

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

2020	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	2020	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°		
283457 2001 MQ₃																					
2	21	11 11.34	+ 0 55.0	2.282	3.239	5.2	23.9	163 W	46	63	2	21	11 31.28	- 1 33.0	1.778	2.717	8.1	22.4	157 W	43	66
3	2	11 1.74	+ 1 42.1	2.246	3.233	1.8	23.6	174 W	47	62	3	2	11 22.07	- 0 39.1	1.729	2.708	4.0	22.1	169 W	44	65
3	12	10 51.83	+ 2 34.2	2.242	3.226	2.9	23.7	171 E	48	61	3	12	11 12.01	+ 0 24.9	1.708	2.699	1.9	21.9	175 E	45	64
3	22	10 42.49	+ 3 26.1	2.269	3.218	6.4	23.9	159 E	48	61	3	22	11 2.14	+ 1 32.3	1.717	2.689	5.9	22.2	164 E	47	62
4	1	10 34.47	+ 4 13.0	2.324	3.209	9.8	24.1	147 E	49	60	4	1	10 53.53	+ 2 35.7	1.754	2.677	10.1	22.4	152 E	48	61
352102 2007 AG₁₂																					
2	21	11 18.50	-47 13.1	2.828	3.433	14.4	25.2	120 W	—	69	2	21	11 31.84	- 8 56.9	2.635	3.540	7.5	22.4	152 W	36	73
2	26	11 11.32	-47 32.0	2.800	3.437	14.0	25.2	123 W	—	68	3	2	11 24.17	- 8 17.0	2.572	3.530	4.8	22.2	163 W	37	72
3	2	11 3.79	-47 41.9	2.776	3.442	13.6	25.2	125 W	—	68	3	12	11 15.87	- 7 24.4	2.540	3.519	3.2	22.1	169 E	38	71
3	7	10 56.07	-47 42.5	2.757	3.445	13.3	25.2	127 E	—	68	3	22	11 7.65	- 6 23.1	2.538	3.508	4.4	22.1	164 E	39	70
3	12	10 48.35	-47 33.9	2.744	3.449	13.1	25.1	128 E	—	68	4	1	11 0.20	- 5 18.3	2.566	3.495	7.0	22.3	155 E	40	69
3	17	10 40.78	-47 16.4	2.736	3.452	12.9	25.1	129 E	—	69											
3	22	10 33.55	-46 50.3	2.733	3.455	12.8	25.1	130 E	—	69											
242187 2003 KR₁₈																					
2	21	11 19.00	- 3 50.2	2.424	3.362	6.3	22.9	158 W	41	68											
3	2	11 10.22	- 3 1.0	2.367	3.345	3.3	22.7	169 W	42	67											
3	12	11 0.93	- 2 2.2	2.342	3.327	2.6	22.6	171 E	43	66											
3	22	10 51.92	+ 0 58.8	2.348	3.308	5.5	22.8	162 E	44	65											
4	1	10 43.94	+ 0 4.0	2.383	3.287	8.7	23.0	150 E	45	64											
498344 2007 VX₂₅₈																					
2	21	11 19.25	+18 7.8	3.449	4.403	3.8	24.2	163 W	63	46											
3	2	11 12.05	+18 58.8	3.433	4.405	2.8	24.1	167 W	64	45											
3	12	11 4.61	+19 42.7	3.449	4.407	3.9	24.2	163 E	65	44											
3	22	10 57.46	+20 16.7	3.496	4.409	5.8	24.3	153 E	65	44											
4	1	10 51.11	+20 38.8	3.571	4.409	7.9	24.4	143 E	66	43											
360221 1999 TX₃₄																					
2	21	11 20.01	+10 16.5	2.144	3.106	5.1	22.2	164 W	55	54											
2	26	11 15.26	+10 41.4	2.114	3.092	3.3	22.1	170 W	56	53											
3	2	11 10.24	+11 6.2	2.091	3.079	1.9	22.0	174 W	56	53											
3	7	11 5.05	+11 30.4	2.077	3.065	2.1	22.0	174 E	57	52											
3	12	10 59.82	+11 53.1	2.070	3.051	3.6	22.0	169 E	57	52											
3	17	10 54.65	+12 13.8	2.071	3.036	5.5	22.1	163 E	57	52											
3	22	10 49.68	+12 31.8	2.079	3.021	7.4	22.2	157 E	58	51											
3	27	10 45.02	+12 46.9	2.094	3.006	9.2	22.3	151 E	58	51											
4	1	10 40.77	+12 58.5	2.116	2.991	11.0	22.4	145 E	58	51											
350872 2002 PG₄₃																					
2	21	11 21.48	+ 4 48.0	2.067	3.023	5.7	22.7	162 W	50	59											
3	2	11 11.38	+ 5 35.7	2.042	3.031	1.7	22.5	175 W	51	58											
3	12	11 0.89	+ 6 24.5	2.049	3.037	2.5	22.5	172 E	51	58											
3	22	10 50.99	+ 7 9.0	2.087	3.042	6.5	22.8	160 E	52	57											
4	1	10 42.52	+ 7 44.8	2.153	3.045	10.1	23.0	148 E	53	56											
399433 2001 YK₄																					
2	21	11 21.73	+ 5 6.9	2.824	3.778	4.6	24.1	162 W	50	59											
3	2	11 12.42	+ 6 11.0	2.837	3.825	1.3	24.0	175 W	51	58											
3	12	11 3.07	+ 7 13.7	2.884	3.871	1.9	24.1	172 E	52	57											
3	22	10 54.34	+ 8 10.9	2.964	3.916	5.0	24.3	160 E	53	56											
4	1	10 46.79	+ 8 59.1	3.075	3.959	7.6	24.6	148 E	54	55											
401968 2002 TE₁₃₈																					
2	21	11 22.30	+ 3 3.4	2.342	3.294	5.5	23.6	161 W	48	61											
3	2	11 13.26	+ 3 47.9	2.332	3.319	1.9	23.4	174 W	49	60											
3	12	11 4.00	+ 4 34.3	2.353	3.342	1.9	23.4	174 E	50	59											
3	22	10 55.30	+ 5 18.0	2.405	3.365	5.4	23.7	161 E	50	59											
4	1	10 47.86	+ 5 55.1	2.487	3.387	8.6	23.9	150 E	51	58											
399628 2004 NM₂₃																					
2	21	11 23.50	- 2 45.7	1.941	2.882	7.4	22.3	158 W	42	67											
3	2	11 14.46	- 1 54.4	1.898	2.878	3.7	22.0	169 W	43	66											
3	12	11 4.83	- 0 53.1	1.884	2.873	2.6	21.9	173 E	44	65											
3	22	10 55.58	+ 0 12.0	1.901	2.867	6.0	22.2	162 E	45	64											
4	1	10 47.62	+ 1 14.4	1.945	2.859	9.8	22.4	151 E	46	63											
499307 2009 WC₅₂																					
2	21	11 26.13	+ 1 25.0	2.742	3.686	5.3	24.0	160 W	46	63											
3	2	11 18.15	+ 2 24.3	2.678	3.662	2.2	23.7	172 W	47	62											
3	12	11 9.58	+ 3 28.7	2.647	3.638	1.3	23.6	175 E	48	61											
3	22	11 1.10	+ 4 33.5	2.647	3.612	4.6	23.8	163 E	50	59											
4	1	10 53.40	+ 5 33.9	2.678	3.585	7.8	24.0	151 E	51	58											
523823 2015 BG₃₁₁																					
2	21	11 30.07	- 4 31.2	2.880	3.802	6.2	23.8	156 W	40	69											
3	2	11 22.05	- 3 43.8	2.852	3.824	3.4	23.6	167 W	41	68											
3	12	11 13.68	- 2 49.1	2.856	3.844	1.9	23.5	173 E	42	67											
3	22	11 5.59	- 1 51.1	2.892	3.863	3.8	23.7	165 E	43	66											
4	1	10 58.38	- 0 54.4	2.959	3.881	6.5	23.9	154 E	44	65											
393822 2005 SX₃₅																					
2	21	11 31.28	- 1 33.0	1.778	2.717	8.1	22.4	157 W	43	66											
3	2	11 22.07	- 0 39.1	1.729	2.708	4.0	22.1	169 W	44	65											
3	12	11 12.01	+ 0 24.9	1.708	2.699	1.9	21.9	175 E	45	64											
3	22	11 2.14	+ 1 32.3	1.717	2.689	5.9	22.2	164 E	47	62											
4	1	10 53.53	+ 2 35.7	1.754	2.677	10.1	22.4	152 E	48	61											
366430 2001 VH₈₆																					
2	21	11 31.84	- 8 56.9	2.635	3.540	7.5	22.4	152 W	36	73											
3	2	11 24.17	- 8 17.0	2.572	3.530	4.8	22.2	163 W	37	72											
3	12	11 15.87	- 7 24.4	2.540	3.519	3.2	22.1	169 E	38	71											
3	22	11 7.65	- 6 23.1	2.538	3.508	4.4	22.1	164 E	39	70											
4	1	11 0.20	- 5 18.3	2.566	3.495	7.0	22.3	155 E	40	69											
518638 2008 JP₁₄																					
2	21	11 34.08	+12 34.3	2.001	2.951	6.5	23.6	160 W	58	51											
2	26	11 28.76	+13 23.8	1.974	2.944	4.8	23.5	166 W	58	51											
3	2	11 23.08	+14 13.1	1.955	2.936	3.5	23.4	170 W	59	50											
3	7	11 17.16	+15 1.1	1.945	2.927	3.3	23.4	170 W	60	49											
3	12	11 11.13	+15 46.7	1.942	2.918	4.5	23.5	167 E	61	48											
3	17	11 5.13	+16 28.9	1.947	2.909	6.2	23.5	162 E	61	48											
3	22	10 59.30	+17 6.9	1.961	2.899	8.1	23.6	156 E	62	47											
3	27	10 53.79	+17 40.0	1.981	2.888	10.0	23.7	150 E	63	46											
523660 2012 KY₄₁																					
2	21	11 36.10	-24 20.6	2.092	2.915	12.7	22.8	139 W	21	88											
2	26	11 31.33	-23 58.8	2.063	2.923	11.5	22.7	144 W	21	88											
3	2	11 26.26	-23 29.2	2.041	2.930	10.3	22.6	148 W	22	87											
3	7	11 21.00	-22 52.3	2.025	2.937	9.2	22.6	152 W	22	87											
3	12	11 15.69	-22 8.5	2.016	2.943	8.4	22.5	154 E	23	86											
3	17	11 10.46	-21 18.5	2.014	2.949	8.0	22.5	156 E	24	85											
3	22	11 5.44	-20 23.3	2.019	2.954	8.1	22.5	155 E	25	84											
3	27	11 0.75	-19 24.2	2.032	2.960	8.6	22.6	154 E	26	83											
161999 1989 RC																					
2	21	11 39.16	+ 7 15.0	2.253	3.195	6.5	23.5	159 W	52	57											
3	2	11 30.54	+ 8 30.8	2.184	3																

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

2020									2020								
α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
313594 2003 NB₇									439898 2000 TG₂								
2 21	11 49.65	+ 7 20.4	1.987	2.919	7.9	21.8	156 W	52 57	2 21	11 54.89	-19 6.5	0.723	1.616	22.6	21.3	141 W	26 83
3 2	11 41.24	+ 8 18.2	1.927	2.903	4.1	21.5	168 W	53 56	2 26	11 49.50	-18 8.9	0.710	1.631	19.4	21.2	147 W	27 82
3 12	11 31.66	+ 9 17.1	1.897	2.887	2.1	21.3	174 W	54 55	3 2	11 43.38	-16 56.2	0.702	1.647	16.0	21.1	153 W	28 81
3 22	11 21.82	+10 10.6	1.896	2.869	5.3	21.5	165 E	55 54	3 7	11 36.81	-15 29.9	0.698	1.661	12.8	21.0	158 W	30 79
4 1	11 12.74	+10 53.0	1.925	2.851	9.2	21.7	153 E	56 53	3 12	11 30.10	-13 52.5	0.700	1.676	10.1	20.9	163 W	31 78
4 11	11 5.27	+11 20.4	1.979	2.832	12.7	21.9	141 E	56 53	3 17	11 23.57	-12 7.4	0.708	1.690	8.6	20.9	165 E	33 76
4015 Wilson-Harrington									410352 2007 VC₁₁								
2 21	11 50.33	- 2 49.8	3.283	4.185	6.3	22.2	152 W	42 67	2 21	11 55.01	- 6 52.2	2.122	3.014	9.7	22.2	149 W	38 71
3 2	11 43.08	- 2 7.1	3.236	4.199	3.7	22.0	164 W	43 66	3 2	11 47.06	- 6 19.1	2.054	3.007	6.2	21.9	161 W	39 70
3 12	11 35.24	- 1 18.3	3.220	4.211	1.2	21.8	175 W	44 65	3 12	11 37.94	- 5 32.2	2.014	2.999	3.0	21.7	171 W	39 70
3 22	11 27.35	+ 0 26.9	3.237	4.223	2.3	21.9	170 E	45 64	3 22	11 28.48	- 4 36.1	2.005	2.991	3.4	21.7	170 E	40 69
4 1	11 19.96	+ 0 23.4	3.286	4.234	4.9	22.1	159 E	45 64	4 1	11 19.62	- 3 36.4	2.025	2.981	6.8	21.9	159 E	41 68
4 11	11 13.55	+ 1 9.3	3.364	4.243	7.3	22.3	147 E	46 63	4 11	11 12.19	- 2 39.4	2.072	2.970	10.3	22.1	148 E	42 67
282226 2002 AU₁₇									394000 2005 UG₅₁₂								
2 21	11 52.29	- 8 45.7	2.119	3.007	9.8	21.7	149 W	36 73	2 21	11 55.23	+ 5 24.6	1.814	2.740	9.0	22.2	154 W	50 59
3 2	11 43.59	- 8 13.3	2.073	3.023	6.5	21.5	160 W	37 72	2 26	11 51.21	+ 5 55.6	1.786	2.739	7.0	22.1	160 W	51 58
3 12	11 33.95	- 7 26.5	2.057	3.038	3.5	21.3	169 W	38 71	3 2	11 46.76	+ 6 28.3	1.764	2.737	4.9	21.9	166 W	51 58
3 22	11 24.26	- 6 29.8	2.070	3.052	3.9	21.4	168 E	39 70	3 7	11 41.99	+ 7 1.6	1.749	2.736	2.9	21.8	172 W	52 57
4 1	11 15.42	- 5 29.3	2.113	3.065	6.9	21.6	158 E	40 69	3 12	11 37.02	+ 7 34.8	1.742	2.734	1.7	21.7	175 W	53 56
4 11	11 8.19	- 4 31.1	2.184	3.076	10.1	21.8	147 E	40 69	3 17	11 31.99	+ 8 6.8	1.742	2.732	2.8	21.8	172 E	53 56
368599 2004 RA₁₆₀									495866 2004 MU₂								
2 21	11 53.14	- 5 44.5	2.704	3.596	7.8	21.6	150 W	39 70	2 21	11 55.46	-10 25.2	3.071	3.937	7.9	22.5	147 W	35 74
3 2	11 45.55	- 5 16.1	2.664	3.619	4.9	21.4	162 W	40 69	3 2	11 48.56	- 9 55.4	3.010	3.945	5.4	22.3	158 W	35 74
3 12	11 37.25	- 4 38.6	2.655	3.641	2.2	21.3	172 W	40 69	3 12	11 40.91	- 9 14.2	2.978	3.953	3.2	22.2	167 W	36 73
3 22	11 28.91	- 3 55.8	2.676	3.662	2.6	21.3	170 E	41 68	3 22	11 33.09	- 8 24.7	2.978	3.960	2.8	22.2	169 E	37 72
4 1	11 21.20	- 3 11.7	2.728	3.682	5.4	21.6	160 E	42 67	4 1	11 25.69	- 7 30.5	3.008	3.965	4.8	22.3	161 E	37 72
4 11	11 14.69	- 2 30.5	2.809	3.702	8.1	21.8	149 E	42 67	4 11	11 19.27	- 6 36.1	3.068	3.970	7.2	22.5	150 E	38 71
326317 1999 VN₂₃									288783 2004 RL₁₀₈								
2 21	11 53.73	+ 9 43.7	3.038	3.959	5.9	22.0	156 W	55 54	2 21	11 56.01	- 7 38.1	1.766	2.660	11.2	22.2	149 W	37 72
3 2	11 46.53	+10 34.8	3.008	3.977	3.4	21.8	166 W	56 53	3 2	11 46.69	- 7 19.2	1.730	2.684	7.2	22.0	160 W	38 71
3 12	11 38.70	+11 23.9	3.009	3.994	2.1	21.7	172 W	56 53	3 12	11 36.27	- 6 44.9	1.723	2.706	3.7	21.8	170 W	38 71
3 22	11 30.82	+12 7.1	3.042	4.011	3.8	21.9	165 E	57 52	3 22	11 25.83	- 6 0.3	1.744	2.728	4.1	21.9	169 E	39 70
4 1	11 23.48	+12 41.1	3.105	4.027	6.3	22.1	154 E	58 51	4 1	11 16.45	- 5 11.7	1.794	2.749	7.6	22.1	159 E	40 69
4 11	11 17.19	+13 4.0	3.196	4.041	8.6	22.2	143 E	58 51	4 11	11 9.01	- 4 25.7	1.870	2.769	11.2	22.4	148 E	41 68
488943 2005 UL₁₄₇									461907 2006 QF₂								
2 21	11 54.45	+ 9 54.1	1.824	2.754	8.6	21.8	155 W	55 54	2 21	11 57.03	- 3 4.0	2.031	2.934	9.4	21.9	151 W	42 67
2 26	11 50.07	+10 21.7	1.795	2.750	6.7	21.7	161 W	55 54	3 2	11 48.93	- 2 35.3	1.952	2.913	5.8	21.6	163 W	42 67
3 2	11 45.25	+10 49.6	1.773	2.746	4.9	21.6	166 W	56 53	3 12	11 39.46	- 1 55.7	1.902	2.892	2.0	21.3	174 W	43 66
3 7	11 40.10	+11 17.0	1.758	2.742	3.4	21.4	171 W	56 53	3 22	11 29.48	- 1 9.5	1.881	2.869	3.1	21.4	171 E	44 65
3 12	11 34.74	+11 43.0	1.751	2.738	3.1	21.4	172 W	57 52	4 1	11 19.98	+ 0 22.4	1.890	2.846	7.2	21.6	159 E	45 64
3 17	11 29.32	+12 6.6	1.751	2.733	4.2	21.5	168 E	57 52	4 11	11 11.89	+ 0 19.9	1.926	2.822	11.1	21.8	147 E	45 64
3 22	11 23.98	+12 27.3	1.758	2.728	6.0	21.6	163 E	57 52	394837 2008 SF₁₈₀								
3 27	11 18.86	+12 44.2	1.773	2.723	8.0	21.7	158 E	58 51	2 21	11 57.88	+ 9 31.0	1.872	2.797	8.8	21.7	154 W	55 54
4 1	11 14.10	+12 57.0	1.794	2.717	9.9	21.8	152 E	58 51	2 26	11 53.86	+10 5.2	1.844	2.795	6.9	21.6	160 W	55 54
4 6	11 9.80	+13 5.3	1.821	2.711	11.8	21.9	146 E	58 51	3 2	11 49.41	+10 39.9	1.823	2.793	5.1	21.5	165 W	56 53
4 11	11 6.04	+13 9.2	1.855	2.705	13.6	22.0	141 E	58 51	3 7	11 44.63	+11 14.3	1.810	2.792	3.6	21.4	170 W	56 53
452391 2002 NB₆₇									306798 2001 OW₉₄								
2 21	11 54.46	+ 0 47.8	1.744	2.664	9.7	22.1	153 W	46 63	2 21	11 58.35	+ 6 34.5	2.355	3.272	7.6	21.4	154 W	52 57
3 2	11 45.83	+ 1 42.5	1.688	2.660	5.3	21.8	166 W	47 62	3 2	11 50.01	+ 7 18.1	2.331	3.300	4.3	21.2	166 W	52 57
3 12	11 35.86	+ 2 45.5	1.661	2.654	0.7	21.4	178 W	48 61	3 12	11 40.88	+ 8 1.5	2.337	3.328	1.6	21.1	174 W	53 56
3 22	11 25.60	+ 3 49.7	1.663	2.648	4.1	21.7	169 E	49 60	3 22	11 31.73	+ 8 40.0	2.374	3.354	3.7	21.3	167 E	54 55
4 1	11 16.17	+ 4 47.9	1.693	2.640	8.6	21.9	157 E	50 59	4 1	11 23.34	+ 9 9.5	2.441	3.379	6.9	21.5	156 E	54 55
4 11	11 8.55	+ 5 34.1	1.750	2.632	12.7	22.2	145 E	51 58	4 11	11 16.37	+ 9 27.7	2.536	3.404	9.8	21.7	145 E	54 55
432037 2008 WS₆₃									158985 2004 RB₃₃₀								
2 21	11 54.48	+20 38.8	2.711	3.626	6.9	21.6	154 W	66 43	2 21	11 54.64	- 7 9.8	1.643	2.543	11.5	21.3	149 W	38 71
2 26	11 50.90	+21 12.5	2.682	3.618	6.0	21.5	158 W	66 43	3 2	11 46.84	- 6 28.7	1.564	2.520	7.5	21.0	161 W	39 70
3 2	11 47.00	+21 44.8	2.661	3.610	5.3	21.4	160 W	67 42	3 12	11 37.39	- 5 28.5	1.511	2.497	3.6	20.7	171 W	40 69
3 7	11 42.85	+22 14.8	2.647	3.601	5.1	21.4	161 W	67 42	3 22	11 27.33	- 4 14.6	1.487	2.474	4.1	20.7	170 E	41 68
3 12	11 38.56	+22 41.8	2.641	3.593	5.3	21.4	161 W	68 41	4 1	11 17.86	- 2 55.2	1.490	2.449	8.4	20.9	159 E	42 67
3 17	11 34.20	+23 5.3	2.642	3.584	6.0	21.5	158 E	68 41	4 11	11 10.12	- 1 39.3	1.519	2.424	12.9	21.1	147 E	43 66
3 22	11 29.87	+23 24.8	2.650	3.575	6.9	21.5	154 E	68 41	4 21	11 4.87	- 0 34.2	1.570	2.398	16.9	21.3	136 E	44 65
3 27	11 25.66	+23 39.9	2.666	3.566	8.0	21.6	150 E	69 40	5 1	11 2.52	+ 0 14.9	1.638	2.371	20.2	21.5	126 E	45 64
4 1	11 21.67	+23 50.4	2.688	3.557	9.2	21.6	146 E	69 40									
4 6	11 17.98	+23 56.2	2.716	3.547	10.3	21.7	141 E	69 40									
4 11	11 14.65	+23 57.4	2.750	3.537	11.4	21.7	136 E	69 40									

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

2020	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45° - 26°	2020	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45° - 26°													
422787 2001 WS₁									2061 Anza																					
2	21	11	59.35	+ 3	6.0	3.078	3.983	6.5	122.4	153 W	48	61	2	21	12	5.93	+ 3	42.3	2.531	3.414	8.7	121.8	149 W	41	68					
3	2	11	51.46	+ 3	45.3	3.038	4.003	3.7	22.3	165 W	49	60	3	2	11	58.01	+ 2	50.2	2.475	3.426	5.5	21.6	161 W	42	67					
3	12	11	42.88	+ 4	26.9	3.031	4.023	0.9	22.1	176 W	49	60	3	12	11	49.07	+ 1	49.1	2.449	3.437	2.1	21.4	173 W	43	66					
3	22	11	34.20	+ 5	7.3	3.056	4.041	2.4	22.2	170 E	50	59	3	22	11	39.83	+ 0	43.7	2.455	3.447	1.9	21.4	174 E	44	65					
4	1	11	26.02	+ 5	43.0	3.113	4.058	5.2	22.4	158 E	51	58	4	1	11	31.05	+ 0	20.8	2.493	3.455	5.2	21.7	162 E	45	64					
494661 2001 RO₇₅									277423 2005 UC₃₁₄																					
2	21	12	0.28	+ 8	36.3	2.275	3.192	7.9	22.1	154 W	54	55	2	21	12	7.78	+ 35	33.4	1.858	2.723	12.2	21.5	144 W	81	28					
3	2	11	51.93	+ 9	24.1	2.253	3.220	4.6	21.9	165 W	54	55	2	26	12	2.47	+ 36	12.9	1.841	2.719	11.7	21.4	146 W	81	28					
3	12	11	42.72	+ 10	9.9	2.260	3.248	2.3	21.8	172 W	55	54	3	2	11	56.58	+ 36	46.4	1.830	2.715	11.5	21.4	147 W	82	27					
3	22	11	33.49	+ 10	48.7	2.299	3.275	4.2	22.0	166 E	56	53	3	7	11	50.25	+ 37	12.6	1.825	2.711	11.6	21.4	147 W	82	27					
4	1	11	25.03	+ 11	16.6	2.367	3.300	7.3	22.2	155 E	56	53	3	12	11	43.66	+ 37	30.6	1.827	2.706	12.0	21.4	146 W	83	26					
4	11	11	18.02	+ 11	31.4	2.462	3.325	10.2	22.4	144 E	57	52	3	17	11	37.00	+ 37	39.7	1.835	2.701	12.6	21.4	144 E	83	26					
351508 2005 RN₃₃									360557 2003 SW₃₈₆																					
2	21	12	1.73	+ 13	47.7	0.937	1.874	13.6	21.6	154 W	59	50	2	21	12	8.45	+ 1	40.1	1.395	2.306	12.3	21.3	150 W	47	62					
2	26	11	56.18	+ 14	48.8	0.931	1.889	10.9	21.5	159 W	60	49	3	2	12	2.35	+ 2	55.3	1.308	2.272	7.8	20.9	162 W	48	61					
3	2	11	49.98	+ 15	47.6	0.932	1.903	8.5	21.4	163 W	61	48	3	12	11	54.00	+ 4	25.0	1.247	2.237	3.2	20.5	174 W	49	60					
3	7	11	43.38	+ 16	41.9	0.939	1.917	7.2	21.4	166 W	62	47	3	22	11	44.38	+ 6	0.0	1.212	2.203	3.8	20.5	172 E	51	58					
3	12	11	36.63	+ 17	29.6	0.952	1.931	7.3	21.5	166 W	62	47	3	27	11	39.50	+ 6	46.0	1.205	2.185	6.6	20.6	166 E	52	57					
3	17	11	30.00	+ 18	9.4	0.972	1.944	8.8	21.6	163 E	63	46	4	1	11	34.83	+ 7	29.0	1.204	2.168	9.4	20.7	159 E	52	57					
3	22	11	23.73	+ 18	40.2	0.997	1.957	10.9	21.7	158 E	64	45	4	6	11	30.53	+ 8	7.9	1.209	2.150	12.1	20.8	153 E	53	56					
3	27	11	18.05	+ 19	1.6	1.028	1.970	13.3	21.9	153 E	64	45	4	11	11	26.76	+ 8	41.5	1.219	2.133	14.7	20.9	147 E	54	55					
4	1	11	13.14	+ 19	13.7	1.064	1.982	15.6	22.1	148 E	64	45	4	16	11	23.62	+ 9	9.4	1.235	2.115	17.1	21.0	142 E	54	55					
4	6	11	9.10	+ 19	16.9	1.106	1.994	17.8	22.2	142 E	64	45	4	21	11	21.22	+ 9	30.9	1.255	2.098	19.4	21.1	136 E	55	54					
4	11	11	6.00	+ 19	12.0	1.151	2.006	19.8	22.4	137 E	64	45	4	26	11	19.63	+ 9	45.9	1.279	2.080	21.5	21.2	131 E	55	54					
461367 2000 QX₁₆₀									492410 2014 KN₄₀																					
2	21	12	2.71	+ 6	51.5	2.056	2.939	10.4	22.3	148 W	38	71	2	21	12	3.22	+ 7	48.5	1.636	2.556	10.1	22.1	153 W	53	56					
3	2	11	55.09	+ 6	14.4	1.980	2.928	6.9	22.0	159 W	39	70	2	26	11	59.14	+ 8	14.6	1.599	2.547	8.1	21.9	159 W	53	56					
3	12	11	46.09	+ 5	22.7	1.932	2.916	3.3	21.8	170 W	40	69	3	2	11	54.49	+ 8	42.0	1.568	2.537	6.0	21.8	164 W	54	55					
3	22	11	36.54	+ 4	20.8	1.914	2.904	2.8	21.7	172 E	41	68	3	7	11	49.38	+ 9	9.7	1.544	2.527	4.0	21.6	170 W	54	55					
4	1	11	27.42	+ 3	15.0	1.925	2.890	6.4	21.9	161 E	42	67	3	12	11	43.96	+ 9	36.9	1.528	2.517	2.9	21.5	173 W	55	54					
4	11	11	19.61	+ 2	11.9	1.965	2.875	10.1	22.1	150 E	43	66	3	17	11	38.35	+ 10	2.5	1.518	2.506	3.6	21.5	171 E	55	54					
501115 2013 TU₁₂									492410 2014 KN₄₀																					
2	21	12	4.82	+ 25	6.9	2.624	3.396	11.9	22.5	135 W	20	89	3	22	11	32.72	+ 10	25.6	1.516	2.495	5.4	21.6	166 E	55	54					
3	2	11	58.04	+ 24	40.7	2.522	3.377	9.9	22.3	144 W	20	89	3	27	11	27.25	+ 10	45.2	1.521	2.484	7.7	21.7	161 E	56	53					
3	12	11	50.00	+ 23	50.0	2.444	3.356	7.9	22.1	152 W	21	88	4	1	11	22.08	+ 11	0.8	1.532	2.473	9.9	21.8	155 E	56	53					
3	22	11	41.38	+ 22	35.9	2.394	3.335	6.6	22.0	157 E	22	87	4	6	11	17.36	+ 11	11.9	1.550	2.462	12.1	21.9	149 E	56	53					
4	1	11	33.00	+ 21	2.2	2.373	3.313	6.9	22.0	156 E	24	85	4	11	11	13.21	+ 11	18.2	1.573	2.450	14.2	22.0	143 E	56	53					
4	11	11	25.63	+ 19	15.6	2.381	3.290	8.6	22.1	151 E	26	83	501190 2011 CX₇																	
501190 2011 CX₇									360521 2003 QD₆₂																					
2	21	12	5.00	+ 22	48.5	0.621	1.561	17.9	21.4	151 W	68	41	2	21	12	10.39	+ 4	0.9	2.259	3.156	8.9	22.2	150 W	49	60					
2	26	11	59.73	+ 25	1.2	0.593	1.545	16.3	21.2	154 W	70	39	3	2	12	2.87	+ 4	51.2	2.195	3.153	5.5	21.9	162 W	50	59					
3	2	11	52.87	+ 27	16.4	0.570	1.528	15.7	21.1	155 W	72	37	3	12	11	54.06	+ 5	45.5	2.160	3.149	2.1	21.7	173 W	51	58					
3	7	11	44.54	+ 29	28.6	0.553	1.510	16.4	21.0	155 W	74	35	3	22	11	44.73	+ 6	38.3	2.156	3.144	2.8	21.8	171 E	52	57					
3	12	11	35.00	+ 31	32.0	0.541	1.492	18.4	21.0	152 W	77	32	4	1	11	35.73	+ 7	24.3	2.182	3.138	6.4	22.0	160 E	52	57					
3	17	11	24.60	+ 33	21.2	0.533	1.473	21.2	21.0	148 E	78	31	4	11	11	27.87	+ 7	59.1	2.236	3.131	9.8	22.2	148 E	53	56					
3	22	11	13.82	+ 34	51.6	0.530	1.453	24.7	21.1	143 E	80	29	327087 2004 XH₁																	
3	27	11	3.24	+ 36	0.3	0.530	1.432	28.3	21.2	137 E	81	28	2	21	12	11.31	+ 4	38.5	2.626	3.520	8.0	22.2	150 W	50	59					
4	1	10	53.40	+ 36	46.6	0.534	1.411	32.0	21.2	132 E	82	27	3	2	12	3.91	+ 5	15.9	2.537	3.493	5.0	22.0	162 W	50	59					
4	6	10	44.77	+ 37	11.3	0.540	1.389	35.6	21.3	126 E	82	27	3	12	11	55.21	+ 5	56.8	2.476	3.465	2.0	21.7	173 W	51	58					
4	11	10	37.64	+ 37	16.4	0.548	1.367	39.0	21.4	121 E	82	27	4	1	11	36.62	+ 7	11.5	2.450	3.406	5.8	21.9	160 E	52	57					
376830 2001 MJ₁₁									406420 2007 TF₁₇₀																					
2	21	12	5.19	+ 13	20.1	1.709	2.627	9.9	21.6	153 W	58	51	2	21	12	11.55	+ 0	56.6	2.144	3.031	9.8	22.2	149 W	44	65					
2	26	12	1.49	+ 14	3.3	1.675	2.618	8.2	21.5	158 W	59	50	3	2	12	3.89	+ 0	20.5	2.071	3.024	6.3	22.0	161 W	45	64					
3	2	11	57.24	+ 14	46.9	1.647	2.609	6.6	21.4	162 W	60	49	3	12	11	54.80	+ 0	24.2	2.027	3.015	2.3	21.7	173 W	45	64					
3	7	11	52.56	+ 15	29.6	1.627	2.599	5.5	21.3	166 W	60	49	3	22	11	45.06	+ 1	12.6	2.012	3.006	1.8	21.6	175 E	46	63					
3	12	11	47.56	+ 16	10.2	1.613	2.589	5.2	21.2	166 W	61	48	4	1	11	35.61	+ 1	59.4	2.028	2.995	5.9	21.9	162 E	47	62					
3	17	11	42.37	+ 16	47.5	1.607	2.579	5.9	21.3	165 E	62	47	4	11	11	27.34	+ 2	39.3	2.073	2.984	9.6	22.1	150 E	48	61					
3	22	11	37.15	+ 17	20.5	1.607	2.569	7.4	21.3	161 E	62	47																		
3	27	11	32.06	+ 17	48.2	1.615	2.558	9.2	21.4	156 E	63	46																		
4	1	11	27.24	+ 18	10.1	1.628	2.547	11.1	21.5	151 E	63	46																		
4	6	11	22.84	+ 18	25.																									

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

2020	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45° - 26°	2020	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45° - 26°
287662 2003 NW₆									325769 2010 LY₆₃ (<i>continuation</i>)								
2 21	12 12.12	+12 2.3	2.020	2.925	9.4	21.7	151 W	57 52	4 1	11 27.64	-1 48.4	1.553	2.519	7.3	21.4	161 E	43 66
2 26	12 8.68	+12 40.7	1.984	2.918	7.8	21.6	156 W	58 51	4 11	11 16.46	-1 5.0	1.583	2.494	12.0	21.6	149 E	44 65
3 2	12 4.76	+13 19.7	1.955	2.910	6.3	21.5	161 W	58 51	455265 2001 VS₄								
3 7	12 0.45	+13 58.2	1.932	2.902	5.1	21.4	165 W	59 50	2 21	12 15.46	-10 10.1	2.052	2.905	11.8	21.7	143 W	35 74
3 12	11 55.83	+14 35.3	1.917	2.894	4.4	21.3	167 W	60 49	3 2	12 8.11	-9 43.4	1.970	2.897	8.4	21.5	155 W	35 74
3 17	11 51.04	+15 10.0	1.909	2.885	4.7	21.3	166 W	60 49	3 12	11 59.15	-8 59.4	1.914	2.887	4.9	21.2	166 W	36 73
3 22	11 46.17	+15 41.4	1.909	2.877	5.8	21.4	163 E	61 48	3 22	11 49.37	-8 1.5	1.888	2.877	2.9	21.1	172 E	37 72
3 27	11 41.38	+16 8.7	1.916	2.868	7.3	21.4	159 E	61 48	4 1	11 39.76	-6 55.3	1.891	2.866	5.4	21.2	164 E	38 71
4 1	11 36.77	+16 31.3	1.929	2.858	9.0	21.5	153 E	62 47	4 11	11 31.28	-5 47.9	1.923	2.853	9.1	21.4	153 E	39 70
4 6	11 32.49	+16 48.8	1.949	2.849	10.7	21.6	148 E	62 47	329838 2004 SM₅₈								
4 11	11 28.61	+17 1.0	1.975	2.839	12.3	21.7	143 E	62 47	2 21	12 17.39	-7 3.5	2.123	2.984	11.1	21.9	144 W	38 71
4 16	11 25.21	+17 7.9	2.007	2.829	13.9	21.8	138 E	62 47	3 2	12 11.21	-6 29.2	2.019	2.952	7.9	21.6	156 W	39 70
282137 2001 QE₁₅₃									3 12	12 3.32	-5 39.6	1.940	2.918	4.2	21.3	168 W	39 70
2 21	12 12.36	+0 20.0	1.716	2.612	11.3	21.9	149 W	45 64	3 22	11 54.41	-4 38.1	1.891	2.885	1.7	21.1	175 E	40 69
3 2	12 5.23	+1 21.3	1.638	2.594	7.2	21.6	161 W	46 63	4 1	11 45.36	-3 30.1	1.871	2.850	4.9	21.3	166 E	41 68
3 12	11 56.24	+2 33.7	1.587	2.576	2.6	21.2	173 W	48 61	4 11	11 37.13	-2 22.5	1.879	2.815	9.0	21.4	154 E	43 66
3 22	11 46.32	+3 50.2	1.564	2.557	2.6	21.2	173 E	49 60	419666 2010 TZ₁₃₇								
4 1	11 36.60	+5 2.4	1.571	2.536	7.4	21.4	161 E	50 59	2 21	12 17.40	+7 22.9	2.349	3.239	8.9	21.6	149 W	52 57
4 11	11 28.23	+6 2.5	1.603	2.515	11.9	21.6	149 E	51 58	3 2	12 9.95	+8 13.4	2.307	3.259	5.8	21.4	161 W	53 56
429073 2009 ND₁									3 12	12 1.32	+9 4.0	2.294	3.278	3.0	21.3	170 W	54 55
2 21	12 12.43	+15 40.5	2.343	3.243	8.5	22.3	151 W	61 48	3 22	11 52.27	+9 49.5	2.312	3.296	3.3	21.3	169 E	55 54
2 26	12 8.40	+16 20.5	2.339	3.267	7.2	22.2	156 W	61 48	4 1	11 43.59	+10 25.2	2.360	3.313	6.2	21.5	159 E	55 54
3 2	12 4.03	+16 59.1	2.341	3.290	5.9	22.2	160 W	62 47	4 11	11 36.03	+10 48.1	2.436	3.329	9.2	21.8	148 E	56 53
3 7	11 59.44	+17 35.5	2.351	3.313	5.1	22.2	163 W	63 46	422729 2001 NC₁₅								
3 12	11 54.71	+18 8.8	2.369	3.335	4.7	22.2	164 W	63 46	2 21	12 18.07	-6 28.7	2.545	3.400	9.7	22.1	145 W	39 70
3 17	11 49.96	+18 38.4	2.394	3.358	5.1	22.2	163 W	64 45	3 2	12 11.11	-6 8.1	2.462	3.393	6.8	21.9	156 W	39 70
3 22	11 45.28	+19 3.9	2.427	3.380	5.9	22.3	160 E	64 45	3 12	12 2.82	-5 36.5	2.407	3.385	3.6	21.7	168 W	39 70
3 27	11 40.79	+19 24.8	2.468	3.401	7.0	22.4	156 E	64 45	3 22	11 53.85	-4 56.9	2.382	3.375	1.5	21.5	175 E	40 69
4 1	11 36.57	+19 40.9	2.515	3.423	8.2	22.5	151 E	65 44	4 1	11 44.98	-4 13.3	2.388	3.366	4.2	21.7	166 E	41 68
4 6	11 32.70	+19 52.2	2.569	3.444	9.4	22.7	146 E	65 44	4 11	11 36.95	-3 30.5	2.424	3.355	7.5	21.9	154 E	41 68
403242 2008 WD₃₁									172722 2004 BV₁₀₂								
2 21	12 13.90	+4 48.3	1.656	2.559	11.2	21.9	150 W	50 59	2 21	12 18.29	-4 30.5	1.726	2.602	12.4	21.5	145 W	40 69
3 2	12 6.33	+5 43.7	1.578	2.537	7.1	21.6	161 W	51 58	3 2	12 5.67	-3 31.3	1.663	2.612	7.9	21.2	159 W	41 68
3 12	11 56.75	+6 45.2	1.526	2.515	3.0	21.3	172 W	52 57	3 12	11 51.11	-2 16.9	1.631	2.618	3.0	21.0	172 W	43 66
3 22	11 46.13	+7 45.2	1.503	2.491	3.9	21.3	170 E	53 56	3 22	11 35.90	-0 54.7	1.631	2.622	2.8	21.0	173 E	44 65
4 1	11 35.70	+8 35.7	1.509	2.467	8.4	21.5	159 E	54 55	4 1	11 21.50	+0 26.4	1.665	2.623	7.8	21.3	159 E	45 64
4 11	11 26.67	+9 10.5	1.539	2.442	12.9	21.7	147 E	54 55	4 11	11 9.20	+1 38.1	1.728	2.621	12.3	21.5	146 E	47 62
415818 2001 QX₁₅₁									369995 1999 RV₁₉₅								
2 21	12 13.92	-33 2.1	2.643	3.340	13.6	21.7	128 W	12 83	2 21	12 19.14	-12 53.8	2.942	3.762	9.5	21.5	141 W	32 77
2 26	12 9.68	-33 26.9	2.608	3.349	12.8	21.7	132 W	12 83	3 2	12 12.95	-12 28.5	2.872	3.775	7.1	21.4	152 W	33 76
3 2	12 4.99	-33 45.5	2.578	3.358	11.9	21.6	136 W	11 82	3 12	12 5.70	-11 49.9	2.829	3.787	4.6	21.2	162 W	33 76
3 7	11 59.93	-33 57.6	2.554	3.367	11.1	21.6	139 W	11 82	3 22	11 57.96	-11 0.6	2.815	3.799	2.8	21.1	169 E	34 75
3 12	11 54.60	-34 3.0	2.536	3.376	10.4	21.5	142 W	11 82	4 1	11 50.34	-10 4.1	2.832	3.809	3.6	21.2	166 E	35 74
3 17	11 49.11	-34 1.5	2.524	3.385	9.8	21.5	145 W	11 82	4 11	11 43.48	-9 5.2	2.880	3.819	6.0	21.4	156 E	36 73
3 22	11 43.58	-33 53.4	2.518	3.393	9.4	21.5	146 E	11 82	168728 2000 OZ₃₃								
3 27	11 38.14	-33 38.8	2.519	3.401	9.2	21.5	147 E	11 82	2 21	12 19.31	-8 49.8	2.159	3.009	11.4	21.6	143 W	36 73
4 1	11 32.92	-33 18.5	2.527	3.409	9.2	21.5	147 E	12 83	3 2	12 12.19	-8 16.6	2.090	3.016	8.1	21.4	155 W	37 72
4 6	11 28.01	-32 53.2	2.541	3.417	9.4	21.5	146 E	12 83	3 12	12 3.60	-7 28.5	2.048	3.022	4.5	21.2	166 W	38 71
4 11	11 23.52	-32 23.7	2.562	3.424	9.9	21.6	144 E	13 84	3 22	11 54.32	-6 29.4	2.035	3.027	2.1	21.0	173 E	39 70
4 16	11 19.52	-31 50.9	2.588	3.431	10.5	21.6	141 E	13 84	4 1	11 45.26	-5 24.8	2.052	3.031	4.6	21.2	166 E	40 69
315187 2007 OS₁									4 11	11 37.27	-4 21.2	2.099	3.034	8.2	21.4	154 E	41 68
2 21	12 14.19	-13 59.8	2.178	3.013	11.9	22.4	141 W	31 78	359020 2008 UP₃₂₃								
3 2	12 6.67	-13 50.5	2.098	3.009	8.9	22.2	152 W	31 78	2 21	12 19.67	-10 56.4	1.828	2.677	13.2	22.2	142 W	34 75
3 12	11 57.62	-13 22.6	2.045	3.005	5.9	22.0	162 W	32 77	3 2	12 12.53	-10 37.5	1.741	2.663	9.7	22.0	153 W	34 75
3 22	11 47.84	-12 38.3	2.020	2.999	4.2	21.9	167 E	32 77	3 12	12 3.45	-9 59.0	1.679	2.649	5.9	21.7	164 W	35 74
4 1	11 38.29	-11 42.0	2.024	2.993	5.7	22.0	163 E	33 76	3 22	11 53.28	-9 3.7	1.645	2.634	3.4	21.5	171 E	36 73
4 11	11 29.87	-10 40.3	2.057	2.985	8.7	22.1	153 E	34 75	4 1	11 43.14	-7 57.2	1.639	2.617	5.7	21.6	165 E	37 72
394013 2005 VY₅₉									4 11	11 34.15	-6 47.5	1.662	2.600	9.7	21.8	154 E	38 71
2 21	12 14.24	+8 6.2	1.820	2.723	10.4	22.0	150 W	53 56	410685 2008 WA₅₉								
2 26	12 10.45	+8 37.5	1.791	2.725	8.5	21.9	156 W	54 55	2 21	12 20.01	-4 20.1	1.517	2.396	13.6	22.0	145 W	41 68
3 2	12 6.16	+9 9.8	1.769	2.727	6.6	21.8	162 W	54 55	3 2	12 13.99	-3 21.6	1.428	2.372	9.4	21.7	157 W	42 67
3 7	12 1.47	+9 42.2	1.754	2.729	4.8	21.7	167 W	55 54	3 12	12 5.70	-2 3.8	1.363	2.347	4.5	21.3	169 W	43 66
3 12	11 56.49	+10 13.8	1.746	2.731	3.5	21.6	170 W	55 54	3 22	11 56.02	-0 32.9	1.325	2.321	1.0	21.0	178 E	44 65
3 17	11 51.36	+10 43.5	1.746	2.732	3.4	21.6	171 W	56 53	4 1	11 46.17	+1 1.3	1.315	2.294	6.			

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

2020	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	2020	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
416595 2004 NZ₈ (continuation)										280244 2002 WP₁₁ (continuation)									
4 1	11 48.20	+13 7.3	2.731	3.676	5.9	21.6	158 E	58	51	4 1	11 52.60	- 8 41.8	1.574	2.557	5.0	21.5	167 E	36	73
4 11	11 40.99	+13 35.3	2.823	3.707	8.4	21.8	147 E	59	50	4 11	11 41.83	- 7 21.3	1.569	2.518	9.3	21.7	156 E	38	71
363237 2001 YX										464644 2000 RO₃₈									
2 21	12 20.43	-38 50.5	2.915	3.542	13.7	22.3	122 W	6	77	2 21	12 31.56	- 6 16.4	2.478	3.311	10.7	22.0	142 W	39	70
2 26	12 16.76	-39 13.7	2.869	3.543	13.1	22.2	126 W	6	77	3 2	12 24.45	- 6 12.3	2.366	3.282	7.8	21.8	153 W	39	70
3 2	12 12.62	-39 31.1	2.828	3.544	12.4	22.1	130 W	5	76	3 12	12 15.59	- 5 57.6	2.281	3.252	4.5	21.5	165 W	39	70
3 7	12 8.06	-39 42.0	2.792	3.545	11.8	22.1	133 W	5	76	3 22	12 5.57	- 5 34.3	2.226	3.220	1.5	21.3	175 E	39	70
3 12	12 3.19	-39 46.3	2.761	3.546	11.2	22.0	136 W	5	76	4 1	11 55.21	- 5 5.4	2.203	3.188	3.6	21.4	168 E	40	69
3 17	11 58.09	-39 43.6	2.736	3.546	10.6	22.0	139 W	5	76	4 11	11 45.40	- 4 35.5	2.209	3.154	7.3	21.5	157 E	40	69
3 22	11 52.89	-39 33.9	2.716	3.546	10.2	22.0	141 E	5	76	338172 2002 RV₁₁₂									
3 27	11 47.69	-39 17.4	2.703	3.546	9.9	22.0	142 E	6	77	2 21	12 32.44	-11 28.5	1.920	2.744	13.7	21.7	139 W	34	75
4 1	11 42.63	-38 54.4	2.696	3.546	9.7	21.9	143 E	6	77	3 2	12 24.70	-10 13.5	1.875	2.784	9.9	21.5	151 W	35	74
4 6	11 37.83	-38 25.6	2.695	3.545	9.8	21.9	143 E	7	78	3 12	12 15.36	- 8 39.8	1.855	2.822	5.8	21.4	163 W	36	73
4 11	11 33.37	-37 51.7	2.700	3.544	10.0	22.0	142 E	7	78	3 22	12 5.34	- 6 54.0	1.865	2.858	2.2	21.2	174 E	38	71
4 16	11 29.34	-37 13.5	2.711	3.543	10.4	22.0	140 E	8	79	4 1	11 55.67	- 5 4.6	1.907	2.893	4.0	21.4	168 E	40	69
405403 2004 PJ₅₀										4 11	11 47.28	- 3 20.7	1.979	2.926	7.8	21.7	157 E	42	67
2 21	12 22.93	- 6 35.1	1.804	2.664	12.8	22.3	143 W	38	71	159560 2001 TO₁₀₃									
3 2	12 15.34	- 6 28.7	1.714	2.646	9.1	22.0	155 W	39	70	2 21	12 33.17	+32 49.0	1.884	2.727	13.1	21.3	141 W	78	31
3 12	12 5.65	- 6 7.6	1.649	2.626	4.9	21.7	167 W	39	70	2 26	12 28.42	+33 33.5	1.846	2.709	12.4	21.2	144 W	79	30
3 22	11 54.72	- 5 34.5	1.613	2.606	2.2	21.5	174 E	39	70	3 2	12 22.88	+34 14.2	1.813	2.692	11.9	21.2	146 W	79	30
4 1	11 43.70	- 4 54.5	1.605	2.585	5.6	21.6	165 E	40	69	3 7	12 16.65	+34 49.5	1.788	2.673	11.7	21.1	147 W	80	29
4 11	11 33.80	- 4 14.1	1.626	2.562	10.0	21.8	154 E	41	68	3 12	12 9.87	+35 17.8	1.768	2.655	11.9	21.1	147 W	80	29
313607 2003 QL₃₀										3 17	12 2.69	+35 38.0	1.755	2.636	12.3	21.1	146 W	81	28
2 21	12 23.56	+ 8 19.2	2.109	2.994	10.1	21.6	148 W	53	56	3 22	11 55.29	+35 49.0	1.748	2.617	13.1	21.1	143 E	81	28
2 26	12 19.86	+ 8 51.0	2.089	3.009	8.4	21.5	154 W	54	55	3 27	11 47.90	+35 50.0	1.748	2.598	14.1	21.1	141 E	81	28
3 2	12 15.72	+ 9 23.3	2.076	3.023	6.7	21.4	159 W	54	55	4 1	11 40.71	+35 41.0	1.753	2.578	15.2	21.1	137 E	81	28
3 7	12 11.25	+ 9 55.4	2.070	3.037	5.1	21.3	164 W	55	54	4 6	11 33.94	+35 22.0	1.764	2.558	16.5	21.2	134 E	80	29
3 12	12 6.54	+10 26.5	2.071	3.051	3.8	21.3	168 W	55	54	4 11	11 27.72	+34 53.6	1.779	2.537	17.8	21.2	129 E	80	29
3 17	12 1.71	+10 55.7	2.080	3.064	3.3	21.2	170 W	56	53	4 16	11 22.20	+34 16.6	1.800	2.516	19.0	21.2	125 E	79	30
3 22	11 56.86	+11 22.3	2.096	3.077	3.9	21.3	168 E	56	53	4 21	11 17.46	+33 31.9	1.824	2.495	20.2	21.3	121 E	79	30
3 27	11 52.12	+11 45.7	2.120	3.090	5.2	21.4	164 E	57	52	4 26	11 13.57	+32 40.3	1.852	2.474	21.3	21.3	117 E	78	31
4 1	11 47.60	+12 5.4	2.151	3.103	6.8	21.5	159 E	57	52	5 1	11 10.55	+31 43.0	1.882	2.452	22.3	21.4	113 E	77	32
4 6	11 43.40	+12 21.1	2.189	3.115	8.3	21.6	153 E	57	52	5 6	11 8.41	+30 40.7	1.916	2.430	23.2	21.4	108 E	76	33
4 11	11 39.60	+12 32.5	2.234	3.127	9.8	21.8	148 E	58	51	5 11	11 7.10	+29 34.5	1.951	2.407	24.0	21.5	104 E	75	34
4 16	11 36.24	+12 39.8	2.284	3.139	11.3	21.9	142 E	58	51	306288 2011 SM₂₈									
277162 2005 NM₂₀										2 21	12 33.65	-11 49.7	1.849	2.671	14.2	21.3	139 W	33	76
2 21	12 25.84	-29 1.2	2.808	3.515	12.6	21.9	129 W	16	87	3 2	12 26.76	-11 53.8	1.748	2.652	10.9	21.0	150 W	33	76
3 2	12 18.03	-29 41.0	2.716	3.514	10.9	21.8	138 W	15	86	3 12	12 17.57	-11 39.3	1.672	2.631	7.1	20.7	161 W	33	76
3 12	12 8.62	-29 59.4	2.648	3.512	9.3	21.7	145 W	15	86	3 22	12 6.84	-11 7.1	1.623	2.609	4.0	20.5	169 W	34	75
3 22	11 58.27	-29 55.0	2.606	3.509	8.0	21.6	151 E	15	86	4 1	11 55.66	-10 21.0	1.603	2.587	4.9	20.5	167 E	35	74
4 1	11 47.84	-29 28.4	2.592	3.505	7.7	21.5	152 E	16	87	4 11	11 45.28	- 9 27.4	1.611	2.563	8.8	20.7	157 E	36	73
4 11	11 38.21	-28 43.6	2.605	3.501	8.5	21.6	149 E	16	87	4 21	11 36.73	- 8 33.8	1.644	2.538	12.9	20.9	146 E	36	73
399637 2004 PQ₆₈										5 1	11 30.74	- 7 47.1	1.700	2.513	16.6	21.0	135 E	37	72
2 21	12 26.59	- 0 59.9	2.037	2.903	11.3	22.3	145 W	44	65	5 11	11 27.67	- 7 12.4	1.772	2.486	19.6	21.2	124 E	38	71
3 2	12 20.11	+ 0 12.0	1.972	2.910	7.7	22.0	157 W	45	64	5 21	11 27.50	- 6 52.4	1.856	2.458	22.0	21.4	115 E	38*	71
3 12	12 12.03	+ 1 33.8	1.935	2.917	3.7	21.8	169 W	47	62	5 31	11 30.07	- 6 48.2	1.948	2.430	23.7	21.5	106 E	35*	71
3 22	12 3.11	+ 2 59.0	1.928	2.923	1.2	21.6	176 E	48	61	331811 2003 SU₉₉									
4 1	11 54.27	+ 4 20.1	1.951	2.928	5.0	21.9	165 E	49	60	2 21	12 34.98	-12 38.0	2.577	3.376	11.3	21.3	138 W	32	77
4 11	11 46.41	+ 5 30.4	2.002	2.931	8.9	22.1	153 E	51	58	3 2	12 29.87	-12 1.4	2.459	3.348	8.8	21.1	149 W	33	76
361071 2006 AO₄										3 12	12 23.16	-11 7.9	2.366	3.318	5.8	20.8	160 W	34	75
2 21	12 26.97	-27 56.5	3.460	4.160	10.6	21.9	130 W	17	88	3 22	12 15.34	- 9 59.4	2.301	3.288	2.9	20.6	170 W	35	74
3 2	12 19.76	-28 14.2	3.361	4.158	9.0	21.7	139 W	17	88	4 1	12 7.12	- 8 40.0	2.267	3.257	2.9	20.5	170 E	36	73
3 12	12 11.29	-28 14.3	3.287	4.155	7.5	21.6	147 W	17	88	4 11	11 59.27	- 7 15.6	2.264	3.225	6.0	20.7	160 E	38	71
3 22	12 2.10	-27 56.1	3.241	4.151	6.3	21.5	153 E	17	88	4 21	11 52.50	- 5 52.6	2.288	3.192	9.3	20.8	149 E	39	70
4 1	11 52.83	-27 20.8	3.223	4.146	6.0	21.5	154 E	18	89	5 1	11 47.38	- 4 36.9	2.338	3.158	12.4	21.0	138 E	40	69
4 11	11 44.15	-26 31.7	3.234	4.140	6.7	21.5	151 E	18	89	5 11	11 44.25	- 3 33.0	2.408	3.124	14.9	21.1	127 E	41	68
413907 2006 WO₂₉										5 21	11 43.24	- 2 43.5	2.494	3.088	17.0	21.2	117 E	42*	67
2 21	12 27.79	+30 30.4	2.542	3.387	10.0	21.5	143 W	76	33	5 31	11 44.35	- 2 9.3	2.590	3.052	18.5	21.3	107 E	41*	66
2 26	12 24.52	+31 27.1	2.530	3.395	9.4	21.5	146 W	76	33	6 10	11 47.46	- 1 50.5	2.692	3.015	19.5	21.4	99 E	37*	66
3 2	12 20.81	+32 20.5	2.525	3.402	9.0	21.5	147 W	77	32	6 20	11 52.39	- 1 46.1	2.796	2.977	20.0	21.5	90 E	33*	66
3 7	12 16.73	+33 9.7	2.526	3.410	8.8	21.5	148 W	78	31	291542 2006 EK₄₇									
3 12	12 12.36	+33 53.8	2.534	3.417	8.9	21.5	148 W	79	30	2 21	12 35.84	- 9 54.6	2.095	2.916	12.8	21.7	139 W	35	74
3 17	12 7.82	+34 32.0	2.549	3.423	9.2	21.5	146 W	80	29	3 2	12 27.14	-10 13.4	2.021	2.925	9.6	21.5	151 W	35	74
3 22	12 3.20	+35 3.7	2.571	3.430	9.8	21.6	144 E	80	29	3 12	12 16.54	-10 17.9	1.973	2.934	6.0	21.3	162 W	35	74
3 27	11 58.62	+35 28.5	2.599	3.436	10.4	21.6	141 E	80	29	3 22	12 4.86	-10 9.4	1.954	2.942	3.2	21.1	170 E	35	74
4 1																			

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

2020	α2000	δ2000	Δ	r	β	V	ψ	45°–26°	2020	α2000	δ2000	Δ	r	β	V	ψ	45°–26°				
470004 2006 MJ ₁₀ (continuation)									302129 2001 QY ₁₉₃ (continuation)												
3	22	11 52.38	+57 44.5	1.839	2.509	19.8	22.9	122 E	77	6	5	16	12 9.50	-7 20.1	1.672	2.443	18.6	21.0	130 E	38	71
3	27	11 43.16	+57 44.1	1.890	2.531	20.1	23.0	119 E	77	6	5	21	12 8.89	-6 57.0	1.710	2.431	20.1	21.1	124 E	38	71
4	1	11 34.77	+57 31.0	1.945	2.552	20.5	23.1	116 E	77	6	5	26	12 9.00	-6 38.5	1.751	2.418	21.4	21.2	120 E	38*	71
4	6	11 27.42	+57 6.7	2.003	2.573	20.9	23.2	114 E	78	7	5	31	12 9.80	-6 24.8	1.794	2.405	22.5	21.3	115 E	38*	70
277810 2006 FV ₃₅									388945 2008 TZ ₃												
2	21	12 54.61	-10 53.4	0.489	1.377	30.8	22.1	135 W	34	75	2	21	13 20.69	+12 55.2	0.549	1.428	29.7	21.2	134 W	58	51
2	26	12 48.89	-9 41.1	0.459	1.379	26.6	21.8	141 W	35	74	3	2	13 30.80	+13 50.3	0.452	1.370	27.4	20.6	140 W	59	50
3	2	12 41.06	-8 7.6	0.432	1.379	21.8	21.5	149 W	37	72	3	12	13 38.48	+15 0.6	0.365	1.313	25.0	20.0	146 W	60	49
3	7	12 31.16	-6 12.1	0.409	1.378	16.4	21.2	157 W	39	70	3	22	13 43.17	+16 18.0	0.288	1.255	22.9	19.3	151 W	61	48
3	12	12 19.37	-3 55.7	0.391	1.376	10.4	20.9	166 W	41	68	3	27	13 44.19	+16 54.6	0.253	1.227	22.3	18.9	152 W	62	47
3	17	12 6.04	-1 21.8	0.378	1.372	3.9	20.5	175 W	44	65	4	1	13 44.25	+17 25.4	0.220	1.199	22.0	18.6	153 W	62	47
3	22	11 51.75	+1 23.0	0.371	1.366	2.9	20.4	176 E	46	63	4	6	13 43.29	+17 45.8	0.188	1.172	22.3	18.2	154 W	63	46
3	27	11 37.24	+4 10.1	0.369	1.359	9.8	20.7	167 E	49	60	4	11	13 41.22	+17 49.7	0.158	1.146	23.2	17.8	153 W	63	46
4	1	11 23.30	+6 50.2	0.373	1.351	16.6	21.0	157 E	52	57	4	13	13 40.02	+17 44.7	0.147	1.136	23.6	17.6	153 W	63	46
4	6	11 10.61	+9 16.0	0.382	1.341	23.0	21.2	148 E	54	55	4	15	13 38.56	+17 34.8	0.136	1.126	24.2	17.4	153 W	63	46
4	11	10 59.64	+11 22.7	0.395	1.330	28.8	21.5	140 E	56	53	4	17	13 36.83	+17 18.7	0.125	1.116	24.8	17.3	152 E	62	47
4	16	10 50.66	+13 8.7	0.411	1.317	34.1	21.7	133 E	58	51	4	19	13 34.78	+16 54.9	0.114	1.106	25.5	17.1	152 E	62	47
160707 2000 QP ₁₀									388945 2008 TZ ₃												
2	21	13 0.01	-10 13.0	2.180	2.951	14.0	21.4	134 W	35	74	4	21	13 32.33	+16 21.5	0.103	1.096	26.2	16.9	151 E	61	48
3	2	12 54.92	-9 58.7	2.943	2.943	11.2	21.2	145 W	35	74	4	25	13 29.41	+15 35.5	0.093	1.087	26.9	16.6	151 E	61	48
3	12	12 47.68	-9 29.1	2.977	2.935	7.7	21.0	157 W	36	73	4	25	13 29.41	+15 35.5	0.093	1.087	26.9	16.6	151 E	61	48
3	22	12 38.81	-8 46.0	1.944	2.927	3.9	20.7	168 W	36	73	4	25	13 25.88	+14 32.8	0.082	1.078	27.7	16.4	150 E	60	49
4	1	12 29.12	-7 53.1	1.919	2.917	1.6	20.5	175 E	37	72	4	27	13 21.55	+13 7.0	0.072	1.069	28.4	16.1	150 E	58	51
4	11	12 19.59	-6 55.9	1.925	2.906	5.0	20.8	165 E	38	71	4	29	13 16.07	+11 7.9	0.062	1.061	29.2	15.8	149 E	56	53
4	21	12 11.11	-6 0.7	1.959	2.894	8.9	21.0	154 E	39	70	5	1	13 8.90	+8 18.4	0.052	1.053	29.9	15.4	149 E	53	56
5	1	12 4.43	-5 12.9	2.019	2.881	12.4	21.2	142 E	40	69	5	2	13 4.37	+6 26.0	0.048	1.049	30.3	15.2	148 E	51	58
5	11	12 0.00	-4 36.8	2.099	2.867	15.4	21.3	131 E	40	69	5	3	12 58.97	+4 7.7	0.043	1.045	30.9	15.0	148 E	49	60
412961 2014 QS ₂₉₀									388945 2008 TZ ₃												
2	21	13 0.66	+6 37.4	1.691	2.519	15.0	21.5	139 W	52	57	5	4	12 52.40	+1 15.1	0.038	1.041	31.6	14.8	147 E	46	63
3	2	12 56.67	+7 56.7	1.593	2.496	11.8	21.2	149 W	53	56	5	5	12 44.20	-2 23.6	0.034	1.037	32.6	14.5	146 E	43	66
3	12	12 50.01	+9 25.0	1.519	2.473	8.3	20.9	159 W	54	55	5	6	12 33.67	-7 5.0	0.030	1.033	34.3	14.3	145 E	38	71
3	22	12 41.19	+10 53.7	1.471	2.448	5.9	20.7	165 W	56	53	5	7	12 19.70	-13 11.0	0.026	1.030	37.1	14.0	142 E	32	77
4	1	12 31.16	+12 12.7	1.449	2.423	6.9	20.7	163 E	57	52	5	8	12 0.35	-21 6.1	0.023	1.026	41.8	13.9	137 E	24	85
4	11	12 21.15	+13 12.5	1.455	2.397	10.5	20.9	154 E	58	51	5	9	11 32.22	-31 2.9	0.020	1.023	48.9	13.8	130 E	14	85
4	21	12 12.37	+13 47.0	1.484	2.370	14.5	21.0	144 E	59	50	5	10	10 49.25	-42 26.3	0.019	1.019	58.8	13.9	120 E	3*	74
5	1	12 5.79	+13 54.0	1.533	2.343	18.2	21.2	133 E	59	50	5	11	9 42.32	-53 8.5	0.019	1.016	70.3	14.3	109 E	—	63
5	11	12 1.99	+13 34.8	1.598	2.315	21.3	21.4	124 E	59	50	5	12	8 7.70	-59 56.7	0.020	1.013	81.5	14.8	97 E	—	55*
333284 1999 PJ ₁									388945 2008 TZ ₃												
2	21	13 1.19	-48 15.7	1.595	2.148	25.6	21.9	110 W	—	68	5	13	6 27.66	-61 19.6	0.022	1.010	90.7	15.4	88 E	—	45*
2	26	12 55.32	-49 50.3	1.565	2.159	24.9	21.9	113 W	—	66	5	14	5 11.80	-59 9.1	0.025	1.007	97.7	16.0	81 E	—	37*
3	2	12 47.92	-51 16.0	1.539	2.170	24.1	21.8	116 W	—	66	5	15	4 22.56	-55 51.5	0.029	1.004	102.8	16.5	76 E	—	30*
3	7	12 39.02	-52 30.5	1.516	2.180	23.4	21.8	119 W	—	63	5	16	3 50.78	-52 36.6	0.033	1.001	106.4	17.0	72 E	—	25*
3	12	12 28.74	-53 32.0	1.497	2.190	22.7	21.8	122 W	—	62	5	17	3 29.33	-49 45.1	0.037	0.999	108.9	17.4	69 W	—	22*
3	17	12 17.30	-54 18.4	1.482	2.199	22.0	21.7	124 W	—	62	5	18	3 14.14	-47 19.0	0.042	0.996	110.7	17.7	67 W	—	25*
3	22	12 5.05	-54 48.2	1.472	2.208	21.5	21.7	126 E	—	61	5	19	3 2.92	-45 15.4	0.046	0.994	111.9	18.0	66 W	—	27*
3	27	11 52.45	-55 0.7	1.465	2.216	21.0	21.7	127 E	—	61	5	20	2 54.35	-43 30.2	0.051	0.991	112.7	18.2	65 W	—	29*
4	1	11 40.00	-54 55.9	1.464	2.224	20.7	21.7	128 E	—	61	5	21	2 47.61	-42 0.0	0.056	0.989	113.2	18.5	64 W	—	31*
4	6	11 28.18	-54 34.8	1.467	2.231	20.6	21.7	128 E	—	61	5	22	2 42.20	-40 41.8	0.060	0.987	113.4	18.7	63 W	—	33*
4	11	11 17.41	-53 59.5	1.474	2.238	20.6	21.7	128 E	—	62	5	23	2 37.78	-39 33.4	0.065	0.985	113.5	18.8	63 W	—	34*
4	16	11 7.98	-53 12.0	1.486	2.244	20.8	21.7	128 E	—	63	5	24	2 34.11	-38 32.9	0.070	0.983	113.4	19.0	63 W	—	35*
280252 2002 XK ₁₄									388945 2008 TZ ₃												
2	21	13 7.35	-1 32.2	1.931	2.723	14.8	21.4	135 W	43	66	5	25	2 31.03	-37 38.9	0.075	0.981	113.2	19.1	63 W	—	37*
3	2	13 3.09	-0 32.2	1.834	2.716	11.6	21.2	146 W	44	65	5	26	2 28.42	-36 50.2	0.080	0.979	113.0	19.2	63 W	—	38*
3	12	12 56.43	+0 41.0	1.761	2.708	7.9	21.0	158 W	46	63	5	27	2 26.19	-36 6.0	0.084	0.978	112.6	19.3	63 W	—	39*
3	22	12 47.88	+2 2.0	1.714	2.699	4.0	20.7	169 W	47	62	5	28	2 24.28	-35 25.5	0.089	0.976	112.2	19.4	63 W	—	41*
4	1	12 38.28	+3 23.4	1.696	2.689	3.0	20.6	172 E	48	61	5	29	2 22.63	-34 48.1	0.094	0.975	111.7	19.5	63 W	—	42*
4	11	12 28.69	+4 36.8	1.707	2.678	6.6	20.8	162 E	50	59	5	30	2 21.21	-34 13.4	0.099	0.974	111.2	19.6	64 W	—	43*
4	21	12 20.13	+5 35.7	1.745	2.666	10.7	21.0	151 E	51	58	5	31	2 19.99	-33 40.9	0.104	0.973	110.6	19.6	64 W	—	44*
5	1	12 13.41	+6 15.6	1.807	2.653	14.4	21.2	139 E	51	58	6	2	2 18.02	-32 41.5	0.113	0.971	109.4	19.7	65 W	—	46*
5	11	12 9.06	+6 35.0	1.888	2.639	17.4	21.4	129 E	52	57	6	4	2 16.58	-31 48.0	0.123	0.970	108.1	19.8	65 W	—	48*
302129 2001 QY ₁₉₃									388945 2008 TZ ₃												
2	21	13 9.95	-15 15.2	1.885	2.625	17.0	21.4	129 W	30	79	6	6	2 15.57	-30 59.1	0.133	0.969	106.7	19.9	66 W	—	50*
3	2	13 6.46	-15 11.0	1.769	2.606	14.2	21.1	140 W	30	79	6	8	2 14.90	-30 13.6	0.142	0.968	105.3	20.0	67 W	—	52*
3	12	13 0.33	-14 46.1	1.673	2.588	10.7	20.9	151 W	30	79	6	10	2 14.53	-29 3							

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

2020	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	2020	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
388945 2008 TZ₃										213640 2002 RA₆₂									
<i>(continuation)</i>																			
9 8	1 26.59	-17 53.2	0.377	1.331	26.6	20.1	144 W	27	82	2 21	13 33.18	-6 50.8	2.202	2.911	15.7	21.3	127 W	38	71
9 13	1 14.00	-17 29.5	0.392	1.360	21.8	20.1	150 W	28	81	3 2	13 30.02	-6 50.1	2.072	2.887	13.2	21.1	138 W	38	71
9 18	1 1.30	-16 57.5	0.410	1.389	17.5	20.1	155 W	28	81	3 12	13 24.34	-6 38.2	1.962	2.863	10.1	20.8	150 W	38	71
9 23	0 49.02	-16 17.0	0.433	1.417	14.2	20.1	160 W	29	80	3 22	13 16.38	-6 16.4	1.875	2.838	6.4	20.5	161 W	39	70
9 28	0 37.65	-15 28.6	0.460	1.446	12.4	20.3	162 W	30	79	4 1	13 6.69	-5 47.2	1.816	2.812	2.2	20.2	174 W	39	70
10 3	0 27.53	-14 33.8	0.491	1.474	12.5	20.4	161 E	30	79	4 11	12 56.15	-5 14.8	1.787	2.785	2.3	20.1	174 E	40	69
10 8	0 18.87	-13 34.3	0.527	1.503	14.0	20.7	159 E	31	78	4 16	12 50.89	-4 58.8	1.783	2.771	4.5	20.3	167 E	40	69
10 13	0 11.77	-12 31.6	0.568	1.530	16.2	21.0	155 E	32	77	4 21	12 45.80	-4 44.0	1.786	2.757	6.7	20.4	161	40	69
10 18	0 6.23	-11 27.0	0.613	1.558	18.6	21.3	150 E	34	75	4 26	12 41.02	-4 30.7	1.796	2.743	8.8	20.5	155	40	69
10 23	0 2.23	-10 21.3	0.662	1.585	20.9	21.5	145 E	35	74	5 1	12 36.65	-4 19.8	1.813	2.728	10.9	20.6	149 E	41	68
10 28	23 59.64	-9 15.3	0.714	1.611	23.0	21.8	141 E	36	73	5 6	12 32.79	-4 11.5	1.835	2.713	12.8	20.6	144 E	41	68
										5 11	12 29.50	-4 6.3	1.863	2.699	14.5	20.7	138 E	41	68
										5 16	12 26.83	-4 4.4	1.895	2.684	16.1	20.8	132 E	41	68
282873 2007 ET₆₅										5 21	12 24.80	-4 5.9	1.932	2.668	17.6	20.9	127 E	41	68
2 21	13 23.44	-3 14.9	1.781	2.541	17.1	21.5	131 W	42	67	5 26	12 23.45	-4 10.9	1.972	2.653	18.9	21.0	122 E	41*	68
3 2	13 20.78	-2 36.8	1.670	2.523	14.1	21.2	142 W	42	67	5 31	12 22.76	-4 19.5	2.015	2.637	20.0	21.0	117 E	40*	68
3 12	13 15.33	-1 43.9	1.579	2.505	10.4	20.9	153 W	43	66	6 5	12 22.72	-4 31.5	2.060	2.621	21.0	21.1	112 E	39*	69
3 22	13 7.41	-0 39.8	1.511	2.485	6.1	20.6	165 W	44	65	6 10	12 23.31	-4 47.0	2.107	2.605	21.8	21.2	108 E	38*	69
4 1	12 57.74	+0 29.1	1.470	2.465	2.6	20.4	174 W	45	64	6 15	12 24.51	-5 5.6	2.156	2.589	22.4	21.2	104 E	36*	69
4 6	12 52.59	+1 2.9	1.460	2.455	3.1	20.4	172 E	46	63	6 20	12 26.28	-5 27.4	2.205	2.573	22.9	21.3	99	33*	69
4 11	12 47.43	+1 34.8	1.457	2.445	5.1	20.5	167	47	62	6 25	12 28.61	-5 52.1	2.254	2.556	23.3	21.3	95	31*	70
4 16	12 42.41	+2 3.9	1.460	2.434	7.4	20.6	162 E	47	62	6 30	12 31.46	-6 19.7	2.304	2.539	23.6	21.3	91 E	29*	70
4 21	12 37.68	+2 29.3	1.471	2.423	9.8	20.7	156 E	47	62	7 5	12 34.79	-6 49.9	2.353	2.523	23.7	21.4	88 E	26*	71*
4 26	12 33.37	+2 50.4	1.487	2.412	12.0	20.8	150 E	48	61	7 10	12 38.58	-7 22.5	2.402	2.506	23.8	21.4	84 E	24*	71*
5 1	12 29.61	+3 6.6	1.509	2.400	14.2	20.9	144 E	48	61	7 15	12 42.81	-7 57.4	2.450	2.488	23.7	21.4	80 E	22*	70*
5 6	12 26.46	+3 17.6	1.536	2.389	16.2	21.0	139	48	61	7 20	12 47.45	-8 34.4	2.496	2.471	23.6	21.5	77 E	20*	68*
5 11	12 24.00	+3 23.4	1.567	2.377	18.0	21.1	133	48	61	7 25	12 52.48	-9 13.4	2.542	2.453	23.4	21.5	73 E	18*	66*
5 16	12 22.24	+3 24.0	1.602	2.365	19.6	21.2	128	48	61	7 30	12 57.89	-9 54.2	2.585	2.436	23.1	21.5	70 E	17*	66*
5 21	12 21.20	+3 19.4	1.641	2.353	21.1	21.3	123 E	48	61	8 4	13 3.64	-10 36.6	2.627	2.418	22.7	21.5	67 E	15*	60*
5 26	12 20.90	+3 9.9	1.682	2.341	22.4	21.3	118 E	48*	61										
5 31	12 21.31	+2 55.7	1.726	2.329	23.5	21.4	114 E	47*	61										
										356520 2011 SV₈₇									
										2 21	13 37.27	-14 26.0	1.607	2.306	20.9	21.5	124 W	31	78
358629 2007 VN₁₆₆										3 2	13 37.31	-14 43.0	1.481	2.280	18.4	21.2	134 W	30	79
2 21	13 25.37	+0 29.8	1.809	2.572	16.8	21.4	131 W	45	64	3 12	13 34.25	-14 41.4	1.371	2.253	15.0	20.9	144 W	30	79
3 2	13 22.94	+1 11.5	1.688	2.543	13.9	21.2	142 W	46	63	3 22	13 28.09	-14 19.2	1.281	2.226	10.7	20.6	155 W	31	78
3 12	13 17.70	+2 5.6	1.588	2.513	10.4	20.9	153 W	47	62	4 1	13 19.30	-13 36.1	1.213	2.198	5.8	20.2	167 W	31	78
3 22	13 9.89	+3 7.7	1.511	2.482	6.5	20.6	164 W	48	61	4 6	13 14.22	-13 7.5	1.188	2.184	3.4	20.0	172 W	32	77
4 1	13 0.17	+4 10.7	1.460	2.451	4.0	20.3	170 W	49	60	4 11	13 8.89	-12 35.3	1.170	2.170	2.3	19.9	175 E	32	77
4 6	12 54.91	+4 40.1	1.445	2.435	4.6	20.3	169 E	50	59	4 16	13 3.51	-12 0.4	1.158	2.155	3.9	19.9	172 E	33	76
4 11	12 49.59	+5 6.5	1.437	2.418	6.3	20.4	165 E	50	59	4 21	12 58.25	-11 23.9	1.152	2.141	6.6	20.1	166 E	34	75
4 16	12 44.36	+5 29.2	1.436	2.402	8.4	20.5	160 E	50	59	4 26	12 53.31	-10 47.1	1.153	2.127	9.3	20.2	160 E	34	75
4 21	12 39.38	+5 47.4	1.441	2.386	10.6	20.6	154 E	51	58	5 1	12 48.87	-10 11.5	1.160	2.112	12.1	20.3	154 E	35	74
4 26	12 34.79	+6 0.5	1.452	2.369	12.8	20.6	148 E	51	58	5 6	12 45.08	-9 38.3	1.172	2.097	14.7	20.4	148 E	35	74
5 1	12 30.72	+6 8.0	1.468	2.352	15.0	20.7	143 E	51	58	5 11	12 42.02	-9 8.5	1.188	2.083	17.2	20.5	143 E	36	73
5 6	12 27.27	+6 9.8	1.490	2.335	17.0	20.8	137 E	51	58	5 16	12 39.78	-8 42.8	1.210	2.068	19.4	20.6	137 E	36	73
5 11	12 24.51	+6 6.1	1.515	2.318	18.8	20.9	132 E	51	58	5 21	12 38.40	-8 21.9	1.235	2.054	21.5	20.7	132 E	37	72
5 16	12 22.47	+5 56.8	1.545	2.300	20.5	21.0	127 E	51	58	5 26	12 37.89	-8 6.2	1.263	2.039	23.4	20.8	127 E	37	72
5 21	12 21.18	+5 42.2	1.577	2.283	22.0	21.0	122 E	51	58	5 31	12 38.26	-7 55.9	1.294	2.024	25.1	20.8	122 E	37*	72
5 26	12 20.65	+5 22.6	1.613	2.265	23.4	21.1	117 E	50*	59	6 5	12 39.49	-7 51.1	1.327	2.010	26.6	20.9	118 E	37*	72
5 31	12 20.87	+4 58.2	1.650	2.248	24.6	21.2	113 E	50*	59	6 10	12 41.52	-7 51.6	1.362	1.995	27.9	21.0	113 E	36*	72
6 5	12 21.82	+4 29.6	1.689	2.230	25.6	21.2	109 E	48*	60	6 15	12 44.32	-7 57.2	1.399	1.980	29.0	21.1	109 E	34*	72
6 10	12 23.45	+3 56.9	1.729	2.212	26.4	21.3	104 E	46*	60	6 20	12 47.86	-8 7.6	1.436	1.966	29.9	21.2	105 E	33*	72
6 15	12 25.75	+3 20.6	1.769	2.194	27.1	21.4	100 E	44*	61	6 25	12 52.09	-8 22.7	1.474	1.951	30.7	21.2	102 E	31*	72
6 20	12 28.67	+2 41.0	1.810	2.176	27.6	21.4	97 E	41*	61	6 30	12 56.98	-8 42.0	1.512	1.937	31.3	21.3	98 E	29*	73
6 25	12 32.19	+1 58.2	1.852	2.158	28.1	21.5	93 E	38*	62	7 5	13 2.46	-9 5.2	1.551	1.923	31.8	21.3	95 E	28*	73
6 30	12 36.26	+1 12.6	1.892	2.140	28.4	21.5	89 E	36*	63	7 10	13 8.51	-9 31.9	1.589	1.909	32.2	21.4	91 E	26*	74
										7 15	13 15.09	-10 1.7	1.627	1.895	32.4	21.4	88 E	25*	74*
										7 20	13 22.18	-10 34.5	1.665	1.881	32.6	21.5	85 E	23*	74*
										7 25	13 29.75	-11 9.7	1.703	1.867	32.6	21.5	83 E	22*	73*
										356453 2011 LT₂₆									
										2 21	13 38.34	-18 26.9	1.893	2.555	19.2	21.4	122 W	27	82
										3 2	13 37.23	-18 42.1	1.758	2.528	17.0	21.1	132 W	26	83
										3 12	13 33.24	-18 38.4	1.638	2.500	14.0	20.9	142 W	26	83
										3 22	13 26.42	-18 12.9	1.538	2.470	10.4	20.6	153 W	27	82

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/21		α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°-26°	2020	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°-26°						
356453 2011 LT₂₆										159857 2004 LJ₁														
<i>(continuation)</i>										<i>(continuation)</i>														
		^{h m}	°	'	'	'	^m	'		^{h m}		°	'	'	'	^m	'							
6	15	12 37.35	-9	6.8	1.643	2.183	26.3	21.0	108 E	33*	73	5	21	12 38.06	-19	43.8	2.730	3.516	11.8	21.0	135 E	25	84	
6	20	12 40.09	-9	2.7	1.683	2.164	27.1	21.0	104 E	31*	73	5	31	12 34.85	-18	19.4	2.825	3.500	13.8	21.2	124 E	27*	82	
6	25	12 43.49	-9	3.4	1.723	2.145	27.8	21.1	100 E	30*	73	6	10	12 33.75	-17	7.7	2.934	3.482	15.4	21.3	115 E	26*	81	
6	30	12 47.50	-9	8.6	1.763	2.126	28.4	21.1	96 E	28*	73	6	20	12 34.62	-16	10.0	3.054	3.463	16.5	21.4	105 E	24*	80	
7	5	12 52.09	-9	18.1	1.803	2.107	28.8	21.2	92 E	26*	73	284456 2007 FM₂₈												
7	10	12 57.21	-9	31.4	1.843	2.088	29.1	21.2	89	25*	74*	2	21	13 45.24	-15	46.1	1.837	2.498	19.8	21.3	121 W	29	80	
7	15	13 2.85	-9	48.3	1.883	2.069	29.3	21.2	86	23*	73*	3	2	13 43.74	-16	27.2	1.711	2.480	17.4	21.1	131 W	29	80	
7	20	13 8.98	-10	8.5	1.921	2.049	29.4	21.3	82 E	22*	72*	3	12	13 39.17	-16	54.5	1.601	2.461	14.4	20.8	142 W	28	81	
7	25	13 15.56	-10	31.7	1.959	2.030	29.4	21.3	79 E	20*	70*	3	22	13 31.61	-17	5.5	1.510	2.442	10.6	20.5	153 W	28	81	
7	30	13 22.59	-10	57.7	1.995	2.010	29.4	21.3	76 E	19*	68*	4	1	13 21.52	-16	58.9	1.444	2.421	6.4	20.2	164 W	28	81	
8	4	13 30.03	-11	25.9	2.030	1.991	29.2	21.3	73	18*	66*	4	6	13 15.83	-16	49.0	1.421	2.410	4.6	20.1	169 W	28	81	
8	9	13 37.88	-11	56.3	2.064	1.971	29.0	21.3	70	17*	64*	4	11	13 9.91	-16	35.3	1.404	2.400	3.6	20.0	171 E	28	81	
8	14	13 46.12	-12	28.3	2.096	1.952	28.7	21.3	68	16*	61*	4	16	13 3.94	-16	18.2	1.394	2.389	4.3	20.0	170 E	29	80	
8	19	13 54.73	-13	1.9	2.127	1.932	28.4	21.3	65	15*	59*	4	21	12 58.09	-15	58.6	1.392	2.378	6.1	20.1	165 E	29	80	
8	24	14 3.73	-13	36.7	2.156	1.912	28.0	21.3	62	15*	56*	4	26	12 52.55	-15	37.3	1.395	2.366	8.3	20.2	160 E	29	80	
8	29	14 13.09	-14	12.3	2.184	1.893	27.5	21.3	60	14*	54*	5	1	12 47.47	-15	15.5	1.405	2.355	10.6	20.3	154 E	30	79	
9	3	14 22.80	-14	48.4	2.209	1.873	27.0	21.3	58	13*	52*	5	6	12 42.99	-14	54.1	1.421	2.343	12.9	20.4	149 E	30	79	
9	8	14 32.87	-15	24.8	2.233	1.854	26.5	21.3	55	13*	49*	5	11	12 39.21	-14	34.1	1.443	2.331	15.0	20.5	143	30	79	
9	13	14 43.30	-16	1.1	2.256	1.835	26.0	21.3	53	12*	47*	5	16	12 36.18	-14	16.1	1.469	2.319	17.0	20.6	138	31	78	
9	18	14 54.08	-16	37.1	2.277	1.816	25.4	21.2	51	12*	45*	5	21	12 33.96	-14	1.0	1.499	2.307	18.9	20.7	132	31	78	
9	23	15 5.21	-17	12.3	2.296	1.797	24.8	21.2	49	12*	42*	5	26	12 32.56	-13	49.3	1.534	2.295	20.5	20.7	127 E	31	78	
9	28	15 16.68	-17	46.5	2.314	1.778	24.1	21.2	46	11*	40*	5	31	12 31.99	-13	41.3	1.571	2.282	22.0	20.8	123	31	78	
10	3	15 28.50	-18	19.2	2.329	1.760	23.4	21.2	44	11*	38*	6	5	12 32.22	-13	37.2	1.611	2.270	23.3	20.9	118	31	78	
10	8	15 40.66	-18	50.2	2.344	1.741	22.8	21.1	42	11*	36*	6	10	12 33.21	-13	37.1	1.652	2.257	24.4	21.0	113	30	78	
10	13	15 53.16	-19	19.0	2.357	1.724	22.1	21.1	40	11*	34*	6	15	12 34.94	-13	41.1	1.696	2.244	25.3	21.1	109	28	78	
10	18	16 5.99	-19	45.4	2.369	1.706	21.3	21.1	39	11*	32*	6	20	12 37.36	-13	48.9	1.740	2.231	26.1	21.1	105	27	78	
10	23	16 19.15	-20	8.9	2.379	1.689	20.6	21.0	37	11*	30*	6	25	12 40.44	-14	0.6	1.786	2.218	26.7	21.2	101	25	78	
10	28	16 32.62	-20	29.2	2.388	1.672	19.9	21.0	35	10*	28*	6	30	12 44.14	-14	15.9	1.832	2.204	27.2	21.2	97	23	78	
11	7	16 46.40	-20	46.0	2.396	1.656	19.1	21.0	33	10*	26*	7	5	12 48.42	-14	34.7	1.877	2.191	27.6	21.3	94	21	79	
11	7	17 0.46	-20	58.8	2.402	1.640	18.4	20.9	31	10*	24*	7	10	12 53.23	-14	56.6	1.923	2.177	27.8	21.3	90	20	79*	
11	12	17 14.79	-21	7.4	2.408	1.625	17.6	20.9	30	10*	22*	7	15	12 58.54	-15	21.5	1.969	2.164	28.0	21.4	87	18	78*	
11	17	17 29.38	-21	11.5	2.413	1.610	16.8	20.8	28	10*	20*	7	20	13 4.34	-15	49.1	2.013	2.150	28.0	21.4	84	16	76*	
11	22	17 44.20	-21	10.7	2.417	1.596	16.1	20.8	27	10*	18*	7	25	13 10.59	-16	19.2	2.057	2.136	28.0	21.5	80	15	74*	
11	27	17 59.23	-21	4.8	2.421	1.583	15.3	20.8	25	10*	16*	7	30	13 17.28	-16	51.5	2.100	2.122	27.8	21.5	77	14	71*	
12	2	18 14.42	-20	53.7	2.424	1.570	14.5	20.7	24	10*	15*	7	5											
12	7	18 29.76	-20	37.0	2.426	1.558	13.7	20.7	22	9*	13*	7	10											
12	12	18 45.23	-20	14.9	2.429	1.547	13.0	20.6	21	9*	11*	7	15											
12	17	19 0.78	-19	47.0	2.431	1.537	12.2	20.6	19	9*	9*	7	20											
12	22	19 16.39	-19	13.5	2.432	1.527	11.5	20.6	18	8*	7*	7	25											
12	27	19 32.03	-18	34.4	2.434	1.518	10.7	20.5	17	8*	6*	7	30											
1	1	19 47.66	-17	49.7	2.436	1.511	10.0	20.5	15	7*	4*	7	5											
1	6	20 3.26	-16	59.8	2.438	1.504	9.2	20.4	14	7*	3*	7	10											
1	11	20 18.81	-16	4.6	2.440	1.499	8.5	20.4	13	6*	1*	7	15											
1	16	20 34.30	-15	4.5	2.443	1.494	7.8	20.4	12	5*	-	7	20											
354820 2005 WR₉₇										436324 2010 GZ₆														
2	21	13 39.30	-3	10.8	1.697	2.425	19.0	21.4	127 W	42	67	2	21	13 50.93	-48	30.8	0.797	1.410	42.9	21.3	104 W	-	67	
3	2	13 38.11	-2	45.9	1.576	2.401	16.2	21.2	137 W	42	67	2	26	13 57.33	-47	35.3	0.735	1.400	42.4	21.1	108 W	-	68	
3	12	13 33.89	-2	6.8	1.473	2.377	12.7	20.9	148 W	43	66	3	2	14 2.74	-46	14.2	0.673	1.390	41.5	20.9	112 W	-	70	
3	22	13 26.74	-1	16.3	1.391	2.351	8.4	20.6	160 W	44	65	3	7	14 7.05	-44	20.3	0.612	1.379	40.1	20.6	117 W	1	72	
4	1	13 17.21	0	19.6	1.333	2.325	4.2	20.2	170 W	45	64	3	12	14 10.12	-41	44.3	0.552	1.368	38.0	20.3	122 W	3	74	
4	6	13 11.86	+0	8.8	1.315	2.311	3.1	20.1	173 W	45	64	3	14	14 10.97	-40	27.4	0.528	1.364	37.0	20.2	124 W	5	76	
4	11	13 6.33	+0	35.7	1.303	2.297	4.1	20.2	171 E	46	63	3	16	14 11.59	-39	0.7	0.505	1.360	35.8	20.0	127 W	6	77	
4	16	13 0.78	+1	0.2	1.298	2.284	6.2	20.2	166 E	46	63	3	18	14 11.98	-37	23.2	0.483	1.356	34.4	19.9	130 W	8	79	
4	21	12 55.39	+1	21.3	1.299	2.270	8.7	20.3	160 E	46	63	3	20	14 12.14	-35	33.6	0.461	1.352	32.8	19.8	133 W	9	80	
4	26	12 50.33	+1	38.3	1.307	2.256	11.2	20.4	154 E	47	62	3	22	14 12.04	-33	30.6	0.440	1.347	31.1	19.6	136 W	11	82	
5	1	12 45.77	+1	50.4	1.320	2.241	13.6	20.5	148 E	47	62	3	24	14 11.71	-31	13.0	0.420	1.343	29.1	19.4	139 W	14	85	
5	6	12 41.81	+1	57.3	1.338	2.227	15.9	20.6	143 E	47	62	3	26	14 11.13	-28	39.4	0.401	1.339	26.9	19.3	143 W	16	87	
5	11	12 38.55	+1	58.8	1.362	2.212	18.0	20.7	137 E	47	62	3	28	14 10.31	-25	48.7	0.384	1.335	24.5	19.1	146 W	19	90	
5	16	12 36.04	+1	54.8	1.389	2.198	20.0	20.8	132 E	47	62	3	30	14 9.26	-22	40.0	0.368	1.331	21.8	18.9	150 W	22	87	
5	21	12 34.32	+1	45.5	1.420	2.183	21.8	20.9	127 E	47	62	4	1	14 7.99	-19	12.9	0.353	1.327	19.0	18.7	154 W	26	83	
5	26	12 33.41	+1	31.0	1.453	2.168	23.3	21.0	122 E	47	62	4	6	14 3.90	-9	17.9	0.325	1.316						

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

2020	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°-26°	20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°-26°				
299346 2005 SG₁₇₇									168730 2000 OX₅₁ (continuation)												
2	21	13 54.34	-15 4.6	1.414	2.088	24.3	21.4	120 W	30	79	9	18	15 30.53	-14 47.7	2.042	1.747	29.5	21.0	59 E	18*	52*
3	2	13 57.40	-15 57.4	1.290	2.059	22.1	21.1	129 W	29	80	9	28	15 53.80	-15 56.0	2.089	1.719	28.4	21.0	55 E	18*	48*
3	12	13 57.23	-16 36.7	1.178	2.030	19.0	20.8	138 W	28	81	10	8	16 18.45	-16 56.6	2.133	1.692	27.3	21.0	51 E	17*	44*
3	22	13 53.51	-16 59.7	1.081	2.002	14.9	20.4	149 W	28	81	10	18	16 44.41	-17 46.5	2.173	1.668	26.1	21.0	47 E	17*	40*
4	1	13 46.30	-17 3.5	1.004	1.973	10.0	20.0	160 W	28	81	10	28	17 11.54	-18 23.0	2.210	1.646	24.8	20.9	44 E	17*	36*
4	11	13 36.31	-16 47.4	0.948	1.944	4.9	19.6	170 W	28	81	11	7	17 39.69	-18 43.7	2.245	1.626	23.4	20.9	41 E	17*	32*
4	16	13 30.68	-16 32.4	0.929	1.930	3.4	19.5	173 E	28	81	11	17	18 8.69	-18 46.3	2.278	1.610	22.0	20.9	38 E	17*	28*
4	21	13 24.89	-16 13.6	0.916	1.915	4.5	19.5	171 E	29	80	11	27	18 38.30	-18 29.5	2.310	1.597	20.5	20.8	34 E	17*	24*
4	26	13 19.21	-15 51.9	0.908	1.901	7.1	19.6	166 E	29	80	12	7	19 8.28	-17 52.3	2.341	1.588	18.9	20.8	32 E	17*	20*
5	1	13 13.88	-15 28.8	0.906	1.887	10.1	19.7	161 E	30	79	12	17	19 38.41	-16 54.8	2.373	1.581	17.4	20.8	29 E	16*	16*
5	6	13 9.11	-15 5.5	0.910	1.873	13.1	19.8	155 E	30	79	12	27	20 8.46	-15 37.6	2.404	1.579	15.8	20.8	26 E	15*	13*
5	11	13 5.08	-14 43.3	0.918	1.860	16.1	19.9	149 E	30	79	1	6	20 38.21	-14 2.3	2.436	1.580	14.1	20.7	23 E	14*	9*
5	16	13 1.92	-14 23.4	0.930	1.846	18.8	20.0	144 E	31	78	1	16	21 7.55	-12 10.9	2.469	1.584	12.4	20.7	20 E	13*	6*
5	21	12 59.73	-14 6.9	0.947	1.833	21.4	20.1	139 E	31	78	160519 1995 CS₃										
5	31	12 58.45	-13 46.8	0.990	1.806	26.0	20.3	129 E	31	78	2	21	14 10.58	-15 9.1	2.178	2.758	18.8	21.4	116 W	30	79
6	10	13 1.29	-13 46.5	1.043	1.781	29.6	20.5	120 E	31*	78	3	2	14 11.03	-15 15.3	2.032	2.733	17.1	21.1	126 W	30	79
6	20	13 7.93	-14 6.2	1.102	1.757	32.4	20.7	112 E	29*	78	3	12	14 8.86	-15 7.4	1.899	2.707	14.7	20.9	136 W	30	79
6	30	13 17.99	-14 44.2	1.166	1.735	34.5	20.9	105 E	26*	79	3	22	14 3.97	-14 44.3	1.785	2.680	11.5	20.6	148 W	30	79
7	10	13 31.03	-15 37.7	1.232	1.714	35.9	21.0	99 E	23*	80	4	1	13 56.56	-14 5.5	1.693	2.652	7.6	20.3	159 W	31	78
7	20	13 46.70	-16 43.1	1.300	1.695	36.8	21.1	93 E	20*	81	4	11	13 47.22	-13 12.8	1.627	2.623	3.3	20.0	171 W	32	77
7	30	14 4.70	-17 57.0	1.367	1.677	37.2	21.2	88 E	18*	80*	4	16	13 42.08	-12 42.4	1.605	2.608	1.1	19.8	177 W	32	77
8	9	14 24.77	-19 15.7	1.435	1.662	37.3	21.3	84 E	17*	77*	4	21	13 36.82	-12 10.2	1.590	2.593	1.8	19.8	175 E	33	76
8	19	14 46.73	-20 35.2	1.503	1.649	37.1	21.4	79 E	15*	73*	4	26	13 31.59	-11 37.0	1.582	2.577	4.1	19.9	169 E	33	76
8	29	15 10.43	-21 52.1	1.570	1.638	36.6	21.4	75 E	15*	69*	5	1	13 26.53	-11 3.8	1.580	2.562	6.5	20.0	163	34	75
9	8	15 35.67	-23 2.4	1.637	1.630	35.9	21.5	72 E	14*	66*	5	6	13 21.79	-10 31.7	1.586	2.546	8.9	20.1	157 E	34	75
313809 2004 BH₄₁									5	11	13 17.49	-10 1.3	1.598	2.530	11.1	20.2	151 E	35	74		
2	21	13 57.41	+36 54.0	0.849	1.622	30.5	21.3	124 W	82	27	5	16	13 13.71	-9 33.6	1.615	2.513	13.2	20.3	145 E	35	74
2	26	14 0.71	+40 21.3	0.816	1.601	30.6	21.2	125 W	85	24	5	21	13 10.55	-9 9.2	1.638	2.497	15.2	20.4	140 E	36	73
3	2	14 2.84	+43 57.1	0.789	1.579	31.1	21.1	125 W	89	20	5	31	13 6.29	-8 32.1	1.697	2.463	18.7	20.6	129 E	36	73
3	7	14 3.58	+47 37.4	0.766	1.555	32.0	21.0	124 W	87	16	6	10	13 4.90	-8 12.5	1.770	2.428	21.5	20.7	119 E	36*	72
3	12	14 2.64	+51 17.5	0.748	1.530	33.3	21.0	122 W	84	13	6	20	13 6.31	-8 10.4	1.853	2.393	23.6	20.8	110 E	34*	72
3	17	13 59.66	+54 52.4	0.734	1.504	34.9	21.0	120 W	80	9	6	30	13 10.37	-8 25.0	1.940	2.356	25.1	21.0	101 E	31*	72
3	22	13 54.24	+58 16.8	0.725	1.477	36.8	20.9	117 W	77	6	7	10	13 16.80	-8 54.6	2.029	2.319	26.0	21.0	93 E	28*	73
3	27	13 46.00	+61 25.5	0.718	1.448	39.0	20.9	114 W	74	3	7	20	13 25.37	-9 36.9	2.117	2.281	26.4	21.1	86 E	24*	73*
4	1	13 34.59	+64 13.7	0.715	1.418	41.3	20.9	111 W	71	—	7	30	13 35.87	-10 30.1	2.202	2.243	26.4	21.2	79 E	21*	70*
4	6	13 19.86	+66 37.8	0.713	1.386	43.7	21.0	107 W	68	—	8	9	13 48.10	-11 31.9	2.283	2.204	26.0	21.2	73 E	19*	65*
4	11	13 1.91	+68 35.1	0.711	1.354	46.2	21.0	103 E	66	—	8	19	14 1.92	-12 40.4	2.357	2.164	25.4	21.2	67 E	17*	60*
4	16	12 41.23	+70 4.0	0.710	1.319	48.7	21.0	99 E	65	—	8	29	14 17.24	-13 53.7	2.424	2.124	24.5	21.2	61 E	15*	55*
4	21	12 18.81	+71 4.1	0.709	1.284	51.2	21.0	95 E	64	—	9	8	14 33.97	-15 9.7	2.483	2.083	23.5	21.2	55 E	13*	49*
4	26	11 56.01	+71 37.2	0.706	1.247	53.8	21.0	92 E	63	—	9	18	14 52.07	-16 26.4	2.534	2.043	22.2	21.1	50 E	12*	44*
5	1	11 34.14	+71 46.6	0.702	1.209	56.4	21.0	88 E	63	—	9	28	15 11.52	-17 41.9	2.577	2.002	20.8	21.1	45 E	11*	39*
5	6	11 14.12	+71 36.4	0.695	1.169	59.2	21.0	85 E	63	—	10	8	15 32.28	-18 53.9	2.611	1.962	19.3	21.0	40 E	10*	34*
5	11	10 56.31	+71 10.9	0.685	1.128	62.1	21.0	81 E	64*	—	10	18	15 54.36	-20 0.2	2.637	1.921	17.7	20.9	36 E	9*	30*
5	16	10 40.60	+70 33.6	0.671	1.086	65.3	20.9	78 E	64*	—	10	28	16 17.72	-20 58.6	2.655	1.881	16.0	20.9	31 E	8*	25*
5	21	10 26.53	+69 46.9	0.654	1.043	68.9	20.9	74 E	63*	—	11	7	16 42.33	-21 46.6	2.666	1.842	14.3	20.8	27 E	7*	21*
5	26	10 13.36	+68 52.3	0.633	0.999	72.9	20.9	70 E	61*	—	11	17	17 8.12	-22 21.9	2.669	1.803	12.5	20.7	23 E	6*	16*
5	31	10 0.10	+67 49.9	0.608	0.954	77.5	20.8	67 E	58*	—	11	27	17 35.02	-22 42.0	2.666	1.766	10.7	20.5	19 E	5*	12*
6	5	9 45.57	+66 37.1	0.578	0.909	82.8	20.8	63 E	55*	—	12	7	18 2.87	-22 44.8	2.658	1.730	8.8	20.4	16 E	4*	8*
6	10	9 28.52	+65 8.0	0.545	0.864	89.2	20.8	58 E	51*	—	12	17	18 31.54	-22 28.5	2.645	1.695	7.0	20.3	12 E	3*	4*
6	15	9 7.79	+63 10.8	0.510	0.819	97.0	20.9	53 E	46*	—	12	27	19 0.84	-21 51.7	2.628	1.663	5.2	20.1	9 E	1*	1*
6	20	8 42.71	+60 25.4	0.473	0.775	106.6	21.1	47 E	40*	—	1	6	19 30.56	-20 53.6	2.608	1.632	3.4	20.0	6 E	—	—
168730 2000 OX₅₁									1	16	20 0.52	-19 34.0	2.587	1.605	1.6	19.8	3 E	—	—		
496127 2010 GN₁₄₅									2	21	14 13.85	-4 44.7	1.555	2.203	23.3	21.4	118 W	40	69		
2	21	14 10.56	-17 4.1	1.876	2.465	21.3	21.4	115 W	28	81	3	2	14 17.21	-4 53.8	1.423	2.173	21.2	21.1	127 W	40	69
3	2	14 13.15	-17 10.8	1.730	2.435	19.6	21.1	125 W	28	81	3	12	14 17.50	-4 51.8	1.303	2.141	18.4	20.8	137 W	40	69
3	12	14 12.99	-17 0.0	1.598	2.403	17.1	20.8	135 W	28	81	3	22	14 14.41	-4 40.2	1.200	2.110	14.7	20.4	148 W	40	69
3	22	14 9.87	-16 29.5	1.481	2.371	13.8	20.5	146 W	29	80	4	1	14 7.86	-4 21.6	1.116	2.078	10.1	20.1	159 W	41	68
4	1	14 3.83	-15 37.9	1.385	2.338	9.6	20.2	157 W	29	80	4	6	14 3.42	-4 11.2	1.082	2.062	7.6	19.9	164 W	41	68
4	11	13 55.40	-14 26.3	1.312	2.304	4.7	19.8	169 W	31	78	4	11	13 58.34	-4 0.9	1.054	2.047	5.2	19.7	169 W	41	68
4	16	13 50.55	-13 44.2	1.285	2.287	2.1	19.6	175 W	31	78	4	16	13 52.77	-3 51.7	1.031	2.031	3.6	19.5	173 W	41	68
4	21	13 45.47	-12 58.																		

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

2020	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
496127 2010 GN₁₄₅ (continuation)										416294 2003 QK₉₉ (continuation)									
9 18	15 47.33	-25 14.4	1.803	1.653	33.5	21.4	65 E	11*	59*	8 4	13 27.80	-35 36.4	1.696	1.867	32.6	21.0	83 E	—	70*
9 28	16 14.23	-26 45.3	1.865	1.644	32.4	21.4	62 E	10*	55*	8 9	13 37.20	-36 7.1	1.726	1.853	32.7	21.0	81 E	—	67*
10 8	16 42.62	-27 58.9	1.927	1.638	31.2	21.4	58 E	10*	52*	8 14	13 47.26	-36 39.2	1.755	1.839	32.6	21.0	78 E	—	65*
10 18	17 12.29	-28 52.3	1.989	1.635	29.9	21.5	55 E	10*	49*	8 19	13 57.97	-37 12.3	1.783	1.825	32.6	21.0	76 E	—	63*
10 28	17 42.94	-29 22.9	2.051	1.635	28.5	21.5	52 E	10*	46*	8 24	14 9.33	-37 45.9	1.811	1.812	32.4	21.0	74 E	—	61*
161551 2004 XO₇₂										416294 2003 QK₉₉ (continuation)									
2 21	14 17.34	-11 41.9	2.240	2.811	18.5	21.4	116 W	33	76	8 29	14 21.33	-38 19.4	1.838	1.799	32.2	21.1	72 E	—	59*
3 2	14 17.50	-11 48.1	2.102	2.797	16.8	21.2	126 W	33	76	9 3	14 33.94	-38 52.2	1.864	1.787	32.0	21.1	70 E	—	57*
3 12	14 15.04	-11 42.6	1.979	2.781	14.3	21.0	136 W	33	76	9 8	14 47.17	-39 23.6	1.889	1.775	31.7	21.1	68 E	—	55*
3 22	14 9.94	-11 25.4	1.873	2.765	11.2	20.8	147 W	34	75	9 13	15 1.01	-39 53.1	1.913	1.763	31.4	21.1	66 E	—	53*
4 1	14 2.40	-10 57.1	1.791	2.748	7.4	20.5	159 W	34	75	9 18	15 15.43	-40 20.0	1.937	1.752	31.1	21.1	64 E	—	52*
4 11	13 53.01	-10 20.0	1.735	2.730	3.2	20.2	171 W	35	74	9 23	15 30.42	-40 43.6	1.961	1.742	30.7	21.1	62 E	—	51*
4 16	13 47.88	-9 59.4	1.718	2.721	1.0	20.0	177 W	35	74	9 28	15 45.94	-41 3.4	1.984	1.732	30.3	21.1	61 E	—	49*
4 21	13 42.63	-9 38.1	1.707	2.711	1.4	20.0	176 E	35	74	10 3	16 1.95	-41 18.6	2.007	1.722	29.9	21.1	59 E	—	48*
4 26	13 37.40	-9 16.9	1.704	2.701	3.7	20.2	170 E	36	73	10 8	16 18.39	-41 28.5	2.029	1.713	29.5	21.1	57 E	—	47*
5 1	13 32.34	-8 56.6	1.709	2.691	6.0	20.3	164 E	36	73	10 13	16 35.22	-41 32.8	2.052	1.705	29.0	21.1	56 E	—	46*
5 6	13 27.57	-8 37.7	1.720	2.681	8.2	20.4	158 E	36	73	10 18	16 52.38	-41 30.7	2.074	1.697	28.5	21.1	54 E	—	45*
5 11	13 23.20	-8 20.9	1.737	2.670	10.3	20.5	152 E	37	72	10 23	17 9.78	-41 22.0	2.096	1.690	27.9	21.1	53 E	—	44*
5 21	13 16.03	-7 55.7	1.789	2.649	14.1	20.7	140 E	37	72	10 28	17 27.35	-41 6.3	2.118	1.684	27.4	21.1	51 E	—	43*
5 31	13 11.35	-7 43.9	1.860	2.626	17.3	20.9	130 E	37	72	11 2	17 45.00	-40 43.3	2.141	1.678	26.8	21.1	50 E	—	42*
6 10	13 9.35	-7 47.0	1.946	2.603	19.8	21.0	120 E	37	72	11 7	18 2.65	-40 12.9	2.164	1.673	26.2	21.1	48 E	—	41*
6 20	13 9.97	-8 4.4	2.043	2.579	21.7	21.2	110 E	35	72	11 12	18 20.23	-39 35.1	2.187	1.669	25.5	21.1	47 E	—	40*
6 30	13 13.07	-8 35.4	2.145	2.554	22.9	21.3	102 E	31*	73	11 17	18 37.66	-38 49.9	2.210	1.666	24.8	21.1	45 E	1*	39*
7 10	13 18.39	-9 18.4	2.250	2.528	23.7	21.4	94 E	27*	73	11 22	18 54.89	-37 57.6	2.234	1.663	24.1	21.1	44 E	2*	37*
7 20	13 25.70	-10 11.6	2.355	2.501	23.9	21.5	86 E	24*	74*	11 27	19 11.84	-36 58.4	2.258	1.661	23.4	21.1	42 E	3*	36*
193846 2001 QZ₁₀₃										497019 2003 GN₅₁									
2 21	14 17.81	-20 52.6	2.448	2.967	18.0	21.4	112 W	24	85	2 21	14 21.11	-9 29.3	0.744	1.470	37.5	21.3	115 W	36	73
3 2	14 17.25	-21 2.6	2.323	2.973	16.4	21.3	122 W	24	85	2 26	14 27.78	-7 50.1	0.709	1.472	35.9	21.2	119 W	37	72
3 12	14 14.16	-20 58.2	2.212	2.978	14.2	21.1	133 W	24	85	3 2	14 33.54	-5 54.4	0.676	1.474	34.2	21.0	123 W	39	70
3 22	14 8.58	-20 37.9	2.119	2.982	11.3	20.9	144 W	24	85	3 7	14 38.30	-3 42.0	0.645	1.476	32.3	20.9	127 W	41	68
4 1	14 0.84	-20 0.8	2.048	2.985	8.0	20.7	155 W	25	84	3 12	14 41.98	+1 13.4	0.618	1.478	30.3	20.7	132 W	44	65
4 11	13 51.59	-19 8.0	2.003	2.987	4.5	20.5	167 W	26	83	3 17	14 44.48	+1 30.4	0.594	1.480	28.0	20.6	136 W	47	62
4 16	13 46.66	-18 36.6	1.992	2.988	2.9	20.4	171 W	26	83	3 22	14 45.71	+4 27.0	0.574	1.481	25.8	20.4	140 W	49	60
4 21	13 41.68	-18 2.7	1.988	2.988	2.4	20.3	173 E	27	82	3 27	14 45.65	+7 32.9	0.558	1.483	23.8	20.3	143 W	53	56
4 26	13 36.79	-17 27.0	1.992	2.988	3.3	20.4	170 E	28	81	4 1	14 44.30	+10 43.1	0.546	1.484	22.1	20.2	146 W	56	53
5 1	13 32.09	-16 50.3	2.002	2.987	5.0	20.5	165 E	28	81	4 6	14 41.75	+13 51.8	0.540	1.485	21.1	20.2	148 W	59	50
5 6	13 27.71	-16 13.6	2.021	2.987	6.8	20.6	160 E	29	80	4 11	14 38.14	+16 52.6	0.538	1.486	20.9	20.1	148 W	62	47
5 11	13 23.73	-15 37.6	2.045	2.986	8.5	20.7	154 E	29	80	4 16	14 33.64	+19 39.8	0.541	1.487	21.5	20.2	147 W	65	44
5 16	13 20.23	-15 3.1	2.077	2.985	10.2	20.8	148 E	30	79	4 21	14 28.51	+22 7.9	0.548	1.488	22.7	20.2	145 W	67	42
5 21	13 17.25	-14 30.7	2.114	2.983	11.8	20.9	143 E	30	79	4 26	14 23.06	+24 13.2	0.559	1.488	24.5	20.3	142 W	69	40
5 26	13 14.84	-14 1.2	2.157	2.981	13.3	21.0	137 E	31	78	5 1	14 17.63	+25 53.5	0.574	1.488	26.4	20.5	139 E	71	38
5 31	13 13.02	-13 34.8	2.204	2.979	14.6	21.1	132 E	31	78	5 6	14 12.53	+27 8.4	0.592	1.489	28.5	20.6	135 E	72	37
6 5	13 11.81	-13 11.8	2.256	2.977	15.8	21.2	127 E	32*	77	5 11	14 8.03	+27 58.9	0.612	1.489	30.3	20.7	132 E	73	36
6 10	13 11.18	-12 52.6	2.311	2.974	16.9	21.3	122 E	32*	77	5 16	14 4.31	+28 26.7	0.635	1.488	32.4	20.8	128 E	73	36
6 15	13 11.13	-12 37.0	2.369	2.972	17.7	21.4	117 E	31*	77	5 21	14 1.51	+28 34.0	0.660	1.488	34.1	21.0	124 E	74	35
6 20	13 11.64	-12 25.1	2.430	2.968	18.5	21.4	112 E	30*	76	5 26	13 59.75	+28 23.1	0.685	1.488	35.7	21.1	121 E	73	36
416294 2003 QK₉₉										289034 2004 TJ₁₃₃									
2 21	14 18.90	-22 9.2	1.844	2.391	22.6	21.4	112 W	23	86	2 21	14 25.17	-13 54.1	2.089	2.637	20.2	21.3	113 W	31	78
3 2	14 19.84	-24 17.9	1.699	2.361	21.2	21.2	120 W	21	88	3 2	14 27.41	-13 44.1	1.946	2.616	18.6	21.1	123 W	31	78
3 12	14 17.43	-26 26.9	1.567	2.330	19.2	20.9	130 W	19	90	3 12	14 27.05	-13 18.6	1.815	2.595	16.3	20.8	133 W	32	77
3 22	14 11.19	-28 32.4	1.451	2.298	16.5	20.6	139 W	16	87	3 22	14 23.91	-12 36.8	1.700	2.572	13.3	20.6	144 W	32	77
4 1	14 0.90	-30 27.8	1.356	2.266	13.5	20.3	148 W	15	86	4 1	14 18.06	-11 39.0	1.607	2.549	9.5	20.3	155 W	33	76
4 6	13 54.33	-31 18.9	1.317	2.250	12.0	20.2	152 W	14	85	4 11	14 9.94	-10 27.8	1.537	2.524	5.1	20.0	167 W	35	74
4 11	13 46.94	-32 4.2	1.284	2.234	10.8	20.1	155 W	13	84	4 16	14 5.27	-9 48.7	1.513	2.512	2.8	19.8	173 W	35	74
4 16	13 38.91	-32 42.5	1.258	2.218	10.0	20.0	157 W	12	83	4 21	14 0.34	-9 8.2	1.495	2.499	1.2	19.6	177 W	36	73
4 21	13 30.46	-33 13.0	1.238	2.202	9.9	19.9	158 E	12	83	4 26	13 55.32	-8 27.5	1.484	2.486	2.8	19.7	173 E	37	72
4 26	13 21.85	-33 35.4	1.225	2.185	10.5	19.9	157 E	11	82	5 1	13 50.36	-7 47.6	1.480	2.473	5.2	19.8	167 E	37	72
5 1	13 13.37	-33 49.8	1.218	2.169	11.8	19.9	154 E	11	82	5 6	13 45.61	-7 9.5	1.483	2.460	7.6	20.0	161 E	38	71
5 6	13 5.31	-33 56.8	1.218	2.152	13.4	20.0	150 E	11	82	5 11	13 41.19	-6 34.1	1.493	2.446	10.0	20.1	155 E	38	71
5 11	12 57.90	-33 57.7	1.223	2.136	15.3	20.0	146 E	11	82	5 16	13 37.24	-6 2.3	1.508	2.433	12.3	20.2	149 E	39	70
5 16	12 51.34	-33 53.7	1.233	2.120	17.3	20.1	141 E	11	82	5 21	13 33.84	-5 34.8	1.529	2.419	14.4	20.3	143 E	39	70
5 21	12 45.80	-33 46.2	1.248	2.103	19.2	20.2	137 E	11	82	5 31	13 29.00	-4 54.2	1.585	2.390	18.2	20.4	133 E	40	69
5 26	12 41.37	-33 36.9	1.267	2.087	21.1	20.2	132 E	11	82	6 10	13 26.99	-4 34.2	1.656						

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°				
289034 2004 TJ₁₃₃										308014 2004 RH₁₉₇													
(continuation)										(continuation)													
7	30	13 55.88	-7 9.7	2.098	2.208	27.1	21.1	82	E	27*	70*	7	10	14 26.37	-6 51.5	1.125	1.739	33.7	20.5	108	E	36*	71
8	9	14 7.88	-8 15.0	2.184	2.176	26.9	21.2	76	E	24*	67*	7	20	14 38.15	-7 54.4	1.192	1.721	35.3	20.6	102	E	33*	72
8	19	14 21.49	-9 26.2	2.265	2.143	26.4	21.2	70	E	22*	62*	7	30	14 52.58	-9 9.4	1.261	1.705	36.3	20.7	96	E	31*	73
8	29	14 36.61	-10 41.2	2.341	2.111	25.6	21.2	64	E	20*	57*	8	9	15 9.33	-10 31.8	1.332	1.691	36.8	20.9	91	E	29*	75*
9	8	14 53.10	-11 57.9	2.409	2.078	24.6	21.2	59	E	19*	52*	8	19	15 28.14	-11 57.3	1.403	1.680	37.0	21.0	87	E	27*	75*
9	18	15 10.92	-13 14.3	2.471	2.045	23.4	21.2	54	E	17*	47*	8	29	15 48.80	-13 22.2	1.476	1.671	36.8	21.1	82	E	26*	73*
9	28	15 30.02	-14 28.4	2.525	2.013	22.0	21.2	49	E	16*	42*	9	8	16 11.08	-14 42.6	1.549	1.665	36.3	21.1	78	E	25*	70*
10	8	15 50.32	-15 38.2	2.572	1.980	20.6	21.2	44	E	15*	37*	9	18	16 34.80	-15 55.0	1.623	1.661	35.6	21.2	74	E	24*	67*
10	18	16 11.81	-16 41.5	2.611	1.948	19.0	21.1	40	E	14*	32*	9	28	16 59.77	-16 56.5	1.697	1.660	34.7	21.3	71	E	24*	63*
10	28	16 34.44	-17 36.5	2.642	1.916	17.3	21.0	35	E	13*	28*	10	8	17 25.77	-17 44.3	1.773	1.661	33.6	21.3	67	E	23*	59*
11	7	16 58.12	-18 21.0	2.667	1.886	15.6	21.0	31	E	12*	23*	10	18	17 52.58	-18 16.1	1.850	1.666	32.4	21.4	64	E	23*	56*
11	17	17 22.79	-18 53.1	2.685	1.855	13.8	20.9	27	E	11*	18*	10	28	18 19.98	-18 30.5	1.929	1.673	31.0	21.5	60	E	23*	52*
11	27	17 48.36	-19 11.0	2.696	1.826	12.0	20.8	23	E	10*	13*	469676 2004 XW₄₉											
12	7	18 14.69	-19 13.2	2.702	1.798	10.2	20.7	19	E	8*	9*	2	21	14 41.23	-42 26.6	2.573	2.899	19.7	21.4	99	W	3	74
12	17	18 41.64	-18 58.5	2.703	1.772	8.4	20.6	15	E	7*	5*	2	26	14 43.53	-43 2.3	2.491	2.880	19.6	21.3	103	W	2	73
12	27	19 9.07	-18 26.1	2.699	1.747	6.6	20.5	12	E	5*	1*	3	2	14 45.19	-43 35.8	2.410	2.860	19.4	21.2	107	W	1	72
1	6	19 36.81	-17 35.7	2.691	1.724	4.8	20.3	8	E	2*	-	3	7	14 46.17	-44 6.8	2.330	2.841	19.0	21.1	111	W	1	72
1	16	20 4.71	-16 27.5	2.679	1.703	3.2	20.2	6	E	-	-	3	12	14 46.41	-44 34.7	2.253	2.821	18.6	21.0	115	W	-	71
37359 2001 UM₁₇										308014 2004 RH₁₉₇													
2	21	14 30.52	-15 26.0	2.334	2.847	18.9	21.4	111	W	30	79	3	2	14 45.19	-43 35.8	2.410	2.860	19.4	21.2	107	W	1	72
3	2	14 31.82	-15 23.2	2.189	2.831	17.5	21.2	121	W	30	79	3	7	14 46.17	-44 6.8	2.330	2.841	19.0	21.1	111	W	1	72
3	12	14 30.60	-15 6.9	2.055	2.813	15.4	21.0	131	W	30	79	3	12	14 46.41	-44 34.7	2.253	2.821	18.6	21.0	115	W	-	71
3	22	14 26.76	-14 36.4	1.938	2.795	12.6	20.7	142	W	30	79	3	17	14 45.87	-44 59.0	2.178	2.801	18.1	20.9	119	W	-	71
4	1	14 20.38	-13 51.3	1.842	2.775	9.1	20.5	154	W	31	78	3	22	14 44.51	-45 18.9	2.106	2.780	17.4	20.8	123	W	-	71
4	11	14 11.91	-12 53.6	1.771	2.754	5.0	20.2	166	W	32	77	3	27	14 42.30	-45 33.6	2.037	2.760	16.7	20.6	127	W	-	70
4	16	14 7.10	-12 20.9	1.746	2.744	2.8	20.0	172	W	33	76	4	1	14 39.26	-45 42.2	1.972	2.739	15.8	20.5	132	W	-	70
4	21	14 2.08	-11 46.6	1.728	2.732	0.6	19.8	178	W	33	76	4	6	14 35.42	-45 43.7	1.911	2.718	14.9	20.4	136	W	-	70
4	26	13 56.96	-11 11.4	1.717	2.721	1.8	19.9	175	E	34	75	4	11	14 30.85	-45 37.3	1.855	2.697	13.9	20.3	140	W	-	70
5	1	13 51.90	-10 36.1	1.714	2.710	4.1	20.0	169	E	34	75	4	16	14 25.66	-45 22.2	1.803	2.676	13.0	20.2	143	W	-	71
5	6	13 47.03	-10 1.7	1.718	2.698	6.4	20.1	163	E	35	74	4	21	14 19.96	-44 57.5	1.757	2.654	12.1	20.1	146	W	-	71
5	11	13 42.46	-9 29.0	1.728	2.686	8.6	20.2	157	E	36	73	4	26	14 13.95	-44 22.9	1.717	2.632	11.3	20.0	149	E	1	72
5	16	13 38.31	-8 58.7	1.745	2.673	10.7	20.3	151	E	36	73	5	1	14 7.82	-43 38.3	1.683	2.610	10.8	19.9	151	E	1	72
5	21	13 34.66	-8 31.5	1.768	2.660	12.6	20.4	145	E	36	73	5	6	14 1.78	-42 44.1	1.656	2.588	10.7	19.8	152	E	2	73
5	31	13 29.15	-7 48.3	1.829	2.634	16.1	20.6	134	E	37	72	5	11	13 56.02	-41 41.1	1.634	2.566	10.9	19.8	151	E	3	74
6	10	13 26.24	-7 21.9	1.907	2.607	19.0	20.7	123	E	38*	71	5	16	13 50.72	-40 30.3	1.619	2.543	11.6	19.8	150	E	4	75
6	20	13 25.97	-7 12.6	1.997	2.579	21.2	20.9	114	E	36*	71	5	21	13 46.04	-39 13.1	1.611	2.521	12.6	19.8	147	E	6	77
6	30	13 28.24	-7 19.6	2.094	2.549	22.7	21.0	105	E	34*	71	5	26	13 42.10	-37 51.4	1.608	2.498	13.9	19.8	144	E	7	78
7	10	13 32.83	-7 41.1	2.195	2.519	23.6	21.1	96	E	30*	72	5	31	13 38.98	-36 26.8	1.612	2.475	15.3	19.8	140	E	9	80
7	20	13 39.51	-8 15.1	2.296	2.488	24.1	21.2	89	E	27*	72*	6	5	13 36.74	-35 1.3	1.620	2.451	16.8	19.9	136	E	10	81
7	30	13 48.07	-8 59.5	2.395	2.455	24.1	21.3	81	E	24*	70*	6	10	13 35.38	-33 36.5	1.634	2.428	18.3	19.9	131	E	11	82
8	9	13 58.29	-9 52.3	2.489	2.422	23.8	21.3	74	E	22*	66*	6	15	13 34.91	-32 13.6	1.653	2.405	19.7	20.0	127	E	13*	84
8	19	14 10.03	-10 51.5	2.578	2.388	23.1	21.3	68	E	19*	61*	6	20	13 35.30	-30 53.9	1.675	2.381	21.1	20.0	123	E	13*	85
8	29	14 23.16	-11 55.4	2.659	2.353	22.2	21.3	62	E	17*	55*	6	25	13 36.52	-29 38.3	1.701	2.357	22.4	20.1	118	E	14*	86
9	8	14 37.58	-13 2.1	2.731	2.317	21.0	21.3	56	E	16*	49*	6	30	13 38.53	-28 27.6	1.730	2.334	23.5	20.1	114	E	14*	88
9	18	14 53.21	-14 10.1	2.795	2.280	19.7	21.3	50	E	14*	44*	7	10	13 44.73	-26 21.9	1.795	2.286	25.4	20.2	105	E	14*	90
9	28	15 10.01	-15 17.7	2.848	2.243	18.2	21.3	44	E	13*	38*	7	20	13 53.52	-24 37.8	1.866	2.237	26.8	20.3	97	E	14*	89
10	8	15 27.92	-16 23.2	2.890	2.204	16.5	21.2	39	E	11*	32*	7	30	14 4.58	-23 14.2	1.939	2.189	27.6	20.4	90	E	14*	84*
10	18	15 46.93	-17 24.9	2.923	2.165	14.8	21.1	34	E	10*	27*	8	9	14 17.61	-22 8.5	2.013	2.140	28.0	20.4	83	E	13*	77*
10	28	16 7.01	-18 21.0	2.944	2.126	12.9	21.0	29	E	9*	22*	8	19	14 32.38	-21 17.7	2.084	2.092	28.1	20.4	76	E	13*	70*
11	7	16 28.11	-19 10.0	2.955	2.086	11.0	20.9	24	E	7*	16*	8	29	14 48.74	-20 38.5	2.152	2.043	27.7	20.4	70	E	13*	64*
11	17	16 50.22	-19 50.0	2.956	2.046	9.0	20.8	19	E	6*	11*	9	8	15 6.51	-20 7.3	2.214	1.995	27.1	20.4	64	E	13*	58*
11	27	17 13.28	-20 19.2	2.946	2.005	7.0	20.7	14	E	4*	6*	9	18	15 25.61	-19 40.8	2.269	1.948	26.2	20.4	59	E	14*	53*
12	7	17 37.23	-20 36.2	2.928	1.965	5.0	20.5	10	E	2*	2*	9	28	15 45.94	-19 16.0	2.318	1.901	25.1	20.4	54	E	14*	47*
12	17	18 1.99	-20 39.2	2.901	1.924	3.0	20.3	6	E	-	-	10	8	16 7.43	-18 49.5	2.359	1.856	23.8	20.3	49	E	14*	42*
12	27	18 27.47	-20 27.0	2.865	1.884	1.6	20.2	3	E	-	-	10	18	16 30.00	-18 18.5	2.392	1.812	22.4	20.3	44	E	15*	37*
1	6	18 53.57	-19 58.4	2.824	1.844	2.2	20.1	4	W	-	-	10	28	16 53.60	-17 40.2	2.417	1.770	21.0	20.2	40	E	15*	32*
1	16	19 20.18	-19 12.6	2.776	1.805	4.1	20.2	7	W	-	-	11	7	17 18.13	-16 51.9	2.435	1.729	19.5	20.1	36	E	16*	27*
308014 2004 RH₁₉₇										368664 2005 JA₂₂													
2	21	14 37.04	-15 39.3	1.563	2.113																		

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

2020	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°		
352735 2008 SQ₃₀₁										237709 2001 UN₁₆₁											
2	21	14 55.63	-12 24.5	1.622	2.124	26.5	21.5	106 W	33	76	2	21	15 4.12	-18 54.8	2.008	2.424	23.5	21.4	103 W	26	83
3	2	15 4.10	-12 53.4	1.485	2.097	25.5	21.2	114 W	32	77	3	2	15 10.97	-19 16.9	1.858	2.399	22.7	21.2	111 W	26	83
3	12	15 10.14	-13 11.9	1.357	2.070	23.8	21.0	123 W	32	77	3	12	15 15.48	-19 27.4	1.716	2.373	21.3	21.0	120 W	26	83
3	22	15 13.26	-13 19.9	1.239	2.043	21.3	20.7	132 W	32	77	3	22	15 17.23	-19 25.3	1.583	2.347	19.1	20.7	129 W	26	83
4	1	15 12.98	-13 17.7	1.134	2.016	17.9	20.3	142 W	32	77	4	1	15 15.89	-19 9.0	1.465	2.320	16.2	20.4	140 W	26	83
4	11	15 9.11	-13 6.1	1.046	1.989	13.5	20.0	152 W	32	77	4	11	15 11.38	-18 37.4	1.365	2.292	12.3	20.1	151 W	26	83
4	21	15 1.79	-12 46.8	0.977	1.962	8.2	19.6	164 W	32	77	4	21	15 3.90	-17 50.4	1.285	2.264	7.7	19.8	162 W	27	82
4	26	14 57.05	-12 35.3	0.950	1.949	5.3	19.4	170 W	32	77	4	26	14 59.26	-17 21.6	1.254	2.250	5.1	19.6	169 W	28	81
5	1	14 51.79	-12 23.3	0.930	1.935	2.7	19.2	175 W	33	76	5	1	14 54.19	-16 49.9	1.230	2.235	2.4	19.4	175 W	28	81
5	6	14 46.22	-12 11.6	0.915	1.922	2.4	19.1	175 E	33	76	5	6	14 48.87	-16 16.1	1.212	2.221	0.4	19.1	179 E	29	80
5	11	14 40.56	-12 0.9	0.906	1.909	5.1	19.2	170 E	33	76	5	11	14 43.47	-15 41.0	1.200	2.206	3.3	19.3	173 E	29	80
5	16	14 35.03	-11 52.0	0.902	1.896	8.2	19.3	165 E	33	76	5	16	14 38.17	-15 5.7	1.195	2.191	6.2	19.5	167 E	30	79
5	21	14 29.85	-11 45.8	0.904	1.883	11.3	19.5	159 E	33	76	5	21	14 33.17	-14 31.2	1.196	2.176	9.0	19.6	160 E	30	79
5	26	14 25.25	-11 43.0	0.911	1.870	14.3	19.6	153 E	33	76	5	26	14 28.63	-13 58.7	1.203	2.162	11.7	19.7	154 E	31	78
5	31	14 21.39	-11 44.2	0.923	1.858	17.2	19.7	147 E	33	76	5	31	14 24.69	-13 29.1	1.216	2.147	14.3	19.8	149 E	32	77
6	10	14 16.36	-12 0.0	0.958	1.834	22.4	19.9	137 E	33	76	6	5	14 21.47	-13 3.3	1.233	2.132	16.7	19.9	143 E	32	77
6	20	14 15.28	-12 34.1	1.007	1.810	26.7	20.1	127 E	32	77	6	10	14 19.04	-12 41.8	1.254	2.116	18.9	20.0	137 E	32	77
6	30	14 18.22	-13 25.5	1.065	1.788	30.0	20.3	118 E	31	77	6	20	14 16.70	-12 13.3	1.309	2.086	22.8	20.2	127 E	33	76
7	10	14 24.93	-14 31.7	1.129	1.766	32.6	20.5	111 E	28	79	6	30	14 17.80	-12 4.7	1.374	2.056	25.9	20.3	118 E	32	76
7	20	14 35.02	-15 49.2	1.197	1.747	34.4	20.6	104 E	26	80	7	10	14 22.18	-12 14.9	1.447	2.026	28.3	20.5	109 E	30	76
7	30	14 48.16	-17 14.6	1.268	1.729	35.6	20.8	98 E	23	81	7	20	14 29.54	-12 41.2	1.524	1.996	29.9	20.6	102 E	28	77
8	9	15 3.99	-18 44.1	1.340	1.712	36.3	20.9	92 E	21	82	7	30	14 39.62	-13 20.8	1.603	1.966	31.0	20.7	95 E	26	77
8	19	15 22.22	-20 14.1	1.413	1.697	36.6	21.0	87 E	19	80	8	9	14 52.09	-14 10.4	1.681	1.936	31.6	20.8	88 E	24	77
8	29	15 42.64	-21 41.1	1.486	1.685	36.5	21.1	83 E	18	76	8	19	15 6.73	-15 6.8	1.758	1.907	31.7	20.9	82 E	22	74
9	8	16 5.01	-23 1.4	1.559	1.674	36.1	21.2	78 E	17	72	8	29	15 23.35	-16 6.8	1.833	1.879	31.5	20.9	77 E	21	70
9	18	16 29.13	-24 11.6	1.632	1.666	35.5	21.2	74 E	16	68	9	8	15 41.76	-17 7.5	1.904	1.852	31.1	21.0	72 E	20	65
9	28	16 54.79	-25 8.7	1.705	1.660	34.6	21.3	70 E	16	64	9	18	16 1.84	-18 5.8	1.971	1.826	30.4	21.0	67 E	19	60
10	8	17 21.73	-25 49.6	1.778	1.656	33.6	21.3	67 E	15	61	9	28	16 23.47	-18 59.0	2.034	1.800	29.5	21.0	62 E	18	56
10	18	17 49.70	-26 12.1	1.851	1.655	32.4	21.4	63 E	15	57	10	8	16 46.51	-19 44.3	2.094	1.777	28.4	21.0	58 E	18	51
10	28	18 18.40	-26 14.4	1.924	1.656	31.1	21.4	59 E	16	53	10	18	17 10.83	-20 18.9	2.149	1.754	27.2	21.0	54 E	18	47
11	7	18 47.50	-25 55.6	1.997	1.660	29.7	21.5	56 E	16	49	10	28	17 36.30	-20 40.5	2.201	1.734	25.9	21.0	50 E	17	42
354952 2006 FJ₉										379156 2009 QN₈											
2	21	14 59.51	-14 32.5	0.862	1.469	40.6	21.4	105 W	30	79	2	21	15 6.48	-12 28.3	1.974	2.409	23.5	21.5	104 W	33	76
2	26	15 13.23	-15 0.2	0.808	1.446	41.0	21.2	107 W	30	79	3	2	15 14.64	-12 2.7	1.814	2.370	22.8	21.3	112 W	33	76
3	2	15 27.42	-15 22.8	0.756	1.422	41.5	21.1	108 W	30	79	3	12	15 20.76	-11 19.6	1.662	2.330	21.5	21.0	121 W	34	75
3	7	15 42.14	-15 39.6	0.707	1.399	41.9	20.9	110 W	29	80	3	22	15 24.45	-10 17.8	1.521	2.290	19.6	20.7	130 W	35	74
3	12	15 57.43	-15 50.0	0.661	1.376	42.4	20.7	111 W	29	80	4	1	15 25.33	-8 56.9	1.395	2.249	16.9	20.4	139 W	36	73
3	17	16 13.33	-15 53.2	0.617	1.354	42.9	20.6	112 W	29	80	4	11	15 23.23	-7 18.6	1.287	2.208	13.5	20.0	149 W	38	71
3	22	16 29.88	-15 48.5	0.575	1.332	43.4	20.4	113 W	29	80	4	16	15 21.06	-6 23.9	1.240	2.187	11.6	19.9	154 W	39	70
3	27	16 47.09	-15 35.1	0.537	1.311	44.0	20.2	114 W	29	80	4	21	15 18.18	-5 26.6	1.199	2.166	9.7	19.7	159 W	40	69
4	1	17 4.98	-15 12.1	0.501	1.291	44.7	20.1	115 W	30	79	4	26	15 14.68	-4 27.8	1.164	2.146	8.0	19.6	163 W	41	68
4	6	17 23.58	-14 39.0	0.469	1.272	45.5	19.9	115 W	30	79	5	1	15 10.65	-3 28.8	1.135	2.125	6.9	19.4	165 W	42	67
4	11	17 42.87	-13 55.3	0.439	1.253	46.4	19.8	115 W	31	78	5	6	15 6.24	-2 31.1	1.112	2.104	6.8	19.4	166 W	42	67
4	16	18 2.79	-13 0.7	0.412	1.236	47.4	19.6	115 W	32	77	5	11	15 1.61	-1 36.1	1.095	2.084	7.9	19.4	164 E	43	66
4	21	18 23.26	-11 55.1	0.388	1.220	48.5	19.5	115 W	33	76	5	16	14 56.91	0 45.3	1.084	2.063	9.8	19.4	160 E	44	65
5	1	19 5.32	-9 14.2	0.350	1.191	50.8	19.3	114 W	36	73	5	21	14 52.34	0 0.1	1.079	2.042	12.0	19.4	155 E	45	64
5	11	19 47.84	-6 4.4	0.322	1.169	53.3	19.1	112 W	38	70	5	26	14 48.07	0 38.3	1.080	2.022	14.5	19.5	150 E	46	63
5	21	20 29.20	-2 44.2	0.304	1.154	55.4	19.0	110 W	41	67	5	31	14 44.27	1 9.0	1.085	2.002	16.9	19.6	145 E	46	63
5	26	20 48.89	-1 7.2	0.298	1.149	56.1	19.0	110 W	43	65	6	10	14 38.60	+1 46.1	1.108	1.961	21.5	19.7	135 E	47	62
5	31	21 7.68	+0 24.1	0.294	1.146	56.6	19.0	109 W	44	64	6	20	14 36.04	+1 50.8	1.145	1.922	25.5	19.9	125 E	47	62
6	5	21 25.46	+1 47.6	0.291	1.145	56.8	19.0	109 W	45	62	6	30	14 36.96	+1 25.7	1.191	1.883	28.8	20.0	117 E	46	63
6	10	21 42.08	+3 1.8	0.289	1.145	56.6	19.0	110 W	47	61	7	10	14 41.34	+0 35.7	1.243	1.845	31.4	20.1	109 E	44	63
6	15	21 57.43	+4 5.4	0.288	1.148	56.1	18.9	110 W	48	60	7	20	14 48.96	+0 34.2	1.299	1.809	33.3	20.2	102 E	41	65
6	20	22 11.39	+4 57.1	0.288	1.153	55.1	18.9	111 W	49	59	7	30	14 59.61	-1 59.3	1.355	1.774	34.7	20.3	96 E	38	66
6	25	22 33.88	+5 36.2	0.288	1.160	53.8	18.9	113 W	50	58	8	9	15 12.99	-3 34.9	1.412	1.741	35.6	20.4	90 E	36	68
6	30	22 34.85	+6 2.0	0.289	1.168	52.1	18.9	115 W	51	58	8	19	15 28.87	-5 17.2	1.468	1.711	36.1	20.5	85 E	34	68
7	10	22 52.11	+6 12.7	0.290	1.190	47.5	18.8	120 W	51	58	8	29	15 47.06	-7 2.3	1.522	1.682	36.3	20.5	81 E	32	67
7	20	23 2.78	+5 27.4	0.293	1.218	41.3	18.7	128 W	50	59	9	8	16 7.36	-8 46.3	1.576	1.657	36.2	20.6	76 E	30	65
7	30	23 6.84	+3 45.8	0.300	1.251	33.6	18.6	137 W	49	60	9	18	16 29.62	-10 25.8	1.628	1.635	35.9	20.6	72 E	29	62
8	4	23 6.63	+2 36.2	0.30																	

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

2020	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	$45^\circ-26^\circ$	20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	$45^\circ-26^\circ$
498066 2007 RM₁₃₃									206921 2004 PU₁₀₀ (<i>continuation</i>)								
2 21	15 22.75	-3 12.5	1.309	1.797	32.6	21.3	102 W	42 67	8 19	15 17.10	-14 44.2	1.773	1.958	31.0	20.7	85 E	24* 76*
3 2	15 41.21	-3 5.3	1.168	1.740	33.0	21.0	107 W	42 67	8 29	15 32.19	-15 49.6	1.849	1.927	30.9	20.8	79 E	22* 71*
3 12	15 59.42	-2 43.5	1.035	1.684	33.1	20.7	112 W	42 67	9 8	15 49.22	-16 55.6	1.922	1.897	30.6	20.8	73 E	21* 67*
3 22	16 17.24	-2 7.6	0.911	1.628	33.0	20.3	117 W	43 66	9 18	16 8.04	-17 59.4	1.991	1.868	30.0	20.9	68 E	20* 62*
4 1	16 34.47	-1 19.3	0.797	1.573	32.6	20.0	122 W	44 65	9 28	16 28.52	-18 58.2	2.055	1.839	29.2	20.9	63 E	19* 57*
4 11	16 50.97	-0 22.6	0.693	1.520	32.0	19.6	127 W	45 64	10 8	16 50.52	-19 49.5	2.115	1.812	28.2	20.9	59 E	18* 52*
4 16	16 58.90	+0 7.0	0.644	1.494	31.6	19.4	129 W	45 64	10 18	17 13.93	-20 30.5	2.170	1.786	27.0	20.9	54 E	18* 48*
4 21	17 6.57	+0 36.2	0.599	1.469	31.1	19.2	131 W	46 63	10 28	17 38.60	-20 59.0	2.221	1.761	25.7	20.8	50 E	17* 43*
4 26	17 13.98	+1 3.5	0.555	1.445	30.5	18.9	133 W	46 63	11 7	18 4.37	-21 12.7	2.268	1.738	24.3	20.8	46 E	17* 38*
5 1	17 21.11	+1 27.1	0.515	1.421	29.9	18.7	135 W	46 63	11 17	18 31.05	-21 9.7	2.311	1.717	22.9	20.8	42 E	17* 34*
5 6	17 27.99	+1 45.1	0.477	1.398	29.1	18.5	138 W	47 62	11 27	18 58.44	-20 48.8	2.351	1.698	21.3	20.7	39 E	17* 29*
5 11	17 34.61	+1 55.1	0.441	1.377	28.3	18.3	140 W	47 62	12 7	19 26.33	-20 9.1	2.387	1.681	19.7	20.7	35 E	17* 25*
5 16	17 40.98	+1 54.6	0.408	1.356	27.3	18.0	142 W	47 62	12 17	19 54.52	-19 10.4	2.421	1.667	18.1	20.7	32 E	16* 21*
5 21	17 47.10	+1 40.3	0.377	1.337	26.2	17.8	144 W	47 62	12 27	20 22.80	-17 53.0	2.453	1.655	16.4	20.6	28 E	15* 17*
5 26	17 53.03	+1 8.7	0.349	1.319	24.9	17.6	147 W	46 63	1 6	20 51.00	-16 18.1	2.482	1.646	14.7	20.6	25 E	14* 13*
5 31	17 58.84	+0 15.7	0.323	1.303	23.3	17.3	149 W	45 64	1 16	21 19.01	-14 27.2	2.510	1.639	12.9	20.5	22 E	12* 10*
6 5	18 4.63	-1 2.4	0.300	1.288	21.5	17.1	152 W	44 65	161001 2002 CG₃₁₀								
6 10	18 10.50	-2 49.2	0.279	1.275	19.3	16.8	156 W	42 67	2 21	15 26.25	-22 49.9	2.533	2.823	20.4	21.5	97 W	22 87*
6 15	18 16.53	-5 7.6	0.261	1.264	16.6	16.6	159 W	40 69	3 2	15 31.52	-23 21.5	2.383	2.812	19.9	21.3	105 W	22 87
6 20	18 22.85	-7 59.4	0.246	1.254	13.6	16.3	163 W	37 72	3 12	15 34.53	-23 45.7	2.238	2.800	18.8	21.1	114 W	21 88
6 25	18 29.61	-11 23.6	0.235	1.247	10.1	16.1	168 W	34 75	3 22	15 34.98	-24 1.6	2.103	2.788	17.2	20.9	124 W	21 88
6 30	18 37.00	-15 15.5	0.227	1.241	6.5	15.8	172 W	30 79	4 1	15 32.63	-24 7.6	1.980	2.774	14.9	20.7	135 W	21 88
7 5	18 45.16	-19 26.5	0.222	1.238	3.6	15.6	176 E	26 83	4 11	15 27.45	-24 2.3	1.875	2.760	11.9	20.5	145 W	21 88
7 10	18 54.13	-23 44.9	0.221	1.237	4.6	15.7	174 E	21 88	4 21	15 19.69	-23 44.1	1.792	2.744	8.3	20.2	157 W	21 88
7 12	18 57.95	-25 27.3	0.222	1.237	6.0	15.8	173 E	20 89	5 1	15 9.93	-23 12.5	1.734	2.728	4.3	20.0	168 W	22 87
7 14	19 1.90	-27 7.9	0.223	1.238	7.5	15.8	171 E	18 89	5 6	15 4.61	-22 52.1	1.715	2.719	2.6	19.8	173 W	22 87
7 16	19 5.98	-28 45.8	0.225	1.239	9.0	15.9	169 E	16 87	5 11	14 59.17	-22 29.1	1.704	2.711	2.1	19.8	174 E	23 86
7 18	19 10.18	-30 20.4	0.228	1.240	10.6	16.0	167 E	15 86	5 16	14 53.76	-22 4.1	1.699	2.702	3.5	19.8	171 E	23 86
7 20	19 14.50	-31 50.8	0.231	1.241	12.1	16.1	165 E	13 84	5 21	14 48.53	-21 37.8	1.701	2.692	5.5	20.0	165 E	23 86
7 25	19 25.79	-35 15.7	0.242	1.246	15.7	16.4	161 E	10 81	5 26	14 43.61	-21 10.8	1.711	2.683	7.6	20.1	159 W	24 85
7 30	19 37.67	-38 5.7	0.256	1.254	18.9	16.6	156 E	7 78	5 31	14 39.14	-20 44.2	1.727	2.673	9.7	20.2	154 W	24 85
8 4	19 49.89	-40 19.0	0.272	1.263	21.6	16.8	153 E	5 76	6 5	14 35.22	-20 18.5	1.748	2.663	11.7	20.3	148 E	25 84
8 9	20 2.21	-41 56.3	0.292	1.274	23.9	17.1	149 E	3 74	6 10	14 31.91	-19 54.5	1.776	2.653	13.5	20.3	142 E	25 84
8 14	20 14.39	-43 0.2	0.314	1.287	25.7	17.3	147 E	2 73	6 20	14 27.30	-19 13.8	1.845	2.632	16.8	20.5	132 E	26 83
8 19	20 26.29	-43 34.3	0.339	1.302	27.2	17.5	144 E	1 72	6 30	14 25.55	-18 45.1	1.929	2.611	19.4	20.7	122 E	26* 83
8 24	20 37.83	-43 42.7	0.366	1.318	28.5	17.8	142 E	1 72	7 10	14 26.58	-18 29.9	2.025	2.588	21.3	20.8	112 E	25* 82
8 29	20 48.98	-43 29.3	0.396	1.336	29.5	18.0	139 E	2 73	7 20	14 30.20	-18 27.6	2.128	2.565	22.6	21.0	104 E	23* 82
9 3	20 59.68	-42 57.9	0.428	1.355	30.3	18.2	137 E	2 73	7 30	14 36.18	-18 37.3	2.234	2.540	23.4	21.1	95 E	21* 83
9 8	21 9.94	-42 11.8	0.463	1.375	31.0	18.4	135 E	3 74	8 9	14 44.26	-18 57.0	2.340	2.515	23.8	21.2	88 E	19* 80*
9 13	21 19.79	-41 13.8	0.499	1.397	31.6	18.7	133 E	4 75	8 19	14 54.22	-19 24.8	2.445	2.490	23.6	21.2	81 E	17* 74*
9 18	21 29.28	-40 6.1	0.539	1.419	32.1	18.9	131 E	5 76	8 29	15 5.87	-19 58.6	2.546	2.463	23.2	21.3	74 E	16* 68*
9 23	21 38.50	-38 50.9	0.581	1.443	32.6	19.1	129 E	6 77	9 8	15 19.03	-20 36.4	2.641	2.436	22.4	21.3	67 E	14* 61*
9 28	21 47.48	-37 29.8	0.625	1.467	32.9	19.3	127 E	8 79	9 18	15 33.58	-21 16.2	2.729	2.408	21.4	21.3	61 E	13* 55*
10 3	21 56.26	-36 4.4	0.672	1.493	33.2	19.5	125 E	9 80	9 28	15 49.40	-21 56.2	2.809	2.379	20.2	21.3	55 E	12* 49*
10 8	22 4.87	-34 35.9	0.721	1.518	33.5	19.7	123 E	10 81	10 8	16 6.40	-22 34.3	2.880	2.350	18.7	21.3	49 E	11* 43*
10 13	22 13.33	-33 5.1	0.773	1.545	33.7	19.9	121 E	12 83	10 18	16 24.48	-23 8.9	2.941	2.320	17.2	21.3	43 E	10* 37*
10 18	22 21.68	-31 32.8	0.828	1.571	33.8	20.1	119 E	13 84	10 28	16 43.59	-23 38.3	2.992	2.290	15.4	21.2	38 E	9* 32*
10 23	22 29.97	-29 59.6	0.885	1.599	33.9	20.3	116 E	15 86	11 7	17 3.60	-24 0.7	3.032	2.259	13.6	21.2	32 E	8* 26*
10 28	22 38.19	-28 26.0	0.944	1.626	33.9	20.4	114 E	17 88	11 17	17 24.47	-24 14.7	3.062	2.228	11.7	21.1	27 E	7* 20*
11 2	22 46.36	-26 52.6	1.006	1.654	33.9	20.6	112 E	18 89	11 27	17 46.08	-24 18.9	3.080	2.196	9.7	21.0	22 E	5* 15*
11 7	22 54.48	-25 19.6	1.070	1.682	33.8	20.8	109 E	20 89	12 7	18 8.34	-24 12.1	3.088	2.164	7.6	20.9	17 E	4* 10*
11 12	23 2.57	-23 47.2	1.136	1.710	33.6	20.9	107 E	21 88	12 17	18 31.14	-23 53.1	3.085	2.132	5.5	20.7	12 E	1* 5*
11 17	23 10.64	-22 15.7	1.204	1.739	33.4	21.1	104 E	23 86	12 27	18 54.36	-23 21.1	3.072	2.100	3.3	20.6	7 E	—
11 22	23 18.70	-20 45.1	1.275	1.767	33.2	21.3	102 E	24 85	1 6	19 17.91	-22 35.6	3.050	2.068	1.1	20.4	2 E	—
11 27	23 26.74	-19 15.6	1.347	1.795	32.8	21.4	99 E	26 83	1 16	19 41.67	-21 36.2	3.018	2.036	1.1	20.3	2 W	—
206921 2004 PU₁₀₀									255550 2006 JB₂₆								
2 21	15 24.35	-17 3.8	2.138	2.484	23.2	21.4	98 W	28 81	2 21	15 34.03	-22 13.1	1.650	1.996	29.6	21.5	95 W	23 86*
3 2	15 32.05	-17 16.7	1.985	2.460	22.7	21.2	107 W	28 81	3 2	15 49.43	-23 29.4	1.513	1.964	29.7	21.3	101 W	22 87
3 12	15 37.60	-17 19.2	1.837	2.434	21.6	21.0	115 W	28 81	3 12	16 3.61	-24 40.2	1.381	1.933	29.3	21.0	108 W	20 89
3 22	15 40.62	-17 10.8	1.698	2.408	19.9	20.8	125 W	28 81	3 22	16 16.15	-25 46.2	1.255	1.902	28.4	20.7	115 W	19 90
4 1	15 40.74	-16 50.9	1.571	2.381	17.4	20.5	135 W	28 81	4 1	16 26.51	-26 47.7	1.139	1.872	26.9	20.5	122 W	18 89
4 11	15 37.74	-16 19.3	1.461	2.354	14.1	20.2	145 W	29 80	4 11	16 34.14	-27 45.0	1.032	1.844	24.6	20.1	130 W	17 88
4 21	15 31.67	-15 36.5	1.370	2.326	10.0	19.9	156 W	29 80	4 21	16 38.46	-28 37.7	0.937	1.816	21.5	19.8	139 W	16 87
5 1	15 22.95	-14 44.4	1.302	2.297	5.2	19.5	168 W	30 79	5 1	16 38.95	-29 23.6	0.856	1.791	17.5	19.4	148 W	16 87
5 6	15 17.88	-14 16.1	1.277														

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

2020	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
255550 2006 JB ₂₆										167785 2005 AT ₃₁									
(continuation)										(continuation)									
7	20	16 9.08	-28 4.2	0.831	1.661	28.9	19.6	128 E	17 88	6	30	15 11.91	-2 54.4	1.343	2.112	22.7	19.9	127 E	42 67
7	30	16 19.52	-27 46.0	0.891	1.657	31.8	19.8	121 E	17* 88	7	10	15 10.67	-4 26.1	1.402	2.081	25.6	20.1	118 E	40* 68
8	9	16 33.64	-27 33.5	0.958	1.655	34.0	20.0	114 E	17* 88	7	20	15 12.74	-6 10.0	1.470	2.049	27.9	20.2	110 E	37* 70
8	19	16 50.81	-27 23.4	1.031	1.657	35.4	20.2	108 E	17* 89	7	30	15 17.99	-8 2.1	1.544	2.017	29.5	20.4	102 E	34* 72
8	29	17 10.48	-27 12.0	1.111	1.662	36.3	20.4	103 E	17* 89	8	9	15 26.14	-9 58.9	1.620	1.986	30.6	20.5	95 E	31* 74
9	8	17 32.09	-26 55.9	1.195	1.669	36.7	20.6	98 E	18* 89	8	19	15 36.95	-11 57.4	1.697	1.955	31.2	20.5	89 E	28* 75*
9	18	17 55.15	-26 31.9	1.284	1.680	36.6	20.8	94 E	18* 88*	8	29	15 50.20	-13 54.9	1.773	1.924	31.4	20.6	83 E	26* 73*
9	28	18 19.25	-25 57.7	1.378	1.693	36.3	20.9	89 E	19* 83*	9	8	16 5.67	-15 49.0	1.847	1.895	31.2	20.7	77 E	23* 69*
10	8	18 43.99	-25 11.8	1.475	1.709	35.6	21.1	85 E	20* 79*	9	18	16 23.21	-17 37.3	1.918	1.866	30.8	20.7	72 E	22* 65*
10	18	19 9.04	-24 13.3	1.577	1.727	34.7	21.2	81 E	21* 74*	9	28	16 42.68	-19 17.5	1.987	1.838	30.1	20.7	67 E	20* 60*
10	28	19 34.16	-23 2.0	1.682	1.748	33.6	21.3	77 E	22* 69*	10	8	17 3.93	-20 47.1	2.051	1.812	29.1	20.7	62 E	19* 55*
11	7	19 59.10	-21 38.4	1.790	1.770	32.3	21.5	73 E	23* 64*	10	18	17 26.85	-22 3.8	2.112	1.787	28.1	20.7	58 E	18* 51*
241661 2000 JA ₇₂										291005 2005 XR ₉₂									
2	21	15 39.66	-13 39.2	1.617	1.977	29.8	21.3	96 W	31 77*	2	21	15 55.14	-21 47.8	2.178	2.397	24.4	21.4	90 W	23 82*
3	2	15 54.60	-14 30.7	1.477	1.942	30.0	21.1	102 W	30 79	3	2	16 5.46	-22 41.8	2.027	2.375	24.4	21.2	98 W	22 87
3	12	16 8.29	-15 16.9	1.342	1.907	29.6	20.8	109 W	30 79	3	12	16 13.97	-23 32.3	1.878	2.351	24.0	21.0	106 W	21 88
3	22	16 20.36	-15 59.3	1.214	1.872	28.7	20.5	115 W	29 80	3	22	16 20.27	-24 19.9	1.735	2.327	23.0	20.8	114 W	21 88
4	1	16 30.30	-16 40.1	1.094	1.839	27.2	20.2	123 W	28 81	4	1	16 23.86	-25 4.8	1.600	2.303	21.3	20.6	123 W	20 89
4	11	16 37.60	-17 21.9	0.984	1.806	24.8	19.9	131 W	28 81	4	11	16 24.29	-25 46.7	1.476	2.277	18.9	20.3	133 W	19 90
4	21	16 41.69	-18 7.8	0.886	1.774	21.6	19.5	140 W	27 82	4	21	16 21.19	-26 24.4	1.367	2.251	15.6	20.0	143 W	19 90
5	1	16 42.04	-19 0.5	0.801	1.744	17.3	19.1	149 W	26 83	5	1	16 14.45	-26 55.3	1.276	2.225	11.6	19.7	154 W	18 89
5	11	16 38.47	-20 1.9	0.732	1.715	11.9	18.7	160 W	25 84	5	11	16 9.82	-27 7.1	1.239	2.212	9.3	19.5	159 W	18 89
5	21	16 31.31	-21 11.5	0.682	1.688	5.6	18.3	171 W	24 85	5	21	16 4.46	-27 16.0	1.207	2.198	7.0	19.3	165 W	18 89
5	26	16 26.69	-21 48.6	0.663	1.676	2.1	18.0	177 W	23 86	5	16	15 58.52	-27 21.6	1.182	2.184	4.7	19.2	170 W	18 89
5	31	16 21.69	-22 26.7	0.650	1.664	1.5	17.9	177 E	23 86	5	21	15 52.18	-27 23.5	1.163	2.171	3.4	19.0	173 W	18 89
6	5	16 16.58	-23 5.3	0.642	1.652	5.1	18.1	172 E	22 87	5	26	15 45.66	-27 22.0	1.150	2.157	4.1	19.0	171 E	18 89
6	10	16 11.64	-23 43.8	0.638	1.641	8.7	18.2	166 E	21 88	5	31	15 39.19	-27 17.2	1.143	2.143	6.2	19.1	167 E	18 89
6	15	16 7.14	-24 22.0	0.639	1.631	12.2	18.3	160 E	21 88	6	5	15 33.01	-27 9.8	1.142	2.129	8.8	19.2	161 E	18 89
6	20	16 3.36	-24 59.5	0.644	1.622	15.6	18.4	155 E	20 89	6	10	15 27.33	-27 0.5	1.148	2.115	11.4	19.3	156 E	18 89
6	25	16 0.53	-25 36.5	0.653	1.613	18.8	18.6	149 E	19 90	6	15	15 22.31	-26 50.0	1.158	2.100	14.0	19.4	150 E	18 89
6	30	15 58.82	-26 13.0	0.666	1.605	21.8	18.7	144 E	19 90	6	20	15 18.11	-26 39.2	1.174	2.086	16.5	19.5	144 E	18 89
7	10	15 59.16	-27 24.4	0.701	1.591	26.9	18.9	135 E	18 89	6	25	15 14.83	-26 29.0	1.194	2.072	18.8	19.6	139 E	19 90
7	20	16 4.65	-28 33.6	0.745	1.580	31.0	19.2	127 E	17* 87	6	30	15 12.56	-26 20.3	1.218	2.058	20.9	19.7	134 E	19 90
7	30	16 15.11	-29 39.3	0.799	1.573	34.1	19.4	120 E	15* 86	7	10	15 11.07	-26 9.1	1.276	2.029	24.5	19.9	124 E	19* 90
8	9	16 30.02	-30 38.9	0.858	1.569	36.3	19.6	114 E	14* 85	7	20	15 13.58	-26 8.0	1.343	2.000	27.3	20.1	115 E	18* 90
8	14	16 38.93	-31 5.3	0.890	1.569	37.1	19.7	111 E	14* 85	7	30	15 19.82	-26 17.6	1.416	1.972	29.5	20.2	107 E	17* 90
8	19	16 48.72	-31 28.8	0.923	1.569	37.8	19.8	108 E	13* 85	8	9	15 29.42	-26 36.4	1.493	1.944	30.9	20.3	100 E	15* 89
8	24	16 59.30	-31 49.0	0.958	1.570	38.3	19.9	106 E	13* 84	8	19	15 41.99	-27 2.0	1.571	1.916	31.8	20.4	93 E	14* 87*
8	29	17 10.60	-32 5.5	0.993	1.572	38.7	20.0	103 E	13* 84	8	29	15 57.25	-27 31.6	1.648	1.888	32.3	20.5	87 E	14* 81*
9	3	17 22.51	-32 17.9	1.030	1.575	38.9	20.1	101 E	12* 84	9	8	16 14.88	-28 1.7	1.724	1.862	32.2	20.6	81 E	13* 75*
9	8	17 34.96	-32 25.7	1.068	1.579	39.1	20.2	99 E	12* 84	9	18	16 34.84	-28 29.2	1.797	1.836	32.1	20.7	76 E	12* 70*
9	13	17 47.87	-32 28.6	1.107	1.584	39.1	20.3	97 E	12* 84	9	28	16 56.32	-28 50.8	1.868	1.811	31.6	20.7	71 E	12* 65*
9	18	18 1.16	-32 26.5	1.148	1.589	39.0	20.4	95 E	12* 83*	10	8	17 19.66	-29 3.3	1.934	1.787	30.8	20.7	66 E	12* 60*
9	23	18 14.76	-32 19.1	1.190	1.596	38.9	20.4	93 E	13* 83*	10	18	17 44.44	-29 3.8	1.998	1.764	29.9	20.7	62 E	12* 56*
9	28	18 28.60	-32 6.3	1.232	1.603	38.7	20.5	91 E	13* 82*	10	28	18 10.43	-28 49.8	2.058	1.743	28.8	20.7	58 E	13* 52*
10	3	18 42.60	-31 48.0	1.276	1.611	38.4	20.6	89 E	13* 81*	11	7	18 37.34	-28 19.0	2.115	1.724	27.6	20.7	54 E	13* 47*
10	8	18 56.69	-31 24.4	1.321	1.619	38.1	20.7	87 E	14* 80*	11	17	19 4.92	-27 30.1	2.168	1.706	26.3	20.7	50 E	14* 43*
10	13	19 10.81	-30 55.4	1.368	1.629	37.6	20.8	86 E	14* 79*	11	27	19 32.89	-26 22.1	2.219	1.690	24.8	20.7	46 E	15* 38*
10	18	19 24.92	-30 21.2	1.415	1.639	37.2	20.8	84 E	15* 78*	12	7	20 0.99	-24 55.0	2.267	1.677	23.3	20.7	42 E	15* 34*
10	23	19 38.97	-29 42.0	1.464	1.649	36.7	20.9	82 E	15* 76*	12	17	20 29.01	-23 9.1	2.313	1.665	21.8	20.7	39 E	16* 29*
10	28	19 52.93	-28 58.2	1.513	1.661	36.1	21.0	80 E	16 74*	12	27	20 56.80	-21 5.7	2.356	1.656	20.1	20.7	35 E	16* 25*
11	2	20 6.74	-28 9.8	1.564	1.673	35.5	21.0	78 E	17 72*	1	6	21 24.20	-18 46.6	2.398	1.650	18.5	20.6	32 E	16* 21*
11	7	20 20.38	-27 17.3	1.616	1.685	34.9	21.1	76 E	18 70*	1	16	21 51.15	-16 13.6	2.438	1.646	16.7	20.6	29 E	15* 17*
11	12	20 33.83	-26 20.9	1.668	1.698	34.2	21.2	75 E	19 68*	252881 2002 JF ₆₃									
11	17	20 47.09	-25 21.0	1.722	1.712	33.5	21.2	73 E	20 65*	2	21	16 15.50	-22 8.7	1.793	1.981	29.9	21.4	86 W	23 78*
11	22	21 0.14	-24 18.0	1.777	1.726	32.7	21.3	71 E	21 63*	3	2	16 34.71	-22 33.3	1.656	1.948	30.6	21.3	91 W	22 84*
11	27	21 12.97	-23 12.0	1.832	1.740	31.9	21.4	69 E	22* 60*	3	12	16 53.23	-22 44.6	1.521	1.915	31.0	21.1	97 W	22 87
12	2	21 25.58	-22 3.6	1.887	1.755	31.1	21.4	67 E	23* 57*	3	22	17 10.77	-22 42.6	1.392	1.884	31.0	20.8	103 W	22 87
12	7	21 37.96	-20 52.9	1.944	1.770	30.3	21.5	65 E	24* 54*	4	1	17 26.92	-22 27.1	1.269	1.854	30.6	20.6	109 W	23 86
										4	11	17 41.28	-21 58.8	1.152	1.825	29.7	20.3	116 W	23 86
										4	21	17 53.39	-21 18.3	1.045	1.798	28.1	20.0	123 W	24 85
										5	1	18 2.69	-20 27.1	0.947	1.772	25.8	19.7	130 W	25 84
										5	11	18 8.74	-19 26.9	0.861	1.749	22.6			

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

Table with columns for year, alpha, delta, delta, r, beta, V, psi, 45-26, 20/21, alpha, delta, delta, r, beta, V, psi, 45-26. It is divided into sections for 252881 2002 JF63, 141531 2002 GB, 213084 1999 TN169, 331548 2000 VO47, and 249230 2008 GZ21. Each section contains a list of astronomical data points with associated coordinates and magnitudes.

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°
249230 2008 GZ ₂₁										467845 2010 VR ₁₄									
(continuation)										(continuation)									
h m										h m									
5 6	18 14.92	-3 14.4	0.976	1.788	26.1	20.4	129 W	42	67	7 22	18 19.12	-65 41.4	0.840	1.693	26.8	18.8	131 E	-	50
5 11	18 13.16	-1 27.3	0.954	1.799	24.4	20.3	133 W	44	65	7 24	18 16.42	-65 50.8	0.845	1.689	27.4	18.8	130 E	-	50
5 16	18 10.34	+0 18.0	0.936	1.809	22.6	20.2	137 W	45	64	7 26	18 13.99	-65 57.7	0.849	1.685	27.9	18.8	129 E	-	50
5 21	18 6.53	+1 59.6	0.923	1.820	20.8	20.2	140 W	47	62	7 28	18 11.88	-66 2.2	0.854	1.681	28.5	18.8	128 E	-	50
5 26	18 1.82	+3 35.3	0.914	1.830	19.2	20.1	143 W	49	60	7 30	18 10.10	-66 4.6	0.860	1.677	29.0	18.9	127 E	-	50
5 31	17 56.38	+5 2.8	0.910	1.840	17.9	20.1	146 W	50	59	8 4	18 7.23	-66 1.6	0.875	1.668	30.3	18.9	124 E	-	50
6 5	17 50.41	+6 20.3	0.910	1.850	17.0	20.0	148 W	51	58	8 9	18 6.72	-65 47.5	0.892	1.660	31.5	19.0	121 E	-	50
6 10	17 44.10	+7 26.3	0.916	1.860	16.5	20.0	149 W	52	57	8 14	18 8.61	-65 23.7	0.910	1.653	32.6	19.1	118 E	-	51
6 15	17 37.70	+8 19.5	0.927	1.870	16.6	20.1	148 W	53	56	8 19	18 12.80	-64 51.4	0.929	1.646	33.6	19.1	116 E	-	51
6 20	17 31.42	+8 59.4	0.943	1.879	17.1	20.1	147 E	54	55	8 24	18 19.11	-64 11.5	0.950	1.640	34.4	19.2	113 E	-	52
6 30	17 20.13	+9 39.2	0.989	1.897	19.2	20.3	142 E	55	54	8 29	18 27.30	-63 24.6	0.971	1.634	35.2	19.3	111 E	-	53
7 10	17 11.61	+9 31.9	1.051	1.915	21.8	20.6	136 E	55	54	9 3	18 37.07	-62 30.8	0.993	1.630	35.8	19.3	109 E	-	53
7 20	17 6.56	+8 47.8	1.128	1.932	24.3	20.8	129 E	54	55	9 8	18 48.12	-61 30.2	1.016	1.626	36.4	19.4	107 E	-	54
7 30	17 5.19	+7 38.0	1.215	1.948	26.4	21.1	121 E	53	56	9 13	19 0.19	-60 22.7	1.040	1.623	36.8	19.4	105 E	-	56
8 9	17 7.29	+6 12.9	1.311	1.963	28.0	21.3	115 E	51	58	9 18	19 13.03	-59 8.2	1.065	1.621	37.2	19.5	103 E	-	57
312004 2007 PW ₂₇										253449 2003 RX ₁₈									
2 21	16 57.39	-0 31.2	2.956	2.938	19.3	21.5	79 W	44*	56*	2 21	17 8.71	-25 3.7	1.972	1.933	29.3	21.5	73 W	19*	67*
3 2	17 5.68	+0 7.9	2.829	2.942	19.6	21.4	87 W	45*	61*	3 2	17 31.62	-25 39.9	1.844	1.903	30.6	21.3	78 W	19*	72*
3 12	17 12.32	+0 55.3	2.701	2.946	19.7	21.3	94 W	46*	63*	3 12	17 54.40	-26 5.1	1.717	1.874	31.7	21.2	83 W	18*	77*
3 22	17 17.08	+1 49.5	2.574	2.949	19.3	21.2	102 W	47	62	3 22	18 16.88	-26 19.8	1.593	1.846	32.6	21.0	88 W	18*	82*
4 1	17 19.71	+2 48.6	2.452	2.951	18.5	21.0	110 W	48	61	4 1	18 38.78	-26 24.8	1.473	1.819	33.3	20.8	93 W	18*	87*
4 11	17 20.01	+3 49.6	2.337	2.952	17.3	20.9	119 W	49	60	4 11	18 59.87	-26 21.6	1.357	1.794	33.6	20.6	98 W	18*	90
4 21	17 17.84	+4 48.8	2.234	2.951	15.8	20.8	127 W	50	59	4 21	19 19.85	-26 12.0	1.246	1.770	33.6	20.4	103 W	18*	90
5 1	17 13.19	+5 41.7	2.147	2.950	13.9	20.6	135 W	51	58	5 1	19 38.34	-25 58.4	1.141	1.748	33.1	20.2	109 W	18*	90
5 11	17 6.27	+6 22.9	2.079	2.948	11.9	20.5	143 W	51	58	5 11	19 54.97	-25 43.6	1.043	1.728	32.1	19.9	115 W	19*	90
5 21	16 57.51	+6 47.4	2.033	2.945	10.3	20.3	149 W	52	57	5 21	20 9.28	-25 30.8	0.952	1.710	30.5	19.7	121 W	19*	90
5 31	16 47.59	+6 50.7	2.012	2.940	9.6	20.3	151 W	52	57	5 31	20 20.70	-25 23.0	0.870	1.695	28.1	19.4	128 W	20*	89
6 10	16 37.42	+6 30.7	2.017	2.935	10.2	20.3	149 E	52	57	6 10	20 28.74	-25 22.5	0.798	1.682	25.0	19.1	136 W	20	89
6 20	16 27.88	+5 47.8	2.046	2.929	11.8	20.4	144 E	51	58	6 20	20 32.90	-25 30.6	0.738	1.671	20.9	18.8	144 W	19	90
6 30	16 19.77	+4 44.3	2.099	2.922	13.9	20.5	136 E	50	59	6 30	20 32.94	-25 45.6	0.691	1.664	15.9	18.5	153 W	19	90
7 10	16 13.65	+3 24.5	2.173	2.914	15.9	20.7	128 E	48	61	7 5	20 31.50	-25 54.4	0.673	1.661	13.1	18.3	158 W	19	90
7 20	16 9.82	+1 53.2	2.262	2.904	17.7	20.8	120 E	47	62	7 10	20 29.21	-26 2.8	0.659	1.659	10.2	18.1	163 W	19	90
7 30	16 8.41	+0 14.6	2.365	2.894	19.1	20.9	111 E	45*	64	7 15	20 26.21	-26 10.0	0.650	1.658	7.3	18.0	168 W	19	90
8 9	16 9.33	-1 27.6	2.478	2.883	20.0	21.1	103 E	42*	65	7 20	20 22.70	-26 15.1	0.645	1.657	4.9	17.9	172 W	19	90
8 19	16 12.45	-3 10.5	2.595	2.871	20.6	21.2	95 E	39*	67	7 25	20 18.93	-26 17.0	0.644	1.657	4.1	17.8	173 W	19	90
8 29	16 17.58	-4 51.9	2.716	2.858	20.7	21.3	88 E	37*	68*	7 30	20 15.19	-26 15.1	0.648	1.658	5.7	17.9	171 E	19	90
9 8	16 24.51	-6 30.0	2.835	2.843	20.4	21.3	80 E	34*	66*	8 4	20 11.74	-26 9.1	0.657	1.660	8.4	18.1	166 E	19	90
9 18	16 33.05	-8 3.8	2.952	2.828	19.9	21.4	73 E	31*	62*	8 9	20 8.79	-25 58.9	0.670	1.662	11.3	18.2	161 E	19	90
9 28	16 43.05	-9 32.1	3.064	2.812	19.0	21.4	66 E	29*	56*	8 14	20 6.55	-25 44.6	0.687	1.666	14.1	18.4	156 E	19	90
10 8	16 54.32	-10 54.1	3.169	2.795	17.9	21.5	59 E	27*	50*	8 19	20 5.16	-25 26.5	0.709	1.669	16.8	18.6	151 E	20	89
10 18	17 6.74	-12 9.3	3.265	2.777	16.6	21.5	53 E	25*	43*	8 29	20 5.32	-24 40.4	0.763	1.679	21.6	18.9	142 E	20	89
10 28	17 20.18	-13 17.1	3.350	2.758	15.1	21.5	46 E	22*	36*	9 8	20 9.45	-23 43.5	0.830	1.691	25.5	19.2	134 E	21	88
11 7	17 34.53	-14 16.9	3.424	2.738	13.4	21.4	40 E	20*	29*	9 18	20 17.20	-22 38.0	0.909	1.706	28.4	19.5	126 E	22	87
11 17	17 49.67	-15 8.5	3.485	2.717	11.6	21.4	34 E	18*	23*	9 28	20 28.04	-21 24.7	0.998	1.724	30.5	19.8	119 E	24	85
11 27	18 5.50	-15 51.5	3.533	2.695	9.7	21.3	27 E	15*	16*	10 8	20 41.31	-20 3.9	1.096	1.743	32.0	20.1	113 E	25	84
12 7	18 21.93	-16 25.6	3.566	2.673	7.7	21.2	21 E	12*	9*	10 18	20 56.43	-18 35.8	1.201	1.765	32.8	20.3	106 E	26	83
12 17	18 38.87	-16 50.9	3.585	2.649	5.7	21.1	15 E	8*	3*	10 28	21 12.95	-17 0.3	1.313	1.788	33.1	20.5	101 E	28	81
12 27	18 56.23	-17 7.2	3.588	2.624	3.7	21.0	10 E	4*	-	11 7	21 30.43	-15 17.6	1.430	1.813	33.0	20.8	95 E	30	78*
1 6	19 13.91	-17 14.9	3.576	2.599	2.1	20.9	5 E	-	-	11 17	21 48.58	-13 28.4	1.552	1.840	32.5	21.0	90 E	32	73*
1 16	19 31.86	-17 14.2	3.549	2.573	2.2	20.9	6 W	-	-	11 27	22 7.17	-11 33.1	1.678	1.868	31.7	21.1	85 E	33	67*
467845 2010 VR ₁₄										253449 2003 RX ₁₈									
2 21	17 5.37	-22 18.5	2.214	2.164	26.1	21.4	74 W	22*	67*	12 7	22 26.02	-9 32.8	1.806	1.897	30.7	21.3	80 E	35	60*
3 2	17 22.58	-23 50.6	2.062	2.129	27.3	21.2	80 W	21*	74*	12 17	22 45.01	-7 28.3	1.937	1.926	29.5	21.4	75 E	38	53*
3 12	17 39.48	-25 26.8	1.910	2.095	28.3	21.1	86 W	19*	80*										
3 22	17 55.94	-27 10.0	1.761	2.060	28.9	20.9	92 W	18*	86*										
4 1	18 11.76	-29 4.0	1.615	2.025	29.2	20.6	99 W	16*	87										
4 11	18 26.73	-31 13.1	1.475	1.991	29.0	20.4	105 W	14*	85										
4 21	18 40.59	-33 42.2	1.343	1.957	28.4	20.2	112 W	11*	82										
5 1	18 52.91	-36 36.1	1.221	1.923	27.3	19.9	119 W	8	79										
5 6	18 58.35	-38 13.7	1.165	1.907	26.5	19.7	122 W	7	78										
5 11	19 3.22	-39 58.8	1.112	1.891	25.6	19.6	126 W	5	76										
5 16	19 7.42	-41 51.5	1.063	1.874	24.7	19.4	129 W	3	74										
5 21	19 10.84	-43 51.5	1.018	1.859	23.7	19.3	133 W	1	72										
5 26	19 13.35	-45 58.1	0.977	1.843	22.6	19.2	136 W	-	70										
5 31	19 14.82	-48 9.9	0.941	1.828	21.6	19.0	138 W	-	68										
6 5	19 15.14	-50 25.2	0.910	1.813	20.8	18.9	141 W	-											

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/21		α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	2020	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°					
160541 1997 WM58																									
		h m		° / ' "				° m °				h m		° / ' "				° m °							
2	21	17	9.35	-16	37.6	2.995	2.881	19.2	21.5	74 W	28*	64*	2	21	17	30.03	-0	43.1	1.126	1.237	49.2	21.5	71 W	42*	51*
3	2	17	19.26	-16	38.8	2.855	2.880	19.9	21.4	81 W	28*	72*	3	2	18	6.63	-2	1.3	1.079	1.208	51.0	21.4	71 W	40*	53*
3	12	17	27.69	-16	35.3	2.712	2.878	20.2	21.3	89 W	28*	78*	3	12	18	43.59	-3	17.7	1.038	1.184	52.6	21.3	71 W	37*	56*
3	22	17	34.40	-16	28.1	2.568	2.876	20.1	21.1	98 W	29*	80	3	22	19	20.84	-4	33.0	1.002	1.165	54.1	21.2	71 W	35*	58*
4	1	17	39.11	-16	18.2	2.426	2.872	19.5	21.0	106 W	29	80	4	1	19	58.29	-5	47.4	0.970	1.152	55.4	21.2	72 W	32*	60*
4	11	17	41.55	-16	6.8	2.289	2.867	18.4	20.8	116 W	29	80	4	11	20	35.84	-7	1.1	0.943	1.146	56.3	21.1	72 W	29*	62*
4	21	17	41.49	-15	55.2	2.162	2.862	16.7	20.6	125 W	29	80	4	21	21	13.37	-8	14.0	0.920	1.147	56.9	21.1	73 W	25*	64*
5	1	17	38.77	-15	44.4	2.048	2.855	14.3	20.4	135 W	29	80	5	1	21	50.61	-9	26.3	0.900	1.155	57.1	21.0	74 W	23*	66*
5	11	17	33.40	-15	35.6	1.952	2.848	11.4	20.2	146 W	29	80	5	11	22	27.29	-10	38.7	0.884	1.168	56.9	21.0	76 W	20*	68*
5	21	17	25.62	-15	29.6	1.879	2.839	7.9	20.0	157 W	30	79	5	21	23	3.04	-11	52.0	0.870	1.188	56.4	21.0	78 W	18*	70*
5	31	17	15.99	-15	27.1	1.830	2.830	4.3	19.8	168 W	30	79	5	31	23	37.43	-13	8.7	0.859	1.214	55.4	21.0	80 W	16*	73*
6	10	17	5.37	-15	28.8	1.810	2.819	2.8	19.6	172 E	30	79	6	10	0	10.05	-14	31.2	0.850	1.243	54.2	21.0	83 W	15*	75*
6	20	16	54.77	-15	35.5	1.818	2.808	5.8	19.8	164 E	29	80	6	20	0	40.51	-16	2.5	0.841	1.277	52.6	21.0	86 W	15*	78*
6	30	16	45.24	-15	47.6	1.852	2.796	9.6	20.0	153 E	29	80	6	30	1	8.36	-17	46.2	0.833	1.314	50.7	21.0	90 W	16*	81*
7	10	16	37.62	-16	5.6	1.911	2.782	13.1	20.2	142 E	29	80	7	10	1	33.22	-19	44.6	0.825	1.353	48.6	21.0	94 W	16*	84*
7	20	16	32.44	-16	29.4	1.990	2.768	16.0	20.4	131 E	29	80	7	20	1	54.66	-22	0.1	0.817	1.394	46.2	20.9	98 W	17*	86
7	30	16	29.95	-16	58.8	2.085	2.753	18.4	20.5	121 E	28*	81	7	30	2	12.15	-24	33.5	0.810	1.435	43.5	20.9	103 W	17*	89
8	9	16	30.19	-17	32.8	2.192	2.737	20.1	20.7	112	27*	82	8	9	2	25.15	-27	22.7	0.803	1.478	40.6	20.9	108 W	17*	89
8	19	16	32.99	-18	10.3	2.306	2.720	21.2	20.8	103 E	26*	82	8	19	2	32.99	-30	23.5	0.798	1.520	37.5	20.8	114 W	15*	86
8	29	16	38.18	-18	50.0	2.423	2.702	21.9	20.9	95 E	24*	83*	8	29	2	34.96	-33	26.3	0.798	1.563	34.4	20.8	119 W	12	83
9	8	16	45.51	-19	30.6	2.542	2.684	22.0	21.0	87 E	23*	79*	9	8	2	30.63	-36	15.7	0.804	1.604	31.2	20.8	124 W	9	80
9	18	16	54.75	-20	10.7	2.658	2.664	21.8	21.1	79 E	22*	73*	9	18	2	20.08	-38	32.5	0.818	1.645	28.5	20.8	129 W	6	77
9	28	17	5.71	-20	48.9	2.770	2.643	21.2	21.2	72 E	20*	66*	9	28	2	4.43	-39	54.9	0.844	1.685	26.4	20.9	132 W	5	76
10	8	17	18.17	-21	23.9	2.876	2.622	20.3	21.2	65	19*	59*	10	8	1	46.12	-40	7.9	0.883	1.724	25.3	21.0	133 W	5	76
10	18	17	31.98	-21	54.5	2.974	2.600	19.1	21.2	59 E	18*	52*	10	18	1	28.13	-39	8.2	0.937	1.761	25.2	21.1	131 E	6	77
10	28	17	46.98	-22	19.5	3.062	2.577	17.8	21.2	52 E	17*	45*	10	28	1	13.10	-37	4.7	1.005	1.797	25.8	21.4	128 E	8	79
11	7	18	3.00	-22	38.1	3.141	2.553	16.2	21.2	46 E	16*	39*	11	7	1	2.49	-34	14.7	1.088	1.832	26.8	21.6	123 E	11	82
11	17	18	19.95	-22	49.2	3.208	2.528	14.5	21.2	40 E	14*	32*	11	17	1	2.49	-34	14.7	1.088	1.832	26.8	21.6	123 E	11	82
11	27	18	37.67	-22	52.1	3.262	2.503	12.7	21.1	34	13*	25*	11	27	1	2.49	-34	14.7	1.088	1.832	26.8	21.6	123 E	11	82
12	7	18	56.05	-22	46.2	3.305	2.477	10.7	21.0	28 E	11*	19*	12	7	1	2.49	-34	14.7	1.088	1.832	26.8	21.6	123 E	11	82
12	17	19	14.98	-22	31.0	3.334	2.450	8.7	21.0	22 E	8*	13*	12	17	1	2.49	-34	14.7	1.088	1.832	26.8	21.6	123 E	11	82
12	27	19	34.36	-22	6.3	3.350	2.422	6.6	20.8	16 E	5*	8*	12	27	1	2.49	-34	14.7	1.088	1.832	26.8	21.6	123 E	11	82
1	6	19	54.07	-21	31.9	3.353	2.394	4.4	20.7	11 E	2*	3*	1	6	19	54.07	-21	31.9	3.353	2.394	4.4	20.7	11 E	2*	3*
1	16	20	14.04	-20	47.9	3.343	2.365	2.2	20.5	5 E	1	1	1	16	20	14.04	-20	47.9	3.343	2.365	2.2	20.5	5 E	1	1
182328 2001 PS13																									
2	21	17	24.37	-19	59.7	2.219	2.097	26.3	21.4	70 W	24*	62*	2	21	17	38.13	-22	4.3	1.964	1.814	30.0	21.5	67 W	21*	59*
3	2	17	45.01	-20	6.4	2.068	2.051	27.8	21.3	75 W	24*	68*	3	2	18	3.48	-21	52.6	1.850	1.789	31.6	21.3	71 W	21*	64*
3	12	18	5.60	-20	2.5	1.918	2.006	29.2	21.1	80 W	24*	73*	3	12	18	28.63	-21	23.8	1.738	1.764	33.0	21.2	75 W	21*	68*
3	22	18	26.06	-19	48.3	1.771	1.961	30.4	20.9	85 W	24*	78*	3	22	18	53.40	-20	38.4	1.629	1.741	34.2	21.1	79 W	22*	72*
4	1	18	46.24	-19	24.4	1.627	1.917	31.4	20.7	91 W	24*	82*	4	1	19	17.57	-19	37.2	1.523	1.720	35.2	20.9	83 W	22*	76*
4	11	19	6.00	-18	51.7	1.487	1.873	32.2	20.5	96 W	25*	83	4	11	19	40.91	-18	21.6	1.420	1.700	36.1	20.8	87 W	23*	79*
4	21	19	25.22	-18	11.5	1.353	1.830	32.6	20.2	101 W	26*	82	4	21	20	3.23	-16	53.6	1.321	1.683	36.7	20.6	92 W	25*	81*
5	1	19	43.69	-17	25.6	1.225	1.789	32.8	20.0	106 W	27*	81	5	1	20	24.28	-15	15.8	1.226	1.668	36.9	20.4	96 W	26*	79
5	11	20	1.23	-16	36.5	1.105	1.749	32.5	19.7	111 W	28*	81	5	11	20	43.82	-13	31.1	1.136	1.655	36.9	20.3	101 W	28*	78
5	21	20	17.60	-15	47.1	0.993	1.710	31.8	19.4	117 W	29*	80	5	21	21	1.57	-11	43.1	1.051	1.644	36.4	20.1	106 W	31*	76
5	31	20	32.50	-15	1.3	0.890	1.674	30.5	19.1	123 W	30*	79	5	31	21	17.19	-9	56.0	0.971	1.636	35.3	19.9	111 W	33*	74
6	10	20	45.63	-14	23.8	0.797	1.641	28.6	18.7	129 W	31	78	6	10	21	30.34	-8	14.6	0.898	1.631	33.7	19.6	117 W	36*	72
6	20	20	56.58	-13	59.7	0.715	1.610	25.9	18.4	136 W	31	78	6	20	21	40.57	-6	44.1	0.831	1.629	31.4	19.4	123 W	38*	71
6	30	21	4.94	-13	54.6	0.644	1.583	22.3	18.0	144 W	31	78	6	30	21	44.45	-6	4.9	0.800	1.629	29.9	19.3	127 W	39	70
7	10	21	10.49	-14	12.7	0.586	1.559	17.8	17.6	152 W	31	78	6	10	21	47.44	-5	30.7	0.772	1.630	28.2	19.1	131 W	39	70
7	20	21	13.14	-14	55.7	0.542	1.540	12.2	17.2	161 W	30	79	7	5	21	49.53	-5	2.3	0.746	1.631	26.2	19.0	135 W	40	69
7	25	21	13.49	-15	25.8	0.526	1.531	9.2	17.0	166 W	30	79	7	10	21	50.67	-4	40.3	0.723	1.633	24.1	18.9	139 W	40	69
7	30	21	13.33	-16	0.3	0.513	1.524	5.9	16.8	171 W	29	80	7	20	21	50.12	-4	17.9	0.685	1.639	19.0	18.6	148 W	41	68
8	4	21	12.83	-16	37.7	0.505	1.519	2.6	16.6	176 W	28	81	7	30	21	46.18	-4	26.3	0.661	1.648	13.3	18.4	158 W	41	68
8	9	21	12.16	-17	16.5	0.500	1.514	1.1	16.5	178 E	28	81	8	9	21	39.9									

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°
155287 2005 XK₁									243927 2001 OR₃₃								
<i>(continuation)</i>																	
h m ° ' "									h m ° ' "								
6 10	20 33.34	-14 30.6	0.900	1.752	25.4	19.1	132 W	30 79	2 21	17 54.42	-19 44.8	2.075	1.848	28.4	21.5	63 W	22* 55*
6 20	20 37.55	-14 2.8	0.813	1.723	22.0	18.7	141 W	31 78	3 2	18 19.07	-19 55.7	1.960	1.821	30.1	21.4	67 W	22* 60*
6 30	20 38.31	-13 51.9	0.738	1.695	17.6	18.3	150 W	31 78	3 12	18 43.73	-19 54.7	1.846	1.794	31.6	21.2	71 W	22* 64*
7 10	20 35.62	-14 0.4	0.678	1.669	12.2	17.9	160 W	31 78	3 22	19 8.31	-19 42.7	1.733	1.769	33.0	21.1	76 W	21* 69*
7 20	20 29.92	-14 28.7	0.635	1.645	6.0	17.5	170 W	31 78	4 1	19 32.64	-19 21.0	1.622	1.745	34.3	21.0	80 W	21* 73*
7 25	20 26.28	-14 49.3	0.620	1.634	3.2	17.2	175 W	30 79	4 11	19 56.60	-18 51.3	1.514	1.723	35.3	20.8	84 W	22* 77*
7 30	20 22.42	-15 13.1	0.609	1.623	3.1	17.2	175 E	30 79	4 21	20 20.06	-18 16.0	1.409	1.703	36.2	20.7	88 W	22* 80*
8 4	20 18.59	-15 39.0	0.604	1.613	5.9	17.3	171 E	29 80	5 1	20 42.83	-17 37.7	1.308	1.684	36.7	20.5	92 W	23* 81*
8 9	20 15.03	-16 6.0	0.602	1.604	9.2	17.4	165 E	29 80	5 11	21 4.76	-16 59.9	1.212	1.667	37.0	20.3	97 W	23* 81
8 14	20 11.99	-16 32.9	0.605	1.595	12.6	17.6	160 E	28 81	5 21	21 25.65	-16 26.1	1.120	1.653	36.9	20.1	102 W	24* 80
8 19	20 9.70	-16 58.7	0.612	1.586	15.9	17.7	155 E	28 81	5 31	21 45.21	-16 0.9	1.034	1.641	36.3	19.9	107 W	26* 80
8 24	20 8.35	-17 22.4	0.623	1.579	19.0	17.8	149 E	28 81	6 10	22 3.14	-15 48.8	0.953	1.632	35.2	19.7	112 W	27* 80
8 29	20 8.08	-17 43.1	0.637	1.572	21.9	18.0	144 E	27 82	6 20	22 19.04	-15 54.6	0.879	1.625	33.5	19.5	118 W	28* 80
9 8	20 10.98	-18 13.6	0.674	1.561	27.0	18.2	135 E	27 82	6 30	22 32.39	-16 23.1	0.812	1.621	31.1	19.2	124 W	28* 80
9 18	20 18.44	-18 26.9	0.722	1.553	31.0	18.5	127 E	27 82	7 10	22 42.68	-17 17.3	0.755	1.620	27.9	19.0	132 W	28 81
9 28	20 30.07	-18 20.8	0.778	1.548	34.0	18.7	120 E	27 82	7 20	22 49.34	-18 37.8	0.707	1.622	23.9	18.7	140 W	26 83
10 8	20 45.17	-17 54.3	0.841	1.546	36.2	18.9	114 E	27 82	7 25	22 51.15	-19 26.8	0.688	1.623	21.6	18.6	144 W	26 83
10 18	21 2.98	-17 7.3	0.911	1.548	37.7	19.2	108 E	28 81	7 30	22 51.94	-20 20.4	0.672	1.626	19.1	18.5	148 W	25 84
10 23	21 12.70	-16 36.3	0.947	1.550	38.2	19.3	106 E	28 81	8 4	22 51.73	-21 16.7	0.660	1.629	16.6	18.3	153 W	24 85
10 28	21 22.85	-16 0.4	0.986	1.552	38.5	19.4	103 E	29 80	8 9	22 50.56	-22 14.1	0.652	1.633	14.1	18.2	157 W	23 86
11 2	21 33.36	-15 19.8	1.025	1.556	38.8	19.5	101 E	30 79	8 14	22 48.53	-23 10.2	0.647	1.638	11.9	18.1	161 W	22 87
11 7	21 44.15	-14 34.9	1.066	1.561	38.9	19.6	99 E	30 78*	8 19	22 45.80	-24 2.6	0.647	1.643	10.2	18.1	163 W	21 88
11 12	21 55.18	-13 45.8	1.108	1.566	38.9	19.6	96 E	31 77*	8 24	22 42.58	-24 49.1	0.652	1.649	9.4	18.1	165 W	20 89
11 17	22 6.39	-12 52.7	1.151	1.572	38.9	19.7	94 E	32 75*	8 29	22 39.13	-25 27.5	0.661	1.655	9.8	18.1	164 W	20 89
11 22	22 17.76	-11 56.1	1.195	1.579	38.7	19.8	92 E	33 73*	9 3	22 35.69	-25 56.3	0.675	1.662	11.2	18.2	161 E	19 90
11 27	22 29.23	-10 56.1	1.241	1.586	38.5	19.9	90 E	34 70*	9 8	22 32.51	-26 14.9	0.693	1.670	13.1	18.4	158 E	19 90
12 7	22 52.36	-8 48.0	1.335	1.603	37.8	20.1	86 E	36 64*	9 13	22 29.78	-26 22.7	0.715	1.678	15.3	18.5	154 E	19 90
12 17	23 15.62	-6 30.9	1.434	1.623	36.9	20.2	82 E	38 59*	9 18	22 27.68	-26 20.1	0.741	1.687	17.5	18.7	150 E	19 90
12 27	23 38.90	-4 7.6	1.536	1.645	35.8	20.4	78 E	41 53*	9 23	22 26.37	-26 7.5	0.771	1.696	19.7	18.9	145 E	19 90
1 6	0 2.13	-1 41.0	1.642	1.669	34.5	20.5	74 E	43* 48*	9 28	22 25.91	-25 45.7	0.805	1.706	21.6	19.0	141 E	19 90
1 16	0 25.28	+ 0 46.5	1.750	1.695	33.1	20.6	70 E	45* 43*	10 3	22 26.32	-25 15.9	0.843	1.716	23.5	19.2	137 W	20 89
207027 2004 VD₅₉									137504 1999 VO₂₁								
2 21	17 52.31	-25 24.9	2.108	1.884	28.0	21.4	63 W	17* 57*	2 21	17 58.12	-19 49.9	2.400	2.124	24.3	21.5	62 W	22* 54*
3 2	18 17.67	-25 7.4	1.983	1.848	29.7	21.3	68 W	17* 61*	3 2	18 18.79	-19 4.7	2.259	2.086	26.0	21.3	67 W	23* 60*
3 12	18 43.05	-24 32.2	1.859	1.814	31.4	21.2	72 W	17* 66*	3 12	18 39.15	-18 4.4	2.117	2.048	27.5	21.2	72 W	24* 65*
3 22	19 8.28	-23 38.9	1.737	1.780	32.9	21.0	76 W	18* 70*	3 22	18 59.07	-16 48.9	1.976	2.010	28.9	21.1	77 W	25* 70*
4 1	19 33.19	-22 27.6	1.617	1.748	34.3	20.9	80 W	19* 74*	4 1	19 18.42	-15 18.0	1.836	1.973	30.1	20.9	82 W	26* 73*
4 11	19 57.62	-20 58.6	1.502	1.716	35.5	20.7	84 W	20* 78*	4 11	19 37.05	-13 31.9	1.699	1.935	31.2	20.7	88 W	28* 76*
4 21	20 21.42	-19 12.7	1.391	1.687	36.5	20.5	88 W	21* 80*	4 21	19 54.83	-11 31.0	1.567	1.899	31.9	20.5	93 W	30* 76*
5 1	20 44.39	-17 11.0	1.285	1.659	37.4	20.4	92 W	23* 81*	5 1	20 11.56	-9 15.9	1.439	1.863	32.4	20.3	98 W	33* 73
5 11	21 6.39	-14 55.1	1.185	1.634	38.0	20.2	96 W	25* 79	5 11	20 27.08	-6 47.7	1.317	1.828	32.6	20.1	103 W	36* 71
5 21	21 27.23	-12 26.9	1.090	1.611	38.2	20.0	100 W	28* 76	5 21	20 41.17	-4 7.9	1.202	1.795	32.4	19.8	108 W	39* 68
5 31	21 46.67	-9 49.1	1.002	1.590	38.2	19.7	104 W	31* 74	5 31	20 53.55	-1 18.8	1.095	1.763	31.9	19.6	113 W	43* 65
6 10	22 4.48	-7 4.7	0.921	1.573	37.7	19.5	109 W	35* 71	6 10	21 3.94	+ 1 35.9	0.998	1.733	30.9	19.3	119 W	46* 62
6 20	22 20.32	-4 17.4	0.846	1.559	36.7	19.3	113 W	39* 68	6 15	21 8.28	+ 3 4.0	0.952	1.718	30.2	19.2	122 W	48 61
6 30	22 33.79	-1 32.2	0.778	1.548	35.2	19.1	119 W	43* 66	6 20	21 11.99	+ 4 31.4	0.909	1.704	29.5	19.0	124 W	50 59
7 5	22 39.50	-0 12.0	0.747	1.544	34.1	18.9	122 W	45* 64	6 25	21 15.02	+ 5 57.2	0.869	1.691	28.5	18.9	127 W	51 58
7 10	22 44.46	+ 1 5.5	0.718	1.541	32.9	18.8	125 W	46 63	6 30	21 17.35	+ 7 20.2	0.831	1.678	27.5	18.8	130 W	52 57
7 15	22 48.59	+ 2 19.4	0.691	1.539	31.5	18.7	128 W	47 62	7 5	21 18.96	+ 8 39.2	0.797	1.666	26.4	18.6	133 W	54 55
7 20	22 51.84	+ 3 28.7	0.666	1.538	29.9	18.5	131 W	48 61	7 10	21 19.82	+ 9 52.8	0.765	1.655	25.2	18.5	136 W	55 54
7 25	22 54.15	+ 4 32.3	0.643	1.538	28.0	18.4	135 W	50 59	7 15	21 19.94	+10 59.4	0.736	1.644	23.9	18.3	139 W	56 53
7 30	22 55.52	+ 5 29.1	0.623	1.538	26.0	18.3	138 W	50 59	7 20	21 19.33	+11 57.4	0.710	1.634	22.6	18.2	142 W	57 52
8 4	22 55.94	+ 6 18.1	0.606	1.540	23.7	18.2	142 W	51 58	7 25	21 18.07	+12 44.9	0.688	1.625	21.3	18.1	144 W	58 51
8 9	22 55.44	+ 6 58.3	0.592	1.542	21.3	18.0	146 W	52 57	7 30	21 16.27	+13 20.6	0.669	1.617	20.1	18.0	147 W	58 51
8 14	22 54.09	+ 7 28.8	0.581	1.546	18.7	17.9	151 W	52 57	8 4	21 14.07	+13 43.3	0.653	1.609	19.1	17.9	149 W	59 50
8 19	22 51.99	+ 7 48.8	0.573	1.550	16.1	17.8	155 W	53 56	8 9	21 11.62	+13 52.2	0.641	1.602	18.3	17.8	150 E	59 50
8 29	22 46.31	+ 7 57.3	0.569	1.561	11.4	17.6	162 W	53 56	8 14	21 9.13	+13 46.8	0.633	1.596	17.8	17.8	151 E	59 50
9 8	22 40.18	+ 7 28.5	0.581	1.576	9.4	17.6	165 E	52 57	8 19	21 6.79	+13 27.3	0.628	1.591	17.8	17.7	151 E	58 51
9 18	22 35.37	+ 6 33.7	0.609	1.594	11.7	17.8	161 E	52 57	8 24	21 4.84	+12 54.6	0.626	1.587	18.1	17.7	151 E	58 51
9 23	22 33.95	+ 6 1.4	0.630	1.604	13.8	18.0	158 E	51 58	8 29	21 3.49	+12 10.2	0.629	1.584	18.9	17.8	149 E	57 52
9 28	22 33.37	+ 5 28.6	0.654	1.614	16.1	18.2	154 E	50 59	9 3	21 2.90	+11 16.3	0.635	1.582	20.0	17.8	148 E	56 53
10 3	22 33.67	+ 4 57.0	0.683	1.626	18.3	18.4	149 E	50 59									
10 8	22 34.86	+ 4 27.9	0.715	1.638	20.4	18.6	145 E	49 60									
10 13	22 36.94	+ 4 2.4	0.751	1.651	22.4	18.7	141 E	49 60									
10 18	22 39.86	+ 3 41.3	0.790	1.664	24.1	18.9	137 E	49 60									

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
137504 1999 VO ₂₁ (continuation)										125475 2001 WA ₁₅ (continuation)									
9 8	21 3.17	+10 15.1	0.644	1.581	21.2	17.9	145 E	55	54	4 11	19 51.97	-15 4.1	1.773	1.947	30.8	20.8	84 W	26*	75*
9 13	21 4.39	+ 9 8.8	0.657	1.580	22.7	18.0	143 E	54	55	4 21	20 10.24	-13 55.6	1.644	1.918	31.6	20.6	89 W	27*	77*
9 18	21 6.62	+ 7 59.9	0.674	1.581	24.2	18.1	140 E	53	56	5 1	20 27.54	-12 42.5	1.518	1.890	32.1	20.4	95 W	28*	77
9 23	21 9.87	+ 6 50.7	0.693	1.582	25.7	18.2	137 E	52	57	5 11	20 43.74	-11 27.2	1.396	1.862	32.3	20.2	100 W	30*	75
9 28	21 14.11	+ 5 43.2	0.716	1.585	27.1	18.3	134 E	51	58	5 21	20 58.61	-10 12.5	1.279	1.836	32.0	20.0	106 W	32*	74
10 3	21 19.29	+ 4 39.3	0.742	1.588	28.5	18.4	131 E	50	59	5 31	21 11.89	- 9 2.0	1.168	1.810	31.3	19.8	112 W	35*	73
10 8	21 25.32	+ 3 40.1	0.771	1.592	29.7	18.5	128 E	49	60	6 10	21 23.29	- 7 59.8	1.063	1.785	30.0	19.5	118 W	36*	72
10 13	21 32.14	+ 2 46.6	0.802	1.598	30.9	18.7	125 E	48	61	6 20	21 32.44	- 7 10.7	0.966	1.762	28.0	19.2	125 W	38*	71
10 18	21 39.67	+ 1 59.7	0.837	1.604	31.9	18.8	122 E	47	62	6 25	21 36.03	- 6 52.8	0.921	1.751	26.7	19.0	129 W	38	71
10 28	21 56.53	+ 0 47.1	0.913	1.618	33.4	19.0	116 E	46	63	6 30	21 38.92	- 6 40.5	0.879	1.741	25.2	18.9	133 W	38	71
11 7	22 15.24	+ 0 3.5	0.999	1.636	34.5	19.3	111 E	45	64	7 5	21 41.06	- 6 34.2	0.840	1.731	23.4	18.7	137 W	38	71
11 17	22 35.23	- 0 12.4	1.094	1.657	35.1	19.5	105 E	45	64*	7 10	21 42.42	- 6 34.8	0.803	1.721	21.4	18.5	142 W	38	71
11 27	22 56.07	- 0 3.2	1.196	1.681	35.3	19.8	100 E	45	63*	7 20	21 42.70	- 6 58.4	0.741	1.703	16.7	18.2	151 W	38	71
12 7	23 17.41	+ 0 27.4	1.306	1.707	35.1	20.0	95 E	45	60*	7 30	21 39.92	- 7 53.7	0.694	1.687	11.0	17.8	162 W	37	72
12 17	23 39.01	+ 1 15.6	1.422	1.736	34.5	20.2	90 E	46	57*	8 9	21 34.83	- 9 16.9	0.664	1.674	4.8	17.4	172 W	36	73
12 27	0 0.72	+ 2 17.9	1.543	1.766	33.7	20.4	86 E	47	53*	8 14	21 31.80	-10 6.3	0.656	1.668	2.6	17.3	176 E	35	74
1 6	0 22.42	+ 3 30.5	1.669	1.799	32.7	20.6	81 E	49	48*	8 19	21 28.73	-10 58.6	0.653	1.663	3.9	17.3	174 E	34	75
1 16	0 44.07	+ 4 50.4	1.797	1.832	31.4	20.7	76 E	50*	44*	8 24	21 25.84	-11 51.9	0.655	1.658	6.9	17.5	169 E	33	76
316650 1987 UL										247429 2002 CQ ₂₉₂									
2 21	18 2.91	-23 38.9	3.040	2.701	18.7	21.4	61 W	18*	54*	2 21	18 40.42	-28 29.5	2.721	2.264	20.4	21.5	53 W	10*	47*
3 2	18 18.14	-23 51.3	2.876	2.658	20.1	21.3	67 W	18*	61*	3 2	19 1.25	-28 7.1	2.591	2.234	22.2	21.4	58 W	11*	52*
3 12	18 32.85	-24 0.6	2.707	2.615	21.4	21.2	74 W	18*	68*	3 12	19 21.69	-27 35.5	2.458	2.204	23.8	21.3	64 W	11*	58*
3 22	18 46.90	-24 8.0	2.534	2.572	22.5	21.0	81 W	19*	75*	3 22	19 41.63	-26 55.2	2.320	2.173	25.4	21.2	69 W	12*	63*
4 1	19 0.09	-24 14.9	2.360	2.527	23.3	20.9	88 W	19*	82*	4 1	20 0.93	-26 7.2	2.180	2.142	26.7	21.1	75 W	13*	68*
4 11	19 12.24	-24 23.3	2.187	2.482	23.7	20.7	95 W	19*	88*	4 11	20 19.46	-25 12.5	2.039	2.111	27.9	20.9	80 W	14*	74*
4 21	19 23.11	-24 35.0	2.017	2.436	23.8	20.5	102 W	19*	89	4 21	20 37.11	-24 12.1	1.898	2.079	28.9	20.7	86 W	15*	80*
5 1	19 32.40	-24 52.7	1.851	2.390	23.4	20.2	110 W	20*	89	5 1	20 53.69	-23 7.6	1.758	2.048	29.8	20.6	91 W	17*	85*
5 11	19 39.78	-25 18.8	1.693	2.343	22.4	20.0	118 W	20*	89	5 11	21 9.03	-22 0.2	1.621	2.016	29.8	20.4	97 W	18*	86
5 21	19 44.86	-25 55.8	1.545	2.296	20.8	19.7	127 W	19	90	5 21	21 22.91	-20 51.5	1.487	1.985	29.7	20.1	103 W	20*	85
5 31	19 47.19	-26 46.0	1.409	2.248	18.4	19.4	136 W	18	89	5 31	21 35.03	-19 43.2	1.359	1.954	29.2	19.9	110 W	23*	84
6 10	19 46.39	-27 50.0	1.288	2.200	15.2	19.0	145 W	17	88	6 10	21 45.06	-18 37.0	1.237	1.923	28.1	19.6	117 W	25*	83
6 20	19 42.17	-29 6.4	1.186	2.152	11.3	18.6	155 W	16	87	6 20	21 52.60	-17 34.5	1.123	1.893	26.3	19.3	124 W	27*	82
6 25	19 38.75	-29 47.8	1.143	2.128	9.2	18.4	160 W	15	86	6 30	21 57.15	-16 37.3	1.018	1.864	23.7	19.0	133 W	28	81
6 30	19 34.55	-30 30.3	1.075	2.104	7.1	18.3	165 W	14	85	7 10	21 58.29	-15 46.2	0.926	1.835	20.1	18.7	142 W	29	80
7 5	19 29.64	-31 12.6	1.073	2.080	5.4	18.1	169 W	14	85	7 20	21 55.69	-15 1.2	0.848	1.808	15.6	18.3	152 W	30	79
7 10	19 24.18	-31 53.5	1.047	2.056	4.8	18.0	170 W	13	84	7 30	21 49.38	-14 21.4	0.788	1.782	10.0	17.9	162 W	31	78
7 15	19 18.34	-32 31.8	1.027	2.032	5.9	18.0	168 E	12	83	8 9	21 40.13	-13 43.9	0.746	1.757	3.6	17.4	174 W	31	78
7 20	19 12.34	-33 6.3	1.012	2.008	8.1	18.0	164 E	12	83	8 14	21 34.81	-13 25.2	0.733	1.745	0.6	17.1	179 E	32	77
7 25	19 6.45	-33 36.1	1.003	1.985	10.6	18.1	159 E	11	82	8 19	21 29.33	-13 6.0	0.724	1.734	3.5	17.3	174 E	32	77
7 30	19 0.92	-34 0.7	1.000	1.961	13.4	18.1	153 E	11	82	8 24	21 23.99	-12 45.9	0.721	1.723	7.0	17.5	168 E	32	77
8 4	18 56.02	-34 19.9	1.002	1.938	16.1	18.2	148 E	11	82	8 29	21 19.05	-12 24.8	0.724	1.713	10.4	17.6	162 E	33	76
8 9	18 51.92	-34 33.7	1.007	1.915	18.7	18.3	143 E	10	81	9 3	21 14.75	-12 2.4	0.730	1.703	13.7	17.8	156 E	33	76
8 14	18 48.82	-34 42.4	1.017	1.892	21.2	18.4	137 E	10	81	9 8	21 11.28	-11 38.7	0.741	1.694	16.8	17.9	151 E	33	76
8 19	18 46.83	-34 46.4	1.031	1.870	23.5	18.4	132 E	10	81	9 18	21 7.35	-10 47.4	0.776	1.677	22.4	18.1	140 E	34	75
8 24	18 46.06	-34 46.2	1.047	1.848	25.7	18.5	128 E	10	81	9 28	21 7.92	- 9 50.1	0.823	1.663	27.0	18.4	131 E	35	74
8 29	18 46.54	-34 42.4	1.066	1.826	27.6	18.6	123 E	10	81	10 8	21 12.89	- 8 46.1	0.880	1.651	30.6	18.6	123 E	36	73
9 8	18 51.19	-34 25.0	1.110	1.783	30.9	18.7	115 E	11	82	10 18	21 21.78	- 7 34.4	0.946	1.642	33.2	18.8	115 E	37	72
9 18	19 0.48	-33 55.6	1.158	1.743	33.4	18.8	107 E	11	82	10 28	21 34.02	- 6 13.8	1.017	1.636	35.1	19.1	109 E	39	70
9 28	19 13.97	-33 14.0	1.209	1.705	35.3	18.9	100 E	12	83	11 7	21 48.98	- 4 43.6	1.094	1.632	36.3	19.2	103 E	40	69*
10 3	19 22.08	-32 48.1	1.235	1.686	36.0	19.0	97 E	12	83	11 17	22 6.11	- 3 3.8	1.174	1.632	36.9	19.4	98 E	42	66*
10 8	19 31.00	-32 18.7	1.262	1.669	36.6	19.0	94 E	13	84*	11 27	22 24.97	+ 1 14.6	1.258	1.634	37.7	19.6	93 E	44	61*
10 13	19 40.65	-31 45.2	1.288	1.652	37.1	19.0	92 E	13	83*	12 7	22 45.15	+ 0 43.1	1.345	1.639	36.9	19.7	88 E	46	56*
10 18	19 50.97	-31 7.6	1.314	1.636	37.5	19.1	89 E	14	82*	12 17	23 6.38	+ 2 47.8	1.435	1.647	36.4	19.9	84 E	48	51*
10 23	20 1.87	-30 25.4	1.340	1.622	37.8	19.1	87 E	15	80*	12 27	23 28.43	+ 4 58.0	1.528	1.658	35.7	20.0	79 E	50	45*
10 28	20 13.29	-29 38.6	1.366	1.607	38.0	19.1	84 E	15	78*										
11 2	20 25.14	-28 46.9	1.392	1.594	38.1	19.2	82 E	16	76*										
11 7	20 37.36	-27 50.3	1.418	1.582	38.1	19.2	80 E	17	74*										
11 12	20 49.90	-26 48.5	1.444	1.571	38.0	19.2	78 E	18	71*										
11 17	21 2.71	-25 41.7	1.471	1.561	37.9	19.2	76 E	19	69*										
11 22	21 15.72	-24 29.8	1.497	1.553	37.7	19.2	74 E	21	66*										
11 27	21 28.90	-23 13.0	1.523	1.545	37.5	19.3	72 E	22	64*										
12 2	21 42.18	-21 51.6	1.550	1.539	37.2	19.3	71 E	23	61*										
12 7	21 55.55	-20 25.7	1.578	1.534	36.9	19.3	69 E	25*	58*										
12 12	22 8.96	-18 55.7	1.606	1.530	36.5	19.3	68 E	26*	56*										
12 17	22 22.41	-17 21.9	1.634	1.527	36.1	19.4	66 E	28*	53*										
12 22	22 35.86	-15 44.6	1.663	1.526	35.6	19.4	65 E	29*	50*										
12 27	22 49.30	-14 4.5	1.693	1.526	35.1	19.4	63 E	30*	48*										
1 1	23 2.72	-12 21.8	1.724	1.527	34.5	19.4	62 E	32*	45*										
1 6	23																		

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°
247429 2002 CQ₂₉₂ (continuation)										307286 2002 PA₉₆ (continuation)									
1 6	23 ^h 51 ^m 14 ^s	+7 11.6	1.623	1.672	34.7	20.1	75 E	52*	40*	11 7	20 12.20	-14 39.3	1.965	1.997	29.0	19.4	77 E	30*	64*
1 16	0 14.38	+9 26.5	1.720	1.688	33.5	20.2	71 E	53*	36*	11 17	20 26.99	-12 35.2	2.032	1.954	28.6	19.5	71 E	32*	57*
178287 1981 UW₂₇										424377 2007 WF₄									
2 21	19 10.88	-26 37.2	2.983	2.401	17.2	21.5	46 W	9*	40*	2 21	19 43.61	-20 16.8	2.451	1.770	19.8	21.5	37 W	10*	31*
3 2	19 30.70	-26 11.4	2.855	2.368	19.1	21.4	51 W	10*	45*	3 2	20 10.71	-18 38.8	2.365	1.740	21.9	21.4	41 W	11*	34*
3 12	19 50.23	-25 38.4	2.722	2.334	20.9	21.3	57 W	10*	51*	3 12	20 37.60	-16 43.0	2.278	1.712	23.9	21.4	44 W	12*	38*
3 22	20 9.43	-24 59.2	2.583	2.300	22.6	21.2	63 W	11*	56*	3 22	21 4.23	-14 30.4	2.192	1.685	25.8	21.3	47 W	13*	41*
4 1	20 28.17	-24 14.5	2.440	2.265	24.2	21.1	68 W	12*	62*	4 1	21 30.55	-12 2.7	2.108	1.660	27.6	21.3	50 W	14*	44*
4 11	20 46.39	-23 25.7	2.294	2.230	25.5	21.0	74 W	13*	68*	4 11	21 56.52	-9 21.9	2.025	1.638	29.4	21.2	53 W	16*	47*
4 21	21 4.00	-22 34.0	2.147	2.194	26.7	20.9	79 W	14*	73*	4 21	22 22.16	-6 30.2	1.946	1.619	31.1	21.1	56 W	17*	49*
5 1	21 20.88	-21 40.8	2.000	2.159	27.7	20.7	85 W	15*	79*	5 1	22 47.48	-3 30.2	1.869	1.602	32.6	21.1	59 W	19*	51*
5 11	21 36.93	-20 48.0	1.854	2.123	28.4	20.5	91 W	17*	84*	5 11	23 12.49	-0 24.6	1.795	1.588	34.0	21.0	62 W	21*	53*
5 21	21 51.99	-19 57.2	1.711	2.087	28.8	20.3	97 W	19*	84*	5 21	23 37.24	+2 43.5	1.724	1.577	35.4	20.9	64 W	24*	54*
5 31	22 5.87	-19 10.6	1.571	2.052	28.8	20.1	103 W	21*	83*	5 31	0 1.70	+5 51.2	1.656	1.570	36.5	20.9	67 W	27*	54*
6 10	22 18.33	-18 30.4	1.437	2.016	28.4	19.9	109 W	23*	83*	6 10	0 25.89	+8 55.4	1.590	1.566	37.5	20.8	70 W	31*	53*
6 20	22 29.07	-17 58.8	1.310	1.981	27.4	19.6	116 W	26*	82*	6 20	0 49.76	+11 53.1	1.527	1.565	38.3	20.7	73 W	36*	51*
6 30	22 37.69	-17 38.4	1.190	1.947	25.8	19.3	124 W	27*	82*	6 30	1 13.23	+14 41.5	1.465	1.568	39.0	20.7	76 W	41*	49*
7 10	22 43.77	-17 30.9	1.081	1.913	23.4	19.0	132 W	27	82	7 10	1 36.15	+17 18.1	1.404	1.575	39.4	20.6	79 W	47*	47*
7 20	22 46.83	-17 37.1	0.983	1.880	20.3	18.6	140 W	27	82	7 20	1 58.34	+19 40.9	1.344	1.585	39.5	20.5	83 W	53*	44
7 30	22 46.45	-17 56.3	0.900	1.848	16.2	18.3	149 W	27	82	7 30	2 19.47	+21 48.0	1.284	1.598	39.4	20.4	87 W	59*	42
8 4	22 44.92	-18 9.5	0.865	1.832	13.9	18.1	154 W	27	82	8 9	2 39.21	+23 38.3	1.224	1.614	38.9	20.3	92 W	65*	40
8 9	22 42.52	-18 24.0	0.833	1.817	11.4	17.9	159 W	27	82	8 14	2 48.42	+24 27.0	1.194	1.623	38.5	20.3	94 W	67*	40
8 14	22 39.31	-18 38.9	0.807	1.803	8.9	17.7	164 W	26	83	8 19	2 57.08	+25 11.1	1.164	1.633	38.0	20.2	97 W	69*	39
8 19	22 35.39	-18 52.8	0.785	1.788	6.6	17.5	168 W	26	83	8 24	3 5.14	+25 50.7	1.134	1.643	37.3	20.2	100 W	71*	38
8 24	22 30.93	-19 4.5	0.769	1.774	5.2	17.4	171 W	26	83	8 29	3 12.50	+26 25.7	1.105	1.655	36.5	20.1	103 W	71	38
8 29	22 26.16	-19 12.3	0.757	1.761	5.7	17.4	170 E	26	83	9 3	3 19.10	+26 56.0	1.076	1.666	35.6	20.0	106 W	72	37
9 3	22 21.32	-19 15.3	0.751	1.748	7.7	17.4	167 E	26	83	9 8	3 24.85	+27 21.7	1.047	1.679	34.5	20.0	110 W	72	37
9 8	22 16.64	-19 12.5	0.749	1.735	10.4	17.5	162 E	26	83	9 13	3 29.65	+27 42.5	1.020	1.691	33.1	19.9	113 W	73	36
9 13	22 12.37	-19 3.2	0.753	1.723	13.4	17.6	157 E	26	83	9 18	3 33.43	+27 58.3	0.993	1.705	31.6	19.8	117 W	73	36
9 18	22 8.75	-18 47.3	0.760	1.712	16.3	17.7	151 E	26	83	9 23	3 36.09	+28 8.8	0.968	1.718	29.9	19.7	121 W	73	36
9 23	22 5.97	-18 24.7	0.772	1.701	19.1	17.9	146 E	27	82	9 28	3 37.59	+28 13.8	0.944	1.733	28.0	19.6	126 W	73	36
9 28	22 4.16	-17 55.6	0.788	1.691	21.7	18.0	141 E	27	82	10 8	3 37.01	+28 6.0	0.904	1.762	23.4	19.4	136 W	73	36
10 8	22 3.73	-16 40.2	0.829	1.672	26.3	18.2	132 E	28	81	10 18	3 31.76	+27 31.9	0.876	1.793	17.8	19.2	147 W	73	36
10 18	22 7.54	-15 4.8	0.882	1.657	30.0	18.4	124 E	30	79	10 28	3 22.75	+26 30.6	0.865	1.825	11.6	19.0	158 W	72	37
10 28	22 15.33	-13 12.9	0.943	1.644	32.8	18.6	116 E	32	77	11 2	3 17.37	+25 50.7	0.867	1.842	8.4	18.9	164 W	71	38
11 7	22 26.48	-11 7.4	1.011	1.635	34.8	18.8	110 E	34	75	11 7	3 11.74	+25 6.0	0.875	1.858	5.5	18.8	170 W	70	39
11 17	22 40.40	-8 50.3	1.084	1.629	36.2	19.0	103 E	36	73	11 12	3 6.14	+24 17.8	0.889	1.875	3.5	18.7	173 E	69	40
11 27	22 56.58	-6 23.6	1.162	1.626	36.9	19.2	98 E	39	69*	11 17	3 0.83	+23 27.8	0.908	1.892	4.2	18.9	172 E	68	41
12 7	23 14.51	-3 49.1	1.244	1.627	37.2	19.3	93 E	41	64*	11 22	2 56.06	+22 37.8	0.934	1.909	6.7	19.1	167 E	68	41
12 17	23 33.85	-1 8.9	1.329	1.631	37.1	19.5	88 E	44	58*	11 27	2 51.99	+21 49.6	0.966	1.927	9.4	19.3	161 E	67	42
12 27	23 54.33	+1 35.1	1.418	1.638	36.7	19.6	84 E	47	52*	12 2	2 48.77	+21 4.7	1.003	1.944	12.0	19.5	156 E	66	43
1 6	0 15.72	+4 20.3	1.509	1.648	35.9	19.7	80 E	49	47*	12 7	2 46.44	+20 24.1	1.045	1.961	14.5	19.7	150 E	65	44
1 16	0 37.89	+7 4.7	1.604	1.662	35.0	19.9	76 E	52*	42*	12 17	2 44.58	+19 18.4	1.144	1.996	18.8	20.1	139 E	64	45
307286 2002 PA₉₆										162195 1999 RK₄₅									
2 21	19 15.53	-36 56.3	3.887	3.305	12.8	21.5	48 W	-	40*	2 21	19 45.01	-16 57.5	0.824	0.591	87.0	20.7	37 W	13*	29*
3 2	19 30.53	-36 32.4	3.735	3.258	14.3	21.4	54 W	-	47*	2 23	19 44.61	-16 52.7	0.851	0.624	82.7	20.7	39 W	14*	32*
3 12	19 44.90	-36 7.1	3.572	3.211	15.7	21.4	61 W	2*	53*	2 25	19 44.86	-16 47.5	0.877	0.657	78.9	20.8	41 W	14*	34*
3 22	19 58.53	-35 41.1	3.401	3.163	17.0	21.3	68 W	3*	59*	2 27	19 45.59	-16 42.0	0.902	0.690	75.6	20.8	42 W	15*	35*
4 1	20 11.25	-35 15.4	3.224	3.114	18.0	21.1	75 W	4*	65*	2 29	19 46.69	-16 36.2	0.925	0.723	72.7	20.9	44 W	16*	37*
4 11	20 22.90	-34 50.9	3.042	3.065	18.9	21.0	82 W	5*	72*	3 2	19 48.07	-16 30.1	0.946	0.756	70.2	20.9	46 W	16*	39*
4 21	20 33.30	-34 28.5	2.858	3.015	19.5	20.9	89 W	6*	78*	3 7	19 52.29	-16 14.3	0.994	0.836	65.0	21.1	50 W	17*	43*
5 1	20 42.21	-34 9.5	2.674	2.965	19.7	20.7	97 W	7*	82*	3 12	19 57.05	-15 57.9	1.032	0.914	61.0	21.3	54 W	18*	47*
5 11	20 49.37	-33 54.6	2.493	2.914	19.6	20.5	104 W	8*	82*	3 17	20 1.89	-15 41.5	1.063	0.990	57.9	21.4	57 W	19*	51*
5 21	20 54.48	-33 44.3	2.317	2.863	19.0	20.3	113 W	10*	82*	3 22	20 6.51	-15 25.3	1.085	1.062	55.3	21.5	61 W	20*	54*
5 31	20 57.16	-33 38.9	2.149	2.811	18.0	20.0	121 W	11*	82*	503960 2004 QF₁									
6 10	20 57.07	-33 37.2	1.992	2.759	16.3	19.8	130 W	11*	82*	2 21	20 0.53	-30 18.6	0.321	0.755	128.7	20.8	37 W	-	30*
6 20	20 53.89	-33 37.2	1.851	2.707	14.0	19.5	140 W	11	82	2 23	20 2.05	-32 14.3	0.335	0.759	124.8	20.6	39 W	-	32*
6 30	20 47.42	-33 34.8	1.728	2.655	11.2	19.2	150 W	11	82	2 25	20 4.16	-33 56.7	0.349	0.763	121.1	20.4	41 W	-	34*
7 5	20 43.00	-33 30.9	1.674	2.628	9.6	19.0	154 W	11	82	2 27	20 6.82	-35 26.8	0.364	0.768	117.6	20.2	43 W	-	35*
7 10	20 37.84	-33 24.2	1.627	2.602	8.0	18.9	159 W	12	83	2 29	20 9.98	-36 45.4	0.378	0.773	114.3	20.1	45 W	-	37*
7 15	20 32.04	-33 13.8	1.585	2.576	6.5	18.8	163 W	12	83	3 2	20 13.60	-37 53.7	0.393	0.779	111.1	20.0	47 W	-	38*
7 20	20 25.72	-32 59.0	1.551	2.549	5.4	18.6	166 W	12	83	3 4	20 17.63	-38 52.5	0.408	0.785	108.2	19.9	49 W	-	39*
7 25	20 19.05	-32 39.1	1.523	2.523	5.2														

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45° - 26°	20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45° - 26°	
503960 2004 QF₁ (continuation)									382669 2002 TA₁₂₆ (continuation)									
3 14	20 42.27	-41 52.9	0.483	0.822	95.8	19.7	55 W	43*	8 29	3 16.29	+21 0.0	1.293	1.818	32.7	20.6	104 W	66	43
3 16	20 47.80	-42 11.1	0.497	0.830	93.7	19.7	56 W	44*	9 8	3 25.76	+20 43.2	1.227	1.848	30.5	20.5	111 W	66	43
3 18	20 53.44	-42 24.6	0.510	0.839	91.8	19.7	57 W	44*	9 18	3 31.61	+20 5.7	1.166	1.880	27.7	20.3	120 W	65	44
3 20	20 59.16	-42 34.0	0.523	0.848	89.9	19.7	58 W	45*	9 28	3 33.44	+19 7.2	1.113	1.912	23.9	20.2	129 W	64	45
3 22	21 4.92	-42 39.6	0.536	0.857	88.2	19.7	59 W	45*	10 8	3 31.19	+17 48.8	1.071	1.946	19.3	20.0	140 W	63	46
3 27	21 19.38	-42 39.6	0.566	0.881	84.2	19.7	61 W	47*	10 13	3 28.60	+17 2.9	1.056	1.963	16.6	19.9	146 W	62	47
4 1	21 33.66	-42 23.4	0.592	0.905	80.8	19.8	63 W	48*	10 18	3 25.16	+16 13.3	1.046	1.980	13.8	19.8	152 W	61	48
4 6	21 47.56	-41 54.9	0.616	0.930	77.7	19.8	65 W	50*	10 23	3 21.00	+15 20.9	1.041	1.997	10.9	19.7	158 W	60	49
4 11	22 0.96	-41 17.1	0.635	0.956	75.1	19.8	67 W	51*	10 28	3 16.30	+14 26.9	1.042	2.015	7.9	19.6	164 W	59	50
4 16	22 13.78	-40 32.7	0.651	0.981	72.7	19.9	69 W	53*	11 2	3 11.27	+13 32.7	1.048	2.032	5.0	19.5	170 W	59	50
4 21	22 25.97	-39 43.8	0.663	1.006	70.6	19.9	71 W	55*	11 7	3 6.11	+12 39.6	1.061	2.050	2.6	19.4	175 W	58	51
4 26	22 37.48	-38 52.1	0.671	1.031	68.8	19.9	73 W	57*	11 12	3 1.03	+11 49.1	1.081	2.068	3.0	19.5	174 E	57	52
5 1	22 48.30	-37 58.9	0.676	1.056	67.0	19.9	75 W	60*	11 17	2 56.23	+11 2.5	1.107	2.086	5.3	19.7	169 E	56	53
5 6	22 58.43	-37 5.2	0.677	1.080	65.5	19.9	77 W	62*	11 22	2 51.89	+10 20.8	1.139	2.103	8.0	19.9	163 E	55	54
5 11	23 7.89	-36 12.0	0.676	1.103	64.0	19.9	79 W	65*	11 27	2 48.16	+9 45.0	1.178	2.121	10.5	20.1	157 E	55	54
5 21	23 24.70	-34 30.2	0.662	1.147	61.3	19.9	84 W	71*	12 7	2 42.85	+8 52.5	1.272	2.157	15.0	20.4	145 E	54	55
5 31	23 38.47	-32 59.0	0.638	1.188	58.6	19.8	89 W	77*	12 17	2 40.66	+8 25.3	1.385	2.192	18.6	20.8	135 E	53	56
6 10	23 48.82	-31 41.9	0.603	1.224	55.7	19.7	95 W	83*	12 27	2 41.56	+8 21.2	1.513	2.227	21.2	21.1	125 E	53	56
6 15	23 52.50	-31 9.7	0.583	1.241	54.1	19.6	98 W	85	1 6	2 45.27	+8 36.0	1.654	2.262	23.0	21.4	116 E	54	55
6 20	23 55.01	-30 42.4	0.561	1.257	52.4	19.5	102 W	87	509352 2007 AG									
6 25	23 56.17	-30 20.2	0.538	1.271	50.4	19.3	106 W	88	2 21	20 24.10	-24 3.0	1.041	0.515	69.7	21.2	29 W	2*	23*
6 30	23 55.77	-30 2.9	0.514	1.285	48.1	19.2	110 W	86	2 23	20 37.44	-22 38.2	1.069	0.502	67.2	21.1	28 W	2*	22*
7 5	23 53.58	-29 50.2	0.489	1.297	45.6	19.0	114 W	86	2 25	20 50.60	-21 9.4	1.098	0.490	64.3	21.0	26 W	2*	20*
7 10	23 49.31	-29 41.5	0.464	1.308	42.7	18.9	119 W	86	2 27	21 3.61	-19 37.0	1.127	0.479	61.2	20.9	25 W	2*	19*
7 15	23 42.63	-29 35.6	0.440	1.318	39.3	18.7	125 W	86	2 29	21 16.48	-18 1.4	1.157	0.470	57.8	20.9	24 W	2*	18*
7 20	23 33.19	-29 30.4	0.417	1.327	35.3	18.5	131 W	86	3 2	21 29.23	-16 23.2	1.187	0.462	54.2	20.8	22 W	2*	16*
7 25	23 20.72	-29 22.3	0.395	1.335	30.9	18.2	138 W	87	3 4	21 41.87	-14 42.8	1.218	0.456	50.4	20.7	21 W	1*	15*
7 30	23 5.12	-29 6.2	0.377	1.341	25.9	18.0	145 W	87	3 6	21 54.41	-13 0.8	1.247	0.453	46.5	20.6	19 W	1*	13*
8 4	22 46.60	-28 36.6	0.363	1.347	20.4	17.8	152 W	87	3 8	22 6.85	-11 17.7	1.277	0.451	42.5	20.6	18 W	1*	12*
8 9	22 25.73	-27 48.2	0.353	1.351	14.9	17.5	160 W	88	3 10	22 19.19	-9 34.3	1.306	0.452	38.5	20.5	16 W	1*	10*
8 14	22 3.50	-26 37.4	0.349	1.354	10.4	17.3	166 W	89	3 12	22 31.42	-7 51.0	1.334	0.454	34.6	20.4	15 W	1*	9*
8 19	21 41.23	-25 4.5	0.350	1.356	9.4	17.3	167 E	20 89	3 17	23 1.50	-3 37.2	1.399	0.470	25.4	20.4	12 W	1*	5*
8 21	21 32.61	-24 21.9	0.352	1.356	10.4	17.4	166 E	21 88	3 22	23 30.76	+0 24.4	1.458	0.496	17.7	20.3	9 W	—	2*
8 23	21 24.29	-23 36.9	0.356	1.357	11.9	17.4	164 E	22 88	3 27	23 59.11	+4 8.5	1.510	0.530	12.1	20.3	6 W	—	—
8 25	21 16.33	-22 49.9	0.360	1.357	13.8	17.5	161 E	22 87	4 1	0 26.58	+7 32.4	1.558	0.569	8.6	20.4	5 W	—	—
8 27	21 8.78	-22 1.5	0.365	1.356	15.8	17.6	159 E	23 86	4 11	1 19.03	+13 16.7	1.642	0.650	7.7	20.8	5 E	—	—
8 29	21 1.68	-21 12.0	0.371	1.356	17.9	17.7	156 E	24 85	4 21	2 8.66	+17 39.9	1.717	0.728	9.1	21.2	7 E	—	—
9 3	20 46.07	-19 7.3	0.389	1.355	23.2	18.0	148 E	26 83	5 1	2 55.93	+20 50.6	1.785	0.799	9.9	21.5	8 E	2*	—
9 8	20 33.60	-17 5.6	0.411	1.352	28.0	18.3	141 E	28 81	5 11	3 41.11	+22 57.9	1.845	0.859	10.0	21.7	8 E	2*	—
9 13	20 24.14	-15 10.7	0.437	1.348	32.4	18.5	134 E	30 79	66400 1999 LT₇									
9 18	20 17.46	-13 24.6	0.466	1.343	36.1	18.8	128 E	32 77	2 21	20 49.36	-20 1.4	1.800	0.962	23.0	21.4	22 W	1*	16*
9 23	20 13.24	-11 47.3	0.496	1.336	39.4	19.0	122 E	33 76	2 26	21 11.14	-18 46.9	1.751	0.914	24.1	21.2	22 W	1*	16*
9 28	20 11.13	-10 18.0	0.528	1.329	42.1	19.2	117 E	35 74	3 2	21 33.87	-17 17.4	1.703	0.863	25.0	21.1	22 W	—	16*
10 3	20 10.81	-8 55.9	0.560	1.320	44.4	19.3	113 E	36 73	3 7	21 57.67	-15 31.3	1.657	0.808	25.7	20.9	21 W	—	15*
10 8	20 12.01	-7 39.5	0.592	1.311	46.4	19.5	108 E	37 72	3 12	22 22.63	-13 26.7	1.613	0.750	25.9	20.7	19 W	—	13*
10 13	20 14.49	-6 27.7	0.624	1.300	48.1	19.7	104 E	39 70	3 17	22 48.90	-11 1.7	1.571	0.690	25.6	20.4	17 W	—	11*
10 18	20 18.10	-5 19.3	0.655	1.288	49.5	19.8	100 E	40 69	3 22	23 16.65	-8 14.4	1.532	0.626	24.5	20.1	15 W	—	9*
10 23	20 22.69	-4 13.2	0.685	1.275	50.8	19.9	97 E	41 68*	3 27	23 46.09	-5 3.2	1.496	0.562	21.9	19.8	12 W	—	6*
10 28	20 28.10	-3 8.5	0.714	1.260	51.9	20.0	94 E	42 66*	4 1	0 17.47	+1 27.2	1.463	0.498	17.4	19.3	9 W	—	2*
11 7	20 41.02	-1 0.4	0.766	1.229	53.7	20.1	88 E	44 60*	4 6	0 51.08	+2 33.5	1.429	0.439	10.3	18.7	5 W	—	—
11 17	20 56.27	+1 9.5	0.809	1.193	55.3	20.2	82 E	46 53*	4 11	1 27.12	+6 55.7	1.391	0.392	6.4	18.3	3 E	—	—
11 27	21 13.49	+3 24.7	0.842	1.153	56.8	20.3	78 E	48 47*	4 13	1 42.20	+8 44.7	1.373	0.379	10.7	18.4	4 E	—	—
12 7	21 32.41	+5 46.9	0.863	1.109	58.4	20.3	73 E	50 40*	4 15	1 57.61	+10 34.8	1.353	0.370	16.5	18.5	6 E	—	—
12 17	21 52.97	+8 16.6	0.870	1.062	60.3	20.3	70 E	52 33*	4 17	2 13.28	+12 24.6	1.331	0.366	23.0	18.6	8 E	1*	—
12 27	22 15.18	+10 53.1	0.863	1.013	62.6	20.2	66 E	53 28*	4 19	2 29.16	+14 12.9	1.307	0.367	29.7	18.8	10 E	3*	2*
1 6	22 39.11	+13 33.1	0.840	0.962	65.7	20.2	63 E	53 22*	4 21	2 45.18	+15 58.3	1.281	0.373	36.3	19.0	13 E	5*	3*
1 16	23 4.99	+16 10.8	0.802	0.911	69.7	20.1	60 E	53 18*	4 23	3 1.28	+17 39.7	1.255	0.384	42.4	19.2	15 E	7*	4*
2 21	20 3.92	-14 7.1	2.484	1.726	17.6	21.5	32 W	13* 24*	4 25	3 17.44	+19 16.0	1.228	0.398	48.0	19.4	17 E	9*	5*
3 2	20 31.08	-12 19.9	2.417	1.704	19.5	21.5	35 W	14* 28*	4 27	3 33.63	+20 46.4	1.201	0.416	52.9	19.5	19 E	11*	7*
3 12	20 57.98	-10 18.1	2.350	1.685	21.4	21.4	38 W	14* 31*	4 29	3 49.86	+22 10.5	1.176	0.437	57.1	19.7	21 E	13*	8*
3 22	21 24.59	-8 3.8	2.285	1.668	23.1	21.4	41 W	15* 34*	5 1	4 6.14	+23 27.8	1.151	0.459	60.5	19.9	23 E	15*	9*
4 1	21 50.86	+5 39.3	2.221	1.654	24.8	21.4	44 W	16* 37*	5 3	4 22.48	+24 38.0	1.128	0.483	63.3	20.0	25 E	17*	10*
4 11	22 16.76	+3 7.5	2.159	1.643	26.4	21.3	47 W	17* 39*	5 5	4 38.88	+25 40.7	1.107	0.508	65.5	20.2	27 E	19*	11*
4 21	22 42.31	-0 31.1	2.098	1.636	27.9	21.3	50 W	18* 42*	5 7	4 55.35	+26 35.8	1.088	0.533	67.2	20.3	29 E	20*	13