-	42
5 6	16 51.07	+27 16.0	2.153	2.881	16.1	20.2	128 W	72 37	6 24	12 50.48	-73 56.8	0.759	1.505	37.7	18.7	115 E	-	42
5 11	16 46.65	+28 38.6	2.110	2.847	16.2	20.2	128 W	74 35	6 25	12 41.10	-73 51.7	0.762	1.500	38.2	18.7	114 E	-	42
5 16	16 41.60	+29 56.0	2.072	2.812	16.4	20.1	128 W	75 34	6 26	12 32.09	-73 45.2	0.766	1.495	38.6	18.7	113 E	-	42
5 21	16 35.98	+31 6.6	2.040	2.776	16.8	20.1	128 W	76 33	6 27	12 23.49	-73 37.4	0.769	1.490	39.1	18.8	112 E	-	42
5 26	16 29.90	+32 9.3	2.013	2.740	17.3	20.0	127 W	77 32	6 28	12 15.28	-73 28.6	0.773	1.485	39.6	18.8	111 E	-	43
5 31	16 23.46	+33 2.9	1.991	2.704	17.9	20.0	125 E	78 31	6 29	12 7.48	-73 18.8	0.776	1.480	40.1	18.8	111 E	-	43*
6 5	16 16.80	+33 46.7	1.973	2.667	18.6	20.0	123 E	79 30	7 1	11 53.07	-72 57.1	0.783	1.469	40.9	18.8	109 E	-	43*
6 10	16 10.06	+34 19.9	1.960	2.629	19.4	19.9	121 E	79 30	7 2	11 46.45	-72 45.4	0.787	1.464	41.4	18.8	108 E	-	43*
6 15	16 3.41	+34 42.2	1.951	2.591	20.2	19.9	118 E	80 29	7 3	11 40.20	-72 33.3	0.791	1.459	41.8	18.8	107 E	-	43*
6 20	15 57.01	+34 53.8	1.946	2.553	21.1	19.9	115 E	80 29	7 4	11 34.31	-72 21.0	0.795	1.454	42.2	18.9	106 E	-	43*
6 25	15 51.01	+34 55.0	1.943	2.514	21.9	19.9	112 E	80 29	7 5	11 28.77	-72 8.5	0.799	1.449	42.6	18.9	105 E	-	43*
6 30	15 45.51	+34 46.3	1.943	2.474	22.8	19.9	109 E	80 29	7 6	11 23.55	-71 55.9	0.803	1.444	43.0	18.9	104 E	-	43*
7 5	15 40.64	+34 28.4	1.945	2.434	23.6	19.9	106 E	79 30	7 7	11 18.63	-71 43.3	0.807	1.439	43.3	18.9	104 E	-	43*
7 10	15 36.48	+34 2.2	1.948	2.394	24.4	19.9	103 E	79 30	7 8	11 14.01	-71 30.9	0.811	1.435	43.7	18.9	103 E	-	42*
7 15	15 33.09	+33 28.5	1.953	2.353	25.2	19.9	100 E	78* 31	7 9	11 9.67	-71 18.5	0.815	1.430	44.1	18.9	102 E	-	42*
7 20	15 30.51	+32 48.2	1.957	2.311	25.9	19.9	97 E	76* 31	7 10	11 5.58	-71 6.4	0.819	1.425	44.4	18.9	101 E	-	42*
7 25	15 28.76	+32 2.4	1.962	2.269	26.5	19.8	94 E	74* 32	7 11	11 1.74	-70 54.5	0.822	1.420	44.7	19.0	101 E	-	42*
7 30	15 27.84	+31 11.7	1.967	2.226	27.1	19.8	91 E	71* 33	7 12	10 58.12	-70 43.0	0.826	1.415	45.0	19.0	100 E	-	42*
8 4	15 27.74	+30 16.9	1.970	2.183	27.7	19.8	88 E	69* 34	7 13	10 54.72	-70 31.7	0.830	1.411	45.4	19.0	99 E	-	41*
8 14	15 29.99	+28 17.3	1.974	2.095	28.6	19.7	82 E	64* 36*	7 14	10 51.51	-70 20.9	0.834	1.406	45.7	19.0	98 E	-	41*
8 24	15 35.36	+26 8.0	1.971	2.005	29.4	19.7	77 E	60* 37*	7 15	10 48.49	-70 10.5	0.838	1.401	46.0	19.0	98 E	-	41*
9 3	15 43.67	+23 51.7	1.960	1.912	30.2	19.6	72 E	56* 37*	7 17	10 42.96	-69 51.0	0.845	1.392	46.5	19.0	96 E	-	40*
9 13	15 54.83	+21 30.3	1.939	1.818	30.9	19.5	68 E	53* 36*	7 19	10 38.03	-69 33.4	0.853	1.383	47.0	19.0	95 E	-	39*
9 23	16 8.76	+19 4.7	1.908	1.722	31.6	19.3	64 E	50* 34*	7 21	10 33.63	-69 17.8	0.860	1.375	47.5	19.1	94 E	-	38*
10 3	16 25.46	+16 35.1	1.867	1.623	32.4	19.2	60 E	48* 32*	7 23	10 29.67	-69 4.2	0.867	1.366	48.0	19.1	93 E	-	37*
10 13	16 45.05	+14 1.1	1.816	1.524	33.3	19.0	57 E	46* 29*	7 25	10 26.12	-68 52.8	0.873	1.358	48.4	19.1	92 E	-	37*
10 23	17 7.66	+11 21.8	1.756	1.423	34.5	18.8	54 E	43* 26*	7 27	10 22.91	-68 43.5	0.879	1.349	48.8	19.1	91 E	-	36*
11 2	17 33.50	+8 35.4	1.690	1.323	35.9	18.6	51 E	41* 24*	7 29	10 19.99	-68 36.4	0.885	1.341	49.2	19.1	90 E	-	35*
11 12	18 2.86	+5 40.1	1.619	1.223	37.6	18.4	49 E	39* 22*	7 31	10 17.34	-68 31.4	0.890	1.334	49.5	19.1	89 E	-	34*
11 22	18 35.98	+2 33.8	1.547	1.127	39.6	18.2	47 E	37* 20*	8 2	10 14.91	-68 28.6	0.895	1.326	49.9	19.1	88 E	-	33*
12 2	19 13.08	+0 45.8	1.477	1.037	41.8	18.0	44 E	34* 20*	8 4	10 12.66	-68 28.0	0.899	1.319	50.2	19.1	87 E	-	32*
12 12	19 54.20	+4 18.9	1.413	0.957	44.1	17.8	43 E	32* 20*	8 6	10 10.58	-68 29.6	0.903	1.312	50.5	19.1	86 E	-	31*
12 22	20 39.04	-8 3.2	1.359	0.893	46.3	17.6	41 E	29* 21*	8 8	10 8.62	-68 33.3	0.906	1.305	50.8	19.1	85 E	-	30*
12 27	21 2.69	-9 57.4	1.336	0.868	47.3	17.5	40 E	27* 23*	8 10	10 6.77	-68 39.2	0.909	1.298	51.1	19.1	85 E	-	29*
1 1	21 27.02	-11 51.2	1.317	0.850	48.3	17.5	40 E	25* 24*	8 12	10 4.99	-68 47.2	0.911	1.292	51.3	19.2	84 E	-	28*
1 6	21 51.91	-13 42.6	1.301	0.839	49.1	17.4	40 E	24* 26*	8 14	10 3.26	-68 57.3	0.913	1.285	51.5	19.2	84 E	-	27*
1 11	22 17.23	-15 29.4	1.288	0.835	49.8	17.4	40 E	22* 28*	8 16	10 1.55	-69 9.5	0.914	1.280	51.8	19.2	83 E	-	26*
1 16	22 42.85	-17 9.4	1.279	0.838	50.3	17.4	41 E	21* 30*	8 18	9 59.84	-69 23.8	0.915	1.274	52.0	19.1	83 E	-	25*
1 21	23 8.66	-18 40.3	1.273	0.848	50.6	17.4	42 E	19* 32*	8 20	9 58.10	-69 40.2	0.915	1.269	52.2	19.1	82 E	-	24*
277473 2005 WD₁									8 22	9 56.31	-69 58.6	0.914	1.264	52.4	19.1	82 W	-	25*
2 25	16 50.31	-16 16.7	2.047	2.165	27.0	21.3	83 W	29* 72*	8 24	9 54.46	-70 19.0	0.913	1.259	52.6	19.1	82 W	-	25*
3 7	17 2.14	-18 22.2	1.863	2.113	28.0	21.1	90 W	27* 80*	8 26	9 52.50	-70 41.5	0.911	1.255	52.8	19.1	81 W	-	26*
3 17	17 13.05	-20 46.7	1.681	2.059	28.6	20.9	97 W	24 85	8 28	9 50.41	-71 6.0	0.909	1.251	53.0	19.1	81 W	-	27*
3 27	17 22.69	-23 38.8	1.502	2.004	28.8	20.6	105 W	21 88	8 30	9 48.15	-71 32.6	0.906	1.247	53.1	19.1	81 W	-	27*
4 6	17 30.66	-27 9.6	1.331	1.949	28.3	20.2	113 W	18 89	9 1	9 45.68	-72 1.3	0.903	1.243	53.3	19.1	81 W	-	28*
4 11	17 33.80	-29 13.7	1.250	1.921	27.8	20.0	117 W	16 87	9 3	9 42.95	-72 32.1	0.899	1.240	53.4	19.1	81 W	-	29*
4 16	17 36.23	-31 32.9	1.172	1.893	27.1	19.8	121 W	13 84	9 5	9 39.90	-73 5.0	0.894	1.237	53.6	19.1	81 W	-	29*
4 21	17 37.80	-34 8.9	1.098	1.864	26.3	19.6	125 W	11 82	9 7	9 36.45	-73 40.1	0.889	1.235	53.7	19.1	81 W	-	30*
4 26	17 38.32	-37 3.7	1.029	1.836	25.3	19.4	129 W	8 79	9 9	9 32.52	-74 17.2	0.884	1.233	53.8	19.1	81 W	-	30*
5 1	17 37.53	-40 18.4	0.966	1.807	24.2	19.2	133 W	5 76	9 11	9 27.98	-74 56.4	0.877	1.231	53.9	19.0	81 W	-	31*
5 6	17 35.08	-43 53.5	0.909	1.779	23.2	19.0	136 W	1 72	9 13	9 22.69	-75 37.6	0.871	1.230	54.0	19.0	81 W	-	31*
5 11	17 30.45	-47 47.8	0.859	1.750	22.4	18.9	139 W	- 68	9 14	9 19.71	-75 59.0	0.867	1.229	54.1	19.0	82 W	-	32*
5 16	17 22.97	-51 58.0	0.817	1.722	22.0	18.7	140 W	- 64	9 15	9 16.47	-76 20.8	0.864	1.228	54.1	19.0	82 W	-	32*
5 18	17 18.97	-53 41.3	0.802	1.710	22.0	18.6	141 W	- 62	9 16	9 12.94	-76 43.0	0.860	1.228	54.2	19.0	82 W	-	32*
5 20	17 14.30	-55 25.7	0.789	1.699	22.1	18.6	141 W	- 61	9 17	9 9.08	-77 5.7	0.856	1.228	54.2	19.0	82 W	-	32*
5 22	17 8.86	-57 10.5																

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

21/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°-26°	2021	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°-26°
277473 2005 WD₁									492344 2014 GE₅₀								
<i>(continuation)</i>									<i>(continuation)</i>								
10 5	5 37.21	-83 4.8	0.774	1.236	53.9	18.8	87 W	— 33	9 23	19 40.21	-26 24.0	1.281	1.904	29.2	21.1	112 E	19 90
10 6	5 12.87	-83 4.8	0.769	1.238	53.8	18.8	88 W	— 33	10 3	19 54.14	-25 41.2	1.406	1.936	29.8	21.4	106 E	19 90
10 7	4 48.18	-82 59.8	0.764	1.239	53.7	18.7	88 W	— 33	411199 2010 KW₁₁₇								
10 8	4 23.75	-82 49.5	0.759	1.240	53.6	18.7	89 W	— 33	2 25	16 55.73	-16 30.9	1.771	1.902	31.0	21.4	82 W	28* 71*
10 9	4 0.17	-82 34.0	0.754	1.242	53.5	18.7	89 W	— 33	3 7	17 16.83	-16 57.2	1.637	1.866	32.1	21.2	87 W	28* 76*
10 10	3 37.89	-82 13.4	0.749	1.244	53.4	18.7	90 W	— 34	3 17	17 37.67	-17 14.6	1.508	1.831	32.9	21.0	92 W	28* 80*
10 11	3 17.23	-81 47.9	0.745	1.245	53.3	18.7	90 W	— 34	3 27	17 58.05	-17 24.3	1.383	1.797	33.5	20.8	97 W	27* 81
10 12	2 58.36	-81 17.9	0.740	1.247	53.2	18.7	90 W	— 35	4 6	18 17.77	-17 28.3	1.263	1.765	33.7	20.5	102 W	27* 81
10 13	2 41.32	-80 43.6	0.735	1.249	53.0	18.7	91 W	— 35	4 16	18 36.55	-17 29.0	1.150	1.734	33.6	20.3	107 W	27* 81
10 14	2 26.04	-80 5.6	0.730	1.251	52.9	18.6	91 W	— 36	4 26	18 54.08	-17 30.1	1.044	1.706	33.0	20.0	113 W	27* 82
10 15	2 12.42	-79 24.1	0.726	1.253	52.7	18.6	92 W	— 37	5 6	19 10.04	-17 35.8	0.945	1.680	31.8	19.8	119 W	27* 82
10 16	2 0.30	-78 39.4	0.721	1.255	52.5	18.6	92 W	— 37	5 16	19 23.98	-17 51.1	0.856	1.657	30.0	19.5	125 W	27 82
10 17	1 49.53	-77 51.8	0.717	1.257	52.3	18.6	93 W	— 38	5 26	19 35.44	-18 22.0	0.776	1.637	27.4	19.1	132 W	27 82
10 18	1 39.96	-77 1.5	0.712	1.259	52.2	18.6	93 W	— 39	6 5	19 43.98	-19 13.8	0.707	1.620	23.9	18.8	140 W	26 83
10 19	1 31.45	-76 8.7	0.708	1.262	52.0	18.6	94 E	— 40	6 15	19 49.13	-20 30.4	0.651	1.607	19.3	18.5	148 W	24 85
10 20	1 23.88	-75 13.6	0.704	1.264	51.7	18.6	95 E	— 41	6 25	19 50.77	-22 11.5	0.608	1.597	13.9	18.1	158 W	23 86
10 21	1 17.12	-74 16.3	0.700	1.267	51.5	18.5	95 E	— 42	6 30	19 50.37	-23 9.6	0.593	1.593	10.9	18.0	163 W	22 87
10 22	1 11.09	-73 16.9	0.697	1.269	51.3	18.5	96 E	— 43	7 5	19 49.26	-24 10.9	0.582	1.590	7.8	17.8	168 W	21 88
10 23	1 5.69	-72 15.5	0.693	1.272	51.1	18.5	96 E	— 44	7 10	19 47.59	-25 13.6	0.575	1.589	4.9	17.6	172 W	20 89
10 24	1 0.85	-71 12.2	0.689	1.274	50.8	18.5	97 E	— 45	7 15	19 45.57	-26 15.8	0.573	1.588	3.3	17.5	175 W	19 90
10 25	0 56.50	-70 7.2	0.686	1.277	50.6	18.5	97 E	— 46	7 20	19 43.44	-27 15.2	0.575	1.588	4.6	17.6	173 E	18 89
10 26	0 52.59	-69 0.4	0.683	1.280	50.3	18.5	98 E	— 47	7 25	19 41.45	-28 10.2	0.581	1.589	7.5	17.8	168 E	17 88
10 27	0 49.07	-67 52.0	0.680	1.283	50.0	18.5	98 E	— 48	7 30	19 39.83	-28 59.2	0.592	1.591	10.5	17.9	163 E	16 87
10 28	0 45.90	-66 42.0	0.678	1.286	49.8	18.5	99 E	— 49	8 4	19 38.77	-29 41.0	0.606	1.594	13.5	18.1	158 E	15 86
10 29	0 43.04	-65 30.6	0.675	1.289	49.5	18.4	99 E	— 50	8 9	19 38.46	-30 15.1	0.625	1.598	16.4	18.3	154 E	15 86
10 30	0 40.46	-64 17.7	0.673	1.292	49.2	18.4	100 E	— 52	8 14	19 39.04	-30 41.2	0.648	1.603	19.0	18.4	149 E	14 85
10 31	0 38.13	-63 3.5	0.671	1.295	48.9	18.4	100 E	— 53	8 24	19 43.15	-31 9.9	0.703	1.616	23.5	18.8	140 E	14 85
11 1	0 36.04	-61 48.0	0.670	1.298	48.6	18.4	101 E	— 54	9 3	19 51.07	-31 9.7	0.770	1.632	27.0	19.1	133 E	14 85
11 2	0 34.15	-60 31.3	0.669	1.302	48.3	18.4	101 E	— 55	9 13	20 2.42	-30 44.0	0.848	1.651	29.7	19.4	126 E	14 85
11 4	0 30.93	-57 54.7	0.667	1.309	47.8	18.4	102 E	— 58	9 18	20 9.19	-30 22.8	0.891	1.662	30.7	19.6	122 E	15 86
11 6	0 28.35	-55 14.3	0.666	1.316	47.2	18.4	103 E	— 61	9 23	20 16.56	-29 56.4	0.936	1.673	31.6	19.7	119 E	15 86
11 8	0 26.31	-52 30.9	0.667	1.323	46.6	18.4	104 E	— 63	9 28	20 24.43	-29 25.4	0.984	1.686	32.2	19.9	116 E	16 87
11 10	0 24.73	-49 45.4	0.669	1.330	46.0	18.4	105 E	— 66	10 3	20 32.74	-28 49.9	1.033	1.699	32.8	20.0	113 E	16 87
11 12	0 23.55	-46 58.5	0.673	1.338	45.5	18.4	106 E	— 69	10 8	20 41.42	-28 10.4	1.084	1.712	33.2	20.1	110 E	17 88
11 14	0 22.72	-44 11.0	0.678	1.346	44.9	18.4	106 E	1 72	10 13	20 50.41	-27 27.0	1.138	1.726	33.4	20.3	108 E	18 89
11 16	0 22.18	-41 23.8	0.685	1.354	44.4	18.4	107 E	4 75	10 18	20 59.63	-26 40.1	1.193	1.741	33.6	20.4	105 E	18 89
11 18	0 21.91	-38 37.7	0.693	1.362	44.0	18.5	107 E	6 77	10 23	21 9.03	-25 50.0	1.249	1.756	33.6	20.5	102 E	19 90
11 20	0 21.88	-35 53.3	0.702	1.371	43.5	18.5	107 E	9 80	10 28	21 18.56	-24 57.0	1.308	1.771	33.6	20.6	100 E	20 89
11 22	0 22.06	-33 11.4	0.713	1.380	43.1	18.5	107 E	12 83	11 2	21 28.20	-24 1.3	1.368	1.787	33.4	20.7	97 E	21 88
11 27	0 23.30	-26 41.2	0.747	1.402	42.3	18.6	107 E	18 89	11 7	21 37.90	-23 3.1	1.429	1.804	33.2	20.8	95 E	22 86*
12 2	0 25.49	-20 36.7	0.790	1.426	41.6	18.8	106 E	24 85	11 12	21 47.65	-22 2.7	1.491	1.821	32.9	21.0	92 E	23 83*
12 7	0 28.48	-15 1.8	0.840	1.450	41.0	18.9	105 E	30 79	11 17	21 57.42	-21 0.4	1.555	1.838	32.5	21.1	90 E	24 80*
12 12	0 32.14	-9 57.3	0.896	1.475	40.5	19.1	103 E	35 74*	11 22	22 7.19	-19 56.4	1.620	1.855	32.1	21.2	87 E	25 76*
12 17	0 36.36	-5 22.3	0.959	1.501	40.0	19.3	101 E	40 69*	11 27	22 16.93	-18 50.9	1.686	1.873	31.6	21.2	85 E	26 73*
12 22	0 41.08	-1 14.4	1.027	1.527	39.5	19.4	99 E	44 64*	12 2	22 26.66	-17 44.0	1.753	1.891	31.1	21.3	82 E	27 70*
12 27	0 46.23	+ 2 29.1	1.098	1.554	39.0	19.6	96 E	47 59*	12 7	22 36.35	-16 36.1	1.820	1.910	30.5	21.4	80 E	28 66*
1 1	0 51.79	+ 5 51.2	1.173	1.582	38.3	19.8	94 E	51 54*	74644 1999 RK₆₃								
1 6	0 57.73	+ 8 54.7	1.250	1.609	37.7	19.9	91 E	54 49*	2 25	17 0.37	-25 15.8	2.682	2.690	21.2	21.4	80 W	19* 73*
1 11	1 4.01	+11 42.0	1.330	1.637	36.9	20.1	89 E	57 45*	3 7	17 12.08	-25 34.1	2.519	2.661	21.9	21.3	87 W	19* 81*
1 16	1 10.61	+14 15.5	1.411	1.665	36.1	20.2	86 E	59 41*	3 17	17 22.41	-25 48.3	2.354	2.631	22.1	21.1	95 W	19* 89*
1 21	1 17.51	+16 36.9	1.493	1.694	35.3	20.4	84 E	62* 38*	3 27	17 31.06	-25 59.0	2.192	2.601	22.0	20.9	103 W	19 90
2 25	16 51.54	-18 56.3	1.549	1.726	34.6	21.5	83 W	26* 74*	4 6	17 37.69	-26 6.9	2.034	2.570	21.3	20.7	111 W	19 90
3 7	17 15.51	-19 33.6	1.445	1.707	35.5	21.3	87 W	25* 78*	4 16	17 41.91	-26 12.5	1.883	2.538	20.0	20.5	120 W	19 90
3 17	17 38.93	-19 59.0	1.345	1.691	36.0	21.2	91 W	25* 82*	4 26	17 43.34	-26 16.0	1.744	2.506	18.1	20.2	129 W	19 90
3 27	18 1.48	-20 14.0	1.249	1.677	36.3	21.0	96 W	25* 84*	5 6	17 41.71	-26 16.8	1.618	2.473	15.4	20.0	139 W	19 90
4 6	18 22.83	-20 21.0	1.158	1.666	36.2	20.8	101 W	24* 84	5 16	17 36.84	-26 13.7	1.510	2.439	11.9	19.7	150 W	19 90
4 16	18 42.53	-20 23.0	1.072	1.658	35.6	20.6	106 W	24* 84	5 26	17 28.94	-26 4.9	1.423	2.405	7.7	19.3	161 W	19 90
4 26	19 0.12	-20 23.7	0.992	1.653	34.5	20.4	112 W	24* 84	5 31	17 24.04	-25 57.8	1.388	2.388	5.4	19.1	167 W	19 90
5 6	19 15.15	-20 27.6	0.918	1.651	32.7	20.2	118 W	24* 84	6 5	17 18.65	-25 48.6	1.360	2.370	3.0	18.9	173 W	19 90
5 16																	

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

21/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°-26°	21/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°-26°	
74644 1999 RK₆₃ (continuation)									350243 2012 TZ₇₈ (continuation)									
10 23	18 21.28	-22 29.9	2.060	1.878	28.8	20.3	65 E	20* 58*	8 9	19 24.42	-20 28.9	0.666	1.637	16.1	18.5	153 E	25	84
11 2	18 43.24	-22 3.5	2.121	1.847	27.9	20.3	61 E	20* 53*	8 14	19 23.99	-20 57.5	0.688	1.639	18.9	18.6	148 E	24	85
11 12	19 6.34	-21 24.4	2.178	1.818	26.8	20.3	56 E	21* 47*	8 24	19 26.24	-21 44.0	0.742	1.646	23.7	18.9	139 E	23	86
11 22	19 30.37	-20 31.0	2.230	1.791	25.6	20.3	52 E	21* 42*	9 3	19 32.54	-22 14.4	0.808	1.655	27.4	19.3	131 E	23	86
12 2	19 55.11	-19 22.4	2.278	1.765	24.2	20.3	47 E	22* 36*	9 13	19 42.54	-22 27.6	0.885	1.666	30.3	19.6	123 E	23	86
12 12	20 20.39	-17 58.1	2.322	1.742	22.8	20.2	43 E	22* 31*	9 23	19 55.67	-22 23.1	0.970	1.680	32.3	19.8	117 E	23	86
12 22	20 46.01	-16 18.3	2.362	1.721	21.3	20.2	40 E	22* 26*	9 28	20 3.18	-22 14.4	1.016	1.688	33.0	20.0	114 E	23	86
1 1	21 11.85	-14 23.5	2.399	1.703	19.8	20.1	36 E	21* 22*	10 3	20 11.23	-22 1.3	1.063	1.696	33.6	20.1	110 E	23	86
1 11	21 37.79	-12 14.8	2.434	1.687	18.2	20.1	32 E	21* 17*	10 8	20 19.74	-21 44.0	1.113	1.705	34.0	20.2	108 E	23	86
1 21	22 3.75	-9 53.9	2.467	1.675	16.5	20.1	29 E	19* 14*	10 13	20 28.65	-21 22.6	1.163	1.714	34.3	20.3	105 E	24	85
329669 2003 UD₈									162789 2000 YF₃₃									
2 25	17 5.51	-23 8.7	2.430	2.440	23.5	21.5	79 W	22* 72*	2 25	17 9.48	-16 20.7	2.794	2.773	20.5	21.5	79 W	28*	69*
3 7	17 20.66	-23 16.5	2.243	2.378	24.6	21.3	85 W	22* 79*	3 7	17 20.06	-16 17.3	2.633	2.749	21.1	21.3	86 W	28*	75*
3 17	17 35.23	-23 16.8	2.056	2.316	25.4	21.1	92 W	22* 85*	3 17	17 29.26	-16 8.4	2.471	2.724	21.4	21.2	94 W	29*	80*
3 27	17 49.00	-23 9.6	1.872	2.252	26.0	20.8	99 W	22* 87	3 27	17 36.80	-15 55.1	2.311	2.698	21.2	21.0	102 W	29	80
4 6	18 1.77	-22 55.4	1.693	2.188	26.1	20.5	106 W	22* 87	4 6	17 42.39	-15 38.4	2.154	2.671	20.6	20.8	110 W	29	80
4 16	18 13.22	-22 34.2	1.520	2.123	25.8	20.2	113 W	22* 87	4 16	17 45.70	-15 19.6	2.005	2.643	19.4	20.6	119 W	30	79
4 26	18 23.01	-22 6.5	1.356	2.057	25.0	19.9	120 W	23 86	4 26	17 46.43	-15 0.2	1.867	2.614	17.5	20.4	129 W	30	79
5 6	18 30.79	-21 32.8	1.202	1.991	23.5	19.5	128 W	23 86	5 6	17 44.38	-14 41.9	1.742	2.585	15.0	20.1	138 W	30	79
5 16	18 36.05	-20 53.4	1.060	1.925	21.2	19.1	137 W	24 85	5 16	17 39.43	-14 26.2	1.635	2.555	11.8	19.8	149 W	31	78
5 26	18 38.36	-20 8.7	0.932	1.858	18.0	18.6	146 W	25 84	5 26	17 31.81	-14 14.9	1.550	2.525	8.0	19.5	160 W	31	78
6 5	18 37.34	-19 19.0	0.820	1.792	13.8	18.1	155 W	26 83	6 5	17 22.08	-14 9.5	1.490	2.493	4.5	19.2	169 W	31	78
6 15	18 32.79	-18 24.6	0.726	1.727	8.6	17.6	165 W	27 82	6 15	17 11.17	-14 11.3	1.455	2.461	4.3	19.2	170 E	31	78
6 25	18 25.13	-17 26.6	0.649	1.663	3.9	17.0	174 W	28 81	6 25	17 0.33	-14 21.4	1.448	2.429	8.1	19.3	160 W	31	78
6 30	18 20.45	-16 56.8	0.618	1.632	4.5	16.9	173 E	28 81	7 5	16 50.78	-14 40.3	1.464	2.395	12.5	19.5	149 W	30	79
7 5	18 15.47	-16 27.1	0.592	1.601	7.3	16.9	169 E	29 80	7 15	16 43.54	-15 8.0	1.502	2.362	16.6	19.6	138 E	30	79
7 10	18 10.44	-15 58.2	0.570	1.571	10.8	16.9	163 E	29 80	7 25	16 39.29	-15 43.8	1.558	2.327	20.1	19.8	128 E	29	80
7 15	18 5.67	-15 30.6	0.552	1.542	14.6	17.0	158 E	29 80	8 4	16 38.27	-16 26.4	1.627	2.293	22.9	19.9	119 E	29	80
7 20	18 1.47	-15 5.2	0.538	1.513	18.4	17.0	152 E	30 79	8 14	16 40.51	-17 14.3	1.704	2.258	25.0	20.1	110 E	27*	81
7 25	17 58.11	-14 42.6	0.528	1.485	22.2	17.0	147 W	30 79	8 24	16 45.85	-18 5.5	1.787	2.223	26.5	20.2	102 E	26*	82
7 30	17 55.82	-14 23.1	0.520	1.458	25.8	17.1	141 E	31 78	9 3	16 54.03	-18 57.8	1.872	2.187	27.4	20.3	94 E	25*	83*
8 4	17 54.80	-14 7.2	0.515	1.432	29.3	17.1	136 E	31 78	9 13	17 4.82	-19 49.2	1.957	2.152	27.8	20.4	87 E	23*	79*
8 14	17 57.17	-13 46.2	0.511	1.385	35.5	17.2	128 E	31 78	9 23	17 17.95	-20 37.6	2.040	2.116	27.9	20.4	80 E	22*	73*
8 24	18 5.91	-13 37.0	0.512	1.344	40.6	17.3	120 E	31 78	10 3	17 33.17	-21 20.7	2.120	2.081	27.5	20.5	74 E	21*	67*
9 3	18 21.01	-13 34.3	0.517	1.310	44.6	17.4	114 E	31 78	10 13	17 50.31	-21 56.6	2.195	2.045	26.9	20.5	68 E	20*	61*
9 13	18 42.22	-13 30.6	0.525	1.284	47.4	17.4	110 E	31 78	10 23	18 9.13	-22 23.3	2.264	2.011	26.1	20.5	63 W	20*	56*
9 23	19 8.96	-13 17.2	0.536	1.267	49.3	17.5	107 E	32 77	11 2	18 29.45	-22 39.0	2.327	1.976	25.0	20.5	57 E	19*	50*
10 3	19 40.34	-12 46.2	0.551	1.260	50.1	17.6	105 E	32 77	11 12	18 51.10	-22 42.1	2.384	1.943	23.8	20.4	52 E	19*	44*
10 13	20 15.27	-11 51.0	0.574	1.263	50.1	17.7	104 E	33 76	11 22	19 13.87	-22 31.1	2.434	1.910	22.4	20.4	47 E	18*	39*
10 18	20 33.65	-11 13.1	0.589	1.268	49.9	17.7	103 E	34 75	12 2	19 37.59	-22 5.0	2.478	1.878	20.9	20.4	43 E	18*	33*
10 23	20 52.38	-10 28.4	0.606	1.276	49.5	17.8	103 E	35 74	12 12	20 2.07	-21 22.9	2.516	1.848	19.3	20.3	38 E	17*	28*
10 28	21 11.28	-9 37.1	0.626	1.286	48.9	17.9	103 E	35 74	12 22	20 27.13	-20 24.6	2.547	1.819	17.7	20.3	34 E	16*	24*
11 2	21 30.18	-8 39.9	0.649	1.298	48.3	17.9	103 E	36 73	1 1	20 52.62	-19 10.1	2.573	1.791	16.0	20.2	30 E	15*	19*
11 7	21 48.95	-7 37.4	0.675	1.312	47.6	18.0	102 E	37 72*	1 11	21 18.40	-17 39.8	2.594	1.765	14.2	20.1	26 E	13*	15*
11 12	22 7.46	-6 30.4	0.704	1.329	46.8	18.1	102 E	38 70*	1 21	21 44.34	-15 54.8	2.610	1.742	12.5	20.0	23 E	11*	12*
11 17	22 25.61	-5 20.0	0.737	1.347	46.0	18.2	102 E	40 69*	186737 2004 CP₂₆									
11 22	22 43.30	-4 7.0	0.774	1.367	45.1	18.3	101 E	41 68*	2 25	17 10.93	-14 59.1	2.619	2.607	21.8	21.4	78 W	29*	67*
11 27	23 0.49	-2 52.4	0.814	1.389	44.3	18.5	101 E	42 66*	3 7	17 22.23	-14 47.5	2.467	2.588	22.5	21.3	86 W	30*	74*
12 2	23 17.16	-1 37.0	0.857	1.412	43.5	18.6	100 E	43 65*	3 17	17 32.12	-14 29.1	2.313	2.568	22.8	21.2	93 W	30*	78*
12 7	23 33.32	0 21.4	0.904	1.437	42.6	18.7	99 E	45 63*	3 27	17 40.30	-14 5.0	2.161	2.546	22.6	21.0	101 W	31*	78
12 12	23 48.97	0 53.8	0.954	1.463	41.8	18.9	98 E	46 61*	4 6	17 46.47	-13 36.2	2.012	2.524	22.0	20.8	109 W	31	78
12 22	0 18.79	+ 3 21.1	1.064	1.518	40.2	19.1	96 E	48 57*	4 16	17 50.27	-13 4.1	1.870	2.501	20.8	20.6	118 W	32	77
1 1	0 46.83	+ 5 42.0	1.185	1.576	38.5	19.4	93 E	51 53*	4 26	17 51.40	-12 30.8	1.737	2.477	18.9	20.3	127 W	32	77
1 11	1 13.40	+ 7 54.9	1.318	1.637	36.9	19.7	90 E	53 50*	5 6	17 49.58	-11 58.1	1.618	2.452	16.4	20.1	137 W	33	76
1 21	1 38.73	+ 9 58.7	1.459	1.701	35.2	19.9	86 E	55 46*	5 16	17 44.70	-11 28.8	1.515	2.426	13.2	19.8	147 W	34	75
2 25	17 8.37	-18 53.9	1.802	1.877	31.1	21.4	79 W	26*	5 26	17 36.93	-11 5.6	1.433	2.399	9.5	19.5	157 W	34	75
3 7	17 30.00	-19 2.6	1.678	1.850	32.2	21.2	83 W	26*	6 5	17 26.85	-10 51.4	1.375	2.371	6.1	19.2	166 W	34	75
3 17	17 51.14	-18 59.2	1.556	1.824	33.0	21.1	88 W	26*	6 15	17 15.43	-10 48.5	1.342	2.342	5.7	19.1	167 E	34	75
3 27	18 11.57	-18 44.9	1.437	1.799	33.6	20.9	93 W	26*	6 25	17 4.00	-10 58.7	1.335	2.313	9.0	19.3	159 E	34	75
4 6	18 31.04	-18 20.9	1.322	1.775	33.9	20.7	99 W	26*	7 5	16 53.89	-11 22.1	1.352	2.282	13.4	19.4	149 E	34	75
4 16	18 49.24	-17 49.3	1.212	1.752	33.7	20.4	104 W	27*	7 15	16 46.19	-11 58.1	1.390	2.251	17.5	19.6	138 E	33	76
4 26	19 5.83	-17 13.1	1.108	1.731	33.1	20.2	110 W	28*	7 25	16 41.63	-12 44.7	1.444	2.220	21.1	19.8	128 E	32	77
5 6	19 20.47	-16 35.4	1.010	1.712	32.0	19.9	116 W	28*	8 4	16 40.47	-13 39.5	1.512	2.187	24.0	19.9	119 E	31*	78
5 16	19 3																	

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

21/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°-26°	21/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°-26°
186737 2004 CP₂₆ (continuation)									161972 2007 JJ₄₀ (continuation)								
9 13	17 7.61	-17 49.4	1.836	2.053	29.3	20.4	87 E	25* 78*	8 19	20 4.52	-5 11.5	0.689	1.654	16.6	18.2	152 E	40 69
9 23	17 21.08	-18 47.3	1.917	2.018	29.4	20.4	81 E	24* 73*	8 24	20 4.27	-6 25.1	0.704	1.652	18.8	18.3	148 E	39 70
10 3	17 36.69	-19 39.0	1.994	1.983	29.1	20.5	75 E	23* 68*	8 29	20 4.95	-7 38.0	0.722	1.650	21.0	18.4	144 E	37 72
10 13	17 54.26	-20 22.3	2.067	1.949	28.6	20.5	69 E	22* 62*	9 3	20 6.60	-8 48.5	0.744	1.650	23.1	18.5	140 E	36 73
10 23	18 13.57	-20 55.3	2.135	1.914	27.8	20.5	64 E	21* 56*	9 8	20 9.25	-9 55.1	0.769	1.650	25.0	18.7	136 E	35 74
11 2	18 34.41	-21 16.1	2.197	1.880	26.8	20.5	59 E	21* 51*	9 13	20 12.88	-10 56.4	0.798	1.651	26.8	18.8	132 E	34 75
11 12	18 56.63	-21 23.2	2.252	1.847	25.6	20.5	54 E	20* 45*	9 23	20 22.91	-12 40.3	0.863	1.656	29.8	19.1	125 E	32 77
11 22	19 20.01	-21 15.2	2.301	1.814	24.3	20.4	49 E	20* 40*	10 3	20 36.15	-13 56.1	0.939	1.663	32.1	19.3	118 E	31 78
12 2	19 44.38	-20 50.9	2.344	1.781	22.9	20.4	45 E	19* 35*	10 13	20 52.04	-14 42.6	1.024	1.673	33.6	19.6	112 E	30 79
12 12	20 9.55	-20 9.6	2.381	1.750	21.3	20.3	40 E	19* 30*	10 23	21 9.96	-15 0.4	1.116	1.686	34.6	19.8	106 E	30 79
12 22	20 35.35	-19 11.0	2.412	1.720	19.8	20.3	36 E	18* 25*	10 28	21 19.48	-14 59.3	1.164	1.694	34.8	19.9	103 E	30 79
1	1 21 1.63	-17 55.2	2.438	1.692	18.2	20.2	32 E	17* 21*	11 2	21 29.31	-14 51.8	1.215	1.702	35.0	20.0	100 E	30 79
1 11	21 28.25	-16 22.8	2.459	1.666	16.5	20.1	29 E	16* 17*	11 7	21 39.39	-14 38.2	1.266	1.711	35.0	20.1	98 E	30 78*
1 21	21 55.09	-14 35.0	2.476	1.641	14.9	20.1	25 E	14* 14*	11 12	21 49.68	-14 19.1	1.319	1.720	35.0	20.2	95 E	31 77*
302024 2000 SM₁₃₄									331857 2003 WN₇								
2 25	17 34.91	-26 8.8	1.934	1.880	30.0	21.4	72 W	18* 66*	2 25	17 57.99	-6 29.9	3.589	3.345	15.9	21.5	68 W	35* 53*
3 7	17 59.30	-25 55.1	1.811	1.851	31.4	21.3	77 W	18* 70*	3 7	18 6.77	-6 22.3	3.424	3.314	16.8	21.4	75 W	36* 60*
3 17	18 23.31	-25 23.9	1.690	1.823	32.6	21.1	81 W	18* 75*	3 17	18 14.46	-6 11.3	3.253	3.283	17.5	21.3	83 W	37* 66*
3 27	18 46.70	-24 34.9	1.572	1.797	33.6	21.0	86 W	19* 80*	3 27	18 20.84	-5 58.3	3.079	3.250	17.9	21.1	91 W	38* 69*
4 6	19 9.24	-23 28.9	1.458	1.772	34.4	20.8	90 W	20* 84*	4 6	18 25.70	-5 45.0	2.905	3.217	17.9	21.0	99 W	39* 70*
4 16	19 30.61	-22 6.6	1.348	1.750	34.8	20.6	95 W	21* 86*	4 16	18 28.81	-5 33.2	2.734	3.183	17.5	20.8	108 W	39* 70*
4 26	19 50.53	-20 29.4	1.243	1.729	35.0	20.4	100 W	23* 84	4 26	18 29.92	-5 25.4	2.569	3.148	16.6	20.6	116 W	40 69
5 6	20 8.70	-18 39.2	1.144	1.711	34.7	20.2	105 W	25* 83	5 6	18 28.83	-5 24.3	2.414	3.113	15.2	20.4	126 W	40 69
5 16	20 24.75	-16 38.4	1.051	1.695	34.0	20.0	111 W	27* 81	5 16	18 25.38	-5 32.6	2.273	3.076	13.3	20.2	135 W	39 70
5 26	20 38.30	-14 30.0	0.965	1.682	32.6	19.7	116 W	30* 78	5 26	18 19.56	-5 53.4	2.151	3.039	10.9	20.0	145 W	39 70
6 5	20 48.96	-12 17.4	0.887	1.671	30.7	19.5	123 W	33* 76	6 5	18 11.56	-6 28.9	2.051	3.002	8.2	19.7	155 W	39 70
6 15	20 56.26	-10 5.5	0.818	1.664	27.9	19.2	130 W	35 74	6 15	18 1.80	-7 20.4	1.978	2.963	5.9	19.5	163 W	38 71
6 20	20 58.54	-9 1.6	0.788	1.661	26.3	19.1	134 W	36 73	6 25	17 51.04	-8 27.6	1.933	2.924	5.5	19.4	164 W	37 72
6 25	20 59.88	-8 0.0	0.760	1.659	24.4	18.9	138 W	37 72	7 5	17 40.18	-9 48.5	1.918	2.884	7.7	19.5	158 W	35 74
6 30	21 0.27	-7 1.6	0.736	1.658	22.4	18.8	142 W	38 71	7 15	17 30.18	-11 19.7	1.930	2.843	10.9	19.6	148 W	34 75
7 5	20 59.71	-6 7.4	0.714	1.657	20.1	18.7	146 W	39 70	7 25	17 21.94	-12 57.3	1.967	2.802	14.2	19.7	138 E	32 77
7 10	20 58.25	-5 18.4	0.697	1.658	17.8	18.5	150 W	40 69	8 4	17 16.05	-14 37.8	2.026	2.760	17.0	19.8	127 E	30 79
7 15	20 55.99	-4 35.5	0.683	1.659	15.4	18.4	154 W	40 69	8 14	17 12.87	-16 18.2	2.100	2.718	19.3	20.0	117 E	29 80
7 20	20 53.07	-3 59.3	0.673	1.661	13.0	18.3	158 W	41 68	8 24	17 12.53	-17 56.6	2.186	2.675	21.1	20.1	108 E	27* 82
7 25	20 49.67	-3 30.5	0.668	1.663	10.9	18.2	162 W	41 68	9 3	17 14.95	-19 31.5	2.279	2.631	22.3	20.2	99	25* 84
8 4	20 42.23	-2 55.6	0.670	1.671	8.9	18.1	165 E	42 67	9 13	17 20.02	-21 2.0	2.374	2.587	22.9	20.2	91 E	23* 83*
8 14	20 35.44	-2 49.5	0.690	1.681	11.1	18.3	161 E	42 67	9 23	17 27.54	-22 27.3	2.469	2.543	23.0	20.3	83 E	21* 76*
8 24	20 30.95	-3 5.2	0.727	1.694	15.2	18.6	154 E	42 67	10 3	17 37.32	-23 46.7	2.560	2.498	22.8	20.3	75 E	19* 69*
8 29	20 29.91	-3 18.3	0.752	1.702	17.4	18.8	150 E	42 67	10 13	17 49.17	-24 59.5	2.646	2.453	22.2	20.3	68 E	17* 62*
9 3	20 29.75	-3 33.6	0.781	1.710	19.5	18.9	145 E	41 68	10 23	18 2.92	-26 4.8	2.724	2.407	21.2	20.3	61 E	16* 55*
9 8	20 30.52	-3 49.7	0.813	1.719	21.5	19.1	141 E	41 68	11 2	18 18.42	-27 1.9	2.792	2.362	20.1	20.3	55 E	14* 48*
9 13	20 32.22	-4 5.7	0.849	1.728	23.3	19.2	137 E	41 68	11 12	18 35.53	-27 50.0	2.850	2.316	18.7	20.3	49 E	13* 42*
9 18	20 34.82	-4 20.6	0.888	1.739	24.9	19.4	133 E	41 68	11 22	18 54.12	-28 28.0	2.897	2.271	17.1	20.2	43 E	11* 36*
9 23	20 38.25	-4 33.8	0.930	1.749	26.3	19.5	130 E	40 69	12 2	19 14.05	-28 55.3	2.932	2.226	15.5	20.1	37 E	9* 30*
10 3	20 47.37	-4 52.8	1.022	1.772	28.5	19.8	122 E	40 69	12 12	19 35.22	-29 10.8	2.955	2.180	13.7	20.0	32 E	7* 25*
10 13	20 59.07	-4 59.7	1.124	1.796	30.1	20.1	116 E	40 69	12 22	19 57.48	-29 14.0	2.967	2.136	12.0	19.9	27 E	5* 20*
10 23	21 12.83	-4 52.7	1.234	1.823	31.0	20.4	109 E	40 69	1	1 20 20.73	-29 4.1	2.967	2.092	10.3	19.8	22 E	3* 16*
11 2	21 28.15	-4 31.6	1.351	1.850	31.5	20.6	103 E	40 69	1 11	20 44.85	-28 40.6	2.957	2.049	8.8	19.7	19 E	— 12*
11 12	21 44.66	-3 56.7	1.474	1.879	31.5	20.9	97 E	41 67	1 21	21 9.70	-28 3.3	2.937	2.006	7.6	19.6	16 E	— 10*
11 22	22 2.02	-3 8.8	1.603	1.910	31.1	21.1	92 E	42 63*	213050 1998 TS₃								
12 2	22 19.97	-2 9.3	1.735	1.941	30.5	21.3	86 E	43 58*	2 25	18 19.24	-1 24.6	1.841	1.654	32.3	21.5	63 W	38* 46*
12 12	22 38.35	-0 59.5	1.871	1.972	29.5	21.4	81 E	44 53*	3 7	18 42.33	+1 40.7	1.782	1.669	33.2	21.5	67 W	41* 48*
161972 2007 JJ₄₀									3 17	19 4.16	+5 2.4	1.725	1.684	33.9	21.4	71 W	44* 50*
2 25	17 43.74	-14 57.9	2.167	2.060	26.9	21.5	71 W	28* 61*	3 27	19 24.58	+8 37.6	1.671	1.700	34.4	21.4	74 W	47* 50*
3 7	18 3.74	-14 21.4	2.031	2.027	28.3	21.3	76 W	29* 66*	4 6	19 43.48	+12 22.8	1.619	1.716	34.8	21.4	78 W	51* 49*
3 17	18 23.26	-13 31.4	1.897	1.995	29.5	21.2	81 W	30* 70*	4 16	20 0.67	+16 14.6	1.570	1.732	34.9	21.3	81 W	54* 47*
3 27	18 42.11	-12 28.6	1.764	1.963	30.5	21.0	86 W	31* 73*	4 26	20 15.98	+20 8.7	1.522	1.748	35.0	21.3	85 W	58* 44*
4 6	19 0.16	-11 13.9	1.634	1.931	31.2	20.8	91 W	32* 75*	5 6	20 29.19	+24 1.4	1.477	1.764	34.9	21.2	88 W	63* 40
4 16	19 17.17	-9 48.5	1.507	1.901	31.7	20.6	96 W	34* 74	5 16	20 40.01	+27 48.2	1.433	1.780	34.6	21.2	92 W	68* 36
4 26	19 32.94	-8 14.5	1.386	1.871	31.8	20.4	102 W	36* 72	5 26	20 48.11	+31 24.0	1.390	1.795	34.2	21.1	95 W	73* 33
5 6	19 47.22	-6 34.2	1.271	1.842	31.5	20.2	107 W	38* 71	6 5	20 53.13	+34 43.1	1.348	1.810	33.6	21.0	99 W	79* 29
5 16	19 59.71	-4 51.0	1.161	1.815	30.8	19.9	113 W	40* 69	6 15	20 54.66	+37 38.8	1.307	1.825	32.9	21.0	103 W	83 26
5 26	20 10.09	-3 9.4	1.060	1.789	29.6	19.7	119 W	42* 67	6 25	20 52.46	+40 1.9	1.269	1.839	32.0	20.9	107 W	85 24
5 31	20 14.39	-2 20.9	1.013	1.776	28.8	19.5	122 W	43 66	7 5	20 46.55	+41 43.0	1.232	1.853	30.9	20.8	111 W	87 22
6 5	20 18.03	-1 34.9	0.967	1.764	27.8	19.4	126 W	43 66	7 15	20 37.40</							

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

21/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	21/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
213050 1998 TS₃										163249 2002 GT									
<i>(continuation)</i>										<i>(continuation)</i>									
7 25	20 26.21	+42 16.0	1.174	1.879	28.5	20.7	118 W	87	22	5 11	0 2.49	+ 5 44.6	1.223	0.922	54.0	20.7	48 W	17*	39*
8 4	20 14.64	+40 53.3	1.156	1.891	27.4	20.6	121 E	86	23	5 16	0 25.00	+ 7 49.5	1.238	0.911	53.5	20.7	46 W	17*	38*
8 14	20 4.51	+38 23.7	1.149	1.902	26.5	20.6	123 E	83	26	5 21	0 47.47	+ 9 48.4	1.256	0.902	52.9	20.7	45 W	17*	36*
8 24	19 57.36	+34 56.5	1.154	1.913	26.0	20.6	124 E	80	29	5 26	1 9.88	+11 40.0	1.277	0.897	52.1	20.7	44 W	17*	35*
9 3	19 53.99	+30 47.5	1.173	1.922	26.0	20.6	123 E	76	33	5 31	1 32.21	+13 23.5	1.299	0.894	51.1	20.7	43 W	17*	34*
9 13	19 54.62	+26 15.2	1.208	1.931	26.5	20.7	121 E	71	38	6 5	1 54.44	+14 57.9	1.323	0.895	50.0	20.7	42 W	17*	33*
9 23	19 59.05	+21 38.8	1.259	1.939	27.3	20.9	118 E	67	42	6 10	2 16.52	+16 22.6	1.349	0.899	48.8	20.7	42 W	17*	32*
10 3	20 6.79	+17 13.9	1.325	1.947	28.3	21.0	113 E	62	47	6 15	2 38.42	+17 37.3	1.375	0.905	47.6	20.8	41 W	18*	31*
10 13	20 17.34	+13 11.8	1.405	1.953	29.2	21.2	107 E	58	51	6 20	3 0.09	+18 41.6	1.401	0.915	46.4	20.8	41 W	18*	30*
10 23	20 30.19	+ 9 39.7	1.497	1.958	29.8	21.3	102 E	55	54*	6 25	3 21.47	+19 35.5	1.428	0.927	45.2	20.8	40 W	18*	29*
11 2	20 44.87	+ 6 40.5	1.599	1.963	30.2	21.5	96 E	52	56*	6 30	3 42.53	+20 19.1	1.454	0.942	44.1	20.9	40 W	19*	28*
215528 2002 VQ₉₁										277423 2005 UC₃₁₄									
2 25	18 26.40	-22 29.1	2.520	2.203	23.0	21.4	60 W	18*	54*	2 25	18 44.49	-31 13.1	2.205	1.863	26.5	21.5	57 W	8*	51*
3 7	18 46.88	-22 47.0	2.376	2.163	24.7	21.3	66 W	18*	59*	3 7	19 12.60	-32 12.4	2.090	1.834	28.3	21.4	61 W	7*	55*
3 17	19 7.35	-22 59.7	2.231	2.124	26.3	21.2	71 W	18*	65*	3 17	19 41.59	-33 1.5	1.977	1.805	30.1	21.3	65 W	5*	53*
3 27	19 27.74	-23 8.6	2.085	2.085	27.7	21.0	76 W	17*	70*	3 27	20 11.37	-33 40.1	1.867	1.777	31.7	21.2	69 W	4*	61*
4 6	19 47.98	-23 15.3	1.940	2.046	28.9	20.9	81 W	17*	75*	4 6	20 41.83	-34 8.2	1.761	1.751	33.1	21.0	73 W	3*	64*
4 16	20 8.00	-23 21.9	1.796	2.008	29.9	20.7	87 W	17*	81*	4 16	21 12.82	-34 25.8	1.659	1.727	34.4	20.9	76 W	1*	66*
4 26	20 27.69	-23 30.8	1.656	1.970	30.7	20.5	92 W	17*	86*	4 26	21 44.08	-34 33.6	1.564	1.704	35.5	20.8	80 W	—	69*
5 6	20 46.98	-23 44.9	1.521	1.933	31.1	20.3	98 W	17*	88	5 6	22 15.38	-34 32.2	1.475	1.683	36.5	20.7	83 W	—	71*
5 16	21 5.72	-24 7.5	1.392	1.898	31.3	20.0	103 W	18*	88	5 16	22 46.39	-34 23.2	1.392	1.664	37.3	20.5	86 W	—	74*
5 26	21 23.75	-24 42.4	1.270	1.863	31.0	19.8	109 W	18*	89	5 26	23 16.71	-34 8.6	1.317	1.648	37.9	20.4	89 W	—	76*
6 5	21 40.89	-25 33.7	1.156	1.830	30.2	19.5	115 W	18*	90	5 31	23 31.51	-33 59.9	1.281	1.640	38.2	20.3	90 W	—	78*
6 15	21 56.80	-26 45.3	1.052	1.798	29.0	19.3	121 W	17*	89	6 5	23 45.99	-33 50.7	1.247	1.634	38.4	20.3	92 W	—	79*
6 25	22 11.11	-28 20.4	0.959	1.769	27.3	19.0	127 W	16*	88	6 10	0 0.10	-33 41.5	1.214	1.628	38.5	20.2	93 W	—	80*
6 30	22 17.53	-29 17.3	0.917	1.755	26.2	18.8	130 W	16*	87	6 15	0 13.77	-33 32.6	1.183	1.622	38.6	20.2	95 W	1*	81*
7 5	22 23.35	-30 20.3	0.878	1.742	25.1	18.7	133 W	15	86	6 20	0 26.95	-33 24.5	1.153	1.618	38.6	20.1	96 W	2*	82*
7 10	22 28.50	-31 29.1	0.843	1.729	23.8	18.5	137 W	14	85	6 25	0 39.60	-33 17.3	1.124	1.614	38.6	20.0	98 W	3*	83*
7 15	22 32.89	-32 42.9	0.811	1.717	22.6	18.4	140 W	12	83	6 30	0 51.65	-33 11.6	1.096	1.611	38.5	20.0	99 W	4*	83
7 20	22 36.46	-34 0.4	0.783	1.705	21.3	18.3	142 W	11	82	7 5	1 3.04	-33 7.6	1.069	1.608	38.4	19.9	101 W	5*	83
7 25	22 39.16	-35 20.1	0.759	1.695	20.1	18.1	145 W	10	81	7 10	1 13.70	-33 5.7	1.043	1.607	38.2	19.9	103 W	6*	83
7 30	22 40.94	-36 40.1	0.739	1.685	19.0	18.0	147 W	8	79	7 15	1 23.56	-33 6.2	1.018	1.606	37.8	19.8	104 W	7*	83
8 4	22 41.75	-37 58.1	0.722	1.675	18.2	18.0	149 W	7	78	7 20	1 32.55	-33 9.0	0.993	1.606	37.5	19.7	106 W	8*	83
8 9	22 41.63	-39 11.3	0.710	1.667	17.7	17.9	150 W	6	77	7 25	1 40.60	-33 14.2	0.969	1.606	37.0	19.7	108 W	9*	83
8 14	22 40.65	-40 17.1	0.702	1.659	17.6	17.9	150 W	5	76	7 30	1 47.64	-33 21.8	0.946	1.608	36.4	19.6	110 W	10*	83
8 19	22 38.97	-41 12.6	0.697	1.653	17.9	17.8	150 W	4	75	8 4	1 53.58	-33 31.7	0.923	1.610	35.7	19.5	112 W	11*	82
8 24	22 36.76	-41 55.7	0.697	1.647	18.6	17.9	149 W	3	74	8 9	1 58.32	-33 43.4	0.901	1.612	34.9	19.5	115 W	11*	82
8 29	22 34.24	-42 24.7	0.700	1.642	19.6	17.9	147 W	3	74	8 14	2 1.76	-33 56.2	0.880	1.616	33.9	19.4	117 W	11*	82
9 3	22 31.67	-42 38.4	0.707	1.638	20.8	17.9	145 E	2	73	8 19	2 3.83	-34 9.2	0.860	1.620	32.9	19.3	120 W	11	82
9 8	22 29.31	-42 36.4	0.717	1.635	22.1	18.0	142 E	2	73	8 24	2 4.45	-34 21.1	0.842	1.625	31.7	19.2	122 W	11	82
9 13	22 27.42	-42 18.6	0.730	1.632	23.6	18.1	140 E	3	74	8 29	2 3.56	-34 30.6	0.824	1.631	30.4	19.2	125 W	10	81
9 18	22 26.20	-41 46.0	0.747	1.631	25.0	18.2	137 E	3	74	9 3	2 1.12	-34 35.9	0.809	1.637	29.0	19.1	128 W	10	81
9 23	22 25.79	-40 59.7	0.766	1.631	26.3	18.3	134 E	4	75	9 8	1 57.15	-34 34.7	0.796	1.644	27.5	19.0	131 W	10	81
9 28	22 26.24	-40 1.2	0.788	1.631	27.6	18.4	131 E	5	76	9 13	1 51.71	-34 24.6	0.785	1.652	25.9	18.9	134 W	11	82
10 3	22 27.61	-38 51.8	0.813	1.633	28.8	18.5	128 E	6	77	9 18	1 44.98	-34 3.1	0.778	1.660	24.4	18.9	137 W	11	82
10 8	22 29.88	-37 33.0	0.840	1.635	29.9	18.6	125 E	7	78	9 23	1 37.20	-33 28.2	0.774	1.669	23.0	18.8	139 W	12	83
10 13	22 33.02	-36 6.2	0.870	1.638	30.9	18.7	122 E	9	80	9 28	1 28.67	-32 38.4	0.774	1.679	21.8	18.8	142 W	12	83
10 18	22 36.97	-34 52.8	0.902	1.643	31.8	18.8	120 E	10	81	10 3	1 19.75	-31 32.9	0.778	1.689	20.8	18.8	143 W	13	84
10 23	22 41.64	-32 32.1	0.937	1.648	32.5	18.9	117 E	12	83	10 8	1 10.82	-30 11.6	0.787	1.699	20.3	18.8	144 W	15	86
10 28	22 46.95	-31 11.0	0.973	1.654	33.2	19.0	114 E	14	85	10 13	1 2.26	-28 35.5	0.801	1.710	20.2	18.9	144 E	16	87
11 2	22 52.83	-29 24.5	1.012	1.661	33.7	19.1	112 E	16	87	10 18	0 54.40	-26 46.7	0.820	1.722	20.6	19.0	143 E	18	89
11 7	22 59.21	-27 35.4	1.053	1.669	34.1	19.2	109 E	17	88	10 23	0 47.47	-24 47.7	0.844	1.734	21.2	19.1	141 E	20	89
11 12	23 6.03	-25 44.3	1.096	1.677	34.4	19.3	107 E	19	90	10 28	0 41.62	-22 41.5	0.874	1.746	22.2	19.2	138 E	22	87
11 17	23 13.22	-23 52.1	1.141	1.686	34.6	19.5	104 E	21	88	11 2	0 36.94	-20 30.6	0.908	1.759	23.3	19.3	135 E	24	85
11 22	23 20.73	-21 59.2	1.188	1.697	34.7	19.6	102 E	23	86	11 7	0 33.46	-18 17.5	0.947	1.772	24.5	19.5	132 E	27	82
11 27	23 28.51	-20 6.1	1.237	1.707	34.7	19.7	100 E	25	84	11 12	0 31.14	-16 4.2	0.990	1.785	25.6	19.6	129 E	29	80
12 2	23 36.53	-18 13.2	1.288	1.719	34.7	19.8	97 E	27	82*	11 17	0 29.95	-13 52.2	1.038	1.799	26.7	19.8	125 E	31	78
12 7	23 44.75	-16 20.9	1.341	1.731	34.5	19.9	95 E	29	79*	11 22	0 29.78	-11 42.9	1.090	1.813	27.7	19.9	121 E	33	76
12 12	23 53.16	-14 29.4	1.395	1.744	34.3	20.0	93 E	31	75*	12 2	0 32.17	- 7 34.5	1.203	1.842	29.2	20.2	114 E	37	72
12 22	0 10.41	-10 50.4	1.508	1.772	33.7	20.1	88 E	34	68*	12 12	0 37.69	- 3 41.7	1.327	1.872	30.2	20.5	107 E	41	68
1 1	0 28.14	- 7 17.8	1.626	1.801	32.8	20.3	83 E	38	61*	12 22	0 45.72	- 0 4.4	1.460	1.902	30.6	20.7	100 E	45	63*
1 11	0 46.27	- 3 53.0	1.750	1.833	31.8	20.5	79 E	41	54*										

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

21/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	21/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
217756 2000 QW₈										281070 2006 OY₁₀									
<i>(continuation)</i>																			
4 6	20 44.97	-13 44.6	1.614	1.518	37.1	21.0	66 W	20*	59*	2 25	19 5.71	-17 56.1	1.445	1.122	43.1	21.4	51 W	18*	43*
4 16	21 14.01	-11 36.1	1.539	1.500	38.5	21.0	69 W	21*	61*	3 7	19 51.53	-12 14.6	1.356	1.035	46.7	21.2	49 W	21*	41*
4 26	21 42.49	-9 15.9	1.468	1.485	39.8	20.9	71 W	22*	63*	3 17	20 39.80	-5 23.6	1.299	0.952	49.6	21.0	47 W	23*	37*
5 6	22 10.36	-6 47.6	1.402	1.474	41.0	20.8	73 W	24*	64*	3 27	21 30.30	+2 6.9	1.281	0.878	51.0	20.8	43 W	24*	32*
5 16	22 37.51	-4 15.0	1.340	1.467	41.9	20.7	76 W	26*	64*	4 6	22 22.79	+9 29.3	1.304	0.819	50.1	20.7	39 W	24*	26*
5 26	23 3.85	-1 42.6	1.281	1.463	42.7	20.6	78 W	28*	64*	4 16	23 16.69	+15 54.6	1.363	0.780	46.7	20.6	34 W	22*	21*
6 5	23 29.32	+0 45.9	1.226	1.464	43.2	20.5	81 W	31*	63*	4 26	0 10.94	+20 49.1	1.449	0.769	41.1	20.5	30 W	20*	16*
6 15	23 53.76	+3 6.2	1.172	1.469	43.4	20.5	84 W	35*	61*	5 6	1 4.06	+24 2.8	1.549	0.785	34.7	20.6	26 W	17*	12*
6 25	0 17.00	+5 14.6	1.120	1.478	43.4	20.4	87 W	39*	59	5 16	1 54.50	+25 45.5	1.654	0.827	28.8	20.6	23 W	14*	10*
7 5	0 38.82	+7 7.8	1.069	1.491	43.0	20.3	91 W	43*	57	5 26	2 41.14	+26 15.5	1.756	0.890	24.3	20.8	21 W	11*	9*
7 15	0 58.90	+8 42.7	1.019	1.507	42.2	20.2	96 W	48*	55	6 5	3 23.56	+25 51.9	1.850	0.965	21.4	21.0	20 W	10*	10*
7 25	1 16.83	+9 56.4	0.969	1.526	40.9	20.1	101 W	52*	54	6 15	4 1.82	+24 50.4	1.934	1.049	20.2	21.2	21 W	9*	11*
8 4	1 32.17	+10 46.5	0.920	1.549	39.0	19.9	106 W	55*	53	6 25	4 36.25	+23 21.9	2.007	1.137	20.1	21.5	23 W	8*	13*
8 14	1 44.32	+11 10.7	0.873	1.574	36.3	19.8	113 W	56	53	162181 1999 LF₆									
8 24	1 52.69	+11 7.1	0.830	1.602	32.9	19.6	121 W	56	53	2 25	19 15.35	-11 52.6	1.753	1.323	34.0	21.4	48 W	23*	39*
9 3	1 56.80	+10 34.8	0.793	1.632	28.5	19.4	130 W	56	53	3 7	19 50.26	-9 17.2	1.677	1.280	36.2	21.3	50 W	23*	40*
9 13	1 56.31	+9 34.0	0.764	1.664	23.0	19.2	140 W	55	54	3 17	20 25.94	-6 14.9	1.610	1.238	38.2	21.2	50 W	24*	41*
9 18	1 54.39	+8 54.1	0.754	1.680	20.0	19.1	145 W	54	55	3 27	21 2.35	-2 49.9	1.553	1.197	40.0	21.1	50 W	24*	41*
9 23	1 51.48	+8 9.1	0.748	1.697	16.7	19.0	151 W	53	56	4 6	21 39.57	+0 51.4	1.508	1.158	41.6	21.0	50 W	25*	40*
9 28	1 47.71	+7 20.1	0.747	1.714	13.3	18.9	157 W	52	57	4 16	22 17.65	+4 40.8	1.474	1.121	42.9	21.0	49 W	25*	39*
10 3	1 43.26	+6 28.7	0.750	1.731	9.7	18.8	163 W	51	58	4 26	22 56.63	+8 28.7	1.451	1.088	43.8	20.9	49 W	24*	37*
10 8	1 38.35	+5 36.7	0.758	1.749	6.3	18.7	169 W	51	58	5 6	23 36.57	+12 4.9	1.440	1.060	44.5	20.8	47 W	24*	36*
10 13	1 33.26	+4 46.2	0.771	1.767	3.4	18.6	174 W	50	59	5 16	0 17.45	+15 20.0	1.437	1.038	44.7	20.8	46 W	24*	34*
10 18	1 28.23	+3 59.0	0.790	1.785	3.1	18.7	174 E	49	60	5 26	0 59.12	+18 5.3	1.443	1.023	44.6	20.8	45 W	23*	32*
10 23	1 23.51	+3 16.8	0.815	1.803	5.7	18.9	170 E	48	61	6 5	1 41.35	+20 14.6	1.455	1.015	44.2	20.7	44 W	23*	31*
10 28	1 19.28	+2 40.7	0.845	1.821	8.7	19.1	164 E	48	61	6 15	2 23.74	+21 43.9	1.471	1.015	43.6	20.8	44 W	23*	30*
11 2	1 15.71	+2 11.7	0.881	1.839	11.6	19.4	158 E	47	62	6 25	3 5.80	+22 31.3	1.489	1.024	42.9	20.8	43 W	23*	29*
11 12	1 10.94	+1 36.2	0.966	1.876	16.7	19.8	147 E	47	62	7 5	3 47.03	+22 37.9	1.508	1.039	42.2	20.8	43 W	24*	29*
11 22	1 9.61	+1 30.2	1.070	1.913	20.7	20.2	137 E	47	62	7 15	4 26.91	+22 6.0	1.526	1.062	41.6	20.9	44 W	25*	29*
12 2	1 11.55	+1 49.6	1.187	1.949	23.7	20.5	127 E	47	62	7 25	5 5.05	+20 59.6	1.543	1.091	41.0	20.9	45 W	26*	30*
12 12	1 16.42	+2 29.8	1.317	1.986	25.8	20.9	119 E	47	62	8 4	5 41.19	+19 23.5	1.556	1.124	40.6	21.0	46 W	26*	31*
12 22	1 23.76	+3 26.0	1.455	2.022	27.1	21.2	111 E	48	61	8 14	6 15.16	+17 22.7	1.566	1.161	40.3	21.1	48 W	30*	32*
1 1	1 33.12	+4 33.7	1.601	2.058	27.8	21.4	103 E	50	59*	8 24	6 46.93	+15 1.8	1.571	1.200	40.0	21.2	50 W	32*	33*
334736 2003 OJ₂₀																			
2 25	18 54.65	-37 6.9	2.887	2.479	19.4	21.5	56 W	2*	49*	9 3	7 44.05	+9 37.1	1.566	1.284	39.8	21.3	55 W	36*	37*
3 7	19 15.79	-36 55.4	2.736	2.430	21.1	21.3	62 W	2*	54*	9 13	8 9.57	+6 40.2	1.554	1.326	39.8	21.3	58 W	38*	40*
3 17	19 36.67	-36 36.6	2.581	2.381	22.7	21.2	67 W	3*	59*	10 3	8 33.19	+3 37.5	1.535	1.368	39.8	21.4	61 W	39*	43*
3 27	19 57.14	-36 11.2	2.423	2.331	24.1	21.1	73 W	3*	63*	10 13	8 54.96	+0 31.3	1.510	1.409	39.8	21.4	65 W	40*	46*
4 6	20 17.08	-35 39.7	2.263	2.280	25.4	20.9	78 W	4*	68*	10 23	9 14.91	-2 36.5	1.477	1.449	39.7	21.4	69 W	40*	50*
4 16	20 36.35	-35 3.1	2.104	2.230	26.6	20.8	84 W	4*	73*	11 2	9 33.03	-5 44.0	1.437	1.488	39.6	21.4	73 W	38*	55*
4 26	20 54.79	-34 22.3	1.946	2.179	27.5	20.6	89 W	5*	78*	11 12	9 49.22	-8 49.6	1.390	1.525	39.6	21.4	78 W	36*	60*
5 6	21 12.23	-33 38.3	1.790	2.129	28.2	20.4	95 W	6*	82*	11 22	10 3.30	-11 51.2	1.337	1.560	38.9	21.3	83 W	33	66*
5 16	21 28.44	-32 52.0	1.639	2.079	28.6	20.1	101 W	6*	83	12 2	10 15.05	-14 46.8	1.278	1.592	38.2	21.3	88 W	30	72*
5 26	21 43.17	-32 4.3	1.492	2.029	28.6	19.9	107 W	9*	84	12 12	10 24.07	-17 33.3	1.215	1.623	37.2	21.2	95 W	27	80*
6 5	21 56.10	-31 15.8	1.351	1.980	28.2	19.6	113 W	11*	85	12 22	10 29.90	-20 6.3	1.150	1.652	35.7	21.1	101 W	25	84
6 15	22 6.79	-30 26.7	1.218	1.932	27.2	19.3	119 W	13*	86	1 1	10 32.00	-22 19.9	1.084	1.678	33.8	20.9	108 W	23	86
6 20	22 11.14	-30 1.8	1.155	1.908	26.6	19.1	123 W	14*	86	1 11	10 29.78	-24 4.8	1.020	1.702	31.2	20.7	116 W	21	88
6 25	22 14.73	-29 36.2	1.094	1.885	25.7	18.9	127 W	15*	86	1 21	10 22.98	-25 9.0	0.962	1.723	28.0	20.5	125 W	20	89
6 30	22 17.50	-29 9.8	1.035	1.862	24.6	18.8	130 W	16*	87	263976 2009 KD₅									
7 5	22 19.35	-28 42.0	0.980	1.839	23.3	18.6	134 W	16	87	2 25	19 36.47	-17 23.3	1.732	1.221	33.9	21.4	43 W	15*	36*
7 10	22 20.20	-28 12.3	0.927	1.817	21.8	18.4	138 W	17	88	3 7	20 12.61	-16 42.2	1.667	1.190	36.0	21.4	45 W	14*	38*
7 15	22 19.98	-27 39.9	0.878	1.795	20.1	18.2	143 W	17	88	3 17	20 49.99	-15 35.6	1.603	1.155	38.1	21.3	46 W	13*	39*
7 20	22 18.64	-27 3.7	0.833	1.774	18.1	18.0	147 W	18	89	3 27	21 28.70	-14 2.3	1.543	1.117	40.0	21.2	46 W	11*	40*
7 25	22 16.16	-26 22.5	0.791	1.754	15.9	17.8	152 W	19	90	4 6	22 8.84	-12 1.3	1.489	1.076	42.2	21.1	46 W	10*	40*
7 30	22 12.55	-25 35.2	0.754	1.734	13.4	17.6	157 W	19	90	4 16	22 50.45	-9 32.5	1.443	1.032	44.0	21.0	46 W	9*	40*
8 4	22 7.87	-24 40.5	0.721	1.715	10.7	17.3	162 W	20	89	4 26	23 33.53	-6 37.0	1.408	0.987	45.6	20.9	44 W	7*	38*
8 9	22 2.24	-23 37.3	0.694	1.696	8.0	17.1	167 W	21	88	5 6	0 18.06	+3 18.3	1.386	0.941	46.7	20.7	43 W	6*	37*
8 14	21 55.88	-22 24.9	0.671	1.678	5.7	16.9	171 W	23	86	5 16	1 3.94								

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

21/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°-26°	2021	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°-26°
263976 2009 KD₅ (continuation)									162474 2000 LB₁₆ (continuation)								
9 23	10 58.46	+11 33.0	1.943	1.048	18.2	20.9	19 W	13* 3*	5 1	1 20.87	-19 55.9	1.348	0.851	48.3	20.5	39 W	— 25*
9 28	11 15.74	+10 16.4	1.959	1.069	18.3	21.0	20 W	14* 2*	5 6	1 48.59	-17 25.2	1.369	0.833	47.1	20.5	37 W	— 23*
10 3	11 32.59	+ 8 58.1	1.972	1.090	18.5	21.0	20 W	14* 2*	5 11	2 14.79	-14 39.2	1.398	0.819	45.5	20.4	35 W	— 21*
10 8	11 49.05	+ 7 38.6	1.984	1.111	18.8	21.1	21 W	15* 3*	5 16	2 39.43	-11 42.4	1.433	0.808	43.3	20.4	33 W	— 19*
10 13	12 5.15	+ 6 18.5	1.994	1.131	19.1	21.1	22 W	16* 3*	5 21	3 2.54	- 8 39.2	1.472	0.801	40.8	20.4	31 W	— 17*
10 18	12 20.95	+ 4 58.4	2.003	1.149	19.5	21.2	23 W	17* 3*	5 26	3 24.26	- 5 33.1	1.515	0.797	38.0	20.3	29 W	— 16*
10 23	12 36.47	+ 3 38.5	2.010	1.168	19.9	21.2	24 W	17* 4*	5 31	3 44.77	- 2 27.2	1.559	0.798	35.0	20.3	27 W	— 15*
10 28	12 51.76	+ 2 19.4	2.015	1.185	20.4	21.3	25 W	18* 4*	6 5	4 4.26	+ 0 36.2	1.603	0.804	31.9	20.3	25 W	— 14*
11 2	13 6.85	+ 1 1.3	2.018	1.201	20.9	21.3	26 W	19* 5*	6 10	4 22.92	+ 3 35.1	1.647	0.813	28.9	20.3	23 W	— 13*
11 7	13 21.78	+ 0 15.5	2.019	1.216	21.4	21.4	27 W	20* 6*	6 15	4 40.92	+ 6 28.2	1.689	0.826	26.2	20.3	21 W	— 14*
11 12	13 36.56	- 1 30.4	2.018	1.231	21.9	21.4	28 W	21* 7*	6 20	4 58.43	+ 9 14.5	1.729	0.842	23.7	20.3	19 W	— 12*
11 17	13 51.23	- 2 43.5	2.015	1.244	22.5	21.5	29 W	22* 8*	6 25	5 15.58	+11 53.0	1.766	0.861	21.6	20.4	18 W	— 12*
416678 2004 XT₅									162474 2000 LB₁₆ (continuation)								
2 25	19 40.99	+ 8 6.3	2.972	2.337	16.6	21.5	42 W	22* 32*	7 5	5 49.35	+16 45.4	1.831	0.906	18.9	20.5	17 W	— 11*
3 7	19 58.59	+ 6 10.1	2.855	2.305	18.5	21.4	48 W	25* 37*	7 15	6 23.01	+21 2.6	1.882	0.959	18.3	20.6	17 W	5* 9*
3 17	20 15.87	+ 4 0.8	2.733	2.272	20.4	21.4	53 W	27* 42*	7 25	6 57.08	+24 43.9	1.919	1.016	19.1	20.8	19 W	10* 8*
3 27	20 32.78	+ 1 38.4	2.607	2.238	22.1	21.3	58 W	30* 46*	8 4	7 31.87	+27 49.1	1.945	1.075	20.7	21.0	22 W	15* 6*
4 6	20 49.28	+ 0 57.0	2.478	2.205	23.8	21.2	63 W	32* 50*	8 14	8 7.50	+30 18.5	1.961	1.134	22.6	21.2	25 W	19* 4*
4 16	21 5.32	+ 3 45.3	2.348	2.171	25.3	21.1	67 W	35* 52*	8 24	8 43.90	+32 12.9	1.969	1.192	24.4	21.4	29 W	23* 2*
4 26	21 20.85	+ 6 46.0	2.219	2.136	26.6	21.0	72 W	39* 53*	415761 2000 SF₂₃								
5 6	21 35.83	+ 9 58.6	2.090	2.102	27.8	20.9	77 W	42* 53*	2 25	20 57.97	-26 4.4	2.283	1.484	18.2	21.5	28 W	— 21*
5 16	21 50.17	+13 22.5	1.965	2.068	28.9	20.7	81 W	47* 51*	3 7	21 31.64	-23 32.4	2.232	1.457	19.8	21.5	30 W	— 23*
5 26	22 3.79	+16 56.4	1.843	2.033	29.8	20.6	86 W	52* 47	3 17	22 4.41	-20 35.6	2.187	1.435	21.2	21.4	31 W	— 25*
6 5	22 16.59	+20 38.9	1.726	1.999	30.5	20.4	90 W	57* 43	3 27	22 36.17	-17 18.3	2.147	1.418	22.5	21.4	33 W	— 26*
6 15	22 28.38	+24 27.8	1.614	1.965	31.0	20.2	94 W	64* 40	4 6	23 6.87	-13 45.2	2.113	1.406	23.7	21.4	34 W	— 28*
6 20	22 33.84	+26 23.7	1.560	1.949	31.2	20.1	96 W	67* 38	4 16	23 36.56	-10 1.4	2.083	1.400	24.8	21.4	36 W	— 30*
6 25	22 38.97	+28 20.1	1.508	1.932	31.4	20.1	98 W	71* 36	4 26	0 5.30	- 6 11.9	2.058	1.399	25.9	21.4	37 W	2* 31*
6 30	22 43.74	+30 16.4	1.457	1.916	31.5	20.0	100 W	74* 34	5 6	0 33.20	- 2 21.4	2.037	1.405	26.9	21.4	39 W	4* 33*
7 5	22 48.10	+32 12.1	1.408	1.900	31.6	19.9	102 W	77* 32	5 16	1 0.38	+ 1 26.1	2.017	1.416	27.8	21.4	41 W	6* 35*
7 10	22 52.00	+34 6.5	1.360	1.884	31.6	19.8	104 W	79 30	5 26	1 26.92	+ 5 6.7	2.000	1.433	28.7	21.4	43 W	9* 36*
7 15	22 55.39	+35 58.7	1.315	1.868	31.6	19.7	106 W	81 28	6 5	1 52.90	+ 8 37.8	1.982	1.455	29.6	21.5	45 W	13* 37*
7 20	22 58.23	+37 47.9	1.271	1.852	31.5	19.6	108 W	83 26	531060 2012 DJ₆₁								
7 25	23 0.46	+39 33.1	1.228	1.837	31.4	19.5	110 W	85 24	2 25	21 17.31	-45 24.7	0.817	0.634	85.0	21.5	40 W	— 23*
7 30	23 2.03	+41 13.4	1.188	1.822	31.3	19.4	111 W	86 23	2 27	21 36.48	-43 48.3	0.846	0.613	83.9	21.4	38 W	— 21*
8 4	23 2.89	+42 47.5	1.149	1.807	31.1	19.3	113 W	88 21	3 1	21 53.73	-41 59.6	0.876	0.592	82.4	21.4	36 W	— 19*
8 9	23 2.99	+44 13.8	1.111	1.793	30.8	19.2	115 W	89 20	3 3	22 9.18	-40 0.9	0.909	0.571	80.6	21.3	35 W	— 17*
8 14	23 2.32	+45 31.0	1.076	1.779	30.5	19.1	117 W	89 20	3 5	22 23.00	-37 54.1	0.944	0.551	78.3	21.3	33 W	— 16*
8 19	23 0.90	+46 37.4	1.042	1.766	30.2	19.0	119 W	88 17	3 7	22 35.38	-35 40.7	0.980	0.532	75.7	21.1	31 W	— 14*
8 24	22 58.77	+47 31.6	1.009	1.753	29.9	18.9	120 W	87 16	3 9	22 46.50	-33 21.6	1.017	0.514	72.6	21.0	30 W	— 13*
8 29	22 56.02	+48 11.9	0.979	1.740	29.5	18.8	122 W	87 16	3 11	22 56.54	-30 57.7	1.055	0.498	69.2	20.9	28 W	— 12*
9 3	22 52.79	+48 36.7	0.951	1.728	29.1	18.8	124 W	86 15	3 13	23 5.65	-28 29.5	1.093	0.483	65.3	20.8	26 W	— 11*
9 8	22 49.28	+48 44.4	0.924	1.716	28.6	18.7	125 E	86 15	3 15	23 13.98	-25 57.4	1.132	0.470	61.2	20.7	24 W	— 10*
9 13	22 45.73	+48 34.1	0.900	1.705	28.2	18.6	127 E	86 15	3 17	23 21.67	-23 21.9	1.170	0.460	56.7	20.6	23 W	— 9*
9 18	22 42.43	+48 5.1	0.878	1.695	27.7	18.5	128 E	87 16	3 19	23 28.84	-20 43.4	1.208	0.452	52.0	20.5	21 W	— 8*
9 23	22 39.64	+47 17.2	0.858	1.685	27.3	18.4	130 E	88 17	3 21	23 35.59	-18 2.4	1.244	0.447	47.2	20.4	19 W	— 8*
9 28	22 37.61	+46 10.8	0.841	1.676	27.0	18.4	131 E	89 18	3 23	23 42.01	-15 19.6	1.279	0.445	42.3	20.3	17 W	— 7*
10 3	22 36.53	+44 46.5	0.827	1.667	26.7	18.3	131 E	90 19	3 25	23 48.20	-12 35.8	1.312	0.446	37.6	20.3	16 W	— 6*
10 8	22 36.58	+43 5.8	0.816	1.660	26.6	18.3	132 E	88 21	3 27	23 54.21	- 9 51.7	1.344	0.450	33.1	20.2	14 W	— 6*
10 13	22 37.86	+41 10.6	0.808	1.652	26.6	18.2	132 E	86 23	3 29	0 0.11	- 7 8.3	1.373	0.457	29.0	20.2	13 W	— 5*
10 18	22 40.41	+39 3.6	0.804	1.646	26.8	18.2	132 E	84 25	3 31	0 5.95	- 4 26.1	1.400	0.467	25.4	20.1	12 W	— 5*
10 23	22 44.19	+36 47.6	0.804	1.640	27.1	18.2	131 E	82 27	4 2	0 11.77	- 1 46.0	1.425	0.479	22.5	20.1	11 W	— 4*
10 28	22 49.14	+34 25.4	0.808	1.635	27.7	18.2	130 E	79 30	4 4	0 17.59	+ 0 51.5	1.448	0.493	20.2	20.2	10 W	— 4*
11 2	22 55.18	+32 0.0	0.815	1.631	28.4	18.3	129 E	77 32	4 6	0 23.46	+ 3 25.9	1.469	0.509	18.8	20.2	9 W	— 3*
11 7	23 2.21	+29 34.5	0.828	1.628	29.2	18.3	127 E	75 34	4 11	0 38.41	+ 9 36.5	1.515	0.555	17.9	20.5	10 W	2* 1*
11 12	23 10.12	+27 12.0	0.844	1.625	30.1	18.4	125 E	72 37	4 16	0 53.98	+15 23.1	1.554	0.606	19.5	20.8	12 W	5* 1*
11 17	23 18.79	+24 55.0	0.864	1.623	31.0	18.5	122 E	70 39	4 21	1 10.37	+20 44.8	1.589	0.659	21.5	21.0	14 W	8* —
11 22	23 28.11	+22 45.4	0.889	1.622	32.0	18.6	120 E	68 41	4 26	1 27.75	+25 41.4	1.620	0.713	23.4	21.3	16 W	10* —
11 27	23 37.95	+20 44.7	0.917	1.622	32.9	18.6	117 E	66 43	48803 2005 GB₁₂₀								
12 2	23 48.24	+18 54.0	0.949	1.623	33.7	18.7	114 E	64 45	2 25	22 11.19	-10 1.5	1.611	0.632	8.3	21.1	5 W	— —
12 7	23 58.89	+17 14.1	0.984	1.624	34.5	18.8	111 E	62 47*	3 7	23 9.51	- 5 43.2	1.547	0.554	0.6	20.3	0 W	— —
12 12	0 9.83	+15 45.1	1.023	1.626	35.1	18.9	108 E	61 48*	3 17	0 1							

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

21/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	21/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
162635 2000 SS₁₆₄										326364 2000 VC₂									
<i>(continuation)</i>										<i>(continuation)</i>									
4 26	1 0.62	+3 18.6	2.986	2.075	9.8	21.0	21 W	—	15*	12 7	4 8.55	+31 16.8	0.731	1.705	7.7	17.0	167 E	76	33
5 6	1 21.60	+5 9.6	2.882	2.012	12.1	20.9	25 W	1*	19*	12 12	3 59.44	+32 55.2	0.729	1.690	11.2	17.1	160 E	78	31
5 16	1 43.55	+7 0.0	2.773	1.947	14.4	20.9	29 W	3*	23*	12 17	3 50.73	+34 27.0	0.734	1.675	14.8	17.3	154 E	79	30
5 26	2 6.60	+8 48.4	2.659	1.883	16.7	20.8	32 W	5*	26*	12 22	3 42.84	+35 51.1	0.743	1.661	18.3	17.4	148 E	81	28
6 5	2 30.90	+10 33.1	2.544	1.819	19.0	20.7	36 W	8*	29*	12 27	3 36.12	+37 7.5	0.758	1.647	21.6	17.5	142 E	82	27
6 15	2 56.59	+12 12.2	2.428	1.755	21.2	20.6	39 W	11*	31*	1 1	3 30.84	+38 16.8	0.776	1.635	24.6	17.7	136 E	83	26
6 25	3 23.82	+13 43.0	2.313	1.692	23.5	20.5	41 W	14*	33*	1 6	3 27.21	+39 20.1	0.798	1.622	27.3	17.8	131 E	84	25
7 5	3 52.70	+15 2.9	2.202	1.630	25.6	20.3	44 W	18*	34*	1 11	3 25.34	+40 18.6	0.823	1.611	29.6	17.9	126 E	85	24
7 15	4 23.33	+16 8.5	2.096	1.570	27.7	20.2	46 W	22*	34*	1 16	3 25.25	+41 13.3	0.851	1.601	31.7	18.0	121 E	86	23
7 20	4 39.30	+16 34.8	2.045	1.540	28.8	20.2	47 W	24*	34*	1 21	3 26.92	+42 4.9	0.880	1.591	33.4	18.1	117 E	87	22
7 25	4 55.71	+16 56.1	1.996	1.512	29.8	20.1	48 W	25*	34*	108906 2001 PL₉									
7 30	5 12.53	+17 12.1	1.949	1.484	30.8	20.0	48 W	27*	34*	2 25	23 32.19	-5 18.8	2.526	1.594	9.5	21.4	15 E	7*	6*
8 4	5 29.76	+17 22.2	1.904	1.457	31.7	20.0	49 W	29*	34*	3 7	23 55.97	-3 40.8	2.525	1.566	7.4	21.3	12 E	3*	4*
8 9	5 47.35	+17 26.1	1.862	1.432	32.7	19.9	50 W	30*	34*	3 17	0 20.23	-1 58.7	2.512	1.535	5.5	21.2	8 E	—	2*
8 14	6 5.28	+17 23.3	1.822	1.407	33.6	19.8	50 W	32*	33*	3 27	0 45.09	-0 14.0	2.488	1.499	4.1	21.0	6 E	—	—
8 24	6 41.95	+16 57.0	1.750	1.362	35.2	19.7	51 W	34*	33*	4 6	1 10.72	+1 31.9	2.453	1.460	3.8	20.9	6 E	—	—
9 3	7 19.37	+16 2.3	1.689	1.323	36.7	19.6	52 W	36*	32*	4 16	1 37.34	+3 17.8	2.410	1.418	4.8	20.9	7 E	—	—
9 13	7 57.04	+14 39.9	1.639	1.291	37.9	19.6	52 W	38*	32*	4 26	2 5.12	+5 1.7	2.358	1.372	6.3	20.8	9 W	—	—
9 23	8 34.46	+12 52.8	1.599	1.268	38.9	19.5	52 W	39*	32*	5 6	2 34.32	+6 42.1	2.300	1.322	8.1	20.8	11 W	—	2*
10 3	9 11.23	+10 45.4	1.569	1.253	39.6	19.4	53 W	39*	31*	5 16	3 5.19	+8 16.7	2.238	1.270	9.9	20.7	12 W	—	4*
10 13	9 46.97	+8 23.5	1.547	1.248	40.1	19.4	54 W	40*	31*	5 26	3 37.94	+9 42.8	2.173	1.214	11.5	20.6	14 W	—	6*
10 18	10 4.36	+7 9.3	1.539	1.249	40.2	19.4	54 W	40*	31*	6 5	4 12.84	+10 57.6	2.108	1.156	13.0	20.5	15 W	—	8*
10 23	10 21.41	+5 53.8	1.532	1.253	40.3	19.4	55 W	40*	32*	6 15	4 50.08	+11 57.6	2.044	1.097	14.1	20.4	15 W	—	8*
10 28	10 38.10	+4 37.9	1.526	1.259	40.4	19.4	55 W	41*	32*	6 25	5 29.77	+12 39.1	1.984	1.037	14.8	20.2	15 W	—	8*
11 2	10 54.42	+3 22.3	1.520	1.267	40.4	19.4	56 W	41*	33*	7 5	6 11.94	+12 58.5	1.930	0.978	15.0	20.0	14 W	—	8*
11 12	11 25.85	+0 54.9	1.511	1.291	40.4	19.4	58 W	41*	34*	7 15	6 56.47	+12 52.5	1.884	0.923	14.3	19.8	13 W	—	7*
11 22	11 55.62	+1 23.6	1.501	1.323	40.3	19.5	60 W	40*	37*	7 25	7 43.04	+12 18.8	1.848	0.873	12.8	19.6	11 W	—	5*
12 2	12 23.69	+3 29.2	1.490	1.361	40.1	19.5	63 W	40*	40*	8 4	8 31.21	+11 17.1	1.822	0.832	10.4	19.4	9 W	—	2*
12 12	12 49.94	+5 18.9	1.475	1.407	39.9	19.6	66 W	39*	44*	8 14	9 20.42	+9 48.4	1.805	0.804	7.2	19.1	6 W	—	—
12 22	13 14.26	+6 50.4	1.456	1.457	39.5	19.6	70 W	38*	49*	8 24	10 9.98	+7 56.2	1.798	0.791	4.2	18.9	3 W	—	—
1 1	13 36.51	+8 2.4	1.431	1.511	38.9	19.6	75 W	37*	54*	8 29	10 34.69	+6 52.7	1.797	0.790	3.7	18.9	3 E	—	—
1 11	13 56.44	+8 53.5	1.401	1.569	38.1	19.6	80 W	36	60*	9 3	10 59.25	+5 45.2	1.799	0.794	4.4	19.0	3 E	—	—
1 21	14 13.80	+9 23.2	1.365	1.629	37.1	19.6	86 W	36	66*	9 8	11 23.59	+4 34.4	1.803	0.802	5.8	19.1	5 E	—	—
2 25	23 21.38	-5 11.8	2.582	1.632	7.7	21.5	13 E	5*	3*	9 13	11 47.66	+3 21.2	1.808	0.814	7.4	19.2	6 E	—	—
3 7	23 46.90	-2 8.0	2.604	1.635	5.9	21.4	10 E	3*	1*	9 18	12 11.39	+2 6.6	1.816	0.830	9.0	19.3	7 E	—	1*
3 17	0 12.25	+0 56.1	2.625	1.642	4.2	21.3	7 E	—	—	9 23	12 34.77	+0 51.4	1.826	0.849	10.5	19.4	9 E	—	2*
3 27	0 37.47	+3 57.9	2.645	1.651	2.4	21.3	4 E	—	—	9 28	12 57.75	+0 23.6	1.839	0.870	11.7	19.5	10 E	—	2*
4 6	1 2.64	+6 55.0	2.663	1.662	0.6	21.1	1 E	—	—	10 3	13 20.33	+1 37.4	1.853	0.894	12.8	19.6	11 E	—	3*
4 16	1 27.83	+9 45.4	2.679	1.677	1.2	21.2	2 W	—	—	10 8	13 42.49	+2 49.4	1.870	0.920	13.6	19.8	12 E	—	4*
4 26	1 53.07	+12 26.7	2.693	1.693	3.0	21.4	5 W	—	—	10 13	14 4.23	-3 58.6	1.888	0.947	14.2	19.9	13 E	—	4*
2 25	23 26.40	-20 6.7	3.646	2.715	6.1	21.5	17 E	—	11*	10 23	14 46.41	-6 6.4	1.932	1.004	14.8	20.1	15 E	—	4*
3 7	23 41.90	-18 10.9	3.634	2.688	5.5	21.4	15 E	—	7*	11 2	15 26.88	-7 56.5	1.983	1.063	14.8	20.2	16 E	—	4*
3 17	23 57.49	-16 15.0	3.608	2.659	5.6	21.4	15 E	—	3*	11 12	16 5.69	-9 26.0	2.040	1.123	14.2	20.4	16 E	—	3*
3 27	0 13.15	+14 19.7	3.568	2.630	6.4	21.4	17 W	—	4*	11 22	16 42.85	-10 33.4	2.100	1.182	13.3	20.5	16 E	—	1*
4 6	0 28.86	+12 25.4	3.516	2.600	7.7	21.4	20 W	—	9*	12 2	17 18.41	-11 18.6	2.162	1.239	12.1	20.7	15 E	—	9*
4 16	0 44.62	+10 32.5	3.451	2.569	9.2	21.4	24 W	—	14*	12 12	17 52.40	-11 42.1	2.224	1.293	10.8	20.8	14 E	—	8*
4 26	1 0.43	+8 41.7	3.374	2.537	10.9	21.3	29 W	—	20*	12 22	18 24.87	-11 45.3	2.284	1.344	9.5	20.9	13 E	—	7*
5 6	1 16.28	+6 53.4	3.287	2.504	12.7	21.3	33 W	—	26*	1 1	18 55.89	-11 30.1	2.340	1.392	8.3	20.9	12 E	—	4*
5 16	1 32.18	+5 8.1	3.189	2.471	14.6	21.3	38 W	—	31*	1 11	19 25.54	-10 58.3	2.390	1.437	7.5	21.0	11 W	—	2*
5 26	1 48.09	+3 26.2	3.081	2.436	16.4	21.3	43 W	—	37*	1 21	19 53.88	-10 12.1	2.434	1.478	7.1	21.1	11 W	—	4*
6 5	2 4.02	+1 48.0	2.966	2.401	18.2	21.2	48 W	4*	42*	469699 2005 EP₆₈									
6 15	2 19.94	+0 14.1	2.842	2.365	19.9	21.1	52 W	8*	46*	2 25	23 33.16	-3 28.3	3.178	2.244	7.1	21.4	16 E	9*	5*
6 25	2 35.81	+1 15.4	2.712	2.328	21.6	21.1	57 W	14*	50*	3 7	23 52.16	-2 25.5	3.161	2.195	4.9	21.2	11 E	4*	2*
7 5	2 51.59	+2 40.3	2.576	2.291	23.2	21.0	62 W	20*	53*	3 17	0 11.77	-1 19.2	3.133	2.147	2.9	21.0	6 E	—	—
7 15	3 7.22	+4 0.5	2.435	2.253	24.6	20.8	68 W	26*	55*	3 27	0 32.01	+0 10.8	3.093	2.098	1.7	20.9	3 E	—	—
7 25	3 22.61	+5 16.3	2.291	2.214	26.0	20.7	73 W	33*	56*	4 6	0 52.92	+0 58.3	3.043	2.050	2.7	20.9	6 W	—	—
8 4	3 37.65	+6 28.0	2.143	2.175	27.2	20.6	78 W	39*	56*	4 16	1 14.56	+2 6.6	2.984	2.002	4.8	20.9	10 W	—	2*
8 14	3 52.20	+7 36.4	1.994	2.136	28.1	20.4	84 W	45*	56*	4 26	1 36.98	+3 12.5	2.918	1.954	7.0	20.9	14 W	—	7*
8 24	4 6.07	+8 42.6	1.844	2.097	28.8	20.2	90 W	50*	55	5 6	2 0.23	+4 14.3	2.845	1.908	9.2	20.9	18 W	—	11*
9 3	4 19.05	+9 48.4	1.695	2.057	29.2	20.0	96 W	54*	54	5 16	2 24.37	+5 10.2	2.767	1.862	11.4	20.9	21 W	—	15*
9 13	4 30.79	+10 56.2	1.549	2.017	29.2	19.8	102 W	56	53	5 26	2 49.44	+5 58.0	2.687	1.818	13.5	20.8	25 W	—	19*
9 23	4 40.93	+12 9.5	1.406	1.978	28.6	19.5	109 W	57	52	6 5	3 15.46	+6 36.0	2.605	1.776	15.6	20.8	28 W	—	22*
10 3	4 48.97	+13 32.7	1.269	1.939	27.4	19.2	117 W	59	50	6 15	3 42.43	+7 2.1	2.523	1.735	17.6	20.7	31 W	—	25*
10 8	4 52.01	+14 19.7	1.204	1.919	26.5	19.0	121 W	59	50	6 25									

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

21/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°-26°	2021	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°-26°		
469699 2005 <i>EP</i> ₆₈ (continuation)									11500 Tomaiyowit										
12 2	11 25.74	-14 27.5	1.673	1.667	34.3	20.3	72 W	31 58*	3 7	0 13.14	+ 5 19.7	2.230	1.333	14.1	21.5	19 E	13*	3*	
12 12	11 44.54	-15 20.6	1.616	1.703	34.4	20.2	78 W	30 63*	3 17	0 40.58	+ 7 38.4	2.219	1.294	12.4	21.3	16 E	10*	2*	
12 22	12 1.49	-15 53.3	1.553	1.741	34.2	20.2	83 W	29 69*	3 27	1 9.12	+ 9 56.2	2.198	1.251	10.9	21.2	14 E	7*	1*	
12 27	12 9.19	-16 1.0	1.519	1.761	33.9	20.1	87 W	29 72*	4 6	1 39.05	+12 10.5	2.168	1.203	9.4	21.0	11 E	5*	—	
1 1	12 16.33	-16 2.3	1.485	1.781	33.5	20.1	90 W	29 75*	4 16	2 10.72	+14 18.2	2.129	1.151	8.2	20.8	9 E	3*	—	
1 6	12 22.83	-15 56.7	1.450	1.803	33.0	20.1	94 W	29 77*	4 26	2 44.47	+16 15.3	2.082	1.095	7.3	20.6	8 E	1*	—	
1 11	12 28.67	-15 43.6	1.415	1.824	32.3	20.0	97 W	29 79*	5 6	3 20.64	+17 56.6	2.029	1.035	6.9	20.4	7 E	—	—	
1 16	12 33.80	-15 22.4	1.379	1.846	31.5	20.0	101 W	30 79	5 11	3 39.74	+18 39.5	2.000	1.004	6.9	20.3	7 E	—	—	
1 21	12 38.18	-14 52.8	1.344	1.868	30.5	19.9	106 W	30 79	5 16	3 59.58	+19 16.0	1.970	0.973	7.0	20.2	7 E	—	—	
399905 2005 <i>XA</i> ₁																			
2 25	23 42.11	- 4 35.3	2.218	1.312	13.4	21.5	18 E	9*	7*	5 31	5 3.64	+20 17.8	1.873	0.879	8.9	20.0	8 E	—	1*
3 2	23 58.41	- 3 1.9	2.229	1.316	12.9	21.5	17 E	9*	7*	6 5	5 26.54	+20 19.1	1.839	0.849	10.0	19.9	8 E	—	2*
3 7	0 14.62	+ 1 28.1	2.241	1.321	12.4	21.5	17 E	8*	7*	6 10	5 50.19	+20 9.1	1.805	0.819	11.5	19.9	9 E	—	3*
3 12	0 30.75	+ 0 5.6	2.255	1.328	11.9	21.5	16 E	8*	6*	6 15	6 14.55	+19 47.0	1.770	0.792	13.2	19.8	10 E	—	4*
3 17	0 46.79	+ 1 38.5	2.270	1.337	11.4	21.5	15 E	7*	6*	6 20	6 39.54	+19 12.0	1.736	0.766	15.2	19.8	11 E	—	5*
450159 2000 <i>JJ</i> ₅																			
2 25	23 56.24	- 4 4.5	1.851	0.998	21.3	21.3	21 E	12*	10*	7 5	7 57.51	+16 8.8	1.631	0.710	23.1	19.7	16 E	—	10*
3 7	0 27.93	+ 0 23.9	1.735	0.875	23.2	20.9	20 E	12*	9*	7 15	8 50.99	+13 6.0	1.565	0.696	29.3	19.8	20 E	—	14*
3 17	1 3.89	+ 5 29.6	1.604	0.757	27.4	20.5	21 E	13*	8*	7 25	9 44.68	+ 9 26.3	1.505	0.703	35.3	19.9	24 E	—	18*
3 27	1 45.38	+11 11.6	1.458	0.654	35.2	20.2	22 E	15*	8*	7 30	10 11.39	+ 7 27.2	1.479	0.714	37.9	19.9	26 E	1*	20*
4 1	2 8.63	+14 12.8	1.380	0.614	40.8	20.1	24 E	16*	9*	8 4	10 37.92	+ 5 24.5	1.457	0.730	40.1	20.0	28 E	2*	22*
4 6	2 33.78	+17 16.8	1.299	0.585	47.5	20.1	26 E	18*	9*	8 9	11 4.22	+ 3 20.3	1.439	0.750	41.9	20.1	30 E	3*	24*
4 11	3 0.96	+20 18.5	1.215	0.570	54.9	20.1	28 E	20*	10*	8 14	11 30.25	+ 1 16.3	1.426	0.773	43.3	20.2	32 E	4*	26*
4 16	3 30.31	+23 11.6	1.132	0.571	62.4	20.2	30 E	23*	11*	8 19	11 55.96	- 0 45.6	1.417	0.799	44.3	20.3	33 E	5*	27*
4 18	3 42.70	+24 16.9	1.099	0.575	65.2	20.2	31 E	24*	12*	8 24	12 21.31	- 2 43.7	1.413	0.827	44.8	20.4	35 E	7*	29*
4 20	3 55.47	+25 19.2	1.066	0.583	67.9	20.3	33 E	25*	13*	8 29	12 46.28	- 4 36.6	1.414	0.857	45.0	20.4	37 E	8*	31*
4 22	4 8.66	+26 18.1	1.035	0.592	70.4	20.3	34 E	26*	13*	9 3	13 10.83	- 6 23.3	1.420	0.887	44.9	20.5	38 E	9*	32*
4 24	4 22.27	+27 13.1	1.005	0.604	72.6	20.4	35 E	27*	14*	9 8	13 34.93	- 8 2.6	1.431	0.919	44.5	20.6	40 E	10*	33*
4 26	4 36.33	+28 3.5	0.975	0.617	74.6	20.4	36 E	28*	15*	9 13	13 58.56	- 9 33.8	1.447	0.950	43.8	20.7	41 E	11*	35*
4 28	4 50.84	+28 49.0	0.948	0.633	76.3	20.5	38 E	29*	16*	9 18	14 21.69	-10 56.5	1.466	0.982	43.1	20.8	42 E	12*	35*
4 30	5 5.82	+29 28.8	0.921	0.650	77.7	20.5	39 E	30*	17*	9 23	14 44.28	-12 10.2	1.489	1.013	42.1	20.8	43 E	13*	36*
5 2	5 21.27	+30 2.4	0.897	0.668	78.7	20.5	41 E	31*	18*	9 28	15 6.35	-13 15.0	1.516	1.044	41.1	20.9	43 E	14*	37*
5 4	5 37.18	+30 29.1	0.874	0.687	79.5	20.6	42 E	33*	19*	10 3	15 27.87	-14 10.9	1.545	1.074	40.1	21.0	44 E	15*	37*
5 6	5 53.51	+30 48.4	0.853	0.708	79.9	20.6	44 E	34*	20*	10 8	15 48.86	-14 58.1	1.578	1.103	38.9	21.1	44 E	15*	37*
5 8	6 10.24	+30 59.7	0.834	0.729	80.1	20.6	45 E	35*	21*	10 13	16 9.31	-15 36.9	1.612	1.131	37.8	21.1	44 E	16*	37*
5 10	6 27.29	+31 2.3	0.817	0.751	80.0	20.6	47 E	36*	22*	10 18	16 29.22	-16 7.5	1.648	1.158	36.6	21.2	44 E	17*	36*
5 12	6 44.58	+30 56.0	0.803	0.774	79.7	20.6	49 E	37*	24*	10 23	16 48.61	-16 30.4	1.686	1.185	35.4	21.3	44 E	17*	36*
5 14	7 2.04	+30 40.4	0.791	0.797	79.1	20.7	51 E	38*	25*	10 28	17 7.49	-16 45.9	1.725	1.210	34.2	21.3	43 E	18*	35*
5 16	7 19.54	+30 15.4	0.781	0.821	78.2	20.7	53 E	39*	27*	11 2	17 25.88	-16 54.6	1.764	1.234	33.0	21.4	43 E	18*	34*
5 18	7 36.99	+29 41.2	0.774	0.845	77.2	20.7	55 E	40*	28*	11 7	17 43.80	-16 56.7	1.805	1.257	31.8	21.4	42 E	19*	33*
5 20	7 54.26	+28 58.0	0.769	0.869	76.1	20.7	56 E	41*	30*	11 12	18 1.26	-16 52.6	1.845	1.279	30.7	21.5	41 E	19*	31*
5 22	8 11.25	+28 6.5	0.766	0.893	74.8	20.7	58 E	42*	32*	154807 2004 <i>PP</i> ₉₇									
5 24	8 27.86	+27 7.4	0.766	0.917	73.3	20.7	60 E	42*	33*	3 7	0 13.27	+ 2 1.2	2.086	1.179	14.7	21.4	18 E	10*	5*
5 26	8 44.01	+26 1.6	0.768	0.942	71.8	20.7	62 E	43*	35*	3 17	0 43.40	+ 6 35.2	2.057	1.137	14.2	21.3	16 E	10*	3*
5 28	8 59.62	+24 50.1	0.772	0.967	70.3	20.7	64 E	43*	37*	3 27	1 15.26	+11 12.2	2.028	1.100	14.1	21.1	16 E	9*	2*
5 30	9 14.66	+23 34.0	0.779	0.991	68.7	20.8	66 E	43*	39*	4 6	1 49.32	+15 45.3	1.999	1.068	14.4	21.1	15 E	9*	1*
6 1	9 29.08	+22 14.3	0.788	1.016	67.0	20.8	67 E	43*	40*	4 16	2 26.05	+20 5.7	1.973	1.043	15.1	21.0	16 E	10*	—
6 3	9 42.88	+20 52.1	0.799	1.040	65.4	20.8	69 E	43*	42*	4 26	3 5.82	+24 2.3	1.951	1.025	16.0	21.0	16 E	10*	—
6 5	9 56.04	+19 28.4	0.812	1.065	63.8	20.8	70 E	42*	44*	5 6	3 48.76	+27 21.9	1.935	1.016	17.0	21.0	17 E	11*	1*
6 7	10 8.58	+18 4.0	0.827	1.089	62.2	20.9	72 E	42*	45*	5 16	4 34.63	+29 51.3	1.927	1.015	18.0	21.0	18 E	12*	2*
6 9	10 20.51	+16 39.6	0.844	1.113	60.7	20.9	73 E	41*	47*	5 26	5 22.56	+31 19.1	1.927	1.024	18.8	21.0	19 E	12*	3*
6 11	10 31.86	+15 16.0	0.863	1.137	59.1	21.0	74 E	41*	48*	6 5	6 11.20	+31 39.0	1.937	1.041	19.3	21.1	20 E	12*	5*
6 13	10 42.65	+13 53.6	0.883	1.161	57.7	21.0	75 E	40*	50*	6 15	6 58.98	+30 51.5	1.956	1.066	19.5	21.2	21 E	12*	7*
6 15	10 52.91	+12 32.8	0.904	1.185	56.3	21.1	76 E	39*	51*	6 25	7 44.50	+29 3.9	1.985	1.097	19.3	21.3	21 E	11*	8*
6 20	11 16.46	+ 9 20.0	0.964	1.244	53.0	21.2	78 E	37*	54*	7 5	8 26.92	+26 27.6	2.024	1.134	18.7	21.4	21 E	10*	10*
6 25	11 37.39	+ 6 22.2	1.031	1.301	50.0	21.4	79 E	35*	57*	7 15	9 5.94	+23 15.8	2.071	1.175	17.7	21.5	21 E	9*	11*
6 30	11 56.16	+ 3 39.8	1.104	1.358	47.4	21.6	80 E	32*	60*	343166 2009 <i>SO</i> ₁₀₃									
7 5	12 13.17	+ 1 12.3	1.182	1.413	45.0	21.7	80 E	30*	62*	3 7	0 20.85	+ 1 40.1	2.661	1.754	10.7	21.3	19 E	12*	7*
3 7	0 1.31	+ 9 53.7	1.794	0.926	21.5	21.4	20 E	14*	—	3 17	0 41.87	+ 2 43.1	2.606	1.661	8.6	21.1	14 E	7*	5*
3 12	0 21																		

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

2021	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	2021	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
343166 2009 SO ₁₀₃ (continuation)										250680 2005 QC ₅									
8 4	10 51.38	+ 8 18.8	1.551	0.834	36.8	19.4	29 E	7*	23*	3 7	1 22.47	+12 16.9	1.145	0.701	59.4	21.4	37 E	30*	15*
8 14	11 43.96	+ 6 58.0	1.607	0.932	36.0	19.6	33 E	11*	25*	3 12	1 39.01	+14 39.4	1.086	0.667	63.9	21.3	37 E	30*	14*
8 24	12 31.39	+ 5 27.6	1.687	1.038	34.1	19.9	35 E	14*	27*	3 17	1 55.77	+16 58.9	1.021	0.637	69.4	21.2	37 E	30*	14*
8 29	12 53.24	+ 4 40.9	1.734	1.091	32.9	20.1	36 E	16*	28*	3 22	2 12.54	+19 12.2	0.950	0.610	75.9	21.2	36 E	30*	13*
9 3	13 13.96	+ 3 54.1	1.786	1.145	31.6	20.2	37 E	17*	28*	3 27	2 28.92	+21 15.2	0.875	0.589	83.5	21.2	36 E	29*	12*
9 8	13 33.60	+ 3 7.9	1.841	1.199	30.3	20.3	37 E	18*	28*	4 1	2 44.34	+23 2.8	0.795	0.575	92.3	21.3	35 E	28*	11*
9 13	13 52.27	+ 2 22.9	1.898	1.253	29.0	20.5	37 E	19*	28*	4 6	2 58.05	+24 29.1	0.714	0.568	102.0	21.5	34 E	27*	10*
9 23	14 26.99	+ 0 58.2	2.020	1.358	26.3	20.7	37 E	20*	26*	275677 2000 RS ₁₁									
10 3	14 58.74	- 0 17.5	2.148	1.461	23.7	20.9	36 E	21*	24*	3 7	1 23.00	- 0 53.2	1.651	0.990	33.6	21.5	34 E	20*	22*
10 13	15 28.09	- 1 22.4	2.278	1.560	21.2	21.1	34 E	22*	22*	3 17	1 59.87	+ 2 1.0	1.603	0.948	35.4	21.4	34 E	20*	22*
10 23	15 55.43	- 2 15.6	2.408	1.656	18.8	21.3	32 E	22*	18*	3 27	2 38.91	+ 5 2.6	1.550	0.913	37.7	21.3	34 E	20*	23*
11 2	16 21.11	- 2 56.5	2.534	1.749	16.6	21.4	30 E	21*	14*	4 6	3 20.33	+ 8 6.7	1.497	0.888	40.3	21.2	35 E	20*	24*
395289 2011 BJ ₂										4 16	4 4.26	+11 6.8	1.446	0.873	43.0	21.2	36 E	20*	25*
3 7	0 30.43	- 8 27.7	2.160	1.276	15.6	21.4	20 E	6*	13*	4 26	4 50.64	+13 53.9	1.401	0.870	45.5	21.2	38 E	21*	26*
3 17	0 50.61	- 2 50.7	2.147	1.222	13.0	21.2	16 E	4*	9*	5 6	5 39.18	+16 17.4	1.365	0.880	47.6	21.2	40 E	22*	28*
3 27	1 11.34	+ 2 52.9	2.123	1.166	10.3	20.9	12 E	3*	5*	5 16	6 29.31	+18 6.2	1.342	0.901	48.9	21.2	42 E	23*	29*
4 6	1 33.11	+ 8 44.4	2.089	1.110	7.8	20.7	9 E	2*	—	5 26	7 20.09	+19 11.0	1.333	0.933	49.3	21.3	44 E	23*	31*
4 16	1 56.62	+14 44.8	2.044	1.055	6.5	20.5	7 E	1*	—	6 5	8 10.34	+19 27.0	1.340	0.972	48.9	21.4	46 E	24*	33*
4 26	2 22.78	+20 53.6	1.989	1.001	7.8	20.4	8 E	1*	—	378124 2006 VT ₂									
5 1	2 37.27	+24 0.3	1.958	0.976	9.4	20.3	9 E	2*	—	3 7	2 7.69	+18 0.4	1.781	1.368	33.6	21.4	50 E	42*	21*
5 6	2 52.98	+27 7.4	1.925	0.952	11.3	20.3	11 E	2*	—	3 17	2 22.35	+20 34.4	1.771	1.262	33.2	21.2	44 E	37*	17*
5 11	3 10.20	+30 13.4	1.890	0.929	13.5	20.3	12 W	4*	—	3 27	2 39.30	+23 15.8	1.735	1.147	33.2	21.0	39 E	32*	13*
5 16	3 29.23	+33 16.2	1.854	0.909	15.9	20.3	14 W	5*	—	4 6	2 58.86	+26 4.5	1.670	1.020	33.9	20.7	35 E	28*	9*
5 21	3 50.43	+36 12.6	1.817	0.890	18.4	20.3	16 W	7*	—	4 16	3 21.65	+28 59.0	1.573	0.882	36.0	20.3	31 E	25*	7*
5 26	4 14.17	+38 58.4	1.781	0.874	20.9	20.3	18 E	9*	—	4 21	3 34.49	+30 26.8	1.510	0.809	38.0	20.1	30 E	24*	5*
5 31	4 40.79	+41 27.9	1.745	0.861	23.4	20.3	20 E	11*	—	4 26	3 48.43	+31 53.0	1.437	0.732	41.0	19.8	29 E	22*	4*
6 5	5 10.50	+43 34.2	1.711	0.852	25.8	20.3	21 E	13*	—	5 1	4 3.53	+33 14.5	1.352	0.654	45.4	19.6	28 E	21*	3*
6 10	5 43.25	+45 9.3	1.680	0.845	28.1	20.3	23 E	15*	—	5 6	4 19.72	+34 25.1	1.254	0.574	52.1	19.3	27 E	21*	3*
6 15	6 18.56	+46 5.0	1.653	0.842	30.1	20.3	25 E	18*	—	5 8	4 26.41	+34 48.0	1.210	0.542	55.7	19.2	26 E	20*	2*
6 17	6 33.21	+46 14.7	1.643	0.842	30.8	20.3	25 E	18*	—	5 10	4 33.14	+35 6.2	1.164	0.511	59.9	19.1	26 E	20*	2*
6 19	6 48.04	+46 16.7	1.634	0.843	31.5	20.3	26 E	19*	—	5 12	4 39.79	+35 18.1	1.116	0.480	64.9	19.0	25 E	19*	2*
6 21	7 2.97	+46 10.8	1.626	0.844	32.2	20.3	26 E	20*	—	5 14	4 46.22	+35 21.6	1.064	0.451	70.9	19.0	25 E	19*	2*
6 23	7 17.91	+45 56.8	1.618	0.845	32.8	20.4	27 E	21*	—	5 16	4 52.19	+35 14.0	1.010	0.424	78.0	19.0	24 E	18*	2*
6 25	7 32.76	+45 34.7	1.612	0.847	33.3	20.4	27 E	21*	—	5 17	4 54.92	+35 4.9	0.983	0.411	82.1	19.0	24 E	18*	2*
6 27	7 47.44	+45 4.7	1.607	0.850	33.8	20.4	28 E	22*	—	5 18	4 57.41	+34 51.6	0.955	0.399	86.4	19.0	23 E	17*	2*
6 29	8 1.86	+44 27.0	1.602	0.853	34.2	20.4	28 E	22*	—	5 19	4 59.61	+34 33.5	0.926	0.388	91.2	19.1	23 E	16*	2*
7 1	8 15.96	+43 41.9	1.599	0.857	34.6	20.4	29 E	23*	1*	5 20	5 1.48	+34 9.9	0.898	0.379	96.3	19.2	22 E	16*	2*
7 3	8 29.68	+42 49.9	1.597	0.861	34.8	20.4	29 E	23*	2*	5 21	5 2.94	+33 40.2	0.869	0.370	101.8	19.4	21 E	15*	2*
7 5	8 42.97	+41 51.3	1.596	0.866	35.1	20.4	29 E	23*	3*	5 22	5 3.96	+33 3.6	0.841	0.363	107.7	19.6	20 E	14*	1*
7 10	9 14.11	+38 59.8	1.598	0.880	35.4	20.5	30 E	23*	6*	5 23	5 4.47	+32 19.5	0.813	0.357	114.0	19.8	19 E	14*	1*
7 15	9 42.15	+35 39.8	1.606	0.897	35.3	20.5	31 E	23*	10*	5 24	5 4.44	+31 27.2	0.787	0.353	120.6	20.2	17 E	11*	1*
7 20	10 7.19	+32 0.0	1.622	0.917	34.9	20.6	31 E	22*	12*	5 25	5 3.84	+30 26.4	0.761	0.351	127.4	20.7	16 E	10*	1*
7 25	10 29.52	+28 8.3	1.643	0.938	34.3	20.7	31 E	21*	15*	5 26	5 2.67	+29 16.8	0.737	0.350	134.5	21.3	14 E	8*	1*
7 30	10 49.53	+24 10.9	1.670	0.961	33.3	20.7	31 E	19*	17*	5 28	4 58.70	+26 31.2	0.694	0.354	148.9	23.3	10 E	4*	—
8 4	11 7.58	+20 12.9	1.702	0.986	32.2	20.8	31 E	18*	19*	5 30	4 52.94	+23 14.6	0.660	0.364	162.7	27.0	6 E	—	—
8 9	11 24.03	+16 17.9	1.737	1.012	31.0	20.9	31 E	16*	20*	6 1	4 46.02	+19 36.2	0.637	0.380	170.7	32.8	3 E	—	—
8 14	11 39.18	+12 28.4	1.776	1.038	29.6	20.9	30 E	14*	21*	6 3	4 38.68	+15 48.4	0.623	0.401	163.2	27.3	7 W	—	—
8 19	11 53.27	+ 8 46.1	1.817	1.066	28.2	21.0	30 E	12*	22*	500080 2011 WV ₁₃₄									
8 24	12 6.52	+ 5 11.9	1.860	1.093	26.7	21.0	29 E	10*	22*	3 7	3 6.06	+11 59.4	2.204	1.933	26.7	21.5	61 E	46*	35*
8 29	12 19.12	+ 1 46.1	1.903	1.121	25.3	21.1	28 E	8*	22*	3 17	3 20.93	+13 19.7	2.220	1.843	26.3	21.4	55 E	42*	32*
9 3	12 31.21	- 1 31.3	1.947	1.149	23.8	21.2	27 E	6*	21*	3 27	3 38.00	+14 41.8	2.223	1.750	25.7	21.2	50 E	37*	29*
9 8	12 42.92	- 4 40.3	1.991	1.177	22.4	21.2	26 E	4*	20*	4 6	3 57.30	+16 3.5	2.213	1.657	25.1	21.1	45 E	32*	26*
9 13	12 54.35	- 7 41.4	2.034	1.205	21.0	21.3	25 E	2*	19*	4 16	4 18.03	+17 22.4	2.189	1.562	24.5	20.9	40 E	27*	24*
9 18	13 5.60	-10 35.0	2.076	1.233	19.7	21.3	24 E	—	18*	4 26	4 43.93	+18 35.6	2.153	1.467	23.9	20.7	36 E	23*	22*
9 23	13 16.74	-13 21.4	2.117	1.260	18.4	21.4	23 E	—	17*	5 6	5 9.78	+19 39.5	2.105	1.372	23.5	20.5	33 E	19*	20*
9 28	13 27.84	-16 1.1	2.156	1.286	17.2	21.4	22 E	—	16*	5 16	5 39.40	+20 29.8	2.047	1.279	23.5	20.3	30 E	16*	19*
10 3	13 38.98	-18 34.6	2.193	1.312	16.1	21.5	21 E	—	14*	5 26	6 12.07	+21 1.1	1.981	1.189	23.8	20.1	28 E	13*	18*
190788 2001 RT ₁₇										5 31	6 29.59	+21 7.8	1.945	1.146	24.1	20.0	27 E	12*	18*
3 7	0 55.48	+17 51.8	1.859	1.190	28.5	21.3	35 E	29*	7*	6 5	6 47.92	+21 7.2	1.909	1.105	24.6	19.9	27 E	11*	18*
3 17	1 17.27	+19 41.6	1.780	1.055	28.8	20.9	31 E	25*	4*	6 10	7 7.06	+20 58.6	1.871	1.066	25.3	19.8	27 E	10*	18*
3 27	1 42.35	+21 34.8	1.670	0.905	30.2	20.5	27 E	21*	3*	6 15	7 26.98	+20 40.9	1.834	1.029	26.1	19.7	26 E	9*	18*
4 6	2 11.75	+23 21.0	1.524	0.738	34.0	20.0	24 E	18*	2*	6 20	7 47.65	+20 13.4	1.796	0.996	27.1	19.6	27 E	9*	18*
4 11	2 28.45	+24 4.4	1.434	0.647	37.6	19.7	23 E	17*	2*	6 25	8 9.03	+19 35.2	1.758	0.967	28.3	19.5	27 E	8*	19*
4 16	2 46.58	+24 32.7	1.331	0.															

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

2021	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	2021	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
500080 2011 WV134 (continuation)										459190 2012 DJ47 (continuation)									
9 8	13 55.26	-7 15.8	1.638	1.155	37.5	20.0	44 E	14*	38*	3 27	11 41.74	-24 34.3	2.521	3.455	6.8	22.3	156 E	20	89
9 13	14 16.27	-9 5.6	1.678	1.199	36.4	20.1	45 E	14*	38*	4 1	11 36.57	-24 16.5	2.536	3.467	7.1	22.3	155 E	21	88
9 23	14 56.59	-12 19.0	1.773	1.289	33.8	20.3	46 E	15*	39*	4 6	11 31.70	-23 55.2	2.559	3.478	7.6	22.4	153 E	21	88
10 3	15 34.55	-14 55.5	1.888	1.382	31.0	20.5	45 E	15*	39*	4 11	11 27.20	-23 31.2	2.588	3.488	8.4	22.5	149 E	21	88
10 13	16 10.18	-16 56.3	2.016	1.477	28.2	20.7	44 E	15*	37*	100085 1992 UY4									
10 23	16 43.54	-18 24.3	2.155	1.572	25.3	20.9	42 E	15*	35*	3 7	12 4.43	-3 29.2	3.201	4.163	3.8	23.8	164 W	42	67
11 2	17 14.76	-19 23.7	2.301	1.667	22.5	21.1	40 E	15*	32*	3 17	11 56.64	-2 42.2	3.154	4.146	1.2	23.6	175 W	42	67
11 12	17 44.01	-19 58.4	2.449	1.760	19.7	21.3	37 E	15*	29*	3 27	11 48.61	-1 51.8	3.139	4.129	2.1	23.6	171 E	43	66
11 22	18 11.43	-20 12.3	2.598	1.853	17.0	21.4	33 E	14*	24*	4 6	11 40.91	-1 1.7	3.156	4.110	4.8	23.8	160 E	44	65
462550 2009 CB3										467317 2000 QW7									
3 7	5 19.49	+33 48.7	0.092	1.004	79.8	17.0	95 E	79*	30*	3 7	12 6.57	+ 1 20.4	1.876	2.847	5.1	23.6	165 W	46	63
3 8	5 54.15	+35 44.6	0.102	1.017	73.2	17.0	101 E	81	28	3 12	12 1.39	+ 2 0.4	1.856	2.843	2.9	23.4	172 W	47	62
3 9	6 23.43	+36 50.3	0.113	1.030	67.9	17.1	106 E	82	27	3 17	11 56.00	+ 2 41.3	1.844	2.838	0.9	23.2	177 W	48	61
3 10	6 47.79	+37 23.2	0.125	1.042	63.7	17.2	110 E	82	27	3 22	11 50.51	+ 3 22.2	1.840	2.834	1.9	23.3	175 E	48	61
3 11	7 7.97	+37 35.8	0.138	1.054	60.4	17.4	113 E	83	26	3 27	11 45.08	+ 4 2.1	1.844	2.828	4.0	23.5	169 E	49	60
3 12	7 24.76	+37 36.2	0.152	1.066	57.7	17.5	115 E	83	26	4 1	11 39.82	+ 4 40.1	1.855	2.823	6.2	23.6	162 E	50	59
3 13	7 38.83	+37 29.4	0.166	1.078	55.4	17.7	117 E	82	27	4 6	11 34.06	+ 5 15.3	1.874	2.817	8.3	23.7	156 E	50	59
3 14	7 50.74	+37 18.4	0.180	1.090	53.6	17.8	118 E	82	27	516461 2005 LF8									
3 15	8 0.93	+37 5.1	0.194	1.102	52.1	18.0	119 E	82	27	3 7	12 7.29	+ 1 8.2	1.758	2.729	5.4	22.3	165 W	46	63
3 16	8 40.72	+36 50.6	0.209	1.114	50.8	18.1	120 E	82	27	3 12	12 2.38	+ 1 37.6	1.727	2.713	3.2	22.2	171 W	47	62
3 17	8 17.40	+36 35.6	0.224	1.125	49.7	18.3	120 E	82	27	3 17	11 57.16	+ 2 8.4	1.704	2.698	1.0	22.0	177 W	47	62
3 18	8 24.16	+36 20.5	0.239	1.136	48.8	18.4	121 E	81	28	3 22	11 51.77	+ 2 39.6	1.688	2.682	1.7	22.0	175 E	48	61
3 19	8 30.16	+36 5.5	0.254	1.147	48.0	18.5	121 E	81	28	3 27	11 46.36	+ 3 10.4	1.680	2.667	4.0	22.1	169 E	48	61
3 20	8 35.54	+35 50.8	0.269	1.159	47.3	18.7	121 E	81	28	4 1	11 41.07	+ 3 39.8	1.679	2.650	6.3	22.2	163 E	49	60
3 21	8 40.39	+35 36.5	0.285	1.170	46.7	18.8	121 E	81	28	4 6	11 36.04	+ 4 7.0	1.685	2.634	8.6	22.3	157 E	49	60
3 22	8 44.81	+35 22.5	0.300	1.180	46.2	18.9	121 E	80	29	4 11	11 31.38	+ 4 31.4	1.697	2.617	10.8	22.4	151 E	50	59
3 23	8 48.84	+35 8.8	0.316	1.191	45.7	19.0	121 E	80	29	506951 2008 KV28									
3 24	8 52.56	+34 55.5	0.331	1.202	45.3	19.1	121 E	80	29	3 7	12 7.30	-28 17.0	1.433	2.308	14.8	24.2	144 W	17	88
3 25	8 56.01	+34 42.5	0.347	1.212	45.0	19.2	121 E	80	29	3 12	12 1.36	-27 44.4	1.397	2.300	13.3	24.1	148 W	17	88
3 26	8 59.22	+34 29.9	0.363	1.222	44.6	19.3	121 E	79	30	3 17	11 55.01	-27 0.3	1.367	2.291	12.0	24.0	151 W	18	89
3 27	9 2.22	+34 17.5	0.378	1.233	44.4	19.4	120 E	79	30	3 22	11 48.46	-26 4.9	1.344	2.282	11.0	23.9	154 E	19	90
462550 2009 CB3										467317 2000 QW7									
3 29	9 7.70	+33 53.6	0.410	1.253	43.9	19.6	120 E	79	30	3 27	11 41.93	-24 59.2	1.327	2.272	10.5	23.9	155 E	20	89
3 31	9 12.63	+33 30.5	0.442	1.272	43.5	19.8	119 E	79	30	4 1	11 35.62	-23 44.5	1.317	2.262	10.7	23.8	155 E	21	88
4 2	9 17.13	+33 8.2	0.474	1.292	43.1	20.0	118 E	78	31	4 6	11 29.72	-22 22.5	1.313	2.252	11.6	23.9	153 E	23	86
4 4	9 21.29	+32 46.4	0.507	1.310	42.8	20.2	117 E	78	31	491037 2011 QW11									
4 6	9 25.18	+32 25.1	0.539	1.329	42.6	20.3	116 E	77	32	3 7	12 8.00	- 2 31.1	2.355	3.318	4.9	23.5	163 W	42	67
462550 2009 CB3										467317 2000 QW7									
4 11	9 34.06	+31 33.2	0.621	1.373	42.0	20.7	113 E	77	32	3 17	11 59.42	- 1 37.0	2.320	3.313	1.3	23.2	176 W	43	66
4 16	9 42.14	+30 42.5	0.704	1.415	41.6	21.0	111 E	76	33	3 27	11 50.55	- 0 39.5	2.316	3.306	2.5	23.3	172 E	44	65
4 21	9 49.75	+29 52.4	0.787	1.454	41.1	21.3	108 E	75	34	4 6	11 42.17	+ 0 16.1	2.343	3.299	6.1	23.5	160 E	45	64
4 26	9 57.07	+29 2.5	0.870	1.491	40.7	21.6	105 E	74	35	4 16	11 34.96	+ 1 5.1	2.398	3.291	9.3	23.7	148 E	46	63
329713 2003 WO7										452140 2015 QR9									
3 7	11 58.26	+12 25.5	2.038	3.011	4.5	23.1	166 W	57	52	3 7	12 9.98	+10 57.5	2.248	3.214	4.9	22.6	164 W	56	53
3 12	11 53.29	+13 2.9	2.023	3.004	3.8	23.1	169 W	58	51	3 12	12 5.64	+11 26.9	2.246	3.224	3.8	22.6	168 W	56	53
3 17	11 48.15	+13 38.3	2.016	2.996	4.0	23.1	168 W	59	50	3 17	12 1.15	+11 54.5	2.252	3.234	3.4	22.5	169 W	57	52
3 22	11 42.97	+14 10.9	2.016	2.988	5.2	23.1	164 E	59	50	3 22	11 56.65	+12 19.6	2.265	3.243	4.0	22.6	167 E	57	52
3 27	11 37.86	+14 39.8	2.024	2.979	6.7	23.2	160 E	60	49	3 27	11 52.23	+12 41.6	2.285	3.253	5.1	22.7	163 E	58	51
4 1	11 32.95	+15 4.5	2.039	2.970	8.4	23.3	154 E	60	49	4 1	11 47.98	+13 0.1	2.313	3.262	6.6	22.8	158 E	58	51
4 6	11 28.35	+15 24.6	2.060	2.961	10.1	23.4	149 E	60	49	4 6	11 44.01	+13 14.8	2.348	3.270	8.0	22.9	153 E	58	51
422715 2000 WE6										439919 2001 QF132									
3 7	11 58.89	+16 20.3	3.110	4.072	3.9	22.9	164 W	61	48	3 7	12 13.99	- 7 59.2	2.020	2.968	6.8	22.7	159 W	37	72
3 17	11 51.04	+17 10.5	3.100	4.066	3.8	22.9	164 W	62	47	3 17	12 4.96	- 7 11.1	1.978	2.963	3.3	22.5	170 W	38	71
3 27	11 43.11	+17 50.5	3.120	4.060	5.4	23.0	157 E	63	46	3 27	11 55.46	- 6 13.4	1.966	2.958	2.6	22.4	172 E	39	70
4 6	11 35.69	+18 17.7	3.170	4.052	7.5	23.1	148 E	63	46	4 6	11 46.41	- 5 12.2	1.984	2.951	6.1	22.6	162 E	40	69
4 16	11 29.30	+18 30.8	3.245	4.044	9.6	23.2	138 E	64	45	4 16	11 38.67	- 4 13.6	2.030	2.943	9.7	22.8	150 E	41	68
482766 2013 GF69										524599 2003 PC11									
3 7	12 0.69	- 0 1.5	1.684	2.658	5.1	23.0	166 W	45	64	3 7	12 14.02	-13 47.8	3.447	4.367	5.5	23.4	155 W	31	78
3 12	11 55.40	+ 0 48.4	1.654	2.642	2.7	22.8	173 W	46	63	3 17	12 6.02	-13 29.0	3.384	4.350	3.5	23.3	164 W	32	77
3 17	11 49.81	+ 1 40.7	1.631	2.625	0.3	22.5	179 W	47	62	3 27	11 57.65	-13 1.0	3.352	4.332	2.8	23.2	168 E	32	77
3 22	11 44.07	+ 2 34.1	1.615	2.608	2.3	22.7	174 E	48	61	4 6	11 49.46	-12 26.2	3.352	4.313	4.2	23.3	162 E	33	76
3 27	11 38.33	+ 3 27.2	1.608	2.591	4.8	22.8	167 E	48	61	4 16	11 41.98	-11 48.1	3.382	4.294	6.3	23.4	152 E	33	76
4 1	11 32.76	+ 4 19.0	1.608	2.573	7.3	22.9	161 E	49	60	495960 2007 MT20									
4 6	11 27.48	+ 5 8.2	1.615	2.554	9.8	23.0	154 E	50	59	3 7	12 14.36	-20 15.8	1.954	2.856	10.1	23.2	150 W	25	84
440012 2002 LE27										495960 2007 MT20									
3 7	12 2.00	- 4 25.6	1.557	2.525	6.3	22.8	164 W	41	68	3 12	12 8.59	-19 40.5	1.936	2.867	8.5	23.1	155 W	25	84
3 17	11 51.33	- 3 15.3	1.488	2.481	1.9	22.4	175 W	42	67	3 17	12 2.62	-18 58.9	1.926	2.878	7.1	23.0	159 W	26	83
3 27	11 39.81	- 1 54.0	1.449	2.436	4.4	22.4	169 E	43	66	3 22	11 56.61	-18 11.8	1.923	2.888	6.1	23.0	162 E	27	82
4 6	11 28.72	- 0 30.2	1.438	2.389	9.6	22.6	157 E	44	65	3 27	11 50.69	-17 20.2	1.928	2.897	5.7	23.0	163 E	28	81
4 16	11 19.31	+ 0 46.9	1.452	2.342	14.5	22.8	144 E	46	63	4 1	11 45.00	-16 25.3	1.940	2.906	6.2	23.0	162 E	29	80</

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

2021	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	2021	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°		
354030 2001 RB₁₈										490354 2009 FF₁₉											
3	7	12 15.65	3 40.5	2.544	3.498	5.2	23.8	161 W	41	68	3	7	12 36.48	2 24.6	0.640	1.601	14.0	22.2	157 W	43	66
3	17	12 6.95	2 39.0	2.524	3.514	1.9	23.6	173 W	42	67	3	17	12 18.29	0 19.9	0.577	1.568	5.2	21.5	172 W	45	64
3	27	11 58.00	1 34.3	2.536	3.529	1.8	23.6	174 E	43	66	3	27	11 55.34	+ 2 13.2	0.537	1.531	5.4	21.3	172 E	47	62
4	6	11 49.53	0 31.4	2.580	3.543	5.1	23.8	162 E	44	65	4	6	11 31.00	+ 4 49.4	0.522	1.490	16.3	21.6	155 E	50	59
4	16	11 42.18	+ 0 24.9	2.653	3.556	8.2	24.0	150 E	45	64	4	16	11 9.30	+ 7 1.1	0.526	1.445	26.7	21.9	140 E	52	57
469722 2005 LP₄₀										184346 2005 HF₆											
3	7	12 18.62	+15 30.1	1.869	2.823	6.8	23.6	160 W	61	48	3	7	12 40.84	- 0 52.5	2.695	3.627	6.3	21.3	156 W	44	65
3	12	12 13.56	+16 39.2	1.845	2.809	6.0	23.5	163 W	62	47	3	17	12 33.79	+ 0 9.8	2.653	3.632	3.2	21.1	168 W	45	64
3	17	12 8.13	+17 46.3	1.828	2.794	6.0	23.5	163 W	63	46	3	27	12 26.08	+ 1 14.1	2.640	3.637	1.0	21.0	176 W	46	63
3	22	12 2.47	+18 50.0	1.819	2.779	6.8	23.5	161 E	64	45	4	6	12 18.35	+ 2 15.8	2.659	3.640	3.6	21.2	167 E	47	62
3	27	11 56.73	+19 48.9	1.818	2.763	8.2	23.6	157 E	65	44	4	16	12 11.23	+ 3 10.3	2.708	3.643	6.7	21.4	155 E	48	61
4	6	11 51.04	+20 41.9	1.824	2.747	9.8	23.6	152 E	66	43	4	26	12 5.27	+ 3 54.3	2.785	3.645	9.4	21.6	144 E	49	60
4	6	11 45.55	+21 28.3	1.838	2.730	11.6	23.7	147 E	66	43	489216 2006 KR₂₀										
455350 2002 RL₁₁₅										3	7	12 43.14	-10 27.2	0.964	1.898	14.3	21.5	152 W	35	74	
3	7	12 20.48	- 6 42.3	2.407	3.351	6.2	23.0	159 W	38	71	3	17	12 36.37	- 9 45.7	0.881	1.856	8.9	21.1	163 W	35	74
3	17	12 12.48	- 5 47.4	2.384	3.369	2.9	22.8	170 W	39	70	3	27	12 26.90	- 8 35.8	0.819	1.814	3.4	20.6	174 W	36	73
3	27	12 4.14	- 4 46.6	2.392	3.387	1.5	22.7	175 E	40	69	4	6	12 16.15	- 7 4.3	0.779	1.772	6.1	20.6	169 E	38	71
4	6	11 56.21	- 3 44.9	2.430	3.404	4.6	23.0	164 E	41	68	4	16	12 6.00	- 5 23.5	0.761	1.731	13.0	20.8	157 E	40	69
4	16	11 49.34	- 2 47.4	2.498	3.419	7.8	23.2	153 E	42	67	4	26	11 58.40	- 3 49.5	0.763	1.690	19.8	20.9	145 E	41	68
409034 2003 MA₂										5	6	11 54.64	- 2 35.5	0.779	1.650	25.9	21.1	134 E	42	67	
3	7	12 20.99	-26 51.4	2.050	2.908	11.7	22.5	143 W	18	89	5	16	11 55.33	- 1 49.4	0.807	1.612	31.1	21.3	125 E	43	66
3	12	12 16.51	-26 51.2	2.008	2.895	10.6	22.4	148 W	18	89	5	26	12 0.53	- 1 34.2	0.841	1.575	35.3	21.5	116 E	43*	66
3	17	12 11.65	-26 44.1	1.971	2.883	9.6	22.3	151 W	18	89	271271 2003 UW₁₉₀										
3	22	12 6.54	-26 30.1	1.941	2.870	8.7	22.2	154 W	18	89	3	7	12 43.43	- 4 53.5	1.678	2.608	9.4	21.5	154 W	40	69
3	27	12 1.31	-26 9.5	1.918	2.857	8.2	22.2	156 E	19	90	3	17	12 35.10	- 3 45.9	1.618	2.596	5.0	21.2	167 W	41	68
4	1	11 56.09	-25 42.6	1.902	2.844	8.2	22.1	156 E	19	90	3	27	12 25.46	- 2 28.6	1.586	2.583	0.2	20.8	179 W	43	66
4	6	11 51.04	-25 10.1	1.892	2.831	8.6	22.1	155 E	20	89	4	6	12 15.58	- 1 9.3	1.582	2.569	4.7	21.1	168 W	44	65
4	11	11 46.26	-24 32.8	1.889	2.817	9.4	22.2	153 E	20	89	4	16	12 6.57	+ 0 3.7	1.607	2.555	9.4	21.4	156 E	45	64
4	16	11 41.90	-23 51.9	1.893	2.804	10.5	22.2	149 E	21	88	4	26	11 59.42	+ 1 3.4	1.657	2.539	13.6	21.6	144 E	46	63
4	21	11 38.05	-23 8.4	1.902	2.790	11.8	22.2	146 E	22	87	439914 2001 OF₃₀										
388259 2006 QF₁										3	7	12 43.53	- 4 1.2	1.984	2.913	8.4	22.5	155 W	41	68	
3	7	12 21.22	- 2 43.9	1.981	2.934	6.5	22.5	160 W	42	67	3	17	12 35.04	- 3 16.0	1.924	2.902	4.4	22.2	167 W	42	67
3	17	12 11.75	- 1 43.9	1.958	2.948	2.4	22.3	173 W	43	66	3	27	12 25.43	- 2 24.2	1.892	2.889	0.2	21.8	179 W	43	66
3	27	12 1.87	- 0 40.5	1.966	2.960	1.9	22.3	174 E	44	65	4	6	12 15.63	- 1 31.2	1.890	2.876	4.1	22.1	168 E	43	66
4	6	11 52.51	+ 0 19.9	2.003	2.971	6.0	22.5	162 E	45	64	4	16	12 6.59	- 0 43.0	1.917	2.862	8.2	22.4	156 E	44	65
4	16	11 44.51	+ 1 11.9	2.070	2.981	9.7	22.8	150 E	46	63	332136 2005 WT₁₁₀										
199801 2007 AE₁₂										3	7	12 43.90	-13 23.2	1.802	2.707	10.6	21.6	150 W	32	77	
3	7	12 25.29	- 6 35.7	1.367	2.316	9.4	22.4	158 W	38	71	3	17	12 35.65	-12 39.1	1.718	2.680	6.8	21.3	161 W	32	77
3	17	12 12.08	- 5 16.8	1.286	2.273	4.0	22.0	171 W	40	69	3	27	12 25.93	-11 36.1	1.662	2.652	3.4	21.1	171 W	33	76
3	27	11 56.96	- 3 39.2	1.234	2.228	2.9	21.8	173 E	41	68	4	6	12 15.74	-10 19.3	1.634	2.622	4.4	21.0	168 E	35	74
4	6	11 41.54	- 1 53.2	1.212	2.179	9.0	22.0	160 E	43	66	4	16	12 6.21	- 8 56.1	1.635	2.592	8.4	21.2	158 E	36	73
4	16	11 27.60	- 0 11.2	1.218	2.128	15.1	22.2	147 E	45	64	4	26	11 58.36	- 7 35.4	1.662	2.560	12.6	21.4	146 E	37	72
527115 2007 TD₁₄										363368 2002 TJ₅₂											
3	7	12 30.21	- 4 0.0	1.757	2.702	8.0	22.8	158 W	41	68	3	7	12 44.04	-10 44.2	2.597	3.501	7.8	22.2	152 W	34	75
3	17	12 21.39	- 2 48.6	1.672	2.658	3.6	22.5	170 W	42	67	3	17	12 36.81	- 9 59.4	2.535	3.499	4.8	22.0	163 W	35	74
3	27	12 11.22	- 1 26.2	1.616	2.612	1.2	22.2	177 E	44	65	3	27	12 28.76	- 9 4.3	2.502	3.495	1.9	21.8	173 W	36	73
4	6	12 0.73	- 0 0.4	1.589	2.566	6.2	22.4	164 E	45	64	4	6	12 20.57	- 8 3.3	2.500	3.490	2.8	21.9	170 E	37	72
4	16	11 51.08	+ 1 20.2	1.590	2.518	11.0	22.6	151 E	46	63	4	16	12 12.95	- 7 1.3	2.528	3.485	5.9	22.1	159 E	38	71
541067 2018 LX₄										4	26	12 6.50	- 6 3.1	2.585	3.478	8.9	22.3	148 E	39	70	
3	7	12 31.14	- 2 50.8	2.057	3.001	7.1	23.2	158 W	42	67	217262 2003 YV₃										
3	17	12 21.62	- 2 26.9	1.991	2.976	3.2	22.9	170 W	43	66	3	7	12 46.12	-14 35.8	1.944	2.840	10.4	21.4	149 W	30	79
3	27	12 11.08	- 1 58.0	1.954	2.951	1.0	22.7	177 E	43	66	3	17	12 37.25	-14 3.0	1.889	2.845	6.9	21.2	160 W	31	78
4	6	12 0.49	- 1 28.7	1.948	2.924	5.2	22.9	165 E	44	65	3	27	12 27.26	-13 13.5	1.863	2.849	3.8	21.0	169 W	32	77
4	16	11 50.82	- 1 3.7	1.971	2.897	9.3	23.1	152 E	44	65	4	6	12 17.15	-12 12.3	1.865	2.851	4.2	21.0	168 E	33	76
504505 2008 MH₁										4	16	12 7.92	-11 5.7	1.896	2.853	7.5	21.2	158 E	34	75	
3	7	12 32.92	-14 9.1	2.112	3.022	9.0	22.9	152 W	31	78	4	26	12 0.42	-10 1.1	1.955	2.853	11.0	21.4	147 E	35	74
3	17	12 23.94	-13 43.4	2.005	2.968	5.9	22.6	162 W	31	78	347375 2012 RL₁₂										
3	27	12 13.58	-13 0.4	1.927	2.913	3.7	22.4	169 E	32	77	3	7	12 46.57	- 3 10.1	1.596	2.527	9.8	21.3	154 W	42	67
4	6	12 2.74	-12 3.4	1.879	2.857	5.2	22.4	165 E	33	76	3	17	12 37.30	- 2 36.4	1.525	2.504	5.3	20.9	167 W	42	67
4	16	11 52.45	-10 57.9	1.861	2.800	8.9	22.5	154 E	34	75	3	27	12 26.37	- 1 55.2	1.481	2.479	0.4	20.5	179 W	43	66
422743 2001 SU₁₁₁										4	6	12 14.95	- 1 12.8	1.466	2.453	5.0	20.8	168 E	44	65	
3	7	12 35.51	-11 9.4	2.899	3.810	6.8	23.0	153 W	34	75	4	16	12 4.32	- 0 35.8	1.478	2.427	10.0	21.0	155 E	44	65
3	17	12 28.30	-10 26.2	2.835	3.802	4.1	22.8	164 W	35	74	4	26	11 55.63	+ 0 10.1	1.515	2.399	14.5	21.2	143 E	45	64
3	27	12 20.43	- 9 33.5	2.801	3.793	1.9	22.7	173 E	35	74	5	6	11 49.63	+ 0 0.5	1.572	2.371	18.4	21.4	132 E	45	64
4	6	12 12.54	- 8 35.1	2.798	3.783	3.1	22.7	168 E	36	73	27662										

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

2021	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	2021	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°		
338214 2002 SO₅₉																					
		h m	°	°	°	°	°					h m	°	°	°	°	°				
3	7	12 49.30	+ 5 41.1	1.881	2.813	8.5	21.5	155 W	51	58	3	7	12 57.72	+ 2 17.8	1.257	2.187	11.9	21.8	153 W	47	62
3	12	12 45.22	+ 6 12.6	1.854	2.811	6.7	21.4	161 W	51	58	3	12	12 53.82	+ 2 55.6	1.222	2.178	9.6	21.7	159 W	48	61
3	17	12 40.73	+ 6 44.1	1.835	2.809	5.1	21.3	165 W	52	57	3	17	12 49.22	+ 3 35.5	1.193	2.167	7.2	21.5	164 W	49	60
3	22	12 35.94	+ 7 14.9	1.822	2.807	3.9	21.2	169 W	52	57	3	22	12 44.07	+ 4 16.4	1.171	2.157	5.0	21.3	169 W	49	60
3	27	12 30.97	+ 7 43.9	1.817	2.804	3.7	21.2	170 W	53	56	3	27	12 38.50	+ 4 56.9	1.155	2.147	3.9	21.2	172 W	50	59
4	1	12 25.96	+ 8 10.4	1.819	2.802	4.7	21.2	167 E	53	56	4	1	12 32.72	+ 5 35.4	1.145	2.136	4.8	21.3	170 E	51	58
4	6	12 21.02	+ 8 33.6	1.829	2.799	6.2	21.3	162 E	54	55	4	6	12 26.91	+ 6 10.7	1.142	2.125	7.0	21.3	165 E	51	58
4	11	12 16.29	+ 8 53.0	1.845	2.795	8.0	21.4	157 E	54	55	4	11	12 21.26	+ 6 41.6	1.146	2.114	9.6	21.4	160 E	52	57
4	16	12 11.88	+ 9 8.0	1.868	2.792	9.8	21.5	152 E	54	55	4	16	12 15.99	+ 7 6.8	1.155	2.102	12.2	21.6	154 E	52	57
4	21	12 7.89	+ 9 18.3	1.897	2.788	11.6	21.6	146 E	54	55	4	21	12 11.26	+ 7 25.8	1.170	2.091	14.8	21.7	148 E	52	57
4	26	12 4.40	+ 9 23.9	1.932	2.784	13.2	21.7	141 E	54	55	4	26	12 7.21	+ 7 38.1	1.190	2.079	17.2	21.8	142 E	53	56
441622 2008 UP₃₆₆																					
3	7	12 50.42	- 0 27.3	2.050	2.975	8.4	22.2	154 W	45	64											
3	17	12 42.44	+ 0 26.9	1.990	2.966	4.7	22.0	166 W	45	64											
3	27	12 33.27	+ 1 24.3	1.960	2.955	1.6	21.7	175 W	46	63											
4	6	12 23.81	+ 2 19.1	1.959	2.944	4.2	21.9	168 E	47	62											
4	16	12 14.96	+ 3 5.6	1.988	2.933	8.0	22.1	156 E	48	61											
4	26	12 7.55	+ 3 39.3	2.042	2.920	11.6	22.3	144 E	49	60											
438035 2004 HT₃																					
3	7	12 53.22	+ 2 27.0	1.871	2.797	8.9	21.6	154 W	47	62											
3	17	12 44.37	+ 3 7.4	1.806	2.781	5.2	21.3	165 W	48	61											
3	27	12 34.10	+ 3 48.3	1.771	2.764	2.5	21.1	173 W	49	60											
4	6	12 23.39	+ 4 23.5	1.764	2.746	5.1	21.2	166 E	49	60											
4	16	12 13.31	+ 4 48.0	1.787	2.727	9.1	21.4	155 E	50	59											
4	26	12 4.83	+ 4 58.0	1.834	2.707	12.9	21.6	143 E	50	59											
402308 2005 TS₅₀																					
3	7	12 54.84	-14 53.8	2.523	3.398	9.2	22.5	147 W	30	79											
3	17	12 46.86	-14 34.2	2.485	3.428	6.2	22.3	158 W	30	79											
3	27	12 38.05	-14 2.3	2.476	3.458	3.5	22.2	168 W	31	78											
4	6	12 29.15	-13 21.4	2.497	3.487	2.9	22.2	170 E	32	77											
4	16	12 20.89	-12 35.9	2.549	3.514	5.2	22.4	161 E	32	77											
480927 2002 YZ₃																					
3	7	12 54.87	-15 49.0	1.945	2.825	11.2	22.5	146 W	29	80											
3	17	12 42.04	-15 32.3	1.820	2.768	7.7	22.2	158 W	29	80											
3	27	12 26.72	-14 53.9	1.726	2.709	4.6	21.8	168 W	30	79											
4	6	12 10.02	-13 55.1	1.665	2.646	5.4	21.8	166 E	31	78											
4	16	11 53.42	-12 41.3	1.637	2.580	9.6	21.9	155 E	32	77											
4	26	11 38.43	-11 21.3	1.640	2.511	14.3	22.0	142 E	34	75											
350713 2001 XP₈₈																					
3	7	12 55.74	+11 39.6	0.660	1.608	16.2	21.6	153 W	57	52											
3	12	12 49.28	+12 56.0	0.645	1.609	13.5	21.5	158 W	58	51											
3	17	12 41.77	+14 10.0	0.635	1.609	11.4	21.3	161 W	59	50											
3	22	12 33.50	+15 18.0	0.630	1.609	10.6	21.3	163 W	60	49											
3	27	12 24.83	+16 16.7	0.631	1.608	11.5	21.3	161 W	61	48											
4	1	12 16.17	+17 3.8	0.637	1.607	13.7	21.4	158 E	62	47											
4	6	12 7.89	+17 37.5	0.648	1.605	16.5	21.6	153 E	63	46											
4	11	12 0.35	+17 57.2	0.664	1.602	19.6	21.7	148 E	63	46											
4	16	11 53.81	+18 3.1	0.683	1.599	22.6	21.9	142 E	63	46											
4	21	11 48.49	+17 56.0	0.706	1.596	25.5	22.0	137 E	63	46											
4	26	11 44.47	+17 37.3	0.733	1.592	28.1	22.2	132 E	63	46											
351549 2005 TJ₇₃																					
3	7	12 56.90	+ 1 0.0	1.954	2.873	9.1	22.4	153 W	46	63											
3	17	12 49.39	+ 2 16.9	1.892	2.862	5.4	22.1	164 W	47	62											
3	27	12 40.53	+ 3 36.8	1.858	2.850	2.6	21.9	172 W	49	60											
4	6	12 31.20	+ 4 52.5	1.854	2.837	4.6	22.0	167 E	50	59											
4	16	12 22.35	+ 5 56.9	1.879	2.823	8.4	22.2	156 E	51	58											
4	26	12 14.87	+ 6 44.9	1.929	2.808	12.1	22.4	144 E	52	57											
243025 2006 UM₂₁₆																					
3	7	12 57.18	-25 2.5	2.877	3.691	10.0	21.8	140 W	20	89											
3	17	12 49.59	-24 34.1	2.825	3.718	7.7	21.7	150 W	20	89											
3	27	12 41.17	-23 48.0	2.799	3.744	5.7	21.6	158 W	21	88											
4	6	12 32.59	-22 47.0	2.803	3.769	4.6	21.5	162 E	22	87											
4	16	12 24.55	-21 35.3	2.838	3.793	5.4	21.6	159 E	23	86											
4	26	12 17.65	-20 18.6	2.902	3.816	7.2	21.8	151 E	25	84											
279893 2001 QZ₁₃₆																					
3	7	12 57.65	-12 15.3	2.147	3.034	10.0	21.3	148 W	33	76											
3	17	12 50.20	-11 25.3	2.083	3.036	6.6	21.1	160 W	34	75											
3	27	12 41.55	-10 21.6	2.047	3.037	3.0	20.9	171 W	35	74											
4	6	12 32.52	- 9 9.2	2.041	3.037	2.4	20.8	173 E	36	73											
4	16	12 23.98	- 7 54.3	2.065	3.036	5.8	21.0	162 E	37	72											
4	26	12 16.76	- 6 43.5	2.117	3.034	9.4	21.3	151 E	38	71											
5	6	12 11.38	- 5 42.4	2.194	3.031	12.5	21.5	139 E	39	70											
363792 2005 JN₁₂₁																					
3	7	12 57.72	+ 2 17.8	1.257	2.187	11.9	21.8	153 W	47	62											
3	12	12 53.82	+ 2 55.6	1.222	2.178	9.6	21.7	159 W	48	61											
3	17	12 49.22	+ 3 35.5	1.193	2.167	7.2	21.5	164 W	49	60											
3	22	12 44.07	+ 4 16.4	1.171	2.157	5.0	21.3	169 W	49	60											
3	27	12 38.50	+ 4 56.9	1.155	2.147	3.9	21.2	172 W	50	59											
4	1	12 32.72	+ 5 35.4	1.145	2.136	4.8	21.3	170 E	51	58											
4	6	12 26.91	+ 6 10.7	1.142	2.125	7.0	21.3	165 E	51	58											
4	11	12 21.26	+ 6 41.6	1.146	2.114	9.6	21.4	160 E	52	57											
4	16	12 15.99	+ 7 6.8	1.155	2.102	12.2	21.6	154 E	52	57											
4	21	12 11.26	+ 7 25.8	1.170	2.091	14.8	21.7	148 E	52	57											
4	26	12 7.21	+ 7 38.1	1.190	2.079	17.2	21.8	142 E	53	56											
487613 2015 MB₆₀																					
3	7	12 57.94	-38 23.7	2.096	2.833	15.7	21.8	130 W	7	78											
3	12	12 53.68	-38 36.9	2.054	2.832	14.7	21.7	134 W	6	77											
3	17	12 48.86	-38 42.2	2.017	2.830	13.8	21.7	137 W	6	77											
3	22	12 43.59	-38 39.2	1.985	2.829	12.9	21.6	141 W	6	77											
3	27	12 38.01	-38 27.6	1.959	2.827	12.0	21.5	144 W	7	78											
4	1	12 32.26	-38 7.3	1.938	2.824	11.3	21.5	146 E	7	78											
4	6	12 26.51	-37 38.6	1.924	2.822	10.9	21.5	148 E	7	78											
4	11	12 20.93	-37 2.0	1.916	2.819	10.7	21.4	148 E	8	79											
4	16	12 15.67	-36 18.3	1.914	2.816	10.9	21.4	148 E	9	80											
4	21	12 10.87	-35 28.9	1.919	2.813	11.3	21.5	147 E	10	81											
4	26	12 6.64	-34 34.9	1.929	2.809	12.0	21.5	144 E	10	81											
396605 2001 RC₁₈																					
3	7	13 0.18	+12 29.2	2.318	3.227	8.3	21.5	152 W	57	52											
3	12	12 55.55	+12 43.6	2.278	3.214	7.1	21.4	156 W	58	51											
3	17																				

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

2021	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	2021	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°										
484616 2008 SY₁₀₅										434176 2002 UA																			
3	7	13	5.44	-	3	45.9	1.902	2.804	10.3	21.9	150	W	41	68	3	7	13	14.13	+20	52.3	2.076	2.952	10.8	22.4	146	W	66	43	
3	17	12	57.83	-	2	36.5	1.868	2.830	6.3	21.7	162	W	42	67	3	12	13	9.73	+21	25.0	2.048	2.947	9.9	22.3	149	W	66	43	
3	27	12	49.00	-	1	21.8	1.861	2.855	2.3	21.5	173	W	44	65	3	17	13	4.81	+21	54.6	2.026	2.942	9.1	22.3	152	W	67	42	
4	6	12	39.87	-	0	8.7	1.885	2.879	2.7	21.6	172	E	45	64	3	22	12	59.48	+22	20.1	2.011	2.937	8.7	22.2	154	W	67	42	
4	16	12	31.37	+0	56.2	1.937	2.903	6.6	21.9	160	E	46	63	3	27	12	53.85	+22	40.6	2.003	2.932	8.7	22.2	154	W	68	41		
4	26	12	24.31	+1	47.7	2.017	2.925	10.2	22.1	149	E	47	62	4	1	12	48.06	+22	55.2	2.003	2.926	9.0	22.2	153	W	68	41		
25872 2000 MV₁										533609 2014 KS₃₈																			
3	7	13	6.85	-	5	47.4	1.652	2.553	11.7	21.7	149	W	39	70	3	7	13	14.83	-14	40.3	1.559	2.426	14.2	21.7	143	W	30	79	
3	17	12	59.43	-	4	38.7	1.563	2.524	7.5	21.4	161	W	40	69	3	17	13	9.90	-12	58.7	1.456	2.394	10.2	21.4	155	W	32	77	
3	27	12	49.95	-	3	16.2	1.500	2.493	2.7	21.1	173	W	42	67	3	27	13	2.75	-10	46.9	1.377	2.361	5.4	21.0	167	W	34	75	
4	6	12	39.36	-	1	46.9	1.465	2.462	2.7	21.0	173	E	43	66	4	6	12	54.20	-	8	11.5	1.327	2.327	1.0	20.6	178	E	37	72
4	16	12	28.85	-	0	20.0	1.459	2.429	7.9	21.9	161	E	45	64	4	16	12	45.39	-	5	24.3	1.305	2.293	5.8	20.8	167	E	40	69
4	26	12	19.67	+0	55.4	1.480	2.395	12.7	21.4	148	E	46	63	4	26	12	37.59	-	2	40.6	1.311	2.258	11.3	21.1	154	E	42	67	
105208 2000 OH₄₈										439313 2012 VE₈₂																			
3	7	13	7.27	-	6	13.6	1.685	2.584	11.6	21.3	148	W	39	70	3	7	13	15.65	+11	2.2	1.053	1.968	15.3	22.0	148	W	56	53	
3	17	12	59.41	-	5	30.6	1.610	2.570	7.4	21.0	161	W	39	70	3	12	13	13.07	+12	16.3	0.996	1.933	13.7	21.8	153	W	57	52	
3	27	12	49.66	-	4	36.4	1.561	2.554	2.7	20.7	173	W	40	69	3	17	13	9.44	+13	35.7	0.945	1.898	12.2	21.6	156	W	59	50	
4	6	12	39.02	-	3	37.0	1.540	2.538	2.3	20.6	174	E	41	68	3	22	13	4.78	+14	58.5	0.899	1.863	11.3	21.4	159	W	60	49	
4	16	12	28.66	-	2	39.5	1.548	2.521	7.2	20.9	162	E	42	67	4	6	12	59.15	+16	22.5	0.860	1.827	11.2	21.3	159	W	61	48	
4	26	12	19.74	-	1	51.1	1.583	2.503	11.8	21.1	150	E	43	66	4	16	12	52.65	+17	45.0	0.826	1.791	12.3	21.2	158	W	63	46	
5	6	12	13.09	-	1	16.9	1.639	2.483	15.7	21.3	138	E	44	65	4	6	12	45.43	+19	3.2	0.797	1.754	14.3	21.1	154	E	64	45	
5	16	12	9.16	-	0	59.7	1.714	2.463	19.0	21.5	127	E	44	65	4	11	12	37.73	+20	14.0	0.775	1.717	17.0	21.1	150	E	65	44	
399613 2004 BQ₆₅										439313 2012 VE₈₂																			
3	7	13	8.31	+1	28.6	2.455	3.352	8.5	22.1	150	W	46	63	5	6	12	31.82	-	0	14.1	1.341	2.224	16.3	21.2	142	E	45	64	
3	17	13	1.42	+2	28.0	2.404	3.361	5.5	21.9	161	W	47	62	5	16	12	28.76	+1	45.8	1.391	2.189	20.5	21.4	131	E	47	62		
3	27	12	53.42	+3	28.4	2.382	3.370	2.8	21.7	170	W	48	61	439313 2012 VE₈₂															
4	6	12	44.99	+4	24.5	2.390	3.377	3.3	21.8	169	E	49	60	3	7	13	15.65	+11	2.2	1.053	1.968	15.3	22.0	148	W	56	53		
4	16	12	36.86	+5	11.7	2.429	3.384	6.2	22.0	159	E	50	59	3	12	13	13.07	+12	16.3	0.996	1.933	13.7	21.8	153	W	57	52		
4	26	12	29.73	+5	46.3	2.495	3.390	9.1	22.1	148	E	51	58	3	17	13	9.44	+13	35.7	0.945	1.898	12.2	21.6	156	W	59	50		
112464 2002 OQ₁₃										439313 2012 VE₈₂																			
3	7	13	8.69	-13	1.3	2.020	2.891	11.3	21.4	145	W	32	77	3	22	13	4.78	+14	58.5	0.899	1.863	11.3	21.4	159	W	60	49		
3	17	13	1.36	-12	14.6	1.949	2.891	7.8	21.2	157	W	33	76	4	6	12	54.20	-	8	11.5	1.327	2.327	1.0	20.6	178	E	37	72	
3	27	12	52.52	-11	12.6	1.906	2.891	3.9	21.0	169	W	34	75	4	16	12	45.39	-	5	24.3	1.305	2.293	5.8	20.8	167	E	40	69	
4	6	12	43.03	-9	59.8	1.892	2.889	1.9	20.8	175	E	35	74	4	26	12	37.59	-	2	40.6	1.311	2.258	11.3	21.1	154	E	42	67	
4	16	12	33.85	-8	42.9	1.907	2.887	5.3	21.0	165	E	36	73	5	6	12	31.82	-	0	14.1	1.341	2.224	16.3	21.2	142	E	45	64	
4	26	12	25.91	-7	28.9	1.951	2.883	9.2	21.3	153	E	38	71	5	16	12	28.76	+1	45.8	1.391	2.189	20.5	21.4	131	E	47	62		
5	6	12	19.84	-6	24.3	2.019	2.878	12.6	21.5	142	E	39	70	439313 2012 VE₈₂															
434882 2006 SM₃₅₆										439313 2012 VE₈₂																			
3	7	13	10.26	-	3	52.1	1.676	2.574	11.6	22.2	149	W	41	68	5	6	12	8.04	+22	57.2	0.728	1.566	30.4	21.2	128	E	68	41	
3	17	13	3.02	-2	52.5	1.601	2.560	7.5	21.9	160	W	42	67	5	16	12	2.30	+23	3.0	0.724	1.527	33.7	21.2	123	E	68	41		
3	27	12	53.87	-1	43.4	1.552	2.544	3.0	21.6	172	W	43	66	5	11	11	57.66	+22	54.9	0.722	1.489	36.9	21.3	118	E	68	41		
4	6	12	43.77	-0	31.9	1.532	2.528	2.8	21.5	173	E	44	65	5	26	11	54.25	+22	33.7	0.721	1.451	40.0	21.3	113	E	68	41		
4	16	12	33.85	+0	34.0	1.540	2.511	7.4	21.8	161	E	46	63	5	31	11	52.11	+22	0.5	0.720	1.412	42.9	21.3	108	E	67	42		
4	26	12	25.26	+1	27.1	1.574	2.493	11.9	22.0	149	E	46	63	5	26	11	51.25	+21	16.3	0.718	1.374	45.7	21.3	104	E	65	43		
523788 2015 FP₁₁₈										439313 2012 VE₈₂																			
3	7	13	10.46	-8	53.0	1.250	2.149	14.7	22.4	147	W	36	73	6	5	11	53.21	+19	18.3	0.712	1.299	51.0	21.3	96	E	60	45		
3	17	13	3.04	-7	59.6	1.125	2.084	10.0	21.9	159	W	37	72	6	10	11	55.92	+18	5.5	0.707	1.262	53.5	21.3	93	E	56	46		
3	27	12	52.09	-6	39.7	1.025	2.017	4.1	21.3	172	W	38	71	6	15	11	59.72	+16	44.0	0.700	1.226	55.9	21.3	89	E	52	47		
4	6	12	38.38	-4	57.1	0.949	1.948	2.8	21.0	175	E	40	69	6	20	12	4.53	+15	13.8	0.690	1.192	58.3	21.3	86	E	49	49		
4	16	12	23.43	-3	1.2	0.901	1.877	10.2	21.2	161	E	42	67	6	25	12	10.27	+13	35.0	0.678	1.158	60.7	21.2	84	E	45	50		
4	26	12	9.30	-1	7.2	0.876	1.804	17.7	21.3	147	E	44	65	6	30	12	16.89	+11	47.2	0.664	1.126	63.2	21.2	81	E	42	52		
5	6	11	57.88	+0	30.6	0.870	1.730	24.8	21.4	134	E	46	63	7	5	12	24.35	+9	50.0	0.648	1.096	65.6	21.2	79	E	39	54		
248920 2006 VS₁₃₃										439313 2012 VE₈₂																			
3	7	13	11.07	+0	58.4	2.536	3.427	8.5	21.7	149	W	46	63	7	10	12	32.62	+7	42.5	0.629	1.068	68.1	21.1	77	E	36	56		
3	17	13	3.92	+1	44.2	2.492	3.447	5.5	21.5	161	W	47	62	7	15	12	41.69	+5	23.9	0.608	1.042	70.5	21.1	75	E	33	57		
3	27	12	55.71	+2	30.7	2.477	3.465	2.7	21.4	170	W	48	61	7	20	12	51.57	+2	53.2	0.585	1.020	73.0	21.0	74	E	30	59		
4	6	12	47.12	+3	13.6	2.493	3.483	2.9	21.4	170	E	48	61	7	25	13	2.25	+0	9.1	0.560	1.000	75.4	21.0	72	E	27	60		
4	16	12	38.87	+3	48.8	2.540	3.500	5.6																					

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2021										2021										
α_{2000}		δ_{2000}	Δ	r	β	V	ψ	$45^{\circ}-26^{\circ}$		α_{2000}		δ_{2000}	Δ	r	β	V	ψ	$45^{\circ}-26^{\circ}$		
439313 2012 VE₈₂										(continuation)										
10	5	20 20.26	-47 28.9	0.392	1.151	58.0	20.0	103 E	—	69										
10	7	20 37.82	-46 36.5	0.403	1.164	56.4	20.0	104 E	—	69										
10	9	20 54.17	-45 36.3	0.414	1.178	54.9	20.0	105 E	—	70										
10	11	21 9.33	-44 30.1	0.427	1.191	53.5	20.1	106 E	—	71										
10	13	21 23.35	-43 19.4	0.440	1.205	52.2	20.1	107 E	—	73										
10	15	21 36.30	-42 5.4	0.455	1.219	51.0	20.2	108 E	3	74										
10	17	21 48.25	-40 49.3	0.470	1.233	49.8	20.3	109 E	4	75										
10	19	21 59.29	-39 32.0	0.486	1.247	48.7	20.3	110 E	5	76										
10	21	22 9.51	-38 14.2	0.502	1.262	47.7	20.4	110 E	7	78										
10	23	22 18.98	-36 56.5	0.520	1.277	46.7	20.5	111 E	8	79										
10	25	22 27.78	-35 39.4	0.538	1.291	45.8	20.6	111 E	9	80										
10	27	22 35.99	-34 23.1	0.557	1.306	45.0	20.6	112 E	11	82										
10	29	22 43.67	-33 8.0	0.576	1.321	44.3	20.7	112 E	12	83										
10	31	22 50.88	-31 54.2	0.596	1.336	43.6	20.8	112 E	13	84										
11	2	22 57.67	-30 41.9	0.617	1.351	42.9	20.9	112 E	14	85										
11	7	23 13.09	-27 48.0	0.672	1.389	41.5	21.1	112 E	17	88										
11	12	23 26.77	-25 4.1	0.730	1.427	40.3	21.3	111 E	20	89										
11	17	23 39.11	-22 30.3	0.792	1.466	39.3	21.5	110 E	22	87										
11	22	23 50.44	-20 5.9	0.857	1.504	38.4	21.7	109 E	25	84										
278592 2008 NG₅										(continuation)										
5	6	12 32.08	+ 4 34.3	1.779	2.630	14.4	21.2	140 E	50	59										
5	16	12 26.67	+ 4 27.3	1.847	2.604	17.6	21.3	129 E	49	60										
5	26	12 23.90	+ 4 2.5	1.930	2.578	20.1	21.5	119 E	49	60										
426057 2012 BH₆₂										(continuation)										
3	7	13 26.13	+ 7 38.0	1.486	2.375	13.5	22.0	146 W	53	56										
3	12	13 22.55	+ 8 34.8	1.468	2.387	11.6	21.9	151 W	54	55										
3	17	13 18.34	+ 9 31.5	1.455	2.398	9.8	21.9	156 W	55	54										
3	22	13 13.63	+10 26.5	1.449	2.409	8.3	21.8	160 W	55	54										
3	27	13 8.54	+11 18.4	1.450	2.419	7.3	21.8	162 W	56	53										
4	1	13 3.24	+12 5.9	1.458	2.430	7.1	21.8	163 W	57	52										
4	6	12 57.88	+12 47.8	1.472	2.440	7.7	21.8	161 E	58	51										
4	11	12 52.62	+13 23.1	1.493	2.450	9.0	21.9	158 E	58	51										
4	16	12 47.63	+13 51.2	1.521	2.459	10.6	22.0	153 E	59	50										
4	21	12 43.03	+14 11.8	1.555	2.468	12.3	22.2	149 E	59	50										
4	26	12 38.94	+14 24.8	1.594	2.477	13.9	22.3	144 E	59	50										
5	1	12 35.44	+14 30.7	1.638	2.485	15.5	22.4	139 E	60	49										
145720 1993 OX₇										(continuation)										
3	7	13 31.45	- 0 45.5	2.620	3.472	9.6	21.3	144 W	44	65										
3	17	13 25.78	+ 0 10.4	2.536	3.464	6.9	21.1	155 W	45	64										
3	27	13 18.66	+ 1 10.3	2.480	3.455	4.1	20.9	166 W	46	63										
4	6	13 10.65	+ 2 9.6	2.453	3.445	2.6	20.8	171 W	47	62										
4	16	13 2.42	+ 3 3.3	2.457	3.434	4.5	20.9	164 E	48	61										
4	26	12 54.68	+ 3 47.1	2.490	3.422	7.4	21.1	154 E	49	60										
5	6	12 48.05	+ 4 17.9	2.549	3.410	10.2	21.3	143 E	49	60										
5	16	12 42.99	+ 4 34.2	2.631	3.396	12.7	21.4	132 E	50	59										
464639 2000 PO₃₀										(continuation)										
3	7	13 31.92	-11 8.7	1.187	2.055	17.7	21.9	141 W	34	75										
3	17	13 21.99	- 9 54.4	1.159	2.098	12.2	21.7	154 W	35	74										
3	27	13 9.70	- 8 22.2	1.154	2.138	6.0	21.4	167 W	37	72										
4	6	12 56.64	- 6 42.1	1.176	2.177	0.4	21.1	179 E	38	71										
4	16	12 44.47	- 5 6.1	1.226	2.214	6.2	21.6	166 E	40	69										
4	26	12 34.58	- 3 45.0	1.302	2.249	11.4	22.0	154 E	41	68										
237610 2001 QB₁₄₂										(continuation)										
3	7	13 32.81	- 7 13.6	2.011	2.860	12.3	21.4	142 W	38	71										
3	17	13 25.64	- 6 43.1	1.953	2.880	8.7	21.2	154 W	38	71										
3	27	13 16.72	- 6 3.9	1.922	2.900	4.7	21.0	166 W	39	70										
4	6	13 6.87	- 5 20.4	1.918	2.919	0.7	20.8	178 W	40	69										
4	16	12 57.04	- 4 37.7	1.945	2.936	3.8	21.0	169 E	40	69										
4	26	12 48.19	- 4 0.9	2.001	2.953	7.7	21.3	157 E	41	68										
5	6	12 41.02	- 3 34.0	2.083	2.969	11.1	21.5	145 E	41	68										
275749 2001 OL₉										(continuation)										
3	7	13 33.88	- 2 46.1	1.826	2.686	12.8	21.3	143 W	42	67										
3	17	13 27.94	- 1 56.9	1.733	2.665	9.3	21.0	154 W	43	66										
3	27	13 19.77	- 0 59.5	1.664	2.643	5.3	20.8	166 W	44	65										
4	6	13 10.09	+ 0 0.2	1.624	2.620	2.6	20.5	173 W	45	64										
4	16	12 59.89	+ 0 55.4	1.611	2.596	5.4	20.7	166 E	46	63										
4	26	12 50.32	+ 1 39.2	1.626	2.571	9.7	20.8	154 E	47	62										
5	6	12 42.36	+ 2 6.9	1.666	2.545	13.8	21.0	143 E	47	62										
5	16	12 36.71	+ 2 16.0	1.726	2.519	17.3	21.2	132 E	47	62										
5	26	12 33.73	+ 2 6.1	1.801	2.492	20.2	21.4	122 E	47	62										
296798 2009 VX₃₈										(continuation)										
3	7	13 34.91	-15 5.3	1.677	2.509	15.2	21.5	139 W	30	79										
3	17	13 29.35	-14 46.3	1.577	2.488	11.6	21.2	150 W	30	79										
3	27	13 21.25	-14 7.9	1.499	2.466	7.4	20.9	161 W	31	78										
4	6	13 11.36	-13 12.1	1.448	2.443	3.1	20.6	173 W	32	77										
4	16	13 0.77	-12 3.8	1.423	2.420	3.7	20.5	171 E	33	76										
4	26	12 50.81	-10 50.8	1.426	2.395	8.4	20.7	160 E	34	75										
5	6	12 42.62	- 9 42.1	1.454	2.370	13.1	21.0	148 E	35	74										
5	16	12 37.01	- 8 45.0	1.504	2.344	17.2	21.1	137 E	36	73										
5	26	12 34.39	- 8 4.7	1.570	2.318	20.6	21.3	126 E	37	72										
6	5	12 34.79	- 7 43.2	1.648	2.291	23.3	21.5	117 E	37*	72										
337110 1999 RE₁₁₀										(continuation)										
3	7	13 36.34	-19 35.7	1.743	2.553	15.6	21.5	136 W	25	84										
3	17	13 30.40	-19 44.0	1.641	2.533	12.4	21.2	147 W	25	84										
3	27	13 21.87	-19 31.8	1.561	2.513	8.7	21.0	158 W	25	84										
4	6	13 11.48	-18 58.9	1.507	2.492	5.2	20.7	167 W	26	83										
4	16	13 0.36	-18 7.6	1.479	2.470	4.8	20.6	168 E	27	82										
4	26	12 49.85	-17 4.4	1.479	2.447	8.3	20.8	159 E	28	81										
5	6	12 41.12	-15 57.8	1.504	2.424	12.5	21.0	149 E	29	80										
5	16	12 35.01	-14 56.3	1.552	2.399	16.4	21.1	138 E	30	79										
5	26	12 31.95	-14 6.7	1.616	2.374	19.8	21.3	128 E	31	78										
6	5	12 31.97	-13 32.8	1.694	2.348	22.4	21.5	118 E	31*	78										
439313 2012 VE₈₂										(continuation)										
10	5	20 20.26	-47 28.9	0.392	1.151	58.0	20.0	103 E	—	69										
10	7	20 37.82	-46 36.5	0.403	1.164	56.4	20.0	104 E	—	69										
10	9	20 54.17	-45 36.3	0.414	1.178	54.9	20.0	105 E	—	70										
10	11	21 9.33	-44 30.1	0.427	1.191	53.5	20.1	106 E	—	71										
10	13	21 23.35	-43 19.4	0.440	1.205	52.2	20.1	107 E	—	73										
10	15	21 36.30	-42 5.4	0.455	1.219	51.0	20.2	108 E	3	74										
10	17	21 48.25	-40 49.3	0.470	1.233	49.8	20.3	109 E	4	75										
10	19	21 59.29	-39 32.0	0.486	1.247	48.7	20.3	110 E	5	76										
10	21	22 9.51	-38 14.2	0.502	1.262	47.7	20.4	110 E	7	78										
10	23	22 18.98	-36 56.5	0.520	1.277	46.7	20.5	111 E	8	79										
10	25	22 27.78	-35 39.4	0.538	1.291	45.8	20.6	111 E	9	80										
10	27	22 35.99	-34 23.1	0.557	1.306	45.0	20.6	112 E	11	82										
10	29	22 43.67	-33 8.0	0.576	1.321	44.3	20.7	112 E	12	83										
10	31	22 50.88	-31 54.2																	

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2021	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	2021	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°		
363116 2001 GQ₂										343223 2009 WD₈₂ (continuation)											
3	7	13 37.98	+30 46.4	0.667	1.548	26.0	21.4	137 W	76	33	6	5	12 48.90	-12 12.5	1.548	2.251	22.6	21.1	122 E	33*	76
398465 2011 UP₁₀₈										217105 2001 XS₉₅											
3	7	13 42.48	+ 0 59.4	1.749	2.599	13.8	21.5	141 W	44	65	3	7	13 59.01	-17 49.1	2.313	3.069	13.9	21.3	132 W	27	82
496916 2001 SX₂₈₈										326290 Akhenaten											
3	7	13 45.45	+ 9 4.1	1.212	2.063	18.5	21.4	139 W	36	73	3	7	14 4.82	+ 1 33.7	0.343	1.260	33.3	21.4	136 W	43	66
338065 2002 OJ₃₆										333725 2009 TX₃₉											
3	7	13 51.61	-10 44.8	1.373	2.203	18.0	21.3	137 W	34	75	3	7	14 6.36	+ 2 52.6	1.790	2.589	15.7	21.3	135 W	42	67
343223 2009 WD₈₂										96006 2004 NE₂₇											
3	7	13 55.13	-17 5.0	1.676	2.465	17.0	21.3	133 W	28	81	3	7	14 8.66	+ 11 32.0	1.580	2.365	18.0	21.3	132 W	33	76

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21/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	$45^\circ-26^\circ$	2021	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	$45^\circ-26^\circ$	
302871 2003 HA₂₂																		
<i>(continuation)</i>																		
6 15	15 8.79	-10 27.9	0.187	1.171	31.2	17.4	143 E	35 74	3 7	14 43.78	-4 20.5	1.880	2.588	18.1	21.5	126 W	41 68	
6 20	15 14.99	-11 18.2	0.179	1.160	34.0	17.4	140 E	34 75	3 17	14 42.44	-3 56.1	1.751	2.559	15.8	21.2	136 W	41 68	
6 25	15 23.64	-12 23.8	0.173	1.151	36.2	17.4	138 E	33 76	3 27	14 38.16	-3 23.7	1.638	2.529	12.7	20.9	146 W	42 67	
6 30	15 34.91	-13 43.5	0.167	1.144	37.9	17.3	136 E	31 78	4 6	14 31.05	-2 46.6	1.547	2.498	9.0	20.6	157 W	42 67	
7 5	15 48.95	-15 15.4	0.163	1.139	38.9	17.3	135 E	30 79	4 16	14 21.52	-2 9.4	1.480	2.467	5.5	20.4	166 W	43 66	
7 10	16 5.86	-16 56.1	0.161	1.136	39.3	17.3	135 E	28 81	4 21	14 16.10	-1 52.7	1.457	2.451	4.6	20.3	169 W	43 66	
7 15	16 25.59	-18 40.9	0.160	1.135	39.1	17.3	135 E	26 83	4 26	14 10.45	-1 38.2	1.441	2.434	4.9	20.2	168 E	43 66	
7 20	16 47.86	-20 23.2	0.161	1.137	38.5	17.3	135 E	25 84	5 1	14 4.71	-1 26.8	1.431	2.418	6.3	20.3	165 W	44 65	
7 25	17 12.12	-21 56.1	0.164	1.141	37.4	17.3	137 E	23 86	5 6	13 59.05	-1 19.0	1.428	2.401	8.2	20.3	160 E	44 65	
7 30	17 37.60	-23 13.1	0.170	1.148	36.2	17.3	138 E	22 87	5 16	13 48.57	-1 16.3	1.441	2.367	12.6	20.5	149 E	44 65	
8 4	18 3.45	-24 10.1	0.179	1.156	35.0	17.4	139 E	21 88	5 26	13 40.14	-1 32.6	1.476	2.333	16.8	20.7	138 E	43 66	
8 8	18 28.87	-24 45.2	0.190	1.166	33.8	17.5	140 E	20 89	6 5	13 34.44	-2 8.0	1.529	2.298	20.4	20.8	128 E	43 66	
8 14	18 53.22	-24 59.4	0.205	1.179	32.9	17.7	141 E	20 89	6 15	13 31.80	-3 1.1	1.596	2.262	23.3	21.0	118 E	42* 67	
8 19	19 16.06	-24 55.1	0.222	1.193	32.1	17.9	141 E	20 89	6 25	13 32.24	-4 9.6	1.671	2.226	25.5	21.1	109 E	39* 68	
8 24	19 37.12	-24 35.8	0.242	1.209	31.7	18.1	141 E	20 89	7 5	13 35.58	-5 30.8	1.751	2.189	27.1	21.2	101 E	35* 70	
8 29	19 56.35	-24 4.9	0.265	1.226	31.4	18.3	141 E	21 88	7 15	13 41.58	-7 2.6	1.833	2.152	28.1	21.3	94 E	30* 71	
9 3	20 13.87	-23 25.4	0.291	1.245	31.4	18.5	140 E	22 87	7 25	13 49.99	-8 42.9	1.915	2.115	28.7	21.4	87 E	26* 72*	
9 8	20 29.87	-22 39.8	0.319	1.266	31.6	18.8	139 E	22 87	8 4	14 0.57	-10 29.4	1.994	2.077	28.8	21.5	80 E	23* 71*	
9 13	20 44.59	-21 49.7	0.351	1.287	31.9	19.0	137 E	23 86	8 14	14 13.14	-12 20.6	2.070	2.040	28.5	21.5	74 E	20* 67*	
9 18	20 58.21	-20 56.5	0.385	1.309	32.3	19.3	136 E	24 85	223483 2003 YF₃₆									
9 23	21 10.90	-20 1.0	0.422	1.333	32.7	19.5	134 E	25 84	3 7	14 50.64	-8 37.8	1.918	2.597	18.6	21.4	123 W	36 73	
9 28	21 22.82	-19 4.1	0.462	1.357	33.1	19.8	132 E	26 83	3 17	14 49.59	-8 15.0	1.797	2.584	16.3	21.2	133 W	37 72	
10 3	21 34.11	-18 6.0	0.505	1.382	33.6	20.0	130 E	27 82	3 27	14 45.64	-7 42.0	1.694	2.569	13.2	21.0	144 W	37 72	
10 8	21 44.91	-17 7.0	0.551	1.407	34.0	20.3	128 E	28 81	4 6	14 38.93	-7 1.0	1.611	2.554	9.4	20.7	155 W	38 71	
10 13	21 55.32	-16 7.2	0.599	1.433	34.4	20.5	126 E	29 80	4 16	14 29.90	-6 15.6	1.552	2.538	5.4	20.4	166 W	39 70	
10 18	22 5.41	-15 6.8	0.650	1.459	34.7	20.7	123 E	30 79	4 21	14 24.77	-5 52.9	1.533	2.530	3.7	20.3	171 W	39 70	
10 23	22 15.24	-14 5.9	0.703	1.485	35.0	20.9	121 E	31 78	4 26	14 19.41	-5 31.2	1.521	2.521	3.2	20.2	172 W	39 70	
10 28	22 24.84	-13 4.7	0.759	1.512	35.2	21.1	119 E	32 77	5 1	14 13.97	-5 11.1	1.515	2.512	4.3	20.3	169 E	40 69	
11 2	22 34.27	-12 3.1	0.817	1.539	35.4	21.3	116 E	33 76	5 6	14 8.60	-4 53.5	1.517	2.503	6.3	20.4	164 E	40 69	
244679 2003 OC₈																		
3 7	14 38.96	-18 21.0	1.892	2.574	18.8	21.5	123 W	27 82	5 16	13 58.65	-4 27.8	1.539	2.484	10.6	20.6	153 E	41 68	
3 17	14 38.46	-18 33.1	1.754	2.541	16.6	21.2	133 W	26 83	5 26	13 50.61	-4 17.9	1.586	2.464	14.6	20.8	142 E	41 68	
3 27	14 35.06	-18 31.8	1.632	2.508	13.6	20.9	144 W	26 83	6 5	13 45.10	-4 25.2	1.651	2.444	18.1	21.0	131 E	41 68	
4 6	14 28.78	-18 15.9	1.530	2.474	9.8	20.6	155 W	27 82	6 15	13 42.42	-4 49.4	1.732	2.423	20.9	21.1	122 E	40* 69	
4 16	14 20.02	-17 44.7	1.452	2.440	5.4	20.3	167 W	27 82	6 25	13 42.60	-5 29.0	1.823	2.401	23.1	21.3	112 E	38* 69	
4 21	14 14.96	-17 23.9	1.422	2.422	3.1	20.1	173 W	28 81	7 5	13 45.45	-6 21.7	1.920	2.378	24.5	21.4	104 E	35* 70	
4 26	14 9.64	-17 0.2	1.400	2.405	1.6	19.9	176 E	28 81	277175 2005 OS₁₄									
5 1	14 4.22	-16 34.3	1.384	2.387	2.9	20.0	173 E	28 81	3 7	14 52.18	-22 46.0	1.718	2.362	21.6	21.5	119 W	22 87	
5 6	13 58.85	-16 7.0	1.374	2.369	5.4	20.1	167 E	29 80	3 17	14 53.46	-23 30.8	1.585	2.335	19.6	21.2	128 W	21 88	
5 11	13 53.71	-15 39.0	1.372	2.351	7.9	20.2	161 E	29 80	3 27	14 51.53	-24 4.0	1.465	2.306	16.8	20.9	138 W	21 88	
5 16	13 48.96	-15 11.6	1.375	2.333	10.4	20.3	155 E	30 79	4 6	14 46.25	-24 22.7	1.363	2.278	13.2	20.6	149 W	21 88	
5 21	13 44.75	-14 45.6	1.384	2.314	12.8	20.4	150 E	30 79	4 16	14 37.82	-24 23.4	1.281	2.249	9.0	20.3	159 W	21 88	
5 26	13 41.18	-14 21.9	1.399	2.296	15.1	20.5	144 E	31 78	4 21	14 32.64	-24 16.4	1.249	2.234	6.9	20.1	165 W	21 88	
6 5	13 36.23	-13 44.2	1.442	2.259	19.2	20.6	133 E	31 78	4 26	14 27.01	-24 4.4	1.223	2.219	5.0	20.0	169 W	21 88	
6 15	13 34.48	-13 22.3	1.500	2.221	22.6	20.8	123 E	31* 77	5 1	14 21.12	-23 47.6	1.203	2.204	4.2	19.9	171 E	21 88	
6 25	13 35.97	-13 18.0	1.567	2.184	25.2	20.9	114 E	30* 77	5 6	14 15.15	-23 26.6	1.190	2.189	5.1	19.9	169 E	22 87	
7 5	13 40.49	-13 30.7	1.641	2.146	27.2	21.1	105 E	27* 78	5 11	14 9.32	-23 2.1	1.183	2.174	7.1	20.0	165 E	22 87	
7 15	13 47.81	-13 58.9	1.718	2.108	28.6	21.2	98 E	25* 78	5 16	14 3.84	-22 35.2	1.182	2.158	9.5	20.1	159 E	22 87	
7 25	13 57.65	-14 40.4	1.795	2.070	29.4	21.2	90 E	22* 79*	5 21	13 58.89	-22 7.1	1.187	2.143	12.0	20.2	154 E	23 86	
8 4	14 9.75	-15 32.6	1.871	2.033	29.8	21.3	84 E	20* 76*	5 26	13 54.63	-21 39.1	1.198	2.128	14.5	20.2	148 E	23 86	
8 14	14 23.93	-16 33.0	1.944	1.995	29.8	21.3	78 E	18* 71*	5 31	13 51.17	-21 12.2	1.213	2.112	16.8	20.3	143 E	24 85	
8 24	14 40.02	-17 39.0	2.012	1.959	29.5	21.4	72 E	16* 66*	6 5	13 48.57	-20 47.5	1.233	2.097	19.1	20.4	138 E	24 85	
9 3	14 57.89	-18 47.8	2.077	1.923	28.9	21.4	67 E	15* 61*	6 10	13 46.90	-20 25.7	1.256	2.081	21.1	20.5	132 E	25 84	
9 13	15 17.47	-19 56.7	2.136	1.888	28.1	21.4	62 E	14* 56*	6 15	13 46.17	-20 7.6	1.283	2.066	23.0	20.6	128 W	25* 84	
9 23	15 38.66	-21 3.0	2.190	1.854	27.1	21.4	57 E	13* 51*	6 20	13 46.38	-19 53.5	1.313	2.050	24.6	20.7	123 E	25* 84	
10 3	16 1.39	-22 3.7	2.238	1.821	26.0	21.3	53 E	12* 47*	6 25	13 47.50	-19 43.8	1.345	2.035	26.1	20.8	118 E	24* 84	
10 13	16 25.61	-22 56.1	2.282	1.790	24.8	21.3	49 E	12* 43*	6 30	13 49.49	-19 38.3	1.379	2.019	27.4	20.8	114 E	23* 84	
10 23	16 51.18	-23 37.1	2.321	1.761	23.5	21.3	45 E	12* 39*	7 5	13 52.32	-19 37.2	1.414	2.004	28.5	20.9	110 E	22* 84	
11 2	17 17.98	-24 4.0	2.356	1.733	22.0	21.2	41 E	11* 34*	7 10	13 55.94	-19 40.1	1.451	1.988	29.4	21.0	106 E	21* 84	
11 12	17 45.86	-24 14.3	2.387	1.708	20.5	21.2	37 E	11* 30*	7 15	14 0.32	-19 46.9	1.488	1.973	30.3	21.0	102 E	20* 84	
11 22	18 14.58	-24 5.8	2.415	1.686	19.0	21.1	34 E	11* 26*	7 20	14 5.40	-19 57.3	1.525	1.958	30.9	21.1	99 E	19* 84	
12 2	18 43.93	-23 37.1	2.441	1.666	17.4	21.1	30 E	11* 22*	7 25	14 11.15	-20 11.0	1.563	1.943	31.4	21.2	95 E	18* 84	
12 12	19 13.64	-22 47.2	2.464	1.649	15.8	21.0	27 E	11* 18*	7 30	14 17.52	-20 27.5	1.601	1.928	31.8	21.2	92 E	17* 84*	
12 22	19 43.46	-21 36.1	2.486	1.636	14.1	20.9	24 E	10* 14*	8 4	14 24.49	-20 46.5	1.639	1.913	32.0	21.2	89 E	17* 82*	
1 1	20 13.16	-20 4.3	2.507	1.626	12.4	20.9	21 E	9* 11*	8 9	14 32.03	-21 7							

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

Table with columns for date, alpha 2000, delta 2000, Delta, r, beta, V, psi, and 45 to -26 degrees. It lists astronomical data for minor planets 277175 2005 OS14, 390646 2002 PN56, 405571 2005 QE87, 511434 2014 JA, 302010 2000 SH8, 340836 2006 VO13, and 390646 2002 PN56. Each entry includes two columns of right ascension and declination data, and two columns of distance and magnitude data.

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

21/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45° - 26°	21/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45° - 26°		
340836 2006 VO₁₃ (continuation)									215197 2000 SN₄₂ (continuation)										
11 2	18 22.05	-28 5.1	1.756	1.448	34.4	20.8	56 E	13* 49*	5 21	14 49.29	-8 20.2	0.944	1.929	9.8	20.3	161 E	37	72	
11 12	18 56.07	-27 28.1	1.794	1.437	33.4	20.8	53 E	14* 46*	5 26	14 44.49	-7 59.2	0.967	1.934	12.6	20.5	155 E	37	72	
11 22	19 30.40	-26 20.9	1.834	1.431	32.3	20.8	51 E	16* 43*	5 31	14 40.43	-7 44.2	0.995	1.940	15.2	20.7	150 E	37	72	
12 2	20 4.56	-24 44.3	1.877	1.430	31.1	20.8	49 E	17* 40*	6 5	14 37.21	-7 35.2	1.028	1.945	17.7	20.8	144 E	37	72	
12 12	20 38.17	-22 40.4	1.923	1.433	29.8	20.8	46 E	19* 37*	6 10	14 34.89	-7 32.3	1.065	1.950	19.9	21.0	139 E	37	72	
12 22	21 10.92	-20 12.6	1.973	1.441	28.4	20.8	44 E	20* 33*	6 15	14 33.48	-7 35.2	1.106	1.955	21.9	21.1	134 E	37	72	
1	21 42.64	-17 25.4	2.027	1.454	26.9	20.9	42 E	22* 30*	6 20	14 32.98	-7 43.6	1.150	1.959	23.6	21.3	129 E	37	72	
1 11	22 13.26	-14 23.3	2.085	1.471	25.3	20.9	40 E	23* 26*	6 25	14 33.37	-7 56.9	1.197	1.964	25.1	21.4	125 E	37* 72		
1 21	22 42.79	-11 11.2	2.147	1.492	23.7	20.9	37 E	23* 23*	516783 2009 XD₈										
404631 2014 HT₉									3 7	15 32.28	-47 21.7	1.635	2.082	27.8	21.4	102 W	-	69	
3 7	15 18.89	-14 45.4	1.658	2.264	23.4	21.4	115 W	30	79	3 12	15 37.19	-48 18.8	1.571	2.069	27.6	21.3	105 W	-	68
3 17	15 23.14	-15 14.2	1.520	2.233	21.7	21.1	124 W	30	79	3 17	15 41.33	-49 14.0	1.508	2.055	27.3	21.2	109 W	-	67
3 27	15 24.46	-15 36.2	1.393	2.202	19.2	20.8	133 W	29	80	3 22	15 44.60	-50 7.0	1.447	2.042	26.9	21.1	112 W	-	66
4 6	15 22.48	-15 51.7	1.281	2.170	15.8	20.5	144 W	29	80	3 27	15 46.87	-50 57.2	1.387	2.027	26.4	20.9	115 W	-	65
4 16	15 17.04	-16 0.8	1.187	2.138	11.6	20.1	155 W	29	80	4 1	15 48.03	-51 44.0	1.330	2.013	25.7	20.8	119 W	-	64
4 26	15 8.42	-16 3.9	1.114	2.106	6.4	19.7	166 W	29	80	4 6	15 47.94	-52 26.4	1.274	1.999	25.0	20.7	122 W	-	64
5 1	15 3.17	-16 3.7	1.086	2.090	3.6	19.5	173 W	29	80	4 11	15 46.49	-53 3.1	1.221	1.984	24.1	20.5	126 W	-	63
5 6	14 57.48	-16 2.5	1.065	2.074	0.7	19.2	179 W	29	80	4 16	15 43.59	-53 32.6	1.171	1.968	23.1	20.4	130 W	-	62
5 11	14 51.55	-16 0.8	1.050	2.058	2.5	19.3	175 E	29	80	4 21	15 39.24	-53 53.1	1.124	1.953	22.1	20.3	133 W	-	62
5 16	14 45.60	-15 59.1	1.040	2.042	5.5	19.5	169 E	29	80	4 26	15 33.49	-54 2.5	1.080	1.937	21.0	20.1	136 W	-	62
5 21	14 39.86	-15 58.0	1.037	2.026	8.6	19.6	163 E	29	80	5 1	15 26.49	-53 59.0	1.040	1.922	19.9	20.0	140 W	-	62
5 26	14 34.54	-15 58.2	1.040	2.010	11.5	19.7	157 E	29	80	5 6	15 18.48	-53 40.5	1.004	1.905	18.8	19.9	142 W	-	62
5 31	14 29.81	-16 0.3	1.047	1.994	14.4	19.8	151 E	29	80	5 11	15 9.80	-53 5.2	0.972	1.889	18.0	19.8	145 E	-	63
6 5	14 25.82	-16 4.8	1.060	1.979	17.1	19.9	145 E	29	80	5 16	15 0.90	-52 12.3	0.945	1.873	17.4	19.7	146 E	-	64
6 15	14 20.49	-16 22.6	1.097	1.948	21.9	20.1	134 E	29	80	5 21	14 52.26	-51 1.8	0.923	1.856	17.3	19.6	147 E	-	65
6 25	14 19.08	-16 54.1	1.148	1.918	25.8	20.3	125 E	28* 81	5 26	14 44.32	-49 34.7	0.906	1.839	17.6	19.5	147 E	-	66	
7 5	14 21.58	-17 39.3	1.208	1.889	29.0	20.5	116 E	26* 82	5 31	14 37.41	-47 53.3	0.894	1.822	18.4	19.5	145 E	-	68	
7 15	14 27.78	-18 37.0	1.274	1.860	31.3	20.6	108 E	24* 83	6 5	14 31.78	-46 0.0	0.887	1.805	19.7	19.5	143 E	-	70	
7 25	14 37.37	-19 45.1	1.343	1.833	32.9	20.7	101 E	21* 84	6 10	14 27.61	-43 58.3	0.884	1.788	21.3	19.5	140 E	1	72	
8 4	14 50.00	-21 0.5	1.414	1.808	34.0	20.9	95 E	19* 85	6 15	14 24.95	-41 51.6	0.887	1.770	23.1	19.6	137 E	3	74	
8 14	15 5.38	-22 20.2	1.485	1.783	34.6	20.9	89 E	17* 83*	6 20	14 23.80	-39 43.4	0.894	1.753	25.0	19.6	133 E	5	76	
8 24	15 23.28	-23 40.9	1.556	1.761	34.8	21.0	84 E	15* 78*	6 25	14 24.09	-37 36.6	0.904	1.735	27.0	19.7	129 E	7*	80	
9 3	15 43.45	-24 59.1	1.625	1.740	34.7	21.1	79 E	14* 73*	6 30	14 25.71	-35 33.4	0.918	1.718	29.0	19.8	125 E	9*	82	
9 13	16 5.74	-26 11.2	1.694	1.722	34.3	21.1	74 E	13* 68*	7 5	14 28.54	-33 35.7	0.936	1.700	30.8	19.8	121 E	11*	82	
9 23	16 29.94	-27 13.8	1.761	1.706	33.6	21.2	70 E	12* 64*	7 10	14 32.50	-31 44.6	0.955	1.682	32.6	19.9	117 E	12*	84	
10 3	16 55.83	-28 3.4	1.826	1.692	32.8	21.2	66 E	12* 60*	7 15	14 37.47	-30 1.0	0.978	1.665	34.1	20.0	113 E	13*	86	
10 13	17 23.20	-28 36.8	1.891	1.681	31.8	21.3	62 E	12* 56*	7 20	14 43.35	-28 25.2	1.002	1.647	35.6	20.0	109 E	14*	88	
10 23	17 51.73	-28 51.4	1.954	1.672	30.6	21.3	59 E	12* 53*	7 25	14 50.03	-26 57.0	1.027	1.630	36.8	20.1	106 E	15*	89	
11 2	18 21.10	-28 45.0	2.018	1.667	29.3	21.3	55 E	13* 49*	8 4	15 5.52	-24 21.9	1.081	1.596	38.9	20.2	99 E	17*	88	
11 12	18 51.00	-28 16.4	2.081	1.664	27.9	21.3	52 E	13* 45*	8 14	15 23.42	-22 11.7	1.138	1.562	40.4	20.3	93 E	18*	86*	
11 22	19 21.05	-27 25.1	2.143	1.664	26.4	21.4	49 E	14* 42*	8 24	15 43.31	-20 21.1	1.194	1.530	41.8	20.4	87 E	20*	81*	
12 2	19 50.94	-26 11.9	2.206	1.667	24.9	21.4	45 E	15* 37*	9 3	16 4.88	-18 44.1	1.250	1.499	41.8	20.5	82 E	22*	75*	
12 12	20 20.41	-24 37.9	2.269	1.673	23.2	21.4	42 E	16* 33*	9 13	16 27.92	-17 15.6	1.304	1.470	42.0	20.5	78 E	23*	71*	
12 22	20 49.25	-22 45.3	2.332	1.682	21.5	21.4	39 E	16* 29*	9 23	16 52.23	-15 50.8	1.354	1.444	41.9	20.6	74 E	25*	66*	
1 1	21 17.32	-20 36.7	2.395	1.693	19.7	21.4	35 E	16* 25*	10 3	17 17.66	-14 25.4	1.402	1.419	41.5	20.6	70 E	27*	61*	
1 11	21 44.55	-18 14.6	2.458	1.707	17.8	21.4	32 E	16* 21*	10 13	17 44.11	-12 56.1	1.446	1.398	41.0	20.6	67 E	28*	57*	
1 21	22 10.93	-15 42.2	2.520	1.723	16.0	21.5	29 E	15* 18*	10 23	18 11.45	-11 19.8	1.488	1.380	40.4	20.7	64 E	30*	52*	
65909 1998 FH₁₂									11 2	18 39.59	-9 34.5	1.527	1.366	39.6	20.7	61 E	32*	47*	
3 7	15 20.07	-11 50.3	0.904	1.604	34.0	21.4	115 W	33	76	11 12	19 8.46	-7 38.6	1.563	1.356	38.8	20.7	59 E	34*	43*
3 17	15 15.10	-10 46.7	0.828	1.631	29.3	21.1	127 W	34	75	11 22	19 37.96	-5 31.3	1.599	1.350	38.0	20.7	57 E	36*	38*
3 27	15 3.68	-9 15.6	0.761	1.652	23.1	20.8	139 W	36	73	12 2	20 8.00	-3 12.9	1.634	1.349	37.1	20.7	56 E	38*	33*
4 6	14 45.66	-7 18.0	0.710	1.667	15.5	20.4	154 W	38	71	12 12	20 38.54	0 44.2	1.671	1.351	36.1	20.7	54 E	40*	28*
4 11	14 34.47	-6 11.6	0.693	1.672	11.3	20.2	161 W	39	70	12 22	21 9.47	+1 53.2	1.710	1.358	35.1	20.8	53 E	41*	24*
4 16	14 22.24	-5 2.6	0.682	1.676	7.4	20.0	168 W	40	69	1 1	21 40.74	+4 36.6	1.753	1.369	34.0	20.8	51 E	42*	20*
4 21	14 9.42	-3 54.0	0.678	1.679	5.2	19.9	171 W	41	68	1 11	22 12.28	+7 23.2	1.800	1.384	32.8	20.9	50 E	42*	16*
4 26	13 56.51	-2 48.5	0.682	1.680	6.8	20.0	169 E	42	67	1 21	22 44.00	+10 9.5	1.852	1.403	31.5	20.9	48 E	41*	14*
5 1	13 44.01	-1 49.1	0.692	1.680	10.6	20.2	162 E	43	66	193822 2001 QD₂₀									
5 6	13 32.36	-0 57.9	0.708	1.678	14.7	20.4	155 E	44	65	3 7	15 32.45	-14 7.6	1.918	2.468	21.9	21.4	112 W	31	78
5 11	13 21.91	0 16.3	0.731	1.675	18.7	20.6	148 E	45	64	3 17	15 36.51	-13 56.8	1.774	2.441	20.5	21.2	121 W	31	78
5 16	13 12.91	+0 14.7	0.758	1.670	22.4	20.8	141 E	45	64	3 27	15 37.86	-13 35.2	1.641	2.412	18.3	20.9	131 W	31	78
5 21	13 5.46	+0 35.2	0.790	1.664	25.7	21.0	135 E	46	63	4 6	15 36.26	-13 2.9	1.522	2.383	15.4	20.6	141 W	32	77
5 26	12 59.58	+0 45.9	0.825	1.657	28.6	21.1	128 E	46	63	4 16	15 31.56	-12 21.0	1.422	2.354	11.7	20.3	152 W	33	76
5 31	12 55.21	+0 47.5	0.863	1.648	31.2	21.3	123 E	46	63	4 26	15 24.04								

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

21/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	21/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°				
193822 2001 QD ₂₀ (continuation)										325152 2008 EC ₁₆₉ (continuation)													
9	3	15 37.25	-16 1.5	1.893	1.908	30.8	21.1	75	E	22	68*	9	3	15 22.69	-1 6.6	2.904	2.713	20.3	21.3	69	E	33*	56*
9	13	15 55.21	-17 19.6	1.962	1.878	30.3	21.1	70	E	20	64*	9	13	15 33.46	-2 22.4	2.985	2.677	19.5	21.3	63	E	31*	51*
9	23	16 14.95	-18 33.6	2.027	1.849	29.6	21.2	65	E	19	59*	9	23	15 45.55	-3 36.7	3.057	2.640	18.5	21.3	57	E	29*	45*
10	3	16 36.31	-19 40.6	2.088	1.821	28.6	21.2	61	E	18	54*	10	3	15 58.85	-4 48.2	3.120	2.603	17.3	21.3	51	E	27*	40*
10	13	16 59.22	-20 38.2	2.145	1.794	27.5	21.2	56	E	17	50*	10	13	16 13.28	-5 55.7	3.172	2.565	16.0	21.2	45	E	25*	34*
10	23	17 23.52	-21 23.7	2.197	1.769	26.3	21.1	52	E	17	45*	10	23	16 28.75	-6 57.9	3.214	2.526	14.5	21.2	39	E	23*	28*
11	2	17 49.05	-21 54.9	2.246	1.745	25.0	21.1	48	E	16	41*	11	2	16 45.18	-7 53.7	3.244	2.487	13.0	21.1	34	E	21*	21*
11	12	18 15.66	-22 9.5	2.290	1.724	23.6	21.1	44	E	16	36*	11	12	17 2.54	-8 42.0	3.263	2.447	11.4	21.0	29	E	19*	15*
11	22	18 43.12	-22 6.0	2.332	1.704	22.1	21.1	40	E	16	32*	11	22	17 20.72	-9 21.7	3.271	2.406	9.8	20.9	24	E	16*	9*
12	2	19 11.22	-21 43.1	2.370	1.687	20.5	21.0	37	E	16	27*	12	2	17 39.68	-9 51.9	3.267	2.366	8.3	20.8	20	E	14*	3*
12	12	19 39.74	-21 0.2	2.406	1.673	18.9	21.0	33	E	15	23*	12	12	17 59.34	-10 11.7	3.252	2.325	6.9	20.7	17	E	11*	—
12	22	20 8.42	-19 57.6	2.439	1.661	17.2	20.9	30	E	15	19*	12	22	18 19.63	-10 20.4	3.226	2.283	5.9	20.6	14	E	7*	—
1	1	20 37.09	-18 36.0	2.471	1.652	15.5	20.9	27	E	14	16*	1	1	18 40.48	-10 17.5	3.190	2.242	5.6	20.5	13	W	4*	—
1	11	21 5.58	-16 56.6	2.501	1.645	13.7	20.9	23	E	12	12*	1	11	19 1.82	-10 2.6	3.145	2.200	6.0	20.5	13	W	7*	—
1	21	21 33.73	-15 1.6	2.529	1.642	12.0	20.8	20	E	11	9*	1	21	19 23.56	-9 35.5	3.091	2.159	7.0	20.4	16	W	9*	—
415754 2000 QU ₁₂₂										207943 1979 MN ₄													
3	7	15 50.61	-28 33.1	1.838	2.298	24.7	21.4	105	W	16	87	3	7	15 53.63	-23 53.0	2.220	2.656	21.2	21.5	105	W	21	88
3	17	15 58.73	-29 47.5	1.690	2.264	24.0	21.1	112	W	15	86	3	17	15 58.51	-24 9.1	2.058	2.623	20.3	21.3	114	W	21	88
3	27	16 4.39	-30 59.0	1.551	2.231	22.6	20.9	121	W	14	85	3	27	16 0.90	-24 16.7	1.904	2.588	18.8	21.0	123	W	21	88
4	6	16 7.07	-32 6.9	1.422	2.197	20.6	20.6	129	W	13	84	4	6	16 0.46	-24 14.7	1.762	2.553	16.6	20.8	133	W	21	88
4	16	16 6.26	-33 8.5	1.306	2.163	17.9	20.3	139	W	12	83	4	16	15 56.94	-24 1.3	1.636	2.516	13.7	20.5	144	W	21	88
4	26	16 1.66	-33 59.5	1.207	2.129	14.5	20.0	148	W	11	82	4	26	15 50.36	-23 34.7	1.530	2.479	9.9	20.1	155	W	21	88
5	1	15 57.97	-34 19.3	1.165	2.112	12.6	19.8	153	W	11	82	5	6	15 41.12	-22 54.0	1.447	2.440	5.4	19.8	167	W	22	87
5	6	15 53.41	-34 34.1	1.128	2.095	10.7	19.6	157	W	10	81	5	11	15 35.76	-22 28.4	1.416	2.421	3.1	19.6	173	W	23	86
5	11	15 48.12	-34 43.2	1.096	2.078	9.0	19.4	161	W	10	81	5	16	15 30.08	-21 59.7	1.391	2.401	1.2	19.4	177	E	23	86
5	16	15 42.27	-34 45.9	1.070	2.061	7.7	19.4	164	W	10	81	5	21	15 24.28	-21 28.4	1.373	2.381	2.7	19.5	174	E	24	85
5	21	15 36.09	-34 41.9	1.049	2.044	7.3	19.3	165	E	10	81	5	26	15 18.53	-20 55.4	1.361	2.361	5.2	19.6	168	E	24	85
5	26	15 29.83	-34 31.3	1.034	2.027	8.0	19.3	164	E	10	81	5	31	15 13.01	-20 21.5	1.356	2.341	7.8	19.7	162	E	25	84
5	31	15 23.74	-34 14.6	1.025	2.010	9.6	19.3	161	E	11	82	5	36	15 7.87	-19 47.7	1.358	2.320	10.4	19.8	156	E	25	84
6	5	15 18.07	-33 52.6	1.022	1.994	11.7	19.4	157	E	11	82	6	5	15 3.27	-19 14.8	1.365	2.299	12.9	19.8	150	E	26	83
6	10	15 13.04	-33 26.4	1.023	1.977	14.0	19.4	152	E	12	83	6	15	14 59.34	-18 43.9	1.378	2.278	15.2	19.9	144	E	26	83
6	15	15 8.87	-33 57.3	1.030	1.961	16.4	19.4	147	E	12	83	6	20	14 56.17	-18 15.8	1.395	2.257	17.4	20.0	138	E	27	82
6	20	15 5.69	-32 26.9	1.041	1.945	18.8	19.6	142	E	13	84	6	25	14 53.81	-17 51.0	1.417	2.236	19.5	20.1	133	E	27	82
6	25	15 3.60	-31 56.5	1.055	1.929	21.0	19.7	137	E	13	84	7	5	14 51.64	-17 13.0	1.470	2.193	23.0	20.2	123	E	27	81
6	30	15 2.62	-31 27.1	1.074	1.913	23.1	19.8	132	E	14	85	7	15	14 52.88	-16 51.6	1.534	2.150	25.7	20.4	113	E	27	81
7	5	15 2.77	-30 59.7	1.095	1.898	25.0	19.8	128	E	14	85	7	25	14 57.39	-16 46.3	1.604	2.106	27.8	20.5	105	E	25	81
7	15	15 6.42	-30 13.1	1.145	1.868	28.3	20.0	119	E	14	86	8	4	15 4.87	-16 55.0	1.676	2.062	29.2	20.6	97	E	24	81
7	25	15 14.22	-29 39.4	1.203	1.839	30.9	20.1	112	E	14	86	8	14	15 15.06	-17 15.3	1.747	2.017	30.1	20.6	90	E	22	80
8	4	15 25.71	-29 17.6	1.265	1.811	32.8	20.3	105	E	13	87	8	24	15 27.73	-17 44.1	1.817	1.973	30.6	20.7	83	E	21	76
8	14	15 40.47	-29 5.3	1.331	1.785	34.2	20.4	98	E	13	87	9	3	15 42.62	-18 18.3	1.883	1.929	30.7	20.7	77	E	20	71
8	24	15 58.06	-28 59.1	1.398	1.761	35.0	20.5	93	E	13	85	9	13	15 59.61	-18 54.8	1.944	1.885	30.4	20.7	72	E	19	65
9	3	16 18.10	-28 54.8	1.465	1.739	35.4	20.6	87	E	13	80	9	23	16 18.52	-19 30.6	1.999	1.841	29.9	20.7	66	E	19	60
9	13	16 40.27	-28 48.4	1.533	1.719	35.5	20.7	82	E	13	76	10	3	16 39.23	-20 2.5	2.049	1.799	29.2	20.7	61	E	19	55
9	23	17 4.23	-28 35.9	1.601	1.702	35.2	20.7	78	E	14	72	10	13	17 1.63	-20 27.5	2.093	1.757	28.4	20.7	57	E	18	50
10	3	17 29.64	-28 13.7	1.669	1.687	34.7	20.8	74	E	14	68	10	23	17 25.60	-20 42.7	2.131	1.717	27.4	20.6	52	E	18	45
10	13	17 56.20	-27 39.1	1.737	1.675	33.9	20.8	70	E	15	64	11	2	17 50.99	-20 45.2	2.163	1.678	26.3	20.6	48	E	18	41
10	23	18 23.58	-26 49.6	1.805	1.666	33.0	20.9	66	E	16	60	11	12	18 17.67	-20 32.4	2.191	1.642	25.1	20.5	45	E	18	36
11	2	18 51.45	-25 43.7	1.874	1.660	31.9	20.9	62	E	17	55	11	22	18 45.42	-20 2.0	2.214	1.608	23.9	20.5	41	E	18	32
11	12	19 19.53	-24 20.9	1.942	1.657	30.6	21.0	59	E	19	51	12	2	19 14.05	-19 12.5	2.234	1.577	22.6	20.4	38	E	18	27
11	22	19 47.55	-22 41.2	2.012	1.658	29.3	21.0	55	E	20	46	12	12	19 43.36	-18 2.6	2.252	1.549	21.3	20.4	35	E	18	23
12	2	20 15.29	-20 45.4	2.082	1.661	27.8	21.0	52	E	22	41	12	22	20 13.11	-16 32.2	2.268	1.525	19.9	20.3	32	E	18	19
12	12	20 42.61	-18 35.0	2.152	1.667	26.2	21.1	48	E	23	36	1	1	20 43.11	-14 41.8	2.284	1.504	18.6	20.2	29	E	18	15
12	22	21 9.39	-16 11.9	2.223	1.677	24.5	21.1	45	E	24	31	1	11	21 13.20	-12 32.7	2.300	1.489	17.3	20.2	27	E	17	12
1	1	21 35.57	-13 38.1	2.294	1.689	22.7	21.1	42	E	25	27	1	21	21 43.21	-10 7.2	2.318	1.477	15.9	20.1	24	E	16	9
1	11	22 1.16	-10 56.0	2.366	1.704	20.9	21.1	38	E	25	22	3	7	16 12.30	-23 16.1	1.617	2.051	28.4	21.4	101	W	22	87
1	21	22 26.14	-8 7.9	2.437	1.722	19.0	21.2	35	E	24	18	3	17	16 25.42	-23 36.2	1.469	2.012	28.1	21.1	108	W	21	88
325152 2008 EC ₁₆₉										344093 1999 RB ₁₉													
3	7	15 51.44	-4 34.5	2.762	3.225	16.9	21.4	109	W	40	69	3	7	16 36.78	-23 45.4	1.329	1.972	27.2	20.8	115	W	21	88
3	17	15 53.50	-3 27.2	2.612	3.203	15.9	21.3	118	W	42	67	4	6	16 45.96	-23 43.6	1.196	1.933	25.7	20.5	123	W	21	88
3	27																						

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

21/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	21/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°		
344093 1999 RB₁₉										282195 2001 UD₇											
<i>(continuation)</i>																					
8	24	16 58.42	-15 49.3	0.869	1.486	41.3	19.7	104 E	29*	80	7	5	16 32.44	-8 10.6	0.742	1.668	21.7	18.8	143 E	37	72
9	3	17 19.25	-16 18.3	0.919	1.474	42.4	19.8	100 E	28*	80	7	15	16 30.99	-8 24.2	0.767	1.641	26.7	19.0	133 E	37	72
9	13	17 42.76	-16 42.3	0.971	1.466	43.1	19.9	96 E	28*	81*	7	25	16 33.92	-9 2.1	0.802	1.617	30.9	19.2	125 E	36	73
9	23	18 8.44	-16 56.0	1.027	1.463	43.3	20.1	92 E	28*	80*	7	30	16 37.03	-9 28.2	0.822	1.605	32.7	19.3	121 E	36	73
10	3	18 35.77	-16 55.5	1.087	1.463	43.1	20.2	89 E	28*	78*	8	4	16 41.19	-9 58.0	0.844	1.595	34.2	19.4	118 E	35*	74
10	13	19 4.32	-16 37.7	1.151	1.469	42.7	20.3	86 E	28*	75*	8	9	16 46.38	-10 30.7	0.868	1.585	35.6	19.4	115 E	34*	75
10	23	19 33.60	-16 0.8	1.220	1.478	41.9	20.4	83 E	29*	72*	8	14	16 52.54	-11 5.5	0.892	1.576	36.7	19.5	112 E	34*	75
11	2	20 3.17	-15 4.5	1.294	1.492	41.0	20.5	80 E	30*	68*	8	24	17 7.59	-12 17.7	0.944	1.561	38.5	19.7	106 E	32*	76
11	12	20 32.69	-13 49.4	1.373	1.510	39.8	20.7	78 E	31	64*	9	3	17 25.83	-13 28.4	1.000	1.550	39.7	19.8	101 E	31*	77
11	22	21 1.85	-12 17.3	1.458	1.531	38.5	20.8	75 E	33	59*	9	13	17 46.86	-14 32.3	1.059	1.542	40.4	20.0	97	30*	79
12	2	21 30.45	-10 30.6	1.549	1.556	37.0	20.9	72 E	34*	54*	9	23	18 10.21	-15 24.4	1.122	1.538	40.7	20.1	93	29*	79*
12	12	21 58.37	-8 31.8	1.644	1.583	35.5	21.0	69 E	36*	49*	10	3	18 35.40	-16 0.7	1.189	1.539	40.6	20.2	89	29*	77*
12	22	22 25.53	-6 24.0	1.745	1.614	33.8	21.2	66 E	38*	44*	10	13	19 2.02	-16 18.3	1.259	1.543	40.1	20.3	85	29*	74*
1	1	22 51.94	-4 9.9	1.849	1.646	32.0	21.3	63 E	40*	39*	10	23	19 29.60	-16 15.2	1.334	1.551	39.5	20.4	82	29*	71*
1	11	23 17.65	-1 52.2	1.957	1.680	30.2	21.4	59 E	40*	35*	11	2	19 57.70	-15 50.9	1.414	1.563	38.5	20.6	79	29*	67*
1	21	23 42.69	+0 26.7	2.067	1.716	28.2	21.5	56 E	40*	31*	11	12	20 26.00	-15 5.6	1.499	1.579	37.4	20.7	76	30*	63*
318902 2005 UR₅										11	22	20 54.14	-14 0.8	1.588	1.597	36.1	20.8	72	31*	58*	
3	7	16 17.28	-3 15.5	1.793	2.232	25.7	21.4	103 W	42	67	12	2	21 29.10	-12 38.6	1.682	1.620	34.7	20.9	69	32*	53*
3	17	16 23.69	-1 34.0	1.697	2.250	24.4	21.2	111 W	43	66	12	12	21 49.13	-11 1.5	1.780	1.644	33.1	21.0	66	34*	48*
3	27	16 27.18	+0 21.2	1.610	2.267	22.7	21.1	119 W	45	64	12	22	22 15.71	-9 12.4	1.881	1.672	31.4	21.1	62	35*	43*
4	6	16 27.51	+2 25.8	1.533	2.283	20.4	20.9	127 W	47	62	1	1	22 41.61	-7 14.0	1.986	1.702	29.7	21.2	59	36*	39*
4	16	16 24.55	+4 33.6	1.471	2.298	17.8	20.8	136 W	50	59	1	11	23 6.84	-5 9.2	2.092	1.733	27.8	21.3	55	36*	34*
4	26	16 18.50	+6 35.6	1.428	2.313	15.1	20.6	143 W	52	57	1	21	23 31.42	-3 0.5	2.200	1.767	25.9	21.4	52	36*	30*
5	6	16 9.89	+8 21.7	1.406	2.326	13.1	20.5	149 W	53	56	277529 2005 XL₆₆										
5	16	15 59.66	+9 41.8	1.406	2.339	12.3	20.5	150 W	55	54	3	7	16 38.88	-12 42.8	2.167	2.480	23.4	21.5	96 W	32	77*
5	26	15 49.03	+10 28.6	1.430	2.351	13.2	20.6	148 E	55	54	3	17	16 47.29	-12 37.3	2.005	2.446	23.2	21.3	104 W	32	77
6	5	15 39.24	+10 40.0	1.475	2.361	15.2	20.8	142 E	56	53	3	27	16 53.72	-12 25.7	1.848	2.411	22.5	21.0	112 W	33	76
6	15	15 31.30	+10 17.8	1.541	2.371	17.6	20.9	135 E	55	54	4	6	16 57.80	-12 9.5	1.699	2.374	21.2	20.8	121 W	33	76
6	25	15 25.88	+9 27.5	1.623	2.380	19.9	21.1	127 E	54	55	4	16	16 59.10	-11 50.2	1.560	2.337	19.1	20.5	130 W	33	76
7	5	15 23.23	+8 15.8	1.718	2.388	21.8	21.3	119 E	53	56	4	26	16 57.27	-11 30.1	1.435	2.299	16.3	20.2	140 W	33	76
407286 2010 GW₁₄₀										5	6	16 52.16	-11 11.8	1.328	2.260	12.8	19.8	150 W	34	75	
3	7	16 22.56	-22 46.0	1.462	1.887	31.3	21.3	99 W	22	87	5	16	16 43.84	-10 58.6	1.241	2.220	8.7	19.5	161 W	34	75
3	17	16 40.28	-22 59.4	1.332	1.853	31.3	21.1	105 W	22	87	5	26	16 32.94	-10 54.0	1.177	2.180	5.3	19.2	169 W	34	75
3	27	16 56.75	-22 58.2	1.209	1.820	30.8	20.8	111 W	22	87	6	5	16 20.59	-11 1.0	1.139	2.138	6.4	19.1	166 E	34	75
4	6	17 11.56	-22 42.4	1.093	1.789	29.8	20.6	117 W	22	87	6	15	16 8.30	-11 22.1	1.125	2.096	11.1	19.3	157 E	34	75
4	16	17 24.17	-22 11.8	0.987	1.759	28.1	20.2	124 W	23	86	6	25	15 57.67	-11 58.5	1.134	2.054	16.3	19.4	146 E	33	76
4	26	17 34.07	-21 27.1	0.890	1.731	25.7	19.9	132 W	24	85	7	5	15 49.93	-12 49.8	1.162	2.012	21.0	19.6	135 E	32	77
5	6	17 40.76	-20 29.3	0.806	1.706	22.4	19.6	140 W	25	84	7	15	15 45.85	-13 54.5	1.204	1.969	25.1	19.7	125 E	31*	78
5	16	17 43.82	-19 20.3	0.735	1.682	18.2	19.2	149 W	26	83	7	25	15 45.71	-15 10.2	1.256	1.926	28.4	19.9	116 E	29*	79
5	26	17 43.24	-18 3.6	0.679	1.662	13.2	18.8	158 W	27	82	8	4	15 49.44	-16 34.3	1.314	1.883	31.0	20.0	107 E	29*	81
5	31	17 41.74	-17 23.9	0.657	1.653	10.4	18.6	163 W	28	81	8	14	15 56.84	-18 4.0	1.375	1.840	32.9	20.1	100 E	25*	82
6	5	17 39.56	-16 44.4	0.639	1.644	7.8	18.5	167 W	28	81	8	24	16 7.65	-19 36.3	1.437	1.798	34.2	20.2	93	23*	83*
6	10	17 36.87	-16 6.0	0.626	1.637	5.6	18.3	171 W	29	80	9	3	16 21.57	-21 8.1	1.497	1.757	35.0	20.2	87	21*	80*
6	15	17 33.91	-15 29.9	0.618	1.630	4.9	18.2	172 W	30	79	9	13	16 38.42	-22 36.5	1.555	1.716	35.4	20.3	81 E	19*	75*
6	20	17 30.90	-14 57.0	0.614	1.624	6.3	18.3	170 E	30	79	9	23	16 57.96	-23 58.1	1.609	1.677	35.5	20.3	76 E	18*	70*
6	25	17 28.10	-14 28.3	0.614	1.619	8.8	18.4	166 E	31	78	10	3	17 20.02	-25 9.5	1.660	1.640	35.3	20.3	71 E	17*	65*
6	30	17 25.70	-14 4.5	0.619	1.614	11.7	18.5	161 E	31	78	10	13	17 44.41	-26 7.0	1.707	1.605	34.9	20.3	67 E	16*	61*
7	5	17 23.91	-13 46.0	0.627	1.611	14.7	18.6	156 E	31	78	10	23	18 10.92	-26 47.1	1.750	1.572	34.3	20.3	63	15*	57*
7	15	17 22.76	-13 25.9	0.656	1.607	20.1	18.9	147 E	32	77	11	2	18 39.27	-27 6.4	1.791	1.542	33.6	20.3	59	15*	53*
7	25	17 25.46	-13 26.4	0.698	1.606	24.8	19.2	139 E	32	77	11	12	19 9.16	-27 1.8	1.828	1.516	32.8	20.3	56 E	16*	49*
8	4	17 32.10	-13 42.8	0.751	1.610	28.5	19.5	131 E	31	77	11	22	19 40.22	-26 31.0	1.863	1.493	31.9	20.3	53 E	16*	46*
8	14	17 42.44	-14 9.2	0.814	1.616	31.3	19.7	124 E	31	78	12	2	20 12.03	-25 32.8	1.898	1.474	30.9	20.3	50 E	17*	42*
8	24	17 56.03	-14 39.2	0.886	1.627	33.3	20.0	118 E	30	79	12	12	20 44.23	-24 6.9	1.932	1.459	29.8	20.2	47 E	18*	38*
9	3	18 12.27	-15 7.2	0.966	1.640	34.7	20.2	112 E	30	79	12	17	21 0.36	-23 14.0	1.949	1.454	29.3	20.2	46 E	18*	37*
9	13	18 30.66	-15 28.8	1.052	1.657	35.5	20.5	107 E	30	79	12	22	21 16.44	-22 14.6	1.967	1.449	28.7	20.2	45 E	19*	35*
9	23	18 50.70	-15 40.4	1.146	1.677	35.8	20.7	102 E	29	80	12	27	21 32.45	-21 9.2	1.985	1.446	28.1	20.2	44 E	19*	33*
10	3	19 11.92	-15 39.7	1.246	1.699	35.7	20.9	98 E	29	80	1	1	21 48.36	-19 58.1	2.004	1.444	27.5	20.2	43 E	20*	32*
10	13	19 33.97	-15 25.5	1.352	1.724	35.3	21.1	93 E	30	78*	1	6	22 4.15	-18 41.8	2.023	1.444	26.9	20.2	42 E	20*	30*
10	23	19 56.51	-14 56.9	1.464	1.751	34.6	21.3	89 E	30	75*	1	11	22 19.80	-17 20.7	2.043	1.444	26.3	20.2	41 E	21*	29*
11	2	20 19.25	-14 14.3	1.580	1.780	33.7	21.5	84 E													

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

21/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	$45^\circ-26^\circ$	21/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	$45^\circ-26^\circ$
444163 2005 GU₁₇₃ (continuation)									282654 2005 UF₁₅₆ (continuation)								
6 20	18 1.34	-36 53.1	0.621	1.626	8.4	18.6	166 W	8 79									
6 25	17 56.84	-37 35.6	0.623	1.627	9.1	18.6	165 E	7 78									
6 30	17 52.50	-38 9.7	0.629	1.627	10.9	18.7	162 E	7 78									
7 5	17 48.63	-38 35.2	0.639	1.629	13.1	18.9	159 E	6 77									
7 10	17 45.51	-38 52.3	0.654	1.631	15.6	19.0	154 E	6 77									
7 15	17 43.38	-39 1.6	0.672	1.634	18.1	19.1	150 E	6 77									
7 20	17 42.41	-39 4.1	0.694	1.638	20.4	19.3	146 E	6 77									
7 25	17 42.67	-39 0.9	0.720	1.642	22.6	19.4	142 E	6 77									
7 30	17 44.16	-38 52.8	0.748	1.647	24.6	19.6	138 E	6 77									
8 4	17 46.86	-38 40.6	0.779	1.652	26.3	19.7	134 E	6 77									
8 9	17 50.72	-38 25.1	0.813	1.659	27.9	19.9	130 E	7 78									
8 14	17 55.66	-38 6.6	0.850	1.665	29.3	20.0	127 E	7 78									
8 19	18 1.60	-37 45.5	0.888	1.673	30.4	20.2	123 E	7 78									
8 24	18 8.41	-37 22.1	0.929	1.680	31.4	20.3	120 E	8 79									
8 29	18 15.98	-36 56.4	0.972	1.689	32.2	20.4	117 E	8 79									
9 3	18 24.23	-36 28.4	1.017	1.698	32.9	20.6	114 E	9 80									
9 8	18 33.06	-35 58.1	1.063	1.707	33.4	20.7	111 E	9 80									
9 13	18 42.39	-35 25.5	1.112	1.717	33.8	20.8	108 E	10 81									
9 18	18 52.14	-34 50.6	1.161	1.727	34.1	20.9	106 E	10 81									
9 23	19 2.22	-34 13.3	1.213	1.738	34.2	21.0	103 E	11 82									
9 28	19 12.57	-33 33.5	1.265	1.749	34.3	21.1	100 E	11 82									
10 3	19 23.13	-32 51.3	1.319	1.761	34.3	21.3	98 E	12 83									
10 8	19 33.86	-32 6.7	1.375	1.773	34.1	21.4	95 E	13 84									
10 13	19 44.71	-31 19.7	1.431	1.785	33.9	21.4	93 E	14 84*									
415473 2014 OC₁₁₂																	
3 7	16 39.63	-9 52.7	1.985	2.317	25.2	21.4	96 W	35 74*									
3 17	16 50.39	-9 27.9	1.832	2.281	25.1	21.2	104 W	36 73									
3 27	16 59.36	-8 53.9	1.686	2.246	24.5	20.9	111 W	36 73									
4 6	17 6.20	-8 12.1	1.546	2.210	23.4	20.7	119 W	37 72									
4 16	17 10.47	-7 24.8	1.417	2.174	21.6	20.4	127 W	38 71									
4 26	17 11.81	-6 35.2	1.299	2.138	19.2	20.1	136 W	38 71									
5 6	17 9.97	-5 47.8	1.197	2.102	16.2	19.8	145 W	39 70									
5 11	17 7.83	-5 26.7	1.153	2.084	14.5	19.6	149 W	40 69									
5 16	17 4.91	-5 8.5	1.113	2.066	12.7	19.5	153 W	40 69									
5 21	17 1.28	-4 53.9	1.078	2.049	11.1	19.3	157 W	40 69									
5 26	16 57.05	-4 44.0	1.049	2.031	9.7	19.2	160 W	40 69									
5 31	16 52.33	-4 39.4	1.024	2.013	8.9	19.1	162 W	40 69									
6 5	16 47.28	-4 40.7	1.006	1.996	9.0	19.0	162 E	40 69									
6 15	16 36.95	-5 3.3	0.985	1.961	11.5	19.0	157 E	40 69									
6 25	16 27.70	-5 53.0	0.985	1.928	15.8	19.2	149 E	39 70									
7 5	16 20.88	-7 7.3	1.003	1.895	20.4	19.3	140 E	38 71									
7 10	16 18.71	-7 52.2	1.018	1.879	22.5	19.4	135 E	37 72									
7 15	16 17.48	-8 41.3	1.037	1.864	24.5	19.5	130 E	36 73									
7 20	16 17.23	-9 33.9	1.058	1.848	26.4	19.6	126 E	35 74									
7 25	16 17.98	-10 29.2	1.082	1.834	28.1	19.6	122 E	35* 74									
8 4	16 22.42	-12 25.2	1.136	1.805	30.9	19.8	114 E	32* 76									
8 14	16 30.64	-14 24.1	1.196	1.778	33.0	19.9	107 E	30* 78									
8 24	16 42.36	-16 21.4	1.260	1.753	34.5	20.1	100 E	28* 80									
9 3	16 57.25	-18 13.1	1.327	1.731	35.5	20.2	95 E	25* 82*									
9 13	17 15.00	-19 55.4	1.396	1.711	36.0	20.3	89 E	24* 81*									
9 23	17 35.30	-21 24.9	1.466	1.693	36.1	20.3	84 E	22* 77*									
10 3	17 57.81	-22 38.5	1.537	1.678	35.9	20.4	80 E	21* 73*									
10 13	18 22.24	-23 33.4	1.608	1.667	35.4	20.5	76 E	20* 69*									
10 23	18 48.21	-24 7.2	1.680	1.658	34.7	20.6	71 E	20* 65*									
11 2	19 15.36	-24 18.4	1.752	1.653	33.7	20.6	68 E	20* 61*									
11 12	19 43.33	-24 6.0	1.825	1.651	32.6	20.7	64 E	20* 56*									
11 22	20 11.73	-23 30.2	1.899	1.652	31.3	20.7	60 E	21* 52*									
12 2	20 40.25	-22 31.8	1.974	1.657	29.9	20.8	57 E	21* 47*									
12 12	21 8.61	-21 12.5	2.050	1.665	28.4	20.8	54 E	22* 43*									
12 22	21 36.58	-19 34.7	2.126	1.676	26.8	20.9	50 E	23* 39*									
1 1	22 4.01	-17 40.9	2.203	1.690	25.1	20.9	47 E	23* 34*									
1 11	22 30.84	-15 34.3	2.281	1.707	23.4	21.0	44 E	23* 31*									
1 21	22 56.99	-13 17.9	2.358	1.727	21.6	21.0	40 E	23* 27*									
282654 2005 UF₁₅₆																	
3 7	16 46.15	-34 39.3	2.747	2.950	19.6	21.4	92 W	10 81*									
3 17	16 52.00	-34 50.3	2.603	2.948	19.4	21.3	100 W	10 81									
3 27	16 55.38	-34 55.6	2.462	2.946	18.6	21.2	109 W	10 81									
4 6	16 56.00	-34 53.8	2.327	2.943	17.3	21.0	119 W	10 81									
4 16	16 53.63	-34 42.8	2.204	2.938	15.4	20.8	129 W	10 81									
4 26	16 48.23	-34 19.8	2.096	2.933	12.9	20.6	139 W	11 82									
5 6	16 40.05	-33 41.7	2.008	2.927	9.9	20.4	150 W	11 82									
5 11	16 35.09	-33 16.3	1.973	2.923	8.2	20.3	156 W	12 83									
5 16	16 29.68	-32 46.3	1.945	2.919	6.5	20.2	161 W	12 83									
5 21	16 23.96	-32 11.8	1.924	2.915	4.9	20.1	166 W	13 84									
5 26	16 18.09	-31 33.2	1.909	2.911	3.7	20.0	169 W	13 84									
5 31	16 12.22	-30 50.9	1.903	2.906	3.5	19.9	170 E	14 85									
6 5	16 6.48	-30 5.6	1.903	2.902	4.4	20.0	167 E	15 86									
6 10	16 1.02	-29 18.0	1.911	2.897	5.9	20.1	163 E	16 87									
6 15	15 55.98	-28 29.2	1.926	2.891	7.7	20.2	158 E	17 88									
6 20	15 51.46	-27 40.0	1.948	2.886	9.5	20.3	152 E	17 88									
6 25	15 47.54	-26 51.5	1.977	2.880	11.2	20.4	147 E	18 89									
6 30	15 44.26	-26 4.4	2.011	2.874	12.8	20.5	141 E	19 90									
7 5	15 41.67	-25 19.4	2.050	2.868	14.3	20.6	136 E	20 89									
7 10	15 39.78	-24 37.1	2.094	2.861	15.7	20.6	131 E	20 89									
7 15	15 38.60	-23 57.9	2.143	2.854	16.9	20.7	125 E	21* 88									
7 20	15 38.11	-23 22.0	2.195	2.847	17.9	20.8	120 E	21* 87									
7 25	15 38.28	-22 49.5	2.249	2.840	18.8	20.9	116 E	21* 87									
7 30	15 39.09	-22 20.5	2.307	2.833	19.6	21.0	111 E	21* 86									
8 4	15 40.50	-21 54.8	2.366	2.825	20.2	21.0	106 E	21* 86									
8 9	15 42.49	-21 32.4	2.427	2.817	20.6	21.1	102 E	21* 86									
8 14	15 45.02	-21 12.9	2.488	2.809	20.9	21.2	98 E	21* 85									
8 19	15 48.07	-20 56.3	2.550	2.800	21.1	21.2	93 E	21* 85*									
8 24	15 51.58	-20 42.1	2.612	2.791	21.2	21.3	89 E	20* 82*									
8 29	15 55.53	-20 30.2	2.674	2.782	21.2	21.3	85 E	20* 79*									
9 3	15 59.90	-20 20.2	2.735	2.773	21.1	21.3	82 E	20* 75*									
9 8	16 4.66	-20 11.9	2.795	2.764	20.9	21.4	78 E	19* 71*									
9 13	16 9.79	-20 5.0	2.854	2.754	20.6	21.4	74 E	19* 68*									
9 18	16 15.25	-19 59.2	2.911	2.744	20.2	21.4	70 E	19* 64*									
9 23	16 21.03	-19 54.2	2.967	2.734	19.7	21.4	67 E	18* 61*									
9 28	16 27.11	-19 49.8	3.020	2.724	19.2	21.5	63 E	18* 57*									
10 3	16 33.46	-19 45.8	3.071	2.713	18.6	21.5	60 E	18* 54*									
10 8	16 40.08	-19 41.9	3.120	2.702	18.0	21.5	57 E	17* 50*									
10 13	16 46.95	-19 37.8	3.166	2.691	17.3	21.5	53 E	17* 47*									
10 18	16 54.04	-19 33.4	3.209	2.680	16.5	21.5	50 E	17* 43*									
10 23	17 1.35	-19 28.5	3.249	2.668	15.8	21.4	47 E	16* 40*									
10 28	17 8.86	-19 22.8	3.287	2.656	14.9	21.4	44 E	16* 36*									
11 2	17 16.55	-19 16.1	3.321	2.644	14.1	21.4	40 E	15* 33*									
11 7	17 24.43	-19 8.4	3.351	2.632	13.2	21.4	37 E	15* 29*									
11 12	17 32.46	-18 59.4	3.379	2.619	12.3	21.4	34 E	14* 26*									
11 17	17 40.64	-18 49.0	3.402	2.607	11.3	21.3	31 E	14* 22*									
11 22	17 48.96	-18 36.9	3.422	2.594	10.4	21.3	28 E	13* 19*									
11 27	17 57.40	-18 23.2	3.439	2.581	9.4	21.3	25 E	12* 15*									
12 2	18 5.96	-18 7.6	3.452	2.567	8.4	21.2	22 E	11* 12*									
12 7	18 14.62	-17 50.0	3.461	2.554	7.4	21.2	19 E	10* 9*									
12 12	18 23.37	-17 30.4	3.467	2.540	6.4	21.1	17 E	8* 5*									
12 17	18 32.21	-17 8.6	3.469	2.526	5.5	21.1	14 E	7* 2*									
12 22	18 41.11	-16 44.5	3.467	2.512	4.6	21.0	12 E	5* —									
12 27	18 50.07	-16 18.1	3.462	2.497	3.8	20.9	10 E	4* —									
1 1	19 59.08	-15 49.2	3.453	2.483	3.2	20.9	8 E	2* —									
1 6	19 8.13	-15 17.8	3.440	2.468	2.9	20.8	7 E	—									
1 11	19 17.22	-14 43.9	3.424	2.453	3.0	20.8	8 W	1* —									
1 16	19 26.32	-14 7.4	3.405	2.438	3.6	20.8	9 W	3* —									
1 21	19 35.44	-13 28.3	3.382	2.423	4.4	20.9	11 W	5* —									
141531 2002 GB																	
3 7	16 53.98	-15 33.2	0.967	1.413	44.6	21.4	92 W	29 78*									
3 12	16 57.34	-16 26.9	0.925	1.431	43.6	21.3	96 W	29 80*									
3 17	16 59.71	-17 23.7	0.883	1.448	42.5	21.2											

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

21/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	2021	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
141531 2002 GB (continuation)																			
7 30	h m	°				m													
7 30	13 1.69	-31 15.8	0.878	1.231	54.5	21.2	81 E	71*		4 28	19 36.41	-46 21.0	0.833	1.490	40.0	19.6	108 W		70
8 4	13 6.25	-31 42.7	0.894	1.197	55.8	21.2	77 E	67*		4 30	19 44.90	-47 58.9	0.807	1.474	40.5	19.5	108 W		68
8 9	13 11.45	-32 13.3	0.905	1.161	57.2	21.2	74 E	63*		5 2	19 54.19	-49 40.7	0.782	1.458	41.0	19.4	108 W		66
8 14	13 17.19	-32 46.9	0.912	1.123	58.6	21.2	71 E	60*		5 4	20 4.45	-51 26.0	0.759	1.441	41.6	19.3	108 W		65
8 19	13 23.42	-33 22.8	0.914	1.083	60.2	21.1	68 E	57*		5 6	20 15.85	-53 14.1	0.737	1.425	42.2	19.2	108 W		63
8 24	13 30.04	-34 0.0	0.911	1.041	62.0	21.1	65 E	53*		5 8	20 28.61	-55 4.1	0.716	1.408	42.9	19.2	108 W		61
8 29	13 36.97	-34 37.4	0.902	0.996	64.1	21.0	62 E	50*		5 10	20 42.99	-56 55.0	0.697	1.392	43.7	19.1	108 W		59
9 3	13 44.12	-35 13.5	0.888	0.950	66.5	21.0	60 E	47*		5 12	20 59.27	-58 45.0	0.679	1.375	44.5	19.1	107 W		57
9 8	13 51.36	-35 46.4	0.867	0.901	69.5	20.9	57 E	44*		5 14	21 17.80	-60 32.0	0.663	1.359	45.4	19.0	107 W		55
9 13	13 58.46	-36 13.4	0.839	0.851	73.1	20.8	54 E	42*		5 16	21 38.91	-62 13.3	0.648	1.342	46.5	19.0	106 W		54
9 18	14 5.11	-36 30.4	0.805	0.799	77.6	20.8	51 E	39*		5 17	21 50.53	-63 0.8	0.642	1.333	47.0	18.9	105 W		53*
9 23	14 10.84	-36 30.8	0.764	0.745	83.3	20.7	48 E	35*		5 18	22 2.89	-63 45.6	0.636	1.325	47.6	18.9	105 W		52*
9 28	14 14.95	-36 4.9	0.717	0.692	90.7	20.7	44 E	32*		5 19	22 16.01	-64 27.1	0.630	1.317	48.2	18.9	104 W		51*
10 3	14 16.51	-34 56.8	0.665	0.638	100.2	20.8	39 E	27*		5 20	22 29.90	-65 5.0	0.625	1.308	48.8	18.9	104 W		51*
10 8	14 14.31	-32 42.1	0.612	0.587	112.9	21.1	33 E	22*		5 21	22 44.53	-65 38.6	0.620	1.300	49.4	18.9	103 W		50*
4487 Pocahontas																			
3 7	17 15.66	-13 13.3	1.843	2.052	28.9	21.5	87 W	32*	74*	5 23	23 15.79	-66 30.9	0.612	1.283	50.7	18.9	101 W		48*
3 17	17 29.99	-11 54.9	1.701	2.026	29.3	21.3	94 W	33*	76*	5 24	23 32.25	-66 48.7	0.608	1.274	51.4	18.8	101 W		48*
3 27	17 42.81	-10 17.4	1.562	1.998	29.4	21.1	100 W	35*	74	5 25	23 49.10	-67 0.5	0.605	1.266	52.0	18.8	100 W		47*
4 6	17 53.79	-8 20.1	1.427	1.969	29.1	20.8	107 W	37	72	5 26	0 6.20	-67 5.9	0.603	1.257	52.7	18.8	99 W		46*
4 16	18 2.51	-6 2.5	1.299	1.938	28.2	20.6	114 W	39	70	5 27	0 23.36	-67 4.9	0.601	1.249	53.4	18.8	98 W		45*
4 26	18 8.52	-3 25.3	1.179	1.906	26.9	20.3	121 W	42	67	5 28	0 40.43	-66 57.5	0.599	1.240	54.2	18.8	97 W		45*
5 6	18 11.36	-0 30.6	1.071	1.872	25.0	20.0	128 W	44	65	5 29	0 57.24	-66 43.7	0.598	1.232	54.9	18.8	96 W		44*
5 11	18 11.44	+ 1 2.0	1.021	1.854	23.9	19.8	132 W	46	63	5 30	1 13.63	-66 23.7	0.597	1.223	55.6	18.8	95 W		43*
5 16	18 10.55	+ 2 36.8	0.976	1.837	22.8	19.7	135 W	48	61	5 31	1 29.48	-65 58.0	0.597	1.215	56.3	18.8	94 W		43*
5 21	18 8.68	+ 4 12.4	0.934	1.819	21.7	19.5	138 W	49	60	6 2	1 59.19	-64 51.0	0.598	1.197	57.8	18.9	92 W		42*
5 26	18 5.84	+ 5 47.2	0.896	1.800	20.7	19.4	141 W	51	58	6 3	2 12.93	-64 10.6	0.598	1.189	58.5	18.9	91 W		41*
5 31	18 2.03	+ 7 19.5	0.863	1.782	19.9	19.2	143 W	52	57	6 4	2 25.90	-63 26.2	0.600	1.180	59.3	18.9	90 W		40*
6 5	17 57.32	+ 8 47.0	0.834	1.763	19.4	19.1	145 W	54	55	6 5	2 38.08	-62 38.5	0.601	1.172	60.0	18.9	89 W		40*
6 10	17 51.82	+10 7.3	0.809	1.744	19.2	19.0	146 W	55	54	6 6	2 49.50	-61 47.9	0.603	1.163	60.7	18.9	88 W		40*
6 15	17 45.69	+11 18.1	0.790	1.724	19.6	19.0	145 W	56	53	6 7	3 0.18	-60 54.7	0.605	1.155	61.4	18.9	87 W		39*
6 20	17 39.16	+12 17.0	0.774	1.705	20.5	18.9	144 E	57	52	6 8	3 10.17	-59 59.5	0.608	1.146	62.0	18.9	86 W		39*
6 25	17 32.47	+13 2.6	0.763	1.685	21.7	18.9	142 E	58	51	6 9	3 19.49	-59 2.6	0.611	1.138	62.7	18.9	85 W		38*
6 30	17 25.86	+13 33.9	0.756	1.665	23.4	18.9	139 E	59	50	6 10	3 28.19	-58 4.4	0.614	1.129	63.4	19.0	84 W		38*
7 5	17 19.61	+13 50.1	0.752	1.645	25.2	18.9	136 E	59	50	6 11	3 36.32	-57 5.2	0.617	1.121	64.0	19.0	83 W		38*
7 10	17 13.95	+13 51.3	0.751	1.625	27.2	19.0	133	59	50	6 12	3 43.92	-56 5.1	0.621	1.113	64.6	19.0	82 W		37*
7 15	17 9.12	+13 38.3	0.754	1.605	29.3	19.0	129	59	50	6 13	3 51.03	-55 4.5	0.625	1.104	65.2	19.0	81 W		37*
7 20	17 5.28	+13 12.2	0.758	1.584	31.3	19.0	126	58	51	6 14	3 57.68	-54 3.6	0.629	1.096	65.8	19.0	80 W		37*
7 25	17 2.55	+12 34.6	0.765	1.564	33.3	19.1	122 E	58	51	6 15	4 3.91	-53 2.6	0.634	1.087	66.4	19.0	79 W		37*
7 30	17 0.98	+11 46.9	0.773	1.544	35.2	19.1	119 E	57	52	6 17	4 15.26	-51 0.5	0.643	1.071	67.5	19.1	77 W		36*
8 4	17 0.63	+10 50.6	0.782	1.524	37.0	19.2	115	56	53	6 19	4 25.32	-48 59.3	0.653	1.054	68.5	19.1	75 W		36*
8 9	17 1.50	+ 9 47.2	0.792	1.504	38.6	19.2	112	55	54	6 21	4 34.28	-46 59.6	0.664	1.038	69.4	19.1	73 W		36*
8 14	17 3.59	+ 8 37.8	0.802	1.484	40.2	19.3	109	54*	55	6 23	4 42.32	-45 1.7	0.675	1.022	70.2	19.2	71 W		36*
8 19	17 6.87	+ 7 24.0	0.813	1.464	41.6	19.3	106	52*	57	6 25	4 49.57	-43 5.9	0.687	1.006	71.0	19.2	69 W		36*
8 24	17 11.29	+ 6 6.8	0.823	1.444	42.9	19.3	103	51*	58	6 27	4 56.16	-41 12.3	0.698	0.990	71.7	19.2	68 W		36*
8 29	17 16.81	+ 4 47.1	0.834	1.425	44.1	19.4	101	49*	59	6 29	5 2.19	-39 20.9	0.711	0.975	72.3	19.2	66 W		36*
9 3	17 23.40	+ 3 25.7	0.844	1.407	45.2	19.4	98	48*	61	7 1	5 7.74	-37 31.5	0.723	0.960	72.8	19.3	64 W		37*
9 8	17 31.02	+ 2 3.3	0.855	1.388	46.2	19.4	96	46*	62	7 3	5 12.89	-35 44.1	0.735	0.945	73.3	19.3	63 W		37*
9 13	17 39.64	+ 0 40.8	0.864	1.371	47.1	19.4	94	45*	63*	7 5	5 17.68	-33 58.4	0.748	0.930	73.7	19.3	61 W		37*
9 18	17 49.22	-0 41.1	0.874	1.353	47.9	19.5	92	44*	64*										
9 23	17 59.73	-2 1.7	0.883	1.337	48.6	19.5	90 E	42*	65*	7 10	5 28.48	-29 40.7	0.778	0.896	74.4	19.3	58 W		39*
10 3	18 23.37	-4 36.7	0.900	1.306	49.9	19.5	87 E	40*	66*	7 15	5 38.09	-25 29.5	0.808	0.865	74.7	19.3	55 W		40*
10 13	18 50.37	-6 58.7	0.918	1.279	50.8	19.5	84 E	38*	66*	7 20	5 47.03	-21 21.3	0.837	0.838	74.7	19.3	53 W		41*
10 23	19 20.41	-9 2.0	0.936	1.256	51.5	19.6	81	36*	65*	7 25	5 55.70	-17 13.7	0.864	0.816	74.3	19.3	51 W		41*
11 2	19 53.10	-10 41.2	0.956	1.238	51.8	19.6	79	34*	63*	7 30	6 4.48	-13 5.0	0.889	0.799	73.7	19.3	49 W		42*
11 12	20 28.01	-11 51.4	0.979	1.226	51.9	19.6	77	33*	62*	8 4	6 13.64	-8 54.8	0.912	0.788	72.9	19.3	48 W		3* 42*
11 22	21 4.52	-12 28.9	1.007	1.219	51.6	19.7	75	33*	60*	8 9	6 23.42	-4 43.5	0.933	0.784	71.8	19.3	47 W		8* 41*
12 2	21 41.96	-12 32.2	1.039	1.217	51.1	19.7	74	32	58*	8 14									

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

Table with columns: 2021, alpha 2000, delta 2000, Delta, r, beta, V, psi, 45-26 degrees, 21/22, alpha 2000, delta 2000, Delta, r, beta, V, psi, 45-26 degrees. Sub-sections include 273364 2006 UU210, 237805 2002 CF26, and 5660 1974 MA. Each entry includes numerical data for various orbital parameters and positions.

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

21/22		α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45° - 26°														
5660 1974 MA										(continuation)													
	h m									h m													
5	1	18 43.73	-58 37.0	2.543	3.129	16.7	20.9	117 W	-	57	7	25	21 59.00	+43 9.4	0.833	1.544	37.3	19.1	113 W	88	21		
501115 2013 TU₁₂										(continuation)													
	h m									h m													
3	7	18 27.56	-12 3.3	2.155	2.039	27.2	21.4	70 W	29*	59*	7	10	3 52.86	+25 33.3	1.136	0.855	59.4	19.8	46 W	29*	28*		

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

21/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	2021	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
529933 2010 TO₁₇₄ (continuation)																			
	h m	° ' "					°				h m	° ' "					°		
9 18	2 53.75	+ 1 4.0	0.839	1.685	26.3	19.1	132 W	46	63	5 1	1 24.24	+11 47.7	1.644	0.741	23.3	21.4	17 W	3*	10*
9 23	2 54.01	+ 0 33.8	0.826	1.700	24.0	19.1	136 W	46	63	5 6	1 46.81	+13 24.3	1.684	0.766	21.2	21.5	16 W	2*	9*
458452 2011 BR₁₅ (continuation)																			
	h m	° ' "					°				h m	° ' "					°		
3 7	21 17.66	-16 34.7	0.756	0.502	102.2	21.0	30 W	5*	24*	3 7	21 17.66	-16 34.7	0.756	0.502	102.2	21.0	30 W	5*	24*
3 9	21 20.05	-15 28.8	0.791	0.511	97.0	20.9	31 W	6*	25*	3 9	21 20.05	-15 28.8	0.791	0.511	97.0	20.9	31 W	6*	25*
413260 2003 TL₄																			
3 11	21 23.28	-14 23.3	0.826	0.522	92.1	20.8	32 W	7*	26*	3 11	21 23.28	-14 23.3	0.826	0.522	92.1	20.8	32 W	7*	26*
3 13	21 27.19	-13 18.7	0.860	0.534	87.7	20.8	32 W	8*	26*	3 13	21 27.19	-13 18.7	0.860	0.534	87.7	20.8	32 W	8*	26*
331509 1999 YA																			
3 7	21 31.34	-20 42.7	2.121	1.334	20.7	21.5	28 W	—	22*	3 7	21 31.34	-20 42.7	2.121	1.334	20.7	21.5	28 W	—	22*
3 17	22 7.80	-20 27.2	2.042	1.290	23.2	21.4	31 W	—	24*	3 17	22 7.80	-20 27.2	2.042	1.290	23.2	21.4	31 W	—	24*
514652 2005 SC₇₁																			
3 7	20 3.54	+ 2 20.3	1.734	1.284	34.5	21.5	47 W	31*	32*	3 7	20 3.54	+ 2 20.3	1.734	1.284	34.5	21.5	47 W	31*	32*
3 12	20 22.00	+ 3 51.6	1.713	1.267	35.1	21.4	47 W	31*	32*	3 12	20 22.00	+ 3 51.6	1.713	1.267	35.1	21.4	47 W	31*	32*
141432 2002 CQ₁₁																			
3 7	21 43.97	-14 11.1	1.472	0.678	34.7	21.4	23 W	2*	17*	3 7	21 43.97	-14 11.1	1.472	0.678	34.7	21.4	23 W	2*	17*
3 12	22 13.84	-11 39.8	1.476	0.642	32.2	21.2	20 W	1*	14*	3 12	22 13.84	-11 39.8	1.476	0.642	32.2	21.2	20 W	1*	14*
418896 2009 AK₁₅																			
3 7	20 23.83	-19 2.2	0.398	0.749	116.3	21.3	43 W	11*	36*	3 7	20 23.83	-19 2.2	0.398	0.749	116.3	21.3	43 W	11*	36*
3 9	20 26.42	-17 18.1	0.417	0.748	113.7	21.3	44 W	12*	37*	3 9	20 26.42	-17 18.1	0.417	0.748	113.7	21.3	44 W	12*	37*
457059 2008 EG																			
3 7	21 51.00	-28 41.0	0.846	0.494	91.7	21.4	30 W	—	21*	3 7	21 51.00	-28 41.0	0.846	0.494	91.7	21.4	30 W	—	21*
3 9	22 5.88	-25 55.6	0.880	0.455	90.3	21.2	27 W	—	18*	3 9	22 5.88	-25 55.6	0.880	0.455	90.3	21.2	27 W	—	18*