

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	20/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°										
88191 2000 YK₂₁										511520 2014 QW₂₉₆ (continuation)																			
12 27	10 46.97	-7 4.4	1.118	1.711	32.9	19.5	109W	38	71	2 5	10 26.93	+26 12.5	1.040	1.996	9.6	20.8	160W	71	38	2 15	10 13.51	+27 56.2	1.071	2.039	7.6	20.8	164W	73	36
1 1	10 52.23	-8 24.9	1.067	1.701	32.4	19.4	112W	37	72	2 25	10 0.28	+29 5.9	1.127	2.080	9.9	21.1	159E	74	35	3 7	9 49.17	+29 38.1	1.207	2.121	13.9	21.4	149E	75	34
1 6	10 56.91	-9 43.7	1.018	1.691	31.7	19.2	115W	35	74	3 17	9 41.39	+29 36.7	1.308	2.160	17.6	21.8	139E	75	34										
1 11	11 0.94	-11 0.1	0.971	1.681	30.9	19.1	119W	34	75																				
1 16	11 4.25	-12 13.0	0.926	1.671	29.9	18.9	122W	33	76																				
1 21	11 6.79	-13 21.6	0.883	1.662	28.7	18.8	126W	32	77																				
1 26	11 8.52	-14 24.8	0.843	1.654	27.4	18.6	129W	31	78																				
1 31	11 9.38	-15 21.4	0.806	1.645	25.9	18.5	133W	30	79																				
2 5	11 9.34	-16 10.0	0.772	1.638	24.2	18.3	137W	29	80																				
2 10	11 8.41	-16 49.2	0.740	1.630	22.4	18.2	141W	28	81																				
2 15	11 6.61	-17 17.2	0.713	1.624	20.4	18.0	145W	28	81																				
2 20	11 4.04	-17 33.0	0.688	1.617	18.5	17.9	149W	27	82																				
2 25	11 0.86	-17 35.6	0.668	1.612	16.6	17.7	152W	27	82																				
3 2	10 57.25	-17 24.5	0.652	1.606	15.0	17.6	155W	28	81																				
3 7	10 53.43	-16 59.8	0.640	1.602	13.9	17.5	157E	28	81																				
3 12	10 49.65	-16 22.1	0.633	1.598	13.5	17.5	158E	29	80																				
3 17	10 46.20	-15 33.0	0.629	1.594	13.9	17.5	157E	29	80																				
3 22	10 43.32	-14 34.9	0.631	1.592	15.1	17.5	155E	30	79																				
3 27	10 41.24	-13 30.5	0.636	1.589	16.8	17.6	153E	31	78																				
4 1	10 40.09	-12 22.6	0.645	1.588	18.9	17.7	149E	33	76																				
4 6	10 39.97	-11 13.8	0.659	1.587	21.1	17.8	145E	34	75																				
4 11	10 40.93	-10 6.5	0.676	1.586	23.3	18.0	141E	35	74																				
4 16	10 42.99	-9 2.9	0.696	1.587	25.4	18.1	137E	36	73																				
4 21	10 46.12	-8 4.7	0.719	1.588	27.4	18.2	133E	37	72																				
4 26	10 50.24	-7 13.1	0.745	1.589	29.2	18.3	130E	38	71																				
5 6	11 1.15	-5 51.6	0.805	1.594	32.2	18.6	123E	39	70																				
5 16	11 15.05	-5 0.5	0.873	1.601	34.5	18.9	116E	40	69																				
5 26	11 31.30	-4 38.7	0.948	1.611	36.1	19.1	110E	39	69																				
6 5	11 49.29	-4 42.6	1.029	1.622	37.1	19.3	105E	37	69																				
6 15	12 8.58	-5 8.4	1.116	1.636	37.7	19.5	100E	34	69																				
6 25	12 28.85	-5 52.0	1.208	1.652	37.8	19.7	96E	31	70																				
7 5	12 49.80	-6 49.1	1.303	1.669	37.5	19.9	91E	28	71																				
7 15	13 11.30	-7 56.0	1.403	1.689	37.0	20.1	87E	26	72																				
7 25	13 33.21	-9 9.5	1.505	1.709	36.1	20.2	83E	24	72																				
8 4	13 55.45	-10 26.1	1.610	1.731	35.1	20.4	79E	22	70																				
8 14	14 18.00	-11 43.3	1.717	1.754	33.9	20.5	75E	21	67																				
8 24	14 40.80	-12 58.6	1.826	1.778	32.6	20.6	71E	20	64																				
9 3	15 3.83	-14 9.6	1.936	1.802	31.1	20.7	67E	19	60																				
9 13	15 27.08	-15 14.8	2.046	1.828	29.4	20.8	63E	19	57																				
9 23	15 50.52	-16 12.1	2.155	1.853	27.7	20.9	59E	18	53																				
10 3	16 14.10	-17 0.4	2.263	1.879	25.9	21.0	55E	18	48																				
10 13	16 37.78	-17 38.3	2.369	1.905	24.0	21.1	51E	18	44																				
10 23	17 1.51	-18 5.0	2.472	1.932	22.0	21.2	47E	18	39																				
11 2	17 25.21	-18 19.8	2.572	1.958	20.0	21.2	42E	17	34																				
11 12	17 48.83	-18 22.2	2.666	1.984	17.9	21.3	38E	17	29																				
11 22	18 12.27	-18 12.1	2.756	2.010	15.8	21.3	34E	16	24																				
12 2	18 35.46	-17 49.5	2.838	2.035	13.7	21.3	29E	15	18																				
12 12	18 58.34	-17 14.8	2.914	2.060	11.5	21.3	25E	13	13																				
12 22	19 20.83	-16 28.4	2.981	2.085	9.4	21.3	20E	11	7																				
1 1	19 42.87	-15 31.2	3.039	2.109	7.2	21.3	16E	9	2																				
1 11	20 4.42	-14 23.7	3.088	2.133	5.2	21.2	11E	5	*																				
1 21	20 25.44	-13 7.1	3.127	2.156	3.5	21.2	8E	1	*																				
204309 2004 RQ₃																													
12 27	10 48.00	+11 9.9	1.573	2.193	23.7	19.9	116W	56	53																				
1 6	10 49.09	+11 41.5	1.503	2.230	20.8	19.8	126W	57	52																				
1 16	10 46.84	+12 33.7	1.445	2.268	17.1	19.6	137W	58	51																				
1 26	10 41.36	+13 43.2	1.405	2.305	12.7	19.4	149W	59	50																				
1 31	10 37.56	+14 22.5	1.393	2.323	10.4	19.3	155W	59	50																				
2 5	10 33.19	+15 3.3	1.388	2.342	7.9	19.2	161W	60	49																				
2 10	10 28.38	+15 44.6	1.388	2.360	5.5	19.1	167W	61	48																				
2 15	10 23.29	+16 24.9	1.396	2.378	3.3	19.0	172W	61	48																				
2 20	10 18.11	+17 3.0	1.411	2.396	2.5	19.0	174W	62	47																				
2 25	10 13.00	+17 37.9	1.433	2.414	3.9	19.2	170E	63	46																				
3 2	10 8.14	+18 8.7	1.462	2.432	6.1	19.3	165E	63	46																				
3 7	10 3.66	+18 34.8	1.497	2.450	8.3	19.5	159E	64	45																				
3 17	9 56.35	+19 11.9	1.586	2.485	12.3	19.8	148E	64	45																				
3 27	9 51.73	+19 28.8	1.698	2.520	15.7	20.1	137E	64	45																				
4 6	9 49.97	+19 27.4	1.826	2.554	18.3	20.4	127E	64	45																				
4 16	9 50.94	+19 10.2	1.968	2.587	20.2	20.6	117E	64	45																				
4 26	9 54.37	+18 39.9	2.120	2.620	21.4	20.9	109E	64	45																				
5 6	9 59.86	+17 58.7	2.278	2.652	22.0	21.1	100E	62	46																				
5 16	10 7.07	+17 8.4	2.439	2.683	22.1	21.2	93E	57	47																				
5 26	10 15.67	+16 10.3	2.601	2.713	21.8	21.4	85E	51	48																				
511520 2014 QW₂₉₆																													
12 27	10 48.79	+18 25.9	1.132	1.818	28.4	21.4	118W	63	46																				
1 6	10 49.84	+20 0.7	1.085	1.864	24.4	21.3	128W	65	44																				
1 16	10 46.33	+21 58.2	1.051	1.909	19.6	21.1	139W	67	42																				
1 26	10 38.40	+24 7.5	1.035	1.953	14.4	20.9	150W	69	40																				
2 5	10 26.93	+26 12.5	1.040	1.996	9.6	20.8	160W	71	38																				
2 15	10 13.51	+27 56.2	1.071	2.039	7.6	20.8	164W	73	36																				
2 25	10 0.28	+29 5.9	1.127	2.080	9.9	21.1	159E	74	35																				
3 7	9 49.17	+29 38.1	1.207	2.121	13.9	21.4	149E	75	34																				
3 17	9 41.39	+29 36.7	1.308	2.160	17.6	21.8	139E	75	34																				
38091 1999 JT₃																													
12 27	10 49.29	+19 52.3	2.207	2.814	17.9	21.0	119W	65	44																				
1 6	10 49.25	+20 43.5	2.066	2.789	16.0	20.8	129W	66	43																				
1 16	10 46.37	+21 50.6	1.941	2.763	13.4	20.5	139W	67	42																				
1 26	10 40.52	+23 10.0	1.837	2.735	10.4	20.3	150W	68	41																				
1 31	10 36.52	+23 52.4	1.795	2.721	8.7	20.1	155W	69	40																				
2 5	10 31.87	+24 35.1	1.759	2.706	7.2	20.0	160W	70	39																				
2 10	10 26.64	+25 17.0	1.730	2.691	5.9	19.9	164W	70	39																				
2 15	10 20.96	+25 56.9	1.709	2.676	5.4	19.8	165W	71	38																				
2 20	10 14.98	+26 33.4	1.694	2.660	5.7	19.8	164W	72	37																				
2 25	10 8.85	+27 5.4	1.688	2.644	6.9	19.9	161E	72	37																				
3 2	10 2.77	+27 32.2	1.688	2.628	8.6	19.9	157E	73	36																				
3 7	9 56.88	+27 53.0	1.695	2.611	10.4	20.0	152E	73	36																				
3 12	9 51.37	+28 7.6	1.709	2.594	12.3	20.1	146E	73	36																				
3 17	9 46.39	+28 15.8	1.729	2.577	14.1	20.1	141E																						

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	20/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°		
63160 2000 YN₈										26120 1991 VZ₂											
<i>(continuation)</i>										<i>(continuation)</i>											
5	6	9 50.38	+20 36.9	2.323	2.648	22.2	20.9	97 E	64*	43	3	17	9 50.33	+17 37.8	2.092	2.978	10.4	19.9	147 E	63	46
5	16	9 56.60	+19 51.5	2.443	2.634	22.6	21.0	89 E	58*	44	3	27	9 44.32	+17 50.4	2.197	2.996	13.4	20.2	136 E	63	46
5	26	10 4.60	+18 56.7	2.562	2.618	22.5	21.1	82 E	51*	45	4	6	9 40.79	+17 49.6	2.321	3.013	15.7	20.4	125 E	63	46
6	5	10 14.09	+17 53.6	2.676	2.602	22.1	21.2	75 E	44*	46*	4	16	9 39.73	+17 36.8	2.460	3.029	17.4	20.6	115 E	63	46
6	15	10 24.83	+16 43.2	2.785	2.585	21.4	21.2	68 E	37*	46*	4	26	9 41.00	+17 13.5	2.608	3.044	18.5	20.8	106 E	62*	47
6	25	10 36.61	+15 26.0	2.887	2.568	20.4	21.3	62 E	31*	44*	5	6	9 44.32	+16 41.1	2.762	3.059	19.1	20.9	97 E	59*	47
7	5	10 49.24	+14 2.7	2.980	2.549	19.2	21.3	56 E	26*	42*	5	16	9 49.40	+16 0.9	2.917	3.072	19.2	21.0	89 E	54*	48
7	15	11 2.61	+12 34.0	3.064	2.529	17.9	21.3	50 E	21*	39*	5	26	9 55.97	+15 13.7	3.072	3.084	18.9	21.1	81 E	47*	49*
7	25	11 16.61	+11 0.3	3.137	2.508	16.3	21.3	44 E	18*	35*	6	5	10 3.76	+14 20.3	3.222	3.094	18.3	21.2	74 E	40*	49*
8	4	11 31.16	+9 22.3	3.200	2.487	14.7	21.2	38 E	14*	30*	6	15	10 12.57	+13 21.4	3.367	3.104	17.5	21.3	66 E	33*	48*
8	14	11 46.21	+7 40.6	3.251	2.465	13.0	21.2	33 E	12*	26*	6	25	10 22.19	+12 17.6	3.503	3.113	16.3	21.4	60 E	27*	45*
8	24	12 1.71	+5 55.8	3.290	2.441	11.1	21.1	28 E	9*	21*	7	5	10 32.48	+11 9.4	3.630	3.121	15.0	21.4	53 E	21*	42*
9	3	12 17.65	+4 8.6	3.317	2.417	9.2	21.0	23 E	7*	16*	7	15	10 43.31	+9 57.3	3.745	3.127	13.5	21.4	46 E	16*	37*
9	13	12 34.03	+2 19.7	3.332	2.393	7.3	20.9	18 E	5*	10*	7	25	10 54.58	+8 41.7	3.848	3.133	11.9	21.4	40 E	12*	32*
9	23	12 50.83	+0 29.8	3.335	2.367	5.4	20.8	13 E	3*	5*	8	4	11 6.19	+7 23.2	3.937	3.138	10.2	21.4	33 E	9*	26*
10	3	13 8.07	-1 20.2	3.326	2.341	3.6	20.7	8 E	1*	—	8	14	11 18.08	+6 2.1	4.011	3.141	8.4	21.4	27 E	6*	20*
10	13	13 25.76	-3 9.6	3.305	2.314	2.4	20.6	6 E	—	—	8	24	11 30.19	+4 39.1	4.070	3.143	6.5	21.3	21 E	3*	14*
10	23	13 43.91	-4 57.2	3.272	2.286	2.8	20.6	7 W	—	—	9	3	11 42.47	+3 14.6	4.112	3.145	4.6	21.3	14 E	—	8*
11	2	14 2.55	-6 42.4	3.228	2.258	4.4	20.6	10 W	4*	—	9	13	11 54.88	+1 49.1	4.138	3.145	2.6	21.1	8 E	—	2*
11	12	14 21.69	-8 23.9	3.173	2.229	6.4	20.6	15 W	8*	—	9	23	12 7.37	+0 23.2	4.147	3.144	0.6	21.0	2 E	—	—
11	22	14 41.33	-10 0.7	3.108	2.200	8.5	20.7	19 W	12*	4*	10	3	12 19.91	-1 2.7	4.139	3.143	1.5	21.1	5 W	—	—
12	2	15 1.50	-11 31.8	3.034	2.171	10.7	20.7	24 W	16*	9*	10	13	12 32.47	-2 28.0	4.113	3.140	3.5	21.2	11 W	5*	1*
12	12	15 22.18	-12 56.1	2.950	2.140	12.8	20.7	29 W	19*	14*	10	23	12 44.98	-3 52.0	4.069	3.136	5.5	21.3	18 W	10*	5*
12	22	15 43.37	-14 12.4	2.858	2.110	14.9	20.6	34 W	21*	19*	11	2	12 57.40	-5 14.3	4.009	3.131	7.5	21.3	24 W	16*	10*
1	1	16 5.05	-15 19.9	2.760	2.080	17.0	20.6	38 W	22*	25*	11	12	13 9.68	-6 34.2	3.932	3.125	9.4	21.4	31 W	21*	15*
1	11	16 27.17	-16 17.5	2.655	2.049	19.1	20.5	43 W	23*	31*	11	22	13 21.74	-7 51.1	3.839	3.118	11.2	21.4	38 W	26*	21*
1	21	16 49.68	-17 4.3	2.545	2.018	21.1	20.5	48 W	23*	36*	12	2	13 33.49	-9 4.4	3.731	3.109	12.9	21.4	45 W	29*	27*
105406 2000 QN₁₅₀										307263 2002 NT₂₆											
12	27	10 49.57	+9 4.9	2.069	2.641	19.7	21.1	115 W	54	55	12	27	10 50.50	+6 59.4	2.406	2.948	17.7	21.3	114 W	52	57
1	6	10 48.93	+8 59.1	1.958	2.651	17.6	20.9	125 W	54	55	1	6	10 52.38	+7 22.3	2.238	2.905	16.3	21.0	124 W	52	57
1	16	10 45.46	+9 8.6	1.860	2.661	14.8	20.7	136 W	54	55	1	16	10 52.05	+8 3.9	2.084	2.861	14.2	20.8	135 W	53	56
1	26	10 39.21	+9 32.5	1.781	2.669	11.2	20.5	148 W	55	54	1	26	10 49.36	+9 5.3	1.948	2.816	11.4	20.5	146 W	54	55
2	5	10 30.53	+10 8.1	1.727	2.676	7.1	20.2	161 W	55	54	2	5	10 44.33	+10 25.3	1.835	2.771	7.9	20.2	157 W	55	54
2	10	10 25.49	+10 29.0	1.709	2.680	4.8	20.1	167 W	55	54	2	15	10 37.23	+12 0.4	1.749	2.726	3.8	19.8	169 W	57	52
2	15	10 20.14	+10 51.0	1.700	2.683	2.5	20.0	173 W	56	53	2	20	10 33.09	+12 51.5	1.717	2.703	1.9	19.7	175 W	58	51
2	20	10 14.63	+11 13.2	1.697	2.686	0.1	19.7	180 W	56	53	2	25	10 28.70	+13 43.6	1.692	2.680	1.7	19.6	175 E	59	50
2	25	10 9.12	+11 35.0	1.702	2.688	2.3	20.0	174 E	57	52	3	2	10 24.19	+14 35.5	1.675	2.657	3.7	19.7	170 E	60	49
3	2	10 3.74	+11 55.6	1.715	2.691	4.6	20.1	167 E	57	52	3	7	10 19.68	+15 26.2	1.665	2.633	5.9	19.8	164 E	60	49
3	7	9 58.65	+12 14.4	1.735	2.693	6.8	20.3	161 E	57	52	3	12	10 15.31	+16 14.4	1.662	2.610	8.2	19.9	158 E	61	48
3	17	9 49.80	+12 44.6	1.795	2.696	11.0	20.5	149 E	58	51	3	17	10 11.23	+16 59.3	1.666	2.586	10.4	19.9	152 E	62	47
3	27	9 43.34	+13 3.0	1.878	2.699	14.5	20.7	137 E	58	51	3	22	10 7.57	+17 40.0	1.676	2.563	12.6	20.0	146 E	63	46
4	6	9 39.62	+13 8.8	1.980	2.700	17.3	21.0	127 E	58	51	3	27	10 4.43	+18 15.9	1.692	2.539	14.6	20.1	140 E	63	46
4	16	9 38.67	+13 2.3	2.097	2.701	19.4	21.1	117 E	58	51	4	6	10 0.02	+19 12.3	1.737	2.491	18.2	20.2	129 E	64	45
4	26	9 40.33	+12 44.3	2.223	2.700	20.8	21.3	107 E	58*	51	4	16	9 58.45	+19 47.5	1.797	2.443	21.1	20.3	119 E	65	44
5	6	9 44.28	+12 15.8	2.354	2.699	21.7	21.5	99 E	55*	52	4	26	9 59.85	+20 2.2	1.867	2.395	23.4	20.5	109 E	65	44
430478 2001 SQ₁₁₅										26120 1991 VZ₂											
12	27	10 49.64	+11 43.2	1.094	1.763	30.1	20.6	116 W	57	52	4	6	10 0.02	+19 12.3	1.737	2.491	18.2	20.2	129 E	64	45
1	6	10 49.91	+11 21.6	1.046	1.808	26.1	20.5	126 W	56	53	4	16	9 58.45	+19 47.5	1.797	2.443	21.1	20.3	119 E	65	44
1	16	10 45.66	+11 21.9	1.008	1.854	21.2	20.3	137 W	56	53	4	26	9 59.85	+20 2.2	1.867	2.395	23.4	20.5	109 E	65	44
1	26	10 37.18	+11 41.4	0.985	1.900	15.3	20.1	149 W	57	52	5	6	10 4.08	+19 58.1	1.942	2.347	25.0	20.5	101 E	64*	44
1	31	10 31.62	+11 56.4	0.981	1.922	12.1	20.0	156 W	57	52	5	16	10 10.92	+19 36.9	2.019	2.299	26.1	20.6	93 E	60*	44
2	5	10 25.42	+12 13.7	0.983	1.945	8.8	19.9	162 W	57	52	5	26	10 20.08	+19 0.2	2.094	2.251	26.7	20.7	85 E	54*	45
2	10	10 18.79	+12 32.1	0.990	1.968	5.5	19.8	169 W	58	51	6	5	10 31.24	+18 9.4	2.166	2.203	26.8	20.7	79 E	47*	46*
2	15	10 11.99	+12 50.3	1.004	1.990	2.2	19.7	176 W	58	51	6	15	10 44.17	+17 5.4	2.233	2.156	26.7	20.7	72 E	41*	46*
2	20	10 5.29	+13 7.2	1.025	2.013	1.4	19.7	177 E	58	51	6	25	10 58.62	+15 49.4	2.294	2.109	26.3	20.7	67 E	35*	46*
2	25	9 58.94	+13 21.9	1.052	2.035	4.4	19.9	171 E	58	51	7	5	11 14.39	+14 22.1	2.348	2.063	25.6	20.7	61 E	31*	45*
3	2	9 53.15	+13 33.8	1.085	2.057	7.4	20.2	164 E	59	50	7	15	11 31.35	+12 44.2	2.395	2.018	24.8	20.7	56 E	27*	43*
3	7	9 48.06	+13 42.4	1.125	2.079	10.2	20.4	158 E	59	50	7	25	11 49.38	+10 56.9	2.435	1.975	23.8	20.6	52 E	23*	40*
3	17	9 40.44	+13 49.2	1.221	2.123	15.0	20.8	146 E	59	50	8	4	12 8.41	+9 0.8	2.469	1.932	22.7	20.6	47 E	21*	38*
3	27	9 36.52	+13 42.0	1.336	2.165	18.8	21.2	136 E	59	50	8	14	12 28.40	+6 57.2	2.496	1.892	21.6	20.5	43 E	19*	34*
4	6	9 36.10	+13 22.2	1.467																	

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	20/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
476559 2008 OC₁₀										94891 2001 YC₅ (continuation)									
12 27	10 50.67	+ 9 26.8	1.520	2.131	24.7	20.9	115 W	54	55	4 1	9 26.78	+45 4.1	2.540	3.088	17.2	20.1	114 E	90	19
1 6	10 49.39	+ 8 28.6	1.449	2.169	21.8	20.7	125 W	53	56	4 6	9 25.68	+44 20.8	2.605	3.097	17.6	20.2	110 E	89	20
1 16	10 44.48	+ 7 45.6	1.391	2.208	18.0	20.6	136 W	53	56	4 11	9 25.34	+43 35.1	2.672	3.106	18.0	20.2	106 E	89	20
1 26	10 36.18	+ 7 17.6	1.350	2.246	13.4	20.4	148 W	52	57	4 16	9 25.71	+42 47.5	2.741	3.114	18.3	20.3	102 E	88	21
2 5	10 25.20	+ 7 3.1	1.332	2.285	8.3	20.2	160 W	52	57	4 21	9 26.73	+41 58.4	2.812	3.122	18.6	20.4	99 E	87	22
2 15	10 12.71	+ 6 59.0	1.340	2.323	3.1	20.0	173 W	52	57	4 26	9 28.35	+41 8.3	2.883	3.130	18.7	20.4	95 E	85*	23
2 20	10 6.39	+ 6 59.5	1.355	2.342	1.8	19.9	176 E	52	57	5 1	9 30.51	+40 17.4	2.955	3.138	18.7	20.5	91 E	81*	24
2 25	10 0.27	+ 7 0.8	1.377	2.361	3.4	20.1	172 E	52	57	5 6	9 33.16	+39 25.9	3.027	3.146	18.7	20.6	87 E	77*	25
3 2	9 54.54	+ 7 2.5	1.406	2.379	5.8	20.3	166 E	52	57	5 11	9 36.26	+38 34.0	3.099	3.153	18.6	20.6	84 E	72*	25
3 7	9 49.32	+ 7 4.1	1.441	2.398	8.2	20.5	160 E	52	57	5 16	9 39.75	+37 41.7	3.171	3.160	18.4	20.7	80 E	68*	26
3 17	9 40.91	+ 7 5.0	1.532	2.435	12.4	20.8	148 E	52	57	5 21	9 43.59	+36 49.3	3.242	3.166	18.1	20.7	77 E	64*	27
3 27	9 35.57	+ 7 0.8	1.644	2.471	15.9	21.1	137 E	52	57	5 26	9 47.75	+35 56.7	3.312	3.173	17.8	20.7	73 E	60*	28*
4 6	9 33.37	+ 6 49.8	1.774	2.506	18.6	21.4	127 E	52	57	5 31	9 52.18	+35 4.1	3.381	3.179	17.4	20.8	70 E	55*	29*
4 16	9 34.06	+ 6 31.4	1.917	2.541	20.5	21.7	117 E	52	57	6 5	9 56.86	+34 11.5	3.448	3.185	17.0	20.8	67 E	52*	29*
122258 2000 OD₄₄																			
12 27	10 50.68	+ 0 16.2	2.350	2.858	18.7	20.7	111 W	45	64	6 10	10 12.10	+31 33.5	3.639	3.202	15.4	20.9	57 E	41*	29*
1 6	10 50.88	- 0 27.0	2.198	2.833	17.3	20.5	121 W	45	64	6 25	10 17.51	+30 40.9	3.699	3.207	14.8	20.9	54 E	38*	29*
1 16	10 48.61	- 0 57.3	2.058	2.807	15.2	20.3	131 W	44	65	6 30	10 23.03	+29 48.4	3.755	3.212	14.2	20.9	51 E	35*	28*
1 26	10 43.77	- 1 12.6	1.936	2.780	12.5	20.0	142 W	44	65	7 5	10 28.68	+28 56.0	3.810	3.216	13.5	20.9	48 E	32*	27*
2 5	10 36.50	- 1 11.3	1.835	2.753	9.2	19.7	153 W	44	65	7 10	10 34.42	+28 3.7	3.861	3.221	12.9	20.9	45 E	29*	26*
2 15	10 27.22	- 0 53.0	1.761	2.724	5.7	19.5	164 W	44	65	7 15	10 40.25	+27 11.5	3.909	3.225	12.1	20.9	42 E	27*	24*
2 25	10 16.74	- 0 19.8	1.714	2.694	3.8	19.3	170 E	45	64	7 20	10 46.15	+26 19.5	3.955	3.229	11.4	20.9	39 E	25*	22*
3 7	10 6.14	+ 0 24.3	1.697	2.663	6.1	19.4	163 E	45	64	7 25	10 52.11	+25 27.6	3.997	3.232	10.7	20.9	36 E	23*	21*
3 12	10 1.14	+ 0 48.7	1.700	2.648	8.0	19.4	158 E	46	63	7 30	10 58.12	+24 36.0	4.035	3.236	9.9	20.9	33 E	21*	19*
3 17	9 56.52	+ 1 13.6	1.709	2.632	10.1	19.5	153 E	46	63	8 4	11 4.18	+23 44.5	4.071	3.239	9.2	20.9	31 E	19*	16*
3 22	9 52.41	+ 1 38.2	1.724	2.616	12.0	19.6	147 E	47	62	8 9	11 10.28	+22 53.4	4.102	3.242	8.4	20.9	28 E	18*	14*
3 27	9 48.89	+ 2 1.7	1.745	2.599	13.9	19.7	141 E	47	62	8 14	11 16.41	+22 2.5	4.130	3.245	7.7	20.9	25 E	16*	11*
4 6	9 43.86	+ 2 43.5	1.802	2.566	17.3	19.8	130 E	48	61	8 19	11 22.56	+21 12.0	4.155	3.247	7.0	20.9	23 E	15*	9*
4 16	9 41.71	+ 3 15.2	1.875	2.532	20.0	20.0	120 E	48	61	8 24	11 28.73	+20 21.9	4.175	3.249	6.3	20.8	21 E	14*	6*
4 26	9 42.45	+ 3 34.5	1.958	2.497	22.2	20.1	111 E	49*	60	8 29	11 34.91	+19 32.2	4.191	3.251	5.7	20.8	19 E	12*	4*
5 6	9 45.87	+ 3 40.6	2.047	2.461	23.6	20.2	102 E	47*	60	9 3	11 41.09	+18 43.0	4.204	3.253	5.2	20.8	17 E	11*	1*
5 16	9 51.71	+ 3 33.2	2.139	2.425	24.6	20.3	94 E	43*	60	9 8	11 47.29	+17 54.3	4.212	3.254	4.8	20.8	16 E	10*	—
5 26	9 59.67	+ 3 12.4	2.230	2.387	25.0	20.4	86 E	38*	61	9 13	11 53.48	+17 6.2	4.217	3.256	4.6	20.8	15 E	9*	—
6 5	10 9.45	+ 2 39.0	2.317	2.349	25.1	20.4	79 E	32*	61*	9 18	11 59.66	+16 18.8	4.217	3.257	4.6	20.8	15 E	7*	—
6 15	10 20.82	+ 1 53.5	2.400	2.311	24.8	20.5	73 E	26*	59*	9 23	12 5.82	+15 32.1	4.213	3.258	4.7	20.8	16 E	6*	—
6 25	10 33.57	+ 0 56.6	2.477	2.272	24.2	20.5	67 E	20*	57*	9 28	12 11.97	+14 46.2	4.205	3.258	5.1	20.8	17 W	7*	—
7 5	10 47.52	- 0 10.9	2.546	2.233	23.4	20.5	61 E	15*	53*	10 3	12 18.10	+14 1.1	4.193	3.258	5.6	20.8	18 W	10*	—
7 15	11 2.55	- 1 28.3	2.608	2.193	22.4	20.5	55 E	11*	49*	10 8	12 24.20	+13 16.9	4.176	3.259	6.1	20.8	20 W	13*	—
7 25	11 18.58	- 2 54.7	2.660	2.153	21.2	20.4	50 E	8*	44*	10 13	12 30.27	+12 33.8	4.156	3.258	6.8	20.9	23 W	16*	—
8 4	11 35.53	- 4 29.1	2.704	2.112	19.9	20.4	45 E	5*	39*	10 18	12 36.29	+11 51.7	4.131	3.258	7.5	20.9	25 W	19*	—
8 14	11 53.39	- 6 10.7	2.739	2.072	18.4	20.3	40 E	3*	34*	10 23	12 42.26	+11 10.7	4.102	3.257	8.3	20.9	28 W	22*	—
8 24	12 12.14	- 7 58.2	2.766	2.031	16.9	20.2	36 E	1*	29*	10 28	12 48.18	+10 31.0	4.069	3.256	9.0	20.9	31 W	25*	1*
9 3	12 31.81	- 9 50.4	2.783	1.991	15.2	20.2	31 E	—	25*	11 2	12 54.04	+ 9 52.6	4.032	3.255	9.8	20.9	34 W	28*	4*
9 13	12 52.43	- 11 45.9	2.793	1.951	13.6	20.1	27 E	—	21*	11 7	12 59.83	+ 9 15.6	3.991	3.254	10.6	20.9	37 W	31*	6*
9 23	13 14.06	- 13 42.9	2.795	1.912	11.8	20.0	23 E	—	17*	11 12	13 5.53	+ 8 40.0	3.946	3.252	11.3	20.9	40 W	34*	9*
10 3	13 36.77	- 15 39.6	2.790	1.873	10.1	19.8	19 E	—	13*	11 17	13 11.13	+ 8 6.1	3.898	3.251	12.1	20.9	43 W	37*	12*
10 13	14 0.61	- 17 33.8	2.779	1.836	8.3	19.7	15 E	—	9*	11 22	13 16.63	+ 7 33.8	3.846	3.249	12.8	20.9	47 W	39*	15*
10 23	14 25.66	- 19 23.0	2.762	1.799	6.5	19.6	12 E	—	5*	11 27	13 22.01	+ 7 3.2	3.791	3.246	13.5	20.9	50 W	42*	18*
11 2	14 51.95	- 21 4.4	2.740	1.764	4.8	19.4	9 E	—	2*	12 2	13 27.26	+ 6 34.4	3.732	3.244	14.1	20.9	54 W	44*	21*
11 12	15 19.53	- 22 35.0	2.714	1.731	3.2	19.3	6 E	—	—	12 7	13 32.36	+ 6 7.6	3.670	3.241	14.8	20.9	57 W	46*	25*
11 22	15 48.35	- 23 51.5	2.684	1.700	2.2	19.1	4 W	—	—	12 12	13 37.30	+ 5 42.9	3.605	3.238	15.4	20.9	61 W	47*	28*
12 2	16 18.35	- 24 50.7	2.653	1.671	2.6	19.1	4 W	—	—	12 17	13 42.04	+ 5 20.2	3.538	3.235	15.9	20.9	64 W	48*	32*
12 12	16 49.38	- 25 29.5	2.619	1.645	3.9	19.1	7 W	—	—	12 22	13 46.59	+ 4 59.7	3.468	3.231	16.4	20.8	68 W	49*	35*
12 22	17 21.19	- 25 45.0	2.585	1.622	5.5	19.2	9 W	—	—	12 27	13 50.90	+ 4 41.5	3.397	3.228	16.8	20.8	72 W	49*	39*
1 1	17 53.53	- 25 35.5	2.551	1.601	7.3	19.2	12 W	—	—	1 1	13 54.97	+ 4 25.7	3.323	3.224	17.2	20.8	76 W	49*	43*
1 11	18 26.07	- 24 59.5	2.517	1.585	9.0	19.2	15 W	1*	8*	1 6	13 58.76	+ 4 12.3	3.248	3.219	17.5	20.7	80 W	49	47*
1 21	18 58.44	- 23 57.2	2.484	1.572	10.7	19.2	17 W	2*	11*	1 11	14 2.38	+ 4 1.4	3.171	3.215	17.7	20.7	84 W	49	50*

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	20/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
16142 Leung										301965 2000 EN₁₇₂ (continuation)									
12 27	10 52.00	+10 15.5	2.359	2.913	17.8	19.3	115W	55	54	4 26	11 7.02	+46 32.4	1.150	1.734	33.7	19.2	107E	88	17
1 6	10 51.97	+10 46.9	2.234	2.915	16.0	19.1	125W	56	53	5 5	11 10.77	+43 47.2	1.185	1.747	33.8	19.3	105E	89	20
1 16	10 49.44	+11 34.9	2.123	2.915	13.5	18.9	136W	57	52	5 6	11 15.06	+41 1.3	1.223	1.761	33.8	19.4	104E	86	23
1 26	10 44.42	+12 38.4	2.033	2.914	10.3	18.7	148W	58	51	5 11	11 19.82	+38 15.7	1.264	1.775	33.8	19.5	102E	83	26
2 5	10 37.16	+13 53.4	1.967	2.912	6.7	18.5	160W	59	50	5 16	11 24.98	+35 31.4	1.308	1.790	33.8	19.6	100E	80*	28
2 10	10 32.84	+14 33.5	1.944	2.911	4.8	18.4	166W	60	49	5 21	11 30.47	+32 49.3	1.355	1.806	33.7	19.6	98E	77*	31
2 15	10 28.19	+15 14.2	1.929	2.909	2.9	18.2	171W	60	49	5 26	11 36.24	+30 10.1	1.404	1.822	33.5	19.7	96E	73*	34
2 20	10 23.32	+15 54.4	1.922	2.908	1.9	18.2	175W	61	48	5 31	11 42.25	+27 34.3	1.456	1.838	33.4	19.8	94E	68*	36
2 25	10 18.37	+16 33.2	1.922	2.905	2.8	18.2	172E	62	47	6 5	11 48.46	+25 2.2	1.511	1.856	33.1	19.9	92E	64*	39
3 2	10 13.47	+17 9.8	1.930	2.903	4.6	18.3	167E	62	47	6 15	12 1.41	+20 10.1	1.626	1.891	32.5	20.1	88E	55*	44
3 7	10 8.73	+17 43.4	1.946	2.900	6.5	18.5	161E	63	46	6 25	12 14.93	+15 35.0	1.750	1.929	31.6	20.3	84E	48*	48
3 12	10 4.28	+18 13.4	1.968	2.898	8.4	18.6	155E	63	46	7 5	12 28.90	+11 17.0	1.880	1.967	30.5	20.5	79E	41*	53*
3 17	10 0.24	+18 39.4	1.997	2.894	10.3	18.7	149E	64	45	7 15	12 43.26	+7 15.6	2.016	2.007	29.3	20.6	75E	35*	55*
3 27	9 53.71	+19 18.4	2.073	2.887	13.5	18.9	137E	64	45	7 25	12 57.98	+3 29.9	2.154	2.048	27.8	20.8	70E	29*	56*
4 6	9 49.59	+19 40.1	2.169	2.879	16.2	19.1	127E	65	44	8 4	13 13.03	0 1.0	2.295	2.089	26.2	20.9	65E	25*	55*
4 16	9 48.03	+19 45.6	2.279	2.870	18.2	19.2	116E	65	44	8 14	13 28.40	-3 18.4	2.436	2.131	24.5	21.0	61E	21*	53*
4 26	9 48.99	+19 36.6	2.399	2.860	19.7	19.4	107E	65	44	8 24	13 44.08	-6 22.9	2.575	2.173	22.6	21.1	56E	18*	49*
5 6	9 52.22	+19 15.1	2.524	2.849	20.5	19.5	98E	63*	45	9 3	14 0.08	-9 15.4	2.711	2.216	20.7	21.2	51E	15*	44*
5 16	9 57.48	+18 42.7	2.651	2.836	20.9	19.6	90E	57*	45	9 13	14 16.40	-11 56.7	2.843	2.259	18.6	21.3	46E	12*	40*
5 26	10 4.48	+18 0.7	2.777	2.823	20.8	19.7	82E	51*	46	9 23	14 33.04	-14 27.2	2.968	2.301	16.5	21.4	41E	9*	35*
6 5	10 12.93	+17 10.3	2.898	2.809	20.4	19.8	75E	44*	47*	10 3	14 49.99	-16 47.4	3.087	2.344	14.3	21.4	35E	7*	29*
6 15	10 22.62	+16 12.5	3.014	2.793	19.7	19.8	68E	37*	46*	10 13	15 7.25	-18 57.6	3.197	2.386	12.1	21.4	30E	5*	24*
6 25	10 33.35	+15 7.9	3.122	2.777	18.7	19.8	61E	30*	44*	10 23	15 24.80	-20 58.2	3.296	2.428	9.9	21.5	25E	2*	19*
7 5	10 44.92	+13 57.4	3.220	2.760	17.5	19.9	55E	25*	41*	11 2	15 42.61	-22 49.3	3.384	2.470	7.7	21.5	19E	—	13*
7 15	10 57.24	+12 41.5	3.308	2.741	16.1	19.9	48E	20*	38*	11 12	16 0.65	-24 31.2	3.460	2.512	5.5	21.4	14E	—	8*
7 25	11 10.17	+11 20.8	3.384	2.722	14.6	19.8	42E	17*	33*	11 22	16 18.87	-26 4.1	3.523	2.552	3.5	21.4	9E	—	3*
8 4	11 23.63	+9 55.9	3.448	2.702	12.9	19.8	37E	13*	28*	12 2	16 37.23	-27 28.4	3.572	2.593	2.2	21.4	6E	—	—
8 14	11 37.57	+8 27.5	3.500	2.680	11.2	19.8	31E	11*	23*	12 12	16 55.64	-28 44.5	3.606	2.633	2.7	21.5	7W	—	1*
8 24	11 51.94	+6 56.1	3.537	2.658	9.3	19.7	25E	8*	18*	118624 2000 HR₂₄									
9 3	12 6.70	+5 22.5	3.562	2.634	7.4	19.6	20E	6*	13*	12 27	10 55.97	-10 9.8	4.053	4.418	12.4	20.0	105W	35	74
9 13	12 21.83	+3 47.1	3.572	2.610	5.5	19.5	14E	4*	7*	1 6	10 56.44	-10 41.7	3.901	4.406	11.7	19.9	115W	34	75
9 23	12 37.32	+2 10.9	3.569	2.585	3.7	19.4	10E	2*	2*	1 16	10 55.49	-11 3.2	3.761	4.394	10.6	19.8	125W	34	75
10 3	12 53.15	+0 34.5	3.551	2.559	2.4	19.3	6E	—	—	1 26	10 53.17	-11 12.6	3.638	4.382	9.3	19.6	134W	34	75
10 13	13 9.34	-1 1.4	3.520	2.532	2.6	19.2	7W	—	—	2 5	10 49.62	-11 8.8	3.534	4.371	7.6	19.5	144W	34	75
10 23	13 25.87	-2 35.8	3.475	2.504	4.2	19.3	11W	4*	—	2 15	10 45.10	-10 51.5	3.455	4.359	5.9	19.4	153W	34	75
11 2	13 42.75	-4 8.0	3.418	2.475	6.1	19.3	15W	9*	—	2 25	10 39.97	-10 21.2	3.403	4.348	4.4	19.2	160W	35	74
11 12	13 59.98	-5 37.1	3.347	2.445	8.2	19.3	21W	14*	3*	3 7	10 34.69	-9 39.8	3.380	4.337	3.9	19.2	163E	35	74
11 22	14 17.53	-7 2.0	3.265	2.415	10.3	19.3	26W	18*	8*	3 17	10 29.70	-8 50.1	3.386	4.326	4.9	19.2	158E	36	73
12 2	14 35.42	-8 21.9	3.171	2.383	12.4	19.3	31W	22*	13*	3 27	10 25.45	-7 55.8	3.420	4.315	6.6	19.3	150E	37	72
12 12	14 53.61	-9 35.8	3.068	2.351	14.4	19.3	37W	25*	19*	4 6	10 22.29	-7 0.6	3.480	4.304	8.4	19.5	141E	38	71
12 22	15 12.08	-10 42.9	2.955	2.318	16.5	19.3	42W	27*	25*	4 16	10 20.45	-6 8.0	3.563	4.294	10.1	19.6	131E	39	70
1 1	15 30.79	-11 42.1	2.833	2.285	18.5	19.2	47W	29*	31*	4 26	10 20.06	-5 20.9	3.665	4.283	11.5	19.7	122E	40	69
1 11	15 49.67	-12 32.8	2.705	2.251	20.4	19.1	53W	29*	38*	5 6	10 21.14	-4 41.3	3.781	4.273	12.6	19.8	113E	40*	69
1 21	16 8.67	-13 14.2	2.571	2.216	22.2	19.0	58W	30*	44*	5 16	10 23.64	-4 10.4	3.907	4.263	13.3	19.9	104E	39*	68
301965 2000 EN₁₇₂										5 26	10 27.48	-3 49.1	4.040	4.254	13.7	20.0	95E	35*	68
12 27	10 54.42	+56 20.2	0.962	1.698	29.6	18.7	121W	79	8	6 5	10 32.52	-3 37.2	4.175	4.244	13.8	20.0	87E	30*	68*
1 1	11 7.06	+58 5.7	0.943	1.688	29.5	18.6	122W	77	6	6 15	10 38.63	-3 34.7	4.310	4.235	13.6	20.1	79E	24*	66*
1 6	11 18.99	+59 47.8	0.928	1.679	29.4	18.5	123W	75	4	6 25	10 45.67	-3 41.1	4.441	4.226	13.2	20.1	71E	10*	62*
1 11	11 29.92	+61 25.3	0.916	1.672	29.5	18.5	123W	74	3	7 5	10 53.53	-3 55.8	4.567	4.217	12.5	20.2	64E	14*	57*
1 16	11 39.54	+62 56.9	0.907	1.665	29.6	18.5	123W	72	1	7 15	11 1.08	-4 18.1	4.684	4.208	11.6	20.2	56E	9*	50*
1 21	11 47.56	+64 21.1	0.901	1.659	29.7	18.5	123W	71	—	7 25	11 11.23	-4 47.3	4.790	4.200	10.6	20.2	49E	5*	43*
1 26	11 53.67	+65 36.7	0.897	1.654	30.0	18.5	123W	69	—	8 4	11 20.87	-5 22.6	4.885	4.192	9.4	20.2	42E	2*	36*
1 31	11 57.58	+66 42.3	0.896	1.650	30.2	18.5	123W	68	—	8 14	11 30.93	-6 3.3	4.967	4.184	8.1	20.2	35E	—	29*
2 5	11 59.07	+67 36.6	0.896	1.647	30.5	18.5	122W	67	—	8 24	11 41.34	-6 48.6	5.034	4.176	6.7	20.1	29E	—	22*
2 10	11 58.04	+68 17.9	0.899	1.645	30.8	18.5	121W	67	—	9 3	11 52.02	-7 37.8	5.086	4.169	5.2	20.1	22E	—	15*
2 15	11 54.57	+68 44.3	0.903	1.644	31.1	18.5	121W	66	—	9 13	12 2.92	-8 30.1	5.121	4.161	3.8	20.0	16E	—	8*
2 17	11 52.57	+68 50.2	0.905	1.644	31.2	18.5	121W	66	—	9 23	12 13.97	-9 24.8	5.139	4.154	2.4	19.9	10E	—	1*
2 19																			

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

2021	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
417581 2006 VA₃										474412 2002 WT									
<i>(continuation)</i>																			
1 24	10 7.58	+11 34.3	0.532	1.481	16.9	17.7	154 W	57	52	12 27	10 56.70	+ 1 35.3	1.612	2.163	25.2	20.5	111 W	47	62
1 26	9 58.91	+10 14.9	0.502	1.461	14.9	17.5	158 W	55	54	1 6	10 54.71	- 0 22.6	1.532	2.198	22.7	20.3	120 W	45	64
1 28	9 49.13	+ 8 45.8	0.474	1.441	12.8	17.2	161 W	54	55	1 16	10 49.14	- 2 7.1	1.463	2.233	19.5	20.2	131 W	43	66
1 30	9 38.12	+ 7 5.7	0.447	1.421	10.9	17.0	164 W	52	57	1 26	10 40.12	- 3 34.3	1.412	2.268	15.6	20.0	142 W	41	68
2 1	9 25.81	+ 5 13.8	0.423	1.400	9.6	16.8	166 W	50	59	2 5	10 28.25	- 4 40.5	1.383	2.302	11.4	19.8	152 W	40	69
2 3	9 12.11	+ 3 9.4	0.401	1.379	9.6	16.6	166 W	48	61	2 15	10 14.62	- 5 22.9	1.380	2.336	7.9	19.7	161 W	40	69
2 5	8 57.01	+ 0 52.6	0.382	1.358	11.3	16.6	164 E	46	63	2 25	10 0.79	- 5 42.1	1.405	2.370	7.0	19.7	163 E	39	70
2 7	8 40.50	+ 1 35.6	0.366	1.337	14.5	16.6	160 E	43	66	3 2	9 54.29	- 5 44.3	1.428	2.386	7.9	19.8	161 E	39	70
2 9	8 22.70	+ 4 13.2	0.354	1.315	18.7	16.6	155 E	41	68	3 7	9 48.30	- 5 42.5	1.458	2.403	9.3	19.9	157 E	39	70
2 11	8 3.75	+ 6 56.8	0.345	1.293	23.5	16.7	148 E	38	71	3 12	9 42.94	- 5 37.6	1.495	2.419	11.0	20.1	152 E	39	70
2 13	7 43.93	+ 9 42.1	0.339	1.271	28.7	16.7	142 E	35	74	3 17	9 38.32	- 5 30.4	1.538	2.435	12.8	20.2	147 E	39	70
2 15	7 23.56	+ 12 24.2	0.337	1.249	34.0	16.8	135 E	33	76	3 22	9 34.51	- 5 21.9	1.586	2.451	14.4	20.4	142 E	40	69
2 17	7 3.02	+ 14 58.3	0.339	1.227	39.3	17.0	128 E	30	79	3 27	9 31.54	- 5 13.0	1.640	2.466	16.0	20.5	137 E	40	69
2 19	6 42.67	+ 17 20.6	0.344	1.204	44.5	17.1	121 E	28	81	4 1	9 29.40	- 5 4.3	1.697	2.482	17.3	20.6	132 E	40	69
2 21	6 22.88	+ 19 28.4	0.351	1.181	49.4	17.2	115 E	26	83	4 6	9 28.07	- 4 56.4	1.759	2.497	18.6	20.8	127 E	40	69
2 23	6 3.91	+ 21 20.6	0.362	1.158	54.0	17.4	109 E	24	85	4 11	9 27.52	- 4 49.8	1.824	2.512	19.6	20.9	123 E	40	69
2 25	5 45.96	+ 22 57.2	0.375	1.134	58.2	17.5	103 E	22	87	4 16	9 27.72	- 4 44.8	1.893	2.527	20.5	21.0	118 E	40	69
2 27	5 29.15	+ 24 19.3	0.389	1.111	62.1	17.7	98 E	21	88	4 21	9 28.60	- 4 41.9	1.963	2.542	21.2	21.1	114 E	40	69
3 1	5 13.51	+ 25 28.2	0.405	1.087	65.6	17.8	93 E	20	86*	4 26	9 30.13	- 4 41.1	2.036	2.556	21.8	21.2	110 E	40*	69
3 3	4 59.03	+ 26 25.8	0.423	1.063	68.7	18.0	88 E	19*	82*	5 1	9 32.22	- 4 42.7	2.110	2.571	22.2	21.3	106 E	39*	69
3 5	4 45.65	+ 27 13.7	0.441	1.039	71.6	18.1	83 E	18*	77*	5 6	9 34.85	- 4 46.7	2.185	2.585	22.5	21.4	102 E	38*	69
3 7	4 33.27	+ 27 53.3	0.460	1.014	74.1	18.2	79 E	16*	73*										
3 9	4 21.80	+ 28 26.0	0.479	0.990	76.4	18.3	76 E	15*	70*										
3 11	4 11.13	+ 28 52.9	0.499	0.965	78.4	18.5	72 E	13*	66*										
3 13	4 1.15	+ 29 14.9	0.519	0.940	80.2	18.5	69 E	11*	63*										
3 15	3 51.75	+ 29 32.4	0.539	0.915	81.9	18.6	66 E	10*	59*										
3 17	3 42.84	+ 29 46.1	0.559	0.890	83.4	18.7	63 E	8*	56*										
3 19	3 34.33	+ 29 56.1	0.579	0.865	84.7	18.8	60 E	6*	53*										
3 21	3 26.13	+ 30 2.6	0.599	0.840	85.9	18.8	57 E	3*	50*										
3 23	3 18.17	+ 30 5.5	0.618	0.815	87.0	18.9	55 E	1*	47*										
3 25	3 10.38	+ 30 4.7	0.637	0.790	88.0	18.9	52 E	—	44*										
3 27	3 2.72	+ 29 59.8	0.656	0.765	88.8	18.9	50 E	—	41*										
4 1	2 43.86	+ 29 27.1	0.703	0.705	90.5	19.0	45 E	—	34*										
4 6	2 25.17	+ 28 17.8	0.748	0.648	91.3	19.0	40 E	—	27*										
4 11	2 6.77	+ 26 20.9	0.792	0.597	91.3	18.9	37 E	—	19*										
4 16	1 49.31	+ 23 25.5	0.836	0.555	90.0	18.8	34 E	—	11*										
4 21	1 33.89	+ 19 24.9	0.880	0.527	87.3	18.7	32 W	—	12*										
4 26	1 21.71	+ 14 21.7	0.926	0.516	83.3	18.6	31 W	—	18*										
4 28	1 17.95	+ 12 5.8	0.944	0.516	81.4	18.6	30 W	—	19*										
4 30	1 14.88	+ 9 43.4	0.963	0.520	79.4	18.6	31 W	—	21*										
5 2	1 12.49	+ 7 15.9	0.982	0.527	77.4	18.6	31 W	—	23*										
5 4	1 10.77	+ 4 44.9	1.000	0.536	75.3	18.6	31 W	—	24*										
5 6	1 9.70	+ 2 11.7	1.019	0.548	73.3	18.6	31 W	—	25*										
5 8	1 9.21	+ 0 22.5	1.037	0.562	71.3	18.6	32 W	—	26*										
5 10	1 9.28	+ 2 56.4	1.056	0.578	69.4	18.7	32 W	3*	26*										
5 12	1 9.86	+ 5 29.3	1.074	0.596	67.6	18.7	33 W	6*	27*										
5 14	1 10.88	+ 8 0.3	1.092	0.615	65.8	18.8	34 W	8*	27*										
5 16	1 12.32	+ 10 28.9	1.110	0.636	64.2	18.8	35 W	11*	27*										
5 21	1 17.43	+ 16 27.3	1.155	0.692	60.5	19.0	37 W	16*	27*										
5 26	1 24.30	+ 22 4.3	1.198	0.752	57.2	19.1	39 W	21*	25*										
5 31	1 32.55	+ 27 18.7	1.241	0.814	54.4	19.3	41 W	26*	24*										
6 5	1 41.93	+ 32 10.9	1.283	0.876	52.0	19.5	43 W	30*	21*										
6 10	1 52.27	+ 36 42.0	1.324	0.939	49.8	19.6	45 W	34*	19*										
6 15	2 3.45	+ 40 53.3	1.364	1.001	47.9	19.8	47 W	38*	17*										
6 20	2 15.42	+ 44 46.1	1.403	1.062	46.2	19.9	49 W	41*	14*										
6 25	2 28.16	+ 48 21.8	1.441	1.122	44.6	20.1	51 W	44*	11*										
6 30	2 41.68	+ 51 41.7	1.477	1.180	43.2	20.2	53 W	46*	9*										
7 5	2 56.00	+ 54 46.9	1.512	1.237	41.9	20.3	54 W	48*	6*										
7 10	3 11.15	+ 57 38.6	1.545	1.292	40.8	20.4	56 W	50*	4*										
7 15	3 27.18	+ 60 17.6	1.577	1.346	39.7	20.5	58 W	52*	2*										
7 20	3 44.15	+ 62 44.6	1.606	1.399	38.7	20.6	60 W	53*	—										
7 25	4 2.13	+ 65 0.4	1.634	1.450	37.9	20.7	61 W	53*	—										
7 30	4 21.21	+ 67 5.7	1.660	1.500	37.0	20.8	63 W	54*	—										
8 4	4 41.47	+ 69 1.0	1.684	1.548	36.3	20.9	65 W	54*	—										
8 9	5 2.98	+ 70 46.8	1.706	1.595	35.6	20.9	66 W	54*	—										
8 14	5 25.81	+ 72 23.7	1.725	1.641	34.9	21.0	68 W	54*	—										
8 19	5 50.04	+ 73 52.0	1.743	1.685	34.3	21.1	70 W	53*	—										
8 24	6 15.75	+ 75 12.2	1.759	1.728	33.7	21.1	72 W	53*	—										
8 29	6 43.00	+ 76 24.8	1.772	1.770	33.1	21.2	73 W	52*	—										
9 3	7 11.83	+ 77 30.3	1.784	1.811	32.6	21.2	75 W	52*	—										
9 8	7 42.27	+ 78 29.2	1.794	1.850	32.1	21.3	77 W	51*	—										
9 13	8 14.33	+ 79 22.0	1.802	1.888	31.5	21.3	79 W	50*	—										
9 18	8 48.05	+ 80 9.3	1.809	1.926	31.0	21.3	81 W	50*	—										
9 23	9 23.51	+ 80 51.4	1.815	1.962	30.5	21.4	83 W	49*	—										
9 28	10 0.86	+ 81 29.0	1.819	1.997	30.0	21.4	85 W	48*	—										
10 3	10 40.28	+ 82 2.3	1.822	2.031	29.5	21.4	87 W	48*	—										
10 8	11 22.00	+ 82 31.5	1.825	2.064	29.0	21.4	89 W	47*	—										
10 13	12 6.31	+ 82 56.8	1.827	2.096	28.4	21.5	91 W	46*	—										
10 18	12 53.44	+ 83 16.8	1.829	2.126	27.9	21.5	93 W	46*	—										
12 27	10 56.82	+ 0 42.2	2.291	2.786	19.4	21.4	110 W	46	63	1 6	10 57.27	+ 0 20.6	2.163	2.788	17.8	21.2	120 W	45	64
1 16	10 55.22	+ 0 15.2	2.047	2.789	15.6	21.0	131 W	45	64	1 26	10 50.63	+ 0 27.5	1.948	2.788	12.7	20.8	142 W	45	64
2 5	10 43.72	+ 0 57.7	1.871	2.787	9.1	20.6	153 W	46	63	2 15	10 34.96	+ 1 44.4							

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
538085 2016 BO₁										267494 2002 JB₉									
<i>(continuation)</i>										<i>(continuation)</i>									
3 7	9 25.83	+7 14.3	1.516	2.447	10.2	21.1	154 E	52	57	1 10	10 32.49	+72 5.1	1.798	2.480	19.3	20.1	123 W	63	—
3 12	9 19.98	+9 16.9	1.573	2.470	12.4	21.3	148 E	54	55	1 12	10 26.52	+72 41.3	1.815	2.498	19.1	20.2	124 W	62	—
3 17	9 15.04	+11 8.9	1.637	2.492	14.5	21.5	141 E	56	53	1 14	10 19.94	+73 15.0	1.832	2.516	19.0	20.2	124 W	62	—
279577 2011 DY₂₂										494545 2017 AL₂₀									
12 27	10 58.30	+14 29.3	2.172	2.736	19.0	21.1	115 W	59	50	12 27	10 58.59	+76 31.1	0.842	1.563	33.9	19.5	118 W	58	—
1 6	10 57.87	+14 47.9	2.068	2.755	16.9	21.0	125 W	60	49	12 29	11 2.71	+76 46.9	0.839	1.561	33.9	19.5	118 W	58	—
1 16	10 54.66	+15 20.7	1.978	2.773	14.2	20.8	136 W	60	49	12 31	11 6.08	+77 1.7	0.836	1.559	33.9	19.5	118 W	58	—
1 26	10 48.71	+16 4.9	1.908	2.790	10.9	20.6	148 W	61	48	1 2	11 8.63	+77 15.4	0.833	1.557	33.9	19.5	118 W	58	—
2 5	10 40.38	+16 55.8	1.862	2.806	7.1	20.4	159 W	62	47	1 4	11 10.33	+77 28.0	0.830	1.556	33.9	19.5	118 W	58	—
2 10	10 35.51	+17 21.9	1.849	2.813	5.2	20.3	165 W	62	47	1 6	11 11.12	+77 39.5	0.827	1.554	33.9	19.5	118 W	57	—
2 15	10 30.32	+17 47.2	1.843	2.821	3.5	20.2	170 W	63	46	1 8	11 10.96	+77 49.8	0.825	1.553	33.9	19.4	118 W	57	—
2 20	10 24.96	+18 10.9	1.845	2.828	2.7	20.2	172 W	63	46	1 10	11 9.82	+77 58.6	0.822	1.552	33.9	19.4	118 W	57	—
2 25	10 19.56	+18 32.2	1.855	2.835	3.4	20.2	170 E	64	45	1 12	11 7.70	+78 5.7	0.820	1.552	33.9	19.4	118 W	57	—
3 2	10 14.27	+18 50.5	1.872	2.842	5.0	20.4	165 E	64	45	1 14	11 4.58	+78 11.1	0.818	1.551	33.9	19.4	119 W	57	—
3 7	10 9.22	+19 5.3	1.896	2.848	6.9	20.5	160 E	64	45	1 16	11 0.50	+78 14.3	0.817	1.551	33.8	19.4	119 W	57	—
3 17	10 0.32	+19 23.5	1.965	2.860	10.5	20.7	148 E	64	45	1 18	10 55.52	+78 15.2	0.815	1.551	33.8	19.4	119 W	57	—
3 27	9 53.63	+19 25.9	2.058	2.872	13.6	20.9	137 E	64	45	1 20	10 49.72	+78 13.3	0.814	1.551	33.7	19.4	119 W	57	—
4 6	9 49.49	+19 13.8	2.170	2.882	16.2	21.2	127 E	64	45	1 22	10 43.19	+78 8.6	0.812	1.551	33.7	19.4	119 W	57	—
4 16	9 47.98	+18 49.1	2.297	2.891	18.0	21.3	117 E	64	45	1 24	10 36.07	+78 0.6	0.812	1.551	33.6	19.4	119 W	57	—
51773 2001 MV										267494 2002 JB₉									
12 27	10 58.40	-20 43.0	2.608	2.941	19.2	19.6	100 W	24	85	2 20	9 47.84	+74 35.1	2.284	2.824	18.8	20.9	113 E	60	—
1 6	10 58.45	-22 17.3	2.489	2.948	18.5	19.5	108 W	23	86	2 25	9 36.93	+73 47.4	2.360	2.863	18.9	21.0	111 E	61	—
1 16	10 56.08	-23 37.7	2.379	2.953	17.3	19.3	117 W	21	88	3 2	9 29.27	+72 54.8	2.439	2.901	19.0	21.1	108 E	62	—
1 26	10 51.26	-24 39.0	2.280	2.958	15.8	19.2	125 W	20	89	3 7	9 24.40	+71 59.2	2.521	2.939	19.0	21.2	105 E	63	—
2 5	10 44.17	-25 16.1	2.197	2.961	14.0	19.1	133 W	20	89	3 12	9 21.90	+71 2.1	2.604	2.977	19.0	21.3	102 E	64	—
2 10	10 39.90	-25 24.1	2.163	2.963	13.1	19.0	137 W	20	89	3 17	9 21.37	+70 4.6	2.689	3.013	19.0	21.4	99 E	65	—
2 15	10 35.26	-25 24.5	2.134	2.964	12.2	18.9	141 W	20	89	494545 2017 AL₂₀									
2 20	10 30.36	-25 17.0	2.111	2.965	11.5	18.9	143 W	20	89	12 27	10 58.59	+76 31.1	0.842	1.563	33.9	19.5	118 W	58	—
2 25	10 25.32	-25 1.7	2.095	2.966	10.8	18.8	146 E	20	89	12 29	11 2.71	+76 46.9	0.839	1.561	33.9	19.5	118 W	58	—
3 2	10 20.27	-24 38.8	2.084	2.966	10.4	18.8	147 E	20	89	12 31	11 6.08	+77 1.7	0.836	1.559	33.9	19.5	118 W	58	—
3 7	10 15.33	-24 8.9	2.080	2.966	10.3	18.8	148 E	21	88	1 2	11 8.63	+77 15.4	0.833	1.557	33.9	19.5	118 W	58	—
3 12	10 10.63	-23 32.6	2.083	2.966	10.5	18.8	147 E	21	88	1 4	11 10.33	+77 28.0	0.830	1.556	33.9	19.5	118 W	58	—
3 17	10 6.29	-22 50.9	2.091	2.966	10.9	18.8	146 E	22	87	1 6	11 11.12	+77 39.5	0.827	1.554	33.9	19.5	118 W	57	—
3 22	10 2.40	-22 4.8	2.106	2.965	11.6	18.9	143 E	23	86	1 8	11 10.96	+77 49.8	0.825	1.553	33.9	19.4	118 W	57	—
3 27	9 59.04	-21 15.7	2.128	2.964	12.4	18.9	140 E	24	85	1 10	11 9.82	+77 58.6	0.822	1.552	33.9	19.4	118 W	57	—
4 1	9 56.27	-20 24.5	2.154	2.963	13.3	19.0	137 E	25	84	1 12	11 7.70	+78 5.7	0.820	1.552	33.9	19.4	118 W	57	—
4 6	9 54.13	-19 32.5	2.186	2.962	14.3	19.1	133 E	25	84	1 14	11 4.58	+78 11.1	0.818	1.551	33.9	19.4	119 W	57	—
4 11	9 52.62	-18 40.6	2.223	2.960	15.2	19.1	129 E	26	83	1 16	11 0.50	+78 14.3	0.817	1.551	33.8	19.4	119 W	57	—
4 16	9 51.76	-17 49.8	2.265	2.959	16.1	19.2	125 E	27	82	1 18	10 55.52	+78 15.2	0.815	1.551	33.8	19.4	119 W	57	—
4 21	9 51.55	-17 0.8	2.310	2.956	16.9	19.3	121 E	28	81	1 20	10 49.72	+78 13.3	0.814	1.551	33.7	19.4	119 W	57	—
4 26	9 51.96	-16 14.4	2.358	2.954	17.7	19.3	117 E	29	80	1 22	10 43.19	+78 8.6	0.812	1.551	33.7	19.4	119 W	57	—
5 6	9 54.50	-14 51.1	2.464	2.949	18.9	19.5	109 E	29*	79	1 24	10 36.07	+78 0.6	0.812	1.551	33.6	19.4	119 W	57	—
5 16	9 59.16	-13 42.2	2.578	2.942	19.7	19.6	101 E	28*	78	1 26	10 28.51	+77 49.1	0.811	1.552	33.6	19.4	119 W	57	—
5 26	10 5.65	-12 49.0	2.696	2.935	20.2	19.7	93 E	24*	77	1 27	10 24.61	+77 42.1	0.811	1.552	33.5	19.4	119 W	57	—
6 5	10 13.70	-12 11.6	2.816	2.927	20.2	19.8	86 E	20*	75*	1 28	10 20.66	+77 34.0	0.810	1.553	33.5	19.4	119 W	57	—
6 15	10 23.07	-11 49.3	2.934	2.917	20.0	19.9	79 E	15*	71*	1 29	10 16.69	+77 25.0	0.810	1.553	33.5	19.4	120 W	58	—
6 25	10 33.54	-11 41.2	3.050	2.907	19.5	19.9	72 E	11*	66*	1 30	10 12.70	+77 15.0	0.810	1.554	33.5	19.4	120 W	58	—
7 5	10 44.95	-11 46.0	3.160	2.896	18.7	20.0	66 E	6*	60*	1 31	10 8.72	+77 4.1	0.810	1.554	33.4	19.4	120 W	58	—
7 15	10 57.15	-12 2.6	3.263	2.883	17.7	20.0	60 E	3*	53*	2 1	10 4.77	+76 52.1	0.810	1.555	33.4	19.4	120 W	58	—
7 25	11 10.02	-12 29.8	3.358	2.870	16.5	20.0	53 E	—	47*	2 2	10 0.86	+76 39.1	0.810	1.556	33.4	19.4	120 W	58	—
8 4	11 23.47	-13 6.3	3.443	2.856	15.2	20.0	47 E	—	40*	2 3	9 57.01	+76 25.1	0.811	1.557	33.3	19.4	120 W	59	—
8 14	11 37.45	-13 50.8	3.517	2.841	13.7	20.0	42 E	—	34*	2 4	9 53.24	+76 10.1	0.811	1.557	33.3	19.4	120 W	59	—
8 24	11 51.88	-14 42.3	3.580	2.824	12.1	20.0	36 E	—	28*	2 5	9 49.56	+75 54.1	0.811	1.558	33.3	19.4	120 W	59	—
9 3	12 6.74	-15 39.5	3.630	2.807	10.5	19.9	30 E	—	22*	2 6	9 45.98	+75 37.0	0.812	1.559	33.2	19.4	120 W	59	—
9 13	12 21.99	-16 41.5	3.667	2.789	8.8	19.8	25 E	—	16*	2 7	9 42.51	+75 19.0	0.812	1.560	33.2	19.4	120 W	60	—
9 23	12 37.61	-17 47.0	3.690	2.770	7.2	19.8	20 E	—	10*	2 8	9 39.17	+75 0.0	0.813	1.561	33.2	19.4	120 W	60	—
10 3	12 53.59	-18 55.1	3.700	2.750	5.7	19.7	16 E	—	5*	2 9	9 35.95	+74 40.0	0.813	1.562	33.1	19.4	120 W	60	—
10 13	13 9.92	-20 4.6	3.695	2.729	4.5	19.6	12 W	—	—	2 10	9 32.87	+74 19							

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°										
494545 2017 AL₂₀										54660 2000 UJ₁																			
<i>(continuation)</i>										<i>(continuation)</i>																			
3 22	9 4.26	+51 56.9	0.947	1.642	33.3	19.9	115 E	83	12	4 1	9 26.75	-52 35.0	1.125	1.817	29.2	20.6	118 E	—	63	4 6	9 28.10	-49 40.7	1.126	1.826	28.9	20.6	118 E	—	66
3 27	9 8.17	+48 43.1	0.980	1.656	33.5	20.0	114 E	86	15	4 11	9 30.72	-46 39.9	1.132	1.835	28.7	20.6	118 E	—	69	4 16	9 34.45	-43 35.9	1.143	1.842	28.7	20.7	118 E	1	72
4 1	9 12.76	+45 31.9	1.018	1.672	33.7	20.1	112 E	89	18	4 21	9 39.12	-40 31.6	1.158	1.850	28.8	20.7	117 E	—	75	4 26	9 44.58	-37 30.1	1.179	1.856	29.1	20.8	116 E	4	78
4 6	9 17.90	+42 24.9	1.059	1.688	33.9	20.2	110 E	87	22	5 1	9 50.69	-34 33.7	1.205	1.862	29.5	20.8	114 E	—	81	5 6	9 57.34	-31 44.7	1.235	1.868	30.0	20.9	112 E	10*	84
4 11	9 23.47	+39 23.1	1.104	1.704	34.0	20.3	108 E	84	25	5 11	10 4.45	-29 4.5	1.270	1.873	30.5	21.0	110 E	—	87	5 16	10 11.94	-26 34.7	1.310	1.877	31.0	21.1	107 E	15*	89
4 16	9 29.40	+36 27.3	1.152	1.722	34.1	20.4	106 E	81	28	5 21	10 19.74	-24 15.9	1.353	1.881	31.4	21.2	104 E	—	88	5 26	10 27.79	-22 8.6	1.400	1.884	31.8	21.3	101 E	17*	86
4 21	9 35.63	+33 38.1	1.204	1.740	34.2	20.5	104 E	79	30	5 31	10 36.03	-20 12.6	1.449	1.887	32.1	21.3	98 E	—	84	6 5	10 44.45	-18 27.8	1.501	1.889	32.3	21.4	95 E	18*	82
4 26	9 42.08	+30 55.6	1.259	1.758	34.1	20.6	101 E	76*	33																				
5 1	9 48.71	+28 19.9	1.317	1.778	34.1	20.8	99 E	73*	36																				
5 6	9 55.48	+25 50.8	1.378	1.797	33.9	20.9	97 E	69*	38																				
5 11	10 2.39	+23 28.0	1.441	1.818	33.7	21.0	94 E	65*	41																				
5 16	10 9.40	+21 11.3	1.506	1.838	33.4	21.1	92 E	61*	43																				
5 21	10 16.50	+19 0.2	1.573	1.859	33.0	21.2	89 E	57*	45																				
5 26	10 23.67	+16 54.5	1.641	1.881	32.5	21.3	87 E	52*	47																				
5 31	10 30.90	+14 53.6	1.711	1.903	32.0	21.4	84 E	48*	49																				
101795 1999 HX₂										456537 2007 BG																			
12 27	10 59.05	+11 56.7	3.420	3.923	13.2	21.4	114 W	57	52	12 27	10 59.53	-38 33.2	0.303	1.032	72.3	19.5	91 W	6	77	1 1	11 0.78	-40 20.4	0.285	1.039	70.9	19.3	93 W	5	76
1 6	10 58.92	+12 36.1	3.244	3.885	12.1	21.2	124 W	58	51	1 6	11 1.19	-42 14.9	0.265	1.044	69.6	19.2	96 W	3	74	1 11	11 0.39	-44 18.1	0.244	1.046	68.5	18.9	98 W	1	72
1 16	10 56.98	+13 28.7	3.085	3.845	10.4	21.0	135 W	58	51	1 16	10 57.87	-46 31.9	0.222	1.047	67.6	18.7	100 W	—	69	1 18	10 56.24	-47 28.9	0.213	1.046	67.3	18.6	101 W	—	69
1 26	10 53.19	+14 33.4	2.947	3.805	8.3	20.8	146 W	60	49	1 20	10 54.16	-48 28.3	0.203	1.045	67.0	18.5	102 W	—	68	1 22	10 51.58	-49 30.4	0.194	1.044	66.9	18.4	103 W	—	66
2 5	10 47.67	+15 47.7	2.834	3.764	5.7	20.6	158 W	61	48	1 24	10 48.38	-50 35.7	0.185	1.043	66.7	18.3	103 W	—	65	1 26	10 44.46	-51 44.5	0.175	1.041	66.7	18.2	104 W	—	64
2 15	10 40.67	+17 7.5	2.751	3.722	3.2	20.4	168 W	62	47	1 28	10 39.65	-52 57.4	0.166	1.038	66.8	18.0	104 W	—	63	1 30	10 33.73	-54 14.9	0.156	1.036	66.9	17.9	105 W	—	62
2 20	10 36.77	+17 47.9	2.721	3.701	2.4	20.3	171 W	63	46	2 1	10 26.40	-55 37.7	0.147	1.033	67.3	17.8	105 W	—	60	2 2	10 17.24	-57 6.3	0.137	1.029	67.8	17.6	105 W	—	59
2 25	10 32.70	+18 27.6	2.699	3.679	2.5	20.3	171 W	63	46	2 5	10 5.65	-58 41.0	0.128	1.026	68.5	17.5	105 W	—	57	2 6	9 58.70	-59 30.6	0.123	1.024	69.0	17.4	104 W	—	56
3 2	10 28.54	+19 6.0	2.685	3.658	3.5	20.3	167 E	64	45	2 7	9 50.79	-60 21.5	0.119	1.022	69.5	17.4	104 W	—	56	2 8	9 41.75	-61 13.5	0.114	1.019	70.1	17.3	104 W	—	55
3 7	10 24.39	+19 42.4	2.679	3.636	4.9	20.4	162 E	65	44	2 9	9 31.39	-62 6.3	0.110	1.017	70.8	17.2	103 W	—	54	2 10	9 19.45	-62 59.2	0.105	1.015	71.7	17.1	103 E	—	53
3 12	10 20.32	+20 16.3	2.681	3.613	6.3	20.4	156 E	65	44	2 11	9 5.67	-63 51.4	0.101	1.012	72.6	17.1	102 E	—	52	2 12	8 49.70	-64 41.5	0.096	1.010	73.7	17.0	101 E	—	51
3 17	10 16.44	+20 47.1	2.690	3.591	7.8	20.5	151 E	66	43	2 13	8 31.21	-65 27.7	0.092	1.007	75.0	17.0	100 E	—	51	2 14	8 9.85	-66 7.3	0.088	1.004	76.4	16.9	99 E	—	50
3 27	10 9.55	+21 38.2	2.728	3.546	10.5	20.6	139 E	67	42	2 15	7 45.38	-66 36.9	0.084	1.002	78.1	16.8	97 E	—	49	2 16	7 17.73	-66 51.8	0.080	0.999	79.9	16.8	96 E	—	49
4 6	10 4.25	+22 14.3	2.788	3.499	12.9	20.7	128 E	67	42	2 17	6 47.21	-66 46.9	0.076	0.996	82.0	16.8	94 E	—	49	2 18	6 14.52	-66 16.3	0.073	0.993	84.4	16.8	91 E	—	50
4 16	10 0.88	+22 35.4	2.865	3.452	14.9	20.8	118 E	68	41	2 19	5 40.83	-65 14.7	0.070	0.990	87.1	16.8	89 E	—	51	2 20	5 7.50	-63 37.9	0.067	0.986	90.1	16.8	86 E	—	52
4 26	9 59.61	+22 42.2	2.954	3.404	16.3	20.9	108 E	68	41	2 21	4 35.81	-61 24.1	0.064	0.983	93.4	16.8	83 E	—	54*	2 22	4 6.69	-58 33.2	0.062	0.980	97.1	16.9	79 E	—	56*
5 6	10 0.42	+22 36.5	3.049	3.355	17.3	21.0	99 E	66*	41	2 23	3 40.60	-55 7.9	0.060	0.976	101.0	17.0	76 E	—	56*	2 24	3 17.61	-51 12.3	0.059	0.973	105.2	17.2	71 E	—	56*
5 16	10 3.22	+22 19.6	3.147	3.305	17.8	21.0	90 E	61*	42	2 25	2 57.54	-46 52.4	0.058	0.969	109.7	17.4	67 E	—	55*	2 26	2 40.08	-42 15.0	0.057	0.965	114.2	17.7	63 E	—	53*
5 26	10 7.84	+21 52.9	3.243	3.254	17.9	21.0	82 E	54*	42	2 27	2 24.90	-37 27.9	0.058	0.961	118.8	18.0	58 E	—	51*	2 28	2 11.64	-32 38.4	0.058	0.957	123.3	18.3	54 E	—	47*
6 5	10 14.08	+21 17.5	3.334	3.202	17.7	21.1	74 E	47*	42*	3 1	2 0.01	-27 53.7	0.060	0.953	127.6	18.7	50 E	—	46	3 2	1 49.76	-23 19.4	0.061	0.949	131.6	19.2	46 E	—	40*
6 15	10 21.77	+20 34.5	3.418	3.149	17.2	21.1	66 E	40*	42*	3 3	1 40.67	-18 59.7	0.064	0.945	135.4	19.7	42 E	—	36*	3 4	1 32.56	-14 57.5	0.066	0.941	138.8	20.2	39 E	—	32*
6 25	10 30.73	+19 44.5	3.492	3.096	16.4	21.0	59 E	33*	40*	3 5	1 25.28	-11 14.1	0.069	0.936	141.9	20.7	36 E	—	28*	3 6	1 18.71	-7 49.8	0.073	0.932	144.6	21.2	33 E	—	25*
7 5	10 40.79	+18 48.3	3.554	3.041	15.3	21.0	52 E	28*	37*	3 7	1 12.75	-4 44.2	0.076	0.927	147.0	21.6	31 E	—	21*	3 8	1 7.31	-1 56.2	0.080	0.923	149.0	22.1	29 E	—	18*
7 15	10 51.84	+17 46.3	3.604	2.986	14.1	21.0	46 E	23*	33*																				
7 25	11 3.77	+16 39.1	3.640	2.930	12.8	20.9	40 E	19*	29*																				
8 4	11 16.47	+15 27.1	3.661	2.873	11.3	20.8	34 E	16*	24*																				
8 14	11 29.91	+14 10.7	3.668	2.815	9.7	20.7	28 E	13*	19*																				
8 24	11 44.01	+12 50.6	3.661	2.756	8.1	20.6	23 E	11*	13*																				
9 3	11 58.76	+11 27.1	3.638	2.696	6.6	20.5	18 E	9*	8*																				
9 13	12 14.14	+10 0.7	3.602	2.636	5.3	20.3	14 E	7*	3*																				
9 23	12 30.15	+8 32.3	3.551	2.575	4.4	20.2	11 E	5*	—																				
10 3	12 46.80	+7 2.3	3.487	2.513	4.4	20.1	11 E	4*	—																				
10 13	13 4.12	+5 31.4	3.411	2.451	5.4	20.1	13 W	5*	—																				
10 23	13 22.12	+4 0.7	3.324	2.388	6.9	20.0	17 W	10*	—																				
11 2	13 40.86	+2 30.9	3.226	2.325	8.7	20.0	21 W	15*	—																				
11 12	14 0.38	+1 3.2	3.119																										

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	20/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
469449 2002 OW₁₉										215122 1999 LG₄									
<i>(continuation)</i>										<i>(continuation)</i>									
4 11	9 33.76	-5 55.4	1.821	2.527	19.1	21.3	124 E	39	70	6 30	10 49.60	-13 35.3	2.644	2.526	22.5	21.3	72 E	9*	66*
4 16	9 34.01	-5 40.9	1.892	2.546	20.0	21.4	120 E	39	70	7 5	10 56.43	-13 34.5	2.691	2.516	22.2	21.3	69 E	7*	63*
22168 Weissflog																			
12 27	10 59.78	+2 40.0	2.058	2.570	21.0	20.3	110 W	48	61	7 10	11 3.49	-13 37.0	2.737	2.505	21.8	21.3	66 E	5*	60*
1 6	11 1.65	+2 10.0	1.915	2.551	19.5	20.1	120 W	47	62	7 15	11 10.77	-13 42.8	2.781	2.494	21.3	21.3	63 E	4*	57*
1 16	11 0.88	+1 55.7	1.784	2.531	17.3	19.9	130 W	47	62	7 20	11 18.25	-13 51.5	2.824	2.482	20.8	21.4	60 E	2*	54*
1 26	10 57.28	+1 59.2	1.667	2.510	14.3	19.6	141 W	47	62	7 25	11 25.92	-14 3.1	2.865	2.471	20.3	21.4	57 E	1*	51*
2 5	10 50.88	+2 21.5	1.571	2.488	10.5	19.3	153 W	47	62	7 30	11 33.76	-14 17.1	2.903	2.459	19.7	21.4	55 E	—	48*
2 15	10 42.02	+3 1.8	1.499	2.465	6.1	19.0	165 W	48	61	8 4	11 41.77	-14 33.6	2.940	2.447	19.0	21.4	52 E	—	45*
2 25	10 31.53	+3 56.4	1.454	2.441	2.1	18.7	175 E	49	60	8 9	11 49.95	-14 52.2	2.975	2.435	18.3	21.3	49 E	—	42*
3 2	10 26.04	+4 27.2	1.442	2.429	2.8	18.7	173 E	49	60	8 14	11 58.29	-15 12.9	3.008	2.423	17.6	21.3	46 E	—	39*
3 7	10 20.59	+4 59.0	1.438	2.416	5.0	18.8	168 E	50	59	8 19	12 6.78	-15 35.3	3.038	2.410	16.9	21.3	44 E	—	36*
3 12	10 15.36	+5 30.9	1.440	2.404	7.4	18.9	162 E	51	58	8 24	12 15.42	-15 59.3	3.066	2.397	16.1	21.3	41 E	—	33*
3 17	10 10.50	+6 1.8	1.449	2.391	9.9	19.0	156 E	51	58	8 29	12 24.20	-16 24.7	3.092	2.384	15.2	21.3	38 E	—	31*
3 22	10 6.16	+6 30.9	1.464	2.378	12.2	19.1	150 E	52	57	9 3	12 33.13	-16 51.2	3.115	2.371	14.4	21.3	36 E	—	28*
3 27	10 2.46	+6 57.5	1.485	2.364	14.5	19.2	144 E	52	57	9 8	12 42.20	-17 18.8	3.136	2.358	13.5	21.2	33 E	—	25*
4 6	9 57.24	+7 40.8	1.542	2.337	18.4	19.4	132 E	53	56	9 13	12 51.42	-17 47.2	3.154	2.344	12.6	21.2	31 E	—	23*
4 16	9 55.18	+8 8.8	1.614	2.309	21.6	19.6	122 E	53	56	9 18	13 0.78	-18 16.2	3.169	2.331	11.7	21.2	28 E	—	20*
4 26	9 56.29	+8 20.5	1.697	2.280	24.1	19.8	113 E	53	56	9 23	13 10.29	-18 45.6	3.181	2.317	10.8	21.1	26 E	—	18*
5 6	10 0.31	+8 16.1	1.786	2.251	25.8	19.9	104 E	52*	56	9 28	13 19.93	-19 15.2	3.191	2.303	9.8	21.1	23 E	—	15*
5 16	10 6.93	+7 56.4	1.877	2.221	26.9	20.0	96 E	49*	56	10 3	13 29.73	-19 44.8	3.198	2.289	8.9	21.0	21 E	—	13*
5 26	10 15.79	+7 22.2	1.969	2.190	27.5	20.1	88 E	43*	57	10 8	13 39.67	-20 14.2	3.202	2.275	7.9	21.0	18 E	—	10*
6 5	10 26.55	+6 34.8	2.059	2.159	27.7	20.2	82 E	37*	57*	10 13	13 49.77	-20 43.2	3.203	2.260	6.9	20.9	16 E	—	8*
6 15	10 38.94	+5 35.0	2.143	2.127	27.5	20.2	75 E	32*	57*	10 18	14 0.01	-21 11.6	3.202	2.246	6.0	20.9	14 E	—	6*
6 25	10 52.73	+4 23.9	2.223	2.095	27.0	20.3	69 E	26*	56*	10 23	14 10.39	-21 39.1	3.197	2.231	5.1	20.8	11 E	—	3*
7 5	11 7.73	+3 2.6	2.297	2.062	26.3	20.3	64 E	21*	54*	10 28	14 20.93	-22 5.6	3.190	2.216	4.3	20.7	10 E	—	1*
7 15	11 23.80	+1 31.9	2.364	2.030	25.3	20.3	59 E	17*	50*	11 2	14 31.62	-22 30.8	3.180	2.201	3.6	20.7	8 E	—	—
7 25	11 40.86	-0 7.1	2.423	1.997	24.2	20.3	54 E	14*	47*	11 7	14 42.46	-22 54.5	3.167	2.186	3.1	20.6	7 W	—	—
8 4	11 58.82	-1 53.2	2.475	1.964	22.9	20.2	49 E	11*	43*	11 12	14 53.45	-23 16.5	3.151	2.171	3.0	20.6	7 W	—	—
8 14	12 17.68	-3 45.4	2.520	1.932	21.5	20.2	44 E	9*	38*	11 17	15 4.58	-23 36.5	3.133	2.156	3.4	20.6	7 W	—	—
8 24	12 37.42	-5 42.1	2.558	1.899	20.1	20.1	40 E	7*	34*	11 22	15 15.85	-23 54.4	3.111	2.140	4.0	20.6	9 W	—	—
9 3	12 58.06	-7 42.0	2.588	1.867	18.5	20.1	36 E	6*	30*	11 27	15 27.26	-24 9.8	3.087	2.125	4.9	20.6	10 W	—	—
9 13	13 19.63	-9 43.5	2.611	1.836	16.8	20.0	32 E	4*	26*	12 2	15 38.80	-24 22.7	3.061	2.109	5.8	20.6	13 W	—	—
9 23	13 42.18	-11 44.7	2.628	1.806	15.2	19.9	28 E	3*	22*	12 7	15 50.47	-24 32.6	3.032	2.094	6.8	20.6	15 W	—	—
10 3	14 5.76	-13 43.5	2.639	1.776	13.4	19.8	24 E	2*	18*	12 12	16 2.26	-24 39.6	3.001	2.078	7.9	20.6	17 W	—	—
10 13	14 30.42	-15 37.7	2.645	1.748	11.6	19.7	21 E	2*	15*	12 17	16 14.15	-24 43.1	2.967	2.063	9.0	20.6	19 W	—	—
10 23	14 56.19	-17 24.7	2.646	1.721	9.9	19.6	17 E	1*	11*	12 22	16 26.13	-24 43.2	2.931	2.047	10.1	20.6	21 W	—	—
11 2	15 23.10	-19 1.7	2.642	1.695	8.0	19.5	14 E	—	8*	12 27	16 38.21	-24 39.6	2.892	2.031	11.3	20.6	24 W	—	—
11 12	15 51.12	-20 26.1	2.635	1.672	6.2	19.4	11 E	—	4*	1 1	16 50.36	-24 32.1	2.852	2.016	12.4	20.6	26 W	—	—
11 22	16 20.19	-21 34.8	2.625	1.650	4.4	19.3	7 E	—	1*	1 6	17 2.57	-24 20.4	2.810	2.000	13.5	20.6	28 W	—	—
12 2	16 50.21	-22 25.2	2.613	1.631	2.5	19.1	4 E	—	—	1 11	17 14.82	-24 4.5	2.765	1.985	14.7	20.6	31 W	—	—
12 12	17 20.99	-22 55.0	2.599	1.614	0.7	18.9	1 E	—	—	1 16	17 27.10	-23 44.0	2.719	1.969	15.8	20.6	33 W	—	—
12 22	17 52.30	-23 2.2	2.583	1.600	1.1	18.9	2 W	—	—	1 21	17 39.40	-23 19.0	2.672	1.954	16.9	20.6	35 W	—	—
1 1	18 23.90	-22 45.9	2.567	1.589	2.9	19.1	5 W	—	—	100926 1998 MQ									
1 11	18 55.50	-22 5.7	2.551	1.581	4.7	19.1	8 W	—	—	12 27	11 0.80	-24 3.7	1.912	2.265	25.5	21.0	98 W	21	88
1 21	19 26.82	-21 2.3	2.534	1.576	6.5	19.2	10 W	—	—	1 1	11 1.34	-24 56.0	1.868	2.280	25.0	20.9	102 W	20	89
215122 1999 LG₄										1 6	11 1.11	-25 44.0	1.825	2.295	24.4	20.8	106 W	19	90
12 27	11 0.19	-23 49.3	2.440	2.755	20.7	21.3	98 W	21	88	1 11	11 0.06	-26 26.7	1.783	2.309	23.6	20.8	110 W	19	90
1 6	11 1.20	-25 44.0	2.318	2.751	20.1	21.1	106 W	19	90	1 16	10 58.18	-27 3.2	1.742	2.323	22.8	20.7	114 W	18	89
1 16	10 59.67	-27 25.9	2.202	2.746	19.2	21.0	113 W	18	89	1 21	10 55.46	-27 32.5	1.704	2.336	21.8	20.7	118 W	17	88
1 26	10 55.44	-28 49.1	2.097	2.741	17.9	20.8	121 W	16	87	1 26	10 51.93	-27 53.7	1.668	2.349	20.7	20.6	123 W	17	88
2 5	10 48.59	-29 47.0	2.005	2.734	16.3	20.7	129 W	15	86	1 31	10 47.63	-28 5.7	1.636	2.361	19.5	20.5	127 W	17	88
2 15	10 39.51	-30 13.2	1.931	2.726	14.7	20.5	136 W	15	86	2 5	10 42.64	-28 7.7	1.607	2.373	18.3	20.5	131 W	17	88
2 25	10 29.01	-30 2.7	1.878	2.717	13.3	20.4	141 E	15	86	2 10	10 37.07	-27 58.8	1.583	2.384	17.0	20.4	135 W	17	88
3 2	10 23.57	-29 43.3	1.859	2.713	12.9	20.4	142 E	15	86	2 15	10 31.05	-27 38.4	1.563	2.395	15.8	20.3	139 W	17	88
3 7	10 18.20	-29 14.9	1.847	2.708	12.7	20.3	143 E	16	87	2 20	10 24.78	-27 6.5	1.550	2.405	14.7	20.3	142 W	18	89
3 12	10 13.06	-28 37.9	1.840	2.702	12.7	20.3	143 E	16	87	2 25	10 18.43	-26 23.5	1.542	2.415	13.9	20.2	144 E	19	90
3 17	10 8.28	-27 53.3	1.840	2.697	13.0	20.3	142 E	17	88	3 2	10 12.20	-25 30.0	1.540	2.425	13.3	20.2	146 E	19	90
3 22	10 4.00	-27 2.3	1.845	2.691	13.6	20.4	141 E	18	89	3 7	10 6.27	-24 27.4	1.544	2.433	13.0	20.2	146 E	21	88
3 27	10 0.31	-26 6.4	1.856	2.685	14.3	20.4	138 E	19	90	3 12	10 0.80	-23 17.1	1.555	2.442	13.2	20.3	146 E	22	87
4 1	9 57.29	-25 6.9	1.872	2.679	15.1	20.4	136 E	20	89	3 17	9 55.93	-22 0.9	1.572	2.450	13.7	20.3	144 E	23	86
4 6	9 54.98	-24 5.2	1.894	2.673	16.1	20.5	132 E	21	88	3 22	9 51.78	-20 40.9	1.596	2.457	14.5	20.4	142 E	24	85
4 11	9 53.42	-23 2.7	1.920	2.666	17.0	20.5	129 E	22	87	3 27	9 48.40	-19 18.9	1.625	2.464	15.5	20.5	139 E	26	83

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°		
483420 2000 CX₃₉										389361 2009 VS₁											
<i>(continuation)</i>										<i>(continuation)</i>											
1	31	11 8.99	+11 40.6	1.100	1.999	15.6	19.6	147W	57	52	3	2	10 58.33	- 4 10.0	0.996	1.976	5.8	19.1	168W	41	68
2	5	11 6.69	+13 50.4	1.092	2.020	12.9	19.5	153W	59	50	3	7	10 54.46	- 2 23.1	1.007	1.994	4.3	19.1	171E	43	66
2	10	11 3.64	+16 2.6	1.091	2.041	10.3	19.4	158W	61	48	3	12	10 50.80	- 0 36.3	1.026	2.011	5.0	19.2	170E	44	65
2	15	10 59.99	+18 14.1	1.096	2.061	8.0	19.3	163W	63	46	3	17	10 47.53	+ 1 7.7	1.051	2.029	7.2	19.4	165E	46	63
2	20	10 55.91	+20 21.3	1.109	2.082	6.5	19.3	166W	65	44	3	22	10 44.79	+ 2 46.3	1.083	2.047	9.7	19.6	160E	48	61
2	25	10 51.57	+22 21.1	1.129	2.104	6.5	19.4	166W	67	42	3	27	10 42.68	+ 4 17.6	1.121	2.064	12.2	19.8	154E	49	60
3	2	10 47.18	+24 11.0	1.157	2.125	7.8	19.5	163E	69	40	4	1	10 41.26	+ 5 40.3	1.164	2.082	14.6	19.9	148E	51	58
3	7	10 42.92	+25 49.0	1.192	2.146	9.7	19.7	159E	71	38	4	6	10 40.56	+ 6 53.6	1.213	2.100	16.7	20.1	143E	52	57
3	12	10 38.98	+27 14.1	1.233	2.168	11.8	19.9	153E	72	37	4	16	10 41.35	+ 8 51.5	1.325	2.136	20.2	20.5	133E	54	55
3	17	10 35.52	+28 25.8	1.280	2.189	13.9	20.0	148E	73	36	4	26	10 44.89	+10 12.3	1.452	2.172	22.8	20.8	123E	55	54
3	22	10 32.66	+29 24.3	1.333	2.211	15.8	20.2	143E	74	35	5	6	10 50.82	+11 0.5	1.590	2.207	24.6	21.1	114E	56	53
3	27	10 30.50	+30 10.3	1.391	2.232	17.5	20.4	138E	75	34	5	16	10 58.73	+11 21.1	1.736	2.243	25.6	21.3	106E	56*	53
4	1	10 29.07	+30 44.8	1.452	2.254	19.0	20.5	133E	76	33	490171 2008 UD₂₅₃										
4	6	10 28.39	+31 8.7	1.518	2.275	20.3	20.7	128E	76	33	12	27	11 1.97	+21 49.9	4.065	4.587	11.1	21.3	116W	67	42
4	11	10 28.45	+31 23.4	1.587	2.297	21.4	20.9	123E	76	33	1	6	11 0.83	+22 21.4	3.973	4.626	9.8	21.3	126W	67	42
4	16	10 29.24	+31 29.7	1.659	2.318	22.3	21.0	119E	76	33	1	16	10 58.12	+22 58.6	3.899	4.665	8.3	21.2	137W	68	41
4	21	10 30.72	+31 28.7	1.733	2.339	23.0	21.1	115E	76	33	1	26	10 53.95	+23 39.0	3.848	4.704	6.6	21.1	147W	69	40
4	26	10 32.84	+31 21.3	1.809	2.361	23.5	21.3	111E	76	33	2	5	10 48.57	+24 19.1	3.822	4.742	4.8	21.0	156W	69	40
5	1	10 35.54	+31 8.4	1.887	2.382	23.9	21.4	107E	76	33	2	15	10 42.34	+24 55.7	3.826	4.780	3.4	20.9	163W	70	39
5	6	10 38.76	+30 50.8	1.965	2.403	24.1	21.5	103E	76	33	2	25	10 35.71	+25 25.4	3.860	4.818	3.3	21.0	164W	70	39
164295 2004 XA₁₃₁										3	7	10 29.17	+25 46.1	3.924	4.855	4.5	21.1	157E	71	38	
12	27	11 1.85	+ 8 29.0	3.029	3.518	15.0	19.5	112W	53	56	3	17	10 23.19	+25 56.3	4.018	4.893	6.1	21.2	148E	71	38
1	6	11 3.91	+ 9 28.9	2.870	3.493	13.8	19.3	122W	54	55	3	27	10 18.17	+25 55.6	4.137	4.929	7.7	21.4	139E	71	38
1	16	11 4.18	+10 46.8	2.726	3.468	12.0	19.1	133W	56	53	128472 2004 PS										
1	26	11 2.61	+12 22.1	2.602	3.444	9.8	18.9	144W	57	52	12	27	11 2.26	+ 3 58.1	2.572	3.055	17.6	21.5	110W	49	60
2	5	10 59.28	+14 11.9	2.503	3.419	7.1	18.7	155W	59	50	1	6	11 1.92	+ 3 43.2	2.450	3.067	16.1	21.3	120W	49	60
2	10	10 57.01	+15 10.9	2.463	3.407	5.7	18.6	160W	60	49	1	16	10 59.26	+ 3 42.1	2.340	3.078	13.9	21.2	131W	49	60
2	15	10 54.40	+16 11.5	2.432	3.395	4.3	18.5	165W	61	48	1	26	10 54.29	+ 3 55.1	2.248	3.088	11.2	21.0	143W	49	60
2	20	10 51.51	+17 12.9	2.408	3.383	3.2	18.4	169W	62	47	2	5	10 47.26	+ 4 21.3	2.179	3.097	7.9	20.8	154W	49	60
2	25	10 48.43	+18 14.0	2.392	3.371	2.9	18.3	170W	63	46	2	15	10 38.64	+ 4 58.5	2.136	3.105	4.3	20.6	166W	50	59
3	2	10 45.23	+19 13.9	2.384	3.360	3.5	18.4	168E	64	45	2	25	10 29.19	+ 5 42.6	2.124	3.113	1.1	20.4	176E	51	58
3	7	10 42.00	+20 11.6	2.384	3.348	4.8	18.4	164E	65	44	3	7	10 19.78	+ 6 28.8	2.143	3.119	3.9	20.6	168E	51	58
3	12	10 38.83	+21 6.3	2.391	3.336	6.2	18.5	159E	66	43	3	17	10 11.28	+ 7 12.4	2.191	3.125	7.6	20.8	156E	52	57
3	17	10 35.80	+21 57.2	2.406	3.324	7.7	18.6	153E	67	42	3	27	10 4.42	+ 7 49.1	2.267	3.129	10.8	21.0	144E	53	56
3	22	10 33.02	+22 43.6	2.427	3.313	9.2	18.6	148E	68	41	4	6	9 59.65	+ 8 16.4	2.365	3.133	13.5	21.2	133E	53	56
3	27	10 30.55	+23 25.3	2.455	3.302	10.6	18.7	142E	68	41	4	16	9 57.14	+ 8 33.0	2.481	3.136	15.7	21.4	122E	54	55
4	6	10 26.80	+24 33.5	2.527	3.279	13.2	18.9	132E	70	39	92383 2000 HE₇₅										
4	16	10 24.93	+25 21.3	2.617	3.257	15.2	19.0	122E	70	39	12	27	11 2.78	+37 57.5	2.432	3.040	16.3	20.5	120W	83	26
4	26	10 25.13	+25 49.7	2.721	3.235	16.8	19.1	112E	71	38	1	1	11 3.16	+38 45.2	2.379	3.037	15.6	20.4	124W	84	25
5	6	10 27.38	+26 0.9	2.832	3.213	17.8	19.2	103E	71*	38	1	6	11 2.79	+39 35.6	2.330	3.034	14.8	20.4	128W	85	24
5	16	10 31.60	+25 57.0	2.948	3.192	18.4	19.3	95E	67*	38	1	11	11 1.61	+40 27.9	2.285	3.030	14.0	20.3	132W	85	24
5	26	10 37.60	+25 40.1	3.065	3.172	18.6	19.4	87E	61*	38	1	16	10 59.62	+41 21.3	2.245	3.027	13.2	20.2	136W	86	23
6	5	10 45.18	+25 12.1	3.180	3.152	18.4	19.5	79E	54*	39	1	21	10 56.79	+42 14.5	2.211	3.023	12.4	20.2	139W	87	22
6	15	10 54.15	+24 34.7	3.290	3.132	18.0	19.5	72E	48*	39*	1	26	10 53.14	+43 6.2	2.183	3.019	11.6	20.1	142W	88	21
6	25	11 4.31	+23 49.1	3.394	3.114	17.3	19.5	66E	42*	39*	1	31	10 48.72	+43 55.2	2.160	3.015	11.0	20.1	144W	89	20
7	5	11 15.48	+22 56.6	3.490	3.095	16.4	19.5	59E	36*	37*	2	5	10 43.60	+44 40.0	2.144	3.010	10.6	20.0	146W	90	19
7	15	11 27.53	+21 58.3	3.577	3.078	15.3	19.6	53E	32*	35*	2	10	10 37.87	+45 19.3	2.134	3.005	10.5	20.0	146W	90	19
7	25	11 40.33	+20 55.2	3.654	3.061	14.2	19.5	47E	28*	31*	2	15	10 31.68	+45 52.0	2.131	3.000	10.6	20.0	146W	89	18
8	4	11 53.77	+19 48.2	3.721	3.044	12.9	19.5	42E	25*	27*	2	20	10 25.20	+46 17.0	2.134	2.995	11.0	20.0	145W	89	18
8	14	12 7.79	+18 38.3	3.776	3.029	11.6	19.5	37E	23*	23*	2	25	10 18.62	+46 33.7	2.143	2.990	11.6	20.0	143E	88	17
8	24	12 22.30	+17 26.3	3.820	3.014	10.3	19.5	32E	21*	18*	3	2	10 12.13	+46 41.9	2.158	2.984	12.4	20.1	140E	88	17
9	3	12 37.24	+16 13.3	3.852	3.000	9.1	19.4	28E	19*	14*	3	7	10 5.92	+46 41.5	2.179	2.978	13.3	20.1	136E	88	17
9	13	12 52.59	+15 0.2	3.873	2.987	8.0	19.4	25E	17*	8*	3	12	10 0.16	+46 32.8	2.206	2.972	14.2	20.2	133E	88	17
9	23	13 8.29	+13 48.1	3.882	2.974	7.2	19.3	22E	16*	3*	3	17	9 54.99	+46 16.4	2.237	2.966	15.1	20.2	129E	89	18
10	3	13 24.30	+12 37.9	3.880	2.963	6.8	19.3	20E	14*	—	3	22	9 50.52	+45 52.9	2.273	2.959	16.0	20.3	125E	89	18
10	13	13 40.60	+11 30.9	3.867	2.952	6.8	19.3	20E	13*	—	3	27	9 46.83	+45 23.2	2.312	2.952	16.8	20.4	121E	90	19
10	23	13 57.14	+10 28.1	3.842	2.942	7.2	19.3	22E	11*	—	4	1	9 43.95	+44 48.2	2.356	2.945	17.6	20.4	117E	90	19
11	2	14 13.88	+ 9 30.6	3.808	2.933	8.0	19.3	24W	14*	—	4	6	9 41.89	+44 8.6	2.402	2.938	18.3	20.5	113E	89	20
11	12	14 30.77	+ 8 39.6	3.764	2.925	9.1	19.3	28W	19*	—	4	11	9 40.64	+43 25.1	2.450	2.930	18.9	20.5	109E	88	21
11	22	14 47.75	+ 7 56.4	3.710	2.918	10.3	19.3	32W	25*	—	4	16									

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	20/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°		
92383 2000 HE₇₅										7345 Happer											
<i>(continuation)</i>										<i>(continuation)</i>											
7	20	11 1.54	+24 8.5	3.394	2.733	14.6	21.0	43 E	26*	26*	3	2	10 27.72	+15 20.6	2.216	3.197	3.0	19.3	170 E	60	49
7	25	11 8.21	+23 4.7	3.422	2.721	13.8	20.9	40 E	24*	25*	3	7	10 23.18	+15 44.3	2.234	3.202	4.7	19.4	165 E	61	48
7	30	11 14.98	+22 0.7	3.447	2.709	13.1	20.9	37 E	22*	23*	3	17	10 14.85	+16 23.3	2.292	3.210	8.1	19.6	153 E	61	48
8	4	11 21.84	+20 56.3	3.470	2.696	12.3	20.9	35 E	21*	21*	3	27	10 8.13	+16 49.1	2.375	3.217	11.1	19.8	142 E	62	47
8	9	11 28.80	+19 51.6	3.489	2.684	11.5	20.9	32 E	19*	19*	4	6	10 3.43	+17 1.1	2.481	3.223	13.6	20.0	131 E	62	47
8	14	11 35.85	+18 46.6	3.506	2.671	10.7	20.8	29 E	17*	17*	4	16	10 0.95	+16 59.9	2.604	3.229	15.6	20.2	120 E	62	47
8	19	11 42.97	+17 41.5	3.519	2.657	9.9	20.8	27 E	16*	15*	4	26	10 0.69	+16 46.8	2.739	3.233	16.9	20.3	111 E	62	47
8	24	11 50.16	+16 36.1	3.530	2.644	9.2	20.8	25 E	15*	13*	5	6	10 2.49	+16 23.2	2.881	3.237	17.8	20.5	102 E	60*	48
8	29	11 57.43	+15 30.6	3.537	2.630	8.4	20.7	22 E	13*	10*	5	16	10 6.13	+15 50.3	3.027	3.240	18.2	20.6	93 E	56*	48
9	3	12 4.76	+14 25.0	3.541	2.617	7.6	20.7	20 E	12*	8*	5	26	10 11.38	+15 9.5	3.174	3.242	18.1	20.7	85 E	49*	49
9	8	12 12.17	+13 19.3	3.542	2.603	6.9	20.6	18 E	11*	5*	6	5	10 17.98	+14 21.6	3.318	3.242	17.7	20.8	77 E	42*	49*
9	13	12 19.64	+12 13.6	3.540	2.589	6.2	20.6	16 E	10*	3*	6	15	10 25.74	+13 27.5	3.456	3.242	17.1	20.9	69 E	35*	49*
9	18	12 27.17	+11 7.9	3.535	2.574	5.6	20.5	15 E	8*	—	6	25	10 34.45	+12 27.9	3.587	3.242	16.1	20.9	62 E	29*	47*
9	23	12 34.76	+10 2.3	3.526	2.560	5.2	20.5	13 E	7*	—	7	5	10 43.95	+11 23.5	3.709	3.240	15.0	20.9	55 E	23*	43*
9	28	12 42.41	+8 56.8	3.514	2.545	4.9	20.5	12 E	6*	—	7	15	10 54.12	+10 14.8	3.819	3.237	13.6	20.9	49 E	18*	39*
10	3	12 50.13	+7 51.5	3.499	2.530	4.8	20.4	12 E	5*	—	7	25	11 4.83	+9 2.3	3.918	3.233	12.1	20.9	42 E	14*	34*
10	13	13 5.75	+5 41.6	3.460	2.500	5.3	20.4	13 W	5*	—	8	4	11 15.98	+7 46.7	4.002	3.229	10.5	20.9	35 E	11*	28*
10	23	13 21.62	+3 33.1	3.408	2.469	6.5	20.4	16 W	9*	—	8	14	11 27.52	+6 28.4	4.072	3.223	8.8	20.9	29 E	7*	22*
11	2	13 37.73	+1 26.3	3.343	2.438	8.2	20.4	20 W	14*	—	8	24	11 39.36	+5 8.0	4.127	3.217	6.9	20.8	23 E	5*	16*
11	12	13 54.10	+0 38.2	3.267	2.406	10.0	20.4	25 W	19*	3*	9	3	11 51.45	+3 45.9	4.165	3.210	5.1	20.8	16 E	2*	10*
11	22	14 10.70	+2 40.0	3.180	2.373	11.9	20.4	30 W	23*	8*	9	13	12 3.76	+2 22.8	4.187	3.202	3.2	20.7	10 E	—	4*
12	2	14 27.54	+4 38.8	3.082	2.340	13.9	20.4	35 W	26*	13*	9	23	12 16.22	+0 59.2	4.192	3.193	1.3	20.5	4 E	—	—
12	12	14 44.59	+6 34.3	2.973	2.307	15.9	20.3	40 W	29*	19*	10	3	12 28.80	+0 24.4	4.180	3.183	1.2	20.5	4 W	—	—
12	22	15 1.85	+8 26.3	2.856	2.273	17.9	20.3	45 W	30*	26*	10	13	12 41.48	+1 47.3	4.151	3.172	3.0	20.6	10 W	4*	—
1	1	15 19.28	+10 14.8	2.731	2.239	19.8	20.2	51 W	31*	33*	10	23	12 54.18	+3 8.9	4.105	3.160	5.0	20.7	16 W	9*	3*
1	11	15 36.83	+11 59.8	2.599	2.204	21.7	20.1	56 W	31*	40*	11	2	13 6.88	+4 28.7	4.041	3.147	6.9	20.7	22 W	15*	7*
1	21	15 54.47	+13 41.9	2.461	2.170	23.5	20.0	61 W	30*	48*	11	12	13 19.52	+5 45.9	3.962	3.134	8.8	20.8	29 W	20*	13*
12	27	11 2.81	+10 30.5	0.310	1.100	60.3	20.7	104 W	34	75	11	22	13 32.03	+6 59.9	3.867	3.119	10.7	20.8	36 W	25*	18*
1	1	10 53.37	+8 14.9	0.308	1.135	53.5	20.6	112 W	37	72	12	2	13 44.33	+8 10.2	3.757	3.104	12.4	20.8	43 W	29*	24*
1	6	10 42.32	+5 43.5	0.307	1.169	46.5	20.4	120 W	39	70	12	12	13 56.32	+9 16.0	3.633	3.088	14.1	20.7	50 W	31*	31*
1	11	10 29.59	+2 55.6	0.307	1.202	39.1	20.3	130 W	42	67	12	22	14 7.90	+10 16.7	3.498	3.071	15.5	20.7	57 W	33*	39*
1	16	10 15.36	+0 7.0	0.310	1.235	31.5	20.2	139 W	45	64	1	1	14 18.93	+11 11.8	3.352	3.053	16.8	20.6	64 W	33*	47*
1	21	10 0.05	+3 18.6	0.317	1.266	23.7	20.0	149 W	48	61	1	11	14 29.24	+12 0.7	3.197	3.034	17.9	20.6	72 W	33*	55*
1	26	9 44.32	+6 30.9	0.328	1.296	15.9	19.9	159 W	52	57	1	21	14 38.64	+12 42.8	3.036	3.014	18.7	20.5	79 W	32	64*
1	31	9 28.90	+9 34.7	0.345	1.325	8.6	19.8	168 W	55	54	12	27	11 5.25	+16 56.2	2.421	2.963	17.6	21.0	114 W	62	47*
2	5	9 14.49	+12 22.3	0.368	1.353	2.6	19.7	176 W	57	52	1	6	11 5.43	+17 34.1	2.303	2.971	15.9	20.8	124 W	63	46
2	10	9 1.64	+14 48.7	0.396	1.380	5.6	20.0	172 E	60	49	1	16	11 3.07	+18 26.0	2.200	2.977	13.5	20.7	135 W	63	46
2	15	8 50.78	+16 51.8	0.430	1.406	11.0	20.5	164 E	62	47	1	26	10 58.12	+19 29.1	2.116	2.982	10.7	20.5	146 W	64	45
2	20	8 42.09	+18 32.3	0.468	1.430	15.8	20.9	157 E	64	45	1	31	10 54.73	+20 3.2	2.082	2.984	9.1	20.4	151 W	65	44
2	25	8 35.58	+19 52.1	0.510	1.454	20.0	21.3	150 E	65	44	2	5	10 50.80	+20 38.1	2.056	2.986	7.5	20.3	157 W	66	43
3	2	8 31.13	+20 54.1	0.556	1.476	23.5	21.6	144 E	66	43	2	10	10 46.40	+21 12.8	2.036	2.988	6.0	20.2	162 W	66	43
3	7	8 28.53	+21 41.0	0.606	1.497	26.5	21.9	138 E	67	42	2	15	10 41.62	+21 46.3	2.023	2.990	4.7	20.1	165 W	67	42
12	27	11 4.12	+43 48.3	0.915	1.644	31.2	20.9	120 W	89	20	2	20	10 36.58	+22 17.7	2.018	2.991	4.1	20.1	167 W	67	42
1	1	11 4.24	+43 53.2	0.881	1.644	29.8	20.8	124 W	89	20	2	25	10 31.42	+22 46.1	2.021	2.992	4.5	20.1	166 E	68	41
1	6	11 2.51	+43 58.8	0.848	1.645	28.2	20.7	128 W	89	20	3	2	10 26.26	+23 10.8	2.031	2.993	5.5	20.2	163 E	68	41
1	11	10 58.79	+44 3.1	0.818	1.646	26.5	20.5	132 W	89	20	3	7	10 21.23	+23 31.3	2.048	2.994	7.0	20.3	158 E	69	40
1	16	10 52.99	+44 3.6	0.790	1.646	24.5	20.4	136 W	89	20	3	12	10 16.46	+23 47.2	2.073	2.994	8.6	20.4	153 E	69	40
1	21	10 45.14	+43 57.2	0.766	1.648	22.5	20.3	140 W	89	20	3	17	10 12.07	+23 58.3	2.104	2.994	10.2	20.5	148 E	69	40
1	26	10 35.42	+43 40.4	0.746	1.649	20.4	20.2	144 W	89	20	3	27	10 4.77	+24 6.1	2.184	2.993	13.1	20.6	137 E	69	40
1	31	10 24.12	+43 9.6	0.731	1.651	18.4	20.1	148 W	88	21	4	6	9 59.81	+23 56.4	2.283	2.992	15.5	20.8	127 E	69	40
2	5	10 11.71	+42 22.1	0.720	1.653	16.9	20.0	151 W	87	22	4	16	9 57.39	+23 31.5	2.398	2.989	17.4	21.0	117 E	69	40
2	10	9 58.77	+41 16.2	0.715	1.655	15.9	19.9	153 W	86	23	4	26	9 57.46	+22 54.0	2.524	2.986	18.7	21.1	108 E	68	41
2	15	9 45.98	+39 51.6	0.716	1.657	15.8	19.9	153 E	85	24	5	6	9 59.80	+22 6.3	2.655	2.981	19.5	21.3	99 E	66*	42
2	20	9 33.97	+38 9.8	0.722	1.660	16.5	20.0	151 E	83	26	5	16	10 4.15	+21 10.2	2.789	2.976	19.9	21.4	91 E	60*	43
2	25	9 23.23	+36 14.2	0.735	1.662	18.0	20.1	149 E	81	28	5	26	10 10.22	+20 7.1	2.922	2.969	19.8	21.5	83 E	53*	44
3	2	9 14.09	+34 8.6	0.753	1.665	19.9	20.2	145 E	79	30	12	27	11 5.28	+10 0.8	2.013	2.547	21.0	21.4	112 W	55	54*
3	7	9 6.71	+31 57.3	0.777	1.668	22.0	20.3	141 E	77	32	1	6	11 6.25	+10 10.0	1.904	2.562	19.0	21.2	122 W	55	54
3	12	9 1.10	+29 43.9	0.805	1.672	24.2	20.5	136 E	75	34	1	16	11 4.38	+10 36.3	1.808	2.577	16.3	21.0	133 W	56	53
3	17	8 57.23	+27 31.2	0.838	1.675	26.3	20.6	132 E	73	36	1	26	10 59.58	+11 18.8	1.728	2.590	12.9	20.8	144 W	56	53
3	22	8 54.97																			

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
127552 2002 YF₅										225586 2000 WS₆₇ <i>(continuation)</i>									
12 27	11 6.13	+40 6.2	2.078	2.698	18.6	20.4	119 W	85	24*	3 14	23 15.55	+48 33.2	0.387	0.811	106.7	19.9	51 W	32*	—
1 1	11 5.94	+40 51.2	2.043	2.711	17.6	20.3	123 W	86	23	3 15	23 17.10	+46 44.6	0.390	0.797	109.0	20.0	49 W	31*	—
1 6	11 4.81	+41 38.2	2.011	2.723	16.7	20.3	127 W	87	22	3 16	23 18.55	+44 55.9	0.393	0.782	111.3	20.1	47 W	30*	—
1 11	11 2.71	+42 26.2	1.984	2.735	15.7	20.2	131 W	87	22	3 17	23 19.91	+43 7.1	0.397	0.767	113.6	20.2	45 W	29*	—
1 16	10 59.63	+43 14.0	1.961	2.746	14.7	20.2	135 W	88	21	3 19	23 22.43	+39 29.5	0.406	0.738	118.1	20.5	41 W	27*	—
1 21	10 55.58	+44 0.1	1.943	2.758	13.7	20.1	138 W	89	20	3 21	23 24.75	+35 52.5	0.416	0.708	122.7	20.8	37 W	25*	—
1 26	10 50.62	+44 43.0	1.930	2.769	12.8	20.1	141 W	90	19	3 23	23 26.97	+32 17.1	0.429	0.678	127.1	21.1	33 W	23*	—
1 31	10 44.83	+45 21.1	1.924	2.780	12.1	20.1	144 W	90	19	3 25	23 29.17	+28 44.4	0.443	0.647	131.2	21.5	29 W	21*	—
2 5	10 38.35	+45 53.1	1.923	2.791	11.6	20.1	145 W	89	18	222205 2000 DV₁₁₇									
2 10	10 31.34	+46 17.8	1.929	2.802	11.4	20.1	146 W	89	18	12 27	11 7.42	+10 53.2	1.603	2.167	24.9	20.5	112 W	56	53*
2 15	10 24.01	+46 34.0	1.941	2.812	11.4	20.1	146 W	88	17	1 6	11 8.72	+10 33.1	1.524	2.202	22.4	20.3	121 W	56	53
2 20	10 16.58	+46 41.1	1.959	2.822	11.8	20.1	144 W	88	17	1 16	11 6.57	+10 30.1	1.455	2.236	19.1	20.1	132 W	55	54
2 25	10 9.30	+46 39.0	1.984	2.832	12.4	20.2	142 E	88	17	1 26	11 0.97	+10 43.1	1.402	2.270	15.0	19.9	143 W	56	53
3 2	10 2.36	+46 27.9	2.015	2.842	13.1	20.3	139 E	89	18	2 5	10 52.30	+11 8.5	1.369	2.304	10.1	19.7	156 W	56	53
3 7	9 55.94	+46 8.4	2.051	2.851	13.9	20.3	136 E	89	18	2 10	10 47.06	+11 24.2	1.362	2.320	7.6	19.6	162 W	56	53
3 12	9 50.21	+45 41.1	2.093	2.861	14.8	20.4	133 E	89	18	2 15	10 41.41	+11 40.7	1.361	2.337	4.9	19.5	168 W	57	52
3 17	9 45.26	+45 6.9	2.139	2.870	15.7	20.5	129 E	90	19	2 20	10 35.53	+11 57.1	1.367	2.353	2.3	19.4	174 W	57	52
3 22	9 41.17	+44 27.0	2.190	2.878	16.5	20.6	125 E	89	20	2 25	10 29.61	+12 12.6	1.380	2.369	1.3	19.4	177 E	57	52
3 27	9 37.95	+43 42.2	2.245	2.887	17.3	20.7	121 E	89	20	3 2	10 23.84	+12 26.3	1.401	2.385	3.5	19.6	172 E	57	52
4 1	9 35.61	+42 53.6	2.304	2.895	17.9	20.8	117 E	88	21	3 7	10 18.38	+12 37.7	1.428	2.401	6.0	19.7	165 E	58	51
4 6	9 34.11	+42 1.9	2.365	2.903	18.5	20.8	113 E	87	22	3 17	10 9.00	+12 51.7	1.502	2.433	10.6	20.1	153 E	58	51
4 11	9 33.42	+41 7.9	2.430	2.911	19.0	20.9	109 E	86	23	3 27	10 2.31	+12 52.6	1.600	2.463	14.5	20.4	142 E	58	51
4 16	9 33.48	+40 12.1	2.496	2.919	19.4	21.0	105 E	85	24	4 6	9 58.64	+12 40.7	1.718	2.493	17.6	20.7	131 E	58	51
4 21	9 34.23	+39 15.0	2.564	2.926	19.7	21.1	101 E	84	25	4 16	9 57.93	+12 16.9	1.850	2.523	19.9	20.9	121 E	57	52
4 26	9 35.62	+38 17.0	2.634	2.934	19.9	21.1	97 E	83*	26	4 26	9 59.92	+11 42.6	1.994	2.551	21.4	21.2	112 E	57	52
5 1	9 37.58	+37 18.5	2.704	2.941	20.0	21.2	93 E	80*	27	5 6	10 4.21	+10 59.0	2.145	2.579	22.3	21.4	104 E	55*	53
5 6	9 40.06	+36 19.6	2.775	2.947	20.0	21.3	90 E	76*	28	508767 1993 BD₂									
5 11	9 43.00	+35 20.4	2.847	2.954	19.9	21.3	86 E	72*	29	12 27	11 8.90	+28 52.4	0.635	1.389	39.3	19.4	117 W	74	35*
5 16	9 46.35	+34 21.2	2.918	2.960	19.8	21.4	82 E	67*	30	1 1	11 28.74	+31 28.6	0.605	1.373	39.4	19.3	118 W	76	33*
5 21	9 50.07	+33 22.0	2.989	2.966	19.6	21.4	79 E	63*	31	1 6	11 49.70	+34 11.5	0.581	1.357	39.8	19.2	118 W	79	30
5 26	9 54.12	+32 22.8	3.059	2.972	19.3	21.5	76 E	59*	32*	1 11	12 11.68	+36 56.7	0.562	1.343	40.3	19.1	118 W	82	27
225586 2000 WS₆₇										1 16	12 34.48	+39 39.0	0.548	1.330	40.9	19.0	118 W	85	24
12 27	11 7.17	+36 27.1	0.934	1.648	31.6	20.7	118 W	81	28*	1 21	12 57.79	+42 12.9	0.539	1.319	41.7	19.0	117 W	87	22
1 1	11 14.87	+38 37.2	0.859	1.608	31.4	20.4	121 W	84	25	1 26	13 21.23	+44 34.0	0.535	1.309	42.6	19.0	116 W	90	19
1 6	11 22.70	+41 11.6	0.788	1.567	31.3	20.2	124 W	86	23	1 31	13 44.32	+46 39.1	0.534	1.301	43.6	19.0	114 W	88	17
1 11	11 30.75	+44 14.1	0.721	1.524	31.4	19.9	126 W	89	20	2 5	14 6.54	+48 27.2	0.536	1.294	44.5	19.0	113 W	87	16
1 16	11 39.20	+47 48.7	0.658	1.479	31.9	19.7	127 W	87	16	2 10	14 27.35	+49 58.3	0.541	1.289	45.3	19.0	112 W	85	14
1 21	11 48.38	+51 59.2	0.601	1.432	33.0	19.5	128 W	83	12	2 15	14 46.33	+51 13.6	0.548	1.286	46.0	19.1	110 W	84	13
1 26	11 58.89	+56 48.8	0.549	1.383	35.0	19.2	126 W	78	7	2 20	15 3.13	+52 14.6	0.555	1.285	46.6	19.1	109 W	83	12
1 28	12 3.72	+58 56.0	0.530	1.363	36.1	19.2	125 W	76	5	2 25	15 17.55	+53 3.1	0.563	1.285	46.9	19.2	109 W	82	11
1 30	12 9.08	+61 9.8	0.512	1.342	37.3	19.1	124 W	74	3	3 2	15 29.46	+53 40.9	0.571	1.287	47.1	19.2	108 W	81	10
2 1	12 15.16	+63 30.1	0.495	1.321	38.8	19.0	123 W	71	—	3 7	15 38.79	+54 9.4	0.579	1.291	47.1	19.2	108 W	81	10
2 3	12 22.25	+65 56.7	0.480	1.300	40.5	19.0	121 W	69	—	3 12	15 45.50	+54 29.0	0.586	1.296	47.0	19.3	107 W	81	10
2 5	12 30.76	+68 29.1	0.465	1.279	42.3	18.9	119 W	67	—	3 17	15 49.64	+54 39.7	0.593	1.304	46.7	19.3	108 W	80	9
2 6	12 35.75	+69 47.2	0.458	1.268	43.3	18.9	118 W	65	—	3 22	15 51.31	+54 40.6	0.599	1.313	46.2	19.3	108 W	80	9
2 7	12 41.39	+71 6.6	0.451	1.257	44.4	18.9	117 W	64	—	3 27	15 50.66	+54 30.4	0.605	1.323	45.5	19.4	109 W	80	9
2 8	12 47.84	+72 26.8	0.445	1.246	45.5	18.9	116 W	63	—	4 1	15 47.93	+54 7.7	0.610	1.335	44.8	19.4	110 W	81	9
2 9	12 55.32	+73 47.9	0.439	1.235	46.7	18.8	114 W	61	—	4 6	15 43.34	+53 30.7	0.614	1.348	43.9	19.4	111 W	81	10
2 10	13 4.13	+75 9.4	0.433	1.223	47.9	18.8	113 W	60	—	4 11	15 37.22	+52 37.2	0.619	1.363	42.9	19.4	112 W	82	11
2 11	13 14.70	+76 31.0	0.428	1.212	49.2	18.8	112 W	58	—	4 16	15 29.98	+51 25.1	0.624	1.379	41.7	19.4	114 W	84	13
2 12	13 27.63	+77 52.0	0.422	1.201	50.5	18.8	110 W	57	—	4 21	15 22.08	+49 52.8	0.629	1.396	40.5	19.4	115 W	85	14
2 13	13 43.78	+79 11.6	0.417	1.189	51.8	18.8	109 W	56	—	4 26	15 13.98	+47 59.6	0.636	1.414	39.3	19.4	117 W	87	16
2 14	14 4.42	+80 28.5	0.413	1.177	53.3	18.8	107 W	55	—	5 1	15 6.08	+45 45.9	0.644	1.434	38.0	19.5	119 W	89	18
2 15	14 31.35	+81 40.8	0.408	1.166	54.7	18.8	106 W	53	—	5 6	14 58.69	+43 12.6	0.655	1.454	36.8	19.5	120 W	88	21
2 16	15 6.99	+82 45.0	0.404	1.154	56.2	18.8	104 W	52	—	5 11	14 52.10	+40 21.7	0.668	1.475	35.7	19.5	122 E	85	24
2 17	15 53.81	+83 36.4	0.400	1.142	57.7	18.8	102 W	51	—	5 16	14 46.48	+37 15.8	0.684	1.496	34.6	19.6	123 E	82	27
2 18	16 52.38	+84 8.3	0.397	1.130	59.3	18.8	100 W	51*	—	5 21	14 41.95	+33 58.4	0.704	1.518	33.8	19.7	123 E	79	30
2 19	17 58.11	+84 14.3	0.393	1.118	60.9	18.8	99 W	50*	—	5 26	14 38.54	+30 33.6	0.728	1.541	33.1	19.7	124 E	76	33
2 20	19 1.52	+83 52.4	0.390	1.106	62.6	18.8	97 W	50*	—	5 31	14 36.22	+27 5.0	0.755	1.565	32.6	19.8	124 E	72	37
2 21	19 54.84	+83 6.4	0.387	1.093	64.3	18.8	95 W	49*	—	6 5	14 34.94	+23 36.2	0.787	1.588	32.3	20.0	123 E	69	40
2 22	20 36.18	+82 2.7	0.385	1.081	66.0	18.8	93 W	48*	—	6 10	14 34.64	+20 10.2	0.824	1.613	32.2	20.1	122 E	65	44
2 23	21 7.36	+80 47.0	0.383	1.068	67.8	18.8	91 W	48*	—	6 15	14 35.25	+16 49.3	0.865	1.6					

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	20/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
84667 2002 VO₈₂										288324 2004 BS₅₈									
<i>(continuation)</i>										<i>(continuation)</i>									
2 20	10 45.82	+ 5 0.2	1.938	2.916	3.4	20.1	170 W	50	59	4 6	10 14.43	+27 53.0	1.573	2.323	20.0	20.7	128 E	73	36
2 25	10 41.12	+ 5 34.3	1.931	2.919	1.4	19.9	176 W	51	58	4 11	10 13.73	+27 58.1	1.635	2.334	21.2	20.8	123 E	73	36
3 2	10 36.36	+ 6 9.1	1.933	2.922	1.3	19.9	176 E	51	58	4 16	10 13.81	+27 56.7	1.698	2.344	22.2	21.0	118 E	73	36
3 7	10 31.66	+ 6 43.8	1.942	2.925	3.2	20.1	170 E	52	57	4 21	10 14.65	+27 49.4	1.765	2.355	23.0	21.1	114 E	73	36
3 12	10 27.16	+ 7 17.7	1.959	2.928	5.3	20.2	164 E	52	57	4 26	10 16.19	+27 37.1	1.832	2.365	23.7	21.2	109 E	73	36
3 17	10 22.95	+ 7 49.9	1.982	2.930	7.2	20.3	158 E	53	56	5 1	10 18.38	+27 20.2	1.902	2.375	24.2	21.3	105 E	72	37
3 27	10 15.83	+ 8 47.1	2.050	2.933	10.9	20.6	146 E	54	55	5 6	10 21.15	+26 59.4	1.972	2.385	24.5	21.4	101 E	72*	37
4 6	10 10.82	+ 9 31.7	2.141	2.936	13.9	20.8	135 E	55	54	5 11	10 24.47	+26 35.1	2.043	2.394	24.7	21.5	98 E	70*	37
4 16	10 8.19	+10 2.3	2.250	2.938	16.3	21.0	125 E	55	54	357621 2005 EG₉₄									
4 26	10 7.97	+10 18.5	2.373	2.938	18.1	21.2	115 E	55	54	12 27	11 9.70	+13 17.0	0.955	1.607	34.6	21.1	112 W	58	51*
5 6	10 9.98	+10 21.1	2.505	2.938	19.3	21.3	105 E	55*	54	1 6	11 4.75	+13 2.7	0.914	1.669	29.6	20.9	123 W	58	51
5 16	10 14.01	+10 11.2	2.642	2.937	20.0	21.4	97 E	51*	54	1 16	10 54.23	+13 11.5	0.881	1.728	23.4	20.7	136 W	58	51
403039 2008 AE										1 26	10 38.52	+13 37.9	0.864	1.784	16.2	20.5	150 W	59	50
12 27	11 9.39	- 5 48.3	0.395	1.148	56.0	20.0	104 W	39	70*	2 5	10 19.16	+14 12.2	0.870	1.838	8.4	20.3	164 W	59	50
1 1	11 27.92	- 5 38.0	0.373	1.141	56.2	19.9	105 W	39	70*	2 10	10 8.87	+14 28.7	0.882	1.864	4.4	20.2	172 W	59	50
1 6	11 47.07	- 5 13.1	0.353	1.135	56.2	19.8	106 W	40	69	2 15	9 58.67	+14 43.0	0.902	1.889	1.2	20.0	178 W	60	49
1 11	12 6.80	- 4 31.6	0.335	1.129	56.3	19.6	107 W	40	69	2 20	9 48.93	+14 54.3	0.928	1.913	3.7	20.3	173 E	60	49
1 16	12 27.04	- 3 32.0	0.318	1.124	56.3	19.5	108 W	41	68	2 25	9 39.96	+15 1.9	0.962	1.937	7.1	20.6	166 E	60	49
1 21	12 47.70	- 2 13.4	0.302	1.120	56.2	19.4	109 W	43	66	3 2	9 32.00	+15 5.6	1.002	1.960	10.4	20.8	159 E	60	49
1 26	13 8.65	- 0 35.6	0.289	1.116	56.1	19.3	110 W	44	65	3 7	9 25.18	+15 5.6	1.049	1.983	13.3	21.1	153 E	60	49
1 31	13 29.73	+ 1 20.6	0.278	1.113	56.0	19.2	110 W	46	63	3 12	9 19.59	+15 2.2	1.100	2.004	16.0	21.3	146 E	60	49
2 5	13 50.69	+ 3 33.6	0.269	1.111	55.9	19.1	111 W	49	60	3 17	9 15.25	+14 55.5	1.157	2.025	18.3	21.5	140 E	60	49
2 10	14 11.26	+ 6 1.1	0.261	1.110	55.8	19.0	112 W	51	58	3581 Alvarez									
2 15	14 31.17	+ 8 39.5	0.256	1.109	55.7	19.0	112 W	54	55	12 27	11 10.56	-23 9.9	3.593	3.827	14.8	18.7	96 W	22	87*
2 20	14 50.16	+11 24.8	0.253	1.109	55.6	19.0	112 W	56	53	1 6	11 10.84	-24 5.3	3.445	3.816	14.4	18.6	105 W	21	88
2 25	15 8.03	+14 12.4	0.251	1.110	55.4	18.9	113 W	59	50	1 16	11 9.30	-24 48.9	3.303	3.804	13.7	18.5	114 W	20	89
3 2	15 24.59	+16 58.7	0.251	1.112	55.3	18.9	113 W	62	47	1 26	11 5.91	-25 17.2	3.171	3.791	12.7	18.3	122 W	20	89
3 7	15 39.66	+19 40.8	0.251	1.115	55.0	18.9	113 W	65	44	2 5	11 0.77	-25 26.9	3.056	3.777	11.3	18.2	131 W	20	89
3 12	15 53.07	+22 16.2	0.253	1.118	54.7	19.0	113 W	67	42	2 15	10 54.16	-25 15.0	2.959	3.763	9.9	18.1	139 W	20	89
3 17	16 4.71	+24 42.8	0.255	1.122	54.3	19.0	114 W	70	39	2 25	10 46.55	-24 39.6	2.886	3.748	8.5	18.0	146 W	20	89
3 22	16 14.49	+26 58.5	0.258	1.127	53.8	19.0	114 W	72	37	3 7	10 38.56	-23 41.4	2.840	3.732	7.7	17.9	150 E	21	88
3 27	16 22.40	+29 2.2	0.261	1.132	53.2	19.0	115 W	74	35	3 12	10 34.64	-23 4.5	2.827	3.723	7.6	17.9	150 E	22	87
4 1	16 28.41	+30 52.8	0.265	1.138	52.5	19.0	115 W	76	33	3 17	10 30.87	-22 23.0	2.821	3.715	7.7	17.9	150 E	23	86
4 6	16 32.47	+32 29.7	0.268	1.145	51.6	19.0	116 W	77	32	3 22	10 27.34	-21 37.8	2.822	3.706	8.1	17.9	148 E	23	86
4 11	16 34.55	+33 51.5	0.271	1.152	50.7	19.1	117 W	79	30	3 27	10 24.13	-20 49.5	2.830	3.697	8.7	17.9	146 E	24	85
4 16	16 34.69	+34 56.0	0.274	1.159	49.6	19.1	118 W	80	29	4 1	10 21.29	-19 59.1	2.844	3.688	9.5	17.9	143 E	25	84
4 21	16 33.02	+35 41.2	0.278	1.167	48.4	19.1	120 W	81	28	4 6	10 18.86	-19 7.4	2.865	3.679	10.3	18.0	139 E	26	83
4 26	16 29.73	+36 5.3	0.281	1.176	47.2	19.1	121 W	81	28	4 11	10 16.88	-18 15.1	2.892	3.669	11.1	18.0	135 E	27	82
5 1	16 25.05	+36 6.7	0.285	1.185	45.9	19.1	122 W	81	28	4 16	10 15.38	-17 23.1	2.924	3.660	12.0	18.1	131 E	28	81
5 6	16 19.25	+35 43.8	0.288	1.194	44.6	19.1	124 W	81	28	4 26	10 13.84	-15 42.9	3.003	3.639	13.5	18.2	122 E	29	80
5 11	16 12.68	+34 55.1	0.293	1.203	43.2	19.1	125 W	80	29	5 6	10 14.25	-14 11.1	3.098	3.619	14.8	18.3	113 E	31*	78
5 16	16 5.77	+33 39.8	0.298	1.213	42.0	19.1	127 W	79	30	5 16	10 16.49	-12 50.8	3.204	3.597	15.8	18.4	105 E	30*	77
5 21	15 58.98	+31 58.4	0.304	1.222	40.8	19.2	128 W	77	32	5 26	10 20.42	-11 43.9	3.317	3.574	16.4	18.5	96 E	27*	76
5 26	15 52.68	+29 53.0	0.311	1.232	39.8	19.2	129 E	75	34	6 5	10 25.83	-10 50.8	3.434	3.551	16.6	18.5	88 E	23*	75*
5 31	15 47.15	+27 26.5	0.320	1.242	39.0	19.3	130 E	72	37	6 15	10 32.55	-10 11.5	3.551	3.527	16.5	18.6	80 E	18*	71*
6 5	15 42.60	+24 42.3	0.330	1.252	38.4	19.3	130 E	70	39	6 25	10 40.39	- 9 45.4	3.664	3.502	16.1	18.6	73 E	13*	66*
6 10	15 39.18	+21 44.2	0.343	1.262	38.1	19.4	130 E	67	42	7 5	10 49.21	- 9 31.5	3.772	3.476	15.4	18.6	66 E	9*	59*
6 15	15 37.01	+18 36.4	0.357	1.272	38.1	19.5	129 E	64	45	7 15	10 58.86	- 9 29.0	3.871	3.450	14.5	18.6	58 E	5*	52*
6 20	15 36.11	+15 23.3	0.373	1.282	38.3	19.6	129 E	60	49	7 25	11 9.23	- 9 36.7	3.960	3.422	13.4	18.6	52 E	2*	45*
6 25	15 36.44	+12 8.9	0.391	1.292	38.6	19.8	127 E	57	52	8 4	11 20.21	- 9 53.5	4.038	3.394	12.2	18.6	45 E	—	38*
6 30	15 37.93	+ 8 56.5	0.412	1.302	39.2	19.9	126 E	54	55	8 14	11 31.73	-10 18.3	4.102	3.365	10.7	18.6	38 E	—	31*
7 5	15 40.52	+ 5 48.5	0.434	1.311	39.8	20.1	124 E	51	58	8 24	11 43.72	-10 50.0	4.151	3.335	9.2	18.5	32 E	—	24*
7 10	15 44.13	+ 2 47.0	0.459	1.321	40.5	20.2	122 E	48	61	9 3	11 56.11	-11 27.6	4.186	3.305	7.6	18.4	26 E	—	18*
7 15	15 48.72	- 0 6.6	0.486	1.330	41.2	20.4	120 E	45*	64	9 13	12 8.87	-12 10.1	4.204	3.273	5.9	18.4	20 E	—	11*
7 20	15 54.21	- 2 51.4	0.514	1.339	41.9	20.5	118 E	42*	67	9 23	12 21.94	-12 56.4	4.205	3.241	4.3	18.3	14 E	—	5*
7 25	16 0.52	- 5 26.5	0.544	1.348	42.6	20.7	116 E	39*	69	10 3	12 35.31	-13 45.6	4.189	3.208	3.1	18.2	10 W	—	—
7 30	16 7.57	- 7 51.8	0.576	1.356	43.2	20.8	114 E	37*	72	10 13	12 48.93	-14 36.8	4.156	3.174	2.8	18.1	9 W	—	2*
8 4	16 15.32	-10 7.3	0.610	1.364	43.7	21.0	112 E	34*	74	10 23	13 2.76	-15 28.8	4.105	3.139	3.8	18.1	12 W	—	6*
8 9	16 23.72	-12 13.0	0.645	1.372	44.1	21.1	110 E	32*	76	11 2	13 16.78	-16 20.6	4.037	3.104	5.5	18.1	17 W	4*	10*
8 14	16 32.74	-14 9.2	0.681	1.379	44.5	21.3	107 E	30*	78	11 12	13 30.95	-17 11.3	3.953	3.068	7.3	18.2	23 W	10*	15*
8 19	16 42.32	-15 56.0	0.718	1.386	44.8	21.4	105 E	28*	80	11 22	13 45.22	-17 59.8	3.852	3.031	9.2	18.2	29 W	14*	20*
288324 2004 BS₅₈										12 2	13 59.53	-18 45.0	3.736	2.993	11.1	18.1	36 W	18*	25*
12 27	11																		

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	20/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°		
76978 2001 BY₆₀										142944 2002 VT₆₉											
<i>(continuation)</i>										<i>(continuation)</i>											
2	20	11 10.47	+15 1.0	1.222	2.193	6.5	17.4	165 W	60	49	9 13	12 29.68	-1 22.7	3.802	2.857	6.0	20.7	17 E	2*	11*	
2	25	11 6.32	+16 52.6	1.195	2.174	5.1	17.3	169 W	62	47	9 23	12 43.15	-3 7.1	3.849	2.872	3.9	20.6	11 E	—	5*	
3	2	11 1.71	+18 45.5	1.176	2.156	5.4	17.3	168 W	64	45	10 3	12 56.71	-4 50.0	3.881	2.886	1.8	20.5	5 E	—	—	
3	7	10 56.81	+20 37.0	1.164	2.137	7.2	17.3	164 E	66	43	10 13	13 10.34	-6 31.2	3.896	2.899	0.4	20.4	1 W	—	—	
3	12	10 51.79	+22 24.4	1.160	2.118	9.6	17.4	159 E	67	42	10 23	13 23.98	-8 10.1	3.895	2.910	2.4	20.5	7 W	1*	—	
3	17	10 46.86	+24 5.0	1.162	2.098	12.4	17.5	153 E	69	40	11 2	13 37.61	-9 46.3	3.878	2.921	4.5	20.7	13 W	6*	3*	
3	22	10 42.24	+25 36.8	1.171	2.079	15.1	17.6	147 E	71	38	11 12	13 51.18	-11 19.6	3.844	2.931	6.5	20.8	20 W	11*	8*	
3	27	10 38.11	+26 58.3	1.185	2.060	17.7	17.7	141 E	72	37	11 22	14 4.63	-12 49.3	3.794	2.940	8.5	20.8	26 W	16*	13*	
4	1	10 34.63	+28 8.8	1.205	2.040	20.1	17.8	135 E	73	36	12 2	14 17.90	-14 15.4	3.728	2.948	10.4	20.9	33 W	19*	19*	
4	6	10 31.92	+29 8.1	1.228	2.021	22.3	17.8	130 E	74	35	12 12	14 30.90	-15 37.4	3.647	2.955	12.2	20.9	39 W	25*	26*	
4	11	10 30.09	+29 56.2	1.255	2.002	24.4	17.9	125 E	75	34	12 22	14 43.51	-16 55.2	3.552	2.961	13.9	20.9	46 W	24*	33*	
4	16	10 29.20	+30 33.7	1.285	1.982	26.1	18.0	120 E	76	33	1	14 55.62	-18 8.8	3.444	2.965	15.5	20.9	53 W	25*	41*	
4	21	10 29.28	+31 1.1	1.317	1.963	27.7	18.1	115 E	76	33	1	11 15 7.08	-19 18.0	3.323	2.969	16.8	20.9	61 W	25*	50*	
4	26	10 30.33	+31 19.3	1.350	1.943	29.1	18.2	110 E	76	33	1	21 15 17.71	-20 22.9	3.193	2.972	17.9	20.8	68 W	24*	58*	
5	1	10 32.30	+31 29.1	1.384	1.924	30.2	18.2	106 E	76	33	234405 2001 RX₁₆										
5	6	10 35.16	+31 31.1	1.419	1.905	31.2	18.3	102 E	77*	32	12 27	11 13.61	+37 33.9	1.267	1.928	26.9	19.1	117 W	83	26*	
5	11	10 38.88	+31 25.9	1.454	1.886	32.0	18.3	98 E	76*	33	1	11 13.78	+37 47.7	1.240	1.945	25.5	19.0	122 W	83	26	
5	16	10 43.39	+31 14.1	1.488	1.867	32.7	18.4	95 E	73*	33	1	11 12.60	+38 3.8	1.216	1.962	24.0	18.9	126 W	83	26	
5	21	10 48.64	+30 56.2	1.521	1.848	33.2	18.4	91 E	71*	33	1	11 10.05	+38 21.0	1.195	1.979	22.3	18.8	130 W	83	26	
5	26	10 54.58	+30 32.7	1.554	1.829	33.6	18.5	88 E	68*	33	1	11 6.10	+38 37.7	1.177	1.996	20.5	18.8	135 W	84	25	
5	31	11 1.13	+30 3.9	1.586	1.810	33.9	18.5	85 E	64*	34	1	21 11 0.82	+38 52.0	1.163	2.013	18.6	18.7	139 W	84	25	
6	5	11 8.25	+29 30.0	1.616	1.792	34.1	18.5	82 E	61*	34	1	26 10 54.32	+39 2.0	1.153	2.031	16.8	18.6	143 W	84	25	
6	10	11 15.89	+28 51.3	1.645	1.774	34.3	18.5	80 E	58*	35	2	31 10 46.78	+39 5.7	1.149	2.048	15.1	18.6	147 W	84	25	
6	15	11 24.03	+28 8.1	1.672	1.756	34.4	18.6	77 E	55*	36	2	5 10 38.43	+39 1.4	1.150	2.066	13.6	18.6	151 W	84	25	
6	25	11 41.58	+26 28.6	1.722	1.722	34.3	18.6	73 E	50*	37*	2	10 29.58	+38 47.8	1.157	2.084	12.5	18.6	153 W	84	25	
7	5	12 0.62	+24 32.7	1.766	1.689	34.1	18.6	69 E	45*	39*	2	15 10 20.55	+38 24.0	1.170	2.102	12.0	18.6	154 W	83	26	
7	15	12 20.96	+22 21.6	1.805	1.658	33.8	18.6	65 E	42*	39*	2	20 10 11.70	+37 49.9	1.190	2.120	12.1	18.6	153 E	83	26	
7	25	12 42.46	+19 56.5	1.838	1.629	33.4	18.6	62 E	39*	40*	2	25 10 3.35	+37 6.0	1.216	2.137	12.8	18.7	151 E	82	27	
8	4	13 4.99	+17 18.7	1.867	1.603	32.9	18.6	59 E	36*	40*	3	2	9 55.76	+36 13.6	1.248	2.155	13.9	18.8	148 E	81	28
8	14	13 28.50	+14 29.7	1.893	1.580	32.4	18.5	57 E	34*	39*	3	7	9 49.09	+35 14.1	1.286	2.173	15.2	19.0	145 E	80	29
8	24	13 52.96	+11 31.8	1.917	1.559	31.7	18.5	54 E	33*	39*	3	12	9 43.47	+34 9.0	1.330	2.191	16.7	19.1	141 E	79	30
9	3	14 18.32	+ 8 27.6	1.941	1.543	31.1	18.5	52 E	31*	38*	3	17	9 38.96	+32 59.8	1.379	2.209	18.0	19.3	137 E	78	31
9	13	14 44.59	+ 5 20.2	1.967	1.529	30.3	18.5	50 E	30*	37*	3	22	9 35.56	+31 48.0	1.433	2.227	19.4	19.4	132 E	77	32
9	23	15 11.73	+ 2 13.3	1.995	1.520	29.4	18.5	48 E	28*	35*	3	27	9 33.24	+30 34.6	1.491	2.245	20.6	19.5	128 E	76	33
10	3	15 39.72	- 0 49.1	2.027	1.515	28.4	18.5	46 E	27*	34*	4	1	9 31.92	+29 20.7	1.553	2.263	21.6	19.7	123 E	74	35
10	13	16 8.51	- 3 42.8	2.063	1.513	27.3	18.5	44 E	26*	32*	4	6	9 31.53	+28 6.9	1.619	2.281	22.5	19.8	119 E	73	36
10	23	16 37.99	- 6 23.3	2.105	1.516	25.9	18.5	42 E	25*	29*	4	11	9 31.98	+26 53.6	1.688	2.299	23.3	19.9	115 E	72	37
11	2	17 8.05	- 8 47.1	2.152	1.523	24.5	18.5	39 E	23*	27*	4	16	9 33.19	+25 41.2	1.759	2.316	23.9	20.1	111 E	71	38
11	12	17 38.53	- 10 50.9	2.205	1.534	22.8	18.5	37 E	22*	24*	4	26	9 37.59	+23 19.6	1.908	2.351	24.6	20.3	103 E	68*	41
11	22	18 9.21	- 12 32.5	2.262	1.549	21.0	18.6	34 E	21*	21*	5	6	9 44.10	+21 2.5	2.063	2.386	24.9	20.5	96 E	64*	43
12	2	18 39.90	- 13 50.7	2.323	1.567	19.1	18.6	31 E	19*	18*	5	16	9 52.26	+18 49.3	2.221	2.420	24.7	20.7	89 E	57*	45
12	12	19 10.40	- 14 45.2	2.386	1.589	17.1	18.6	28 E	17*	14*	5	26	10 1.69	+16 39.3	2.380	2.454	24.1	20.9	82 E	49*	47
12	22	19 40.47	- 15 16.9	2.450	1.613	14.9	18.6	25 E	15*	11*	6	5	10 12.07	+14 31.9	2.539	2.487	23.3	21.0	76 E	41*	49*
1	1	20 9.96	- 15 27.3	2.515	1.640	12.7	18.6	22 E	13*	8*	6	15	10 23.20	+12 26.3	2.694	2.520	22.1	21.1	69 E	34*	50*
1	11	20 38.73	- 15 18.6	2.578	1.670	10.4	18.6	18 E	10*	6*	6	25	10 34.90	+10 21.9	2.845	2.551	20.8	21.2	63 E	27*	49*
1	21	21 6.69	- 14 53.2	2.639	1.702	8.1	18.6	14 E	7*	3*	7	5	10 47.02	+ 8 18.5	2.990	2.583	19.3	21.3	57 E	22*	46*
12	27	11 13.31	+21 51.5	1.572	2.165	24.5	18.8	114 W	67	42*	7	15	10 59.47	+ 6 15.5	3.127	2.613	17.6	21.4	51 E	16*	43*
1	6	11 14.86	+22 24.7	1.501	2.200	21.9	18.7	123 W	67	42	7	25	11 12.19	+ 4 13.0	3.256	2.643	15.9	21.4	45 E	12*	38*
1	16	11 12.66	+23 13.5	1.441	2.235	18.6	18.5	133 W	68	41	8	4	11 25.11	+ 2 10.8	3.374	2.672	14.0	21.5	40 E	8*	33*
1	26	11 6.65	+24 11.8	1.398	2.269	14.8	18.3	144 W	69	40	8	14	11 38.19	+ 0 9.0	3.482	2.700	12.1	21.5	34 E	5*	28*
1	31	11 2.32	+24 41.7	1.383	2.286	12.7	18.3	149 W	70	39	8	24	11 51.39	+ 1 52.5	3.577	2.727	10.1	21.5	28 E	2*	22*
2	5	10 57.24	+25 10.5	1.375	2.303	10.7	18.2	154 W	70	39	9	3	12 4.70	- 3 53.3	3.660	2.754	8.0	21.5	22 E	—	16*
2	10	10 51.53	+25 36.8	1.373	2.320	8.9	18.1	159 W	71	38	9	13	12 18.08	- 5 53.6	3.728	2.780	6.0	21.4	17 E	—	10*
2	15	10 45.37	+25 59.1	1.377	2.337	7.5	18.1	162 W	71	38	9	23	12 31.53	- 7 53.0	3.782	2.805	4.0	21.4	11 E	—	5*
2	20	10 38.96	+26 16.3	1.388	2.353	6.8	18.1	164 W	71	38	10	3	12 45.00	- 9 51.3	3.821	2.829	2.3	21.3	6 E	—	—
2	25	10 32.53	+26 27.7	1.406	2.369	7.1	18.1	163 W	71	38	10	13	12 58.50	- 11 48.4	3.844	2.852	1.9	21.3	5 W	—	—
3	2	10 26.27	+26 32.7	1.431	2.386	8.2	18.2	160 E	72	37	10	23	13 11.97	- 13 43.9	3.851	2.874	3.3	21.4	10 W	—	3*
3	7	10 20.38	+26 31.2	1.462	2.402	9.7	18.4	156 E	72	37	198752 2005 EA₆₀										
3	12	10 15.01	+26 23.4	1.499	2.417	11.5	18.5	151 E	71	38	12 27	11 13.68	+ 7 46.4	0.505	1.244	48.4	20.6	109 W	53	56*	
3	17	10 10.30	+26 9.6	1.543	2.433	13.2	18.6	146 E	71	38	1	6	11 28.48	+ 5 42.4	0.500	1.278	44.2	20.5	115 W	51	58
3	22	10 6.35																			

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
455193 2000 RJ₆₀										265139 2003 UV₂₈₃									
<i>(continuation)</i>										<i>(continuation)</i>									
1 18	10 4.03	+45 37.9	0.723	1.626	20.7	20.0	144 W	89	18	3 27	10 20.69	+11 36.3	1.348	2.248	14.2	20.6	147 E	57	52
1 20	9 56.08	+45 4.4	0.721	1.635	19.3	19.9	147 W	90	19	4 6	10 16.69	+11 37.0	1.452	2.278	17.9	20.9	136 E	57	52
1 22	9 48.09	+44 27.0	0.721	1.644	18.1	19.9	149 W	89	20	4 16	10 15.86	+11 22.3	1.571	2.307	20.7	21.2	126 E	56	53
1 24	9 40.13	+43 46.0	0.721	1.652	16.8	19.9	151 W	89	20	4 26	10 17.95	+10 53.6	1.703	2.335	22.6	21.5	117 E	56	53
1 26	9 32.26	+43 1.3	0.723	1.661	15.7	19.9	153 W	88	21	491973 2013 EN₁₁									
1 28	9 24.55	+42 13.1	0.727	1.670	14.8	19.8	154 W	87	22	12 27	11 14.76	-18 32.3	1.825	2.184	26.5	21.0	98 W	26	82*
1 30	9 17.04	+41 21.8	0.731	1.679	14.0	19.8	156 W	86	23	1 1	11 16.77	-18 38.0	1.786	2.208	25.8	21.0	102 W	26	83
2 1	9 9.80	+40 27.7	0.737	1.687	13.4	19.9	157 W	85	24	1 6	11 18.05	-18 37.3	1.747	2.232	25.0	20.9	106 W	26	83
2 3	9 2.85	+39 31.1	0.744	1.696	13.1	19.9	157 E	85	24	1 11	11 18.57	-18 29.6	1.708	2.256	24.0	20.9	111 W	27	82
2 5	8 56.23	+38 32.6	0.753	1.705	13.0	19.9	157 E	84	25	1 16	11 18.31	-18 14.1	1.672	2.280	22.8	20.8	116 W	27	82
2 10	8 41.29	+36 0.1	0.779	1.726	13.8	20.0	155 E	81	28	1 21	11 17.29	-17 50.2	1.637	2.303	21.5	20.7	121 W	27	82
2 15	8 28.82	+33 24.3	0.814	1.748	15.5	20.2	152 E	78	31	1 26	11 15.52	-17 17.4	1.605	2.327	20.0	20.7	126 W	28	81
2 20	8 18.82	+30 51.0	0.856	1.769	17.8	20.4	147 E	76	33	1 31	11 13.04	-16 35.3	1.577	2.350	18.2	20.6	132 W	28	81
2 25	8 11.13	+28 24.3	0.905	1.790	20.0	20.6	142 E	73	36	2 5	11 9.91	-15 43.6	1.553	2.374	16.4	20.5	137 W	29	80
3 2	8 5.52	+26 6.8	0.959	1.811	22.2	20.9	136 E	71	38	2 10	11 6.21	-14 42.5	1.534	2.397	14.3	20.4	143 W	30	79
3 7	8 1.74	+23 59.8	1.019	1.832	24.1	21.1	131 E	69	40	2 15	11 2.05	-13 32.3	1.521	2.420	12.2	20.4	149 W	31	78
3 12	7 59.53	+22 3.2	1.083	1.852	25.7	21.3	126 E	67	42	2 20	10 57.57	-12 14.0	1.514	2.443	10.1	20.3	154 W	33	76
3 17	7 58.70	+20 16.6	1.151	1.872	27.0	21.5	121 E	65	44	2 25	10 52.92	-10 48.8	1.515	2.466	8.1	20.2	159 W	34	75
210806 2001 HN₄₀										3 2	10 48.24	-9 18.4	1.523	2.488	6.5	20.2	163 E	36	73
12 27	11 14.47	+11 13.5	2.437	2.925	18.4	21.3	110 W	56	53*	3 7	10 43.69	-7 44.7	1.538	2.511	5.7	20.2	165 E	37	72
1 6	11 17.17	+11 36.5	2.275	2.892	17.2	21.1	120 W	57	52	3 12	10 39.39	-6 9.6	1.561	2.533	6.0	20.3	164 E	39	70
1 16	11 17.63	+12 16.5	2.126	2.859	15.3	20.9	130 W	57	52	3 17	10 35.48	-4 35.1	1.593	2.555	7.2	20.4	161 W	40	69
1 26	11 15.63	+13 13.6	1.993	2.824	12.8	20.6	141 W	58	51	3 22	10 32.06	-3 3.1	1.631	2.577	8.8	20.5	157 E	42	67
2 5	11 11.09	+14 25.8	1.881	2.789	9.6	20.3	152 W	59	50	3 27	10 29.20	-1 35.2	1.677	2.598	10.5	20.7	152 E	43	66
2 10	11 7.91	+15 6.3	1.834	2.771	7.9	20.2	157 W	60	49	4 1	10 26.95	-0 12.5	1.730	2.620	12.2	20.8	146 E	45	64
2 15	11 4.18	+15 48.8	1.794	2.753	6.1	20.0	163 W	61	48	4 6	10 25.33	+1 4.1	1.788	2.641	13.8	21.0	141 E	46	63
2 20	10 59.98	+16 32.1	1.761	2.735	4.5	19.9	167 W	62	47	4 11	10 24.35	+2 13.9	1.853	2.662	15.3	21.1	136 E	47	62
2 25	10 55.41	+17 15.2	1.736	2.716	3.6	19.8	170 W	62	47	4 16	10 24.00	+3 16.8	1.922	2.683	16.6	21.2	130 E	48	61
3 2	10 50.58	+17 57.0	1.717	2.697	3.9	19.8	169 E	63	46	4 21	10 24.27	+4 12.7	1.996	2.703	17.7	21.4	125 E	49	60
3 7	10 45.64	+18 36.4	1.706	2.679	5.3	19.8	166 E	64	45	351545 2005 TE₁₅									
3 12	10 40.72	+19 12.5	1.702	2.659	7.2	19.9	160 E	64	45	12 27	11 15.28	+35 20.0	0.659	1.408	38.6	21.1	117 W	80	29*
3 17	10 35.97	+19 44.3	1.705	2.640	9.2	20.0	155 E	65	44	1 6	11 33.44	+36 56.9	0.564	1.366	37.8	20.7	122 W	82	27
3 22	10 31.53	+20 11.2	1.715	2.621	11.2	20.1	149 E	65	44	1 16	11 49.85	+39 12.4	0.474	1.321	36.9	20.2	126 W	84	25
3 27	10 27.54	+20 32.7	1.730	2.601	13.2	20.1	144 E	66	43	1 26	12 3.89	+42 14.5	0.392	1.272	36.4	19.7	130 W	87	22
4 6	10 21.23	+20 59.3	1.777	2.561	16.7	20.3	133 E	66	43	1 31	12 9.78	+44 6.3	0.354	1.247	36.5	19.4	131 W	89	20
4 16	10 17.62	+21 4.2	1.839	2.521	19.7	20.4	122 E	66	43	2 5	12 14.69	+46 14.6	0.317	1.220	36.9	19.1	132 W	89	18
4 26	10 16.92	+20 49.2	1.913	2.480	22.0	20.5	113 E	66	43	2 10	12 18.35	+48 42.3	0.281	1.194	37.9	18.9	132 E	86	15
5 6	10 19.06	+20 16.9	1.995	2.439	23.7	20.6	104 E	65*	44	2 15	12 20.38	+51 33.1	0.248	1.166	39.5	18.6	131 W	83	12
5 16	10 23.81	+19 29.6	2.079	2.397	24.8	20.7	95 E	61*	45	2 17	12 20.62	+52 49.1	0.235	1.155	40.4	18.5	131 W	82	11
5 26	10 30.90	+18 29.0	2.163	2.354	25.5	20.8	88 E	55*	46	2 19	12 20.47	+54 10.2	0.222	1.144	41.5	18.3	130 W	81	10
6 5	10 40.01	+17 16.8	2.244	2.311	25.7	20.8	81 E	48*	47	2 21	12 19.85	+55 37.2	0.210	1.133	42.7	18.2	129 W	79	8
6 15	10 50.87	+15 54.0	2.321	2.268	25.5	20.9	74 E	41*	48*	2 23	12 18.68	+57 10.9	0.197	1.121	44.1	18.1	128 W	78	7
6 25	11 3.24	+14 21.5	2.392	2.225	25.1	20.9	68 E	35*	48*	2 25	12 16.81	+58 52.3	0.185	1.110	45.8	18.0	127 W	76	5
7 5	11 16.91	+12 40.2	2.457	2.182	24.4	20.9	62 E	30*	47*	2 26	12 15.56	+59 46.4	0.179	1.104	46.7	18.0	126 W	75	4
7 15	11 31.76	+10 50.7	2.514	2.138	23.5	20.9	57 E	25*	45*	2 27	12 14.06	+60 43.0	0.173	1.099	47.7	17.9	125 W	74	3
7 25	11 47.64	+8 53.6	2.563	2.095	22.4	20.8	52 E	22*	42*	2 28	12 12.26	+61 42.2	0.167	1.093	48.8	17.8	124 W	73	2
8 4	12 4.49	+6 49.8	2.604	2.053	21.2	20.8	47 E	18*	38*	3 1	12 10.11	+62 44.5	0.162	1.087	49.9	17.8	123 W	72	1
8 14	12 22.27	+4 40.0	2.637	2.010	19.9	20.7	43 E	16*	35*	3 2	12 7.55	+63 50.0	0.156	1.081	51.1	17.7	122 W	71	—
8 24	12 40.95	+2 25.1	2.663	1.969	18.5	20.6	38 E	14*	31*	3 3	12 4.48	+64 59.0	0.150	1.076	52.4	17.7	121 W	70	—
9 3	13 0.53	+0 6.4	2.681	1.928	17.0	20.6	34 E	12*	27*	3 4	12 0.78	+66 11.8	0.145	1.070	53.9	17.6	119 W	69	—
9 13	13 21.05	-2 15.1	2.692	1.889	15.4	20.5	30 E	10*	23*	3 5	11 56.30	+67 28.9	0.139	1.064	55.4	17.6	118 W	68	—
9 23	13 42.54	-4 37.8	2.698	1.850	13.8	20.4	26 E	9*	19*	3 6	11 50.81	+68 50.4	0.134	1.058	57.0	17.5	116 W	66	—
10 3	14 5.05	-7 0.0	2.698	1.814	12.2	20.3	22 E	7*	15*	3 7	11 43.99	+70 16.7	0.128	1.053	58.8	17.5	115 W	65	—
10 13	14 28.63	-9 19.6	2.693	1.779	10.5	20.2	19 E	6*	12*	3 8	11 35.38	+71 47.9	0.123	1.047	60.7	17.4	113 W	63	—
10 23	14 53.34	-11 34.4	2.685	1.747	8.8	20.1	16 E	5*	8*	3 9	11 24.27	+73 24.1	0.118	1.041	62.7	17.4	111 W	62	—
11 2	15 19.20	-13 41.9	2.673	1.717	7.1	19.9	12 E	3*	5*	3 10	11 9.54	+75 4.8	0.113	1.036	65.0	17.3	109 E	60	—
11 12	15 46.23	-15 39.4	2.659	1.690	5.4	19.8	9 E	2*	1*	3 11	10 49.39	+76 48.6	0.108	1.030	67.4	17.3	107 E	58	—
11 22	16 14.41	-17 24.0	2.643	1.666	3.8	19.7	6 E	—	—	3 12	10 20.83	+78 32.3	0.103	1.024	70.0	17.3	104 E	56	—
12 2	16 43.66	-18 52.8	2.627	1.645	2.4	19.5	4 E	—	—	3 13	9 39.07	+80 9.1	0.099	1.018	72.9	17.3	102 E	55	—
12 12	17 13.87	-20 3.4	2.610	1.628	1.8	19.5	3 W	—	—	3 14	8 37.98	+81 24.3	0.094	1.013	76.0	17.2	99 E	54	—
12 22	17 44.82	-20 53.3	2.594	1.615	2.7	19.5	4 W	—	—	3 15	7 16.16	+81 53.6	0.090	1.007	79.4	17.3	96 E	53	—
1 1	18 16.30	-21 21.0	2.578	1.606	4.1	19.6	7 W	—	—	3 16	5 48.39	+81 12.8	0.086	1.001	83.0	17.3	92 E	54*	

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	20/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
376763 1999 XB₉										101811 1999 JQ₆ (continuation)									
12 27	11 15.64	+33 22.6	1.558	2.179	23.9	20.8	116W	78	31*	2 13	10 58.98	+55 17.6	0.775	1.635	24.9	16.5	136W	80	9
1 1	11 18.28	+34 35.4	1.530	2.197	22.7	20.7	120W	80	29	2 15	10 54.92	+54 59.4	0.776	1.638	24.7	16.5	136W	80	9
1 6	11 19.98	+35 52.7	1.506	2.214	21.5	20.7	124W	81	28	2 17	10 50.81	+54 38.0	0.778	1.641	24.6	16.5	136W	80	9
1 11	11 20.68	+37 13.4	1.485	2.231	20.3	20.6	128W	82	27	2 19	10 46.71	+54 13.5	0.780	1.645	24.4	16.5	137W	81	10
1 16	11 20.32	+38 36.2	1.468	2.248	19.0	20.6	132W	84	25	2 21	10 42.65	+53 45.8	0.783	1.648	24.4	16.5	137W	81	10
1 21	11 18.88	+39 59.3	1.455	2.265	17.7	20.5	136W	85	24	2 23	10 38.66	+53 15.0	0.786	1.652	24.3	16.5	137W	82	11
1 26	11 16.35	+41 20.9	1.448	2.282	16.5	20.5	139W	86	23	2 25	10 34.79	+52 41.2	0.791	1.655	24.3	16.5	137W	82	11
1 31	11 12.77	+42 38.7	1.446	2.299	15.6	20.5	141W	88	21	3 2	10 25.79	+51 4.3	0.804	1.665	24.5	16.6	136E	84	13
2 5	11 8.21	+43 50.8	1.450	2.315	14.8	20.5	143W	89	20	3 7	10 18.01	+49 11.9	0.821	1.676	24.8	16.6	135E	86	15
2 10	11 2.79	+44 55.1	1.459	2.332	14.3	20.5	144W	90	19	3 12	10 11.68	+47 6.8	0.843	1.687	25.4	16.7	133E	88	17
2 15	10 56.70	+45 49.8	1.474	2.348	14.2	20.5	144W	89	18	3 17	10 6.88	+44 52.1	0.869	1.699	26.1	16.8	131E	90	19
2 20	10 50.17	+46 33.4	1.494	2.364	14.4	20.6	144W	88	17	3 22	10 3.62	+42 31.0	0.899	1.712	26.9	16.9	129E	88	21
2 25	10 43.45	+47 5.2	1.521	2.380	14.8	20.6	142W	88	17	3 27	10 1.77	+40 6.4	0.933	1.725	27.7	17.1	127E	85	24
3 2	10 36.81	+47 24.9	1.552	2.396	15.5	20.7	140E	88	17	4 1	10 1.21	+37 40.7	0.971	1.738	28.5	17.2	124E	83	26
3 7	10 30.49	+47 32.8	1.589	2.412	16.3	20.8	137E	87	16	4 6	10 1.78	+35 15.7	1.012	1.753	29.3	17.3	121E	80	29
3 12	10 24.70	+47 29.3	1.630	2.427	17.2	20.9	134E	88	17	4 11	10 3.35	+32 52.8	1.058	1.767	30.0	17.5	118E	78	31
3 17	10 19.63	+47 15.6	1.676	2.442	18.1	21.0	130E	88	17	4 16	10 5.79	+30 32.9	1.106	1.783	30.6	17.6	115E	76	33
3 22	10 15.40	+46 52.6	1.726	2.457	18.9	21.1	127E	88	17	4 21	10 8.98	+28 16.8	1.158	1.798	31.1	17.7	112E	73	36
3 27	10 12.08	+46 21.8	1.780	2.472	19.7	21.2	123E	89	18	4 26	10 12.82	+26 4.8	1.212	1.814	31.5	17.9	109E	71	38
4 1	10 9.70	+45 44.3	1.837	2.487	20.4	21.3	120E	89	18	5 1	10 17.19	+23 57.0	1.269	1.831	31.8	18.0	107E	69	40
4 6	10 8.23	+45 1.2	1.897	2.502	21.1	21.4	116E	90	19	5 6	10 22.03	+21 53.5	1.328	1.848	32.0	18.1	104E	67*	42
19127 Olegfremov										65803 Didymos									
12 27	11 16.08	+ 5 43.9	2.361	2.820	19.4	20.5	108W	51	58*	5 16	10 32.86	+17 58.7	1.453	1.882	32.1	18.3	98E	60*	46
1 6	11 16.78	+ 5 30.2	2.235	2.829	17.9	20.3	118W	51	58	5 26	10 44.89	+14 18.8	1.584	1.918	31.9	18.6	93E	53*	50
1 16	11 14.96	+ 5 31.1	2.119	2.836	15.8	20.2	128W	51	58	6 5	10 57.80	+10 52.2	1.720	1.954	31.2	18.8	87E	45*	53
1 26	11 10.53	+ 5 47.0	2.020	2.842	13.0	20.0	140W	51	58	6 15	11 11.38	+ 7 36.8	1.859	1.991	30.3	19.0	82E	38*	56*
2 5	11 3.61	+ 6 16.7	1.941	2.847	9.5	19.7	152W	51	58	6 25	11 25.50	+ 4 31.0	2.001	2.029	29.2	19.1	77E	31*	59*
2 15	10 54.61	+ 6 57.7	1.889	2.851	5.5	19.5	164W	52	57	7 5	11 40.03	+ 1 33.7	2.143	2.066	27.9	19.3	72E	25*	59*
2 20	10 49.56	+ 7 21.0	1.873	2.852	3.3	19.4	170W	52	57	7 15	11 54.94	- 1 16.4	2.284	2.104	26.4	19.4	67E	20*	58*
2 25	10 44.30	+ 7 45.3	1.865	2.854	1.1	19.2	177W	53	56	7 25	12 10.16	- 4 0.0	2.423	2.143	24.7	19.5	62E	16*	55*
3 2	10 38.96	+ 8 9.7	1.865	2.855	1.1	19.2	177E	53	56	8 4	12 25.68	- 6 37.7	2.560	2.180	23.0	19.6	57E	12*	51*
3 7	10 33.67	+ 8 33.6	1.872	2.855	3.3	19.4	171E	54	55	8 14	12 41.48	- 9 10.0	2.691	2.218	21.1	19.7	52E	9*	46*
3 12	10 28.57	+ 8 56.3	1.887	2.856	5.4	19.5	164E	54	55	8 24	12 57.57	-11 37.0	2.818	2.256	19.2	19.8	47E	6*	41*
3 17	10 23.78	+ 9 17.1	1.909	2.856	7.5	19.6	158E	54	55	9 3	13 13.94	-13 58.7	2.937	2.293	17.2	19.9	42E	4*	36*
3 27	10 15.56	+ 9 51.2	1.973	2.855	11.3	19.9	146E	55	54	9 13	13 30.61	-16 15.4	3.049	2.330	15.2	19.9	37E	1*	31*
4 6	10 9.62	+10 13.4	2.060	2.853	14.5	20.1	135E	55	54	9 23	13 47.57	-18 26.7	3.152	2.366	13.1	19.9	32E	—	26*
4 16	10 6.22	+10 22.8	2.165	2.850	17.0	20.3	124E	55	54	10 3	14 4.83	-20 32.7	3.246	2.402	11.0	19.9	27E	—	21*
4 26	10 5.40	+10 19.3	2.284	2.846	18.8	20.4	114E	55	54	10 13	14 22.40	-22 33.0	3.329	2.437	9.0	20.0	22E	—	16*
5 6	10 6.96	+10 3.9	2.410	2.840	20.1	20.6	105E	54*	54	10 23	14 40.26	-24 27.4	3.400	2.471	7.1	19.9	18E	—	11*
5 16	10 10.67	+ 9 37.4	2.542	2.834	20.8	20.7	96E	51*	54	11 2	14 58.40	-26 15.7	3.459	2.505	5.3	19.9	14E	—	6*
5 26	10 16.23	+ 9 1.0	2.674	2.826	21.0	20.8	88E	45*	55	11 12	15 16.81	-27 57.7	3.505	2.538	4.1	19.9	11E	—	1*
6 5	10 23.36	+ 8 15.5	2.804	2.817	20.8	20.9	80E	38*	56*	11 22	15 35.44	-29 33.1	3.537	2.570	3.8	19.9	10W	—	2*
6 15	10 31.83	+ 7 21.8	2.930	2.807	20.3	21.0	73E	32*	55*	12 2	15 54.24	-31 2.0	3.556	2.602	4.7	20.0	12W	—	6*
6 25	10 41.41	+ 6 20.7	3.049	2.796	19.4	21.0	66E	26*	53*	12 12	16 13.16	-32 24.3	3.560	2.632	6.2	20.1	17W	—	11*
7 5	10 51.92	+ 5 12.9	3.160	2.784	18.3	21.1	59E	20*	50*	12 22	16 32.10	-33 40.1	3.550	2.662	7.9	20.2	22W	—	16*
7 15	11 3.22	+ 3 58.9	3.261	2.771	17.0	21.1	53E	15*	45*	1	1 16 50.98	-34 49.7	3.526	2.691	9.7	20.3	27W	—	21*
7 25	11 15.20	+ 2 39.5	3.352	2.756	15.6	21.1	47E	11*	40*	1 11	17 9.69	-35 53.7	3.488	2.719	11.4	20.4	33W	1*	27*
8 4	11 27.77	+ 1 15.2	3.430	2.740	13.9	21.1	41E	8*	34*	1 21	17 28.11	-36 52.7	3.437	2.746	13.1	20.4	39W	1*	33*
8 14	11 40.86	+ 0 13.4	3.496	2.724	12.2	21.0	35E	5*	29*	252882 2002 JM₆₈									
8 24	11 54.40	+ 1 45.6	3.548	2.706	10.3	21.0	29E	3*	23*	12 27	11 16.72	+10 8.8	0.768	1.433	40.4	19.8	109W	55	54*
9 3	12 8.38	+ 3 21.0	3.587	2.687	8.4	20.9	23E	—	17*	1 6	11 19.24	+10 43.8	0.738	1.488	35.3	19.7	119W	56	53
9 13	12 22.76	+ 4 58.8	3.611	2.666	6.4	20.8	17E	—	11*	1 16	11 16.11	+11 52.7	0.713	1.543	29.1	19.5	130W	57	52
9 23	12 37.52	+ 6 38.5	3.621	2.645	4.4	20.7	12E	—	5*	1 26	11 7.19	+13 30.7	0.698	1.597	21.9	19.3	143W	59	50
10 3	12 52.66	+ 8 19.4	3.615	2.623	2.3	20.5	6E	—	—	1 31	11 0.77	+14 26.8	0.695	1.623	18.0	19.2	149W	59	50
10 13	13 8.17	+10 0.9	3.596	2.599	1.0	20.4	3W	—	—	2 5	10 53.30	+15 24.6	0.698	1.649	14.0	19.1	156W	60	49
10 23	13 24.04	+11 42.2	3.561	2.575	2.4	20.5	6W	—	—	2 10	10 45.04	+16 21.6	0.706	1.674	10.0	19.0	163W	61	48
11 2	13 40.28	+13 22.7	3.513	2.549	4.5	20.6	12W	3*	4*	2 15	10 36.35	+17 15.1	0.719	1.699	6.5	18.9	169W	62	47
11 12	13 56.89	+15 1.7	3.450	2.522	6.7	20.6	17W	7*	8*	2 20	10 27.62	+18 2.7	0.739	1.724	4.5	18.9	172W	63	46
11 22	14 13.86	+16 38.4	3.374	2.494	8.9	20.6	23W	11*	13*	2 25	10 19.23	+18 42.7	0.765	1.748	5.7	19.1	170E	64	45
12 2	14 31.19	+18 12.0	3.285	2.465	11.0	20.6	29W	14*	18*	3 2	10 11.50	+19 14.1	0.796	1.772	8.5	19.3	165E	64	45
12 12	14 48.85	+19 41.9	3.185	2.436	13.2	20.6	34W	17*	24*	3 7	10 4.67	+19 36.9	0.834	1.795	11.6	19.6	159E	65	44
12 22	15 6.82	+21 7.3	3.073	2.405	15.3	20.6	40W	18*	30*	3 12	9 58.92	+19 51.1	0.876	1.817	14.5	19.8	153E	65	44
1 1	15 25.07	+22																	

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	20/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
252882 2002 JM₆₈										143992 2004 AF									
<i>(continuation)</i>										<i>(continuation)</i>									
2 5	11 50.20	+56 26.6	0.844	1.660	27.1	18.5	130 W	79	8	4 26	9 25.21	-3 23.4	2.262	2.747	20.4	21.1	108 E	41*	67
2 10	11 46.24	+57 7.7	0.842	1.662	26.8	18.5	131 W	78	7	5 6	9 28.07	-3 15.7	2.428	2.781	21.0	21.3	100 E	39*	67
2 15	11 40.52	+57 34.9	0.842	1.665	26.7	18.5	131 W	77	6	5 16	9 32.88	-3 18.9	2.597	2.812	21.1	21.5	92 E	35*	67
2 20	11 33.40	+57 45.4	0.845	1.669	26.6	18.5	131 W	77	6	75015 1999 UW₄									
2 25	11 25.35	+57 37.8	0.851	1.673	26.7	18.6	130 W	77	6	12 27	11 18.35	+5 39.3	2.255	2.714	20.3	21.2	107 W	51	58*
2 27	11 21.98	+57 29.3	0.855	1.675	26.8	18.6	130 W	78	7	1 6	11 19.89	+5 26.0	2.133	2.724	18.8	21.1	117 W	50	59
3 1	11 18.60	+57 17.8	0.858	1.677	26.9	18.6	130 W	78	7	1 16	11 18.86	+5 28.2	2.022	2.733	16.6	20.9	127 W	50	59
3 3	11 15.21	+57 3.2	0.862	1.679	27.0	18.6	130 W	78	7	1 26	11 15.17	+5 46.2	1.925	2.741	13.8	20.7	139 W	51	58
3 5	11 11.87	+56 45.5	0.867	1.681	27.1	18.6	129 W	78	7	2 5	11 8.90	+6 19.0	1.849	2.749	10.2	20.5	150 W	51	58
3 7	11 8.60	+56 24.8	0.872	1.683	27.3	18.7	129 E	79	8	2 15	11 0.45	+7 3.9	1.797	2.755	6.1	20.3	163 W	52	57
3 12	11 0.92	+55 20.3	0.887	1.689	27.7	18.7	128 E	80	9	2 20	10 55.62	+7 29.4	1.781	2.758	3.9	20.1	169 W	52	57
3 17	10 54.25	+53 58.7	0.905	1.696	28.2	18.8	126 E	81	10	2 25	10 50.55	+7 55.9	1.773	2.761	1.7	20.0	175 W	53	56
3 22	10 48.86	+52 22.2	0.925	1.703	28.7	18.9	125 E	83	12	3 2	10 45.37	+8 22.5	1.772	2.763	0.6	19.9	178 E	53	56
3 27	10 44.86	+50 33.3	0.949	1.711	29.3	18.9	123 E	84	13	3 7	10 40.22	+8 48.6	1.779	2.765	2.9	20.1	172 E	54	55
4 1	10 42.23	+48 34.4	0.976	1.719	29.9	19.0	121 E	86	15	3 12	10 35.23	+9 13.4	1.793	2.767	5.1	20.2	166 E	54	55
4 6	10 40.89	+46 27.9	1.005	1.728	30.5	19.1	119 E	89	18	3 17	10 30.54	+9 36.1	1.815	2.769	7.3	20.3	159 E	55	54
4 11	10 40.77	+44 15.7	1.038	1.737	31.0	19.2	117 E	89	20	3 27	10 22.49	+10 13.3	1.878	2.771	11.2	20.6	147 E	55	54
4 16	10 41.74	+41 59.6	1.073	1.746	31.5	19.3	114 E	87	22	4 6	10 16.71	+10 37.5	1.964	2.773	14.5	20.8	136 E	56	53
4 21	10 43.67	+39 41.2	1.111	1.756	32.0	19.4	112 E	85	24	4 16	10 13.50	+10 47.7	2.068	2.774	17.1	21.0	125 E	56	53
4 26	10 46.43	+37 21.9	1.152	1.767	32.4	19.5	110 E	82	27	4 26	10 12.89	+10 44.1	2.186	2.773	19.1	21.2	116 E	56	53
5 1	10 49.91	+35 2.7	1.195	1.778	32.8	19.6	107 E	80	29	5 6	10 14.70	+10 27.7	2.313	2.772	20.4	21.3	106 E	55*	54
5 6	10 54.00	+32 44.3	1.240	1.789	33.0	19.7	105 E	78	31	5 16	10 18.67	+9 59.8	2.445	2.770	21.2	21.5	98 E	52*	54
5 11	10 58.62	+30 27.4	1.288	1.800	33.2	19.8	102 E	75	34	283889 2004 BL₈₉									
5 16	11 3.69	+28 12.4	1.338	1.812	33.3	19.9	100 E	72*	36	12 27	11 19.07	-2 11.9	1.418	1.909	30.0	20.1	104 W	43	66*
5 21	11 9.16	+25 59.6	1.390	1.824	33.4	20.0	98 E	69*	38	1 6	11 29.25	-4 25.5	1.292	1.880	29.3	19.8	111 W	41	68
5 26	11 14.97	+23 49.4	1.443	1.837	33.3	20.1	95 E	65*	40	1 16	11 37.29	-6 34.9	1.174	1.852	28.0	19.5	118 W	38	71
6 5	11 27.39	+19 37.2	1.555	1.862	33.0	20.3	90 E	57*	44	1 26	11 42.72	-8 36.7	1.065	1.825	25.9	19.2	126 W	36	73
6 15	11 40.70	+15 36.1	1.673	1.889	32.4	20.5	86 E	49*	48	1 31	11 44.32	-9 33.4	1.015	1.812	24.6	19.1	130 W	35	74
6 25	11 54.70	+11 46.2	1.794	1.916	31.6	20.6	81 E	42*	52*	2 5	11 45.09	-10 26.5	0.967	1.800	23.1	18.9	134 W	35	74
7 5	12 9.24	+8 7.1	1.919	1.944	30.5	20.8	76 E	35*	55*	2 10	11 45.00	-11 15.2	0.924	1.788	21.4	18.7	139 W	34	75
7 15	12 24.27	+4 38.2	2.045	1.972	29.2	20.9	71 E	30*	56*	2 15	11 44.01	-11 58.4	0.884	1.776	19.5	18.6	143 W	33	76
7 25	12 39.73	+1 19.1	2.172	2.001	27.8	21.0	67 E	25*	56*	2 20	11 42.14	-12 35.4	0.848	1.764	17.4	18.4	148 W	32	77
8 4	12 55.57	-1 50.7	2.297	2.030	26.2	21.1	62 E	21*	54*	2 25	11 39.46	-13 5.4	0.816	1.753	15.3	18.2	152 W	32	77
8 14	13 11.81	-4 51.6	2.421	2.059	24.5	21.2	57 E	17*	50*	3 2	11 36.04	-13 27.5	0.789	1.743	13.1	18.1	156 W	32	77
8 24	13 28.43	-7 43.8	2.542	2.087	22.6	21.3	53 E	14*	46*	3 7	11 32.02	-13 41.2	0.767	1.733	11.2	17.9	160 W	31	78
9 3	13 45.43	-10 27.5	2.658	2.116	20.7	21.4	48 E	11*	42*	3 12	11 27.58	-13 46.2	0.749	1.723	9.8	17.8	163 E	31	78
9 13	14 2.85	-13 2.9	2.768	2.145	18.7	21.4	43 E	9*	37*	3 17	11 22.97	-13 42.6	0.737	1.715	9.3	17.7	164 E	31	78
9 23	14 20.67	-15 29.8	2.872	2.173	16.6	21.5	38 E	7*	32*	3 22	11 18.44	-13 31.3	0.729	1.706	10.0	17.7	163 E	31	78
10 3	14 38.91	-17 48.2	2.969	2.201	14.4	21.5	33 E	5*	27*	3 27	11 14.25	-13 13.3	0.726	1.698	11.6	17.8	160 E	32	77
230136 2001 PH₁₀										4 1	11 10.64	-12 50.3	0.728	1.691	13.8	17.8	156 E	32	77
12 27	11 17.25	+4 20.9	2.046	2.515	22.0	21.2	107 W	49	60*	4 6	11 7.79	-12 23.8	0.735	1.685	16.3	17.9	152 E	33	76
1 6	11 19.46	+4 23.0	1.947	2.545	20.2	21.1	117 W	49	60	4 11	11 5.85	-11 55.6	0.745	1.679	18.8	18.0	147 E	33	76
1 16	11 18.95	+4 44.0	1.858	2.574	17.8	20.9	127 W	50	59	4 16	11 4.96	-11 27.4	0.760	1.673	21.2	18.2	143 E	34	75
1 26	11 15.66	+5 24.1	1.784	2.602	14.6	20.8	138 W	50	59	4 21	11 5.15	-11 0.8	0.778	1.669	23.5	18.3	138 E	34	75
2 5	11 9.76	+6 21.4	1.729	2.630	10.8	20.6	150 W	51	58	4 26	11 6.45	-10 37.1	0.799	1.665	25.7	18.4	134 E	34	75
2 15	11 1.70	+7 31.9	1.698	2.657	6.4	20.4	163 W	53	56	5 1	11 8.81	-10 17.1	0.822	1.661	27.6	18.5	130 E	35	74
2 20	10 57.11	+8 10.0	1.693	2.670	4.1	20.2	169 W	53	56	5 6	11 12.18	-10 1.5	0.848	1.659	29.3	18.6	126 E	35	74
2 25	10 52.32	+8 48.8	1.695	2.683	1.8	20.1	175 W	54	55	5 16	11 21.72	-9 45.0	0.907	1.656	32.2	18.8	119 E	35*	74
3 2	10 47.47	+9 27.1	1.705	2.695	0.9	20.1	178 E	54	55	5 26	11 34.52	-9 48.8	0.973	1.655	34.3	19.1	113 E	34*	74
3 7	10 42.68	+10 4.0	1.722	2.708	3.0	20.2	172 E	55	54	6 5	11 49.94	-10 11.7	1.045	1.658	35.8	19.3	107 E	32*	74
3 12	10 38.10	+10 38.7	1.746	2.720	5.2	20.4	166 E	56	53	6 15	12 7.48	-10 51.3	1.122	1.664	36.7	19.4	102 E	29*	75
3 17	10 33.86	+11 10.5	1.778	2.732	7.3	20.6	160 E	56	53	6 25	12 26.70	-11 44.8	1.204	1.672	37.1	19.6	97 E	26*	76
3 22	10 30.04	+11 38.6	1.816	2.744	9.3	20.7	154 E	57	52	7 5	12 47.23	-12 48.8	1.290	1.683	37.1	19.8	93 E	23*	77
3 27	10 26.75	+12 2.8	1.861	2.756	11.2	20.8	148 E	57	52	7 15	13 8.83	-14 0.1	1.380	1.696	36.8	19.9	89 E	20*	78*
4 1	10 24.04	+12 22.9	1.911	2.767	12.8	21.0	142 E	57	52	7 25	13 31.28	-15 15.7	1.474	1.712	36.2	20.1	85 E	18*	77*
4 6	10 21.93	+12 38.6	1.966	2.779	14.3	21.1	137 E	58	51	8 4	13 54.42	-16 32.5	1.571	1.730	35.4	20.2	81 E	17*	74*
4 11	10 20.45	+12 50.2	2.026	2.790	15.7	21.2	131 E	58	51	8 14	14 18.12	-17 47.8	1.672	1.750					

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	20/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
313276 2002 AX₁										240871 MOSS (continuation)									
12 27	11 22.69	+30 47.2	0.256	1.113	53.7	18.9	114 W	76	33*	12 2	18 46.95	-35 38.6	2.691	1.931	15.9	20.8	32 E	1*	26*
12 29	11 3.94	+30 29.2	0.246	1.127	49.2	18.8	120 W	75	34	12 7	19 1.56	-34 58.3	2.734	1.950	14.8	20.9	30 E	1*	24*
12 31	10 43.56	+29 59.3	0.238	1.140	44.3	18.6	126 W	75	34	12 12	19 15.80	-34 14.0	2.777	1.968	13.8	20.9	28 E	1*	22*
1 2	10 21.74	+29 15.3	0.232	1.152	39.0	18.4	132 W	74	35	12 17	19 29.66	-33 26.1	2.819	1.987	12.7	20.9	26 E	1*	20*
1 4	9 58.81	+28 15.3	0.227	1.165	33.4	18.2	139 W	73	36	12 22	19 43.13	-32 35.0	2.860	2.005	11.7	20.9	24 E	1*	18*
1 6	9 35.25	+26 58.5	0.224	1.176	27.6	18.0	146 W	72	37	12 27	19 56.23	-31 41.1	2.899	2.024	10.7	20.9	22 E	—	16*
1 8	9 11.63	+25 25.9	0.224	1.188	21.7	17.9	154 W	70	39	1 1	20 8.97	-30 44.5	2.937	2.043	9.6	20.9	20 E	—	14*
1 10	8 48.54	+23 40.2	0.226	1.199	15.7	17.7	161 W	69	40	1 6	20 21.34	-29 45.7	2.973	2.062	8.6	20.9	18 E	—	12*
1 12	8 26.53	+21 45.4	0.230	1.210	9.9	17.6	168 W	67	42	1 11	20 33.35	-28 45.0	3.008	2.082	7.6	20.9	16 E	—	10*
1 14	8 6.01	+19 46.3	0.237	1.220	4.6	17.4	174 W	65	44	1 16	20 45.02	-27 42.5	3.041	2.101	6.6	20.9	14 E	—	8*
1 16	7 47.25	+17 47.3	0.246	1.230	2.7	17.4	177 E	63	46	1 21	20 56.36	-26 38.7	3.071	2.120	5.7	20.9	12 E	—	6*
1 18	7 30.35	+15 52.4	0.257	1.239	6.7	17.7	172 E	61	48	311554 2006 BQ₁₄₇									
1 20	7 15.33	+14 4.3	0.271	1.248	11.0	18.0	166 E	59	50	12 27	11 23.10	-21 30.3	0.555	1.166	57.2	19.8	94 W	23	84*
1 22	7 2.09	+12 24.7	0.285	1.257	15.0	18.3	161 E	57	52	1 1	11 31.33	-21 39.8	0.512	1.165	56.8	19.6	97 W	23	86*
1 24	6 50.50	+10 54.2	0.301	1.265	18.6	18.6	156 E	56	53	1 6	11 39.73	-21 38.9	0.467	1.162	56.3	19.4	100 W	23	86
1 26	6 40.42	+9 33.1	0.319	1.273	21.9	18.8	151 E	55	54	1 11	11 48.40	-21 24.3	0.421	1.157	55.8	19.2	103 W	24	85
1 28	6 31.68	+8 20.9	0.337	1.281	24.8	19.0	147 E	53	56	1 16	11 57.51	-20 50.8	0.375	1.149	55.1	18.9	107 W	24	85
1 30	6 24.14	+7 17.0	0.357	1.288	27.4	19.2	143 E	52	57	1 21	12 7.36	-19 50.6	0.328	1.139	54.3	18.5	110 W	25	84
2 1	6 17.64	+6 20.6	0.377	1.295	29.7	19.4	139 E	51	58	1 26	12 18.44	-18 11.4	0.281	1.126	53.3	18.2	114 W	27	82
2 3	6 12.08	+5 31.1	0.398	1.301	31.8	19.6	136 E	51	58	1 28	12 23.38	-17 16.5	0.262	1.121	52.8	18.0	115 W	28	81
2 5	6 7.33	+4 47.6	0.419	1.307	33.6	19.8	133 E	50	59	1 30	12 28.72	-16 10.3	0.244	1.115	52.4	17.8	116 W	29	80
2 7	6 3.31	+4 9.5	0.441	1.313	35.2	20.0	130 E	49	60	2 1	12 34.55	-14 50.2	0.225	1.108	51.9	17.6	118 W	30	79
2 9	5 59.94	+3 36.1	0.463	1.318	36.7	20.1	127 E	49	60	2 3	12 40.99	-13 12.8	0.207	1.102	51.4	17.4	119 W	32	77
2 11	5 57.13	+3 6.9	0.486	1.323	38.0	20.3	124 E	48	61	2 5	12 48.20	-11 13.9	0.190	1.094	50.9	17.2	120 W	34	75
2 13	5 54.84	+2 41.2	0.508	1.328	39.1	20.4	122 E	48	61	2 6	12 52.15	-10 4.6	0.181	1.091	50.7	17.1	121 W	35	74
2 15	5 53.00	+2 18.8	0.531	1.332	40.2	20.5	120 E	47	62	2 7	12 56.39	-8 47.6	0.173	1.087	50.5	16.9	122 W	36	73
2 20	5 50.09	+1 34.0	0.589	1.342	42.3	20.8	114 E	47	62	2 8	13 0.94	-7 21.9	0.164	1.083	50.4	16.8	122 W	38	71
2 25	5 49.16	+1 1.4	0.647	1.349	43.9	21.1	109 E	46	63	2 9	13 5.85	-5 46.4	0.156	1.079	50.2	16.7	123 W	39	70
3 2	5 49.74	+0 37.6	0.705	1.353	45.1	21.3	105 E	46	63	2 10	13 11.18	-3 59.7	0.148	1.075	50.2	16.6	123 W	41	68
3 7	5 51.55	+0 19.9	0.762	1.356	46.0	21.5	100 E	45	64	2 11	13 16.98	-2 0.5	0.140	1.071	50.3	16.5	123 W	43	66
240871 MOSS										2 12	13 23.34	+0 13.0	0.133	1.066	50.4	16.3	124 W	45	64
12 27	11 23.07	+21 35.0	1.568	2.136	25.3	20.2	112 W	67	42*	2 13	13 30.35	+2 42.2	0.126	1.062	50.8	16.2	124 W	48	61
1 6	11 28.12	+20 49.1	1.425	2.097	24.0	19.9	120 W	66	43	2 14	13 38.10	+5 28.9	0.119	1.058	51.3	16.1	123 W	50	59
1 16	11 29.84	+20 9.3	1.292	2.059	21.8	19.6	129 W	65	44	2 15	13 46.74	+8 34.6	0.113	1.053	52.1	16.0	123 W	54	55
1 26	11 27.61	+19 32.7	1.172	2.021	18.7	19.2	139 W	65	44	2 16	13 56.40	+12 0.4	0.107	1.048	53.2	15.9	122 W	57	52
1 31	11 24.86	+19 14.1	1.118	2.002	16.7	19.0	144 W	64	45	2 17	14 7.29	+15 46.5	0.102	1.044	54.7	15.8	120 W	61	48
2 5	11 20.97	+18 54.3	1.068	1.983	14.5	18.8	150 W	64	45	2 18	14 19.59	+19 52.0	0.098	1.039	56.6	15.8	119 W	65	44
2 10	11 15.94	+18 32.2	1.024	1.964	12.1	18.6	155 W	64	45	2 19	14 33.57	+24 14.4	0.094	1.034	59.0	15.8	116 W	69	40
2 15	11 9.84	+18 6.6	0.986	1.946	9.5	18.4	161 W	63	46	2 20	14 49.48	+28 48.7	0.092	1.029	61.8	15.8	114 W	74	35
2 20	11 2.78	+17 36.4	0.953	1.928	7.0	18.2	166 W	63	46	2 21	15 7.61	+33 27.9	0.090	1.024	65.0	15.8	110 W	78	31
2 25	10 54.97	+17 0.6	0.927	1.910	4.9	18.1	170 W	62	47	2 22	15 28.22	+38 2.8	0.089	1.018	68.5	15.9	107 W	83	26
3 2	10 46.67	+16 18.4	0.907	1.892	4.7	18.0	171 E	61	48	2 23	15 51.47	+42 23.1	0.090	1.013	72.3	16.0	103 W	87	22*
3 7	10 38.15	+15 29.5	0.894	1.875	6.7	18.0	167 E	60	49	2 24	16 17.39	+46 18.7	0.091	1.008	76.1	16.2	99 W	89	17*
3 12	10 29.75	+14 34.2	0.888	1.858	9.6	18.1	162 E	60	49	2 25	16 45.74	+49 41.1	0.094	1.002	79.8	16.3	95 W	85*	13*
3 17	10 21.78	+13 32.8	0.888	1.841	12.8	18.2	156 E	59	50	2 26	17 15.95	+52 24.7	0.097	0.996	83.4	16.5	91 W	80*	9*
3 22	10 14.54	+12 26.2	0.894	1.825	16.0	18.3	150 E	57	52	2 27	17 47.12	+54 27.7	0.101	0.991	86.8	16.8	87 W	76*	6*
3 27	10 8.24	+11 15.5	0.905	1.809	19.0	18.4	144 E	56	53	2 28	18 18.17	+55 51.6	0.106	0.985	90.0	17.0	84 W	71*	3*
4 1	10 3.05	+10 1.8	0.921	1.793	21.9	18.5	138 E	55	54	3 1	18 48.06	+56 40.7	0.111	0.979	92.9	17.2	81 W	68*	—
4 6	9 59.05	+8 46.1	0.941	1.778	24.5	18.7	133 E	54	55	3 2	19 15.94	+57 1.0	0.117	0.973	95.5	17.4	78 W	64*	—
4 16	9 54.73	+6 11.1	0.992	1.749	28.9	18.9	123 E	51	58	3 3	19 41.32	+56 58.8	0.123	0.967	97.9	17.6	75 W	61*	—
4 26	9 55.12	+3 34.2	1.052	1.723	32.3	19.1	114 E	49	60	3 4	20 3.99	+56 40.1	0.130	0.961	100.0	17.8	73 W	58*	—
5 6	9 59.66	+0 56.5	1.117	1.699	34.8	19.2	106 E	45*	63	3 5	20 24.03	+56 9.7	0.137	0.954	102.0	18.0	70 W	56*	—
5 16	10 7.74	+1 42.5	1.186	1.678	36.5	19.4	99 E	40*	66	3 6	20 41.62	+55 31.7	0.144	0.948	103.7	18.2	68 W	53*	—
5 26	10 18.82	+4 23.8	1.256	1.660	37.5	19.5	93 E	33*	68	3 7	20 57.04	+54 48.7	0.152	0.941	105.3	18.4	66 W	51*	—
6 5	10 32.42	-7 7.8	1.325	1.645	38.1	19.6	88 E	27*	71*	3 8	21 10.55	+54 2.9	0.159	0.935	106.8	18.5	64 W	50*	—
6 15	10 48.20	-9 55.0	1.393	1.633	38.2	19.7	84 E	20*	73*	3 9	21 22.44	+53 15.7	0.167	0.928	108.1	18.7	63 W	48*	—
6 25	11 5.93	-12 45.4	1.460	1.625	38.0	19.8	80 E	15*	72*	3 10	21 32.92	+52 28.1	0.175	0.921	109.3				

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	20/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
311554 2006 BQ₁₄₇										35396 1997 XF₁₁									
<i>(continuation)</i>										<i>(continuation)</i>									
4 11	23 30.58	+31 21.6	0.478	0.663	122.2	21.2	34 W	28*	5*	11 24	21 36.41	-14 36.1	0.449	1.011	74.1	17.8	80 E	30	65*
4 16	23 42.86	+28 10.3	0.538	0.619	120.2	21.2	32 W	26*	8*	11 26	21 52.19	-13 36.4	0.454	1.027	72.1	17.8	82 E	31	66*
4 21	23 56.72	+25 0.3	0.605	0.577	116.5	21.0	31 W	23*	12*	11 28	22 7.50	-12 34.3	0.461	1.042	70.2	17.8	84 E	32	67*
4 26	0 12.69	+21 57.2	0.679	0.538	111.0	20.7	30 W	20*	15*	11 30	22 22.29	-11 30.7	0.469	1.058	68.3	17.8	85 E	33	67*
5 1	0 31.17	+19 7.9	0.761	0.507	103.5	20.4	29 W	17*	17*	12 2	22 36.53	-10 26.1	0.478	1.074	66.5	17.8	87 E	35	67*
5 6	0 52.32	+16 40.2	0.850	0.484	94.2	20.1	29 W	14*	19*	12 7	23 9.59	-7 45.1	0.509	1.114	62.2	17.9	91 E	37	67*
5 8	1 1.49	+15 48.6	0.887	0.479	90.2	20.0	28 W	13*	19*	12 12	23 39.06	-5 10.4	0.547	1.153	58.5	18.0	93 E	40	65*
5 10	1 11.02	+15 1.6	0.925	0.475	86.0	19.9	28 W	11*	19*	12 17	0 5.24	-2 46.3	0.591	1.192	55.3	18.2	95 E	42	64*
5 12	1 20.89	+14 19.6	0.963	0.474	81.8	19.9	28 W	10*	20*	12 22	0 28.55	-0 34.6	0.641	1.231	52.6	18.3	96 E	44	62*
5 14	1 31.02	+13 42.5	1.001	0.475	77.5	19.8	27 W	9*	20*	12 27	0 49.45	+1 25.0	0.696	1.270	50.3	18.5	97 E	46	60*
5 16	1 41.39	+13 10.2	1.038	0.478	73.3	19.7	27 W	7*	20*	1 1	1 8.37	+3 13.3	0.754	1.308	48.3	18.7	97 E	48	58*
										1 6	1 25.69	+4 51.8	0.816	1.345	46.6	18.9	96 E	50	56*
										1 11	1 41.71	+6 21.5	0.881	1.381	45.1	19.1	95 E	51	54*
										1 16	1 56.68	+7 43.5	0.948	1.417	43.8	19.2	94 E	53	53*
										1 21	2 10.79	+8 58.8	1.018	1.452	42.6	19.4	93 E	54	51*
523824 2016 RO₁										137176 1999 JZ₁₁									
12 27	11 23.68	-21 37.0	0.325	1.058	67.9	19.7	94 W	23	84*	12 27	11 24.34	+6 14.8	2.319	2.758	20.0	21.2	106 W	51	57*
1 1	11 30.83	-25 43.3	0.336	1.069	66.3	19.7	96 W	19	89*	1 6	11 26.85	+6 18.1	2.185	2.757	18.7	21.1	116 W	51	58
1 6	11 36.88	-29 25.4	0.346	1.082	64.5	19.7	97 W	16	87	1 16	11 26.94	+6 38.2	2.061	2.756	16.8	20.9	126 W	52	57
1 11	11 41.74	-32 44.6	0.356	1.096	62.5	19.8	99 W	12	83	1 26	11 24.43	+7 15.8	1.951	2.753	14.1	20.7	137 W	52	57
1 16	11 45.28	-35 41.4	0.366	1.112	60.4	19.8	101 W	9	80	2 5	11 15.68	-1 59.2	1.160	2.047	16.0	19.6	145 W	43	66
1 21	11 47.42	-38 16.5	0.375	1.129	58.1	19.8	103 W	7	78	2 15	11 3.80	-0 59.6	1.072	2.021	10.6	19.2	158 W	44	65
1 26	11 48.09	-40 30.0	0.384	1.148	55.8	19.8	105 W	5	76	2 25	10 48.37	+0 30.7	1.009	1.992	4.7	18.8	170 W	46	63
1 31	11 47.21	-42 22.1	0.392	1.168	53.3	19.9	108 W	3	74	3 2	10 39.78	+1 25.1	0.988	1.976	3.3	18.7	173 E	46	63
2 5	11 44.73	-43 51.9	0.399	1.189	50.8	19.9	111 W	1	72	3 7	10 30.95	+2 23.8	0.974	1.959	5.1	18.7	170 E	47	62
2 10	11 40.69	-44 58.3	0.406	1.210	48.1	19.9	114 W	-	70	3 12	10 22.18	+3 24.7	0.968	1.941	8.3	18.8	164 E	48	61
2 15	11 35.24	-45 39.4	0.413	1.233	45.4	19.9	117 W	-	71	3 17	10 13.78	+4 25.9	0.968	1.923	11.8	19.0	157 E	49	60
2 20	11 28.68	-45 54.2	0.420	1.256	42.7	19.9	121 W	-	70	3 22	10 6.02	+5 25.1	0.975	1.903	15.3	19.1	150 E	50	59
2 25	11 21.43	-45 42.1	0.428	1.279	39.9	19.9	124 W	-	70	3 27	9 59.14	+6 20.8	0.988	1.883	18.6	19.2	143 E	51	58
3 2	11 13.95	-45 3.3	0.436	1.303	37.2	19.9	127 W	-	71	4 1	9 53.28	+7 11.6	1.006	1.862	21.7	19.3	137 E	52	57
3 7	11 6.68	-43 59.0	0.446	1.327	34.6	19.9	131 E	1	72	4 6	9 48.57	+7 56.8	1.027	1.840	24.5	19.4	130 E	53	56
3 12	11 0.06	-42 31.3	0.458	1.351	32.2	19.9	134 E	2	73	4 16	9 42.74	+9 8.3	1.080	1.794	29.3	19.6	119 E	54	55
3 17	10 54.48	-40 43.6	0.473	1.375	30.1	20.0	136 E	4	75	4 26	9 41.61	+9 53.9	1.139	1.744	33.1	19.8	109 E	55	54
3 22	10 50.19	-38 40.7	0.490	1.400	28.3	20.0	138 E	6	77	5 6	9 44.69	+10 15.4	1.200	1.690	36.1	19.9	100 E	53	54
3 27	10 47.31	-36 27.6	0.510	1.424	27.1	20.1	139 E	9	80	5 16	9 51.43	+10 14.7	1.258	1.633	38.2	20.0	91 E	49	54
4 1	10 45.83	-34 9.3	0.533	1.448	26.3	20.2	140 E	11	82	5 26	10 1.30	+9 53.8	1.309	1.573	39.9	20.0	84 E	44	54
4 6	10 45.70	-31 50.3	0.559	1.472	26.1	20.4	140 E	13	84	6 5	10 13.82	+9 14.5	1.352	1.508	41.1	20.1	78 E	38	54*
4 11	10 46.81	-29 34.2	0.589	1.496	26.2	20.5	139 E	15	86	6 15	10 28.65	+8 17.8	1.383	1.441	42.1	20.0	72 E	32	54*
4 16	10 49.07	-27 24.5	0.623	1.520	26.7	20.7	137 E	18	89	6 25	10 45.58	+7 4.7	1.403	1.370	43.0	20.0	67 E	27	53*
4 21	10 52.35	-25 23.4	0.660	1.543	27.5	20.9	135 E	20	89	7 5	11 4.43	+5 36.1	1.408	1.296	43.9	19.9	62 E	23	51*
4 26	10 56.50	-23 32.6	0.700	1.566	28.3	21.1	132 E	21	88	7 15	11 25.21	+3 52.2	1.400	1.219	45.0	19.8	58 E	19	49*
5 1	11 1.39	-21 52.8	0.743	1.589	29.2	21.2	130 E	23	86	7 25	11 47.94	+1 53.9	1.376	1.140	46.5	19.6	54 E	17	47*
5 6	11 6.91	-20 24.3	0.790	1.611	30.1	21.4	127 E	25	84	8 4	12 12.76	-0 18.0	1.336	1.061	48.4	19.5	51 E	15	44*
30771 1986 PO₂										137176 1999 JZ₁₁									
12 27	11 24.81	+5 30.3	2.323	2.756	20.1	19.7	106 W	51	58*	1 16	11 26.94	+6 38.2	2.061	2.756	16.8	20.9	126 W	52	57
1 6	11 26.85	+6 18.1	2.185	2.757	18.7	21.1	116 W	51	58	1 26	11 24.43	+7 15.8	1.951	2.753	14.1	20.7	137 W	52	57
1 16	11 26.94	+6 38.2	2.061	2.756	16.8	20.9	126 W	52	57	2 5	11 19.33	+8 9.6	1.860	2.749	10.8	20.4	148 W	53	56
1 26	11 24.43	+7 15.8	1.951	2.753	14.1	20.7	137 W	52	57	2 15	11 11.87	+9 16.5	1.793	2.744	6.9	20.2	161 W	54	55
2 5	11 19.33	+8 9.6	1.860	2.749	10.8	20.4	148 W	53	56	2 20	11 7.44	+9 53.1	1.770	2.742	4.8	20.0	167 W	55	54
2 15	11 11.87	+9 16.5	1.793	2.744	6.9	20.2	161 W	54	55	2 25	11 2.67	+10 30.6	1.754	2.739	2.7	19.9	172 W	56	53
2 20	11 7.44	+9 53.1	1.770	2.742	4.8	20.0	167 W	55	54	3 2	10 57.69	+11 8.0	1.746	2.735	1.5	19.8	176 W	56	53
2 25	11 2.67	+10 30.6	1.754	2.739	2.7	19.9	172 W	56	53	3 7	10 52.64	+11 44.4	1.745	2.732	2.8	19.9	172 E	57	52
3 2	10 57.69	+11 8.0	1.746	2.735	1.5	19.8	176 W	56	53	3 12	10 47.64	+12 18.8	1.752	2.728	4.8	20.0	167 E	57	52
3 7	10 52.64	+11 44.4	1.745	2.732	2.8	19.9	172 E	57	52	3 17	10 42.85	+12 50.4	1.766	2.724	7.0	20.1	161 E	58	51
3 12	10 47.64	+12 18.8	1.752	2.728	4.8	20.0	167 E	57	52	3 22	10 38.39	+13 18.5	1.786	2.720	9.1	20.2	155 E	58	51
3 17	10 42.85	+12 50.4	1.766	2.724	7.0	20.1	161 E	58	51	3 27	10 34.38	+13 42.6	1.814	2.715	11.0	20.3	149 E	59	50
3 22	10 38.39	+13 18.5	1.786	2.720	9.1	20.2	155 E	58	51	4 6	10 28.01	+14 17.7	1.885	2.705	14.6	20.6	137 E	59	50
3 27	10 34.38	+13 42.6	1.814	2.715	11.0	20.3	149 E	59	50	4 16	10 24.18	+14 34.9	1.975	2.695	17.4	20.7	126 E	60	49
4 6	10 28.01	+14 17.7	1.885	2.705															

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
30771 1986 PO₂										449107 2012 VJ₈₂									
<i>(continuation)</i>										<i>(continuation)</i>									
3 2	10 56.29	+11 34.2	1.938	2.927	1.5	18.7	176 W	57	52	4 1	20 34.88	-27 8.1	0.746	0.989	68.7	21.5	67 W	9*	61*
3 7	10 51.61	+12 12.5	1.953	2.938	2.7	18.8	172 E	57	52	4 6	20 45.34	-24 44.8	0.758	1.018	66.8	21.5	69 W	11*	63*
3 12	10 47.06	+12 48.4	1.975	2.950	4.6	18.9	166 E	58	51	103358 2000 AE₉₃									
3 17	10 42.76	+13 21.0	2.005	2.960	6.5	19.1	160 E	58	51	12 27	11 26.63	+13 51.8	2.442	2.905	18.7	21.0	108 W	59	50*
3 27	10 35.30	+14 14.9	2.085	2.982	10.1	19.3	149 E	59	50	1 6	11 28.61	+14 23.9	2.315	2.910	17.4	20.9	118 W	59	50
4 6	10 29.82	+14 51.9	2.189	3.002	13.1	19.6	137 E	60	49	1 16	11 28.16	+15 12.2	2.200	2.914	15.4	20.7	128 W	60	49
4 16	10 26.61	+15 12.0	2.312	3.021	15.4	19.8	127 E	60	49	1 26	11 25.13	+16 15.0	2.101	2.917	12.8	20.5	139 W	61	48
4 26	10 25.73	+15 16.2	2.450	3.039	17.2	20.0	117 E	60	49	2 5	11 19.57	+17 28.7	2.023	2.919	9.7	20.3	150 W	62	47
5 6	10 27.04	+15 6.4	2.598	3.057	18.4	20.1	107 E	60	49	2 10	11 15.91	+18 7.8	1.993	2.919	8.1	20.2	155 W	63	46
5 16	10 30.31	+14 44.5	2.753	3.073	19.0	20.3	99 E	57	49	2 15	11 11.75	+18 47.3	1.971	2.920	6.5	20.1	160 W	64	45
5 26	10 35.29	+14 12.3	2.909	3.088	19.1	20.4	90 E	52	50	2 20	11 7.18	+19 26.0	1.955	2.920	5.2	20.0	165 W	64	45
6 5	10 41.71	+13 31.3	3.065	3.102	18.9	20.6	83 E	45	50	2 25	11 2.31	+20 2.9	1.947	2.920	4.4	20.0	167 W	65	44
6 15	10 49.36	+12 42.7	3.218	3.116	18.4	20.7	75 E	39	51*	3 2	10 57.27	+20 37.1	1.946	2.919	4.5	20.0	167 W	66	43
6 25	10 58.00	+11 47.8	3.365	3.128	17.5	20.7	68 E	32	50*	3 7	10 52.18	+21 7.8	1.953	2.918	5.5	20.0	164 E	66	43
7 5	11 7.48	+10 47.5	3.505	3.139	16.4	20.8	61 E	27	47*	3 12	10 47.18	+21 34.2	1.967	2.917	6.9	20.1	159 E	67	42
7 15	11 17.64	+9 42.7	3.635	3.150	15.2	20.8	54 E	22	43*	3 17	10 42.40	+21 55.7	1.988	2.916	8.5	20.2	154 E	67	42
7 25	11 28.36	+8 34.1	3.754	3.159	13.7	20.9	48 E	18	39*	3 22	10 37.96	+22 12.2	2.016	2.915	10.2	20.3	149 E	67	42
8 4	11 39.55	+7 22.5	3.861	3.167	12.1	20.9	41 E	14	33*	3 27	10 33.96	+22 23.4	2.049	2.913	11.7	20.4	144 E	67	42
8 14	11 51.13	+6 8.6	3.955	3.175	10.5	20.9	35 E	11	27*	4 6	10 27.57	+22 30.7	2.133	2.909	14.6	20.6	133 E	68	41
8 24	12 3.02	+4 53.1	4.034	3.181	8.7	20.8	28 E	9	21*	4 16	10 23.63	+22 19.2	2.235	2.904	16.9	20.8	123 E	67	42
9 3	12 15.18	+3 36.7	4.098	3.186	6.8	20.8	22 E	6	15*	4 26	10 22.24	+21 51.7	2.349	2.897	18.6	20.9	113 E	67	42
9 13	12 27.55	+2 19.9	4.146	3.191	5.0	20.7	16 E	4	9*	5 6	10 23.28	+21 11.0	2.472	2.890	19.8	21.1	104 E	66	43
9 23	12 40.08	+1 3.5	4.177	3.194	3.2	20.6	10 E	2	3*	5 16	10 26.51	+20 19.4	2.600	2.882	20.4	21.2	96 E	62	44
10 3	12 52.75	+0 11.8	4.191	3.196	1.8	20.6	6 E	—	—	5 26	10 31.67	+19 18.9	2.728	2.872	20.6	21.3	88 E	56	45
10 13	13 5.50	+1 25.5	4.187	3.198	2.0	20.6	6 W	—	—	6 5	10 38.46	+18 10.9	2.855	2.862	20.4	21.4	80 E	48	46
10 23	13 18.30	+2 36.7	4.166	3.198	3.6	20.7	12 W	6*	—	6 15	10 46.64	+16 56.6	2.977	2.851	19.9	21.4	73 E	41	47*
11 2	13 31.08	+3 44.8	4.128	3.198	5.5	20.7	18 W	12*	2*	6 25	10 55.97	+15 36.7	3.093	2.839	19.1	21.5	66 E	35	46*
11 12	13 43.80	+4 49.1	4.072	3.196	7.3	20.8	24 W	17*	7*	101258 1998 SF₉₇									
11 22	13 56.39	+5 48.9	4.000	3.194	9.2	20.8	31 W	23*	12*	12 27	11 26.81	+7 42.2	2.322	2.760	20.0	20.8	106 W	53	56*
12 2	14 8.77	+6 43.4	3.912	3.190	10.9	20.9	38 W	27*	18*	1 6	11 28.60	+7 40.4	2.207	2.779	18.6	20.7	116 W	53	56
12 12	14 20.84	+7 32.0	3.808	3.185	12.6	20.9	45 W	31*	25*	1 16	11 27.89	+7 54.0	2.101	2.797	16.5	20.5	126 W	53	56
12 22	14 32.49	+8 13.9	3.691	3.180	14.1	20.8	52 W	33*	32*	1 26	11 24.55	+8 22.8	2.011	2.814	13.7	20.4	137 W	53	56
1 1	14 43.61	+8 48.6	3.562	3.173	15.4	20.8	59 W	35*	40*	2 5	11 18.69	+9 5.0	1.940	2.830	10.4	20.2	149 W	54	55
1 11	14 54.02	+9 15.4	3.422	3.166	16.6	20.8	67 W	35*	48*	2 15	11 10.66	+9 56.9	1.893	2.845	6.5	20.0	161 W	55	54
1 21	15 3.55	+9 33.8	3.274	3.157	17.5	20.7	75 W	35*	57*	2 20	11 6.03	+10 24.8	1.881	2.853	4.5	19.8	167 W	55	54
449107 2012 VJ₈₂										2 25	11 1.14	+10 52.8	1.875	2.860	2.5	19.7	173 W	56	53
12 27	11 25.45	+40 37.4	0.191	0.986	83.6	19.0	85 W	4	75*	3 2	10 56.12	+11 20.2	1.877	2.866	1.5	19.6	176 W	56	53
12 29	11 45.55	+44 24.8	0.198	0.975	86.6	19.2	82 W	1	71*	3 7	10 51.10	+11 46.2	1.887	2.873	2.7	19.8	172 E	57	52
12 31	12 6.73	+47 43.2	0.205	0.964	89.3	19.3	79 W	—	67*	3 12	10 46.20	+12 10.1	1.904	2.879	4.6	19.9	166 E	57	52
1 2	12 28.82	+50 32.1	0.214	0.953	91.7	19.5	76 W	—	63*	3 17	10 41.55	+12 31.3	1.929	2.885	6.6	20.0	160 E	58	51
1 4	12 51.56	+52 52.0	0.224	0.943	93.7	19.7	73 W	—	60*	3 27	10 33.43	+13 3.8	1.998	2.897	10.3	20.3	149 E	58	51
1 6	13 14.65	+54 44.4	0.235	0.933	95.5	19.8	71 W	—	57*	4 6	10 27.39	+13 21.8	2.091	2.908	13.5	20.5	137 E	58	51
1 7	13 26.23	+55 30.9	0.240	0.928	96.2	19.9	70 W	—	56*	4 16	10 23.75	+13 25.0	2.203	2.917	16.0	20.7	127 E	58	51
1 8	13 37.78	+56 11.5	0.246	0.923	96.9	20.0	69 W	—	55*	4 26	10 22.58	+13 14.4	2.330	2.926	17.9	20.9	117 E	58	51
1 9	13 49.25	+56 46.4	0.252	0.918	97.5	20.0	68 W	—	54*	5 6	10 23.72	+12 51.5	2.467	2.934	19.1	21.1	108 E	58	51
1 10	14 0.60	+57 16.0	0.258	0.914	98.0	20.1	67 W	—	53*	5 16	10 26.94	+12 17.8	2.610	2.940	19.9	21.2	99 E	55	52
1 11	14 11.81	+57 40.6	0.265	0.909	98.5	20.2	66 W	—	52*	5 26	10 31.97	+11 34.7	2.755	2.946	20.1	21.4	91 E	49	52
1 12	14 22.83	+58 0.5	0.271	0.904	98.9	20.2	65 W	—	51*	6 5	10 38.54	+10 43.4	2.900	2.951	19.9	21.5	83 E	43	53
1 13	14 33.64	+58 16.1	0.277	0.900	99.3	20.3	65 W	—	51*	417201 2005 XM₄									
1 14	14 44.21	+58 27.8	0.284	0.896	99.6	20.3	64 W	—	50*	12 27	11 26.82	+58 20.7	0.430	1.240	44.9	20.1	117 W	77	6*
1 15	14 54.53	+58 35.7	0.291	0.892	99.8	20.4	63 W	—	49*	12 29	11 38.29	+60 24.2	0.435	1.241	45.1	20.1	117 W	75	3*
1 16	15 4.58	+58 40.3	0.297	0.887	100.0	20.4	63 W	—	49*	12 31	11 50.34	+62 20.9	0.440	1.242	45.3	20.1	116 W	73	1*
1 18	15 23.84	+58 40.5	0.311	0.880	100.3	20.5	62 W	—	48*	1 2	12 2.98	+64 10.4	0.447	1.244	45.5	20.2	116 W	71	—
1 20	15 41.95	+58 30.4	0.325	0.872	100.3	20.6	61 W	—	47*	1 4	12 16.22	+65 52.5	0.454	1.245	45.7	20.2	115 W	69	—
1 22	15 58.92	+58 11.8	0.339	0.865	100.3	20.7	60 W	—	46*	1 6	12 30.05	+67 26.9	0.462	1.246	46.0	20.2	114 W	68	—
1 24	16 14.79	+57 46.1	0.353	0.859	100.0	20.7	59 W	—	45*	1 8	12 44.44	+68 53.6	0.470	1.248	46.2	20.3	114 W	66	—
1 26	16 29.63	+57 14.6	0.368	0.853	99.7	20.8	59 W	—	45*	1 10	12 59.36	+70 12.7	0.479	1.249	46.5	20.3	113 W	65	—
1 28	16 43.52	+56 38.3	0.382	0.848	99.2	20.8	58 W	—	45*	1 12	13 14.72	+71 24.4	0.488	1.251	46.8	20.4	112 W	64	—
1 30	16 56.56	+55 58.1	0.397	0.844	98.7	20.9	58 W	—	45*	1 14	13 30.44	+72 28.9	0.497	1.253	47.1	20.5	111 W	63	—
2 1	17 8.81	+55 14.5	0.412	0.840	98.0	20.9	58 W	—	44*	1 16	13 46.42	+73 26.6	0.507	1.254	47.3	20.5	110 W	62	—
2 3	17 20.36	+54 28.3	0.426	0.836	97.3	21.0	57 W	—	44*	1 17	13 54.47	+73 53.0	0.512	1.255	47.4	20.5	110 W	61	—
2 5	17 31.29	+53 39.7	0.441	0.833	96.5	21.0	57 W	—	44*	1 18	14 2.53	+74 17.8	0.517	1.256	47.6	20.6	110 W	61	—
2 7	17 41.65	+52 49.2	0.456	0.831	95.6	21.0													

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

2021	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45° - 26°	20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45° - 26°	
417201 2005 XM₄ (continuation)									480881 2001 XT₁₀₂									
2	15 47.35	+78 3.0	0.591	1.268	48.9	20.9	104 W	57*	12 27	11 27.14	-25 37.7	1.107	1.503	40.8	19.8	92 W	19	85*
2	15 53.65	+78 13.2	0.596	1.269	48.9	20.9	104 W	57*	1 1	11 36.08	-28 16.8	1.084	1.504	40.7	19.8	93 W	17	87*
2	15 59.74	+78 23.0	0.601	1.270	49.0	20.9	104 W	57*	1 6	11 44.67	-30 52.2	1.061	1.507	40.6	19.7	95 W	14	85
2	16 5.60	+78 32.4	0.607	1.271	49.0	21.0	103 W	56*	1 11	11 52.84	-33 22.9	1.041	1.510	40.3	19.7	96 W	12	83
2	16 11.23	+78 41.5	0.612	1.271	49.1	21.0	103 W	56*	1 16	12 0.52	-35 48.0	1.021	1.515	40.0	19.6	98 W	9	80
2	16 21.78	+78 59.0	0.622	1.273	49.2	21.0	102 W	56*	1 21	12 7.65	-38 6.4	1.002	1.521	39.6	19.6	100 W	7	78
2	16 31.34	+79 15.8	0.632	1.275	49.3	21.1	102 W	56*	1 26	12 14.14	-40 17.3	0.985	1.528	39.1	19.5	102 W	5	76
2	16 39.88	+79 32.2	0.642	1.277	49.3	21.1	101 W	55*	1 31	12 19.92	-42 19.9	0.968	1.536	38.5	19.5	104 W	3	74
2	16 47.37	+79 48.4	0.652	1.279	49.4	21.1	101 W	55*	2 5	12 24.88	-44 13.2	0.952	1.545	37.9	19.5	106 W	1	72
2	16 53.79	+80 4.5	0.661	1.281	49.4	21.2	100 W	55*	2 10	12 28.91	-45 56.2	0.937	1.556	37.1	19.4	108 W	1	70
2	16 59.10	+80 20.8	0.670	1.283	49.4	21.2	100 W	54*	2 15	12 31.92	-47 27.7	0.922	1.567	36.3	19.4	110 W	—	69
2	17 3.27	+80 37.3	0.679	1.285	49.5	21.2	99 W	54*	2 20	12 33.84	-48 46.6	0.909	1.580	35.3	19.3	113 W	—	67
2	17 6.24	+80 54.1	0.688	1.286	49.5	21.3	99 W	54*	2 25	12 34.65	-49 51.8	0.896	1.593	34.2	19.3	115 W	—	66
2	17 7.96	+81 11.1	0.697	1.288	49.5	21.3	98 W	54*	3 2	12 34.35	-50 42.1	0.884	1.607	33.0	19.3	118 W	—	65
2	17 8.36	+81 28.3	0.705	1.290	49.5	21.3	98 W	53*	3 7	12 32.99	-51 16.2	0.874	1.622	31.8	19.2	121 W	—	65
2	17 8.03	+81 37.0	0.709	1.291	49.5	21.4	98 W	53*	3 12	12 30.68	-51 32.9	0.865	1.638	30.4	19.2	123 W	—	64
2	17 7.33	+81 45.7	0.713	1.292	49.5	21.4	97 W	53*	3 17	12 27.64	-51 31.2	0.858	1.654	29.0	19.1	126 W	—	64
2	17 6.25	+81 54.4	0.717	1.293	49.5	21.4	97 W	53*	3 22	12 24.14	-51 10.5	0.853	1.671	27.5	19.1	129 W	—	65
3	17 4.77	+82 3.1	0.720	1.294	49.4	21.4	97 W	53*	3 27	12 20.49	-50 30.9	0.850	1.689	26.1	19.1	132 E	—	65
3	17 2.88	+82 11.8	0.724	1.295	49.4	21.4	97 W	53*	4 1	12 16.98	-49 33.3	0.851	1.708	24.6	19.1	135 E	—	66
3	17 0.54	+82 20.4	0.728	1.296	49.4	21.4	97 W	53*	4 6	12 13.88	-48 18.9	0.855	1.727	23.3	19.0	137 E	—	68
3	16 57.75	+82 28.9	0.731	1.297	49.4	21.4	97 W	53*	4 11	12 11.43	-46 49.6	0.862	1.746	22.2	19.0	139 E	—	69
3	16 54.48	+82 37.2	0.735	1.298	49.4	21.4	96 W	52*	4 16	12 9.79	-45 8.0	0.873	1.766	21.3	19.1	140 E	—	71
3	16 50.71	+82 45.4	0.738	1.299	49.4	21.5	96 W	52	4 21	12 9.08	-43 17.2	0.889	1.786	20.7	19.1	141 E	2	73
3	16 46.43	+82 53.3	0.741	1.300	49.4	21.5	96 W	52	4 26	12 9.33	-41 20.6	0.909	1.807	20.4	19.2	141 E	4	75
3	16 41.60	+83 0.9	0.745	1.301	49.4	21.5	96 W	52	5 1	12 10.51	-39 21.3	0.934	1.828	20.5	19.3	141 E	6	77
3	16 36.22	+83 8.2	0.748	1.302	49.3	21.5	96 W	52	5 6	12 12.56	-37 22.1	0.964	1.849	20.9	19.4	139 E	8	79
3	16 30.28	+83 15.0	0.751	1.303	49.3	21.5	96 W	52	5 11	12 15.44	-35 25.7	0.998	1.871	21.4	19.5	137 E	10	81
3	16 23.75	+83 21.3	0.754	1.304	49.3	21.5	96 W	52	5 16	12 19.07	-33 34.0	1.037	1.892	22.2	19.6	135 E	11	82
3	16 16.65	+83 27.1	0.757	1.305	49.3	21.5	95 W	52	5 21	12 23.37	-31 48.9	1.080	1.914	23.0	19.8	132 E	13	84
3	16 8.98	+83 32.1	0.760	1.306	49.3	21.5	95 W	51	5 26	12 28.24	-30 11.5	1.128	1.936	23.8	19.9	129 E	15	86
3	16 0.76	+83 36.4	0.763	1.307	49.3	21.5	95 W	51	5 31	12 33.62	-28 42.5	1.179	1.959	24.6	20.1	126 E	16*	87
3	15 52.01	+83 39.9	0.766	1.308	49.2	21.5	95 W	51	6 5	12 39.43	-27 21.9	1.235	1.981	25.4	20.2	123 E	17*	89
3	15 42.77	+83 42.4	0.768	1.309	49.2	21.6	95 W	51	6 15	12 52.13	-25 6.5	1.356	2.026	26.6	20.5	117 E	18*	89
3	15 33.11	+83 43.8	0.771	1.310	49.2	21.6	95 W	51	6 25	13 5.97	-23 23.2	1.488	2.071	27.4	20.8	110 E	18*	87
3	15 23.08	+83 44.2	0.773	1.311	49.2	21.6	95 W	51	7 5	13 20.62	-22 8.0	1.631	2.116	27.8	21.0	104 E	18*	86
3	15 12.76	+83 43.4	0.776	1.312	49.2	21.6	95 W	51	7 15	13 35.91	-21 16.1	1.781	2.161	27.8	21.3	97 E	17*	85
3	15 2.24	+83 41.3	0.778	1.312	49.1	21.6	95 W	51	7 25	13 51.69	-20 43.2	1.936	2.206	27.4	21.5	91 E	16*	84*
3	14 51.62	+83 37.9	0.781	1.313	49.1	21.6	95 W	51	33073 1997 WU₁₆									
3	14 40.98	+83 33.2	0.783	1.314	49.1	21.6	94 W	51	12 27	11 27.24	-8 26.5	2.623	2.948	19.2	20.7	99 W	37	72*
3	14 30.42	+83 27.2	0.785	1.315	49.1	21.6	94 W	52	1 6	11 28.92	-9 16.2	2.501	2.965	18.3	20.6	109 W	36	73
3	14 20.04	+83 19.7	0.787	1.316	49.0	21.6	94 W	52	1 16	11 28.36	-9 52.2	2.386	2.982	16.9	20.5	118 W	35	74
3	14 9.90	+83 10.9	0.789	1.317	49.0	21.6	94 W	52	1 26	11 25.47	-10 11.7	2.283	2.998	14.9	20.3	129 W	35	74
3	14 0.08	+83 0.7	0.791	1.318	49.0	21.6	94 W	52	2 5	11 20.32	-10 12.7	2.196	3.012	12.3	20.1	139 W	35	74
3	13 50.64	+82 49.2	0.793	1.319	49.0	21.6	94 W	52	2 15	11 13.19	-9 53.5	2.130	3.026	9.4	20.0	150 W	35	74
3	13 41.62	+82 36.4	0.795	1.320	48.9	21.6	94 W	52	2 25	11 4.65	-9 14.5	2.091	3.039	6.4	19.8	160 W	36	73
3	13 33.05	+82 22.3	0.797	1.321	48.9	21.6	94 W	53	3 7	10 55.50	-8 18.8	2.079	3.051	4.6	19.7	166 E	37	72
3	13 24.95	+82 7.0	0.799	1.322	48.9	21.6	94 W	53	3 12	10 50.96	-7 46.0	2.085	3.057	4.7	19.7	165 E	37	72
3	13 17.34	+81 50.5	0.800	1.323	48.9	21.7	94 W	53	3 17	10 46.61	-7 11.1	2.098	3.062	5.5	19.8	163 E	38	71
4	13 10.20	+81 32.9	0.802	1.324	48.9	21.7	94 W	53	3 22	10 42.54	-6 34.9	2.118	3.067	6.8	19.9	159 E	38	71
4	13 3.54	+81 14.1	0.804	1.325	48.8	21.7	94 W	54	3 27	10 38.84	-5 58.3	2.145	3.072	8.2	20.0	154 E	39	70
4	12 51.59	+80 33.6	0.807	1.327	48.8	21.7	94 E	54	4 1	10 35.59	-5 22.1	2.179	3.077	9.7	20.1	149 E	40	69
4	12 46.27	+80 11.9	0.808	1.327	48.8	21.7	94 E	55	4 6	10 32.84	-4 46.9	2.219	3.081	11.1	20.2	144 E	40	69
4	12 41.36	+79 49.3	0.810	1.328	48.7	21.7	94 E	55	4 16	10 28.96	-3 42.5	2.316	3.090	13.7	20.4	133 E	41	68
4	12 36.84	+79 25.7	0.811	1.329	48.7	21.7	94 E	56	4 26	10 27.35	-2 48.8	2.430	3.097	15.8	20.5	123 E	42	67
4	12 32.69	+79 1.3	0.812	1.330	48.7	21.7	94 E	56	5 6	10 27.94	-2 8.0	2.558	3.103	17.3	20.7	114 E	43*	66
4	12 28.87	+78 36.1	0.814	1.331	48.7	21.7	94 E	56	5 16	10 30.56	-1 40.8	2.695	3.109	18.3	20.9	105 E	41*	66
4	12 25.39	+78 10.1	0.815	1.332	48.6	21.7	94 E	57	5 26	10 34.98	-1 27.0	2.838	3.113	18.9	21.0	96 E	38*	65
4	12 22.20	+77 43.3	0.816	1.333	48.6	21.7	94 E	57	6 5	10 40.96	-1 25.9	2.982	3.117	19.0	21.1	88 E	33*	65
4	12 19.30	+77 15.8	0.817	1.334	48.6	21.7	94 E	58	6 15	10 48.26	-1 36.5	3.125	3.119	18.7	21.2	80 E	27*	65*
4	12 16.66	+76 47.5	0.819	1.335	48.6	21.7	94 E	58	6 25	10 56.69	-1 57.8	3.264	3.121	18.1	21.3	73 E	22*	62*
4	12 14.27	+76 18.6	0.820	1.335	48.5	21.7	94 E	59	7 5	11 6.05	-2 28.5	3.396	3.122	17.3	21.3	66 E	17*	58*
4	12 12.11	+75 48.9	0.821	1.336	48.5	21.7	94 E	59	7 15	11 16.22	-3 7.7	3.521	3.122	16.2	21.4	59 E	12*	52*
4	12 10.16	+75 18.7	0.822	1.337	48.5	21.7	94 E	60	7 25	11 27.04	-3 54.3	3.636	3.120	14.9	21.4	52 E	9*	46*
4	12 8.41	+74 47.7	0.823	1.338	48.5	21.7	94 E	60	8 4	11 38.44	-4 47.2	3.740	3.118	13.5	21.4	46 E	6*	40*</

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	20/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
33073 1997 WU₁₆ (continuation)										484284 2007 PW₁₅ (continuation)									
1 1	14 59.76	-21 24.2	3.481	2.974	15.0	21.2	52 W	21*	41*	7 5	11 2.88	-5 47.0	2.050	1.893	29.5	20.8	67 E	14*	60*
1 11	15 12.73	-22 11.4	3.345	2.957	16.5	21.2	59 W	22*	49*	7 15	11 18.96	-8 8.6	2.109	1.862	28.8	20.8	62 E	9*	56*
1 21	15 25.09	-22 52.8	3.199	2.939	17.8	21.1	66 W	22*	57*	7 25	11 36.38	-10 37.0	2.162	1.832	27.9	20.8	58 E	5*	52*
68346 2001 KZ₆₆										1198 Atlantis									
12 27	11 28.02	-17 55.0	1.569	1.923	30.6	20.5	95 W	27	80*	12 27	11 29.16	+0 3.9	2.612	2.983	18.8	19.8	102 W	45	63*
1 1	11 30.04	-18 46.4	1.526	1.940	30.0	20.5	99 W	26	83*	1 6	11 30.77	-0 19.1	2.477	2.990	17.7	19.7	112 W	45	64
1 6	11 31.27	-19 33.6	1.483	1.956	29.3	20.4	103 W	25	84	1 16	11 30.14	-0 28.0	2.351	2.995	16.1	19.5	122 W	45	64
1 11	11 31.62	-20 15.9	1.440	1.972	28.4	20.3	107 W	25	84	1 26	11 27.13	-0 21.5	2.238	3.000	13.8	19.3	133 W	45	64
1 16	11 31.03	-20 52.3	1.397	1.986	27.4	20.2	112 W	24	85	2 5	11 21.81	+0 1.0	2.144	3.003	10.9	19.1	145 W	45	64
1 21	11 29.48	-21 22.0	1.357	2.000	26.1	20.2	117 W	24	85	2 15	11 14.40	+0 38.7	2.072	3.005	7.5	18.9	157 W	46	63
1 26	11 26.93	-21 43.8	1.318	2.014	24.7	20.1	121 W	23	86	2 25	11 5.46	+1 28.9	2.029	3.006	3.7	18.7	169 W	46	63
1 31	11 23.38	-21 56.7	1.281	2.026	23.1	20.0	126 W	23	86	3 2	11 0.67	+1 57.3	2.019	3.006	1.9	18.5	174 W	47	62
2 5	11 18.85	-21 59.6	1.248	2.038	21.3	19.9	131 W	23	86	3 7	10 55.81	+2 26.9	2.016	3.006	1.5	18.5	175 E	47	62
2 10	11 13.41	-21 51.4	1.219	2.049	19.4	19.8	136 W	23	86	3 12	10 50.99	+2 57.2	2.021	3.005	3.1	18.6	171 E	48	61
2 15	11 7.17	-21 31.0	1.194	2.060	17.5	19.7	141 W	23	86	3 17	10 46.34	+3 27.2	2.033	3.005	5.0	18.7	165 E	48	61
2 20	11 0.30	-20 58.1	1.175	2.070	15.5	19.6	146 W	24	85	3 22	10 41.97	+3 56.3	2.053	3.004	6.9	18.9	159 E	49	60
2 25	10 53.02	-20 12.8	1.161	2.079	13.7	19.5	150 W	25	84	3 27	10 37.97	+4 23.8	2.080	3.002	8.7	19.0	153 E	49	60
3 2	10 45.57	-19 15.7	1.153	2.087	12.3	19.4	153 E	26	83	4 6	10 31.40	+5 11.8	2.152	2.999	12.0	19.2	141 E	50	59
3 7	10 38.18	-18 8.1	1.152	2.095	11.4	19.4	155 E	27	82	4 16	10 27.04	+5 48.3	2.246	2.995	14.8	19.4	130 E	51	58
3 12	10 31.10	-16 51.8	1.158	2.102	11.4	19.4	155 E	28	81	4 26	10 25.06	+6 11.5	2.356	2.989	17.0	19.5	120 E	51	58
3 17	10 24.56	-15 29.2	1.170	2.108	12.1	19.5	154 E	30	79	5 6	10 25.38	+6 21.4	2.478	2.982	18.5	19.7	110 E	51	58
3 22	10 18.76	-14 2.8	1.189	2.114	13.4	19.6	150 E	31	78	5 16	10 27.84	+6 18.5	2.607	2.975	19.5	19.8	101 E	49	58
3 27	10 13.81	-12 35.2	1.214	2.119	15.1	19.7	146 E	32	77	5 26	10 22.22	+6 3.5	2.739	2.966	19.9	19.9	93 E	44	58
4 1	10 9.80	-11 8.7	1.245	2.124	16.9	19.8	142 E	34	75	6 5	10 38.23	+5 37.6	2.871	2.956	20.0	20.0	85 E	38	58
4 6	10 6.77	-9 45.2	1.282	2.127	18.7	19.9	137 E	35	74	6 15	10 45.67	+5 1.9	3.000	2.945	19.6	20.1	77 E	32	58
4 11	10 4.73	-8 26.3	1.323	2.130	20.4	20.1	132 E	37	72	6 25	10 54.31	+4 17.2	3.123	2.933	19.0	20.2	70 E	26	56
4 16	10 3.65	-7 13.0	1.368	2.133	21.9	20.2	127 E	38	71	7 5	11 3.96	+3 24.7	3.239	2.920	18.1	20.2	63 E	21	53
4 26	10 4.22	-5 6.2	1.469	2.135	24.6	20.4	118 E	40	69	7 15	11 14.49	+2 25.1	3.346	2.905	16.9	20.2	56 E	16	48
5 6	10 7.96	-3 27.2	1.578	2.135	26.5	20.6	109 E	41	67	7 25	11 25.76	+1 19.2	3.442	2.890	15.5	20.2	50 E	12	43
5 16	10 14.38	-2 15.0	1.694	2.132	27.7	20.8	101 E	40	66	8 4	11 37.66	+0 8.0	3.526	2.873	14.0	20.2	43 E	9	37
5 26	10 23.00	-1 27.8	1.812	2.127	28.4	21.0	93 E	36	65	8 14	11 50.14	-1 7.9	3.598	2.856	12.4	20.2	37 E	6	31
6 5	10 33.40	-1 2.4	1.929	2.119	28.5	21.1	86 E	32	65*	8 24	12 3.12	-2 27.8	3.656	2.837	10.6	20.1	31 E	4	25
6 15	10 45.26	-0 56.3	2.043	2.108	28.3	21.2	79 E	27	64*	9 3	12 16.56	-3 51.0	3.699	2.817	8.7	20.1	25 E	1	19
6 25	10 58.33	-1 6.8	2.152	2.094	27.7	21.3	73 E	23	62*	9 13	12 30.42	-5 16.7	3.728	2.796	6.7	20.0	19 E	-	13*
7 5	11 12.41	-1 31.7	2.255	2.078	26.7	21.4	67 E	19	58*	9 23	12 44.67	-6 44.2	3.742	2.774	4.7	19.9	13 E	-	7*
7 15	11 27.36	-2 8.8	2.349	2.059	25.6	21.4	61 E	15	54*	10 3	12 59.30	-8 12.7	3.741	2.751	2.7	19.7	7 E	-	1*
7 25	11 43.09	-2 56.3	2.434	2.037	24.2	21.4	55 E	12	49*	10 13	13 14.30	-9 41.7	3.724	2.727	0.8	19.6	2 E	-	-
8 4	11 59.52	-3 52.6	2.509	2.012	22.7	21.4	50 E	10	44*	10 23	13 29.63	-11 10.2	3.692	2.702	1.8	19.6	5 W	-	-
8 14	12 16.65	-4 56.0	2.572	1.985	21.0	21.4	45 E	8	39*	11 2	13 45.31	-12 37.5	3.645	2.676	3.9	19.7	11 W	3*	2*
8 24	12 34.46	-6 5.2	2.624	1.954	19.3	21.3	40 E	6	34*	11 12	14 1.31	-14 2.9	3.583	2.649	6.1	19.8	16 W	7*	7*
9 3	12 52.97	-7 18.6	2.664	1.921	17.4	21.3	35 E	5	29*	11 22	14 17.61	-15 25.5	3.507	2.620	8.2	19.8	22 W	12*	11*
9 13	13 12.23	-8 34.9	2.691	1.886	15.4	21.2	30 E	4	24*	12 2	14 34.19	-16 44.7	3.417	2.591	10.4	19.8	28 W	15*	17*
9 23	13 32.29	-9 52.6	2.706	1.847	13.3	21.1	25 E	3	19*	12 12	14 51.02	-17 59.5	3.314	2.561	12.5	19.8	34 W	18*	22*
10 3	13 53.21	-11 10.1	2.708	1.805	11.2	20.9	21 E	2	14*	12 22	15 8.04	-19 9.2	3.200	2.529	14.5	19.8	40 W	20*	29*
10 13	14 15.10	-12 25.8	2.697	1.761	9.1	20.8	16 E	1	10*	1 1	15 25.22	-20 13.3	3.075	2.497	16.5	19.7	46 W	21*	35*
10 23	14 38.04	-13 37.9	2.675	1.714	6.9	20.6	12 E	1	6*	1 11	15 42.47	-21 11.0	2.940	2.464	18.4	19.6	52 W	21*	42*
11 2	15 2.16	-14 44.2	2.640	1.664	4.9	20.4	8 E	-	1*	1 21	15 59.71	-22 1.8	2.798	2.430	20.2	19.6	58 W	22*	49*
11 12	15 27.56	-15 42.5	2.595	1.612	3.1	20.2	5 E	-	-	484284 2007 PW₁₅									
11 22	15 54.36	-16 30.1	2.541	1.556	2.4	20.0	4 E	-	-	12 27	11 29.46	+28 27.9	0.830	1.508	37.2	21.2	112 W	73	35*
12 2	16 22.68	-17 4.3	2.478	1.499	3.5	20.0	5 W	-	-	1 1	11 44.29	+30 11.1	0.779	1.482	37.3	21.0	114 W	75	34*
12 12	16 52.62	-17 21.7	2.408	1.439	5.4	19.9	8 W	2*	-	1 6	12 0.00	+32 6.6	0.732	1.457	37.5	20.9	116 W	77	32*
12 22	17 24.26	-17 18.9	2.333	1.377	7.4	19.9	10 W	4*	-	1 11	12 16.71	+34 14.1	0.688	1.431	37.9	20.7	117 W	79	30*
1 1	17 57.66	-16 52.5	2.256	1.314	9.4	19.8	13 W	6*	1*	1 16	12 34.55	+36 32.3	0.649	1.405	38.5	20.5	117 W	82	27
1 11	18 32.83	-15 58.9	2.179	1.250	11.3	19.7	14 W	7*	3*	418900 2009 BE₂									
1 21	19 9.73	-14 35.4	2.104	1.186	12.9	19.5	16 W	8*	4*	12 27	11 29.46	+28 27.9	0.830	1.508	37.2	21.2	112 W	73	35*
484284 2007 PW₁₅										1 1	11 44.29	+30 11.1	0.779	1.482	37.3	21.0	114 W	75	34*
12 27	11 29.04	+14 0.7	2.065	2.544	21.6	21.3	108 W	59	50*	1 6	12 0.00	+32 6.6	0.732	1.457	37.5	20.9	116 W	77	32*
1 6	11 31.69	+13 21.2	1.909	2.513	20.4	21.0	117 W	58	51	1 11	12 16.71	+34 14.1	0.688	1.431	37.9	20.7	117 W	79	30*
1 16	11 31.56	+12 51.0	1.762	2.481	18.5	20.8	127 W	58	51	1 16	12 34.55	+36 32.3	0.649	1.405	38.5	20.5	117 W	82	27
1 26	11 28.23	+12 29.5	1.630	2.448	15.8	20.5	138 W	57	52	418900 2009 BE₂									
2 5	11 21.51	+12 14.8	1.516	2.415	12.2	20.1	149 W	57	52	12 27	11 29.46	+28 27.9	0.830	1.508	37.2	21.2	112 W	73	35*
2 15	11 11.47	+12 3.5	1.425	2.381	7.7	19.8	161 W	57	52	1 1	11 44.29	+30 11.1	0.779	1.482	37.3	21.0	114 W	75	34*
2 20	11 5.37	+11 57.7	1.390	2.364	5.3	19.6	167 W	57	52	1 6	12 0.00	+32 6.6	0.732	1.457	37.5	20.9	116 W	77	32*
2 25	10 58.73	+11 50.9	1.3																

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
418900 2009 BE₂										297364 2000 DS₁₆									
<i>(continuation)</i>										<i>(continuation)</i>									
1 21	12 53.67	+38 58.7	0.614	1.379	39.3	20.4	117 W	84	25	1 16	11 21.32	+32 28.8	0.918	1.738	24.8	19.1	132 W	77	32
1 26	13 14.21	+41 30.0	0.584	1.353	40.4	20.3	117 W	86	23	1 21	11 14.77	+31 40.4	0.896	1.754	22.2	19.0	138 W	77	32
1 31	13 36.29	+44 1.8	0.558	1.327	41.9	20.2	116 W	89	20	1 26	11 6.78	+30 46.9	0.879	1.769	19.4	18.8	143 W	76	33
2 5	13 59.96	+46 29.3	0.536	1.302	43.7	20.1	114 W	89	18	1 31	10 57.56	+29 46.7	0.866	1.785	16.4	18.7	149 W	75	34
2 10	14 25.13	+48 47.3	0.518	1.276	45.7	20.0	112 W	86	15	2 5	10 47.39	+28 38.8	0.860	1.802	13.3	18.6	155 W	74	35
2 15	14 51.62	+50 50.5	0.504	1.251	48.0	20.0	110 W	84	13	2 10	10 36.62	+27 22.8	0.859	1.820	10.4	18.5	161 W	72	37
2 17	15 2.52	+51 34.7	0.498	1.241	49.0	20.0	109 W	83	12	2 15	10 25.70	+25 59.0	0.866	1.838	8.1	18.5	165 W	71	38
2 19	15 13.55	+52 15.5	0.494	1.231	50.0	20.0	107 W	83	12	2 20	10 15.05	+24 28.5	0.880	1.856	7.1	18.5	167 W	69	40
2 21	15 24.69	+52 52.9	0.489	1.221	51.0	20.0	106 W	82	11	3 25	10 5.07	+22 53.3	0.902	1.875	7.9	18.6	165 E	68	41
2 23	15 35.91	+53 26.6	0.485	1.211	52.0	20.0	105 W	82	11	3 7	9 56.04	+21 15.6	0.930	1.894	9.9	18.8	161 E	66	43
2 25	15 47.17	+53 56.6	0.482	1.201	53.1	20.0	104 W	81	10*	3 12	9 48.17	+19 37.6	0.966	1.914	12.4	19.0	156 E	65	44
2 27	15 58.44	+54 22.8	0.478	1.192	54.1	20.0	103 W	81	10*	3 17	9 41.59	+18 1.1	1.008	1.934	14.8	19.2	150 E	63	46
3 1	16 9.69	+54 45.2	0.475	1.182	55.1	20.0	102 W	80	9*	3 17	9 36.33	+16 27.6	1.056	1.954	17.1	19.4	145 E	61	48
3 3	16 20.87	+55 3.9	0.472	1.173	56.2	20.0	101 W	80	9*	3 27	9 29.67	+13 32.7	1.167	1.995	21.0	19.8	134 E	59	50
3 5	16 31.97	+55 18.7	0.469	1.164	57.2	20.0	99 W	80	9*	4 6	9 27.56	+10 55.2	1.296	2.037	23.9	20.1	125 E	56	53
3 7	16 42.93	+55 29.9	0.466	1.155	58.2	20.0	98 W	80	8*	4 16	9 29.19	+ 8 33.5	1.437	2.080	25.8	20.5	116 E	54	55
3 12	17 9.61	+55 42.4	0.459	1.133	60.8	20.0	95 W	79*	8*	4 26	9 33.81	+ 6 24.1	1.587	2.123	26.8	20.7	108 E	51*	58
3 17	17 34.98	+55 33.7	0.451	1.113	63.3	19.9	93 W	79*	8*	5 6	9 40.70	+ 4 23.4	1.744	2.167	27.3	21.0	100 E	47*	60
3 21	17 58.88	+55 5.2	0.443	1.093	65.7	19.9	90 W	79*	9*	5 16	9 49.37	+ 2 28.6	1.904	2.210	27.2	21.2	94 E	42*	62
3 27	18 21.30	+54 18.1	0.434	1.076	68.0	19.9	88 W	78*	10*	5 26	9 59.40	+ 0 37.1	2.066	2.254	26.7	21.4	87 E	36*	63
4 1	18 42.38	+53 13.4	0.424	1.060	70.2	19.9	86 W	78*	11*	99799 2002 LJ₃									
4 6	19 2.29	+51 51.5	0.412	1.046	72.3	19.9	85 W	78*	12*	12 27	11 31.76	+ 5 40.7	1.023	1.582	37.1	20.8	104 W	51	58*
4 11	19 21.22	+50 12.1	0.400	1.034	74.3	19.9	83 W	77*	14*	1 6	11 39.22	+ 6 10.1	0.957	1.616	34.1	20.7	113 W	51	58
4 16	19 39.38	+48 13.9	0.385	1.024	76.1	19.8	82 W	76*	16*	1 16	11 42.55	+ 7 14.8	0.895	1.648	30.2	20.5	123 W	52	57
4 21	19 57.02	+45 54.9	0.370	1.016	77.7	19.8	81 W	75*	18*	1 26	11 41.11	+ 8 57.2	0.840	1.678	25.2	20.2	134 W	54	55
4 26	20 14.35	+43 12.4	0.354	1.011	79.1	19.7	81 W	73*	21*	1 31	11 38.49	+10 1.8	0.817	1.692	22.2	20.1	139 W	55	54
5 1	20 31.57	+40 3.7	0.337	1.009	80.1	19.7	81 W	71*	24	2 5	11 34.60	+11 14.3	0.799	1.706	19.1	19.9	146 W	56	53
5 6	20 48.80	+36 25.5	0.321	1.009	80.8	19.6	81 W	69*	28	2 10	11 29.47	+12 32.7	0.784	1.719	15.7	19.8	152 W	58	51
5 11	21 6.06	+32 13.7	0.304	1.012	81.0	19.5	82 W	65*	32	2 15	11 23.25	+13 54.8	0.775	1.731	12.2	19.7	158 W	59	50
5 16	21 23.38	+27 24.4	0.289	1.017	80.7	19.4	83 W	61*	37	2 20	11 16.16	+15 17.4	0.771	1.743	8.9	19.5	164 W	60	49
5 21	21 40.75	+21 54.6	0.275	1.024	79.7	19.2	85 W	57*	42	2 25	11 8.45	+16 37.4	0.774	1.755	6.5	19.5	168 W	62	47
5 26	21 58.11	+15 44.1	0.263	1.034	78.0	19.1	87 W	52*	48	3 2	11 0.47	+17 51.8	0.783	1.766	6.0	19.5	169 W	63	46
5 31	22 15.38	+ 8 56.6	0.254	1.047	75.6	19.0	90 W	46*	55	3 7	10 52.54	+18 57.8	0.797	1.776	7.9	19.6	166 E	64	45
6 5	22 32.37	+ 1 40.4	0.249	1.061	72.6	18.9	94 W	39*	62	3 12	10 45.00	+19 53.8	0.818	1.786	10.7	19.8	160 E	65	44
6 7	22 39.04	- 1 19.4	0.248	1.067	71.3	18.8	95 W	37*	65	3 17	10 38.14	+20 38.6	0.845	1.795	13.8	20.0	155 E	66	43
6 9	22 45.62	- 4 20.9	0.248	1.074	69.8	18.8	97 W	34*	68	3 22	10 32.20	+21 11.8	0.877	1.804	16.7	20.2	149 E	66	43
6 11	22 52.09	- 7 22.9	0.249	1.080	68.4	18.7	98 W	31*	71	3 27	10 27.33	+21 34.0	0.914	1.812	19.4	20.4	143 E	67	42
6 13	22 58.43	-10 24.6	0.250	1.087	66.8	18.7	100 W	29*	74	4 1	10 23.61	+21 45.9	0.954	1.820	21.8	20.6	137 E	67	42
6 15	23 4.64	-13 24.8	0.251	1.095	65.3	18.7	102 W	26*	77	4 6	10 21.06	+21 48.7	0.998	1.827	24.0	20.7	132 E	67	42
6 17	23 10.70	-16 22.6	0.254	1.102	63.8	18.7	103 W	23*	80	4 11	10 19.64	+21 43.2	1.045	1.833	25.9	20.9	127 E	67	42
6 19	23 16.59	-19 17.0	0.257	1.110	62.2	18.7	105 W	21*	83	4 16	10 19.32	+21 30.6	1.095	1.839	27.5	21.0	122 E	67	42
6 21	23 22.30	-22 7.2	0.261	1.118	60.7	18.7	106 W	18*	86	4 21	10 20.02	+21 11.7	1.147	1.844	28.8	21.2	118 E	66	43
6 23	23 27.82	-24 52.6	0.265	1.126	59.2	18.7	108 W	16*	89	4 26	10 21.65	+20 47.5	1.200	1.849	29.9	21.3	114 E	66	43
6 25	23 33.13	-27 32.6	0.270	1.135	57.7	18.7	109 W	14*	88	5 1	10 24.10	+20 18.5	1.254	1.853	30.8	21.5	110 E	65	44
6 30	23 45.36	-33 46.9	0.285	1.157	54.2	18.8	113 W	8*	82	335323 2005 QV₁₀₈									
7 5	23 55.86	-39 22.7	0.303	1.180	51.1	18.9	116 W	4*	77	12 27	11 31.86	- 7 37.9	1.568	1.973	29.5	20.9	99 W	37	71*
7 10	0 4.32	-44 20.0	0.324	1.203	48.2	19.0	118 W	-	72	1 6	11 39.36	- 7 19.5	1.487	2.010	27.9	20.8	107 W	38	71
7 15	0 10.46	-48 40.4	0.346	1.228	45.7	19.1	120 W	-	67	1 16	11 43.89	- 6 30.8	1.409	2.048	25.4	20.7	117 W	38	71
7 20	0 14.03	-52 25.9	0.371	1.253	43.5	19.2	122 W	-	64	1 26	11 45.21	- 5 7.8	1.339	2.086	22.1	20.5	127 W	40	69
7 25	0 18.83	-55 38.8	0.398	1.278	41.7	19.4	123 W	-	60	2 5	11 43.23	- 3 9.3	1.283	2.124	17.9	20.3	138 W	42	67
7 30	0 12.71	-58 21.0	0.426	1.304	40.0	19.5	124 W	-	58	2 10	11 41.06	- 1 57.2	1.261	2.143	15.5	20.2	145 W	43	66
8 4	0 7.60	-60 33.7	0.455	1.329	38.7	19.7	125 W	-	55	2 15	11 38.18	- 0 37.7	1.245	2.162	12.8	20.1	151 W	44	65
8 9	23 59.66	-62 17.1	0.487	1.355	37.5	19.8	125 W	-	54	2 20	11 34.69	+ 0 47.9	1.235	2.181	10.1	20.0	157 W	46	63
8 14	23 49.36	-63 31.2	0.519	1.381	36.6	20.0	126 W	-	52	2 25	11 30.73	+ 2 17.9	1.232	2.200	7.2	19.9	164 W	47	62
8 16	23 44.73	-63 52.8	0.533	1.392	36.3	20.0	126 W	-	52	3 2	11 26.45	+ 3 50.0	1.235	2.219	4.2	19.8	171 W	49	60
8 18	23 39.90	-64 9.8	0.546	1.402	36.0	20.1	126 W	-	52	3 7	11 22.01	+ 5 22.2	1.246	2.237	1.4	19.6	177 W	50	59
8 20	23 34.92	-64 22.4	0.560	1.413	35.7	20.2	125 W	-	52	3 12	11 17.57	+ 6 52.3	1.264	2.256	1.9	19.7	176 E	52	57
8 22	23 29.85	-64 30.6	0.575	1.423	35.5	20.2	125 W	-	51	3 17	11 13.32	+ 8 18.0	1.289	2.275	4.7	19.9	169 E	53	56
8 24	23 24.76	-64 34.7	0.589	1.433	35.2	20.3	125 W	-	51	3 22	11 9.40	+ 9 37.7	1.322	2.293	7.3	20.1	163 E	55	54
8 26	23 19.69	-64 34.7	0.604	1.444	35.0	20.3	125 W	-	51	3 27	11 5.94	+10 50.1	1.361	2.311	9.8	20.3	157 E	56	53
8 28	23 14.71	-64 30.8	0.619	1.454	34.9	20.4	125 W	-	51	4 1	11 3.04	+11 54.3	1.407	2.330	12.1	20.5	151 E	57	52
8 30	23 9.86	-64 23.2	0.634	1.464	34.7	20.5	1												

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	20/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
471502 2011 YO₁₇										154347 2002 XK₄									
<i>(continuation)</i>																			
3 27	10 55.22	-14 28.3	2.777	3.707	6.5	20.5	155 E	31	78	12 27	11 34.03	+3 12.8	2.149	2.552	22.1	20.9	103 W	48	60*
4 6	10 49.83	-13 52.7	2.840	3.722	8.4	20.6	147 E	31	78	1 6	11 31.74	+2 52.4	2.054	2.603	20.3	20.8	113 W	48	61
4 16	10 45.97	-13 15.3	2.928	3.737	10.3	20.8	138 E	32	77	1 16	11 26.39	+2 48.5	1.967	2.652	17.8	20.6	125 W	48	61
4 26	10 43.87	-12 40.3	3.036	3.752	12.0	20.9	129 E	32	77	1 26	11 17.95	+3 1.5	1.895	2.699	14.5	20.5	137 W	48	61
5 6	10 43.56	-12 10.8	3.161	3.767	13.4	21.1	120 E	33	76	2 5	11 6.71	+3 30.2	1.846	2.742	10.5	20.3	150 W	49	60
5 16	10 44.98	-11 49.1	3.298	3.782	14.4	21.2	111 E	32*	76	2 15	10 53.34	+4 11.6	1.824	2.783	6.0	20.1	163 W	49	60
5 26	10 48.02	-11 36.3	3.444	3.798	15.1	21.3	103 E	29*	76	2 20	10 46.20	+4 35.6	1.825	2.803	3.6	20.0	170 W	50	59
6 5	10 52.49	-11 33.2	3.596	3.813	15.4	21.4	95 E	25*	76	2 25	10 38.96	+5 0.7	1.834	2.822	1.6	19.9	176 W	50	59
486527 2013 HO₇										1316 Kasan									
12 27	11 33.79	+29 7.3	2.282	2.796	19.1	21.4	111 W	74	34*	12 27	11 34.25	-24 47.6	2.591	2.782	20.7	18.5	91 W	20	83*
1 6	11 35.42	+29 32.4	2.132	2.761	17.9	21.2	120 W	75	34	1 6	11 37.15	-26 23.7	2.489	2.808	20.3	18.4	99 W	19	90
1 16	11 34.00	+30 8.9	1.933	2.726	16.2	20.9	129 W	75	34	1 16	11 37.68	-27 46.6	2.390	2.833	19.4	18.3	107 W	17	88
1 26	11 29.16	+30 52.5	1.871	2.690	14.0	20.7	139 W	76	33	1 26	11 35.66	-28 52.1	2.297	2.858	18.2	18.2	115 W	16	87
2 5	11 20.73	+31 36.1	1.769	2.653	11.6	20.5	147 W	77	32	2 5	11 31.10	-29 35.1	2.215	2.881	16.5	18.1	124 W	15	86
2 10	11 15.22	+31 55.0	1.727	2.634	10.4	20.4	151 W	77	32	2 15	11 24.23	-29 50.7	2.147	2.904	14.6	18.0	132 W	15	86
2 15	11 8.95	+32 10.0	1.691	2.616	9.5	20.3	154 W	77	32	2 20	11 20.10	-29 46.9	2.120	2.915	13.6	17.9	136 W	15	86
2 20	11 2.03	+32 19.7	1.663	2.597	8.9	20.2	156 W	77	32	2 25	11 15.62	-29 34.9	2.099	2.926	12.6	17.9	140 W	15	86
2 25	10 54.64	+32 22.9	1.641	2.578	8.9	20.1	156 W	77	32	3 2	11 10.92	-29 14.7	2.083	2.936	11.7	17.8	143 W	16	87
3 2	10 46.98	+32 18.6	1.626	2.559	9.4	20.1	155 E	77	32	3 7	11 6.11	-28 46.5	2.072	2.946	10.9	17.8	146 E	16	87
3 7	10 39.25	+32 6.1	1.618	2.539	10.4	20.1	152 E	77	32	3 12	11 1.34	-28 10.8	2.068	2.957	10.3	17.8	148 E	17	88
3 12	10 31.68	+31 45.2	1.617	2.520	11.8	20.2	149 E	77	32	3 17	10 56.72	-27 28.1	2.071	2.966	10.0	17.8	149 E	18	89
3 17	10 24.48	+31 15.9	1.623	2.500	13.4	20.2	144 E	76	33	3 22	10 52.38	-26 39.5	2.080	2.976	10.0	17.8	149 E	18	89
3 22	10 17.84	+30 38.6	1.635	2.481	15.0	20.3	140 E	76	33	3 27	10 48.43	-25 46.2	2.096	2.986	10.4	17.8	147 E	19	90
3 27	10 11.92	+29 54.2	1.652	2.461	16.7	20.3	135 E	75	34	4 1	10 44.96	-24 49.3	2.118	2.995	10.9	17.9	145 E	20	89
4 1	10 6.82	+29 3.6	1.675	2.441	18.3	20.4	130 E	74	35	4 6	10 42.01	-23 50.1	2.146	3.004	11.7	18.0	143 E	21	88
4 6	10 2.60	+28 7.6	1.702	2.421	19.7	20.5	125 E	73	36	4 11	10 39.65	-22 49.9	2.180	3.012	12.5	18.0	139 E	22	87
4 11	9 59.29	+27 7.2	1.733	2.401	21.1	20.5	120 E	72	37	4 16	10 37.90	-21 49.7	2.220	3.021	13.4	18.1	136 E	23	86
4 16	9 56.92	+26 3.3	1.768	2.381	22.3	20.6	116 E	71	38	4 21	10 36.77	-20 50.6	2.265	3.029	14.3	18.2	132 E	24	85
4 21	9 55.45	+24 56.5	1.805	2.361	23.4	20.7	111 E	70	39	4 26	10 36.25	-19 53.7	2.315	3.037	15.2	18.3	128 E	25	84
4 26	9 54.85	+23 47.5	1.844	2.340	24.3	20.7	107 E	69	40	5 6	10 36.98	-18 8.6	2.427	3.053	16.7	18.4	119 E	27*	82
5 1	9 55.05	+22 36.8	1.885	2.320	25.1	20.8	102 E	67*	41	5 16	10 39.88	-16 38.3	2.553	3.067	17.9	18.6	111 E	27*	81
5 6	9 56.02	+21 24.8	1.927	2.300	25.7	20.8	98 E	65*	43	5 26	10 44.69	-15 24.8	2.688	3.081	18.7	18.7	103 E	26*	79
5 11	9 57.68	+20 11.6	1.970	2.279	26.2	20.9	94 E	62*	44	6 5	10 51.12	-14 28.4	2.829	3.094	19.1	18.9	95 E	22*	78
5 16	10 0.00	+18 57.4	2.013	2.259	26.6	20.9	90 E	58*	45	6 15	10 58.92	-13 48.4	2.974	3.105	19.1	19.0	88 E	19*	77*
5 21	10 2.92	+17 42.4	2.056	2.239	26.8	20.9	87 E	54*	46	6 25	11 7.86	-13 23.9	3.118	3.116	18.8	19.1	81 E	14*	77*
5 26	10 6.37	+16 26.6	2.098	2.218	27.0	21.0	83 E	50*	48	7 5	11 17.75	-13 13.3	3.260	3.126	18.2	19.2	73 E	10*	67*
5 31	10 10.31	+15 10.0	2.140	2.198	27.0	21.0	80 E	45*	49*	7 15	11 28.43	-13 15.0	3.397	3.135	17.3	19.2	67 E	7*	61*
6 5	10 14.71	+13 52.6	2.181	2.178	26.9	21.0	76 E	41*	50*	7 25	11 39.76	-13 27.6	3.527	3.143	16.2	19.3	60 E	4*	54*
6 10	10 19.52	+12 34.3	2.221	2.157	26.8	21.0	73 E	37*	51*	8 4	11 51.63	-13 49.5	3.649	3.150	15.0	19.3	53 E	1*	47*
6 15	10 24.72	+11 15.1	2.260	2.137	26.5	21.0	70 E	33*	51*	8 14	12 3.97	-14 19.5	3.760	3.156	13.6	19.4	47 E	—	40*
6 20	10 30.27	+9 54.9	2.297	2.117	26.2	21.0	67 E	30*	51*	8 24	12 16.70	-14 56.0	3.860	3.162	12.0	19.4	41 E	—	33*
6 25	10 36.15	+8 33.7	2.332	2.097	25.8	21.0	64 E	26*	50*	9 3	12 29.75	-15 38.0	3.947	3.166	10.4	19.3	34 E	—	27*
6 30	10 42.32	+7 11.5	2.366	2.077	25.4	21.0	61 E	23*	50*	9 13	12 43.10	-16 24.4	4.020	3.170	8.6	19.3	28 E	—	20*
7 5	10 48.78	+5 48.2	2.398	2.057	24.9	21.0	58 E	20*	49*	9 23	12 56.68	-17 13.9	4.078	3.172	6.9	19.3	22 E	—	14*
7 10	10 55.52	+4 23.7	2.428	2.038	24.4	21.0	56 E	17*	47*	10 3	13 10.47	-18 5.6	4.120	3.174	5.2	19.2	17 E	—	8*
7 15	11 2.51	+2 58.0	2.456	2.019	23.8	21.0	53 E	15*	46*	10 13	13 24.42	-18 58.5	4.145	3.174	3.7	19.1	12 E	—	2*
7 20	11 9.76	+1 31.0	2.482	1.999	23.2	21.0	51 E	12*	44*	10 23	13 38.49	-19 51.8	4.153	3.174	2.8	19.1	9 W	—	—
7 25	11 17.24	+0 2.9	2.505	1.981	22.5	21.0	48 E	10*	42*	11 2	13 52.65	-20 44.4	4.144	3.173	3.3	19.1	10 W	—	4*
7 30	11 24.97	+1 26.5	2.527	1.962	21.8	20.9	46 E	8*	40*	11 12	14 6.83	-21 35.6	4.116	3.171	4.6	19.2	15 W	1*	9*
8 4	11 32.93	+2 57.2	2.547	1.944	21.1	20.9	44 E	6*	38*	11 22	14 20.98	-22 24.6	4.072	3.168	6.3	19.2	21 W	6*	13*
8 9	11 41.13	+4 29.1	2.564	1.926	20.4	20.9	41 E	4*	35*	12 2	14 35.03	-23 10.6	4.010	3.164	8.1	19.3	27 W	10*	19*
8 14	11 49.58	+6 2.2	2.580	1.908	19.7	20.8	39 E	2*	33*	12 12	14 48.88	-23 52.9	3.931	3.159	9.9	19.3	34 W	13*	25*
8 19	11 58.28	+7 36.5	2.594	1.891	18.9	20.8	37 E	1*	31*	12 22	15 2.44	-24 30.9	3.836	3.153	11.7	19.3	40 W	15*	32*
8 24	12 7.22	+9 11.8	2.605	1.874	18.2	20.8	35 E	—	29*	1 1	15 15.60	-25 4.0	3.727	3.146	13.3	19.3	47 W	17*	39*
8 29	12 16.44	+10 48.2	2.615	1.857	17.4	20.7	33 E	—	27*	1 11	15 28.20	-25 31.7	3.603	3.138	14.8	19.3	55 W	18*	46*
9 3	12 25.93	+12 25.4	2.623	1.841	16.7	20.7	32 E	—	25*	1 21	15 40.08	-25 53.4	3.468	3.130	16.1	19.3	62 W	18*	54*
9 8	12 35.72	+14 3.5	2.629	1.826	16.0	20.7	30 E	—	23*	101742 1999 FO₇									
9 13	12 45.83	+15 42.2	2.633	1.811	15.2	20.6	28 E	—	21*	12 27	11 35.23	+30 16.3	1.089	1.714	32.3	17.4	111 W	75	33*
9 18	12 56.25	+17 21.3	2.636	1.796	14.6	20.6	27 E	—	19*	1 1	11 36.62	+29 48.7	1.060	1.729	30.9	17.3	116 W	75	34*
9 23	13 7.03	+19 0.6	2.638	1.782	13.9	20.6	25 E	—	17*	1 6	11 36.69	+29 23.8	1.032	1.745	29.2	17.3	120 W	74	35
9 28	13 18.17	+20 39.9	2.638	1.769	13.3	20.5	24 E	—	15*	1 11	11 35.36	+29 0.9	1.006	1.762	27.3	17.2	125 W	74	35
10 3	13 29.72	+22 18.9	2.637	1.756	12.7	20.5	23 E	—	14*	1 16	11 32.60	+28 39.3	0.982	1.779	25.2	17.1	130 W	74	35
10 13																			

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	20/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
101742 1999 FO₇										12520 1998 HV₇₈									
<i>(continuation)</i>																			
2 25	10 31.46	+23 57.7	0.954	1.928	7.5	16.6	165 E	69	40	12 27	11 36.46	-3 20.4	2.514	2.846	19.9	19.9	99 W	42	66*
3 2	10 22.79	+22 57.5	0.978	1.947	8.6	16.7	163 E	68	41	1 6	11 38.95	-3 58.4	2.384	2.856	19.0	19.7	109 W	41	68
3 7	10 14.90	+21 53.1	1.009	1.967	10.5	16.9	159 E	67	42	1 16	11 39.17	-4 22.5	2.261	2.866	17.5	19.6	119 W	41	68
3 12	10 7.99	+20 45.9	1.046	1.987	12.7	17.0	154 E	66	43	1 26	11 36.97	-4 30.7	2.149	2.874	15.4	19.4	129 W	40	69
3 17	10 2.19	+19 37.0	1.090	2.007	14.9	17.2	149 E	65	44	2 5	11 32.32	-4 21.5	2.054	2.882	12.6	19.2	140 W	41	68
3 22	9 57.56	+18 27.7	1.139	2.028	17.0	17.4	143 E	63	46	2 15	11 25.44	-3 54.3	1.980	2.888	9.3	19.0	152 W	41	68
3 27	9 54.08	+17 18.8	1.193	2.048	18.9	17.6	138 E	62	47	2 25	11 16.81	-3 10.5	1.932	2.894	5.6	18.8	163 W	42	67
4 6	9 50.37	+15 4.4	1.313	2.089	22.0	18.0	129 E	60	49	3 7	11 7.24	-2 13.9	1.912	2.898	2.6	18.6	172 E	43	66
4 16	9 50.48	+12 56.1	1.448	2.129	24.2	18.3	119 E	58	51	3 12	11 2.39	-1 42.4	1.913	2.900	2.8	18.6	172 E	43	66
4 26	9 53.74	+10 53.8	1.594	2.170	25.6	18.6	111 E	56	53	3 17	10 57.66	-1 9.8	1.922	2.902	4.3	18.7	168 E	44	65
5 6	9 59.46	+8 56.4	1.747	2.211	26.4	18.8	103 E	53*	55	3 22	10 53.18	-0 37.1	1.939	2.903	6.1	18.8	162 E	44	65
5 16	10 7.12	+7 2.4	1.905	2.251	26.5	19.1	96 E	48*	57	3 27	10 49.05	-0 5.1	1.962	2.904	7.9	18.9	156 E	45	64
5 26	10 16.29	+5 10.4	2.065	2.291	26.2	19.3	89 E	42*	59	4 1	10 45.36	+0 25.6	1.993	2.905	9.7	19.0	151 E	45	64
6 5	10 26.61	+3 19.5	2.226	2.330	25.6	19.4	83 E	35*	61*	4 6	10 42.17	+0 54.2	2.029	2.906	11.4	19.2	145 E	46	63
6 15	10 37.84	+1 28.9	2.386	2.369	24.7	19.6	77 E	28*	61*	4 16	10 37.51	+1 43.6	2.118	2.906	14.4	19.4	134 E	47	62
6 25	10 49.77	-0 22.2	2.543	2.407	23.5	19.7	71 E	22*	60*	4 26	10 35.26	+2 20.0	2.225	2.905	16.8	19.5	124 E	47	62
7 5	11 2.26	-2 13.8	2.696	2.445	22.1	19.9	65 E	16*	57*	5 6	10 35.39	+2 42.5	2.345	2.904	18.5	19.7	114 E	48*	61
7 15	11 15.20	-4 6.2	2.843	2.481	20.6	20.0	59 E	12*	53*	5 16	10 37.73	+2 51.1	2.473	2.901	19.7	19.9	105 E	46*	61
7 25	11 28.50	-5 59.5	2.983	2.518	19.0	20.0	54 E	7*	48*	5 26	10 42.05	+2 46.3	2.607	2.897	20.3	20.0	96 E	42*	61
8 4	11 42.11	-7 53.5	3.116	2.553	17.2	20.1	48 E	4*	42*	6 5	10 48.07	+2 29.4	2.741	2.893	20.5	20.1	88 E	37*	62
8 14	11 55.98	-9 48.1	3.239	2.588	15.4	20.2	43 E	1*	36*	6 15	10 55.55	+2 1.3	2.874	2.887	20.3	20.2	81 E	31*	62*
8 24	12 10.09	-11 43.1	3.352	2.621	13.5	20.2	37 E	—	31*	6 25	11 4.27	+1 23.4	3.003	2.880	19.8	20.3	73 E	26*	60*
9 3	12 24.40	-13 38.2	3.454	2.654	11.6	20.2	32 E	—	25*	7 5	11 14.04	+0 36.6	3.125	2.872	18.9	20.3	66 E	20*	57*
9 13	12 38.91	-15 33.2	3.545	2.686	9.8	20.2	27 E	—	19*	7 15	11 24.70	-0 17.9	3.240	2.863	17.8	20.4	60 E	16*	52*
9 23	12 53.59	-17 27.6	3.622	2.718	7.9	20.2	22 E	—	14*	7 25	11 36.12	-1 19.2	3.345	2.853	16.5	20.4	53 E	12*	46*
10 3	13 8.44	-19 21.3	3.686	2.748	6.3	20.2	17 E	—	8*	8 4	11 48.19	-2 26.3	3.439	2.843	15.1	20.4	47 E	9*	41*
10 13	13 23.43	-21 13.8	3.736	2.777	4.9	20.2	14 E	—	3*	8 14	12 0.85	-3 38.4	3.522	2.831	13.5	20.4	41 E	6*	35*
10 23	13 38.55	-23 4.9	3.771	2.806	4.3	20.2	12 W	—	2*	8 24	12 14.01	-4 54.6	3.592	2.818	11.7	20.3	35 E	4*	29*
11 2	13 53.78	-24 54.3	3.791	2.833	4.5	20.3	13 W	—	6*	9 3	12 27.64	-6 14.0	3.649	2.804	9.9	20.3	29 E	2*	22*
11 12	14 9.07	-26 41.6	3.795	2.860	5.6	20.3	16 W	—	10*	9 13	12 41.71	-7 35.9	3.691	2.789	8.0	20.2	23 E	—	17*
11 22	14 24.38	-28 26.8	3.785	2.885	7.1	20.4	21 W	—	15*	9 23	12 56.16	-8 59.4	3.719	2.773	6.0	20.1	17 E	—	11*
12 2	14 39.66	-30 9.6	3.759	2.910	8.7	20.5	27 W	3*	20*	10 3	13 11.00	-10 23.8	3.732	2.756	4.0	20.0	11 E	—	5*
12 12	14 54.84	-31 50.0	3.717	2.933	10.3	20.5	32 W	5*	26*	10 13	13 26.20	-11 48.2	3.730	2.738	2.0	19.9	5 E	—	—
12 22	15 9.81	-33 28.0	3.662	2.956	12.0	20.6	38 W	6*	32*	10 23	13 41.74	-13 11.8	3.713	2.719	1.0	19.8	3 W	—	—
1 1	15 24.46	-35 3.8	3.593	2.978	13.5	20.6	45 W	7*	39*	11 2	13 57.61	-14 33.9	3.680	2.699	2.7	19.9	7 W	—	1*
1 11	15 38.66	-36 37.8	3.511	2.998	14.9	20.6	51 W	7*	45*	11 12	14 13.79	-15 53.5	3.633	2.678	4.8	20.0	13 W	4*	5*
1 21	15 52.24	-38 10.2	3.418	3.018	16.1	20.6	58 W	6*	52*	11 22	14 30.24	-17 9.8	3.571	2.657	7.0	20.0	19 W	8*	9*
420738 2012 TS										275842 2001 SC₅									
12 27	11 35.65	-47 46.4	0.392	0.997	76.7	21.4	80 W	—	67*	12 27	11 36.77	+27 56.3	2.317	2.816	19.1	20.9	110 W	73	36*
1 1	12 2.69	-49 40.8	0.387	0.987	78.1	21.4	79 W	—	65*	1 6	11 39.07	+28 38.8	2.179	2.795	17.9	20.8	119 W	74	35
1 6	12 32.48	-51 12.0	0.381	0.977	79.7	21.4	78 W	—	64*	1 16	11 38.49	+29 35.1	2.053	2.773	16.1	20.6	128 W	75	34
1 11	13 5.05	-52 15.0	0.376	0.967	81.3	21.4	76 W	—	62*	1 26	11 34.70	+30 41.0	1.943	2.750	14.0	20.3	137 W	76	33
1 16	13 40.12	-52 44.2	0.370	0.957	83.0	21.5	75 W	—	61*	1 31	11 31.56	+31 15.5	1.896	2.739	12.9	20.2	142 W	76	33
1 21	14 17.06	-52 33.9	0.365	0.948	84.7	21.5	74 W	—	60*	2 5	11 27.58	+31 49.6	1.854	2.727	11.7	20.1	146 W	77	32
1 26	14 54.92	-51 39.7	0.361	0.939	86.5	21.5	72 W	—	59*	2 10	11 22.80	+32 22.1	1.818	2.714	10.6	20.0	149 W	77	32
518452 2005 ES₂₆₇																			
12 27	11 36.02	+0 26.7	1.258	1.739	33.7	20.5	101 W	45	62*	1 31	11 31.56	+31 15.5	1.896	2.739	12.9	20.2	142 W	76	33
1 1	11 42.79	+0 52.2	1.217	1.749	32.9	20.4	105 W	46	63*	2 5	11 27.58	+31 49.6	1.854	2.727	11.7	20.1	146 W	77	32
1 6	11 48.95	+1 26.5	1.177	1.759	32.0	20.3	109 W	46	63	2 10	11 22.80	+32 22.1	1.818	2.714	10.6	20.0	149 W	77	32
1 11	11 54.42	+2 10.3	1.139	1.770	30.8	20.2	113 W	47	62	2 15	11 17.30	+32 51.5	1.788	2.702	9.8	20.0	152 W	78	31
1 16	11 59.15	+3 4.1	1.102	1.781	29.4	20.1	117 W	48	61	2 20	11 11.19	+33 16.4	1.765	2.689	9.2	19.9	154 W	78	31
1 26	12 6.14	+5 23.0	1.035	1.804	26.0	19.9	126 W	50	59	2 25	11 4.61	+33 35.5	1.748	2.676	9.2	19.9	154 W	79	30
2 5	12 9.52	+8 22.4	0.982	1.828	21.8	19.7	137 W	53	56	3 2	10 57.74	+33 47.7	1.739	2.663	9.6	19.9	153 W	79	30
2 15	12 9.05	+11 55.1	0.945	1.853	16.9	19.5	147 W	57	52	3 7	10 50.77	+33 52.3	1.736	2.649	10.4	19.9	151 E	79	30
2 20	12 7.42	+13 48.9	0.934	1.866	14.4	19.4	152 W	59	50	3 12	10 43.89	+33 48.8	1.740	2.636	11.6	19.9	148 E	79	30
2 25	12 4.97	+15 44.1	0.930	1.879	12.1	19.3	156 W	61	48	3 17	10 37.30	+33 37.0	1.751	2.622	12.9	20.0	144 E	79	30
3 2	12 1.83	+17 37.3	0.931	1.893	10.4	19.3	160 W	63	46	3 22	10 31.18	+33 17.2	1.767	2.608	14.3	20.0	140 E	78	31
3 7	11 58.14	+19 25.5	0.938	1.906	9.4	19.3	162 W	64	45	3 27	10 25.67	+32 49.9	1.789	2.593	15.8	20.1	135 E	78	31
3 12	11 54.10	+21 5.5	0.952	1.920	9.6	19.3	161 W	66	43	4 1	10 20.88	+32 15.8	1.816	2.579	17.1	20.2	130 E	77	32
3 17	11 49.93	+22 34.8	0.972	1.933	10.7	19.4	159 W	68	41	4 6	10 16.88	+31 35.8	1.847	2.564	18.5	20.2	126 E	77	32
3 22	11 45.85	+23 51.6	0.997	1.947	12.4	19.6	155 E	69	40	4 11	10 13.72	+30 50.6	1.882	2.549	19.7	20.3	121 E	76	33
3 27	11 42.06	+24 54.9	1.029	1.961	14.3	19.7	151 E	70	39	4 16	10 11.41	+30 1.0	1.921	2.534	20.7	20.4	117 E	75	34
4 1	11 38.74	+25 44.5	1.065	1.975	16.3	19.9	146 E	71	38	4 26	10 9.28	+28 11.6	2.00						

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
275842 2001 SC₅										512245 2016 AU₈									
<i>(continuation)</i>										<i>(continuation)</i>									
9 13	12 45.87	-6 11.5	2.898	2.009	11.2	20.4	23 E	1*	17*	4 16	8 2.67	-16 37.3	0.277	1.083	66.2	19.6	99 E	27*	81
9 23	13 4.19	-9 4.1	2.899	1.973	9.3	20.3	18 E	—	12*	4 21	8 3.26	-16 2.8	0.284	1.069	69.4	19.7	95 E	27*	80
10 3	13 23.43	-11 58.1	2.890	1.937	7.4	20.2	14 E	—	8*	4 26	8 4.81	-15 32.6	0.289	1.054	72.6	19.9	92 E	25*	79*
10 13	13 43.71	-14 52.7	2.873	1.901	5.5	20.0	11 E	—	4*	5 1	8 7.03	-15 5.7	0.292	1.039	75.8	20.0	88 E	24*	78*
10 23	14 5.13	-17 46.4	2.848	1.866	4.0	19.9	7 E	—	—	5 6	8 9.69	-14 40.9	0.293	1.023	79.0	20.0	84 E	21*	76*
11 2	14 27.85	-20 37.8	2.816	1.832	3.2	19.8	6 W	—	—	5 11	8 12.57	-14 16.8	0.292	1.006	82.4	20.1	81 E	19*	73*
11 12	14 52.03	-23 24.7	2.779	1.800	3.8	19.8	7 W	—	—	5 16	8 15.44	-13 52.0	0.289	0.989	86.0	20.2	77 E	16*	71*
11 22	15 17.80	-26 4.7	2.736	1.769	5.3	19.8	9 W	—	3*	5 21	8 18.02	-13 24.3	0.284	0.972	89.9	20.3	74 E	13*	67*
12 2	15 45.32	-28 34.5	2.689	1.739	7.1	19.8	13 W	—	6*	5 26	8 19.99	-12 50.5	0.277	0.954	94.2	20.4	70 E	10*	64*
12 12	16 14.71	-30 50.8	2.639	1.712	8.9	19.8	16 W	—	10*	5 31	8 21.01	-12 6.4	0.269	0.936	99.1	20.5	66 E	7*	60*
12 22	16 45.99	-32 49.1	2.588	1.687	10.8	19.8	19 W	—	13*	6 5	8 20.73	-11 6.6	0.258	0.919	104.5	20.6	61 E	4*	55*
12 27	17 2.33	-33 40.3	2.562	1.675	11.8	19.8	20 W	—	14*	6 10	8 18.75	-9 44.6	0.247	0.901	110.7	20.9	56 E	1*	50*
1 1	17 19.11	-34 25.4	2.536	1.664	12.7	19.8	22 W	—	16*	6 15	8 14.59	-7 52.5	0.235	0.884	117.9	21.2	50 E	—	44*
1 6	17 36.29	-35 3.8	2.510	1.653	13.6	19.8	23 W	—	17*										
1 11	17 53.84	-35 35.2	2.484	1.644	14.5	19.8	25 W	—	19*										
1 16	18 11.69	-35 59.0	2.459	1.635	15.4	19.8	26 W	—	20*										
1 21	18 29.79	-36 14.9	2.435	1.626	16.2	19.8	27 W	—	21*										
99942 Apophis										414429 2009 DC₄₃									
12 27	11 36.87	-12 46.8	0.248	1.036	70.9	18.4	95 W	32	75*	12 27	11 37.59	+28 11.6	1.273	1.860	29.7	20.9	110 W	73	35*
1 1	11 40.21	-14 0.0	0.239	1.048	68.0	18.3	99 W	31	78*	1 1	11 54.37	+30 22.4	1.131	1.799	29.3	20.5	116 W	75	34*
1 6	11 42.69	-15 10.9	0.228	1.058	65.0	18.1	103 W	30	79	1 6	12 10.72	+33 16.2	1.001	1.735	28.8	20.2	122 W	78	31
1 11	11 44.02	-16 18.2	0.217	1.067	61.9	17.9	107 W	29	80	1 26	12 26.42	+36 57.4	0.885	1.669	28.4	19.8	126 W	82	27
1 16	11 43.86	-17 19.9	0.204	1.075	58.5	17.7	111 W	28	81	1 31	12 33.95	+39 6.1	0.833	1.635	28.4	19.6	128 W	84	25
1 21	11 41.88	-18 13.7	0.191	1.082	54.9	17.5	116 W	27	82	2 5	12 41.20	+41 26.5	0.785	1.601	28.6	19.5	129 W	86	23
1 26	11 37.72	-18 56.8	0.178	1.088	50.8	17.2	121 W	26	83	2 10	12 48.08	+43 57.7	0.741	1.566	29.1	19.3	129 W	89	20
1 31	11 30.96	-19 25.1	0.166	1.092	46.4	16.9	127 W	26	83	2 15	12 54.51	+46 38.0	0.701	1.531	30.0	19.2	129 W	88	17
2 5	11 21.11	-19 33.0	0.153	1.096	41.4	16.6	133 W	25	84	2 20	13 0.40	+49 25.2	0.665	1.496	31.2	19.0	128 W	86	15
2 10	11 7.77	-19 12.5	0.142	1.098	35.9	16.3	139 W	26	83	2 25	13 5.67	+52 16.7	0.633	1.460	32.8	18.9	127 W	83	12
2 15	10 50.82	-18 14.2	0.131	1.099	30.2	16.0	146 W	27	82	3 2	13 10.17	+55 9.5	0.604	1.425	34.9	18.8	125 W	80	9
2 20	10 30.66	-16 30.3	0.123	1.099	24.9	15.7	152 W	28	81	3 7	13 13.76	+58 0.9	0.578	1.389	37.2	18.7	122 W	77	6
2 25	10 8.25	-13 57.5	0.117	1.098	21.4	15.5	156 E	31	78	3 12	13 16.24	+60 47.6	0.554	1.353	39.9	18.7	119 W	74	3
2 27	9 58.96	-12 43.5	0.115	1.097	21.1	15.4	157 E	32	77	3 17	13 17.43	+63 26.6	0.532	1.317	42.9	18.6	116 W	72	1
3 1	9 49.64	-11 22.8	0.114	1.096	21.5	15.4	156 E	34	75	3 22	13 17.18	+65 55.5	0.511	1.281	46.0	18.5	112 W	69	—
3 3	9 40.39	-9 56.6	0.113	1.095	22.6	15.4	155 E	35	74	3 27	13 15.35	+68 12.7	0.491	1.245	49.4	18.5	109 W	67	—
3 5	9 31.30	-8 25.7	0.113	1.093	24.3	15.5	153 E	37	72	4 1	13 11.79	+70 17.5	0.471	1.210	52.8	18.4	105 W	65	—
3 7	9 22.48	-6 51.4	0.113	1.092	26.5	15.5	151 E	38	71	4 6	13 6.32	+72 9.8	0.450	1.176	56.5	18.4	101 W	63	—
3 9	9 14.00	-5 14.9	0.113	1.090	29.1	15.6	148	40	69	4 11	12 58.81	+73 50.1	0.428	1.143	60.3	18.3	98 E	61	—
3 11	9 5.96	-3 37.5	0.114	1.088	31.9	15.7	145	41	68	4 16	12 49.12	+75 19.8	0.405	1.110	64.3	18.2	94 E	60	—
3 13	8 58.41	-2 0.4	0.115	1.086	34.9	15.8	141 E	43	66	4 18	12 44.59	+75 53.4	0.395	1.098	66.0	18.2	93 E	59	—
3 15	8 51.39	+0 24.7	0.116	1.084	37.9	15.9	138 E	45	64	4 20	12 39.64	+76 25.8	0.385	1.085	67.7	18.2	92 E	59	—
3 17	8 44.92	+1 8.9	0.118	1.081	40.9	16.0	135 E	46	63	4 22	12 34.21	+76 57.6	0.375	1.073	69.5	18.2	90 E	58	—
3 22	8 31.21	+4 48.9	0.124	1.074	48.3	16.3	126 E	50	59	4 24	12 28.21	+77 28.8	0.364	1.062	71.3	18.1	89 E	58	—
3 27	8 20.79	+8 5.8	0.130	1.066	55.2	16.6	119 E	53	56	4 26	12 21.54	+78 0.0	0.353	1.050	73.1	18.1	87 E	57	—
4 1	8 13.16	+10 59.4	0.137	1.057	61.5	16.9	112 E	56	53	4 27	12 17.89	+78 15.6	0.348	1.045	74.1	18.1	86 E	57	—
4 6	8 7.80	+13 32.4	0.143	1.047	67.4	17.2	105 E	59	50	4 28	12 14.00	+78 31.2	0.342	1.039	75.1	18.1	86 E	56	—
4 11	8 4.21	+15 48.1	0.150	1.036	73.0	17.4	99 E	60	48	4 29	12 9.83	+78 47.0	0.336	1.034	76.1	18.1	85 E	56	—
4 16	8 1.92	+17 50.2	0.155	1.023	78.3	17.6	93 E	61	46	4 30	12 5.35	+79 2.9	0.330	1.028	77.1	18.0	84 E	56	—
4 21	8 0.38	+19 42.2	0.160	1.010	83.5	17.9	87 E	60	44	5 1	12 0.52	+79 19.0	0.324	1.023	78.1	18.0	84 E	56	—
4 26	7 59.05	+21 27.8	0.164	0.996	88.8	18.1	82 E	58	42*	5 2	11 55.26	+79 35.3	0.318	1.018	79.2	18.0	83 E	55	—
5 1	7 57.35	+23 10.3	0.167	0.981	94.3	18.3	76 E	55	40*	5 3	11 49.53	+79 51.7	0.312	1.013	80.3	18.0	82 E	55	—
5 6	7 54.78	+24 52.0	0.168	0.966	100.0	18.6	71 E	51	38*	5 4	11 43.24	+80 8.4	0.306	1.008	81.4	18.0	81 E	55	—
5 11	7 50.78	+26 35.0	0.169	0.950	106.2	18.9	65 E	47	35*	5 5	11 36.31	+80 25.2	0.300	1.003	82.5	18.0	80 E	55	—
5 16	7 44.73	+28 20.2	0.170	0.933	112.9	19.2	58 E	43	31*	5 6	11 28.63	+80 42.3	0.294	0.998	83.7	18.0	80 E	54	—
5 21	7 35.89	+30 7.0	0.170	0.916	120.2	19.7	51 E	38	27*	5 7	11 20.08	+80 59.4	0.287	0.994	84.8	17.9	79 E	54	—
5 26	7 23.60	+31 52.1	0.170	0.898	128.3	20.4	44 E	32	22*	5 8	11 10.49	+81 16.5	0.281	0.989	86.1	17.9	78 E	54	—
5 31	7 7.50	+33 28.4	0.172	0.881	137.1	21.3	36 E	26	16*	5 9	10 59.70	+81 33.5	0.274	0.985	87.3	17.9	77 E	53	—
512245 2016 AU₈										512245 2016 AU₈									
12 27	11 37.30	+6 22.4	0.398	1.142	57.0	20.3	103 W	51	57*	5 10	10 47.50	+81 50.2	0.268	0.980	88.6	17.9	76 E	53*	—
1 1	11 40.64	+4 20.2	0.378	1.150	55.0	20.1	107 W	49	60*	5 11	10 33.66	+82 6.3	0.261	0.976	89.9	17.9	75 E	53*	—
1 6	11 42.75	+2 13.9	0.357	1.157	52.8														

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	20/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
414429 2009 DC₄₃										250008 2002 AO₃₁									
<i>(continuation)</i>										<i>(continuation)</i>									
6 6	3 24.18	+43 21.4	0.110	0.919	148.7	20.9	28 W	22*	—	4 11	10 41.54	+7 15.7	1.482	2.326	16.7	21.3	138 E	52	57
6 7	3 21.28	+39 0.9	0.109	0.919	150.4	21.2	27 W	20*	4*	4 16	10 40.17	+7 18.0	1.538	2.339	18.3	21.4	133 E	52	57
6 8	3 18.75	+34 33.6	0.108	0.919	151.2	21.4	26 W	18*	8*	224000 2005 GX₈									
6 9	3 16.57	+30 3.3	0.108	0.919	151.1	21.3	26 W	16*	11*	12 27	11 38.64	+33 13.3	2.202	2.721	19.6	21.2	111 W	78	30*
6 10	3 14.68	+25 33.9	0.108	0.920	150.0	21.1	27 W	14*	15*	1 6	11 41.54	+34 22.0	2.083	2.709	18.4	21.0	120 W	79	30
6 11	3 13.06	+21 9.0	0.110	0.921	148.1	20.8	29 W	11*	19*	1 16	11 41.30	+35 44.8	1.975	2.695	16.7	20.8	128 W	81	28
6 12	3 11.68	+16 52.1	0.112	0.921	145.5	20.4	31 W	9*	23*	1 26	11 37.52	+37 16.0	1.884	2.680	14.8	20.6	136 W	82	27
6 13	3 10.50	+12 45.9	0.114	0.922	142.6	20.0	34 W	7*	27*	2 5	11 30.05	+38 46.3	1.813	2.665	13.0	20.5	143 W	84	25
6 14	3 9.51	+8 52.6	0.118	0.924	139.3	19.6	36 W	5*	30*	2 10	11 24.98	+39 27.6	1.786	2.657	12.3	20.4	145 W	84	25
6 15	3 8.69	+5 13.4	0.121	0.925	136.0	19.3	39 W	4*	33*	2 15	11 19.11	+40 4.1	1.765	2.648	11.8	20.4	147 W	85	24
6 17	3 7.48	-1 20.5	0.130	0.928	129.5	18.8	45 W	1*	39*	2 20	11 12.60	+40 34.2	1.751	2.640	11.6	20.3	148 W	86	23
6 19	3 6.77	-6 56.3	0.141	0.932	123.3	18.4	50 W	—	44*	2 25	11 5.60	+40 56.5	1.742	2.631	11.7	20.3	147 W	86	23
6 21	3 6.45	-11 39.6	0.152	0.936	117.6	18.1	55 W	—	48*	3 2	10 58.32	+41 10.0	1.740	2.622	12.2	20.3	146 W	86	23
6 23	3 6.45	-15 37.9	0.165	0.942	112.6	18.0	59 W	—	51*	3 7	10 50.97	+41 13.9	1.744	2.612	12.9	20.4	144 E	86	23
6 25	3 6.71	-18 58.7	0.178	0.947	108.0	17.9	62 W	—	54*	3 12	10 43.78	+41 8.0	1.754	2.603	13.9	20.4	141 E	86	23
6 26	3 6.93	-20 27.2	0.185	0.950	105.8	17.9	64 W	—	55*	3 17	10 36.97	+40 52.4	1.770	2.593	15.0	20.4	138 E	86	23
6 27	3 7.19	-21 48.7	0.191	0.954	103.8	17.8	66 W	—	57*	3 22	10 30.72	+40 27.4	1.791	2.583	16.2	20.5	134 E	85	24
6 28	3 7.49	-23 4.1	0.198	0.957	101.9	17.8	67 W	—	58*	3 27	10 25.19	+39 54.1	1.817	2.573	17.3	20.6	130 E	85	24
6 29	3 7.83	-24 13.8	0.205	0.961	100.1	17.8	68 W	—	59*	4 1	10 20.48	+39 13.2	1.848	2.562	18.5	20.6	126 E	84	25
6 30	3 8.20	-25 18.5	0.212	0.964	98.3	17.8	70 W	—	60*	4 6	10 16.63	+38 25.9	1.882	2.551	19.5	20.7	121 E	83	26
7 1	3 8.60	-26 18.6	0.219	0.968	96.6	17.8	71 W	—	61*	4 11	10 13.69	+37 33.1	1.920	2.540	20.5	20.8	117 E	83	26
7 2	3 9.01	-27 14.7	0.226	0.972	95.0	17.8	72 W	—	62*	4 16	10 11.66	+36 35.8	1.961	2.529	21.4	20.8	113 E	82	27
7 3	3 9.45	-28 7.0	0.233	0.976	93.4	17.8	73 W	—	63*	4 21	10 10.50	+35 34.8	2.004	2.518	22.2	20.9	109 E	81	28
7 4	3 9.89	-28 56.0	0.240	0.980	91.9	17.8	74 W	—	63*	4 26	10 10.18	+34 30.8	2.050	2.506	22.8	20.9	105 E	80	29
7 5	3 10.35	-29 42.0	0.247	0.984	90.5	17.8	75 W	—	64*	5 1	10 10.64	+33 24.5	2.097	2.495	23.4	21.0	101 E	78*	31
7 7	3 11.27	-31 6.1	0.260	0.993	87.7	17.8	77 W	—	66*	5 6	10 11.82	+32 16.4	2.144	2.483	23.8	21.0	97 E	76*	32
7 9	3 12.19	-32 21.3	0.274	1.003	85.1	17.9	79 W	—	67*	5 11	10 13.67	+31 6.8	2.193	2.470	24.1	21.1	94 E	73*	33
7 11	3 13.07	-33 29.2	0.287	1.012	82.7	17.9	81 W	—	68*	5 16	10 16.13	+29 56.0	2.242	2.458	24.3	21.1	90 E	69*	34
7 13	3 13.91	-34 31.0	0.300	1.023	80.4	17.9	83 W	—	69*	5 21	10 19.14	+28 44.2	2.292	2.445	24.4	21.2	86 E	65*	35
7 15	3 14.67	-35 27.7	0.313	1.033	78.2	18.0	84 W	—	70*	5 26	10 22.64	+27 31.6	2.340	2.432	24.4	21.2	83 E	60*	36
7 17	3 15.35	-36 20.4	0.326	1.044	76.1	18.0	86 W	—	71*	5 31	10 26.59	+26 18.4	2.389	2.419	24.3	21.2	80 E	56*	38
7 19	3 15.91	-37 9.5	0.338	1.056	74.1	18.1	87 W	—	72*	6 5	10 30.95	+25 4.6	2.437	2.406	24.2	21.3	76 E	52*	39*
7 21	3 16.37	-37 55.7	0.350	1.067	72.2	18.1	89 W	—	72*	6 10	10 35.68	+23 50.1	2.484	2.393	23.9	21.3	73 E	48*	40*
7 23	3 16.69	-38 39.5	0.362	1.079	70.3	18.1	90 W	—	73*	6 15	10 40.74	+22 35.2	2.529	2.379	23.6	21.3	70 E	44*	41*
7 25	3 16.86	-39 21.3	0.373	1.091	68.5	18.2	91 W	—	73*	6 20	10 46.10	+21 19.7	2.574	2.365	23.3	21.3	67 E	41*	41*
7 30	3 16.57	-40 59.1	0.401	1.123	64.3	18.2	95 W	—	74*	6 25	10 51.74	+20 3.7	2.616	2.351	22.8	21.3	64 E	37*	41*
8 4	3 15.04	-42 30.0	0.427	1.156	60.3	18.3	98 W	—	73*	6 30	10 57.62	+18 47.2	2.657	2.337	22.3	21.3	61 E	34*	41*
8 9	3 12.05	-43 55.6	0.451	1.189	56.6	18.4	102 W	—	72	7 5	11 3.72	+17 30.2	2.697	2.323	21.8	21.3	58 E	31*	41*
8 14	3 7.41	-45 15.8	0.475	1.224	53.1	18.5	105 W	—	71	7 10	11 10.04	+16 12.7	2.734	2.309	21.2	21.3	55 E	28*	40*
8 19	3 0.99	-46 29.4	0.497	1.259	49.8	18.5	108 W	—	70	7 15	11 16.56	+14 54.6	2.770	2.294	20.5	21.3	52 E	25*	39*
8 24	2 52.73	-47 34.6	0.520	1.295	46.6	18.6	111 W	—	68	7 20	11 23.26	+13 36.0	2.803	2.279	19.8	21.3	50 E	23*	38*
8 29	2 42.66	-48 29.1	0.542	1.331	43.6	18.7	115 W	—	68	7 25	11 30.12	+12 16.9	2.834	2.264	19.1	21.3	47 E	21*	36*
9 3	2 30.86	-49 10.1	0.565	1.367	40.8	18.7	118 W	—	67	7 30	11 37.15	+10 57.3	2.863	2.249	18.3	21.3	44 E	19*	35*
9 8	2 17.63	-49 34.4	0.589	1.403	38.2	18.8	121 W	—	66	8 4	11 44.33	+9 37.1	2.890	2.234	17.5	21.3	42 E	17*	33*
9 13	2 3.39	-49 39.5	0.615	1.438	35.8	18.9	123 W	—	66	8 9	11 51.67	+8 16.4	2.914	2.219	16.7	21.2	39 E	15*	31*
9 18	1 48.73	-49 23.6	0.644	1.474	33.8	19.0	125 W	—	67	8 14	11 59.15	+6 55.2	2.936	2.203	15.8	21.2	36 E	13*	29*
9 23	1 34.24	-48 46.6	0.674	1.510	32.0	19.1	127 W	—	67	8 19	12 6.77	+5 33.6	2.955	2.188	14.9	21.2	34 E	12*	26*
9 28	1 20.47	-47 49.6	0.708	1.545	30.5	19.2	128 W	—	68	8 24	12 14.54	+4 11.5	2.972	2.172	14.0	21.1	31 E	10*	24*
10 3	1 7.85	-46 34.6	0.745	1.580	29.5	19.3	129 W	—	69	8 29	12 22.45	+2 48.9	2.986	2.157	13.0	21.1	29 E	9*	22*
10 8	0 56.71	-45 4.0	0.785	1.614	28.7	19.5	129 W	—	71	9 3	12 30.51	+1 26.0	2.997	2.141	12.1	21.1	26 E	8*	20*
10 13	0 47.23	-43 21.1	0.829	1.648	28.2	19.6	129 E	2	73	9 8	12 38.71	+0 2.7	3.007	2.125	11.1	21.0	24 E	6*	17*
10 18	0 39.46	-41 29.1	0.876	1.682	28.0	19.8	128 E	4	75	9 13	12 47.07	+1 21.0	3.013	2.109	10.1	21.0	21 E	5*	15*
10 23	0 33.33	-39 30.9	0.928	1.715	27.9	19.9	126 E	5	76	9 18	12 55.59	+2 44.9	3.017	2.093	9.0	20.9	19 E	4*	13*
10 28	0 28.73	-37 29.2	0.982	1.747	28.0	20.1	124 E	8	79	9 23	13 4.26	+4 8.9	3.018	2.077	8.0	20.8	17 E	2*	10*
11 2	0 25.52	-35 25.8	1.041	1.779	28.2	20.3	122 E	10	81	9 28	13 13.10	+5 33.2	3.017	2.061	6.9	20.8	14 E	1*	8*
11 7	0 23.57	-33 22.3	1.103	1.811	28.4	20.5	120 E	12	83	10 3	13 22.12	+6 57.5	3.014	2.045	5.8	20.7	12 E	—	6*
11 12	0 22.73	-31 19.8	1.168	1.842	28.6	20.6	117 E	14	85	1									

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	20/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
312958 1997 QP₂										301968 2000 FX₂									
<i>(continuation)</i>										<i>(continuation)</i>									
2 25	10 39.41	-3 57.6	0.837	1.815	7.2	18.6	167 W	41	68	7 25	11 59.30	-0 37.6	2.735	2.361	21.4	19.7	58 E	17*	50*
3 2	10 28.25	-4 58.3	0.840	1.818	7.3	18.7	166 E	40	69	8 4	12 13.16	-3 4.6	2.884	2.408	19.6	19.8	53 E	13*	46*
3 7	10 17.40	-5 52.0	0.850	1.822	9.3	18.8	163 E	39	70	8 14	12 27.21	-5 26.7	3.026	2.454	17.7	19.9	47 E	9*	41*
3 17	9 58.04	-7 18.0	0.891	1.828	15.0	19.1	152 E	38	71	8 24	12 41.43	-7 44.4	3.160	2.500	15.7	19.9	42 E	6*	36*
3 27	9 43.50	-8 19.9	0.954	1.834	20.5	19.4	140 E	37	72	9 3	12 55.81	-9 57.9	3.286	2.545	13.6	20.0	36 E	4*	30*
4 6	9 34.50	-9 6.3	1.035	1.839	24.9	19.7	129 E	36	73	9 13	13 10.34	-12 7.3	3.401	2.590	11.5	20.0	31 E	1*	25*
4 11	9 32.02	-9 26.5	1.080	1.841	26.7	19.9	124 E	36	73	9 23	13 25.01	-14 12.8	3.504	2.634	9.4	20.0	25 E	—	19*
4 16	9 30.79	-9 45.9	1.128	1.843	28.2	20.0	120 E	35	74	10 3	13 39.81	-16 14.2	3.595	2.677	7.4	20.1	20 E	—	14*
4 21	9 30.72	-10 5.4	1.177	1.845	29.5	20.2	115 E	35	74	10 13	13 54.73	-18 11.6	3.672	2.719	5.4	20.0	15 E	—	8*
4 26	9 31.70	-10 25.6	1.227	1.847	30.5	20.3	111 E	34*	74	10 23	14 9.74	-20 4.9	3.735	2.760	3.6	20.0	10 E	—	2*
5 6	9 36.40	-11 9.8	1.330	1.850	32.0	20.5	104 E	32*	75	11 2	14 24.82	-21 54.1	3.783	2.801	2.6	20.0	7 W	—	—
5 16	9 44.18	-12 1.1	1.434	1.853	32.8	20.7	97 E	28*	76	11 12	14 39.93	-23 39.2	3.814	2.841	3.1	20.1	9 W	—	3*
5 26	9 54.46	-13 1.2	1.537	1.854	33.1	20.9	91 E	23*	77*	11 22	14 55.03	-25 20.2	3.830	2.880	4.6	20.2	14 W	—	8*
6 5	10 6.77	-14 10.4	1.638	1.855	33.0	21.0	85 E	17*	77*	12 2	15 10.05	-26 57.2	3.830	2.918	6.4	20.3	19 W	2*	13*
6 15	10 20.79	-15 29.0	1.734	1.856	32.7	21.1	80 E	12*	74*	12 12	15 24.92	-28 30.3	3.813	2.955	8.3	20.4	26 W	5*	19*
6 25	10 36.27	-16 56.6	1.827	1.855	32.0	21.2	76 E	7*	70*	12 22	15 39.53	-29 59.8	3.780	2.991	10.0	20.5	32 W	7*	25*
7 5	10 53.04	-18 32.4	1.914	1.854	31.3	21.3	71 E	3*	65*	1	15 53.80	-31 26.0	3.732	3.026	11.7	20.6	39 W	8*	32*
7 15	11 11.01	-20 15.6	1.996	1.852	30.3	21.3	67 E	—	60*	1 11	16 7.58	-32 49.7	3.669	3.061	13.2	20.6	45 W	9*	39*
7 25	11 30.12	-22 5.2	2.074	1.849	29.3	21.4	63 E	—	54*	1 21	16 20.72	-34 11.2	3.593	3.094	14.6	20.7	53 W	9*	46*
8 4	11 50.33	-23 59.4	2.145	1.846	28.2	21.4	59 E	—	50*	118307 1998 VM₁									
8 14	12 11.68	-25 57.0	2.212	1.842	27.0	21.5	56 E	—	45*	12 27	11 41.60	+11 6.5	2.555	2.950	18.9	21.1	104 W	56	52*
8 24	12 34.19	-27 55.9	2.274	1.837	25.8	21.5	52 E	—	41*	1 6	11 43.99	+11 11.8	2.422	2.954	17.8	20.9	113 W	56	53
9 3	12 57.92	-29 53.9	2.331	1.832	24.5	21.5	49 E	—	37*	1 16	11 44.08	+11 31.4	2.298	2.958	16.1	20.7	124 W	57	52
9 13	13 22.93	-31 48.8	2.383	1.826	23.2	21.5	46 E	—	34*	1 26	11 41.67	+12 4.8	2.188	2.960	13.8	20.5	134 W	57	52
9 23	13 49.27	-33 37.6	2.431	1.820	21.8	21.5	42 E	—	31*	2 5	11 36.75	+12 49.8	2.096	2.961	10.9	20.3	145 W	58	51
10 3	14 16.96	-35 17.4	2.474	1.812	20.4	21.5	39 E	—	28*	2 15	11 29.49	+13 42.6	2.028	2.961	7.6	20.1	157 W	59	50
10 13	14 46.00	-36 45.3	2.513	1.805	19.0	21.5	36 E	—	25*	2 20	11 25.13	+14 10.1	2.004	2.961	5.9	20.0	162 W	59	50
10 23	15 16.30	-37 57.8	2.548	1.797	17.5	21.4	33 E	—	22*	2 25	11 20.40	+14 37.3	1.988	2.960	4.3	19.9	167 W	60	49
11 2	15 47.71	-38 52.0	2.579	1.788	16.0	21.4	30 E	—	20*	3 2	11 15.42	+15 3.4	1.978	2.960	3.3	19.9	170 W	60	49
11 12	16 20.01	-39 25.2	2.605	1.779	14.5	21.3	27 E	—	18*	3 7	11 10.29	+15 27.5	1.977	2.959	3.4	19.9	170 W	60	49
11 22	16 52.86	-39 35.2	2.628	1.769	13.0	21.3	24 E	—	15*	3 12	11 5.15	+15 48.9	1.983	2.958	4.5	19.9	166 E	61	48
12 2	17 25.90	-39 20.4	2.645	1.759	11.5	21.2	21 E	—	12*	3 17	11 0.13	+16 7.1	1.996	2.956	6.2	20.0	161 E	61	48
12 12	17 58.75	-38 40.3	2.658	1.749	10.1	21.2	18 E	—	10*	3 27	10 50.94	+16 31.8	2.044	2.953	9.6	20.2	150 E	62	47
12 22	18 31.01	-37 35.1	2.666	1.738	8.8	21.1	16 E	—	7*	4 6	10 43.50	+16 39.9	2.116	2.948	12.8	20.4	139 E	62	47
1 1	19 2.39	-36 5.8	2.668	1.728	7.7	21.1	14 E	—	4*	4 16	10 38.31	+16 31.6	2.210	2.942	15.5	20.6	129 E	62	47
1 11	19 32.67	-34 14.1	2.664	1.717	7.1	21.0	12 E	—	1*	4 26	10 35.60	+16 8.4	2.319	2.936	17.5	20.8	119 E	61	48
1 21	20 1.70	-32 1.9	2.655	1.706	7.0	21.0	12 W	—	2*	5 6	10 35.31	+15 32.4	2.439	2.928	19.0	20.9	109 E	61	48
301968 2000 FX₂										5 16	10 37.26	+14 45.5	2.565	2.920	19.9	21.1	100 E	58*	49
12 27	11 41.47	+58 10.9	0.849	1.548	35.1	16.6	115 W	77	5*	5 26	10 41.22	+13 49.2	2.695	2.911	20.4	21.2	92 E	55*	50
1 1	11 48.57	+58 33.8	0.838	1.554	34.4	16.6	117 W	76	5*	6 5	10 46.90	+12 45.2	2.824	2.900	20.4	21.3	84 E	52*	51
1 6	11 53.30	+58 56.5	0.828	1.560	33.6	16.6	119 W	76	5*	6 15	10 54.05	+11 34.2	2.951	2.889	20.0	21.4	77 E	39*	52*
1 11	11 55.47	+59 18.1	0.820	1.568	32.7	16.5	121 W	76	5	6 25	11 2.46	+10 17.3	3.071	2.877	19.3	21.4	69 E	32*	51*
1 16	11 54.99	+59 36.9	0.813	1.577	31.7	16.5	123 W	75	4	7 5	11 11.91	+8 55.2	3.185	2.863	18.4	21.4	63 E	26*	49*
1 21	11 51.80	+59 50.7	0.807	1.588	30.7	16.5	125 W	75	4	7 15	11 22.26	+7 28.5	3.290	2.849	17.2	21.5	56 E	21*	46*
1 26	11 46.02	+59 56.4	0.804	1.599	29.7	16.4	127 W	75	4	7 25	11 33.37	+5 57.6	3.385	2.834	15.8	21.5	50 E	17*	41*
1 31	11 37.87	+59 51.2	0.802	1.611	28.6	16.4	128 W	75	4	8 4	11 45.13	+4 23.3	3.469	2.818	14.3	21.5	43 E	13*	36*
2 5	11 27.76	+59 31.7	0.804	1.625	27.6	16.4	130 W	75	4	8 14	11 57.47	+2 45.9	3.540	2.801	12.6	21.4	37 E	10*	31*
2 7	11 23.28	+59 19.4	0.805	1.630	27.3	16.4	131 W	76	5	8 24	12 10.33	+1 6.0	3.598	2.783	10.9	21.4	31 E	7*	25*
2 9	11 18.63	+59 4.1	0.807	1.636	26.9	16.4	131 W	76	5	9 3	12 23.65	-0 35.9	3.643	2.764	9.0	21.3	25 E	5*	19*
2 11	11 13.84	+58 45.8	0.809	1.642	26.6	16.4	132 W	76	5	9 13	12 37.41	-2 19.3	3.673	2.745	7.0	21.2	19 E	3*	13*
2 13	11 8.97	+58 24.4	0.812	1.648	26.2	16.4	132 W	77	6	9 23	12 51.56	-4 3.6	3.689	2.724	5.0	21.1	14 E	—	7*
2 15	11 4.07	+57 59.8	0.815	1.654	26.0	16.4	133 W	77	6	10 3	13 6.10	-5 48.3	3.690	2.702	2.9	21.0	8 E	—	2*
2 17	10 59.18	+57 32.0	0.819	1.661	25.7	16.4	133 W	77	6	10 13	13 21.02	-7 32.8	3.677	2.680	0.8	20.8	2 E	—	—
2 19	10 54.36	+57 1.1	0.824	1.667	25.5	16.5	134 W	78	7	10 23	13 36.29	-9 16.5	3.648	2.657	1.5	20.8	4 W	—	—
2 21	10 49.64	+56 27.1	0.829	1.674	25.3	16.5	134 W	79	8	11 2	13 51.92	-10 58.7	3.606	2.632	3.6	20.9	10 W	3*	—
2 23	10 45.07	+55 50.0	0.835	1.680	25.1	16.5	134 W	79	8	11 12	14 7.88	-12 39.0	3.549	2.607	5.8	21.0	15 W	8*	5*
2 25	10 40.67	+55 10.1	0.842	1.687	25.0	16.5	134 W	80	9	11 22	14 24.16	-14 16.5	3.478	2.582	7.9	21.0	21 W	12*	10*
3 2	10 30.61	+53 19.0	0.861	1.705	24.8	16.6	134 E	82	11	12 2	14 40.74	-15 50.8	3.394	2.555	10.1	21.0	27 W	15*	15*
3 7	10 22.09	+51 13.9	0.885	1.723	24.9	16.7	133 E	84	13	12 12	14 57.60	-17 21.3	3.297	2.527	12.2	21.0	33 W	18*	21*
3 12	10 15.25	+48 58.1	0.914	1.742	25.1	16.8	132 E	86	15	12 22	15 14.68	-18 47.5	3.189	2.499	14.3	21.0	39 W	20*	27*
3 17	10 10.10	+46 35.0	0.947	1.761	25.6	16.9	130 E	88	17	1 1	15 31.95	-20 9.1	3.071	2.470	16.2	21.0	45 W	21*	34*
3 22	10 6.54	+44 7.7	0.984	1.781	26.1	17.0	128 E	89	20	1 11	15 49.34	-21 25.5	2.943	2.441	18.1	20.9	51 W	21*	41*

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	20/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
53319 1999 JM₈										5621 Erb									
<i>(continuation)</i>										<i>(continuation)</i>									
4 1	10 49.92	+19 58.3	1.921	2.787	12.4	19.6	143 E	65	44	11 22	18 18.16	-22 11.3	2.121	1.424	23.2	17.5	35 E	13*	26*
4 6	10 45.45	+20 26.3	1.932	2.754	14.2	19.6	138 E	65	44	12 2	18 53.22	-21 17.7	2.165	1.437	21.8	17.5	33 E	14*	23*
4 16	10 38.15	+21 5.4	1.968	2.688	17.5	19.7	126 E	66	43	12 12	19 27.56	-19 58.0	2.213	1.456	20.2	17.5	31 E	15*	20*
4 26	10 33.48	+21 22.3	2.020	2.619	20.2	19.8	116 E	66	43	12 22	20 0.84	-18 15.0	2.266	1.480	18.6	17.6	29 E	15*	17*
5 6	10 31.63	+21 19.0	2.080	2.549	22.4	19.9	106 E	66*	43	12 27	20 17.02	-17 16.0	2.295	1.493	17.7	17.6	28 E	15*	15*
5 16	10 32.60	+20 58.0	2.145	2.477	23.9	19.9	97 E	63*	43	1 1	20 32.87	-16 12.7	2.324	1.508	16.8	17.6	26 E	15*	14*
5 26	10 36.23	+20 21.4	2.208	2.403	24.9	20.0	88 E	57*	44	1 6	20 48.39	-15 5.4	2.354	1.523	16.0	17.6	25 E	15*	12*
6 5	10 42.27	+19 31.3	2.268	2.328	25.5	20.0	81 E	50*	44	1 11	21 3.57	-13 54.9	2.385	1.540	15.0	17.7	24 E	15*	11*
6 15	10 50.49	+18 29.0	2.320	2.251	25.6	20.0	73 E	43*	45*	1 16	21 18.40	-12 41.5	2.417	1.557	14.1	17.7	23 E	14*	9*
6 25	11 0.65	+17 15.4	2.364	2.172	25.5	19.9	67 E	37*	45*	1 21	21 32.89	-11 25.8	2.449	1.575	13.2	17.7	21 E	13*	8*
7 5	11 12.56	+15 51.2	2.396	2.091	25.0	19.9	60 E	31*	43*	215263 2001 OW₂₃									
7 15	11 26.10	+14 16.5	2.417	2.009	24.4	19.8	55 E	27*	41*	12 27	11 42.15	-17 13.3	2.597	2.814	20.4	21.0	92 W	28	78*
7 25	11 41.16	+12 31.7	2.426	1.926	23.6	19.7	49 E	23*	38*	1 6	11 44.14	-19 3.8	2.484	2.837	19.9	20.9	101 W	26	83
8 4	11 57.70	+10 36.7	2.422	1.841	22.7	19.5	44 E	20*	35*	1 16	11 43.75	-20 44.8	2.376	2.859	18.9	20.8	109 W	24	85
8 14	12 15.74	+ 8 31.3	2.406	1.755	21.8	19.4	40 E	17*	31*	1 26	11 40.79	-22 12.2	2.277	2.880	17.5	20.7	119 W	23	86
8 24	12 35.31	+ 6 15.7	2.378	1.668	20.8	19.2	36 E	15*	27*	2 5	11 35.23	-23 21.8	2.191	2.901	15.6	20.6	128 W	22	87
9 3	12 56.53	+ 3 49.7	2.340	1.581	19.9	19.0	32 E	14*	24*	2 15	11 27.26	-24 8.6	2.122	2.920	13.4	20.4	137 W	21	88
9 13	13 19.57	+ 1 13.5	2.292	1.494	19.1	18.8	29 E	12*	21*	2 20	11 22.51	-24 22.1	2.096	2.929	12.3	20.4	141 W	21	88
9 23	13 44.64	+ 1 32.3	2.236	1.408	18.4	18.6	26 E	11*	18*	2 25	11 17.40	-24 28.5	2.075	2.938	11.3	20.3	145 W	21	88
10 3	14 12.02	+ 4 26.5	2.174	1.324	17.9	18.4	24 E	10*	16*	3 2	11 12.02	-24 27.8	2.061	2.947	10.3	20.3	148 W	21	88
10 13	14 42.05	- 7 27.1	2.109	1.244	17.7	18.2	22 E	10*	14*	3 7	11 6.51	-24 20.1	2.053	2.956	9.6	20.2	150 E	21	88
10 23	15 15.07	-10 30.2	2.043	1.169	17.7	18.0	21 E	9*	12*	3 12	11 1.00	-24 5.5	2.052	2.964	9.1	20.2	152 E	21	88
10 28	15 32.82	-12 1.1	2.011	1.135	17.9	17.9	21 E	9*	12*	3 17	10 55.62	-23 44.6	2.057	2.972	9.1	20.2	152 E	21	88
11 2	15 51.45	-13 30.2	1.979	1.102	18.1	17.8	20 E	8*	12*	3 22	10 50.52	-23 18.3	2.069	2.980	9.3	20.3	151 E	22	87
11 7	16 10.99	-14 56.6	1.950	1.073	18.4	17.8	20 E	8*	11*	3 27	10 45.81	-22 47.5	2.088	2.988	9.9	20.3	149 E	22	87
11 12	16 31.45	-16 18.8	1.922	1.047	18.8	17.7	20 E	8*	11*	4 1	10 41.58	-22 13.4	2.114	2.995	10.7	20.4	146 E	23	86
11 17	16 52.82	-17 35.4	1.896	1.024	19.3	17.6	20 E	8*	11*	4 6	10 37.89	-21 36.8	2.145	3.002	11.7	20.5	143 E	23	86
11 22	17 15.08	-18 44.8	1.873	1.005	19.8	17.6	20 E	8*	11*	4 11	10 34.81	-20 58.9	2.182	3.009	12.7	20.5	139 E	24	85
11 27	17 38.16	-19 45.5	1.853	0.991	20.4	17.5	21 E	8*	12*	4 16	10 32.37	-20 20.6	2.225	3.015	13.7	20.6	135 E	25	84
12 2	18 1.98	-20 35.8	1.837	0.981	21.0	17.5	21 E	8*	12*	4 21	10 30.59	-19 43.1	2.272	3.022	14.7	20.7	130 E	25	84
12 7	18 26.42	-21 14.3	1.825	0.977	21.7	17.5	21 E	9*	12*	4 26	10 29.46	-19 6.9	2.324	3.028	15.6	20.8	126 E	26	83
12 12	18 51.29	-21 39.7	1.816	0.977	22.3	17.5	22 E	9*	13*	5 1	10 28.96	-18 32.8	2.379	3.034	16.4	20.9	122 E	26	83
12 17	19 16.43	-21 51.2	1.813	0.982	22.8	17.5	23 E	9*	14*	5 6	10 29.06	-18 1.2	2.438	3.040	17.1	21.0	118 E	27*	82
12 22	19 41.62	-21 48.4	1.814	0.992	23.2	17.6	23 E	10*	14*	5 11	10 29.76	-17 32.5	2.499	3.045	17.7	21.0	113 E	27*	82
12 27	20 6.66	-21 31.4	1.820	1.006	23.6	17.6	24 E	10*	15*	5 16	10 31.00	-17 7.0	2.563	3.050	18.2	21.1	109 E	26*	81
1 1	20 31.37	-21 0.8	1.831	1.025	23.7	17.7	25 E	11*	15*	5 21	10 32.76	-16 44.9	2.629	3.055	18.6	21.2	105 E	25*	81
1 6	20 55.56	-20 17.4	1.847	1.048	23.8	17.8	25 E	11*	16*	5 26	10 34.99	-16 26.3	2.696	3.060	18.9	21.2	101 E	24*	80
1 11	21 19.10	-19 22.7	1.868	1.074	23.7	17.8	26 E	12*	16*	5 31	10 37.66	-16 11.3	2.764	3.064	19.2	21.3	97 E	22*	80
1 16	21 41.88	-18 18.3	1.894	1.104	23.4	17.9	26 E	13*	16*	6 5	10 40.74	-15 59.8	2.833	3.068	19.3	21.4	94 E	20*	80
1 21	22 3.82	-17 5.9	1.924	1.136	23.0	18.0	27 E	13*	17*	6 10	10 44.19	-15 51.8	2.902	3.072	19.3	21.4	90 E	18*	80*
12 27	11 41.95	- 3 48.2	2.259	2.586	22.1	18.9	98 W	41	66*	6 15	10 47.99	-15 47.2	2.970	3.076	19.2	21.5	86 E	15*	78*
1 6	11 47.36	+ 4 54.9	2.089	2.549	21.7	18.7	106 W	40	69	47343 1999 XL₄₅									
1 16	11 50.74	+ 5 51.9	1.925	2.510	20.7	18.4	115 W	39	70	12 27	11 42.59	+ 9 58.5	2.390	2.786	20.1	20.4	103 W	55	53*
1 26	11 51.71	+ 6 36.6	1.771	2.470	19.1	18.2	125 W	38	71	1 6	11 46.31	+10 5.6	2.248	2.778	19.1	20.2	113 W	55	54
2 5	11 49.96	+ 7 6.0	1.630	2.430	16.7	17.9	135 W	38	71	1 16	11 47.73	+10 28.7	2.114	2.769	17.5	20.1	122 W	55	54
2 15	11 45.27	+ 7 16.8	1.506	2.388	13.4	17.6	146 W	38	71	1 26	11 46.60	+11 8.1	1.993	2.759	15.2	19.8	133 W	56	53
2 25	11 37.70	+ 7 6.3	1.403	2.346	9.5	17.2	157 W	38	71	2 5	11 42.79	+12 2.3	1.890	2.748	12.2	19.6	144 W	57	52
3 7	11 27.77	+ 6 33.8	1.324	2.303	5.5	16.9	167 W	38	71	2 15	11 36.37	+13 7.7	1.809	2.736	8.8	19.4	155 W	58	51
3 17	11 16.45	+ 5 41.6	1.273	2.258	4.5	16.7	170 E	39	70	2 20	11 32.29	+13 42.8	1.778	2.730	6.9	19.2	161 W	59	50
3 22	11 10.69	+ 5 10.0	1.257	2.236	6.3	16.7	166 E	40	69	2 25	11 27.74	+14 18.2	1.754	2.723	5.2	19.1	166 W	59	50
3 27	11 5.13	+ 4 36.1	1.248	2.213	8.7	16.8	160 E	40	69	3 2	11 22.83	+14 53.0	1.737	2.717	3.9	19.0	169 W	60	49
4 1	10 59.94	+ 4 1.2	1.245	2.191	11.2	16.9	155 E	41	68	3 7	11 17.69	+15 26.0	1.727	2.710	3.7	19.0	170 W	60	49
4 6	10 55.28	+ 3 26.4	1.248	2.168	13.8	17.0	149 E	42	67	3 12	11 12.44	+15 56.3	1.725	2.703	4.8	19.1	167 E	61	48
4 11	10 51.29	+ 2 52.9	1.257	2.145	16.3	17.0	143 E	42	67	3 17	11 7.24	+16 23.1	1.730	2.695	6.5	19.1	162 E	61	48
4 16	10 48.08	+ 2 21.7	1.270	2.122	18.6	17.1	138 E	43	66	3 22	11 2.25	+16 45.5	1.743	2.687	8.4	19.2	157 E	62	47
4 21	10 45.72	+ 1 53.9	1.287	2.098	20.8	17.2	132 E	43	66	3 27	10 57.58	+17 3.2	1.761	2.679	10.3	19.3	151 E	62	47
4 26	10 44.25	+ 1 29.9	1.308	2.075	22.8	17.3	127 E	43	66	4 6	10 49.68	+17 23.4	1.816	2.663	13.9	19.5	140 E	62	47
5 6	10 44.03	+ 0 55.6	1.358	2.028	26.3	17.4	117 E	44	65	4 16	10 44.19	+17 23.3	1.892	2.645	17.0	19.7	129 E	62	47
5 16	10 47.30	+ 0 40.8	1.415	1.980	29.0	17.5	108 E	43*	65	4 26	10 41.43	+17 4.5	1.982	2.627	19.5	19.9	119 E	62	47
5 26	10 53.80	+ 0 46.1	1.475	1.933	31.0	17.6	100 E	40*	65	5 6	10 41.39	+16 29.6	2.083	2.607	21.3	20.0	110 E	61	48
6 5	11 3.14	+ 1 10.5	1.536	1.886	32.5	17.7	93 E	36*	65	5 16	10 43.87	+15 40.9	2.191	2.587	22.5	20.1	101 E	59*	48
6 15	11 15.02	+ 1 52.9	1.594	1.839	33.5	17.7</													

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	20/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	
47343 1999 XL ₄₅										344342 2001 WZ ₁₅										
<i>(continuation)</i>										<i>(continuation)</i>										
11	2	14 38.53	-13 27.1	3.116	2.125	1.3	19.6	3 E	—	1	11	16 12.32	-34 33.0	3.254	2.644	15.1	21.0	45 W	7*	38*
11	12	14 59.42	-15 15.0	3.081	2.093	1.5	19.5	3 W	—	1	16	16 21.66	-34 51.7	3.194	2.631	16.0	21.0	47 W	7*	41*
11	22	15 21.13	-16 56.7	3.037	2.061	3.6	19.6	7 W	1*	1	21	16 30.96	-35 8.7	3.131	2.617	16.9	21.0	50 W	7*	44*
12	2	15 43.68	-18 30.9	2.984	2.030	5.7	19.7	12 W	4*	2968 Iliya										
12	12	16 7.09	-19 56.0	2.924	1.998	7.9	19.7	16 W	7*	12	27	11 44.72	-8 22.1	2.645	2.909	19.7	20.3	95 W	37	70*
12	22	16 31.33	-21 10.6	2.856	1.966	10.2	19.7	21 W	9*	1	6	11 48.45	-9 29.3	2.486	2.889	19.3	20.2	104 W	36	73
1	1	16 56.38	-22 13.2	2.782	1.935	12.4	19.7	25 W	10*	1	16	11 50.15	-10 26.9	2.332	2.868	18.3	20.0	113 W	35	74
1	11	17 22.19	-23 2.3	2.703	1.905	14.6	19.7	29 W	11*	1	26	11 49.58	-11 12.1	2.187	2.847	16.8	19.8	123 W	34	75
1	21	17 48.66	-23 36.8	2.619	1.875	16.7	19.6	33 W	11*	2	5	11 46.55	-11 42.1	2.056	2.824	14.7	19.5	133 W	33	76
344342 2001 WZ ₁₅										203471 2002 AU ₄										
12	27	11 44.10	-21 36.5	2.846	3.012	19.1	21.1	90 W	23	12	27	11 45.59	+16 17.8	0.426	1.167	54.5	19.9	105 W	61	47*
1	6	11 46.60	-23 24.0	2.719	3.020	18.8	21.0	98 W	22	1	1	11 55.85	+19 11.2	0.399	1.172	52.8	19.7	108 W	64	44*
1	16	11 46.92	-25 3.0	2.596	3.027	18.2	20.9	107 W	20	1	6	12 6.18	+22 35.7	0.373	1.174	51.0	19.5	112 W	68	41*
1	26	11 44.84	-26 30.0	2.481	3.033	17.1	20.8	115 W	18	1	11	12 16.60	+26 35.4	0.348	1.175	49.2	19.3	115 W	72	37*
2	5	11 40.28	-27 40.3	2.377	3.038	15.6	20.6	124 W	17	1	16	12 27.12	+31 13.1	0.326	1.173	47.7	19.1	118 W	76	33*
2	15	11 33.33	-28 29.1	2.289	3.042	13.9	20.5	132 W	17	1	21	12 37.84	+36 29.1	0.307	1.170	46.5	18.9	120 W	81	28
2	25	11 24.40	-28 51.5	2.220	3.045	12.1	20.4	140 W	16	1	26	12 48.89	+42 20.5	0.292	1.164	46.0	18.8	122 W	87	22
3	2	11 19.40	-28 51.9	2.195	3.046	11.2	20.3	143 W	16	1	28	12 53.46	+44 49.5	0.287	1.162	46.1	18.8	122 W	90	19
3	7	11 14.20	-28 44.9	2.175	3.047	10.5	20.3	146 W	16	1	30	12 58.14	+47 22.4	0.282	1.159	46.3	18.7	122 W	88	17
3	12	11 8.91	-28 30.4	2.161	3.048	10.0	20.2	148 E	16	2	1	13 2.95	+49 58.5	0.278	1.155	46.7	18.7	121 W	85	14
3	17	11 3.68	-28 9.0	2.155	3.049	9.8	20.2	149 E	17	2	3	13 7.93	+52 36.9	0.275	1.151	47.2	18.7	121 W	82	11
3	22	10 58.63	-27 41.2	2.154	3.049	9.8	20.2	149 E	17	2	5	13 13.11	+55 16.7	0.272	1.147	48.0	18.7	120 W	80	9
3	27	10 53.89	-27 7.8	2.160	3.049	10.2	20.2	147 E	18	2	7	13 18.54	+57 57.0	0.271	1.143	48.9	18.7	119 W	77	6
4	1	10 49.56	-26 29.9	2.173	3.049	10.7	20.3	145 E	19	2	9	13 24.28	+60 36.7	0.269	1.138	49.9	18.7	118 W	74	3
4	6	10 45.72	-25 48.4	2.192	3.048	11.5	20.3	143 E	19	2	11	13 30.42	+63 15.0	0.269	1.133	51.1	18.7	117 W	72	1
4	11	10 42.45	-25 4.5	2.216	3.047	12.4	20.4	139 E	20	2	13	13 37.09	+65 50.7	0.269	1.128	52.4	18.7	115 W	69	—
4	16	10 39.79	-24 19.2	2.246	3.047	13.3	20.4	136 E	21	2	15	13 44.45	+68 23.0	0.269	1.122	53.9	18.8	113 W	67	—
4	21	10 37.77	-23 33.8	2.282	3.045	14.2	20.5	132 E	21	2	16	13 48.47	+69 37.7	0.269	1.119	54.6	18.8	113 W	65	—
4	26	10 36.40	-22 49.0	2.321	3.044	15.1	20.6	128 E	22	2	17	13 52.77	+70 51.2	0.270	1.116	55.4	18.8	112 W	64	—
5	1	10 35.67	-22 5.8	2.365	3.042	16.0	20.7	124 E	23	2	18	13 57.39	+72 3.5	0.271	1.113	56.2	18.8	111 W	63	—
5	6	10 35.57	-21 24.7	2.413	3.040	16.8	20.7	120 E	24	2	19	14 2.40	+73 14.4	0.271	1.110	57.0	18.9	110 W	62	—
5	11	10 36.07	-20 46.2	2.463	3.038	17.5	20.8	116 E	24	2	20	14 7.88	+74 23.9	0.272	1.107	57.7	18.9	109 W	61	—
5	16	10 37.16	-20 11.0	2.517	3.036	18.1	20.9	111 E	24	2	21	14 13.91	+75 32.0	0.273	1.103	58.6	18.9	108 W	59	—
5	21	10 38.79	-19 39.1	2.572	3.033	18.6	20.9	107 E	23	2	22	14 20.63	+76 38.4	0.274	1.100	59.5	18.9	107 W	58	—
5	26	10 40.92	-19 11.0	2.630	3.030	19.0	21.0	103 E	22	2	23	14 28.20	+77 43.1	0.275	1.096	60.3	19.0	106 W	57	—
5	31	10 43.53	-18 46.6	2.688	3.027	19.3	21.0	100 E	20	2	24	14 36.81	+78 46.0	0.276	1.093	61.2	19.0	105 W	56	—
6	5	10 46.58	-18 25.9	2.748	3.024	19.5	21.1	96 E	18	2	25	14 46.74	+79 46.8	0.278	1.089	62.1	19.0	104 W	55	—
6	10	10 50.04	-18 9.1	2.808	3.020	19.6	21.1	92 E	16	2	26	14 58.35	+80 45.5	0.279	1.085	62.9	19.0	103 W	54	—
6	15	10 53.88	-17 56.0	2.868	3.017	19.7	21.2	88 E	14	203471 2002 AU ₄										
6	20	10 58.06	-17 46.6	2.928	3.012	19.6	21.2	85 E	12	12	27	11 45.59	+16 17.8	0.426	1.167	54.5	19.9	105 W	61	47*
6	25	11 2.56	-17 40.8	2.988	3.008	19.5	21.3	81 E	10	1	1	11 55.85	+19 11.2	0.399	1.172	52.8	19.7	108 W	64	44*
6	30	11 7.36	-17 38.4	3.047	3.004	19.3	21.3	78 E	8	1	6	12 6.18	+22 35.7	0.373	1.174	51.0	19.5	112 W	68	41*
7	5	11 12.43	-17 39.3	3.105	2.999	19.1	21.3	75 E	6	1	11	12 16.60	+26 35.4	0.348	1.175	49.2	19.3	115 W	72	37*
7	10	11 17.75	-17 43.3	3.162	2.994	18.8	21.3	71 E	4	1	16	12 27.12	+31 13.1	0.326	1.173	47.7	19.1	118 W	76	33*
7	15	11 23.31	-17 50.3	3.217	2.989	18.4	21.4	68 E	3	1	21	12 37.84	+36 29.1	0.307	1.170	46.5	18.9	120 W	81	28
7	20	11 29.08	-18 0.1	3.271	2.983	17.9	21.4	65 E	1	1	26	12 48.89	+42 20.5	0.292	1.164	46.0	18.8	122 W	87	22
7	25	11 35.05	-18 12.7	3.323	2.977	17.5	21.4	62 E	—	1	28	12 53.46	+44 49.5	0.287	1.162	46.1	18.8	122 W	90	19
7	30	11 41.21	-18 27.7	3.373	2.971	16.9	21.4	59 E	—	1	30	12 58.14	+47 22.4	0.282	1.159	46.3	18.7	122 W	88	17
8	4	11 47.55	-18 45.0	3.420	2.965	16.4	21.4	55 E	—	2	1	13 2.95	+49 58.5	0.278	1.155	46.7	18.7	121 W	85	14
8	9	11 54.06	-19 4.5	3.465	2.959	15.8	21.4	52 E	—	2	3	13 7.93	+52 36.9	0.275	1.151	47.2	18.7	121 W	82	11
8	14	12 0.72	-19 26.1	3.508	2.952	15.1	21.4	49 E	—	2	5	13 13.11	+55 16.7	0.272	1.147	48.0	18.7	120 W	80	9
8	19	12 7.53	-19 49.6	3.548	2.945	14.4	21.4	47 E	—	2	7	13 18.54	+57 57.0	0.271	1.143	48.9	18.7	119 W	77	6
8	24	12 14.48	-20 14.8	3.585	2.938	13.7	21.4	44 E	—	2	9	13 24.28	+60 36.7	0.269	1.138	49.9	18.7	118 W	74	3
8	29	12 21.57	-20 41.6	3.620	2.931	13.0	21.4	41 E	—	2	11	13 30.42	+63 15.0	0.269	1.133	51.1	18.7	117 W	72	1
9	3	12 28.79	-21 9.8	3.651	2.923	12.3	21.4	38 E	—	2	13	13 37.09	+65 50.7	0.269	1.128	52.4	18.7	115 W	69	—
9	8	12 36.15	-21 39.3	3.679	2.915	11.5	21.4	35 E	—	2	15	13 44.45	+68 23.0	0.269	1.122	53.9	18.8	113 W	67	—
9	13	12 43.62	-22 10.0	3.704	2.907	10.7	21.3	33 E	—	2	16	13 48.47	+69 37.7	0.269	1.119	54.6	18.8	113 W	65	—
9	18	12 51.21	-22 41.7	3.726	2.899	10.0	21.3	30 E	—	2	17	13 52.77	+70 51.2	0.270	1.116	55.4	18.8	112 W	64	—
9	23	12 58.92	-23 14.3	3.744	2.890	9.2	21.3	27 E	—	2	18	13 57.39	+72 3.5	0.271	1.113	56.2	18.8	111 W	63	—
9	28	13 6.74	-23 47.6	3.759	2.881	8.4	21.3	25 E	—	2	19	14 2.40	+73 14.4	0.271	1.110	57.0	18.9	110 W	62	—
10	3	13 14.68	-24 21.5	3.771	2.872	7.7	21.2	23 E	—	2	20	14 7.88	+74 23.9	0.272	1.107	57.7	18.9	109 W	61	—
10	8	13 22.73	-24 55.9	3.779	2.863	7.0	21.2	20 E	—	2	21	14 13.91	+75 32.0	0.273	1.103	58.6	18.9	1		

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	20/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
203471 2002 AU₄										102997 1999 XF₉₄									
<i>(continuation)</i>										<i>(continuation)</i>									
2 27	15 12.11	+81 41.6	0.280	1.081	63.8	19.1	101 W	53	—	8 4	12 6.56	+19 40.2	3.556	2.929	14.2	20.9	45 E	28*	30*
2 28	15 28.66	+82 34.7	0.281	1.077	64.7	19.1	100 W	52	—	8 14	12 19.12	+17 53.7	3.644	2.936	12.7	20.9	40 E	24*	26*
3 1	15 48.86	+83 24.3	0.283	1.073	65.6	19.1	99 W	52	—	8 24	12 32.03	+16 8.5	3.720	2.943	11.2	20.9	35 E	22*	21*
3 2	16 13.78	+84 9.5	0.284	1.069	66.5	19.2	98 W	51	—	9 3	12 45.21	+14 25.2	3.783	2.948	9.7	20.9	30 E	19*	16*
3 3	16 44.66	+84 49.1	0.286	1.065	67.4	19.2	97 W	50	—	9 13	12 58.66	+12 44.3	3.832	2.952	8.3	20.8	25 E	17*	11*
3 4	17 22.56	+85 21.3	0.287	1.061	68.3	19.2	96 W	50*	—	9 23	13 12.30	+11 6.5	3.868	2.955	7.0	20.8	21 E	15*	5*
3 5	18 7.65	+85 44.2	0.289	1.057	69.3	19.3	95 W	49*	—	10 3	13 26.13	+ 9 32.3	3.890	2.957	6.1	20.8	18 E	12*	—
3 6	18 58.11	+85 55.9	0.290	1.052	70.2	19.3	94 W	48*	—	10 13	13 40.10	+ 8 2.5	3.897	2.958	5.7	20.8	17 E	10*	—
3 7	19 49.90	+85 55.5	0.292	1.048	71.1	19.3	93 W	48*	—	10 23	13 54.17	+ 6 37.6	3.889	2.958	6.0	20.8	18 E	7*	—
3 8	20 38.30	+85 43.6	0.293	1.043	72.0	19.3	92 W	47*	—	11 2	14 8.31	+ 5 18.4	3.866	2.957	6.8	20.8	21 W	12*	—
3 9	21 20.16	+85 22.3	0.295	1.038	72.9	19.4	91 W	47*	—	11 12	14 22.47	+ 4 5.6	3.828	2.955	8.0	20.8	24 W	18*	—
3 10	21 54.67	+84 54.0	0.296	1.034	73.9	19.4	89 W	46*	—	11 22	14 36.59	+ 2 59.8	3.775	2.952	9.4	20.9	29 W	23*	—
3 11	22 22.51	+84 20.7	0.298	1.029	74.8	19.4	88 W	46*	—	12 2	14 50.62	+ 2 1.7	3.708	2.948	10.9	20.9	34 W	28*	5*
3 12	22 44.90	+83 44.2	0.299	1.024	75.7	19.5	87 W	45*	—	12 12	15 4.46	+ 1 11.9	3.627	2.943	12.5	20.9	40 W	33*	11*
3 13	23 3.01	+83 5.4	0.301	1.019	76.7	19.5	86 W	45*	—	12 22	15 18.02	+ 0 31.1	3.533	2.937	14.0	20.9	46 W	37*	18*
3 14	23 17.83	+82 25.1	0.302	1.014	77.6	19.5	85 W	44*	—	1 1	15 31.21	- 0 0.5	3.427	2.930	15.4	20.9	52 W	39*	26*
3 15	23 30.10	+81 44.0	0.304	1.009	78.6	19.6	84 W	44*	—	1 11	15 43.88	- 0 22.1	3.310	2.922	16.7	20.8	59 W	41*	33*
3 16	23 40.38	+81 2.1	0.305	1.004	79.6	19.6	83 W	43*	—	1 21	15 55.89	- 0 33.7	3.184	2.913	17.9	20.8	65 W	43*	41*
3 17	23 49.11	+80 19.9	0.306	0.998	80.5	19.6	82 E	43*	—	385377 2002 RJ₈									
3 18	23 56.59	+79 37.3	0.308	0.993	81.5	19.7	81 E	43*	—	12 27	11 46.89	- 6 21.2	1.753	2.095	27.8	21.3	96 W	39	68*
3 19	0 3.05	+78 54.5	0.309	0.988	82.5	19.7	80 E	43*	—	1 6	11 54.61	- 6 1.5	1.660	2.129	26.6	21.1	104 W	39	70*
3 20	0 8.70	+78 11.6	0.310	0.982	83.5	19.7	78 E	43*	—	1 16	11 59.67	- 5 14.5	1.571	2.163	24.6	21.0	114 W	40	69
3 21	0 13.66	+77 28.5	0.311	0.976	84.5	19.8	77 E	42*	—	1 26	12 1.76	- 3 56.7	1.489	2.196	21.8	20.8	124 W	41	68
3 22	0 18.05	+76 45.2	0.312	0.971	85.5	19.8	76 E	42*	—	2 5	12 0.75	- 2 6.5	1.420	2.230	18.2	20.6	135 W	43	66
3 23	0 21.95	+76 1.7	0.314	0.965	86.6	19.8	75 E	42*	—	2 15	11 56.67	+ 0 14.6	1.369	2.263	13.7	20.4	147 W	45	64
3 24	0 25.45	+75 18.0	0.315	0.959	87.6	19.9	74 E	42*	—	2 20	11 53.60	+ 1 34.8	1.352	2.279	11.2	20.3	153 W	47	62
3 25	0 28.58	+74 34.0	0.316	0.953	88.7	19.9	73 E	41*	—	2 25	11 49.98	+ 2 59.6	1.341	2.295	8.6	20.2	160 W	48	61
3 26	0 31.41	+73 49.7	0.317	0.947	89.7	20.0	72 E	41*	—	3 2	11 45.92	+ 4 27.1	1.337	2.311	5.9	20.1	166 W	49	60
3 27	0 33.98	+73 5.1	0.318	0.941	90.8	20.0	71 E	40*	—	3 7	11 41.56	+ 5 55.6	1.341	2.327	3.4	20.0	172 W	51	58
3 28	0 36.31	+72 19.9	0.319	0.935	91.9	20.0	69 E	40*	—	3 12	11 37.06	+ 7 22.9	1.351	2.343	1.9	19.9	175 W	52	57
3 29	0 38.44	+71 34.3	0.319	0.929	93.0	20.1	68 E	39*	—	3 17	11 32.57	+ 8 46.9	1.370	2.359	3.4	20.1	172 E	54	55
3 30	0 40.39	+70 48.1	0.320	0.923	94.2	20.1	67 E	39*	—	3 22	11 28.27	+10 6.0	1.395	2.374	5.8	20.3	166 E	55	54
3 31	0 42.17	+70 1.3	0.321	0.916	95.3	20.2	66 E	38*	—	3 27	11 24.30	+11 18.5	1.428	2.390	8.2	20.4	160 E	56	53
4 1	0 43.82	+69 13.8	0.322	0.910	96.5	20.2	65 E	37*	—	4 1	11 20.77	+12 23.6	1.467	2.405	10.5	20.6	154 E	57	52
4 2	0 45.35	+68 25.5	0.323	0.904	97.7	20.2	64 E	37*	—	4 6	11 17.77	+13 20.6	1.513	2.420	12.7	20.8	148 E	58	51
4 3	0 46.76	+67 36.4	0.324	0.897	99.0	20.3	62 W	36*	—	4 11	11 15.38	+14 9.3	1.564	2.435	14.6	20.9	142 E	59	50
4 4	0 48.08	+66 46.5	0.324	0.890	100.2	20.3	61 W	36*	—	4 16	11 13.64	+14 49.6	1.620	2.450	16.3	21.1	137 E	60	49
4 5	0 49.31	+65 55.5	0.325	0.884	101.5	20.4	60 W	35*	—	4 21	11 12.56	+15 21.9	1.681	2.465	17.8	21.2	132 E	60	49
4 6	0 50.46	+65 3.6	0.326	0.877	102.8	20.4	59 W	35*	—	4 26	11 12.16	+15 46.5	1.745	2.479	19.0	21.3	126 E	61	48
4 8	0 52.58	+63 16.5	0.327	0.863	105.4	20.6	56 W	34*	—	5 1	11 12.40	+16 4.1	1.812	2.493	20.1	21.5	122 E	61	48
4 10	0 54.49	+61 24.6	0.329	0.849	108.1	20.7	54 W	33*	—	377052 2002 TB₁₄₂									
4 12	0 56.26	+59 27.6	0.331	0.835	110.9	20.8	51 W	33*	—	12 27	11 47.56	+13 37.4	2.077	2.497	22.5	21.2	103 W	59	49*
4 14	0 57.92	+57 25.0	0.333	0.821	113.8	21.0	48 W	32*	—	1 6	11 51.92	+14 16.2	1.992	2.538	20.9	21.0	113 W	59	50*
4 16	0 59.54	+55 16.8	0.335	0.807	116.8	21.2	46 W	31*	—	1 16	11 53.57	+15 13.4	1.915	2.580	18.8	20.9	122 W	60	49
4 18	1 1.16	+53 2.9	0.338	0.792	119.8	21.4	43 W	30*	—	1 26	11 52.34	+16 27.1	1.851	2.620	16.0	20.8	133 W	61	48
102997 1999 XF₉₄										2 5	11 48.24	+17 52.5	1.805	2.660	12.8	20.7	143 W	63	46
12 27	11 45.96	+22 15.3	2.058	2.524	21.9	19.6	107 W	67	41*	2 15	11 41.54	+19 22.5	1.781	2.700	9.4	20.5	153 W	64	45
1 6	11 50.99	+23 54.9	1.968	2.553	20.3	19.5	116 W	69	40	2 25	11 32.90	+20 47.9	1.783	2.739	6.6	20.4	161 W	66	43
1 16	11 53.22	+25 55.0	1.890	2.580	18.3	19.4	125 W	71	38	3 2	11 28.14	+21 26.0	1.794	2.758	5.9	20.4	163 W	66	43
1 26	11 52.39	+28 10.9	1.827	2.606	15.8	19.3	134 W	73	36	3 7	11 23.26	+21 59.7	1.813	2.777	6.0	20.5	163 W	67	42
1 31	11 50.77	+29 22.3	1.803	2.619	14.6	19.2	138 W	74	35	3 12	11 18.40	+22 28.3	1.838	2.796	6.7	20.6	161 E	67	42
2 5	11 48.37	+30 34.3	1.784	2.632	13.3	19.1	142 W	76	33	3 17	11 13.70	+22 51.1	1.871	2.815	7.9	20.7	157 E	68	41
2 10	11 45.20	+31 45.3	1.772	2.644	12.2	19.1	145 W	77	32	3 22	11 9.29	+23 8.0	1.910	2.833	9.3	20.8	153 E	68	41
2 15	11 41.32	+32 53.7	1.765	2.657	11.3	19.1	148 W	78	31	3 27	11 5.28	+23 18.8	1.956	2.851	10.7	20.9	148 E	68	41
2 20	11 36.85	+33 57.7	1.765	2.669	10.6	19.0	150 W	79	30	4 1	11 1.75	+23 23.8	2.007	2.870	12.1	21.0	143 E	68	41
2 25	11 31.88	+34 55.9	1.772	2.680	10.4	19.0	151 W	80	29	4 6	10 58.76	+23 23.2	2.064	2.888	13.4	21.2	138 E	68	41
3 2	11 26.58	+35 46.9	1.785	2.692	10.5	19.1	150 W	81	28	4 11	10 56.35	+23 17.4	2.126	2.905	14.6	21.3	133 E	68	41

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	20/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
89486 2001 XL₃₁										177266 2003 WK₈₈									
<i>(continuation)</i>										<i>(continuation)</i>									
4 21	10 43.66	-21 25.5	2.244	3.024	14.0	20.0	133 E	24	85	10 3	14 33.47	-17 54.1	2.625	1.855	16.7	20.9	32 E	4*	26*
4 26	10 41.88	-20 43.2	2.278	3.015	15.0	20.0	129 E	24	85	10 13	14 57.58	-19 26.1	2.648	1.829	14.9	20.9	28 E	3*	22*
5 1	10 40.76	-20 2.3	2.315	3.006	16.0	20.1	125 E	25	84	10 23	15 22.75	-20 49.7	2.665	1.805	13.1	20.8	24 E	2*	18*
5 6	10 40.26	-19 23.5	2.357	2.997	16.9	20.1	120 E	26	83	11 2	15 48.98	-22 2.5	2.677	1.782	11.2	20.7	20 E	1*	14*
5 16	10 41.12	-18 14.0	2.449	2.978	18.4	20.3	112 E	26*	82	11 12	16 16.21	-23 2.0	2.684	1.760	9.4	20.6	17 E	1*	11*
5 26	10 44.27	-17 18.0	2.550	2.957	19.4	20.4	104 E	24*	81	11 22	16 44.33	-23 45.7	2.686	1.739	7.5	20.5	13 E	—	7*
6 5	10 49.44	-16 36.8	2.655	2.936	20.1	20.5	96 E	20*	81	12 2	17 13.22	-24 11.5	2.684	1.721	5.5	20.4	10 E	—	3*
6 15	10 56.38	-16 10.7	2.762	2.914	20.4	20.5	88 E	16*	79*	12 12	17 42.69	-24 17.6	2.679	1.704	3.6	20.2	6 E	—	—
6 25	11 4.85	-15 59.4	2.869	2.890	20.3	20.6	81 E	12*	75*	12 22	18 12.53	-24 2.7	2.670	1.689	1.7	20.1	3 E	—	—
7 5	11 14.63	-16 2.0	2.971	2.866	20.0	20.6	74 E	8*	68*	1 1	18 42.51	-23 26.1	2.659	1.676	0.4	19.9	1 W	—	—
7 15	11 25.57	-16 17.2	3.068	2.841	19.3	20.7	68 E	4*	61*	1 11	19 12.39	-22 27.9	2.646	1.665	2.2	20.1	4 W	—	—
7 25	11 37.51	-16 44.1	3.158	2.814	18.4	20.7	61 E	1*	55*	1 21	19 41.97	-21 8.9	2.630	1.657	4.1	20.2	7 W	—	1*
8 4	11 50.34	-17 21.1	3.240	2.787	17.4	20.7	55 E	—	48*	376842 2001 QM₂₅₉									
8 14	12 3.98	-18 7.2	3.311	2.759	16.1	20.7	49 E	—	41*	12 27	11 50.02	+ 5 1.0	1.926	2.305	24.9	21.1	100 W	50	57*
8 24	12 18.37	-19 1.0	3.373	2.730	14.8	20.6	44 E	—	35*	1 6	11 55.28	+ 3 13.7	1.768	2.272	24.3	20.9	108 W	48	61*
9 3	12 33.46	-20 1.2	3.422	2.699	13.3	20.6	38 E	—	29*	1 16	11 58.03	+ 1 27.6	1.616	2.239	23.1	20.6	117 W	46	63
9 13	12 49.24	-21 6.8	3.460	2.668	11.7	20.5	33 E	—	23*	1 26	11 57.74	+ 0 17.0	1.474	2.205	21.1	20.3	126 W	45	64
9 23	13 5.68	-22 16.3	3.485	2.636	10.1	20.5	28 E	—	18*	2 5	11 53.93	+ 1 59.6	1.346	2.171	18.2	20.0	137 W	43	66
10 3	13 22.78	-23 28.5	3.498	2.603	8.5	20.4	23 E	—	13*	2 15	11 46.21	+ 3 38.8	1.237	2.137	14.3	19.6	148 W	41	68
10 13	13 40.56	-24 42.3	3.497	2.569	7.0	20.3	18 E	—	8*	2 25	11 34.63	+ 5 12.1	1.149	2.103	9.8	19.3	159 W	40	69
10 23	13 59.01	-25 56.1	3.483	2.534	5.8	20.2	15 E	—	3*	3 7	11 19.90	+ 6 36.2	1.088	2.068	5.8	18.9	168 W	38	71
11 2	14 18.14	-27 8.6	3.457	2.499	5.0	20.1	13 W	—	2*	3 17	11 3.47	+ 7 47.7	1.055	2.034	6.9	18.9	166 E	37	72
11 12	14 37.98	-28 18.5	3.418	2.462	5.1	20.1	13 W	—	5*	3 27	10 47.46	+ 8 45.9	1.049	2.000	12.0	19.0	155 E	36	73
11 22	14 58.51	-29 24.2	3.366	2.425	6.0	20.0	15 W	—	9*	4 1	10 40.25	+ 9 10.7	1.056	1.983	14.8	19.1	150 E	36	73
12 2	15 19.72	-30 24.3	3.303	2.387	7.5	20.0	18 W	—	12*	4 6	10 33.84	+ 9 33.3	1.068	1.966	17.5	19.2	144 E	35	74
12 12	15 41.61	-31 17.1	3.228	2.348	9.2	20.0	22 W	1*	16*	4 11	10 28.40	+ 9 54.3	1.084	1.949	20.0	19.3	138 E	35	74
12 22	16 4.11	-32 1.1	3.142	2.309	11.1	20.0	27 W	3*	21*	4 16	10 24.04	+ 10 14.7	1.106	1.933	22.4	19.4	133 E	35	74
1 1	16 27.17	-32 34.9	3.046	2.269	13.2	20.0	32 W	4*	25*	4 26	10 18.70	+ 10 56.3	1.158	1.900	26.5	19.6	123 E	34	75
1 11	16 50.72	-32 56.9	2.941	2.228	15.2	19.9	36 W	5*	30*	5 6	10 17.78	+ 11 43.2	1.218	1.868	29.6	19.8	114 E	33*	76
1 21	17 14.62	-33 5.7	2.829	2.188	17.3	19.9	41 W	6*	35*	5 16	10 20.93	+ 12 38.6	1.284	1.837	32.0	19.9	106 E	30*	77
37117 Narcissus										5 26	10 27.69	+ 13 45.2	1.351	1.808	33.6	20.0	99 E	26*	78
12 27	11 49.53	-13 50.8	5.358	5.483	10.3	21.3	92 W	31	74*	6 5	10 37.55	+ 15 3.5	1.418	1.779	34.7	20.1	93 E	20*	79
1 6	11 50.44	-14 21.2	5.243	5.525	10.0	21.3	102 W	31	78	6 15	10 50.15	+ 16 33.6	1.482	1.753	35.4	20.2	87 E	15*	79*
1 16	11 50.17	-14 43.8	5.134	5.568	9.5	21.2	111 W	30	79	6 25	11 5.19	+ 18 15.2	1.542	1.728	35.6	20.3	82 E	10*	76*
1 26	11 48.73	-14 57.7	5.035	5.610	8.6	21.1	121 W	30	79	7 5	11 22.43	+ 20 6.9	1.600	1.705	35.7	20.3	78 E	6*	72*
2 5	11 46.20	-15 2.1	4.952	5.652	7.5	21.1	131 W	30	79	7 15	11 41.79	+ 22 7.2	1.654	1.685	35.4	20.4	74 E	2*	67*
2 15	11 42.73	-14 56.7	4.888	5.693	6.2	21.0	141 W	30	79	7 25	12 3.18	+ 24 13.8	1.705	1.667	35.0	20.4	70 E	—	62*
2 25	11 38.54	-14 41.5	4.849	5.735	4.8	20.9	151 W	30	79	8 4	12 26.59	+ 26 23.8	1.753	1.651	34.5	20.4	67 E	—	58*
3 7	11 33.90	-14 17.5	4.837	5.776	3.5	20.9	159 W	31	78	8 14	12 52.05	+ 28 33.9	1.800	1.639	33.9	20.5	64 E	—	54*
3 17	11 29.14	-13 46.1	4.854	5.818	2.7	20.8	164 E	31	78	8 24	13 19.56	+ 30 39.8	1.846	1.630	33.1	20.5	62 E	—	51*
3 27	11 24.56	-13 9.3	4.902	5.859	3.0	20.9	162 E	32	77	9 3	13 49.12	+ 32 36.9	1.893	1.623	32.2	20.5	59 E	—	48*
4 6	11 20.48	-12 29.5	4.979	5.900	4.1	21.0	155 E	33	76	9 13	14 20.65	+ 34 20.4	1.942	1.620	31.2	20.5	57 E	—	46*
4 16	11 17.12	-11 49.2	5.084	5.941	5.4	21.1	146 E	33	76	9 23	14 53.95	+ 35 45.0	1.992	1.621	30.1	20.5	54 E	—	44*
4 26	11 14.67	-11 10.8	5.213	5.981	6.7	21.3	136 E	34	75	10 3	15 28.70	+ 36 46.2	2.045	1.624	28.8	20.6	52 E	—	42*
5 6	11 13.21	-10 36.0	5.364	6.022	7.7	21.4	127 E	34	75	10 13	16 4.46	+ 37 20.2	2.102	1.631	27.5	20.6	49 E	—	41*
177266 2003 WK₈₈										10 23	16 40.64	+ 37 24.7	2.162	1.641	26.0	20.6	46 E	—	39*
12 27	11 49.72	- 3 51.7	2.238	2.540	22.6	21.5	96 W	41	65*	11 2	17 16.62	+ 36 59.0	2.226	1.653	24.4	20.7	43 E	—	37*
1 6	11 55.23	- 4 56.6	2.089	2.524	22.1	21.3	105 W	40	69*	11 12	17 51.87	+ 36 4.1	2.293	1.669	22.7	20.7	40 E	1*	34*
1 16	11 58.60	- 5 50.5	1.945	2.507	21.1	21.1	114 W	39	70	11 22	18 25.88	+ 34 42.3	2.362	1.687	20.8	20.7	37 E	3*	31*
1 26	11 59.50	- 6 30.8	1.809	2.490	19.3	20.8	123 W	38	71	12 2	18 58.36	+ 32 56.9	2.433	1.708	18.9	20.8	34 E	4*	28*
2 5	11 57.64	- 6 54.9	1.686	2.471	16.8	20.6	134 W	38	71	12 12	19 29.14	+ 30 51.6	2.505	1.731	16.8	20.8	31 E	5*	24*
2 15	11 52.89	- 6 59.9	1.580	2.451	13.6	20.3	144 W	38	71	12 22	19 58.16	+ 28 30.2	2.576	1.756	14.7	20.8	27 E	6*	20*
2 25	11 45.41	- 6 44.3	1.494	2.431	9.6	20.0	156 W	38	71	1 1	20 25.48	+ 25 56.2	2.645	1.783	12.5	20.8	23 E	6*	16*
3 7	11 35.80	- 6 8.4	1.433	2.410	5.4	19.7	167 W	39	70	1 11	20 51.21	+ 23 12.6	2.712	1.812	10.3	20.8	19 E	5*	12*
3 12	11 30.48	- 5 43.8	1.413	2.399	3.8	19.6	171 W	39	70	1 21	21 15.48	+ 20 22.1	2.774	1.842	8.0	20.8	15 E	4*	8*
3 17	11 25.03	- 5 15.7	1.400	2.388	3.6	19.6	171 E	40	69	18181 2000 QD₃₄									
3 22	11 19.62	- 4 45.0	1.393	2.377	5.0	19.6	168 E	40	69	12 27	11 50.31	+ 2 38.7	1.582	1.985	29.3	17.1	99 W	48	59*
3 27	11 14.43	- 4 12.8	1.394	2.365	7.2	19.7	163 E	41	68	1 6	11 59.16	+ 0 10.2	1.440	1.952	29.0	16.8	106 W	45	64*
4 1	11 9.60	- 3 40.3	1.401	2.354	9.5	19.8	157 E	41	68	1 16	12 5.76	+ 3 8.0	1.305	1.919	28.1	16.5	113 W	42	67
4 6	11 5.27	- 3 8.4	1.414	2.342	11.8	19.9	151 E	42	67	1 26	12 9.53	+ 6 15.6	1.179	1.887	26.5	16.2	121 W	39	70
4 11	11 1.55	- 2 38.1	1.433	2.330	14.0	20.0	146 E	42	67	2 5	12 9.87	+ 9 33.4	1.066	1.857	24.2	15.9	130 W	35	74
4 16	10 58.54	- 2 10.4	1.457	2.318	16.1	20.1	140 E	43	66	2 15	12 6.09	+ 12 58.9	0.968	1.827	21.1	15.6	138 W	32	77
4 26	10 54.85	- 1 25.3	1.519	2.293</															

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	20/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°		
18181 2000 QD₃₄										175786 1999 PT₃											
<i>(continuation)</i>										<i>(continuation)</i>											
5 11	10 42.21	-27 59.9	0.926	1.660	32.5	15.6	118 E	17*	88	11 27	18 43.84	-23 44.2	2.067	1.385	24.4	19.8	35 E	13*	27*		
5 16	10 45.42	-28 11.4	0.953	1.656	33.7	15.7	115 E	16*	88	12 2	19 1.78	-22 59.3	2.087	1.391	23.7	19.8	34 E	13*	26*		
5 21	10 49.80	-28 24.7	0.982	1.653	34.6	15.8	112 E	15*	88	12 7	19 19.47	-22 7.5	2.109	1.399	22.9	19.8	34 E	14*	24*		
5 26	10 55.26	-28 40.3	1.011	1.650	35.4	15.9	109 E	14*	87	12 12	19 36.87	-21 9.3	2.133	1.407	22.2	19.9	33 E	15*	23*		
5 31	11 1.70	-28 58.2	1.041	1.649	36.1	15.9	107 E	12*	87	12 17	19 53.96	-20 5.1	2.157	1.417	21.4	19.9	32 E	15*	21*		
6 5	11 9.05	-29 18.4	1.071	1.648	36.6	16.0	104 E	11*	87	12 22	20 10.70	-18 55.5	2.183	1.428	20.6	19.9	31 E	16*	19*		
6 10	11 17.26	-29 40.9	1.102	1.648	37.0	16.1	102 E	9*	86	12 27	20 27.09	-17 41.2	2.210	1.440	19.8	19.9	30 E	16*	18*		
6 15	11 26.27	-30 5.7	1.134	1.649	37.3	16.2	100 E	7*	86	1	1	20 43.11	-16 22.7	2.238	1.453	18.9	19.9	29 E	16*	16*	
6 25	11 46.44	-31 1.1	1.199	1.653	37.7	16.3	96 E	4*	85*	1	6	20 58.77	-15 0.5	2.267	1.468	18.1	19.9	28 E	16*	14*	
7 5	12 9.12	-32 1.6	1.266	1.660	37.7	16.4	93 E	2*	81*	1	11	21 14.07	-13 35.4	2.297	1.483	17.2	20.0	26 E	16*	13*	
7 15	12 34.00	-33 4.2	1.337	1.671	37.5	16.6	89 E	—	78*	1	16	21 29.01	-12 7.7	2.328	1.499	16.3	20.0	25 E	16*	11*	
7 25	13 0.75	-34 5.6	1.412	1.684	37.0	16.7	86 E	—	74*	1	21	21 43.60	-10 38.2	2.360	1.516	15.4	20.0	24 E	16*	10*	
8 4	13 29.06	-35 1.9	1.490	1.700	36.3	16.8	83 E	—	71*	65335 2002 LR₅₈											
8 14	13 58.62	-35 50.0	1.574	1.719	35.5	16.9	80 E	—	68*	12 27	11 51.33	-5 38.2	3.077	3.313	17.2	20.8	95 W	39	67*		
8 19	14 13.76	-36 10.1	1.617	1.729	35.0	17.0	79 E	—	66*	1	6	11 53.88	-5 42.8	2.944	3.331	16.6	20.7	105 W	39	70*	
8 24	14 29.09	-36 27.1	1.662	1.740	34.5	17.0	77 E	—	65*	1	16	11 54.54	-5 32.9	2.817	3.349	15.5	20.6	115 W	39	70	
8 29	14 44.55	-36 40.8	1.708	1.752	33.9	17.1	75 E	—	64*	1	26	11 53.18	-5 6.9	2.700	3.366	13.8	20.5	125 W	40	69	
9 3	15 0.12	-36 50.8	1.755	1.764	33.3	17.1	74 E	—	62*	2	5	11 49.82	4 24.0	2.599	3.382	11.6	20.3	136 W	41	68	
9 8	15 15.75	-36 57.1	1.804	1.776	32.7	17.2	72 E	—	61*	2	15	11 44.59	3 24.4	2.518	3.397	8.8	20.2	148 W	42	67	
9 13	15 31.40	-36 59.5	1.853	1.789	32.0	17.3	70 E	—	60*	2	25	11 37.84	-2 10.2	2.464	3.412	5.7	20.0	160 W	43	66	
9 18	15 47.02	-36 58.0	1.904	1.802	31.3	17.3	69 E	—	59*	3	7	11 30.12	0 45.4	2.439	3.425	2.3	19.8	172 W	44	65	
9 23	16 2.58	-36 52.5	1.956	1.816	30.6	17.4	67 E	—	58*	3	12	11 26.10	0 0.7	2.439	3.431	1.0	19.7	177 E	45	64	
9 28	16 18.03	-36 43.0	2.008	1.830	29.8	17.4	65 E	—	56*	3	17	11 22.09	0 44.5	2.446	3.437	1.8	19.7	174 E	46	63	
10 3	16 33.35	-36 29.5	2.062	1.845	29.0	17.5	63 E	—	55*	3	22	11 18.20	+1 29.4	2.462	3.443	3.4	19.9	168 E	46	63	
10 8	16 48.52	-36 12.1	2.116	1.860	28.2	17.5	62 E	—	54*	3	27	11 14.50	+2 13.2	2.485	3.448	5.1	20.0	162 E	47	62	
10 13	17 3.50	-35 50.9	2.171	1.875	27.3	17.6	60 E	—	52*	4	6	11 7.97	+3 34.9	2.553	3.459	8.2	20.2	150 E	49	60	
10 18	17 18.27	-35 26.0	2.226	1.890	26.4	17.6	58 E	—	51*	4	16	11 2.99	+4 45.4	2.647	3.468	10.9	20.4	139 E	50	59	
10 23	17 32.81	-34 57.6	2.282	1.906	25.5	17.7	56 E	—	49*	4	26	10 59.83	+5 41.9	2.763	3.477	13.1	20.6	128 E	51	58	
10 28	17 47.10	-34 25.7	2.338	1.922	24.6	17.7	54 E	—	47*	5	6	10 58.58	+6 23.6	2.895	3.484	14.8	20.7	118 E	51	58	
11 2	18 1.13	-33 50.6	2.394	1.939	23.6	17.7	52 E	—	45*	5	16	10 59.20	+6 50.7	3.039	3.491	16.0	20.9	108 E	51	57	
11 12	18 28.41	-32 31.3	2.505	1.972	21.6	17.8	47 E	8*	41*	5	26	11 1.55	+7 4.1	3.190	3.497	16.6	21.0	99 E	48*	57	
11 22	18 54.57	-31 1.0	2.614	2.005	19.6	17.9	43 E	9*	37*	6	5	11 5.44	+7 5.2	3.344	3.502	16.8	21.1	90 E	43*	57	
12 2	19 19.61	-29 21.0	2.720	2.039	17.4	17.9	38 E	9*	31*	6	15	11 10.70	+6 55.5	3.497	3.506	16.7	21.2	82 E	37*	57*	
12 12	19 43.57	-27 32.7	2.822	2.074	15.2	18.0	34 E	10*	26*	6	25	11 17.14	+6 36.2	3.646	3.509	16.2	21.3	74 E	32*	56*	
12 22	20 6.46	-25 37.3	2.917	2.109	13.0	18.0	29 E	9*	21*	7	5	11 24.57	+6 8.7	3.789	3.511	15.4	21.4	67 E	26*	53*	
1	1	20 28.35	-23 36.0	3.006	2.143	10.7	18.0	24 E	8*	16*	7	15	11 32.86	+5 34.3	3.923	3.512	14.4	21.4	59 E	22*	49*
1	11	20 49.30	-21 29.7	3.086	2.178	8.4	18.0	19 E	6*	11*	7	25	11 41.87	+4 54.0	4.046	3.512	13.2	21.4	52 E	18*	44*
1	21	21 9.34	-19 19.5	3.157	2.213	6.0	18.0	14 E	4*	6*	8	4	11 51.49	+4 9.0	4.156	3.511	11.8	21.4	45 E	14*	37*
12 27	11 50.53	-3 52.7	2.218	2.518	22.9	21.2	96 W	41	65*	8	14	12 1.63	+3 20.0	4.252	3.509	10.2	21.4	38 E	11*	31*	
1	6	11 56.20	-5 13.4	2.052	2.485	22.5	21.0	104 W	40	69*	8	24	12 12.20	+2 28.1	4.332	3.507	8.6	21.4	31 E	9*	25*
1	16	11 59.81	-6 26.6	1.891	2.450	21.7	20.8	113 W	39	70	9	3	12 23.14	+1 34.2	4.396	3.503	6.9	21.3	25 E	6*	18*
1	26	12 0.94	-7 30.0	1.738	2.414	20.1	20.5	122 W	37	72	9	13	12 34.39	+0 39.0	4.442	3.499	5.1	21.3	18 E	4*	11*
2	5	11 59.24	-8 21.0	1.598	2.378	17.8	20.2	132 W	37	72	9	23	12 45.88	0 16.7	4.471	3.493	3.3	21.2	12 E	2*	5*
2	15	11 54.40	-8 56.1	1.474	2.340	14.7	19.9	143 W	36	73	10	3	12 57.56	-1 11.9	4.481	3.487	1.7	21.1	6 E	—	—
2	25	11 46.41	-9 12.0	1.370	2.301	10.9	19.6	154 W	36	73	10	13	13 9.40	-2 6.0	4.472	3.480	1.6	21.1	6 W	—	—
3	7	11 35.73	-9 6.7	1.290	2.261	6.9	19.2	164 W	36	73	10	23	13 21.33	-2 57.9	4.444	3.472	3.1	21.2	11 W	5*	—
3	17	11 23.30	-8 40.1	1.236	2.220	5.2	19.0	168 E	36	73	11	2	13 33.29	-3 46.9	4.397	3.463	4.9	21.2	17 W	11*	1*
3	22	11 16.89	-8 20.1	1.219	2.199	6.4	19.0	166 E	37	72	11	12	13 45.23	-4 32.2	4.332	3.453	6.7	21.3	24 W	17*	6*
3	27	11 10.63	-7 56.7	1.209	2.178	8.5	19.1	161 E	37	72	11	22	13 57.07	-5 12.8	4.249	3.442	8.5	21.3	31 W	23*	12*
4	1	11 4.70	-7 31.1	1.206	2.156	10.9	19.2	156 E	37	72	12	2	14 8.72	-5 47.8	4.150	3.430	10.2	21.3	38 W	28*	18*
4	6	10 59.29	-7 4.4	1.208	2.135	13.5	19.2	150 E	38	71	12	12	14 20.10	-6 16.4	4.034	3.417	11.9	21.3	45 W	32*	25*
4	11	10 54.56	-6 37.7	1.216	2.113	16.0	19.3	144 E	38	71	12	22	14 31.09	-6 37.5	3.905	3.403	13.3	21.3	53 W	35*	32*
4	16	10 50.64	-6 12.1	1.228	2.091	18.4	19.4	139 E	39	70	1	1	14 41.55	-6 50.3	3.764	3.388	14.6	21.2	60 W	37*	40*
4	21	10 47.60	-5 48.8	1.245	2.069	20.7	19.5	133 E	39	70	1	11	14 51.35	-6 53.7	3.612	3.373	15.7	21.2	68 W	38*	48*
4	26	10 45.51	-5 28.6	1.266	2.047	22.7	19.6	128 E	40	69	1	21	15 0.29	-6 47.0	3.452	3.356	16.5	21.1	76 W	38*	56*
5	6	10 44.15	-4 59.6	1.316	2.002	26.3	19.7	118 E	40	69	1951 Lick										
5	16	10 46.49	-4 48.0	1.372	1.957	29.2	19.8	109 E	39*	69	12 27	11 52.17	+5 23.5	0.918	1.450	42.0	16.5	99 W	50	57*	
5	26	10 52.23	-4 55.3	1.433	1.911	31.3	19.9	101 E	36*	69	1	1	12 3.75	+7 33.4	0.869	1.447	41.6	16.3	103 W	53	55*
6	5	11 0.95	-5 21.0	1.493	1.865	32.9	20.0	94 E	32*	69	1	6	12 15.47	+10 5.2	0.822	1.443	41.0	16.2	106 W	55	53*
6	15	11 12.33	-6 4.2	1.552	1.819	33.9	20.1	88 E	27*	70*	1	11	12 27.36	+13 0.7	0.779	1.440	40.2	16.0	109 W	58	51*
6	25	11 26.05	-7 3.7	1.607	1.774	34.5	20.1	82 E	22*	70*	1	1									

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	2021	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°		
1951 Lick (continuation)										174881 2004 BU ₅₈ (continuation)											
4	1	15 7.54	+71 14.3	0.774	1.372	45.7	16.1	101 W	64	—	2	3	13 43.32	+62 51.9	0.769	1.478	37.5	19.7	114 W	72	1
4	6	15 6.61	+72 28.8	0.795	1.368	46.3	16.1	99 W	63	—	2	5	13 54.66	+64 58.6	0.765	1.464	38.4	19.7	113 W	70	—
4	11	15 3.26	+73 23.6	0.815	1.363	46.9	16.2	97 W	62	—	2	6	14 0.85	+66 0.9	0.763	1.457	38.8	19.7	112 W	69	—
4	16	14 57.81	+73 59.1	0.833	1.359	47.4	16.3	95 W	61	—	2	7	14 7.45	+67 2.3	0.762	1.450	39.3	19.7	111 W	68	—
4	18	14 55.16	+74 8.0	0.840	1.357	47.5	16.3	94 W	61	—	2	8	14 14.49	+68 2.6	0.761	1.443	39.8	19.7	111 W	67	—
4	20	14 52.31	+74 14.0	0.846	1.356	47.7	16.3	94 W	61	—	2	9	14 22.02	+69 1.7	0.760	1.435	40.3	19.7	110 W	66	—
4	22	14 49.29	+74 17.0	0.852	1.354	47.8	16.3	93 W	61	—	2	10	14 30.09	+69 59.4	0.760	1.428	40.8	19.7	109 W	65	—
4	24	14 46.17	+74 17.1	0.858	1.352	48.0	16.3	93 W	61	—	2	11	14 38.76	+70 55.5	0.760	1.421	41.3	19.7	108 W	64	—
4	26	14 42.98	+74 14.3	0.863	1.351	48.1	16.3	92 W	61	—	2	12	14 48.08	+71 49.8	0.760	1.414	41.8	19.7	107 W	63	—
4	28	14 39.78	+74 8.7	0.868	1.349	48.2	16.4	92 W	61	—	2	13	14 58.12	+72 42.1	0.761	1.406	42.4	19.7	106 W	62	—
4	30	14 36.61	+74 0.4	0.873	1.348	48.4	16.4	91 W	61	—	2	14	15 8.95	+73 32.1	0.761	1.399	42.9	19.7	105 W	61	—
5	2	14 33.51	+73 49.3	0.877	1.346	48.5	16.4	91 E	61	—	2	15	15 20.63	+74 19.7	0.763	1.391	43.4	19.7	105 W	61	—
5	4	14 30.51	+73 35.5	0.880	1.344	48.6	16.4	91 E	61	—	2	16	15 33.22	+75 4.6	0.764	1.384	44.0	19.7	104 W	60	—
5	6	14 27.65	+73 19.1	0.884	1.343	48.7	16.4	90 E	62	—	2	17	15 46.78	+75 46.5	0.766	1.376	44.5	19.7	103 W	59	—
5	8	14 24.96	+73 0.1	0.887	1.341	48.8	16.4	90 E	62	—	2	18	16 1.34	+76 25.1	0.767	1.368	45.0	19.7	102 W	59	—
5	10	14 22.47	+72 38.5	0.889	1.340	48.9	16.4	90 E	62	—	2	19	16 16.93	+77 0.1	0.770	1.360	45.6	19.7	101 W	58	—
5	12	14 20.20	+72 14.3	0.891	1.338	49.0	16.4	89 E	63	—	2	20	16 33.53	+77 31.3	0.772	1.353	46.1	19.7	100 W	57*	—
5	14	14 18.16	+71 47.7	0.893	1.337	49.1	16.4	89 E	63	—	2	21	16 51.08	+77 58.4	0.774	1.345	46.6	19.8	99 W	57*	—
5	16	14 16.38	+71 18.7	0.895	1.335	49.2	16.4	89 E	64	—	2	22	17 9.48	+78 21.1	0.777	1.337	47.2	19.8	98 W	56*	—
5	21	14 13.02	+69 55.7	0.896	1.332	49.4	16.4	88 E	65	—	2	23	17 28.57	+78 39.3	0.780	1.329	47.7	19.8	97 W	56*	—
5	26	14 11.21	+68 18.5	0.896	1.329	49.6	16.4	88 E	67	—	2	24	17 48.16	+78 52.9	0.783	1.321	48.2	19.8	96 W	55*	—
5	31	14 10.85	+66 27.4	0.893	1.325	49.9	16.4	88 E	69	—	2	25	18 8.01	+79 1.9	0.786	1.313	48.7	19.8	95 W	55*	—
6	5	14 11.78	+64 22.4	0.889	1.322	50.1	16.4	88 E	71	—	2	26	18 27.86	+79 6.2	0.789	1.304	49.2	19.8	94 W	54*	—
6	10	14 13.87	+62 3.4	0.883	1.320	50.2	16.4	88 E	73	2	2	27	18 47.45	+79 6.2	0.792	1.296	49.8	19.8	93 W	54*	—
6	15	14 16.99	+59 30.1	0.875	1.317	50.4	16.4	88 E	75	4	2	28	19 6.53	+79 2.0	0.796	1.288	50.3	19.8	92 W	53*	—
6	20	14 21.02	+56 42.6	0.866	1.315	50.6	16.4	88 E	78	7	3	1	19 24.91	+78 54.0	0.799	1.279	50.7	19.8	91 W	53*	—
6	25	14 25.83	+53 40.5	0.857	1.313	50.7	16.3	89 E	81*	10	3	2	19 42.42	+78 42.6	0.803	1.271	51.2	19.8	90 W	52*	—
6	30	14 31.30	+50 23.9	0.848	1.311	50.8	16.3	89 E	83*	14	3	3	19 58.97	+78 28.1	0.807	1.263	51.7	19.8	89 W	52*	—
7	5	14 37.36	+46 52.5	0.839	1.309	50.9	16.3	89 E	83*	17	3	4	20 14.50	+78 10.9	0.811	1.254	52.2	19.9	88 W	52*	—
7	10	14 43.96	+43 6.5	0.831	1.308	51.0	16.3	90 E	81*	21	3	5	20 28.99	+77 51.4	0.814	1.246	52.6	19.9	87 W	51*	—
7	15	14 51.06	+39 6.8	0.824	1.307	51.1	16.3	90 W	77*	25	3	6	20 42.45	+77 29.9	0.818	1.237	53.1	19.9	86 W	51*	—
7	20	14 58.61	+34 54.5	0.819	1.306	51.1	16.2	90 W	74*	29	3	7	20 54.93	+77 6.9	0.822	1.228	53.6	19.9	85 W	50*	—
7	25	15 6.58	+30 31.5	0.817	1.305	51.1	16.2	90 E	69*	33	3	8	21 6.47	+76 42.5	0.826	1.219	54.0	19.9	84 W	50*	—
7	30	15 14.94	+25 59.8	0.818	1.305	51.1	16.2	90 E	65*	38	3	9	21 17.14	+76 17.0	0.830	1.211	54.4	19.9	83 W	50*	—
8	4	15 23.68	+21 22.3	0.822	1.305	51.0	16.2	90 E	61*	43	3	10	21 27.01	+75 50.7	0.834	1.202	54.9	19.9	82 W	49*	—
8	9	15 32.81	+16 42.0	0.830	1.305	51.0	16.3	90 E	56*	47	3	11	21 36.13	+75 23.7	0.837	1.193	55.3	19.9	81 W	49*	—
8	14	15 42.32	+12 2.3	0.842	1.306	50.9	16.3	89 E	52*	52	3	12	21 44.58	+74 56.1	0.841	1.184	55.7	19.9	80 W	48*	—
8	19	15 52.21	+7 26.8	0.858	1.306	50.7	16.3	88 E	48*	57*	3	13	21 52.41	+74 28.2	0.845	1.175	56.1	19.9	79 W	48*	—
8	24	16 2.47	+2 58.6	0.879	1.307	50.6	16.4	87 E	44*	61*	3	14	21 59.68	+74 0.0	0.849	1.166	56.6	19.9	78 W	48*	—
8	29	16 13.12	-1 19.7	0.903	1.309	50.4	16.4	86 E	40*	65*	3	15	22 6.44	+73 31.6	0.852	1.156	57.0	19.9	77 W	47*	—
9	3	16 24.15	-5 25.8	0.930	1.310	50.1	16.5	85 E	36*	68*	3	16	22 12.74	+73 3.1	0.856	1.147	57.4	19.9	76 W	47*	—
9	8	16 35.59	-9 18.3	0.961	1.312	49.7	16.6	84 E	32*	70*	3	17	22 18.62	+72 34.5	0.859	1.138	57.8	19.9	75 W	47*	—
9	13	16 47.46	-12 55.8	0.995	1.314	49.3	16.6	82 E	29*	72*	3	18	22 24.12	+72 5.9	0.862	1.129	58.2	19.9	74 W	47*	—
9	23	17 12.44	-19 24.1	1.070	1.319	48.3	16.8	79 E	23*	72*	3	19	22 29.27	+71 37.3	0.866	1.119	58.6	19.9	74 W	46*	—
10	3	17 39.14	-24 49.9	1.152	1.324	47.0	16.9	76 E	18*	69*	3	20	22 34.11	+71 8.7	0.869	1.110	58.9	19.9	73 W	46*	—
10	13	18 7.58	-29 15.9	1.237	1.330	45.6	17.0	72 E	14*	66*	3	21	22 38.66	+70 40.2	0.872	1.100	59.3	19.9	72 W	46*	—
10	18	18 22.44	-31 7.7	1.280	1.334	44.8	17.1	71 E	12*	64*	3	22	22 42.95	+70 11.7	0.875	1.091	59.7	19.9	71 W	45*	—
10	23	18 37.70	-32 46.0	1.322	1.337	43.9	17.1	69 E	11*	63*	3	23	22 47.00	+69 43.3	0.878	1.081	60.1	19.9	70 W	45*	—
10	28	18 53.33	-34 11.3	1.365	1.341	43.1	17.2	67 E	10*	61*	3	24	22 50.83	+69 15.0	0.880	1.072	60.5	19.9	69 W	45*	—
11	2	19 9.32	-35 24.0	1.406	1.345	42.2	17.2	66 E	9*	59*	3	25	22 54.46	+68 46.7	0.883	1.062	60.9	19.9	68 W	45*	—
11	7	19 25.63	-36 24.5	1.447	1.349	41.3	17.3	64 E	8*	58*	3	26	22 57.91	+68 18.5	0.885	1.052	61.3	19.9	68 W	45*	—
11	12	19 42.23	-37 13.3	1.486	1.353	40.5	17.3	63 E	7*	56*	3	27	23 1.19	+67 50.3	0.887	1.042	61.7	19.9	67 W	44*	—
11	17	19 59.06	-37 50.8	1.524	1.357	39.6	17.3	61 E	6*	55*	3	29	23 7.31	+66 53.9	0.891	1.023	62.4	19.9	65 W	44*	—
11	22	20 16.07	-38 17.2	1.561	1.362	38.8	17.4	60 E	6*	54*	3	31	23 12.91	+65 57.5	0.894	1.003	63.2	19.9	64 W	44*	—
11	27	20 33.22	-38 33.0	1.596	1.366	37.9	17.4	58 E	6*	52*	4	2	23 18.09	+65 0.7	0.897	0.983	64.1	19.9	62 W	43*	—
12	2	20 50.45	-38 38.5	1.629	1.370	37.1	17.4	57 E	6*	51*	4	4	23 22.90	+64 3.3	0.899	0.962	64.9	19.9	61 W	43*	—
12	7	21 7.71	-38 34.0	1.661	1.375	36.3	17.5	56 E	6*	50*	4	6	23 27.41	+63 5.1	0.900	0.942	65.8	19.9	59 W	42*	—
12	12	21 24.97	-38 19.9	1.691	1.379	35.6	17.5	55 E	6*	49*	4	8	23 31.67	+62 5.9	0.900	0.922	66.7	19.8	58 W	42*	—
12	17	21 42.15	-37 56.6	1.720	1.384	34.9	17.5	54 E	6*	48*	4	10	23 35.74	+61 5.2	0.899	0.901	67.6	19.8	56 W	42*	—
12	22	21 59.23	-37 24.6	1.74																	

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
174881 2004 BU₅₈										142348 2002 RX₂₁₁									
<i>(continuation)</i>										<i>(continuation)</i>									
6 3	2 37.70	+ 6 8.2	0.856	0.573	88.1	19.5	34 W	2*	28*	1 31	12 7.14	+10 19.4	0.808	1.644	26.1	19.9	133 W	55	54
6 5	2 49.35	+ 4 2.2	0.877	0.582	85.6	19.4	35 W	—	29*	2 5	12 4.07	+11 14.5	0.803	1.675	22.9	19.8	139 W	56	53
6 10	3 18.18	- 0 21.7	0.938	0.613	78.8	19.4	36 W	—	30*	2 10	11 59.80	+12 13.2	0.802	1.705	19.6	19.8	145 W	57	52
6 15	3 45.82	- 3 37.0	1.007	0.651	71.9	19.5	38 W	—	30*	2 15	11 54.48	+13 13.6	0.806	1.736	16.2	19.7	151 W	58	51
6 20	4 11.68	- 5 55.2	1.082	0.695	65.6	19.6	39 W	—	30*	2 20	11 48.32	+14 13.1	0.815	1.766	12.8	19.6	157 W	59	50
6 25	4 35.51	- 7 29.7	1.158	0.743	60.0	19.7	39 W	—	30*	2 25	11 41.57	+15 9.4	0.829	1.797	9.8	19.6	162 W	60	49
6 27	4 44.47	- 7 58.1	1.189	0.763	58.0	19.8	39 W	—	30*	3 2	11 34.53	+16 0.3	0.849	1.827	7.4	19.6	166 W	61	48
6 29	4 53.12	- 8 22.1	1.220	0.783	56.0	19.8	40 W	—	30*	3 7	11 27.48	+16 44.1	0.875	1.856	6.5	19.6	168 W	62	47
7 1	5 1.46	- 8 42.4	1.250	0.803	54.2	19.9	40 W	—	30*	3 12	11 20.70	+17 19.6	0.906	1.886	7.3	19.8	166 E	62	47
7 3	5 9.50	- 8 59.5	1.280	0.824	52.5	19.9	40 W	—	30*	3 17	11 14.43	+17 46.1	0.944	1.915	9.3	20.0	162 E	63	46
7 5	5 17.26	- 9 13.8	1.309	0.844	50.9	20.0	40 W	—	30*	3 22	11 8.88	+18 3.5	0.988	1.944	11.6	20.2	157 E	63	46
7 10	5 35.50	- 9 40.0	1.380	0.896	47.4	20.1	40 W	—	31*	3 27	11 4.18	+18 12.3	1.037	1.973	13.9	20.4	152 E	63	46
7 15	5 52.23	- 9 56.6	1.448	0.947	44.4	20.3	41 W	—	31*	4 1	11 0.40	+18 13.1	1.091	2.001	16.0	20.7	146 E	63	46
7 20	6 7.64	-10 7.1	1.511	0.997	41.9	20.4	41 W	—	32*	4 6	10 57.57	+18 6.7	1.150	2.029	18.0	20.9	141 E	63	46
7 25	6 21.90	-10 13.8	1.569	1.047	39.7	20.6	41 W	—	33*	4 11	10 55.67	+17 54.1	1.212	2.057	19.7	21.1	136 E	63	46
7 30	6 35.15	-10 18.5	1.622	1.095	38.0	20.7	42 W	—	34*	4 16	10 54.67	+17 36.0	1.279	2.084	21.1	21.3	131 E	63	46
8 4	6 47.52	-10 22.5	1.670	1.142	36.6	20.8	42 W	—	35*	4 21	10 54.53	+17 13.1	1.349	2.111	22.4	21.4	127 E	62	47
8 9	6 59.09	-10 26.6	1.712	1.188	35.4	20.9	43 W	—	36*	65999 1998 ND									
8 14	7 9.94	-10 31.3	1.749	1.232	34.5	21.0	44 W	1*	37*	12 27	11 53.55	-23 43.9	2.926	3.040	18.8	21.1	87 W	21	79*
8 19	7 20.15	-10 36.9	1.780	1.275	33.9	21.1	45 W	3*	38*	1 6	11 56.66	-25 32.8	2.795	3.044	18.8	21.0	95 W	19	89*
8 24	7 29.76	-10 43.7	1.805	1.316	33.4	21.2	46 W	6*	40*	1 16	11 57.66	-27 14.4	2.666	3.047	18.3	20.9	103 W	18	89
8 29	7 38.82	-10 51.6	1.825	1.356	33.0	21.3	47 W	9*	41*	1 26	11 56.30	-28 45.1	2.544	3.049	17.5	20.8	112 W	16	87
9 3	7 47.37	-11 0.9	1.839	1.395	32.9	21.3	49 W	11*	42*	2 5	11 52.42	-30 0.7	2.432	3.050	16.2	20.6	120 W	15	86
9 8	7 55.43	-11 11.5	1.847	1.432	32.8	21.4	50 W	14*	44*	2 15	11 46.05	-30 56.0	2.334	3.050	14.6	20.5	129 W	14	85
9 13	8 3.00	-11 23.3	1.850	1.467	32.8	21.4	52 W	17*	46*	2 20	11 42.00	-31 14.3	2.291	3.049	13.8	20.4	133 W	14	85
9 18	8 10.11	-11 36.1	1.847	1.501	32.9	21.5	54 W	19*	47*	2 25	11 37.46	-31 25.6	2.254	3.049	12.9	20.3	136 W	14	85
405371 2003 YK₁₂₁										3 2	11 32.53	-31 29.6	2.222	3.048	12.1	20.3	140 W	14	85
12 27	11 52.92	- 7 55.7	2.006	2.292	25.3	19.9	94 W	37	69*	3 7	11 27.31	-31 25.9	2.195	3.046	11.3	20.2	143 W	14	85
1 6	11 55.63	-10 12.3	1.930	2.345	24.2	19.8	102 W	35	74*	3 12	11 21.92	-31 14.5	2.175	3.045	10.7	20.2	145 E	14	85
1 16	11 55.46	-12 17.6	1.857	2.398	22.5	19.7	111 W	33	76	3 17	11 16.49	-30 55.4	2.161	3.043	10.3	20.1	147 E	14	85
1 26	11 52.21	-14 7.9	1.794	2.451	20.1	19.6	121 W	31	78	3 22	11 11.18	-30 29.1	2.154	3.041	10.2	20.1	147 E	15	86
2 5	11 45.90	-15 39.1	1.744	2.503	17.3	19.5	131 W	29	80	3 27	11 6.10	-29 56.5	2.153	3.039	10.3	20.1	147 E	15	86
2 15	11 36.84	-16 46.7	1.712	2.556	14.1	19.4	141 W	28	81	4 1	11 1.38	-29 18.3	2.158	3.036	10.7	20.2	146 E	16	87
2 25	11 25.77	-17 27.3	1.702	2.609	10.9	19.3	150 W	28	81	4 6	10 57.12	-28 35.6	2.170	3.033	11.3	20.2	144 E	16	87
3 2	11 19.82	-17 37.1	1.707	2.635	9.5	19.3	154 W	27	82	4 11	10 53.40	-27 49.5	2.187	3.030	12.1	20.2	141 E	17	88
3 7	11 13.79	-17 40.2	1.719	2.661	8.4	19.3	157 W	27	82	4 16	10 50.28	-27 1.2	2.211	3.027	13.0	20.3	137 E	18	89
3 12	11 7.84	-17 37.0	1.738	2.687	7.8	19.3	158 E	27	82	4 21	10 47.80	-26 11.9	2.239	3.023	13.9	20.3	134 E	19	90
3 17	11 2.14	-17 28.3	1.763	2.712	7.9	19.4	158 E	28	81	4 26	10 46.00	-25 22.6	2.273	3.019	14.8	20.4	130 E	20	89
3 22	10 56.82	-17 14.9	1.796	2.738	8.4	19.4	156 E	28	81	5 1	10 44.85	-24 34.3	2.311	3.015	15.7	20.5	126 E	20	89
3 27	10 51.99	-16 58.0	1.835	2.764	9.3	19.5	153 E	28	81	5 6	10 44.36	-23 47.8	2.353	3.010	16.5	20.5	122 E	21	88
4 1	10 47.75	-16 38.6	1.881	2.789	10.4	19.7	150 E	28	81	5 11	10 44.51	-23 3.7	2.398	3.005	17.3	20.6	118 E	22	87
4 6	10 44.14	-16 17.6	1.933	2.814	11.6	19.8	145 E	29	80	5 16	10 45.27	-22 22.6	2.447	3.000	18.0	20.7	114 E	22	86
4 11	10 41.21	-15 56.1	1.990	2.840	12.8	19.9	141 E	29	80	5 21	10 46.61	-21 44.9	2.498	2.995	18.5	20.7	110 E	21	86
4 16	10 38.97	-15 34.8	2.052	2.865	13.9	20.0	137 E	29	80	5 26	10 48.49	-21 11.0	2.551	2.990	19.0	20.8	106 E	20	85
4 26	10 36.53	-14 55.8	2.191	2.915	15.9	20.3	127 E	30	79	5 31	10 50.88	-20 40.8	2.605	2.984	19.4	20.8	102 E	19	85
5 6	10 36.63	-14 24.8	2.344	2.964	17.4	20.5	119 E	31*	78	6 5	10 53.74	-20 14.7	2.661	2.978	19.7	20.9	98 E	18	84
5 16	10 38.98	-14 4.1	2.508	3.012	18.3	20.7	110 E	30*	78	6 10	10 57.04	-19 52.5	2.718	2.971	19.9	20.9	94 E	16	84
5 26	10 43.24	-13 54.8	2.679	3.060	18.9	20.9	102 E	27*	78	6 15	11 0.75	-19 34.2	2.775	2.965	20.0	21.0	91 E	14	83*
6 5	10 49.10	-13 56.8	2.855	3.107	19.0	21.1	95 E	23*	78	6 20	11 4.84	-19 19.9	2.832	2.958	20.1	21.0	87 E	12	80*
6 15	10 56.28	-14 9.6	3.033	3.154	18.8	21.3	87 E	18*	77*	6 25	11 9.27	-19 9.4	2.888	2.951	20.0	21.1	83 E	10	77*
6 25	11 4.53	-14 32.6	3.210	3.200	18.2	21.4	80 E	13*	73*	6 30	11 14.02	-19 2.6	2.945	2.943	19.9	21.1	80 E	8	74*
190208 2006 AQ										7 5	11 19.06	-18 59.2	3.000	2.936	19.7	21.1	77 E	6	70*
12 27	11 52.98	+ 4 31.2	0.560	1.204	53.8	19.2	99 W	50	57*	7 10	11 24.39	-18 59.3	3.054	2.928	19.4	21.1	73 E	4	67*
1 6	12 2.01	+ 2 22.1	0.560	1.259	48.7	19.2	106 W	47	62*	7 15	11 29.97	-19 2.5	3.107	2.919	19.1	21.2	70 E	3	63*
1 16	12 5.25	+ 0 48.6	0.556	1.318	42.6	19.1	115 W	46	63	7 20	11 35.78	-19 8.8	3.159	2.911	18.7	21.2	67 E	1	60*
1 26	12 2.35	- 0 6.8	0.554	1.381	35.5	19.0	125 W	45	64	7 25	11 41.82	-19 17.9	3.208	2.902	18.3	21.2	64 E	—	56*
2 5	11 53.53	- 0 23.8	0.557	1.446	27.5	18.9	137 W	45	64	7 30	11 48.06	-19 29.7	3.256	2.893	17.8	21.2	60 E	—	53*
2 10	11 47.18	- 0 18.6	0.563	1.479	23.1	18.8	144 W	45	64	8 4	11 54.50	-19 44.1	3.301	2.884	17.2	21.2	57 E	—	49*
2 15	11 39.85	- 0 5.2	0.572	1.512	18.6	18.7	151 W	45	64	8 9	12 1.12	-20 0.7	3.345	2.874	16.7	21.2	54 E	—	46*
2 20	11 31.86	+ 0 14.8	0.585	1.546	14.1	18.7	158 W	45	64	8 14	12 7.92	-20 19.6	3.386	2.864	16.0	21.2	51 E	—	43*
2 25	11 23.59	+ 0 39.7	0.603	1.579	9.6	18.6	165 W	46	63	8 19	12 14.89	-20 40.4	3.424	2.854	15.4	21.2	48 E	—	40*
3 2	11 15.42	+ 1 7.4	0.626	1.612	5.3	18.6	171 W	46	63	8 24	12 22.02	-21 3.1	3.459	2.844	14.7	21.2	46 E	—	37*

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	20/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
65999 1998 ND										60735 2000 GF₈₂									
<i>(continuation)</i>										<i>(continuation)</i>									
11 27	15 3.92	-30 35.0	3.520	2.598	6.7	20.7	18 W	—	12*	2 25	11 31.43	+32 19.5	2.061	2.978	8.6	19.4	153 W	77	32
12 2	15 13.70	-31 1.8	3.489	2.583	7.4	20.7	20 W	—	14*	3 2	11 25.58	+32 42.9	2.050	2.969	8.6	19.4	153 W	78	31
12 7	15 23.58	-31 27.3	3.454	2.567	8.2	20.7	22 W	—	16*	3 7	11 19.49	+33 0.4	2.046	2.960	9.0	19.4	152 W	78	31
12 12	15 33.56	-31 51.2	3.416	2.551	9.1	20.7	24 W	1*	18*	3 12	11 13.32	+33 11.1	2.048	2.951	9.7	19.4	150 E	78	31
12 17	15 43.63	-32 13.5	3.375	2.535	10.1	20.7	27 W	2*	21*	3 17	11 7.23	+33 14.6	2.058	2.942	10.6	19.5	147 E	78	31
12 22	15 53.79	-32 34.0	3.331	2.518	11.0	20.7	29 W	3*	23*	3 22	11 1.38	+33 10.8	2.074	2.933	11.8	19.5	143 W	78	31
12 27	16 4.01	-32 52.6	3.283	2.502	12.0	20.7	32 W	4*	26*	3 27	10 55.91	+32 59.9	2.096	2.923	12.9	19.6	139 W	78	31
1 1	16 14.30	-33 9.2	3.233	2.485	12.9	20.7	34 W	5*	28*	4 1	10 50.93	+32 42.2	2.123	2.913	14.1	19.7	135 E	78	31
1 6	16 24.65	-33 23.6	3.180	2.468	13.9	20.7	37 W	6*	31*	4 6	10 46.54	+32 18.2	2.156	2.902	15.3	19.7	130 E	77	32
1 11	16 35.02	-33 35.7	3.124	2.450	14.9	20.6	40 W	6*	34*	4 11	10 42.80	+31 48.5	2.193	2.892	16.4	19.8	126 E	77	32
1 16	16 45.42	-33 45.5	3.066	2.433	15.9	20.6	43 W	6*	36*	4 16	10 39.76	+31 13.8	2.234	2.881	17.4	19.9	121 E	76	33
1 21	16 55.82	-33 52.9	3.005	2.415	16.8	20.6	45 W	7*	39*	4 26	10 35.83	+29 51.8	2.325	2.859	19.0	20.0	112 E	75	34
2629 Rudra										144332 2004 DV₂₄									
12 27	11 53.85	+13 44.2	1.421	1.890	30.6	18.6	102 W	59	49*	12 27	11 54.92	-30 47.8	1.490	1.697	35.2	20.0	84 W	14	78*
1 6	12 1.11	+11 59.8	1.285	1.864	29.8	18.3	110 W	57	52*	1 1	11 58.45	-30 38.1	1.436	1.710	35.1	19.9	88 W	14	82*
1 16	12 5.27	+10 15.6	1.154	1.837	28.2	18.0	118 W	55	54	1 6	12 1.18	-30 20.7	1.381	1.722	34.8	19.8	92 W	15	85*
1 26	12 5.55	+ 8 29.5	1.031	1.809	25.5	17.6	128 W	53	56	1 11	12 3.01	-29 54.3	1.323	1.734	34.3	19.7	96 W	15	86*
2 5	12 1.07	+ 6 38.6	0.920	1.780	21.7	17.2	138 W	52	57	1 16	12 3.86	-29 16.9	1.265	1.745	33.6	19.6	101 W	16	87
2 15	11 50.99	+ 4 39.6	0.825	1.751	16.4	16.8	150 W	50	59	1 21	12 3.65	-28 26.6	1.206	1.755	32.6	19.5	106 W	17	88
2 25	11 35.08	+ 2 29.9	0.750	1.721	9.7	16.3	163 W	47	62	1 26	12 2.30	-27 20.9	1.147	1.765	31.3	19.4	112 W	18	89
3 7	11 14.27	+ 0 10.1	0.700	1.691	3.1	15.8	175 W	45	64	1 31	11 59.75	-25 57.3	1.090	1.774	29.5	19.2	117 W	19	90
3 12	11 2.74	- 1 1.7	0.686	1.675	4.6	15.8	172 E	44	65	2 5	11 55.94	-24 12.7	1.036	1.783	27.4	19.1	124 W	21	88
3 17	10 51.04	- 2 13.4	0.678	1.660	8.5	15.9	166 E	43	66	2 10	11 50.85	-22 4.3	0.985	1.790	24.8	18.9	130 W	23	86
3 22	10 39.66	- 3 23.8	0.677	1.645	12.8	16.1	159 E	42	67	2 15	11 44.52	-19 29.4	0.939	1.798	21.7	18.7	138 W	26	83
3 27	10 29.03	- 4 32.1	0.682	1.629	17.0	16.2	151 E	40	69	2 20	11 37.07	-16 26.8	0.900	1.804	18.0	18.5	146 W	29	80
4 6	10 11.34	- 6 40.2	0.707	1.599	24.6	16.5	138 E	38	71	2 25	11 28.68	-12 57.1	0.869	1.810	14.0	18.3	154 W	32	77
4 16	9 59.67	- 8 37.6	0.748	1.569	30.9	16.8	127 E	36	73	3 2	11 19.61	- 9 3.6	0.847	1.816	9.6	18.1	162 W	36	73
4 26	9 54.29	-10 29.0	0.798	1.539	35.7	17.0	117 E	35	74	3 7	11 10.16	- 4 52.6	0.835	1.820	5.6	17.9	170 W	40	69
5 6	9 54.58	-12 19.6	0.851	1.511	39.3	17.2	108 E	32*	76	3 12	11 0.70	- 0 33.0	0.835	1.824	4.3	17.8	172 E	44	65
5 16	9 59.75	-14 13.7	0.906	1.483	42.0	17.4	101 E	27*	78	3 17	10 51.57	+ 3 45.1	0.846	1.828	7.5	18.0	166 E	49	60
5 26	10 9.06	-16 14.8	0.957	1.457	43.8	17.5	95 E	22*	80	3 22	10 43.11	+ 7 52.1	0.868	1.831	11.8	18.2	158 E	53	56
6 5	10 21.89	-18 24.3	1.005	1.433	45.1	17.6	90 E	16*	82*	3 27	10 35.58	+11 40.2	0.900	1.833	15.9	18.5	150 E	57	52
6 15	10 37.89	-20 42.9	1.048	1.411	45.9	17.7	86 E	10*	80*	4 1	10 29.16	+15 5.1	0.941	1.834	19.6	18.7	142 E	60	49
6 25	10 56.86	-23 10.3	1.086	1.392	46.4	17.8	83 E	5*	76*	4 6	10 23.96	+18 4.7	0.989	1.835	22.9	18.9	135 E	63	46
7 5	11 18.73	-25 44.5	1.120	1.375	46.7	17.8	80 E	1*	72*	4 11	10 20.01	+20 39.4	1.043	1.835	25.6	19.1	128 E	66	43
7 15	11 43.60	-28 22.8	1.149	1.362	46.8	17.8	78 E	—	68*	4 16	10 17.32	+22 50.7	1.101	1.835	27.9	19.3	121 E	68	41
7 25	12 11.61	-31 1.0	1.176	1.351	46.8	17.9	76 E	—	65*	4 21	10 15.85	+24 40.9	1.163	1.834	29.7	19.4	115 W	70	39
8 4	12 42.94	-33 32.8	1.201	1.345	46.5	17.9	74 E	—	62*	4 26	10 15.51	+26 12.5	1.227	1.832	31.1	19.6	110 E	71	38
8 14	13 17.74	-35 50.6	1.227	1.342	46.2	17.9	73 E	—	60*	5 1	10 16.22	+27 28.1	1.292	1.830	32.2	19.7	105 E	72	37
8 24	13 55.92	-37 45.5	1.255	1.343	45.6	18.0	72 E	—	58*	5 6	10 17.87	+28 29.9	1.358	1.827	32.9	19.9	100 E	73*	35
8 29	14 16.16	-38 31.1	1.271	1.345	45.3	18.0	71 E	—	58*	5 11	10 20.40	+29 19.8	1.423	1.823	33.5	20.0	96 E	72*	35
9 3	14 37.06	-39 7.5	1.288	1.347	45.0	18.0	70 E	—	57*	5 16	10 23.71	+29 59.3	1.488	1.819	33.8	20.1	91 E	70*	34
9 8	14 58.51	-39 33.7	1.306	1.351	44.5	18.0	70 E	—	57*	5 21	10 27.74	+30 30.1	1.552	1.814	33.9	20.2	87 E	67*	33
9 13	15 20.37	-39 48.8	1.326	1.356	44.1	18.1	70 E	—	57*	5 26	10 32.40	+30 53.2	1.614	1.809	33.8	20.2	84 E	64*	33
9 18	15 42.48	-39 52.3	1.347	1.361	43.6	18.1	69 E	—	57*	5 31	10 37.63	+31 9.7	1.674	1.803	33.6	20.3	80 E	61*	33
9 23	16 4.65	-39 44.0	1.371	1.367	43.0	18.1	68 E	—	58*	6 5	10 43.37	+31 20.2	1.731	1.796	33.4	20.4	77 E	58*	33
9 28	16 26.71	-39 23.8	1.396	1.375	42.4	18.2	68 E	—	58*	6 10	10 49.59	+31 25.6	1.786	1.789	33.0	20.4	74 E	55*	33*
10 3	16 48.52	-38 52.1	1.424	1.382	41.8	18.2	67 E	1*	58*	6 15	10 56.24	+31 26.4	1.838	1.781	32.6	20.4	71 E	52*	32*
10 8	17 9.94	-38 9.5	1.454	1.391	41.1	18.2	66 E	3*	58*	6 20	11 3.29	+31 23.0	1.887	1.772	32.0	20.5	68 E	50*	32*
10 13	17 30.84	-37 16.8	1.485	1.400	40.3	18.3	65 E	4*	58*	6 25	11 10.70	+31 15.8	1.933	1.763	31.5	20.5	65 E	47*	32*
10 18	17 51.14	-36 14.9	1.519	1.410	39.6	18.3	64 E	6*	57*	6 30	11 18.45	+31 5.3	1.974	1.753	30.9	20.5	62 E	45*	31*
10 23	18 10.76	-35 4.8	1.555	1.421	38.7	18.4	63 E	7*	57*	7 5	11 26.52	+30 51.7	2.013	1.743	30.3	20.5	60 E	43*	31*
10 28	18 29.68	-33 47.6	1.592	1.432	37.9	18.4	62 E	9*	56*	7 10	11 34.91	+30 35.1	2.047	1.732	29.7	20.5	58 E	42*	30*
11 2	18 47.88	-32 24.2	1.632	1.444	37.0	18.5	61 E	11*	55*										
11 7	19 5.39	-30 55.8	1.673	1.456	36.1	18.5	60 E	12*	54*										
11 12	19 22.21	-29 23.0	1.715	1.469	35.2	18.6	59 E	14*	52*										
11 17	19 38.38	-27 46.9	1.759	1.482	34.2	18.6	57 E	16*	51*										
11 22	19 53.93	-26 8.0	1.804	1.496	33.2	18.6	56 E	17*	48*										
11 27	20 8.90	-24 27.0	1.849	1.510	32.2	18.7	55 E	19*	46*										
12 2	20 23.34	-22 44.5	1.896	1.524	31.2	18.7	53 E	20*	44*										
12 7	20 37.29	-21 0.8	1.943	1.538	30.1	18.8	52 E	22*	41*										
12 12	20 50.80	-19 16.3	1.991	1.553	29.0	18.8	50 E	23*	38*										
12 22	21 16.63	-15 46.4	2.087	1.583	26.9	18.9	47 E	25*	33*										
1 1	21 41.12	-12 16.4	2.182	1.613	24.7	19.0	43 E	26*	27*										
1 11	22 4.54	- 8 47.8	2.275	1.644	22.5	19.0	40 E	27*	22*										

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	20/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°			
144332 2004 DV₂₄										1862 Apollo												
<i>(continuation)</i>										<i>(continuation)</i>												
7	15	11 43.59	+30 15.8	2.078	1.720	29.1	20.5	55	E	40*	29*	11 23	21 28.86	- 7 59.5	0.212	0.979	86.2	16.0	81	E	37	61*
7	20	11 52.55	+29 54.0	2.105	1.708	28.6	20.5	53	E	39*	28*	11 24	21 41.95	- 6 18.0	0.213	0.988	83.6	15.9	84	E	39	61*
7	25	12 1.80	+29 29.8	2.128	1.695	28.0	20.5	52	E	38*	27*	11 25	21 54.79	- 4 36.5	0.214	0.998	81.0	15.9	87	E	40	61*
7	30	12 11.32	+29 3.3	2.147	1.681	27.5	20.5	50	E	37*	26*	11 26	22 7.33	- 2 56.1	0.217	1.007	78.4	15.8	89	E	42	61*
8	4	12 21.13	+28 34.5	2.163	1.667	27.0	20.5	48	E	36*	25*	11 27	22 19.53	- 1 17.7	0.220	1.017	75.9	15.8	92	E	44	61*
8	14	12 41.60	+27 30.7	2.182	1.637	26.1	20.5	45	E	35*	22*	11 28	22 31.34	+ 0 17.9	0.224	1.027	73.5	15.8	94	E	45	60*
8	24	13 3.27	+26 18.6	2.186	1.605	25.5	20.4	43	E	34*	20*	11 29	22 42.75	+ 1 50.0	0.229	1.036	71.2	15.8	96	E	47	60*
9	3	13 26.20	+24 58.3	2.176	1.571	25.2	20.3	42	E	33*	18*	11 30	22 53.73	+ 3 18.2	0.234	1.046	69.0	15.8	98	E	48	59*
9	13	13 50.52	+23 29.5	2.154	1.534	25.2	20.3	40	E	33*	15*	12 1	23 4.26	+ 4 42.1	0.240	1.055	66.9	15.8	100	E	50	58*
9	23	14 16.33	+21 52.1	2.122	1.496	25.4	20.2	40	E	33*	13*	12 2	23 14.36	+ 6 1.5	0.246	1.065	64.9	15.8	102	E	51	57*
10	3	14 43.77	+20 5.2	2.082	1.456	25.9	20.1	40	E	33*	11*	12 7	23 58.48	+11 31.4	0.286	1.112	56.8	16.0	109	E	57	52*
10	13	15 12.95	+18 8.4	2.036	1.415	26.6	20.0	39	E	33*	9*	12 12	0 33.39	+15 25.1	0.335	1.159	51.2	16.2	113	E	60	49*
10	23	15 43.95	+16 1.5	1.989	1.372	27.3	19.9	39	E	33*	7*	12 17	1 1.35	+18 10.2	0.390	1.206	47.3	16.5	116	E	63	46
11	2	16 16.78	+13 44.2	1.943	1.329	28.1	19.8	39	E	33*	5*	12 22	1 24.30	+20 9.5	0.450	1.251	44.7	16.8	117	E	65	44
11	12	16 51.40	+11 17.3	1.903	1.285	28.7	19.7	39	E	33*	4*	12 24	1 32.42	+20 48.1	0.475	1.269	43.9	17.0	117	E	66	43
11	22	17 27.60	+ 8 42.7	1.870	1.242	29.0	19.6	38	E	32*	2*	12 26	1 40.05	+21 22.6	0.501	1.287	43.2	17.1	116	E	66	43
12	2	18 5.10	+ 6 3.0	1.847	1.200	28.9	19.5	36	E	30*	1*	12 28	1 47.25	+21 53.7	0.527	1.304	42.6	17.2	116	E	67	42
12	12	18 43.53	+ 3 22.1	1.836	1.159	28.3	19.4	34	E	28*	1*	12 30	1 54.07	+22 21.8	0.554	1.322	42.1	17.3	116	E	67	42
12	22	19 22.46	+ 0 44.4	1.837	1.121	27.2	19.3	31	E	25*	—	1 1	2 0.58	+22 47.4	0.581	1.339	41.6	17.5	115	E	68	41*
1	1	20 1.49	- 1 46.1	1.848	1.087	25.4	19.2	28	E	22*	1*	1 6	2 15.66	+23 42.4	0.651	1.382	40.6	17.7	114	E	69	40*
1	11	20 40.33	- 4 5.9	1.865	1.058	23.1	19.1	25	E	19*	1*	1 11	2 29.45	+24 27.9	0.723	1.423	39.8	18.0	112	E	69	39*
1	21	21 18.77	- 6 12.5	1.887	1.035	20.3	19.0	21	E	15*	2*	1 16	2 42.29	+25 6.3	0.797	1.464	39.1	18.3	110	E	70	39*
												1 21	2 54.41	+25 39.4	0.874	1.503	38.5	18.5	108	E	71	38*
1862 Apollo										500638 2012 VS₁												
12	27	11 55.39	+ 8 5.8	1.880	2.262	25.4	20.7	100	W	53	54*	12 27	11 55.44	+15 30.0	1.530	1.988	28.9	21.4	102	W	60	47*
1	6	11 59.93	+ 8 4.7	1.730	2.247	24.5	20.4	109	W	53	56*	1 6	12 0.11	+15 14.5	1.442	2.017	27.1	21.2	111	W	60	49*
1	16	12 1.71	+ 8 24.0	1.584	2.228	22.8	20.2	118	W	53	56	1 16	12 1.18	+15 17.3	1.360	2.045	24.4	21.1	121	W	60	49
1	26	12 0.12	+ 9 6.4	1.448	2.206	20.3	19.9	129	W	54	55	2 5	11 54.62	+10 12.9	1.327	2.180	16.7	19.5	141	W	55	54
2	5	11 54.62	+10 12.9	1.327	2.180	16.7	19.5	141	W	55	54	2 15	11 44.78	+11 41.9	1.224	2.151	12.1	19.1	153	W	57	52
2	20	11 38.24	+12 32.8	1.182	2.136	9.5	18.9	159	W	58	51	2 20	11 38.24	+12 32.8	1.182	2.136	9.5	18.9	159	W	58	51
2	25	11 30.72	+13 26.1	1.147	2.119	6.9	18.7	165	W	58	51	2 25	11 30.72	+13 26.1	1.147	2.119	6.9	18.7	165	W	58	51
3	2	11 22.36	+14 20.1	1.119	2.102	4.9	18.6	170	W	59	50	3 2	11 22.36	+14 20.1	1.119	2.102	4.9	18.6	170	W	59	50
3	7	11 13.36	+15 12.7	1.099	2.083	4.7	18.5	170	W	60	49	3 7	11 13.36	+15 12.7	1.099	2.083	4.7	18.5	170	W	60	49
3	12	11 3.98	+16 2.0	1.086	2.064	6.7	18.5	166	E	61	48	3 12	11 3.98	+16 2.0	1.086	2.064	6.7	18.5	166	E	61	48
3	17	10 54.53	+16 45.9	1.080	2.044	9.6	18.6	160	E	62	47	3 17	10 54.53	+16 45.9	1.080	2.044	9.6	18.6	160	E	62	47
3	22	10 45.30	+17 23.0	1.082	2.023	12.7	18.8	153	E	62	47	3 22	10 45.30	+17 23.0	1.082	2.023	12.7	18.8	153	E	62	47
3	27	10 36.61	+17 52.3	1.090	2.001	15.8	18.9	147	E	63	46	3 27	10 36.61	+17 52.3	1.090	2.001	15.8	18.9	147	E	63	46
4	1	10 28.68	+18 13.3	1.104	1.979	18.8	19.0	140	E	63	46	4 1	10 28.68	+18 13.3	1.104	1.979	18.8	19.0	140	E	63	46
4	6	10 21.71	+18 26.1	1.123	1.955	21.6	19.1	134	E	63	46	4 6	10 21.71	+18 26.1	1.123	1.955	21.6	19.1	134	E	63	46
4	16	10 11.13	+18 28.4	1.173	1.905	26.6	19.3	122	E	63	46	4 16	10 11.13	+18 28.4	1.173	1.905	26.6	19.3	122	E	63	46
4	26	10 5.27	+18 3.9	1.232	1.851	30.5	19.5	111	E	63	46	4 26	10 5.27	+18 3.9	1.232	1.851	30.5	19.5	111	E	63	46
5	6	10 3.89	+17 18.0	1.295	1.793	33.5	19.6	101	E	61*	47	5 6	10 3.89	+17 18.0	1.295	1.793	33.5	19.6	101	E	61*	47
5	16	10 6.47	+16 14.5	1.356	1.731	35.7	19.7	93	E	56*	48	5 16	10 6.47	+16 14.5	1.356	1.731	35.7	19.7	93	E	56*	48
5	26	10 12.44	+14 56.0	1.412	1.665	37.3	19.7	85	E	49*	49	5 26	10 12.44	+14 56.0	1.412	1.665	37.3	19.7	85	E	49*	49
6	5	10 21.27	+13 23.8	1.459	1.594	38.5	19.7	78	E	42*	50*	6 5	10 21.27	+13 23.8	1.459	1.594	38.5	19.7	78	E	42*	50*
6	15	10 32.54	+11 38.5	1.495	1.520	39.4	19.7	72	E	35*	51*	6 15	10 32.54	+11 38.5	1.495	1.520	39.4	19.7	72	E	35*	51*
6	25	10 45.96	+ 9 39.9	1.518	1.441	40.1	19.7	66	E	29*	51*	6 25	10 45.96	+ 9 39.9	1.518	1.441	40.1	19.7	66	E	29*	51*
7	5	11 1.32	+ 7 27.6	1.526	1.358	40.8	19.6	61	E	23*	49*	7 5	11 1.32	+ 7 27.6	1.526	1.358	40.8	19.6	61	E	23*	49*
7	15	11 18.56	+ 5 0.9	1.518	1.271	41.6	19.4	56	E	19*	47*	7 15	11 18.56	+ 5 0.9	1.518	1.271	41.6	19.4	56	E	19*	47*
7	25	11 37.67	+ 2 18.8	1.493	1.180	42.7	19.3	52	E	15*	44*	7 25	11 37.67	+ 2 18.8	1.493	1.180	42.7	19.3	52	E	15*	44*
8	4	11 58.76	+ 0 39.5	1.449	1.086	44.4	19.1	48	E	12*	42*	8 4	11 58.76	+ 0 39.5	1.449	1.086	44.4	19.1	48	E	12*	42*
8	14	12 22.09	+ 3 54.8	1.387	0.990	46.9	18.8	45	E	10*	39*	8 14	12 22.09	+ 3 54.8	1.387	0.990	46.9	18.8	45	E	10*	39*
8	24	12 47.96	- 7 27.1	1.304	0.895	50.7	18.6	43	E	8*	37*	8 24	12 47.96	- 7 27.1	1.304	0.895	50.7	18.6	43	E	8*	37*
9	3	13 16.77	-11 14.3	1.201	0.805	56.3	18.4	42	E	6*	36*	9 3	13 16.77	-11 14.3	1.201	0.805	56.3	18.4	42	E	6*	36*
9	8	13 32.40	-13 12.1	1.141	0.764	60.1	18.2	41	E	6*	35*	9 8	13 32.40	-13 12.1	1.141	0.764	60.1	18.2	41	E	6*	35*
9	13	13 48.89	-15 11.1	1.076	0.727	64.5	18.1	41	E	5*	35*	9 13	13 48.89	-15 11.1	1.076	0.727	64.5	18.1	41	E	5*	35*
9	18	14 6.23	-17 9.5	1.006	0.695	69.7	18.1	40	E	5*	34*	9 18	14 6.23	-17 9.5	1.006	0.695	69.7	18.1	40	E	5*	34*
9	23	14 24.40	-19 5.0	0.932	0.671	75.6	18.0	40	E	5*	34*	9 23	14 24.40	-19 5.0	0.932	0.671	75.6	18.0	40	E	5*	34*
9	28	14 43.35	-20 55.1	0.855	0.654	82.0	18.0	40	E	4*	34*	9 28	14 43.35									

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	20/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°		
3163 Randi (continuation)										228572 2001 YY₄ (continuation)											
10 13	14 8.63	-11 58.1	3.141	2.190	6.6	18.7	15 E	1*	8*	4 16	11 27.66	+ 2 37.0	0.787	1.712	19.3	19.2	146 E	48	61		
10 23	14 28.62	-13 33.8	3.124	2.150	4.5	18.5	10 E	—	3*	4 26	11 25.19	+ 1 14.2	0.871	1.739	23.8	19.6	136 E	46	63		
11 2	14 49.50	-15 5.6	3.097	2.111	2.4	18.3	5 E	—	—	5 6	11 26.81	- 0 14.0	0.966	1.768	27.1	20.0	127 E	45	64		
11 12	15 11.31	-16 32.0	3.061	2.071	0.6	18.1	1 E	—	—	5 16	11 31.90	- 1 46.8	1.072	1.796	29.5	20.3	119 E	43	66		
11 22	15 34.06	-17 51.2	3.016	2.032	2.1	18.2	4 W	—	—	5 26	11 39.82	- 3 23.8	1.186	1.825	31.0	20.6	112 E	41*	67		
12 2	15 57.76	-19 1.3	2.963	1.993	4.2	18.2	9 W	2*	—	6 5	11 49.96	- 5 4.4	1.305	1.854	31.9	20.9	105 E	37*	69		
12 12	16 22.39	-20 0.4	2.902	1.955	6.4	18.3	13 W	4*	3*	6 15	12 1.89	- 6 47.9	1.430	1.882	32.2	21.1	99 E	32*	71		
12 22	16 47.91	-20 46.7	2.836	1.917	8.6	18.3	17 W	7*	8*	6 25	12 15.24	- 8 33.8	1.557	1.911	32.1	21.3	94 E	27*	73		
1	17 14.27	-21 18.3	2.765	1.880	10.8	18.3	21 W	9*	12*	9551 Kazi											
1 11	17 41.37	-21 33.5	2.690	1.844	12.9	18.2	25 W	10*	16*	12 27	11 56.46	+ 7 50.3	2.658	2.979	19.0	21.4	99 W	53	54*		
1 21	18 9.07	-21 30.8	2.612	1.810	15.1	18.2	29 W	11*	20*	1	6	11 58.73	+ 7 46.0	2.552	3.016	18.0	21.3	109 W	53	56*	
1980 Tezcatlipoca										1 16	11 58.74	+ 7 55.5	2.452	3.052	16.4	21.2	119 W	53	56		
12 27	11 55.80	-30 39.0	2.142	2.260	25.6	18.4	84 W	14	78*	1 26	11 56.36	+ 8 18.4	2.364	3.087	14.2	21.0	130 W	53	56		
1	6	12 1.83	-33 4.5	2.043	2.276	25.6	18.3	91 W	12	83*	2	5	11 51.64	+ 8 52.9	2.293	3.121	11.5	20.9	141 W	54	55
1 16	12 5.24	-35 21.2	1.942	2.290	25.2	18.2	98 W	10	81	2 15	11 44.79	+ 9 36.0	2.245	3.155	8.3	20.7	153 W	55	54		
1 26	12 5.55	-37 24.4	1.844	2.302	24.4	18.1	105 W	8	79	2 25	11 36.29	+10 23.2	2.223	3.187	4.9	20.6	164 W	55	54		
1 31	12 4.41	-38 19.0	1.796	2.307	23.9	18.0	109 W	7	78	3	7	11 26.87	+11 9.1	2.231	3.218	2.2	20.4	173 W	56	53	
2	5	12 2.34	-39 7.8	1.750	2.312	23.2	17.9	112 W	6	77	3 12	11 22.08	+11 29.9	2.247	3.233	2.5	20.5	172 E	56	53	
2 10	11 59.32	-39 49.6	1.706	2.316	22.5	17.9	116 W	5	76	3 17	11 17.37	+11 48.6	2.270	3.249	3.8	20.6	167 E	57	52		
2 15	11 55.36	-40 23.1	1.665	2.320	21.7	17.8	120 W	5	76	3 22	11 12.86	+12 4.6	2.301	3.263	5.4	20.7	162 E	57	52		
2 20	11 50.51	-40 46.9	1.626	2.324	20.8	17.7	124 W	4	75	3 27	11 8.65	+12 17.6	2.340	3.278	7.0	20.8	156 E	57	52		
2 25	11 44.85	-41 0.0	1.591	2.326	19.8	17.6	127 W	4	75	4	1	11 4.80	+12 27.3	2.385	3.292	8.5	21.0	151 E	57	52	
3	2	11 38.51	-41 1.2	1.560	2.329	18.9	17.6	130 W	4	75	4	6	11 1.38	+12 33.8	2.436	3.307	10.0	21.1	145 E	58	51
3	7	11 31.67	-40 49.6	1.533	2.331	18.0	17.5	134 W	4	75	4 11	10 58.43	+12 37.0	2.493	3.320	11.3	21.2	140 E	58	51	
3 12	11 24.54	-40 24.7	1.511	2.332	17.2	17.4	136 E	5	76	4 16	10 56.00	+12 36.8	2.556	3.334	12.5	21.3	134 E	58	51		
3 17	11 17.35	-39 46.3	1.494	2.333	16.5	17.4	138 E	5	76	4 21	10 54.10	+12 33.4	2.623	3.348	13.5	21.4	129 E	58	51		
3 22	11 10.37	-38 55.2	1.483	2.333	16.1	17.4	140 E	6	77	4 26	10 52.72	+12 27.0	2.694	3.361	14.4	21.5	124 E	57	52		
3 27	11 3.80	-37 52.3	1.477	2.333	15.9	17.3	140 E	7	78	80593 2000 AG₁₄₄											
4	1	10 57.86	-36 39.4	1.477	2.332	16.0	17.4	140 E	8	79	12 27	11 56.61	-11 9.0	2.587	2.794	20.6	19.3	92 W	34	71*	
4	6	10 52.68	-35 18.2	1.482	2.331	16.4	17.4	139 E	10	81	1	6	11 58.66	-12 53.4	2.467	2.816	20.1	19.2	100 W	32	77*
4 11	10 48.39	-33 50.9	1.493	2.329	17.0	17.4	137 E	11	82	1 16	11 58.34	-14 29.8	2.350	2.837	19.1	19.1	110 W	31	78		
4 16	10 45.06	-32 19.7	1.509	2.327	17.8	17.5	135 E	13	84	1 26	11 55.43	-15 55.2	2.242	2.857	17.5	19.0	119 W	29	80		
4 21	10 42.70	-30 46.9	1.531	2.325	18.8	17.5	132 E	14	85	2	5	11 49.84	-17 6.2	2.148	2.876	15.4	18.8	129 W	28	81	
4 26	10 41.32	-29 14.6	1.557	2.321	19.8	17.6	129 E	16	87	2 15	11 41.66	-17 58.7	2.072	2.894	12.8	18.6	139 W	27	82		
5	1	10 40.88	-27 44.4	1.587	2.318	20.8	17.7	125 E	17	88	2 25	11 31.35	-18 29.1	2.019	2.911	10.2	18.5	149 W	27	82	
5	6	10 41.32	-26 17.6	1.622	2.314	21.8	17.7	121 E	19	90	3	7	11 19.71	-18 35.7	1.993	2.927	8.0	18.4	156 W	26	83
5 11	10 42.59	-24 55.3	1.660	2.309	22.8	17.8	118 E	20*	89	3 12	11 13.71	-18 30.2	1.990	2.934	7.4	18.4	158 E	26	83		
5 16	10 44.65	-23 38.4	1.701	2.304	23.7	17.9	114 E	21*	88	3 17	11 7.78	-18 19.4	1.995	2.941	7.3	18.4	158 E	27	82		
5 26	10 50.82	-21 22.8	1.791	2.292	25.1	18.0	106 E	20*	85	3 22	11 2.07	-18 3.9	2.007	2.948	7.7	18.4	157 E	27	82		
6	5	10 59.33	-19 32.6	1.887	2.278	26.1	18.2	99 E	19*	84	3 27	10 56.69	-17 44.5	2.026	2.955	8.5	18.5	154 E	27	82	
6 15	11 9.77	-18 7.4	1.987	2.263	26.7	18.3	92 E	16*	82*	4	1	10 51.76	-17 22.2	2.052	2.961	9.6	18.6	150 E	28	81	
6 25	11 21.81	-17 5.4	2.089	2.245	26.8	18.4	85 E	13*	78*	4	6	10 47.36	-16 57.9	2.085	2.968	10.9	18.6	146 E	28	81	
7	5	11 35.16	-16 24.2	2.189	2.225	26.6	18.4	79 W	10*	73*	4 11	10 43.55	-16 32.5	2.123	2.974	12.1	18.7	142 E	28	81	
7 15	11 49.63	-16 1.2	2.286	2.203	26.1	18.5	72 E	8*	66*	4 16	10 40.39	-16 6.9	2.167	2.979	13.3	18.8	137 E	29	80		
7 25	12 5.07	-15 53.8	2.378	2.180	25.3	18.5	66 E	6*	60*	4 21	10 37.90	-15 41.9	2.216	2.985	14.5	18.9	132 E	29	80		
8	4	12 21.35	-15 59.4	2.463	2.154	24.2	18.6	61 E	3*	54*	4 26	10 36.07	-15 18.2	2.270	2.990	15.5	19.0	127 E	30	79	
8 14	12 38.43	-16 15.6	2.541	2.126	22.9	18.6	55 E	3*	48*	5	6	10 34.37	-14 36.9	2.387	2.999	17.2	19.2	118 E	30*	79	
8 24	12 56.24	-16 40.2	2.609	2.097	21.5	18.5	49 E	2*	43*	5 16	10 35.12	-14 6.0	2.516	3.008	18.5	19.3	109 E	30*	78		
9	3	13 14.78	-17 10.9	2.668	2.065	19.8	18.5	44 E	1*	37*	5 26	10 38.03	-13 47.2	2.651	3.015	19.2	19.5	101 E	27*	78	
9 13	13 34.05	-17 45.7	2.716	2.031	18.1	18.4	39 E	1*	32*	6	5	10 42.82	-13 41.1	2.790	3.021	19.6	19.6	93 E	22*	78	
9 23	13 54.06	-18 22.4	2.753	1.996	16.2	18.4	34 E	—	27*	6 15	10 49.21	-13 47.4	2.929	3.027	19.6	19.7	86 E	17*	76*		
10	3	14 14.83	-18 59.1	2.778	1.958	14.1	18.3	29 E	—	22*	6 25	10 56.95	-14 5.5	3.066	3.031	19.2	19.8	78 E	12*	72*	
10 13	14 36.40	-19 33.6	2.791	1.919	12.0	18.2	24 E	—	18*	7	5	11 5.83	-14 34.7	3.197	3.034	18.5	19.9	72 E	8*	66*	
10 23	14 58.78	-20 3.7	2.792	1.878	9.8	18.0	19 E	—	13*	7 15	11 15.67	-15 14.0	3.322	3.036	17.7	19.9	65 E	3*	59*		
11	2	15 22.03	-20 27.2	2.782	1.835	7.5	17.9	14 E	—	8*	7 25	11 26.33	-16 2.5	3.439	3.037	16.6	20.0	59 E	—	52*	
11 12	15 46.16	-20 41.8	2.759	1.790	5.2	17.7	9 E	—	3*	8	4	11 37.70	-16 59.2	3.546	3.037	15.4	20.0	53 E	—	45*	
11 22	16 11.19	-20 45.1	2.726	1.744	2.9	17.5	5 E	—	—	8 14	11 49.68	-18 3.3	3.642	3.036	14.0	20.0	47 E	—	38*		
12	2	16 37.13	-20 34.5	2.682	1.696	1.0	17.2	2 E	—	—	8 24	12 2.21	-19 13.9	3.725	3.034	12.6	20.0	41 E	—	32*	
12 12	17 3.97	-20 7.5	2.628	1.647	2.4	17.2	4 W	—	—	9	3	12 15.23	-20 30.2	3.796	3.031	11.1	20.0	35 E	—	25*	
12 22	17 31.69	-19 21.6	2.566	1.597	4.8	17.3	8 W	1*	—	9 13	12 28.70	-21 51.5	3.853	3.027	9.6	20.0	30 E	—	19*		
1	1	18 0.27	-18 14.3	2.498	1.546	7.2	17.3	11 W	4*	1*	9 23	12 42.58	-23 16.9	3.896	3.022	8.2	19.9	26 E	—	13*	
1 11	18 29.67	-16 43.4	2.425	1.495	9.7	17.2	15 W	7*	4*	10	3	12 56.85	-24 45.6	3.924	3.015						

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
376817 2001 AT₄₃										333416 2003 AG₂									
<i>(continuation)</i>										<i>(continuation)</i>									
2 5	11 57.86	-29 27.8	1.997	2.630	19.0	21.0	120 W	16	87	5 1	10 47.67	-23 37.0	1.978	2.702	17.4	20.8	127 E	21	88
2 15	11 50.98	-30 40.3	1.923	2.651	17.0	20.8	128 W	14	85	5 6	10 47.80	-22 56.5	2.036	2.716	18.2	20.9	123 E	22	87
2 25	11 41.50	-31 22.8	1.867	2.670	14.9	20.7	136 W	14	85	5 11	10 48.61	-22 19.2	2.097	2.729	19.0	21.0	119 E	23*	86
3 7	11 30.24	-31 30.7	1.831	2.689	12.9	20.6	143 W	13	84	5 16	10 50.06	-21 45.6	2.162	2.743	19.6	21.1	115 E	23*	86
3 17	11 18.33	-31 2.5	1.819	2.707	11.6	20.6	147 E	14	85	5 21	10 52.08	-21 15.8	2.228	2.756	20.1	21.1	111 E	22*	85
3 27	11 7.11	-30 2.0	1.831	2.723	11.5	20.6	147 E	15	86	5 26	10 54.64	-20 50.0	2.297	2.769	20.5	21.2	107 E	21*	85
4 6	10 57.73	-28 37.7	1.868	2.739	12.5	20.7	144 E	16	87	5 31	10 57.67	-20 28.4	2.367	2.782	20.8	21.3	103 E	20*	84
4 16	10 50.95	-27 0.0	1.928	2.753	14.2	20.8	138 E	18	89	6 5	11 1.15	-20 10.7	2.439	2.794	21.0	21.4	100 E	18*	84
4 26	10 47.13	-25 19.7	2.008	2.767	16.1	21.0	130 E	20	89	6 10	11 5.03	-19 57.0	2.511	2.806	21.1	21.5	96 E	17*	84
5 6	10 46.23	-23 45.6	2.106	2.779	17.9	21.2	122 E	21	88	452773 2006 DM₁₄									
5 16	10 48.03	-22 23.4	2.216	2.790	19.3	21.3	114 E	22*	86	12 27	11 59.53	-4 6.8	1.695	2.016	29.1	20.9	94 W	41	64*
5 26	10 52.22	-21 16.5	2.337	2.800	20.3	21.5	107 E	21*	85	1 6	12 4.33	-5 51.0	1.634	2.078	27.5	20.9	102 W	39	70*
99321 2001 TT₁₁₃										1 16	12 5.95	-7 18.8	1.575	2.140	25.3	20.8	111 W	38	71
12 27	11 56.98	+1 33.5	1.951	2.285	25.3	21.3	97 W	47	60*	1 26	12 4.20	-8 27.5	1.523	2.202	22.5	20.7	121 W	37	72
1 6	12 2.91	+0 51.5	1.843	2.306	24.3	21.2	105 W	46	63*	2 5	11 59.07	-9 14.7	1.482	2.264	18.9	20.6	132 W	36	73
1 16	12 6.27	+0 25.4	1.739	2.326	22.6	21.0	115 W	45	64	2 15	11 50.85	-9 37.9	1.457	2.325	14.7	20.5	143 W	35	74
1 26	12 6.73	+0 17.2	1.643	2.346	20.2	20.8	125 W	45	64	2 25	11 40.35	-9 36.8	1.453	2.386	10.2	20.4	155 W	35	74
2 5	12 4.12	+0 27.7	1.559	2.365	17.0	20.6	135 W	45	64	3 2	11 34.59	-9 27.8	1.461	2.416	8.1	20.3	160 W	36	73
2 15	11 58.42	+0 56.9	1.493	2.382	13.1	20.4	147 W	46	63	3 7	11 28.72	-9 13.9	1.475	2.446	6.2	20.3	165 W	36	73
2 25	11 50.04	+1 42.1	1.448	2.400	8.4	20.2	159 W	47	62	3 12	11 22.89	-8 56.0	1.496	2.476	5.0	20.3	168 E	36	73
3 2	11 45.09	+2 9.2	1.435	2.408	5.9	20.1	166 W	47	62	3 17	11 17.30	-8 34.8	1.525	2.506	4.9	20.3	168 E	36	73
3 7	11 39.81	+2 38.0	1.429	2.416	3.3	19.9	172 W	48	61	3 22	11 12.08	-8 11.6	1.560	2.535	5.9	20.5	165 E	37	72
3 12	11 34.35	+3 7.7	1.430	2.424	0.6	19.7	178 W	48	61	3 27	11 7.35	-7 47.4	1.603	2.565	7.5	20.6	160 E	37	72
3 17	11 28.89	+3 37.3	1.438	2.431	2.0	19.9	175 E	49	60	4 1	11 3.21	-7 23.1	1.651	2.594	9.2	20.8	155 E	38	71
3 22	11 23.61	+4 5.6	1.454	2.439	4.6	20.0	169 E	49	60	4 6	10 59.72	-6 59.6	1.706	2.623	10.9	20.9	150 E	38	71
3 27	11 18.65	+4 31.7	1.476	2.446	7.1	20.2	162 E	50	59	4 11	10 56.90	-6 37.6	1.767	2.651	12.5	21.1	145 E	38	71
4 1	11 14.14	+4 55.0	1.505	2.453	9.4	20.4	156 E	50	59	4 16	10 54.79	-6 17.7	1.833	2.680	14.0	21.3	140 E	39	70
4 6	11 10.19	+5 14.8	1.539	2.459	11.6	20.5	150 E	50	59	4 21	10 53.37	-6 0.4	1.904	2.708	15.2	21.4	135 E	39	70
4 11	11 6.88	+5 30.8	1.580	2.466	13.6	20.6	145 E	51	58	87024 2000 JS₆₆									
4 16	11 4.27	+5 42.6	1.625	2.472	15.4	20.8	139 E	51	58	12 27	12 0.28	-20 56.1	1.080	1.421	43.7	21.3	87 W	24	76*
4 21	11 2.38	+5 50.2	1.676	2.478	17.1	20.9	134 E	51	58	1 6	12 18.88	-24 25.9	0.999	1.415	44.0	21.1	91 W	21	84*
4 26	11 1.21	+5 53.5	1.730	2.484	18.5	21.0	128 E	51	58	1 16	12 36.85	-27 51.7	0.917	1.407	44.1	20.9	95 W	17	88
5 1	11 0.75	+5 52.8	1.787	2.490	19.7	21.1	124 E	51	58	1 26	12 54.04	-31 11.1	0.834	1.396	44.0	20.7	100 W	14	85
5 6	11 0.97	+5 48.1	1.848	2.495	20.8	21.2	119 E	51	58	2 5	13 10.24	-34 21.8	0.752	1.383	43.6	20.5	105 W	11	82
5 11	11 1.84	+5 39.6	1.911	2.500	21.6	21.3	114 E	51*	58	2 10	13 17.86	-35 53.0	0.711	1.375	43.3	20.3	107 W	9	80
5 16	11 3.32	+5 27.6	1.975	2.505	22.3	21.4	110 E	50*	59	2 15	13 25.06	-37 20.5	0.670	1.367	42.9	20.2	110 W	8	79
313548 2003 BL₁										2 20	13 31.78	-38 43.8	0.630	1.358	42.4	20.0	112 W	6	77
12 27	11 58.54	+28 17.5	0.526	1.236	49.9	20.2	106 W	73	34*	2 25	13 37.95	-40 2.1	0.591	1.348	41.8	19.8	115 W	5	76
1 1	11 57.58	+25 49.9	0.507	1.251	47.6	20.1	110 W	71	38*	3 2	13 43.48	-41 14.5	0.552	1.338	41.1	19.7	117 W	4	75
1 6	11 54.79	+23 18.5	0.489	1.267	44.9	20.0	115 W	68	41*	3 7	13 48.24	-42 19.8	0.514	1.327	40.2	19.5	120 W	3	74
1 11	11 50.05	+20 42.3	0.471	1.284	41.7	19.8	120 W	66	43	3 12	13 52.08	-43 16.3	0.476	1.316	39.2	19.2	123 W	2	73
1 16	11 43.24	+18 0.9	0.456	1.302	37.9	19.7	125 W	63	46	3 17	13 54.86	-44 1.8	0.440	1.304	38.0	19.0	126 W	1	72
1 21	11 34.36	+15 14.1	0.443	1.321	33.7	19.5	132 W	60	49	3 22	13 56.45	-44 33.6	0.405	1.292	36.5	18.8	129 W	—	71
1 26	11 23.51	+12 23.0	0.433	1.340	29.1	19.4	139 W	57	52	3 27	13 56.74	-44 48.3	0.371	1.279	34.8	18.5	133 W	—	71
1 31	11 10.94	+9 29.9	0.428	1.360	24.0	19.2	146 W	54	55	4 1	13 55.64	-44 41.9	0.338	1.266	32.9	18.2	137 W	—	71
2 5	10 57.06	+6 39.1	0.428	1.381	18.8	19.1	153 W	52	57	4 6	13 53.05	-44 8.4	0.307	1.252	30.6	17.9	140 W	1	72
2 10	10 42.40	+3 55.5	0.433	1.402	13.8	19.0	160 W	49	60	4 11	13 49.01	-43 0.3	0.277	1.238	28.0	17.6	145 W	2	73
2 15	10 27.68	+1 24.5	0.445	1.423	9.7	18.9	166 W	46	63	4 16	13 43.69	-41 8.8	0.250	1.224	25.1	17.3	149 W	4	75
2 20	10 13.58	-0 49.6	0.463	1.445	8.1	19.0	168 W	44	65	4 18	13 41.29	-40 9.7	0.240	1.218	23.9	17.1	151 E	5	76
2 25	10 0.71	-2 44.6	0.487	1.467	9.6	19.2	166 E	42	67	4 20	13 38.76	-39 1.5	0.230	1.212	22.7	17.0	152 E	6	77
3 7	9 40.10	-5 37.2	0.552	1.511	16.1	19.8	155 E	39	70	4 22	13 36.14	-37 43.4	0.220	1.207	21.5	16.9	154 E	7	78
3 17	9 27.13	-7 26.4	0.636	1.555	22.0	20.3	144 E	38	71	4 24	13 33.47	-36 14.7	0.211	1.201	20.4	16.7	155 E	9	80
3 27	9 21.32	-8 34.4	0.734	1.599	26.5	20.8	134 E	36	73	4 26	13 30.77	-34 34.9	0.202	1.195	19.4	16.6	157 E	10	81
4 6	9 21.30	-9 20.1	0.842	1.643	29.5	21.3	126 E	36	73	5 1	13 24.14	-29 33.0	0.183	1.180	18.2	16.3	159 E	15	86
333416 2003 AG₂										5 6	13 18.06	-23 13.1	0.167	1.165	19.8	16.1	157 E	22	87
12 27	11 58.82	-18 34.8	2.093	2.283	25.5	20.8	88 W	26	75*	5 11	13 13.04	-15 40.0	0.156	1.149	24.7	16.1	152 E	29	80
1 6	12 3.57	-21 6.6	2.006	2.321	24.9	20.7	96 W	24	84*	5 16	13 9.52	-7 12.8	0.148	1.134	31.8	16.2	144 E	38	71
1 16	12 5.66	-23 28.9	1.922	2.358	23.9	20.6	104 W	22	87	5 18	13 8.60	-3 41.4	0.147	1.128	35.1	16.2	140 E	41	68
1 26	12 4.74	-25 37.5	1.844	2.395	22.4	20.5	112 W	19	90	5 20	13 7.97	-0 8.6	0.146	1.122	38.5	16.3	136 E	45	64
1 31	12 3.08	-26 35.1	1.808	2.413	21.5	20.4	116 W	18	89	5 22	13 7.63	+3 23.4	0.146	1.116	41.9	16.4	133 E	48	61
2 5	12 0.61	-27 27.3	1.774	2.431	20.4	20.4	121 W	18	89	5 24	13 7.58	+6 52.7	0.146	1.110	45.2	16.5	129 E	52	57
2 10	11 57.33	-28 13.0	1.744	2.448	19.3	20.3	125 W	17	88	5 26	13 7.82	+10 17.3	0.147	1.104	48.6	16.6	125 E	55	54
2 15	11 53.29	-28 51.4	1.718	2.466	18.0	20.3	129 W	16	87	5 28									

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

2021	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45° - 26°	20/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45° - 26°	
87024 2000 JS₆₆ (continuation)									87024 2000 JS₆₆ (continuation)									
7 25	14 29.90	+64 27.5	0.243	0.976	92.5	18.9	74 E	65*	11 18	2 53.48	+11 34.5	0.201	1.186	10.1	16.2	168 E	57	52
7 30	14 37.06	+66 59.0	0.247	0.972	92.9	18.9	73 E	63*	11 20	2 52.31	+ 9 27.9	0.211	1.192	12.9	16.5	164 E	54	55
8 4	14 43.10	+69 26.4	0.250	0.970	93.0	18.9	73 E	61*	11 22	2 51.36	+ 7 33.6	0.220	1.198	15.4	16.7	161 E	53	56
8 6	14 45.14	+70 24.4	0.251	0.970	93.0	18.9	73 E	60*	11 27	2 49.90	+ 3 36.9	0.247	1.213	21.1	17.1	154 E	49	60
8 8	14 46.93	+71 21.9	0.252	0.969	92.9	18.9	73 E	59*	12 2	2 49.65	+ 0 41.6	0.276	1.228	25.8	17.5	147 E	46	63
8 10	14 48.43	+72 19.1	0.253	0.970	92.8	18.9	73 E	59*	12 7	2 50.55	- 1 23.8	0.309	1.242	29.6	17.9	142 E	44	65
8 12	14 49.62	+73 16.1	0.253	0.970	92.6	18.9	73 E	58*	12 12	2 52.50	- 2 49.2	0.343	1.256	32.6	18.2	137 E	42	67
8 14	14 50.45	+74 12.8	0.253	0.970	92.4	18.9	73 E	57*	12 17	2 55.40	- 3 43.4	0.379	1.269	35.2	18.6	132 E	41	68
8 16	14 50.85	+75 9.5	0.253	0.971	92.2	18.9	73 E	56*	12 22	2 59.14	- 4 13.3	0.416	1.282	37.2	18.8	128 E	41	68
8 18	14 50.74	+76 6.0	0.252	0.972	91.9	18.9	74 E	55*	12 27	3 3.61	- 4 24.2	0.455	1.295	38.9	19.1	124 E	41	68
8 20	14 50.04	+77 2.5	0.252	0.973	91.5	18.9	74 E	54*	1 1	3 8.76	- 4 20.1	0.495	1.307	40.3	19.3	121 E	41	68
8 22	14 48.61	+77 58.8	0.251	0.975	91.1	18.9	75 E	54*	1 6	3 14.55	- 4 4.2	0.536	1.319	41.4	19.6	117 E	41	68
8 24	14 46.30	+78 55.0	0.250	0.977	90.7	18.8	75 E	53*	1 11	3 20.91	- 3 39.2	0.577	1.330	42.3	19.8	114 E	41	68
8 25	14 44.76	+79 23.0	0.249	0.978	90.5	18.8	75 E	52*	1 16	3 27.80	- 3 7.3	0.619	1.341	43.1	20.0	111 E	42	67
8 26	14 42.92	+79 51.0	0.249	0.979	90.2	18.8	76 E	52*	3287 Olmstead									
8 27	14 40.74	+80 18.9	0.248	0.980	90.0	18.8	76 E	51*	12 27	12 0.45	-10 48.2	2.671	2.861	20.1	19.6	91 W	34	70*
8 28	14 38.19	+80 46.7	0.247	0.981	89.7	18.8	76 E	51*	1 6	12 5.97	-11 42.5	2.510	2.841	20.0	19.5	99 W	33	75*
8 29	14 35.20	+81 14.5	0.246	0.982	89.4	18.8	76 E	51*	1 16	12 9.66	-12 25.7	2.352	2.820	19.3	19.3	108 W	33	76
8 30	14 31.72	+81 42.2	0.246	0.983	89.1	18.8	77 E	50*	2 5	12 10.54	-13 7.0	2.061	2.774	18.2	19.1	118 W	32	77
8 31	14 27.68	+82 9.7	0.245	0.984	88.8	18.7	77 E	50*	2 26	12 11.26	-12 54.9	2.201	2.797	16.4	18.9	128 W	32	77
9 1	14 22.96	+82 37.2	0.244	0.986	88.5	18.7	78 E	49*	2 15	12 7.36	-12 58.8	1.935	2.751	13.9	18.6	138 W	32	77
9 2	14 17.45	+83 4.4	0.243	0.987	88.2	18.7	78 E	49*	2 25	12 1.79	-12 27.6	1.830	2.726	10.8	18.4	149 W	33	76
9 3	14 11.01	+83 31.4	0.242	0.988	87.9	18.7	78 E	48*	3 7	11 54.23	-11 32.6	1.747	2.700	7.3	18.1	160 W	33	76
9 4	14 3.42	+83 58.2	0.240	0.990	87.5	18.7	79 E	48*	3 17	11 45.34	-10 15.5	1.692	2.674	4.3	17.9	168 E	35	74
9 5	13 54.44	+84 24.6	0.239	0.991	87.2	18.6	79 E	47*	3 22	11 40.71	- 9 30.2	1.675	2.660	4.0	17.8	169 E	35	74
9 6	13 43.75	+84 50.5	0.238	0.993	86.8	18.6	80 E	47*	3 27	11 36.13	- 8 41.8	1.665	2.647	4.9	17.8	167 E	36	73
9 7	13 30.92	+85 15.7	0.237	0.995	86.4	18.6	80 E	47*	4 1	11 31.74	- 7 51.3	1.663	2.633	6.6	17.9	162 E	37	72
9 8	13 15.39	+85 40.1	0.235	0.996	86.0	18.6	81 E	46*	4 6	11 27.65	- 6 59.9	1.667	2.619	8.5	18.0	157 E	38	71
9 9	12 56.47	+86 3.1	0.234	0.998	85.6	18.5	81 E	46*	4 11	11 23.99	- 6 8.8	1.678	2.604	10.5	18.1	152 E	39	70
9 10	12 33.33	+86 24.4	0.233	1.000	85.1	18.5	82 E	45*	4 16	11 20.84	- 5 19.1	1.695	2.590	12.5	18.2	146 E	40	69
9 11	12 5.06	+86 43.2	0.231	1.002	84.7	18.5	82 E	45*	4 21	11 18.28	- 4 32.0	1.718	2.575	14.3	18.2	141 E	40	69
9 12	11 30.97	+86 58.5	0.230	1.003	84.2	18.5	83 E	44*	4 26	11 16.37	- 3 48.1	1.746	2.560	16.1	18.3	135 E	41	68
9 13	10 51.08	+87 9.2	0.228	1.005	83.7	18.4	83 W	45*	5 6	11 14.55	- 2 32.6	1.814	2.530	19.1	18.5	125 E	42	67
9 14	10 6.71	+87 14.2	0.226	1.007	83.2	18.4	84 W	45*	5 16	11 15.44	- 1 35.7	1.896	2.499	21.5	18.6	115 E	43	66
9 15	9 20.70	+87 12.6	0.225	1.009	82.7	18.4	85 W	46*	5 26	11 18.90	- 0 58.4	1.986	2.468	23.2	18.8	106 E	42	65
9 16	8 36.54	+87 4.5	0.223	1.011	82.1	18.3	85 W	47*	6 5	11 24.67	- 0 40.1	2.080	2.436	24.4	18.9	98 E	39	65
9 17	7 56.93	+86 50.3	0.221	1.013	81.6	18.3	86 W	47*	6 15	11 32.51	- 0 39.3	2.176	2.403	25.0	18.9	90 E	34	65
9 18	7 23.08	+86 31.0	0.220	1.016	81.0	18.3	87 W	48*	6 25	11 42.15	- 0 54.5	2.270	2.370	25.2	19.0	83 E	30	65*
9 19	6 54.90	+86 7.6	0.218	1.018	80.4	18.2	87 W	48*	7 5	11 53.35	- 1 23.6	2.361	2.336	25.0	19.1	76 E	25	63*
9 20	6 31.67	+85 40.8	0.216	1.020	79.8	18.2	88 W	49*	7 15	12 5.93	- 2 4.9	2.447	2.302	24.5	19.1	70 E	21	60*
9 21	6 12.48	+85 11.4	0.214	1.022	79.2	18.2	89 W	50*	7 25	12 19.74	- 2 56.6	2.526	2.267	23.7	19.1	64 E	18	56*
9 22	5 56.50	+84 39.9	0.212	1.024	78.5	18.1	90 W	50*	8 4	12 34.66	- 3 57.0	2.598	2.232	22.7	19.1	58 E	16	51*
9 23	5 43.05	+84 6.4	0.210	1.027	77.8	18.1	90 W	51*	8 14	12 50.61	- 5 4.6	2.662	2.197	21.4	19.1	52 E	14	46*
9 24	5 31.59	+83 31.2	0.208	1.029	77.1	18.0	91 W	51*	8 24	13 7.52	- 6 17.6	2.717	2.162	20.1	19.0	47 E	12	41*
9 25	5 21.68	+82 54.5	0.206	1.031	76.4	18.0	92 W	52	9 3	13 25.37	- 7 34.5	2.764	2.127	18.6	19.0	42 E	10	36*
9 26	5 13.02	+82 16.2	0.204	1.034	75.6	18.0	93 W	53	9 13	13 44.14	- 8 53.8	2.802	2.091	16.9	18.9	37 E	9	31*
9 27	5 5.35	+81 36.6	0.202	1.036	74.8	17.9	94 W	53	9 23	14 3.84	-10 13.6	2.830	2.056	15.2	18.9	33 E	8	26*
9 28	4 58.48	+80 55.5	0.200	1.039	74.0	17.9	95 W	54	10 3	14 24.45	-11 32.1	2.850	2.022	13.4	18.8	28 E	7	22*
9 29	4 52.27	+80 12.9	0.198	1.041	73.2	17.8	96 W	55	10 13	14 46.01	-12 47.7	2.861	1.988	11.6	18.7	24 E	6	17*
9 30	4 46.59	+79 28.8	0.196	1.044	72.3	17.8	97 W	56	10 23	15 8.50	-13 58.3	2.864	1.954	9.7	18.6	19 E	5	12*
10 1	4 41.35	+78 43.2	0.193	1.046	71.4	17.7	98 W	56	11 2	15 31.94	-15 1.8	2.860	1.921	7.9	18.5	15 E	4	8*
10 2	4 36.49	+77 55.9	0.191	1.049	70.4	17.7	99 W	57	11 12	15 56.31	-15 56.2	2.849	1.889	6.1	18.3	12 E	3	3*
10 3	4 31.93	+77 7.0	0.189	1.051	69.5	17.6	100 W	58	11 22	16 21.55	-16 39.3	2.831	1.859	4.4	18.2	8 E	2	*
10 4	4 27.63	+76 16.3	0.187	1.054	68.4	17.6	102 W	59	12 2	16 47.62	-17 9.3	2.807	1.829	3.2	18.1	6 E	—	—
10 5	4 23.57	+75 23.7	0.185	1.057	67.4	17.5	103 W	60	12 12	17 14.43	-17 24.1	2.779	1.802	3.1	18.0	6 W	—	—
10 6	4 19.69	+74 29.3	0.183	1.059	66.3	17.5	104 W	61	12 22	17 41.85	-17 22.3	2.747	1.776	4.1	18.0	7 W	1*	—
10 7	4 15.98	+73 32.7	0.181	1.062	65.1	17.4	105 W	61	1 1	18 9.73	-17 2.5	2.711	1.752	5.7	18.0	10 W	4*	—
10 8	4 12.43	+72 34.1	0.179	1.065	64.0	17.4	107 W	62	1 11	18 37.93	-16 24.2	2.673	1.730	7.4	18.1	13 W	6*	2*
10 9	4 9.01	+71 33.2	0.176	1.067	62.7	17.3	108 W	63	1 21	19 6.25	-15 27.0	2.634	1.711	9.2	18.1	16 W	8*	6*
10 10	4 5.71	+70 30.1	0.174	1.070	61.5	17.2	110 W	65	1774 Jodiefoster									
10 11	4 2.52	+69 24.5	0.172	1.073	60.2	17.2	111 W	66	12 27	12 1.08	- 3 38.0	2.917	3.138	18.2	20.9	94 W	41	64*
10 12	3 59.44	+68 16.5	0.171	1.076	58.8	17.1	113 W	67	1 6	12 4.67	- 4 11.2	2.769	3.137	17.8	20.7	103 W	41	68*
10 13	3 56.46	+67 6.0	0.169	1.079	57.4	17.1	114 W	68	1 16	12 6.35	- 4 32.6	2.625	3.136	16.9	20.6	112 W	40	69
10 15	3 50.75	+64 37.1	0.165	1.084	54.4	17.0	118 W	70	1 26	12 5.93	- 4 40.3	2.490	3.133	15.3	20.4	123 W	40	69
10 17	3 45.37	+61 57.6	0.162	1.090	51.2	16.8	121 W	73	2 5	12 3.3								

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°-26°	20/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°-26°
17744 Jodiefoster (continuation)									2253 Espinette (continuation)								
5 16	11 5.38	+ 2 30.2	2.524	3.041	18.0	20.5	111 E	47* 61	8 14	12 37.12	- 0 56.7	2.912	2.354	18.6	17.9	48 E	14* 41*
5 26	11 7.63	+ 2 29.7	2.646	3.027	19.1	20.6	102 E	44* 62	8 24	12 52.40	- 2 35.9	2.968	2.324	17.1	17.9	42 E	12* 36*
6 5	11 11.75	+ 2 16.5	2.771	3.013	19.6	20.7	94 E	40* 62	9 3	13 8.48	- 4 17.8	3.015	2.292	15.4	17.8	37 E	10* 31*
6 15	11 17.52	+ 1 51.9	2.897	2.997	19.8	20.8	86 E	34* 62	9 13	13 25.35	- 6 1.6	3.051	2.261	13.6	17.8	32 E	8* 26*
6 25	11 24.73	+ 1 16.8	3.020	2.980	19.5	20.9	78 E	29* 62*	9 23	13 42.99	- 7 45.9	3.076	2.228	11.8	17.7	27 E	6* 21*
7 5	11 33.17	+ 0 32.6	3.138	2.963	18.9	20.9	71 E	24* 59*	10 3	14 1.41	- 9 29.6	3.091	2.196	9.8	17.6	22 E	5* 16*
7 15	11 42.69	+ 0 19.7	3.249	2.944	18.0	20.9	64 E	19* 55*	10 13	14 20.65	- 11 11.5	3.096	2.163	7.9	17.5	17 E	3* 11*
7 25	11 53.13	+ 1 19.1	3.352	2.925	16.9	21.0	57 E	15* 50*	10 23	14 40.70	- 12 50.2	3.090	2.130	5.8	17.4	13 E	2* 6*
8 4	12 4.39	+ 2 24.5	3.443	2.904	15.6	21.0	50 E	12* 44*	11 2	15 1.60	- 14 24.2	3.075	2.097	3.8	17.2	8 E	— 1*
8 14	12 16.36	+ 3 35.1	3.524	2.883	14.1	20.9	44 E	9* 38*	11 12	15 23.36	- 15 52.1	3.051	2.064	1.9	17.0	4 E	— —
8 24	12 28.99	+ 4 49.9	3.592	2.861	12.5	20.9	38 E	6* 32*	11 22	15 45.97	- 17 12.1	3.017	2.032	1.5	16.9	3 W	— —
9 3	12 42.20	+ 6 8.1	3.646	2.838	10.8	20.9	32 E	4* 26*	12 2	16 9.43	- 18 22.7	2.976	1.999	3.2	17.0	6 W	— —
9 13	12 55.96	+ 7 28.8	3.687	2.814	8.9	20.8	26 E	2* 20*	12 12	16 33.73	- 19 22.1	2.927	1.967	5.2	17.0	10 W	3* 1*
9 23	13 10.23	+ 8 51.3	3.714	2.789	7.0	20.7	20 E	— 14*	12 22	16 58.80	- 20 8.8	2.871	1.935	7.4	17.1	15 W	6* 5*
10 3	13 25.00	+ 10 14.6	3.725	2.764	5.0	20.6	14 E	— 8*	1 1	17 24.59	- 20 41.3	2.810	1.904	9.5	17.1	19 W	8* 9*
10 13	13 40.24	+ 11 38.0	3.722	2.737	2.9	20.4	8 E	— 2*	1 11	17 50.98	- 20 58.2	2.743	1.874	11.7	17.1	23 W	9* 14*
10 23	13 55.93	+ 13 0.4	3.704	2.710	0.8	20.2	2 E	— —	1 21	18 17.85	- 20 58.6	2.673	1.845	13.8	17.1	27 W	10* 18*
11 2	14 12.07	+ 14 21.2	3.671	2.682	1.5	20.3	4 W	— —	1131 Porzia								
11 12	14 28.64	+ 15 39.4	3.624	2.653	3.6	20.4	10 W	2* 1*	12 27	12 2.00	+ 3 6.7	2.571	2.850	20.1	18.2	96 W	48 58*
11 22	14 45.60	+ 16 54.0	3.562	2.624	5.8	20.4	15 W	6* 6*	1 6	12 6.31	+ 2 54.1	2.434	2.855	19.4	18.1	105 W	48 61*
12 2	15 2.95	+ 18 4.2	3.487	2.593	7.9	20.4	21 W	10* 11*	1 16	12 8.53	+ 2 56.2	2.302	2.859	18.2	17.9	115 W	48 61
12 12	15 20.65	+ 19 9.3	3.399	2.562	10.1	20.4	27 W	13* 16*	1 26	12 8.40	+ 3 14.2	2.179	2.863	16.3	17.8	125 W	48 61
12 22	15 38.65	+ 20 8.2	3.298	2.530	12.2	20.4	33 W	16* 22*	2 5	12 5.80	+ 3 48.1	2.071	2.865	13.8	17.6	136 W	49 60
1 1	15 56.89	+ 21 0.3	3.187	2.497	14.3	20.4	39 W	18* 28*	2 15	12 0.72	+ 4 36.9	1.982	2.866	10.6	17.3	148 W	50 59
1 11	16 15.32	+ 21 44.8	3.066	2.464	16.3	20.4	45 W	19* 35*	2 25	11 53.43	+ 5 37.4	1.917	2.866	6.9	17.1	160 W	51 58
1 21	16 33.84	+ 22 21.2	2.935	2.431	18.2	20.3	50 W	19* 42*	3 2	11 49.12	+ 6 10.4	1.895	2.865	4.9	17.0	166 W	51 58
12 27	12 1.20	+ 7 4.4	2.570	2.875	19.8	21.4	98 W	52 54*	3 7	11 44.50	+ 6 44.3	1.880	2.865	3.0	16.9	171 W	52 57
1 6	12 5.47	+ 7 15.3	2.442	2.888	19.0	21.3	107 W	52 57*	3 12	11 39.68	+ 7 18.1	1.873	2.864	1.7	16.8	175 W	52 57
1 16	12 7.59	+ 7 42.3	2.320	2.901	17.6	21.2	117 W	53 56	3 17	11 34.78	+ 7 51.0	1.873	2.863	2.4	16.8	173 E	53 56
1 26	12 7.36	+ 8 25.9	2.209	2.912	15.6	21.0	127 W	53 56	3 22	11 29.93	+ 8 22.1	1.880	2.861	4.3	16.9	168 E	53 56
2 5	12 4.67	+ 9 24.9	2.114	2.922	13.0	20.8	138 W	54 55	3 27	11 25.27	+ 8 50.6	1.895	2.860	6.3	17.1	162 E	54 55
2 15	11 59.56	+ 10 36.4	2.040	2.932	9.9	20.6	149 W	56 53	4 6	11 16.92	+ 9 37.6	1.946	2.856	10.1	17.3	150 E	55 54
2 25	11 52.33	+ 11 55.1	1.990	2.940	6.6	20.4	160 W	57 52	4 16	11 10.44	+ 10 8.7	2.020	2.851	13.5	17.5	139 E	55 54
3 2	11 48.12	+ 12 35.0	1.976	2.944	5.0	20.3	165 W	58 51	4 26	11 6.29	+ 10 22.8	2.115	2.845	16.2	17.7	128 E	55 54
3 7	11 43.62	+ 13 13.9	1.969	2.948	3.8	20.3	169 W	58 51	5 6	11 4.57	+ 10 20.5	2.223	2.837	18.3	17.8	118 E	55 54
3 12	11 38.95	+ 13 51.1	1.969	2.951	3.6	20.3	169 W	59 50	5 16	11 5.24	+ 10 3.3	2.343	2.829	19.8	18.0	108 E	55* 54
3 17	11 34.23	+ 14 25.5	1.977	2.954	4.4	20.3	167 E	59 50	5 26	11 8.09	+ 9 32.8	2.468	2.820	20.7	18.1	100 E	51* 54
3 22	11 29.60	+ 14 56.3	1.993	2.957	5.9	20.4	162 E	60 49	6 5	11 12.86	+ 8 50.9	2.595	2.810	21.2	18.3	91 E	46* 55
3 27	11 25.17	+ 15 23.0	2.015	2.960	7.5	20.5	157 E	60 49	6 15	11 19.31	+ 7 59.1	2.722	2.799	21.1	18.3	84 E	40* 56
4 1	11 21.04	+ 15 45.1	2.044	2.962	9.2	20.6	152 E	61 48	6 25	11 27.20	+ 6 58.7	2.845	2.786	20.8	18.4	76 E	34* 56*
4 6	11 17.30	+ 16 2.5	2.080	2.964	10.8	20.7	146 E	61 48	7 5	11 36.31	+ 5 51.0	2.963	2.773	20.1	18.5	69 E	28* 55*
4 11	11 14.02	+ 16 14.9	2.121	2.966	12.3	20.8	141 E	61 48	7 15	11 46.47	+ 4 37.0	3.074	2.759	19.1	18.5	63 E	23* 52*
4 16	11 11.27	+ 16 22.4	2.168	2.968	13.7	20.9	135 E	61 48	7 25	11 57.53	+ 3 17.7	3.176	2.744	17.9	18.5	56 E	19* 47*
4 21	11 9.09	+ 16 25.3	2.219	2.970	15.0	21.0	130 E	61 48	8 4	12 9.37	+ 1 53.8	3.268	2.727	16.5	18.5	50 E	16* 42*
4 26	11 7.49	+ 16 23.6	2.275	2.971	16.1	21.1	125 E	61 48	8 14	12 21.92	+ 0 26.3	3.349	2.710	15.0	18.5	44 E	13* 37*
5 1	11 6.48	+ 16 17.7	2.333	2.972	17.0	21.2	120 E	61 48	8 24	12 35.09	- 1 4.2	3.419	2.692	13.3	18.5	38 E	10* 31*
5 6	11 6.04	+ 16 8.0	2.395	2.973	17.8	21.3	116 E	61 48	9 3	12 48.84	- 2 36.8	3.475	2.673	11.5	18.4	32 E	8* 26*
5 11	11 6.16	+ 15 54.7	2.459	2.973	18.5	21.4	111 E	61 48	9 13	13 3.13	- 4 10.8	3.519	2.652	9.6	18.4	26 E	6* 20*
5 16	11 6.83	+ 15 38.0	2.525	2.973	19.0	21.4	106 E	60* 48	9 23	13 17.93	- 5 45.5	3.549	2.631	7.6	18.3	20 E	4* 14*
12 27	12 1.75	+ 1 5.8	2.585	2.852	20.1	18.1	95 W	46 60*	10 3	13 33.22	- 7 20.0	3.565	2.609	5.6	18.2	15 E	2* 8*
1 6	12 6.80	+ 0 46.3	2.432	2.840	19.6	18.0	104 W	46 63*	10 13	13 48.99	- 8 53.6	3.566	2.586	3.5	18.1	9 E	— 3*
1 16	12 9.89	+ 0 40.9	2.283	2.827	18.6	17.8	114 W	46 63	10 23	14 5.24	- 10 25.4	3.554	2.562	1.5	17.9	4 E	— —
1 26	12 10.75	+ 0 51.3	2.144	2.813	16.9	17.6	124 W	46 63	11 2	14 21.94	- 11 54.6	3.528	2.537	1.2	17.8	3 W	— —
2 5	12 9.20	+ 1 18.6	2.018	2.799	14.6	17.4	134 W	46 63	11 12	14 39.10	- 13 20.4	3.487	2.511	3.2	17.9	8 W	2* —
2 15	12 5.12	+ 2 2.9	1.910	2.783	11.5	17.1	146 W	47 62	11 22	14 56.69	- 14 41.9	3.433	2.485	5.4	18.0	14 W	6* 3*
2 25	11 58.69	+ 3 2.3	1.825	2.767	7.8	16.9	158 W	48 61	12 2	15 14.71	- 15 58.2	3.367	2.457	7.6	18.0	19 W	10* 7*
3 2	11 54.73	+ 3 36.3	1.793	2.758	5.8	16.7	164 W	49 60	12 12	15 33.12	- 17 8.5	3.287	2.429	9.8	18.0	25 W	14* 13*
3 7	11 50.38	+ 4 12.4	1.767	2.749	3.7	16.6	170 W	49 60	12 22	15 51.88	- 18 12.1	3.197	2.400	12.0	18.0	30 W	16* 19*
3 12	11 45.74	+ 4 49.6	1.748	2.740	1.7	16.4	175 W	50 59	1 1	16 10.96	- 19 8.2	3.095	2.370	14.1	18.0	36 W	18* 25*
3 17	11 40.93	+ 5 27.0	1.737	2.731	1.5	16.4	176 E	50 59	1 11	16 30.29	- 19 56.2	2.984	2.340	16.2	18.0	41 W	19* 31*
3 22	11 36.11	+ 6 3.5	1.734	2.721	3.5	16.5	170 E	51 58	1 21	16 49.79	- 20 35.7	2.864	2.308	18.2	17.9	47 W	20* 38*
3 27	11 31.39	+ 6 38.3	1.738	2.711	5.7	16.6	164 E	52 57	114319 2002 XD₅₈								
4 1	11 26.91	+ 7 10.4	1.748	2.701	7.9	16.7	158 E	52 57	12 27	12 2.23	- 8 6.8	2.663	2.865	20.1	21.0	92 W	37 67*
4 6	11 22.78	+ 7 39.3	1.766	2.691	10.0	16.8	152 E	53 56	1 6	12 6.95	- 9 1.3	2.515	2.860	19.8	20.9	100 W	36 73*
4 16	11 15.96	+ 8 25.0	1.818	2.670	13.8												

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	20/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°		
114319 2002 XD₅₈										78545 2002 RT₁₂₁											
<i>(continuation)</i>										<i>(continuation)</i>											
4	26	11 10.15	-3 28.0	1.945	2.738	15.4	20.1	134 E	42	67	3	22	11 51.29	-8 21.8	1.135	2.125	4.0	18.5	171 E	37	72
5	6	11 8.19	-2 38.4	2.033	2.721	18.0	20.3	123 E	42	67	3	27	11 45.48	-8 1.9	1.122	2.110	5.1	18.5	169 E	37	72
5	16	11 8.76	-2 4.6	2.133	2.704	20.0	20.4	114 E	43*	66	4	1	11 39.79	-7 39.5	1.114	2.094	7.4	18.6	164 E	37	72
5	26	11 11.69	-1 47.1	2.241	2.685	21.4	20.5	105 E	41*	66	4	6	11 34.43	-7 15.6	1.113	2.078	10.0	18.7	159 E	38	71
6	5	11 16.72	-1 45.1	2.354	2.666	22.2	20.7	96 E	37*	66	4	11	11 29.58	-6 51.4	1.118	2.063	12.7	18.8	153 E	38	71
6	15	11 23.61	-1 57.6	2.468	2.645	22.6	20.8	89 E	32*	66	4	16	11 25.40	-6 28.0	1.129	2.047	15.3	18.9	147 E	39	70
6	25	11 32.11	-2 23.1	2.580	2.624	22.5	20.8	81 E	27*	66*	4	21	11 22.03	-6 6.6	1.144	2.031	17.8	19.0	142 E	39	70
7	5	11 41.98	-3 0.2	2.688	2.602	22.1	20.9	74 E	22*	63*	4	26	11 19.53	-5 48.1	1.163	2.016	20.1	19.1	136 E	39	70
7	15	11 53.07	-3 47.5	2.790	2.578	21.4	20.9	68 E	18*	59*	5	6	11 17.30	-5 22.5	1.212	1.984	24.2	19.2	126 E	40	69
7	25	12 5.20	-4 43.6	2.885	2.555	20.4	20.9	61 E	15*	54*	5	16	11 18.79	-5 14.4	1.272	1.953	27.4	19.4	117 E	40*	69
8	4	12 18.26	-5 47.1	2.971	2.530	19.2	21.0	55 E	12*	49*	5	26	11 23.75	-5 25.4	1.338	1.923	29.9	19.5	109 E	38*	69
8	14	12 32.18	-6 56.9	3.048	2.504	17.8	20.9	49 E	9*	43*	6	5	11 31.78	-5 54.8	1.408	1.893	31.7	19.7	101 E	34*	70
8	24	12 46.88	-8 11.7	3.115	2.478	16.2	20.9	43 E	7*	37*	6	15	11 42.51	-6 41.3	1.480	1.863	32.9	19.8	95 E	30*	71
9	3	13 2.32	-9 30.3	3.171	2.451	14.6	20.9	38 E	5*	32*	6	25	11 55.59	-7 43.2	1.551	1.835	33.6	19.9	89 E	26*	72
9	13	13 18.48	-10 51.6	3.215	2.423	12.8	20.8	32 E	3*	26*	7	5	12 10.69	-8 58.3	1.620	1.807	34.0	19.9	83 E	22*	72*
9	23	13 35.33	-12 14.4	3.248	2.394	10.9	20.7	27 E	2*	21*	7	15	12 27.62	-10 24.5	1.687	1.781	33.9	20.0	78 E	18*	70*
10	3	13 52.88	-13 37.3	3.268	2.365	8.9	20.6	21 E	—	15*	7	25	12 46.20	-11 59.6	1.752	1.756	33.7	20.0	73 E	15*	67*
10	13	14 11.13	-14 59.3	3.277	2.335	6.8	20.5	16 E	—	10*	8	4	13 6.30	-13 40.8	1.813	1.733	33.2	20.1	69 E	13*	63*
10	23	14 30.08	-16 18.8	3.274	2.305	4.7	20.4	11 E	—	5*	8	14	13 27.86	-15 25.8	1.873	1.712	32.4	20.1	65 E	11*	59*
11	2	14 49.74	-17 34.6	3.259	2.274	2.6	20.2	6 E	—	—	8	24	13 50.81	-17 11.7	1.929	1.693	31.6	20.1	61 E	10*	55*
11	12	15 10.11	-18 45.3	3.232	2.242	0.5	20.0	1 E	—	—	9	3	14 15.13	-18 55.4	1.983	1.675	30.6	20.1	58 E	9*	52*
11	22	15 31.18	-19 49.3	3.194	2.211	1.9	20.1	4 W	—	—	9	13	14 40.78	-20 34.0	2.036	1.661	29.4	20.1	54 E	8*	48*
12	2	15 52.95	-20 45.2	3.146	2.178	4.2	20.2	9 W	1*	1*	9	23	15 7.69	-22 4.0	2.087	1.649	28.2	20.1	51 E	8*	45*
12	12	16 15.37	-21 31.6	3.088	2.146	6.4	20.2	14 W	4*	6*	10	3	15 35.78	-23 22.3	2.137	1.639	26.8	20.1	48 E	8*	42*
12	22	16 38.41	-22 6.8	3.020	2.113	8.7	20.2	19 W	7*	10*	10	13	16 4.95	-24 25.8	2.187	1.632	25.4	20.1	44 E	8*	38*
1	1	17 1.99	-22 29.7	2.944	2.081	10.9	20.2	24 W	9*	15*	10	23	16 34.98	-25 11.6	2.236	1.628	23.8	20.1	41 E	8*	35*
1	11	17 26.05	-22 38.9	2.861	2.048	13.1	20.2	28 W	11*	20*	11	2	17 5.68	-25 37.4	2.285	1.628	22.2	20.1	38 E	9*	32*
1	21	17 50.47	-22 33.4	2.771	2.015	15.3	20.2	33 W	12*	25*	11	12	17 36.78	-25 41.5	2.333	1.630	20.6	20.1	35 E	9*	29*
289022 2004 TN₁₁₅										193948 2001 RQ₄₇											
12	27	12 2.26	+26 30.3	2.793	3.187	17.4	21.4	105 W	72	36*	12	27	12 4.30	+21 2.2	1.928	2.344	24.2	20.5	102 W	66	41*
1	6	12 5.81	+27 29.1	2.662	3.182	16.5	21.2	113 W	72	36*	1	6	12 11.07	+20 45.2	1.779	2.312	23.5	20.3	110 W	66	43*
1	16	12 7.08	+28 42.6	2.542	3.175	15.2	21.1	122 W	74	35	1	16	12 15.26	+20 40.9	1.636	2.279	22.2	20.0	119 W	66	43
1	26	12 5.79	+30 7.8	2.436	3.168	13.6	20.9	131 W	75	34	1	26	12 16.30	+20 48.5	1.503	2.245	20.3	19.7	128 W	66	43
2	5	12 1.80	+31 39.5	2.349	3.160	11.8	20.8	139 W	77	32	2	5	12 13.67	+21 5.0	1.383	2.212	17.6	19.4	137 W	66	43
2	15	11 55.14	+33 10.1	2.285	3.150	10.2	20.6	146 W	78	31	2	10	12 10.84	+21 15.0	1.330	2.194	16.0	19.3	142 W	66	43
2	25	11 46.15	+34 30.5	2.246	3.140	9.2	20.6	150 W	80	29	2	15	12 6.96	+21 24.8	1.281	2.177	14.3	19.1	147 W	66	43
3	7	11 35.55	+35 31.9	2.234	3.129	9.3	20.5	149 W	81	28	2	20	12 2.05	+21 33.2	1.237	2.160	12.4	19.0	152 W	67	42
3	17	11 24.33	+36 7.5	2.249	3.117	10.6	20.6	145 E	81	28	2	25	11 56.17	+21 38.6	1.199	2.143	10.7	18.8	156 W	67	42
3	27	11 13.63	+36 13.9	2.289	3.103	12.4	20.7	138 E	81	28	3	2	11 49.43	+21 39.6	1.167	2.126	9.2	18.7	160 W	67	42
4	6	11 4.45	+35 52.0	2.350	3.089	14.4	20.8	130 E	81	28	3	7	11 41.99	+21 34.6	1.142	2.108	8.4	18.6	162 W	67	42
4	16	10 57.49	+35 5.2	2.430	3.074	16.2	20.9	121 E	80	29	3	12	11 34.06	+21 22.6	1.123	2.091	8.4	18.5	162 W	66	43
4	26	10 53.11	+33 58.3	2.524	3.058	17.7	21.1	113 E	79	30	3	17	11 25.90	+21 2.3	1.111	2.074	9.5	18.5	160 E	66	43
5	6	10 51.34	+32 36.2	2.627	3.040	18.7	21.2	104 E	78	31	3	27	11 17.79	+20 33.4	1.106	2.056	11.4	18.6	156 E	66	43
5	16	10 52.04	+31 3.1	2.737	3.022	19.4	21.3	96 E	74*	33	3	27	11 10.01	+19 55.7	1.107	2.039	13.6	18.7	151 E	65	44
5	26	10 54.94	+29 21.9	2.849	3.003	19.7	21.4	89 E	67*	35	4	1	11 2.80	+19 9.7	1.114	2.022	16.0	18.7	146 E	64	45
6	5	10 59.74	+27 35.2	2.960	2.983	19.7	21.4	81 E	59*	36	4	6	10 56.35	+18 16.3	1.126	2.005	18.3	18.8	141 E	63	46
6	15	11 6.16	+25 44.3	3.069	2.962	19.3	21.5	74 E	51*	38*	4	11	10 50.83	+17 16.3	1.143	1.987	20.6	18.9	136 E	62	47
367390 2008 MB₅										78545 2002 RT₁₂₁											
12	27	12 2.53	+8 35.4	0.675	1.269	50.1	20.5	98 W	54	53*	12	27	12 3.56	-3 13.9	2.107	2.376	24.4	20.8	93 W	42	63*
1	6	12 16.61	+12 43.6	0.652	1.325	45.4	20.4	106 W	58	51*	1	6	12 11.50	-4 37.6	1.952	2.348	24.3	20.6	101 W	40	68*
1	16	12 26.03	+17 39.0	0.632	1.380	40.0	20.3	116 W	63	46	1	16	12 17.58	-5 53.8	1.800	2.320	23.6	20.4	109 W	39	70
1	26	12 29.74	+23 14.7	0.620	1.433	34.2	20.2	125 W	68	41	1	26	12 21.40	-7 0.2	1.656	2.292	22.3	20.2	118 W	38	71
1	31	12 29.17	+26 11.5	0.618	1.459	31.3	20.1	130 W	71	38	2	5	12 22.56	-7 54.6	1.522	2.262	20.2	19.9	128 W	37	72
2	5	12 26.85	+29 9.2	0.619	1.484	28.6	20.1	134 W	74	35	2	15	12 20.69	-8 34.0	1.401	2.233	17.3	19.6	138 W	36	73
2	10	12 22.75	+32 2.6	0.624	1.509	26.0	20.1	138 W	77	32	2	25	12 15.61	-8 55.5	1.297	2.203	13.6	19.3	149 W	36	73
2	15	12 16.91	+34 46.0	0.634	1.533	24.0	20.1	141 W	80	29	3	7	12 7.50	-8 57.0	1.214	2.172	9.1	18.9	160 W	36	73
2	20	12 9.53	+37 14.0	0.649	1.557	22.5	20.1	143 W	82	27	3	17	11 57.03	-8 38.1	1.155	2.141	4.8	18.6	170 W	36	73
2	25	12 0.91	+39 21.7	0.668	1.580	21.7	20.2	144 W	84	25											
3	2	11 51.45	+41 6.0	0.692	1.602	21.5	20.3	144 W	86	23											
3	7	11 41.62	+42 25.3	0.721	1.623	21.9	20.4	142 W	87	22											
3	12	11 31.93	+43 19.3	0.754	1.644	22.8	20.6	140 W	88	21											
3	17	11 22.84	+43 49.6	0.791	1.665	23.9	20.7	137 E	89	20											
3	22	11 14.75</																			

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	20/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
193948 2001 RQ₄₇										40263 1999 FQ₅									
<i>(continuation)</i>										<i>(continuation)</i>									
11 17	17 33.49	-38 48.9	2.389	1.657	19.2	20.1	34 E	—	27*	12 2	18 41.35	-9 53.4	2.100	1.384	23.0	21.1	33 E	22*	16*
11 22	17 51.85	-38 47.1	2.414	1.665	18.5	20.1	32 E	—	26*	12 7	18 57.19	-10 16.8	2.107	1.373	22.3	21.1	32 E	22*	15*
11 27	18 10.12	-38 36.9	2.440	1.674	17.7	20.1	31 E	—	25*	12 12	19 13.20	-10 35.2	2.114	1.363	21.6	21.0	31 E	21*	13*
12 2	18 28.22	-38 18.2	2.467	1.684	16.9	20.1	30 E	—	23*	12 17	19 29.36	-10 48.6	2.122	1.352	20.9	21.0	29 E	20*	12*
12 7	18 46.08	-37 51.6	2.493	1.694	16.1	20.1	28 E	—	22*	12 22	19 45.66	-10 56.9	2.129	1.342	20.2	21.0	28 E	19*	11*
12 12	19 3.62	-37 17.3	2.520	1.704	15.3	20.1	27 E	—	21*	12 27	20 2.06	-11 0.3	2.135	1.333	19.4	21.0	27 E	18*	9*
12 17	19 20.78	-36 36.0	2.547	1.715	14.4	20.1	26 E	—	20*	1	1 20 18.56	-10 58.6	2.142	1.324	18.6	20.9	25 E	18*	8*
12 22	19 37.53	-35 48.0	2.575	1.727	13.6	20.1	24 E	—	18*	1	1 20 35.13	-10 51.9	2.149	1.315	17.8	20.9	24 E	17*	7*
12 27	19 53.84	-34 54.0	2.602	1.740	12.8	20.1	23 E	—	17*	1	1 21 05.75	-10 40.4	2.155	1.307	17.0	20.9	23 E	15*	7*
1	1 20 9.68	-33 54.5	2.629	1.752	11.9	20.1	22 E	—	16*	1	1 21 8.40	-10 24.3	2.161	1.299	16.2	20.8	22 E	14*	6*
1	6 20 25.05	-32 50.2	2.656	1.766	11.1	20.1	20 E	—	14*	1	21 25.07	-10 3.8	2.167	1.291	15.4	20.8	20 E	13*	5*
1	11 20 39.94	-31 41.7	2.683	1.779	10.2	20.1	19 E	—	13*	31913 2000 GM₅₆									
1	16 20 54.34	-30 29.5	2.709	1.793	9.4	20.2	17 E	—	11*	12 27	12 7.08	+9 26.2	2.694	2.986	19.1	20.6	97 W	54	51*
1	21 21 8.28	-29 14.1	2.734	1.808	8.6	20.2	16 E	—	10*	1	6 12 11.23	+9 18.9	2.542	2.975	18.5	20.4	107 W	54	54*
40263 1999 FQ₅										1	16 12 13.34	+9 25.1	2.396	2.963	17.4	20.3	116 W	54	55
12 27	12 5.78	-14 49.4	1.354	1.648	36.6	20.9	88 W	30	72*	1	26 12 13.14	+9 44.9	2.260	2.950	15.6	20.1	126 W	55	54
1	1 12 13.06	-14 57.9	1.307	1.655	36.4	20.9	91 W	30	75*	2	5 12 10.45	+10 17.7	2.139	2.936	13.3	19.9	137 W	55	54
1	6 12 19.85	-14 59.5	1.259	1.663	36.1	20.8	95 W	30	77*	2	25 12 5.21	+11 1.2	2.037	2.921	10.4	19.6	148 W	56	53
1	11 12 26.11	-14 53.3	1.211	1.670	35.6	20.7	99 W	30	79*	2	15 11 57.63	+11 51.2	1.960	2.906	7.1	19.4	159 W	57	52
1	16 12 31.77	-14 38.3	1.162	1.677	34.9	20.6	102 W	30	79	3	2 11 53.11	+12 16.8	1.932	2.897	5.4	19.3	164 W	57	52
1	21 12 36.77	-14 13.4	1.113	1.683	34.1	20.5	107 W	31	78	3	7 11 48.22	+12 41.8	1.911	2.889	4.1	19.2	168 W	58	51
1	26 12 41.03	-13 37.5	1.065	1.689	33.0	20.4	111 W	31	78	3	12 11 43.07	+13 5.3	1.897	2.880	3.5	19.1	170 W	58	51
1	31 12 44.49	-12 49.5	1.018	1.695	31.6	20.2	116 W	32	77	3	17 11 37.80	+13 26.4	1.891	2.871	4.2	19.2	168 E	58	51
2	5 12 47.08	-11 48.0	0.973	1.700	30.0	20.1	120 W	33	76	3	22 11 32.53	+13 44.5	1.892	2.862	5.6	19.2	164 E	59	50
2	10 12 48.70	-10 31.8	0.929	1.705	28.0	19.9	126 W	34	75	3	27 11 27.40	+13 58.9	1.901	2.853	7.4	19.3	159 E	59	50
2	15 12 49.28	-8 59.7	0.889	1.710	25.7	19.8	131 W	36	73	4	6 11 18.06	+14 15.2	1.938	2.833	10.9	19.5	148 E	59	50
2	25 12 47.22	-5 5.7	0.819	1.718	20.1	19.4	143 W	40	69	4	16 11 10.57	+14 13.8	1.999	2.813	14.2	19.7	137 E	59	50
3	7 12 40.90	-0 9.9	0.769	1.725	13.2	19.1	157 W	45	64	4	26 11 5.47	+13 54.9	2.079	2.792	17.0	19.8	126 E	59	50
3	17 12 31.02	+5 26.9	0.744	1.730	6.8	18.8	168 W	50	59	5	6 11 2.93	+13 20.5	2.173	2.769	19.1	20.0	116 E	58	51
3	22 12 25.23	+8 18.6	0.742	1.732	5.8	18.7	170 W	53	56	5	16 11 2.92	+12 32.6	2.277	2.746	20.6	20.1	107 E	57	51
3	27 12 19.22	+11 4.8	0.748	1.733	7.8	18.8	166 E	56	53	5	26 11 5.26	+11 33.1	2.386	2.722	21.6	20.2	98 E	53*	52
4	1 12 13.29	+13 40.3	0.760	1.734	11.0	19.0	161 E	59	50	6	5 11 9.68	+10 23.9	2.497	2.697	22.1	20.3	90 E	47*	54
4	6 12 7.68	+16 1.0	0.779	1.735	14.5	19.2	154 E	61	48	6	15 11 15.92	+9 6.2	2.607	2.672	22.1	20.4	82 E	40*	55
4	11 12 2.65	+18 4.1	0.803	1.736	17.9	19.4	148 E	63	46	6	25 11 32.73	+7 41.2	2.713	2.645	21.8	20.4	75 E	34*	55*
4	16 11 58.40	+19 48.2	0.833	1.736	21.0	19.5	142 E	65	44	7	5 11 23.89	+6 9.8	2.814	2.617	21.2	20.5	68 E	28*	54*
4	21 11 55.07	+21 13.4	0.867	1.735	23.8	19.7	136 E	66	43	7	15 11 43.24	+4 32.7	2.907	2.589	20.3	20.5	62 E	23*	51*
4	26 11 52.76	+22 20.5	0.904	1.734	26.3	19.9	130 E	67	42	7	25 11 54.60	+2 50.5	2.992	2.560	19.1	20.5	56 E	18*	47*
5	1 11 51.47	+23 11.0	0.945	1.733	28.4	20.0	125 E	68	41	8	4 12 6.88	+1 3.9	3.066	2.530	17.8	20.5	50 E	15*	42*
5	6 11 51.19	+23 46.5	0.987	1.732	30.2	20.2	120 E	69	40	8	14 12 19.99	-0 46.6	3.131	2.499	16.3	20.4	44 E	12*	37*
5	11 11 51.90	+24 8.7	1.032	1.730	31.7	20.3	116 E	69	40	8	24 12 33.87	-2 40.3	3.184	2.468	14.6	20.4	38 E	9*	32*
5	16 11 53.54	+24 19.2	1.077	1.727	33.0	20.4	112 E	69	40	9	3 12 48.47	-4 36.7	3.225	2.436	12.9	20.3	33 E	6*	26*
5	21 11 56.05	+24 19.3	1.123	1.724	34.0	20.5	108 E	69*	40	9	13 13 3.80	-6 35.2	3.255	2.403	11.0	20.3	27 E	4*	21*
5	26 11 59.35	+24 10.6	1.169	1.721	34.8	20.7	104 E	69*	40	9	23 13 19.83	-8 35.0	3.273	2.370	9.0	20.2	22 E	2*	16*
5	31 12 3.37	+23 54.1	1.215	1.718	35.5	20.8	100 E	67*	40	10	3 13 36.58	-10 35.4	3.278	2.336	7.0	20.0	17 E	—	11*
6	5 12 8.04	+23 30.8	1.261	1.714	36.0	20.8	97 E	65*	40	10	13 13 54.08	-12 35.6	3.271	2.302	4.9	19.9	11 E	—	5*
6	10 12 13.31	+23 1.4	1.306	1.709	36.3	20.9	94 E	62*	41	10	23 14 12.33	-14 34.5	3.253	2.267	2.8	19.7	6 E	—	—
6	15 12 19.11	+22 26.7	1.351	1.705	36.6	21.0	91 E	60*	42	11	2 14 31.39	-16 31.3	3.223	2.232	0.9	19.5	2 E	—	—
6	20 12 25.41	+21 47.3	1.394	1.700	36.7	21.1	88 E	57*	42	11	12 14 51.30	-18 24.8	3.182	2.196	1.9	19.5	4 W	—	—
6	25 12 32.14	+21 3.8	1.437	1.694	36.7	21.1	86	54*	43	11	22 15 12.08	-20 13.8	3.131	2.160	4.0	19.6	9 W	—	2*
6	30 12 39.28	+20 16.6	1.478	1.688	36.7	21.2	83	52*	44	12	2 15 33.78	-21 56.9	3.070	2.125	6.2	19.7	14 W	3*	6*
7	5 12 46.78	+19 26.0	1.518	1.682	36.6	21.2	81 E	50*	45	12	12 15 56.42	-23 32.9	3.001	2.089	8.5	19.7	18 W	5*	10*
7	10 12 54.63	+18 32.4	1.556	1.676	36.4	21.3	78	47*	45	12	22 16 20.02	-25 0.1	2.923	2.053	10.7	19.7	23 W	7*	15*
7	15 13 2.80	+17 36.1	1.593	1.669	36.2	21.3	76	45*	46*	1	1 16 44.58	-26 17.0	2.839	2.017	13.0	19.7	27 W	8*	20*
7	20 13 11.28	+16 37.5	1.629	1.662	36.0	21.3	74	44*	47*	1	11 17 10.08	-27 22.1	2.749	1.982	15.2	19.6	32 W	8*	25*
7	25 13 20.04	+15 36.8	1.663	1.654	35.7	21.4	72	42*	47*	1	21 17 36.44	-28 13.9	2.654	1.947	17.3	19.6	36 W	8*	30*
7	30 13 29.07	+14 34.2	1.695	1.646	35.3	21.4	70 E	41*	47*	108573 2001 MN₄									
8	4 13 38.37	+13 29.9	1.726	1.638	35.0	21.4	68 E	39*	47*	12 27	12 7.45	+30 29.4	2.312	2.735	20.3	20.6	105 W	75	32*
8	9 13 47.93	+12 24.2	1.755	1.630	34.6	21.4	66 E	38*	47*	1	6 12 12.01	+31 41.8	2.219	2.756	19.2	20.5	113 W	77	32*
8	14 13 57.75	+11 17.3	1.783	1.621	34.2	21.4	64	37*	46*	1	16 12 13.75	+33 9.6	2.136	2.776	17.6	20.4	121 W	78	31
8	19 14 7.83	+10 9.5	1.809	1.612	33.8	21.4	62	36*	45*	1	26 12 12.33	+34 48.2	2.066	2.795	15.8	20.3	129 W	80	29
8	24 14 18.16	+9 0.9	1.833	1.603	33.4	21.4	61 E	35*	45*	1	31 12 10.38	+35 39.3	2.038	2.804	14.9	20.2	133 W	81	28
8	29 14 28.74	+7 51.8	1.856	1.593	32.9	21.4	59 E	34*	44*	2	5 12 7.59	+36 30.0	2.015	2.813	13.9	20.2	137 W	81	28
9	3 14 39.																		

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	20/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
108573 2001 MN₄										175729 1998 BB₁₀									
<i>(continuation)</i>										<i>(continuation)</i>									
5 1	10 51.75	+35 34.6	2.469	2.931	19.2	20.9	107 E	81	28	3 7	10 18.32	+30 17.5	0.551	1.503	17.9	20.8	152 E	75	34
5 6	10 51.62	+34 40.3	2.532	2.936	19.5	20.9	103 E	80	29	3 12	10 10.32	+30 50.5	0.594	1.527	20.8	21.1	147 E	76	33
5 11	10 52.10	+33 44.1	2.597	2.940	19.8	21.0	100 E	78*	30	3 17	10 4.13	+31 5.0	0.641	1.550	23.4	21.4	142 E	76	33
5 16	10 53.17	+32 46.3	2.664	2.945	20.0	21.1	96 E	76*	31	3 22	9 59.72	+31 4.5	0.691	1.572	25.8	21.7	137 E	76	33
5 21	10 54.78	+31 47.3	2.731	2.949	20.1	21.1	92 E	72*	32	3 27	9 56.98	+30 52.2	0.744	1.594	27.8	21.9	132 E	76	33
5 26	10 56.87	+30 47.4	2.798	2.953	20.1	21.2	89 E	68*	33	60187 1999 VL₂₃									
5 31	10 59.40	+29 46.9	2.866	2.956	20.0	21.2	85 E	64*	34	12 27	12 8.06	-25 10.8	1.936	2.071	28.2	19.2	84 W	20	76*
6 5	11 2.32	+28 45.8	2.933	2.960	19.8	21.3	82 E	60*	35	1 6	12 18.13	-26 55.3	1.855	2.102	27.9	19.1	90 W	18	84*
6 10	11 5.62	+27 44.4	3.000	2.963	19.6	21.3	78 E	56*	36	1 16	12 25.81	-28 24.4	1.771	2.134	27.2	19.0	97 W	17	88
6 15	11 9.25	+26 42.8	3.066	2.966	19.3	21.4	75 E	52*	37*	1 26	12 30.73	-29 34.3	1.688	2.165	26.0	18.9	105 W	15	86
6 20	11 13.17	+25 41.0	3.132	2.968	18.9	21.4	71 E	48*	38*	1 31	12 32.04	-30 0.7	1.648	2.180	25.3	18.8	109 W	15	86
6 25	11 17.36	+24 39.2	3.195	2.971	18.5	21.4	68 E	45*	39*	2 5	12 32.55	-30 20.4	1.608	2.196	24.3	18.8	113 W	15	86
6 30	11 21.78	+23 37.5	3.258	2.973	18.0	21.5	65 E	41*	39*	2 10	12 32.23	-30 32.8	1.570	2.211	23.2	18.7	118 W	14	85
7 5	11 26.43	+22 35.8	3.318	2.975	17.5	21.5	62 E	38*	38*	2 15	12 31.06	-30 36.9	1.535	2.227	22.0	18.6	122 W	14	85
1916 Boreas										2 20	12 29.09	-30 32.0	1.502	2.242	20.6	18.6	127 W	14	85
12 27	12 7.61	-1 35.1	2.809	3.025	18.9	20.5	93 W	43	61*	2 25	12 26.36	-30 17.4	1.472	2.257	19.0	18.5	132 W	15	86
1 6	12 11.35	-2 26.1	2.635	2.998	18.7	20.3	102 W	43	66*	3 2	12 22.96	-29 52.5	1.447	2.273	17.4	18.4	137 W	15	86
1 16	12 13.15	-3 8.2	2.465	2.970	17.9	20.2	112 W	42	67	3 7	12 18.98	-29 17.1	1.426	2.288	15.7	18.3	142 W	16	87
1 26	12 12.71	-3 39.6	2.303	2.941	16.6	19.9	122 W	41	68	3 12	12 14.58	-28 31.0	1.410	2.302	13.9	18.3	146 W	16	87
2 5	12 9.81	-3 58.9	2.155	2.910	14.5	19.7	132 W	41	68	3 17	12 9.90	-27 34.7	1.399	2.317	12.2	18.2	150 W	17	88
2 15	12 4.28	-4 4.8	2.024	2.878	11.8	19.4	143 W	41	68	3 22	12 5.13	-26 28.9	1.395	2.332	10.8	18.1	154 W	19	90
2 25	11 56.24	-3 56.6	1.915	2.845	8.4	19.2	155 W	41	68	3 27	12 0.46	-25 15.1	1.397	2.346	9.7	18.1	157 E	20	89
3 7	11 46.09	-3 35.2	1.834	2.810	4.5	18.9	167 W	41	68	4 1	11 56.03	-23 54.9	1.406	2.361	9.2	18.1	158 E	21	88
3 17	11 34.61	-3 3.0	1.782	2.774	1.9	18.6	175 E	42	67	4 6	11 52.01	-22 30.3	1.421	2.375	9.4	18.2	157 E	22	87
3 22	11 28.69	-2 44.3	1.768	2.756	3.3	18.7	171 E	42	67	4 11	11 48.50	-21 3.2	1.443	2.389	10.2	18.2	155 E	24	85
3 27	11 22.86	-2 24.7	1.761	2.737	5.4	18.8	165 E	43	66	4 16	11 45.60	-19 35.8	1.472	2.403	11.4	18.3	152 E	25	84
4 1	11 17.25	-2 5.0	1.762	2.718	7.6	18.8	159 E	43	66	4 21	11 43.37	-18 10.0	1.507	2.417	12.8	18.5	148 E	27	82
4 6	11 11.98	-1 45.9	1.769	2.698	9.7	18.9	153 E	43	66	4 26	11 41.85	-16 47.4	1.548	2.430	14.3	18.6	143 E	28	81
4 16	11 2.95	-1 12.2	1.803	2.658	13.8	19.1	141 E	44	65	5 1	11 41.04	-15 29.3	1.595	2.444	15.8	18.7	139 E	30	79
4 26	10 56.46	-0 48.1	1.858	2.617	17.2	19.2	130 E	44	65	5 6	11 40.92	-14 16.8	1.646	2.457	17.2	18.8	134 E	31	78
5 6	10 52.80	-0 36.6	1.928	2.575	20.0	19.4	119 E	44	65	5 16	11 42.65	-12 10.4	1.763	2.483	19.5	19.1	125 E	33	76
5 16	10 51.98	-0 38.8	2.009	2.531	22.1	19.5	109 E	44*	65	5 26	11 46.78	-10 30.8	1.894	2.509	21.3	19.3	116 E	34*	75
5 26	10 53.86	-0 55.2	2.095	2.485	23.6	19.6	100 E	40*	65	6 5	11 52.93	-9 17.1	2.035	2.533	22.4	19.5	108 E	33*	73
6 5	10 58.17	-1 25.3	2.182	2.439	24.6	19.7	92 E	35*	65	6 15	12 0.78	-8 26.9	2.183	2.557	23.1	19.7	100 E	30*	72
6 15	11 4.64	-2 8.4	2.268	2.391	25.0	19.7	84 E	29*	66*	6 25	12 10.02	-7 57.4	2.335	2.580	23.2	19.9	92 E	27*	72
6 25	11 13.01	-3 3.9	2.348	2.342	25.0	19.8	77 E	23*	65*	7 5	12 20.40	-7 45.3	2.488	2.602	22.9	20.0	85 E	24*	71*
7 5	11 23.06	-4 10.7	2.422	2.292	24.7	19.8	70 E	18*	62*	7 15	12 31.72	-7 47.7	2.640	2.623	22.3	20.2	78 E	21*	68*
7 15	11 34.63	-5 28.2	2.488	2.240	24.1	19.8	64 E	14*	57*	7 25	12 43.82	-8 2.1	2.789	2.644	21.3	20.3	71 E	18*	64*
7 25	11 47.58	-6 55.4	2.545	2.188	23.3	19.7	58 E	10*	52*	8 4	12 56.57	-8 25.8	2.933	2.663	20.2	20.4	65 E	16*	58*
8 4	12 1.81	-8 31.5	2.591	2.134	22.2	19.7	53 E	7*	47*	8 14	13 9.88	-8 56.8	3.071	2.682	18.8	20.4	58 E	14*	52*
8 14	12 17.30	-10 15.6	2.627	2.079	21.0	19.6	47 E	4*	41*	8 24	13 23.67	-9 33.4	3.200	2.700	17.2	20.5	52 E	12*	46*
8 24	12 34.03	-12 6.8	2.652	2.024	19.7	19.5	42 E	2*	36*	9 3	13 37.87	-10 13.6	3.319	2.717	15.5	20.5	46 E	10*	40*
9 3	12 52.02	-14 3.9	2.666	1.967	18.3	19.4	38 E	—	31*	9 13	13 52.44	-10 56.1	3.428	2.733	13.7	20.5	40 E	9*	34*
9 13	13 11.37	-16 5.8	2.670	1.911	16.8	19.3	33 E	—	27*	9 23	14 7.34	-11 39.4	3.525	2.748	11.7	20.5	34 E	8*	28*
9 23	13 32.16	-18 10.7	2.664	1.853	15.3	19.2	29 E	—	22*	10 3	14 22.52	-12 22.3	3.608	2.762	9.7	20.5	28 E	6*	22*
10 3	13 54.51	-20 16.7	2.649	1.796	13.8	19.1	25 E	—	18*	10 13	14 37.96	-13 3.5	3.678	2.776	7.7	20.5	22 E	5*	15*
10 13	14 18.59	-22 21.4	2.626	1.739	12.2	18.9	22 E	—	15*	10 23	14 53.62	-13 42.0	3.732	2.788	5.6	20.4	16 E	3*	9*
10 23	14 44.56	-24 21.7	2.596	1.682	10.8	18.8	18 E	—	11*	11 2	15 9.44	-14 16.7	3.772	2.799	3.5	20.4	10 E	1*	3*
11 2	15 12.58	-26 13.8	2.560	1.625	9.4	18.6	16 E	—	8*	11 12	15 25.39	-14 46.6	3.795	2.810	1.8	20.3	5 E	—	—
11 12	15 42.80	-27 53.0	2.519	1.571	8.1	18.5	13 E	—	6*	11 22	15 41.40	-15 10.9	3.802	2.819	1.8	20.3	5 W	—	—
11 22	16 15.26	-29 14.0	2.476	1.518	7.0	18.3	11 E	—	4*	12 2	15 57.42	-15 28.7	3.792	2.828	3.6	20.4	10 W	4*	—
11 27	16 32.32	-29 45.8	2.454	1.492	6.6	18.2	10 E	—	3*	12 12	16 13.37	-15 39.4	3.766	2.836	5.7	20.5	16 W	9*	3*
12 2	16 49.91	-30 10.8	2.432	1.467	6.2	18.1	9 E	—	2*	12 22	16 29.17	-15 42.2	3.724	2.842	7.7	20.6	23 W	13*	9*
12 7	17 7.99	-30 28.2	2.410	1.443	5.8	18.1	9 E	—	1*	1 1	16 44.71	-15 36.6	3.666	2.848	9.7	20.6	29 W	17*	16*
12 12	17 26.52	-30 37.3	2.389	1.420	5.5	18.0	8 E	—	—	1 11	16 59.91	-15 22.1	3.594	2.853	11.6	20.7	36 W	20*	23*
12 17	17 45.43	-30 37.3	2.368	1.398	5.3	17.9	7 E	—	—	1 21	17 14.63	-14 58.5	3.507	2.857	13.4	20.7	42 W	23*	30*
12 22	18 4.65	-30 27.8	2.348	1.377	5.1	17.9	7 E	—	—	108516 2001 KR₇₅									
12 27	18 24.12	-30 8.1	2.328	1.357	4.9	17.8	7 E	—	—	12 27	12 8.52	-21 35.7	2.957	3.031	18.9	20.3	85 W	23	75*
1 1	18 43.73	-29 38.1	2.311	1.339	4.8	17.8	7 W	—	—	1 6	12 12.09	-23 26.1	2.828	3.041	18.8	20.2	93 W	22	85*
1 6	19 3.41	-28 57.4	2.294	1.322	4.8	17.7	6 W	—	—	1 16	12 13.62	-25 10.4	2.701	3.051	18.4	20.1	101 W	20	89
1 11	19 23.07	-28 6.2	2.279	1.306	4.8	17.7	6 W	—	—	1 26	12 12.85	-26 45.4	2.579	3.059	17.6	20.0	110 W	18	89
1 16	19 42.61	-27 4.5	2.266	1.292	4.8	17.6	6 W	—	—	2 5	12 9.59	-28 7.5	2.467	3.066	16.4	19.9	119 W	17	88
1 21	20 1.96	-25 52.7	2.254	1.280	4.8														

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°-26°	20/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°-26°
108516 2001 KR₇₅ (continuation)									321025 2008 ME₁ (continuation)								
5 16	10 57.47	-22 56.7	2.491	3.080	17.1	19.9	117 E	22* 87	9 23	18 1.72	-36 0.8	1.176	1.552	40.3	18.6	90 E	9* 79*
5 26	10 59.50	-21 55.1	2.601	3.076	18.2	20.1	108 E	20* 86	9 28	18 18.59	-33 55.7	1.230	1.575	39.5	18.7	89 E	11* 80*
6 5	11 3.62	-21 7.6	2.719	3.071	19.0	20.2	101 E	18* 85	10 3	18 34.44	-31 53.1	1.286	1.598	38.7	18.8	88 E	13* 80*
6 15	11 9.57	-20 34.8	2.840	3.064	19.3	20.3	93 E	14* 84*	10 8	18 49.39	-29 53.7	1.346	1.622	37.9	18.9	86 E	15* 80*
6 25	11 17.07	-20 16.7	2.962	3.057	19.4	20.4	86 E	10* 80*	10 13	19 3.55	-27 58.0	1.409	1.647	37.1	19.0	85 E	17* 78*
7 5	11 25.90	-20 12.5	3.082	3.049	19.1	20.4	79 E	6* 72*	10 18	19 17.02	-26 6.1	1.475	1.672	36.2	19.1	83 E	19* 77*
7 15	11 35.88	-20 21.2	3.199	3.039	18.5	20.5	72 E	3* 65*	10 23	19 29.88	-24 18.0	1.543	1.699	35.3	19.2	81 E	21* 74*
7 25	11 46.84	-20 41.5	3.309	3.029	17.7	20.5	65 E	— 58*	11 2	19 54.08	-20 52.6	1.684	1.752	33.5	19.4	77 E	24* 68*
8 4	11 58.65	-21 12.2	3.412	3.018	16.8	20.6	59 E	— 51*	11 12	20 16.66	-17 40.3	1.832	1.808	31.6	19.6	73 E	27* 62*
8 14	12 11.22	-21 52.0	3.505	3.005	15.6	20.6	53 E	— 44*	11 22	20 37.97	-14 38.9	1.984	1.865	29.5	19.8	69 E	30* 55*
8 24	12 24.47	-22 39.7	3.588	2.992	14.3	20.6	47 E	— 38*	12 2	20 58.26	-11 46.3	2.138	1.922	27.5	20.0	64 E	33* 48*
9 3	12 38.34	-23 34.1	3.660	2.977	12.9	20.5	41 E	— 31*	12 12	21 17.74	-9 0.7	2.292	1.980	25.3	20.1	59 E	34* 41*
9 13	12 52.79	-24 34.1	3.719	2.962	11.5	20.5	36 E	— 25*	12 22	21 36.53	-6 20.4	2.444	2.039	23.2	20.3	55 E	36* 34*
9 23	13 7.78	-25 38.5	3.766	2.945	10.0	20.5	31 E	— 20*	1 1	21 54.76	-3 44.4	2.593	2.097	21.0	20.4	50 E	36* 27*
10 3	13 23.29	-26 46.2	3.798	2.928	8.5	20.4	26 E	— 14*	1 11	22 12.50	-1 11.8	2.736	2.156	18.8	20.5	45 E	34* 20*
10 13	13 39.31	-27 56.2	3.817	2.909	7.1	20.4	21 E	— 9*	1 21	22 29.81	+ 1 18.2	2.874	2.214	16.6	20.6	40 E	32* 15*
10 23	13 55.81	-29 7.5	3.821	2.890	6.1	20.3	18 E	— 4*	3392 Setouchi								
11 2	14 12.78	-30 19.0	3.810	2.869	5.5	20.2	16 W	— 5*	12 27	12 11.25	-31 45.1	1.363	1.542	38.9	17.0	80 W	13 74*
11 12	14 30.20	-31 29.7	3.784	2.848	5.6	20.2	16 W	— 8*	1 1	12 21.83	-34 13.0	1.339	1.545	39.0	16.9	82 W	11 76*
11 22	14 48.04	-32 38.8	3.744	2.825	6.4	20.2	19 W	— 12*	1 6	12 32.34	-36 37.2	1.315	1.549	39.1	16.9	83 W	8 76*
12 2	15 6.27	-33 45.1	3.689	2.802	7.7	20.2	22 W	— 16*	1 11	12 42.72	-38 57.3	1.292	1.554	39.1	16.9	85 W	6 76*
12 12	15 24.85	-34 48.1	3.620	2.777	9.2	20.2	27 W	— 21*	1 16	12 52.94	-41 12.6	1.270	1.559	39.0	16.8	87 W	4 74*
12 22	15 43.70	-35 46.8	3.537	2.752	10.9	20.2	32 W	1* 26*	1 21	13 2.95	-43 22.6	1.248	1.566	38.9	16.8	88 W	2 73*
1 1	16 2.76	-36 40.6	3.442	2.725	12.6	20.2	37 W	3* 31*	1 26	13 12.70	-45 26.8	1.227	1.573	38.8	16.8	90 W	— 71
1 11	16 21.93	-37 29.1	3.334	2.698	14.4	20.2	43 W	3* 37*	1 31	13 22.10	-47 24.7	1.206	1.580	38.5	16.7	92 W	— 69
1 21	16 41.08	-38 11.8	3.216	2.670	16.1	20.1	49 W	4* 43*	2 5	13 31.08	-49 16.2	1.185	1.589	38.3	16.7	94 W	— 67
321025 2008 ME₁									2 10	13 39.51	-51 0.7	1.164	1.598	37.9	16.7	96 W	— 65
12 27	12 8.86	-6 27.5	2.022	2.261	25.8	20.2	91 W	39 65*	2 15	13 47.27	-52 37.8	1.143	1.608	37.5	16.6	98 W	— 63
1 6	12 17.01	-9 24.7	1.842	2.203	26.2	19.9	98 W	36 72*	2 20	13 54.21	-54 7.0	1.122	1.619	37.0	16.6	100 W	— 62
1 16	12 23.56	-12 35.6	1.666	2.145	26.3	19.7	105 W	32 77	2 25	14 0.20	-55 27.9	1.101	1.630	36.4	16.6	102 W	— 61
1 26	12 28.00	-16 2.5	1.500	2.087	25.8	19.4	113 W	29 80	3 2	14 5.10	-56 40.0	1.080	1.642	35.7	16.5	105 W	— 59
2 5	12 29.74	-19 47.6	1.346	2.028	24.9	19.0	120 W	25 84	3 7	14 8.73	-57 42.6	1.060	1.654	34.9	16.5	107 W	— 58
2 15	12 27.95	-23 51.1	1.206	1.970	23.4	18.7	127 W	21 88	3 12	14 10.96	-58 34.8	1.040	1.667	34.0	16.4	110 W	— 57
2 20	12 25.45	-25 58.9	1.143	1.941	22.6	18.5	131 W	19 90	3 17	14 11.67	-59 15.4	1.020	1.680	33.0	16.4	113 W	— 56
2 25	12 21.73	-28 9.7	1.085	1.912	21.8	18.3	134 W	17 88	3 22	14 10.85	-59 43.2	1.001	1.694	31.9	16.3	116 W	— 56
3 2	12 16.69	-30 22.1	1.032	1.883	21.0	18.2	137 W	15 86	3 27	14 8.55	-59 56.7	0.984	1.708	30.7	16.2	119 W	— 56
3 7	12 10.23	-32 34.1	0.985	1.854	20.4	18.0	139 W	12 83	4 1	14 4.92	-59 54.5	0.968	1.723	29.4	16.2	122 W	— 56
3 12	12 2.32	-34 43.0	0.943	1.826	20.0	17.9	141 W	10 81	4 6	14 0.20	-59 35.5	0.954	1.737	28.0	16.1	126 W	— 56
3 17	11 52.98	-36 45.9	0.908	1.798	20.0	17.8	142 W	8 79	4 11	13 54.74	-58 58.2	0.942	1.753	26.5	16.1	129 W	— 57
3 22	11 42.37	-38 39.6	0.878	1.770	20.5	17.7	142 E	6 77	4 16	13 48.95	-58 2.3	0.932	1.768	25.0	16.0	132 W	— 58
3 27	11 30.74	-40 21.3	0.854	1.743	21.4	17.6	140 E	5 76	4 21	13 43.26	-56 47.9	0.927	1.784	23.5	16.0	135 E	— 59
4 1	11 18.44	-41 48.7	0.836	1.716	22.8	17.6	138 E	3 74	4 26	13 38.08	-55 16.2	0.925	1.800	22.1	16.0	138 E	— 61
4 6	11 5.90	-43 0.4	0.822	1.689	24.5	17.6	136 E	2 73	5 1	13 33.69	-53 29.2	0.927	1.817	21.0	16.0	140 E	— 63
4 11	10 53.64	-43 56.0	0.813	1.663	26.4	17.5	132 E	1 72	5 6	13 30.29	-51 29.5	0.933	1.833	20.1	16.0	141 E	— 65
4 16	10 42.17	-44 36.8	0.808	1.638	28.4	17.6	129 E	— 71	5 11	13 27.98	-49 20.1	0.945	1.850	19.5	16.0	142 E	— 67
4 21	10 31.93	-45 5.0	0.806	1.613	30.4	17.6	126 E	— 71	5 16	13 26.81	-47 4.5	0.961	1.866	19.4	16.0	142 E	— 69
4 26	10 23.24	-45 23.4	0.807	1.589	32.4	17.6	122 E	— 71	5 21	13 26.77	-44 46.3	0.983	1.883	19.6	16.1	141 E	— 71
5 1	10 16.30	-45 34.9	0.809	1.566	34.3	17.6	119 E	— 70	5 26	13 27.77	-42 28.9	1.011	1.900	20.1	16.2	140 E	3 74
5 6	10 11.25	-45 42.4	0.813	1.544	36.1	17.7	115 E	— 70	5 31	13 29.72	-40 15.1	1.043	1.917	20.9	16.3	138 E	5 76
5 11	10 8.13	-45 48.2	0.818	1.523	37.8	17.7	112 E	— 70	6 5	13 32.50	-38 7.0	1.080	1.935	21.8	16.5	135 E	7 78
5 16	10 6.94	-45 54.8	0.823	1.504	39.3	17.7	110 E	— 70	6 10	13 36.05	-36 6.3	1.122	1.952	22.8	16.6	132 E	9 80
5 21	10 7.65	-46 3.9	0.828	1.485	40.6	17.7	107 E	— 70	6 15	13 40.26	-34 14.2	1.169	1.969	23.8	16.7	128 E	11* 82
5 26	10 10.19	-46 16.7	0.832	1.467	41.8	17.8	105 E	— 70	6 20	13 45.05	-32 31.6	1.220	1.986	24.8	16.9	125 E	12* 83
5 31	10 14.51	-46 33.9	0.836	1.451	42.9	17.8	103 E	— 69*	6 25	13 50.35	-30 58.5	1.275	2.003	25.6	17.0	122 E	13* 85
6 5	10 20.60	-46 55.9	0.839	1.437	43.8	17.8	101 E	— 69*	7 5	14 2.18	-28 20.2	1.394	2.038	27.0	17.3	114 E	15* 88
6 10	10 28.46	-47 22.8	0.842	1.424	44.7	17.8	100 E	— 68*	7 15	14 15.35	-26 16.0	1.524	2.072	27.9	17.5	108 E	15* 90
6 15	10 38.12	-47 54.4	0.843	1.412	45.4	17.8	98 E	— 67*	7 25	14 29.56	-24 41.2	1.663	2.105	28.3	17.8	101 E	16* 89
6 20	10 49.61	-48 30.1	0.844	1.403	45.9	17.8	97 E	— 66*	8 4	14 44.56	-23 30.0	1.808	2.139	28.2	18.0	94 E	16* 87*
6 25	11 2.98	-49 9.1	0.845	1.395	46.4	17.8	97 E	— 65*	8 14	15 0.22	-22 37.4	1.957	2.171	27.8	18.2	88 E	16* 82*
6 30	11 18.31	-49 49.8	0.845	1.388	46.7	17.8	96 E	— 64*	8 24	15 16.41	-21 58.9	2.108	2.204	27.0	18.3	82 E	16* 76*
7 5	11 35.67	-50 30.2	0.845	1.384	47.0	17.8	96 E	— 63*	9 3	15 33.04	-21 30.4	2.258	2.235	25.9	18.5	76 E	16* 70*
7 10	11 55.13	-51 8.3	0.846	1.382	47.1	17.8	95 E	— 62*	9 13	15 50.05	-21 8.5	2.407	2.266	24.6	18.6	70 E	16* 64*
7 15	12 16.70	-51 41.4	0.847	1.381	47.1	17.8	95 E	— 62*	9 23	16 7.37	-20 50.5	2.553	2.296	23.1	18.7	64 E	16* 58*
7 20	12 40.30	-52 6.6	0.850	1.382	47.1	17.8	95 E	— 61*	10 3	16 24.95	-20 33.8	2.693	2.325	21.4	18.8	58 E	16* 52*
7 25	13 5.71	-52 20.6	0.854	1.385	46.9	17.8											

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
221674 2007 DY₁										152941 2000 FM₁₀									
<i>(continuation)</i>										<i>(continuation)</i>									
2 10	12 28.46	+10 24.9	1.193	2.032	19.2	19.5	137 W	55	54	3 22	9 18.10	+26 16.0	1.202	2.009	21.7	20.6	132 E	71	38
2 15	12 25.65	+10 49.6	1.176	2.052	16.9	19.4	143 W	56	53	3 27	9 15.22	+25 46.5	1.280	2.038	23.2	20.8	127 E	71	38
2 20	12 21.94	+11 16.2	1.163	2.071	14.5	19.3	148 W	56	53	4 1	9 13.59	+25 14.8	1.360	2.067	24.3	21.0	122 E	70	39
2 25	12 17.45	+11 43.6	1.155	2.091	12.0	19.2	154 W	57	52	4 6	9 13.05	+24 41.4	1.443	2.094	25.2	21.2	117 E	70	39
3 2	12 12.32	+12 10.4	1.153	2.110	9.5	19.2	159 W	57	52	4 11	9 13.47	+24 6.8	1.528	2.121	25.9	21.3	112 E	69	40
3 7	12 6.70	+12 35.3	1.158	2.130	7.3	19.1	164 W	58	51	4 16	9 14.72	+23 31.3	1.614	2.146	26.4	21.5	108 E	69	40
3 12	12 0.80	+12 57.2	1.168	2.149	5.7	19.1	168 W	58	51	506459 2002 AL₁₄									
3 17	11 54.82	+13 14.9	1.185	2.168	5.5	19.1	168 W	58	51	12 27	12 12.25	- 7 5.0	0.510	1.106	62.8	18.8	90 W	38	65*
3 22	11 48.99	+13 27.5	1.209	2.187	6.6	19.2	165 E	58	51	1 1	12 27.62	- 5 6.8	0.489	1.114	61.9	18.7	92 W	40	65*
3 27	11 43.50	+13 34.6	1.238	2.206	8.4	19.4	161 E	59	50	1 6	12 43.20	- 2 49.8	0.468	1.122	60.9	18.6	95 W	42	64*
4 6	11 34.12	+13 31.6	1.316	2.244	12.5	19.7	151 E	59	50	1 11	12 58.96	- 0 12.0	0.448	1.129	59.8	18.5	97 W	45	62*
4 16	11 27.53	+13 7.1	1.416	2.282	16.2	20.0	141 E	58	51	1 16	13 14.86	+ 2 48.1	0.429	1.136	58.7	18.3	99 W	48	60*
4 26	11 24.07	+12 24.1	1.533	2.318	19.2	20.3	131 E	57	52	1 26	13 46.90	+ 9 56.1	0.397	1.148	56.3	18.1	104 W	55	54*
5 6	11 23.60	+11 26.3	1.665	2.354	21.4	20.6	121 E	56	53	2 5	14 18.87	+18 23.5	0.375	1.157	54.3	18.0	108 W	63	46*
5 16	11 25.81	+10 17.3	1.808	2.390	22.9	20.9	113 E	55*	54	2 15	14 49.93	+27 37.9	0.364	1.163	53.0	17.9	110 W	73	36
5 26	11 30.30	+ 8 59.5	1.958	2.425	23.8	21.1	105 E	52*	55	2 20	15 4.78	+32 17.3	0.364	1.166	52.7	17.9	110 W	77	32
6 5	11 36.67	+ 7 35.3	2.113	2.458	24.2	21.3	97 E	47*	56	2 25	15 19.01	+36 49.4	0.365	1.167	52.8	17.9	110 W	82	27
6 15	11 44.58	+ 6 5.9	2.272	2.491	24.1	21.5	90 E	41*	58	3 2	15 32.46	+41 9.2	0.370	1.168	53.1	17.9	110 W	86	23
380359 2002 TN₃₀										3 7	15 44.96	+45 13.2	0.376	1.168	53.6	18.0	109 W	90	19
12 27	12 11.47	+58 41.3	0.551	1.290	45.2	18.0	111 W	76	4*	3 12	15 56.32	+48 59.0	0.384	1.168	54.2	18.0	108 W	86	15
1 1	12 26.40	+58 13.6	0.544	1.289	45.0	18.0	112 W	77	5*	3 17	16 6.32	+52 25.3	0.392	1.167	55.0	18.1	106 W	83	12
1 6	12 38.20	+57 43.6	0.537	1.290	44.6	17.9	113 W	77	6*	3 22	16 14.79	+55 31.8	0.402	1.165	55.8	18.2	105 W	79	8
1 11	12 46.84	+57 12.8	0.531	1.293	44.0	17.9	114 W	78	7*	3 27	16 21.59	+58 18.9	0.411	1.162	56.7	18.2	103 W	77	6
1 16	12 52.32	+56 41.4	0.524	1.298	43.2	17.8	115 W	78	7*	4 1	16 26.53	+60 47.6	0.420	1.159	57.6	18.3	102 W	74	3
1 21	12 54.67	+56 8.4	0.518	1.305	42.1	17.8	117 W	79	8	4 6	16 29.43	+62 59.2	0.428	1.156	58.5	18.4	100 W	72	1
1 26	12 53.95	+55 32.4	0.512	1.314	40.8	17.7	119 W	79	8	4 11	16 30.08	+64 54.2	0.435	1.151	59.4	18.4	99 W	70	—
1 31	12 50.28	+54 50.9	0.507	1.324	39.2	17.7	122 W	80	9	4 16	16 28.35	+66 32.8	0.441	1.146	60.3	18.5	97 W	68	—
2 5	12 43.84	+54 0.9	0.502	1.336	37.4	17.6	125 W	81	10	4 26	16 17.77	+69 1.3	0.447	1.134	62.2	18.5	95 W	66	—
2 10	12 34.93	+52 58.5	0.499	1.350	35.4	17.6	128 W	82	11	5 6	15 58.69	+70 25.3	0.446	1.120	64.2	18.6	92 W	65	—
2 15	12 24.02	+51 39.9	0.498	1.366	33.2	17.6	131 W	83	12	5 16	15 33.92	+70 42.1	0.437	1.103	66.4	18.6	90 W	64	—
2 17	12 19.25	+51 3.0	0.498	1.372	32.3	17.5	132 W	84	13	5 18	15 28.70	+70 37.3	0.434	1.100	66.9	18.6	90 E	64	—
2 19	12 14.32	+50 22.9	0.499	1.379	31.4	17.5	133 W	85	14	5 20	15 23.48	+70 29.7	0.431	1.096	67.4	18.5	89 E	65	—
2 21	12 9.27	+49 39.3	0.500	1.386	30.5	17.5	135 W	85	14	5 22	15 18.30	+70 19.5	0.427	1.093	67.9	18.5	89 E	65	—
2 23	12 4.16	+48 52.2	0.501	1.393	29.6	17.5	136 W	86	15	5 24	15 13.19	+70 6.7	0.423	1.089	68.4	18.5	89 E	65	—
2 25	11 59.03	+48 1.6	0.503	1.401	28.8	17.5	137 W	87	16	5 26	15 8.17	+69 51.3	0.419	1.085	68.9	18.5	88 E	65	—
2 27	11 53.93	+47 7.7	0.506	1.409	27.9	17.5	138 W	88	17	5 28	15 3.25	+69 33.4	0.414	1.081	69.5	18.5	88 E	65	—
3 1	11 48.91	+46 10.4	0.509	1.416	27.1	17.5	139 W	89	18	5 30	14 58.46	+69 13.0	0.409	1.077	70.1	18.5	88 E	66	—
3 3	11 44.00	+45 10.0	0.513	1.424	26.4	17.5	140 W	90	19	6 1	14 53.80	+68 50.0	0.404	1.074	70.6	18.5	87 E	66	—
3 5	11 39.24	+44 6.7	0.518	1.433	25.7	17.5	141 W	89	20	6 3	14 49.28	+68 24.5	0.398	1.070	71.3	18.4	87 E	67	—
3 7	11 34.65	+43 0.8	0.523	1.441	25.1	17.5	142 W	88	21	6 5	14 44.91	+67 56.3	0.392	1.066	71.9	18.4	87 E	67	—
3 12	11 24.14	+40 6.1	0.540	1.463	23.9	17.6	143 E	85	24	6 10	14 34.69	+66 34.5	0.375	1.055	73.6	18.4	86 E	68	—
3 17	11 15.21	+37 1.5	0.562	1.485	23.4	17.7	144 E	82	27	6 15	14 25.43	+64 55.6	0.356	1.045	75.5	18.3	85 E	70	—
3 22	11 8.01	+33 52.4	0.588	1.509	23.3	17.8	143 E	79	30	6 20	14 17.01	+62 58.5	0.335	1.034	77.6	18.2	84 E	72*	1
3 27	11 2.52	+30 43.9	0.620	1.533	23.8	18.0	142 E	76	33	6 25	14 9.12	+60 40.9	0.312	1.023	79.9	18.1	82 E	74*	3
4 1	10 58.64	+27 39.9	0.657	1.558	24.6	18.2	139 E	73	36	6 27	14 6.03	+59 39.3	0.303	1.019	81.0	18.1	82 E	74*	4
4 6	10 56.22	+24 43.3	0.698	1.584	25.6	18.4	137 E	70	39	6 29	14 2.95	+58 33.3	0.293	1.015	82.0	18.0	81 E	74*	5
4 11	10 55.10	+21 55.7	0.744	1.610	26.7	18.6	134 E	67	42	7 1	13 59.84	+57 22.4	0.283	1.011	83.2	18.0	81 E	74*	7
4 16	10 55.14	+19 18.0	0.795	1.636	27.7	18.8	131 E	64	45	7 3	13 56.69	+56 6.2	0.273	1.006	84.4	18.0	80 E	74*	8
4 21	10 56.20	+16 50.1	0.849	1.663	28.7	19.0	127 E	62	47	7 5	13 53.47	+54 43.9	0.263	1.002	85.7	17.9	79 E	73*	9
4 26	10 58.14	+14 31.8	0.907	1.691	29.5	19.2	124 E	60	49	7 7	13 50.16	+53 14.8	0.253	0.998	87.1	17.9	79 E	73*	11
5 1	11 0.82	+12 22.6	0.968	1.718	30.2	19.4	121 E	57	52	7 9	13 46.73	+51 37.9	0.242	0.994	88.5	17.8	78 E	71*	12
5 6	11 4.15	+10 21.6	1.032	1.746	30.8	19.6	118 E	55	54	7 11	13 43.15	+49 52.3	0.232	0.989	90.1	17.8	77 E	70*	14
5 11	11 8.03	+ 8 28.1	1.098	1.774	31.2	19.8	114 E	53	56	7 13	13 39.39	+47 56.8	0.221	0.985	91.8	17.7	76 E	68*	16
5 16	11 12.41	+ 6 41.2	1.168	1.802	31.5	20.0	111 E	51*	57	7 15	13 35.42	+45 49.8	0.211	0.981	93.6	17.7	74 E	66*	18
5 26	11 22.37	+ 3 24.2	1.313	1.858	31.7	20.3	105 E	46*	61	7 17	13 31.19	+43 29.7	0.201	0.977	95.5	17.7	73 E	64*	21
6 5	11 33.60	+ 0 25.6	1.465	1.914	31.5	20.6	99 E	40*	64	7 19	13 26.66	+40 54.7	0.191	0.973	97.6	17.7	72 E	61*	23*
6 15	11 45.82	- 2 18.9	1.622	1.971	31.0	20.9	94 E	34*	66	7 21	13 21.78	+38 2.6	0.181	0.969	99.9	17.6	70 E	58*	26*
6 25	11 58.82	- 4 52.4	1.783	2.026	30.1	21.1	88 E	28*	69	7 23	13 16.52	+34 51.0	0.171	0.965	102.3	17.6	68 E	55*	28*
7 5	12 12.43	- 7 17.0	1.947	2.081	29.0	21.3	83 E	23*	70*	7 25	13 10.83	+31 17.4	0.162	0.962	105.0	17.7	66 E	51*	31*
152941 2000 FM₁₀										7 27	13 4.66	+27 19.5	0.154	0.958	107.7	17.7	64 E	46*	34*
12 27	12 11.51	+14 59.7	0.732	1.311	47.9	19.3	99 W	60	46*	7 29	12 57.99	+22 55.7	0.147	0.954	110.7	17.7	62 E	42*	37*
1 1	12 7.20	+16 0.3	0.726	1.363	44.2	19.3	105 W	61	47*	7 31	12 50.78	+18 5.1	0.140	0.951					

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	20/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
506459 2002 AL₁₄										3920 Aubignan									
<i>(continuation)</i>										<i>(continuation)</i>									
8 16	11 33.33	-26 47.0	0.140	0.926	124.6	18.6	49 E	—	35*	6 5	11 27.09	+13 45.8	2.599	2.834	21.0	18.4	93 E	52*	50
8 18	11 21.70	-31 9.4	0.147	0.924	123.5	18.6	50 E	—	32*	6 15	11 33.01	+12 42.9	2.727	2.825	21.0	18.5	85 E	45*	51
8 20	11 9.93	-34 58.4	0.154	0.922	122.0	18.6	51 E	—	28*	6 25	11 40.43	+11 32.3	2.852	2.816	20.7	18.5	78 E	39*	52*
8 22	10 58.16	-38 15.0	0.163	0.920	120.3	18.5	52 E	—	25*	7 5	11 49.10	+10 15.4	2.972	2.805	20.0	18.6	71 E	33*	52*
8 24	10 46.52	-41 1.5	0.172	0.918	118.6	18.5	53 E	—	22*	7 15	11 58.86	+ 8 53.2	3.086	2.794	19.1	18.6	64 E	29*	50*
8 26	10 35.17	-43 20.7	0.182	0.916	116.8	18.5	54 E	—	19*	7 25	12 9.55	+ 7 26.7	3.191	2.781	18.0	18.7	58 24*	46*	
8 28	10 24.22	-45 15.7	0.192	0.914	115.0	18.5	55 W	—	17*	8 4	12 21.03	+ 5 56.8	3.287	2.768	16.6	18.7	51 E	21*	42*
8 30	10 13.78	-46 49.8	0.202	0.913	113.3	18.5	56 W	—	20*	8 14	12 33.24	+ 4 24.3	3.372	2.754	15.1	18.7	45 E	18*	37*
9 1	10 3.94	-48 5.8	0.213	0.911	111.6	18.5	57 W	—	23*	8 24	12 46.07	+ 2 50.0	3.446	2.739	13.5	18.7	39 E	15*	32*
9 3	9 54.76	-49 6.5	0.224	0.910	110.0	18.5	58 W	—	26*	9 3	12 59.47	+ 1 14.6	3.507	2.722	11.8	18.6	33 E	12*	26*
9 5	9 46.27	-49 54.2	0.235	0.909	108.5	18.5	59 W	—	28*	9 13	13 13.41	+ 0 21.2	3.555	2.705	10.0	18.6	28 E	10*	20*
9 7	9 38.49	-50 30.9	0.246	0.908	107.0	18.5	60 W	—	31*	9 23	13 27.84	+ 1 56.7	3.590	2.687	8.1	18.5	22 E	8*	15*
9 9	9 31.43	-50 58.3	0.256	0.908	105.6	18.6	60 W	—	33*	10 3	13 42.73	+ 3 31.1	3.611	2.668	6.2	18.4	17 E	6*	9*
9 11	9 25.06	-51 18.0	0.267	0.907	104.3	18.6	61 W	—	34*	10 13	13 58.07	+ 5 3.6	3.618	2.649	4.4	18.3	12 E	4*	3*
9 13	9 19.37	-51 31.2	0.278	0.907	103.0	18.6	61 W	—	36*	10 23	14 13.84	+ 6 33.4	3.611	2.628	2.9	18.2	8 E	2*	—
9 15	9 14.33	-51 38.8	0.288	0.907	101.7	18.6	62 W	—	38*	11 2	14 30.01	+ 7 59.8	3.589	2.606	2.5	18.1	7 E	—	—
9 17	9 9.91	-51 41.8	0.299	0.907	100.5	18.6	62 W	—	39*	11 12	14 46.57	+ 9 22.0	3.554	2.584	3.7	18.2	10 W	4*	—
9 19	9 6.08	-51 40.9	0.309	0.907	99.4	18.6	63 W	—	41*	11 22	15 3.48	+10 39.2	3.505	2.561	5.6	18.2	15 W	8*	—
9 21	9 2.81	-51 36.9	0.318	0.907	98.3	18.6	63 W	—	42*	12 2	15 20.73	+11 50.6	3.442	2.536	7.6	18.2	20 W	13*	4*
9 23	9 0.07	-51 30.1	0.328	0.908	97.2	18.7	64 W	—	44*	12 12	15 38.27	+12 55.6	3.366	2.511	9.6	18.3	25 W	16*	10*
9 25	8 57.81	-51 21.3	0.337	0.909	96.2	18.7	64 W	—	45*	12 22	15 56.04	+13 53.3	3.279	2.486	11.7	18.3	31 W	19*	16*
9 27	8 56.01	-51 10.6	0.346	0.910	95.2	18.7	65 W	—	46*	1 1	16 14.00	+14 43.4	3.180	2.459	13.7	18.3	36 W	21*	22*
9 29	8 54.62	-50 58.6	0.354	0.911	94.3	18.7	65 W	—	47*	1 11	16 32.07	+15 25.3	3.070	2.432	15.7	18.2	42 W	23*	29*
10 1	8 53.61	-50 45.4	0.362	0.912	93.4	18.7	65 W	—	48*	1 21	16 50.15	+15 58.7	2.952	2.404	17.7	18.2	48 W	24*	36*
10 3	8 52.96	-50 31.3	0.370	0.914	92.5	18.7	66 W	—	49*	392022 2009 BA₂									
10 8	8 52.66	-49 53.2	0.387	0.918	90.4	18.8	67 W	—	52*	12 27	12 12.69	+10 8.3	1.315	1.728	34.4	21.3	96 W	55	50*
10 13	8 53.97	-49 12.4	0.402	0.924	88.5	18.8	68 W	—	54*	1 6	12 32.03	+11 26.4	1.207	1.714	34.1	21.1	102 W	56	51*
10 18	8 56.59	-48 29.9	0.413	0.930	86.8	18.8	69 W	—	56*	1 16	12 50.47	+13 21.1	1.106	1.700	33.3	20.9	109 W	58	51*
10 23	9 0.31	-47 46.7	0.422	0.937	85.2	18.8	70 W	—	58*	1 26	13 7.59	+15 56.7	1.015	1.685	32.0	20.6	115 W	61	48
10 28	9 4.91	-47 3.3	0.427	0.945	83.7	18.8	71 W	—	60*	2 5	13 22.92	+19 14.9	0.935	1.672	30.4	20.4	121 W	64	45
11 2	9 10.20	-46 19.9	0.429	0.954	82.3	18.7	72 W	—	62*	2 10	13 29.70	+21 9.5	0.900	1.665	29.5	20.3	124 W	66	43
11 7	9 16.00	-45 36.1	0.428	0.963	81.0	18.7	74 W	—	64*	2 15	13 35.76	+23 13.2	0.868	1.658	28.6	20.2	127 W	68	41
11 12	9 22.20	-44 50.9	0.424	0.973	79.8	18.7	75 W	—	65*	2 20	13 41.00	+25 24.4	0.841	1.652	27.7	20.0	129 W	70	39
11 17	9 28.69	-44 3.5	0.417	0.983	78.6	18.6	77 W	1	67*	2 25	13 45.33	+27 41.0	0.817	1.646	27.0	20.0	131 W	73	36
11 22	9 35.41	-43 12.7	0.406	0.993	77.4	18.5	79 W	2	69*	3 2	13 48.66	+30 0.4	0.797	1.640	26.4	19.9	133 W	75	34
11 27	9 42.25	-42 17.3	0.393	1.004	76.2	18.4	81 W	3	71*	3 7	13 50.90	+32 19.6	0.782	1.634	26.0	19.8	134 W	77	32
12 2	9 49.10	-41 15.2	0.378	1.014	74.9	18.3	83 W	4	73*	3 12	13 51.97	+34 35.4	0.770	1.628	25.9	19.8	134 W	80	29
12 7	9 55.85	-40 3.3	0.360	1.025	73.5	18.2	86 W	5	75*	3 17	13 51.85	+36 43.8	0.762	1.622	26.0	19.7	134 W	82	27
12 12	10 2.39	-38 37.6	0.339	1.036	71.9	18.0	89 W	6	77*	3 22	13 50.56	+38 41.4	0.758	1.617	26.4	19.7	134 W	84	25
12 17	10 8.67	-36 53.2	0.317	1.046	70.0	17.9	92 W	8	79	3 27	13 48.20	+40 24.9	0.757	1.612	27.0	19.7	133 W	85	24
12 22	10 14.55	-34 43.5	0.294	1.057	67.7	17.6	96 W	10	81	4 1	13 44.91	+41 51.5	0.760	1.607	27.8	19.8	131 W	87	22
12 24	10 16.77	-33 42.6	0.284	1.061	66.7	17.5	98 W	11	82	4 6	13 40.88	+42 59.4	0.765	1.602	28.7	19.8	130 W	88	21
12 26	10 18.88	-32 35.4	0.274	1.065	65.5	17.4	100 W	12	83	4 11	13 36.37	+43 47.0	0.773	1.597	29.7	19.8	128 W	89	20
12 28	10 20.88	-31 21.2	0.264	1.069	64.2	17.3	102 W	14	85	4 16	13 31.68	+44 13.5	0.783	1.593	30.7	19.9	126 E	89	20
12 30	10 22.76	-29 58.9	0.254	1.073	62.8	17.2	104 W	15	86	4 21	13 27.14	+44 19.2	0.795	1.589	31.8	20.0	124 E	89	20
1 1	10 24.49	-28 27.4	0.244	1.077	61.3	17.1	106 W	17	88	4 26	13 23.02	+44 5.0	0.809	1.586	32.8	20.0	121 E	89	20
1 3	10 26.06	-26 45.4	0.234	1.081	59.6	17.0	109 W	18	89	5 1	13 19.55	+43 32.2	0.825	1.582	33.8	20.1	119 E	89	20
1 5	10 27.47	-24 51.5	0.224	1.085	57.7	16.8	111 W	20	89	5 6	13 16.87	+42 42.3	0.841	1.579	34.7	20.2	117 E	88	21
1 7	10 28.69	-22 44.1	0.215	1.089	55.6	16.7	114 W	22	87	5 11	13 15.11	+41 36.9	0.859	1.577	35.6	20.2	115 E	87	22
1 9	10 29.71	-20 21.7	0.205	1.092	53.3	16.5	117 W	25	84	5 16	13 14.34	+40 17.7	0.878	1.574	36.3	20.3	113 E	85	24
1 11	10 30.52	-17 42.5	0.196	1.096	50.7	16.3	120 W	27	82	5 21	13 14.56	+38 46.5	0.898	1.572	37.0	20.3	111 E	84	25
1 13	10 31.10	-14 45.0	0.188	1.099	47.9	16.2	124 W	30	79	5 26	13 15.75	+37 5.0	0.918	1.570	37.7	20.4	109 E	82	27
1 15	10 31.44	-11 27.6	0.180	1.103	44.8	16.0	128 W	34	75	5 31	13 17.84	+35 14.6	0.940	1.569	38.2	20.5	107 E	80	29
1 17	10 31.50	- 7 49.4	0.172	1.106	41.4	15.8	132 W	37	72	6 5	13 20.78	+33 16.7	0.962	1.568	38.7	20.5	105 E	78	31
1 19	10 31.28	+ 3 49.8	0.166	1.110	37.8	15.6	136 W	41	68	6 10	13 24.50	+31 12.4	0.985	1.567	39.1	20.6	103 E	76	33
1 21	10 30.76	+ 0 30.5	0.161	1.113	34.1	15.5	141 W	46	63	6 15	13 28.94	+29 2.8	1.009	1.566	39.5	20.7	101 E	73	35
3920 Aubignan										6 20	13 34.04	+26 48.9	1.034	1.566	39.8	20.7	100 E	70	37
12 27	12 12.65	+ 6 10.1	2.578	2.837	20.2	18.3	95 W	51	54*	6 25	13 39.74	+24 31.9	1.060	1.566	40.0	20.8	98 E	66	39
1 6	12 17.94	+ 6 17.0	2.444	2.844	19.6	18.2	104 W	51	57*	6 30	13 45.98	+22 12.4	1.087	1.567	40.2	20.8	96 E	63	42
1 16	12 21.21	+ 6 40.1	2.314	2.851	18.5	18.0	113 W	52	57	7 5	13 52.70	+19 51.3	1.115	1.568	40.3	20.9	95 E	59	44
1 26	12 22.20	+ 7 20.2	2.194	2.856	16.7	17.9	123 W	52	57	7 10	13 59.88	+17 29.3	1.144	1.569	40.3	21.0	93 E	56	47
2 5	12 20.72	+ 8 16.9	2.087	2.860	14.4	17.7	134 W	53	56	7 15	14 7.49	+15 7.0	1.17						

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	20/22	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
162781 2000 XL₄₄										485512 2011 TB₁₀									
<i>(continuation)</i>																			
2 5	13 36.54	-14 11.5	0.611	1.315	45.3	19.0	109W	31	78	12 27	12 13.69	-21 35.0	1.368	1.595	37.8	20.2	84W	23	74*
2 10	13 42.97	-16 27.7	0.600	1.328	43.8	18.9	111W	29	80	1 1	12 23.09	-21 45.0	1.337	1.611	37.5	20.2	87W	23	77*
2 15	13 48.20	-18 38.5	0.589	1.342	42.1	18.8	114W	26	83	1 6	12 31.95	-21 47.5	1.305	1.627	37.2	20.1	89W	23	80*
2 20	13 52.14	-20 43.2	0.580	1.358	40.2	18.8	118W	24	85	1 11	12 40.19	-21 41.9	1.272	1.644	36.7	20.1	93W	23	83*
2 25	13 54.69	-22 40.9	0.572	1.375	38.0	18.7	121W	22	87	1 16	12 47.76	-21 27.5	1.239	1.662	36.1	20.0	96W	24	85*
3 2	13 55.80	-24 30.4	0.566	1.394	35.7	18.6	125W	20	89	1 21	12 54.60	-21 3.7	1.206	1.681	35.2	20.0	100W	24	85
3 7	13 55.39	-26 10.3	0.561	1.414	33.1	18.6	129W	19	90	1 26	13 0.66	-20 29.9	1.173	1.700	34.2	19.9	104W	25	84
3 12	13 53.45	-27 38.9	0.558	1.435	30.3	18.5	133W	17	88	1 31	13 5.88	-19 45.5	1.140	1.720	33.0	19.8	108W	25	84
3 17	13 50.05	-28 54.6	0.558	1.456	27.4	18.5	138W	16	87	2 5	13 10.20	-18 49.7	1.108	1.740	31.6	19.8	112W	26	83
3 22	13 45.36	-29 55.9	0.560	1.479	24.5	18.4	142W	15	86	2 10	13 13.57	-17 42.1	1.077	1.762	29.9	19.7	117W	27	82
3 27	13 39.63	-30 41.5	0.566	1.502	21.5	18.4	146W	14	85	2 15	13 15.94	-16 22.1	1.049	1.783	28.0	19.6	122W	29	80
4 1	13 33.19	-31 11.2	0.575	1.526	18.8	18.4	151W	14	85	2 25	13 17.67	-13 4.9	1.001	1.828	23.2	19.4	133W	32	77
4 6	13 26.38	-31 24.9	0.588	1.551	16.3	18.4	154W	14	85	3 7	13 15.55	-9 2.6	0.970	1.874	17.5	19.2	145W	36	73
4 11	13 19.61	-31 23.6	0.605	1.576	14.5	18.4	157W	14	85	3 17	13 10.21	-4 29.1	0.961	1.921	11.1	19.0	158W	41	68
4 16	13 13.25	-31 9.2	0.626	1.602	13.4	18.5	158E	14	85	3 22	13 6.68	-2 8.1	0.967	1.945	7.9	18.9	164W	43	66
4 21	13 7.62	-30 44.5	0.652	1.628	13.3	18.6	158E	14	85	3 27	13 2.84	+0 10.8	0.979	1.969	5.2	18.9	170W	45	64
4 26	13 2.94	-30 12.2	0.682	1.654	14.0	18.8	157E	15	86	4 1	12 58.87	+2 24.2	0.999	1.993	4.1	18.9	172W	47	62
5 1	12 59.35	-29 35.3	0.716	1.681	15.2	18.9	154E	15	86	4 6	12 54.95	+4 28.8	1.026	2.018	5.4	19.0	169E	49	60
5 6	12 56.90	-28 56.1	0.755	1.708	16.7	19.1	151E	16	87	4 11	12 51.26	+6 22.4	1.060	2.042	7.8	19.2	164E	51	58
5 11	12 55.58	-28 16.7	0.797	1.735	18.4	19.4	147E	17	88	4 16	12 47.95	+8 3.0	1.101	2.067	10.3	19.4	158E	53	56
5 16	12 55.36	-27 38.9	0.844	1.762	20.0	19.6	143E	17	88	4 26	12 42.93	+10 42.9	1.200	2.116	15.0	19.9	147E	56	53
5 21	12 56.19	-27 4.1	0.894	1.789	21.5	19.8	140E	18	89	5 6	12 40.41	+12 29.4	1.319	2.165	18.7	20.2	137E	57	52
5 26	12 57.95	-26 33.0	0.948	1.817	22.9	20.0	136E	18	89	5 16	12 40.50	+13 29.5	1.454	2.214	21.4	20.6	127E	58	51
5 31	13 0.56	-26 6.2	1.005	1.844	24.1	20.2	132E	19	90	5 26	12 43.05	+13 51.9	1.602	2.263	23.2	20.9	118E	59	50
6 5	13 3.91	-25 43.6	1.064	1.871	25.2	20.4	128E	19*	90	6 5	12 47.74	+13 45.4	1.757	2.312	24.3	21.2	110E	58*	50
6 15	13 12.56	-25 11.7	1.192	1.925	26.8	20.7	121E	19*	89	6 15	12 54.24	+13 17.0	1.919	2.360	24.8	21.4	103E	55*	51
6 25	13 23.32	-24 56.3	1.330	1.979	27.9	21.0	114E	18*	89	69045 2002 XN₅₉									
7 5	13 35.69	-24 54.9	1.475	2.032	28.4	21.3	108E	16*	89	12 27	12 14.15	-21 37.1	2.972	3.025	18.8	19.8	84W	23	74*
7 15	13 49.35	-25 4.8	1.627	2.085	28.5	21.6	102E	15*	89	1 6	12 18.18	-23 25.1	2.841	3.034	18.9	19.7	92W	22	83*
31367 1998 WB₉										1 16	12 20.23	-25 7.2	2.711	3.041	18.6	19.6	100W	20	89
12 27	12 13.51	+26 45.9	2.686	3.051	18.3	19.4	102W	72	35*	1 26	12 20.03	-26 40.6	2.585	3.047	17.8	19.5	109W	18	89
1 6	12 18.56	+28 1.5	2.567	3.056	17.5	19.3	111W	73	36*	2 5	12 17.36	-28 1.7	2.468	3.052	16.6	19.4	118W	17	88
1 16	12 21.36	+29 33.8	2.459	3.060	16.3	19.2	119W	75	34	2 15	12 12.13	-29 6.2	2.364	3.056	15.1	19.2	126W	16	87
1 26	12 21.61	+31 19.7	2.364	3.063	14.8	19.0	127W	76	33	2 25	12 4.48	-29 49.0	2.276	3.059	13.2	19.1	135W	15	86
1 31	12 20.70	+32 16.1	2.323	3.065	14.0	19.0	131W	77	32	3 2	11 59.88	-30 1.0	2.240	3.060	12.2	19.0	139W	15	86
2 5	12 19.09	+33 13.7	2.288	3.065	13.1	18.9	135W	78	31	3 7	11 54.87	-30 6.0	2.210	3.060	11.3	18.9	143W	15	86
2 10	12 16.77	+34 11.5	2.257	3.066	12.3	18.8	138W	79	30	3 12	11 49.55	-30 3.9	2.185	3.061	10.4	18.9	146W	15	86
2 15	12 13.75	+35 8.0	2.233	3.067	11.6	18.8	141W	80	29	3 17	11 44.07	-29 54.6	2.167	3.061	9.7	18.8	149E	15	86
2 20	12 10.07	+36 2.2	2.214	3.067	11.0	18.7	144W	81	28	3 22	11 38.54	-29 38.2	2.156	3.061	9.3	18.8	150E	15	86
2 25	12 5.81	+36 52.5	2.202	3.067	10.6	18.7	145W	82	27	3 27	11 33.11	-29 15.4	2.151	3.061	9.2	18.8	151E	16	87
3 2	12 1.05	+37 37.9	2.196	3.066	10.5	18.7	146W	83	26	4 1	11 27.90	-28 46.8	2.153	3.060	9.4	18.8	150E	16	87
3 7	11 55.89	+38 17.3	2.196	3.066	10.6	18.7	145W	83	26	4 6	11 23.04	-28 13.2	2.162	3.059	9.9	18.8	148E	17	88
3 12	11 50.47	+38 49.6	2.203	3.065	10.9	18.7	144W	84	25	4 11	11 18.63	-27 35.6	2.177	3.058	10.6	18.9	146E	17	88
3 17	11 44.93	+39 14.3	2.216	3.064	11.5	18.8	142E	84	25	4 16	11 14.75	-26 55.1	2.198	3.057	11.5	18.9	143E	18	89
3 22	11 39.43	+39 30.7	2.235	3.062	12.2	18.8	140E	85	24	4 21	11 11.46	-26 12.9	2.225	3.055	12.5	19.0	139E	19	90
3 27	11 34.11	+39 38.9	2.260	3.061	13.0	18.9	136E	85	24	4 26	11 8.82	-25 30.1	2.258	3.054	13.5	19.1	135E	19	90
4 1	11 29.10	+39 39.0	2.290	3.059	13.8	18.9	133E	85	24	5 1	11 6.82	-24 47.6	2.295	3.051	14.4	19.1	131E	20	89
4 6	11 24.52	+39 31.4	2.325	3.057	14.7	19.0	129E	85	24	5 6	11 5.48	-24 6.2	2.337	3.049	15.4	19.2	127E	21	88
4 11	11 20.47	+39 16.6	2.364	3.054	15.5	19.0	125E	84	25	5 16	11 4.73	-22 49.8	2.432	3.043	17.0	19.3	118E	22*	87
4 16	11 17.00	+38 55.1	2.407	3.052	16.3	19.1	121E	84	25	5 26	11 6.41	-21 45.4	2.538	3.037	18.3	19.5	110E	21*	86
4 21	11 14.18	+38 27.7	2.454	3.049	17.0	19.2	117E	83	26	6 5	11 10.24	-20 55.1	2.653	3.029	19.1	19.6	102E	18*	85
4 26	11 12.03	+37 55.1	2.504	3.046	17.7	19.2	113E	83	26	6 15	11 15.96	-20 19.8	2.771	3.020	19.6	19.7	94E	15*	84
5 6	11 9.70	+36 37.1	2.610	3.039	18.7	19.4	105E	82	27	6 25	11 23.30	-19 59.5	2.891	3.010	19.7	19.8	87E	11*	80*
5 16	11 9.91	+35 5.8	2.723	3.031	19.3	19.5	98E	79*	29	7 5	11 32.03	-19 53.4	3.010	3.000	19.5	19.9	80E	7*	74*
5 26	11 12.42	+33 25.1	2.839	3.022	19.6	19.6	90E	72*	31	7 15	11 41.96	-20 0.3	3.125	2.988	19.0	19.9	73E	4*	66*
6 5	11 16.89	+31 37.9	2.955	3.012	19.5	19.6	83E	64*	32	7 25	11 52.91	-20 19.2	3.234	2.975	18.2	20.0	66E	1*	59*
6 15	11 23.06	+29 46.1	3.069	3.001	19.2	19.7	77E	56*	34	8 4	12 4.77	-20 48.5	3.336	2.961	17.3	20.0	60E	—	52*
6 25	11 30.64	+27 51.3	3.179	2.990	18.6	19.7	70E	49*	36*	8 14	12 17.42	-21 27.0	3.428	2.945	16.1	20.0	54E	—	45*
7 5	11 39.39	+25 54.5	3.283	2.977	17.8	19.8	64E	43*	36*	8 24	12 30.80	-22 13.5	3.511	2.929	14.8	20.0	48E	—	39*
7 15	11 49.13	+23 56.4	3.379	2.963	16.9	19.8	58E	37*	35*	9 3	12 44.83	-23 6.5	3.582	2.912	13.4	20.0	42E	—	33*
7 25	11 59.70	+21 57.6	3.466	2.948	15.7	19.8	52E	33*	33*	9 13	12 59.48	-24 5.1	3.641	2.894	11.9	19.9	36E	—	27*
8 4	12 10.97	+19 58.7	3.543	2.932	14.4														