

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

Table with columns for dates (19/20, 19/21), coordinates (alpha, delta), and physical parameters (Delta, r, beta, V, psi, 45, -26). It contains three main sections: 401857 2000 PG3, 152637 1997 NC1 (continuation), and 311154 2004 TF3.

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19/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	2020	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
311154 2004 TF₃ (continuation)										395289 2011 BJ₂ (continuation)									
11 2	4 49.72	+36 31.3	1.192	2.066	17.2	20.4	142 W	82	27	1 22	17 28.33	+18 17.5	0.897	0.881	67.2	20.2	56 W	49*	12*
11 7	4 44.18	+36 30.9	1.180	2.085	14.8	20.3	147 W	82	27	2 1	17 33.40	+13 3.3	0.891	0.918	66.0	20.2	58 W	49*	23*
11 12	4 37.79	+36 23.9	1.173	2.103	12.4	20.2	153 W	81	28	2 11	17 39.81	+7 23.6	0.863	0.963	65.1	20.2	62 W	47*	35*
11 17	4 30.79	+36 9.8	1.172	2.122	10.0	20.1	158 W	81	28	2 16	17 43.40	+4 21.7	0.843	0.988	64.7	20.2	65 W	45*	41*
11 22	4 23.47	+35 48.8	1.177	2.141	7.9	20.1	163 W	81	28	2 21	17 47.16	+1 9.7	0.818	1.013	64.3	20.2	67 W	42*	46*
11 27	4 16.12	+35 21.1	1.189	2.159	6.5	20.0	166 W	80	29	2 26	17 51.02	-2 14.5	0.791	1.040	63.8	20.1	70 W	40*	52*
12 2	4 9.02	+34 47.8	1.208	2.178	6.3	20.1	166 E	80	29	3 2	17 54.88	-5 53.3	0.761	1.067	63.0	20.1	74 W	37*	58*
12 7	4 2.41	+34 10.1	1.233	2.196	7.3	20.2	164 E	79	30	3 7	17 58.67	-9 49.7	0.730	1.095	62.1	20.0	77 W	33*	64*
12 12	3 56.51	+33 29.3	1.264	2.214	9.0	20.3	159 E	78	31	3 12	18 2.27	-14 6.9	0.698	1.123	60.9	19.9	81 W	30*	70*
12 17	3 51.47	+32 47.0	1.302	2.231	10.9	20.5	155 E	78	31	3 17	18 5.58	-18 48.1	0.667	1.151	59.5	19.9	85 W	25*	77*
12 22	3 47.41	+32 4.8	1.346	2.249	12.9	20.7	149 E	77	32	3 22	18 8.38	-23 56.3	0.637	1.179	57.7	19.8	90 W	20*	83*
12 27	3 44.35	+31 23.8	1.396	2.266	14.8	20.8	144 E	76	33	3 27	18 10.43	-29 33.6	0.610	1.207	55.5	19.7	94 W	15*	86*
1 1	3 44.32	+30 45.2	1.451	2.283	16.5	21.0	139 E	76	33	4 1	18 11.37	-35 39.9	0.587	1.234	53.1	19.5	99 W	9*	80
1 6	3 41.27	+30 9.5	1.510	2.300	18.1	21.1	134 E	75	34	4 6	18 10.70	-42 12.2	0.569	1.261	50.5	19.5	104 W	3*	74
1 11	3 41.17	+29 37.2	1.573	2.317	19.4	21.3	128 E	75	34	4 11	18 7.59	-49 3.1	0.558	1.288	47.8	19.4	108 W	—	67
1 16	3 41.96	+29 8.6	1.640	2.334	20.5	21.4	124 E	74	35	4 13	18 5.39	-51 50.2	0.556	1.299	46.7	19.4	110 W	—	64
325620 2009 SV₂₄₂										4 15	18 2.46	-54 37.5	0.555	1.309	45.7	19.3	111 W	—	61
12 23	17 22.68	-22 2.9	2.848	1.884	4.8	20.8	9 W	1*	1*	4 17	17 58.64	-57 23.9	0.555	1.319	44.7	19.3	112 W	—	59
1 2	17 49.69	-21 56.7	2.797	1.854	7.0	20.8	13 W	3*	5*	4 19	17 53.73	-60 8.2	0.556	1.329	43.8	19.3	114 W	—	56
1 12	18 17.09	-21 32.3	2.743	1.825	9.1	20.8	17 W	5*	9*	4 21	17 47.46	-62 49.0	0.559	1.340	42.9	19.3	115 W	—	53
1 22	18 44.75	-20 48.8	2.684	1.799	11.2	20.8	21 W	7*	13*	4 22	17 43.72	-64 7.7	0.561	1.345	42.5	19.3	115 W	—	52
2 1	19 12.49	-19 46.0	2.624	1.774	13.3	20.8	24 W	8*	17*	4 23	17 39.50	-65 25.0	0.563	1.350	42.1	19.3	116 W	—	51
2 11	19 40.14	-18 24.1	2.561	1.751	15.3	20.8	28 W	9*	21*	4 24	17 34.74	-66 40.7	0.566	1.355	41.8	19.4	116 W	—	49
2 21	20 7.57	-16 44.0	2.498	1.730	17.2	20.8	31 W	10*	24*	4 25	17 29.39	-67 54.6	0.569	1.360	41.4	19.4	117 W	—	48
3 2	20 34.67	-14 46.9	2.434	1.712	19.2	20.8	35 W	11*	28*	4 26	17 23.37	-69 6.4	0.572	1.364	41.1	19.4	117 W	—	47
3 12	21 1.33	-12 34.7	2.370	1.696	21.0	20.8	38 W	12*	31*	4 27	17 16.59	-70 16.0	0.575	1.369	40.8	19.4	117 W	—	46
3 22	21 27.52	-10 9.3	2.307	1.683	22.8	20.7	41 W	13*	34*	4 28	17 8.97	-71 23.0	0.579	1.374	40.5	19.4	118 W	—	45
4 1	21 53.20	-7 33.2	2.244	1.673	24.4	20.7	44 W	14*	37*	4 29	17 0.39	-72 27.2	0.583	1.379	40.2	19.4	118 W	—	44
4 11	22 18.34	-4 49.1	2.183	1.667	26.0	20.7	47 W	16*	40*	4 30	16 50.76	-73 28.2	0.588	1.384	40.0	19.4	118 W	—	43
4 21	22 42.97	-1 59.6	2.123	1.663	27.5	20.7	50 W	17*	42*	5 1	16 39.97	-74 25.7	0.592	1.389	39.8	19.5	118 W	—	42
5 1	23 7.09	+0 52.4	2.063	1.662	28.9	20.6	53 W	19*	45*	5 2	16 27.92	-75 19.4	0.597	1.393	39.6	19.5	118 W	—	41
5 11	23 30.71	+3 44.3	2.004	1.665	30.2	20.6	56 W	21*	47*	5 3	16 14.50	-76 8.8	0.602	1.398	39.4	19.5	118 W	—	40
5 21	23 53.83	+6 33.5	1.946	1.671	31.3	20.6	59 W	24*	48*	5 4	15 59.66	-76 53.4	0.608	1.403	39.3	19.5	118 W	—	39
5 31	0 16.42	+9 17.4	1.887	1.680	32.4	20.6	62 W	27*	49*	5 5	15 43.39	-77 33.0	0.614	1.407	39.1	19.5	118 W	—	38
6 10	0 38.44	+11 53.8	1.828	1.691	33.2	20.5	66 W	31*	49*	5 6	15 25.73	-78 7.0	0.620	1.412	39.0	19.6	118 W	—	38
6 20	0 59.81	+14 20.7	1.767	1.706	34.0	20.5	70 W	36*	48*	5 7	15 6.82	-78 35.1	0.626	1.417	38.9	19.6	118 W	—	37
6 30	1 20.41	+16 36.3	1.705	1.724	34.5	20.5	74 W	42*	47*	5 8	14 46.90	-78 57.0	0.632	1.421	38.8	19.6	118 E	—	37
7 10	1 40.05	+18 39.1	1.642	1.743	34.8	20.4	78 W	48*	45*	5 9	14 26.29	-79 12.5	0.639	1.426	38.7	19.6	118 E	—	37
7 20	1 58.52	+20 28.1	1.576	1.766	34.8	20.4	83 W	54*	44	5 10	14 5.40	-79 21.8	0.646	1.430	38.6	19.7	118 E	—	37
7 30	2 15.49	+22 2.1	1.509	1.790	34.5	20.3	88 W	60*	42	5 11	13 44.66	-79 24.8	0.653	1.435	38.6	19.7	118 E	—	37
8 9	2 30.60	+23 20.3	1.441	1.816	33.8	20.2	94 W	65*	41	5 12	13 24.49	-79 22.1	0.661	1.439	38.5	19.7	117 E	—	37
8 19	2 43.41	+24 22.1	1.373	1.844	32.7	20.1	100 W	69*	40	5 13	13 5.24	-79 14.2	0.668	1.444	38.5	19.8	117 E	—	37
8 29	2 53.40	+25 6.2	1.305	1.873	31.0	20.0	107 W	70	39	5 14	12 47.18	-79 1.6	0.676	1.448	38.5	19.8	117 E	—	37
9 8	3 0.07	+25 31.6	1.241	1.904	28.6	19.8	115 W	71	38	5 15	12 30.49	-78 44.9	0.684	1.453	38.5	19.8	117 E	—	37
9 18	3 2.96	+25 36.2	1.182	1.936	25.4	19.7	124 W	71	38	5 16	12 15.24	-78 24.9	0.692	1.457	38.4	19.9	116 E	—	38
9 28	3 1.80	+25 17.6	1.133	1.968	21.4	19.5	134 W	70	39	5 17	12 1.44	-78 2.2	0.700	1.461	38.4	19.9	116 E	—	38
10 8	2 56.75	+24 34.1	1.098	2.002	16.5	19.3	145 W	70	39	5 18	11 49.04	-77 37.3	0.708	1.465	38.4	19.9	116 E	—	38
10 13	2 52.96	+24 2.9	1.087	2.019	13.8	19.2	151 W	69	40	5 19	11 37.95	-77 10.7	0.717	1.470	38.4	20.0	115 E	—	39
10 18	2 48.50	+23 25.6	1.081	2.036	11.0	19.1	157 W	68	41	5 20	11 28.07	-76 42.9	0.725	1.474	38.5	20.0	115 E	—	39
10 23	2 43.58	+22 43.0	1.080	2.053	8.1	19.0	163 W	68	41	5 21	11 19.30	-76 14.2	0.734	1.478	38.5	20.0	115 E	—	40
10 28	2 38.40	+21 56.2	1.086	2.070	5.3	18.9	169 W	67	42	5 22	11 11.52	-75 44.9	0.743	1.482	38.5	20.0	114 E	—	40
11 2	2 33.19	+21 6.4	1.098	2.087	3.1	18.8	174 W	66	43	5 23	11 4.63	-75 15.2	0.752	1.486	38.5	20.1	114 E	—	41
11 7	2 28.15	+20 15.1	1.117	2.105	3.0	18.9	174 E	65	44	5 24	10 58.54	-74 45.5	0.761	1.490	38.5	20.1	114 E	—	41
11 12	2 23.48	+19 23.9	1.142	2.122	5.1	19.0	169 E	64	45	5 25	10 53.15	-74 15.8	0.770	1.495	38.5	20.1	113 E	—	42
11 17	2 19.34	+18 34.3	1.173	2.139	7.6	19.2	163 E	64	45	5 26	10 48.40	-73 46.4	0.780	1.499	38.6	20.2	113 E	—	42
11 22	2 15.86	+17 47.6	1.211	2.157	10.1	19.4	157 E	63	46	5 27	10 44.22	-73 17.2	0.789	1.503	38.6	20.2	112 E	—	43
11 27	2 13.14	+17 5.0	1.254	2.174	12.4	19.6													

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

19/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	19/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
395289 2011 <i>BJ</i> ₂										86829 2000 <i>GR</i> ₁₄₆									
<i>(continuation)</i>										<i>(continuation)</i>									
7 5	10 40.75	-62 26.0	1.176	1.633	38.3	21.3	96 E	-	49*	4 11	20 39.43	-24 1.1	2.306	2.270	25.3	20.7	75 W	13*	69*
7 10	10 48.45	-62 3.1	1.224	1.646	38.0	21.3	94 E	-	48*	4 21	20 50.73	-24 8.0	2.183	2.283	25.9	20.6	83 W	14*	77*
7 15	10 56.98	-61 50.0	1.270	1.658	37.8	21.4	92 E	-	47*	5 1	21 0.31	-24 25.5	2.055	2.293	26.1	20.5	90 W	15*	84*
7 20	11 6.29	-61 45.8	1.315	1.669	37.5	21.5	91 E	-	46*	5 11	21 7.91	-24 56.9	1.924	2.300	25.8	20.3	98 W	16*	89
144753 2004 <i>HF</i> ₁										23983 1999 <i>NS</i> ₁₁									
12 23	17 23.38	-7 58.8	4.074	3.154	5.6	21.4	18 W	12*	-	12 23	17 24.21	-18 24.6	3.450	2.488	4.0	20.1	10 W	4*	-
1 2	17 37.31	-8 23.0	4.045	3.156	6.8	21.4	22 W	16*	2*	1 2	17 43.51	-18 40.5	3.390	2.456	6.1	20.2	15 W	7*	5*
1 12	17 51.05	-8 39.2	3.998	3.157	8.2	21.5	27 W	19*	9*	1 12	18 3.09	-18 46.7	3.319	2.424	8.3	20.2	21 W	9*	11*
1 22	18 4.52	-8 47.8	3.935	3.157	9.8	21.5	33 W	22*	17*	1 22	18 22.87	-18 43.2	3.235	2.391	10.4	20.2	26 W	11*	17*
2 1	18 17.59	-8 49.3	3.857	3.156	11.4	21.5	39 W	24*	25*	2 1	18 42.79	-18 29.7	3.141	2.357	12.6	20.2	31 W	13*	23*
1036 Ganymed										23983 1999 <i>NS</i> ₁₁									
12 23	17 23.48	-11 15.5	2.824	1.893	7.9	13.5	15 W	9*	-	2 2	19 22.72	-17 33.1	2.925	2.288	14.8	20.1	42 W	15*	29*
1 2	17 48.77	-10 41.9	2.732	1.826	9.8	13.5	19 W	12*	-	3 2	19 42.60	-16 50.7	2.805	2.253	18.8	20.1	47 W	16*	40*
1 12	18 15.21	-9 50.4	2.636	1.760	11.9	13.4	22 W	15*	4*	3 12	20 2.32	-15 59.6	2.679	2.217	20.8	20.0	52 W	17*	46*
1 22	18 42.79	-8 39.4	2.540	1.695	14.0	13.3	25 W	17*	8*	3 22	20 21.87	-15 0.6	2.548	2.181	22.7	19.9	57 W	18*	51*
2 1	19 11.50	-7 7.6	2.444	1.632	16.0	13.2	27 W	18*	12*	4 1	20 41.17	-13 54.4	2.413	2.144	24.4	19.8	63 W	19*	56*
2 11	19 41.31	-5 14.7	2.352	1.570	18.0	13.1	29 W	19*	15*	4 11	21 0.19	-12 42.2	2.276	2.107	26.1	19.7	68 W	21*	60*
2 21	20 12.20	-3 1.5	2.266	1.510	19.9	12.9	31 W	20*	18*	4 21	21 18.91	-11 25.3	2.137	2.071	27.6	19.6	73 W	22*	65*
3 2	20 44.14	-0 29.8	2.188	1.454	21.5	12.8	33 W	21*	20*	5 1	21 37.26	-10 4.9	1.997	2.034	28.9	19.4	78 W	24*	68*
3 12	21 17.07	+2 16.8	2.120	1.403	23.0	12.7	33 W	21*	21*	5 11	21 55.22	-8 42.9	1.858	1.997	30.1	19.3	83 W	26*	71*
3 17	21 33.90	+3 44.2	2.091	1.379	23.6	12.7	34 W	21*	21*	5 21	22 12.75	-7 20.9	1.722	1.961	31.0	19.1	88 W	28*	71*
3 22	21 50.97	+5 13.4	2.064	1.357	24.2	12.6	34 W	21*	22*	5 31	22 29.76	-6 1.3	1.588	1.926	31.7	18.9	93 W	31*	70
3 27	22 8.25	+6 43.5	2.041	1.336	24.7	12.6	34 W	21*	22*	6 10	22 46.17	-4 46.6	1.457	1.890	32.1	18.7	98 W	34*	69
4 1	22 25.74	+8 13.6	2.020	1.317	25.1	12.5	34 W	21*	22*	6 20	23 1.84	-3 39.7	1.332	1.856	32.1	18.4	104 W	37*	68
4 6	22 43.42	+9 42.8	2.003	1.300	25.5	12.5	34 W	20*	22*	6 30	23 16.59	-2 44.3	1.212	1.823	31.7	18.2	109 W	40*	67
4 11	23 1.29	+11 10.1	1.988	1.285	25.8	12.5	34 W	20*	22*	7 10	23 30.17	-2 4.4	1.099	1.791	30.8	17.9	116 W	42*	66
4 16	23 19.31	+12 34.7	1.977	1.273	26.1	12.4	34 W	20*	22*	7 20	23 42.28	-1 44.5	0.995	1.761	29.2	17.6	122 W	43	66
4 21	23 37.47	+13 55.7	1.968	1.262	26.2	12.4	34 W	19*	22*	7 30	23 52.49	-1 49.7	0.899	1.732	26.9	17.3	129 W	43	66
4 26	23 55.74	+15 12.2	1.961	1.254	26.4	12.4	34 W	19*	22*	8 9	0 0.39	-2 24.5	0.815	1.705	23.7	16.9	137 W	43	66
5 1	0 14.08	+16 23.4	1.957	1.248	26.5	12.4	34 W	18*	22*	8 19	0 5.52	-3 31.9	0.743	1.681	19.6	16.6	146 W	41	68
5 6	0 32.46	+17 28.7	1.955	1.245	26.6	12.4	34 W	18*	22*	8 29	0 7.61	-5 11.3	0.686	1.659	14.6	16.2	156 W	40	69
5 11	0 50.84	+18 27.5	1.954	1.244	26.6	12.4	34 W	18*	22*	9 3	0 7.55	-6 10.9	0.664	1.649	11.9	16.0	160 W	39	70
5 21	1 27.46	+20 4.2	1.958	1.251	26.8	12.4	34 W	17*	23*	9 8	0 6.82	-7 15.1	0.646	1.640	9.2	15.8	165 W	38	71
5 31	2 3.56	+21 11.0	1.965	1.267	27.0	12.4	35 W	17*	23*	9 13	0 5.50	-8 21.8	0.632	1.631	6.8	15.7	169 W	37	72
6 10	2 38.78	+21 47.3	1.974	1.293	27.3	12.5	36 W	17*	24*	9 18	0 3.76	-9 28.6	0.624	1.624	5.7	15.6	171 W	36	73
6 20	3 12.80	+21 54.0	1.983	1.326	27.7	12.6	37 W	18*	25*	9 23	0 1.77	-10 32.6	0.620	1.617	6.6	15.6	169 W	34	75
6 30	3 45.30	+21 32.6	1.990	1.368	28.2	12.7	39 W	20*	27*	9 28	23 59.76	-11 31.1	0.620	1.610	8.8	15.7	166 E	33	76
7 10	4 16.06	+20 45.6	1.994	1.415	28.8	12.8	42 W	22*	29*	10 3	23 57.94	-12 21.8	0.626	1.605	11.7	15.8	161 E	33	76
7 20	4 44.90	+19 35.7	1.995	1.468	29.4	12.8	45 W	25*	31*	10 8	23 56.49	-13 3.0	0.635	1.601	14.6	16.0	156 E	32	77
7 30	5 11.70	+18 5.4	1.990	1.525	30.0	12.9	49 W	28*	34*	10 13	23 55.58	-13 33.3	0.649	1.597	17.5	16.1	151 E	31	78
8 9	5 36.38	+16 17.5	1.980	1.585	30.6	13.0	53 W	32*	36*	10 18	23 55.36	-13 52.1	0.666	1.595	20.2	16.2	146 E	31	78
8 19	5 58.90	+14 14.2	1.964	1.647	31.0	13.1	57 W	36*	39*	11 7	19 50.23	-33 37.3	1.967	1.858	29.9	20.0	69 E	11*	63*
8 29	6 19.19	+11 57.7	1.942	1.712	31.3	13.2	62 W	39*	43*	11 17	20 6.50	-32 25.6	2.023	1.799	29.2	20.0	63 E	12*	57*
9 8	6 37.20	+9 29.9	1.913	1.777	31.4	13.2	67 W	42*	46*	11 27	20 24.45	-31 4.9	2.067	1.736	28.4	19.9	57 E	13*	50*
9 18	6 52.86	+6 52.7	1.880	1.843	31.3	13.3	72 W	45*	50*	12 7	20 43.84	-29 33.4	2.097	1.669	27.4	19.8	51 E	14*	44*
9 28	7 6.02	+4 7.7	1.841	1.909	30.9	13.3	78 W	46*	54*	12 17	21 4.52	-27 49.2	2.112	1.597	26.4	19.7	46 E	14*	38*
10 8	7 16.55	+1 17.0	1.799	1.976	30.2	13.3	85 W	46*	59*	12 27	21 26.38	-25 50.4	2.112	1.521	25.3	19.6	41 E	15*	33*
10 18	7 24.25	+1 37.0	1.754	2.042	29.2	13.3	92 W	43	64*	1 6	21 49.37	-23 35.0	2.097	1.440	24.3	19.4	37 E	14*	28*
10 28	7 28.88	-4 31.0	1.711	2.107	27.8	13.3	99 W	40	68*	1 16	22 13.50	-21 0.7	2.067	1.355	23.4	19.2	33 E	14*	24*
11 2	7 29.97	-5 56.6	1.690	2.140	26.9	13.2	103 W	39	70	2 1	18 42.79	-18 29.7	3.141	2.357	12.6	20.2	31 W	13*	23*
11 7	7 30.24	-7 20.4	1.671	2.172	25.9	13.2	107 W	38	71	2 11	19 2.76	-18 6.2	3.037	2.323	14.7	20.2	37 W	14*	29*
11 12	7 29.64	-8 41.6	1.653	2.205	24.9	13.2	111 W	36	73	2 21	19 22.72	-17 33.1	2.925	2.288	16.8	20.1	42 W	15*	35*
11 17	7 28.18	-9 59.3	1.637	2.237	23.7	13.2	115 W	35	74	3 2	19 42.60	-16 50.7	2.805	2.253	18.8	20.1	47 W	16*	40*
11 22	7 25.87	-11 12.3	1.624	2.268	22.5	13.2	119 W	34	75	3 12	20 2.32	-15 59.6	2.679	2.217	20.8	20.0	52 W	17*	46*
11 27	7 22.74	-12 19.6	1.615	2.300	21.2	13.2	122 W	33	76	3 22	20 21.87	-15 0.6	2.548	2.181	22.7	19.9	57 W	18*	51*
12 2	7 18.86	-13 20.2	1.609	2.331	19.9	13.1	126 W	32	77	4 1	20 41.17	-13 54.4	2.413	2.144	24.4	19.8	63 W	19*	56*
12 7	7 14.30	-14 13.0	1.607	2.362	18.7	13.1	130 W	31	78	4 11	21 0.19	-12 42.2	2.276	2.107	26.1	19.7	68 W	21*	60*
12 12	7 9.15	-14 56.9	1.610	2.393	17.5	13.1	133 W	30	79	4 21	21 18.91	-11 25.3	2.137	2.071	27.6	19.6	73 W	22*	65*
12 17	7 3.55	-15 31.2	1.618	2.424	16.4	13.1	136 W	29	80	5 1	21 37.26	-10 4.9	1.997	2.034	28.9	19.4	78 W	24*	68*
12 22	6 57.65	-15 55.3	1.631	2.454	15.5	13.2	138 W	29	80	5 11	21 55.22	-8 42.9	1.858	1.997	30.1	19.3	83 W	26*	71*
12 27	6 51.63	-16 8.9	1.649	2.484	14.8	13.2	140 W	29	80	5 21	22 12.75	-7 20.9	1.722	1.961	31.0	19.1	88 W	28*	71*
1 1	6 45.64	-16 12.3	1.674	2.514	14.3	13.2	141 E	29	80	5 31	22 29.76	-6 1.3	1.588	1.926	31.7	18.9	93 W	31*	70
1 6	6 39.84	-16 5.9	1.704	2.543	14.1	13.3	141 E	29	80	6 10	22 46.17	-4 46.6	1.457	1.890	32.1	18.7	98 W	34*	69
1 11	6 34.38	-15 50.3	1.740	2.572	14.2	13.4	140 E	29	80	6 20	23 1.84	-3 39.7	1.332	1.856	32.1	18.4	104 W	37*	68
1 16	6 29.38	-15 26.4	1.782	2.601	14.5	13.5	138 E												

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

19/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	19/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
23983 1999 NS₁₁ (continuation)										256412 2007 BT₂ (continuation)									
10 28	23 57.39	-13 54.7	0.711	1.592	24.9	16.5	138 E	31	78	2 1	19 45.79	-37 42.2	2.451	1.617	15.1	20.7	25 W	-	17*
11 7	0 2.84	-13 14.6	0.767	1.593	28.7	16.8	129 E	32	77	2 11	20 19.34	-37 4.0	2.448	1.647	16.5	20.8	28 W	-	19*
11 17	0 11.51	-11 58.7	0.834	1.597	31.6	17.1	122 E	33	76	2 21	20 51.44	-36 3.5	2.440	1.677	17.9	20.9	31 W	-	21*
11 22	0 16.94	-11 9.6	0.870	1.601	32.7	17.2	119 E	34	75	3 2	21 21.92	-34 44.9	2.428	1.705	19.2	21.0	34 W	-	24*
11 27	0 23.02	-10 14.3	0.909	1.605	33.6	17.3	116 E	35	74	3 12	21 50.68	-33 12.8	2.409	1.733	20.5	21.0	38 W	-	27*
12 2	0 29.68	-9 13.9	0.949	1.610	34.4	17.4	113 E	36	73	3 22	22 17.76	-31 31.0	2.385	1.760	21.8	21.1	41 W	-	30*
12 7	0 36.85	-8 9.0	0.991	1.617	35.0	17.6	110 E	37	72	4 1	22 43.22	-29 43.4	2.354	1.786	23.1	21.1	45 W	-	33*
12 12	0 44.49	-7 0.6	1.035	1.623	35.4	17.7	107 E	38	71	4 11	23 7.12	-27 53.2	2.317	1.810	24.4	21.1	48 W	-	37*
12 17	0 52.55	-5 49.1	1.080	1.631	35.8	17.8	104 E	39	70*	4 21	23 29.59	-26 3.3	2.273	1.833	25.6	21.2	52 W	-	41*
12 22	1 0.98	-4 35.3	1.127	1.640	36.0	17.9	102 E	40	68*	5 1	23 50.70	-24 16.2	2.221	1.855	26.7	21.2	56 W	-	46*
12 27	1 9.74	-3 19.8	1.175	1.649	36.1	18.0	99 E	42	66*	5 11	0 10.51	-22 34.0	2.162	1.875	27.8	21.2	60 W	-	51*
1 1	1 18.80	-2 3.2	1.225	1.659	36.1	18.1	97 E	43	64*	5 21	0 29.06	-20 58.4	2.097	1.894	28.8	21.2	64 W	-	57*
1 6	1 28.11	-0 46.0	1.275	1.670	36.0	18.2	94 E	44	61*	5 31	0 46.35	-19 31.3	2.024	1.911	29.7	21.1	69 W	1*	62*
1 11	1 37.66	+ 0 31.3	1.328	1.681	35.8	18.3	92 E	46	59*	6 10	1 2.32	-18 13.9	1.944	1.927	30.4	21.1	74 W	5*	68*
1 16	1 47.43	+ 1 48.4	1.381	1.693	35.5	18.4	90 E	47	57*	6 20	1 16.90	-17 7.6	1.858	1.942	30.9	21.0	79 W	9*	73*
47648 2000 CA₄₀										6386 Keithnoll									
12 23	17 24.39	-6 56.7	3.584	2.673	6.8	20.6	19 W	12*	-	12 23	17 24.59	-18 56.9	3.525	2.562	3.8	17.7	10 W	3*	-
1 2	17 41.70	-7 8.0	3.528	2.645	8.1	20.6	22 W	16*	-	1 2	17 43.22	-19 18.6	3.469	2.534	5.9	17.8	15 W	6*	5*
1 12	17 59.13	-7 9.2	3.460	2.617	9.6	20.6	26 W	19*	7*	1 12	18 2.07	-19 31.6	3.400	2.505	8.0	17.8	21 W	9*	11*
1 22	18 16.62	-7 0.2	3.379	2.587	11.3	20.6	31 W	22*	14*	1 22	18 21.09	-19 35.7	3.318	2.475	10.2	17.8	26 W	11*	18*
2 1	18 34.07	-6 41.1	3.288	2.557	13.1	20.6	36 W	24*	20*	2 1	18 40.19	-19 31.1	3.224	2.445	12.3	17.8	32 W	13*	24*
2 11	18 51.41	-6 12.2	3.186	2.527	14.9	20.6	41 W	26*	27*	2 11	18 59.29	-19 17.9	3.119	2.414	14.4	17.8	38 W	14*	30*
2 21	19 8.55	-5 33.7	3.076	2.495	16.6	20.5	46 W	27*	33*	2 21	19 18.33	-18 56.6	3.005	2.381	16.5	17.8	43 W	15*	36*
3 2	19 25.41	-4 46.3	2.956	2.463	18.3	20.5	51 W	29*	39*	3 2	19 37.23	-18 27.6	2.883	2.349	18.5	17.7	49 W	16*	42*
3 12	19 41.91	-3 50.7	2.830	2.431	20.0	20.4	57 W	30*	44*	3 12	19 55.90	-17 51.8	2.753	2.315	20.4	17.6	54 W	17*	48*
3 22	19 57.98	-2 47.8	2.698	2.398	21.5	20.3	62 W	32*	50*	3 22	20 14.32	-17 10.0	2.617	2.281	22.1	17.5	60 W	17*	53*
4 1	20 13.51	-1 38.6	2.561	2.364	23.0	20.2	67 W	33*	54*	4 1	20 32.40	-16 23.4	2.476	2.247	23.8	17.4	65 W	18*	59*
4 11	20 28.43	-0 24.6	2.420	2.329	24.3	20.1	73 W	35*	58*	4 11	20 50.08	-15 33.3	2.332	2.212	25.3	17.3	71 W	19*	64*
4 21	20 42.65	+ 0 52.9	2.276	2.295	25.4	20.0	78 W	37*	60*	4 21	21 7.32	-14 41.2	2.186	2.177	26.6	17.2	76 W	21*	69*
5 1	20 56.04	+ 2 11.9	2.130	2.260	26.3	19.8	84 W	39*	61*	5 1	21 24.03	-13 48.8	2.038	2.141	27.8	17.0	82 W	22*	73*
5 11	21 8.47	+ 3 30.3	1.985	2.224	27.0	19.6	90 W	42*	60	5 11	21 40.13	-12 58.2	1.892	2.105	28.6	16.9	87 W	24*	76*
5 21	21 19.78	+ 4 45.4	1.840	2.188	27.4	19.4	96 W	45*	59	5 21	21 55.55	-12 11.8	1.747	2.069	29.2	16.7	93 W	26*	76*
5 31	21 29.76	+ 5 53.9	1.698	2.153	27.4	19.2	102 W	48*	58	5 31	22 10.12	-11 32.3	1.605	2.033	29.5	16.5	99 W	28*	76*
6 10	21 38.20	+ 6 51.5	1.559	2.117	27.0	19.0	109 W	50*	57	6 10	22 23.70	-11 3.0	1.468	1.997	29.3	16.2	106 W	30*	75
6 15	21 41.75	+ 7 14.8	1.491	2.099	26.6	18.9	112 W	52*	57	6 20	22 36.07	-10 47.5	1.336	1.962	28.6	16.0	112 W	32*	75
6 20	21 44.80	+ 7 33.3	1.425	2.081	26.1	18.7	116 W	52*	56	6 30	22 46.91	-10 50.3	1.212	1.926	27.4	15.7	119 W	34*	75
6 25	21 47.30	+ 7 46.1	1.361	2.063	25.3	18.6	120 W	53	56	7 10	22 55.92	-11 15.7	1.098	1.892	25.5	15.4	127 W	34	75
6 30	21 49.24	+ 7 52.2	1.299	2.046	24.5	18.5	124 W	53	56	7 20	23 2.67	-12 7.9	0.994	1.858	22.7	15.0	135 W	33	76
7 5	21 50.56	+ 7 50.7	1.240	2.028	23.4	18.3	128 W	53	56	7 30	23 6.71	-13 30.0	0.904	1.825	19.1	14.7	144 W	32	77
7 10	21 51.25	+ 7 40.4	1.183	2.010	22.1	18.1	132 W	53	56	8 9	23 7.74	-15 21.1	0.829	1.793	14.8	14.3	153 W	30	79
7 15	21 51.27	+ 7 20.3	1.130	1.993	20.6	18.0	136 W	52	57	8 14	23 7.08	-16 25.9	0.798	1.778	12.5	14.1	158 W	29	80
7 20	21 50.60	+ 6 49.0	1.079	1.976	18.9	17.8	141 W	52	57	8 19	23 5.66	-17 35.2	0.771	1.763	10.2	13.9	162 W	27	82
7 25	21 49.26	+ 6 5.5	1.033	1.959	16.9	17.6	146 W	51	58	8 24	23 3.56	-18 47.0	0.751	1.748	8.4	13.8	165 W	26	83
7 30	21 47.29	+ 5 9.0	0.991	1.942	14.8	17.4	151 W	50	59	8 29	23 0.91	-19 58.7	0.735	1.734	7.5	13.7	167 W	25	84
8 9	21 41.74	+ 2 35.5	0.923	1.908	10.2	17.1	160 W	48	61	9 3	22 57.87	-21 8.0	0.724	1.721	8.0	13.6	166 W	24	85
8 19	21 34.77	+ 0 48.6	0.876	1.876	6.9	16.8	167 E	44	65	9 8	22 54.63	-22 12.2	0.718	1.707	9.8	13.7	163 E	23	86
8 29	21 27.75	-4 49.6	0.854	1.845	8.8	16.8	164 E	40	69	9 13	22 51.40	-23 9.0	0.716	1.695	12.3	13.8	159 E	22	87
9 3	21 24.72	-6 56.7	0.852	1.830	11.3	16.9	159 E	38	71	9 18	22 48.42	-23 56.5	0.720	1.683	15.0	13.8	154 E	21	88
9 8	21 22.24	-9 3.9	0.856	1.815	14.1	17.0	154 E	36	73	9 23	22 45.93	-24 33.1	0.727	1.671	17.8	14.0	149 E	20	89
9 13	21 20.48	-11 8.1	0.865	1.801	17.0	17.1	148 E	34	75										
9 18	21 19.58	-13 6.5	0.880	1.787	19.8	17.2	143 E	32	77										
9 23	21 19.62	-14 56.9	0.899	1.774	22.5	17.3	138 E	30	79										
9 28	21 20.68	-16 37.7	0.923	1.761	24.9	17.4	132 E	28	81										
10 3	21 22.77	-18 7.9	0.950	1.749	27.0	17.5	127 E	27	82										
10 8	21 25.87	-19 27.0	0.980	1.737	28.9	17.6	123 E	26	83										
10 18	21 34.99	-21 31.7	1.047	1.715	32.0	17.8	114 E	23	86										
10 28	21 47.66	-22 53.0	1.121	1.696	34.2	18.0	106 E	22	87										
11 7	22 3.31	-23 34.5	1.199	1.679	35.6	18.2	100 E	21	88										
11 12	22 12.06	-23 41.6	1.239	1.672	36.0	18.3	97 E	21	88*										
11 17	22 21.34	-23 40.2	1.279	1.665	36.3	18.3	94 E	21	86*										
11 22	22 31.10	-23 30.7	1.320	1.659	36.5	18.4	91 E	21	83*										
11 27	22 41.26	-23 13.8	1.360	1.654	36.6	18.4	88 E	22	80*										
12 2	22 51.77	-22 49.8	1.401	1.650	36.6	18.5	86 E	22	77*										
12 7	23 2.56	-22 19.3	1.441	1.647	36.4	18.6	83 E	23	74*										
12 12	23 13.61	-21 42.7	1.481	1.644	36.2	18.6	81 E	23	71*										
12 17	23 24.87	-21 0.4	1.522	1.643	36.0	18.7	79 E	24	68*										
12 22	23 36.32	-20 12.9	1.561	1.642	35.7	18.7	77 E	25	65*										
12 27	23 47.90	-19 20.7	1.601	1.642	35.3	18.7	75 E	26	63*										
1 1	23 59.61	-18 24.1	1.640	1.642	34.9	18.8	73 E	27	60*										
1 6	0 11.42	-17 23.8	1.680	1.644	34.4	18.8	71 E	28	58*										
1 11	0 23.30	-16 20.0	1.719	1.646	33.9	18.9	69 E	29*	56*										
1 16	0 35.26	-15 13.3	1.758	1.650	33.4	18.9	67 E</												

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

19/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°-26°	19/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°-26°	
6386 Keithnoll (continuation)									468507 2005 NB₆ (continuation)									
9 28	22 44.12	-24 58.0	0.739	1.660	20.4	14.1	145 E	20 89	4 1	21 12.37	-14 21.2	2.291	1.908	25.5	20.7	55 W	15*	49*
10 3	22 43.14	-25 11.1	0.754	1.650	23.0	14.2	140 E	20 89	4 11	21 33.04	-11 23.0	2.175	1.876	27.4	20.6	59 W	17*	53*
10 8	22 43.09	-25 12.5	0.772	1.641	25.3	14.3	135 E	20 89	4 21	21 53.22	-8 9.6	2.060	1.846	29.2	20.5	64 W	20*	56*
10 13	22 44.02	-25 2.7	0.793	1.632	27.4	14.4	131 E	20 89	5 1	22 12.92	-4 41.4	1.947	1.817	30.8	20.4	67 W	23*	59*
10 18	22 45.96	-24 42.4	0.816	1.624	29.4	14.5	127 E	20 89	5 11	22 32.15	-0 58.9	1.836	1.790	32.3	20.3	71 W	27*	60*
10 23	22 48.90	-24 12.2	0.842	1.617	31.0	14.6	123 E	21 88	5 21	22 50.94	+2 57.2	1.730	1.765	33.6	20.1	75 W	32*	59*
10 28	22 52.79	-23 33.2	0.869	1.610	32.5	14.7	119 E	21 88	5 31	23 9.29	+7 6.1	1.627	1.743	34.8	20.0	79 W	37*	57*
11 2	22 57.57	-22 46.0	0.898	1.604	33.8	14.8	116 E	22 87	6 10	23 27.18	+11 26.2	1.531	1.722	35.8	19.9	82 W	43*	53
11 7	23 3.15	-21 51.6	0.929	1.600	34.8	14.9	113 E	23 86	6 20	23 44.59	+15 55.9	1.440	1.704	36.5	19.7	86 W	49*	48
11 12	23 9.46	-20 50.6	0.961	1.596	35.7	15.0	110 E	24 85	6 30	0 1.43	+20 32.6	1.355	1.689	37.0	19.6	90 W	57*	43
11 17	23 16.44	-19 43.6	0.994	1.592	36.5	15.1	107 E	25 84	7 5	0 9.60	+22 52.5	1.315	1.682	37.2	19.5	91 W	61*	41
11 22	23 24.02	-18 31.3	1.029	1.590	37.0	15.2	104 E	26 83	7 10	0 17.59	+25 12.9	1.277	1.676	37.3	19.5	93 W	65*	39
11 27	23 32.12	-17 14.2	1.064	1.589	37.5	15.3	101 E	28 81	7 15	0 25.35	+27 33.4	1.241	1.671	37.3	19.4	95 W	69*	36
12 2	23 40.68	-15 53.1	1.101	1.588	37.8	15.3	99 E	29 80*	7 20	0 32.84	+29 53.3	1.206	1.667	37.2	19.3	97 W	73*	34
12 7	23 49.64	-14 28.4	1.138	1.588	38.0	15.4	97 E	31 77*	7 25	0 40.03	+32 12.0	1.173	1.664	37.1	19.3	99 W	76*	32
12 12	23 58.94	-13 0.7	1.177	1.590	38.1	15.5	94 E	32 74*	7 30	0 46.86	+34 28.8	1.141	1.661	36.9	19.2	101 W	79*	30
12 17	0 8.57	-11 30.4	1.216	1.592	38.2	15.6	92 E	33 71*	8 4	0 53.28	+36 42.9	1.112	1.659	36.7	19.1	102 W	82	27
12 22	0 18.47	-9 58.1	1.257	1.595	38.1	15.6	90 E	35 68*	8 9	0 59.22	+38 53.8	1.083	1.658	36.3	19.1	104 W	84	25
12 27	0 28.62	-8 24.3	1.298	1.599	37.9	15.7	88 E	37 65*	8 14	1 4.59	+41 0.4	1.057	1.658	35.9	19.0	106 W	86	23
1 1	0 38.98	-6 49.5	1.340	1.603	37.7	15.8	86 E	38 62*	8 19	1 9.29	+43 2.0	1.031	1.659	35.3	18.9	109 W	88	21
1 6	0 49.53	-5 14.1	1.383	1.609	37.4	15.8	84 E	40 59*	8 24	1 13.21	+44 57.3	1.008	1.660	34.7	18.9	111 W	90	19
1 11	1 0.26	-3 38.6	1.428	1.615	37.1	15.9	82 E	41 57*	8 29	1 16.28	+46 45.3	0.985	1.662	34.0	18.8	113 W	88	17
1 16	1 11.15	-2 3.3	1.473	1.622	36.7	16.0	80 E	43 54*	9 3	1 18.39	+48 24.8	0.965	1.665	33.3	18.7	115 W	87	16
79571 1998 QG₉₂									154144 2002 FA₅									
12 23	17 25.03	-21 23.6	3.028	2.061	4.2	20.3	9 W	1*	9 13	1 19.40	+51 13.3	0.929	1.674	31.5	18.6	120 W	84	13
1 2	17 49.43	-21 46.0	2.969	2.025	6.4	20.3	13 W	4*	9 18	1 18.20	+52 19.1	0.913	1.679	30.4	18.5	122 W	83	12
1 12	18 14.43	-21 54.3	2.903	1.988	8.6	20.3	18 W	5*	9 23	1 15.91	+53 10.4	0.899	1.686	29.3	18.5	125 W	82	11
1 22	18 39.95	-21 47.7	2.831	1.953	10.8	20.3	22 W	7*	9 28	1 12.67	+53 45.9	0.888	1.693	28.2	18.4	127 W	81	10
2 1	19 5.88	-21 25.5	2.754	1.918	13.0	20.3	26 W	8*	10 3	1 8.70	+54 4.6	0.879	1.700	27.0	18.4	129 W	81	10
2 11	19 32.09	-20 47.5	2.672	1.884	15.2	20.2	30 W	8*	10 8	1 4.25	+54 5.5	0.872	1.709	25.9	18.3	132 W	81	10
2 21	19 58.50	-19 53.7	2.588	1.851	17.3	20.2	34 W	9*	10 13	0 59.65	+53 48.3	0.868	1.718	24.8	18.3	134 E	81	10
3 2	20 24.99	-18 44.7	2.502	1.819	19.4	20.2	38 W	9*	10 18	0 55.27	+53 13.2	0.867	1.727	23.7	18.3	136 E	82	11
3 12	20 51.47	-17 21.1	2.414	1.789	21.4	20.1	41 W	10*	10 23	0 51.46	+52 21.5	0.870	1.738	22.8	18.3	137 E	83	12
3 22	21 17.88	-15 44.0	2.327	1.761	23.4	20.1	45 W	10*	10 28	0 48.49	+51 14.9	0.876	1.748	22.1	18.3	138 E	84	13
4 1	21 44.16	-13 55.0	2.239	1.735	25.3	20.0	48 W	11*	11 2	0 46.57	+49 55.9	0.886	1.760	21.7	18.3	139 E	85	14
4 11	22 10.26	-11 55.8	2.154	1.711	27.1	19.9	51 W	11*	11 7	0 45.78	+48 27.1	0.900	1.772	21.5	18.4	139 E	87	16
4 21	22 36.17	-9 48.4	2.069	1.689	28.8	19.9	54 W	12*	11 12	0 46.17	+46 51.3	0.918	1.784	21.5	18.4	139 E	88	17
5 1	23 1.86	-7 35.2	1.988	1.671	30.4	19.8	57 W	14*	11 17	0 47.73	+45 11.3	0.940	1.797	21.1	18.5	137 E	90	19
5 11	23 27.32	-5 18.6	1.908	1.655	31.9	19.8	60 W	15*	11 22	0 50.41	+43 29.8	0.966	1.811	22.3	18.6	136 E	88	21
5 21	23 52.53	-3 1.1	1.831	1.643	33.3	19.7	63 W	17*	11 27	0 54.10	+41 49.5	0.997	1.825	23.0	18.7	134 E	87	22
5 31	0 17.46	-0 45.5	1.757	1.634	34.6	19.6	66 W	20*	12 2	0 58.69	+40 12.1	1.032	1.839	23.7	18.8	131 E	85	24
6 10	0 42.03	+1 25.6	1.685	1.628	35.6	19.6	69 W	23*	12 7	1 4.08	+38 39.3	1.071	1.854	24.5	18.9	129 E	84	25
6 20	1 6.19	+3 29.6	1.615	1.626	36.6	19.5	72 W	27*	12 12	1 10.17	+37 12.1	1.115	1.869	25.3	19.1	126 E	82	27
6 30	1 29.80	+5 24.0	1.546	1.627	37.3	19.4	76 W	32*	12 17	1 16.87	+35 51.2	1.161	1.885	26.1	19.2	123 E	81	28
7 10	1 52.69	+7 6.7	1.480	1.632	37.7	19.3	79 W	37*	12 22	1 24.10	+34 37.3	1.212	1.900	26.8	19.3	120 E	80	29
7 20	2 14.65	+8 36.0	1.414	1.640	38.0	19.3	83 W	42*	12 27	1 31.78	+33 30.5	1.266	1.916	27.4	19.4	116 E	79	30*
7 30	2 35.39	+9 50.5	1.349	1.651	37.9	19.2	87 W	47*	1 1	1 39.83	+32 30.6	1.323	1.933	27.9	19.6	113 E	78	31*
8 9	2 54.59	+10 49.3	1.284	1.666	37.5	19.1	92 W	52*	1 6	1 48.21	+31 37.3	1.382	1.949	28.3	19.7	110 E	77	32*
8 19	3 11.83	+11 32.3	1.221	1.684	36.6	19.0	97 W	55*	1 11	1 56.85	+30 50.2	1.444	1.966	28.6	19.8	107 E	76	32*
8 29	3 26.62	+11 59.4	1.159	1.704	35.2	18.8	103 W	57*	1 16	2 5.74	+30 9.0	1.509	1.983	28.9	19.9	103 E	75	32*
9 8	3 38.48	+12 11.6	1.099	1.727	33.2	18.7	110 W	57										
9 18	3 46.82	+12 10.1	1.043	1.753	30.5	18.5	118 W	57										
9 28	3 51.14	+11 56.7	0.993	1.781	26.9	18.3	126 W	57										
10 8	3 51.13	+11 34.2	0.952	1.810	22.5	18.2	136 W	57										
10 18	3 46.82	+11 5.9	0.925	1.841	17.2	18.0	147 W	56										
10 23	3 43.22	+10 51.0	0.917	1.857	14.4	17.9	152 W	56										
10 28	3 38.85	+10 36.5	0.915	1.874	11.4	17.8	158 W	56										
11 2	3 33.89	+10 23.2	0.918	1.890	8.5	17.7	164 W	55										
11 7	3 28.57	+10 11.6	0.926	1.907	5.9	17.6	169 W	55										
11 12	3 23.11	+10 2.5	0.940	1.925	4.3	17.6	172 W	55										
11 17	3 17.75	+9 56.5	0.960	1.942	4.8	17.7	171 E	55										
11 22	3 12.73	+9 54.2	0.986	1.960	6.9	17.8	166 E	55										
11 27	3 8.23	+9 55.7	1.018	1.978	9.3	18.0	161 E	55										
12 7	3 1.36	+10 11.0	1.099	2.014	14.1	18.4	150 E	55										
12 17	2 57.79	+10 41.5	1.199	2.050	18.1	18.8	140 E	56										
12 27	2 57.67	+11 25.5	1.317	2.087	21.2	19.1	130 E	56										
1 6	3 0.75	+12 19.6	1.448	2.124	23.5	19.4	121 E	57										
1 16	3 6.62	+13 20.8	1.589	2.161	24.9	19.7	112 E	58										
12 23	17 25.03	-29 48.8	3.216	2.256	4.6	21.0	11 W	—	12 23	17 25.22	-9 21.5	2.293	1.380	11.8	20.6	17 W	10*	—
1 2	17 48.38	-29 23.4	3.159	2.221	6.4	21.0	15 W	—	1 2	17 59.61	-9 32.5	2.259	1.354	12.7	20.6	18 W	12*	—
1 12	18 11.85	-28 44.4	3.091	2.185	8.5	21.0	19 W	—	1 12	18 34.59	-9 23.9	2.230	1.332	13.4	20.5	18 W	12*	—
1 22	18 35.35	-27 50.9	3.013	2.149	10.6	21.0	24 W	2*	1 22	19 9.92	-8 55.7	2.207	1.315	14.0	20.5	19 W	12*	2*
2 1	18 58.77	-26 42.3	2.927	2.114	12.8													

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

19/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45° - 26°	19/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45° - 26°
154144 2002 FA₅									173444 2000 LG₃								
<i>(continuation)</i>									<i>(continuation)</i>								
10 8	6 7.08	5 34.2	1.543	1.995	29.4	21.1	101 W	39 70	1 6	2 13.44	+42 31.2	1.568	2.195	23.6	19.2	117 E	88 21*
10 18	6 11.20	8 7.7	1.481	2.027	27.8	21.0	108 W	37 72	1 11	2 19.17	+41 19.3	1.629	2.211	24.1	19.3	113 E	86 22*
10 28	6 11.74	10 40.1	1.426	2.059	25.8	20.9	115 W	34 75	1 16	2 25.43	+40 13.7	1.693	2.227	24.6	19.4	110 E	85 23*
11 7	6 8.51	13 3.0	1.380	2.088	23.5	20.8	123 W	32 77	88254 2001 FM₁₂₉								
11 17	6 1.54	15 5.7	1.346	2.117	21.1	20.7	129 W	30 79	12 23	17 26.06	-23 27.4	2.630	1.663	4.9	21.2	8 W	— 1*
11 27	5 51.35	16 36.1	1.329	2.144	19.0	20.6	135 W	28 81	1 2	17 51.77	-23 37.2	2.551	1.606	7.7	21.2	13 W	2* 5*
12 7	5 39.00	17 23.8	1.331	2.170	17.5	20.6	139 W	28 81	1 12	18 18.75	-23 30.5	2.459	1.542	10.5	21.2	17 W	3* 9*
12 17	5 25.95	17 23.1	1.353	2.194	17.1	20.7	139 E	28 81	1 22	18 47.18	-23 4.4	2.355	1.472	13.4	21.0	20 W	5* 13*
12 27	5 13.82	16 34.9	1.397	2.217	17.7	20.8	137 E	28 81	2 1	19 17.27	-22 15.7	2.242	1.395	16.3	21.0	23 W	5* 17*
1 6	5 3.97	15 7.0	1.460	2.238	19.2	20.9	132 E	30 79	2 11	19 49.26	-21 0.1	2.123	1.310	19.3	20.8	26 W	6* 20*
1 16	4 57.19	13 10.3	1.542	2.258	20.8	21.1	125 E	32 77	2 21	20 23.52	-19 12.3	2.000	1.218	22.4	20.6	28 W	6* 22*
12 23	17 25.34	-34 8.2	2.796	1.853	7.1	19.5	13 W	— 6*	3 2	21 05.0	-16 45.6	1.877	1.117	25.4	20.4	29 W	6* 23*
1 2	17 55.21	-33 25.4	2.753	1.824	8.2	19.5	15 W	— 9*	3 7	21 20.18	-15 15.5	1.817	1.063	26.8	20.2	29 W	6* 23*
1 12	18 24.91	-32 19.4	2.704	1.795	9.7	19.5	18 W	— 12*	3 12	21 40.77	-13 32.8	1.760	1.008	28.2	20.1	29 W	5* 23*
1 22	18 54.21	-30 50.1	2.651	1.767	11.5	19.5	21 W	— 15*	3 17	22 2.36	-11 36.5	1.705	0.950	29.5	19.9	28 W	5* 22*
2 1	19 22.90	-28 57.6	2.594	1.741	13.3	19.4	24 W	— 18*	3 22	22 25.09	-9 25.9	1.654	0.890	30.5	19.8	27 W	4* 21*
2 11	19 50.81	-26 42.7	2.533	1.717	15.3	19.4	27 W	1* 21*	4 1	23 14.41	-4 20.2	1.567	0.765	31.6	19.3	24 W	3* 18*
2 21	20 17.85	-24 6.4	2.469	1.695	17.3	19.4	31 W	3* 25*	4 11	0 10.01	+ 1 41.9	1.505	0.637	29.6	18.8	18 W	1* 12*
3 2	20 43.97	-21 10.0	2.403	1.675	19.3	19.4	34 W	5* 28*	4 21	1 13.58	+ 8 22.2	1.470	0.520	21.5	18.1	11 W	— 5*
3 12	21 9.16	-17 55.2	2.335	1.657	21.3	19.4	37 W	7* 31*	4 26	1 48.89	+11 43.8	1.460	0.475	13.9	17.6	7 W	— —
3 22	21 33.48	-14 23.4	2.266	1.642	23.2	19.4	41 W	9* 34*	5 1	2 26.56	+14 55.0	1.452	0.446	3.8	17.0	2 W	— —
4 1	21 57.00	-10 36.4	2.196	1.629	25.1	19.3	44 W	11* 38*	5 6	3 6.14	+17 44.6	1.442	0.439	7.9	17.2	3 E	— —
4 11	22 19.78	-6 36.0	2.127	1.619	26.9	19.3	47 W	14* 40*	5 11	3 46.74	+20 2.2	1.430	0.455	19.0	17.6	8 E	1* —
4 21	22 41.97	-2 24.0	2.059	1.613	28.6	19.3	50 W	17* 43*	5 16	4 27.32	+21 41.3	1.418	0.492	28.1	18.1	13 E	4* 4*
5 1	23 3.63	+ 1 57.6	1.992	1.609	30.2	19.2	53 W	21* 45*	5 21	5 7.03	+22 40.6	1.412	0.543	34.5	18.4	18 E	7* 8*
5 11	23 24.88	+ 6 26.5	1.928	1.608	31.6	19.2	57 W	24* 46*	5 26	5 45.20	+23 2.5	1.413	0.601	38.5	18.8	22 E	10* 12*
5 21	23 45.82	+11 0.5	1.865	1.611	32.8	19.2	60 W	29* 46*	5 31	6 21.40	+22 51.5	1.422	0.664	40.6	19.1	25 E	11* 15*
5 31	0 6.52	+15 37.1	1.806	1.617	33.9	19.1	63 W	34* 44*	6 5	6 55.32	+22 13.2	1.440	0.728	41.3	19.3	28 E	12* 18*
6 10	0 27.04	+20 13.6	1.749	1.625	34.8	19.1	66 W	39* 42*	6 10	7 26.82	+21 13.5	1.468	0.792	41.1	19.5	31 E	13* 21*
6 20	0 47.43	+24 47.5	1.694	1.637	35.5	19.1	69 W	45* 39*	6 15	7 55.91	+19 58.0	1.503	0.854	40.4	19.7	33 E	13* 23*
6 25	0 57.57	+27 2.5	1.668	1.644	35.7	19.1	71 W	49* 37*	6 20	8 22.67	+18 31.6	1.544	0.915	39.2	19.9	35 E	13* 25*
6 30	1 7.66	+29 15.9	1.642	1.651	36.0	19.0	72 W	52* 35*	6 25	8 47.27	+16 58.2	1.592	0.974	37.8	20.1	36 E	13* 27*
7 5	1 17.70	+31 27.3	1.617	1.659	36.1	19.0	74 W	56* 33*	6 30	9 9.90	+15 21.0	1.644	1.031	36.3	20.2	37 E	12* 28*
7 10	1 27.68	+33 36.5	1.592	1.668	36.2	19.0	76 W	59* 30	7 5	9 30.78	+13 42.1	1.700	1.086	34.7	20.4	37 E	12* 29*
7 15	1 37.58	+35 43.2	1.568	1.677	36.3	19.0	78 W	63* 28	7 10	9 50.12	+12 3.4	1.759	1.139	33.1	20.5	38 E	11* 30*
7 20	1 47.36	+37 47.1	1.544	1.687	36.3	19.0	80 W	67* 26	7 15	10 8.12	+10 25.8	1.820	1.189	31.5	20.6	38 E	10* 30*
7 25	1 56.98	+39 48.0	1.520	1.698	36.3	18.9	81 W	70* 24	7 20	10 24.95	+ 8 50.1	1.882	1.238	29.8	20.7	37 E	9* 30*
7 30	2 6.42	+41 45.6	1.497	1.709	36.2	18.9	83 W	74* 22	7 25	10 40.78	+ 7 16.6	1.945	1.284	28.2	20.8	37 E	8* 30*
8 4	2 15.61	+43 39.8	1.473	1.720	36.0	18.9	85 W	78* 20	7 30	10 55.73	+ 5 45.7	2.009	1.329	26.7	20.9	36 E	8* 29*
8 9	2 24.51	+45 30.4	1.450	1.732	35.8	18.9	87 W	81* 18	8 4	11 9.92	+ 4 17.5	2.072	1.371	25.1	21.0	35 E	7* 29*
8 14	2 33.03	+47 17.4	1.427	1.745	35.5	18.8	90 W	84* 17	8 9	11 23.46	+ 2 52.0	2.135	1.412	23.6	21.1	34 E	6* 28*
8 19	2 41.08	+49 0.4	1.405	1.758	35.1	18.8	92 W	85* 15	8 14	11 36.44	+ 1 29.1	2.197	1.450	22.1	21.2	33 E	5* 27*
8 24	2 48.55	+50 39.4	1.382	1.771	34.7	18.8	94 W	84* 13	8 19	11 48.94	+ 0 8.8	2.257	1.487	20.7	21.3	31 E	5* 25*
8 29	2 55.33	+52 14.1	1.360	1.785	34.2	18.7	97 W	83 12	8 24	12 1.03	- 1 9.1	2.316	1.523	19.2	21.3	30 E	4* 24*
9 3	3 1.29	+53 44.2	1.338	1.799	33.6	18.7	99 W	81 10	8 29	12 12.76	- 2 24.5	2.373	1.556	17.8	21.4	28 E	3* 22*
9 8	3 6.29	+55 9.6	1.316	1.813	33.0	18.7	102 W	80 9	9 3	12 24.17	- 3 37.5	2.428	1.588	16.4	21.4	26 E	3* 20*
9 13	3 10.15	+56 29.7	1.295	1.827	32.2	18.6	104 W	79 8	9 8	12 35.33	- 4 48.3	2.480	1.618	15.0	21.5	24 E	2* 18*
9 18	3 12.71	+57 43.9	1.274	1.842	31.4	18.6	107 W	77 6	9 13	12 46.26	- 5 56.8	2.530	1.647	13.6	21.5	23 E	1* 17*
9 23	3 13.81	+58 51.4	1.255	1.857	30.5	18.6	110 W	76 5	302531 2002 LL₅₈								
9 28	3 13.31	+59 51.1	1.236	1.873	29.5	18.5	113 W	75 4	12 23	17 26.25	-25 19.7	3.072	2.104	3.9	20.2	8 W	— 2*
10 3	3 11.12	+60 41.9	1.219	1.888	28.4	18.5	116 W	74 3	1 2	17 51.19	-25 42.6	3.005	2.058	6.1	20.2	13 W	— 6*
10 8	3 7.22	+61 22.1	1.204	1.904	27.2	18.4	119 W	73 3	1 12	18 16.93	-25 50.9	2.931	2.013	8.4	20.2	17 W	2* 11*
10 13	3 1.67	+61 50.3	1.191	1.920	26.0	18.4	122 W	74 2	1 22	18 43.36	-25 43.2	2.851	1.969	10.6	20.2	22 W	3* 15*
10 18	2 54.66	+62 4.6	1.180	1.936	24.8	18.3	125 W	73 2	2 1	19 10.36	-25 18.7	2.766	1.925	12.8	20.2	26 W	4* 19*
10 20	2 51.52	+62 6.2	1.176	1.942	24.3	18.3	127 W	73 2	2 11	19 37.77	-24 36.6	2.679	1.883	14.9	20.1	29 W	4* 23*
10 22	2 48.23	+62 5.1	1.173	1.949	23.8	18.3	128 W	73 2	2 21	20 5.47	-23 36.4	2.590	1.843	17.1	20.1	33 W	5* 27*
10 24	2 44.83	+62 1.5	1.171	1.955	23.3	18.3	129 W	73 2	3 2	20 33.32	-22 18.4	2.500	1.805	19.1	20.0	37 W	5* 31*
10 26	2 41.34	+61 55.3	1.169	1.961	22.8	18.3	130 W	73 2	3 12	21 1.18	-20 43.0	2.411	1.768	21.2	20.0	40 W	6* 34*
10 28	2 37.80	+61 46.4	1.167	1.968	22.4	18.3	131 W	73 2	3 22	21 28.96	-18 51.1	2.323	1.735	23.1	19.9	43 W	6* 37*
10 30	2 34.25	+61 34.9	1.166	1.974	21.9	18.3	132 W	73 2	4 1	21 56.56	-16 44.4	2.237	1.704	25.0	19.9	46 W	7* 40*
11 1	2 30.70	+61 20.8	1.166	1.981	21.5	18.3	133 W	74 3	4 11	22 23.91	-14 24.6	2.155	1.677	26.8	19.8	49 W	7* 43*
11 3	2 27.21	+61 4.0	1.166	1.987	21.1	18.3	134 E	74 3	4 21	22 50.98	-11 54.0	2.076	1.653	28.5	19.7	52 W	8* 46*
11 5	2 23.79	+60 44.7	1.167	1.994	20.7	18.3	135 E	74 3	5 1	23 17.71	- 9 15.2	2.001	1.633	30.1	19.7	54 W	10* 48*
11 7	2 20.48	+60 23.0	1.169	2.000	20.3	18.3	136 E	75 4	5 11	23 44.07	- 6 31.0	1.930	1.617	31.5	19.6	57 W	12* 51*
11 9	2 17.31	+59 58.9	1.171	2.007	20.0	1											

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

19/21										19/21																													
α_{2000}										α_{2000}																													
δ_{2000}										δ_{2000}																													
Δ										Δ																													
r										r																													
β										β																													
V										V																													
ψ										ψ																													
45° -26°										45° -26°																													
302531 2002 LL₅₈																				164725 1998 QF₉₈																			
<i>(continuation)</i>										<i>(continuation)</i>																													
10 8	4	13.32	+20	51.2	1.086	1.887	24.0	18.5	130 W	66	43	5 31	23	7.18	+0	54.6	1.629	1.788	34.1	19.1	82 W	32*	63*																
10 18	4	9.58	+21	22.6	1.055	1.929	19.2	18.3	140 W	66	43	6 10	23	28.94	+2	29.4	1.518	1.759	35.1	19.0	85 W	35*	62																
10 28	4	1.84	+21	44.0	1.040	1.973	13.7	18.1	152 W	67	42	6 20	23	50.64	+3	55.6	1.412	1.732	35.9	18.8	89 W	39*	60																
11 2	3	56.80	+21	50.7	1.040	1.995	10.7	18.1	158 W	67	42	6 30	0	12.16	+5	9.4	1.311	1.708	36.4	18.6	94 W	42*	59																
11 7	3	51.21	+21	54.6	1.045	2.017	7.6	18.0	164 W	67	42	7 10	0	33.35	+6	6.7	1.215	1.688	36.6	18.4	98 W	46*	58																
11 12	3	45.31	+21	55.8	1.057	2.040	4.6	17.9	171 W	67	42	7 15	0	43.74	+6	27.9	1.169	1.679	36.6	18.4	100 W	48*	58																
11 17	3	39.33	+21	54.7	1.075	2.063	1.8	17.7	176 W	67	42	7 20	0	53.95	+6	43.3	1.125	1.671	36.4	18.3	102 W	49*	57																
11 22	3	33.53	+21	51.8	1.099	2.085	2.1	17.8	176 E	67	42	7 25	1	3.91	+6	52.4	1.082	1.664	36.2	18.2	105 W	50*	57																
11 27	3	28.13	+21	47.7	1.130	2.108	4.8	18.1	170 E	67	42	7 30	1	13.58	+6	54.7	1.041	1.658	35.8	18.0	107 W	51*	57																
12 2	3	23.31	+21	43.3	1.167	2.132	7.4	18.3	164 E	67	42	8 9	1	31.80	+6	37.0	0.965	1.649	34.5	17.8	113 W	52	57																
12 7	3	19.19	+21	39.0	1.210	2.155	9.9	18.5	158 E	67	42	8 19	1	48.04	+5	47.0	0.896	1.644	32.6	17.6	119 W	51	58																
12 17	3	13.44	+21	33.6	1.314	2.201	14.3	18.9	146 E	67	42	8 29	2	1.63	+4	22.8	0.836	1.644	30.0	17.4	126 W	49	60																
12 27	3	11.20	+21	35.2	1.437	2.248	17.8	19.3	136 E	67	42	9 8	2	11.97	+2	26.0	0.786	1.648	26.6	17.2	133 W	47	62																
1 6	3	12.32	+21	45.1	1.576	2.295	20.3	19.6	126 E	67	42	9 13	2	15.75	+1	17.0	0.766	1.651	24.6	17.1	137 W	46	63																
1 16	3	16.43	+22	3.1	1.728	2.342	22.0	19.9	117 E	67	42	9 18	2	18.53	+0	2.3	0.749	1.656	22.5	16.9	141 W	45	64																
120414 4880 P-L										307240 2002 JU₆₇																													
12 23	17	26.36	-29	46.5	2.681	1.722	5.8	20.5	10 W	—	4*	12 23	17	26.71	-17	28.5	2.820	1.861	5.4	20.1	10 W	4*	—																
1 2	17	58.26	-30	11.9	2.644	1.700	7.5	20.5	13 W	—	7*	1 2	17	51.27	-16	38.9	2.840	1.904	7.4	20.3	15 W	7*	2*																
1 12	18	30.74	-30	11.8	2.606	1.681	9.2	20.5	16 W	—	10*	1 12	18	14.82	-15	35.7	2.852	1.948	9.4	20.4	19 W	10*	7*																
1 22	19	3.44	-29	45.2	2.567	1.665	10.9	20.5	19 W	—	13*	1 22	18	37.33	-14	20.0	2.855	1.992	11.4	20.6	24 W	13*	12*																
2 1	19	35.98	-28	52.3	2.529	1.652	12.6	20.6	21 W	—	15*	2 1	18	58.74	-12	52.8	2.849	2.037	13.3	20.7	28 W	16*	17*																
2 11	20	8.00	-27	34.2	2.492	1.643	14.3	20.6	24 W	—	18*	2 11	19	19.01	-11	15.3	2.833	2.081	15.1	20.8	33 W	18*	23*																
2 21	20	39.22	-25	53.0	2.455	1.636	15.9	20.6	27 W	—	21*	2 21	19	38.12	-9	28.6	2.809	2.124	16.8	20.9	38 W	20*	28*																
3 2	21	9.42	-23	51.5	2.419	1.634	17.5	20.6	30 W	—	23*	3 2	19	56.03	-7	34.0	2.775	2.168	18.4	20.9	44 W	22*	34*																
3 12	21	38.46	-21	33.2	2.383	1.635	19.0	20.6	32 W	—	26*	3 12	20	12.68	-5	32.4	2.732	2.211	19.8	21.0	49 W	25*	39*																
3 22	22	6.29	-19	1.5	2.348	1.639	20.6	20.6	35 W	—	29*	3 22	20	28.05	-3	25.2	2.680	2.253	21.1	21.0	55 W	27*	44*																
4 1	22	32.89	-16	20.1	2.313	1.647	22.0	20.7	38 W	1*	32*	4 1	20	42.06	-1	13.3	2.621	2.295	22.2	21.1	60 W	30*	49*																
4 11	22	58.29	-13	32.4	2.277	1.659	23.4	20.7	41 W	3*	35*	4 11	20	54.63	+1	2.1	2.555	2.336	23.1	21.1	66 W	33*	53*																
4 21	23	22.55	-10	41.4	2.240	1.673	24.8	20.7	44 W	4*	38*	4 21	21	5.66	+3	19.7	2.482	2.376	23.7	21.1	72 W	36*	56*																
5 1	23	45.72	-7	49.9	2.200	1.691	26.0	20.7	47 W	6*	41*	5 1	21	15.02	+5	38.3	2.405	2.416	24.1	21.0	79 W	40*	57*																
5 11	0	7.84	-5	0.4	2.159	1.712	27.3	20.8	51 W	9*	45*	5 11	21	22.53	+7	56.1	2.324	2.454	24.2	21.0	85 W	44*	56*																
5 21	0	28.97	-2	14.8	2.114	1.735	28.4	20.8	55 W	12*	48*	5 21	21	28.03	+10	11.2	2.242	2.492	23.9	21.0	92 W	49*	54*																
5 31	0	49.09	+0	25.2	2.065	1.760	29.4	20.8	58 W	15*	51*	5 31	21	31.29	+12	21.0	2.161	2.529	23.3	20.9	99 W	54*	52																
6 10	1	8.19	+2	58.4	2.013	1.788	30.2	20.8	63 W	20*	53*	6 10	21	32.13	+14	22.1	2.084	2.565	22.3	20.8	107 W	58*	50																
6 20	1	26.23	+5	23.8	1.957	1.818	31.0	20.8	67 W	25*	54*	6 20	21	30.40	+16	10.3	2.013	2.599	20.9	20.7	114 W	61*	48																
6 30	1	43.08	+7	40.7	1.896	1.849	31.5	20.8	72 W	31*	54*	6 30	21	26.05	+17	40.4	1.951	2.633	19.1	20.6	122 W	63	46																
7 10	1	58.61	+9	48.9	1.831	1.882	31.7	20.7	77 W	38*	54*	7 10	21	19.28	+18	46.7	1.903	2.666	17.2	20.5	129 W	64	45																
7 20	2	12.62	+11	48.1	1.762	1.916	31.7	20.7	83 W	45*	52*	7 20	21	10.50	+19	24.3	1.871	2.698	15.1	20.5	136 W	64	45																
7 30	2	24.82	+13	38.3	1.690	1.951	31.3	20.6	89 W	52*	50	7 30	21	0.43	+19	29.3	1.859	2.728	13.4	20.4	142 W	64	45																
8 9	2	34.90	+15	19.6	1.617	1.987	30.5	20.5	95 W	58*	49	8 4	20	55.23	+19	19.4	1.861	2.743	12.7	20.4	143 E	64	45																
8 19	2	42.45	+16	52.2	1.543	2.024	29.2	20.4	103 W	62*	47	8 9	20	50.06	+19	1.5	1.869	2.758	12.3	20.4	145 E	64	45																
8 29	2	47.03	+18	15.4	1.471	2.061	27.2	20.3	111 W	63	46	8 14	20	45.08	+18	36.3	1.882	2.772	12.2	20.4	145 E	64	45																
9 8	2	48.23	+19	28.5	1.405	2.099	24.6	20.2	120 W	64	45	8 19	20	40.38	+18	4.3	1.902	2.786	12.3	20.5	144 E	63	46																
9 18	2	45.71	+20	29.7	1.348	2.136	21.2	20.0	130 W	65	44	8 24	20	36.09	+17	26.5	1.927	2.800	12.6	20.5	143 E	62	47																
9 28	2	39.41	+21	16.1	1.304	2.174	17.0	19.9	141 W	66	43	8 29	20	32.29	+16	44.1	1.958	2.814	13.1	20.6	141 E	62	48																
10 8	2	29.79	+21	44.8	1.279	2.211	12.2	19.7	152 W	67	42	9 3	20	29.05	+15	58.1	1.994	2.827	13.8	20.6	138 E	61	48																
10 13	2	24.01	+21	51.8	1.274	2.230	9.7	19.6	158 W	67	42	9 8	20	26.42	+15	9.6	2.036	2.840	14.5	20.7	135 E	60	49																
10 18	2	17.81	+21	53.9	1.276	2.249	7.2	19.5	163 W	67	42	9 13	20	24.42	+14	19.7	2.082	2.853	15.2	20.8	132 E	59	50																
10 23	2	11.41	+21	51.2	1.284	2.268	5.1	19.4	168 W	67	42	9 18	20	23.07	+13	29.3	2.133	2.865	16.0	20.9	128 E	58	51																
10 28	2	5.02	+21	44.5	1.299	2.286	3.8	19.4	171 E	67	42	9 23	20	22.37	+12	39.3	2.188	2.878	16.7	21.0	124 E	58	51																
11 2	1	58.85	+21	34.5	1.321	2.305	4.3	19.5	170 E	67	42	9 28	20	22.32	+11	50.5	2.247	2.890	17.4	21.1	121 E	57	52																
11 7	1	53.09	+21	22.0	1.350	2.323	6.0	19.7	166 E	66	43	10 3	20	22.87	+11	3.5	2.309	2.901	17.9	21.2	117 E	56	53																
11 12	1	47.89	+21	8.0	1.385	2.342	8.1	19.8	161 E	66	43	10 8	20	24.01	+10	18.9	2.374	2.913	18.4	21.2	113 E	55	54																
11 17	1	43.38	+20	53.6	1.427	2.360	10.2	20.0	155 E	66	43	10 13	20	25.71	+9	37.0	2.442	2.924	18.8	21.3	109 E	55	54																
11 22	1	39.65	+20	39.8	1.474	2.378	12.2	20.2	149 E	66	43	10 18	20	27.92	+8	58.1	2.512	2.935	19.1	21.4	105 E	54	55																
11 27	1	36.76	+20	27.4	1.528	2.396	14.1	20.3	144 E	65	44	10 23	20	30.63	+8	22.4	2.583	2.945	19.3	21.5	101 E	53	56*																
12 7	1	33.50	+20	9.1	1.648																																		

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

19/20	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	19/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
417264 2006 AT₂										159927 2005 CL₅₇									
12 23	17 26.86	-11 15.3	2.383	1.454	10.0	20.5	15 W	9*	—	7 20	0 58.82	+11 47.3	1.165	1.666	37.0	18.1	99 W	54*	52
1 2	17 57.03	-11 43.5	2.447	1.529	10.4	20.7	16 W	10*	—	7 30	1 17.11	+13 49.6	1.083	1.653	36.6	18.0	104 W	58*	50
1 12	18 25.33	-11 53.3	2.507	1.605	11.2	20.9	18 W	12*	3*	8 4	1 25.77	+14 45.4	1.044	1.649	36.2	17.9	106 W	59*	49
1 22	18 51.80	-11 47.3	2.562	1.683	12.2	21.1	21 W	13*	8*	8 9	1 34.02	+15 37.1	1.006	1.645	35.6	17.8	109 W	61*	48
2 1	19 16.49	-11 28.3	2.609	1.761	13.4	21.3	25 W	14*	13*	8 14	1 41.80	+16 24.3	0.970	1.642	35.0	17.7	112 W	61	48
2 11	19 39.44	-10 58.8	2.645	1.839	14.8	21.5	28 W	15*	18*	8 19	1 49.01	+17 6.6	0.935	1.640	34.1	17.5	115 W	62	47
174784 2003 WY₉₈										<i>(continuation)</i>									
12 23	17 28.36	-26 58.4	3.329	2.361	3.5	20.3	8 W	—	2*	8 24	1 55.59	+17 43.5	0.902	1.639	33.1	17.4	118 W	63	46
1 2	17 49.02	-26 33.8	3.342	2.397	5.5	20.5	14 W	—	7*	8 29	2 1.45	+18 14.7	0.871	1.639	31.8	17.3	121 W	63	46
1 12	18 8.93	-25 59.8	3.341	2.433	7.6	20.6	19 W	3*	13*	9 3	2 6.52	+18 39.8	0.842	1.641	30.4	17.2	125 W	64	45
1 22	18 28.02	-25 17.3	3.327	2.469	9.7	20.7	25 W	5*	18*	9 8	2 10.73	+18 58.5	0.815	1.643	28.7	17.1	128 W	64	45
2 1	18 46.20	-24 26.9	3.298	2.503	11.6	20.8	31 W	8*	24*	9 18	2 16.25	+19 15.0	0.767	1.650	24.7	16.9	137 W	64	45
2 11	19 3.39	-23 29.5	3.256	2.537	13.5	20.9	37 W	10*	30*	9 28	2 17.72	+19 2.0	0.732	1.661	19.6	16.6	146 W	64	45
2 21	19 19.52	-22 26.0	3.200	2.571	15.3	20.9	43 W	12*	37*	10 8	2 15.47	+18 20.5	0.711	1.676	13.6	16.4	157 W	63	46
3 2	19 34.50	-21 17.2	3.132	2.603	16.9	21.0	50 W	14*	43*	10 13	2 13.21	+17 50.2	0.707	1.685	10.4	16.2	162 W	63	46
3 12	19 48.25	-20 4.2	3.053	2.635	18.3	21.0	56 W	15*	50*	10 18	2 10.43	+17 14.9	0.707	1.694	7.1	16.1	168 W	62	47
3 22	20 0.66	-18 47.9	2.963	2.666	19.5	21.0	63 W	17*	57*	10 23	2 7.37	+16 35.9	0.713	1.705	3.8	16.0	173 W	62	47
4 1	20 11.61	-17 29.3	2.864	2.695	20.4	21.0	70 W	20*	64*	10 28	2 4.26	+15 55.2	0.723	1.716	1.8	15.9	177 E	61	48
4 11	20 20.96	-16 9.5	2.758	2.725	21.1	20.9	78 W	22*	70*	11 2	2 1.34	+15 14.4	0.739	1.728	3.9	16.1	173 E	60	49
4 21	20 28.56	-14 49.5	2.647	2.753	21.3	20.9	85 W	25*	76*	11 7	1 58.80	+14 35.3	0.760	1.741	6.9	16.3	168 E	60	49
5 1	20 34.23	-13 30.5	2.533	2.780	21.2	20.8	93 W	27*	78*	11 12	1 56.79	+13 59.3	0.786	1.754	9.9	16.5	162 E	59	50
5 11	20 37.77	-12 13.7	2.420	2.807	20.6	20.7	102 W	30*	76*	11 17	1 55.46	+13 27.6	0.816	1.768	12.8	16.8	157 E	58	51
5 21	20 38.99	-11 0.4	2.311	2.832	19.5	20.6	111 W	33*	75*	11 22	1 54.90	+13 1.4	0.852	1.783	15.4	17.0	151 E	58	51
5 31	20 37.73	-9 52.3	2.210	2.857	17.9	20.4	120 W	35*	74*	11 27	1 55.15	+12 41.1	0.892	1.798	17.7	17.2	146 E	58	51
6 10	20 33.93	-8 50.9	2.120	2.880	15.7	20.3	130 W	36	73	12 7	1 58.05	+12 18.5	0.984	1.831	21.6	17.5	137 E	57	52
6 20	20 27.66	-7 58.0	2.047	2.903	12.9	20.1	140 W	37	72	12 17	2 3.96	+12 18.6	1.091	1.865	24.6	17.9	128 E	57	52
6 30	20 19.22	-7 15.1	1.996	2.925	9.8	20.0	151 W	38	71	12 27	2 12.54	+12 38.2	1.210	1.901	26.7	18.2	120 E	58	51
7 10	20 9.21	-6 43.4	1.969	2.946	6.7	19.8	160 W	38	71	1 6	2 23.32	+13 12.7	1.339	1.938	28.0	18.5	112 E	58	51*
7 20	19 58.41	-6 23.4	1.970	2.965	4.8	19.7	166 W	39	70	1 16	2 35.91	+13 58.0	1.476	1.977	28.7	18.8	105 E	59	49*
7 30	19 47.78	-6 14.6	2.000	2.984	5.8	19.8	163 E	39	70	99967 1979 OG₈									
8 9	19 38.24	-6 15.2	2.057	3.002	8.5	20.0	154 E	39	70	12 23	17 30.69	-11 34.6	3.424	2.481	5.5	20.6	14 W	8*	—
8 19	19 30.51	-6 23.2	2.140	3.019	11.3	20.3	144 E	39	70	1 2	17 49.36	-12 9.4	3.365	2.445	6.9	20.6	17 W	11*	1*
8 29	19 25.05	-6 35.8	2.245	3.035	13.8	20.5	134 E	38	71	1 12	18 8.37	-12 34.8	3.294	2.408	8.7	20.6	22 W	14*	7*
9 8	19 22.06	-6 50.4	2.368	3.050	15.9	20.7	124 E	38	71	1 22	18 27.66	-12 51.0	3.212	2.370	10.6	20.6	26 W	16*	14*
9 18	19 21.50	-7 4.7	2.504	3.064	17.3	20.8	115 E	38	71	2 1	18 47.17	-12 58.1	3.119	2.332	12.6	20.6	31 W	17*	20*
9 28	19 23.25	-7 16.8	2.650	3.077	18.3	21.0	106 E	38	71	2 11	19 6.84	-12 56.5	3.017	2.294	14.7	20.5	36 W	18*	26*
10 8	19 27.05	-7 25.1	2.801	3.090	18.7	21.1	97 E	38	71*	2 21	19 26.63	-12 46.7	2.906	2.255	16.7	20.5	41 W	19*	32*
10 18	19 32.66	-7 28.5	2.955	3.101	18.7	21.3	89 E	38	69*	3 2	19 46.49	-12 29.5	2.786	2.215	18.8	20.4	46 W	20*	38*
10 28	19 39.84	-7 25.8	3.107	3.111	18.4	21.4	81 E	38*	63*	3 12	20 6.38	-12 6.0	2.661	2.176	20.8	20.3	51 W	20*	43*
11 7	19 48.32	-7 16.6	3.255	3.120	17.7	21.5	73 E	37*	55*	3 22	20 26.29	-11 37.3	2.530	2.136	22.7	20.2	56 W	21*	48*
296318 2009 EN₂										4 1	20 46.20	-11 4.8	2.395	2.096	24.6	20.1	61 W	21*	53*
12 23	17 29.35	-1 9.2	1.661	0.857	27.4	20.5	24 W	16*	—	4 11	21 6.09	-10 30.3	2.257	2.056	26.3	20.0	66 W	22*	58*
12 28	17 55.76	-2 38.7	1.661	0.833	26.0	20.4	22 W	14*	—	4 21	21 26.01	-9 55.8	2.117	2.017	28.0	19.9	70 W	22*	63*
1 2	18 22.20	-4 9.3	1.668	0.813	24.1	20.3	20 W	12*	—	5 1	21 45.94	-9 23.5	1.976	1.978	29.5	19.7	75 W	23*	67*
1 7	18 48.53	-5 39.4	1.680	0.799	21.8	20.2	18 W	10*	—	5 11	22 5.91	-8 56.2	1.837	1.939	30.9	19.6	80 W	24*	70*
1 12	19 14.60	-7 7.6	1.697	0.791	19.0	20.1	15 W	7*	—	5 21	22 25.96	-8 37.0	1.699	1.901	32.0	19.4	85 W	25*	72*
1 17	19 40.33	-8 32.0	1.718	0.788	15.9	20.0	13 W	5*	—	5 31	22 46.09	-8 29.8	1.565	1.865	32.9	19.2	90 W	27*	72
1 22	20 5.62	-9 51.1	1.741	0.792	12.7	20.0	10 W	3*	—	6 10	23 6.31	-8 38.7	1.435	1.829	33.9	19.0	95 W	28*	73
1 27	20 30.42	-11 3.5	1.767	0.802	9.5	19.9	8 W	—	—	6 20	23 26.60	-9 8.7	1.312	1.795	33.9	18.8	100 W	30*	74
2 1	20 54.68	-12 8.2	1.794	0.818	6.3	19.8	5 W	—	—	6 30	23 46.89	-10 5.3	1.196	1.762	33.8	18.5	105 W	31*	74
2 11	21 41.52	-13 51.4	1.851	0.865	1.8	19.7	2 E	—	—	7 10	0 7.06	-11 34.0	1.090	1.732	33.3	18.3	111 W	31*	76
2 21	22 26.07	-14 58.1	1.908	0.927	5.3	20.2	5 E	—	—	7 20	0 26.89	-13 39.9	0.994	1.703	32.5	18.0	116 W	31*	78
3 2	23 8.33	-15 30.6	1.964	0.999	9.1	20.6	9 E	—	1*	7 30	0 45.99	-16 26.2	0.911	1.678	31.2	17.8	121 W	29*	80
3 12	23 48.33	-15 33.9	2.021	1.077	12.1	20.9	13 E	—	4*	8 4	0 55.13	-18 4.4	0.875	1.666	30.5	17.6	124 W	27	82
3 22	0 26.16	-15 14.4	2.077	1.158	14.3	21.2	17 E	—	6*	8 9	1 3.90	-19 52.0	0.842	1.655	29.8	17.5	126 W	25	84
4 1	1 1.95	-14 38.9	2.134	1.241	15.8	21.5	20 E	—	7*	8 14	1 12.20	-21 48.1	0.813	1.644	29.0	17.4	128 W	23	86
159927 2005 CL₅₇										8 19	1 19.94	-23 51.2	0.788	1.635	28.3	17.3	130 W	21	88
12 23	17 29.70	-22 9.7	3.376	2.405	3.1	20.1	8 W	—	—	8 24	1 27.00	-25 59.4	0.767	1.626	27.6	17.2	132 W	19	90
1 2	17 50.61	-22 13.1	3.311	2.364	5.4	20.1	13 W	3*	5*	8 29	1 33.30	-28 9.9	0.750	1.618	27.1	17.1	133 W	17	88
1 12	18 11.93	-22 5.6	3.236	2.322	7.6	20.1	18 W	6*	10*	9 3	1 38.74	-30 20.2	0.736	1.611	26.7	17.1	134 W	15	86
1 22	18 33.60	-21 46.3	3.150	2.280	9.9	20.1	23 W	8*	16*	9 8	1 43.24	-32 27.2	0.727	1.605	26.5	17.0	135 W	13	84
2 1	18 55.51	-21 14.9	3.055	2.238	12.1	20.1	28 W	9*	21*	9 13	1 46.72	-34 27.8	0.721	1.600	26.4	17.0	135 W	11	82
2 11	19 17.59	-20 31.0	2.952	2.196	14.3	20.1	33 W	10*	26*	9 18	1 49.13	-36 19.0	0.719	1.596	26.5	17.0	135 W	9	80
2 21	19 39.77	-19 34.6	2.843	2.154	16.5	20.0	38 W	12*	32*	9 23	1 50.4								

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

19/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	19/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
99967 1979 OG₈										85274 1994 GH									
<i>(continuation)</i>										<i>(continuation)</i>									
12 12	1 51.56	-26 31.6	1.056	1.670	33.7	18.1	110 E	18	89	5 11	23 59.20	+0 53.1	2.110	1.659	27.9	21.0	50 W	14*	43*
12 17	1 56.06	-24 17.9	1.094	1.682	33.8	18.2	108 E	21	88	5 21	0 22.71	+3 0.9	2.061	1.674	29.2	21.0	54 W	17*	46*
12 22	2 1.10	-22 2.3	1.136	1.695	33.9	18.3	106 E	23	86	5 31	0 45.59	+5 1.1	2.009	1.692	30.3	21.0	57 W	19*	48*
12 27	2 6.66	-19 46.2	1.179	1.708	34.0	18.4	104 E	25	84	6 10	1 7.78	+6 51.9	1.954	1.712	31.3	21.0	61 W	23*	50*
1 1	2 12.66	-17 30.6	1.224	1.722	34.0	18.5	102 E	27	82	6 20	1 29.24	+8 31.8	1.896	1.733	32.1	20.9	65 W	27*	51*
1 6	2 19.08	-15 16.2	1.272	1.737	33.9	18.6	100 E	30	79*	6 30	1 49.83	+9 59.2	1.835	1.756	32.8	20.9	69 W	32*	52*
1 11	2 25.87	-13 3.8	1.322	1.752	33.8	18.7	98 E	32	76*	7 10	2 9.41	+11 13.1	1.770	1.780	33.3	20.9	74 W	37*	52*
1 16	2 33.01	-10 54.1	1.374	1.768	33.6	18.8	96 E	34	73*	7 20	2 27.80	+12 12.7	1.702	1.806	33.5	20.8	79 W	43*	52*
162913 2001 MT₁₈										5332 Davidaguilar									
12 23	17 30.72	-19 4.7	1.875	0.914	9.2	20.0	9 W	2*	—	12 23	17 33.22	-5 46.6	4.020	3.107	5.9	20.6	19 W	12*	—
12 28	17 52.19	-19 7.0	1.921	0.960	8.9	20.1	9 W	2*	—	1 2	17 47.06	-5 58.5	4.004	3.117	6.9	20.7	22 W	16*	—
1 2	18 12.66	-19 0.4	1.966	1.007	8.7	20.3	9 W	2*	—	1 12	18 0.66	-6 1.6	3.972	3.126	8.2	20.7	27 W	20*	6*
1 7	18 32.16	-18 46.3	2.010	1.052	8.7	20.4	9 W	2*	—	1 22	18 13.92	-5 56.3	3.922	3.134	9.6	20.8	32 W	23*	14*
1 12	18 50.76	-18 25.5	2.052	1.097	8.9	20.6	10 W	3*	1*	2 1	18 26.76	-5 43.0	3.856	3.140	11.2	20.8	38 W	26*	21*
1 17	19 8.51	-17 58.9	2.092	1.141	9.2	20.7	11 W	3*	2*	2 11	18 39.03	-5 22.1	3.775	3.145	12.6	20.8	44 W	28*	29*
1 22	19 25.46	-17 27.4	2.131	1.183	9.6	20.8	12 W	3*	3*	2 21	18 50.65	-4 54.5	3.680	3.148	14.1	20.8	51 W	30*	37*
1 27	19 41.66	-16 51.7	2.166	1.225	10.2	21.0	13 W	4*	4*	3 2	19 1.47	-4 20.6	3.572	3.151	15.4	20.8	57 W	33*	44*
2 1	19 57.17	-16 12.3	2.199	1.265	10.8	21.1	14 W	4*	6*	3 12	19 11.37	-3 41.6	3.452	3.152	16.5	20.8	64 W	34*	51*
2 6	20 12.02	-15 29.9	2.230	1.305	11.5	21.2	15 W	5*	7*	3 22	19 20.19	-2 58.3	3.323	3.151	17.4	20.7	71 W	36*	57*
2 11	20 26.27	-14 45.0	2.257	1.343	12.2	21.3	17 W	5*	9*	4 1	19 27.76	-2 12.0	3.187	3.149	18.1	20.6	79 W	38*	62*
2 16	20 39.96	-13 58.0	2.282	1.379	13.0	21.5	18 W	6*	11*	4 11	19 33.91	-1 24.2	3.045	3.146	18.5	20.6	86 W	40*	65*
37384 2001 WU₁										385343 2002 LV									
12 23	17 31.58	-28 18.4	3.884	2.915	2.9	20.4	8 W	—	2*	12 23	17 33.36	-7 40.5	2.587	1.673	10.0	20.4	17 W	10*	—
1 2	17 48.20	-28 54.8	3.915	2.973	4.7	20.5	14 W	—	8*	1 2	18 0.60	-8 54.8	2.495	1.588	11.0	20.3	18 W	12*	—
1 12	18 4.34	-29 25.6	3.929	3.031	6.6	20.7	21 W	1*	15*	1 12	18 29.73	-9 58.4	2.400	1.503	12.2	20.1	19 W	13*	1*
1 22	18 19.91	-29 51.9	3.926	3.087	8.5	20.8	28 W	3*	21*	1 22	19 0.93	-10 49.9	2.304	1.417	13.5	20.0	20 W	12*	5*
2 1	18 34.81	-30 14.8	3.906	3.142	10.2	20.9	34 W	4*	28*										
2 11	18 48.92	-30 35.5	3.870	3.197	11.8	21.0	41 W	5*	35*										
2 21	19 2.13	-30 55.4	3.818	3.251	13.2	21.0	49 W	6*	43*										
3 2	19 14.33	-31 15.8	3.753	3.303	14.4	21.1	56 W	7*	50*										
3 12	19 25.35	-31 38.3	3.675	3.355	15.4	21.1	64 W	7*	57*										
3 22	19 35.08	-32 4.3	3.587	3.406	16.1	21.1	72 W	8*	64*										
4 1	19 43.34	-32 35.3	3.492	3.456	16.5	21.1	80 W	8*	72*										
4 11	19 49.94	-33 12.3	3.392	3.504	16.6	21.1	88 W	9*	78*										
4 21	19 54.69	-33 56.5	3.290	3.552	16.3	21.0	97 W	9*	82*										
5 1	19 57.39	-34 48.1	3.191	3.599	15.6	21.0	106 W	9*	81										
5 11	19 57.84	-35 46.7	3.099	3.646	14.5	20.9	115 W	9*	80										
5 21	19 55.92	-36 51.0	3.018	3.691	13.0	20.8	125 W	8*	79										
5 31	19 51.55	-37 58.2	2.953	3.735	11.2	20.7	135 W	7	78										
6 10	19 44.86	-39 4.4	2.909	3.779	9.1	20.6	144 W	6	77										
6 20	19 36.16	-40 5.0	2.888	3.821	6.9	20.5	153 W	5	76										
6 30	19 26.02	-40 55.3	2.894	3.863	5.3	20.5	159 W	4	75										
7 5	19 20.66	-41 15.5	2.908	3.883	4.9	20.5	161 W	4	75										
7 10	19 15.24	-41 31.8	2.930	3.904	4.9	20.5	161 E	3	74										
7 15	19 9.88	-41 44.3	2.958	3.924	5.3	20.6	159 E	3	74										
7 20	19 4.68	-41 52.9	2.994	3.943	6.0	20.6	156 E	3	74										
7 25	18 59.76	-41 57.6	3.036	3.963	6.9	20.7	152 E	3	74										
7 30	18 55.20	-41 58.8	3.085	3.983	7.8	20.8	148 E	3	74										
8 4	18 51.07	-41 56.7	3.140	4.002	8.7	20.9	144 E	3	74										
8 9	18 47.44	-41 51.8	3.202	4.021	9.5	21.0	139 E	3	74										
8 14	18 44.35	-41 44.5	3.268	4.040	10.4	21.1	134 E	3	74										
8 19	18 41.83	-41 35.0	3.339	4.058	11.1	21.2	129 E	3	74										
8 24	18 39.89	-41 23.9	3.415	4.076	11.8	21.2	125 E	4	75										
8 29	18 38.53	-41 11.5	3.495	4.095	12.3	21.3	120 E	4	75										
9 3	18 37.76	-40 58.1	3.577	4.113	12.8	21.4	115 E	4	75										
9 8	18 37.54	-40 44.0	3.663	4.130	13.2	21.5	111 E	4	75										
12 23	17 31.82	-42 44.6	3.930	3.027	6.5	21.4	20 W	—	9*	8 29	18 25.72	-6 50.5	2.327	2.957	17.3	19.8	119 E	38	71
1 2	17 51.98	-42 54.9	3.914	3.033	7.3	21.4	23 W	—	13*	9 8	18 25.01	-8 23.1	2.430	2.933	18.8	19.9	110 E	37	72
1 12	18 11.95	-43 0.5	3.882	3.037	8.4	21.4	27 W	—	18*	9 18	18 26.74	-9 49.9	2.541	2.908	19.8	20.0	101 E	35	74
1 22	18 31.61	-43 1.8	3.836	3.040	9.7	21.5	31 W	—	23*	9 28	18 30.77	-11 9.1	2.656	2.881	20.3	20.1	93 E	34*	75*
2 1	18 50.84	-42 59.5	3.775	3.043	11.2	21.5	37 W	—	28*	10 8	18 36.86	-12 19.8	2.772	2.853	20.4	20.2	84 E	32*	71*
85274 1994 GH										385343 2002 LV									
12 23	17 33.02	-19 36.5	2.684	1.715	4.5	20.7	8 W	1*	—	10 18	18 44.81	-13 21.4	2.885	2.823	20.1	20.3	76 E	31*	65*
1 2	18 1.98	-19 47.9	2.650	1.695	6.3	20.7	11 W	3*	2*	10 28	18 54.40	-14 13.6	2.993	2.792	19.4	20.3	69 E	29*	58*
1 12	18 31.31	-19 39.7	2.614	1.677	8.2	20.8	14 W	5*	5*	11 7	19 5.43	-14 56.2	3.092	2.759	18.4	20.3	61 E	28*	50*
1 22	19 0.83	-19 11.5	2.576	1.661	10.0	20.8	17 W	6*	9*	11 17	19 17.72	-15 29.1	3.181	2.725	17.1	20.3	54 E	26*	42*
2 1	19 30.33	-18 23.6	2.537	1.648	11.9	20.8	20 W	7*	12*	11 27	19 31.10	-15 52.2	3.259	2.690	15.7	20.3	47 E	24*	35*
2 11	19 59.64	-17 16.9	2.497	1.637	13.7	20.8	23 W	7*	16*	12 7	19 45.42	-16 5.7	3.323	2.653	14.0	20.2	41 E	22*	28*
2 21	20 28.60	-15 52.9	2.457	1.628	15.5	20.9	26 W	8*	19*	12 17	20 0.56	-16 9.7	3.372	2.614	12.1	20.2	34 E	19*	21*
3 2	20 57.08	-14 13.5	2.416	1.623	17.3	20.9	29 W	8*	23*	1 6	20 16.40	-16 4.4	3.407	2.575	10.2	20.1	27 E	16*	14*
3 12	21 24.99	-12 21.2	2.374	1.620	19.0	20.9	32 W	9*	26*	1 16	20 32.84	-15 50.2	3.425	2.533	8.1	20.0	21 E	12*	9*
3 22	21 52.30	-10 18.5	2.333	1.619	20.6	20.9	35 W	9*	29*	1 16	20 49.81	-15 27.5	3.427	2.490	5.9	19.8	15 E	7*	4*
4 1	22 18.96	-8 8.3	2.290	1.622	22.2	20.9	38 W	10*	32*										
4 11	22 44.96	-5 53.3	2.247	1.627	23.8	20.9	41 W	11*	35*										
4 21	23 10.33	-3 36.3	2.203	1.635	25.2	20.9	44 W	11*	38*										
5 1	23 35.07	-1 20.0	2.158	1.646	26.6	21.0	47 W	13*	40*										

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

19/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	19/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
385343 2002 LV										88412 2001 QN₂₈									
<i>(continuation)</i>																			
2 1	19 34.36	-11 27.4	2.210	1.332	14.9	19.8	20 W	11*	9*	12 23	17 33.94	-25 44.7	2.571	1.598	4.2	19.9	7 W	-	1*
2 11	20 10.17	-11 48.8	2.120	1.248	16.4	19.6	21 W	10*	11*	1 2	18 6.46	-25 54.8	2.537	1.576	6.0	20.0	10 W	-	3*
2 21	20 48.51	-11 51.9	2.036	1.168	17.7	19.4	21 W	8*	13*	1 12	18 39.44	-25 38.6	2.503	1.557	7.7	20.0	12 W	-	6*
3 2	21 29.41	-11 33.7	1.961	1.093	18.8	19.2	21 W	5*	14*	1 22	19 12.56	-24 55.5	2.470	1.540	9.5	20.0	15 W	-	9*
3 12	22 12.78	-10 51.5	1.899	1.027	19.7	19.0	20 W	2*	14*	2 1	19 45.48	-23 46.0	2.438	1.527	11.2	20.0	17 W	-	11*
3 22	22 58.33	-9 42.9	1.852	0.973	20.2	18.9	20 W	-	14*	2 11	20 17.89	-22 11.5	2.408	1.518	12.8	20.1	20 W	1*	14*
4 1	23 45.50	-8 6.7	1.822	0.935	20.3	18.8	19 W	-	12*	2 21	20 49.58	-20 14.6	2.379	1.512	14.4	20.1	22 W	1*	16*
4 11	0 33.47	-6 5.2	1.812	0.916	20.1	18.7	18 W	-	10*	3 2	21 20.35	-17 58.3	2.352	1.510	16.0	20.1	25 W	2*	19*
4 16	0 57.45	-4 56.4	1.815	0.915	19.8	18.7	18 W	-	9*	3 12	21 50.13	-15 26.3	2.326	1.512	17.5	20.1	27 W	2*	21*
4 21	1 21.27	-3 43.7	1.823	0.918	19.5	18.7	18 W	-	9*	3 22	22 18.88	-12 42.4	2.301	1.518	19.0	20.2	30 W	3*	24*
4 26	1 44.79	-2 28.2	1.835	0.927	19.2	18.7	18 W	-	8*	4 1	22 46.62	-9 50.3	2.278	1.527	20.4	20.2	32 W	4*	26*
5 1	2 7.92	-1 11.5	1.853	0.941	18.7	18.8	17 W	-	7*	4 11	23 13.39	-6 53.8	2.254	1.540	21.8	20.3	35 W	5*	29*
5 6	2 30.57	+0 5.1	1.875	0.960	18.2	18.8	17 W	-	6*	4 21	23 39.27	-3 56.0	2.230	1.557	23.1	20.3	37 W	6*	31*
5 11	2 52.64	+1 20.4	1.901	0.983	17.7	18.9	17 W	-	6*	5 1	0 4.31	-1 0.0	2.204	1.576	24.4	20.3	40 W	8*	34*
5 16	3 14.11	+2 33.1	1.931	1.009	17.1	19.0	17 W	-	5*	5 11	0 28.58	+1 51.7	2.177	1.598	25.6	20.4	43 W	10*	37*
5 21	3 34.92	+3 42.2	1.964	1.039	16.5	19.0	17 W	-	5*	5 21	0 52.14	+4 37.0	2.147	1.623	26.8	20.4	46 W	13*	39*
5 26	3 55.06	+4 46.9	2.001	1.072	15.9	19.1	17 W	-	5*	5 31	1 14.99	+7 14.0	2.114	1.651	27.9	20.5	50 W	16*	41*
5 31	4 14.50	+5 46.5	2.039	1.107	15.3	19.2	17 W	-	5*	6 10	1 37.14	+9 41.4	2.077	1.680	29.0	20.5	53 W	20*	43*
6 10	4 51.30	+7 29.6	2.121	1.183	14.0	19.4	16 W	-	6*	6 20	1 58.57	+11 58.2	2.035	1.711	29.9	20.5	57 W	24*	44*
6 20	5 25.44	+8 50.2	2.207	1.264	13.0	19.6	16 W	-	7*	6 30	2 19.18	+14 3.7	1.988	1.743	30.7	20.5	61 W	30*	45*
6 30	5 57.05	+9 49.4	2.293	1.348	12.3	19.8	16 W	-	9*	7 10	2 38.89	+15 57.6	1.936	1.777	31.4	20.5	66 W	36*	45*
7 10	6 26.32	+10 29.1	2.374	1.433	12.0	20.0	17 W	-	10*	7 20	2 57.55	+17 39.9	1.879	1.811	31.9	20.5	70 W	42*	45*
7 20	6 53.44	+10 52.0	2.449	1.519	12.2	20.2	18 W	-	12*	7 30	3 14.93	+19 10.8	1.816	1.847	32.2	20.5	76 W	49*	44*
7 30	7 18.59	+11 0.7	2.515	1.605	12.8	20.4	21 W	1*	14*	8 9	3 30.80	+20 30.8	1.749	1.882	32.2	20.4	81 W	55*	43*
8 9	7 41.93	+10 57.9	2.571	1.689	13.8	20.6	23 W	6*	16*	8 19	3 44.84	+21 40.8	1.678	1.919	31.8	20.4	87 W	61*	42
8 19	8 3.62	+10 46.2	2.613	1.772	15.0	20.8	27 W	11*	19*	8 29	3 56.67	+22 41.5	1.603	1.955	31.0	20.3	94 W	66*	41
8 29	8 23.74	+10 28.0	2.642	1.854	16.4	20.9	31 W	17*	21*	9 8	4 5.85	+23 33.9	1.528	1.991	29.7	20.2	102 W	69	40
9 8	8 42.38	+10 5.5	2.656	1.933	17.8	21.1	36 W	22*	23*	9 18	4 11.90	+24 18.4	1.454	2.027	27.8	20.1	110 W	69	40
9 18	8 59.62	+9 40.8	2.655	2.011	19.2	21.2	41 W	28*	26*	9 28	4 14.32	+24 54.8	1.384	2.063	25.2	19.9	119 W	70	39
9 28	9 15.45	+9 16.1	2.638	2.087	20.5	21.3	47 W	34*	28*	10 8	4 12.74	+25 22.4	1.322	2.099	21.8	19.8	129 W	70	39
10 8	9 29.86	+8 53.7	2.606	2.161	21.7	21.4	53 W	39*	31*	10 18	4 7.03	+25 38.7	1.273	2.134	17.5	19.6	140 W	71	38
10 18	9 42.82	+8 35.7	2.560	2.233	22.7	21.5	60 W	45*	35*	10 28	3 57.55	+25 40.9	1.242	2.168	12.5	19.4	152 W	71	38
30800 1989 ST										216722 2005 EC₂₈₆									
12 23	17 33.47	-24 50.9	2.788	1.815	3.7	18.5	7 W	-	-	12 23	17 34.07	-31 50.4	2.639	1.681	6.1	19.5	10 W	-	4*
1 2	18 2.01	-24 47.6	2.747	1.789	5.7	18.5	10 W	-	4*	1 2	18 6.85	-32 57.1	2.606	1.664	7.8	19.5	13 W	-	7*
1 12	18 30.91	-24 24.0	2.702	1.764	7.7	18.5	14 W	1*	7*	1 12	18 40.75	-33 37.3	2.571	1.650	9.5	19.6	16 W	-	9*
1 22	18 59.99	-23 39.6	2.655	1.741	9.8	18.6	17 W	2*	11*	1 22	19 15.39	-33 48.8	2.537	1.638	11.3	19.6	19 W	-	12*
2 1	19 29.02	-22 34.4	2.605	1.721	11.8	18.6	21 W	3*	14*	2 1	19 50.31	-33 30.9	2.504	1.630	12.9	19.6	22 W	-	14*
2 11	19 57.82	-21 9.0	2.554	1.702	13.7	18.6	24 W	4*	18*	2 11	20 25.00	-32 44.0	2.472	1.625	14.5	19.6	24 W	-	16*
2 21	20 26.24	-19 24.5	2.502	1.686	15.6	18.6	27 W	5*	21*	2 21	20 59.02	-31 29.8	2.442	1.623	16.0	19.7	27 W	-	18*
3 2	20 54.14	-17 22.8	2.449	1.673	17.5	18.6	30 W	6*	24*	3 2	21 32.01	-29 51.5	2.414	1.625	17.4	19.7	29 W	-	20*
3 12	21 21.44	-15 6.0	2.396	1.662	19.3	18.6	34 W	7*	27*	3 12	22 3.68	-27 53.0	2.387	1.630	18.8	19.7	32 W	-	23*
3 22	21 48.10	-12 36.3	2.344	1.654	21.0	18.6	37 W	8*	31*	3 22	22 33.92	-25 38.5	2.362	1.639	20.1	19.7	34 W	-	25*
4 1	22 14.09	-9 56.6	2.291	1.649	22.7	18.6	40 W	9*	33*	4 1	23 2.65	-23 12.6	2.337	1.650	21.3	19.8	37 W	-	27*
4 11	22 39.42	-7 9.4	2.238	1.647	24.3	18.6	43 W	10*	36*	4 11	23 29.88	-20 39.6	2.313	1.665	22.5	19.8	39 W	-	30*
4 21	23 4.14	-4 17.6	2.186	1.648	25.8	18.6	46 W	12*	39*	4 21	23 55.68	-18 3.2	2.287	1.682	23.6	19.8	42 W	-	33*
5 1	23 28.24	-1 23.7	2.133	1.652	27.3	18.6	49 W	14*	42*	5 1	0 20.12	-15 26.9	2.260	1.702	24.7	19.9	45 W	-	37*
5 11	23 51.77	+1 29.6	2.081	1.659	28.6	18.5	52 W	16*	44*	5 11	0 43.26	-12 53.6	2.230	1.725	25.8	19.9	48 W	-	41*
5 21	0 14.74	+4 20.1	2.027	1.668	29.8	18.5	55 W	19*	46*	5 21	1 5.19	-10 25.4	2.197	1.750	26.8	19.9	51 W	-	45*
5 31	0 37.16	+7 5.6	1.972	1.681	30.9	18.5	58 W	22*	48*	5 31	1 25.92	-8 4.2	2.159	1.776	27.7	20.0	55 W	3*	49*
6 10	0 58.98	+9 44.0	1.916	1.696	31.9	18.5	62 W	26*	48*	6 10	1 45.48	-5 51.3	2.116	1.805	28.6	20.0	58 W	7*	52*
6 20	1 20.17	+12 14.0	1.857	1.713	32.8	18.5	66 W	31*	49*	6 20	2 3.86	-3 47.4	2.067	1.835	29.4	20.0	63 W	12*	56*
6 30	1 40.61	+14 33.9	1.797	1.733	33.4	18.5	70 W	37*	48*	6 30	2 20.98	-1 53.3	2.012	1.866	30.1	20.0	67 W	18*	58*
7 10	2 0.18	+16 42.9	1.734	1.755	33.9	18.4	74 W	43*	47*	7 10	2 36.75	-0 8.9	1.952	1.899	30.6	20.0	72 W	24*	60*
7 20	2 18.67	+18 40.2	1.669	1.779	34.1	18.4	79 W	49*	45*	7 20	2 51.03	+1 25.9	1.885	1.932	30.8	19.9	77 W	31*	61*
7 30	2 35.82	+20 25.3	1.601	1.804	34.0	18.3	84 W	56*	44	7 30	3 3.59	+2 51.5	1.813	1.966	30.8	19.9	83 W	37*	61*
8 9	2 51.31	+21 57.9	1.531	1.831	33.6	18.2	90 W	62*	42	8 9	3 14.19	+4 8.8	1.736	2.001	30.4	19.8	89 W	43*	60
8 19	3 4.74	+23 18.1	1.460	1.860	32.8	18.1	96 W	67*	41	8 19	3 22.48	+5 18.8	1.657	2.036	29.6	19.7	96 W	48*	59
8 29	3 15.63	+24 25.5	1.389	1.889	31.4	18.0	103 W	69	40	8 29	3 28.05	+6 22.6	1.577	2.071	28.2	19.6	104 W	51*	58
9 8	3 23.48	+25 19.9	1.319	1.919	29.5	17.9	110 W	70	39	9 8	3 30.51	+7 22.0	1.499	2.106	26.1	19.5	113 W	52	57
9 18	3 27.76	+26 0.4	1.254	1.950	26.8	17.7	119 W	71	38	9 18	3 29.41	+8 18.0	1.426	2.142	23.3	19.3	123 W	53	56
9 28	3 28.02	+26 24.8	1.197	1.982	23.3	17.6	128 W	71	38	9 28	3 24.46	+9 12.1	1.365	2.177	19.6	19.2	133 W	54	55
10 8	3 24.14	+26 30.8	1.151	2.014	19.0	17.4	139 W	72	37	10 8	3 15.71	+10 4.9	1.319	2.212	15.1	19.0	145 W		

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

19/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	19/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
334055 2001 OK₂₁ (continuation)										259461 2003 SN₁₀₁ (continuation)									
12 17	2 57.14	+28 12.0	1.415	2.281	14.9	20.3	143 E	73	36	1 11	3 3.85	+18 57.6	1.657	2.292	22.2	21.4	118 E	64	45
12 22	2 55.89	+27 39.9	1.472	2.300	16.6	20.4	138 E	73	36	1 16	3 6.48	+18 51.7	1.730	2.308	23.0	21.5	114 E	64	45
12 27	2 55.54	+27 11.2	1.533	2.320	18.0	20.6	133 E	72	37	74998 1999 TV₂₇₆									
1 1	2 56.03	+26 46.3	1.599	2.339	19.3	20.7	128 E	72	37	12 23	17 36.49	-23 47.8	3.061	2.085	2.8	19.5	6 W	—	—
1 6	2 57.33	+26 25.1	1.668	2.358	20.4	20.9	123 E	71	38	1 2	18 0.17	-23 50.2	3.079	2.121	4.9	19.7	11 W	—	4*
1 11	2 59.35	+26 7.7	1.740	2.376	21.3	21.0	119 E	71	38	1 12	18 23.20	-23 39.7	3.087	2.156	7.1	19.8	16 W	3*	9*
1 16	3 2.07	+25 54.0	1.815	2.395	22.0	21.2	114 E	71	38*	1 22	18 45.49	-23 17.3	3.085	2.192	9.1	20.0	21 W	5*	14*
392211 2009 TG₁₀										2 1	19 6.94	-22 44.5	3.072	2.228	11.1	20.1	26 W	6*	19*
12 23	17 35.30	-5 20.8	2.117	1.232	15.3	20.5	19 W	12*	—	2 11	19 27.46	-22 2.6	3.049	2.264	13.1	20.2	31 W	8*	25*
1 2	18 11.32	-3 15.1	2.135	1.273	16.5	20.7	22 W	14*	—	2 21	19 47.00	-21 13.1	3.014	2.299	14.9	20.2	37 W	9*	30*
1 12	18 46.19	-0 58.5	2.161	1.319	17.3	20.8	23 W	17*	—	3 2	20 5.48	-20 17.6	2.968	2.334	16.6	20.3	42 W	11*	36*
1 22	19 19.72	+1 25.5	2.195	1.369	17.7	20.9	25 W	19*	—	3 12	20 22.84	-19 17.8	2.912	2.368	18.2	20.3	48 W	12*	42*
2 1	19 51.79	+3 53.9	2.235	1.422	17.9	21.0	26 W	20*	—	3 22	20 39.03	-18 15.3	2.846	2.402	19.6	20.4	54 W	13*	48*
2 11	20 22.31	+6 23.6	2.280	1.477	18.0	21.2	28 W	21*	1*	4 1	20 53.96	-17 11.8	2.770	2.435	20.9	20.4	60 W	15*	54*
2 21	20 51.27	+8 52.0	2.326	1.533	18.0	21.3	29 W	23*	4*	4 11	21 7.55	-16 8.9	2.685	2.468	21.9	20.4	67 W	17*	61*
3 2	21 18.70	+11 17.4	2.373	1.590	18.0	21.4	30 W	24*	6*	4 21	21 19.71	-15 8.3	2.594	2.501	22.7	20.3	73 W	19*	67*
52689 1998 FF₂										5 1	21 30.30	-14 11.7	2.496	2.532	23.1	20.3	80 W	21*	73*
12 23	17 35.59	-28 58.1	2.074	1.109	7.2	21.2	8 W	—	2*	5 11	21 39.17	-13 21.1	2.394	2.563	23.2	20.2	88 W	23*	77*
12 28	17 58.31	-29 11.1	2.070	1.106	7.4	21.2	8 W	—	2*	5 21	21 46.15	-12 38.1	2.290	2.593	22.9	20.2	96 W	26*	77
1 2	18 21.11	-29 10.1	2.068	1.105	7.5	21.2	8 W	—	2*	5 31	21 51.02	-12 4.7	2.187	2.623	22.0	20.1	104 W	29*	76
1 7	18 43.83	-28 55.0	2.068	1.106	7.6	21.2	9 W	—	2*	6 10	21 53.57	-11 42.5	2.087	2.651	20.7	19.9	113 W	32*	76
1 12	19 6.33	-28 26.2	2.071	1.108	7.6	21.3	9 W	—	2*	6 20	21 53.62	-11 32.9	1.995	2.679	18.7	19.8	122 W	33*	76
1 17	19 28.49	-27 44.3	2.075	1.112	7.7	21.3	9 W	—	2*	6 30	21 51.06	-11 36.9	1.914	2.706	16.1	19.6	132 W	33	76
1 22	19 50.20	-26 50.1	2.081	1.118	7.7	21.3	9 W	—	2*	7 10	21 45.93	-11 54.2	1.849	2.732	12.9	19.5	143 W	33	76
1 27	20 11.36	-25 44.6	2.088	1.126	7.7	21.3	9 W	—	2*	7 20	21 38.51	-12 23.2	1.805	2.758	9.1	19.3	155 W	33	76
2 1	20 31.91	-24 29.1	2.098	1.135	7.7	21.3	9 W	—	2*	7 30	21 29.37	-13 0.8	1.785	2.782	4.9	19.1	166 W	32	77
2 6	20 51.80	-23 4.8	2.108	1.145	7.8	21.4	9 W	—	2*	8 4	21 24.41	-13 21.5	1.785	2.794	2.8	19.0	172 W	32	77
2 11	21 11.02	-21 32.9	2.120	1.157	7.8	21.4	9 W	—	2*	8 9	21 19.36	-13 42.7	1.792	2.806	0.8	18.8	178 W	31	78
2 16	21 29.58	-19 54.8	2.133	1.170	7.9	21.4	9 W	—	3*	8 19	21 14.33	-14 3.7	1.807	2.817	1.8	19.0	175 E	31	78
2 21	21 47.48	-18 11.6	2.148	1.185	8.1	21.5	10 W	—	3*	8 19	21 9.47	-14 24.0	1.828	2.828	3.9	19.1	169 E	31	78
259461 2003 SN₁₀₁										8 29	21 0.69	-15 0.7	1.892	2.850	7.8	19.4	157 E	30	79
12 23	17 36.07	-23 17.2	2.780	1.805	3.3	21.2	6 W	—	—	9 8	20 53.81	-15 29.7	1.980	2.871	11.3	19.7	146 E	30	79
1 2	18 4.28	-23 3.5	2.738	1.777	5.4	21.3	10 W	—	3*	9 18	20 49.27	-15 49.7	2.091	2.891	14.2	19.9	135 E	29	80
1 12	18 32.84	-22 29.8	2.692	1.750	7.5	21.3	13 W	2*	6*	9 28	20 47.29	-16 0.1	2.220	2.910	16.4	20.1	125 E	29	80
1 22	19 1.57	-21 35.6	2.643	1.725	9.5	21.3	17 W	4*	10*	10 8	20 47.80	-16 1.1	2.362	2.929	18.0	20.3	115 E	29	80
2 1	19 30.31	-20 20.9	2.592	1.702	11.6	21.3	20 W	5*	13*	10 18	20 50.60	-15 53.0	2.513	2.946	19.0	20.5	106 E	29	80
2 11	19 58.85	-18 46.2	2.540	1.682	13.5	21.3	23 W	6*	17*	10 28	20 55.45	-15 36.3	2.670	2.962	19.4	20.7	97 E	29	79*
2 21	20 27.09	-16 52.8	2.487	1.663	15.5	21.3	27 W	7*	20*	11 7	21 2.04	-15 11.5	2.829	2.978	19.4	20.8	89 E	30	74*
3 2	20 54.91	-14 42.3	2.434	1.647	17.3	21.3	30 W	8*	23*	11 17	21 10.11	-14 39.1	2.988	2.992	19.0	20.9	81 E	30	78*
3 12	21 22.23	-12 16.9	2.381	1.634	19.1	21.3	33 W	9*	26*	11 27	21 19.39	-13 59.3	3.143	3.006	18.3	21.0	73 E	31	57*
3 22	21 49.04	-9 38.9	2.328	1.624	20.9	21.3	36 W	10*	29*	12 7	21 29.66	-13 12.7	3.292	3.019	17.3	21.1	65 E	31*	50*
4 1	22 15.31	-6 51.1	2.277	1.617	22.5	21.3	38 W	11*	32*	12 17	21 40.73	-12 19.7	3.432	3.030	16.0	21.2	58 E	31*	42*
4 11	22 41.06	-3 56.4	2.227	1.613	24.1	21.3	41 W	13*	35*	12 27	21 52.43	-11 20.8	3.563	3.041	14.6	21.2	51 E	30*	34*
4 21	23 6.33	-0 57.5	2.177	1.612	25.6	21.3	44 W	14*	37*	1 6	22 4.61	-10 16.4	3.681	3.051	12.9	21.2	44 E	28*	27*
5 1	23 31.15	+2 2.6	2.128	1.615	27.1	21.3	47 W	16*	39*	1 16	22 17.17	-9 7.3	3.787	3.060	11.2	21.2	37 E	25*	20*
5 11	23 55.55	+5 1.1	2.079	1.620	28.4	21.3	50 W	18*	41*	260141 2004 QT₂₄									
5 21	0 19.56	+7 55.5	2.030	1.629	29.6	21.3	53 W	21*	43*	12 23	17 36.53	-30 42.0	2.316	1.355	6.7	21.3	9 W	—	3*
5 31	0 43.17	+10 43.4	1.980	1.641	30.7	21.3	56 W	24*	44*	1 2	18 10.98	-31 31.3	2.323	1.374	8.3	21.4	12 W	—	5*
6 10	1 6.36	+13 22.6	1.929	1.655	31.7	21.3	59 W	28*	44*	1 12	18 45.42	-31 49.9	2.323	1.391	10.0	21.5	14 W	—	8*
6 20	1 29.10	+15 51.4	1.877	1.672	32.6	21.3	63 W	32*	44*	1 22	19 19.60	-31 38.7	2.316	1.403	11.7	21.6	17 W	—	10*
6 30	1 51.26	+18 8.2	1.822	1.692	33.4	21.2	66 W	37*	44*	2 1	19 53.29	-30 59.3	2.301	1.412	13.5	21.6	20 W	—	13*
7 10	2 12.71	+20 11.8	1.765	1.714	33.9	21.2	70 W	43*	43*	74789 1999 SY₅									
7 20	2 33.28	+22 1.5	1.704	1.738	34.3	21.2	75 W	49*	42*	12 23	17 36.54	-10 1.6	3.755	2.815	5.1	19.8	15 W	8*	—
7 30	2 52.69	+23 36.9	1.641	1.764	34.5	21.1	79 W	56*	40*	1 2	17 52.64	-10 26.3	3.710	2.792	6.3	19.9	18 W	12*	—
8 9	3 10.65	+24 57.9	1.575	1.791	34.3	21.1	85 W	62*	39	1 12	18 8.82	-10 42.6	3.650	2.767	7.8	19.9	23 W	15*	6*
8 19	3 26.77	+26 4.6	1.507	1.820	33.8	21.0	90 W	67*	38	1 22	18 25.02	-10 50.6	3.576	2.742	9.6	19.9	28 W	18*	13*
8 29	3 40.59	+26 57.3	1.437	1.850	32.8	20.9	97 W	71*	37	2 1	18 41.15	-10 50.7	3.488	2.716	11.4	19.9	33 W	20*	20*
9 8	3 51.63	+27 36.3	1.367	1.881	31.3	20.8	104 W	73	36	2 11	18 57.11	-10 43.3	3.388	2.690	13.3	19.9	39 W	21*	27*
9 18	3 59.32	+28 1.5	1.299	1.913	29.2	20.7	112 W	73	36	2 21	19 12.83	-10 29.2	3.275	2.662	15.1	19.8	45 W	23*	34*
9 28	4 3.13	+28 11.9	1.235	1.945	26.4	20.5	120 W	73	36	3 2	19 28.22	-10 9.2	3.151	2.633	16.9	19.8	50 W	24*	41*
10 8	4 2.71	+28 6.0	1.179	1.978	22.7	20.3	130 W	73	36	3 12	19 43.19	-9 44.4	3.018	2.603	18.5	19.7	56 W	25*	47*
10 18	3 57.98	+27 41.5	1.136	2.012	18.1	20.1	141 W	73	36	3 22	19 57.65	-9 15.9	2.876	2.573	20.1	19.6	63 W	26*	53*
10 23	3 54.13	+27 21.5	1.121	2.028	15.5	20.0	147 W	72	37	4 1	20 11.51	-8 45.2	2.727	2.542	21.5	19.6	69 W	27*	59*
10 28	3 49.46	+26 56.2	1.110	2.045	12.8	19.9	153 W	72	37	4 11	20 24.								

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

Table with columns for date (19/21, 20/21), alpha2000, delta2000, Delta, r, beta, V, psi, 45-26 degrees. Contains two main sections: 41223 1999 XD16 and 153415 2001 QP153, with sub-sections for 114534 2003 BT19 and 153415 2001 QP153. Each entry lists coordinates and magnitudes.

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

19/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	19/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
470990 2009 SU₁₀₈										272287 2005 ST₉									
12 23	17 38.71	-28 18.5	2.762	1.790	4.0	21.1	7 W	—	1*	12 23	17 39.72	-31 58.1	2.753	1.792	5.4	20.6	10 W	—	3*
1 2	18 8.54	-28 4.4	2.710	1.750	5.6	21.1	10 W	—	4*	1 2	18 11.05	-32 19.7	2.708	1.760	6.8	20.6	12 W	—	5*
1 12	18 38.95	-27 27.3	2.654	1.711	7.4	21.1	13 W	—	7*	1 12	18 43.18	-32 16.9	2.662	1.730	8.4	20.6	15 W	—	8*
1 22	19 9.72	-26 25.9	2.597	1.673	9.3	21.1	16 W	—	10*	1 22	19 15.80	-31 47.9	2.614	1.702	10.0	20.6	18 W	—	11*
2 1	19 40.59	-24 59.5	2.539	1.638	11.2	21.1	19 W	—	13*	2 1	19 48.53	-30 52.3	2.566	1.677	11.7	20.6	20 W	—	14*
2 11	20 11.32	-23 8.5	2.481	1.606	13.1	21.1	22 W	1*	16*	2 11	20 20.99	-29 30.4	2.519	1.655	13.4	20.6	23 W	—	16*
2 21	20 41.73	-20 53.7	2.424	1.577	15.0	21.0	24 W	2*	18*	2 21	20 52.90	-27 43.5	2.473	1.636	15.0	20.6	25 W	—	18*
3 2	21 11.67	-18 17.1	2.369	1.551	16.8	21.0	27 W	3*	21*	3 2	21 23.99	-25 34.2	2.428	1.620	16.6	20.6	28 W	—	21*
3 12	21 41.05	-15 21.1	2.317	1.529	18.5	21.0	29 W	4*	23*	3 12	21 54.08	-23 5.3	2.385	1.607	18.2	20.6	30 W	—	23*
3 22	22 9.83	-12 8.7	2.268	1.511	20.1	21.0	31 W	5*	25*	3 22	22 23.12	-20 20.2	2.344	1.599	19.7	20.6	33 W	—	25*
4 1	22 38.03	-8 43.3	2.223	1.497	21.7	21.0	34 W	6*	28*	4 1	22 51.06	-17 22.6	2.304	1.594	21.1	20.6	35 W	—	28*
4 11	23 5.68	-5 8.8	2.181	1.488	23.2	21.0	36 W	8*	30*	4 11	23 17.92	-14 16.3	2.266	1.593	22.5	20.6	38 W	—	31*
4 21	23 32.86	-1 28.9	2.143	1.484	24.6	21.0	38 W	9*	32*	4 21	23 43.78	-11 4.5	2.229	1.596	23.9	20.6	40 W	—	34*
5 1	23 59.63	+2 12.6	2.107	1.485	25.9	21.0	40 W	11*	33*	5 1	0 8.68	-7 50.5	2.192	1.603	25.2	20.6	43 W	2*	36*
5 11	0 26.07	+5 51.7	2.075	1.491	27.1	21.0	42 W	13*	35*	5 11	0 32.71	-4 37.2	2.155	1.613	26.4	20.6	45 W	5*	39*
5 21	0 52.25	+9 25.2	2.044	1.502	28.2	21.0	45 W	16*	36*	5 21	0 55.93	-1 26.9	2.117	1.628	27.6	20.6	48 W	8*	42*
5 31	1 18.20	+12 49.8	2.015	1.517	29.3	21.0	47 W	19*	37*	5 31	1 18.37	+1 38.4	2.076	1.645	28.7	20.6	51 W	11*	44*
6 10	1 43.94	+16 2.9	1.986	1.537	30.2	21.0	50 W	23*	37*	6 10	1 40.07	+4 37.0	2.034	1.666	29.8	20.6	55 W	16*	46*
6 20	2 9.45	+19 2.4	1.956	1.560	31.1	21.1	52 W	27*	37*	6 20	2 1.02	+7 28.0	1.988	1.690	30.7	20.7	58 W	21*	48*
6 30	2 34.65	+21 46.6	1.925	1.588	31.8	21.1	55 W	32*	37*	6 30	2 21.16	+10 10.5	1.939	1.716	31.6	20.7	62 W	27*	48*
7 10	2 59.42	+24 14.5	1.891	1.618	32.5	21.1	59 W	38*	36*	7 10	2 40.42	+12 44.3	1.885	1.745	32.2	20.6	66 W	33*	48*
7 20	3 23.62	+26 25.9	1.854	1.652	33.1	21.1	62 W	44*	35*	7 20	2 58.68	+15 9.6	1.828	1.776	32.7	20.6	71 W	40*	47*
7 30	3 47.00	+28 21.0	1.813	1.688	33.5	21.1	66 W	50*	34*	7 30	3 15.74	+17 26.7	1.766	1.809	33.0	20.6	76 W	47*	46*
8 9	4 9.32	+30 0.6	1.768	1.726	33.7	21.1	71 W	56*	33*	8 9	3 31.37	+19 36.7	1.701	1.843	32.9	20.6	81 W	55*	44*
8 19	4 30.26	+31 26.3	1.719	1.766	33.7	21.1	76 W	62*	32*	8 19	3 45.26	+21 40.6	1.633	1.879	32.5	20.5	87 W	61*	42
8 29	4 49.44	+32 39.9	1.664	1.807	33.5	21.1	81 W	68*	31*	8 29	3 56.99	+23 39.9	1.563	1.916	31.7	20.4	94 W	67*	40
9 8	5 6.47	+33 43.7	1.606	1.849	33.0	21.0	87 W	74*	30*	9 8	4 6.12	+25 35.9	1.492	1.954	30.4	20.3	101 W	71	38
9 18	5 20.86	+34 40.1	1.545	1.892	32.0	21.0	93 W	79*	29*	9 18	4 12.10	+27 29.3	1.424	1.992	28.5	20.2	109 W	72	37
9 28	5 32.08	+35 31.1	1.483	1.936	30.6	20.9	101 W	81	28	9 28	4 14.33	+29 19.8	1.360	2.031	25.9	20.1	118 W	74	35
10 8	5 39.59	+36 18.2	1.421	1.980	28.6	20.8	109 W	81	28	10 8	4 12.33	+31 5.0	1.305	2.070	22.5	19.9	127 W	76	33
10 18	5 42.81	+37 1.3	1.362	2.025	25.9	20.7	117 W	82	27	10 13	4 9.64	+31 54.3	1.283	2.090	20.6	19.9	132 W	77	32
10 28	5 41.28	+37 38.2	1.311	2.069	22.5	20.5	127 W	83	26	10 18	4 5.82	+32 40.1	1.264	2.110	18.5	19.8	138 W	78	31
11 7	5 34.92	+38 4.2	1.273	2.113	18.4	20.4	138 W	83	26	10 23	4 0.94	+33 21.4	1.249	2.130	16.3	19.7	143 W	78	31
11 12	5 30.04	+38 11.0	1.259	2.135	16.2	20.3	143 W	83	26	10 28	3 55.10	+33 57.3	1.240	2.149	14.1	19.6	148 W	79	30
11 17	5 24.19	+38 12.4	1.251	2.157	13.8	20.2	149 W	83	26	11 2	3 48.48	+34 26.8	1.236	2.169	11.8	19.6	153 W	79	30
11 22	5 17.58	+38 7.7	1.248	2.179	11.5	20.2	154 W	83	26	11 7	3 41.28	+34 49.2	1.238	2.189	9.7	19.5	158 W	80	29
11 27	5 10.44	+37 56.5	1.251	2.201	9.3	20.1	159 W	83	26	11 12	3 33.74	+35 3.9	1.247	2.209	8.1	19.5	162 W	80	29
12 2	5 3.05	+37 38.6	1.261	2.223	7.4	20.1	163 W	83	26	11 17	3 26.16	+35 11.1	1.262	2.228	7.1	19.5	164 E	80	29
12 7	4 55.68	+37 14.4	1.277	2.244	6.4	20.1	165 W	82	27	11 22	3 18.81	+35 11.2	1.284	2.248	7.2	19.5	163 E	80	29
12 12	4 48.62	+36 44.7	1.300	2.266	6.5	20.1	165 E	82	27	11 27	3 11.95	+35 5.1	1.312	2.267	8.2	19.6	161 E	80	29
12 17	4 42.09	+36 10.4	1.330	2.287	7.6	20.3	162 E	81	28	12 2	3 5.78	+34 54.2	1.347	2.287	9.7	19.8	157 E	80	29
12 22	4 36.31	+35 33.1	1.366	2.308	9.2	20.4	158 E	81	28	12 7	3 0.47	+34 39.6	1.388	2.306	11.5	19.9	152 E	80	29
12 27	4 31.40	+34 54.0	1.409	2.329	11.0	20.6	153 E	80	29	12 12	2 56.10	+34 22.8	1.435	2.325	13.2	20.1	147 E	79	30
1 1	4 27.46	+34 14.5	1.458	2.349	12.9	20.7	148 E	79	30	12 17	2 52.76	+34 4.9	1.487	2.344	14.9	20.2	142 E	79	30
1 6	4 24.52	+33 35.7	1.512	2.370	14.6	20.9	143 E	79	30	12 22	2 50.44	+33 47.2	1.545	2.363	16.4	20.4	137 E	79	30
1 11	4 22.56	+32 58.5	1.572	2.390	16.2	21.0	137 E	78	31	12 27	2 49.14	+33 30.6	1.606	2.382	17.8	20.5	132 E	79	30
1 16	4 21.58	+32 23.4	1.636	2.411	17.6	21.2	132 E	77	32	1 1	2 48.81	+33 15.7	1.672	2.401	19.0	20.7	127 E	78	31
171819 2001 FZ₆										182974 2002 NT₂₃									
12 23	17 39.52	-28 31.4	2.291	1.321	5.4	21.1	7 W	—	1*	12 23	17 39.78	-18 35.2	3.217	2.244	3.1	20.7	7 W	1*	—
1 2	18 17.67	-28 47.2	2.266	1.303	6.6	21.2	9 W	—	3*	1 2	18 1.54	-18 52.1	3.166	2.210	5.0	20.7	11 W	4*	1*
1 12	18 56.35	-28 24.6	2.243	1.287	7.8	21.2	10 W	—	4*	1 12	18 23.72	-18 57.4	3.105	2.176	7.1	20.8	16 W	6*	6*
1 22	19 35.01	-27 23.2	2.222	1.273	8.9	21.2	12 W	—	5*	1 22	18 46.27	-18 50.6	3.035	2.142	9.3	20.8	21 W	8*	12*
2 1	20 13.14	-25 44.0	2.204	1.262	10.0	21.2	13 W	—	6*	2 1	19 9.12	-18 31.7	2.957	2.108	11.5	20.8	25 W	10*	17*
2 11	20 50.28	-23 30.2	2.189	1.254	11.0	21.2	14 W	—	8*	2 11	19 32.16	-18 0.7	2.871	2.073	13.7	20.8	30 W	11*	22*
2 21	21 26.19	-20 46.3	2.176	1.249	11.9	21.2	15 W	—	9*	2 21	19 55.35	-17 17.8	2.780	2.039	15.8	20.7	34 W	11*	27*
3 2	22 0.74	-17 37.7	2.167	1.247	12.9	21.2	16 W	—	10*	3 2	20 18.63	-16 23.5	2.683	2.005	18.0	20.7	39 W	12*	32*
3 12	22 33.93	-14 10.0	2.160	1.248	13.8	21.2	17 W	—	11*	3 12	20 41.93	-15 18.5	2.581	1.972	20.0	20.6	43 W	13*	36*
3 22	23 5.87	-10 29.1	2.156	1.252	14.7	21.3	19 W	—	12*	3 22	21 5.25	-14 3.8	2.477	1.940	22.1	20.6	47 W	13*	41*
4 1	23 36.75	-6 40.2	2.153	1.259	15.6	21.3	20 W	—	14*	4 1	21 28.54	-12 40.5	2.370	1.908	24.0	20.5	51 W	14*	45*
4 11	0 6.74	-2 48.5	2.152	1.269	16.5	21.4	21 W	—	15*	4 11	21 51.80	-11 9.9	2.262	1.877	25.9	20.4	55 W	15*	49*
4 21	0 36.08	+1 1.7	2.151	1.282	17.5	21.4	23 W	—	17*	4 21	22 15.04	-9 33.5	2.154	1.847	27.8	20.3	59 W	16*	52*
5 1	1 4.97	+4 46.6	2.150	1.297	18.5	21.5	24 W	1*	18*	5 1	22 38.25	-7 53.0	2.046	1.818	29.5	20.2	63 W	17*	56*
194386 2001 VG₅																			

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

19/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	19/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
182974 2002 NT₂₃										29451 1997 RM₁									
(continuation)										(continuation)									
9 23	h m	° ' "	''							4 1	h m	° ' "	''						
9 28	3 19.08	+ 1 16.2	0.836	1.671	27.2	18.0	130 W	46	63	4 1	22 44.52	-10 32.9	2.371	1.625	19.5	18.5	33 W	4*	27*
9 28	3 20.99	+ 0 35.0	0.815	1.677	25.3	17.9	134 W	46	63	4 11	23 9.66	- 7 45.5	2.348	1.645	20.9	18.6	36 W	5*	30*
10 3	3 21.81	- 0 7.5	0.798	1.683	23.2	17.8	139 W	45	64	4 21	23 33.79	- 4 57.9	2.323	1.669	22.3	18.6	39 W	7*	33*
10 8	3 21.55	- 0 49.9	0.783	1.691	21.0	17.7	143 W	44	65	5 1	23 56.95	- 2 12.7	2.296	1.695	23.6	18.7	42 W	8*	36*
10 13	3 20.23	- 1 30.8	0.773	1.699	18.7	17.6	147 W	43	66	5 11	0 19.18	+ 0 28.0	2.266	1.724	24.9	18.7	46 W	11*	39*
10 18	3 17.95	- 2 8.5	0.766	1.707	16.4	17.6	151 W	43	66	5 21	0 40.52	+ 3 2.3	2.232	1.755	26.1	18.7	50 W	14*	42*
10 23	3 14.85	- 2 41.2	0.763	1.717	14.3	17.5	155 W	42	67	5 31	1 0.98	+ 5 28.9	2.193	1.788	27.2	18.8	54 W	17*	45*
10 28	3 11.12	- 3 7.4	0.765	1.727	12.6	17.5	158 W	42	67	6 10	1 20.51	+ 7 46.7	2.149	1.823	28.1	18.8	58 W	21*	47*
11 2	3 6.98	- 3 25.6	0.772	1.737	11.5	17.4	160 W	42	67	6 20	1 39.07	+ 9 54.9	2.100	1.860	29.9	18.8	62 W	26*	49*
11 7	3 2.64	- 3 35.2	0.784	1.748	11.2	17.5	160 W	41	68	6 30	1 56.54	+11 52.8	2.045	1.897	29.6	18.8	67 W	32*	49*
11 17	2 54.34	+ 3 26.1	0.822	1.772	13.1	17.7	156 E	42	67	7 10	2 12.80	+13 40.3	1.985	1.936	30.0	18.8	72 W	39*	49*
11 27	2 47.91	- 2 40.5	0.880	1.797	16.6	18.0	149 E	42	67	7 20	2 27.66	+15 17.3	1.920	1.976	30.2	18.8	78 W	45*	49*
12 7	2 44.42	+ 1 24.9	0.956	1.825	20.3	18.3	140 E	44	65	7 30	2 40.86	+16 43.7	1.850	2.016	30.1	18.8	84 W	52*	47
12 12	2 43.92	- 0 38.4	0.999	1.839	21.9	18.5	136 E	44	65	8 9	2 52.10	+17 59.7	1.777	2.056	29.5	18.7	91 W	58*	46
12 17	2 44.27	+ 0 12.6	1.047	1.853	23.4	18.6	132 E	45	64	8 19	3 1.05	+19 5.4	1.703	2.097	28.6	18.6	98 W	63*	45
12 22	2 45.46	+ 1 7.0	1.098	1.868	24.7	18.8	128 E	46	63	8 29	3 7.28	+20 0.6	1.628	2.138	27.0	18.5	106 W	65	44
12 27	2 47.44	+ 2 4.1	1.152	1.883	25.8	19.0	124 E	47	62	9 8	3 10.42	+20 44.7	1.557	2.179	24.9	18.4	115 W	66	43
1 1	2 50.16	+ 3 2.8	1.208	1.899	26.7	19.1	120 E	48	61	9 18	3 10.11	+21 16.9	1.493	2.220	22.0	18.3	124 W	66	43
1 6	2 53.58	+ 4 2.7	1.268	1.914	27.5	19.3	116 E	49	60	9 28	3 6.20	+21 35.3	1.439	2.260	18.3	18.1	135 W	67	42
1 11	2 57.63	+ 5 3.1	1.329	1.930	28.1	19.4	112 E	50	59	10 8	2 58.90	+21 38.3	1.402	2.300	14.0	17.9	146 W	67	42
1 16	3 2.28	+ 6 3.5	1.393	1.947	28.6	19.5	109 E	51	58*	10 13	2 54.15	+21 33.7	1.391	2.320	11.6	17.9	152 W	67	42
118112 2665 T-3										307190 2002 EK₁₃₀									
12 23	17 40.26	-22 57.9	3.167	2.189	2.3	21.4	5 W	-	-	12 23	17 40.42	-26 39.8	2.483	1.508	3.9	19.1	6 W	-	-
1 2	18 3.12	-23 0.0	3.120	2.159	4.6	21.4	10 W	1*	3*	1 2	18 15.26	-26 3.6	2.482	1.513	5.1	19.2	8 W	-	2*
1 12	18 26.33	-22 49.3	3.063	2.128	6.8	21.5	15 W	3*	8*	1 12	18 49.32	-24 58.2	2.482	1.523	6.4	19.3	10 W	-	4*
1 22	18 49.81	-22 25.2	2.998	2.097	9.1	21.5	20 W	5*	13*	1 22	19 22.23	-23 26.3	2.486	1.539	7.9	19.4	12 W	-	6*
2 1	19 13.46	-21 47.6	2.924	2.066	11.3	21.5	24 W	6*	17*	2 1	19 53.74	-21 31.7	2.490	1.560	9.4	19.5	15 W	1*	9*
2 11	19 37.17	-20 56.3	2.843	2.035	13.5	21.5	29 W	7*	22*	2 11	20 23.68	-19 18.3	2.495	1.585	11.0	19.6	18 W	2*	12*
2 21	20 0.87	-19 51.6	2.756	2.004	15.7	21.5	33 W	9*	27*	2 21	20 52.00	-16 50.4	2.500	1.614	12.6	19.7	21 W	3*	15*
3 2	20 24.49	-18 33.9	2.664	1.974	17.8	21.4	38 W	10*	31*	3 2	21 18.72	-14 11.9	2.503	1.648	14.1	19.8	24 W	5*	18*
3 12	20 47.97	-17 3.8	2.567	1.944	19.9	21.4	42 W	10*	36*	3 12	21 43.89	-11 26.6	2.504	1.684	15.7	19.9	27 W	6*	21*
3 22	21 11.28	-15 22.1	2.468	1.914	22.0	21.3	46 W	11*	40*	3 22	22 7.61	- 8 37.5	2.502	1.724	17.2	20.0	31 W	8*	25*
4 1	21 34.39	-13 29.9	2.366	1.885	23.9	21.3	50 W	13*	44*	4 1	22 29.96	- 5 47.3	2.495	1.766	18.7	20.1	35 W	10*	28*
4 11	21 57.29	-11 28.4	2.263	1.857	25.8	21.2	54 W	14*	48*	4 11	22 51.04	- 2 58.1	2.483	1.810	20.2	20.2	38 W	12*	32*
4 21	22 19.99	- 9 18.7	2.159	1.830	27.6	21.1	58 W	15*	51*	4 21	23 10.91	+ 0 11.8	2.466	1.856	21.5	20.3	43 W	14*	36*
5 1	22 42.50	- 7 2.4	2.055	1.804	29.4	21.0	61 W	17*	54*	5 1	23 29.62	+ 2 30.2	2.442	1.903	22.8	20.3	47 W	17*	39*
5 11	23 4.83	+ 4 41.0	1.952	1.779	31.0	20.9	65 W	19*	57*	5 11	23 47.18	+ 5 6.8	2.411	1.952	23.9	20.4	52 W	20*	43*
5 21	23 27.01	- 2 16.2	1.850	1.756	32.5	20.8	69 W	22*	59*	5 21	0 3.60	+ 7 37.2	2.373	2.001	25.0	20.4	57 W	23*	46*
5 31	23 49.02	+ 0 10.0	1.751	1.734	33.8	20.7	72 W	25*	60*	5 31	0 18.82	+10 0.7	2.327	2.051	25.8	20.5	62 W	28*	48*
6 10	0 10.86	+ 2 35.8	1.653	1.715	35.0	20.6	76 W	29*	60*	6 10	0 32.75	+12 16.5	2.275	2.101	26.4	20.5	67 W	33*	49*
6 20	0 32.51	+ 4 59.1	1.558	1.697	36.1	20.5	79 W	34*	59*	6 20	0 45.28	+14 24.3	2.216	2.152	26.9	20.5	73 W	39*	49*
6 30	0 53.87	+ 7 17.7	1.466	1.682	36.9	20.4	83 W	39*	57	6 30	0 56.23	+16 23.4	2.152	2.202	27.0	20.5	79 W	45*	48*
7 10	1 14.86	+ 9 29.4	1.377	1.669	37.5	20.2	87 W	44*	55	7 10	1 5.37	+18 13.1	2.083	2.252	26.8	20.5	86 W	53*	46
7 20	1 35.29	+11 32.2	1.290	1.659	37.8	20.1	91 W	50*	52	7 20	1 12.45	+19 52.6	2.011	2.302	26.2	20.4	93 W	59*	44
7 30	1 54.90	+13 23.8	1.207	1.651	37.7	19.9	96 W	55*	51	7 30	1 17.15	+21 20.3	1.939	2.352	25.1	20.4	101 W	65*	43
8 9	2 13.36	+15 2.4	1.127	1.646	37.3	19.7	100 W	59*	49	8 9	1 19.20	+22 34.4	1.868	2.401	23.5	20.3	109 W	68	41
8 19	2 30.24	+16 26.3	1.050	1.644	36.3	19.6	106 W	61*	48	8 19	1 18.36	+23 32.1	1.804	2.450	21.4	20.2	118 W	69	40
8 29	2 44.96	+17 33.8	0.978	1.645	34.8	19.4	112 W	63	46	8 29	1 14.51	+24 9.9	1.748	2.498	18.6	20.1	128 W	69	40
9 8	2 56.92	+18 24.0	0.911	1.649	32.5	19.2	118 W	63	46	9 8	1 7.84	+24 24.5	1.707	2.546	15.4	19.9	138 W	69	40
9 18	3 5.41	+18 55.5	0.851	1.655	29.4	18.9	126 W	64	45	9 18	0 58.88	+24 13.3	1.685	2.592	11.9	19.8	148 W	69	40
9 28	3 9.79	+19 7.2	0.799	1.664	25.3	18.7	135 W	64	45	9 23	0 53.80	+23 57.9	1.682	2.615	10.1	19.8	153 W	69	40
10 8	3 9.75	+18 58.8	0.758	1.676	20.2	18.4	145 W	64	45	9 28	0 48.52	+23 36.2	1.686	2.638	8.5	19.7	157 W	69	40
10 18	3 5.44	+18 30.4	0.731	1.690	14.1	18.2	156 W	64	45	10 3	0 43.19	+23 8.9	1.696	2.661	7.1	19.7	161 W	68	41
10 23	3 1.96	+18 9.6	0.724	1.698	10.7	18.0	162 W	63	46	10 8	0 37.94	+22 36.8	1.713	2.684	6.3	19.7	163 E	68	41
10 28	2 57.87	+17 45.3	0.722	1.706	7.2	17.9	168 W	63	46	10 13	0 32.94	+22 0.8	1.737	2.706	6.3	19.7	163 E	67	42
11 2	2 53.41	+17 18.7	0.725	1.715	3.7	17.7	174 W	62	47	10 18	0 28.29	+21 22.1	1.768	2.728	6.9	19.8	161 E	66	43
11 7	2 48.83	+16 50.9	0.734</																

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

19/21		α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°											45°	-26°					
3255 Tholen																											
12	23	17 40.65	-38 53.0	3.979	3.046	5.1	19.2	16 W	—	6*																	
1	2	17 59.58	-38 52.0	3.940	3.026	6.0	19.3	19 W	—	10*																	
1	12	18 18.52	-38 46.2	3.886	3.005	7.3	19.3	23 W	—	15*																	
1	22	18 37.34	-38 35.6	3.816	2.982	8.9	19.3	28 W	—	21*																	
2	1	18 55.95	-38 20.5	3.732	2.959	10.6	19.3	33 W	—	26*																	
2	11	19 14.22	-38 1.2	3.634	2.935	12.2	19.3	39 W	—	32*																	
2	21	19 32.06	-37 38.4	3.523	2.909	13.9	19.2	45 W	—	37*																	
3	2	19 49.35	-37 13.0	3.400	2.883	15.5	19.2	51 W	—	43*																	
3	12	20 5.97	-36 45.8	3.267	2.856	17.0	19.2	57 W	—	48*																	
3	22	20 21.82	-36 17.9	3.126	2.827	18.4	19.1	64 W	—	54*																	
4	1	20 36.78	-35 50.8	2.976	2.798	19.6	19.0	70 W	1*	60*																	
4	11	20 50.70	-35 25.6	2.822	2.767	20.6	18.9	77 W	2*	66*																	
4	21	21 3.44	-35 4.0	2.663	2.736	21.4	18.8	83 W	3*	72*																	
5	1	21 14.78	-34 47.6	2.502	2.704	21.9	18.6	90 W	4*	78*																	
5	11	21 24.48	-34 37.8	2.342	2.670	22.0	18.4	98 W	5*	81*																	
5	21	21 32.27	-34 36.1	2.183	2.636	21.8	18.3	105 W	7*	81																	
5	31	21 37.76	-34 43.7	2.030	2.601	21.0	18.0	113 W	8*	81																	
6	10	21 40.54	-35 0.7	1.885	2.565	19.7	17.8	121 W	9*	81																	
6	15	21 40.77	-35 12.5	1.816	2.546	18.9	17.7	126 W	9*	81																	
6	20	21 40.15	-35 26.2	1.750	2.528	17.9	17.6	130 W	10*	81																	
6	25	21 38.61	-35 41.4	1.688	2.509	16.7	17.4	135 W	9	80																	
6	30	21 36.12	-35 57.2	1.629	2.490	15.4	17.3	139 W	9	80																	
7	5	21 32.67	-36 12.9	1.576	2.471	14.0	17.2	144 W	9	80																	
7	10	21 28.25	-36 27.5	1.527	2.451	12.5	17.0	148 W	9	80																	
7	15	21 22.88	-36 39.8	1.484	2.432	11.1	16.9	153 W	8	79																	
7	20	21 16.64	-36 48.5	1.446	2.412	9.7	16.7	156 W	8	79																	
7	25	21 9.65	-36 52.3	1.414	2.392	8.6	16.6	159 W	8	79																	
7	30	21 2.09	-36 49.9	1.389	2.372	8.0	16.6	161 W	8	79																	
8	4	20 54.18	-36 40.3	1.371	2.352	8.3	16.5	161 E	8	79																	
8	9	20 46.15	-36 22.9	1.358	2.331	9.2	16.5	158 E	9	80																	
8	14	20 38.26	-35 57.6	1.353	2.310	10.7	16.5	155 E	9	80																	
8	19	20 30.76	-35 24.4	1.353	2.290	12.5	16.6	151 E	10	81																	
8	24	20 23.87	-34 44.0	1.360	2.269	14.5	16.7	146 E	10	81																	
8	29	20 17.80	-33 57.2	1.372	2.248	16.5	16.7	141 E	11	82																	
9	3	20 12.68	-33 5.2	1.389	2.226	18.4	16.8	136 E	12	83																	
9	8	20 8.58	-32 9.0	1.411	2.205	20.2	16.9	131 E	13	84																	
9	13	20 5.55	-31 9.7	1.436	2.184	21.9	16.9	126 E	14	85																	
9	18	20 3.60	-30 8.1	1.466	2.162	23.5	17.0	121 E	15	86																	
9	28	20 2.86	-28 0.9	1.532	2.119	26.0	17.1	112 E	17	88																	
10	8	20 5.95	-25 51.4	1.605	2.076	27.9	17.3	103 E	19	90																	
10	18	20 12.35	-23 40.8	1.682	2.032	29.2	17.3	95 E	21	92*																	
10	28	20 21.57	-21 28.7	1.760	1.989	29.9	17.4	88 E	24	79*																	
11	7	20 33.12	-19 14.2	1.836	1.946	30.2	17.5	81 E	26	71*																	
11	17	20 46.62	-16 55.7	1.909	1.904	30.1	17.5	75 E	28	63*																	
11	27	21 1.75	-14 31.6	1.976	1.862	29.6	17.5	69 E	30*	55*																	
12	7	21 18.25	-12 0.6	2.038	1.821	28.9	17.5	63 E	32*	47*																	
12	17	21 35.93	-9 21.9	2.093	1.781	28.0	17.5	58 E	34*	39*																	
12	27	21 54.65	-6 34.6	2.141	1.743	26.9	17.5	53 E	35*	33*																	
1	6	22 14.32	-3 38.5	2.183	1.706	25.8	17.4	49 E	35*	26*																	
1	16	22 34.91	-0 33.8	2.218	1.672	24.5	17.4	45 E	34*	21*																	
137427 1999 TF₂₁₁																											
12	23	17 40.80	-49 52.0	2.842	2.013	12.7	19.7	27 W	—	11*																	
12	28	17 57.93	-50 3.6	2.876	2.052	12.7	19.8	27 W	—	12*																	
1	2	18 14.67	-50 9.3	2.908	2.090	12.7	19.9	28 W	—	13*																	
1	7	18 30.99	-50 9.8	2.938	2.128	12.8	19.9	29 W	—	14*																	
1	12	18 46.84	-50 5.7	2.966	2.166	12.9	20.0	30 W	—	15*																	
1	22	19 17.05	-49 45.9	3.013	2.239	13.4	20.1	32 W	—	17*																	
2	1	19 45.18	-49 14.6	3.050	2.311	14.1	20.2	35 W	—	20*																	
2	11	20 11.18	-48 35.9	3.074	2.380	14.9	20.4	38 W	—	24*																	
2	21	20 35.12	-47 53.6	3.086	2.448	15.8	20.5	42 W	—	27*																	
3	2	20 57.05	-47 11.3	3.085	2.515	16.7	20.5	47 W	—	31*																	
3	12	21 17.04	-46 31.8	3.072	2.579	17.6	20.6	52 W	—	35*																	
3	22	21 35.19	-45 57.8	3.046	2.641	18.5	20.7	57 W	—	40*																	
4	1	21 51.51	-45 31.9	3.009	2.702	19.2	20.7	63 W	—	45*																	
4	11	22 6.00	-45 16.1	2.961	2.761	19.8	20.8	69 W	—	50*																	
4	21	22 18.62	-45 12.5	2.904	2.818	20.2	20.8	75 W	—	55*																	
5	1	22 29.25	-45 22.9	2.840	2.874	20.3	20.8	82 W	—	60*																	
5	11	22 37.72	-45 48.3	2.770	2.928	20.2	20.8	89 W	—	65*																	
5	21	22 43.78	-46 29.7	2.699	2.980	19.7	20.7	96 W	—	68*																	
5	31	22 47.09	-47 26.6	2.629	3.031	19.0	20.7	104 W	—	69																	
6	10	22 47.26	-48 37.2	2.563	3.080	17.9	20.6	111 W	—	67																	
6	20	22 43.87	-49 58.0	2.506	3.128	16.5	20.6	119 W	—	66																	
6	30	22 36.51	-51 22.7	2.462	3.174	14.9	20.5	126 W	—	65																	
7	5	22 31.30	-52 3.8	2.446	3.196	14.1	20.5	130 W	—	64																	
7	10	22 25.07	-52 42.3	2.436	3.218	13.3	20.4	133 W	—	63																	
7	15	22 17.89	-53 17.1	2.430	3.240	12.6	20.4	136 W	—	63																	
7	20	22 9.84	-53 46.7	2.430	3.261	11.9	20.4	138 W	—	62																	
7	25	22 1.06	-54 9.8	2.436	3.282	11.4	20.4	140 W	—	62																	
137427 1999 TF₂₁₁ (continuation)																											
7	30	21 51.76	-54 25.4	2.448	3.303	11.1	20.4	141 W	—	62																	
8	4	21 42.17	-54 32.7	2.467	3.323	10.9	20.5	142 W	—	61																	
8	9	21 32.51	-54 31.4	2.492	3.343	11.0	20.5	141 W	—	61																	
8	14	21 23.03	-54 21.4	2.523	3.362	11.2	20.5	140 E	—	62																	
8	19	21 13.96	-54 3.0	2.561	3.381	11.6	20.6	138 E	—	62																	
8	24	21 5.51	-53 36.7	2.605	3.400	12.0	20.7	135 E	—	62																	
8	29	20 57.83	-53 3.6	2.655	3.419	12.6	20.7	132 E	—	63																	
9	3	20 51.04	-52 24.5	2.710	3.437	13.2	20.8	129 E	—	64																	
9	8	20 45.19	-51 40.5	2.770	3.454	13.7	20.9	126 E	—	64																	
9	13	20 40.31	-50 52.6	2.835	3.472	14.3	21.0	122 E	—	65																	
9	18	20 36.39	-50 1.8	2.905	3.489	14.8	21.1	118 E	—	66																	
9	23	20 33.40	-49 8.8	2.978	3.506	15.2	21.1	114 E	—	67																	

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

19/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	19/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
280366 2003 TE (continuation)										67367 2000 LY₂₇ (continuation)									
4 11	23 27.05	-24 42.0	2.186	1.602	25.1	19.7	43 W	—	32*	10 13	9 53.61	+11 13.4	1.251	1.031	50.7	19.4	53 W	41*	28*
4 21	23 58.49	-22 19.8	2.139	1.590	26.4	19.7	45 W	—	34*	10 18	10 11.40	+ 8 54.8	1.254	1.034	50.5	19.4	53 W	41*	29*
5 1	0 28.87	-19 47.8	2.099	1.583	27.5	19.6	46 W	—	36*	10 23	10 28.77	+ 6 34.4	1.258	1.038	50.3	19.4	53 W	40*	30*
5 11	0 58.09	-17 10.2	2.064	1.580	28.4	19.6	48 W	—	39*	10 28	10 45.74	+ 4 13.3	1.261	1.044	50.0	19.5	54 W	39*	31*
5 21	1 26.11	-14 31.2	2.033	1.582	29.3	19.6	50 W	—	42*	11 2	11 2.37	+ 1 52.5	1.265	1.050	49.7	19.5	54 W	39*	32*
5 31	1 52.88	-11 54.5	2.004	1.589	30.0	19.6	52 W	—	44*	11 7	11 18.71	+ 0 27.3	1.269	1.058	49.4	19.5	54 W	38*	33*
6 10	2 18.40	+ 9 23.2	1.977	1.601	30.7	19.6	54 W	—	47*	11 12	11 34.78	- 2 45.2	1.272	1.068	49.1	19.5	55 W	37*	35*
6 20	2 42.66	+ 6 59.5	1.949	1.616	31.4	19.6	56 W	3*	50*	11 17	11 50.63	- 5 0.5	1.275	1.078	48.8	19.5	55 W	35*	36*
6 30	3 5.65	+ 4 45.0	1.918	1.636	32.0	19.6	59 W	8*	52*	11 27	12 21.73	+ 9 20.8	1.279	1.102	48.3	19.6	56 W	33*	39*
7 10	3 27.31	+ 2 40.6	1.885	1.660	32.6	19.6	61 W	14*	54*	12 7	12 52.26	-13 24.0	1.279	1.129	47.8	19.6	58 W	30*	43*
7 20	3 47.62	+ 0 46.4	1.846	1.687	33.0	19.7	65 W	20*	56*	12 17	13 22.36	-17 7.3	1.274	1.158	47.4	19.6	60 W	27*	47*
7 30	4 6.46	+ 0 58.1	1.803	1.717	33.4	19.7	69 W	27*	57*	12 27	13 52.07	-20 28.2	1.264	1.189	47.1	19.7	62 W	24*	51*
8 9	4 23.70	+ 2 33.9	1.753	1.751	33.6	19.6	73 W	33*	58*	1 6	14 21.41	-23 25.2	1.248	1.222	46.9	19.7	65 W	21*	56*
8 19	4 39.19	+ 4 2.8	1.697	1.786	33.7	19.6	78 W	40*	58*	1 16	14 50.31	-25 57.8	1.225	1.254	46.7	19.7	68 W	19*	60*
8 29	4 52.67	+ 5 26.7	1.635	1.824	33.4	19.6	84 W	45*	58*	365435 2010 LA₁₀₄									
9 8	5 3.84	+ 6 48.5	1.568	1.864	32.7	19.5	90 W	50*	57*	12 23	17 41.72	-20 11.7	2.653	1.678	3.4	21.3	6 W	—	—
9 18	5 12.35	+ 8 11.4	1.498	1.906	31.5	19.4	97 W	53*	56	1 2	18 11.32	-20 39.8	2.630	1.665	5.0	21.3	9 W	1*	—
9 28	5 17.72	+ 9 38.8	1.427	1.948	29.7	19.3	105 W	55	54	1 12	18 41.25	-20 47.8	2.606	1.654	6.8	21.4	12 W	2*	4*
10 8	5 19.50	+11 14.6	1.358	1.992	27.2	19.2	114 W	56	53	1 22	19 11.31	-20 35.3	2.579	1.646	8.7	21.4	15 W	3*	7*
10 18	5 17.21	+13 1.3	1.297	2.036	23.7	19.0	125 W	58	51	2 1	19 41.29	-20 3.0	2.551	1.640	10.5	21.5	18 W	4*	11*
10 28	5 10.58	+15 0.1	1.247	2.081	19.3	18.8	136 W	60	49	426362 2013 ND₁₁									
11 7	4 59.76	+17 8.5	1.217	2.127	14.0	18.7	149 W	62	47	12 23	17 42.17	-27 34.4	2.581	1.607	3.8	21.2	6 W	—	—
11 12	4 52.99	+18 14.4	1.210	2.150	11.1	18.6	155 W	63	46	1 2	18 15.22	-27 55.5	2.554	1.589	5.3	21.3	9 W	—	3*
11 17	4 45.53	+19 20.0	1.210	2.173	8.0	18.5	162 W	64	45	1 12	18 48.76	-27 49.3	2.527	1.574	7.0	21.3	11 W	—	5*
11 22	4 37.59	+20 24.2	1.218	2.196	4.9	18.4	169 W	65	44	1 22	19 22.40	-27 15.2	2.500	1.563	8.6	21.3	14 W	—	8*
11 27	4 29.43	+21 25.9	1.233	2.218	1.8	18.2	176 W	66	43	2 1	19 55.77	-26 13.9	2.475	1.555	10.3	21.4	16 W	—	10*
12 2	4 21.33	+22 24.2	1.256	2.241	1.2	18.2	177 E	67	42	2 11	20 28.51	-24 47.2	2.452	1.551	11.9	21.4	19 W	—	13*
12 7	4 13.51	+23 18.5	1.287	2.264	4.2	18.5	170 E	68	41	2 21	21 0.37	-22 57.9	2.429	1.551	13.4	21.5	21 W	—	15*
12 12	4 6.23	+24 8.5	1.325	2.287	6.9	18.7	164 E	69	40	3 2	21 31.16	-20 49.3	2.408	1.554	14.9	21.5	24 W	—	17*
12 17	3 59.66	+24 54.3	1.371	2.310	9.5	18.9	157 E	70	39	66272 1999 JW₆									
12 22	3 53.96	+25 36.2	1.423	2.333	11.8	19.1	151 E	71	38	12 23	17 42.38	-36 11.7	2.593	1.653	8.0	20.8	13 W	—	4*
12 27	3 49.22	+26 14.7	1.481	2.355	13.9	19.3	145 E	71	38	1 2	18 11.30	-38 22.9	2.580	1.666	10.0	20.9	17 W	—	8*
1 1	3 45.49	+26 50.2	1.545	2.378	15.7	19.5	139 E	72	37	1 12	18 41.91	-40 16.1	2.556	1.677	12.2	21.0	21 W	—	12*
1 6	3 42.76	+27 23.4	1.614	2.400	17.2	19.7	134 E	72	37	1 22	19 14.24	-41 49.3	2.525	1.688	14.4	21.1	25 W	—	15*
1 11	3 41.02	+27 54.8	1.687	2.423	18.6	19.8	128 E	73	36	2 1	19 48.21	-43 0.9	2.486	1.697	16.5	21.1	29 W	—	18*
1 16	3 40.24	+28 24.7	1.764	2.445	19.7	20.0	123 E	73	36	2 11	20 23.60	-43 48.9	2.443	1.705	18.5	21.1	33 W	—	20*
12 23	17 41.39	-23 32.8	2.562	1.584	3.0	20.3	5 W	—	—	2 21	21 0.10	-44 11.7	2.396	1.711	20.3	21.2	37 W	—	22*
1 2	18 10.00	-23 10.1	2.553	1.587	5.2	20.5	8 W	—	1*	3 2	21 37.26	-44 8.4	2.347	1.717	22.0	21.2	40 W	—	24*
1 12	18 38.34	-22 27.9	2.535	1.587	7.5	20.6	12 W	2*	5*	3 12	22 14.58	-43 39.1	2.298	1.720	23.5	21.2	44 W	—	25*
1 22	19 6.35	-21 26.5	2.509	1.584	9.7	20.6	16 W	3*	9*	3 22	22 51.54	-42 44.8	2.250	1.723	24.8	21.2	46 W	—	26*
2 1	19 33.96	-20 6.5	2.474	1.579	11.9	20.7	19 W	5*	12*	4 1	23 27.69	-41 28.1	2.205	1.724	26.0	21.2	49 W	—	27*
2 11	20 1.14	-18 28.9	2.433	1.572	14.2	20.7	23 W	6*	16*	4 11	0 2.61	-39 52.4	2.162	1.723	27.0	21.2	51 W	—	28*
2 21	20 27.89	-16 34.5	2.384	1.562	16.4	20.7	26 W	7*	20*	4 21	0 36.08	-38 1.6	2.122	1.721	27.9	21.2	53 W	—	30*
3 2	20 54.24	-14 24.4	2.329	1.550	18.5	20.7	30 W	8*	23*	5 1	1 7.92	-36 0.5	2.085	1.718	28.7	21.1	55 W	—	32*
3 12	21 20.24	-11 59.8	2.269	1.535	20.7	20.7	33 W	10*	27*	5 11	1 38.07	-33 53.5	2.051	1.713	29.4	21.1	56 W	—	34*
3 22	21 46.01	+ 9 21.8	2.204	1.518	22.8	20.7	36 W	11*	30*	5 21	2 6.55	-31 44.8	2.017	1.707	30.1	21.1	58 W	—	37*
4 1	22 11.66	+ 6 31.6	2.134	1.499	24.9	20.7	39 W	12*	33*	5 31	2 33.40	-29 38.1	1.983	1.699	30.7	21.1	59 W	—	41*
4 11	22 37.34	+ 3 30.5	2.062	1.477	27.0	20.6	42 W	14*	35*	6 10	2 58.68	-27 36.3	1.948	1.690	31.4	21.0	60 W	—	44*
4 21	23 3.24	+ 0 19.9	1.988	1.453	29.0	20.6	45 W	15*	37*	6 20	3 22.50	-25 41.5	1.909	1.680	32.1	21.0	61 W	—	48*
5 1	23 29.58	+ 2 58.4	1.912	1.428	31.0	20.5	47 W	17*	39*	6 30	3 44.90	-23 55.4	1.865	1.669	32.8	20.9	63 W	—	52*
5 11	23 56.61	+ 6 22.6	1.837	1.401	33.0	20.4	49 W	19*	40*	7 10	4 5.94	-22 18.5	1.815	1.656	33.7	20.9	65 W	—	55*
5 21	0 24.63	+ 9 50.1	1.763	1.372	34.9	20.4	51 W	21*	41*	7 20	4 25.69	-20 50.9	1.758	1.642	34.6	20.8	66 W	—	59*
5 31	0 53.94	+13 17.8	1.691	1.341	36.8	20.3	52 W	24*	40*	7 30	4 44.13	-19 32.2	1.691	1.627	35.6	20.8	69 W	5*	62*
6 5	1 9.20	+15 0.4	1.656	1.326	37.8	20.2	53 W	25*	40*	8 9	5 1.27	-18 21.1	1.615	1.611	36.6	20.7	71 W	11*	65*
6 10	1 24.91	+16 41.4	1.621	1.310	38.7	20.2	54 W	27*	39*	8 19	5 17.07	-17 15.9	1.529	1.594	37.7	20.6	75 W	16*	68*
6 15	1 41.14	+18 20.1	1.588	1.294	39.6	20.1	54 W	28*	39*	8 29	5 31.40	-16 14.2	1.433	1.576	38.9	20.4	78 W	22*	71*
6 20	1 57.92	+19 55.7	1.556	1.277	40.6	20.1	55 W	30*	38*	9 3	5 37.97	-15 43.5	1.381	1.567	39.4	20.3	80 W	24*	72*
6 25	2 15.28	+21 27.4	1.525	1.261	41.5	20.0	55 W	32*	37*	9 8	5 44.12	-15 12.0	1.326	1.558	39.9	20.3	83 W	26*	74*
6 30	2 33.26	+22 54.0	1.495	1.245	42.3	20.0	56 W	33*	36*	9 13	5 49.80	-14 39.3	1.269	1.548	40.3	20.2	85 W	28*	75*
7 5	2 51.89	+24 14.6	1.467	1.228	43.2	19.9	56 W	35*	35*	9 18	5 54.96	-14 4.4	1.210	1.538	40.7	20.1	87 W	30*	75*
7 10	3 11.18	+25 28.0	1.441	1.212	44.0	19.9	56 W	36*	34*	9 23	5 59.55	-13 26.1	1.149	1.529	41.0	19.9	90 W	31*	76*
7 15	3 31.15	+26 33.1	1.415	1.196	44.8	19.9	56 W	38*	32*	9 28	6 3.49	-12 43.1	1.086	1.519	41.2	19.8	93 W	32*	76*
7 20	3 51.75	+27 28.7	1.392	1.180	45.6	19.8	56 W	39*	31*	10 3	6 6.70	-11 53.6	1.022	1.509	41.2	19.7	96 W	33	76*
7 25	4 12.96																		

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

19/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	19/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
66272 1999 JW₆ <i>(continuation)</i>										93038 2000 RL₁₀₄ <i>(continuation)</i>									
12 3	4 3.54	+33 47.2	0.411	1.388	9.8	16.5	166 E	79	30	4 21	20 32.93	+ 2 6.4	2.770	2.786	20.8	20.2	80 W	39*	60*
12 5	3 49.48	+36 25.8	0.415	1.385	13.2	16.7	161 E	81	28	5 1	20 39.58	+ 3 55.3	2.660	2.804	21.0	20.1	88 W	43*	60*
12 7	3 34.93	+38 53.0	0.421	1.381	16.6	16.8	156 E	84	25	5 11	20 44.43	+ 5 43.8	2.550	2.820	20.9	20.0	95 W	46*	58
12 9	3 20.09	+41 6.8	0.429	1.377	19.9	17.0	152 E	86	23	5 21	20 47.27	+ 7 29.6	2.441	2.836	20.4	19.9	102 W	50*	57
12 11	3 5.15	+43 6.4	0.440	1.374	23.0	17.1	147 E	88	21	5 31	20 47.92	+ 9 9.7	2.338	2.850	19.5	19.8	110 W	53*	55
12 13	2 50.35	+44 51.3	0.452	1.371	26.0	17.2	142 E	90	19	6 10	20 46.27	+10 40.3	2.244	2.864	18.2	19.7	118 W	56	53
12 15	2 35.89	+46 22.2	0.466	1.367	28.7	17.4	138 E	89	18	6 20	20 42.27	+11 57.2	2.161	2.877	16.6	19.6	126 W	57	52
12 17	2 21.95	+47 39.9	0.482	1.364	31.2	17.5	134 E	87	16	6 30	20 36.07	+12 55.4	2.093	2.889	14.8	19.4	134 W	58	51
12 19	2 8.69	+48 45.8	0.498	1.361	33.5	17.7	130 E	86	15	7 10	20 28.04	+13 30.4	2.044	2.900	12.9	19.3	140 W	59	50
12 21	1 56.20	+49 41.4	0.516	1.357	35.5	17.8	127 E	85	14	7 20	20 18.78	+13 38.8	2.016	2.910	11.5	19.2	145 W	59	50
12 23	1 44.57	+50 28.2	0.535	1.354	37.3	17.9	123 E	85	14	7 30	20 9.10	+13 19.6	2.012	2.919	10.8	19.2	147 E	58	51
12 25	1 33.83	+51 7.7	0.555	1.351	39.0	18.0	120 E	84	13	8 9	19 59.93	+12 34.9	2.031	2.927	11.2	19.3	146 E	58	51
12 27	1 23.98	+51 41.3	0.575	1.348	40.4	18.1	117 E	83	12*	8 14	19 55.78	+12 4.4	2.050	2.930	11.8	19.3	144 E	57	52
12 29	1 15.02	+52 10.1	0.596	1.345	41.7	18.2	115 E	83	11*	8 19	19 52.06	+11 29.4	2.075	2.934	12.5	19.4	141 E	56	53
12 31	1 6.89	+52 35.1	0.617	1.342	42.8	18.3	112 E	82	11*	8 24	19 48.83	+10 50.7	2.105	2.937	13.3	19.4	138 E	56	53
1 2	0 59.58	+52 57.3	0.638	1.339	43.8	18.4	110 E	82	10*	8 29	19 46.14	+10 9.4	2.140	2.940	14.1	19.5	135 E	55	54
1 4	0 53.02	+53 17.3	0.660	1.336	44.7	18.5	107 E	82	9*	9 3	19 44.05	+ 9 26.3	2.180	2.942	15.0	19.6	131 E	54	55
1 6	0 47.16	+53 35.8	0.681	1.334	45.4	18.6	105 E	81	8*	9 8	19 42.56	+ 8 42.2	2.225	2.945	15.8	19.6	127 E	54	55
1 8	0 41.96	+53 53.3	0.703	1.331	46.1	18.7	103 E	81	7*	9 13	19 41.68	+ 7 57.8	2.273	2.947	16.6	19.7	123 E	53	56
1 10	0 37.37	+54 10.2	0.724	1.328	46.6	18.8	101 E	81	6*	9 18	19 41.42	+ 7 13.8	2.326	2.949	17.3	19.8	119 E	52	57
1 12	0 33.33	+54 26.7	0.746	1.326	47.1	18.9	99 E	81*	3*	9 28	19 42.70	+ 5 49.4	2.439	2.952	18.5	19.9	111 E	51	58
1 14	0 29.81	+54 43.3	0.767	1.323	47.5	18.9	97 E	80*	3*	10 8	19 46.22	+ 4 32.8	2.561	2.954	19.2	20.1	103 E	50	59
1 16	0 26.75	+55 0.0	0.788	1.321	47.8	19.0	96 E	79*	2*	10 18	19 51.75	+ 3 26.1	2.689	2.955	19.6	20.2	95 E	48	60*
98302 2000 SX₂₃₇										208565 2002 CT₁₁									
12 23	17 43.50	-23 48.1	2.711	1.732	2.5	18.6	4 W	—	—	12 23	17 45.08	-53 31.4	2.004	1.256	23.2	20.2	30 W	—	12*
1 2	18 13.03	-24 13.5	2.680	1.711	4.5	18.7	8 W	—	1*	12 28	18 15.08	-53 17.6	1.961	1.214	23.9	20.1	30 W	—	11*
1 12	18 43.08	-24 18.2	2.646	1.692	6.5	18.7	11 W	—	5*	1 2	18 45.71	-52 36.8	1.920	1.171	24.5	20.0	30 W	—	10*
1 22	19 13.45	-24 1.4	2.610	1.675	8.5	18.8	14 W	—	8*	1 7	19 16.34	-51 26.7	1.881	1.126	25.0	19.9	29 E	—	10*
2 1	19 43.88	-23 23.2	2.572	1.661	10.4	18.8	18 W	1*	12*	1 12	19 46.34	-49 45.9	1.843	1.080	25.4	19.8	28 E	—	11*
2 11	20 14.16	-22 24.4	2.534	1.649	12.3	18.8	21 W	1*	15*	1 17	20 15.18	-47 34.2	1.808	1.034	25.6	19.6	27 E	—	11*
2 21	20 44.08	-21 6.4	2.495	1.640	14.1	18.9	24 W	1*	18*	1 22	20 42.48	-44 52.1	1.776	0.986	25.6	19.5	26 E	—	11*
3 2	21 13.49	-19 31.2	2.456	1.634	15.9	18.9	27 W	2*	21*	1 27	21 8.02	-41 41.0	1.746	0.937	25.4	19.3	24 E	—	11*
3 12	21 42.25	-17 41.3	2.416	1.631	17.7	18.9	30 W	2*	24*	2 1	21 31.72	-38 2.6	1.719	0.888	24.7	19.2	22 E	—	11*
3 22	20 10.29	-15 39.4	2.377	1.631	19.3	18.9	33 W	2*	27*	2 6	21 53.62	-33 59.1	1.695	0.839	23.7	19.0	20 E	—	10*
4 1	22 37.58	-13 28.5	2.337	1.634	20.9	18.9	36 W	3*	30*	2 11	22 13.86	-29 32.3	1.673	0.791	22.2	18.8	18 E	—	9*
4 11	23 4.09	-11 11.5	2.297	1.640	22.5	19.0	39 W	3*	33*	2 16	22 32.62	-24 44.2	1.653	0.744	20.1	18.6	15 E	—	9*
4 21	23 29.85	- 8 51.3	2.256	1.648	24.0	19.0	42 W	4*	36*	2 21	22 50.11	-19 36.8	1.634	0.700	17.4	18.3	12 E	—	6*
5 1	23 54.85	- 6 30.8	2.214	1.659	25.4	19.0	45 W	6*	39*	2 26	23 6.57	-14 12.0	1.616	0.661	14.5	18.1	10 E	—	4*
5 11	0 19.10	- 4 12.4	2.170	1.673	26.7	19.0	48 W	7*	42*	3 2	23 22.26	- 8 32.0	1.595	0.627	12.0	17.8	8 E	—	1*
5 21	0 42.64	- 1 58.4	2.125	1.690	27.9	19.0	51 W	10*	45*	3 7	23 37.47	- 2 39.5	1.573	0.601	11.9	17.7	7 E	—	1*
5 31	1 5.44	+ 0 9.0	2.077	1.708	29.0	19.0	55 W	12*	48*	3 12	23 52.56	+ 3 22.0	1.546	0.585	15.2	17.7	9 E	—	3*
6 10	1 27.46	+ 2 8.2	2.027	1.729	30.0	19.0	59 W	16*	50*	3 17	0 7.97	+ 9 28.4	1.516	0.581	20.8	17.8	12 E	—	5*
6 20	1 48.67	+ 3 57.8	1.973	1.752	30.9	19.0	62 W	20*	52*	3 22	0 24.20	+15 35.0	1.482	0.588	22.7	18.0	16 E	—	8*
6 30	2 8.95	+ 5 36.5	1.915	1.776	31.7	19.0	67 W	25*	54*	3 27	0 41.87	+21 37.0	1.446	0.606	33.4	18.2	20 E	—	11*
7 10	2 28.20	+ 7 3.7	1.854	1.802	32.2	19.0	71 W	31*	54*	4 1	1 1.67	+27 29.2	1.410	0.634	38.8	18.4	23 E	—	14*
7 20	2 46.26	+ 8 18.9	1.789	1.829	32.6	18.9	76 W	37*	55*	4 6	1 24.39	+33 5.9	1.377	0.669	43.2	18.6	27 E	—	17*
7 30	3 2.89	+ 9 21.7	1.720	1.858	32.7	18.9	81 W	43*	54*	4 11	1 50.88	+38 19.9	1.349	0.710	46.5	18.8	31 E	—	21*
8 9	3 17.85	+10 12.4	1.649	1.887	32.4	18.8	87 W	48*	54	4 13	2 2.73	+40 17.2	1.339	0.727	47.5	18.8	32 E	—	22*
8 19	3 30.81	+10 51.2	1.575	1.917	31.8	18.8	93 W	53*	53	4 15	2 15.37	+42 8.7	1.331	0.745	48.3	18.9	34 E	—	24*
8 29	3 41.39	+11 18.8	1.499	1.948	30.7	18.6	100 W	56*	53	4 17	2 28.83	+43 53.5	1.324	0.764	49.0	19.0	35 E	—	25*
9 8	3 49.16	+11 36.1	1.425	1.979	29.0	18.5	108 W	57	52	4 19	2 43.14	+45 31.0	1.318	0.782	49.5	19.0	36 E	—	27*
9 18	3 53.70	+11 44.2	1.354	2.011	26.7	18.4	116 W	57	52	4 21	2 58.31	+47 0.2	1.314	0.801	49.8	19.1	38 E	—	28*
9 28	3 54.57	+11 44.4	1.290	2.042	23.5	18.2	126 W	57	52	4 23	3 14.30	+48 20.4	1.311	0.821	50.1	19.1	39 E	—	30*
10 8	3 51.57	+11 38.5	1.236	2.074	19.6	18.0	136 W	57	52	4 25	3 31.07	+49 30.6	1.310	0.840	50.2	19.2	40 E	—	31*
10 18	3 44.79	+11 28.4	1.198	2.106	14.8	17.8	147 W	56	53	4 27	3 48.53	+50 30.2	1.310	0.860	50.2	19.2	41 E	—	33*
10 28	3 34.84	+11 16.9	1.180	2.138	9.5	17.6	159 W	56	53	4 29	4 6.56	+51 18.6	1.312	0.879	50.1	19.3	42 E	—	34*
11 2	3 29.04	+11 11.7	1.179	2.153	6.8	17.5	165 W	56	53	5 1	4 25.01	+51 55.3	1.316	0.899	49.9	19.3	43 E		

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

19/20	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	19/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	
208565 2002 CT₁₁										5587 1990 SB										
(continuation)										(continuation)										
5 29	8 2.62	+44 13.0	1.517	1.163	41.9	20.0	50 E	42*	14*	3 2	22 25.93	-3 7.8	2.262	1.287	5.9	16.6	8 W	1*	-	
5 31	8 12.80	+43 3.4	1.540	1.180	41.2	20.0	50 E	42*	15*	3 12	22 58.09	-0 55.5	2.325	1.349	6.0	16.8	8 W	1*	-	
6 2	8 22.38	+41 52.8	1.564	1.198	40.4	20.1	50 E	41*	17*	3 22	23 28.27	+1 12.0	2.389	1.415	6.6	16.9	9 W	1*	2*	
6 4	8 31.39	+40 41.6	1.588	1.215	39.7	20.1	50 E	41*	18*	4 1	23 56.65	+3 12.1	2.450	1.484	7.7	17.2	11 W	1*	5*	
6 6	8 39.88	+39 30.2	1.613	1.232	39.0	20.1	50 E	40*	19*	4 11	0 24.41	+5 3.1	2.507	1.554	9.0	17.4	14 W	1*	8*	
6 8	8 47.90	+38 19.0	1.639	1.249	38.2	20.2	50 E	39*	20*	4 21	0 48.73	+6 43.9	2.558	1.626	10.6	17.6	17 W	2*	11*	
6 10	8 55.49	+37 8.0	1.665	1.265	37.5	20.2	49 E	38*	21*	5 1	1 12.72	+8 13.8	2.601	1.698	12.2	17.8	21 W	2*	15*	
6 15	9 12.83	+34 13.3	1.733	1.306	35.7	20.3	49 E	36*	23*	5 11	1 35.50	+9 32.3	2.635	1.770	13.9	17.9	25 W	4*	19*	
6 20	9 28.21	+31 23.9	1.803	1.345	33.9	20.4	48 E	33*	25*	5 21	1 57.13	+10 39.0	2.658	1.842	15.5	18.1	29 W	5*	23*	
6 25	9 42.03	+28 40.9	1.873	1.382	32.1	20.5	46 E	30*	27*	5 31	2 17.66	+11 33.8	2.671	1.913	17.1	18.2	34 W	8*	27*	
6 30	9 54.62	+26 4.6	1.945	1.419	30.4	20.6	45 E	27*	28*	6 10	2 37.10	+12 16.5	2.672	1.983	18.6	18.4	39 W	11*	31*	
7 5	10 6.19	+23 35.1	2.016	1.453	28.6	20.7	43 E	25*	28*	6 20	2 55.43	+12 47.2	2.661	2.052	20.0	18.5	44 W	15*	35*	
7 10	10 16.96	+21 12.1	2.087	1.487	26.9	20.8	41 E	22*	28*	6 30	3 12.60	+13 5.8	2.638	2.119	21.3	18.6	49 W	20*	39*	
7 15	10 27.07	+18 55.2	2.157	1.519	25.3	20.8	40 E	19*	28*	7 10	3 28.53	+13 12.4	2.603	2.185	22.4	18.7	55 W	25*	42*	
7 20	10 36.64	+16 43.9	2.225	1.550	23.6	20.9	38 E	17*	27*	7 20	3 43.13	+13 6.9	2.558	2.250	23.3	18.7	61 W	31*	45*	
7 25	10 45.77	+14 37.8	2.291	1.580	22.0	21.0	36 E	14*	27*	7 30	3 56.24	+12 49.5	2.502	2.314	23.9	18.7	68 W	38*	48*	
7 30	10 54.53	+12 36.3	2.355	1.608	20.4	21.0	33 E	12*	25*	8 9	4 7.70	+12 20.1	2.437	2.375	24.3	18.7	74 W	44*	50*	
8 4	11 2.98	+10 39.1	2.416	1.635	18.8	21.0	31 E	10*	24*	8 19	4 17.32	+11 39.0	2.365	2.436	24.3	18.7	82 W	49*	52*	
8 9	11 11.18	+8 45.7	2.474	1.661	17.2	21.1	29 E	8*	22*	8 29	4 24.86	+10 46.2	2.287	2.494	23.9	18.7	90 W	53*	53*	
8 14	11 19.17	+6 55.6	2.529	1.685	15.6	21.1	27 E	6*	20*	9 8	4 30.07	+9 42.3	2.208	2.552	23.0	18.6	98 W	54*	54*	
8 19	11 26.99	+5 8.5	2.580	1.709	14.1	21.1	24 E	4*	18*	9 18	4 32.72	+8 28.0	2.130	2.607	21.6	18.6	107 W	53	56	
8 24	11 34.66	+3 24.0	2.628	1.731	12.5	21.1	22 E	3*	16*	9 28	4 32.59	+7 4.7	2.058	2.662	19.7	18.5	117 W	52	57	
8 29	11 42.22	+1 41.9	2.672	1.752	11.0	21.1	19 E	1*	13*	10 8	4 29.58	+5 34.9	1.997	2.714	17.2	18.4	127 W	51	58	
9 3	11 49.68	+0 1.8	2.712	1.771	9.6	21.1	17 E	—	11*	10 18	4 23.78	+4 2.2	1.952	2.765	14.2	18.3	137 W	49	60	
9 8	11 57.06	+31 36.5	2.747	1.790	8.1	21.1	15 E	—	9*	10 23	4 19.92	+3 16.3	1.937	2.790	12.6	18.2	142 W	48	61	
9 13	12 4.38	+3 13.3	2.779	1.807	6.7	21.1	12 E	—	6*	10 28	4 15.52	+2 31.7	1.928	2.815	11.0	18.2	147 W	48	61	
9 18	12 11.66	+4 48.7	2.805	1.824	5.4	21.1	10 E	—	3*	11 2	4 10.66	+1 49.3	1.925	2.839	9.5	18.1	152 W	47	62	
9 23	12 18.91	+6 23.2	2.828	1.839	4.3	21.1	8 E	—	1*	11 7	4 5.47	+1 9.7	1.930	2.863	8.1	18.1	156 W	46	63	
9 28	12 26.14	+7 56.6	2.846	1.853	3.4	21.0	6 E	—	—	11 12	4 0.04	+0 33.8	1.941	2.886	7.1	18.1	159 W	46	63	
10 3	12 33.36	+9 29.4	2.859	1.866	3.0	21.0	6 W	—	—	11 17	3 54.52	+0 2.1	1.960	2.909	6.6	18.1	160 W	45	64	
10 8	12 40.58	+11 1.6	2.868	1.877	3.3	21.1	6 W	—	—	11 27	3 43.74	+0 46.4	2.021	2.955	7.5	18.2	157 E	44	65	
10 13	12 47.82	+12 33.5	2.871	1.888	4.2	21.1	8 W	—	2*	12 7	3 34.10	+1 13.7	2.110	2.998	9.7	18.4	149 E	44	65	
10 18	12 55.08	+14 5.2	2.871	1.898	5.3	21.2	10 W	—	4*	12 17	3 26.29	+1 20.2	2.226	3.040	12.2	18.7	139 E	44	65	
10 23	13 2.37	+15 36.8	2.865	1.906	6.5	21.3	12 W	—	6*	12 27	3 20.77	+1 8.1	2.363	3.081	14.3	18.9	129 E	44	65	
10 28	13 9.70	+17 8.6	2.855	1.914	7.8	21.3	15 W	—	1*	9*	3 17.65	+0 41.0	2.517	3.121	15.9	19.1	119 E	44	65	
11 2	13 17.07	+18 40.5	2.841	1.920	9.1	21.4	18 W	—	3*	1 6	3 16.87	+0 2.3	2.685	3.159	17.0	19.3	110 E	45	64	
11 7	13 24.50	+20 12.9	2.822	1.925	10.4	21.4	20 W	—	4*	1 16										
11 12	13 31.99	+21 45.9	2.799	1.929	11.7	21.5	23 W	—	6*	16*										
322775 2001 HA₈										8651 Alineraynal										
12 23	17 45.10	+22 0.7	2.179	1.200	3.5	19.6	4 W	—	—	12 23	17 46.24	+23 33.3	3.347	2.366	1.5	19.2	4 W	—	—	
12 28	18 5.75	+22 32.7	2.160	1.182	3.7	19.6	4 W	—	—	1 2	18 7.40	+23 31.0	3.302	2.336	3.8	19.3	9 W	—	2*	
1 2	18 26.87	+22 55.1	2.142	1.165	3.9	19.5	5 W	—	—	1 12	18 28.84	+23 17.7	3.244	2.305	6.1	19.3	14 W	2*	7*	
1 7	18 48.36	+23 7.0	2.128	1.151	4.1	19.5	5 W	—	—	1 22	18 50.48	+22 53.0	3.176	2.273	8.3	19.4	20 W	4*	13*	
1 12	19 10.11	+23 8.0	2.116	1.140	4.2	19.5	5 W	—	—	2 1	19 12.22	+22 16.8	3.098	2.241	10.6	19.4	25 W	6*	18*	
1 17	19 32.02	+22 57.8	2.108	1.131	4.4	19.5	5 W	—	—	2 11	19 33.99	+21 29.0	3.011	2.208	12.8	19.4	30 W	7*	23*	
1 22	19 53.97	+22 36.3	2.102	1.126	4.6	19.5	5 W	—	—	2 21	19 55.70	+20 29.8	2.916	2.176	15.0	19.3	35 W	9*	28*	
1 27	20 15.84	+22 3.8	2.100	1.124	4.8	19.5	5 W	—	—	3 2	20 17.30	+19 19.5	2.814	2.143	17.1	19.3	39 W	10*	33*	
2 1	20 37.51	+21 20.7	2.101	1.125	5.0	19.5	6 W	—	—	3 12	20 38.72	+17 58.7	2.705	2.110	19.2	19.3	44 W	11*	38*	
2 6	20 58.87	+20 27.6	2.104	1.129	5.2	19.5	6 W	—	—	3 22	20 59.94	+16 27.9	2.592	2.077	21.2	19.2	49 W	12*	43*	
2 11	21 19.84	+19 25.7	2.111	1.136	5.4	19.5	6 W	—	—	4 1	21 20.91	+14 48.0	2.475	2.045	23.1	19.1	53 W	13*	47*	
2 16	21 40.35	+18 15.7	2.121	1.145	5.7	19.6	7 W	—	—	4 11	21 41.62	+12 59.8	2.356	2.012	25.0	19.0	58 W	15*	52*	
2 21	22 0.34	+16 59.0	2.134	1.158	5.9	19.6	7 W	—	—	4 21	22 2.06	+11 4.2	2.234	1.980	26.7	18.9	62 W	17*	56*	
2 26	22 19.79	+15 36.6	2.149	1.174	6.1	19.7	7 W	—	—	5 1	22 22.22	+9 2.3	2.112	1.948	28.4	18.8	67 W	19*	60*	
3 2	22 38.66	+14 9.9	2.166	1.191	6.4	19.7	8 W	—	—	5 11	22 42.09	+6 55.3	1.990	1.918	29.9	18.7	71 W	21*	63*	
3 7	22 56.94	+12 40.0	2.186	1.212	6.6	19.8	8 W	—	—	5 21	23 1.68	+4 44.2	1.869	1.887	31.3	18.6	75 W	24*	65*	
3 12	23 14.65	+11 7.9	2.207	1.234	6.9	19.9	9 W	—	—	5 31	23 20.95	+2 30.7	1.749	1.858	32.5	18.4	80 W	27*	65*	
3 17	23 31.79	+9 34.7	2.231	1.258	7.2	20.0	9 W	—	1*	6 10	23 39.86	+0 16.0	1.632	1.831	33.5	18.3	84 W	31*	64*	
3 22	23 48.40	+8 1.3	2.255	1.284	7.5	20.0	10 W	—	2*	6 20	23 58.37	+1 58.4	1.519	1.804	34.3	18.1	88 W	36*	62	
3 27	0 4.48	+6 28.4	2.281	1.311	7.8	20.1	10 W	—	2*	6 30	0 16.34	+4 10.4	1.408	1.779	34.8	17.9	93 W	41*	60	
4 1	0 20.07	+4 56.8	2.308	1.340	8.1	20.2	11 W	—	3*	7 10	0 33.65	+6 18.4	1.302	1.756	35.0	17.7	98 W	46*	58	
4 11	0 49.86	+1 59.6	2.362	1.401	8.9	20.4	13 W	—	5*	7 20	0 50.09	+8 20.3	1.201	1.735	34.8	17.5	103 W	51*	56	
4 21	1 17.98	+0 46.8	2.416	1.465	9.9	20.6	15 W	—	7*	7 30	1 5.32	+10 13.6	1.105	1.716	34.2	17.3	108 W	55*	54	
5 1	1 44.62	+3 20.1	2.468	1.532	11.0	20.8	17 W	—	10*	8 9	1 18.99	+11 56.0	1.015	1.700	33.1	17.1	114 W	57	52	
5 11	2 9.93	+5 39.0	2.516	1.600	12.2	21.0	20 W	—	13*	8 19	1 30.59	+13 24.7	0.931	1.685	31.3	16.8				

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

19/21		α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45° – 26°			19/21		α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45° – 26°	
8651 Alineraynal										163693 Atira												
<i>(continuation)</i>										<i>(continuation)</i>												
12 27	1 49.17	+13 1.4	1.106	1.759	30.6	17.3	115 E	58	51	10 23	11 11.21	- 2 8.4	0.831	0.652	83.3	17.9	41 W	27*	25*			
1 6	2 2.97	+13 54.4	1.216	1.782	31.7	17.5	108 E	59	50*	10 28	11 25.66	+ 0 30.7	0.869	0.686	78.5	17.9	43 W	30*	25*			
1 16	2 18.57	+14 56.1	1.332	1.807	32.2	17.8	102 E	60	48*	11 2	11 41.44	+ 0 46.7	0.902	0.719	74.5	18.0	44 W	33*	24*			
163693 Atira										163693 Atira												
12 23	17 46.83	-19 7.5	1.665	0.693	8.0	17.2	6 W	—	—	11 7	11 58.12	+ 1 46.8	0.932	0.752	71.2	18.0	46 W	35*	24*			
12 28	18 13.97	-20 42.1	1.637	0.659	5.4	16.9	4 W	—	—	11 12	12 15.39	+ 2 32.3	0.957	0.783	68.5	18.1	47 W	36*	23*			
1 2	18 42.73	-22 4.5	1.608	0.625	2.1	16.6	1 W	—	—	11 17	12 33.04	+ 3 5.7	0.978	0.812	66.3	18.1	49 W	38*	23*			
1 7	19 13.20	-23 10.5	1.575	0.593	2.0	16.4	1 E	—	—	11 22	12 50.94	+ 3 29.2	0.996	0.839	64.5	18.2	50 W	39*	23*			
1 12	19 45.37	-23 55.0	1.539	0.563	7.0	16.5	4 E	—	—	11 27	13 9.00	+ 3 44.4	1.011	0.864	62.9	18.2	51 W	41*	23*			
1 17	20 19.09	-24 11.9	1.500	0.537	13.0	16.6	7 E	—	1*	12 2	13 27.16	+ 3 52.7	1.023	0.886	61.7	18.3	52 W	42*	23*			
1 22	20 54.02	-23 55.0	1.455	0.517	19.8	16.7	10 E	—	4*	12 7	13 45.41	+ 3 55.5	1.031	0.906	60.7	18.3	53 W	42*	23*			
1 27	21 29.59	-22 58.9	1.407	0.505	27.2	16.8	14 E	—	7*	12 12	14 3.71	+ 3 53.6	1.038	0.924	59.9	18.4	54 W	43*	24*			
2 1	22 5.10	-21 20.0	1.354	0.503	34.9	16.9	17 E	2*	11*	12 17	14 22.07	+ 3 48.0	1.042	0.939	59.3	18.4	55 W	43*	24*			
2 6	22 39.84	-18 57.6	1.300	0.509	42.4	17.1	20 E	5*	13*	12 22	14 40.48	+ 3 39.3	1.045	0.952	58.8	18.4	56 W	44*	25*			
2 11	23 13.25	-15 54.3	1.247	0.524	49.1	17.2	24 E	9*	16*	12 27	14 58.94	+ 3 28.2	1.045	0.963	58.5	18.4	57 W	44*	26*			
2 16	23 45.01	-12 15.5	1.196	0.546	54.8	17.4	27 E	12*	18*	1 1	15 17.48	+ 3 14.9	1.044	0.971	58.3	18.4	57 W	44*	27*			
2 21	0 15.08	+ 8 8.2	1.151	0.574	59.2	17.5	30 E	16*	20*	1 6	15 36.14	+ 2 59.9	1.042	0.976	58.2	18.4	58 W	44*	28*			
2 26	0 43.58	+ 3 40.3	1.112	0.605	62.4	17.7	33 E	20*	21*	1 11	15 54.92	+ 2 43.3	1.038	0.979	58.3	18.4	58 W	43*	30*			
3 2	1 10.74	+ 0 59.7	1.082	0.638	64.5	17.8	36 E	24*	21*	1 16	16 13.87	+ 2 25.4	1.033	0.980	58.4	18.4	58 W	43*	31*			
										216265 2006 WD₆₀												
3 7	1 36.81	+ 5 43.8	1.059	0.672	65.6	17.9	38 E	27*	21*	12 23	17 46.89	-19 59.4	2.840	1.862	2.6	21.3	5 W	—	—			
3 12	2 2.08	+10 24.6	1.043	0.706	66.0	18.0	40 E	30*	21*	1 2	18 13.72	-20 0.2	2.797	1.830	4.4	21.3	8 W	1*	—			
3 17	2 26.80	+14 55.8	1.035	0.739	65.8	18.0	43 E	33*	21*	1 12	18 41.07	-19 43.5	2.750	1.798	6.4	21.4	12 W	3*	3*			
3 22	2 51.18	+19 11.9	1.033	0.771	65.2	18.1	45 E	36*	20*	1 22	19 8.82	-19 8.8	2.699	1.769	8.4	21.4	15 W	5*	7*			
3 27	3 15.41	+23 9.1	1.036	0.800	64.3	18.2	46 E	38*	19*	2 1	19 36.82	-18 15.7	2.645	1.740	10.4	21.4	19 W	6*	11*			
4 1	3 39.62	+26 44.6	1.043	0.828	63.3	18.2	48 E	40*	19*	2 11	20 4.91	-17 4.8	2.590	1.714	12.4	21.4	22 W	7*	15*			
4 6	4 3.90	+29 56.7	1.053	0.854	62.3	18.3	49 E	42*	18*	2 21	20 32.98	-15 36.7	2.533	1.690	14.3	21.4	25 W	7*	18*			
4 11	4 28.30	+32 44.4	1.066	0.877	61.2	18.3	50 E	43*	17*	3 2	21 0.93	-13 52.9	2.476	1.668	16.2	21.4	28 W	8*	22*			
4 16	4 52.83	+35 7.6	1.080	0.899	60.1	18.4	51 E	44*	17*	3 12	21 28.65	-11 55.1	2.419	1.649	18.1	21.3	31 W	8*	25*			
4 21	5 17.47	+37 6.6	1.094	0.917	59.2	18.4	52 E	45*	16*	3 22	21 56.12	- 9 45.5	2.363	1.633	19.9	21.3	34 W	9*	28*			
4 26	5 42.15	+38 42.1	1.109	0.934	58.3	18.5	52 E	45*	16*	4 1	22 23.29	- 7 26.5	2.308	1.620	21.6	21.3	37 W	10*	30*			
5 1	6 6.78	+39 54.8	1.123	0.947	57.5	18.5	52 E	45*	16*	4 11	22 50.14	- 5 1.0	2.254	1.610	23.2	21.3	39 W	10*	33*			
5 6	6 31.23	+40 45.9	1.137	0.959	56.8	18.5	53 E	45*	16*	4 21	23 16.70	- 2 31.7	2.202	1.604	24.8	21.3	42 W	11*	36*			
5 11	6 55.37	+41 16.3	1.149	0.968	56.2	18.6	53 E	45*	16*	5 1	23 42.96	- 0 1.5	2.151	1.601	26.3	21.3	45 W	12*	38*			
5 16	7 19.09	+41 27.4	1.159	0.974	55.8	18.6	53 E	45*	17*	5 11	0 8.91	+ 2 26.6	2.100	1.601	27.7	21.3	47 W	14*	40*			
5 21	7 42.27	+41 20.2	1.168	0.978	55.4	18.6	53 E	44*	17*	5 21	0 34.58	+ 4 50.1	2.050	1.605	29.0	21.3	50 W	16*	42*			
5 26	8 4.83	+40 56.1	1.174	0.980	55.2	18.6	53 E	44*	18*	5 31	0 59.92	+ 7 6.1	2.001	1.613	30.2	21.3	53 W	18*	44*			
5 31	8 26.68	+40 16.2	1.178	0.979	55.2	18.6	52 E	43*	19*	6 10	1 24.90	+ 9 12.4	1.951	1.623	31.3	21.2	56 W	22*	45*			
6 5	8 47.76	+39 21.6	1.179	0.975	55.2	18.6	52 E	42*	20*	6 20	1 49.46	+11 7.0	1.900	1.637	32.3	21.2	59 W	25*	46*			
6 10	9 8.05	+38 13.3	1.178	0.969	55.4	18.6	52 E	41*	21*	6 30	2 13.46	+12 48.1	1.847	1.654	33.2	21.2	63 W	30*	47*			
6 20	9 46.24	+35 18.4	1.166	0.950	56.3	18.6	51 E	38*	23*	7 10	2 36.78	+14 14.4	1.793	1.674	33.9	21.2	67 W	35*	47*			
6 30	10 21.37	+31 36.7	1.142	0.921	57.9	18.5	50 E	35*	26*	7 20	2 59.24	+15 25.2	1.736	1.696	34.4	21.2	71 W	40*	47*			
7 10	10 53.53	+27 10.8	1.105	0.882	60.3	18.4	49 E	32*	29*	7 30	3 20.58	+16 19.8	1.677	1.721	34.7	21.1	75 W	46*	47*			
7 15	11 8.54	+24 41.4	1.081	0.859	62.0	18.3	48 E	30*	30*	8 9	3 40.56	+16 58.3	1.615	1.748	34.8	21.1	80 W	51*	47*			
7 20	11 22.84	+22 0.6	1.054	0.834	63.9	18.3	47 E	28*	31*	8 19	3 58.87	+17 21.1	1.550	1.776	34.6	21.0	85 W	56*	47*			
7 25	11 36.37	+19 8.2	1.022	0.806	66.3	18.2	47 E	26*	32*	8 29	4 15.12	+17 28.8	1.484	1.807	34.0	21.0	91 W	60*	47			
7 30	11 49.05	+16 3.6	0.987	0.777	69.1	18.2	46 E	24*	33*	9 8	4 28.93	+17 22.7	1.416	1.838	32.9	20.9	97 W	62*	47			
8 4	12 0.74	+12 46.1	0.949	0.746	72.5	18.1	44 E	22*	33*	9 18	4 39.86	+17 4.0	1.348	1.871	31.3	20.7	104 W	62	47			
8 9	12 11.21	+ 9 15.1	0.906	0.713	76.5	18.0	43 E	19*	34*	9 28	4 47.41	+16 34.3	1.283	1.905	29.1	20.6	112 W	62	47			
8 14	12 20.12	+ 5 29.9	0.860	0.679	81.4	18.0	42 E	16*	33*	10 8	4 51.21	+15 55.5	1.223	1.940	26.1	20.5	121 W	61	48			
8 19	12 26.92	+ 1 30.7	0.812	0.645	87.2	18.0	40 E	12*	33*	10 18	4 50.91	+15 9.6	1.171	1.975	22.3	20.3	131 W	60	49			
8 24	12 30.84	+ 2 40.9	0.761	0.612	94.2	18.0	37 E	8*	31*	10 28	4 46.51	+14 19.5	1.132	2.010	17.7	20.1	142 W	59	50			
8 29	12 30.76	- 6 59.6	0.711	0.580	102.4	18.1	34 E	3*	28*	11 2	4 42.91	+13 53.9	1.119	2.028	15.2	20.0	148 W	59	50			
8 31	12 29.29	- 8 42.7	0.692	0.568	106.1	18.2	33 E	1*	27*	11 7	4 38.51	+13 28.7	1.111	2.046	12.5	19.9	153 W	58	51			

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

19/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	19/20	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°										
122159 2000 JM ₈₁ (continuation)										237805 2002 CF ₂₆ (continuation)																			
5 21	0 29.73	+7 32.2	2.075	1.630	28.6	20.0	50 W	19*	41*	2 13	6 4.64	+70 7.1	0.837	1.536	35.8	19.4	114 E	65	—	2 15	6 9.08	+68 29.8	0.850	1.546	35.6	19.5	114 E	67	—
5 31	0 54.18	+10 14.7	2.027	1.640	29.8	20.0	53 W	22*	43*	2 17	6 13.29	+66 53.4	0.863	1.555	35.4	19.5	114 E	68	—	2 19	6 17.33	+65 18.1	0.877	1.565	35.3	19.5	114 E	70	—
6 10	1 18.26	+12 47.8	1.979	1.653	30.8	20.0	57 W	25*	43*	2 21	6 21.23	+63 44.2	0.892	1.574	35.2	19.6	113 E	71	—	2 23	6 25.02	+62 11.9	0.908	1.583	35.1	19.6	113 E	73	2
6 20	1 41.92	+15 9.6	1.930	1.670	31.7	20.0	60 W	30*	44*	2 25	6 28.71	+60 41.1	0.925	1.593	35.0	19.7	113 E	74	3	2 27	6 32.33	+59 12.1	0.942	1.602	35.0	19.7	112 E	76	5
6 30	2 5.04	+17 18.4	1.880	1.690	32.5	20.0	63 W	34*	44*	2 29	6 35.89	+57 44.9	0.960	1.611	34.9	19.8	111 E	77	6	3 2	6 39.40	+56 19.7	0.979	1.620	34.9	19.8	111 E	79	8
7 10	2 27.47	+19 13.1	1.827	1.713	33.2	20.0	67 W	40*	43*	3 7	6 47.98	+52 55.2	1.030	1.643	34.9	20.0	109 E	82	11	3 12	6 56.37	+49 43.4	1.084	1.666	34.9	20.1	107 E	85	14
7 20	2 49.05	+20 53.0	1.771	1.739	33.6	19.9	71 W	46*	42*	3 17	7 4.60	+46 43.9	1.142	1.687	34.9	20.3	104 E	88	17	3 22	7 12.74	+43 56.4	1.203	1.709	34.8	20.4	102 E	89	20
7 30	3 9.49	+22 17.8	1.713	1.767	33.9	19.9	76 W	52*	41*	4 1	7 28.85	+38 53.9	1.334	1.751	34.6	20.7	96 E	84*	25	4 11	7 44.78	+34 29.0	1.473	1.791	34.0	20.9	91 E	77*	30
8 9	3 28.53	+23 27.7	1.651	1.798	33.9	19.9	81 W	58*	40*	4 21	8 0.57	+30 34.1	1.618	1.829	33.2	21.1	85 E	69*	33	5 1	8 16.27	+27 2.5	1.764	1.865	32.1	21.3	79 E	61*	37*
8 19	3 45.81	+24 23.1	1.587	1.830	33.5	19.8	87 W	64*	40	461634 2005 EF ₁₆₉																			
8 29	4 0.91	+25 4.8	1.521	1.864	32.8	19.7	93 W	68*	39	12 23	17 48.99	+13 29.8	2.213	1.547	22.5	20.4	37 W	23*	—	1 2	18 24.35	+12 51.7	2.198	1.521	22.5	20.3	36 W	24*	—
9 8	4 13.41	+25 33.6	1.453	1.899	31.6	19.6	99 W	71*	38	1 12	18 59.58	+12 16.0	2.196	1.499	22.0	20.3	35 W	24*	—	1 22	19 34.22	+11 42.8	2.206	1.482	22.2	20.2	33 W	23*	—
9 18	4 22.80	+25 50.4	1.387	1.936	29.8	19.5	107 W	71*	38	2 1	20 7.92	+11 12.5	2.225	1.469	20.1	20.2	31 W	23*	—	2 11	20 40.39	+10 44.6	2.250	1.462	18.8	20.1	29 W	21*	—
9 28	4 28.58	+25 55.4	1.323	1.973	27.3	19.4	115 W	71	38	2 11	21 11.53	+10 18.7	2.278	1.459	17.5	20.1	26 W	20*	—	3 2	21 41.31	+9 53.9	2.304	1.461	16.4	20.1	25 W	19*	2*
10 8	4 30.38	+25 48.7	1.266	2.012	24.0	19.3	125 W	71	38	3 12	22 9.76	+9 29.0	2.325	1.469	15.7	20.1	24 W	17*	6*	3 12	22 37.02	+9 2.7	2.339	1.481	15.6	20.2	24 W	16*	10*
10 18	4 27.98	+25 29.3	1.219	2.051	20.0	19.1	135 W	70	39	4 1	23 3.21	+8 33.6	2.344	1.498	16.3	20.2	25 W	14*	14*	4 11	23 28.46	+7 59.7	2.339	1.520	17.6	20.3	27 W	13*	18*
10 28	4 21.59	+24 56.2	1.187	2.090	15.1	18.9	147 W	70	39	4 21	23 52.92	+7 19.4	2.323	1.545	19.3	20.4	31 W	12*	23*	5 1	0 16.69	+6 30.3	2.295	1.574	21.3	20.4	35 W	11*	27*
11 2	4 17.13	+24 34.4	1.178	2.110	12.4	18.8	153 W	70	39	5 11	0 39.88	+5 30.2	2.257	1.606	23.4	20.5	39 W	11*	32*	5 21	1 2.57	+4 16.4	2.208	1.641	25.4	20.6	44 W	11*	37*
11 7	4 12.02	+24 9.3	1.175	2.130	9.6	18.7	159 W	69	40	5 31	1 24.79	+2 46.3	2.152	1.678	27.3	20.6	49 W	11*	43*	6 10	1 46.55	+0 56.8	2.089	1.717	28.9	20.6	55 W	12*	48*
11 12	4 6.46	+23 41.3	1.177	2.150	6.7	18.6	165 W	69	40	6 20	2 7.83	+1 15.0	2.022	1.758	30.2	20.7	60 W	13*	53*	6 30	2 28.56	+0 35.0	1.952	1.800	31.1	20.7	66 W	15*	59*
11 17	4 0.64	+23 11.0	1.186	2.169	3.8	18.5	172 W	68	41	7 10	2 48.62	+0 56.6	1.884	1.844	31.6	20.7	72 W	17*	64*	7 20	3 7.88	+0 30.4	1.820	1.887	31.8	20.6	78 W	19*	70*
11 22	3 54.82	+22 39.1	1.202	2.189	1.2	18.4	177 W	68	41	7 30	3 26.08	+0 33.6	1.762	1.932	31.5	20.6	84 W	20*	75*	8 9	3 42.98	+0 4.4	1.713	1.976	30.9	20.6	89 W	19*	81*
11 27	3 49.20	+22 6.6	1.225	2.209	2.4	18.5	175 E	67	42	8 19	3 58.24	+0 28.5	1.677	2.021	30.0	20.6	94 W	18*	88*	8 29	4 11.41	+0 29.8	1.656	2.065	28.9	20.5	99 W	15*	87
12 2	3 43.99	+21 34.6	1.254	2.229	5.0	18.8	169 E	67	42	9 8	4 22.03	+0 25.8	1.650	2.110	27.8	20.5	102 W	11*	82	9 18	4 29.50	+0 39.8	1.660	2.154	26.8	20.6	105 W	5	76
12 7	3 39.33	+21 3.9	1.290	2.249	7.6	19.0	162 E	66	43	9 28	4 33.20	+0 33.0	1.685	2.197	25.9	20.6	107 W	—	71	10 8	4 32.56	+0 48.5	1.725	2.240	25.2	20.7	108 W	—	67
12 12	3 35.36	+20 35.4	1.332	2.269	10.0	19.2	156 E	66	43	10 8	4 32.56	+0 48.5	1.725	2.240	25.2	20.7	108 W	—	67	10 18	4 27.21	+0 52.4	1.778	2.282	24.6	20.8	107 W	—	63
12 17	3 32.15	+20 9.7	1.381	2.288	12.3	19.3	150 E	65	44	10 28	4 17.26	+0 55.3	1.841	2.324	24.2	20.9	106 W	—	60	11 7	4 3.66	+0 57.3	1.913	2.365	23.9	21.0	105 W	—	58
12 22	3 29.77	+19 47.5	1.434	2.308	14.3	19.5	145 E	65	44	11 17	3 48.13	+0 58.5	1.991	2.405	23.7	21.1	102 W	—	57	11 27	3 32.93	+0 58.3	2.073	2.444	23.4	21.2	100 E	—	57
12 27	3 28.23	+19 29.0	1.493	2.328	16.0	19.7	139 E	64	45	12 7	3 20.12	+0 57.0	2.159	2.482	23.2	21.3	97 E	—	58	12 17	3 10.94	+0 56.2	2.246	2.519	22.9	21.5	94 E	—	60
1 1	3 27.52	+19 14.3	1.556	2.347	17.6	19.8	134 E	64	45	1922 Zulu																			
1 6	3 27.60	+19 3.3	1.623	2.366	18.9	20.0	129 E	64	45	12 23	17 49.66	+8 10.5	2.616	1.689	9.0	16.1	16 W	7*	—	1 2	18 17.81	+6 31.8	2.612	1.703	10.2	16.2	18 W	11*	—
1 11	3 28.43	+18 56.0	1.694	2.386	20.0	20.1	124 E	64	45	1 12	18 45.56	+4 37.9	2.610	1.722	11.5	16.3	20 W	14*	—	1 22	19 12.79	+2 30.3	2.610	1.746	12.6	16.3	23 W	17*	—
1 16	3 29.99	+18 52.0	1.768	2.405	21.0	20.3	119 E	64	45	2 1	19 39.36	+0 10.8	2.613	1.773	13.8	16.4	25 W	19*	3*	2 11	20 5.16	+0 21.8	2.617	1.805	14.8	16.5	28 W	21*	6*
12 23	17 48.35	+73 6.9	0.719	1.283	49.6	19.1	97 W	48*	—	2 21	20 30.13	+4 54.5	2.623	1.839	15.8	16.6	30 W	23*	10*	3 2	20 54.21	+7 35.4	2.630	1.877	16.7	16.7	33 W	25*	14*
12 25	17 51.68	+74 1.2	0.720	1.292	49.0	19.1	97 W	48*	—	3 12	21 17.34	+10 18.7	2.637	1.917	17.5	16.7	36 W	27*	17*	3 12	21 17.34	+10 18.7	2.637	1.917	17.5	16.7	36 W	27*	17*
12 27	17 55.34	+74 58.3	0.721	1.302	48.4	19.1	98 W	49*	—	3 22	21 39.53	+13 2.2	2.643	1.960	18.3	16.8	38 W	28*	20*	4 1	22 0.74	+15 44.2	2.646	2.005	19.2	16.9	41 W	30*	23*
12 29	17 59.39	+75 58.3	0.722	1.311	47.7	19.1	99 W	49*	—	4 11	22 20.95	+18 22.9	2.646	2.052	19.9	17.0	44 W	32*	25*	4 21	22 40.15	+20 57.2	2.642	2.100	20.7	17.0	48 W	34*	28*
12 31	18 3.92	+77 1.1	0.724	1.321	47.1	19.1	100 W	49*	—	5 1	22 58.29	+23 26.1	2.632	2.149	21.4	17.1	51 W	36*	30*	5 11	23 15.32	+25 48.5	2.615	2.200	22.1	17.2	55 W	39*	31*
1 2	18 9.07	+78 6.7	0.725	1.331	46.4	19.1	101 W	49*	—	5 21	23 31.15	+28 4.0	2.592	2.251	22.8	17.2	59 W	43*	32*	6 10	23 45.68	+30 11.9	2.561	2.302	23.3	17.3	64 W	47*	32*
1 3	18 11.95	+78 40.5	0.																										

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

19/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45° - 26°	19/20	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45° - 26°											
1922 Zulu (continuation)									390725 2003 HB																			
7 30	0 34.82	+39 24.6	2.244	2.617	22.5	17.2	100 W	84 25	12 23	17 50.40	-25 33.1	1.826	0.846	4.0	21.0	3 W	-	-	12 23	17 50.40	-25 33.1	1.826	0.846	4.0	21.0	3 W	-	-
8 9	0 34.46	+40 3.0	2.183	2.670	21.2	17.2	108 W	85 24	12 28	18 14.94	-26 17.9	1.789	0.810	4.5	20.9	4 W	-	-	1 2	18 40.84	-26 47.1	1.750	0.772	5.1	20.8	4 W	-	-
8 19	0 31.27	+40 16.6	2.127	2.722	19.6	17.1	116 W	85 24	1 7	19 8.11	-26 57.5	1.710	0.734	6.0	20.7	4 W	-	-	1 12	19 36.69	-26 45.6	1.670	0.696	7.3	20.6	5 E	-	-
8 24	0 28.68	+40 12.4	2.102	2.747	18.6	17.1	120 W	85 24	1 17	20 6.45	-26 7.5	1.628	0.658	9.2	20.5	6 E	-	-	1 22	20 37.17	-24 59.6	1.585	0.622	11.9	20.4	7 E	-	1*
8 29	0 25.49	+40 0.3	2.080	2.773	17.6	17.0	124 W	85 24	1 27	21 8.55	-23 18.7	1.540	0.590	15.5	20.3	9 E	-	-	2 1	21 40.19	-21 2.5	1.494	0.562	20.0	20.3	11 E	-	5*
9 3	0 21.80	+39 39.7	2.061	2.799	16.5	17.0	128 W	85 24	2 6	22 11.70	-18 10.6	1.447	0.541	25.5	20.3	14 E	-	-	2 6	22 11.70	-18 10.6	1.447	0.541	25.5	20.3	14 E	-	2* 7*
9 8	0 17.70	+39 10.5	2.047	2.824	15.3	17.0	132 W	84 25	2 11	22 42.67	-14 44.4	1.398	0.529	31.6	20.4	16 E	-	-	2 11	22 42.67	-14 44.4	1.398	0.529	31.6	20.4	16 E	-	5* 9*
9 13	0 13.31	+38 32.3	2.037	2.850	14.2	16.9	136 W	84 25	2 16	23 12.80	-10 48.0	1.348	0.527	38.0	20.5	19 E	-	-	2 16	23 12.80	-10 48.0	1.348	0.527	38.0	20.5	19 E	-	8* 10*
9 18	0 8.76	+37 45.5	2.033	2.875	13.0	16.9	140 W	83 26	2 21	23 41.91	-6 27.5	1.299	0.534	44.2	20.6	22 E	-	-	2 21	23 41.91	-6 27.5	1.299	0.534	44.2	20.6	22 E	-	12* 11*
9 23	0 4.20	+36 50.3	2.034	2.900	12.0	16.9	143 W	82 27	2 26	0 10.01	-1 50.2	1.253	0.551	49.7	20.7	25 E	-	-	3 2	0 37.27	-2 56.1	1.210	0.576	54.3	20.9	28 E	-	16* 12*
9 28	23 59.76	+35 47.6	2.041	2.925	11.1	16.9	146 E	81 28	3 7	1 3.96	+7 44.0	1.173	0.606	57.7	21.0	31 E	-	-	3 12	1 30.42	+12 26.7	1.143	0.641	60.1	21.2	34 E	-	26* 14*
10 3	23 55.56	+34 38.5	2.055	2.950	10.4	16.9	148 E	80 29	3 17	1 56.95	+16 58.2	1.119	0.678	61.6	21.3	37 E	-	-	3 22	2 23.86	+21 13.0	1.102	0.716	62.3	21.4	39 E	-	30* 14*
10 8	23 51.72	+33 24.2	2.075	2.975	10.0	16.9	149 E	78 31	3 27	2 51.34	+25 6.3	1.092	0.754	62.3	21.5	42 E	-	-	3 27	2 51.34	+25 6.3	1.092	0.754	62.3	21.5	42 E	-	35* 14*
10 13	23 48.31	+32 6.0	2.102	3.000	10.0	16.9	149 E	77 32	4341 Poseidon																			
10 18	23 45.42	+30 45.4	2.136	3.024	10.2	17.0	147 E	76 33	12 23	17 50.60	-20 23.7	3.118	2.138	1.9	20.2	4 W	-	-	1 2	18 9.88	-20 37.6	3.174	2.208	3.9	20.5	9 W	-	1*
10 23	23 43.09	+29 23.8	2.178	3.049	10.7	17.1	145 E	74 35	1 12	18 28.31	-20 42.1	3.213	2.275	6.2	20.7	15 W	-	-	1 12	18 28.31	-20 42.1	3.213	2.275	6.2	20.7	15 W	-	4* 6*
10 28	23 41.35	+28 2.9	2.225	3.073	11.4	17.2	142 E	72 36	1 22	18 45.87	-20 38.7	3.234	2.338	8.5	20.9	21 W	-	-	1 22	18 45.87	-20 38.7	3.234	2.338	8.5	20.9	21 W	-	7* 13*
11 2	23 40.21	+26 43.7	2.280	3.097	12.2	17.3	139 E	73 37	2 1	19 2.53	-20 28.7	3.237	2.399	10.7	21.0	27 W	-	-	2 1	19 2.53	-20 28.7	3.237	2.399	10.7	21.0	27 W	-	9* 19*
11 7	23 39.66	+25 27.3	2.340	3.121	13.0	17.4	135 E	70 39	2 11	19 18.23	-20 13.5	3.222	2.456	12.7	21.1	33 W	-	-	2 11	19 18.23	-20 13.5	3.222	2.456	12.7	21.1	33 W	-	11* 26*
11 12	23 39.68	+24 14.7	2.406	3.144	13.8	17.5	131 E	69 40	2 21	19 32.93	-19 54.5	3.189	2.511	14.6	21.2	40 W	-	-	2 21	19 32.93	-19 54.5	3.189	2.511	14.6	21.2	40 W	-	12* 33*
11 17	23 40.26	+23 6.5	2.477	3.168	14.5	17.6	127 E	68 41	3 2	19 46.96	-19 33.0	3.140	2.562	16.3	21.3	47 W	-	-	3 2	19 46.96	-19 33.0	3.140	2.562	16.3	21.3	47 W	-	14* 40*
11 27	23 42.96	+21 5.0	2.634	3.215	15.8	17.8	118 E	66 43	3 12	19 59.02	-19 10.7	3.074	2.611	17.8	21.4	54 W	-	-	3 12	19 59.02	-19 10.7	3.074	2.611	17.8	21.4	54 W	-	15* 47*
12 7	23 47.48	+19 24.9	2.805	3.261	16.6	18.0	109 E	64 44*	3 22	20 10.22	-18 49.0	2.995	2.657	19.1	21.4	61 W	-	-	3 22	20 10.22	-18 49.0	2.995	2.657	19.1	21.4	61 W	-	16* 55*
12 17	23 53.53	+18 6.0	2.986	3.306	17.0	18.2	100 E	63 43*	4 1	20 20.03	-18 29.7	2.902	2.701	20.1	21.4	68 W	-	-	4 1	20 20.03	-18 29.7	2.902	2.701	20.1	21.4	68 W	-	18* 62*
12 27	0 0.87	+17 7.1	3.174	3.351	17.1	18.3	92 E	62 40*	4 11	20 28.29	-18 14.4	2.799	2.742	20.8	21.4	76 W	-	-	4 11	20 28.29	-18 14.4	2.799	2.742	20.8	21.4	76 W	-	19* 70*
1 6	0 9.25	+16 25.9	3.364	3.395	16.7	18.5	83 E	61 36*	4 21	20 34.82	-18 5.0	2.689	2.780	21.1	21.3	85 W	-	-	4 21	20 34.82	-18 5.0	2.689	2.780	21.1	21.3	85 W	-	21* 77*
1 16	0 18.49	+16 0.3	3.554	3.438	16.1	18.6	75 E	60* 32*	5 1	20 39.40	-18 3.4	2.573	2.816	20.9	21.2	93 W	-	-	5 1	20 39.40	-18 3.4	2.573	2.816	20.9	21.2	93 W	-	23* 82*
52310 1991 VJ									31686 2000 QD₁₂₄																			
12 23	17 49.80	-27 17.9	2.801	1.823	2.6	18.8	5 W	-	1 2	18 18.13	-28 17.7	2.753	1.786	4.6	18.9	8 W	-	-	1 2	18 18.13	-28 17.7	2.753	1.786	4.6	18.9	8 W	-	2*
1 2	18 18.13	-28 17.7	2.753	1.786	4.6	18.9	8 W	-	1 12	18 47.70	-28 59.3	2.701	1.751	6.7	18.9	12 W	-	-	1 12	18 47.70	-28 59.3	2.701	1.751	6.7	18.9	12 W	-	6*
1 12	18 47.70	-28 59.3	2.701	1.751	6.7	18.9	12 W	-	1 22	19 18.37	-29 20.7	2.645	1.718	8.9	18.9	16 W	-	-	1 22	19 18.37	-29 20.7	2.645	1.718	8.9	18.9	16 W	-	9*
2 1	19 49.95	-29 20.3	2.587	1.687	11.0	18.9	19 W	-	2 1	19 49.95	-29 20.3	2.587	1.687	11.0	18.9	19 W	-	-	2 1	19 49.95	-29 20.3	2.587	1.687	11.0	18.9	19 W	-	13*
2 11	20 22.18	-28 57.1	2.528	1.658	13.1	18.9	22 W	-	2 11	20 22.18	-28 57.1	2.528	1.658	13.1	18.9	22 W	-	-	2 11	20 22.18	-28 57.1	2.528	1.658	13.1	18.9	22 W	-	16*
2 21	20 54.82	-28 10.4	2.469	1.632	15.0	18.9	25 W	-	2 21	20 54.82	-28 10.4	2.469	1.632	15.0	18.9	25 W	-	-	2 21	20 54.82	-28 10.4	2.469	1.632	15.0	18.9	25 W	-	18*
3 2	21 27.57	-27 0.8	2.412	1.608	16.9	18.8	28 W	-	3 2	21 27.57	-27 0.8	2.412	1.608	16.9	18.8	28 W	-	-	3 2	21 27.57	-27 0.8	2.412	1.608	16.9	18.8	28 W	-	20*
3 12	22 0.15	-25 29.3	2.359	1.589	18.7	18.8	31 W	-	3 12	22 0.15	-25 29.3	2.359	1.589	18.7	18.8	31 W	-	-	3 12	22 0.15	-25 29.3	2.359	1.589	18.7	18.8	31 W	-	23*
3 22	22 32.34	-23 38.0	2.308	1.572	20.3	18.8	33 W	-	3 22	22 32.34	-23 38.0	2.308	1.572	20.3	18.8	33 W	-	-	3 22	22 32.34	-23 38.0	2.308	1.572	20.3	18.8	33 W	-	25*
4 1	23 3.93	-21 29.8	2.262	1.560	21.8	18.8	35 W	-	4 1	23 3.93	-21 29.8	2.262	1.560	21.8	18.8	35 W	-	-	4 1	23 3.93	-21 29.8	2.262	1.560	21.8	18.8	35 W	-	27*
4 11	23 34.78	-19 8.1	2.221	1.551	23.2	18.8	38 W	-	4 11	23 34.78	-19 8.1	2.221	1.551	23.2	18.8	38 W	-	-	4 11	23 34.78	-19 8.1	2.221	1.551	23.2	18.8	38 W	-	29*
4 21	0 4.79	-16 36.6	2.184	1.547	24.4	18.8	40 W	-	4 21	0 4.79	-16 36.6	2.184	1.547	24.4	18.8	40 W	-	-	4 21	0 4.79	-16 36.6	2.184	1.547	24.4	18.8	40 W	-	31*
5 1	0 33.90	-13 59.3	2.150	1.547	25.6	18.8	41 W	-	5 1	0 33.90	-13 59.3	2.150	1.547	25.6	18.8	41 W	-	-										

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

19/21		α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45° - 26°															
316866 2000 QD₁₂₄ (continuation)											311555 2006 BA₁₄₈													
		^h ^m	^o [']					^o ^m	^o [']	^h ^m	^o [']						^o ^m	^o [']	^o [']	^o [']	^o [']	^o [']		
7	10	2 20.05	+16 13.4	1.805	1.740	33.3	21.1	70 W	39*	46*	12	23	17 51.31	-30 29.8	1.971	1.004	7.3	20.4	7 W	-	-	-	-	-
7	20	2 40.01	+18 6.5	1.739	1.760	33.8	21.0	74 W	45*	45*	12	28	18 15.45	-29 55.5	1.921	0.952	7.1	20.2	7 W	-	-	-	-	-
7	30	2 58.89	+19 47.6	1.671	1.783	34.0	21.0	79 W	52*	44*	1	2	18 40.50	-29 1.5	1.872	0.900	6.8	20.0	6 W	-	-	-	-	-
8	9	3 16.43	+21 16.7	1.600	1.807	33.9	20.9	84 W	58*	43	1	7	19 6.35	-27 45.8	1.824	0.850	6.1	19.8	5 W	-	-	-	-	-
8	19	3 32.28	+22 34.1	1.528	1.832	33.5	20.8	90 W	64*	41	1	12	19 32.83	-26 6.4	1.778	0.801	5.3	19.6	4 E	-	-	-	-	-
8	29	3 46.01	+23 40.3	1.454	1.859	32.7	20.7	96 W	68*	40	1	17	19 59.80	-24 2.1	1.735	0.756	4.6	19.4	4 E	-	-	-	-	-
9	8	3 57.16	+24 35.9	1.380	1.886	31.3	20.6	103 W	70	39	1	22	20 27.07	-21 32.3	1.695	0.715	4.9	19.2	4 E	-	-	-	-	-
9	18	4 5.18	+25 21.4	1.309	1.914	29.3	20.5	111 W	70	39	1	27	20 54.51	-18 37.5	1.656	0.680	6.9	19.2	5 E	-	-	-	-	-
9	28	4 9.51	+25 56.5	1.241	1.943	26.6	20.3	120 W	71	38	2	1	21 21.97	-15 19.8	1.621	0.653	10.3	19.2	7 E	-	-	-	-	-
10	8	4 9.73	+26 20.2	1.182	1.973	23.1	20.1	129 W	71	38	2	6	21 49.36	-11 42.4	1.589	0.636	14.5	19.2	9 E	3*	-	-	-	-
10	18	4 5.62	+26 30.5	1.134	2.002	18.7	19.9	140 W	72	37	2	11	22 16.63	-7 50.1	1.560	0.629	19.1	19.3	12 E	6*	-	-	-	-
10	28	3 57.50	+26 24.4	1.103	2.033	13.5	19.7	151 W	71	38	2	16	22 43.78	-3 48.5	1.535	0.634	23.8	19.5	15 E	9*	-	-	-	-
11	2	3 52.24	+26 14.6	1.096	2.048	10.7	19.6	157 W	71	38	2	21	23 10.82	+0 16.2	1.515	0.650	28.0	19.6	18 E	12*	2*	-	-	-
11	7	3 46.42	+26 0.4	1.093	2.063	7.8	19.5	163 W	71	38	2	26	23 37.81	+4 18.0	1.501	0.676	31.6	19.8	21 E	15*	2*	-	-	-
11	12	3 40.26	+25 42.0	1.097	2.078	5.1	19.4	169 W	71	38	3	2	24 0.479	+8 11.1	1.494	0.710	34.3	19.9	24 E	18*	3*	-	-	-
11	17	3 34.01	+25 20.0	1.108	2.093	3.0	19.3	174 W	70	39	3	7	23 0.3176	+11 50.9	1.494	0.750	36.1	20.1	26 E	20*	4*	-	-	-
11	22	3 27.92	+24 55.3	1.125	2.108	3.3	19.4	173 E	70	39	3	12	24 0.5872	+15 13.4	1.503	0.795	37.2	20.3	29 E	23*	5*	-	-	-
11	27	3 22.24	+24 28.9	1.148	2.123	5.5	19.6	168 E	69	40	3	17	1 25.61	+18 15.7	1.520	0.843	37.6	20.5	31 E	25*	7*	-	-	-
12	2	3 17.15	+24 2.1	1.178	2.138	8.0	19.8	162 E	69	40	3	22	1 52.32	+20 56.1	1.545	0.893	37.4	20.6	33 E	27*	8*	-	-	-
12	7	3 12.79	+23 35.9	1.214	2.153	10.5	20.0	156 E	69	40	3	27	2 18.73	+23 13.6	1.577	0.945	36.9	20.8	35 E	28*	9*	-	-	-
12	12	3 9.27	+23 11.3	1.256	2.168	12.8	20.1	151 E	68	41	4	1	2 44.67	+25 8.3	1.616	0.997	36.0	20.9	36 E	30*	10*	-	-	-
12	17	3 6.64	+22 49.1	1.303	2.183	15.0	20.3	145 E	68	41	4	6	3 9.99	+26 41.1	1.661	1.049	34.9	21.0	37 E	30*	11*	-	-	-
12	22	3 4.95	+22 29.9	1.355	2.198	16.9	20.5	140 E	67	42	4	11	3 34.55	+27 53.3	1.712	1.102	33.7	21.2	38 E	31*	12*	-	-	-
12	27	3 4.18	+22 14.1	1.411	2.213	18.6	20.6	134 E	67	42	4	16	3 58.24	+28 46.8	1.766	1.153	32.3	21.3	38 E	31*	13*	-	-	-
1	1	3 4.29	+22 1.9	1.471	2.227	20.0	20.8	129 E	67	42	4	21	4 20.99	+29 23.7	1.825	1.204	30.9	21.4	38 E	31*	14*	-	-	-
1	6	3 5.24	+21 53.3	1.535	2.242	21.2	20.9	124 E	67	42	162438 2000 GF₃													
1	11	3 6.97	+21 48.1	1.602	2.256	22.3	21.1	120 E	67	42	12	23	17 51.45	-27 11.8	2.659	1.680	2.6	20.2	5 W	-	-	-	-	-
1	16	3 9.44	+21 46.2	1.672	2.270	23.1	21.2	115 E	67	42	1	2	18 22.76	-27 14.0	2.627	1.655	4.1	20.3	7 W	-	-	-	-	-
											1	12	18 54.52	-26 51.8	2.593	1.632	5.8	20.3	10 W	-	-	-	-	-
											1	22	19 26.47	-26 4.5	2.558	1.611	7.6	20.3	12 W	-	-	-	-	-
											2	1	19 58.30	-24 52.4	2.523	1.594	9.3	20.3	15 W	-	-	-	-	-
											2	11	20 29.74	-23 16.8	2.489	1.579	11.1	20.4	18 W	-	-	-	-	-
											2	21	21 0.59	-21 19.5	2.455	1.567	12.8	20.4	20 W	-	-	-	-	-
											3	2	21 30.70	-19 3.3	2.421	1.558	14.4	20.4	23 W	-	-	-	-	-
											3	12	21 59.97	-16 31.4	2.389	1.553	16.0	20.4	26 W	-	-	-	-	-
											3	22	22 28.39	-13 47.0	2.358	1.552	17.6	20.4	28 W	1*	22*	-	-	-
											4	1	22 55.95	-10 53.6	2.328	1.554	19.1	20.5	31 W	2*	24*	-	-	-
											4	11	23 22.69	-7 54.6	2.299	1.559	20.6	20.5	33 W	3*	27*	-	-	-
											4	21	23 48.68	-4 53.3	2.269	1.568	22.0	20.5	36 W	4*	30*	-	-	-
											5	1	0 13.99	+1 52.5	2.239	1.580	23.4	20.5	38 W	6*	32*	-	-	-
											5	11	0 38.65	+1 5.0	2.208	1.595	24.7	20.6	41 W	8*	35*	-	-	-
											5	21	1 2.75	+3 57.0	2.176	1.613	26.0	20.6	44 W	10*	37*	-	-	-
											5	31	1 26.28	+6 41.5	2.141	1.634	27.2	20.6	47 W	13*	40*	-	-	-
											6	10	1 49.27	+9 16.9	2.103	1.657	28.3	20.7	51 W	17*	41*	-	-	-
											6	20	2 11.69	+11 42.1	2.061	1.682	29.3	20.7	54 W	22*	43*	-	-	-
											6	30	2 33.49	+13 56.3	2.016	1.709	30.3	20.7	58 W	27*	43*	-	-	-
											7	10	2 54.57	+15 59.0	1.966	1.738	31.1	20.7	62 W	33*	44*	-	-	-
											7	20	3 14.82	+17 50.2	1.911	1.769	31.8	20.7	66 W	39*	44*	-	-	-
											7	30	3 34.03	+19 30.1	1.851	1.800	32.2	20.7	71 W	46*	43*	-	-	-
											8	9	3 52.02	+20 59.5	1.787	1.833	32.5	20.6	76 W	53*	42*	-	-	-
											8	19	4 8.49	+22 19.4	1.718	1.866	32.5	20.6	82 W	59*	42*	-	-	-
											8	29	4 23.11	+23 31.1	1.646	1.900	32.1	20.5	88 W	65*	40*	-	-	-
											9	8	4 35.48	+24 36.2	1.572	1.935	31.3	20.5	95 W	69*	39*	-	-	-
											9	18	4 45.14	+25 36.2	1.496	1.969	29.9	20.3	102 W	71	38	-	-	-
											9	28	4 51.55	+26 32.2	1.422	2.004	28.0	20.2	110 W	72	37	-	-	-
											10	8	4 54.22	+27 24.8	1.353	2.039	25.3	20.1	119 W	72	37	-	-	-
											10	18	4 52.68	+28 12.8	1.292	2.073	21.8	19.9	129 W	73	36	-	-	-
											10	28	4 46.76	+28 53.3	1.245	2.107	17.5	19.7	140 W	74	35	-	-	-
											11	2	4 42.25	+29 9.5	1.227	2.124	15.1	19.6	146 W	74	35	-	-	-
											11	7	4 36.85	+29 22.1	1.215	2.141	12.5	19.5	152 W	74	35	-	-	-
											11	12	4 30.69	+29 30.6	1.208	2.158	9.9	19.4	158 W	75	34	-	-	-
											11	17	4 23.98	+29 34.5	1.208	2.175	7.3	19.3	164 W	75	34	-	-	-
											11	22	4 16.97	+29 33.7	1.214	2.191	5.0	19.2	169 W	75	34	-	-	-
											11	27	4 9.92	+29 28.5	1.227	2.207								

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

19/20	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	19/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
514596 2003 FG (continuation)										3040 Kozai (continuation)									
12 31	19 8.39	-26 20.9	1.310	0.360	21.2	19.0	8 E	—	2*	12 27	23 40.86	-45 11.6	1.645	1.542	35.8	17.3	66 E	—	59*
1 2	19 27.98	-25 17.4	1.283	0.354	27.8	19.1	10 E	—	3*	1 1	23 54.10	-44 4.2	1.659	1.533	35.6	17.3	65 E	1	58*
1 4	19 47.23	-23 58.9	1.254	0.355	34.8	19.3	12 E	1*	5*	1 6	0 7.57	-42 50.3	1.671	1.525	35.5	17.3	64 E	2*	57*
1 6	20 5.95	-22 27.0	1.224	0.363	41.7	19.5	14 E	3*	6*	1 11	0 21.24	-41 30.1	1.681	1.517	35.4	17.3	63 E	3*	57*
1 8	20 23.99	-20 43.4	1.194	0.376	48.1	19.7	17 E	6*	8*	1 16	0 35.08	-40 3.4	1.689	1.510	35.3	17.3	62 E	5*	56*
1 10	20 41.31	-18 50.3	1.165	0.395	53.7	19.9	19 E	8*	9*	210764 2000 WZ₁₃₄									
1 12	20 57.92	-16 49.5	1.137	0.418	58.3	20.1	21 E	11*	10*	12 23	17 52.69	-27 17.2	2.770	1.790	2.4	20.4	4 W	—	—
1 14	21 13.87	-14 42.7	1.111	0.443	62.0	20.3	23 E	14*	11*	1 2	18 22.11	-27 6.4	2.737	1.765	3.9	20.5	7 W	—	1*
1 16	21 29.25	-12 31.3	1.087	0.471	64.8	20.4	26 E	16*	12*	1 12	18 51.84	-26 34.0	2.700	1.740	5.6	20.5	10 W	—	4*
1 18	21 44.13	-10 16.6	1.066	0.501	66.8	20.6	28 E	19*	12*	1 22	19 21.67	-25 39.6	2.661	1.718	7.5	20.5	13 W	—	7*
1 20	21 58.60	-7 59.7	1.048	0.532	68.2	20.7	30 E	21*	13*	2 1	19 51.37	-24 23.5	2.619	1.697	9.4	20.6	16 W	—	10*
1 22	22 12.70	-5 41.5	1.034	0.563	69.0	20.8	32 E	23*	14*	2 11	20 20.73	-22 46.5	2.576	1.679	11.3	20.6	20 W	—	14*
1 24	22 26.49	-3 23.1	1.022	0.594	69.3	21.0	34 E	26*	14*	2 21	20 49.60	-20 50.3	2.532	1.663	13.2	20.6	23 W	1*	17*
1 26	22 40.02	-1 5.4	1.013	0.626	69.2	21.0	36 E	28*	14*	3 2	21 17.87	-18 36.7	2.488	1.650	15.0	20.6	26 W	2*	20*
1 28	22 53.30	+ 1 10.7	1.008	0.657	68.8	21.1	39 E	30*	15*	3 12	21 45.46	-16 8.2	2.443	1.640	16.8	20.6	29 W	3*	23*
1 30	23 6.37	+ 3 24.5	1.005	0.689	68.2	21.2	40 E	33*	15*	3 22	22 12.35	-13 27.3	2.398	1.632	18.6	20.6	31 W	4*	25*
2 1	23 19.24	+ 5 35.1	1.005	0.720	67.3	21.3	42 E	35*	15*	4 1	22 38.56	-10 36.9	2.353	1.627	20.2	20.6	34 W	5*	28*
2 3	23 31.91	+ 7 41.8	1.008	0.750	66.3	21.3	44 E	37*	16*	4 11	23 4.10	-7 39.7	2.308	1.626	21.9	20.6	37 W	6*	31*
2 5	23 44.40	+ 9 44.1	1.014	0.780	65.1	21.4	46 E	38*	16*	4 21	23 29.05	-4 38.5	2.263	1.627	23.4	20.6	40 W	8*	34*
2 7	23 56.70	+11 41.4	1.022	0.810	63.9	21.5	48 E	40*	16*	5 1	23 53.43	-1 35.9	2.217	1.631	24.9	20.6	43 W	9*	37*
3040 Kozai										5 11	0 17.29	+ 1 25.5	2.171	1.639	26.3	20.6	46 W	12*	39*
12 23	17 51.72	+ 5 50.1	3.012	2.208	12.6	18.7	29 W	17*	—	5 21	0 40.69	+ 4 23.7	2.124	1.649	27.6	20.7	49 W	14*	41*
1 2	18 12.16	+ 5 9.8	3.009	2.206	12.6	18.7	29 W	20*	—	5 31	1 3.64	+ 7 16.4	2.075	1.662	28.9	20.7	52 W	18*	43*
1 12	18 32.36	+ 4 42.0	2.998	2.203	12.9	18.7	30 W	23*	—	6 10	1 26.14	+10 2.0	2.025	1.677	30.0	20.7	56 W	22*	45*
1 22	18 52.26	+ 4 25.8	2.977	2.198	13.5	18.7	31 W	25*	1*	6 20	1 48.16	+12 39.0	1.972	1.695	31.0	20.7	59 W	27*	45*
2 1	19 11.79	+ 4 20.7	2.946	2.193	14.4	18.7	33 W	27*	7*	6 30	2 9.64	+15 6.3	1.917	1.715	31.9	20.6	63 W	32*	45*
2 11	19 30.90	+ 4 25.4	2.904	2.186	15.4	18.7	36 W	29*	13*	7 10	2 30.47	+17 23.0	1.859	1.738	32.6	20.6	67 W	38*	45*
2 21	19 49.54	+ 4 38.7	2.852	2.178	16.7	18.7	39 W	30*	19*	7 20	2 50.51	+19 28.8	1.797	1.762	33.2	20.6	71 W	45*	44*
3 2	20 7.66	+ 4 59.4	2.788	2.168	18.1	18.6	43 W	31*	25*	7 30	3 9.53	+21 23.6	1.732	1.787	33.5	20.6	76 W	51*	42*
3 12	20 25.21	+ 5 25.7	2.714	2.158	19.6	18.6	47 W	32*	30*	8 9	3 27.30	+23 7.6	1.665	1.814	33.5	20.5	81 W	58*	41*
3 22	20 42.18	+ 5 56.2	2.628	2.146	21.2	18.6	51 W	33*	36*	8 19	3 43.49	+24 41.7	1.594	1.843	33.3	20.4	87 W	64*	39*
4 1	20 58.50	+ 6 28.9	2.531	2.133	22.8	18.5	56 W	34*	40*	8 29	3 57.67	+26 6.5	1.522	1.872	32.6	20.3	93 W	69*	38
4 11	21 14.14	+ 7 1.8	2.424	2.120	24.3	18.5	61 W	35*	45*	9 8	4 9.40	+27 23.1	1.449	1.903	31.4	20.2	100 W	72*	37
4 21	21 29.06	+ 7 32.6	2.308	2.105	25.8	18.4	66 W	36*	49*	9 18	4 18.14	+28 32.4	1.377	1.934	29.7	20.1	107 W	74	35
5 1	21 43.18	+ 7 58.7	2.183	2.089	27.2	18.3	71 W	38*	52*	9 28	4 23.27	+29 34.1	1.309	1.965	27.3	20.0	116 W	75	34
5 11	21 56.41	+ 8 16.8	2.053	2.071	28.4	18.2	77 W	40*	55*	10 8	4 24.31	+30 27.4	1.247	1.997	24.2	19.8	125 W	75	34
5 21	22 8.65	+ 8 23.2	1.910	2.053	29.3	18.0	83 W	42*	56*	10 18	4 20.90	+31 9.2	1.196	2.029	20.2	19.6	135 W	76	33
5 26	22 14.34	+ 8 20.4	1.839	2.044	29.7	18.0	86 W	43*	56	10 23	4 17.53	+31 24.3	1.176	2.045	17.9	19.5	141 W	76	33
5 31	22 19.72	+ 8 12.8	1.767	2.034	29.9	17.9	90 W	44*	56	10 28	4 13.15	+31 34.8	1.160	2.062	15.5	19.4	146 W	77	32
6 5	22 24.76	+ 7 59.4	1.693	2.024	30.0	17.8	93 W	46*	56	11 2	4 7.89	+31 39.9	1.149	2.078	13.0	19.4	152 W	77	32
6 10	22 29.43	+ 7 39.3	1.620	2.014	30.0	17.7	97 W	47*	56	11 7	4 1.91	+31 39.3	1.144	2.094	10.5	19.3	157 W	77	32
6 15	22 33.70	+ 7 11.4	1.547	2.004	29.9	17.6	101 W	48*	57	11 12	3 55.44	+31 32.6	1.145	2.110	8.0	19.2	163 W	77	32
6 20	22 37.51	+ 6 34.5	1.474	1.993	29.5	17.4	105 W	49*	57	11 17	3 48.72	+31 20.1	1.151	2.126	6.0	19.1	167 W	76	33
6 25	22 40.81	+ 5 47.1	1.401	1.983	29.0	17.3	109 W	49*	58	11 22	3 42.03	+31 2.2	1.165	2.142	5.1	19.1	169 W	76	33
6 30	22 43.55	+ 4 47.6	1.330	1.972	28.2	17.1	114 W	49*	59	11 27	3 35.64	+30 39.9	1.184	2.158	5.7	19.2	167 E	76	33
7 5	22 45.69	+ 3 34.2	1.261	1.961	27.1	17.0	118 W	49*	60	12 2	3 29.76	+30 14.3	1.211	2.174	7.4	19.3	164 E	75	34
7 10	22 47.16	+ 2 5.2	1.195	1.949	25.8	16.8	123 W	47	62	12 7	3 24.58	+29 46.6	1.243	2.190	9.5	19.5	159 E	75	34
7 15	22 47.87	+ 0 18.4	1.131	1.938	24.1	16.6	129 W	45	64	12 12	3 20.24	+29 18.1	1.282	2.206	11.6	19.7	153 E	74	35
7 20	22 47.77	- 1 47.9	1.072	1.926	22.1	16.4	135 W	43	66	12 17	3 16.81	+28 50.1	1.326	2.221	13.7	19.8	148 E	74	35
7 25	22 46.77	- 4 15.3	1.017	1.914	19.7	16.2	141 W	41	68	12 22	3 14.36	+28 23.5	1.376	2.237	15.6	20.0	142 E	73	36
7 30	22 44.84	- 7 4.5	0.968	1.902	16.9	16.0	147 W	38	71	12 27	3 12.89	+27 59.2	1.431	2.252	17.3	20.2	137 E	73	36
8 4	22 41.93	-10 15.0	0.926	1.890	13.8	15.8	154 W	35	74	1 1	3 12.36	+27 37.7	1.489	2.268	18.8	20.3	132 E	73	36
8 9	22 38.03	-13 44.9	0.892	1.877	10.6	15.6	160 W	31	78	1 6	3 12.74	+27 19.3	1.552	2.283	20.1	20.5	127 E	72	37
8 14	22 33.16	-17 30.3	0.867	1.865	7.7	15.4	166 W	27	82	1 11	3 13.96	+27 4.1	1.618	2.298	21.2	20.6	122 E	72	37
8 19	22 27.40	-21 25.2	0.850	1.852	6.4	15.3	168 W	24	85	1 16	3 15.98	+26 52.1	1.686	2.313	22.1	20.7	118 E	72	37
8 24	22 20.88	-25 22.1	0.843	1.840	7.9	15.3	166 W	20	89	86626 2000 EV₁₂₄									
8 29	22 13.84	-29 12.9	0.846	1.827	11.0	15.4	160 E	16	87	12 23	17 53.03	-19 15.6	2.610	1.632	2.8	19.2	5 W	—	—
9 3	22 6.53	-32 50.4	0.857	1.814	14.7	15.6	153 E	12	83	1 2	18 23.38	-19 21.5	2.590	1.617	4.0	19.3	7 W	—	—
9 8	21 59.25	-36 8.9	0.877	1.801	18.3	15.7	146 E	9	80	1 12	18 53.95	-19 6.2	2.570	1.606	5.5	19.3	9 W	2*	—
9 13	21 52.34	-39 4.7	0.903	1.789	21.7	15.9	139 E	6	77	1 22	19 24.54	-18 30.0	2.549	1.597	7.1	19.4	12 W	3*	3*
9 18	21 46.10	-41 36.5	0.935	1.776	24.7	16.0	132 E	3	74	2 1	19 54.93	-17 33.7	2.527	1.591	8.8	19.4	14 W	4*	7*
9 23	21 40.84	-43 44.6	0.972	1.763	27.3	16.2	126 E	1	72	2 11	20 24.92	-16 19.0	2.505	1.589	10.5	19.5	17 W	4*	10*
9 28	21 36.77	-45 30.6	1.013	1															

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

19/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	$45^\circ-26^\circ$	19/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	$45^\circ-26^\circ$				
86626 2000 EV₁₂₄									14017 1994 NS												
<i>(continuation)</i>									<i>(continuation)</i>												
8	9	h m	° ' "						5	11	h m	° ' "									
8	19	3 20.64	+12 8.2	1.750	1.955	31.1	19.8	86 W	50*	52*	5	21	0 1.62	+ 4 11.5	2.292	1.791	25.0	19.0	49 W	16*	41*
8	19	3 33.51	+12 10.4	1.673	1.987	30.6	19.7	92 W	54*	52	5	21	0 22.50	+ 6 16.8	2.243	1.815	26.3	19.0	53 W	19*	43*
8	29	3 44.03	+11 58.0	1.594	2.020	29.6	19.6	99 W	56*	52	5	31	0 42.66	+ 8 14.5	2.189	1.840	27.4	19.1	57 W	22*	46*
9	8	3 51.85	+11 31.8	1.516	2.052	28.0	19.5	107 W	57	52	6	10	1 2.05	+10 3.2	2.130	1.866	28.5	19.1	61 W	26*	48*
9	18	3 56.56	+10 52.3	1.442	2.084	25.8	19.4	116 W	56	53	6	20	1 20.59	+11 41.9	2.065	1.893	29.3	19.0	66 W	31*	49*
9	28	3 57.78	+10 1.0	1.375	2.115	22.8	19.2	125 W	55	54	6	30	1 38.15	+13 9.3	1.996	1.921	30.0	19.0	71 W	36*	49*
10	8	3 55.34	+ 9 0.5	1.319	2.147	19.2	19.0	135 W	54	55	7	10	1 54.57	+14 24.7	1.921	1.948	30.4	19.0	76 W	42*	49*
10	18	3 49.35	+ 7 54.6	1.279	2.178	14.8	18.9	146 W	53	56	7	20	2 9.65	+15 27.2	1.843	1.977	30.6	18.9	82 W	48*	49
10	23	3 45.17	+ 7 21.3	1.267	2.193	12.5	18.8	151 W	52	57	7	30	2 23.10	+16 15.9	1.761	2.005	30.4	18.9	88 W	54*	48
10	28	3 40.36	+ 6 48.9	1.260	2.208	10.2	18.7	157 W	52	57	8	9	2 34.63	+16 50.1	1.678	2.034	29.8	18.8	95 W	59*	47
11	2	3 35.07	+ 6 18.4	1.259	2.223	8.0	18.6	162 W	51	58	8	19	2 43.84	+17 8.9	1.593	2.063	28.6	18.6	102 W	62*	47
11	7	3 29.46	+ 5 50.5	1.265	2.238	6.3	18.5	166 W	51	58	8	29	2 50.32	+17 11.2	1.511	2.092	26.9	18.5	111 W	62	47
11	12	3 23.73	+ 5 26.2	1.277	2.253	5.6	18.5	167 W	50	59	9	8	2 53.69	+16 56.1	1.434	2.120	24.4	18.4	120 W	62	47
11	17	3 18.07	+ 5 6.1	1.296	2.267	6.1	18.6	166 E	50	59	9	18	2 53.63	+16 22.7	1.365	2.148	21.2	18.2	129 W	61	48
11	27	3 7.69	+ 4 40.9	1.354	2.296	9.5	18.9	157 E	50	59	9	28	2 50.02	+15 30.8	1.309	2.176	17.1	18.0	140 W	61	48
12	7	2 59.49	+ 4 36.8	1.437	2.324	13.4	19.2	147 E	50	59	10	8	2 43.17	+14 21.8	1.271	2.204	12.3	17.8	152 W	59	50
12	17	2 54.13	+ 4 52.8	1.541	2.351	16.8	19.5	136 E	50	59	10	13	2 38.74	+13 42.1	1.260	2.218	9.6	17.7	158 W	59	50
12	27	2 51.88	+ 5 26.3	1.662	2.378	19.5	19.8	126 E	50	59	10	18	2 33.82	+12 59.9	1.255	2.231	6.9	17.5	164 W	58	51
1	6	2 52.61	+ 6 13.5	1.797	2.404	21.5	20.0	117 E	51	58	10	23	2 28.58	+12 16.3	1.257	2.245	4.1	17.4	171 W	57	52
1	16	2 56.03	+ 7 10.8	1.941	2.428	22.7	20.3	108 E	52	57*	10	28	2 23.22	+11 32.4	1.265	2.258	1.6	17.3	176 W	57	52
136864 1998 FB₄₁									161513 2004 RK₁₉₅												
12	23	17 53.45	-20 28.1	2.648	1.668	2.1	19.7	4 W	—	—	12	23	17 53.93	-25 25.6	2.666	1.684	1.6	20.2	3 W	—	—
1	2	18 23.35	-20 21.7	2.653	1.679	3.5	19.8	6 W	—	—	1	2	18 24.52	-25 8.6	2.651	1.675	3.2	20.3	6 W	—	—
1	12	18 52.82	-19 55.1	2.657	1.693	5.2	19.9	9 W	1*	1*	1	12	18 55.03	-24 28.8	2.634	1.668	5.1	20.3	9 W	—	2*
1	22	19 21.67	-19 9.5	2.658	1.709	7.0	20.0	12 W	3*	4*	1	22	19 25.21	-23 26.9	2.615	1.664	6.9	20.4	12 W	—	6*
2	1	19 49.73	-18 6.8	2.657	1.728	8.8	20.1	16 W	4*	8*	2	1	19 54.86	-22 4.3	2.594	1.662	8.8	20.5	15 W	—	9*
2	11	20 16.87	-16 49.3	2.653	1.750	10.6	20.2	19 W	5*	12*	2	11	20 23.78	-20 22.8	2.572	1.662	10.6	20.5	18 W	1*	12*
2	21	20 43.02	-15 19.4	2.645	1.773	12.4	20.3	23 W	6*	16*	2	21	20 51.87	-18 24.8	2.548	1.665	12.4	20.6	21 W	2*	15*
3	2	21 8.12	-13 39.6	2.632	1.799	14.2	20.4	26 W	7*	20*	3	2	21 19.06	-16 12.9	2.522	1.671	14.2	20.6	24 W	3*	18*
3	12	21 32.15	-11 52.5	2.615	1.826	15.9	20.5	30 W	8*	24*	3	12	21 45.30	-13 49.8	2.493	1.678	16.2	20.7	28 W	4*	22*
3	22	21 55.14	-10 0.4	2.592	1.854	17.6	20.5	34 W	9*	28*	3	22	22 10.64	-11 18.4	2.463	1.688	17.7	20.7	31 W	5*	25*
4	1	22 17.09	- 8 5.7	2.564	1.884	19.2	20.6	38 W	10*	32*	4	1	22 35.09	- 8 41.2	2.430	1.701	19.3	20.8	34 W	7*	28*
4	11	22 38.01	- 6 10.4	2.529	1.915	20.7	20.6	43 W	11*	36*	4	11	22 58.68	- 6 0.7	2.394	1.715	20.9	20.8	38 W	8*	32*
4	21	22 57.94	- 4 16.4	2.487	1.947	22.2	20.7	47 W	13*	41*	4	21	23 21.49	- 3 19.3	2.355	1.731	22.5	20.8	41 W	10*	35*
5	1	23 16.87	- 2 25.5	2.439	1.979	23.5	20.7	52 W	15*	45*	5	1	23 43.55	- 0 38.9	2.313	1.749	24.0	20.9	45 W	12*	38*
5	11	23 34.79	- 0 39.3	2.384	2.013	24.8	20.8	57 W	17*	49*	5	11	0 4.89	+ 1 58.5	2.266	1.769	25.4	20.9	49 W	14*	41*
5	21	23 51.66	+ 1 0.9	2.323	2.046	25.8	20.8	62 W	20*	53*	5	21	0 25.53	+ 4 31.5	2.216	1.790	26.7	20.9	52 W	17*	44*
5	31	0 7.42	+ 2 33.4	2.254	2.080	26.7	20.8	67 W	24*	56*	5	31	0 45.47	+ 6 58.5	2.161	1.812	27.8	20.9	57 W	21*	46*
6	10	0 21.97	+ 3 57.0	2.180	2.114	27.3	20.7	73 W	28*	58*	6	10	1 4.67	+ 9 18.4	2.102	1.836	28.9	20.9	61 W	25*	48*
6	20	0 35.18	+ 5 10.4	2.101	2.148	27.6	20.7	79 W	33*	58*	6	20	1 23.07	+11 30.3	2.038	1.861	29.8	20.9	65 W	30*	49*
6	30	0 46.85	+ 6 12.1	2.017	2.182	27.7	20.7	85 W	39*	58	6	30	1 40.56	+13 33.4	1.970	1.886	30.5	20.9	70 W	36*	49*
7	10	0 56.78	+ 7 0.7	1.931	2.216	27.3	20.6	92 W	44*	57	7	10	1 56.98	+15 27.0	1.897	1.912	31.0	20.8	75 W	42*	48*
7	20	1 4.70	+ 7 34.7	1.844	2.250	26.4	20.5	100 W	49*	56	7	20	2 12.16	+17 10.8	1.821	1.939	31.2	20.8	81 W	49*	47*
7	30	1 10.29	+ 7 52.4	1.757	2.283	25.0	20.4	108 W	52*	56	7	30	2 25.79	+18 44.3	1.741	1.966	31.0	20.7	87 W	56*	45
8	9	1 13.29	+ 7 52.2	1.676	2.316	23.0	20.2	117 W	53*	56	8	9	2 37.58	+20 7.4	1.659	1.993	30.5	20.6	93 W	62*	44
8	19	1 13.43	+ 7 32.9	1.602	2.348	20.3	20.1	126 W	53	56	8	19	2 47.12	+21 19.5	1.577	2.021	29.5	20.5	100 W	66*	43
8	29	1 10.61	+ 6 53.9	1.540	2.380	16.8	19.9	137 W	52	57	8	29	2 53.95	+22 20.0	1.496	2.049	27.9	20.4	108 W	67	42
9	8	1 5.01	+ 5 56.6	1.496	2.412	12.7	19.7	148 W	51	58	9	8	2 57.63	+23 7.8	1.418	2.076	25.7	20.2	117 W	68	41
9	18	0 57.09	+ 4 44.4	1.473	2.442	8.0	19.5	160 W	50	59	9	18	2 57.72	+23 41.0	1.349	2.104	22.7	20.0	126 W	69	40
9	23	0 52.53	+ 4 4.7	1.471	2.458	5.5	19.4	166 W	49	60	9	28	2 54.01	+23 56.7	1.290	2.131	18.9	19.9	136 W	69	40
9	28	0 47.74	+ 3 23.8	1.476	2.473	3.0	19.3	173 W	48	61	10	8	2 46.68	+23 52.4	1.247	2.159	14.3	19.7	148 W	69	40
10	3	0 42.89	+ 2 43.0	1.487	2.487	0.8	19.2	178 W	48	61	10	13	2 41.87	+23 42.1	1.233	2.172	11.9	19.6	153 W	69	40
10	8	0 38.11	+ 2 3.3	1.506	2.502	2.3	19.3	174 E	47	62	10	18	2 36.46	+23 26.3	1.225	2.185	9.3	19.5	159 W	68	41
10	13	0 33.54	+ 1 25.6	1.531	2.517	4.6	19.5	168 E	46	63	10	23	2 30.65	+23 5.3	1.223	2.199	6.8	19.4	165 W	68	41
10	18	0 29.31	+ 0 51.0	1.564	2.531	6.9	19.7	162 E	46	63	10	28	2 24.66	+22 39.8	1.227	2.212	4.6	19.3	170 W	68	41
10	28	0 22.32	+ 0 6.1	1.648	2.559	11.1	20.0	150 E	45	64	11	2	2 18.70	+22 10.8	1.238	2.225	3.5	19.2	172 E	67	42
11	7	0 17.72	+ 0 44.4	1.756	2.586	14.6	20.3	139 E	44	65	11	7	2 12.98	+21 39.2	1.255	2.238	4.5	19.3	170 E	67	42
11	17	0 15.71	+ 1 3.0	1.882	2.613	17.3	20.6	128 E	44	65	11	12	2 7.67	+21 6.3	1.280	2.251	6.5	19.5	165 E	66	43
11	27	0 16.27	+ 1 2.7	2.023	2.638	19.2	20.8	118 E	44	65	11	17	2 2.95	+20 33.3	1.310	2.263	8.8	19.7	160 E	66	43
12	7</																				