

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°
256460 2007 DL										42609 Daubechies									
<i>(continuation)</i>										<i>(continuation)</i>									
3 17	13 51.52	+6 57.5	1.459	2.366	12.7	19.4	149W	52	57	7 5	14 54.12	-7 44.6	0.899	1.659	32.1	17.1	120E	37*	72
3 22	13 48.35	+8 32.0	1.457	2.387	11.0	19.4	153W	54	55	7 10	14 59.47	-8 34.7	0.932	1.660	33.2	17.2	117E	36*	73
3 27	13 44.67	+10 4.0	1.461	2.408	9.6	19.4	156W	55	54	7 20	15 12.36	-10 21.0	1.005	1.664	34.8	17.5	111E	33*	74
4 1	13 40.63	+11 31.4	1.473	2.429	8.7	19.4	158W	57	52	7 30	15 27.85	-12 11.0	1.083	1.672	35.8	17.7	106E	31*	76
4 6	13 36.35	+12 52.5	1.491	2.450	8.5	19.4	159W	58	51	8 9	15 45.53	-13 59.5	1.167	1.682	36.3	17.8	101E	29*	78
4 11	13 32.00	+14 5.9	1.516	2.471	9.0	19.5	157W	59	50	8 19	16 5.05	-15 42.5	1.257	1.695	36.4	18.0	96E	27*	80
4 16	13 27.70	+15 10.5	1.548	2.492	9.9	19.6	155E	60	49	8 29	16 26.14	-17 16.5	1.351	1.711	36.1	18.2	92E	25*	81*
4 21	13 23.59	+16 5.7	1.587	2.513	11.2	19.7	151E	61	48	9 8	16 48.49	-18 38.5	1.450	1.730	35.6	18.4	88E	24*	79*
5 1	13 16.41	+17 26.6	1.681	2.554	13.9	20.0	142E	62	47	9 18	17 11.83	-19 46.3	1.554	1.751	34.8	18.5	83E	23*	76*
5 11	13 11.18	+18 10.1	1.796	2.595	16.5	20.2	133E	63	46	9 28	17 35.95	-20 38.2	1.662	1.774	33.7	18.7	79E	23*	72*
5 21	13 8.21	+18 21.2	1.927	2.635	18.5	20.5	124E	63	46	10 8	18 0.57	-21 13.1	1.773	1.800	32.5	18.8	75E	22*	68*
5 26	13 7.61	+18 16.5	1.998	2.655	19.3	20.6	120E	63	46	10 18	18 25.49	-21 30.6	1.887	1.827	31.1	18.9	71E	22*	64*
5 31	13 7.59	+18 5.8	2.071	2.674	19.9	20.7	116E	63	46	10 28	18 50.50	-21 30.8	2.003	1.856	29.5	19.0	67E	22*	59*
6 5	13 8.13	+17 50.1	2.146	2.694	20.5	20.8	112E	63*	46	11 7	19 15.39	-21 14.2	2.120	1.886	27.9	19.1	63E	22*	54*
6 10	13 9.18	+17 30.0	2.223	2.713	20.9	20.9	108E	62*	46	11 17	19 40.02	-20 41.7	2.239	1.917	26.1	19.2	58E	23*	49*
6 15	13 10.73	+17 6.1	2.302	2.732	21.1	21.0	104E	60*	47	11 27	20 4.27	-19 54.4	2.356	1.949	24.2	19.3	54E	23*	44*
6 20	13 12.74	+16 39.0	2.381	2.751	21.3	21.1	100E	58*	47	12 7	20 28.01	-18 53.9	2.472	1.982	22.3	19.4	50E	23*	38*
6 25	13 15.19	+16 9.0	2.462	2.770	21.4	21.2	97E	56*	48	12 17	20 51.20	-17 41.6	2.586	2.016	20.2	19.5	45E	23*	33*
6 30	13 18.03	+15 36.7	2.543	2.788	21.4	21.3	93E	54*	48	12 27	21 13.80	-16 19.3	2.696	2.050	18.2	19.6	41E	22*	27*
7 5	13 21.24	+15 2.5	2.624	2.807	21.2	21.4	90E	51*	49	1 6	21 35.78	-14 48.6	2.801	2.085	16.0	19.6	36E	21*	22*
7 10	13 24.79	+14 26.7	2.704	2.825	21.0	21.4	86E	49*	50	1 16	21 57.15	-13 11.0	2.901	2.120	13.9	19.6	31E	19*	18*
360361 2002 AQ₄										66269 1999 JN₃									
12 23	12 59.94	+14 0.8	1.783	1.926	30.4	20.9	83W	59	38*	12 23	13 1.20	-20 15.0	3.050	2.852	18.8	20.1	69W	25	58*
1 2	13 17.26	+14 58.2	1.713	1.961	30.1	20.8	89W	60	41*	1 2	13 11.26	-21 22.5	2.901	2.837	19.7	20.0	76W	24	66*
1 12	13 32.70	+16 18.6	1.645	1.996	29.4	20.8	96W	61	44*	1 12	13 20.18	-22 23.3	2.747	2.821	20.3	19.9	84W	23	75*
1 22	13 45.91	+18 2.8	1.580	2.031	28.3	20.7	102W	63	45*	1 22	13 27.69	-23 15.8	2.590	2.805	20.5	19.7	92W	22	84*
2 1	13 56.46	+20 10.4	1.521	2.067	26.7	20.6	109W	65	44*	2 1	13 33.50	-23 58.0	2.434	2.787	20.3	19.6	101W	21	88*
2 11	14 3.90	+22 38.0	1.471	2.103	24.9	20.5	116W	68	41	2 11	13 37.29	-24 27.3	2.280	2.768	19.7	19.4	109W	21	88
2 21	14 7.83	+25 19.5	1.431	2.138	22.8	20.4	123W	70	39	2 21	13 38.77	-24 40.9	2.133	2.749	18.4	19.2	119W	20	89
2 26	14 8.36	+26 42.5	1.417	2.156	21.7	20.4	126W	72	37	3 2	13 37.66	-24 35.0	1.997	2.728	16.5	19.0	129W	20	89
3 2	14 7.90	+28 5.0	1.406	2.174	20.6	20.3	129W	73	36	3 12	13 33.90	-24 5.9	1.877	2.707	13.9	18.7	139W	21	88
3 7	14 6.48	+29 25.1	1.400	2.192	19.6	20.3	132W	74	35	3 22	13 27.66	-23 10.5	1.776	2.685	10.7	18.5	150W	22	87
3 12	14 4.12	+30 41.1	1.397	2.210	18.8	20.3	134W	76	33	4 1	13 19.44	-21 47.4	1.699	2.662	7.2	18.2	161W	23	86
3 17	14 0.88	+31 51.0	1.400	2.227	18.0	20.3	136W	77	32	4 6	13 14.85	-20 56.1	1.671	2.650	5.6	18.1	165W	24	85
3 22	13 56.85	+32 53.2	1.407	2.245	17.5	20.3	137W	78	31	4 11	13 10.12	-19 59.2	1.649	2.638	4.5	18.0	168E	25	84
3 27	13 52.17	+33 45.9	1.419	2.262	17.1	20.3	138W	79	30	4 16	13 5.38	-18 57.6	1.635	2.626	4.5	18.0	168E	26	83
4 1	13 47.00	+34 27.8	1.436	2.280	17.0	20.4	138W	79	30	4 21	13 0.78	-17 52.5	1.628	2.613	5.6	18.0	165E	27	82
4 6	13 41.55	+34 58.0	1.458	2.297	17.1	20.4	137W	80	29	4 26	12 56.45	-16 45.4	1.629	2.601	7.3	18.1	161E	28	81
4 11	13 35.99	+35 16.0	1.484	2.314	17.4	20.5	136W	80	29	5 1	12 52.52	-15 37.6	1.636	2.588	9.2	18.1	156E	29	80
4 16	13 30.53	+35 22.0	1.515	2.331	17.9	20.6	134E	80	29	5 6	12 49.09	-14 30.8	1.650	2.575	11.2	18.2	150E	30	79
4 21	13 25.32	+35 16.2	1.550	2.348	18.4	20.7	132E	80	29	5 11	12 46.24	-13 26.2	1.670	2.561	13.2	18.3	145E	32	77
4 26	13 20.54	+34 59.3	1.590	2.364	19.1	20.7	130E	80	29	5 16	12 44.01	-12 24.9	1.696	2.548	15.0	18.4	139E	33	76
5 1	13 16.30	+34 32.2	1.633	2.381	19.7	20.8	127E	80	29	5 21	12 42.46	-11 27.7	1.726	2.534	16.8	18.5	134E	34	75
5 6	13 12.71	+33 56.0	1.681	2.397	20.4	20.9	124E	79	30	5 31	12 41.41	-9 48.6	1.800	2.506	19.7	18.7	123E	35*	74
5 11	13 9.80	+33 11.9	1.731	2.414	21.0	21.0	121E	78	31	6 10	12 43.05	-8 31.8	1.886	2.478	22.0	18.8	114E	35*	73
5 16	13 7.59	+32 21.2	1.785	2.430	21.5	21.1	118E	77	32	6 20	12 47.16	-7 37.3	1.981	2.448	23.6	18.9	105E	33*	72
5 21	13 6.10	+31 24.8	1.841	2.446	22.0	21.2	115E	76	33	6 30	12 53.53	-6 3.8	2.080	2.418	24.7	19.1	97E	31*	71
5 26	13 5.32	+30 23.6	1.900	2.461	22.5	21.3	112E	75	34	7 10	13 1.87	-6 48.8	2.180	2.388	25.2	19.1	89E	28*	71
5 31	13 5.21	+29 18.8	1.961	2.477	22.8	21.4	109E	74	35	7 20	13 11.95	-6 49.7	2.278	2.357	25.3	19.2	82E	25*	69*
42609 Daubechies										215250 2001 KS₆₂									
12 23	13 0.30	-4 46.5	2.127	2.097	26.9	19.4	75W	40	51*	12 23	13 1.99	+2 28.4	2.974	2.921	19.2	21.2	77W	47	46*
1 2	13 17.47	-6 8.7	1.981	2.062	28.1	19.2	81W	39	57*	1 2	13 11.57	+2 9.9	2.807	2.895	19.8	21.0	85W	47	52*
1 12	13 34.32	-7 22.6	1.836	2.028	28.9	19.0	86W	38	64*	1 12	13 20.03	+2 3.9	2.639	2.868	20.0	20.9	93W	47	58*
1 22	13 50.70	-8 26.5	1.693	1.994	29.5	18.8	92W	37	69*	1 22	13 27.12	+2 11.9	2.473	2.840	19.8	20.7	102W	47	61*
2 1	14 6.40	-9 18.5	1.554	1.961	29.8	18.6	99W	36	73*	2 1	13 32.54	+2 35.5	2.311	2.811	19.2	20.5	110W	48	61
2 11	14 21.14	-9 56.7	1.419	1.928	29.6	18.4	105W	35	74	2 11	13 35.99	+3 15.6	2.157	2.781	18.0	20.3	120W	48	61
2 21	14 34.60	-10 19.6	1.291	1.897	28.9	18.1	112W	35	74	2 21	13 37.19	+4 12.4	2.016	2.751	16.1	20.1	129W	49	60
3 2	14 46.32	-10 25.4	1.171	1.866	27.7	17.8	119W	35	74	3 2	13 35.89	+5 24.8	1.890	2.719	13.8	19.8	139W	50	59
3 12	14 55.84	-10 13.0	1.060	1.837	25.7	17.5	127W	35	74	3 12	13 32.01	+6 49.4	1.785	2.687	10.9	19.6	149W	52	57
3 22	15 2.65	-9 42.0	0.961	1.809	22.9	17.2	135W	35	74										
4 1	15 6.27	-8 53.2	0.875	1.783	19.3	16.8	144W	36	73										
4 11	15 6.49	-7 50.2	0.805	1.759	14.8	16.5	153W	37	72										
4 16	15 5.34	-7 15.2	0.776	1.748	12.4	16.3	158W	38	71										
4 21	15 3.44	-6 39.2	0.752	1															

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°
215250 2001 KS₆₂										66251 1999 GJ₂									
<i>(continuation)</i>										<i>(continuation)</i>									
3 17	13 29.15	+7 34.6	1.741	2.671	9.4	19.5	154 W	53	56	9 28	17 8.00	-11 3.1	1.132	1.263	49.1	19.5	72 E	30*	62*
3 22	13 25.72	+8 20.6	1.704	2.654	8.0	19.3	158 W	53	56	10 8	17 39.86	-12 35.8	1.156	1.250	48.9	19.5	70 E	29*	60*
3 27	13 21.79	+9 6.2	1.673	2.638	6.9	19.2	161 W	54	55	10 18	18 13.45	-13 48.7	1.181	1.240	48.5	19.5	69 E	29*	58*
4 1	13 17.47	+9 50.2	1.648	2.621	6.3	19.2	163 W	55	54	10 28	18 48.50	-14 37.6	1.208	1.234	48.0	19.6	67 E	29*	56*
4 6	13 12.88	+10 31.5	1.631	2.604	6.5	19.1	163 W	56	53	11 7	19 24.62	-14 59.1	1.238	1.232	47.3	19.6	66 E	29*	54*
4 11	13 8.13	+11 8.9	1.621	2.586	7.5	19.2	160 E	56	53	11 17	20 1.38	-14 51.4	1.272	1.233	46.5	19.6	65 E	29*	52*
4 16	13 3.36	+11 41.5	1.617	2.569	8.9	19.2	157 E	57	52	11 27	20 38.33	-14 14.1	1.310	1.238	45.4	19.7	63 E	30*	49*
4 21	12 58.72	+12 8.5	1.619	2.551	10.6	19.3	152 E	57	52	12 7	21 15.01	-13 8.8	1.354	1.247	44.3	19.7	62 E	31*	47*
5 1	12 50.32	+12 43.1	1.642	2.516	14.2	19.4	142 E	58	51	12 12	21 33.14	-12 26.6	1.377	1.253	43.6	19.8	61 E	32*	45*
5 11	12 43.84	+12 50.9	1.685	2.479	17.6	19.5	132 E	58	51	12 17	21 51.09	-11 38.5	1.402	1.260	43.0	19.8	61 E	32*	44*
5 21	12 39.81	+12 33.1	1.744	2.442	20.4	19.7	123 E	58	51	12 22	22 8.83	-10 45.2	1.429	1.267	42.3	19.8	60 E	33*	42*
5 31	12 38.49	+11 52.3	1.814	2.405	22.8	19.8	113 E	57*	52	12 27	22 26.33	-9 47.2	1.456	1.275	41.5	19.9	59 E	34*	41*
6 10	12 39.88	+10 52.3	1.891	2.367	24.5	19.9	105 E	54*	53	1	22 43.57	-8 45.2	1.485	1.284	40.8	19.9	59 E	35*	40*
6 20	12 43.80	+9 36.4	1.972	2.329	25.7	20.0	97	49*	54	1	6 23 0.56	-7 39.8	1.515	1.294	40.0	19.9	58 E	35*	38*
6 30	12 50.04	+8 7.6	2.054	2.290	26.4	20.1	90	44*	56	1	11 23 17.30	-6 31.6	1.546	1.304	39.2	20.0	57 E	36*	37*
7 10	12 58.35	+6 28.4	2.135	2.251	26.6	20.1	83	38*	58*	1	16 23 33.78	-5 21.1	1.579	1.315	38.4	20.0	56 E	36*	36*
7 20	13 8.49	+4 40.8	2.212	2.212	26.6	20.1	77	34*	58*	250577 2005 AC									
7 30	13 20.30	+2 46.6	2.284	2.173	26.2	20.2	71	30*	57*	12 23	13 5.50	+53 44.2	0.678	1.287	48.8	19.7	100 W	81	5*
8 9	13 33.61	+0 47.4	2.351	2.134	25.5	20.2	65	27*	54*	12 28	13 16.14	+54 18.8	0.605	1.255	50.1	19.5	102 W	81	5*
8 19	13 48.32	+1 15.5	2.412	2.095	24.7	20.2	60	24*	51*	1	2 13 27.46	+55 8.8	0.532	1.220	51.7	19.2	103 W	80	5*
8 29	14 4.36	+3 20.6	2.466	2.056	23.7	20.1	55	21*	47*	1	7 13 40.20	+56 19.4	0.458	1.184	53.6	18.8	104 W	79	5*
9 8	14 21.67	+5 26.4	2.513	2.018	22.5	20.1	50	19*	42*	1	12 13 55.89	+57 59.2	0.384	1.145	56.0	18.4	105 W	77	3*
9 18	14 40.22	+7 31.5	2.554	1.980	21.1	20.1	45	17*	38*	1	13 13 59.64	+58 23.8	0.369	1.137	56.6	18.4	105 W	77	3*
9 28	15 0.02	+9 34.2	2.588	1.943	19.7	20.0	41	16*	33*	1	14 14 3.67	+58 50.3	0.355	1.129	57.2	18.3	105 W	76	3*
10 8	15 21.06	+11 32.7	2.615	1.907	18.2	19.9	37	14*	29*	1	15 14 8.05	+59 18.9	0.340	1.121	57.8	18.2	105 W	76	2*
10 18	15 43.34	+13 25.0	2.636	1.873	16.6	19.9	32	13*	25*	1	16 14 12.84	+59 49.7	0.325	1.113	58.5	18.1	105 W	75	2*
10 28	16 6.86	+15 9.0	2.651	1.839	14.9	19.8	28	11*	21*	1	17 14 18.14	+60 23.1	0.310	1.105	59.3	18.0	105 W	75	1*
11 7	16 31.60	+16 42.6	2.662	1.808	13.2	19.7	25	10*	16*	1	18 14 24.04	+60 59.2	0.295	1.097	60.1	17.9	105 W	74	1*
11 17	16 57.52	+18 3.5	2.667	1.778	11.4	19.6	21	8*	12*	1	19 14 30.69	+61 38.2	0.281	1.089	61.0	17.8	105 W	73	—
11 27	17 24.53	+19 9.4	2.669	1.750	9.6	19.5	17	7*	8*	1	20 14 38.27	+62 20.4	0.266	1.080	62.0	17.7	104 W	73	—
12 7	17 52.53	+19 58.5	2.667	1.725	7.7	19.4	14	5*	5*	1	21 14 47.02	+63 6.0	0.251	1.072	63.1	17.6	104 W	72	—
12 17	18 21.37	+20 28.9	2.662	1.702	5.9	19.2	10	3*	1*	1	22 14 57.25	+63 55.0	0.237	1.063	64.3	17.5	103 W	71	—
12 27	18 50.85	+20 39.4	2.655	1.682	4.0	19.1	7	—	—	1	23 15 9.39	+64 47.2	0.222	1.055	65.7	17.4	102 W	70*	—
1	6 19 20.75	+20 29.3	2.646	1.666	2.2	19.0	4	—	—	1	24 15 24.01	+65 42.3	0.208	1.046	67.3	17.3	102 W	69*	—
1	16 19 50.86	+19 58.6	2.636	1.652	0.6	18.8	1 W	—	—	1	25 15 41.88	+66 38.8	0.194	1.037	69.0	17.1	100 W	68*	—
66251 1999 GJ₂										1	26 16 4.01	+67 34.2	0.180	1.028	71.0	17.0	99 W	66*	—
12 23	13 2.77	+12 15.4	1.891	1.834	30.6	20.9	71 W	33	54*	1	27 16 31.65	+68 23.8	0.167	1.019	73.3	16.9	97 W	65*	—
1	2 13 20.50	+13 40.5	1.776	1.828	31.6	20.8	77 W	31	61*	1	28 17 6.11	+68 59.1	0.153	1.010	76.1	16.8	95 W	62*	—
1	12 13 37.58	+14 53.9	1.658	1.821	32.4	20.7	83 W	30	68*	1	29 17 48.17	+69 6.2	0.141	1.001	79.3	16.7	93 W	60*	—
1	22 13 53.83	+15 53.8	1.538	1.812	32.9	20.5	89 W	29	75*	1	30 18 37.03	+68 25.2	0.129	0.992	83.1	16.6	89 W	56*	—
2	1 14 8.96	+16 37.5	1.416	1.802	33.0	20.3	96 W	28	80*	1	31 19 29.38	+66 32.4	0.118	0.983	87.6	16.6	86 W	52*	—
2	6 14 15.99	+16 52.4	1.355	1.796	32.8	20.2	99 W	28	81*	2	1 20 20.15	+63 6.9	0.108	0.974	92.9	16.6	81 W	47*	—
2	11 14 22.62	+17 2.2	1.295	1.790	32.6	20.1	102 W	28	81	2	2 21 5.08	+57 57.0	0.100	0.964	99.2	16.7	75 E	42*	—
2	16 14 28.77	+17 6.5	1.235	1.783	32.2	20.0	106 W	28	81	2	3 21 42.38	+51 4.1	0.093	0.955	106.4	16.9	68 E	44*	—
2	21 14 34.38	+17 4.8	1.177	1.776	31.6	19.8	110 W	28	81	2	4 22 12.32	+42 45.2	0.090	0.946	114.1	17.3	61 E	44*	—
2	26 14 39.36	+16 56.5	1.119	1.768	30.8	19.7	114 W	28	81	2	5 22 36.09	+33 32.9	0.089	0.936	121.9	17.8	54 E	43*	—
3	2 14 43.65	+16 41.0	1.063	1.761	29.8	19.6	118 W	28	81	2	6 22 55.01	+24 10.0	0.090	0.927	129.0	18.4	47 E	39*	—
3	7 14 47.17	+16 17.8	1.008	1.752	28.6	19.4	122 W	29	80	2	7 23 10.19	+15 16.8	0.095	0.917	134.8	19.1	41 E	35*	4*
3	12 14 49.83	+15 46.4	0.956	1.744	27.1	19.2	127 W	29	80	2	8 23 22.49	+7 20.0	0.102	0.907	138.9	19.7	37 E	31*	10*
3	17 14 51.56	+15 6.0	0.906	1.735	25.4	19.0	132 W	30	79	2	9 23 32.58	+0 29.7	0.111	0.898	141.4	20.2	35 E	26*	15*
3	22 14 52.25	+14 16.1	0.860	1.725	23.4	18.9	137 W	31	78	2	10 23 40.92	-5 15.5	0.121	0.888	142.5	20.6	33 E	22*	19*
4	1 14 50.35	+12 6.1	0.776	1.706	18.4	18.5	147 W	33	76	2	11 23 47.87	-10 3.4	0.133	0.878	142.7	20.8	33 E	18*	21*
4	11 14 44.02	+9 17.3	0.710	1.684	12.4	18.0	159 W	36	73	2	12 23 53.71	-14 3.0	0.145	0.868	142.2	20.9	33 E	15*	24*
4	21 14 33.85	+5 58.4	0.664	1.662	6.7	17.6	169 W	39	70	2	13 23 58.64	-17 23.2	0.159	0.858	141.5	20.9	33 E	12*	25*
4	26 14 27.76	+4 13.5	0.650	1.650	6.0	17.5	170 W	41	68	2	14 0 2.81	-20 11.5	0.173	0.848	140.5	20.9	33 E	10*	26*
5	1 14 21.36	+2 29.4	0.641	1.638	7.9	17.6	167 E	43	66	2	15 0 6.34	-22 33.8	0.187	0.838	139.4	21.0	34 E	8*	27*
5	6 14 14.97	+0 49.8	0.637	1.626	11.2	17.7	162 E	44	65	2	16 0 9.33	-24 35.0	0.202	0.828	138.3	20.9	34 E	6*	28*
5	11 14 8.87	+0 42.2	0.638	1.613	14.9	17.8	156 E	46	63	2	17 0 11.86	-26 19.0	0.217	0.818	137.2	20.9	34 E	4*	28*
5	16 14 3.34	+2 3.8	0.644	1.601	18.6	17.9	150 E	47	62	2	18 0 13.98	-27 48.6	0.232	0.808	136.1	20.9	35 E	2*	28*
5	21 13 58.60	+3 13.2	0.655	1.588	22.2	18.1	144 E	48	61	2	19 0 15.74	-29 6.3	0.247	0.798	135.0	20.9	35 E	1*	29*
5	31 13 52.19	+4 51.7	0.685	1.561	28.6	18.3	133 E	50	59	2	20 0 17.19	-30 13.8	0.263	0.788	134.0	20.9	35 E	—	28*
6	10 13 50.35	+5 37.8	0.725	1.534	33.8	18.5	123 E	51	58	2	21 0 18.36	-31 12.8	0.279	0.777	132.9	20.9	35		

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

19/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45° - 26°	20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45° - 26°	
3800 Karayusuf (continuation)									66008 1998 QH₂ (continuation)									
8 24	16 23.99	-27 1.2	1.043	1.545	40.4	17.7	98 E	16*	1 17	15 2.03	-36 13.2	0.761	0.944	69.5	17.7	64 W	9*	58*
8 29	16 34.37	-28 5.6	1.088	1.550	40.4	17.8	95 E	15*	1 22	15 27.83	-31 20.0	0.711	0.931	72.2	17.6	64 W	13*	58*
9 3	16 45.30	-29 4.0	1.134	1.556	40.4	17.9	93 E	14*	1 27	15 54.56	-25 25.2	0.668	0.921	74.7	17.6	64 W	19*	57*
9 8	16 56.72	-29 56.3	1.180	1.561	40.2	18.0	91 E	13*	2 1	16 22.06	-18 29.5	0.635	0.914	76.6	17.5	65 W	25*	54*
9 13	17 8.61	-30 42.5	1.227	1.566	40.0	18.1	89 E	13*	2 3	16 33.23	-15 28.4	0.626	0.912	77.2	17.5	65 W	28*	53*
9 18	17 20.91	-31 22.7	1.273	1.571	39.7	18.2	86 E	12*	2 5	16 44.46	-12 20.6	0.619	0.911	77.7	17.5	64 W	31*	51*
9 23	17 33.61	-31 56.7	1.320	1.576	39.3	18.3	84 E	12*	2 7	16 55.75	-9 8.0	0.614	0.910	78.0	17.5	64 W	34*	49*
9 28	17 46.64	-32 24.6	1.367	1.582	38.9	18.3	82 E	11*	2 9	17 7.06	-5 52.3	0.612	0.909	78.2	17.5	64 W	37*	47*
10 3	17 59.96	-32 46.2	1.414	1.587	38.4	18.4	80 E	11*	2 11	17 18.37	-2 35.9	0.613	0.909	78.2	17.5	64 W	39*	45*
10 8	18 13.53	-33 1.5	1.461	1.592	37.9	18.5	78 E	11*	2 13	17 29.66	+0 39.2	0.616	0.910	78.0	17.5	64 W	42*	43*
10 13	18 27.30	-33 10.6	1.508	1.597	37.4	18.5	76 E	11*	2 15	17 40.90	+3 50.8	0.622	0.911	77.7	17.5	64 W	44*	40*
10 18	18 41.24	-33 13.6	1.554	1.602	36.8	18.6	74 E	11*	2 17	17 52.08	+6 57.0	0.631	0.912	77.2	17.5	64 W	46*	38*
10 23	18 55.31	-33 10.3	1.601	1.607	36.1	18.6	72 E	11*	2 19	18 3.15	+9 56.1	0.642	0.915	76.6	17.5	64 W	48*	36*
10 28	19 9.46	-33 1.1	1.647	1.612	35.5	18.7	70 E	11*	2 21	18 14.11	+12 46.9	0.655	0.917	75.9	17.5	64 W	50*	33*
11 2	19 23.65	-32 45.9	1.692	1.617	34.8	18.7	68 E	12*	2 23	18 24.93	+15 28.3	0.670	0.920	75.1	17.6	64 W	52*	31*
11 7	19 37.84	-32 24.9	1.737	1.621	34.1	18.8	67 E	12*	2 25	18 35.58	+17 59.8	0.687	0.924	74.2	17.6	64 W	53*	29*
11 12	19 52.01	-31 58.2	1.782	1.626	33.4	18.8	65 E	13*	2 27	18 46.05	+20 21.1	0.706	0.928	73.2	17.6	64 W	54*	27*
11 17	20 6.12	-31 26.1	1.826	1.631	32.6	18.8	63 E	13*	3 2	19 56.33	+22 32.1	0.726	0.933	72.1	17.7	64 W	55*	26*
11 22	20 20.15	-30 48.8	1.869	1.635	31.9	18.9	61 E	14*	3 2	19 6.40	+24 33.2	0.748	0.938	71.0	17.7	63 W	55*	24*
11 27	20 34.07	-30 6.5	1.912	1.639	31.1	18.9	59 E	14*	3 7	19 30.59	+28 54.7	0.805	0.952	68.2	17.8	63 W	56*	21*
12 2	20 47.86	-29 19.5	1.954	1.644	30.3	18.9	57 E	15*	3 12	19 53.32	+32 24.5	0.867	0.969	65.3	17.9	62 W	56*	18*
12 7	21 1.52	-28 28.0	1.995	1.648	29.4	19.0	55 E	16*	3 17	20 14.56	+35 12.0	0.930	0.988	62.4	18.0	62 W	55*	16*
12 12	21 15.02	-27 32.3	2.036	1.652	28.6	19.0	53 E	16*	3 22	20 34.31	+37 25.9	0.993	1.008	59.7	18.1	61 W	55*	15*
12 17	21 28.37	-26 32.7	2.076	1.656	27.8	19.0	52 E	17*	3 27	20 52.64	+39 13.7	1.054	1.031	57.2	18.2	60 W	54*	14*
12 22	21 41.56	-25 29.5	2.114	1.659	26.9	19.0	50 E	17*	4 1	21 9.61	+40 41.3	1.112	1.055	54.8	18.3	60 W	54*	13*
12 27	21 54.58	-24 23.0	2.152	1.663	26.1	19.1	48 E	18*	4 6	21 25.33	+41 53.1	1.167	1.080	52.7	18.4	59 W	53*	13*
1 1	22 7.44	-23 13.5	2.189	1.666	25.2	19.1	46 E	18*	4 11	21 39.88	+42 52.9	1.217	1.106	50.8	18.5	59 W	53*	13*
1 6	22 20.13	-22 1.2	2.225	1.669	24.3	19.1	44 E	19*	4 16	21 53.37	+43 43.4	1.262	1.133	49.2	18.6	59 W	53*	13*
1 11	22 32.68	-20 46.5	2.260	1.672	23.4	19.1	43 E	19*	4 21	22 5.86	+44 26.9	1.302	1.160	47.7	18.7	59 W	53*	13*
1 16	22 45.09	-19 29.5	2.293	1.675	22.5	19.1	41 E	19*	4 26	22 17.41	+45 4.9	1.336	1.188	46.5	18.8	59 W	53*	14*
									5 1	22 28.07	+45 38.4	1.365	1.216	45.5	18.8	59 W	53*	14*
12 23	13 6.53	-4 2.1	2.924	2.812	19.6	20.7	74 W	41*	5 11	22 46.92	+46 35.6	1.406	1.272	44.0	19.0	61 W	54*	15*
1 2	13 15.33	-4 53.4	2.787	2.816	20.2	20.6	82 W	40	5 21	23 2.63	+47 23.1	1.423	1.327	43.0	19.0	63 W	56*	15*
1 12	13 22.75	-5 35.3	2.646	2.818	20.4	20.5	90 W	39	5 31	23 15.15	+48 2.8	1.418	1.382	42.4	19.1	67 W	59*	16*
1 22	13 28.53	-6 6.7	2.503	2.820	20.2	20.3	98 W	39	6 5	23 20.17	+48 19.4	1.407	1.408	42.2	19.1	69 W	61*	16*
2 1	13 32.39	-6 26.4	2.363	2.821	19.5	20.2	108 W	39	6 10	23 24.32	+48 33.8	1.392	1.435	42.1	19.1	71 W	64*	15
2 11	13 34.04	-6 33.5	2.229	2.820	18.1	20.0	117 W	38	6 15	23 27.54	+48 45.6	1.371	1.460	41.9	19.1	74 W	66*	15
2 21	13 33.23	-6 27.1	2.105	2.819	16.2	19.8	128 W	39	6 20	23 29.76	+48 54.1	1.346	1.485	41.7	19.1	77 W	69*	15
3 2	13 29.82	-6 7.0	1.996	2.816	13.5	19.6	138 W	39	6 25	23 30.89	+48 58.6	1.317	1.510	41.4	19.1	80 W	72*	15
3 12	13 23.89	-5 34.0	1.908	2.812	10.2	19.4	150 W	39	6 30	23 30.86	+48 57.9	1.284	1.534	41.1	19.1	83 W	76*	15
3 22	13 15.76	-4 50.3	1.843	2.808	6.3	19.2	162 W	40	7 5	23 29.59	+48 50.8	1.248	1.558	40.6	19.0	86 W	80*	15
4 1	13 6.11	-3 59.8	1.806	2.802	2.1	18.9	174 W	41	7 10	23 27.00	+48 35.6	1.209	1.580	40.0	19.0	90 W	84*	15
4 6	13 1.00	-3 33.8	1.799	2.799	1.0	18.8	177 W	41	7 15	23 23.00	+48 10.2	1.168	1.603	39.2	18.9	94 W	87	16
4 11	12 55.87	-3 8.3	1.799	2.795	2.7	18.9	172 E	42	7 20	23 17.54	+47 32.0	1.126	1.624	38.2	18.8	98 W	87	16
4 16	12 50.85	-2 43.9	1.806	2.791	4.9	19.0	166 E	42	7 25	23 10.62	+46 37.6	1.083	1.645	37.0	18.8	103 W	88	17
4 21	12 46.06	-2 21.5	1.821	2.787	7.0	19.1	160 E	43	7 30	23 2.32	+45 23.5	1.041	1.665	35.4	18.6	108 W	90	19
5 1	12 37.64	-1 44.8	1.869	2.778	10.9	19.4	148 E	43	8 4	22 52.79	+43 45.8	1.000	1.685	33.5	18.5	113 W	89	20
5 11	12 31.28	-1 21.8	1.941	2.768	14.4	19.6	137 E	44	8 9	22 42.27	+41 40.9	0.962	1.703	31.3	18.4	119 W	87	22
5 21	12 27.33	-1 14.0	2.031	2.757	17.1	19.7	127	44	8 14	22 31.08	+39 5.5	0.928	1.721	28.8	18.3	125 W	84	25
5 31	12 25.90	-1 21.6	2.136	2.745	19.3	19.9	117	43*	8 19	22 19.59	+35 57.6	0.899	1.739	26.1	18.2	131 W	81	28
6 10	12 26.87	-1 43.6	2.249	2.732	20.8	20.1	108 E	41*	8 24	22 8.26	+32 17.8	0.878	1.756	23.3	18.0	137 E	77	32
6 20	12 30.04	-2 18.4	2.368	2.718	21.7	20.2	99	37*	8 29	21 57.48	+28 9.7	0.865	1.772	20.7	17.9	142	73	36
6 30	12 35.19	-3 4.5	2.489	2.703	22.1	20.3	91	32*	9 3	21 47.61	+23 40.0	0.862	1.787	18.7	17.9	145	69	40
7 10	12 42.05	-4 0.3	2.609	2.687	22.1	20.4	83	28*	9 8	21 38.88	+18 57.9	0.870	1.801	17.6	17.9	147 E	64	45
7 20	12 50.42	-5 4.1	2.725	2.670	21.7	20.5	76	23*	9 13	21 31.47	+14 13.6	0.888	1.815	17.7	18.0	147 E	59	50
7 30	13 0.11	-6 14.8	2.836	2.651	21.0	20.5	69	20*	9 18	21 25.45	+9 36.9	0.918	1.828	18.9	18.1	144 E	55	54
8 9	13 10.98	-7 30.8	2.940	2.632	20.0	20.5	63 E	17*	9 23	21 20.84	+5 16.0	0.957	1.841	20.6	18.2	140 W	50	59
8 19	13 22.89	-8 51.1	3.035	2.612	18.8	20.6	56 E	14*	9 28	21 17.60	+1 16.2	1.005	1.853	22.6	18.4	135 E	46	63
8 29	13 35.77	-10 14.6	3.120	2.591	17.4	20.6	50	12*	10 3	21 15.64	-2 19.6	1.061	1.864	24.5	18.6	129	43	66
9 8	13 49.53	-11 40.1	3.195	2.569	15.8	20.5	44	9*	10 8	21 14.85	-5 30.9	1.123	1.874	26.3	18.8	124	39	70
9 18	14 4.12	-13 6.6	3.259	2.545	14.1	20.5	38	7*	10 13	21 15.13	-8 18.5	1.190	1.884	27.7	19.0	119	37	72
9 28	14 19.52	-14 33.1	3.310	2.521	12.3	20.4	32 E	6*	10 18	21 16.38	-10 44.1	1.262	1.892	28.9	19.2	113	34	75
10 8	14 35.69	-15 58.6	3.348	2.496	10.4	20.4	27 E	4*	10 23	21 18.51	-12 49.6	1.337	1.901	29.8	19.3	108	32	77
10 18	14 52.61	-17 22.0	3.374	2.470	8.3	20.3	21 E	2*	10 28	21 21.41	-14 37.2	1.414	1.908	30.4	19.5	103	30	79
10 28																		

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°
86067 1999 RM₂₈										39489 1981 EU₆									
12 23	13 8.08	+ 5 1.1	1.414	1.532	38.8	19.6	77 W	50*	43*	8 19	14 18.04	-13 44.2	2.023	1.939	29.5	19.4	71 E	18*	64*
1 2	13 30.42	+ 6 40.5	1.362	1.575	38.3	19.6	83 W	52	46*	8 29	14 36.39	-14 42.9	2.089	1.907	28.8	19.4	66 E	17*	59*
1 12	13 51.01	+ 8 49.0	1.310	1.619	37.4	19.5	89 W	54	48*	9 8	14 56.18	-15 43.4	2.150	1.876	27.9	19.4	61 E	16*	54*
1 22	14 9.52	+11 28.3	1.260	1.662	36.2	19.5	95 W	56	49*	9 18	15 17.34	-16 43.0	2.206	1.846	26.9	19.4	56 E	15*	50*
2 1	14 25.47	+14 38.9	1.214	1.706	34.5	19.4	101 W	60	49*	9 28	15 39.82	-17 38.8	2.257	1.817	25.7	19.3	52 E	15*	46*
2 6	14 32.33	+16 25.4	1.193	1.727	33.6	19.4	104 W	61	47*	10 8	16 3.54	-18 28.3	2.303	1.789	24.4	19.3	48 E	14*	41*
2 11	14 38.36	+18 18.4	1.175	1.749	32.5	19.3	108 W	63	46	10 18	16 28.43	-19 8.7	2.344	1.764	23.0	19.3	44 E	14*	37*
2 16	14 43.49	+20 17.3	1.158	1.770	31.4	19.3	111 W	65	44	10 28	16 54.39	-19 37.5	2.381	1.740	21.5	19.2	40 E	14*	33*
2 21	14 47.63	+22 20.8	1.144	1.791	30.3	19.3	114 W	67	42	11 7	17 21.28	-19 52.3	2.415	1.719	19.9	19.2	36 E	14*	28*
2 26	14 50.70	+24 27.6	1.133	1.812	29.1	19.2	117 W	69	40	11 17	17 48.96	-19 51.2	2.445	1.699	18.4	19.1	33 E	14*	24*
3 2	14 52.66	+26 35.6	1.125	1.832	28.0	19.2	120 W	72	37	11 27	18 17.24	-19 32.5	2.471	1.683	16.7	19.1	29 E	13*	20*
3 7	14 53.44	+28 42.9	1.120	1.853	26.9	19.2	122 W	74	35	12 7	18 45.91	-18 55.2	2.496	1.669	15.1	19.0	26 E	13*	16*
3 12	14 53.02	+30 47.1	1.119	1.873	25.8	19.2	125 W	76	33	12 17	19 14.79	-17 58.9	2.519	1.658	13.4	19.0	23 E	12*	11*
3 17	14 51.38	+32 45.8	1.122	1.893	24.9	19.2	127 W	78	31	12 27	19 43.67	-16 43.9	2.540	1.650	11.7	18.9	20 E	11*	8*
3 22	14 48.56	+34 36.4	1.129	1.912	24.2	19.2	128 W	80	29	1 6	20 12.36	-15 11.0	2.560	1.645	10.0	18.9	17 E	10*	4*
3 27	14 44.60	+36 16.6	1.139	1.931	23.6	19.2	129 W	81	28	1 16	20 40.74	-13 21.8	2.580	1.643	8.4	18.8	14 E	8*	1*
4 1	14 39.65	+37 43.9	1.154	1.950	23.2	19.3	130 W	83	26	8507 1991 CB₁									
4 6	14 33.89	+38 56.7	1.173	1.969	23.0	19.3	130 W	84	25	12 23	13 9.88	-15 47.7	1.899	1.793	30.7	21.2	69 W	29*	54*
4 11	14 27.53	+39 53.6	1.195	1.987	23.0	19.4	129 W	85	24	1 2	13 30.71	-19 1.0	1.725	1.717	33.2	20.9	73 W	26	61*
4 16	14 20.81	+40 34.0	1.222	2.005	23.1	19.4	128 W	86	23	1 12	13 53.66	-22 29.6	1.554	1.638	35.8	20.7	77 W	23	67*
4 21	14 13.99	+40 57.8	1.252	2.023	23.4	19.5	127 W	86	23	1 22	14 19.69	-26 15.5	1.387	1.555	38.5	20.4	80 W	19	73*
4 26	14 7.33	+41 5.2	1.285	2.040	23.7	19.6	125 E	86	23	2 1	14 34.30	-28 15.3	1.307	1.512	40.1	20.3	81 W	17	75*
5 1	14 1.07	+40 57.2	1.321	2.057	24.1	19.7	123 E	86	23	2 1	14 50.30	-30 19.2	1.229	1.469	41.7	20.1	82 W	15	76*
5 6	13 55.42	+40 35.2	1.361	2.073	24.6	19.8	121 E	86	23	2 6	15 8.02	-32 26.7	1.154	1.424	43.4	20.0	83 W	13	77*
5 11	13 50.49	+40 0.8	1.403	2.089	25.0	19.9	119 E	85	24	2 11	15 27.85	-34 36.4	1.083	1.379	45.3	19.8	83 W	10	76*
5 16	13 46.37	+39 15.5	1.448	2.105	25.4	20.0	117 E	84	25	2 16	15 50.30	-36 45.5	1.016	1.332	47.4	19.6	83 W	8	75*
5 21	13 43.12	+38 20.8	1.495	2.120	25.8	20.1	114 E	83	26	2 21	16 15.90	-38 50.1	0.954	1.285	49.8	19.5	83 W	6	73*
5 26	13 40.76	+37 18.3	1.544	2.135	26.2	20.2	112 E	82	27	2 23	16 27.15	-39 37.2	0.930	1.266	50.8	19.4	83 W	5	72*
5 31	13 39.27	+36 9.4	1.595	2.150	26.5	20.3	109 E	81	28	2 25	16 39.02	-40 22.0	0.908	1.247	51.8	19.4	82 W	5*	72*
6 5	13 38.61	+34 55.4	1.647	2.164	26.7	20.4	106 E	80	29	2 27	16 51.54	-41 3.9	0.886	1.228	52.9	19.3	82 W	4*	71*
6 10	13 38.73	+33 37.4	1.701	2.178	26.9	20.5	104 E	79	30	2 29	17 4.74	-41 42.1	0.866	1.209	54.0	19.3	81 W	3*	70*
6 15	13 39.57	+32 16.4	1.756	2.191	27.1	20.5	101 E	77*	32	3 2	17 18.62	-42 16.0	0.846	1.189	55.2	19.2	80 W	2*	69*
6 20	13 41.08	+30 53.0	1.812	2.204	27.1	20.6	98 E	74*	33	3 4	17 33.18	-42 44.5	0.828	1.170	56.4	19.2	79 W	2*	68*
6 25	13 43.21	+29 28.0	1.869	2.217	27.1	20.7	96 E	71*	35	3 6	17 48.40	-43 7.0	0.811	1.151	57.7	19.1	79 W	1*	66*
6 30	13 45.90	+28 2.0	1.927	2.229	27.1	20.8	93 E	67*	36	3 8	18 4.24	-43 22.4	0.796	1.131	59.0	19.1	78 W	—	65*
7 5	13 49.11	+26 35.4	1.985	2.241	27.0	20.9	91 E	64*	37	3 10	18 20.64	-43 29.9	0.782	1.111	60.3	19.1	77 W	—	64*
7 10	13 52.77	+25 8.8	2.044	2.253	26.8	20.9	88 E	61*	39	3 12	18 37.51	-43 28.6	0.769	1.092	61.7	19.0	75 W	—	63*
7 15	13 56.85	+23 42.4	2.103	2.264	26.6	21.0	86 E	58*	40	3 14	18 54.75	-43 17.9	0.758	1.072	63.1	19.0	74 W	—	62*
7 20	14 1.31	+22 16.4	2.162	2.274	26.3	21.1	83 E	56*	42	3 16	19 12.22	-42 57.1	0.748	1.053	64.5	19.0	73 W	—	61*
7 25	14 6.13	+20 51.1	2.221	2.284	26.0	21.1	80 E	53*	43*	3 18	19 29.81	-42 25.8	0.740	1.033	65.9	18.9	71 W	—	59*
7 30	14 11.28	+19 26.8	2.280	2.294	25.6	21.2	78 E	51*	44*	3 20	19 47.35	-41 43.9	0.733	1.014	67.3	18.9	70 W	—	58*
8 4	14 16.72	+18 3.6	2.338	2.303	25.2	21.2	75 E	49*	45*	3 22	20 4.72	-40 51.4	0.728	0.994	68.7	18.9	68 W	—	57*
8 9	14 22.42	+16 41.8	2.396	2.312	24.8	21.3	73 E	47*	46*	3 24	20 21.79	-39 48.7	0.725	0.975	70.1	18.9	67 W	—	55*
8 14	14 28.38	+15 21.4	2.454	2.321	24.3	21.3	71 E	45*	46*	3 26	20 38.45	-38 36.3	0.723	0.956	71.4	18.9	65 W	—	54*
8 19	14 34.57	+14 2.5	2.510	2.329	23.9	21.4	68 E	43*	45*	3 28	20 54.60	-37 14.8	0.723	0.937	72.6	18.9	64 W	—	53*
8 24	14 40.99	+12 45.2	2.566	2.337	23.2	21.4	66 E	41*	45*	3 30	21 10.19	-35 45.1	0.725	0.918	73.8	18.9	62 W	—	52*
8 29	14 47.61	+11 29.7	2.621	2.344	22.6	21.4	63 E	40*	44*	4 1	21 25.17	-34 8.2	0.729	0.900	74.9	18.9	60 W	—	50*
9 3	14 54.42	+10 16.1	2.674	2.351	22.0	21.5	61 E	38*	42*	4 3	21 39.51	-32 25.1	0.734	0.882	75.9	18.9	59 W	—	49*
9 8	15 1.41	+ 9 4.5	2.727	2.358	21.3	21.5	58 E	37*	41*	4 5	21 53.23	-30 36.8	0.741	0.864	76.7	18.9	57 W	—	48*
39489 1981 EU₆										4 7	22 6.31	-28 44.3	0.749	0.846	77.4	18.9	56 W	—	47*
12 23	13 9.60	-14 38.9	2.874	2.685	20.0	20.5	69 W	30*	54*	4 9	22 18.81	-26 48.6	0.760	0.830	78.0	18.9	54 W	—	46*
1 2	13 20.91	-15 58.9	2.718	2.661	21.0	20.4	76 W	29	62*	4 11	22 30.73	-24 50.5	0.771	0.813	78.4	18.9	53 W	—	45*
1 12	13 31.31	-17 13.4	2.559	2.636	21.8	20.3	84 W	28	70*	4 13	22 42.13	-22 50.8	0.785	0.797	78.7	18.9	51 W	—	43*
1 22	13 40.55	-18 21.4	2.397	2.610	22.1	20.1	91 W	27	79*	4 15	22 53.05	-20 50.3	0.799	0.782	78.7	18.9	50 W	—	42*
2 1	13 48.33	-19 21.3	2.236	2.583	22.1	20.0	99 W	26	83	4 17	23 3.53	-18 49.6	0.815	0.768	78.6	18.9	49 W	—	41*
2 11	13 54.32	-20 11.7	2.078	2.556	21.6	19.8	108 W	25	84	4 19	23 13.60	-16 49.1	0.833	0.755	78.3	18.9	47 W	—	40*
2 21	13 58.16	-20 50.4	1.927	2.527	20.5	19.6	116 W	24	85	4 21	23 23.33	-14 49.3							

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°
8507 1991 CB₁										178833 2001 HN₁₂									
<i>(continuation)</i>										<i>(continuation)</i>									
9 8	7 1.74	+34 55.0	1.856	1.667	32.7	21.0	63 W	56*	22*	8 19	13 46.62	-11 47.9	2.276	2.024	26.4	20.2	63 E	15*	56*
9 18	7 18.92	+34 56.5	1.825	1.745	32.6	21.1	69 W	62*	23*	8 29	14 3.45	-13 44.3	2.333	1.985	25.5	20.2	58 E	13*	52*
9 28	7 33.43	+34 59.5	1.781	1.819	32.3	21.1	76 W	68*	24*	9 8	14 21.77	-15 41.7	2.383	1.947	24.3	20.2	53 E	11*	47*
10 8	7 45.05	+35 7.5	1.726	1.890	31.7	21.1	83 W	75*	25*	9 18	14 41.58	-17 38.1	2.427	1.910	23.1	20.1	48 E	10*	42*
10 18	7 53.43	+35 23.6	1.663	1.957	30.6	21.1	91 W	80*	27*	9 28	15 2.90	-19 31.5	2.464	1.874	21.7	20.1	44 E	8*	38*
10 28	7 58.06	+35 50.1	1.595	2.020	29.0	21.0	100 W	81	27*	10 8	15 25.72	-21 19.3	2.495	1.839	20.3	20.0	40 E	7*	34*
11 7	7 58.41	+36 27.6	1.527	2.081	26.7	20.9	110 W	81	27*	10 18	15 50.08	-22 59.0	2.520	1.806	18.8	20.0	36 E	6*	30*
11 17	7 53.86	+37 14.6	1.463	2.138	23.6	20.8	120 W	82	27	10 28	16 15.94	-24 27.7	2.540	1.775	17.2	19.9	32 E	5*	26*
11 27	7 43.95	+38 5.3	1.409	2.192	19.7	20.6	132 W	83	26	11 7	16 43.25	-25 42.4	2.555	1.745	15.6	19.8	28 E	4*	22*
12 7	7 28.78	+38 49.7	1.373	2.243	15.1	20.5	144 W	84	25	11 17	17 11.92	-26 40.1	2.566	1.718	13.9	19.7	25 E	3*	19*
12 12	7 19.47	+39 5.6	1.363	2.267	12.7	20.4	150 W	84	25	11 27	17 41.78	-27 18.0	2.574	1.694	12.3	19.6	21 E	2*	15*
12 17	7 9.30	+39 15.1	1.360	2.291	10.4	20.3	155 W	84	25	12 7	18 12.59	-27 33.7	2.580	1.673	10.6	19.5	18 E	1*	12*
12 22	6 58.57	+39 17.0	1.364	2.313	8.3	20.3	160 W	84	25	12 17	18 44.07	-27 25.3	2.584	1.654	9.0	19.5	15 E	—	9*
12 27	6 47.65	+39 10.6	1.376	2.335	6.9	20.3	163 W	84	25	12 27	19 15.90	-26 51.9	2.586	1.639	7.4	19.4	12 E	—	6*
1 1	6 36.89	+38 55.9	1.396	2.357	6.6	20.3	164 E	84	25	1 6	19 47.72	-25 53.4	2.588	1.628	5.9	19.3	10 E	—	4*
1 6	6 26.62	+38 33.6	1.424	2.377	7.5	20.4	162 E	84	25	1 16	20 19.26	-24 30.9	2.591	1.620	4.5	19.2	7 E	—	1*
1 11	6 17.14	+38 4.7	1.459	2.397	9.0	20.5	158 E	83	26	455308 2002 FF									
1 16	6 8.68	+37 30.8	1.502	2.417	10.9	20.7	152 E	83	26	12 23	13 10.49	+0 31.1	1.662	1.693	34.1	21.3	75 W	46*	46*
205560 2001 SC₂₈₂										1 2	13 34.14	-1 56.5	1.548	1.658	35.5	21.1	78 W	43	51*
12 23	13 9.88	+0 56.4	2.134	2.105	26.8	20.5	75 W	46*	46*	1 12	13 58.08	-4 23.6	1.438	1.625	36.8	20.9	82 W	41	57*
1 2	13 24.50	+1 5.2	2.046	2.140	27.1	20.4	82 W	46	51*	1 22	14 22.27	-6 40.3	1.333	1.595	38.0	20.8	86 W	38	63*
1 12	13 37.52	+1 33.7	1.956	2.174	26.9	20.4	89 W	47	56*	2 1	14 46.61	-9 12.3	1.234	1.569	38.9	20.6	89 W	36	69*
1 22	13 48.66	+2 23.6	1.866	2.208	26.3	20.3	97 W	47	60*	2 11	15 10.95	-11 32.1	1.140	1.546	39.6	20.4	93 W	33	74*
2 1	13 57.57	+3 36.3	1.777	2.241	25.2	20.2	105 W	49	60*	2 21	15 35.10	-13 48.5	1.053	1.527	40.0	20.2	97 W	31	78*
2 11	14 3.92	+5 12.0	1.695	2.274	23.5	20.0	113 W	50	59	3 2	16 58.73	-16 1.5	0.972	1.512	40.1	20.0	101 W	29	80
2 21	14 7.39	+7 9.3	1.621	2.307	21.2	19.9	122 W	52	57	3 12	16 21.46	-18 12.2	0.898	1.501	39.8	19.8	105 W	27	82
2 26	14 7.95	+8 15.0	1.589	2.324	19.9	19.8	127 W	53	56	3 22	16 42.81	-20 22.2	0.830	1.495	38.9	19.6	110 W	25	84
3 2	14 7.72	+9 24.3	1.561	2.340	18.5	19.8	132 W	54	55	4 1	17 2.10	-22 33.9	0.768	1.494	37.4	19.4	115 W	22	87
3 7	14 6.69	+10 36.2	1.537	2.356	17.0	19.7	136 W	56	53	4 6	17 10.76	-23 41.1	0.740	1.496	36.4	19.3	118 W	21	88
3 12	14 4.89	+11 49.4	1.519	2.371	15.4	19.6	141 W	57	52	4 11	17 18.63	-24 49.7	0.714	1.498	35.1	19.2	121 W	20	89
3 17	14 2.35	+13 2.5	1.505	2.387	14.0	19.6	145 W	58	51	4 16	17 25.62	-26 0.0	0.690	1.502	33.7	19.1	124 W	19	90
3 22	13 59.14	+14 13.9	1.497	2.403	12.6	19.5	148 W	59	50	4 21	17 31.59	-27 12.0	0.668	1.507	32.0	19.0	127 W	18	89
3 27	13 55.35	+15 22.1	1.496	2.418	11.5	19.5	151 W	60	49	4 26	17 36.43	-28 25.5	0.648	1.512	30.2	18.9	131 W	17	88
4 1	13 51.10	+16 25.2	1.500	2.433	10.8	19.5	153 W	61	48	5 1	17 40.06	-29 40.4	0.631	1.520	28.1	18.8	135 W	15	86
4 6	13 46.54	+17 21.9	1.511	2.448	10.5	19.5	154 W	62	47	5 6	17 42.42	-30 55.9	0.616	1.528	25.7	18.6	139 W	14	85
4 11	13 41.80	+18 11.0	1.528	2.463	10.7	19.6	153 W	63	46	5 11	17 43.46	-32 11.1	0.604	1.537	23.2	18.5	143 W	13	84
4 16	13 37.03	+18 51.7	1.552	2.478	11.3	19.6	151 E	64	45	5 16	17 43.17	-33 24.7	0.596	1.547	20.6	18.4	147 W	12	83
4 21	13 32.39	+19 23.4	1.581	2.492	12.3	19.7	148 E	64	45	5 21	17 41.80	-34 34.9	0.591	1.558	17.9	18.4	152 W	10	81
4 26	13 28.01	+19 45.8	1.616	2.506	13.4	19.8	145 E	65	44	5 26	17 38.66	-35 39.9	0.590	1.570	15.2	18.3	156 W	9	80
5 1	13 24.01	+19 59.2	1.657	2.521	14.6	19.9	141 E	65	44	5 31	17 35.19	-36 37.9	0.592	1.583	12.7	18.2	160 W	8	79
5 11	13 17.52	+20 0.6	1.752	2.548	16.9	20.1	133 E	65	44	6 5	17 30.87	-37 27.4	0.599	1.597	10.7	18.2	163 W	8	79
5 21	13 13.38	+19 32.5	1.863	2.575	18.9	20.4	124 E	65	44	6 10	17 26.21	-38 7.3	0.610	1.612	9.6	18.2	165 W	7	78
5 31	13 11.73	+18 41.0	1.987	2.601	20.4	20.6	116 E	64	45	6 15	17 21.54	-38 37.2	0.626	1.627	9.6	18.3	164 E	6	77
6 10	13 12.49	+17 31.9	2.121	2.626	21.5	20.8	109 E	62*	46	6 20	17 17.18	-38 57.3	0.645	1.643	10.7	18.4	163 E	6	77
6 20	13 15.41	+16 10.2	2.261	2.651	22.1	21.0	101 E	58*	48	6 25	17 13.43	-39 8.1	0.669	1.660	12.4	18.6	159 E	6	77
6 30	13 20.25	+14 39.7	2.404	2.674	22.3	21.1	94 E	53*	49	6 30	17 10.55	-39 11.0	0.698	1.677	14.4	18.8	156 E	6	77
7 10	13 26.73	+13 3.5	2.549	2.697	22.1	21.3	87 E	48*	51	7 5	17 8.68	-39 7.4	0.730	1.695	16.5	18.9	152 E	6	77
7 20	13 34.60	+11 23.8	2.693	2.718	21.6	21.4	81 E	43*	53*	7 10	17 7.88	-38 58.6	0.766	1.713	18.5	19.1	148 E	6	77
7 30	13 43.67	+9 42.6	2.835	2.739	20.9	21.5	74 E	39*	53*	7 15	17 8.17	-38 45.8	0.805	1.732	20.3	19.3	144 E	6	77
178833 2001 HN₁₂										7 20	17 9.54	-38 30.1	0.849	1.752	22.0	19.5	140 E	6	77
12 23	13 9.93	+0 52.2	2.986	2.878	19.2	21.3	74 W	44*	47*	7 25	17 11.95	-38 12.4	0.895	1.771	23.6	19.7	136 E	7	78
1 2	13 19.51	+1 41.7	2.819	2.851	20.0	21.2	82 W	43	54*	7 30	17 15.33	-37 53.4	0.945	1.791	24.9	19.9	132 E	7	78
1 12	13 27.99	+2 22.6	2.650	2.822	20.4	21.1	90 W	43	61*	8 4	17 19.59	-37 33.6	0.997	1.812	26.0	20.1	128 E	7	78
1 22	13 35.15	+2 54.0	2.480	2.792	20.4	20.9	98 W	42	66*	8 9	17 24.62	-37 13.0	1.052	1.832	27.0	20.2	125 E	8	79
2 1	13 40.66	+3 14.6	2.313	2.762	20.0	20.7	107 W	42	67	8 14	17 30.35	-36 52.0	1.110	1.853	27.8	20.4	122 E	8	79
2 11	13 44.21	+3 23.6	2.153	2.731	19.0	20.5	116 W	42	67	8 19	17 36.70	-36 30.5	1.170	1.874	28.4	20.6	118 E	8	79
2 21	13 45.48	+3 20.5	2.001	2.699	17.3	20.3	126 W	42	67	8 24	17 43.61	-36 8.6	1.233	1.895	28.9				

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°
160085 2000 LJ₆										55333 2001 SZ₁₁₇									
12 23	13 11.17	-18 30.4	3.000	2.776	19.1	21.2	67 W	26*	55*	9 18	15 26.09	-19 10.6	3.186	2.800	17.9	20.8	59 E	14*	53*
1 2	13 22.13	-19 25.3	2.848	2.758	20.1	21.1	75 W	26	63*	9 28	15 40.52	-19 50.6	3.332	2.834	16.3	20.9	52 E	13*	46*
1 12	13 32.06	-20 12.2	2.691	2.739	20.8	21.0	82 W	25	72*	10 8	15 55.41	-20 28.2	3.469	2.869	14.5	20.9	46 E	12*	40*
1 22	13 40.73	-20 49.3	2.530	2.719	21.2	20.8	90 W	24	80*	10 18	16 10.68	-21 2.3	3.596	2.902	12.7	20.9	40 E	10*	34*
2 1	13 47.83	-21 14.5	2.369	2.698	21.2	20.7	99 W	24	85	10 28	16 26.25	-21 32.3	3.711	2.934	10.8	21.0	34 E	9*	27*
2 11	13 53.05	-21 25.3	2.210	2.676	20.6	20.5	107 W	24	85	11 7	16 42.04	-21 57.4	3.813	2.966	8.8	21.0	27 E	7*	21*
2 21	13 56.06	-21 19.0	2.057	2.653	19.4	20.3	117 W	24	85	11 17	16 57.98	-22 17.1	3.900	2.997	6.7	20.9	21 E	5*	14*
3 2	13 56.54	-20 52.1	1.914	2.629	17.6	20.0	127 W	24	85	11 27	17 13.99	-22 31.2	3.973	3.028	4.7	20.9	14 E	2*	7*
3 12	13 54.33	-20 1.1	1.785	2.604	15.0	19.8	137 W	25	84	12 7	17 29.97	-22 39.2	4.029	3.057	2.6	20.8	8 E	—	1*
3 22	13 49.42	-18 43.5	1.674	2.579	11.6	19.5	149 W	26	83	12 17	17 45.85	-22 41.1	4.069	3.086	0.5	20.7	2 E	—	—
4 1	13 42.14	-16 58.5	1.588	2.552	7.4	19.2	161 W	28	81	12 27	18 1.53	-22 37.0	4.092	3.113	1.6	20.8	5 W	—	—
4 6	13 37.82	-15 56.5	1.554	2.539	5.2	19.0	167 W	29	80	1 6	18 16.91	-22 26.9	4.097	3.140	3.6	21.0	12 W	2*	4*
4 11	13 33.22	-14 49.3	1.528	2.525	2.9	18.8	173 W	30	79	1 16	18 31.92	-22 11.3	4.084	3.166	5.6	21.1	18 W	5*	11*
4 16	13 28.45	-13 37.9	1.509	2.511	1.6	18.7	176 E	31	78	302156 2001 SF₂₈₆									
4 21	13 23.68	-12 23.7	1.497	2.497	3.2	18.8	172 E	33	76	12 23	13 11.68	-42 41.5	0.898	0.971	63.4	20.8	62 W	2*	56*
4 26	13 19.04	-11 8.3	1.493	2.482	5.5	18.9	166 E	34	75	12 25	13 27.95	-43 36.4	0.888	0.947	64.7	20.7	61 W	1*	54*
5 1	13 14.69	-9 53.4	1.496	2.468	8.0	19.0	160 E	35	74	12 27	13 45.06	-44 23.2	0.880	0.923	66.1	20.7	59 W	—	52*
5 6	13 10.76	-8 40.5	1.506	2.453	10.4	19.1	154 E	36	73	12 29	14 2.96	-45 0.7	0.874	0.898	67.4	20.6	57 W	—	51*
5 11	13 7.34	-7 31.0	1.522	2.438	12.7	19.2	148 E	37	72	12 31	14 21.55	-45 27.8	0.869	0.873	68.7	20.6	56 W	—	49*
5 16	13 4.51	-6 26.1	1.544	2.423	14.9	19.3	142 E	39	70	1 2	14 40.71	-45 43.4	0.866	0.848	70.0	20.6	54 W	—	47*
5 21	13 2.34	-5 26.7	1.572	2.407	16.9	19.4	136 E	40	69	1 4	15 0.29	-45 46.5	0.865	0.822	71.2	20.6	52 W	—	45*
5 31	13 0.10	-3 46.6	1.639	2.376	20.3	19.6	126 E	41	68	1 6	15 20.11	-45 36.7	0.865	0.797	72.4	20.5	51 W	—	44*
6 10	13 0.68	-2 33.0	1.719	2.344	23.0	19.7	116 E	42*	67	1 8	15 39.99	-45 13.7	0.868	0.771	73.5	20.5	49 W	—	42*
6 20	13 3.94	-1 44.7	1.807	2.311	24.9	19.9	106 E	40*	66	1 10	15 59.73	-44 37.3	0.872	0.745	74.4	20.5	47 W	—	40*
6 30	13 9.66	-1 19.5	1.900	2.278	26.2	20.0	98 E	38*	65	1 12	16 19.18	-43 48.0	0.878	0.719	75.3	20.4	45 W	—	38*
7 10	13 17.57	-1 14.0	1.993	2.244	26.9	20.1	90 E	34*	65	1 14	16 38.19	-42 46.2	0.886	0.694	75.9	20.4	43 W	—	37*
7 20	13 27.41	-1 25.1	2.084	2.210	27.2	20.1	83 E	32*	65*	1 16	16 56.66	-41 32.9	0.897	0.668	76.3	20.4	41 W	—	35*
7 30	13 38.98	-1 49.7	2.171	2.175	27.0	20.2	77 E	29*	63*	1 18	17 14.52	-40 9.0	0.909	0.643	76.6	20.3	39 W	—	33*
8 9	13 52.10	-2 24.8	2.253	2.140	26.5	20.2	71 E	27*	60*	1 20	17 31.73	-38 35.5	0.923	0.618	76.5	20.3	38 W	—	31*
8 19	14 6.62	-3 8.0	2.327	2.105	25.8	20.2	65 E	25*	55*	1 22	17 48.30	-36 53.6	0.940	0.594	76.1	20.2	36 W	—	30*
8 29	14 22.45	-3 56.9	2.394	2.070	24.8	20.2	59 E	24*	51*	1 24	18 4.24	-35 4.6	0.959	0.570	75.4	20.1	34 W	—	28*
9 8	14 39.50	-4 49.1	2.453	2.034	23.7	20.2	54 E	22*	46*	1 26	18 19.61	-33 9.4	0.980	0.548	74.3	20.0	32 W	1*	26*
9 18	14 57.74	-5 42.6	2.503	1.999	22.4	20.2	49 E	21*	41*	1 28	18 34.46	-31 9.3	1.002	0.527	72.8	20.0	31 W	2*	25*
9 28	15 17.12	-6 35.4	2.544	1.964	21.1	20.1	45 E	21*	36*	1 30	18 48.87	-29 5.4	1.027	0.508	70.8	19.9	29 W	3*	23*
10 8	15 37.61	-7 25.3	2.577	1.929	19.6	20.1	40 E	20*	31*	2 1	19 2.92	-26 58.6	1.054	0.491	68.4	19.8	28 W	3*	22*
10 18	15 59.19	-8 10.3	2.602	1.895	18.2	20.0	36 E	19*	26*	2 3	19 16.65	-24 50.2	1.082	0.476	65.6	19.7	26 W	4*	20*
10 28	16 21.83	-8 48.3	2.619	1.862	16.7	19.9	33 E	19*	21*	2 5	19 30.15	-22 41.1	1.111	0.464	62.3	19.6	25 W	5*	18*
11 7	16 45.50	-9 17.4	2.629	1.829	15.3	19.9	29 E	18*	16*	2 7	19 43.45	-20 32.3	1.142	0.456	58.7	19.5	23 W	5*	17*
11 17	17 10.14	-9 35.6	2.633	1.798	14.0	19.8	26 E	17*	11*	2 9	19 56.59	-18 24.9	1.174	0.451	54.9	19.4	22 W	6*	15*
11 27	17 35.69	-9 41.2	2.632	1.768	12.7	19.7	23 E	16*	7*	2 11	20 9.58	-16 19.8	1.206	0.450	51.0	19.4	21 W	6*	13*
12 7	18 2.03	-9 32.7	2.626	1.739	11.5	19.6	21 E	14*	2*	2 13	20 22.41	-14 17.9	1.238	0.452	47.0	19.3	20 W	7*	12*
12 17	18 29.09	-9 8.9	2.617	1.713	10.5	19.5	19 E	13*	—	2 15	20 35.09	-12 19.8	1.271	0.459	43.1	19.3	19 W	7*	10*
12 27	18 56.72	-8 29.0	2.605	1.688	9.7	19.5	17 E	10*	—	2 17	20 47.57	-10 26.2	1.303	0.468	39.5	19.3	18 W	7*	9*
1 6	19 24.78	-7 33.0	2.592	1.666	9.1	19.4	16 E	8*	—	2 19	20 59.84	-8 37.3	1.335	0.481	36.1	19.3	17 W	8*	7*
1 16	19 53.14	-6 21.3	2.579	1.646	8.7	19.3	15 E	5*	—	2 21	21 11.87	-6 53.5	1.367	0.497	33.1	19.3	16 W	8*	6*
55333 2001 SZ₁₁₇										165222 2000 SA₄₅									
12 23	13 11.34	-12 59.2	1.864	1.773	31.2	19.0	69 W	32*	53*	12 23	13 12.72	-19 6.1	2.106	1.944	27.7	20.3	67 W	26*	55*
1 2	13 30.53	-15 6.7	1.798	1.801	31.7	19.0	74 W	30	60*	1 2	13 33.39	-21 26.3	1.974	1.907	29.3	20.2	72 W	24	61*
1 12	13 48.40	-17 1.4	1.729	1.831	31.9	19.0	80 W	28	67*	1 12	13 54.53	-23 41.6	1.843	1.871	30.7	20.0	76 W	21	68*
1 22	14 4.68	-18 42.4	1.658	1.864	31.8	18.9	86 W	26	74*	1 22	14 16.15	-25 49.9	1.713	1.836	32.0	19.8	81 W	19	74*
2 1	14 19.00	-20 8.7	1.585	1.898	31.3	18.8	92 W	25	81*	1 27	14 27.12	-26 50.7	1.650	1.819	32.5	19.8	83 W	18	77*
2 11	14 30.94	-21 19.7	1.512	1.933	30.3	18.7	99 W	24	85	2 1	14 38.18	-27 48.9	1.586	1.801	33.0	19.7	86 W	17	79*
2 21	14 40.09	-22 14.7	1.441	1.970	28.7	18.6	107 W	23	86	2 6	14 49.32	-28 44.0	1.524	1.785	33.5	19.6	88 W	16	82*
3 2	14 45.95	-22 52.4	1.373	2.009	26.5	18.5	115 W	22	87	2 11	15 0.52	-29 36.0	1.463	1.768	33.9	19.5	90 W	15	84*
3 12	14 48.20	-23 11.2	1.312	2.048	23.5	18.4	125 W	22	87	2 16	15 11.77	-30 24.3	1.402	1.752	34.3	19.4	93 W	15	85*
3 22	14 46.67	-23 9.6	1.261	2.088	19.8	18.2	135 W	22	87	2 21	15 23.02	-31 8.7	1.343	1.737	34.6	19.3	95 W	14	85*
4 1	14 41.54	-22 45.8	1.226	2.128	15.3	18.0	146 W	22	87	2 26	15 34.24	-31 48.8	1.285	1.722	34.8	19.2	97 W	13	84
4 6	14 37.85	-22 25.7	1.215	2.148	12.8	17.9	152 W	23	86	3 2	15 45.38	-32 24.2	1.229	1.707	34.9	19.0	100 W	13	84
4 11	14 33.58	-22 0.3	1.209	2.169	10.2	17.9	157 W	23	86	3 7	15 56.39	-32 54.5	1.173	1.693	34.9	18.9	102 W	12	83
4 16	14 28.88	-21 30.3	1.210	2.190	7.6	17.8	163 W	23	86	3 12	16 7.22	-33 19.5	1.120	1.679	34.9	18.8	105 W	12	83
4 21	14 23.94	-20 56.4	1.216	2.210	5.1	17.7	169 W	24	85	3 17	16 17.81	-33 38.8	1.067	1.666	34.7	18.7	108 W	11	82
4 26	14 18.95	-20 19.6	1.229	2.231	3.1	17.6	173 W	25	84	3 22	16 28.05	-33 52.0	1.017	1.653	34.4	18.6	110 W	11	82
5 1	14 14.11	-19 41.0	1.248	2.252	2.9	17.6													

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°
165222 2000 SA₄₅										311999 2007 NS₂									
<i>(continuation)</i>										<i>(continuation)</i>									
4 21	17 17.44	-32 43.5	0.753	1.593	29.1	17.7	129 W	12	83	6 25	16 3.70	-36 56.7	0.644	1.602	19.3	19.1	149 E	8	79
4 26	17 22.74	-32 4.1	0.717	1.586	27.5	17.5	133 W	13	84	6 30	16 0.71	-34 31.5	0.664	1.603	21.7	19.3	144 E	10	81
5 1	17 26.96	-31 15.8	0.684	1.580	25.6	17.3	137 W	14	85	7 5	15 59.29	-32 13.1	0.687	1.604	24.2	19.4	140 E	13	84
5 11	17 32.04	-29 11.6	0.626	1.569	21.0	17.0	146 W	16	87	7 10	15 59.29	-30 4.1	0.715	1.605	26.5	19.6	135 E	15	86
5 21	17 32.63	-26 31.5	0.583	1.563	15.2	16.6	156 W	18	89	7 15	16 0.60	-28 5.7	0.746	1.605	28.7	19.8	131 E	17	88
5 31	17 29.46	-23 21.6	0.556	1.560	8.6	16.3	167 W	22	87	7 20	16 3.08	-26 18.7	0.780	1.606	30.7	19.9	126 E	19*	90
6 5	17 26.96	-21 39.9	0.549	1.560	5.2	16.1	172 W	23	86	7 25	16 6.60	-24 43.1	0.817	1.606	32.4	20.1	122 E	20*	89
6 10	17 24.17	-19 57.0	0.547	1.561	2.6	15.9	176 W	25	84	7 30	16 11.06	-23 18.2	0.855	1.606	33.9	20.2	118 E	21*	87
6 15	17 21.32	-18 15.7	0.549	1.563	3.8	16.0	174 E	27	82	8 4	16 16.33	-22 3.2	0.896	1.606	35.2	20.3	114 E	23*	86
6 20	17 18.68	-16 38.7	0.556	1.566	7.0	16.2	169 E	28	81	8 9	16 22.31	-20 57.1	0.938	1.606	36.2	20.5	111 E	23*	85
6 25	17 16.48	-15 8.7	0.568	1.570	10.4	16.4	164 E	30	79	8 14	16 28.93	-19 58.8	0.981	1.606	37.1	20.6	107 E	24*	84
6 30	17 14.92	-13 47.5	0.584	1.574	13.7	16.6	159 E	31	78	8 19	16 36.12	-19 7.4	1.025	1.605	37.7	20.7	104 E	25*	83
7 5	17 14.14	-12 36.5	0.604	1.580	16.7	16.8	153 E	32	77	8 24	16 43.82	-18 21.8	1.069	1.604	38.2	20.8	101 E	26*	82
7 10	17 14.19	-11 36.0	0.627	1.586	19.5	17.0	149 E	33	76	8 29	16 52.00	-17 41.0	1.115	1.604	38.6	20.9	98 E	26*	82
7 20	17 16.94	-10 6.0	0.685	1.602	24.1	17.3	140 E	35	74	9 3	17 0.58	-17 4.2	1.160	1.603	38.5	21.0	95 E	27*	81*
7 30	17 23.19	-9 12.6	0.755	1.621	27.7	17.7	132 E	36	73	9 8	17 9.53	-16 30.4	1.205	1.601	38.9	21.1	92 E	27*	80*
8 9	17 32.58	-8 47.1	0.835	1.642	30.3	18.0	125 E	36	73	9 13	17 18.82	-15 59.1	1.250	1.600	39.0	21.2	90 E	28*	78*
8 14	17 38.29	-8 42.0	0.878	1.654	31.3	18.1	122 E	36	73	9 18	17 28.42	-15 29.5	1.296	1.599	38.9	21.2	87 E	28*	76*
8 19	17 44.61	-8 40.5	0.924	1.667	32.1	18.3	119 E	36	73	9 23	17 38.32	-15 1.1	1.340	1.597	38.7	21.3	85 E	29*	74*
8 24	17 51.49	-8 41.8	0.971	1.680	32.8	18.4	116 E	36	73	9 28	17 48.48	-14 33.1	1.385	1.596	38.5	21.4	82 E	29*	72*
8 29	17 58.87	-8 44.9	1.020	1.694	33.3	18.6	113 E	36	73	10 3	17 58.89	-14 5.3	1.428	1.594	38.2	21.4	80 E	30*	69*
9 8	18 14.89	-8 53.6	1.124	1.722	33.9	18.8	108 E	36	73	10 8	18 9.51	-13 37.1	1.471	1.592	37.8	21.5	78 E	30*	67*
9 18	18 32.29	-9 1.8	1.235	1.753	34.0	19.1	103 E	36	73	347813 2002 NP₁									
9 28	18 50.79	-9 5.4	1.351	1.786	33.8	19.3	98 E	36	73	12 23	13 13.57	-11 17.1	0.918	1.084	58.2	19.8	69 W	34*	52*
10 8	19 10.07	-9 1.9	1.472	1.820	33.3	19.5	93 E	36	72*	12 28	13 26.76	-14 33.0	0.912	1.093	57.9	19.8	70 W	30	55*
10 18	19 29.91	-8 49.4	1.598	1.855	32.5	19.7	88 E	36	69*	1 2	13 40.03	-17 46.1	0.906	1.103	57.6	19.8	71 W	27	59*
10 28	19 50.13	-8 27.0	1.728	1.890	31.5	19.9	83 E	37*	65*	1 7	13 53.43	-20 55.8	0.900	1.113	57.3	19.8	72 W	24	62*
11 7	20 10.53	-7 54.0	1.860	1.927	30.3	20.1	79 E	37*	60*	1 12	14 7.00	-24 1.6	0.893	1.124	57.0	19.8	73 W	21	65*
11 17	20 31.01	-7 10.5	1.995	1.964	28.9	20.2	74 E	38*	55*	1 17	14 20.77	-27 2.7	0.887	1.136	56.6	19.8	75 W	18	67*
11 27	20 51.44	-6 16.9	2.130	2.001	27.4	20.4	69 E	38*	48*	1 22	14 34.78	-29 58.8	0.880	1.148	56.2	19.8	76 W	15	70*
12 7	21 11.74	-5 13.9	2.265	2.039	25.8	20.5	64 E	39*	42*	1 27	14 49.02	-32 49.2	0.873	1.160	55.8	19.8	77 W	12	71*
12 17	21 31.84	-4 2.3	2.399	2.077	24.0	20.6	59 E	39*	36*	2 1	15 3.52	-35 33.4	0.866	1.172	55.4	19.7	78 W	9	72*
12 27	21 51.72	-2 43.1	2.530	2.114	22.2	20.7	54 E	38*	30*	2 6	15 18.29	-38 11.0	0.858	1.185	54.9	19.7	80 W	7	72*
1 6	22 11.33	-1 17.4	2.658	2.151	20.3	20.8	49 E	37*	24*	2 11	15 33.34	-40 41.6	0.850	1.198	54.5	19.7	81 W	4	71*
1 16	22 30.68	+0 13.8	2.780	2.188	18.3	20.9	44 E	35*	19*	2 16	15 48.66	-43 5.2	0.841	1.211	54.0	19.7	82 W	2	70*
12 23	13 13.22	-24 50.6	1.608	1.492	36.8	21.5	65 W	20*	56*	2 21	16 4.23	-45 21.5	0.832	1.224	53.5	19.7	84 W	—	69*
12 28	13 25.49	-26 44.7	1.577	1.495	37.2	21.5	67 W	18	59*	2 26	16 19.98	-47 30.3	0.822	1.237	52.9	19.7	86 W	—	68*
1 2	13 37.86	-28 36.3	1.546	1.499	37.6	21.4	69 W	16	61*	3 2	16 35.87	-49 31.7	0.812	1.249	52.4	19.7	87 W	—	66*
1 7	13 50.33	-30 25.0	1.515	1.502	38.0	21.4	70 W	15	64*	3 7	16 51.84	-51 25.7	0.801	1.262	51.8	19.6	89 W	—	64*
1 12	14 2.90	-32 10.6	1.483	1.506	38.4	21.4	72 W	13	66*	3 12	17 7.80	-53 12.8	0.789	1.274	51.2	19.6	91 W	—	63*
1 17	14 15.58	-33 52.9	1.451	1.510	38.7	21.4	74 W	11	68*	3 17	17 23.65	-54 53.2	0.777	1.287	50.6	19.6	92 W	—	61*
1 22	14 28.34	-35 31.6	1.419	1.514	39.0	21.3	76 W	9	70*	3 22	17 39.22	-56 27.5	0.764	1.299	49.9	19.5	94 W	—	60
1 27	14 41.16	-37 6.5	1.386	1.517	39.3	21.3	78 W	8	71*	3 27	17 54.35	-57 56.3	0.750	1.310	49.2	19.5	96 W	—	58
2 1	14 54.02	-38 37.2	1.353	1.521	39.5	21.2	79 W	6	72*	4 1	18 8.84	-59 20.2	0.735	1.322	48.5	19.5	98 W	—	57
2 6	15 6.90	-40 3.6	1.320	1.525	39.7	21.2	81 W	5	72*	4 6	18 22.50	-60 39.9	0.720	1.333	47.6	19.4	100 W	—	55
2 11	15 19.75	-41 25.5	1.286	1.529	39.9	21.1	83 W	4	72*	4 11	18 35.09	-61 56.3	0.705	1.344	46.7	19.4	102 W	—	54
2 16	15 32.53	-42 43.0	1.252	1.532	40.0	21.1	85 W	2	72*	4 16	18 46.31	-63 10.2	0.689	1.354	45.8	19.3	105 W	—	53
2 21	15 45.18	-43 55.8	1.218	1.536	40.0	21.0	88 W	1	72*	4 21	18 55.80	-64 22.3	0.672	1.364	44.8	19.2	107 W	—	52
2 26	15 57.62	-45 4.1	1.183	1.540	40.0	21.0	90 W	—	71*	4 23	18 59.02	-64 50.8	0.665	1.368	44.3	19.2	108 W	—	51
3 2	16 9.77	-46 7.7	1.148	1.543	39.9	20.9	92 W	—	70	4 25	19 1.86	-65 19.0	0.659	1.371	43.9	19.2	109 W	—	51
3 7	16 21.53	-47 6.7	1.113	1.547	39.8	20.9	94 W	—	69	4 27	19 4.30	-65 46.9	0.652	1.375	43.4	19.1	110 W	—	50
3 12	16 32.82	-48 1.2	1.078	1.551	39.5	20.8	97 W	—	68	4 29	19 6.30	-66 14.6	0.645	1.379	42.9	19.1	111 W	—	50
3 17	16 43.52	-48 51.4	1.042	1.554	39.2	20.7	99 W	—	67	5 1	19 7.84	-66 42.0	0.639	1.382	42.4	19.1	112 W	—	49
3 22	16 53.47	-49 37.4	1.007	1.557	38.7	20.6	102 W	—	66	5 3	19 8.87	-67 9.1	0.632	1.386	41.9	19.0	113 W	—	49
3 27	17 2.54	-50 19.2	0.971	1.561	38.2	20.5	105 W	—	66	5 5	19 9.35	-67 35.7	0.626	1.389	41.4	19.0	114 W	—	48
4 1	17 10.56	-50 56.9	0.936	1.564	37.5	20.4	108 W	—	65	5 7	19 9.25	-68 1.9	0.619	1.392	40.9	19.0	115 W	—	48
4 6	17 17.38	-51 30.4	0.901	1.567	36.6	20.3	111 W	—	64	5 9	19 8.53	-68 27.4	0.613	1.395	40.3	19.0	117 W	—	48
4 11	17 22.83	-51 59.5	0.867	1.570	35.6	20.2	114 W	—	64	5 11	19 7.14	-68 52.1	0.606	1.399	39.8	18.9	118 W	—	47
4 16	17 26.73	-52 23.7	0.833	1.573	34.4	20.1	118 W	—	64	5 13	19 5.03	-69 15.9	0.600	1.402	39.2	18.9	119 W	—	47
4 21	17 28.88	-52 42.4	0.800	1.576	33.1	20.0	121 W	—	63	5 15	19 2.16	-69 38.4	0.594	1.405	38.6	18.8	120 W	—	46
4 26	17 29.11	-52 54.2	0.769	1.579	31.5	19.9	125 W	—	63	5 17	18 58.50	-69 59.5	0.588	1.408	38.0	18.8	121 W	—	46
5 1	17 27.33	-52 57.6	0.740	1.581	29.7	19.7													

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°										
347813 2002 NP₁ (continuation)										503369 2016 CQ₂₃ (continuation)																			
6 25	16 26.85	-63 39.6	0.533	1.447	29.3	18.4	136 E	—	52	2 11	15 12.87	-43 52.5	1.498	1.706	35.1	20.6	84 W	1	71*	2 21	15 40.73	-47 32.9	1.414	1.690	35.8	20.5	88 W	—	68*
6 30	16 17.02	-60 51.1	0.538	1.450	29.5	18.4	135 E	—	55	2 26	15 55.23	-49 17.4	1.375	1.683	36.0	20.4	89 W	—	67*	3 2	16 10.07	-50 57.3	1.336	1.677	36.2	20.3	91 W	—	65
7 5	16 11.01	-57 52.0	0.548	1.452	30.2	18.5	134 E	—	58	3 7	16 25.22	-52 32.1	1.299	1.671	36.4	20.3	93 W	—	63	3 12	16 40.62	-54 1.3	1.263	1.666	36.5	20.2	94 W	—	62
7 10	16 8.15	-54 48.5	0.561	1.453	31.3	18.6	132 E	—	61	3 17	16 56.18	-55 24.6	1.229	1.661	36.5	20.1	96 W	—	61	3 22	17 11.78	-56 41.7	1.196	1.658	36.5	20.1	98 W	—	59
7 12	16 7.76	-53 35.1	0.567	1.454	31.8	18.6	131 E	—	62	3 27	17 27.25	-57 52.5	1.163	1.655	36.5	20.0	100 W	—	58	4 1	17 42.43	-58 56.8	1.132	1.653	36.3	19.9	102 W	—	57
7 14	16 7.74	-52 22.1	0.573	1.454	32.3	18.7	130 E	—	64	4 6	17 57.13	-59 54.8	1.102	1.652	36.1	19.9	103 W	—	56	4 11	18 11.14	-60 46.7	1.072	1.651	35.8	19.8	105 W	—	55
7 16	16 8.06	-51 9.8	0.580	1.454	32.8	18.7	129 E	—	65	4 16	18 24.21	-61 32.9	1.044	1.651	35.4	19.7	108 W	—	54	4 21	18 36.08	-62 13.7	1.016	1.652	34.9	19.7	110 W	—	54
7 18	16 8.70	-49 58.4	0.588	1.454	33.4	18.8	128 E	—	66	4 26	18 46.47	-62 49.2	0.989	1.654	34.3	19.6	112 W	—	53	5 1	18 55.14	-63 19.8	0.963	1.657	33.6	19.5	114 W	—	53
7 20	16 9.64	-48 48.1	0.596	1.454	34.0	18.8	127 E	—	67	5 6	19 1.84	-63 45.3	0.938	1.660	32.8	19.4	117 W	—	52	5 11	19 6.38	-64 5.4	0.915	1.664	31.9	19.4	120 W	—	52
7 25	16 13.11	-45 58.1	0.619	1.454	35.5	18.9	124 E	—	70	5 16	19 8.54	-64 19.5	0.893	1.669	30.8	19.3	122 W	—	52	5 21	19 8.19	-64 26.4	0.872	1.674	29.6	19.2	125 W	—	52
7 30	16 17.93	-43 18.0	0.644	1.453	36.9	19.1	121 E	2*	73	5 26	19 5.33	-64 24.4	0.853	1.680	28.3	19.1	128 W	—	52	5 31	19 0.12	-64 11.1	0.837	1.687	26.9	19.1	131 W	—	52
8 4	16 23.85	-40 48.5	0.671	1.452	38.3	19.2	117 E	4*	75	6 2	18 57.44	-64 2.1	0.831	1.690	26.3	19.0	132 W	—	52	6 4	18 54.47	-63 50.9	0.825	1.693	25.7	19.0	134 W	—	52
8 9	16 30.65	-38 29.7	0.701	1.450	39.6	19.3	114 E	6*	78	6 6	18 51.23	-63 37.2	0.820	1.696	25.1	19.0	135 W	—	52	6 8	18 47.76	-63 21.0	0.816	1.699	24.5	18.9	136 W	—	53
8 14	16 38.18	-36 21.3	0.732	1.447	40.8	19.4	111 E	8*	80	6 10	18 44.11	-63 2.1	0.812	1.703	23.9	18.9	137 W	—	53	6 12	18 40.30	-62 40.4	0.808	1.706	23.3	18.9	138 W	—	53
8 19	16 46.32	-34 22.6	0.765	1.444	41.8	19.5	108 E	10*	82	6 14	18 36.39	-62 15.9	0.805	1.710	22.7	18.9	139 W	—	54	6 16	18 32.41	-61 48.5	0.803	1.713	22.2	18.9	140 W	—	54
8 24	16 55.00	-32 33.0	0.799	1.441	42.7	19.7	105 E	12*	83	6 18	18 28.42	-61 18.2	0.801	1.717	21.7	18.8	141 W	—	55	6 20	18 24.46	-60 45.0	0.800	1.721	21.2	18.8	142 W	—	55
8 29	17 4.12	-30 51.4	0.833	1.436	43.5	19.8	102 E	14*	85	6 22	18 20.57	-60 9.0	0.800	1.725	20.7	18.8	143 W	—	56	6 24	18 16.79	-59 30.2	0.800	1.729	20.3	18.8	144 W	—	56
9 8	17 23.45	-27 48.3	0.904	1.426	44.6	20.0	96 E	17*	88	6 26	18 13.15	-58 48.7	0.801	1.733	19.9	18.8	145 E	—	57	6 28	18 9.69	-58 4.8	0.803	1.737	19.6	18.8	145 E	—	58
9 18	17 43.94	-25 5.4	0.976	1.414	45.3	20.1	91 E	19*	85*	6 30	18 6.42	-57 18.5	0.806	1.741	19.3	18.8	145 E	—	59	7 5	17 59.26	-55 14.1	0.815	1.752	19.0	18.8	146 E	—	61
9 28	18 5.38	-22 35.9	1.046	1.399	45.6	20.3	86 E	22*	79*	7 15	17 53.62	-52 59.9	0.830	1.764	19.2	18.9	145 E	—	63	7 17	17 49.56	-50 39.7	0.850	1.776	19.7	19.0	144 E	—	65
10 8	18 27.58	-20 14.0	1.113	1.383	45.6	20.4	82 E	24*	74*	7 20	17 47.04	-48 16.9	0.875	1.788	20.5	19.1	142 E	—	68	7 25	17 45.96	-45 54.9	0.905	1.801	21.6	19.2	139 E	—	70
10 18	18 50.43	-17 54.8	1.177	1.365	45.4	20.5	77 E	27*	68*	7 30	17 46.21	-43 36.1	0.940	1.814	22.8	19.3	136 E	1	72	8 4	17 47.61	-41 22.7	0.979	1.828	24.0	19.5	133 E	4	75
10 28	19 13.89	-15 34.4	1.236	1.345	45.0	20.5	73 E	29*	62*	8 9	17 50.01	-39 16.0	1.023	1.842	25.1	19.6	130 E	6	77	8 14	17 53.30	-37 16.5	1.070	1.856	26.2	19.8	126 E	8	79
11 7	19 37.88	-13 9.7	1.289	1.323	44.6	20.6	70 E	31*	56*	8 19	17 57.35	-35 24.7	1.122	1.871	27.2	19.9	122 E	10	81	8 24	18 2.07	-33 40.4	1.177	1.886	28.0	20.1	119 E	11	82
11 17	20 2.42	-10 38.5	1.336	1.300	44.0	20.6	66 E	33*	50*	8 29	18 7.36	-32 3.4	1.234	1.901	28.7	20.2	115 E	13	84	8 29	18 13.15	-30 33.1	1.295	1.916	29.2	20.4	112 E	14	85
11 27	20 27.54	-7 58.9	1.376	1.276	43.5	20.6	63 E	36*	44*	9 3	18 13.15	-30 33.1	1.295	1.916	29.2	20.4	112 E	14	85	9 8	18 19.37	-29 9.0	1.358	1.932	29.6	20.5	109 E	16	87
12 7	20 53.28	-5 9.9	1.408	1.251	43.0	20.6	60 E	38*	38*	9 18	18 32.84	-26 36.7	1.490	1.964	30.0	20.7	102 E	18	89	9 28	18 47.44	-24 21.3	1.629	1.996	30.0	21.0	96 E	21	88*
12 17	21 19.75	-2 11.2	1.433	1.225	42.6	20.6	57 W	40*	33*	10 8	19 2.85	-22 18.2	1.773	2.029	29.5	21.2	90 E	23*	82*	10 18	19 18.86	-20 23.4	1.919	2.062	28.7	21.3	84 E	25*	75*
12 27	21 47.10	+0 57.2	1.451	1.199	42.2	20.5	55 E	41*	27*	416680 2004 XD₅₀																			
1 6	22 15.48	+4 13.9	1.462	1.174	42.1	20.5	53 E	42*	23*	12 23	13 14.80	+8 6.5	0.912	1.181	54.3	20.5	77 W	53*	40*	1 2	13 59.75	+7 23.1	0.886	1.159	55.6	20.5	76 W	52*	40*
1 16	22 45.15	+7 37.1	1.467	1.149	42.0	20.5	51 E	43*	19*	1 12	14 43.67	+6 40.9	0.875	1.144	56.4	20.4	76 W	51*	41*	1 22	15 25.51	+6 1.6	0.873	1.138	56.8	20.4	75 W	51*	43*
262623 2006 WY₂										2 1	16 4.46	+5 27.2	0.879	1.141	56.6	20.5	75 W	50*	45*	2 11	16 40.13	+4 58.3	0.887	1.152	56.1	20.5	76 W	49*	47*
12 23	13 14.33	+15 31.4	0.704	1.110	60.9	20.2	80 W	60*	35*	2 21	17 12.40	+4 35.2	0.895	1.171	55.3	20.5	77 W	48*	50*	3 2	17 41.23	+4 17.1	0.900	1.197	54.2	20.5	78 W	48*	53*
12 28	13 42.16	+15 50.2	0.678	1.086	62.8	20.2	79 W	61*	33*	3 12	18 6.68	+4 2.4	0.899	1.230	52.9	20.6	81 W	47*	55*	3 22	18 28.79	+3 48.6	0.891	1.268	51.4	20.6	84 W	47*	58*
1 2	14 11.42	+16 0.7	0.657	1.061	64.9	20.1	78 W	61*	32*	4 1	18 47.45	+3 32.5	0.876	1.310	49.7	20.6	88 W	47*	60*	4 11	19 2.51	+3 9.1	0.854	1.356	47.5	20.5	94 W	47*	61
1 7	14 41.82	+15 59.8	0.643	1.034	67.2	20.1	76 W	60*	31*	4 21	19 13.69	+2 32.8	0.825	1.404	44.9	20.4	100 W	47*	61	4 26	19 17.69	+2 7.7	0.809	1.429	43.3	20.4	103 W	46*	62
1 12	15 12.96	+15 44.8	0.634	1.007	69.4	20.1	73 W	59*	30*	5 1	19 20.55	+1 36.4	0.793	1.454	41.4	20.3	107 W	46*	62	5 6	19 22.22	+0 57.9	0.776	1.480	39.4	20.3	111 W	46*	63
1 17	15 44.37	+15 13.9	0.632	0.978	71.7	20.1	71 W	58*	29*	5 11	19 22.64	+0 11.3	0.759	1.505	37.1	20.2	116 W	45*	64	5 16	19 21.78	+0 44.6	0.743	1.531	34.5	20.1	121 W	44	65
1 22	16 15.56	+14 26.6	0.636	0.949	73.8	20.1	68 W	56*	28*	5 21	19 19.57	-1 50.6	0.728	1.557	31.7	20.0	126 W	43	66	5 31	19 11.21	-4 34.9	0.706	1.609	25.0	19.8	138 W	40	69
1 27	16 46.10	+13 23.4	0.645	0.919	75.8	20.1	65 W	53*	28*	6 10	18 58.21	-7 59.0	0.699	1.660	17.4	19.6	151 W	37	72	6 20	18 42.10	-11 48.7	0.711	1.711	9.5	19.5	164 W	33	76
2 1	17 15.70	+12 5.7	0.660	0.888	77.5	20.1	62 W	50*	27*																				
2 6	17 44.22	+10 35.2	0.680	0.858	78.8	20.2	59 W	47*	27*																				
2 11	18 11.66	+8 54.1	0.705	0.827	79.8	20.2	56 W	44*	28*																				
2 16	18 38.15	+7 4.8	0.733	0.797	80.3	20.2	53 W	41*	28*																				
2 21	19 3.88	+5 10.0	0.765	0.769	80.3	20.3	50 W	37*	29*																				
2 26	19 29.08	+3 12.2																											

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°
416680 2004 XD₅₀										3270 Dudley									
<i>(continuation)</i>										<i>(continuation)</i>									
6 25	18 33.60	-13 46.2	0.727	1.736	6.1	19.4	170 W	31	78	2 16	15 3.39	+10 23.0	1.234	1.765	32.8	17.3	105 W	55	54*
6 30	18 25.27	-15 41.2	0.748	1.761	4.6	19.4	172 E	29	80	2 21	15 9.43	+12 3.0	1.213	1.785	31.8	17.2	108 W	57	52
7 5	18 17.42	-17 31.0	0.777	1.786	6.1	19.6	169 E	27	82	2 26	15 14.58	+13 48.1	1.194	1.805	30.8	17.2	111 W	59	50
7 10	18 10.32	-19 13.8	0.811	1.810	8.9	19.8	164 E	26	83	3 2	15 18.78	+15 37.4	1.178	1.826	29.6	17.2	114 W	61	48
7 15	18 4.15	-20 48.2	0.851	1.834	11.9	20.1	158 E	24	85	3 7	15 21.97	+17 29.5	1.165	1.846	28.5	17.1	117 W	62	47
7 20	17 59.06	-22 13.8	0.897	1.858	14.7	20.3	152 E	23	86	3 12	15 24.13	+19 22.8	1.154	1.866	27.3	17.1	121 W	64	45
7 30	17 52.41	-24 39.3	1.003	1.904	19.5	20.8	141 E	20	89	3 17	15 25.21	+21 15.7	1.146	1.887	26.1	17.1	123 W	66	43
8 9	17 50.40	-26 34.1	1.126	1.949	23.0	21.2	131 E	18	89	3 22	15 25.20	+23 6.1	1.143	1.907	25.0	17.0	126 W	68	41
8 19	17 52.55	-28 3.6	1.261	1.992	25.5	21.6	122 E	17	88	3 27	15 24.10	+24 51.9	1.142	1.928	23.9	17.0	128 W	70	39
8 29	17 58.30	-29 12.8	1.406	2.034	27.0	21.9	114 E	16	87	4 1	15 21.95	+26 30.7	1.146	1.949	23.0	17.0	130 W	72	37
216773 2006 BR₈										283155 2009 BC₁₄									
12 23	13 14.87	-14 25.5	1.479	1.436	39.4	19.8	68 W	31*	53*	12 23	13 15.25	-16 35.3	2.115	1.956	27.6	20.6	67 W	28*	54*
12 28	13 31.02	-14 30.6	1.430	1.421	40.4	19.7	69 W	30*	54*	1 2	13 28.71	-19 45.2	2.040	1.992	28.2	20.6	73 W	25	62*
1 2	13 47.52	-14 27.7	1.383	1.407	41.3	19.7	71 W	31	56*	1 12	13 40.71	-22 51.7	1.962	2.028	28.5	20.6	80 W	22	70*
1 7	14 4.36	-14 15.9	1.337	1.393	42.2	19.6	72 W	31	57*	1 22	13 50.93	-25 54.8	1.881	2.065	28.4	20.5	86 W	19	79*
1 12	14 21.52	-13 54.4	1.293	1.381	43.0	19.5	73 W	31	58*	2 1	13 58.96	-28 54.1	1.800	2.102	27.9	20.4	93 W	16	87*
1 17	14 38.97	-13 22.5	1.251	1.369	43.8	19.5	75 W	32	59*	2 6	14 1.99	-30 21.9	1.760	2.120	27.5	20.4	97 W	15	86
1 22	14 56.65	-12 39.7	1.211	1.359	44.6	19.4	76 W	32	60*	2 11	14 4.28	-31 48.2	1.721	2.139	26.9	20.3	101 W	13	84
1 27	15 14.51	-11 45.4	1.173	1.350	45.3	19.3	77 W	33	61*	2 16	14 5.76	-33 12.7	1.683	2.157	26.3	20.3	105 W	12	83
2 1	15 32.46	-10 39.4	1.138	1.342	45.9	19.3	78 W	34	62*	2 21	14 6.35	-34 34.8	1.647	2.175	25.5	20.2	109 W	10	81
2 11	16 8.37	- 7 52.3	1.077	1.330	47.0	19.2	80 W	37*	62*	2 26	14 5.98	-35 54.0	1.612	2.194	24.6	20.2	113 W	9	80
2 21	16 43.71	- 0 22.0	1.028	1.323	47.7	19.1	82 W	40*	61*	3 2	14 4.60	-37 9.4	1.580	2.212	23.6	20.1	117 W	8	79
3 2	17 17.72	- 0 16.3	0.992	1.322	48.2	19.0	84 W	44*	60*	3 7	14 2.16	-38 20.0	1.550	2.230	22.4	20.1	121 W	7	78
3 7	17 34.03	+ 1 56.2	0.978	1.323	48.3	19.0	84 W	46*	58*	3 12	13 58.65	-39 24.8	1.524	2.248	21.2	20.0	125 W	6	77
3 12	17 49.78	+ 4 13.0	0.967	1.326	48.3	19.0	85 W	48*	57*	3 17	13 54.10	-40 22.7	1.502	2.266	19.9	20.0	129 W	5	76
3 17	18 4.91	+ 6 32.4	0.959	1.330	48.2	18.9	86 W	50*	56*	3 22	13 48.55	-41 12.2	1.484	2.284	18.5	19.9	133 W	4	75
3 22	18 19.37	+ 8 52.8	0.952	1.336	48.1	18.9	87 W	52*	54*	3 27	13 42.13	-42 52.3	1.470	2.302	17.2	19.9	137 W	3	74
3 27	18 33.10	+11 12.9	0.948	1.343	47.9	18.9	87 W	54*	52*	4 1	13 35.00	-42 21.9	1.461	2.320	15.9	19.8	140 W	3	74
4 1	18 46.05	+13 31.3	0.945	1.351	47.7	18.9	88 W	56*	50*	4 6	13 27.40	-42 40.4	1.458	2.338	14.8	19.8	143 W	2	73
4 6	18 58.21	+15 46.7	0.943	1.360	47.3	18.9	89 W	58*	48*	4 11	13 19.58	-42 47.7	1.460	2.355	13.9	19.8	146 W	2	73
4 11	19 9.56	+17 58.2	0.943	1.371	47.0	18.9	90 W	60*	46*	4 16	13 11.78	-42 43.9	1.468	2.372	13.4	19.8	147 E	2	73
4 16	19 20.05	+20 5.2	0.942	1.383	46.5	18.9	90 W	62*	44	4 21	13 4.29	-42 29.8	1.481	2.390	13.1	19.8	147 E	3	74
4 21	19 29.65	+22 7.0	0.942	1.395	46.1	18.9	91 W	64*	42	4 26	12 57.33	-42 6.6	1.500	2.407	13.2	19.9	147 E	3	74
4 26	19 38.33	+24 3.1	0.942	1.409	45.5	19.0	93 W	66*	40	5 1	12 51.12	-41 36.0	1.525	2.424	13.6	19.9	145 E	3	74
5 1	19 46.06	+25 52.8	0.942	1.424	44.9	19.0	94 W	68*	38	5 6	12 45.78	-40 59.7	1.556	2.440	14.3	20.0	143 E	4	75
5 6	19 52.82	+27 35.6	0.941	1.439	44.3	19.0	95 W	70*	36	5 11	12 41.40	-40 19.5	1.591	2.457	15.1	20.1	141 E	5	76
5 11	19 58.58	+29 11.3	0.940	1.455	43.6	19.0	96 W	72*	35	5 16	12 38.03	-39 37.2	1.632	2.473	16.0	20.2	137 E	5	76
5 16	20 3.30	+30 39.2	0.938	1.472	42.8	19.0	98 W	74*	33	5 21	12 35.65	-38 54.1	1.677	2.490	17.0	20.3	134 E	6	77
5 21	20 6.94	+31 58.9	0.935	1.490	42.0	19.0	100 W	76*	32	5 26	12 34.27	-38 11.6	1.726	2.506	17.9	20.4	130 E	7	78
5 26	20 9.46	+33 9.3	0.932	1.508	41.2	19.0	102 W	78*	31	6 5	12 34.24	-36 52.8	1.836	2.537	19.6	20.6	123 E	8*	79
5 31	20 10.87	+34 9.7	0.928	1.527	40.2	18.9	104 W	79	30										
6 5	20 11.17	+34 58.9	0.924	1.546	39.2	18.9	106 W	80	29										
6 10	20 10.37	+35 36.1	0.919	1.566	38.1	18.9	108 W	81	28										
6 15	20 8.52	+35 59.8	0.914	1.586	36.9	18.9	110 W	81	28										
6 20	20 5.67	+36 8.9	0.909	1.606	35.7	18.9	113 W	81	28										
6 25	20 1.97	+36 1.9	0.905	1.627	34.3	18.9	116 W	81	28										
6 30	19 57.57	+35 37.6	0.902	1.647	33.0	18.8	118 W	81	28										
7 5	19 52.68	+34 55.3	0.901	1.668	31.6	18.8	121 W	80	29										
7 10	19 47.52	+33 54.9	0.901	1.690	30.2	18.8	123 W	79	30										
7 15	19 42.30	+32 36.3	0.904	1.711	28.8	18.8	126 W	78	31										
7 20	19 37.25	+31 0.2	0.910	1.732	27.5	18.8	128 E	76	33										
7 25	19 32.60	+29 8.2	0.919	1.753	26.3	18.8	130 E	74	35										
7 30	19 28.54	+27 2.3	0.931	1.775	25.4	18.9	131 E	72	37										
8 4	19 25.19	+24 45.5	0.948	1.796	24.6	18.9	132 E	70	39										
8 9	19 22.66	+22 20.6	0.970	1.817	24.2	19.0	133 E	67	42										
8 14	19 20.99	+19 50.8	0.996	1.839	24.0	19.0	132 E	65	44										
8 19	19 20.20	+17 19.0	1.027	1.860	24.0	19.1	132 E	62	47										
8 24	19 20.31	+14 48.1	1.063	1.881	24.3	19.2	130 E	60	49										
8 29	19 21.28	+12 20.6	1.103	1.902	24.7	19.4	128 E	57	52										
9 3	19 23.08	+ 9 58.6	1.149	1.922	25.2	19.5	126 E	55	54										
9 8	19 25.63	+ 7 43.6	1.198	1.943	25.7	19.6	123 E	53	56										
9 13	19 28.88	+ 5 36.6	1.252	1.963	26.2	19.7	120 E	51	58										
9 18	19 32.78	+ 3 38.4	1.310	1.983	26.7	19.9	117 E	49	60										
9 28	19 42.32	+ 0 9.7	1.435	2.023	27.6	20.1	111 E	45	64										
10 8	19 53.76	- 2 42.1	1.572	2.062	28.0	20.4	104 E	42	67										
10 18	20 6.73	- 4 59.3	1.719	2.099	28.1	20.6	98 E	40	69*										
10 28	20 20.90	- 6 44.8	1.871	2.136	27.7	20.8	91 E	38	68*										
11 7	20 35.97	- 8 2.2	2.027	2.171	27.0	21.0	85 E	37	65*										
11 17	20 51.71	- 8 55.0	2.184	2.205	26.0	21.2	78 E	36	60*										
11 27	21 7.95	- 9 26.3	2.341	2.238	24.8														

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°
283155 2009 BC₁₄										383651 2007 TD₁₅									
<i>(continuation)</i>										<i>(continuation)</i>									
6 10	12 35.47	-36 17.9	1.896	2.553	20.3	20.7	119 E	8*	80	5 6	15 17.90	-25 52.5	0.979	1.979	5.6	19.5	169 W	19	90
6 15	12 37.44	-35 46.5	1.958	2.568	20.9	20.8	116 E	7*	80	5 11	15 11.77	-24 38.0	0.990	1.997	3.4	19.4	173 E	20	89
6 20	12 40.09	-35 18.8	2.023	2.583	21.4	20.9	112 E	7*	81	5 16	15 5.92	-23 22.2	1.008	2.015	3.7	19.5	173 E	22	87
6 25	12 43.35	-34 55.1	2.090	2.598	21.8	21.0	109 E	6*	81	5 21	15 0.56	-22 7.2	1.032	2.032	6.0	19.7	168 E	23	86
6 30	12 47.19	-34 35.3	2.158	2.613	22.1	21.1	105 E	5*	81	5 26	14 55.87	-20 54.8	1.062	2.050	8.7	19.9	162 E	24	85
7 5	12 51.52	-34 19.4	2.228	2.627	22.3	21.2	102 E	4*	82	5 31	14 51.96	-19 46.9	1.097	2.067	11.3	20.1	156 E	25	84
7 10	12 56.31	-34 7.2	2.299	2.641	22.4	21.3	98 E	3*	82*	6 5	14 48.90	-18 44.6	1.139	2.084	13.7	20.3	151 E	26	83
7 15	13 1.52	-33 58.5	2.370	2.655	22.4	21.4	95 E	2*	81*	6 10	14 46.72	-17 48.9	1.185	2.101	16.0	20.4	145 E	27	82
7 20	13 7.11	-33 53.1	2.443	2.669	22.4	21.4	91 E	1*	79*	6 20	14 44.91	-16 18.1	1.291	2.134	19.7	20.8	135 E	29	80
131774 2002 AZ₁₈										6 30	14 46.33	-15 14.8	1.412	2.166	22.5	21.1	125 E	30*	79
12 23	13 15.98	+11 24.3	2.447	2.444	23.2	20.2	78 W	56*	37*	7 10	14 50.56	-14 36.1	1.545	2.197	24.4	21.4	117 E	30*	79
1 2	13 28.04	+11 54.9	2.353	2.476	23.3	20.1	85 W	57	42*	7 20	14 57.14	-14 17.4	1.685	2.228	25.6	21.6	109 E	29*	78
1 12	13 38.48	+12 44.4	2.258	2.508	23.1	20.1	93 W	58	46*	46780 1998 HH₅₂									
1 22	13 47.03	+13 53.7	2.164	2.539	22.4	20.0	101 W	59	49*	12 23	13 16.41	-3 39.1	2.807	2.665	20.5	19.8	72 W	41*	47*
2 1	13 53.35	+15 22.7	2.075	2.570	21.3	19.9	109 W	60	49*	1 2	13 26.42	-4 38.7	2.673	2.667	21.2	19.7	79 W	40	55*
2 11	13 57.15	+17 9.6	1.995	2.599	19.7	19.8	117 W	62	47	1 12	13 35.15	-5 29.4	2.534	2.669	21.6	19.6	87 W	40	62*
2 16	13 58.02	+18 8.7	1.959	2.613	18.8	19.7	121 W	63	46	1 22	13 42.33	-6 10.3	2.394	2.669	21.5	19.5	95 W	39	68*
2 21	13 58.16	+19 10.6	1.927	2.628	17.8	19.7	126 W	64	45	2 1	13 47.66	-6 40.4	2.254	2.668	21.0	19.3	104 W	38	71
2 26	13 57.55	+20 14.6	1.899	2.642	16.8	19.6	130 W	65	44	2 11	13 50.81	-6 58.8	2.119	2.666	19.9	19.2	113 W	38	71
3 2	13 56.19	+21 19.4	1.875	2.655	15.7	19.5	133 W	66	43	2 21	13 51.49	-7 4.9	1.992	2.663	18.1	19.0	123 W	38	71
3 7	13 54.10	+22 23.9	1.856	2.669	14.7	19.5	137 W	67	42	3 2	13 49.43	-6 58.1	1.877	2.659	15.7	18.7	134 W	38	71
3 12	13 51.32	+23 26.6	1.842	2.682	13.7	19.5	140 W	68	41	3 12	13 44.58	-6 38.8	1.780	2.654	12.5	18.5	145 W	38	71
3 17	13 47.90	+24 26.3	1.834	2.695	12.9	19.4	143 W	69	40	3 22	13 37.12	-6 8.4	1.704	2.648	8.6	18.3	157 W	39	70
3 22	13 43.91	+25 21.6	1.832	2.708	12.2	19.4	145 W	70	39	4 1	13 27.57	-5 30.1	1.654	2.641	4.3	18.0	169 W	39	70
3 27	13 39.45	+26 11.0	1.836	2.721	11.9	19.4	146 W	71	38	4 6	13 22.29	-5 9.4	1.640	2.638	2.1	17.8	174 W	40	69
4 1	13 34.65	+26 53.5	1.846	2.733	11.8	19.4	146 W	72	37	4 11	13 16.86	-4 48.6	1.633	2.634	1.3	17.8	176 E	40	69
4 6	13 29.65	+27 28.1	1.862	2.745	12.0	19.5	145 W	72	37	4 16	13 11.42	-4 28.4	1.633	2.629	3.2	17.9	171 E	41	68
4 11	13 24.59	+27 54.2	1.884	2.757	12.4	19.5	144 W	73	36	4 21	13 6.10	-4 9.5	1.640	2.625	5.5	18.0	166 E	41	68
4 16	13 19.59	+28 11.6	1.912	2.769	13.1	19.6	141 E	73	36	5 1	12 56.42	-3 38.7	1.675	2.615	9.9	18.2	153 E	41	68
4 21	13 14.80	+28 20.1	1.946	2.780	13.8	19.7	139 E	73	36	5 11	12 48.72	-3 20.3	1.733	2.604	13.8	18.5	142 E	42	67
4 26	13 10.34	+28 20.0	1.984	2.791	14.7	19.7	135 E	73	36	5 21	12 43.52	-3 16.5	1.812	2.593	17.1	18.7	131 E	42	67
5 1	13 6.31	+28 11.8	2.028	2.802	15.5	19.8	132 E	73	36	5 31	12 41.05	-3 28.2	1.907	2.580	19.7	18.8	121 E	41*	67
5 6	13 2.78	+27 56.0	2.075	2.813	16.4	19.9	128 E	73	36	6 10	12 41.24	-3 54.4	2.012	2.567	21.6	19.0	112 E	40*	68
5 11	12 59.81	+27 33.5	2.127	2.824	17.2	20.0	124 E	73	36	6 20	12 43.88	-4 33.9	2.123	2.552	22.8	19.2	103 E	36*	69
5 16	12 57.43	+27 4.9	2.183	2.834	17.9	20.1	121 E	72	37	6 30	12 48.74	-5 25.0	2.238	2.537	23.5	19.3	95 E	32*	69
5 21	12 55.65	+26 31.0	2.241	2.844	18.5	20.2	117 E	72	37	7 10	12 55.54	-6 26.0	2.354	2.520	23.8	19.4	87 E	27*	70*
5 26	12 54.48	+25 52.5	2.302	2.853	19.1	20.3	113 E	71	38	7 20	13 4.04	-7 35.2	2.467	2.503	23.6	19.5	80 E	23*	69*
5 31	12 53.91	+25 10.1	2.366	2.863	19.5	20.3	109 E	70	39	7 30	13 14.04	-8 51.3	2.576	2.485	23.1	19.5	73 E	20*	65*
6 10	12 54.47	+23 36.1	2.498	2.881	20.2	20.5	102 E	67*	40	8 9	13 25.37	-10 12.8	2.680	2.466	22.2	19.6	67 E	17*	60*
6 20	12 57.09	+21 53.2	2.635	2.899	20.5	20.6	95 E	61*	42	8 19	13 37.89	-11 38.3	2.776	2.446	21.2	19.6	61 E	14*	55*
6 30	13 1.52	+20 4.6	2.774	2.915	20.4	20.8	88 E	55*	44	8 29	13 51.52	-13 6.7	2.864	2.425	19.9	19.6	55 E	12*	49*
7 10	13 7.51	+18 12.8	2.913	2.930	20.0	20.9	81 E	49*	46	9 8	14 6.16	-14 36.7	2.943	2.404	18.4	19.6	49 E	10*	43*
7 20	13 14.82	+16 19.6	3.049	2.944	19.4	20.9	74 E	44*	47*	9 18	14 21.78	-16 7.2	3.012	2.382	16.8	19.6	43 E	8*	37*
7 30	13 23.27	+14 26.2	3.181	2.958	18.6	21.0	68 E	39*	47*	9 28	14 38.34	-17 36.9	3.070	2.358	15.1	19.5	38 E	6*	32*
8 9	13 32.68	+12 33.9	3.308	2.970	17.5	21.1	62 E	35*	44*	10 8	14 55.81	-19 4.6	3.118	2.335	13.2	19.5	32 E	5*	26*
8 19	13 42.91	+10 43.5	3.427	2.981	16.3	21.1	56 E	32*	41*	10 18	15 14.17	-20 29.0	3.154	2.310	11.3	19.4	27 E	3*	21*
8 29	13 53.86	+8 55.7	3.537	2.992	15.0	21.2	50 E	29*	37*	10 28	15 33.42	-21 48.9	3.178	2.285	9.3	19.3	22 E	1*	16*
9 8	14 5.43	+7 11.2	3.637	3.001	13.6	21.2	44 E	26*	32*	11 7	15 53.53	-23 3.0	3.191	2.259	7.2	19.2	17 E	—	11*
9 18	14 17.54	+5 30.6	3.726	3.009	12.1	21.2	39 E	24*	26*	11 17	16 14.49	-24 9.8	3.192	2.233	5.1	19.1	12 E	—	6*
9 28	14 30.12	+3 54.6	3.802	3.017	10.5	21.2	33 E	21*	21*	11 27	16 36.25	-25 8.2	3.182	2.206	3.1	18.9	7 E	—	1*
10 8	14 43.11	+2 23.7	3.866	3.023	9.0	21.1	28 E	19*	15*	12 7	16 58.76	-25 56.8	3.161	2.178	1.6	18.8	3 E	—	—
10 18	14 56.46	+0 58.4	3.915	3.028	7.6	21.1	24 E	16*	8*	12 17	17 21.98	-26 34.4	3.129	2.151	2.3	18.8	5 W	—	—
10 28	15 10.11	-0 20.8	3.950	3.033	6.3	21.1	20 E	14*	2*	12 27	17 45.82	-26 59.9	3.087	2.122	4.3	18.9	9 W	—	3*
11 7	15 23.99	-1 33.2	3.970	3.036	5.5	21.1	17 E	11*	—	1 6	18 10.18	-27 12.4	3.036	2.094	6.4	18.9	14 W	—	8*
11 17	15 38.05	-2 38.5	3.974	3.038	5.3	21.0	16 E	7*	—	1 16	18 34.96	-27 11.2	2.975	2.065	8.7	18.9	18 W	1*	12*
11 27	15 52.21	-3 36.2	3.962	3.040	5.8	21.1	18 W	10*	—	468917 2014 VS₁									
12 7	16 6.41	-4 26.0	3.934	3.040	6.9	21.1	22 W	15*	—	12 23	13 16.60	-7 19.8	2.154	2.041	26.9	21.3	70 W	38*	49*
12 17	16 20.56	-5 7.5	3.890	3.039	8.2	21.1	26 W	20*	2*	1 2	13 32.23	-7 1.7	2.074	2.083	27.4	21.3	77 W	38	55*
12 27	16 34.57	-5 40.6	3.831	3.037	9.8	21.2	32 W	24*	9*	1 12	13 46.24	-6 22.9	1.990	2.126	27.4	21.3	84 W	39	61*
1 6	16 48.35	-6 5.1	3.757	3.035	11.3	21.2	37 W	27*	17*	1 22	13 58.40	-5 21.5	1.904	2.169	27.0	21.2	92 W	40	66*
1 16	17 1.77	-6 21.2	3.668	3.031	12.9	21.2	43 W	30*	24*	2 1	14 8.36	-3 55.5	1.819	2.213	26.0	21.1	100 W	41	68*
383651 2007 TD₁₅										2 11	14 15.81	-2 3.7	1.737	2.256	24.5	21.0	109 W	43	66
12 23	13 16.23	-21 48.0	1.633	1.514	36.2	21.0													

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°											
94396 2001 SN₂₁₃										137064 1998 WP₅ (continuation)																				
12 23	13 16.66	- 2 52.0	2.212	2.123	26.1	20.9	72 W	42*	47*	4 19	14 1.97	+ 0 56.4	0.258	1.257	10.0	17.1	167 W	46	63	4 19	14 1.97	+ 0 56.4	0.258	1.257	10.0	17.1	167 W	46	63	
1 2	13 33.25	- 4 17.3	2.071	2.094	27.3	20.8	78 W	41	53*	4 21	13 54.84	- 1 0.9	0.262	1.263	8.6	17.1	169 E	44	65	4 23	13 47.93	- 2 55.8	0.267	1.269	8.2	17.1	170 E	42	67	
1 12	13 49.39	- 5 35.5	1.928	2.064	28.3	20.6	84 W	39	60*	4 25	13 41.31	- 4 47.4	0.272	1.274	8.7	17.2	169 W	40	69	4 27	13 35.01	- 6 34.7	0.279	1.280	10.1	17.3	167 W	38	71	
2 1	14 19.65	- 7 46.3	1.646	2.005	29.2	20.3	90 W	37	71*	4 29	13 29.08	- 8 17.4	0.287	1.286	11.9	17.5	165 E	37	72	5 1	13 23.54	- 9 55.0	0.295	1.292	13.8	17.6	162 E	35	74	
2 11	14 33.25	- 8 36.9	1.510	1.976	29.2	20.0	103 W	36	73	5 6	13 11.52	- 13 35.8	0.320	1.306	18.8	18.0	155 E	31	78	5 11	13 2.15	- 16 44.2	0.348	1.321	23.2	18.3	149 E	28	81	
2 21	14 45.40	- 9 16.9	1.378	1.947	28.6	19.8	110 W	36	73	5 16	12 55.33	- 19 23.3	0.381	1.335	27.0	18.6	143 E	26	83	5 21	12 50.89	- 21 38.0	0.416	1.350	30.2	19.0	138 E	23	86	
3 2	14 55.63	- 9 45.8	1.253	1.919	27.4	19.5	117 W	35	74	5 26	12 48.60	- 23 33.1	0.454	1.364	32.8	19.2	133 E	21	88	5 31	12 48.21	- 25 12.9	0.494	1.379	34.9	19.5	129 E	20*	89	
3 12	15 3.47	- 10 3.6	1.137	1.891	25.5	19.2	125 W	35	74	6 5	12 49.47	- 26 40.9	0.536	1.393	36.6	19.8	125 E	18*	89	6 10	12 52.15	- 27 59.6	0.579	1.407	38.0	20.0	122 E	16*	88	
3 22	15 8.39	- 10 11.1	1.031	1.864	22.8	18.9	134 W	35	74	6 15	12 56.09	- 29 10.9	0.623	1.421	39.0	20.2	118 E	14*	87	6 20	13 1.12	- 30 16.5	0.668	1.434	39.9	20.4	115 E	13*	86	
4 1	15 9.85	- 10 9.5	0.938	1.837	19.1	18.6	143 W	35	74	6 25	13 7.14	- 31 17.6	0.714	1.447	40.5	20.6	112 E	11*	85	6 30	13 14.05	- 32 15.2	0.761	1.460	41.0	20.7	110 E	9*	84	
4 11	15 7.60	- 10 1.3	0.861	1.812	14.5	18.2	153 W	35	74	7 5	13 21.73	- 33 9.7	0.808	1.473	41.3	20.9	107 E	7*	83	7 10	13 30.11	- 34 1.6	0.855	1.485	41.5	21.0	105 E	6*	82	
4 21	15 1.76	- 9 50.4	0.801	1.788	9.1	17.8	164 W	35	74	7 15	13 39.14	- 34 50.9	0.903	1.497	41.6	21.2	102 E	5*	81	7 20	13 48.78	- 35 38.0	0.951	1.508	41.6	21.3	100 E	3*	80	
4 26	14 57.70	- 9 45.4	0.779	1.777	6.3	17.6	169 W	35	74	7 25	13 58.98	- 36 23.0	1.000	1.520	41.5	21.4	98 E	2*	79*											
5 1	14 53.10	- 9 41.8	0.761	1.766	4.1	17.4	173 W	35	74																					
5 6	14 48.17	- 9 40.5	0.749	1.755	4.0	17.4	173 E	35	74																					
5 11	14 43.16	- 9 42.1	0.742	1.745	6.2	17.4	169 E	35	74																					
5 16	14 38.30	- 9 47.3	0.740	1.735	9.2	17.6	164 E	35	74																					
5 21	14 33.83	- 9 56.7	0.743	1.725	12.4	17.7	159 E	35	74																					
5 31	14 26.92	- 10 29.5	0.762	1.708	18.4	17.9	148 E	35	74																					
6 10	14 23.67	- 11 21.8	0.796	1.693	23.7	18.2	138 E	34	75																					
6 20	14 24.58	- 12 31.7	0.842	1.680	28.0	18.4	129 E	32	77																					
6 30	14 29.67	- 13 56.3	0.898	1.669	31.4	18.6	121 E	31*	78																					
7 10	14 38.62	- 15 31.6	0.961	1.661	33.9	18.8	114 E	28*	80																					
7 20	14 51.00	- 17 13.2	1.030	1.655	35.7	19.0	108 E	25*	81																					
7 30	15 6.40	- 18 57.2	1.103	1.652	36.9	19.2	102 E	23*	83																					
8 9	15 24.43	- 20 39.5	1.180	1.651	37.5	19.4	97 E	21*	85																					
8 19	15 44.72	- 22 16.0	1.260	1.654	37.7	19.5	93 E	19*	86*																					
8 29	16 7.00	- 23 43.5	1.343	1.659	37.5	19.7	88 E	18*	82*																					
9 8	16 30.93	- 24 58.7	1.430	1.666	37.0	19.8	84 E	17*	78*																					
9 18	16 56.23	- 25 58.7	1.519	1.676	36.2	19.9	80 E	16*	74*																					
9 28	17 22.61	- 26 41.6	1.611	1.689	35.3	20.0	77 E	16*	71*																					
10 8	17 49.75	- 27 5.5	1.705	1.703	34.1	20.1	73 E	16*	67*																					
10 18	18 17.35	- 27 9.7	1.801	1.720	32.8	20.2	69 E	16*	63*																					
10 28	18 45.13	- 26 53.9	1.900	1.739	31.3	20.3	65 E	17*	59*																					
11 2	18 58.99	- 26 38.6	1.949	1.749	30.5	20.4	64 E	17*	57*																					
11 7	19 12.78	- 26 18.6	1.999	1.759	29.7	20.4	62 E	17*	55*																					
11 12	19 26.50	- 25 53.9	2.050	1.770	28.9	20.5	60 E	18*	53*																					
11 17	19 40.10	- 25 24.8	2.100	1.782	28.0	20.5	58 E	18*	50*																					
11 22	19 53.58	- 24 51.4	2.150	1.793	27.1	20.5	56 E	18*	48*																					
11 27	20 6.91	- 24 14.1	2.201	1.805	26.2	20.6	54 E	19*	45*																					
12 2	20 20.08	- 23 32.9	2.251	1.817	25.3	20.6	52 E	19*	43*																					
12 7	20 33.06	- 22 48.2	2.301	1.830	24.3	20.7	50 E	20*	40*																					
12 12	20 45.87	- 22 0.2	2.351	1.843	23.4	20.7	48 E	20*	38*																					
12 17	20 58.48	- 21 9.2	2.400	1.856	22.4	20.7	46 E	20*	35*																					
12 22	21 10.91	- 20 15.4	2.449	1.869	21.4	20.7	44 E	20*	33*																					
12 27	21 23.14	- 19 19.1	2.497	1.883	20.4	20.8	42 E	20*	30*																					
1 1	21 35.17	- 18 20.6	2.545	1.897	19.4	20.8	40 E	20*	28*																					
1 6	21 47.01	- 17 20.2	2.592	1.911	18.3	20.8	38 E	20*	26*																					
1 11	21 58.66	- 16 18.0	2.637	1.925	17.3	20.8	36 E	19*	23*																					
1 16	22 10.13	- 15 14.3	2.682	1.939	16.2	20.9	33 E	19*	21*																					
137064 1998 WP₅																														
12 23	13 18.50	+ 49 26.3	0.452	1.126	60.3	19.6	96 W	85*	7*	5 1	13 1.40	+ 1 1.3	1.921	2.851	9.5	19.9	152 E	46	63	5 11	12 54.24	+ 1 24.7	1.975	2.832	13.0	20.1	141 E	46	63	
12 28	13 42.19	+ 48 25.3	0.451	1.120	61.0	19.6	95 W	86*	8*	5 21	12 49.19	+ 1 31.4	2.050	2.812	15.9	20.3	130 E	47	62	5 31	12 46.50	+ 1 21.6	2.140	2.791	18.3	20.4	120 E	46*	63	
1 2	14 3.34	+ 47 17.1	0.451	1.115	61.5	19.6	95 W	87*	9*	6 10	12 46.21	+ 0 56.4	2.241	2.770	20.0	20.6	111 E	45*	63	6 10	12 46.21	+ 0 56.4	2.241	2.770	20.0	20.6	111 E	45*	63	
1 7	14 22.11	+ 46 4.3	0.449	1.111	62.0	19.6	94 W	87*	10*	6 20	12 48.19	+ 0 17.8	2.349	2.747	21.2	20.7	102 E	41*	64	6 30	12 52.26	- 0 32.6	2.460	2.724	21.9	20.8	94 E	36*	65	
1 12	14 38.71	+ 44 49.0	0.447	1.108	62.3	19.6	94 W	88*	12*	7 10	12 58.18	- 1 32.8	2.572	2.700	22.1	20.9	86 E	32*	66*	7 20	13 5.76	- 2 41.2	2.681	2.675	21.9	20.9	79 E	28*	65*	
1 17	14 53.35	+ 43 32.8	0.444	1.106	62.5	19.6	94 W	88*	14*	7 30	13 14.81	- 3 56.3	2.785	2.649	21.3	21.0	72 E	24*	62*	8 9	13 25.16	- 5 16.6	2.882	2.622	20.5	21.0	65 E	21*	57*	
1 22	15 6.18	+ 42 17.0	0.440	1.106	62.6	19.6	94 W	87*	16*	8 19	13 36.70	- 6 41.0	2.972	2.595	19.5	21.0	59 E	18*	52*	8 29	13 49.31	- 8 8.2	3.053	2.566	18.2	21.0	53 E	15*	46*	
1 27	15 17.33	+ 41 2.1	0.434	1.107	62.5	19.5	94 W	86*	18*	9 8	14 2.93	- 9 37.2	3.123	2.537	16.7	21.0	46 E	13*	40*	9 8	14 2.93	- 9 37.2	3.123	2.537	16.7	21.0	46 E	13*	40*	
2 1	15 26.89	+ 39 47.8	0.427	1.108	62.3	19.5	95 W	85*	21*	9 18	14 17.49	- 11 6.9	3.183	2.508	15.1	20.9	41 E	11*	34*	9 28	14 32.95	- 12 36.1	3.231	2.477	13.4	20.9	35 E	9*	29*	
2 6	15 34.96	+ 38 33.8	0.419	1.112	61.9	19.4	96 W	84	23*	10 8	14 49.28	- 14 3.8	3.268	2.446	11.5	20.8	29 E	7*	23*	10 8	14 49.28	- 14 3.8	3.268	2.446	11.5	20.8	29 E	7*	23*	
2 11	15 41.57	+ 37 19.6	0.409	1.116	61.3	19.4	97 W	82	25*	10 18	15 6.47	- 15 28.8																		

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°										
89766 2002 AO₆₂										344631 2003 LY₂																			
<i>(continuation)</i>										<i>(continuation)</i>																			
3 27	13 34.91	- 3 0.1	1.959	2.926	6.0	20.1	162 W	42	67	7 20	15 40.02	+ 0 15.0	0.739	1.477	39.1	17.8	114 E	45*	64	7 30	15 51.70	+ 4 41.0	0.808	1.460	42.0	18.1	106 E	49*	59
4 1	13 30.60	- 2 26.0	1.944	2.928	4.2	20.0	168 W	43	66	8 9	16 6.09	+ 7 58.0	0.881	1.450	43.6	18.3	100 E	51*	56	8 14	16 14.16	+ 9 15.9	0.918	1.448	44.0	18.4	97 E	52*	55
4 6	13 26.08	- 1 51.9	1.937	2.931	2.7	19.9	172 W	43	66	8 19	16 22.76	+ 10 22.3	0.954	1.446	44.2	18.5	95 E	53*	54	8 24	16 31.86	+ 11 18.9	0.991	1.447	44.3	18.6	93 E	54*	53
4 11	13 21.45	- 1 18.7	1.936	2.933	2.4	19.8	173 W	44	65	9 3	16 51.47	+ 12 48.4	1.063	1.453	44.0	18.7	89 E	55*	51*	9 8	17 1.91	+ 13 23.6	1.098	1.458	43.7	18.8	88 E	56*	50*
4 16	13 16.82	- 0 47.0	1.943	2.936	3.6	19.9	169 E	44	65	9 13	17 12.77	+ 13 53.5	1.133	1.465	43.3	18.9	86 E	56*	49*	9 18	17 24.02	+ 14 19.1	1.167	1.473	42.8	18.9	85 E	57*	48*
4 21	13 12.31	- 0 17.6	1.958	2.937	5.3	20.0	164 E	45	64	9 23	17 35.66	+ 14 41.0	1.201	1.482	42.3	19.0	84 E	57*	47*	9 28	17 47.67	+ 15 0.1	1.235	1.494	41.8	19.1	83 E	58*	46*
5 1	13 4.09	+ 0 31.6	2.007	2.941	9.0	20.3	153 E	46	63	10 3	18 0.02	+ 15 16.7	1.268	1.506	41.2	19.1	82 E	58*	45*	10 8	18 12.69	+ 15 31.4	1.302	1.520	40.6	19.2	81 E	59*	44*
5 11	12 57.50	+ 1 5.5	2.082	2.943	12.2	20.5	142 E	46	63	10 13	18 25.67	+ 15 44.7	1.336	1.535	39.9	19.2	81 E	59*	43*	10 18	18 38.95	+ 15 56.8	1.371	1.551	39.3	19.3	80 E	59*	42*
5 21	12 52.95	+ 1 22.7	2.177	2.944	15.0	20.7	131 E	46	63	10 23	18 52.48	+ 16 8.3	1.406	1.568	38.6	19.4	80 E	60*	40*	10 28	19 6.24	+ 16 19.6	1.442	1.586	37.9	19.4	79 E	60*	39*
5 31	12 50.65	+ 1 23.3	2.289	2.944	17.1	20.8	121 E	46	63	11 2	19 20.20	+ 16 30.8	1.479	1.605	37.2	19.5	78 E	60*	37*	11 7	19 34.32	+ 16 42.3	1.518	1.625	36.6	19.5	78 E	60*	36*
6 10	12 50.58	+ 1 8.6	2.412	2.943	18.7	21.0	112 E	45*	63	11 17	20 2.91	+ 17 6.7	1.600	1.668	35.2	19.7	76 E	61*	33*	11 27	20 31.74	+ 17 34.5	1.689	1.713	33.7	19.8	74 E	61*	29*
6 20	12 52.58	+ 0 40.7	2.542	2.941	19.7	21.2	103 E	42*	63	12 7	21 0.51	+ 18 6.5	1.785	1.760	32.3	20.0	72 E	61*	26*	12 17	21 29.00	+ 18 42.9	1.890	1.809	30.8	20.1	70 E	60*	22*
6 30	12 56.47	+ 0 1.4	2.677	2.938	20.2	21.3	95 E	37*	64	12 27	21 56.99	+ 19 23.9	2.003	1.860	29.2	20.2	67 E	59*	19*	1 6	22 24.33	+ 20 9.0	2.123	1.912	27.6	20.4	64 E	57*	16*
7 10	13 2.03	- 0 47.3	2.813	2.935	20.2	21.4	87 E	33*	65	1 16	22 50.96	+ 20 57.5	2.248	1.965	25.9	20.5	61 E	54*	13*	12 23	13 19.97	+ 26 27.4	1.314	1.565	38.7	20.5	85 W	71*	25*
7 20	13 9.06	- 1 43.6	2.946	2.930	19.9	21.5	79 E	29*	64*	1 2	13 32.43	+ 25 58.5	1.291	1.629	37.1	20.5	90 W	71	30*	1 12	13 41.00	+ 25 53.2	1.262	1.693	35.2	20.5	97 W	71	34*
306805 2001 QO₆₅										491565 2012 QF₄₉																			
12 23	13 19.40	- 1 19.0	3.015	2.866	19.0	20.8	72 W	44*	45*	1 22	13 45.31	+ 26 10.5	1.228	1.758	32.8	20.5	105 W	71	37*	1 27	13 45.71	+ 26 26.8	1.212	1.790	31.4	20.4	109 W	71	37*
1 2	13 28.60	- 1 1.8	2.910	2.905	19.5	20.7	80 W	44	52*	2 1	13 44.85	+ 26 47.1	1.195	1.822	29.8	20.4	113 W	72	37	2 2	13 44.85	+ 26 47.1	1.195	1.822	29.8	20.4	113 W	72	37
1 12	13 36.33	- 0 29.2	2.800	2.943	19.5	20.7	88 W	45	58*	2 6	13 42.69	+ 27 10.3	1.180	1.854	28.1	20.3	117 W	72	37	2 11	13 39.20	+ 27 35.3	1.167	1.886	26.3	20.3	122 W	73	36
1 22	13 42.38	+ 0 20.0	2.690	2.981	19.1	20.6	97 W	45	62*	2 16	13 34.38	+ 28 0.3	1.156	1.918	24.4	20.3	127 W	73	36	2 21	13 28.26	+ 28 23.6	1.148	1.949	22.3	20.2	131 W	73	36
2 1	13 46.50	+ 1 26.7	2.582	3.017	18.2	20.5	107 W	46	63	2 26	13 20.92	+ 28 43.1	1.145	1.981	20.3	20.2	136 W	74	35	3 2	13 12.53	+ 28 56.6	1.146	2.012	18.3	20.2	140 W	74	35
2 11	13 48.50	+ 2 50.8	2.481	3.053	16.8	20.4	117 W	48	61	3 7	13 3.32	+ 29 2.3	1.153	2.042	16.5	20.1	144 W	74	35	3 12	12 53.56	+ 28 58.5	1.165	2.073	14.9	20.1	147 W	74	35
2 21	13 48.23	+ 4 31.0	2.393	3.087	14.9	20.3	127 W	50	59	3 17	12 43.56	+ 28 44.6	1.184	2.103	13.9	20.2	150 W	74	35	3 22	12 33.62	+ 28 20.0	1.209	2.133	13.4	20.2	150 W	73	36
3 2	13 45.65	+ 6 24.3	2.323	3.121	12.5	20.1	137 W	51	58	3 27	12 24.06	+ 27 45.1	1.241	2.162	13.5	20.3	150 W	73	36	4 1	12 15.14	+ 27 0.8	1.280	2.191	14.1	20.4	148 E	72	37
3 7	13 43.52	+ 7 24.2	2.296	3.138	11.2	20.1	142 W	52	57	4 6	12 7.06	+ 26 8.3	1.325	2.220	15.0	20.6	145 E	71	38	4 11	11 59.95	+ 25 9.3	1.377	2.249	16.1	20.7	141 E	70	39
3 12	13 40.89	+ 8 25.2	2.275	3.154	9.9	20.0	147 W	53	56	4 16	11 53.87	+ 24 5.3	1.434	2.277	17.3	20.9	138 E	69	40	4 21	11 48.85	+ 22 57.6	1.496	2.305	18.5	21.0	133 E	68	41
3 17	13 37.80	+ 9 26.4	2.260	3.170	8.6	20.0	151 W	54	55	4 26	11 44.87	+ 21 47.4	1.563	2.332	19.6	21.2	129 E	67	42	5 1	11 41.88	+ 20 35.8	1.634	2.359	20.5	21.3	125 E	66	43
3 22	13 34.32	+ 10 26.8	2.253	3.186	7.5	19.9	155 W	55	54	5 6	11 39.82	+ 19 23.5	1.710	2.386	21.4	21.5	121 E	64	45	5 12	13 20.61	- 12 29.2	2.977	2.752	19.3	18.8	67 W	32*	51*
3 27	13 30.51	+ 11 25.3	2.253	3.201	6.6	19.9	158 W	56	53	1 2	13 31.22	- 13 41.0	2.831	2.740	20.2	18.8	75 W	31	59*	1 12	13 40.79	- 14 46.5	2.680	2.728	20.9	18.6	82 W	30	67*
4 1	13 26.47	+ 12 20.7	2.260	3.217	6.1	19.9	160 W	57	52	1 22	13 49.08	- 15 44.7	2.526	2.714	21.3	18.5	90 W	29	75*	2 1	13 55.79	- 16 34.5	2.372	2.700	21.2	18.4	99 W	28	81*
4 6	13 22.31	+ 13 12.3	2.275	3.232	6.2	19.9	160 W	58	51	2 11	14 0.61	- 17 14.6	2.220	2.684	20.5	18.2	107 W	28	81	2 21	14 0.61	- 17 14.6	2.220	2.684	20.5	18.2	107 W	28	81
4 11	13 18.12	+ 13 59.2	2.297	3.247	6.7	20.0	158 E	59	50	3 2	14 3.19	- 17 43.3	2.074	2.668	19.3	18.0	117 W	27	82	3 2	14 3.20	- 17 58.8	1.938	2.650	17.5	17.8	127 W	27	82
4 21	13 10.04	+ 15 16.8	2.363	3.276	8.7	20.1	151 E	60	49	3 12	14 0.44	- 17 58.8	1.816	2.632	14.9	17.5	137 W	27	82	3 22	13 54.90	- 17 41.5	1.712	2.612	11.6	17.3	148 W	27	82
5 1	13 2.92	+ 16 10.4	2.455	3.304	10.9	20.3	142 E	61	48	4 1	13 37.01	- 16 13.1	1.576	2.570	3.5	17.0	171 W	29	80	4 16	13 31.73	- 15 41.4	1.558	2.559	2.2	16.6	174 E	29	80
5 11	12 57.32	+ 16 40.3	2.569	3.331	13.0	20.5	132 E	62	47	4 21	13 26.41	- 15 7.2	1.548	2.548	3.1	16.6	172 E	30	79	4 26	13 21.20	- 14 31.4	1.545	2.536	5.1	16.7	167 E	30	79
5 21	12 53.52	+ 16 48.4	2.701	3.357	14.7	20.7	123 E	62	47	5 1	13 16.25	- 13 55.0	1.549	2.524	7.4	16.8	161 E	31	78	5 6	13 11.72	- 13 19.2	1.559	2.512	9.6	16.9	155 E	32	77
5 31	12 51.65	+ 16 37.8	2.846	3.383	15.9	20.9	114 E	62	47	5 11	13 7.69	- 12 44.8	1.576	2.500	11.8	17.0	150 E	32	77	5 16	13 4.26	- 12 12.8	1.598	2.487	13.9	17.1	144 E	33	76
6 10	12 51.66	+ 16 12.0	3.001	3.407	16.7	21.0	105 E	60*	48	5 21	13 1.50	- 11 43.9	1.625	2.474	15.8	17.2	138 E	33	76	6 10	12 50.58	+ 1 8.6	2.481	3.053	16.8	20.4	117 W	48	

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

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°	
2423 Ibaruri									325395 2009 CQ₅									
<i>(continuation)</i>									<i>(continuation)</i>									
5 31	12 58.13	-10 57.6	1.692	2.448	19.1	17.4	128 E	34 75	1 17	14 10.18	-45 0.7	0.373	0.940	85.5	18.3	72 W	—	64*
6 10	12 57.68	-10 28.8	1.773	2.421	21.7	17.5	118 E	34* 74	1 22	14 25.25	-49 1.9	0.387	0.948	83.8	18.4	73 W	—	62*
6 20	13 0.00	-10 17.6	1.862	2.393	23.7	17.7	109 E	32* 74	1 27	14 42.37	-52 39.4	0.401	0.956	82.2	18.4	74 W	—	60*
6 30	13 4.88	-10 23.4	1.957	2.364	25.0	17.8	101 E	29* 74	2 1	15 1.74	-55 53.6	0.414	0.963	80.7	18.4	75 W	—	57*
7 10	13 12.04	-10 44.4	2.053	2.334	25.8	17.9	93 E	25* 75	2 6	15 23.58	-58 44.2	0.426	0.970	79.5	18.5	75 W	—	55*
7 20	13 21.21	-11 18.4	2.149	2.304	26.1	18.0	86 E	22* 74*	2 11	15 48.09	-61 10.9	0.437	0.977	78.4	18.5	76 W	—	53*
7 30	13 32.18	-12 3.4	2.241	2.273	26.0	18.0	79 E	20* 71*	2 21	16 45.25	-64 50.0	0.454	0.989	76.7	18.5	77 W	—	49*
8 9	13 44.76	-12 57.3	2.329	2.241	25.5	18.1	72 E	17* 66*	3 2	17 50.94	-66 42.4	0.464	1.000	75.5	18.6	78 W	—	46*
8 19	13 58.80	-13 57.8	2.412	2.209	24.8	18.1	66 E	15* 60*	3 12	18 58.78	-66 44.5	0.467	1.008	74.8	18.6	78 W	—	45*
8 29	14 14.21	-15 3.1	2.487	2.176	23.8	18.1	61 E	13* 54*	3 14	19 11.92	-66 32.4	0.467	1.009	74.7	18.6	78 W	—	45*
9 8	14 30.90	-16 11.2	2.555	2.143	22.7	18.1	55 E	12* 49*	3 16	19 24.79	-66 16.3	0.466	1.011	74.7	18.6	78 W	—	45*
9 18	14 48.81	-17 20.1	2.614	2.109	21.3	18.0	50 E	11* 44*	3 18	19 37.44	-65 56.4	0.465	1.012	74.6	18.6	79 W	—	45*
9 28	15 7.92	-18 27.8	2.665	2.075	19.8	18.0	45 E	10* 39*	3 20	19 49.54	-65 33.0	0.464	1.013	74.6	18.6	79 W	—	45*
10 8	15 28.18	-19 32.3	2.708	2.041	18.2	18.0	40 E	9* 34*	3 22	20 1.35	-65 6.0	0.462	1.014	74.6	18.6	79 W	—	45*
10 18	15 49.58	-20 31.6	2.741	2.007	16.5	17.9	35 E	8* 29*	3 27	20 29.12	-63 44.1	0.457	1.016	74.7	18.5	79 W	—	45*
10 28	16 12.09	-21 23.6	2.766	1.972	14.7	17.8	30 E	7* 24*	4 1	20 54.33	-62 3.1	0.450	1.017	74.9	18.5	79 W	—	46*
11 7	16 35.64	-22 6.1	2.782	1.938	12.8	17.7	26 E	6* 19*	4 6	21 17.09	-60 4.0	0.442	1.018	75.2	18.5	80 W	—	47*
11 17	17 0.20	-22 37.2	2.790	1.904	10.9	17.6	21 E	5* 15*	4 11	21 37.69	-57 47.5	0.432	1.018	75.6	18.5	80 W	—	49*
11 27	17 25.68	-22 54.8	2.791	1.871	9.0	17.5	17 E	4* 10*	4 16	21 56.41	-55 13.8	0.420	1.017	76.2	18.4	80 W	—	51*
12 7	17 51.95	-22 57.1	2.784	1.838	7.0	17.4	13 E	2* 6*	4 21	22 13.52	-52 22.4	0.407	1.016	76.8	18.4	80 W	—	53*
12 17	18 18.90	-22 42.6	2.771	1.807	5.0	17.2	9 E	1* 2*	4 26	22 29.27	-49 11.9	0.394	1.014	77.7	18.3	80 W	—	55*
12 27	18 46.37	-22 10.0	2.752	1.776	3.0	17.1	5 E	—	5 1	22 43.92	-45 40.3	0.379	1.012	78.6	18.3	80 W	—	58*
1 6	19 14.21	-21 18.6	2.729	1.746	1.1	16.9	2 E	—	5 6	22 57.71	-41 44.9	0.364	1.008	79.7	18.2	80 W	—	61*
1 16	19 42.26	-20 8.0	2.701	1.718	1.3	16.8	2 W	—	5 11	23 10.90	-37 23.0	0.349	1.005	80.9	18.2	79 W	—	64*
2078 Nanking																		
12 23	13 20.96	-28 10.2	3.534	3.204	15.8	19.1	63 W	17* 55*	5 16	23 23.71	-32 31.7	0.335	1.000	82.3	18.1	79 W	—	67*
1 2	13 29.64	-29 47.1	3.415	3.214	16.7	19.1	70 W	15 63*	5 21	23 36.31	-27 8.7	0.321	0.995	83.8	18.1	78 W	1*	69*
1 12	13 37.07	-31 21.3	3.288	3.223	17.3	19.0	78 W	14 71*	5 26	23 48.88	-21 12.6	0.309	0.990	85.4	18.0	77 W	6*	71*
1 22	13 43.01	-32 52.2	3.157	3.231	17.7	19.0	85 W	12 79*	5 31	0 1.61	-14 44.1	0.299	0.984	87.1	18.0	76 W	11*	70*
2 1	13 47.14	-34 18.3	3.024	3.237	17.7	18.9	94 W	11 82	6 5	0 14.73	-7 46.9	0.292	0.978	88.8	18.0	74 W	17*	66*
2 11	13 49.18	-35 37.6	2.892	3.243	17.3	18.8	102 W	9 80	6 10	0 28.48	-0 28.5	0.289	0.971	90.5	18.0	73 W	24*	61*
2 21	13 48.84	-36 47.8	2.765	3.248	16.6	18.7	111 W	8 79	6 12	0 34.21	+ 2 30.3	0.289	0.968	91.1	18.1	72 W	26*	59*
3 2	13 45.90	-37 45.3	2.647	3.251	15.4	18.5	120 W	7 78	6 14	0 40.09	+ 5 29.8	0.289	0.965	91.7	18.1	72 W	29*	56*
3 12	13 40.35	-38 25.7	2.542	3.254	13.8	18.4	128 W	7 78	6 16	0 46.13	+ 8 29.1	0.290	0.962	92.3	18.1	71 W	32*	54*
3 17	13 36.66	-38 38.3	2.496	3.255	13.0	18.3	133 W	6 77	6 18	0 52.36	+11 27.2	0.292	0.959	92.8	18.1	71 W	34*	51*
3 22	13 32.41	-38 44.9	2.455	3.256	12.0	18.2	137 W	6 77	6 20	0 58.78	+14 23.4	0.294	0.956	93.3	18.2	70 W	36*	48*
3 27	13 27.69	-38 45.1	2.419	3.256	11.1	18.2	141 W	6 77	6 22	1 5.42	+17 16.5	0.297	0.953	93.7	18.2	69 W	39*	45*
4 1	13 22.61	-38 38.7	2.389	3.256	10.2	18.1	145 W	6 77	6 24	1 12.28	+20 5.9	0.300	0.950	94.1	18.2	69 W	41*	43*
4 6	13 17.29	-38 25.5	2.365	3.256	9.4	18.1	148 W	7 78	6 26	1 19.39	+22 50.6	0.305	0.947	94.4	18.3	68 W	43*	40*
4 11	13 11.84	-38 5.7	2.348	3.256	8.8	18.0	150 E	7 78	6 28	1 26.77	+25 30.1	0.310	0.944	94.6	18.3	68 W	45*	38*
4 16	13 6.42	-37 39.4	2.337	3.255	8.4	18.0	152 E	7 78	6 30	1 34.42	+28 3.7	0.315	0.940	94.8	18.3	67 W	47*	35*
4 21	13 1.14	-37 7.3	2.333	3.254	8.4	18.0	152 E	8 79	7 5	1 54.92	+33 58.9	0.331	0.932	95.1	18.4	66 W	51*	29*
4 26	12 56.13	-36 29.9	2.335	3.253	8.6	18.0	151 E	9 80	7 10	2 17.54	+39 9.1	0.350	0.924	95.0	18.5	65 W	53*	24*
5 1	12 51.52	-35 48.4	2.345	3.251	9.1	18.0	149 E	9 80	7 15	2 42.43	+43 31.7	0.372	0.916	94.7	18.6	64 W	55*	20*
5 6	12 47.39	-35 3.6	2.360	3.250	9.9	18.1	146 E	10 81	7 20	3 9.58	+47 5.7	0.395	0.908	94.2	18.7	63 W	56*	16*
5 11	12 43.81	-34 16.7	2.382	3.248	10.8	18.1	143 E	11 82	7 25	3 38.77	+49 51.4	0.419	0.900	93.5	18.8	62 W	56*	13*
5 16	12 40.83	-33 28.7	2.410	3.245	11.7	18.2	139 E	12 83	7 30	4 9.61	+51 49.9	0.445	0.892	92.6	18.9	61 W	55*	10*
5 21	12 38.47	-32 40.5	2.444	3.243	12.7	18.2	135 E	12 83	8 1	4 22.26	+52 24.5	0.456	0.889	92.2	18.9	61 W	55*	9*
5 26	12 36.76	-31 53.2	2.482	3.240	13.6	18.3	131 E	13 84	8 3	4 35.03	+52 52.1	0.466	0.887	91.8	18.9	61 W	55*	8*
5 31	12 35.69	-31 7.5	2.525	3.237	14.5	18.4	127 E	14* 85	8 5	4 47.87	+53 12.7	0.477	0.884	91.4	19.0	61 W	55*	8*
6 10	12 35.41	-29 43.5	2.623	3.230	16.1	18.5	118 E	14* 86	8 7	5 0.72	+53 26.7	0.487	0.881	91.0	19.0	60 W	54*	7*
6 20	12 37.44	-28 32.0	2.733	3.222	17.3	18.6	110 E	13* 87	8 9	5 13.53	+53 34.3	0.498	0.878	90.6	19.0	60 W	54*	7*
6 30	12 41.54	-27 34.9	2.852	3.213	18.1	18.7	102 E	11* 88	8 11	5 26.26	+53 35.6	0.508	0.876	90.1	19.0	60 W	54*	7*
7 10	12 47.44	-26 52.7	2.975	3.203	18.5	18.8	94 E	8* 87*	8 13	5 38.84	+53 31.0	0.519	0.873	89.7	19.0	60 W	53*	6*
7 20	12 54.90	-26 24.7	3.100	3.192	18.5	18.9	86 E	6* 79*	8 15	5 51.24	+53 20.8	0.529	0.871	89.2	19.1	59 W	53*	6*
7 30	13 3.73	-26 9.9	3.223	3.180	18.2	19.0	79 E	4* 71*	8 17	6 3.43	+53 5.1	0.540	0.868	88.8	19.1	59 W	53*	5*
8 9	13 13.74	-26 6.8	3.342	3.167	17.7	19.0	71 E	2* 63*	8 19	6 15.36	+52 44.2	0.550	0.866	88.3	19.1	59 W	52*	5*
8 19	13 24.78	-26 13.9	3.455	3.153	16.8	19.1	64 E	1* 56*	8 21	6 27.01	+52 18.5	0.560	0.864	87.8	19.1	59 W	52*	5*
8 29	13 36.74	-26 29.5	3.559	3.138	15.8	19.1	58 E	— 49*	8 23	6 38.37	+51 48.2	0.570	0.862	87.4	19.1	58 W	52*	5*
9 8	13 49.52	-26 52.2	3.654	3.121	14.5	19.1	51 E	— 43*	8 25	6 49.42	+51 13.6	0.580	0.860	86.9	19.1	58 W	52*	5*
9 18	14 3.05	-27 20.5	3.737	3.104	13.2	19.1	45 E	— 36*	8 27	7 0.15	+50 34.9	0.590	0.858	86.4	19.2	58 W	51*	5*
9 28	14 17.25	-27 52.9	3.807	3.085	11.6	19.1	38 E	— 30*	8 29	7 10.57	+49 52.4	0.600	0.857	85.9	19.2	58 W	51*	5*
10 8	14 32.08	-28 28.1	3.864	3.066	10.0	19.0	32 E	— 24*	9 3	7 35.24	+47 50.8	0.624	0.853	84.6	19.2	57 W	51*	6*
10 18	14 47.49	-29 4.9	3.906	3.045	8.3	19.0	26 E	— 18*	9 8	7 58.08	+45 30.2	0.647	0.850	83.4	19.2	57 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°
325395 2009 CQ₅										125458 2001 WR₄									
<i>(continuation)</i>										<i>(continuation)</i>									
11 22	11 59.00	-5 55.2	0.880	0.909	67.0	19.5	58 W	36*	39*	4 21	13 6.94	+14 49.2	2.295	3.209	8.8	20.1	151 E	60	49
11 27	12 14.02	-9 28.0	0.890	0.917	66.2	19.5	58 W	33*	41*	5 1	12 58.83	+15 3.0	2.334	3.188	11.3	20.3	142 E	60	49
12 2	12 29.39	-12 55.4	0.900	0.925	65.4	19.5	59 W	31*	43*	5 11	12 52.16	+14 55.8	2.397	3.167	13.6	20.4	132 E	60	49
12 7	12 45.21	-16 16.7	0.909	0.933	64.6	19.5	59 W	28*	46*	5 21	12 47.33	+14 29.2	2.477	3.144	15.7	20.5	123 E	59	50
12 12	13 1.52	-19 30.7	0.919	0.941	63.9	19.6	59 W	25*	48*	5 31	12 44.60	+13 45.7	2.571	3.121	17.3	20.6	114 E	59*	50
12 17	13 18.41	-22 36.3	0.927	0.949	63.3	19.6	59 W	22*	49*	6 10	12 43.97	+12 48.1	2.674	3.096	18.5	20.7	105 E	56*	51
12 22	13 35.93	-25 32.5	0.935	0.957	62.6	19.6	60 W	19*	51*	6 20	12 45.37	+11 39.2	2.783	3.071	19.2	20.8	97 E	51*	52
12 27	13 54.15	-28 18.2	0.942	0.964	62.1	19.6	60 W	16*	52*	6 30	12 48.64	+10 21.4	2.894	3.045	19.5	20.9	89 E	45*	54
1	14 13.14	-30 52.4	0.949	0.972	61.6	19.6	60 W	14*	54*	7 10	12 53.60	+ 8 56.7	3.004	3.019	19.4	21.0	81 E	40*	55*
1	14 32.95	-33 13.9	0.955	0.978	61.1	19.6	61 W	12*	54*	7 20	13 0.05	+ 7 26.6	3.110	2.991	19.0	21.0	74 E	35*	55*
1 11	14 53.59	-35 21.7	0.960	0.985	60.7	19.6	61 W	9*	55*	7 30	13 7.84	+ 5 52.5	3.210	2.962	18.4	21.0	67 E	30*	53*
1 16	15 15.06	-37 14.7	0.964	0.991	60.4	19.7	61 W	7*	55*	8 9	13 16.80	+ 4 15.4	3.303	2.933	17.4	21.0	60 E	27*	49*
16724 Ulliloltzmann										153249 2001 BW₁₅									
12 23	13 21.28	+18 16.6	3.464	3.437	16.4	20.3	80 W	63*	31*	12 23	13 21.68	-24 37.9	1.554	1.418	38.3	18.5	63 W	20*	54*
1	13 29.06	+19 2.6	3.357	3.468	16.5	20.2	88 W	64	36*	12 28	13 36.90	-28 7.3	1.483	1.375	40.0	18.3	64 W	17*	56*
1 12	13 35.42	+20 4.0	3.251	3.498	16.2	20.2	96 W	65	40*	1	13 53.93	-31 46.9	1.418	1.332	41.8	18.2	64 W	13*	58*
1 22	13 40.13	+21 20.3	3.149	3.527	15.7	20.1	105 W	66	42*	1	14 13.25	-35 34.3	1.358	1.288	43.5	18.1	64 W	9*	58*
2 1	13 42.98	+22 50.2	3.055	3.555	14.8	20.0	113 W	68	41	1 12	14 35.50	-39 25.5	1.306	1.246	45.3	18.0	64 W	6*	58*
2 11	13 43.79	+24 30.8	2.973	3.582	13.7	19.9	121 W	70	39	1 14	14 45.38	-40 57.8	1.287	1.229	46.0	17.9	64 W	4*	57*
2 21	13 42.43	+26 17.8	2.907	3.609	12.3	19.8	129 W	71	38	1 16	14 55.89	-42 29.1	1.269	1.212	46.6	17.9	64 W	2*	57*
2 26	13 40.92	+27 11.9	2.881	3.622	11.7	19.8	132 W	72	37	1 18	15 7.10	-43 58.8	1.253	1.195	47.3	17.9	63 W	1*	56*
3 2	13 38.88	+28 5.4	2.861	3.634	11.0	19.8	135 W	73	36	1 20	15 19.05	-45 26.3	1.238	1.178	48.0	17.8	63 W	—	55*
3 7	13 36.34	+28 57.1	2.846	3.647	10.4	19.7	138 W	74	35	1 22	15 31.79	-46 50.8	1.225	1.162	48.6	17.8	62 W	—	54*
3 12	13 33.33	+29 46.4	2.838	3.659	10.0	19.7	140 W	75	34	1 24	15 45.37	-48 11.3	1.213	1.145	49.2	17.8	62 W	—	53*
3 17	13 29.90	+30 32.3	2.835	3.671	9.6	19.7	142 W	76	33	1 26	15 59.80	-49 27.0	1.202	1.129	49.8	17.7	61 W	—	52*
3 22	13 26.13	+31 13.9	2.839	3.683	9.4	19.7	143 W	76	33	1 28	16 15.10	-50 36.8	1.193	1.113	50.4	17.7	61 W	—	50*
3 27	13 22.08	+31 50.4	2.849	3.695	9.4	19.7	143 W	77	32	1 30	16 31.26	-51 39.6	1.185	1.098	50.9	17.7	60 W	—	49*
4 1	13 17.85	+32 21.4	2.866	3.706	9.5	19.8	142 W	77	32	2 1	16 48.24	-52 34.6	1.179	1.082	51.4	17.6	59 W	—	48*
4 6	13 13.53	+32 46.2	2.889	3.717	9.8	19.8	141 W	78	31	2 3	17 5.96	-53 20.6	1.175	1.067	51.9	17.6	58 W	—	46*
4 11	13 9.21	+33 4.6	2.918	3.728	10.2	19.8	139 E	78	31	2 5	17 24.31	-53 56.8	1.171	1.052	52.3	17.6	58 W	—	45*
4 16	13 4.99	+33 16.6	2.952	3.739	10.8	19.9	136 E	78	31	2 7	17 43.13	-54 22.5	1.170	1.037	52.7	17.6	57 W	—	43*
4 21	13 0.95	+33 22.2	2.992	3.750	11.3	19.9	133 E	78	31	2 9	18 2.25	-54 37.3	1.170	1.023	53.0	17.5	56 W	—	42*
4 26	12 57.17	+33 21.5	3.037	3.760	11.9	20.0	130 E	78	31	2 11	18 21.46	-54 40.8	1.171	1.009	53.2	17.5	55 W	—	41*
5 1	12 53.72	+33 14.8	3.087	3.770	12.5	20.1	126 E	78	31	2 13	18 40.57	-54 33.0	1.173	0.996	53.4	17.5	54 W	—	39*
5 11	12 47.99	+32 45.3	3.199	3.790	13.5	20.2	119 E	78	31	2 15	18 59.35	-54 14.2	1.177	0.983	53.5	17.5	53 W	—	38*
5 21	12 44.04	+31 57.4	3.325	3.809	14.3	20.3	111 E	77	32	2 17	19 17.65	-53 44.9	1.182	0.971	53.5	17.5	52 W	—	37*
5 31	12 41.95	+30 55.1	3.460	3.827	14.9	20.4	104 E	76	33	2 19	19 35.29	-53 5.8	1.189	0.959	53.5	17.4	51 W	—	35*
6 10	12 41.70	+29 42.0	3.601	3.844	15.2	20.5	96 E	71	34	2 21	19 52.18	-52 17.6	1.196	0.947	53.4	17.4	50 W	—	34*
6 20	12 43.12	+28 21.3	3.745	3.861	15.3	20.6	89 E	64*	36	2 23	20 8.23	-51 21.3	1.204	0.936	53.3	17.4	49 W	—	33*
6 30	12 46.08	+26 55.5	3.890	3.876	15.0	20.7	82 E	58*	37	2 25	20 23.41	-50 17.7	1.214	0.926	53.0	17.4	48 W	—	32*
7 10	12 50.38	+25 26.6	4.031	3.891	14.6	20.8	75 E	51*	38*	2 27	20 37.70	-49 7.9	1.224	0.917	52.7	17.4	47 W	—	31*
7 20	12 55.84	+23 56.3	4.168	3.905	14.0	20.9	68 E	46*	39*	2 29	20 51.12	-47 52.6	1.235	0.908	52.4	17.4	46 W	—	30*
7 30	13 2.32	+22 25.7	4.297	3.918	13.2	20.9	62 E	41*	37*	3 2	21 3.69	-46 32.7	1.247	0.900	52.0	17.4	46 W	—	30*
8 9	13 9.64	+20 56.0	4.417	3.930	12.2	20.9	55 E	37*	34*	3 4	21 15.46	-45 9.0	1.259	0.893	51.5	17.4	45 W	—	29*
8 19	13 17.71	+19 27.9	4.527	3.942	11.2	21.0	49 E	34*	31*	3 6	21 26.49	-43 42.0	1.272	0.887	51.0	17.3	44 W	—	29*
8 29	13 26.40	+18 2.2	4.623	3.952	10.1	21.0	43 E	31*	26*	3 8	21 36.82	-42 12.4	1.285	0.881	50.4	17.3	43 W	—	28*
9 8	13 35.61	+16 39.7	4.706	3.962	9.0	21.0	38 E	28*	20*	3 10	21 46.51	-40 40.7	1.299	0.876	49.8	17.3	42 W	—	28*
9 18	13 45.26	+15 20.9	4.775	3.971	7.9	20.9	33 E	25*	14*	3 12	21 55.62	-39 7.3	1.313	0.872	49.2	17.3	42 W	—	27*
9 28	13 55.28	+14 6.4	4.827	3.979	7.0	20.9	29 E	22*	8*	3 14	22 4.19	-37 32.7	1.328	0.869	48.5	17.3	41 W	—	27*
10 8	14 5.59	+12 57.1	4.863	3.987	6.3	20.9	26 E	20*	1*	3 16	22 12.28	-35 57.1	1.342	0.867	47.8	17.3	40 W	—	27*
10 18	14 16.11	+11 53.3	4.882	3.993	5.9	20.9	24 E	17*	—	3 18	22 19.93	-34 20.9	1.357	0.866	47.1	17.3	40 W	—	27*
10 28	14 26.78	+10 55.8	4.883	3.999	5.9	20.9	24 E	14*	—	3 20	22 27.19	-32 44.3	1.371	0.866	46.4	17.3	39 W	—	26*
11 7	14 37.51	+10 5.2	4.866	4.004	6.3	20.9	27 W	15*	—	3 22	22 34.08	-31 7.5	1.386	0.867	45.6	17.3	38 W	—	26*
11 17	14 48.23	+ 9 22.0	4.832	4.008	7.1	21.0	30 W	22*	—	3 27	22 49.97	-27 5.7	1.422	0.873	43.9	17.4	37 W	—	27*
11 27	14 58.86	+ 8 47.0	4.781	4.011	8.1	21.0	35 W	28*	—	4 1	23 4.27	-23 6.1	1.458	0.884	42.2	17.4	37 W	—	27*
12 7	15 9.29	+ 8 20.8	4.714	4.014	9.1	21.0	40 W	34*	3*	4 6	23 17.34	-19 10.0	1.491	0.901	40.8	17.4	36 W	—	28*
12 17	15 19.44	+ 8 3.7	4.631	4.016	10.2	21.0	46 W	40*	10*	4 11	23 29.45	-15 18.4	1.523	0.923	39.6	17.5	36 W	—	29*
12 27	15 29.16	+ 7 56.4	4.533	4.017	11.3	21.0	53 W	44*	17*	4 16	23 40.81	-11 32.0	1.553	0.949	38.6	17.6	36 W	—	29*
1	15 38.34	+ 7 59.3	4.423	4.017	12.2	21.0	60 W	48*	25*	4 21	23 51.57	- 7 51.1	1.580	0.978	37.8	17.7	37 W	1*	30*
1 16	15 46.84	+ 8 12.6	4.303	4.016	13.0	20.9	67 W	51*	33*	5 1	0 11.71	- 0 46.8	1.627	1.047	36.8	17.8	38 W	7*	32*
125458 2001 WR₄										153249 2001 BW₁₅									
12 23	13 21.50	+ 6 25.1	3.515	3.391	16.2	21.5	75 W	51*	40*	5 11	0 30.50	+ 5 54.6	1.665	1.123	36.3	18.0	41 W	13*	34*
1	13 29.34	+ 6 18.3	3.361	3.381	16.8	21.4	83 W	51											

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°
153249 2001 BW₁₅										37152 2000 VV₅₆									
<i>(continuation)</i>										<i>(continuation)</i>									
6 10	1 21.53	+23 56.9	1.729	1.377	36.0	18.6	53 W	32*	33*	2 11	14 40.34	-14 1.4	1.545	1.964	29.7	17.2	99 W	31	78*
6 20	1 37.01	+29 24.0	1.736	1.464	35.8	18.7	57 W	40*	31*	2 21	14 53.63	-15 34.2	1.409	1.931	29.5	17.0	106 W	29	80
6 30	1 51.60	+34 37.4	1.736	1.549	35.5	18.8	62 W	47*	28*	3 2	15 5.41	-17 4.0	1.278	1.898	28.8	16.7	113 W	28	81
7 10	2 5.06	+39 39.0	1.732	1.634	35.0	18.9	67 W	56*	24*	3 12	15 15.21	-18 31.7	1.156	1.866	27.4	16.4	120 W	26	83
7 15	2 11.28	+42 5.8	1.729	1.675	34.7	18.9	70 W	60*	22*	3 22	15 22.49	-19 58.4	1.044	1.835	25.3	16.1	128 W	25	84
7 20	2 17.07	+44 30.2	1.724	1.716	34.4	19.0	72 W	64*	19*	4 1	15 26.62	-21 24.3	0.943	1.805	22.3	15.7	137 W	24	85
7 25	2 22.35	+46 52.1	1.719	1.757	34.0	19.0	75 W	68*	17	4 11	15 27.10	-22 49.0	0.856	1.777	18.4	15.4	146 W	22	87
7 30	2 27.03	+49 11.6	1.713	1.797	33.5	19.0	78 W	71*	15	4 21	15 23.62	-24 10.4	0.785	1.751	13.6	15.0	156 W	21	88
8 4	2 31.01	+51 28.5	1.707	1.836	33.0	19.1	81 W	75*	13	4 26	15 20.44	-24 48.5	0.756	1.739	11.0	14.8	161 W	20	89
8 9	2 34.16	+53 42.9	1.700	1.875	32.5	19.1	83 W	77*	10	5 1	15 16.44	-25 24.1	0.732	1.727	8.4	14.6	166 W	20	89
8 14	2 36.30	+55 54.3	1.694	1.914	31.9	19.1	86 W	78*	8	5 6	15 11.80	-25 56.5	0.713	1.715	6.1	14.4	170 W	19	90
8 19	2 37.23	+58 2.4	1.688	1.952	31.2	19.1	89 W	77*	6	5 11	15 6.73	-26 25.3	0.699	1.705	5.1	14.3	171 E	19	90
8 24	2 36.71	+60 6.4	1.682	1.989	30.5	19.1	92 W	75	4	5 16	15 1.49	-26 50.1	0.690	1.694	6.2	14.3	170 E	18	89
8 29	2 34.47	+62 5.4	1.677	2.026	29.8	19.1	95 W	73	2	5 21	14 56.37	-27 10.8	0.686	1.685	8.6	14.4	166 E	18	89
9 3	2 30.22	+63 58.2	1.673	2.062	29.0	19.2	97 W	71	—	5 26	14 51.66	-27 27.9	0.686	1.676	11.5	14.5	161 E	18	89
9 8	2 23.61	+65 43.3	1.670	2.097	28.2	19.2	100 W	69	—	5 31	14 47.65	-27 42.0	0.691	1.668	14.5	14.6	156 E	17	88
9 13	2 14.34	+67 18.6	1.669	2.132	27.4	19.2	103 W	68	—	6 5	14 44.56	-27 54.0	0.700	1.660	17.5	14.7	151 E	17	88
9 18	2 2.17	+68 41.8	1.670	2.167	26.5	19.2	105 W	66	—	6 10	14 42.54	-28 4.8	0.712	1.653	20.2	14.9	146 E	17	88
9 23	1 47.07	+69 50.1	1.673	2.201	25.7	19.2	108 W	65	—	6 15	14 41.68	-28 15.1	0.728	1.647	22.8	15.0	141 E	17	88
9 28	1 29.35	+70 40.9	1.678	2.234	24.9	19.2	110 W	64	—	6 20	14 42.06	-28 25.6	0.748	1.642	25.2	15.1	137 E	17	88
9 30	1 21.66	+70 55.8	1.681	2.247	24.5	19.2	111 W	64	—	6 30	14 46.57	-28 49.5	0.794	1.634	29.1	15.3	129 E	16*	87
10 2	1 13.73	+71 7.5	1.684	2.260	24.2	19.2	112 W	64	—	7 10	14 55.79	-29 18.6	0.849	1.629	32.2	15.6	121 E	15*	87
10 4	1 5.61	+71 15.8	1.688	2.273	23.9	19.2	113 W	64	—	7 20	15 9.16	-29 51.9	0.911	1.627	34.5	15.8	115 E	14*	86
10 6	0 57.38	+71 20.8	1.692	2.286	23.6	19.2	114 W	64	—	7 25	15 17.24	-30 9.4	0.945	1.627	35.3	15.9	112 E	13*	86
10 8	0 49.13	+71 22.4	1.697	2.299	23.3	19.3	114 E	64	—	7 30	15 26.15	-30 27.0	0.979	1.628	36.0	16.0	109 E	13*	86
10 10	0 40.94	+71 20.6	1.702	2.311	23.0	19.3	115 E	64	—	8 4	15 35.80	-30 44.1	1.016	1.630	36.6	16.1	107 E	13*	85
10 12	0 32.89	+71 15.6	1.708	2.324	22.7	19.3	116 E	64	—	8 9	15 46.13	-31 0.4	1.053	1.633	37.0	16.2	104 E	12*	85
10 14	0 25.06	+71 7.4	1.714	2.336	22.5	19.3	116 E	64	—	8 14	15 57.06	-31 15.2	1.092	1.637	37.3	16.3	102 E	12*	85
10 16	0 17.51	+70 56.1	1.721	2.349	22.2	19.3	117 E	64	—	8 19	16 8.55	-31 28.2	1.132	1.641	37.4	16.4	100 E	12*	85
10 18	0 10.31	+70 42.1	1.729	2.361	22.0	19.3	118 E	64	—	8 24	16 20.52	-31 38.9	1.173	1.646	37.5	16.4	98 E	12*	84
10 20	0 3.50	+70 25.3	1.737	2.373	21.7	19.3	118 E	65	—	8 29	16 32.93	-31 47.1	1.216	1.652	37.5	16.5	95 E	12*	84*
10 22	23 57.13	+70 6.1	1.745	2.386	21.5	19.3	118 E	65	—	9 3	16 45.69	-31 52.2	1.259	1.659	37.4	16.6	93 E	12*	83*
10 24	23 51.21	+69 44.6	1.754	2.398	21.3	19.4	119 E	65	—	9 8	16 58.76	-31 54.0	1.304	1.666	37.2	16.7	91 E	12*	82*
10 26	23 45.77	+69 21.2	1.764	2.410	21.1	19.4	119 E	66	—	9 13	17 12.07	-31 52.2	1.350	1.674	36.9	16.8	89 E	12*	81*
10 28	23 40.81	+68 56.0	1.774	2.421	21.0	19.4	119 E	66	—	9 18	17 25.58	-31 46.6	1.397	1.683	36.6	16.8	87 E	12*	80*
11 2	23 30.48	+67 46.6	1.803	2.451	20.6	19.4	120 E	67	—	9 23	17 39.05	-31 37.0	1.445	1.693	36.2	16.9	85 E	12*	78*
11 7	23 22.96	+66 30.7	1.835	2.480	20.3	19.5	120 E	68	—	9 28	17 53.01	-31 23.5	1.495	1.703	35.8	17.0	84 E	12*	77*
11 12	23 17.97	+65 10.9	1.871	2.508	20.1	19.6	119 E	70	—	10 3	18 6.81	-31 5.8	1.545	1.713	35.3	17.1	82 E	13*	75*
11 17	23 15.19	+63 49.5	1.911	2.536	20.0	19.6	118 E	71	—	10 8	18 20.62	-30 44.0	1.596	1.725	34.7	17.1	80 E	14*	73*
11 22	23 14.32	+62 28.6	1.954	2.563	20.0	19.7	117 E	73	2	10 13	18 34.40	-30 18.1	1.649	1.736	34.2	17.2	78 E	14*	72*
11 27	23 15.05	+61 9.7	2.001	2.590	20.0	19.8	116 E	74	3*	10 18	18 48.12	-29 48.2	1.702	1.749	33.5	17.3	76 E	15*	70*
12 2	23 17.12	+59 53.9	2.051	2.616	20.1	19.9	114 E	75	4*	10 23	19 1.74	-29 14.4	1.756	1.762	32.9	17.3	74 E	15*	68*
12 7	23 20.31	+58 42.0	2.104	2.641	20.2	19.9	112 E	76	5*	10 28	19 15.24	-28 36.9	1.811	1.775	32.1	17.4	72 E	16*	66*
12 12	23 24.46	+57 34.6	2.160	2.667	20.3	20.0	110 E	77	5*	11 2	19 28.59	-27 55.7	1.867	1.789	31.4	17.5	70 E	17*	64*
12 17	23 29.42	+56 32.2	2.219	2.691	20.3	20.1	108 E	78	5*	11 7	19 41.78	-27 11.2	1.923	1.803	30.6	17.5	68 E	17*	61*
12 22	23 35.06	+55 35.0	2.280	2.716	20.4	20.2	106 E	79	5*	11 12	19 54.78	-26 23.4	1.980	1.817	29.8	17.6	66 E	18*	59*
12 27	23 41.29	+54 43.1	2.344	2.739	20.5	20.3	103 E	80	5*	11 17	20 7.60	-25 32.6	2.038	1.832	29.0	17.6	64 E	19*	56*
1 1	23 48.00	+53 56.6	2.409	2.762	20.5	20.3	100 E	81	5*	11 22	20 20.23	-24 39.1	2.095	1.848	28.1	17.7	62 E	20*	54*
1 6	23 55.14	+53 15.3	2.476	2.785	20.5	20.4	98 E	81*	4*	11 27	20 32.64	-23 42.9	2.153	1.863	27.2	17.7	60 E	20*	51*
1 11	0 2.66	+52 39.0	2.545	2.807	20.4	20.5	95 E	81*	4*	12 7	20 56.86	-21 43.9	2.269	1.895	25.4	17.8	56 E	22*	45*
1 16	0 10.50	+52 7.6	2.614	2.829	20.3	20.6	92 E	79*	3*	12 17	21 20.26	-19 37.1	2.384	1.928	23.5	17.9	51 E	23*	40*
237838 2002 EV₇₁										58141 1981 UW₂₂									
12 23	13 21.68	-11 9.9	3.602	3.352	15.7	21.2	68 W	34*	50*	12 23	13 22.28	-3 41.0	2.805	2.640	20.5	21.0	70 W	41*	46*
1 2	13 29.88	-12 23.8	3.487	3.376	16.4	21.1	75 W	33	58*	1 2	13 33.85	-4 31.8	2.655	2.623	21.5	20.9	77 W	40	53*
1 12	13 36.85	-13 31.6	3.367	3.401	16.7	21.1	84 W	31	67*	1 12	13 44.44	-5 13.1	2.502	2.605	22.1	20.7	85 W	40	60*
1 22	13 42.39	-14 32.7	3.245	3.426	16.7	21.0	92 W	30	75*	1 22	13 53.84	-5 43.9	2.346	2.586	22.3	20.6	93 W	39	66*
2 1	13 46.29	-15 26.3	3.123	3.451	16.3	20.9	101 W	30	79	2 1	14 1.73	-6 2.7	2.192	2.566	22.2	20.4	101 W	39	70*
2 11	13 48.40	-16 11.6	3.007	3.476	15.4	20.8	110 W	29	80	2 11	14 7.80	-6 8.6	2.041	2.545	21.5	20.2	109 W	39	70*
2 21	13 48.56	-16 47.8	2.899	3.502	14.1	20.7	120 W	28	81	2 21	14 11.71	-6 0.5	1.897	2.523	20.1	20.0	119 W	39	70
3 2	13 46.74	-17 13.9	2.804	3.529	12.3	20.6	130 W	28	81	3 2	14 13.08	-5 37.6	1.763	2.501	18.1	19.8	128 W	39	70
3 12	13 43.03	-17 29.1	2.728	3.555	10.1	20.5	141 W	28	81	3 12	14 11.67	-5 0.2	1.644	2.478	15.4	19.5	139 W	40	69
3 22	13 37.68	-17 33.2	2.672	3.581	7.6	20.3	152 W	27											

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°
98943 2001 CC₂₁ (continuation)									162819 2001 BD₃₄ (continuation)								
5 26	1 26.42	+ 5 36.0	1.390	0.948	46.8	20.9	43 W	10* 36*	7 25	13 1.38	-31 7.9	3.010	3.088	19.1	21.1	85 E	1* 75*
5 31	1 43.44	+ 7 11.6	1.410	0.966	46.0	20.9	43 W	11* 36*	7 30	13 6.36	-31 6.4	3.078	3.092	18.9	21.2	81 E	— 71*
6 5	2 0.22	+ 8 43.1	1.428	0.985	45.2	21.0	44 W	12* 36*	8 4	13 11.63	-31 7.6	3.146	3.096	18.7	21.2	78 E	— 68*
6 10	2 16.81	+10 10.2	1.444	1.004	44.6	21.0	44 W	13* 36*	8 9	13 17.18	-31 11.5	3.212	3.100	18.4	21.2	75 E	— 64*
6 15	2 33.23	+11 32.6	1.458	1.023	44.1	21.1	45 W	14* 36*	8 14	13 22.98	-31 17.7	3.278	3.103	18.0	21.3	71 E	— 61*
6 20	2 49.51	+12 50.1	1.470	1.042	43.7	21.1	45 W	16* 36*	8 19	13 29.04	-31 26.2	3.342	3.106	17.6	21.3	68 E	— 58*
6 25	3 5.67	+14 2.6	1.479	1.060	43.4	21.2	46 W	18* 36*	8 24	13 35.32	-31 36.8	3.404	3.109	17.1	21.3	65 E	— 54*
6 30	3 21.72	+15 9.8	1.486	1.078	43.2	21.2	46 W	20* 36*	8 29	13 41.82	-31 49.2	3.465	3.112	16.6	21.4	62 E	— 51*
7 5	3 37.68	+16 11.7	1.490	1.095	43.0	21.2	47 W	21* 35*	9 3	13 48.53	-32 3.3	3.523	3.115	16.0	21.4	58 E	— 48*
7 10	3 53.57	+17 8.2	1.493	1.111	42.9	21.3	48 W	24* 35*	9 8	13 55.42	-32 18.8	3.579	3.117	15.4	21.4	55 E	— 45*
7 15	4 9.40	+17 59.3	1.493	1.127	42.9	21.3	49 W	26* 35*	9 13	14 2.50	-32 35.6	3.633	3.119	14.8	21.4	52 E	— 42*
7 20	4 25.17	+18 44.9	1.490	1.142	42.9	21.3	50 W	28* 35*	9 18	14 9.75	-32 53.5	3.684	3.121	14.1	21.4	49 E	— 39*
7 25	4 40.89	+19 25.0	1.486	1.156	43.0	21.3	51 W	30* 35*	9 23	14 17.17	-33 12.4	3.732	3.122	13.4	21.4	46 E	— 36*
7 30	4 56.54	+19 59.6	1.479	1.170	43.1	21.4	52 W	32* 34*	9 28	14 24.75	-33 32.1	3.778	3.123	12.7	21.4	43 E	— 33*
8 4	5 12.15	+20 28.7	1.470	1.182	43.3	21.4	53 W	34* 34*	10 3	14 32.48	-33 52.4	3.820	3.125	11.9	21.4	40 E	— 30*
8 9	5 27.72	+20 52.5	1.459	1.194	43.5	21.4	54 W	36* 34*	10 8	14 40.36	-34 13.2	3.860	3.125	11.2	21.4	37 E	— 27*
8 14	5 43.23	+21 10.8	1.446	1.205	43.8	21.4	55 W	39* 34*	10 13	14 48.37	-34 34.3	3.895	3.126	10.4	21.4	35 E	— 25*
8 19	5 58.70	+21 23.9	1.431	1.215	44.0	21.4	57 W	41* 33*	10 18	14 56.52	-34 55.6	3.928	3.126	9.7	21.4	32 E	— 22*
8 24	6 14.10	+21 31.7	1.414	1.223	44.3	21.4	58 W	42* 33*	10 23	15 4.80	-35 17.0	3.957	3.126	8.9	21.4	29 E	— 19*
8 29	6 29.44	+21 34.4	1.395	1.231	44.7	21.4	59 W	44* 33*	10 28	15 13.19	-35 38.2	3.982	3.126	8.2	21.3	27 E	— 17*
9 3	6 44.73	+21 32.1	1.375	1.238	45.0	21.4	60 W	46* 33*	11 2	15 21.69	-35 59.3	4.004	3.126	7.5	21.3	24 E	— 14*
9 8	6 59.97	+21 24.9	1.352	1.244	45.4	21.4	62 W	49* 33*	11 7	15 30.29	-36 20.1	4.022	3.125	6.8	21.3	22 E	— 11*
9 13	7 15.15	+21 12.9	1.328	1.249	45.8	21.3	63 W	50* 33*	11 12	15 39.00	-36 40.4	4.036	3.125	6.2	21.3	20 E	— 9*
9 18	7 30.28	+20 56.3	1.303	1.253	46.3	21.3	64 W	51* 33*	11 17	15 47.79	-37 0.3	4.046	3.124	5.8	21.3	18 E	— 6*
9 23	7 45.36	+20 35.1	1.276	1.256	46.7	21.3	66 W	52* 34*	11 22	15 56.66	-37 19.5	4.052	3.122	5.4	21.3	17 E	— 4*
9 28	8 0.39	+20 9.6	1.247	1.258	47.2	21.3	67 W	54* 34*	11 27	16 5.60	-37 38.0	4.054	3.121	5.2	21.2	17 W	— 4*
10 3	8 15.39	+19 39.8	1.218	1.258	47.6	21.2	68 W	55* 34*	12 2	16 14.60	-37 55.8	4.052	3.119	5.1	21.2	16 W	— 6*
10 8	8 30.38	+19 5.9	1.187	1.258	48.1	21.2	70 W	56* 34*	12 7	16 23.64	-38 12.6	4.046	3.117	5.3	21.2	17 W	— 8*
10 13	8 45.37	+18 27.9	1.155	1.257	48.6	21.1	71 W	57* 35*	12 12	16 32.73	-38 28.7	4.036	3.115	5.6	21.2	18 W	— 10*
10 18	9 0.38	+17 46.1	1.122	1.255	49.2	21.1	72 W	58* 35*	12 17	16 41.84	-38 43.7	4.022	3.112	6.1	21.3	20 W	— 12*
10 23	9 15.41	+17 0.5	1.088	1.252	49.7	21.0	74 W	58* 36*	12 22	16 50.96	-38 57.8	4.003	3.110	6.7	21.3	22 W	— 14*
10 28	9 30.51	+16 11.3	1.054	1.247	50.3	21.0	75 W	58* 37*	12 27	17 0.08	-39 10.9	3.981	3.107	7.3	21.3	24 W	— 17*
11 2	9 45.70	+15 18.4	1.020	1.242	50.9	20.9	76 W	58* 37*	1 1	17 9.18	-39 23.0	3.955	3.103	8.0	21.3	26 W	— 20*
11 7	10 1.02	+14 22.0	0.985	1.236	51.5	20.8	77 W	58* 38*	1 6	17 18.26	-39 34.1	3.926	3.100	8.8	21.3	29 W	— 22*
11 12	10 16.52	+13 22.1	0.949	1.229	52.2	20.8	79 W	58* 39*	1 11	17 27.29	-39 44.2	3.892	3.096	9.6	21.3	32 W	— 25*
11 17	10 32.23	+12 18.7	0.914	1.220	52.9	20.7	80 W	57* 40*	1 16	17 36.26	-39 53.4	3.855	3.093	10.3	21.3	34 W	— 28*
11 22	10 48.19	+11 11.8	0.879	1.211	53.6	20.6	81 W	56* 42*	137799 1999 YB								
11 27	11 4.47	+10 1.5	0.844	1.201	54.4	20.5	82 W	55* 43*	12 23	13 24.48	- 2 24.3	1.218	1.281	46.3	21.2	70 W	42* 45*
12 2	11 21.13	+ 8 47.6	0.810	1.190	55.2	20.4	82 W	54* 44*	1 2	13 54.33	- 5 35.7	1.158	1.271	47.5	21.1	72 W	39* 50*
12 7	11 38.26	+ 7 29.9	0.776	1.178	56.1	20.3	83 W	52* 46*	1 12	14 24.68	- 8 42.9	1.100	1.261	48.6	21.0	74 W	36 55*
12 17	12 14.19	+ 4 43.5	0.711	1.151	58.2	20.2	84 W	50* 49*	1 22	14 55.69	-11 43.4	1.043	1.252	49.8	20.9	76 W	33 60*
12 27	12 52.91	+ 1 42.0	0.652	1.121	60.7	20.0	84 W	47* 52*	2 1	15 27.42	-14 34.4	0.989	1.244	50.8	20.8	78 W	30 65*
1 6	13 35.21	+ 1 33.8	0.601	1.088	63.7	19.8	83 W	43* 55*	2 11	15 59.94	-17 13.1	0.936	1.237	51.8	20.7	80 W	28* 69*
1 16	14 21.76	+ 4 59.7	0.559	1.053	67.3	19.7	81 W	40* 58*	2 21	16 33.28	-19 37.1	0.886	1.232	52.6	20.6	82 W	25* 73*
162819 2001 BD₃₄									3 2	17 7.35	-21 43.9	0.838	1.227	53.4	20.5	84 W	23* 76*
12 23	13 24.43	-24 21.3	2.993	2.691	19.0	20.8	63 W	21* 54*	3 12	17 42.02	-23 31.9	0.793	1.224	54.0	20.4	86 W	21* 79*
1 2	13 34.46	-26 31.0	2.895	2.718	19.9	20.8	70 W	18 62*	3 17	17 59.53	-24 18.4	0.771	1.223	54.3	20.4	87 W	20* 80*
1 12	13 43.18	-28 38.3	2.791	2.745	20.4	20.7	77 W	16 70*	3 22	18 17.09	-24 59.9	0.750	1.223	54.5	20.3	88 W	19* 82*
1 22	13 50.30	-30 42.5	2.683	2.771	20.7	20.7	85 W	14 79*	3 27	18 34.67	-25 36.2	0.729	1.222	54.7	20.2	89 W	18* 83*
2 1	13 55.46	-32 42.9	2.573	2.796	20.6	20.6	93 W	12 83*	4 1	18 52.21	-26 7.6	0.709	1.223	54.8	20.2	90 W	17* 84*
2 11	13 58.30	-34 37.7	2.464	2.820	20.1	20.5	101 W	10 81*	4 6	19 9.68	-26 34.1	0.689	1.223	54.9	20.1	91 W	17* 85*
2 21	13 58.46	-36 24.6	2.361	2.844	19.2	20.4	109 W	9 80*	4 11	19 27.03	-26 56.1	0.670	1.224	54.9	20.1	92 W	16* 86*
3 2	13 55.60	-37 59.8	2.266	2.866	17.8	20.3	118 W	7 78*	4 16	19 44.21	-27 13.7	0.651	1.225	54.9	20.0	93 W	15* 87*
3 12	13 49.61	-39 18.2	2.184	2.888	16.1	20.2	127 W	6 77*	4 21	20 1.16	-27 27.4	0.633	1.227	54.8	19.9	94 W	15* 87*
3 17	13 45.48	-39 49.3	2.148	2.898	15.1	20.1	131 W	5 76*	4 26	20 17.80	-27 37.8	0.615	1.229	54.6	19.9	96 W	14* 88*
3 22	13 40.66	-40 14.0	2.118	2.908	14.0	20.0	135 W	5 76*	5 1	20 34.08	-27 45.3	0.597	1.231	54.4	19.8	97 W	14* 88*
3 27	13 35.24	-40 31.7	2.093	2.918	13.0	20.0	139 W	4 75*	5 6	20 49.96	-27 50.6	0.580	1.234	54.0	19.7	98 W	13* 88*
4 1	13 29.35	-40 41.8	2.073	2.928	12.0	19.9	142 W	4 75*	5 11	21 5.39	-27 54.2	0.563	1.236	53.6	19.7	100 W	13* 88*
4 6	13 23.13	-40 44.0	2.059	2.937	11.2	19.9	145 W	4 75*	5 21	21 34.63	-27 59.7	0.530	1.243	52.5	19.5	103 W	13* 88*
4 11	13 16.75	-40 38.3	2.051	2.947	10.5	19.9	148 E	4 75*	5 31	22 1.21	-28 8.3	0.498	1.251	50.9	19.4	107 W	13* 88*
4 16	13 10.38	-40 25.0	2.049	2.956	10.0	19.9	149 E	5 76*	6 10	22 24.63	-28 26.2	0.467	1.260	48.8	19.2	111 W	13* 88*
4 21	13 4.19	-40 4.4	2.054	2.965	9.9	19.9	150 E	5 76*	6 15	22 34.95	-28 40.6	0.452	1.265	47.5	19.1	113 W	14* 87*
4 26	12 58.33	-39 37.5	2.065	2.973	10.1	19.9	149 E	5 76*	6 20	22 44.18	-28 59.7	0.437	1.269	46.1	19.0	116 W	14* 87*
5 1	12 52.96	-39 5.2	2.083	2.982	10.5	19.9	147 E	6 77*	6 25	22 52.20	-29 24.1	0.422	1.274	44.4	18.9	119 W	14* 87*
5 6	12 48.18	-38 28.8	2.107	2.990	11.2												

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°
28085 1998 QO₉₈										129493 1995 BM₂									
<i>(continuation)</i>										<i>(continuation)</i>									
7 10	14 22.17	+ 2 27.0	2.038	2.487	23.4	19.2	104 E	44*	62	4 11	16 39.25	-34 28.1	1.129	1.909	24.7	18.2	127 W	11	82
7 20	14 28.54	+ 1 37.1	2.191	2.518	23.6	19.4	97 E	41*	62	4 21	16 35.80	-32 47.7	1.079	1.944	20.3	18.0	138 W	12	83
7 30	14 36.50	+ 0 39.6	2.345	2.547	23.5	19.6	90 E	38*	63	5 1	16 28.17	-30 38.7	1.045	1.980	15.0	17.8	149 W	14	85
8 9	14 45.80	- 0 22.5	2.499	2.576	23.0	19.7	83 E	36*	64*	5 6	16 23.17	-29 24.1	1.035	1.998	12.0	17.7	156 W	16	87
8 19	14 56.26	- 1 27.1	2.650	2.604	22.2	19.9	76 E	33*	62*	5 11	16 17.65	-28 3.8	1.031	2.016	9.0	17.6	162 W	17	88
8 29	15 7.72	- 2 32.1	2.798	2.631	21.2	20.0	70 E	31*	58*	5 16	16 11.83	-26 39.3	1.034	2.034	5.9	17.5	168 W	18	89
9 8	15 20.03	- 3 36.0	2.940	2.657	19.9	20.1	64 E	29*	53*	5 21	16 5.96	-25 12.0	1.043	2.052	3.0	17.4	174 W	20	89
9 18	15 33.08	- 4 37.4	3.076	2.682	18.5	20.1	58 E	27*	48*	5 26	16 0.27	-23 44.2	1.058	2.070	1.8	17.3	176 E	21	88
9 28	15 46.78	- 5 35.1	3.204	2.706	17.0	20.2	52 E	26*	42*	5 31	15 54.98	-22 17.8	1.080	2.088	4.2	17.5	171 E	23	86
10 8	16 1.03	- 6 28.0	3.322	2.728	15.3	20.2	46 E	24*	36*	6 5	15 50.25	-20 54.8	1.109	2.107	7.0	17.8	165 E	24	85
10 18	16 15.75	- 7 15.3	3.430	2.750	13.6	20.3	41 E	22*	30*	6 10	15 46.20	-19 36.8	1.144	2.125	9.7	18.0	159 E	25	84
10 28	16 30.88	- 7 56.1	3.526	2.771	11.9	20.3	35 E	21*	23*	6 15	15 42.90	-18 25.0	1.185	2.143	12.2	18.2	154 E	27	82
11 7	16 46.31	- 8 29.7	3.612	2.791	10.1	20.3	30 E	19*	16*	6 20	15 40.42	-17 20.3	1.231	2.161	14.4	18.3	148 E	28	81
11 17	17 1.99	- 8 55.5	3.680	2.810	8.4	20.3	24 E	16*	9*	6 30	15 37.91	-15 33.3	1.339	2.197	18.3	18.7	137 E	29	80
11 27	17 17.84	- 9 13.1	3.736	2.828	6.8	20.2	20 E	13*	2*	7 10	15 38.52	-14 15.5	1.462	2.233	21.1	19.0	128 E	31	78
12 7	17 33.76	- 9 22.0	3.778	2.845	5.5	20.2	16 E	10*	—	7 20	15 41.90	-13 23.3	1.598	2.269	23.1	19.3	119 E	31*	77
12 17	17 49.69	- 9 22.0	3.804	2.861	4.8	20.2	14 E	6*	—	7 30	15 47.68	-12 52.0	1.744	2.304	24.4	19.6	110 E	31*	77
12 27	18 5.52	- 9 13.0	3.815	2.875	5.0	20.2	15 W	7*	—	8 9	15 55.47	-12 36.7	1.896	2.338	25.0	19.8	103 E	31*	77
1 6	18 21.18	- 8 55.1	3.811	2.889	5.9	20.3	18 W	12*	—	8 19	16 4.94	-12 32.9	2.052	2.372	25.1	20.0	95 E	30*	77
1 16	18 36.57	- 8 28.2	3.791	2.902	7.3	20.3	22 W	15*	4*	8 29	16 15.83	-12 36.8	2.210	2.406	24.8	20.2	89 E	29*	76*
483878 2005 YS₁₆₅										162785 2000 YA₁₇									
12 23	13 26.51	+31 55.7	0.628	1.130	60.3	18.9	86 W	76*	20*	12 23	13 26.77	+12 11.6	2.999	2.924	19.1	21.3	76 W	57*	35*
12 28	13 50.44	+33 31.9	0.650	1.145	59.0	19.0	86 W	78*	19*	1 2	13 36.74	+12 31.1	2.878	2.938	19.4	21.2	84 W	58	40*
1 2	14 12.53	+34 53.7	0.673	1.162	57.7	19.0	87 W	79*	18*	1 12	13 45.38	+13 6.5	2.756	2.950	19.5	21.1	91 W	58	45*
1 7	14 32.70	+36 4.2	0.697	1.181	56.3	19.1	88 W	80*	17*	1 22	13 52.43	+13 58.7	2.634	2.961	19.1	21.0	100 W	59	48*
1 12	14 50.94	+37 6.5	0.722	1.202	54.9	19.2	88 W	81*	17*	2 1	13 57.62	+15 7.6	2.518	2.971	18.4	20.9	108 W	60	49*
1 17	15 7.28	+38 3.4	0.746	1.224	53.4	19.3	89 W	82*	17*	2 11	14 0.68	+16 32.1	2.409	2.981	17.3	20.8	116 W	62	47
1 22	15 21.77	+38 57.2	0.769	1.248	52.0	19.3	90 W	83*	17*	2 21	14 1.37	+18 9.5	2.313	2.989	15.8	20.7	125 W	63	46
1 27	15 34.44	+39 49.8	0.791	1.273	50.6	19.4	91 W	84*	18*	3 2	13 59.51	+19 55.2	2.233	2.997	14.0	20.5	133 W	65	44
2 1	15 45.34	+40 42.2	0.812	1.300	49.2	19.5	92 W	85*	18*	3 12	13 55.10	+21 42.2	2.173	3.003	12.3	20.4	140 W	67	42
2 11	16 1.97	+42 29.3	0.849	1.355	46.5	19.6	95 W	87*	19*	3 17	13 52.01	+22 33.6	2.151	3.006	11.5	20.4	143 W	68	41
2 21	16 11.76	+44 21.0	0.880	1.413	43.9	19.7	98 W	89*	19*	3 22	13 48.38	+23 22.2	2.135	3.009	10.8	20.3	145 W	68	41
3 2	16 14.39	+46 13.9	0.906	1.472	41.2	19.7	102 W	89	18*	3 27	13 44.30	+24 6.7	2.125	3.011	10.4	20.3	147 W	69	40
3 7	16 12.91	+47 7.7	0.917	1.502	39.9	19.8	104 W	88	17	4 1	13 39.86	+24 46.1	2.122	3.013	10.3	20.3	148 W	70	39
3 12	16 9.54	+47 57.6	0.928	1.533	38.6	19.8	106 W	87	16	4 6	13 35.17	+25 19.4	2.126	3.015	10.4	20.3	147 W	70	39
3 17	16 4.26	+48 41.4	0.939	1.563	37.3	19.8	108 W	86	15	4 11	13 30.34	+25 46.0	2.135	3.017	10.8	20.3	146 W	71	38
3 22	15 57.12	+49 16.9	0.951	1.593	36.0	19.9	110 W	86	15	4 16	13 25.49	+26 5.4	2.151	3.019	11.4	20.4	144 E	71	38
3 27	15 48.25	+49 41.2	0.963	1.624	34.8	19.9	112 W	85	14	4 21	13 20.75	+26 17.3	2.172	3.020	12.1	20.4	141 E	71	38
4 1	15 37.89	+49 51.6	0.976	1.654	33.6	19.9	114 W	85	14	4 26	13 16.22	+26 21.6	2.200	3.021	13.0	20.5	138 E	71	38
4 6	15 26.38	+49 45.7	0.991	1.685	32.4	20.0	115 W	85	14	5 1	13 12.00	+26 18.5	2.232	3.021	13.9	20.5	134 E	71	38
4 11	15 14.17	+49 22.0	1.008	1.715	31.4	20.0	117 W	86	15	5 6	13 8.20	+26 8.3	2.270	3.022	14.7	20.6	130 E	71	38
4 16	15 1.69	+48 39.7	1.028	1.744	30.4	20.1	118 W	86	15	5 11	13 4.87	+25 51.6	2.311	3.022	15.6	20.7	126 E	71	38
4 21	14 49.42	+47 38.5	1.050	1.774	29.6	20.1	119 W	87	16	5 16	13 2.05	+25 28.8	2.357	3.022	16.4	20.7	122 E	70	39
4 26	14 37.79	+46 19.3	1.076	1.803	28.9	20.2	120 W	89	18	5 21	12 59.77	+25 0.7	2.406	3.022	17.1	20.8	118 E	70	39
5 1	14 27.14	+44 43.9	1.106	1.833	28.4	20.3	120 E	90	19	5 26	12 58.07	+24 27.7	2.458	3.022	17.8	20.9	114 E	69	40
5 6	14 17.71	+42 54.7	1.139	1.861	28.0	20.4	120 E	88	21	5 31	12 56.94	+23 50.5	2.513	3.021	18.3	20.9	110 E	69	40
5 11	14 9.61	+40 54.4	1.176	1.890	27.7	20.5	119 E	86	23	6 5	12 56.38	+23 9.8	2.570	3.020	18.8	21.0	107 E	68*	41
5 16	14 2.86	+38 45.8	1.217	1.918	27.6	20.6	119 E	84	25	6 10	12 56.36	+22 25.9	2.628	3.019	19.2	21.1	103 E	66*	42
5 21	13 57.45	+36 31.3	1.262	1.946	27.6	20.7	117 E	82	27	6 15	12 56.86	+21 39.5	2.688	3.017	19.4	21.1	99 E	63*	42
5 26	13 53.29	+34 13.2	1.311	1.973	27.6	20.8	116 E	79	30	6 20	12 57.86	+20 50.9	2.749	3.016	19.6	21.2	95 E	60*	43
5 31	13 50.32	+31 53.5	1.364	2.000	27.7	20.9	114 E	77	32	6 25	12 59.34	+20 0.4	2.810	3.014	19.7	21.2	92 E	57*	44
6 5	13 48.41	+29 34.0	1.421	2.027	27.7	21.0	112 E	75	34	6 30	13 1.27	+19 8.5	2.871	3.012	19.7	21.3	88 E	54*	45
6 10	13 47.45	+27 16.0	1.480	2.053	27.8	21.2	109 E	72	37	7 5	13 3.61	+18 15.4	2.932	3.009	19.7	21.3	84 E	51*	46
6 15	13 47.35	+25 0.4	1.543	2.079	27.9	21.3	107 E	70*	39	7 10	13 6.35	+17 21.4	2.993	3.007	19.5	21.4	81 E	48*	47
6 20	13 48.00	+22 47.9	1.609	2.104	27.9	21.4	104 E	67*	41	7 15	13 9.44	+16 26.7	3.053	3.004	19.3	21.4	78 E	46*	47*
129493 1995 BM₂										152771 1999 RB₃₄									
12 23	13 26.53	-27 42.5	1.847	1.627	32.1	19.1	62 W	17*	54*	12 23	13 28.04	- 9 46.9	2.714	2.492	21.2	20.5	67 W	35*	48*
12 28	13 39.55	-28 57.0	1.820	1.634	32.5	19.1	63 W	16*	56*	1 2	13 42.88	-10 4.5	2.544	2.449	22.6	20.4	73 W	35	55*
1 2	13 52.52	-30 6.7	1.792	1.641	32.9	19.1	65 W	15*	58*	1 12	13 57.38	-10 7.6	2.371	2.406	23.7	20.2	80 W	35	61*
1 7	14 5.39	-31 11.3	1.763	1.649	33.3	19.1	67 W	14	60*	1 22	14 11.39	- 9 53.4	2.197	2.362	24.6	20.0	87 W	35	67*
1 12	14 18.14	-32 10.7	1.734	1.658	33.6	19.1	69 W	13	63*										
1 17	14 30.73	-33 4.7	1.705	1.667	33.9	19.1	71 W	12	65*										
1 22	14 43.10	-33 53.3	1.674	1.678	34.1	19.1	73 W	11	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°		
152771 1999 RB₃₄									114924 2003 QL₄₁										
<i>(continuation)</i>									<i>(continuation)</i>										
2 1	14 24.71	-9 18.4	2.024	2.317	25.1	19.8	94 W	36 72*	6 20	12 50.18	-17 30.8	2.203	2.712	20.7	20.5	109 E	24*	82	
2 11	14 37.09	-8 18.5	1.855	2.273	25.1	19.6	102 W	37 72	6 30	12 53.89	-17 29.6	2.307	2.687	21.8	20.6	101 E	21*	81	
2 21	14 48.25	-6 49.8	1.693	2.228	24.7	19.3	110 W	38 71	7 10	12 59.74	-17 41.7	2.414	2.662	22.4	20.7	93 E	18*	82*	
3 2	14 57.82	-4 47.6	1.541	2.183	23.7	19.0	118 W	40 69	7 20	13 7.50	-18 5.9	2.520	2.635	22.6	20.8	85 E	15*	78*	
3 12	15 5.43	-2 8.7	1.401	2.139	22.2	18.8	126 W	43 66	7 30	13 16.96	-18 41.0	2.623	2.608	22.6	20.8	78 E	12*	72*	
3 22	15 10.67	+1 8.9	1.278	2.095	20.1	18.4	134 W	46 63	8 9	13 27.93	-19 25.3	2.721	2.580	21.8	20.9	71 E	10*	65*	
4 1	15 13.18	+5 2.6	1.175	2.051	17.8	18.1	141 W	50 59	8 19	13 40.26	-20 17.1	2.813	2.551	21.0	20.9	65 E	7*	58*	
4 6	15 13.34	+7 10.5	1.132	2.029	16.8	18.0	144 W	52 57	8 29	13 53.87	-21 15.0	2.896	2.521	20.0	20.9	59 E	6*	52*	
4 11	15 12.77	+9 23.5	1.094	2.008	16.0	17.9	147 W	54 55	9 8	14 8.64	-22 17.2	2.971	2.491	18.7	20.9	53 E	4*	46*	
4 16	15 11.49	+11 39.2	1.063	1.986	15.5	17.8	148 W	57 52	9 18	14 24.54	-23 22.3	3.036	2.460	17.3	20.9	47 E	3*	40*	
4 21	15 9.53	+13 54.8	1.038	1.965	15.5	17.7	148 W	59 50	9 28	14 41.53	-24 28.6	3.091	2.428	15.8	20.8	41 E	1*	35*	
4 26	15 6.98	+16 7.1	1.018	1.945	16.1	17.7	148 W	61 48	10 8	14 59.56	-25 34.4	3.135	2.396	14.1	20.8	36 E	-	29*	
5 1	15 3.96	+18 13.1	1.005	1.924	17.1	17.6	146 W	63 46	10 18	15 18.63	-26 38.2	3.167	2.363	12.3	20.7	30 E	-	24*	
5 6	15 0.62	+20 9.7	0.997	1.904	18.5	17.6	143 W	65 44	10 28	15 38.71	-27 38.2	3.188	2.329	10.5	20.6	25 E	-	19*	
5 11	14 57.12	+21 54.6	0.995	1.884	20.1	17.7	140 E	67 42	11 7	15 59.78	-28 32.8	3.198	2.295	8.7	20.5	20 E	-	14*	
5 16	14 53.62	+23 25.8	0.997	1.865	21.9	17.7	136 E	68 41	11 17	16 21.80	-29 20.1	3.197	2.261	6.8	20.4	16 E	-	9*	
5 21	14 50.31	+24 42.1	1.003	1.845	23.8	17.8	133 E	70 39	11 27	16 44.72	-29 58.6	3.184	2.226	5.1	20.3	12 E	-	5*	
5 26	14 47.36	+25 42.7	1.012	1.827	25.6	17.8	129 E	71 38	12 7	17 8.46	-30 26.5	3.161	2.191	3.8	20.2	8 E	-	1*	
5 31	14 44.95	+26 27.7	1.024	1.809	27.3	17.9	125 E	71 38	12 17	17 32.95	-30 42.2	3.128	2.156	3.4	20.1	7 W	-	-	
6 5	14 43.19	+26 57.6	1.039	1.791	28.9	17.9	121 E	72 37	12 27	17 58.06	-30 44.3	3.085	2.121	4.3	20.1	9 W	-	3*	
6 10	14 42.18	+27 13.4	1.056	1.774	30.4	18.0	118 E	72 37	1 6	18 23.65	-30 31.7	3.033	2.085	5.9	20.1	13 W	-	6*	
6 15	14 41.99	+27 16.0	1.073	1.758	31.7	18.0	115 E	72 37	1 16	18 49.60	-30 3.3	2.974	2.050	7.9	20.1	17 W	-	10*	
6 20	14 42.65	+27 6.5	1.092	1.742	32.9	18.1	111 E	72 37	26129 1993 DK										
6 25	14 44.19	+26 45.9	1.112	1.727	34.0	18.1	108 E	72 37	12 23	13 28.56	-25 27.4	1.963	1.729	30.1	17.8	62 W	19*	53*	
6 30	14 46.62	+26 15.5	1.131	1.713	34.9	18.2	106 E	71* 38	1 2	13 51.20	-27 11.7	1.908	1.757	30.8	17.7	66 W	18*	58*	
7 5	14 49.91	+25 36.4	1.151	1.699	35.7	18.2	103 E	70* 38	1 12	14 12.78	-28 38.2	1.848	1.787	31.3	17.7	71 W	16	64*	
7 10	14 54.04	+24 49.4	1.171	1.686	36.3	18.3	101 E	68* 39	1 22	14 33.03	-29 46.3	1.782	1.819	31.7	17.7	76 W	15	70*	
7 15	14 58.96	+23 55.3	1.191	1.674	36.9	18.3	98 E	66* 40	1 27	14 42.54	-30 13.3	1.748	1.835	31.8	17.7	79 W	15	73*	
7 20	15 4.64	+22 54.9	1.210	1.663	37.4	18.3	96 E	64* 41	2 1	14 51.56	-30 35.5	1.712	1.852	31.8	17.7	82 W	14	76*	
7 25	15 11.07	+21 48.9	1.229	1.653	37.8	18.4	94 E	63* 42	2 6	15 0.05	-30 52.9	1.676	1.870	31.7	17.6	85 W	14	79*	
7 30	15 18.19	+20 38.0	1.249	1.644	38.1	18.4	93 E	61* 43	2 11	15 7.96	-31 5.4	1.638	1.888	31.5	17.6	88 W	14	82*	
8 4	15 25.97	+19 22.7	1.268	1.635	38.3	18.4	91 E	59* 45	2 16	15 15.22	-31 13.1	1.600	1.906	31.2	17.6	92 W	14	84*	
8 9	15 34.37	+18 3.8	1.286	1.628	38.5	18.4	89 E	58* 46	2 21	15 21.78	-31 15.7	1.562	1.924	30.8	17.5	95 W	14	85	
8 14	15 43.35	+16 41.5	1.306	1.622	38.6	18.5	88 E	56* 47	2 26	15 27.57	-31 13.3	1.523	1.942	30.2	17.5	99 W	14	85	
8 19	15 52.90	+15 16.6	1.325	1.617	38.7	18.5	86 E	55* 49*	3 2	15 32.52	-31 5.6	1.485	1.961	29.5	17.4	103 W	14	85	
8 24	16 2.98	+13 49.6	1.345	1.613	38.7	18.5	85 E	53* 50*	3 7	15 36.59	-30 52.4	1.446	1.980	28.6	17.3	107 W	14	85	
8 29	16 13.57	+12 21.1	1.365	1.610	38.6	18.6	84 E	52* 51*	3 12	15 39.73	-30 33.6	1.409	1.999	27.6	17.3	111 W	14	85	
9 3	16 24.62	+10 51.9	1.386	1.608	38.5	18.6	83 E	51* 52*	3 22	15 43.03	-29 38.3	1.339	2.038	24.8	17.1	121 W	15	86	
9 8	16 36.11	+9 22.4	1.408	1.607	38.3	18.6	82 E	50* 53*	4 1	15 42.24	-28 17.4	1.278	2.077	21.2	17.0	131 W	17	88	
9 13	16 48.02	+7 53.3	1.432	1.607	38.1	18.6	80 E	48* 53*	4 11	15 37.56	-26 29.7	1.232	2.116	16.8	16.8	142 W	19	90	
9 18	17 0.31	+6 25.2	1.457	1.609	37.9	18.7	79 E	47* 54*	4 16	15 33.96	-25 26.2	1.216	2.136	14.3	16.7	148 W	20	89	
9 23	17 12.96	+4 58.9	1.483	1.611	37.6	18.7	78 E	46* 54*	4 21	15 29.67	-24 16.8	1.205	2.156	11.6	16.6	155 W	21	88	
9 28	17 25.92	+3 35.2	1.511	1.615	37.2	18.7	77 E	45* 54*	4 26	15 24.88	-23 2.6	1.200	2.175	8.8	16.5	161 W	22	87	
10 3	17 39.17	+2 14.5	1.541	1.619	36.8	18.8	76 E	44* 54*	5 1	15 19.76	-21 44.8	1.201	2.195	5.8	16.4	167 W	23	86	
10 8	17 52.67	+0 57.5	1.573	1.625	36.4	18.8	75 E	43* 54*	5 6	15 14.53	-20 25.0	1.209	2.215	2.9	16.2	174 W	25	84	
10 18	18 20.26	-1 23.2	1.644	1.640	35.3	18.9	72 E	41* 52*	5 11	15 9.37	-19 5.0	1.225	2.234	0.6	16.1	179 E	26	83	
10 28	18 48.40	-3 23.2	1.723	1.658	34.1	19.0	69 E	40* 50*	5 16	15 4.45	-17 46.4	1.247	2.254	3.0	16.3	173 E	27	82	
11 7	19 16.77	-5 0.0	1.810	1.681	32.7	19.1	66 E	38* 48*	5 21	14 59.93	-16 31.0	1.276	2.274	5.7	16.6	167 E	28	81	
11 17	19 45.09	-6 12.6	1.905	1.706	31.2	19.2	63 E	37* 44*	5 26	14 55.94	-15 20.2	1.311	2.293	8.2	16.8	161 E	30	79	
11 27	20 13.10	-7 1.2	2.007	1.735	29.4	19.3	60 E	36* 41*	5 31	14 52.57	-14 15.1	1.353	2.312	10.6	16.9	155 E	31	78	
12 7	20 40.60	-7 27.0	2.114	1.767	27.6	19.4	56 E	35* 37*	6 10	14 47.91	-12 25.1	1.453	2.351	14.8	17.3	144 E	33	76	
12 17	21 7.44	-7 32.3	2.226	1.801	25.6	19.5	52 E	34* 32*	6 20	14 46.06	-11 3.0	1.573	2.389	18.0	17.6	133 E	34	75	
12 27	21 33.52	-7 19.4	2.339	1.837	23.5	19.6	48 E	32* 28*	6 30	14 46.94	-10 7.6	1.709	2.426	20.4	17.9	124 E	35*	74	
1 6	21 58.78	-6 51.2	2.453	1.875	21.4	19.7	44 E	31* 24*	7 10	14 50.24	-9 35.2	1.856	2.463	22.0	18.2	115 E	34*	74	
1 16	22 23.23	-6 10.4	2.566	1.915	19.1	19.7	40 E	28* 21*	7 20	14 55.65	-9 21.7	2.011	2.500	22.9	18.4	107 E	33*	73	
114924 2003 QL₄₁									7 30	15 2.86	-9 22.9	2.172	2.536	23.3	18.6	99 E	32*	73	
12 23	13 28.53	-13 46.4	3.280	3.001	17.3	21.5	65 W	31*	49*	8 9	15 11.58	-9 35.0	2.336	2.571	23.2	18.8	92 E	30*	74*
1 2	13 37.75	-15 7.7	3.135	2.993	18.3	21.4	73 W	30	58*	8 19	15 21.59	-9 54.7	2.500	2.605	22.8	19.0	84 E	29*	72*
1 12	13 45.89	-16 24.9	2.984	2.984	19.0	21.3	81 W	29	67*	8 29	15 32.68	-10 19.2	2.662	2.639	22.0	19.1	78 E	27*	68*
1 22	13 52.72	-17 37.2	2.829	2.974	19.3	21.2	89 W	27	76*	9 8	15 44.70	-10 46.3	2.822	2.671	20.9	19.2	71 E	26*	62*
2 1	13 57.94	-18 43.9	2.673	2.963	19.3	21.1	97 W	26	83*	9 18	15 57.49	-11 14.0	2.976	2.703	19.6	19.3	65 E	25*	56*
2 11	14 1.27	-19 44.1	2.519	2.951	18.7	20.9	106 W	25	84	9 28	16 10.96	-11 40.6	3.123	2.735	18.2	19.4	58 E	24*	50*
2 21	14 2.39	-20 36.4	2.372	2.939	17.7	20.7	116 W	24	85	10 8	16 24.98	-1							

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°
23714 1998 EC₃										21788 1999 SZ₅									
<i>(continuation)</i>										<i>(continuation)</i>									
1 27	15 30.04	-10 49.0	1.205	1.322	45.6	19.3	74 W	34*	57*	8 19	13 46.40	+ 7 5.5	3.635	3.206	15.4	20.3	57 E	30*	44*
2 1	15 50.86	-11 36.9	1.159	1.289	47.1	19.3	73 W	33*	58*	8 29	13 56.42	+ 5 50.3	3.743	3.206	14.2	20.3	51 E	27*	39*
2 6	16 12.61	-12 19.4	1.118	1.257	48.6	19.2	73 W	32*	59*	9 8	14 7.15	+ 4 35.9	3.839	3.205	12.8	20.3	45 E	25*	34*
2 11	16 35.24	-12 55.2	1.081	1.226	50.2	19.1	73 W	31*	60*	9 18	14 18.53	+ 3 23.2	3.922	3.204	11.4	20.3	39 E	22*	28*
2 16	16 58.69	-13 23.4	1.050	1.196	51.7	19.0	72 W	31*	60*	9 28	14 30.47	+ 2 13.1	3.992	3.201	9.9	20.3	33 E	20*	22*
2 21	17 22.82	-13 42.9	1.024	1.168	53.1	18.9	71 W	30*	60*	10 8	14 42.89	+ 1 6.5	4.047	3.198	8.4	20.2	28 E	18*	15*
2 26	17 47.47	-13 52.9	1.003	1.142	54.5	18.9	70 W	29*	60*	10 18	14 55.75	+ 0 4.1	4.086	3.193	7.0	20.2	23 E	15*	8*
3 2	18 12.46	-13 53.0	0.987	1.118	55.8	18.8	69 W	28*	59*	10 28	15 8.98	- 0 53.4	4.110	3.188	5.8	20.2	19 E	13*	2*
3 7	18 37.59	-13 43.1	0.976	1.096	56.9	18.8	68 W	27*	58*	11 7	15 22.51	- 1 45.0	4.118	3.181	5.1	20.1	17 E	10*	—
3 12	19 2.66	-13 23.5	0.971	1.077	57.8	18.8	66 W	26*	58*	11 17	15 36.29	- 2 30.2	4.110	3.174	5.1	20.1	17 E	7*	—
3 17	19 27.47	-12 54.7	0.970	1.061	58.5	18.8	65 W	25*	57*	11 27	15 50.23	- 3 8.2	4.085	3.166	5.7	20.1	19 W	11*	—
3 22	19 51.83	-12 17.7	0.973	1.048	59.0	18.8	64 W	24*	56*	12 7	16 4.27	- 3 38.4	4.044	3.157	6.9	20.1	23 W	16*	—
3 27	20 15.61	-11 33.5	0.979	1.038	59.2	18.8	63 W	23*	55*	12 17	16 18.32	- 4 0.3	3.987	3.147	8.3	20.2	27 W	21*	2*
4 1	20 38.67	-10 43.6	0.989	1.031	59.3	18.8	62 W	22*	55*	12 27	16 32.29	- 4 13.2	3.915	3.136	9.8	20.2	33 W	26*	9*
4 6	21 0.96	- 9 49.0	1.001	1.028	59.1	18.8	62 W	22*	54*	1 6	16 46.08	- 4 16.8	3.829	3.124	11.4	20.2	39 W	29*	16*
4 11	21 22.42	- 8 51.2	1.016	1.029	58.7	18.8	61 W	21*	54*	1 16	16 59.58	- 4 10.8	3.730	3.111	12.9	20.2	45 W	32*	24*
4 16	21 43.03	- 7 51.0	1.032	1.033	58.2	18.8	61 W	20*	54*	163023 2001 XU₁									
4 21	22 2.79	- 6 49.7	1.049	1.041	57.5	18.9	61 W	20*	53*	12 23	13 29.39	+34 38.4	0.618	1.133	60.1	20.7	87 W	79*	18*
4 26	22 21.69	- 5 48.2	1.066	1.052	56.7	18.9	61 W	19*	53*	12 28	13 59.39	+35 11.7	0.589	1.108	62.2	20.6	86 W	78*	16*
5 1	22 39.76	- 4 47.2	1.083	1.066	55.9	18.9	61 W	19*	54*	1 2	14 31.67	+35 24.7	0.563	1.080	64.8	20.5	84 W	77*	15*
5 11	23 13.47	- 2 49.9	1.116	1.104	54.1	19.0	62 W	19*	54*	1 7	15 5.94	+35 9.6	0.542	1.049	67.9	20.5	81 W	75*	14*
5 21	23 44.16	- 1 2.3	1.145	1.152	52.3	19.1	64 W	20*	55*	1 12	15 41.62	+34 19.2	0.525	1.015	71.4	20.4	78 W	72*	12*
5 31	0 11.95	+ 0 32.0	1.167	1.207	50.5	19.2	67 W	22*	57*	1 17	16 17.92	+32 48.2	0.514	0.978	75.4	20.4	74 W	68*	12*
6 10	0 36.99	+ 1 50.5	1.181	1.268	48.8	19.3	70 W	24*	58*	1 22	16 53.96	+30 34.1	0.509	0.937	79.8	20.5	70 W	64*	11*
6 20	0 59.35	+ 2 51.2	1.186	1.334	47.1	19.4	74 W	28*	59*	1 27	17 28.92	+27 37.6	0.509	0.893	84.5	20.5	65 W	59*	11*
6 30	1 18.96	+ 3 32.6	1.182	1.403	45.3	19.4	79 W	32*	60*	2 1	18 2.27	+24 2.3	0.516	0.845	89.3	20.6	59 W	53*	11*
7 10	1 35.72	+ 3 53.4	1.170	1.473	43.4	19.5	84 W	37*	60*	2 6	18 33.79	+19 54.3	0.530	0.794	94.1	20.8	53 W	47*	12*
7 20	1 49.44	+ 3 52.5	1.151	1.544	41.2	19.5	91 W	41*	60	2 11	19 3.59	+15 21.1	0.551	0.740	98.6	20.9	48 W	41*	13*
7 30	1 59.78	+ 3 28.6	1.125	1.615	38.5	19.4	98 W	45*	61	2 16	19 32.07	+10 31.7	0.582	0.682	102.5	21.0	42 W	35*	15*
8 9	2 6.42	+ 2 41.4	1.097	1.686	35.3	19.4	106 W	47*	61	2 21	19 59.78	+ 5 36.4	0.623	0.621	105.2	21.1	37 W	29*	16*
8 19	2 8.99	+ 1 30.9	1.068	1.756	31.5	19.3	115 W	47*	62	2 26	20 27.49	+ 0 47.0	0.677	0.559	106.1	21.1	33 W	23*	18*
8 29	2 7.19	- 0 1.1	1.045	1.825	26.9	19.2	125 W	45	64	3 2	20 56.12	- 3 41.8	0.745	0.496	104.1	21.0	29 W	16*	18*
9 3	2 4.66	- 0 53.6	1.036	1.859	24.3	19.2	131 W	44	65	3 7	21 26.72	- 7 31.4	0.831	0.438	98.1	20.6	26 W	10*	18*
9 8	2 1.08	- 1 49.2	1.031	1.892	21.6	19.1	136 W	43	66	3 12	22 0.20	-10 17.6	0.933	0.391	87.1	20.2	23 W	4*	17*
9 13	1 56.53	- 2 46.8	1.030	1.926	18.7	19.0	142 W	42	67	3 14	22 14.46	-11 0.5	0.978	0.377	81.4	20.0	22 W	2*	16*
9 18	1 51.12	- 3 44.7	1.033	1.959	15.8	19.0	148 W	41	68	3 16	22 29.15	-11 27.7	1.025	0.368	74.9	19.8	21 W	—	15*
9 23	1 45.01	- 4 41.4	1.042	1.991	13.0	18.9	153 W	40	69	3 18	22 44.16	-11 38.4	1.072	0.362	68.1	19.6	20 W	—	14*
9 28	1 38.42	- 5 35.0	1.057	2.023	10.4	18.9	159 W	39	70	3 20	22 59.31	-11 32.7	1.119	0.362	61.1	19.5	19 W	—	12*
10 3	1 31.56	- 6 23.9	1.078	2.055	8.3	18.9	163 W	39	70	3 22	23 14.43	-11 11.4	1.165	0.367	54.2	19.4	17 W	—	11*
10 8	1 24.65	- 7 6.8	1.105	2.086	7.1	18.9	165 W	38	71	3 24	23 29.32	-10 36.2	1.211	0.376	47.7	19.4	16 W	—	9*
10 13	1 17.92	- 7 42.7	1.139	2.117	7.2	19.0	164 W	37	72	3 26	23 43.85	- 9 49.3	1.254	0.389	41.7	19.4	15 W	—	7*
10 18	1 11.57	- 8 10.7	1.179	2.148	8.5	19.2	162 E	37	72	3 28	23 57.88	- 8 53.0	1.295	0.406	36.4	19.4	14 W	—	6*
10 28	1 0.65	- 8 42.7	1.279	2.207	12.1	19.6	152 E	36	73	3 30	0 11.37	- 7 49.6	1.335	0.425	31.8	19.4	13 W	—	4*
11 7	0 52.75	- 8 44.4	1.401	2.265	15.7	20.0	142 E	36	73	4 1	0 24.28	- 6 41.2	1.372	0.447	27.9	19.5	12 W	—	3*
11 17	0 48.14	- 8 20.8	1.542	2.321	18.6	20.3	132 E	37	72	4 3	0 36.61	- 5 29.4	1.408	0.470	24.5	19.5	11 W	—	2*
11 27	0 46.68	- 7 37.1	1.699	2.375	20.6	20.6	122 E	37	72	4 5	0 48.39	- 4 15.7	1.442	0.494	21.7	19.6	11 W	—	—
12 7	0 48.00	- 6 38.6	1.867	2.427	22.0	20.9	113 E	38	71	4 7	0 59.64	- 3 1.1	1.475	0.518	19.4	19.7	10 W	—	—
12 17	0 51.69	- 5 29.3	2.044	2.478	22.6	21.2	104 E	40	69*	4 9	1 10.41	- 1 46.4	1.507	0.543	17.4	19.8	9 W	—	—
12 27	0 57.36	- 4 12.3	2.225	2.526	22.8	21.4	96 E	41	66*	4 11	1 20.73	- 0 32.2	1.537	0.569	15.7	19.9	9 E	—	—
21788 1999 SZ₅										364205 2006 QQ₁₀₄									
12 23	13 29.38	- 0 45.6	3.116	2.926	18.4	19.8	70 W	44*	43*	4 16	1 44.84	+ 2 28.1	1.610	0.631	12.6	20.1	8 E	—	—
1 2	13 39.17	- 0 40.9	2.997	2.948	19.0	19.8	78 W	44	50*	4 21	2 6.94	+ 5 18.3	1.677	0.691	10.4	20.3	7 E	—	—
1 12	13 47.68	- 0 22.2	2.873	2.969	19.3	19.7	86 W	45	56*	4 26	2 27.49	+ 7 56.7	1.740	0.748	8.6	20.5	6 E	—	—
1 22	13 54.70	+ 0 11.9	2.747	2.990	19.2	19.6	94 W	45	61*	5 1	2 46.80	+10 22.9	1.799	0.802	7.1	20.6	6 E	—	—
2 1	13 59.97	+ 1 2.4	2.624	3.009	18.6	19.5	103 W	46	63*	5 6	3 5.14	+12 37.3	1.854	0.853	5.8	20.8	5 E	—	—
2 11	14 3.27	+ 2 9.5	2.505	3.028	17.5	19.4	113 W	47	62	5 11	3 22.73	+14 40.4	1.905	0.900	4.6	20.9	4 E	—	—
2 21	14 4.40	+ 3 32.8	2.397	3.045	15.9	19.3	123 W	49	60	5 16	3 39.72	+16 33.1	1.952	0.944	3.4	21.0	3 E	—	—
3 2	14 3.20	+ 5 10.2	2.304	3.062	13.8	19.1	132 W	50	59	5 21	3 56.25	+18 15.9	1.995	0.984	2.2	21.0	2 E	—	—
3 12	13 59.71	+ 6 57.7	2.231	3.078	11.4	19.0	142 W	52	57	5 26	4 12.41	+19 49.5	2.033	1.021	1.3	21.1	1 E	—	—
3 17	13 57.16	+ 7 53.4	2.203	3.086	10.1	18.9	147 W	53	56	5 31	4 28.30	+21 14.5	2.068	1.054	1.1	21.2	1 W	—	—
3 22	13 54.12	+ 8 49.4	2.181	3.093	8.9	18.8	151 W	54	55	6 5	4 43.96	+22 31.5	2.098	1.085	1.9	21.3	2 W	—	—
3 27	13 50.66	+ 9 44.5	2.166	3.100	7.8	18.8	155 W	55	54	6 10	4 59.48	+23 40.8	2.125	1.113	3.0	21.5	3 W	—	—
4 1	13 46.86	+10 37.7	2.158	3.107	7.0	18.7	158												

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

19/20	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°	2020	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°	-26°
364205 2006 QQ₁₀₄										333980 2000 RL₁₂									
<i>(continuation)</i>										<i>(continuation)</i>									
4 11	17 53.49	-17 10.0	0.859	1.551	36.6	19.4	113 W	28	81	2 6	14 28.04	-19 20.9	1.558	1.921	30.7	19.4	95 W	26	83*
4 21	18 12.07	-15 8.4	0.789	1.540	35.3	19.2	118 W	30	79	2 11	14 33.83	-21 25.7	1.474	1.892	31.1	19.3	99 W	24	85
5 1	18 27.51	-12 48.2	0.727	1.533	33.3	18.9	123 W	32	77	2 16	14 39.42	-23 39.4	1.392	1.862	31.3	19.1	102 W	21	88
5 6	18 33.88	-11 33.3	0.700	1.531	32.1	18.8	126 W	33	76	2 21	14 44.77	-26 3.2	1.313	1.832	31.5	18.9	105 W	19	90
5 11	18 39.29	-10 16.6	0.675	1.530	30.7	18.7	129 W	35	74	2 26	14 49.82	-28 38.5	1.237	1.803	31.6	18.8	108 W	16	87
5 16	18 43.68	-8 59.4	0.653	1.531	29.1	18.6	133 W	36	73	3 2	14 54.53	-31 26.4	1.164	1.773	31.6	18.6	110 W	14	85
5 21	18 46.98	-7 43.2	0.634	1.532	27.4	18.5	136 W	37	72	3 7	14 58.83	-34 28.4	1.095	1.744	31.5	18.4	113 W	11	82
5 26	18 49.21	-6 29.7	0.617	1.534	25.5	18.3	139 W	39	70	3 12	15 2.64	-37 45.5	1.031	1.715	31.4	18.3	116 W	7	78
5 31	18 50.38	-5 20.5	0.603	1.538	23.5	18.2	143 W	40	69	3 17	15 5.83	-41 18.6	0.972	1.687	31.4	18.1	118 W	4	75
6 5	18 50.56	-4 17.4	0.592	1.542	21.5	18.1	146 W	41	68	3 22	15 8.25	-45 7.9	0.918	1.659	31.3	18.0	120 W	—	71
6 10	18 49.84	-3 22.0	0.585	1.548	19.4	18.1	150 W	42	67	3 27	15 9.67	-49 12.7	0.869	1.631	31.4	17.8	122 W	—	67
6 15	18 48.34	-2 35.8	0.580	1.554	17.5	18.0	153 W	42	67	4 1	15 9.76	-53 31.3	0.827	1.604	31.7	17.7	123 W	—	62
6 20	18 46.22	-2 0.1	0.580	1.562	15.8	17.9	155 W	43	66	4 3	15 9.33	-55 17.9	0.812	1.593	31.9	17.6	123 W	—	61
6 30	18 40.98	-1 23.3	0.590	1.580	13.8	17.9	158 W	44	65	4 5	15 8.57	-57 6.1	0.798	1.582	32.1	17.6	123 W	—	59
7 10	18 35.94	-1 32.0	0.615	1.601	14.4	18.1	157 E	43	66	4 7	15 7.45	-58 55.4	0.786	1.572	32.4	17.5	123 W	—	57
7 20	18 32.63	-2 19.0	0.656	1.626	16.9	18.3	152 E	43	66	4 9	15 5.89	-60 45.6	0.774	1.562	32.7	17.5	123 W	—	55
7 25	18 31.99	-2 53.4	0.682	1.639	18.5	18.5	149 E	42	67	4 11	15 3.82	-62 36.3	0.763	1.551	33.0	17.5	122 W	—	53
7 30	18 32.15	-3 32.9	0.712	1.653	20.2	18.7	146 E	41	68	4 13	15 1.14	-64 27.0	0.753	1.541	33.4	17.4	122 W	—	52
8 4	18 33.14	-4 15.8	0.745	1.668	21.8	18.8	142 E	41	68	4 15	14 57.74	-66 17.4	0.744	1.531	33.9	17.4	122 W	—	50
8 9	18 34.96	-5 0.6	0.782	1.684	23.3	19.0	139 E	40	69	4 17	14 53.46	-68 6.8	0.737	1.521	34.4	17.4	121 W	—	48
8 14	18 37.59	-5 46.2	0.821	1.700	24.7	19.2	136 E	39	70	4 19	14 48.11	-69 54.7	0.730	1.512	34.9	17.4	120 W	—	46
8 19	18 41.00	-6 31.4	0.864	1.716	25.9	19.3	132 E	38	71	4 21	14 41.44	-71 40.5	0.724	1.502	35.5	17.3	120 W	—	44
8 24	18 45.14	-7 15.2	0.910	1.733	27.0	19.5	129 E	38	71	4 22	14 37.51	-72 32.4	0.721	1.497	35.8	17.3	119 W	—	43
8 29	18 49.98	-7 57.0	0.959	1.751	28.0	19.7	126 E	37	72	4 23	14 33.12	-73 23.5	0.719	1.493	36.1	17.3	119 W	—	43
9 8	19 1.46	-9 11.8	1.064	1.787	29.5	20.0	119 E	36	73	4 24	14 28.22	-74 13.7	0.717	1.488	36.4	17.3	119 W	—	42
9 18	19 14.96	-10 12.7	1.179	1.824	30.5	20.3	113 E	35	74	4 25	14 22.73	-75 2.8	0.715	1.483	36.7	17.3	118 W	—	41
9 28	19 30.08	-10 58.0	1.303	1.863	30.9	20.6	107 E	34	75	4 26	14 16.58	-75 50.8	0.713	1.479	37.1	17.3	118 W	—	40
10 8	19 46.41	-11 26.8	1.434	1.903	31.0	20.8	101 E	34	75	4 27	14 9.69	-76 37.5	0.711	1.474	37.4	17.3	117 E	—	39
10 18	20 3.64	-11 39.5	1.571	1.943	30.7	21.0	96 E	33	75*	4 28	14 1.96	-77 22.7	0.710	1.470	37.7	17.3	117 E	—	39
10 28	20 21.50	-11 36.6	1.714	1.983	30.1	21.3	90 E	33	72*	4 29	13 53.28	-78 6.3	0.709	1.465	38.1	17.3	116 E	—	38
11 7	20 39.77	-11 19.0	1.860	2.024	29.2	21.5	85 E	34	68*	4 30	13 43.53	-78 48.0	0.708	1.461	38.4	17.3	116 E	—	37
152742 1998 XE₁₂																			
12 23	13 29.90	-19 49.5	0.696	0.910	74.2	20.7	63 W	25*	51*	5 1	13 32.59	-79 27.7	0.707	1.457	38.7	17.3	115 E	—	37
12 25	13 45.46	-21 34.7	0.682	0.883	76.7	20.7	61 W	23*	50*	5 2	13 20.31	-80 5.1	0.706	1.452	39.1	17.3	115 E	—	36
12 27	14 2.13	-23 18.4	0.671	0.856	79.2	20.7	59 W	21*	49*	5 3	13 6.56	-80 39.9	0.706	1.448	39.4	17.3	114 E	—	35
12 29	14 19.92	-24 58.6	0.663	0.827	81.8	20.7	56 W	19*	47*	5 4	12 51.24	-81 11.7	0.705	1.444	39.8	17.3	114 E	—	35
12 31	14 38.81	-26 33.0	0.658	0.798	84.4	20.7	54 W	17*	46*	5 5	12 34.27	-81 40.3	0.705	1.440	40.1	17.3	113 E	—	34
1 2	14 58.74	-27 59.3	0.656	0.768	86.9	20.7	51 W	15*	44*	5 6	12 15.63	-82 5.1	0.705	1.436	40.5	17.3	113 E	—	34
1 4	15 19.58	-29 15.0	0.658	0.737	89.4	20.7	49 W	13*	41*	5 7	11 55.40	-82 26.0	0.705	1.432	40.8	17.3	112 E	—	34
1 6	15 41.17	-30 18.1	0.664	0.705	91.8	20.7	46 W	12*	39*	5 8	11 33.78	-82 42.6	0.705	1.428	41.1	17.3	111 E	—	33
1 8	16 3.27	-31 6.6	0.673	0.672	93.9	20.7	43 W	10*	36*	5 9	11 11.10	-82 54.6	0.706	1.424	41.5	17.3	111 E	—	33
1 10	16 25.63	-31 39.5	0.687	0.638	95.8	20.7	40 W	8*	34*	5 10	10 47.80	-83 1.9	0.706	1.420	41.8	17.3	110 E	—	33
1 12	16 48.00	-31 56.2	0.705	0.602	97.3	20.7	37 W	7*	31*	5 11	10 24.41	-83 4.5	0.706	1.416	42.1	17.3	110 E	—	33
1 14	17 10.15	-31 56.6	0.727	0.566	98.3	20.7	35 W	5*	29*	5 12	10 1.45	-83 2.7	0.707	1.412	42.5	17.3	109 E	—	33
1 16	17 31.87	-31 41.4	0.753	0.528	98.7	20.7	32 W	4*	26*	5 13	9 39.40	-82 56.7	0.708	1.408	42.8	17.4	109 E	—	33
1 18	17 53.04	-31 11.5	0.784	0.490	98.5	20.6	30 W	3*	23*	5 14	9 18.64	-82 47.1	0.709	1.405	43.1	17.4	108 E	—	33
1 20	18 13.61	-30 27.7	0.819	0.451	97.3	20.4	27 W	2*	21*	5 15	8 59.39	-82 34.3	0.709	1.401	43.4	17.4	108 E	—	33*
1 22	18 33.62	-29 31.0	0.859	0.411	95.0	20.2	25 W	1*	19*	5 16	8 41.78	-82 18.7	0.710	1.397	43.7	17.4	107 E	—	34*
1 24	18 53.19	-28 21.7	0.903	0.370	91.3	20.0	22 W	—	16*	5 17	8 25.82	-82 1.0	0.711	1.394	44.0	17.4	107 E	—	34*
1 26	19 12.52	-26 59.7	0.952	0.331	85.7	19.6	20 W	—	14*	5 18	8 11.45	-81 41.6	0.712	1.391	44.3	17.4	106 E	—	34*
1 28	19 31.91	-25 24.5	1.005	0.294	77.5	19.2	17 W	—	11*	5 19	7 58.56	-81 20.8	0.713	1.387	44.6	17.4	106 E	—	34*
1 30	19 51.71	-23 34.8	1.061	0.261	66.2	18.7	14 W	—	8*	5 20	7 47.02	-80 59.0	0.714	1.384	44.9	17.4	105 E	—	34*
2 1	20 12.17	-21 29.8	1.116	0.238	51.4	18.1	11 W	—	5*	5 21	7 36.70	-80 36.5	0.716	1.381	45.1	17.4	105 E	—	34*
2 2	20 22.67	-20 21.9	1.142	0.232	42.9	17.9	9 W	—	3*	5 22	7 27.46	-80 13.5	0.717	1.377	45.4	17.4	104 E	—	34*
2 3	20 33.28	-19 11.1	1.167	0.229	34.1	17.7	7 W	—	1*	5 23	7 19.19	-79 50.3	0.718	1.374	45.7	17.4	104 E	—	34*
2 4	20 43.92	-17 58.1	1.189	0.231	25.3	17.5	6 W	—	—	5 24	7 11.75	-79 27.1	0.719	1.371	45.9	17.4	103 E	—	34*
2 5	20 54.51	-16 44.1	1.209	0.236	17.1	17.3	4 W	—	—	5 25	7 5.07	-79 3.9	0.720	1.368	46.2	17.4	103 E	—	34*
2 6	21 4.94	-15 29.7	1.226	0.245	10.2	17.1	3 W	—	—	5 26	6 59.03	-78 40.9	0.722	1.365	46.4	17.4	103 E	—	34*
2 7	21 15.13	-14 16.0	1.241	0.257	6.5	17.1	2 W	—	—	5 27	6 53.57	-78 18.2	0.723	1.362	46.7	17.4	102 E	—	34*
2 8	21 25.05	-13 3.4	1.255	0.272	8.4	17.3	2 E	—	—	5 28	6 48.61	-77 55.8	0.724	1.360	46.9	17.4	102 E	—	33*
2 9	21 34.66	-11 52.4	1.266	0.289	12.4	17.7	4 E	—	—	5 29	6 44.09	-77 33.9	0.725	1.357	47.1	17.4	101 E	—	33*
2 10	21 43.96	-10 43.2	1.277	0.307	16.4	17.9	5 E	—	—	5 30	6 39.97	-77 12.4	0.727	1.354	47.3	17.5	101 E	—	

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

2020	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45° - 26°	19/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45° - 26°	
333980 2000 RL₁₂ (continuation)									333980 2000 RL₁₂ (continuation)									
6 28	5 45.97	-71 31.1	0.741	1.310	50.6	17.5	95 W	—	29*	11 12	22 15.55	-12 18.9	1.359	1.835	31.9	19.0	102 E	33 76
6 30	5 43.31	-71 28.5	0.740	1.310	50.6	17.5	95 W	—	30*	11 17	22 20.68	-10 11.9	1.442	1.865	31.6	19.2	98 E	35 74*
7 2	5 40.52	-71 28.6	0.739	1.309	50.7	17.5	95 W	—	31*	11 22	22 26.09	-8 13.4	1.527	1.894	31.3	19.3	95 E	37 70*
7 4	5 37.56	-71 31.2	0.737	1.309	50.6	17.5	95 W	—	32*	11 27	22 31.75	-6 22.1	1.613	1.924	30.8	19.5	92 E	39 67*
7 6	5 34.38	-71 36.3	0.735	1.310	50.6	17.5	95 W	—	33*	12 2	22 37.62	-4 37.1	1.700	1.954	30.3	19.6	89 E	40 63*
7 8	5 30.94	-71 43.9	0.732	1.311	50.5	17.5	96 W	—	34*	12 7	22 43.67	-2 57.5	1.788	1.984	29.7	19.7	86 E	42 59*
7 10	5 27.19	-71 53.8	0.729	1.312	50.4	17.5	96 W	—	35*	12 17	22 56.26	+0 8.6	1.966	2.043	28.3	20.0	80 E	45 51*
7 12	5 23.06	-72 6.2	0.726	1.313	50.3	17.5	96 W	—	36*	12 27	23 9.38	+3 1.1	2.144	2.103	26.8	20.2	74 E	48* 43*
7 14	5 18.50	-72 20.9	0.723	1.315	50.1	17.5	97 W	—	36*	1 6	23 22.92	+5 43.3	2.320	2.161	25.0	20.4	68 E	49* 36*
7 16	5 13.43	-72 37.8	0.719	1.317	50.0	17.4	97 W	—	37*	1 16	23 36.81	+8 17.8	2.492	2.219	23.2	20.5	63 E	49* 29*
7 18	5 7.75	-72 56.8	0.715	1.320	49.7	17.4	98 W	—	38*									
7 20	5 1.36	-73 17.7	0.711	1.322	49.5	17.4	98 W	—	38*									
310464 2000 SF									310464 2000 SF									
7 21	4 57.86	-73 28.8	0.709	1.324	49.4	17.4	99 W	—	38*	12 23	13 31.33	-21 18.5	3.281	2.952	17.1	20.7	62 W	23* 51*
7 22	4 54.14	-73 40.3	0.707	1.325	49.2	17.4	99 W	—	38*	1 2	13 40.20	-23 9.8	3.163	2.967	18.1	20.7	70 W	22 60*
7 23	4 50.18	-73 52.1	0.705	1.327	49.1	17.4	99 W	—	38*	1 12	13 47.85	-24 59.0	3.038	2.980	18.8	20.6	77 W	20 69*
7 24	4 45.96	-74 4.3	0.703	1.329	48.9	17.4	100 W	—	39*	1 22	13 54.02	-26 45.9	2.909	2.993	19.1	20.6	85 W	18 79*
7 25	4 41.46	-74 16.7	0.700	1.331	48.7	17.4	100 W	—	39*	2 1	13 58.38	-28 29.6	2.778	3.005	19.1	20.5	94 W	17 87*
7 26	4 36.66	-74 29.3	0.698	1.333	48.6	17.4	100 W	—	39*	2 11	14 0.62	-30 8.8	2.649	3.016	18.6	20.4	102 W	15 86*
7 27	4 31.54	-74 42.0	0.696	1.334	48.4	17.4	101 W	—	39*	2 21	14 0.40	-31 41.7	2.525	3.026	17.7	20.2	111 W	13 84
7 28	4 26.08	-74 54.8	0.694	1.337	48.2	17.3	101 W	—	39*	3 2	13 57.43	-33 5.1	2.411	3.035	16.4	20.1	120 W	12 83
7 29	4 20.26	-75 7.6	0.691	1.339	48.0	17.3	102 W	—	39*	3 12	13 51.59	-34 14.8	2.311	3.043	14.6	20.0	130 W	11 82
7 30	4 14.05	-75 20.2	0.689	1.341	47.8	17.3	102 W	—	39*	3 22	13 43.03	-35 6.2	2.229	3.050	12.4	19.8	139 W	10 81
7 31	4 7.43	-75 32.7	0.686	1.343	47.5	17.3	103 W	—	40*									
8 1	4 0.38	-75 44.8	0.684	1.345	47.3	17.3	103 W	—	40*	3 27	13 37.85	-35 23.4	2.196	3.053	11.3	19.7	143 W	10 81
8 2	3 52.89	-75 56.5	0.682	1.348	47.1	17.3	103 W	—	40*	4 1	13 32.20	-35 34.4	2.170	3.056	10.3	19.7	147 W	9 80
8 3	3 44.93	-76 7.6	0.679	1.350	46.8	17.3	104 W	—	40*	4 6	13 26.22	-35 38.8	2.149	3.058	9.4	19.6	150 W	9 80
8 4	3 36.49	-76 17.9	0.677	1.353	46.6	17.3	104 W	—	40*	4 11	13 20.03	-35 36.6	2.135	3.061	8.6	19.6	153 W	9 80
8 5	3 27.56	-76 27.4	0.675	1.355	46.3	17.3	105 W	—	40*	4 16	13 13.79	-35 28.0	2.128	3.063	8.2	19.5	154 E	10 81
8 6	3 18.14	-76 35.9	0.672	1.358	46.0	17.3	105 W	—	39*	4 21	13 7.65	-35 13.2	2.128	3.065	8.2	19.5	154 E	10 81
8 7	3 8.24	-76 43.1	0.670	1.361	45.8	17.2	106 W	—	39	4 26	13 1.76	-34 52.9	2.135	3.066	8.2	19.6	153 E	10 81
8 8	2 57.87	-76 49.0	0.668	1.364	45.5	17.2	107 W	—	39	5 1	12 56.26	-34 28.1	2.149	3.067	9.2	19.6	151 E	11 82
8 9	2 47.06	-76 53.2	0.666	1.367	45.2	17.2	107 W	—	39	5 6	12 51.26	-33 59.7	2.169	3.069	10.1	19.7	148 E	11 82
8 10	2 35.83	-76 55.7	0.664	1.370	44.9	17.2	108 W	—	39	5 11	12 46.84	-33 28.7	2.195	3.069	11.2	19.7	144 E	12 83
8 11	2 24.24	-76 56.2	0.662	1.373	44.5	17.2	108 W	—	39	5 16	12 43.07	-32 56.3	2.227	3.070	12.2	19.8	140 E	12 83
8 12	2 12.35	-76 54.6	0.660	1.376	44.2	17.2	109 W	—	39	5 21	12 39.99	-32 23.3	2.264	3.070	13.3	19.9	136 E	13 84
8 13	2 0.23	-76 50.6	0.658	1.379	43.9	17.2	109 W	—	39	5 26	12 37.63	-31 50.7	2.306	3.071	14.3	20.0	131 E	13 84
8 14	1 47.96	-76 44.2	0.656	1.382	43.5	17.2	110 W	—	39	5 31	12 35.97	-31 19.5	2.352	3.070	15.3	20.0	127 E	14* 85
8 15	1 35.62	-76 35.2	0.654	1.385	43.2	17.2	111 W	—	39	6 10	12 34.73	-30 23.2	2.456	3.069	16.9	20.2	118 E	13* 86
8 16	1 23.31	-76 23.5	0.652	1.389	42.8	17.1	111 W	—	40	6 20	12 36.04	-29 38.1	2.571	3.068	18.2	20.3	110 E	12* 86
8 17	1 11.11	-76 9.1	0.651	1.392	42.5	17.1	112 W	—	40	6 30	12 39.66	-29 6.1	2.693	3.065	19.0	20.4	102 E	9* 87
8 18	0 59.10	-75 51.8	0.649	1.396	42.1	17.1	112 W	—	40	7 10	12 45.28	-28 47.7	2.819	3.061	19.4	20.6	94 E	7* 86*
8 19	0 47.37	-75 31.7	0.648	1.399	41.7	17.1	113 W	—	40	7 20	12 52.63	-28 42.3	2.945	3.056	19.4	20.7	86 E	4* 78*
8 20	0 35.99	-75 8.8	0.647	1.403	41.4	17.1	114 W	—	41	7 30	13 1.49	-28 49.1	3.070	3.050	19.1	20.7	79 E	2* 71*
8 21	0 25.00	-74 43.1	0.646	1.406	41.0	17.1	114 W	—	41	8 9	13 11.67	-29 6.8	3.191	3.043	18.5	20.8	72 E	— 63*
8 22	0 14.46	-74 14.8	0.645	1.410	40.6	17.1	115 W	—	42	8 19	13 23.00	-29 33.8	3.305	3.035	17.7	20.8	66 E	— 56*
8 23	0 4.40	-73 43.8	0.644	1.414	40.2	17.1	116 W	—	42	8 29	13 35.38	-30 9.0	3.412	3.026	16.7	20.9	59 E	— 50*
8 24	23 54.83	-73 10.3	0.644	1.418	39.8	17.1	116 W	—	43	9 8	13 48.70	-30 50.7	3.509	3.016	15.5	20.9	53 E	— 43*
8 25	23 45.78	-72 34.4	0.643	1.422	39.4	17.1	117 W	—	43	9 18	14 2.89	-31 37.6	3.596	3.005	14.2	20.9	47 E	— 37*
8 26	23 37.25	-71 56.1	0.643	1.425	39.0	17.1	117 W	—	44	9 28	14 17.90	-32 28.4	3.671	2.993	12.8	20.9	41 E	— 31*
8 27	23 29.22	-71 15.8	0.643	1.429	38.6	17.1	118 W	—	45	10 8	14 33.67	-33 21.8	3.733	2.981	11.3	20.8	36 E	— 26*
8 28	23 21.68	-70 33.3	0.643	1.433	38.2	17.1	119 W	—	45	10 18	14 50.17	-34 16.6	3.782	2.967	9.8	20.8	31 E	— 21*
8 29	23 14.63	-69 49.0	0.643	1.438	37.8	17.1	119 W	—	46	10 28	15 7.36	-35 11.5	3.816	2.952	8.4	20.7	26 E	— 15*
8 30	23 8.04	-69 2.9	0.644	1.442	37.5	17.0	120 W	—	47	11 7	15 25.20	-36 5.5	3.837	2.936	7.1	20.7	21 E	— 10*
8 31	23 1.89	-68 15.1	0.645	1.446	37.1	17.0	120 W	—	48	11 17	15 43.66	-36 57.6	3.842	2.919	6.1	20.6	18 E	— 6*
9 1	22 56.16	-67 25.8	0.646	1.450	36.7	17.0	121 W	—	49	11 27	16 2.67	-37 46.7	3.832	2.902	5.6	20.6	17 W	— 4*
9 2	22 50.82	-66 35.0	0.647	1.454	36.3	17.0	121 W	—	49	12 7	16 22.17	-38 31.9	3.808	2.883	5.9	20.6	17 W	— 8*
9 3	22 45.86	-65 43.0	0.648	1.459	36.0	17.0	122 E	—	50	12 17	16 42.11	-39 12.5	3.769	2.863	6.7	20.6	20 W	— 12*
9 4	22 41.24	-64 49.8	0.650	1.463	35.6	17.0	122 E	—	51	12 27	17 2.39	-39 48.0	3.715	2.843	8.0	20.6	24 W	— 17*
9 5	22 36.96	-63 55.5	0.652	1.467	35.3	17.1	123 E	—	52	1 6	17 22.90	-40 17.8	3.648	2.821	9.5	20.6	28 W	— 22*
9 6	22 32.98	-63 0.3	0.654	1.472	34.9	17.1	123 E	—	53	1 16	17 43.55	-40 41.8	3.567	2.799	11.2	20.6	33 W	— 27*
9 7	22 29.29	-62 4.2	0.656	1.476	34.6	17.1	124 E	—	54									
9 8	22 25.86	-61 7.4	0.659	1.481	34.3	17.1	124 E	—	55									
9082 Leonardmartin									9082 Leonardmartin									
9 10	22 19.75	-59 11.8	0.665	1.490	33.7	17.1	125 E	—	57	12 23	13 31.46	+17 4.6	3.799	3.713	15.0	20.6	78 W	62* 31*
9 12	22 14.52	-57 14.5	0.673	1.500	33.2	17.1	125 E	—	59	1 2	13 38.12	+17 6.7	3.642	3.695	15.4	20.5</		

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°
9082 Leonardmartin (continuation)										194263 2001 UL (continuation)									
5 1	12 49.80	+23 23.9	2.630	3.407	12.3	19.5	134 E	68	41	3 12	14 34.26	- 8 15.2	1.722	2.502	17.0	20.4	132 W	37	72
5 11	12 41.97	+22 33.1	2.691	3.378	14.1	19.6	125 E	68	41	3 22	14 30.36	- 6 18.9	1.661	2.532	13.5	20.2	143 W	39	70
5 21	12 36.07	+21 23.8	2.769	3.347	15.7	19.7	117 E	66	43	3 27	14 27.41	- 5 15.8	1.638	2.546	11.6	20.1	149 W	40	69
5 31	12 32.32	+19 59.5	2.860	3.316	16.9	19.8	108 E	65	44	4 1	14 23.90	- 4 10.5	1.622	2.561	9.6	20.0	155 W	41	68
6 10	12 30.70	+18 24.1	2.959	3.284	17.8	19.9	100 E	60	46	4 6	14 19.92	- 3 4.4	1.612	2.575	7.7	19.9	160 W	42	67
6 20	12 31.10	+16 40.4	3.063	3.250	18.2	19.9	91 E	54	47	4 11	14 15.58	- 1 58.6	1.609	2.588	5.9	19.9	164 W	43	66
6 30	12 33.36	+14 50.8	3.169	3.216	18.3	20.0	83 E	47	49	4 16	14 11.01	- 0 54.4	1.613	2.602	4.8	19.8	168 W	44	65
7 10	12 37.25	+12 57.1	3.272	3.181	18.1	20.0	76 E	40	51*	4 21	14 6.35	+ 0 6.9	1.624	2.615	4.7	19.8	168 W	45	64
7 20	12 42.60	+11 0.5	3.371	3.146	17.5	20.0	69 E	35	50*	4 26	14 1.72	+ 1 4.0	1.643	2.628	5.7	19.9	165 E	46	63
7 30	12 49.24	+ 9 2.0	3.462	3.109	16.7	20.1	62 E	30	47*	5 1	13 57.27	+ 1 56.0	1.669	2.641	7.2	20.0	161 E	47	62
8 9	12 57.00	+ 7 2.2	3.544	3.071	15.6	20.0	55 E	25	43*	5 11	13 49.34	+ 3 21.8	1.741	2.667	10.7	20.3	151 E	48	61
8 19	13 5.75	+ 5 1.5	3.616	3.033	14.4	20.0	48 E	22	38*	5 21	13 43.26	+ 4 21.3	1.836	2.691	14.0	20.6	140 E	49	60
8 29	13 15.40	+ 3 0.4	3.675	2.994	12.9	20.0	41 E	18	33*	5 31	13 39.43	+ 4 54.9	1.950	2.714	16.6	20.8	130 E	50	59
9 8	13 25.86	+ 0 59.3	3.722	2.954	11.3	19.9	35 E	15	27*	6 10	13 37.97	+ 5 5.1	2.079	2.737	18.7	21.0	120 E	50	59
9 18	13 37.05	+ 1 1.6	3.753	2.913	9.6	19.8	29 E	12	21*	6 20	13 38.77	+ 4 55.7	2.219	2.758	20.1	21.2	111 E	49*	59
9 28	13 48.93	+ 3 2.1	3.770	2.871	7.7	19.7	23 E	9	15*	6 30	13 41.65	+ 4 30.4	2.367	2.779	20.9	21.4	103 E	46*	59
10 8	14 1.46	+ 5 1.7	3.772	2.829	5.8	19.6	17 E	6*	9*	7369 Gavrilin									
10 18	14 14.60	+ 7 0.4	3.758	2.785	3.9	19.5	11 E	3*	2*	12 23	13 33.88	-30 24.6	3.453	3.072	16.0	19.2	59 W	14*	52*
10 28	14 28.34	+ 8 57.9	3.727	2.741	2.2	19.3	6 E	—	—	1 2	13 44.25	-32 2.3	3.342	3.082	17.0	19.2	66 W	13	60*
11 7	14 42.64	+10 53.8	3.681	2.697	2.1	19.2	6 W	—	—	1 12	13 53.52	-33 37.4	3.222	3.091	17.8	19.1	74 W	11	68*
11 17	14 57.52	+12 48.0	3.620	2.651	3.7	19.3	10 W	4*	—	1 22	14 1.43	-35 9.2	3.095	3.099	18.3	19.1	81 W	10	75*
11 27	15 12.96	+14 40.3	3.543	2.605	5.8	19.3	15 W	8*	3*	2 1	14 7.67	-36 36.9	2.966	3.105	18.5	19.0	89 W	8	79*
12 7	15 28.95	+16 30.6	3.452	2.558	8.0	19.3	21 W	12*	9*	2 11	14 11.92	-37 58.8	2.836	3.111	18.4	18.9	97 W	7	78
12 17	15 45.50	+18 18.8	3.348	2.511	10.2	19.3	27 W	14*	15*	2 21	14 13.84	-39 13.0	2.708	3.116	17.8	18.8	105 W	6	77
12 27	16 2.60	+20 4.9	3.231	2.463	12.5	19.2	33 W	16*	22*	3 2	14 13.12	-40 16.5	2.586	3.120	16.9	18.6	114 W	5	76
1 6	16 20.25	+21 49.2	3.104	2.415	14.7	19.2	39 W	17*	29*	3 12	14 9.59	-41 5.3	2.475	3.123	15.6	18.5	122 W	4	75
1 16	16 38.48	+23 31.9	2.966	2.366	16.9	19.1	44 W	17*	36*	3 22	14 3.28	-41 34.8	2.378	3.125	13.9	18.3	131 W	3	74
28017 1997 YV₁₃										307556 2003 EQ₄₃									
12 23	13 32.54	+14 23.9	3.688	3.374	15.2	19.8	64 W	30*	49*	3 27	13 59.18	-41 40.7	2.335	3.126	12.9	18.3	135 W	3	74
1 2	13 40.39	+15 18.0	3.566	3.394	16.0	19.8	72 W	30	58*	4 1	13 54.53	-41 40.0	2.298	3.126	12.0	18.2	139 W	3	74
1 12	13 47.02	+16 5.6	3.436	3.413	16.5	19.7	80 W	29	67*	4 6	13 49.47	-41 32.3	2.267	3.127	11.0	18.1	143 W	3	74
1 22	13 52.25	+16 45.9	3.302	3.431	16.7	19.7	89 W	28	75*	4 11	13 44.10	-41 17.4	2.241	3.126	10.2	18.1	147 W	4	75
2 1	13 55.85	+17 17.9	3.166	3.448	16.4	19.6	98 W	28	81*	4 16	13 38.56	-40 55.3	2.222	3.126	9.5	18.0	149 W	4	75
2 11	13 57.61	+17 40.5	3.032	3.464	15.7	19.5	108 W	27	82	4 21	13 33.00	-40 26.1	2.209	3.126	9.0	18.0	151 E	5	76
2 21	13 57.37	+17 52.7	2.906	3.480	14.6	19.3	118 W	27	82	4 26	13 27.58	-39 50.5	2.202	3.125	8.8	18.0	152 E	5	76
3 2	13 55.04	+17 53.0	2.792	3.494	12.9	19.2	128 W	27	82	5 1	13 22.43	-39 9.1	2.202	3.124	8.9	18.0	151 E	6	77
3 12	13 50.67	+17 40.8	2.694	3.508	10.7	19.1	139 W	27	82	5 6	13 17.68	-38 22.9	2.209	3.122	9.3	18.0	150 E	7	78
3 22	13 44.48	+17 15.6	2.619	3.520	8.0	18.9	151 W	28	81	5 11	13 13.43	-37 33.0	2.222	3.121	10.0	18.1	147 E	7	78
4 1	13 36.89	+16 38.1	2.569	3.532	5.0	18.7	162 W	28	81	5 16	13 9.75	-36 40.6	2.242	3.119	10.9	18.1	144 E	8	79
4 11	13 28.51	+15 50.6	2.548	3.543	2.2	18.5	172 W	29	80	5 21	13 6.70	-35 46.7	2.267	3.117	11.9	18.2	141 E	9	80
4 21	13 20.05	+14 56.5	2.557	3.553	2.6	18.6	171 E	30	79	5 26	13 4.33	-34 52.5	2.298	3.115	12.9	18.2	137 E	10	81
4 26	13 16.01	+14 28.5	2.574	3.558	4.0	18.7	166 E	31	78	5 31	13 2.63	-33 59.1	2.335	3.112	13.9	18.3	133 E	11	82
5 1	13 12.21	+14 0.5	2.597	3.562	5.5	18.8	160 E	31	78	6 5	13 1.61	-33 7.3	2.376	3.110	14.8	18.4	128 E	12*	83
5 6	13 8.72	+13 33.3	2.628	3.566	6.9	18.9	155 E	31	78	6 10	13 1.26	-32 17.8	2.421	3.107	15.7	18.4	124 E	12*	84
5 11	13 5.60	+13 7.2	2.665	3.570	8.3	19.0	149 E	32	77	6 20	13 2.42	-30 48.1	2.522	3.100	17.2	18.6	116 E	12*	85
5 21	13 0.61	+12 20.6	2.758	3.578	10.9	19.2	138 E	33	76	6 30	13 5.88	-29 32.8	2.635	3.092	18.3	18.7	107 E	11*	86
5 31	12 57.47	+11 43.5	2.872	3.584	12.9	19.3	128 E	33	76	7 10	13 11.36	-28 33.2	2.755	3.084	19.0	18.8	99 E	9*	87
6 10	12 56.24	+11 17.5	3.001	3.590	14.5	19.5	118 E	33*	75	7 20	13 18.59	-27 48.7	2.879	3.074	19.3	18.9	91 E	8*	84*
6 20	12 56.83	+11 3.0	3.141	3.594	15.6	19.6	108 E	31*	75	7 30	13 27.33	-27 18.5	3.003	3.064	19.2	19.0	84 E	6*	76*
6 30	12 59.13	+10 59.9	3.289	3.598	16.2	19.7	99 E	28*	75	8 9	13 37.37	-27 1.0	3.126	3.052	18.8	19.1	76 E	4*	69*
7 10	13 2.96	+11 7.1	3.440	3.601	16.4	19.8	91 E	24*	75	8 19	13 48.55	-26 54.4	3.244	3.040	18.2	19.1	69 E	3*	62*
7 20	13 8.15	+11 23.8	3.590	3.603	16.2	19.9	83 E	21*	73*	8 29	14 0.74	-26 56.9	3.356	3.026	17.2	19.1	63 E	2*	55*
7 30	13 14.55	+11 48.6	3.737	3.604	15.8	20.0	75 E	17*	68*	9 8	14 13.80	-27 6.6	3.459	3.012	16.1	19.2	56 E	1*	48*
8 9	13 21.99	+12 20.4	3.878	3.604	15.0	20.1	67 E	14*	61*	9 18	14 27.67	-27 21.9	3.553	2.996	14.7	19.2	49 E	—	42*
8 19	13 30.35	+12 58.0	4.010	3.604	14.0	20.1	60 E	12*	54*	9 28	14 42.26	-27 41.2	3.635	2.980	13.2	19.1	43 E	—	35*
8 29	13 39.51	+13 40.3	4.131	3.602	12.8	20.1	52 E	9*	46*	10 8	14 57.49	-28 2.9	3.705	2.963	11.6	19.1	37 E	—	29*
9 8	13 49.38	+14 26.2	4.240	3.600	11.4	20.1	45 E	7*	39*	10 18	15 13.33	-28 25.5	3.761	2.945	9.8	19.1	30 E	—	23*
9 18	13 59.86	+15 14.8	4.334	3.596	9.9	20.1	38 E	5*	32*	10 28	15 29.70	-28 47.7	3.802	2.925	8.0	19.0	24 E	—	17*
9 28	14 10.88	+16 5.2	4.414	3.592	8.3	20.1	31 E	3*	25*	11 7	15 46.54	-29 8.2	3.829	2.905	6.2	18.9	18 E	—	12*
10 8	14 22.36	+16 56.4	4.476	3.587	6.5	20.0	24 E	1*	18*	11 17	16 3.80	-29 25.8	3.839	2.884	4.4	18.8	13 E	—	6*
10 18	14 34.25	+17 47.7	4.521	3.581	4.7	20.0	17 E	—	11*	11 27	16 21.41	-29 39.5	3.833	2.862	3.0	18.7	9 E	—	—
10 28	14 46.47	+18 38.4	4.547	3.574	2.9	19.9	10 E	—	4*	12 7	16 39.28	-29 48.2	3.811	2.839	2.8	18.7	8 W	—	1*
11 7	14 58.96	+19 27.6	4.555	3.567	1.1	19.7	4 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°
307556 2003 EQ₄₃										151888 2003 YV₁₁₇									
<i>(continuation)</i>																			
3 17	14 39.46	+ 0 59.3	1.638	2.461	16.0	20.3	137 W	46	63	12 23	13 35.29	- 3 53.4	1.529	1.463	38.3	18.9	67 W	41*	43*
3 22	14 37.22	+ 2 20.5	1.621	2.484	14.3	20.2	142 W	47	62	1 2	14 4.12	- 3 13.6	1.472	1.480	38.9	18.8	71 W	42*	46*
3 27	14 34.32	+ 3 42.4	1.611	2.506	12.6	20.2	147 W	49	60	1 12	14 32.11	- 2 8.1	1.418	1.501	39.2	18.8	75 W	43*	49*
4 1	14 30.85	+ 5 3.6	1.607	2.529	11.0	20.1	151 W	50	59	1 22	14 58.91	- 0 35.8	1.368	1.526	39.3	18.8	79 W	44	52*
4 6	14 26.91	+ 6 22.4	1.609	2.551	9.6	20.1	155 W	51	58	2 1	15 24.10	+ 1 23.6	1.320	1.555	39.0	18.7	83 W	46	55*
4 11	14 22.62	+ 7 37.3	1.619	2.573	8.6	20.1	157 W	53	56	2 11	15 47.29	+ 3 49.1	1.276	1.586	38.4	18.7	88 W	49	56*
4 16	14 18.11	+ 8 47.0	1.635	2.595	8.1	20.1	159 W	54	55	2 21	16 8.05	+ 6 38.1	1.236	1.620	37.6	18.6	93 W	52	56*
4 21	14 13.50	+ 9 50.3	1.658	2.617	8.3	20.2	158 W	55	54	2 26	16 17.37	+ 8 10.5	1.218	1.638	37.0	18.6	95 W	53	55*
4 26	14 8.94	+10 46.1	1.688	2.638	9.0	20.3	156 E	56	53	3 2	16 25.92	+ 9 47.3	1.201	1.656	36.4	18.6	98 W	55	54*
5 1	14 4.56	+11 33.8	1.725	2.660	10.1	20.4	152 E	57	52	3 7	16 33.64	+11 27.8	1.186	1.674	35.7	18.6	100 W	56	53*
5 11	13 56.76	+12 44.1	1.817	2.702	12.6	20.6	144 E	58	51	3 12	16 40.48	+13 11.1	1.172	1.693	34.9	18.5	103 W	58	51
5 21	13 50.76	+13 22.1	1.931	2.743	15.1	20.9	135 E	58	51	3 17	16 46.39	+14 56.3	1.159	1.713	34.1	18.5	105 W	60	49
5 31	13 46.94	+13 31.3	2.062	2.784	17.1	21.1	126 E	59	50	3 22	16 51.32	+16 42.6	1.148	1.732	33.2	18.5	108 W	62	47
6 10	13 45.39	+13 16.9	2.207	2.823	18.6	21.3	117 E	58	51	3 27	16 55.22	+18 28.5	1.138	1.752	32.3	18.5	110 W	63	46
406235 2007 BF₇₃																			
12 23	13 34.26	- 8 31.5	2.322	2.115	25.1	21.4	66 W	36*	46*	4 1	16 58.03	+20 12.9	1.130	1.772	31.4	18.4	113 W	65	44
1 2	13 45.54	-11 6.7	2.242	2.157	25.7	21.4	72 W	34	55*	4 6	16 59.76	+21 54.1	1.125	1.793	30.4	18.4	115 W	67	42
1 12	13 55.20	-13 37.5	2.156	2.199	26.1	21.4	79 W	31	64*	4 11	17 0.38	+23 30.7	1.121	1.813	29.4	18.4	117 W	69	40
1 22	14 2.96	-16 4.3	2.066	2.241	26.0	21.3	87 W	29	73*	4 16	16 59.89	+25 1.1	1.119	1.834	28.5	18.4	119 W	70	39
2 1	14 8.43	-18 27.3	1.975	2.283	25.5	21.2	95 W	27	81*	4 21	16 58.32	+26 23.6	1.120	1.855	27.5	18.4	121 W	71	38
2 11	14 11.19	-20 46.1	1.885	2.325	24.3	21.1	104 W	24	85	4 26	16 55.72	+27 36.4	1.124	1.876	26.6	18.4	123 W	73	36
2 21	14 10.82	-22 59.3	1.800	2.367	22.6	21.0	113 W	22	87	5 1	16 52.19	+28 37.9	1.130	1.897	25.8	18.4	125 W	74	35
3 2	14 6.93	-25 4.0	1.725	2.409	20.3	20.9	123 W	20	89	5 6	16 47.87	+29 26.8	1.139	1.917	25.1	18.5	126 W	74	35
3 12	13 59.37	-26 55.3	1.664	2.450	17.3	20.8	133 W	18	89	5 11	16 42.92	+30 1.9	1.152	1.938	24.5	18.5	127 W	75	34
3 22	13 48.37	-28 27.1	1.623	2.491	14.0	20.6	143 W	17	88	5 16	16 37.52	+30 22.6	1.167	1.959	24.0	18.5	128 W	75	34
4 1	13 34.68	-29 32.8	1.605	2.532	10.7	20.5	152 W	15	86	5 21	16 31.87	+30 28.5	1.185	1.980	23.6	18.6	128 W	75	34
4 11	13 19.67	-30 8.9	1.614	2.571	8.3	20.5	158 W	15	86	5 26	16 26.18	+30 19.6	1.207	2.001	23.4	18.6	128 W	75	34
4 16	13 12.17	-30 15.9	1.629	2.591	8.0	20.5	159 E	15	86	5 31	16 20.66	+29 56.4	1.232	2.022	23.3	18.7	128 E	75	34
4 21	13 4.94	-30 16.4	1.651	2.611	8.2	20.5	158 E	15	86	6 5	16 15.50	+29 20.0	1.261	2.042	23.3	18.8	127 E	74	35
4 26	12 58.17	-30 11.1	1.680	2.630	9.0	20.6	156 E	15	86	6 10	16 10.84	+28 31.6	1.293	2.063	23.4	18.8	126 E	74	35
5 1	12 52.02	-30 1.2	1.716	2.650	10.2	20.7	152 E	15	86	6 15	16 6.79	+27 32.6	1.328	2.083	23.6	18.9	125 E	73	36
5 6	12 46.59	-29 48.1	1.758	2.669	11.5	20.9	148 E	15	86	6 20	16 3.43	+26 24.5	1.366	2.104	23.8	19.0	123 E	71	38
5 11	12 41.96	-29 32.8	1.805	2.688	12.8	21.0	144 E	15	86	6 25	16 0.82	+25 8.9	1.408	2.124	24.1	19.1	121 E	70	39
5 16	12 38.16	-29 16.5	1.858	2.707	14.1	21.1	139 E	16	87	6 30	15 58.99	+23 47.4	1.453	2.144	24.4	19.2	119 E	69	40
5 21	12 35.20	-29 0.2	1.916	2.725	15.3	21.2	135 E	16	87	7 5	15 57.92	+22 21.4	1.501	2.164	24.7	19.3	117 E	67	42
5 26	12 33.09	-28 44.8	1.978	2.744	16.4	21.4	130 E	16	87	7 10	15 57.59	+20 52.3	1.551	2.183	25.0	19.4	115 E	66	43
5 31	12 31.78	-28 30.9	2.044	2.762	17.3	21.5	126 E	16*	87	7 15	15 57.98	+19 21.1	1.604	2.203	25.2	19.5	112 E	64	45
162780 2000 XJ₃₈																			
12 23	13 35.22	-25 17.2	3.204	2.847	17.5	21.2	60 W	19*	51*	8 9	16 9.31	+11 45.3	1.905	2.297	25.8	20.0	99 E	55*	52
1 2	13 45.20	-27 16.1	3.101	2.869	18.4	21.2	67 W	18	60*	8 19	16 17.43	+ 8 54.1	2.037	2.333	25.6	20.2	94 E	51*	55
1 12	13 53.98	-29 12.8	2.991	2.891	19.2	21.2	75 W	16	68*	8 29	16 27.17	+ 6 13.6	2.175	2.368	25.2	20.3	88 E	48*	58*
1 22	14 1.30	-31 7.1	2.875	2.912	19.6	21.1	82 W	14	76*	9 8	16 38.26	+ 3 45.4	2.315	2.403	24.6	20.5	83 E	45*	58*
2 1	14 6.82	-32 58.2	2.757	2.932	19.6	21.0	90 W	12	82*	9 18	16 50.50	+ 1 30.2	2.458	2.436	23.7	20.6	77 E	42*	57*
2 11	14 10.21	-34 44.8	2.640	2.951	19.3	20.9	98 W	10	81	9 28	17 3.73	- 0 31.5	2.600	2.468	22.6	20.7	71 E	39*	54*
2 21	14 11.10	-36 24.9	2.526	2.970	18.6	20.8	107 W	9	80	10 8	17 17.77	- 2 19.4	2.740	2.499	21.4	20.8	66 E	37*	50*
3 2	14 9.16	-37 55.4	2.420	2.987	17.4	20.7	116 W	7	78	10 18	17 32.49	- 3 53.5	2.876	2.529	19.9	20.9	60 E	35*	45*
3 12	14 4.21	-39 11.9	2.326	3.003	15.8	20.6	125 W	6	77	10 28	17 47.78	- 5 14.1	3.008	2.558	18.4	21.0	54 E	33*	39*
3 22	13 56.30	-40 9.4	2.248	3.018	13.9	20.5	133 W	5	76	11 7	17 3.51	- 6 21.3	3.133	2.586	16.7	21.0	49 E	31*	33*
3 27	13 51.35	-40 29.1	2.216	3.025	12.9	20.4	137 W	5	76	11 17	18 19.58	- 7 15.5	3.249	2.612	14.9	21.1	43 E	28*	26*
4 1	13 45.86	-40 42.2	2.189	3.032	11.9	20.3	141 W	4	75	11 27	18 35.90	- 7 57.2	3.356	2.638	13.1	21.1	37 E	26*	19*
4 6	13 39.96	-40 48.0	2.168	3.039	11.0	20.3	145 W	4	75	12 7	18 52.35	- 8 26.9	3.452	2.662	11.1	21.1	31 E	23*	13*
4 11	13 33.78	-40 46.5	2.153	3.046	10.2	20.2	147 W	4	75	12 17	19 8.87	- 8 45.2	3.535	2.685	9.2	21.1	26 E	19*	6*
4 16	13 27.49	-40 37.6	2.145	3.052	9.6	20.2	149 E	4	75	12 27	19 25.36	- 8 52.9	3.605	2.707	7.4	21.1	21 E	15*	—
4 21	13 21.24	-40 21.6	2.143	3.058	9.3	20.2	150 E	5	76	1 6	19 41.73	- 8 50.7	3.660	2.728	5.7	21.1	16 E	10*	—
4 26	13 15.19	-39 59.0	2.148	3.064	9.3	20.2	150 E	5	76	1 16	19 57.93	- 8 39.5	3.700	2.748	4.4	21.0	12 E	4*	—
5 1	13 9.52	-39 30.8	2.159	3.069	9.6	20.2	149 E	5	76	242216 2003 RN₁₀									
5 6	13 4.33	-38 57.8	2.176	3.074	10.2	20.3	147 E	6	77	12 23	13 35.78	-45 9.6	1.886	1.590	31.4	19.3	57 W	—	51*
5 11	12 59.73	-38 21.3	2.200	3.079	10.9	20.3	145 E	7	78	12 28	13 55.76	-46 48.3	1.834	1.553	32.4	19.2	58 W	—	50*
5 16	12 55.78	-37 42.4	2.229	3.084	11.8	20.4	141 E	7	78	1 2	14 17.23	-48 18.3	1.783	1.516	33.4	19.2	58 W	—	50*
5 21	12 52.54	-37 2.1	2.264	3.089	12.7	20.5	138 E	8	79	1 7	14 40.25	-49 36.9	1.734	1.479	34.5	19.1	58 W	—	50*
5 26	12 50.03	-36 21.5	2.305	3.093	13.7	20.6	134 E	9	80	1 12	15 4.81	-50 41.3	1.687	1.442	35.5	19.0	58 W	—	50*
5 31	12 48.26	-35 41.7	2.350	3.097	14.6	20.6	130 E	9*	80	1 17	15 30.81	-51 28.9	1.642	1.406	36.6	18.9	59 W	—	49*
6 5	12 47.20	-35 3.4	2.399	3.101	15.4	20.7	126 E	10*	81	1 22	15 58.0								

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°	
242216 2003 RN₁₀ (continuation)									214607 2006 RF₂₂ (continuation)									
4 16	22 3.82	-3 45.7	1.195	1.028	53.0	18.0	55 W	20* 47*	5 6	14 21.11	-14 38.1	1.049	2.053	3.8	18.1	172 E	30	79
4 21	22 17.73	+0 55.2	1.201	1.036	52.8	18.0	55 W	24* 46*	5 11	14 15.44	-14 29.7	1.041	2.035	6.9	18.2	166 E	31	78
4 26	22 31.40	+5 32.2	1.210	1.047	52.4	18.0	55 W	27* 44*	5 16	14 10.05	-14 22.1	1.038	2.018	9.9	18.3	160 E	31	78
5 1	22 44.91	+10 2.6	1.223	1.062	51.8	18.1	56 W	30* 42*	5 21	14 5.13	-14 16.1	1.041	2.000	12.9	18.4	154 E	31	78
5 6	22 58.30	+14 24.2	1.239	1.080	51.0	18.1	56 W	32* 40*	5 26	14 0.86	-14 12.4	1.049	1.982	15.7	18.5	148 E	31	78
5 11	23 11.62	+18 35.2	1.258	1.101	50.2	18.2	57 W	35* 38*	5 31	13 57.39	-14 11.8	1.061	1.965	18.3	18.6	142 E	31	78
5 16	23 24.89	+22 34.3	1.279	1.125	49.2	18.2	57 W	38* 35*	6 10	13 53.16	-14 21.5	1.098	1.931	23.0	18.8	132 E	31	78
5 21	23 38.12	+26 20.6	1.302	1.151	48.3	18.3	58 W	40* 33*	6 20	13 52.78	-14 47.2	1.147	1.897	26.8	19.0	123 E	30*	79
5 31	0 4.50	+33 13.3	1.351	1.209	46.3	18.4	59 W	45* 28*	6 30	13 56.27	-15 29.3	1.204	1.865	29.9	19.2	114 E	28*	79
6 10	0 30.74	+39 13.2	1.401	1.273	44.3	18.6	61 W	49* 23*	7 10	14 3.36	-16 26.1	1.266	1.834	32.1	19.3	106 E	25*	80
6 20	0 56.71	+44 24.1	1.448	1.341	42.5	18.7	63 W	54* 19*	7 20	14 13.72	-17 35.1	1.331	1.804	33.7	19.4	100 E	22*	82
6 30	1 22.10	+48 51.1	1.490	1.412	40.9	18.8	65 W	58* 15*	7 30	14 27.05	-18 53.4	1.397	1.777	34.8	19.5	94 E	20*	83*
7 5	1 34.45	+50 49.9	1.509	1.449	40.1	18.9	67 W	60* 13*	8 9	14 43.05	-20 17.7	1.463	1.751	35.4	19.6	88 E	18*	81*
7 10	1 46.51	+52 40.0	1.525	1.486	39.4	18.9	68 W	62* 11*	8 19	15 1.50	-21 44.3	1.529	1.727	35.6	19.7	83 E	16*	77*
7 15	1 58.20	+54 22.0	1.538	1.523	38.8	19.0	70 W	64* 10*	8 29	15 22.23	-23 9.9	1.594	1.705	35.4	19.7	78 E	15*	72*
7 20	2 9.41	+55 56.8	1.550	1.560	38.1	19.0	71 W	65* 8	9 8	15 45.03	-24 30.5	1.657	1.687	35.1	19.8	74 E	14*	68*
7 25	2 20.06	+57 24.9	1.559	1.597	37.5	19.1	73 W	67* 7	9 18	16 9.76	-25 42.4	1.720	1.671	34.4	19.8	70 E	13*	64*
7 30	2 30.03	+58 46.9	1.565	1.634	36.9	19.1	75 W	68* 5	9 28	16 36.23	-26 42.0	1.782	1.657	33.6	19.9	66 E	13*	60*
8 4	2 39.20	+60 3.3	1.569	1.671	36.3	19.2	77 W	70* 4	10 8	17 4.18	-27 25.6	1.844	1.648	32.6	19.9	63 E	12*	57*
8 9	2 47.45	+61 14.7	1.570	1.707	35.7	19.2	80 W	70* 3	10 18	17 33.35	-27 50.3	1.906	1.641	31.5	19.9	59 E	13*	53*
8 14	2 54.62	+62 21.6	1.570	1.744	35.1	19.2	82 W	71* 2	10 28	18 3.42	-27 53.7	1.968	1.638	30.2	19.9	56 E	13*	50*
8 19	3 0.54	+63 24.1	1.567	1.780	34.5	19.3	84 W	71* 1	11 7	18 34.01	-27 34.2	2.032	1.638	28.9	20.0	53 E	14*	46*
8 24	3 5.00	+64 22.3	1.562	1.816	33.8	19.3	87 W	71* -	11 17	19 4.76	-26 51.4	2.096	1.641	27.4	20.0	50 E	14*	43*
8 29	3 7.83	+65 15.9	1.555	1.852	33.0	19.3	90 W	70* -	11 27	19 35.35	-25 45.6	2.161	1.648	25.8	20.0	47 E	15*	39*
9 3	3 8.84	+66 4.8	1.547	1.888	32.3	19.3	93 W	69 -	12 7	20 5.44	-24 18.4	2.228	1.658	24.1	20.1	43 E	16*	35*
9 8	3 7.84	+66 48.3	1.537	1.923	31.4	19.3	96 W	68 -	12 17	20 34.85	-22 31.8	2.296	1.671	22.4	20.1	40 E	17*	31*
9 13	3 4.66	+67 25.3	1.528	1.958	30.5	19.3	99 W	68 -	12 27	21 3.40	-20 28.6	2.365	1.688	20.6	20.1	37 E	17*	26*
9 18	2 59.21	+67 54.4	1.517	1.992	29.5	19.3	102 W	67 -	1 6	21 31.02	-18 11.5	2.434	1.707	18.7	20.1	34 E	17*	22*
9 23	2 51.50	+68 13.9	1.507	2.026	28.4	19.3	106 W	67 -	1 16	21 57.69	-15 43.8	2.503	1.728	16.8	20.2	30 E	17*	19*
9 28	2 41.72	+68 21.7	1.498	2.060	27.3	19.3	109 W	67 -	145656 4788 P-L									
9 30	2 37.31	+68 21.1	1.495	2.073	26.9	19.3	111 W	67 -	12 23	13 37.40	-9 18.2	2.152	1.945	27.2	20.7	65 W	35*	46*
10 2	2 32.66	+68 18.2	1.491	2.086	26.4	19.3	112 W	67 -	1 2	14 0.21	-10 41.2	1.985	1.874	29.3	20.5	69 W	34*	51*
10 4	2 27.80	+68 12.9	1.489	2.100	25.9	19.3	114 W	67 -	1 12	14 24.45	-11 55.7	1.822	1.804	31.5	20.3	73 W	33	57*
10 6	2 22.77	+68 5.1	1.486	2.113	25.4	19.2	115 W	67 -	1 22	14 50.37	-12 58.8	1.663	1.733	33.6	20.1	77 W	32	62*
10 8	2 17.61	+67 54.7	1.484	2.126	24.9	19.2	116 W	67 -	1 27	15 4.04	-13 24.8	1.586	1.698	34.7	20.0	79 W	32	64*
10 10	2 12.38	+67 41.7	1.482	2.139	24.4	19.2	118 W	67 -	2 1	15 18.23	-13 46.5	1.512	1.663	35.8	19.9	81 W	31	66*
10 12	2 7.11	+67 25.9	1.481	2.152	23.9	19.2	119 W	68 -	2 6	15 32.97	-14 3.3	1.439	1.628	36.9	19.7	82 W	31	68*
10 14	2 1.85	+67 7.4	1.480	2.165	23.4	19.2	121 W	68 -	2 11	15 48.30	-14 14.4	1.369	1.594	38.0	19.6	83 W	31	70*
10 16	1 56.64	+66 46.1	1.480	2.177	22.9	19.2	122 W	68 -	2 16	16 4.25	-14 19.3	1.302	1.560	39.1	19.5	85 W	31	71*
10 18	1 51.54	+66 22.1	1.480	2.190	22.4	19.2	123 W	69 -	2 21	16 20.84	-14 17.1	1.238	1.526	40.3	19.4	86 W	31	72*
10 20	1 46.57	+65 55.3	1.481	2.203	21.9	19.2	124 W	69 -	2 26	16 38.08	-14 7.1	1.178	1.493	41.4	19.2	87 W	31*	73*
10 22	1 41.78	+65 26.0	1.483	2.215	21.4	19.2	126 E	70 -	3 2	16 55.98	-13 48.7	1.120	1.461	42.7	19.1	87 W	31*	74*
10 24	1 37.20	+64 54.2	1.485	2.228	21.0	19.2	127 E	70 -	3 7	17 14.52	-13 21.0	1.067	1.430	43.9	19.0	88 W	32*	74*
10 26	1 32.84	+64 19.9	1.488	2.240	20.5	19.2	128 E	71 -	3 12	17 33.70	-12 43.7	1.018	1.400	45.2	18.9	88 W	32*	74*
10 28	1 28.74	+63 43.5	1.492	2.253	20.1	19.2	129 E	71 -	3 17	17 53.46	-11 56.3	0.973	1.371	46.5	18.8	88 W	33*	74*
11 2	1 19.66	+62 3.4	1.505	2.283	19.1	19.3	131 E	73 2	3 22	18 13.75	-10 58.7	0.933	1.343	47.9	18.7	88 W	33*	73*
11 7	1 12.34	+60 12.9	1.524	2.313	18.4	19.3	133 E	75 4	4 1	18 55.49	-8 34.1	0.865	1.292	50.6	18.5	87 W	34*	71*
11 12	1 6.76	+58 14.7	1.548	2.343	17.8	19.3	134 E	77 6	4 11	19 38.08	-5 36.4	0.816	1.248	53.2	18.4	86 W	36*	68*
11 17	1 2.83	+56 11.7	1.579	2.373	17.5	19.4	134 E	79 8	4 21	20 20.52	-2 17.5	0.784	1.213	55.6	18.3	84 W	37*	65*
11 22	1 0.42	+54 6.7	1.615	2.401	17.5	19.5	133 E	81 10	4 26	20 41.35	-0 34.8	0.773	1.199	56.5	18.3	84 W	37*	64*
11 27	0 59.36	+52 2.5	1.658	2.430	17.6	19.5	132 E	83 12	5 1	21 1.77	+1 7.3	0.766	1.188	57.3	18.3	83 W	38*	62*
12 2	0 59.47	+50 1.0	1.706	2.458	17.9	19.6	130 E	85 14	5 6	21 21.69	+2 47.0	0.762	1.180	57.9	18.3	82 W	38*	61*
12 7	1 0.59	+48 4.1	1.761	2.485	18.4	19.8	127 E	87 16	5 11	21 41.06	+4 22.9	0.760	1.174	58.3	18.3	82 W	39*	59*
12 12	1 2.58	+46 13.1	1.821	2.513	18.8	19.9	124 E	89 18	5 16	21 59.79	+5 53.7	0.760	1.172	58.6	18.3	82 W	39*	58*
12 17	1 5.34	+44 28.9	1.886	2.539	19.4	20.0	121 E	89 20	5 21	22 17.84	+7 18.5	0.762	1.172	58.6	18.3	81 W	40*	57*
12 22	1 8.75	+42 52.1	1.955	2.565	19.8	20.1	118 E	88 21*	5 26	22 35.17	+8 36.3	0.764	1.176	58.4	18.3	82 W	41*	55*
12 27	1 12.72	+41 23.2	2.029	2.591	20.3	20.2	114 E	86 22*	5 31	22 51.73	+9 46.8	0.768	1.182	58.1	18.3	82 W	41*	54*
1 1	1 17.16	+40 2.0	2.107	2.617	20.6	20.3	110 E	85 23*	6 10	23 22.52	+11 44.5	0.774	1.204	56.9	18.3	83 W	44*	52
1 6	1 22.01	+38 48.6	2.187	2.642	20.9	20.4	107 E	84 24*	6 20	23 50.02	+13 10.6	0.779	1.236	55.1	18.3	86 W	46*	51
1 11	1 27.22	+37 42.5	2.271	2.666	21.1	20.5	103 E	83 24*	6 30	0 13.98	+14 4.3	0.781	1.277	52.8	18.3	90 W	50*	50
1 16	1 32.74	+36 43.4	2.357	2.690	21.2	20.6	99 E	82 24*	7 10	0 34.17	+14 25.1	0.778	1.326	49.9	18.3	94 W	53*	50
214607 2006 RF₂₂									7 20	0 50.25	+14 12.5	0.772	1.381	46.4	18.3	100 W	57*	50
12 23	13 37.39	-7 8.5	2.767	2.522	20.8	21.3	65 W	37* 45*	7 30	1 1.82	+13 24.6	0.762	1.441	42.2	18.2	108 W	58*	51
1 2	13 50.80	-8 27.7	2.611	2.490	2													

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°
145656 4788 P-L										99935 2002 AV₄									
<i>(continuation)</i>										<i>(continuation)</i>									
10 18	0 22.78	5 20.5	1.037	1.993	11.2	18.7	157 E	40	69	4 16	14 8.42	-21 41.4	0.623	1.616	8.5	16.5	166 W	23	86
10 28	0 18.38	6 21.0	1.162	2.063	15.6	19.2	146 E	39	70	4 21	13 54.54	-22 13.7	0.572	1.571	6.6	16.2	170 E	23	86
11 7	0 17.02	6 46.5	1.305	2.131	18.9	19.6	136 E	38	71	4 26	13 38.03	-22 39.9	0.527	1.525	8.3	16.0	167 E	22	87
11 12	0 17.41	6 48.2	1.383	2.166	20.2	19.8	131 E	38	71	5 1	13 19.02	-22 56.9	0.489	1.478	13.0	16.0	161 E	22	87
11 17	0 18.45	6 43.5	1.464	2.199	21.2	20.0	126 E	38	71	5 6	12 57.91	-23 2.1	0.458	1.430	19.2	16.0	152 E	22	87
11 22	0 20.10	6 33.3	1.549	2.233	22.1	20.2	122 E	38	71	5 11	12 35.32	-22 53.5	0.433	1.380	26.1	16.0	143 E	22	87
11 27	0 22.31	6 18.1	1.636	2.266	22.7	20.3	117 E	39	70	5 16	12 12.00	-22 30.9	0.414	1.330	33.6	16.0	133 E	22	87
12 7	0 28.18	5 35.7	1.817	2.332	23.5	20.6	109 E	39	70	5 21	11 48.77	-21 55.5	0.400	1.278	41.2	16.1	124 E	23*	86
12 17	0 35.69	4 40.8	2.005	2.397	23.8	20.9	101 E	40	68*	5 26	11 26.29	-21 10.6	0.391	1.225	49.0	16.1	114 E	23*	85
12 27	0 44.53	3 36.6	2.198	2.460	23.5	21.2	93 E	41	64*	5 31	11 4.89	-20 19.4	0.384	1.172	56.9	16.2	105 E	21*	84
1 6	0 54.42	2 26.1	2.392	2.522	22.9	21.4	86 E	43	58*	6 5	10 44.59	-19 24.4	0.379	1.117	64.7	16.3	96 E	17*	83
89137 2001 UD₁₇										405198 2003 DU₂₁									
12 23	13 37.83	-13 36.5	2.256	2.010	25.9	20.8	63 W	31*	47*	12 23	13 38.47	-6 24.8	2.248	2.046	25.9	20.9	65 W	38*	44*
1 2	13 57.87	-15 11.9	2.125	1.980	27.4	20.6	68 W	30*	54*	1 2	13 50.42	-9 1.9	2.170	2.086	26.6	20.9	72 W	36*	52*
1 12	14 18.06	-16 38.5	1.993	1.951	28.9	20.5	73 W	28	60*	1 12	14 0.77	-11 34.2	2.086	2.126	27.0	20.8	79 W	33	61*
1 22	14 38.31	-17 54.9	1.861	1.922	30.1	20.4	78 W	27	67*	1 22	14 9.24	-14 2.6	1.997	2.168	26.9	20.8	86 W	31	71*
2 1	14 58.48	-18 59.1	1.730	1.893	31.1	20.2	84 W	26	73*	2 1	14 15.43	-16 27.2	1.907	2.209	26.4	20.7	94 W	29	79*
2 11	15 18.42	-19 49.4	1.600	1.866	31.9	20.0	89 W	25	79*	2 11	14 18.94	-18 48.2	1.817	2.250	25.3	20.6	103 W	26	83
2 21	15 37.88	-20 24.1	1.474	1.839	32.4	19.8	95 W	25	84*	2 21	14 19.32	-21 4.8	1.732	2.292	23.6	20.5	112 W	24	85
3 2	15 56.56	-20 41.7	1.352	1.813	32.5	19.6	100 W	24	85	3 2	14 16.13	-23 14.6	1.656	2.333	21.2	20.4	122 W	22	87
3 12	16 14.09	-20 40.6	1.235	1.788	32.2	19.4	106 W	24	85	3 12	14 9.16	-25 13.3	1.593	2.375	18.2	20.2	132 W	20	89
3 22	16 30.04	-20 20.0	1.124	1.765	31.4	19.1	113 W	25	84	3 17	14 4.28	-26 6.7	1.569	2.395	16.4	20.2	137 W	19	89
4 1	16 43.85	-19 39.0	1.021	1.744	30.0	18.9	119 W	25	84	3 22	13 58.53	-26 54.9	1.549	2.415	14.6	20.1	142 W	18	90
4 11	16 55.01	-18 37.5	0.927	1.724	27.8	18.6	127 W	26	83	3 27	13 52.03	-27 37.1	1.536	2.436	12.8	20.0	147 W	17	88
4 21	17 2.94	-17 16.3	0.844	1.706	24.8	18.2	134 W	28	81	4 1	13 44.92	-28 12.5	1.528	2.456	11.0	20.0	152 W	17	88
5 1	17 7.16	-15 37.7	0.773	1.690	21.0	17.9	143 W	29	80	4 6	13 37.39	-28 40.7	1.528	2.476	9.4	19.9	156 W	16	87
5 6	17 7.83	-14 43.3	0.743	1.683	18.8	17.7	147 W	30	79	4 11	13 29.65	-29 1.5	1.534	2.496	8.2	19.9	159 W	16	87
5 11	17 7.55	-13 46.6	0.717	1.677	16.4	17.6	152 W	31	78	4 16	13 21.90	-29 14.9	1.548	2.516	7.6	19.9	161 E	16	87
5 16	17 6.37	-12 48.7	0.695	1.671	14.0	17.4	156 W	32	77	4 21	13 14.37	-29 21.5	1.568	2.536	7.8	20.0	160 E	16	87
5 21	17 4.38	-11 51.0	0.677	1.666	11.6	17.3	161 W	33	76	4 26	13 7.25	-29 22.1	1.596	2.556	8.6	20.0	158 E	16	87
5 26	17 1.73	-10 54.9	0.663	1.661	9.5	17.1	164 W	34	75	5 1	13 0.72	-29 17.7	1.630	2.575	9.8	20.2	154 E	16	87
5 31	16 58.62	-10 2.1	0.654	1.657	8.2	17.0	167 W	35	74	5 6	12 54.92	-29 9.5	1.671	2.595	11.2	20.3	150 E	16	87
6 5	16 55.26	-9 14.3	0.650	1.654	8.1	17.0	167 W	36	73	5 11	12 49.91	-28 58.9	1.717	2.614	12.6	20.4	146 E	16	87
6 10	16 51.88	-8 32.7	0.650	1.651	9.4	17.1	165 E	36	73	5 16	12 45.75	-28 46.8	1.769	2.633	14.0	20.5	141 E	16	87
6 15	16 48.69	-7 58.6	0.655	1.649	11.5	17.2	161 E	37	72										
6 20	16 45.92	-7 32.6	0.664	1.648	13.9	17.3	157 E	37	72										
6 30	16 42.33	-7 6.5	0.694	1.648	19.0	17.6	148 E	38	71										
7 10	16 42.14	-7 12.5	0.738	1.650	23.5	17.8	140 E	38	71										
7 20	16 45.64	-7 44.5	0.794	1.655	27.2	18.1	132 E	37	72										
7 25	16 48.78	-8 8.1	0.826	1.658	28.8	18.2	128 E	37	72										
7 30	16 52.80	-8 35.2	0.860	1.662	30.2	18.4	125 E	36	73										
8 4	16 57.65	-9 5.1	0.896	1.667	31.3	18.5	121 E	36	73										
8 9	17 3.26	-9 56.6	0.935	1.673	32.3	18.6	118 E	35	74										
8 19	17 16.54	-10 42.0	1.017	1.685	33.8	18.9	112 E	34*	75										
8 29	17 32.23	-11 45.7	1.106	1.700	34.6	19.1	107 E	33*	76										
9 8	17 49.89	-12 43.2	1.200	1.717	35.1	19.3	102 E	32*	77										
9 18	18 9.10	-13 31.0	1.301	1.736	35.1	19.5	97 E	31*	78										
9 28	18 29.56	-14 6.7	1.406	1.757	34.7	19.7	92 E	31*	77										
10 8	18 50.93	-14 28.5	1.515	1.780	34.1	19.9	88 E	30*	75*										
10 18	19 12.93	-14 35.5	1.629	1.804	33.3	20.0	83 E	30*	71*										
10 28	19 35.34	-14 27.4	1.745	1.829	32.2	20.2	79 E	30*	66*										
11 7	19 57.94	-14 4.3	1.864	1.856	30.9	20.3	74 E	31*	61*										
11 17	20 20.56	-13 26.9	1.985	1.883	29.5	20.4	70 E	31*	56*										
11 27	20 43.06	-12 36.1	2.106	1.911	27.9	20.6	65 E	32*	50*										
12 7	21 5.34	-11 33.2	2.227	1.940	26.2	20.7	60 E	32*	44*										
12 17	21 27.32	-10 19.5	2.347	1.970	24.4	20.8	56 E	33*	38*										
12 27	21 48.97	-8 56.5	2.464	1.999	22.5	20.8	51 E	32*	32*										
1 6	22 10.24	-7 25.7	2.579	2.029	20.5	20.9	46 E	31*	27*										
1 16	22 31.14	-5 48.7	2.688	2.059	18.5	21.0	42 E	29*	22*										
12 23	13 37.89	-7 17.0	2.602	2.366	22.2	20.9	65 W	37*	45*										
1 2	13 50.12	-8 40.9	2.424	2.319	23.8	20.8	72 W	36*	52*										
1 12	14 1.84	-10 1.9	2.239	2.269	25.2	20.6	79 W	35	60*										
1 22	14 12.87	-11 19.9	2.050	2.216	26.3	20.4	86 W	34	68*										
2 1	14 22.97	-12 35.0	1.859	2.160	27.1	20.1	94 W	32	75*										
2 11	14 31.82	-13 47.8	1.668	2.100	27.4	19.8	101 W	31	78										
2 21	14 39.00	-14 58.9	1.480	2.036	27.2	19.5	109 W	30	79										
3 2	14 43.91	-16 9.3	1.298	1.969	26.4	19.1	118 W	29	80										
3 12	14 45.75	-17 20.4	1.123	1.898	24.6	18.7	127 W	28	81										
3 17	14 45.19	-17 56.6	1.040	1.861	23.3	18.4	132 W	27	82										
3 22	14 43.40	-18 33.5	0.960	1.822	21.7	18.2	137 W	26	83										
3 27	14 40.20	-19 11.0	0.883	1.783	19.8	17.9	143 W	26	83										
4 1	14 35.34	-19 49.1	0.811	1.743	17.4	17.6	148 W	25	84										

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°
405198 2003 DU₂₁										6569 Ondaatje									
<i>(continuation)</i>										<i>(continuation)</i>									
5 21	12 42.47	-28 34.4	1.826	2.652	15.3	20.7	136 E	16	87	8 29	20 33.38	-59 3.9	0.482	1.348	37.5	17.0	126 E	—	57
5 26	12 40.06	-28 22.5	1.888	2.671	16.4	20.8	132 E	17	88	9 3	20 39.83	-59 25.4	0.518	1.360	38.6	17.2	123 E	—	57
5 31	12 38.49	-28 11.8	1.953	2.690	17.5	20.9	127 E	17*	88	9 8	20 47.32	-59 25.5	0.555	1.372	39.4	17.4	120 E	—	57
6 5	12 37.72	-28 3.1	2.022	2.708	18.4	21.0	123 E	16*	88	9 13	20 55.66	-59 7.2	0.593	1.385	40.0	17.6	118 E	—	57
6 10	12 37.70	-27 56.5	2.094	2.726	19.1	21.2	118 E	16*	88	9 18	21 4.70	-58 33.1	0.632	1.398	40.4	17.7	116 E	—	57
6 15	12 38.37	-27 52.4	2.168	2.745	19.7	21.3	114 E	15*	88	9 23	21 14.27	-57 45.3	0.671	1.412	40.7	17.9	113 E	—	58
6 20	12 39.70	-27 51.0	2.244	2.763	20.2	21.4	110 E	14*	88	9 28	21 24.22	-56 45.7	0.711	1.426	40.8	18.0	112 E	—	59
6 25	12 41.62	-27 52.2	2.322	2.780	20.6	21.5	106 E	12*	88	10 3	21 34.41	-55 36.0	0.751	1.440	40.8	18.2	110 E	—	60
451043 2008 YB₂										944 Hidalgo									
12 23	13 40.07	+11 14.5	1.664	1.665	34.4	20.9	73 W	55*	33*	12 23	13 40.43	-0 31.9	4.379	4.103	12.8	17.8	67 W	44*	40*
1 2	13 58.83	+ 9 12.6	1.604	1.688	34.6	20.9	77 W	54*	39*	1 2	13 44.58	- 1 17.4	4.286	4.163	13.3	17.8	76 W	44	49*
1 12	14 15.66	+ 7 20.9	1.539	1.714	34.7	20.8	82 W	52	46*	1 12	13 47.46	- 1 55.5	4.186	4.222	13.4	17.8	85 W	43	57*
1 22	14 30.34	+ 5 39.6	1.472	1.741	34.4	20.8	88 W	51	52*	1 22	13 48.92	- 2 26.1	4.083	4.281	13.2	17.8	95 W	43	64*
2 1	14 42.52	+ 4 8.3	1.401	1.771	33.7	20.7	94 W	49	57*	2 1	13 48.83	- 2 49.3	3.981	4.339	12.7	17.7	105 W	42	67
2 11	14 51.82	+ 2 45.7	1.328	1.802	32.5	20.6	101 W	48	61*	2 11	13 47.11	- 3 5.3	3.885	4.398	11.7	17.6	115 W	42	67
2 21	14 57.78	+ 1 29.9	1.257	1.835	30.6	20.4	109 W	46	63	2 21	13 43.75	- 3 14.8	3.802	4.455	10.3	17.6	126 W	42	67
3 2	14 59.87	+ 0 18.5	1.188	1.869	28.0	20.3	118 W	45	64	3 2	13 38.83	- 3 18.4	3.736	4.512	8.6	17.5	137 W	42	67
3 12	14 57.65	- 0 51.6	1.127	1.905	24.4	20.1	128 W	44	65	3 12	13 32.54	- 3 17.4	3.693	4.569	6.5	17.4	148 W	42	67
3 22	14 50.90	- 2 3.3	1.077	1.941	19.8	19.9	139 W	43	66	3 22	13 25.21	- 3 13.2	3.677	4.626	4.2	17.3	160 W	42	67
4 1	14 39.87	- 3 19.1	1.045	1.977	14.4	19.7	151 W	42	67	4 1	13 17.25	- 3 7.6	3.692	4.682	1.9	17.2	171 W	42	67
4 11	14 25.57	- 4 39.8	1.035	2.015	8.4	19.5	163 W	40	69	4 11	13 9.15	- 3 2.6	3.739	4.738	1.2	17.2	174 E	42	67
4 21	14 9.67	- 6 4.5	1.051	2.052	3.3	19.3	173 W	39	70	4 21	13 1.40	- 2 59.9	3.819	4.793	3.3	17.4	164 E	42	67
5 1	13 54.22	- 7 31.1	1.094	2.090	5.9	19.6	168 E	37	72	5 1	12 54.40	- 3 1.1	3.930	4.847	5.5	17.6	153 E	42	67
5 11	13 41.06	- 8 57.8	1.165	2.128	11.1	20.0	156 E	36	73	5 11	12 48.50	- 3 7.3	4.068	4.902	7.3	17.8	142 E	42	67
5 21	13 31.27	- 10 23.6	1.258	2.166	15.6	20.3	145 E	35	74	5 21	12 43.88	- 3 19.1	4.230	4.956	8.8	18.0	131 E	42	67
5 31	13 25.28	- 11 48.8	1.372	2.203	19.2	20.7	134 E	33	76	5 31	12 40.64	- 3 36.8	4.411	5.009	10.0	18.1	121 E	41*	68
6 10	13 22.96	- 13 14.0	1.501	2.240	21.9	21.0	125 E	32*	77	6 10	12 38.78	- 4 0.3	4.606	5.062	10.8	18.3	111 E	39*	68
6 20	13 23.89	- 14 39.6	1.642	2.277	23.7	21.3	116 E	29*	79	6 20	12 38.23	- 4 29.2	4.812	5.115	11.2	18.4	102 E	35*	68
6569 Ondaatje										411381 2010 VK₆₅									
12 23	13 40.27	+ 9 3.2	1.713	1.688	33.6	20.1	72 W	53*	35*	12 23	13 41.30	- 19 11.8	2.137	1.861	27.4	20.8	60 W	25*	49*
1 2	14 5.72	+ 8 38.6	1.603	1.660	35.0	20.0	76 W	53*	39*	1 2	14 0.77	- 19 38.4	2.076	1.902	28.2	20.8	66 W	25*	55*
1 12	14 31.56	+ 8 27.7	1.497	1.630	36.3	19.8	79 W	53*	42*	1 12	14 18.77	- 19 47.0	2.008	1.945	28.7	20.8	72 W	25	61*
1 22	14 57.73	+ 8 31.8	1.394	1.600	37.6	19.7	83 W	54	46*	1 22	14 35.07	- 19 36.4	1.934	1.989	29.0	20.8	79 W	25	68*
2 1	15 24.10	+ 8 52.1	1.296	1.570	38.8	19.5	86 W	54	48*	2 1	14 49.34	- 19 5.5	1.855	2.034	28.9	20.8	86 W	26	75*
2 11	15 50.52	+ 9 28.5	1.204	1.539	39.9	19.3	89 W	54	50*	2 11	15 1.28	- 18 12.9	1.773	2.079	28.3	20.7	93 W	27	81*
2 21	16 16.82	+ 10 20.3	1.117	1.509	40.9	19.1	91 W	55	52*	2 21	15 10.55	- 16 57.4	1.691	2.125	27.1	20.6	102 W	28	81
3 2	16 42.76	+ 11 25.8	1.035	1.479	42.0	19.0	94 W	56	52*	3 2	15 16.80	- 15 18.1	1.612	2.171	25.3	20.5	111 W	30	79
3 7	16 55.53	+ 12 2.7	0.996	1.464	42.5	18.9	95 W	57	52*	3 12	15 19.78	- 13 15.0	1.541	2.217	22.7	20.4	120 W	32	77
3 12	17 8.14	+ 12 41.6	0.958	1.449	43.0	18.8	96 W	58	51*	3 22	15 19.36	- 10 49.7	1.482	2.263	19.5	20.2	131 W	34	75
3 17	17 20.56	+ 13 22.1	0.922	1.435	43.5	18.7	97 W	58*	51*										
3 22	17 32.75	+ 14 3.6	0.886	1.421	44.0	18.6	98 W	59	50										
3 27	17 44.69	+ 14 45.4	0.851	1.407	44.5	18.5	99 W	60*	49										
4 1	17 56.36	+ 15 26.7	0.816	1.393	45.0	18.4	100 W	60*	49										
4 6	18 7.72	+ 16 6.4	0.782	1.380	45.4	18.3	101 W	61*	48										
4 11	18 18.79	+ 16 43.8	0.749	1.368	45.8	18.2	102 W	62*	47										
4 16	18 29.53	+ 17 18.0	0.716	1.356	46.2	18.1	103 W	62*	47										
4 21	18 39.92	+ 17 47.8	0.684	1.344	46.5	18.0	104 W	63*	46										
4 26	18 49.93	+ 18 12.0	0.651	1.333	46.8	17.9	105 W	63*	46										
5 1	18 59.54	+ 18 29.0	0.619	1.323	46.9	17.7	106 W	63*	46										
5 6	19 8.76	+ 18 37.0	0.587	1.314	46.9	17.6	108 W	64*	45										
5 11	19 17.58	+ 18 34.4	0.555	1.305	46.8	17.5	110 W	64	45										
5 16	19 25.95	+ 18 18.9	0.523	1.297	46.5	17.3	111 W	63	46										
5 21	19 33.86	+ 17 47.7	0.491	1.290	46.0	17.2	114 W	63	46										
5 26	19 41.25	+ 16 57.3	0.460	1.284	45.1	17.0	116 W	62	47										
5 31	19 48.11	+ 15 43.5	0.429	1.279	43.9	16.8	119 W	61	48										
6 5	19 54.43	+ 14 1.3	0.399	1.274	42.2	16.6	122 W	59	50										
6 10	20 0.16	+ 11 45.1	0.371	1.271	40.0	16.3	126 W	57	52										
6 15	20 5.24	+ 8 48.3	0.344	1.269	37.1	16.1	131 W	54	55										
6 20	20 9.60	+ 5 3.9	0.319	1.267	33.5	15.8	137 W	50	59										
6 25	20 13.20	+ 0 26.1	0.298	1.267	29.0	15.6	143 W	45	64										
6 30	20 16.03	- 5 7.4	0.281	1.268	23.7	15.3	150 W	40	69										
7 5	20 18.10	- 11 31.4	0.269	1.269	17.7	15.0	158 W	33	76										
7 10	20 19.41	- 18 31.8	0.263	1.272	11.9	14.7	165 W	26	83										
7 12	20 19.74	- 21 25.1	0.262	1.273	10.0	14.7	167 W	24	85										
7 14	20 19.95	- 24 18.8	0.262	1.275	8.7	14.6	169 W	21	88										
7 16	20 20.07	- 27 10.9	0.264	1.277	8.3	14.6	170 W	18	89										
7 18	20 20.10	- 29 59.8	0.266	1.278	8.9	14.7	169 W	15	86										
7 20	20 20.05	- 32 43.8	0.270	1.280	10.3	14.8	167 W	12	83										
7 22	20 19.95	- 35 21.5	0.274	1.283	12.1	14.9	165 W	10	81										
7 24	20 19.81	- 37 51.6	0.280	1.285	14.2	15.0	162 W	7	78										
7 26	20 19.67	- 40 13.2	0.286	1.287	16.3	15.1	159 E	5	76										
7 28	20 19.53	- 42 25.8	0.294	1.290	18.3	15.2	156 E	3	74										
7 30	20 19.42	- 44 29.0	0.302	1.293	20.3	15.4	154 E	1	72										
8 4	20 19.42	- 48 55.5	0.325	1.300	24.9	15.7	147 E	—	67										
8 9	20 20.05	- 52 25.2	0.351	1.308	28.6	16.0	142 E	—	64										
8 14	20 21.57	- 55 3.9	0.381	1.317	31.7	16.3	137 E	—	61										
8 19	20 24.21	- 56 58.8	0.413	1.327	34.2	16.5	133 E	—	59										
8 24	20 28.14	- 58 16.7	0.447	1.337	36.1	16.8	129 E	—	58										

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°
411381 2010 VK₆₅										2055 Dvořák									
<i>(continuation)</i>																			
3 27	15 17.88	-9 29.9	1.458	2.286	17.6	20.1	136 W	36	73	12 23	13 42.42	-17 29.7	1.952	1.703	30.2	16.7	61 W	27*	48*
4 1	15 15.63	-8 6.5	1.440	2.308	15.6	20.1	142 W	37	72	1 2	14 5.49	-21 27.9	1.849	1.679	31.9	16.6	64 W	23*	54*
4 6	15 12.66	-6 40.7	1.427	2.331	13.5	20.0	147 W	38	71	1 12	14 29.61	-25 28.5	1.750	1.657	33.4	16.5	68 W	20*	60*
4 11	15 9.07	-5 13.9	1.420	2.354	11.4	19.9	152 W	40	69	1 22	14 54.98	-29 29.2	1.655	1.638	34.8	16.4	72 W	16	65*
4 16	15 4.98	-3 47.5	1.419	2.377	9.4	19.9	157 W	41	68	1 27	15 8.19	-31 28.7	1.610	1.629	35.4	16.3	73 W	14	67*
4 21	15 0.51	-2 23.3	1.425	2.399	7.7	19.8	161 W	43	66	2 1	15 21.78	-33 26.9	1.566	1.622	36.0	16.3	75 W	12	69*
4 26	14 55.81	-1 2.8	1.439	2.422	6.6	19.8	164 W	44	65	2 6	15 35.76	-35 23.4	1.524	1.615	36.5	16.2	77 W	10	70*
5 1	14 51.04	+0 12.3	1.459	2.444	6.5	19.9	164 W	45	64	2 11	15 50.15	-37 17.7	1.483	1.609	36.9	16.2	78 W	8	71*
5 6	14 46.36	+1 20.8	1.487	2.466	7.2	20.0	162 E	46	63	2 16	16 4.96	-39 9.2	1.444	1.604	37.4	16.1	80 W	6	71*
5 11	14 41.89	+2 21.8	1.521	2.488	8.6	20.1	158 E	47	62	2 21	16 20.20	-40 57.3	1.407	1.599	37.7	16.1	82 W	4	71*
5 21	14 34.04	+3 59.3	1.609	2.532	11.8	20.4	149 E	49	60	2 26	16 35.83	-42 41.4	1.371	1.596	38.0	16.0	83 W	2	71*
5 31	14 28.20	+5 3.3	1.720	2.575	14.9	20.7	139 E	50	59	3 2	16 51.85	-44 21.0	1.337	1.593	38.3	16.0	85 W	1*	70*
6 10	14 24.72	+5 36.8	1.849	2.618	17.3	20.9	130 E	51	58	3 7	17 8.21	-45 55.6	1.304	1.592	38.5	15.9	87 W	—	69*
6 20	14 23.64	+5 44.5	1.992	2.660	19.2	21.2	121 E	51	58	3 12	17 24.86	-47 24.6	1.273	1.591	38.6	15.9	88 W	—	68*
6 30	14 24.82	+5 31.6	2.147	2.701	20.4	21.4	112 E	50*	58	3 17	17 41.73	-48 47.8	1.243	1.591	38.7	15.8	90 W	—	67*
8035 1992 TB																			
12 23	13 41.61	-37 30.1	0.773	0.856	74.1	18.8	57 W	7*	51*	3 22	17 58.72	-50 4.9	1.214	1.592	38.7	15.8	92 W	—	66*
12 28	14 17.66	-36 22.4	0.781	0.824	75.5	18.8	54 W	8*	48*	3 27	18 15.71	-51 15.9	1.187	1.594	38.7	15.7	93 W	—	65*
1 2	14 53.00	-34 38.6	0.794	0.795	76.4	18.8	52 W	9*	46*	4 1	18 32.55	-52 20.8	1.161	1.597	38.6	15.7	95 W	—	64*
1 7	15 27.12	-32 24.1	0.813	0.770	76.7	18.8	50 W	11*	43*	4 6	18 49.10	-53 19.8	1.136	1.601	38.4	15.6	97 W	—	63*
1 12	15 59.73	-29 46.2	0.839	0.749	76.3	18.8	48 W	12*	41*	4 11	19 5.22	-54 13.2	1.112	1.606	38.1	15.6	99 W	—	62
1 14	16 12.31	-28 38.2	0.850	0.742	75.9	18.8	47 W	13*	40*	4 16	19 20.73	-55 1.7	1.089	1.611	37.8	15.5	101 W	—	61
1 16	16 24.63	-27 28.2	0.863	0.736	75.4	18.8	46 W	14*	39*	4 21	19 35.44	-55 45.9	1.067	1.617	37.3	15.5	103 W	—	60
1 18	16 36.69	-26 16.8	0.877	0.731	74.8	18.7	46 W	14*	38*	4 26	19 49.17	-56 26.5	1.045	1.625	36.8	15.4	105 W	—	60
1 20	16 48.48	-25 4.3	0.891	0.727	74.1	18.7	45 W	15*	38*	5 1	20 1.73	-57 4.1	1.025	1.633	36.2	15.4	107 W	—	59
1 22	17 0.02	-23 51.2	0.906	0.724	73.3	18.7	45 W	16*	37*	5 6	20 12.96	-57 39.3	1.005	1.641	35.5	15.3	109 W	—	58
1 27	17 27.78	-20 48.3	0.948	0.722	70.8	18.8	44 W	18*	35*	5 11	20 22.70	-58 12.8	0.986	1.651	34.7	15.3	112 W	—	58
2 1	17 54.06	-17 49.0	0.993	0.725	67.9	18.8	43 W	19*	34*	5 16	20 30.76	-58 45.0	0.968	1.661	33.7	15.2	114 W	—	57
2 6	18 18.95	-14 56.9	1.041	0.735	64.7	18.8	42 W	21*	32*	5 21	20 36.95	-59 16.0	0.951	1.672	32.7	15.2	117 W	—	57
2 11	18 42.55	-12 14.1	1.092	0.751	61.5	18.9	42 W	22*	31*	5 26	20 41.11	-59 45.5	0.935	1.684	31.6	15.1	120 W	—	56
2 16	19 4.92	-9 41.6	1.143	0.773	58.3	18.9	42 W	23*	30*	5 31	20 43.10	-60 13.0	0.921	1.696	30.3	15.1	122 W	—	56
2 21	19 26.14	-7 19.5	1.194	0.799	55.3	19.0	42 W	24*	30*	6 5	20 42.81	-60 37.1	0.908	1.708	29.0	15.0	125 W	—	55
3 2	20 5.31	-3 4.4	1.293	0.861	50.0	19.2	42 W	25*	29*	6 10	20 40.20	-60 56.5	0.898	1.722	27.6	15.0	128 W	—	55
3 12	20 40.56	+0 36.8	1.384	0.932	45.9	19.4	42 W	26*	30*	6 15	20 35.29	-61 9.2	0.889	1.736	26.1	14.9	131 W	—	55
3 22	21 12.42	+3 50.5	1.463	1.008	42.8	19.6	43 W	26*	31*	6 20	20 28.23	-61 12.7	0.884	1.750	24.7	14.9	134 W	—	55
4 1	21 41.35	+6 42.0	1.530	1.085	40.6	19.8	45 W	27*	32*	6 22	20 24.88	-61 10.9	0.882	1.756	24.1	14.9	135 W	—	55
4 11	22 7.74	+9 15.1	1.581	1.162	39.2	20.0	47 W	28*	34*	6 24	20 21.25	-61 7.2	0.881	1.762	23.5	14.9	136 W	—	55
4 21	22 31.94	+11 32.6	1.617	1.236	38.4	20.1	50 W	29*	36*	6 26	20 17.40	-61 1.2	0.881	1.768	23.0	14.9	137 W	—	55
5 1	22 54.19	+13 36.5	1.638	1.308	38.0	20.3	53 W	31*	38*	6 28	20 13.35	-60 53.0	0.881	1.774	22.4	14.8	138 W	—	55
5 11	23 14.66	+15 27.5	1.642	1.377	37.8	20.4	57 W	33*	40*	6 30	20 9.15	-60 42.4	0.882	1.780	21.9	14.8	139 W	—	55
5 21	23 33.47	+17 6.4	1.631	1.442	37.8	20.5	61 W	35*	42*	7 2	20 4.83	-60 29.4	0.883	1.786	21.4	14.8	140 W	—	56
5 31	23 50.61	+18 33.0	1.605	1.503	37.9	20.5	66 W	38*	43*	7 4	20 0.45	-60 13.8	0.885	1.793	21.0	14.8	141 W	—	56
6 10	0 6.05	+19 46.7	1.565	1.560	37.9	20.6	71 W	43*	43*	7 6	19 56.03	-59 55.7	0.888	1.799	20.6	14.8	142 W	—	56
6 20	0 19.66	+20 46.4	1.512	1.614	37.8	20.6	77 W	47*	43*	7 8	19 51.63	-59 35.1	0.891	1.805	20.2	14.8	142 W	—	56
6 30	0 31.19	+21 30.1	1.448	1.663	37.3	20.5	83 W	53*	42	7 10	19 47.27	-59 12.0	0.895	1.812	19.9	14.8	143 W	—	57
7 10	0 40.35	+21 55.0	1.375	1.708	36.5	20.4	90 W	59*	42	7 12	19 43.00	-58 46.5	0.900	1.818	19.6	14.9	143 W	—	57
7 15	0 43.91	+21 59.2	1.336	1.730	35.9	20.4	94 W	62*	42	7 14	19 38.85	-58 18.5	0.905	1.825	19.4	14.9	143 W	—	58
7 20	0 46.70	+21 57.1	1.295	1.750	35.1	20.3	98 W	64*	42	7 16	19 34.85	-57 48.4	0.912	1.831	19.3	14.9	144 E	—	58
7 25	0 48.66	+21 47.8	1.253	1.769	34.2	20.2	102 W	66*	42	7 18	19 31.03	-57 16.1	0.918	1.838	19.2	14.9	144 E	—	59
7 30	0 49.72	+21 30.3	1.211	1.788	33.0	20.2	106 W	66*	42	7 20	19 27.41	-56 41.7	0.926	1.845	19.1	14.9	144 E	—	59
8 4	0 49.81	+21 3.9	1.169	1.805	31.6	20.1	111 W	66	43	7 25	19 19.38	-55 8.3	0.948	1.862	19.2	15.0	143 E	—	61
8 9	0 48.87	+20 27.2	1.128	1.822	29.9	20.0	116 W	65	44	7 30	19 12.94	-53 26.3	0.976	1.879	19.7	15.1	141 E	—	63
8 14	0 46.85	+19 39.3	1.089	1.837	27.9	19.8	122 W	65	44	8 4	19 8.11	-51 38.6	1.007	1.896	20.4	15.2	139 E	—	64
8 19	0 43.71	+18 38.8	1.052	1.852	25.6	19.7	128 W	64	45	8 9	19 4.85	-49 47.9	1.044	1.914	21.2	15.3	137 E	—	66
8 24	0 39.44	+17 24.7	1.017	1.866	23.0	19.6	134 W	62	47	8 14	19 3.05	-47 56.3	1.085	1.932	22.1	15.5	134 E	—	68
8 29	0 34.11	+15 56.5	0.987	1.878	20.1	19.4	140 W	61	48	8 19	19 2.56	-46 5.6	1.130	1.950	23.1	15.6	131 E	—	70
9 3	0 27.80	+14 14.2	0.962	1.890	16.8	19.3	147 W	59	50	8 24	19 3.27	-44 17.3	1.180	1.968	24.0	15.8	128 E	1	72
9 8	0 20.66	+12 18.4	0.943	1.901	13.3	19.1	154 W	57	52	8 29	19 5.03	-42 32.2	1.233	1.986	24.8	15.9	124 E	2	73
9 13	0 12.89	+10 11.1	0.930	1.911	9.6	19.0	162 W	55	54	9 3	19 7.69	-40 51.0	1.290	2.005	25.6	16.0	121 E	4	75
9 18	0 4.75	+7 55.1	0.925	1.920	5.9	18.8	169 W	53	56	9 8	19 11.12	-39 14.0	1.350	2.023	26.2	16.2	117 E	6	77
9 23	23 56.53	+5 34.0	0.928	1.929	2.9	18.7	174 E	51	58	9 13	19 15.23	-37 41.1	1.414	2.042	26.8	16.3	114 E	7	78
9 28	23 48.52	+3 12.4	0.938	1.936	3.9	18.8	172 E	48	61	9 18	19 19.92	-36 12.2	1.479	2.060	27.2	16.4	111 E	9	80
10 3</																			

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°
15817 Lucianotesi (continuation)										363218 2001 VM₇₅ (continuation)									
1 12	14 50.35	-12 18.1	1.278	1.275	45.3	21.2	67 W	32*	51*	3 12	15 15.69	-29 55.6	1.693	2.315	22.6	20.4	117 W	15	86
1 17	15 8.02	-12 39.2	1.246	1.266	46.1	21.1	68 W	32*	53*	3 22	15 14.30	-29 10.2	1.616	2.353	19.8	20.3	127 W	16	87
1 22	15 25.96	-12 53.6	1.215	1.257	46.9	21.1	69 W	32*	54*	4 1	15 9.42	-28 0.7	1.553	2.390	16.3	20.1	138 W	17	88
1 27	15 44.14	-13 0.9	1.185	1.249	47.6	21.0	70 W	32*	55*	4 6	15 5.82	-27 16.4	1.528	2.408	14.3	20.0	144 W	18	89
2 1	16 2.52	-13 0.8	1.157	1.241	48.4	21.0	70 W	32*	57*	4 11	15 1.56	-26 25.9	1.509	2.427	12.1	19.9	150 W	19	90
2 6	16 21.07	-12 53.0	1.130	1.233	49.1	21.0	71 W	32*	58*	4 16	14 56.78	-25 29.6	1.495	2.445	9.7	19.9	156 W	20	89
2 11	16 39.76	-12 37.4	1.104	1.226	49.8	20.9	72 W	32*	59*	4 21	14 51.61	-24 28.0	1.488	2.462	7.4	19.8	162 W	21	88
2 16	16 58.53	-12 14.0	1.080	1.218	50.5	20.9	72 W	32*	59*	4 26	14 46.24	-23 22.2	1.487	2.480	5.0	19.7	168 W	22	87
2 21	17 17.34	-11 42.8	1.057	1.212	51.1	20.8	73 W	32*	60*	5 1	14 40.82	-22 13.3	1.494	2.497	3.0	19.6	173 W	23	86
2 26	17 36.12	-11 4.0	1.036	1.205	51.8	20.8	73 W	32*	60*	5 6	14 35.55	-21 2.8	1.509	2.514	2.4	19.6	174 E	24	85
3 2	17 54.83	-10 18.1	1.016	1.199	52.4	20.8	73 W	33*	61*	5 11	14 30.55	-19 52.3	1.530	2.531	4.0	19.7	170 E	25	84
3 7	18 13.42	-9 25.5	0.998	1.193	52.9	20.7	74 W	33*	61*	5 16	14 25.97	-18 43.1	1.559	2.548	6.1	19.9	164 E	26	83
3 12	18 31.86	-8 26.9	0.981	1.188	53.5	20.7	74 W	33*	61*	5 21	14 21.90	-17 36.7	1.595	2.564	8.3	20.0	159 E	27	82
3 17	18 50.11	-7 22.8	0.965	1.184	54.0	20.7	74 W	34*	61*	5 26	14 18.43	-16 34.0	1.638	2.580	10.3	20.2	153 E	28	81
3 22	19 8.14	-6 13.9	0.950	1.180	54.5	20.6	75 W	34*	61*	5 31	14 15.60	-15 36.1	1.686	2.596	12.2	20.3	147 E	29	80
3 27	19 25.92	-5 1.2	0.937	1.176	55.0	20.6	75 W	35*	61*	6 10	14 11.98	-13 56.9	1.799	2.628	15.5	20.6	136 E	31	78
4 1	19 43.43	-3 45.3	0.924	1.173	55.4	20.6	75 W	35*	61*	6 20	14 10.99	-12 40.7	1.930	2.658	18.0	20.9	126 E	32*	77
4 6	20 0.67	-2 27.2	0.913	1.171	55.7	20.6	75 W	35*	60*	6 30	14 12.46	-11 47.0	2.075	2.687	19.8	21.1	116 E	32*	76
4 11	20 17.63	-1 7.5	0.902	1.169	56.1	20.5	76 W	36*	60*	7 10	14 16.11	-11 13.3	2.229	2.716	20.9	21.3	108 E	31*	75
4 16	20 34.33	+0 12.8	0.891	1.168	56.4	20.5	76 W	36*	60*	85953 1999 FK₂₁									
4 21	20 50.75	+1 33.3	0.881	1.168	56.7	20.5	76 W	37*	59*	12 23	13 45.17	-14 13.6	1.349	1.227	44.6	20.9	61 W	30*	46*
4 26	21 6.91	+2 53.0	0.871	1.168	56.9	20.5	77 W	37*	58*	1	2 14 6.26	-15 31.8	1.267	1.249	46.0	20.8	66 W	29*	52*
5 1	21 22.80	+4 11.4	0.861	1.169	57.1	20.5	77 W	38*	58*	1 12	14 28.11	-16 40.0	1.170	1.258	47.6	20.7	71 W	28*	58*
5 6	21 38.45	+5 27.7	0.851	1.171	57.3	20.5	78 W	38*	57*	1 22	14 51.26	-17 36.7	1.061	1.254	49.5	20.6	76 W	27	64*
5 11	21 53.88	+6 41.5	0.841	1.173	57.4	20.4	78 W	39*	56*	2 1	15 16.52	-18 19.0	0.943	1.236	51.7	20.3	80 W	27	69*
5 21	22 24.09	+8 59.8	0.819	1.179	57.5	20.4	79 W	40*	55*	2 6	15 30.33	-18 33.1	0.881	1.222	52.9	20.2	82 W	26	71*
5 31	22 53.48	+11 1.9	0.795	1.188	57.5	20.4	81 W	42*	53*	2 11	15 45.25	-18 41.4	0.819	1.205	54.4	20.1	83 W	26	73*
6 10	23 22.10	+12 44.2	0.769	1.198	57.3	20.3	83 W	44*	51	2 16	16 1.61	-18 42.5	0.756	1.184	56.1	19.9	84 W	26	74*
6 15	23 36.12	+13 26.9	0.755	1.204	57.1	20.3	84 W	46*	51	2 21	16 19.85	-18 34.2	0.693	1.159	58.2	19.7	85 W	26	75*
6 20	23 49.94	+14 3.3	0.740	1.210	56.8	20.2	86 W	47*	50	2 26	16 40.54	-18 13.4	0.632	1.131	60.7	19.5	85 W	27*	76*
6 25	0 3.52	+14 32.8	0.724	1.217	56.5	20.2	87 W	49*	49	3 2	17 4.46	-17 35.4	0.572	1.099	63.9	19.4	85 W	27*	75*
6 30	0 16.85	+14 54.8	0.708	1.224	56.1	20.1	89 W	50*	49	3 7	17 32.60	-16 33.4	0.515	1.063	68.0	19.2	83 W	28*	73*
7 5	0 29.90	+15 8.9	0.691	1.232	55.6	20.1	90 W	52*	49	3 12	18 6.13	-14 57.8	0.464	1.023	73.2	19.0	80 W	29*	70*
7 10	0 42.66	+15 14.5	0.673	1.240	55.0	20.0	92 W	53*	49	3 14	18 21.30	-14 7.4	0.446	1.005	75.7	19.0	79 W	29*	68*
7 15	0 55.06	+15 11.1	0.655	1.248	54.4	19.9	94 W	54*	49	3 16	18 37.55	-13 9.0	0.430	0.987	78.5	19.0	77 W	29*	66*
7 20	1 7.04	+14 57.8	0.636	1.256	53.5	19.9	96 W	56*	49	3 18	18 54.91	-12 1.9	0.415	0.968	81.5	19.0	74 W	29*	64*
7 25	1 18.54	+14 33.9	0.616	1.264	52.6	19.8	99 W	57*	49	3 20	19 13.37	-10 45.7	0.402	0.949	84.7	19.0	72 W	29*	61*
7 30	1 29.49	+13 58.5	0.597	1.273	51.5	19.7	101 W	57*	50	3 22	19 32.85	-9 20.4	0.392	0.928	88.2	19.0	69 W	29*	59*
8 4	1 39.83	+13 11.1	0.577	1.282	50.2	19.6	104 W	57*	51	3 24	19 53.23	-7 46.7	0.384	0.907	92.0	19.1	65 W	29*	55*
8 9	1 49.45	+12 10.9	0.557	1.291	48.8	19.5	107 W	57*	52	3 26	20 14.34	-6 5.8	0.379	0.885	95.8	19.2	62 W	28*	52*
8 14	1 58.26	+10 57.0	0.538	1.299	47.1	19.4	110 W	56	53	3 28	20 35.94	-4 19.5	0.377	0.862	99.8	19.3	58 W	27*	48*
8 19	2 6.13	+9 28.6	0.518	1.308	45.2	19.3	114 W	54	55	3 30	20 57.75	-2 30.5	0.379	0.838	103.8	19.4	55 W	26*	45*
8 24	2 12.93	+7 45.1	0.500	1.317	43.0	19.2	117 W	53	56	4 1	21 19.50	-0 41.6	0.385	0.813	107.6	19.6	51 W	25*	41*
8 29	2 18.56	+5 46.4	0.483	1.326	40.6	19.0	121 W	51	58	4 3	21 40.89	+1 4.5	0.394	0.788	111.2	19.8	47 W	24*	37*
9 8	2 25.89	+1 5.3	0.453	1.344	35.2	18.8	130 W	46	63	4 5	22 1.68	+2 45.3	0.406	0.761	114.6	20.0	44 W	22*	34*
9 18	2 27.26	+4 23.9	0.433	1.361	29.1	18.5	139 W	41	68	4 7	22 21.67	+4 18.8	0.422	0.733	117.6	20.2	40 W	21*	31*
9 28	2 22.42	-10 11.8	0.424	1.377	23.5	18.3	147 W	35	74	4 9	22 40.74	+5 43.9	0.442	0.704	120.6	20.4	37 W	19*	28*
10 3	2 17.93	-12 58.9	0.426	1.385	21.4	18.3	150 W	32	77	4 11	22 58.82	+6 59.9	0.465	0.674	122.2	20.6	35 W	17*	25*
10 8	2 12.33	-15 33.1	0.431	1.393	20.2	18.3	151 W	29	80	4 16	23 39.71	+9 31.2	0.537	0.594	125.1	20.9	29 W	14*	20*
10 13	2 5.93	-17 49.0	0.440	1.400	20.0	18.3	151 W	27	82	4 21	0 15.42	+11 14.8	0.629	0.506	124.2	20.8	25 W	11*	16*
10 18	1 59.12	-19 42.3	0.453	1.407	20.8	18.4	150 W	25	84	4 26	0 48.15	+12 24.3	0.745	0.410	118.1	20.2	21 W	8*	13*
10 23	1 52.32	-21 10.0	0.470	1.414	22.2	18.6	147 W	24	85	5 1	1 21.44	+13 15.7	0.889	0.312	103.2	19.1	18 W	5*	10*
10 28	1 45.92	-22 11.8	0.491	1.421	24.1	18.7	144 E	23	86	5 3	1 36.15	+13 35.8	0.955	0.276	92.9	18.5	16 W	3*	9*
11 2	1 40.26	-22 48.6	0.514	1.427	26.2	18.9	141 E	22	87	5 5	1 52.40	+13 58.4	1.025	0.245	79.2	17.9	14 W	1*	7*
11 7	1 35.55	-23 2.5	0.540	1.433	28.3	19.1	137 E	22	87	5 7	2 10.60	+14 25.4	1.095	0.225	61.8	17.3	11 W	—	5*
11 12	1 31.94	-22 56.0	0.569	1.439	30.2	19.3	133 E	22	87	5 9	2 30.69	+14 57.8	1.161	0.220	42.4	16.8	8 W	—	2*
11 17	1 29.52	-22 31.8	0.600	1.444	32.1	19.4	129 E	22	87	5 11	2 51.86	+15 33.8	1.216	0.231	24.2	16.5	5 W	—	—
11 22	1 28.33	-21 52.8	0.632	1.449	33.7	19.6	125 E	23	86	5 13	3 13.03	+16 10.4	1.261	0.256	10.9	16.3	3 W	—	—
11 27	1 28.32	-21 1.5	0.667	1.454	35.2	19.8	122 E	24	85	5 15	3 33.45	+16 44.6	1.296	0.289	8.7	16.6	2 E	—	—
12 2	1 29.42	-20 0.3	0.702	1.458	36.4	19.9	119 E	25	84	5 17	3 52.82	+17 14.8	1.325	0.327	14.1	17.1	5 E	—	—
12 7	1 31.53	-18 51.2	0.739	1.462	37.5	20.1	115 E	26	83	5 19	4 11.11	+17 40.6	1.351	0.366	19.1	17.5	7 E	—	1*
12 12	1 34.58	-17 35.6	0.777	1.466	38.5	20.2	112 E	27	82	5 21	4 28.38	+18 1.8	1.374						

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°
85953 1999 FK ₂₁										32039 2000 JO ₂₃									
<i>(continuation)</i>										<i>(continuation)</i>									
8 4	9 58.46	+ 9 57.1	2.141	1.204	13.9	21.0	17 E	—	11*	10 28	19 24.17	-19 29.5	1.586	1.640	35.8	18.1	75 E	25*	66*
8 9	10 11.64	+ 8 59.7	2.171	1.221	12.5	21.0	15 E	—	9*	11 7	19 50.68	-18 1.8	1.680	1.658	34.5	18.3	72 E	27*	61*
8 14	10 24.50	+ 8 1.5	2.196	1.235	11.2	21.0	14 E	—	8*	11 17	20 16.88	-16 22.0	1.777	1.678	33.1	18.4	68 E	28*	56*
8 19	10 37.09	+ 7 2.5	2.217	1.246	9.8	20.9	12 E	—	6*	11 27	20 42.66	-14 31.4	1.877	1.701	31.5	18.5	64 E	30*	50*
8 24	10 49.49	+ 6 2.7	2.234	1.253	8.5	20.9	11 E	—	5*	12 7	21 7.91	-12 31.2	1.978	1.725	29.9	18.6	61 E	31*	45*
8 29	11 1.74	+ 5 2.2	2.245	1.257	7.1	20.9	9 E	—	3*	12 17	21 32.60	-10 23.0	2.081	1.751	28.1	18.7	57 E	33*	39*
9 3	11 13.90	+ 4 0.9	2.252	1.258	5.8	20.8	7 E	—	1*	12 27	21 56.73	- 8 8.3	2.185	1.779	26.3	18.7	53 E	34*	34*
9 8	11 26.02	+ 2 58.9	2.254	1.255	4.4	20.7	6 E	—	—	1 6	22 20.29	- 5 48.9	2.289	1.809	24.3	18.8	49 E	34*	29*
9 13	11 38.15	+ 1 56.1	2.252	1.250	3.1	20.7	4 E	—	—	1 16	22 43.34	- 3 26.5	2.392	1.839	22.4	18.9	45 E	33*	24*
9 18	11 50.34	+ 0 52.4	2.244	1.240	1.8	20.5	2 E	—	—	16851 1997 YU ₁									
9 23	12 2.65	+ 0 12.1	2.231	1.228	0.4	20.4	1 E	—	—	12 23	13 46.75	-30 29.2	3.559	3.129	15.2	21.4	57 W	14*	50*
9 28	12 15.13	- 1 17.4	2.214	1.212	0.9	20.4	1 W	—	—	1 2	13 57.32	-32 6.9	3.441	3.132	16.3	21.3	64 W	13*	57*
10 8	12 40.87	- 3 30.7	2.164	1.169	3.6	20.5	4 W	—	—	1 12	14 6.92	-33 43.0	3.315	3.133	17.2	21.3	71 W	11	65*
10 18	13 8.14	+ 5 48.0	2.094	1.112	6.3	20.4	7 W	1*	—	1 22	14 15.32	-35 17.2	3.181	3.133	17.9	21.2	78 W	10	72*
10 28	13 37.69	- 8 9.6	2.007	1.039	8.9	20.3	9 W	3*	—	2 1	14 22.19	-36 48.7	3.043	3.132	18.3	21.1	86 W	8	77*
11 7	14 10.56	-10 35.5	1.902	0.948	11.5	20.1	11 W	5*	—	2 11	14 27.23	-38 16.6	2.904	3.130	18.3	21.0	94 W	7	78
11 17	14 48.31	-13 5.1	1.782	0.837	13.7	19.8	12 W	5*	—	2 21	14 30.07	-39 39.2	2.766	3.127	18.0	20.9	102 W	5	76
11 22	15 9.70	-14 20.7	1.717	0.773	14.6	19.5	11 W	5*	—	3 2	14 30.35	-40 54.0	2.633	3.123	17.3	20.8	111 W	4	75
11 27	15 33.27	-15 35.8	1.648	0.703	15.1	19.3	11 W	4*	—	3 12	14 27.78	-41 57.6	2.509	3.118	16.1	20.6	119 W	3	74
12 2	15 59.58	-16 49.6	1.577	0.626	15.0	18.9	9 W	3*	—	3 22	14 22.23	-42 45.4	2.398	3.112	14.6	20.5	128 W	2	73
12 7	16 29.32	-18 0.5	1.501	0.541	13.9	18.4	8 W	1*	—	3 27	14 18.38	-43 1.6	2.349	3.108	13.8	20.4	132 W	2	73
12 12	17 3.43	-19 6.3	1.420	0.448	11.2	17.8	5 W	—	—	4 1	14 13.86	-43 11.9	2.304	3.104	12.8	20.3	136 W	2	73
12 17	17 43.11	-20 5.1	1.327	0.350	9.6	17.1	3 E	—	—	4 6	14 8.78	-43 15.6	2.264	3.100	11.9	20.3	140 W	2	73
12 22	18 29.12	-20 59.1	1.207	0.258	27.2	16.8	7 E	—	—	4 11	14 3.24	-43 12.2	2.230	3.096	11.0	20.2	144 W	2	73
12 27	19 16.28	-22 11.6	1.032	0.220	71.1	17.4	12 E	3*	4*	4 16	13 57.36	-43 1.5	2.202	3.091	10.2	20.1	147 W	2	73
12 28	19 24.37	-22 32.3	0.992	0.224	81.3	17.7	13 E	3*	5*	4 21	13 51.31	-42 43.2	2.180	3.086	9.6	20.0	149 E	2	73
12 29	19 31.71	-22 55.4	0.952	0.232	91.0	18.0	14 E	3*	6*	4 26	13 45.25	-42 17.7	2.165	3.081	9.3	20.0	151 E	3	74
12 30	19 38.27	-23 20.9	0.912	0.243	99.9	18.5	14 E	3*	6*	5 1	13 39.33	-41 45.3	2.156	3.075	9.2	20.0	151 E	3	74
12 31	19 44.08	-23 48.5	0.873	0.257	108.0	18.9	14 E	3*	7*	5 6	13 33.72	-41 6.9	2.153	3.069	9.4	20.0	150 E	4	75
1 1	19 49.20	-24 18.0	0.836	0.273	115.0	19.4	15 E	2*	7*	5 11	13 28.55	-40 23.4	2.158	3.063	10.0	20.0	148 E	5	76
1 2	19 53.73	-24 49.1	0.801	0.291	121.2	19.9	15 E	2*	8*	5 16	13 23.92	-39 35.8	2.168	3.057	10.7	20.1	146 E	5	76
1 3	19 57.74	-25 21.7	0.767	0.310	126.6	20.4	15 E	1*	8*	5 21	13 19.92	-38 45.4	2.185	3.050	11.7	20.1	142 E	6	77
1 4	20 1.32	-25 55.4	0.735	0.329	131.2	20.9	15 E	1*	8*	5 26	13 16.62	-37 53.2	2.207	3.043	12.7	20.2	139 E	7	78
1 5	20 4.54	-26 30.3	0.705	0.348	135.3	21.3	14 E	—	8*	5 31	13 14.05	-37 0.7	2.235	3.036	13.7	20.2	135 E	8	79
32039 2000 JO ₂₃										6 5	13 12.21	-36 8.7	2.268	3.029	14.7	20.3	131 E	9*	80
12 23	13 45.98	-16 26.3	2.572	2.252	22.3	19.5	60 W	28*	47*	6 10	13 11.11	-35 18.2	2.305	3.021	15.7	20.4	126 E	9*	81
1 2	14 2.84	-18 18.6	2.431	2.220	23.9	19.4	66 W	27*	54*	6 15	13 10.71	-34 30.0	2.346	3.013	16.6	20.4	122 E	10*	81
1 12	14 19.62	-20 7.4	2.285	2.187	25.3	19.3	72 W	25	61*	6 20	13 11.00	-33 44.6	2.391	3.005	17.4	20.5	118 E	10*	82
1 22	14 36.25	-21 52.4	2.137	2.154	26.5	19.1	78 W	23	68*	6 30	13 13.52	-32 24.0	2.489	2.987	18.7	20.6	110 E	9*	84
2 1	14 52.56	-23 33.0	1.989	2.120	27.5	19.0	84 W	21	76*	7 10	13 18.35	-31 18.6	2.594	2.969	19.6	20.7	101 E	7*	85
2 11	15 8.38	-25 8.9	1.841	2.086	28.2	18.8	90 W	20	83*	7 20	13 25.20	-30 28.5	2.705	2.949	20.1	20.8	94 E	6*	84*
2 21	15 23.48	-26 39.9	1.695	2.053	28.6	18.6	96 W	18	89	7 30	13 33.80	-29 53.2	2.817	2.928	20.2	20.9	86 E	4*	77*
3 2	15 37.52	-28 5.7	1.554	2.019	28.6	18.3	103 W	17	88	8 9	13 43.93	-29 31.3	2.927	2.906	20.0	20.9	79 E	3*	70*
3 12	15 50.15	-29 26.3	1.417	1.985	28.1	18.1	110 W	16	87	8 19	13 55.39	-29 20.9	3.033	2.883	19.5	21.0	72 E	2*	63*
3 17	15 55.79	-30 4.6	1.351	1.968	27.7	18.0	113 W	15	86	8 29	14 8.04	-29 20.2	3.134	2.859	18.7	21.0	65 E	1*	57*
3 22	16 0.88	-30 41.4	1.287	1.951	27.1	17.8	117 W	14	85	9 8	14 21.75	-29 27.4	3.227	2.834	17.6	21.0	59 E	—	50*
3 27	16 5.35	-31 16.7	1.226	1.935	26.4	17.7	121 W	14	85	9 18	14 36.44	-29 40.4	3.311	2.808	16.4	21.0	52 E	—	44*
4 1	16 9.12	-31 50.2	1.167	1.918	25.4	17.5	124 W	13	84	9 28	14 52.02	-29 57.6	3.383	2.780	15.0	21.0	46 E	—	38*
4 6	16 12.12	-32 21.7	1.110	1.902	24.3	17.4	128 W	13	84	10 8	15 8.42	-30 17.0	3.445	2.752	13.4	21.0	40 E	—	32*
4 11	16 14.27	-32 51.0	1.057	1.885	23.0	17.2	133 W	12	83	10 18	15 25.59	-30 37.1	3.493	2.722	11.7	20.9	34 E	—	27*
4 16	16 15.51	-33 17.6	1.006	1.869	21.5	17.0	137 W	12	83	10 28	15 43.47	-30 56.2	3.529	2.692	10.0	20.8	28 E	—	21*
4 21	16 15.76	-33 40.9	0.959	1.854	19.8	16.8	141 W	11	82	11 7	16 2.01	-31 12.8	3.550	2.660	8.1	20.7	22 E	—	15*
4 26	16 14.99	-34 0.0	0.916	1.838	17.9	16.7	146 W	11	82	11 17	16 21.15	-31 25.4	3.557	2.627	6.3	20.6	17 E	—	10*
5 1	16 13.19	-34 14.3	0.877	1.823	15.8	16.5	150 W	11	82	11 27	16 40.81	-31 32.7	3.549	2.593	4.6	20.5	12 E	—	5*
5 6	16 10.43	-34 22.8	0.842	1.807	13.6	16.3	155 W	11	82	12 7	17 0.92	-31 33.4	3.527	2.558	3.5	20.4	9 E	—	—
5 11	16 6.80	-34 24.7	0.811	1.793	11.4	16.1	159 W	11	82	12 17	17 21.42	-31 26.4	3.490	2.523	3.5	20.4	9 W	—	2*
5 16	16 2.43	-34 19.2	0.786	1.778	9.4	15.9	163 W	11	82	12 27	17 42.18	-31 10.7	3.439	2.486	4.7	20.4	12 W	—	6*
5 21	15 57.52	-34 5.8	0.765	1.764	8.0	15.8	166 W	11	82	1 6	18 3.13	-30 45.3	3.374	2.448	6.6	20.4	17 W	—	11*
5 26	15 52.36	-33 44.5	0.749	1.750	7.7	15.7	167 E	11	82	1 16	18 24.18	-30 9.6	3.297	2.409	8.6	20.4	22 W	—	16*
5 31	15 47.24	-33 15.7	0.738	1.737	8.7	15.7	165 E	12	83	466130 2012 FZ ₂₃									
6 5	15 42.46	-32 40.5	0.732	1.724	10.8	15.8	161 E	12	83	12 23	13 47.59	-55 16.5	1.331	1.130	46.2	20.8	56 W	—	46*
6 10	15 38.29	-32 0.2	0.730	1.711	13.3	15.9	157 E	13	84	12 28	14 5.12	-53 41.2	1.271	1.099	48.4	20.7	57 W	—	47*
6 15	15 34.95	-31 16.5	0.733	1.699	16.1	15.9</													

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°
466130 2012 FZ ₂₃										4954 Eric									
<i>(continuation)</i>										<i>(continuation)</i>									
2 23	17 41.45	+11 21.7	0.643	1.009	69.6	19.7	73 W	53*	42*	7 10	13 0.11	-21 17.5	2.629	2.885	20.6	17.9	94 E	15*	85*
2 25	17 50.65	+15 22.0	0.649	1.016	68.9	19.7	73 W	56*	38*	7 20	13 6.56	-21 31.7	2.773	2.891	20.5	18.0	86 E	12*	80*
2 27	17 59.95	+19 15.1	0.659	1.024	68.1	19.7	74 W	59*	35*	7 30	13 14.52	-21 56.4	2.915	2.896	20.1	18.1	79 E	9*	73*
2 29	18 9.31	+22 58.9	0.671	1.032	67.3	19.8	74 W	62*	32*	8 9	13 23.78	-22 30.2	3.052	2.899	19.4	18.2	72 E	6*	65*
3 2	18 18.73	+26 31.4	0.687	1.041	66.3	19.8	74 W	64*	29*	8 19	13 34.16	-23 11.7	3.182	2.900	18.4	18.3	65 E	4*	58*
3 4	18 28.18	+29 51.6	0.706	1.051	65.3	19.9	74 W	66*	26*	8 29	13 45.54	-23 59.5	3.303	2.900	17.2	18.3	58 E	2*	51*
3 6	18 37.66	+32 58.8	0.726	1.061	64.3	19.9	74 W	67*	24*	9 8	13 57.81	-24 52.2	3.414	2.898	15.8	18.3	52 E	—	44*
3 8	18 47.13	+35 52.8	0.749	1.072	63.2	20.0	74 W	68*	21*	9 18	14 10.90	-25 48.8	3.512	2.894	14.3	18.3	45 E	—	38*
3 10	18 56.59	+38 33.7	0.774	1.083	62.1	20.0	74 W	68*	19*	9 28	14 24.72	-26 48.1	3.597	2.889	12.6	18.3	39 E	—	31*
3 12	19 6.01	+41 1.9	0.800	1.094	61.0	20.1	74 W	68*	16*	10 8	14 39.24	-27 48.9	3.668	2.883	10.9	18.3	33 E	—	25*
3 14	19 15.37	+43 18.1	0.828	1.106	59.8	20.2	74 W	68*	14*	10 18	14 54.40	-28 50.4	3.724	2.875	9.1	18.3	27 E	—	20*
3 16	19 24.65	+45 23.0	0.856	1.118	58.7	20.2	74 W	68*	13*	10 28	15 10.16	-29 51.6	3.763	2.865	7.4	18.2	22 E	—	14*
3 18	19 33.84	+47 17.5	0.886	1.131	57.6	20.3	74 W	67*	11*	11 7	15 26.49	-30 51.6	3.787	2.853	5.8	18.1	17 E	—	8*
3 20	19 42.90	+49 2.3	0.916	1.144	56.5	20.3	73 W	66*	9*	11 17	15 43.34	-31 49.6	3.794	2.841	4.6	18.1	13 E	—	3*
3 22	19 51.83	+50 38.4	0.947	1.157	55.4	20.4	73 W	66*	8*	11 27	16 0.67	-32 44.9	3.784	2.826	4.1	18.0	12 W	—	2*
3 24	20 0.61	+52 6.4	0.978	1.171	54.4	20.5	73 W	65*	7*	12 7	16 18.42	-33 36.9	3.757	2.810	4.7	18.0	14 W	—	6*
3 26	20 9.21	+53 27.2	1.010	1.185	53.3	20.5	72 W	64*	6*	12 17	16 36.55	-34 25.1	3.714	2.792	6.1	18.1	18 W	—	11*
3 28	20 17.64	+54 41.5	1.042	1.199	52.3	20.6	72 W	63*	5*	12 27	16 54.98	-35 9.0	3.655	2.773	7.8	18.1	23 W	—	16*
3 30	20 25.88	+55 49.8	1.073	1.214	51.3	20.7	72 W	63*	4*	1 6	17 13.62	-35 48.4	3.580	2.751	9.7	18.1	28 W	—	22*
4 1	20 33.92	+56 52.8	1.105	1.229	50.4	20.7	71 W	62*	3*	1 16	17 32.41	-36 23.2	3.490	2.729	11.6	18.1	34 W	—	28*
4 6	20 53.08	+59 10.5	1.183	1.266	48.1	20.9	70 W	61*	1*	90791 1994 PG ₃₂									
4 11	21 10.85	+61 5.5	1.260	1.305	46.0	21.0	69 W	59*	—	12 23	13 49.64	-15 12.0	2.205	1.909	26.4	20.8	60 W	29*	45*
4 16	21 27.18	+62 43.5	1.333	1.345	44.0	21.2	69 W	58*	—	1 2	14 11.50	-17 27.9	2.076	1.872	28.2	20.7	64 W	27*	51*
4 21	21 42.02	+64 8.8	1.403	1.386	42.2	21.3	68 W	58*	—	1 12	14 34.04	-19 39.2	1.948	1.835	29.9	20.6	69 W	25*	58*
4 26	21 55.35	+65 24.5	1.470	1.427	40.6	21.4	67 W	57*	—	1 22	14 57.34	-21 44.6	1.821	1.799	31.5	20.4	73 W	23	64*
12 23	13 48.48	-6 57.5	2.492	2.225	23.2	21.2	63 W	37*	42*	2 1	15 21.37	-23 42.1	1.696	1.763	33.0	20.3	77 W	21	69*
1 2	13 59.42	-9 4.3	2.416	2.273	24.0	21.2	70 W	36*	51*	2 6	15 33.66	-24 37.3	1.634	1.746	33.7	20.2	79 W	20	72*
1 12	14 8.78	-11 4.6	2.332	2.321	24.4	21.2	77 W	34	59*	2 11	15 46.13	-25 29.9	1.574	1.730	34.3	20.1	81 W	20	75*
1 22	14 16.30	-12 58.8	2.242	2.368	24.5	21.2	85 W	32	69*	2 16	15 58.78	-26 19.7	1.515	1.713	35.0	20.0	84 W	19	77*
2 1	14 21.65	-14 47.3	2.149	2.415	24.0	21.1	93 W	30	77*	2 21	16 11.57	-27 6.4	1.457	1.697	35.5	19.9	86 W	18	80*
2 11	14 24.46	-16 29.8	2.056	2.462	23.1	21.0	102 W	29	80	2 26	16 24.50	-27 49.7	1.400	1.681	36.0	19.8	88 W	17	82*
2 21	14 24.39	-18 6.0	1.966	2.507	21.5	20.9	112 W	27	82	3 2	16 37.54	-28 29.5	1.344	1.666	36.5	19.7	90 W	17	84*
3 2	14 21.11	-19 34.1	1.885	2.553	19.2	20.8	122 W	25	84	3 7	16 50.66	-29 5.5	1.290	1.652	36.9	19.6	92 W	16	85*
3 12	14 14.51	-20 51.7	1.817	2.597	16.3	20.6	133 W	24	85	3 12	17 3.84	-29 37.7	1.237	1.638	37.3	19.5	94 W	15	86*
3 22	14 4.78	-21 55.2	1.769	2.641	12.8	20.5	144 W	23	86	3 17	17 17.04	-30 5.8	1.185	1.624	37.6	19.4	96 W	15	86
4 1	13 52.50	-22 41.1	1.744	2.684	9.0	20.4	155 W	22	87	3 27	17 30.20	-30 29.8	1.136	1.611	37.8	19.3	98 W	15*	86
4 6	13 45.73	-22 56.8	1.742	2.705	7.2	20.3	160 W	22	87	3 27	17 43.27	-30 49.5	1.087	1.599	37.9	19.2	100 W	14*	85
4 11	13 38.76	-23 7.5	1.747	2.726	5.7	20.2	164 W	22	87	4 1	17 56.20	-31 5.0	1.041	1.588	38.0	19.1	102 W	14*	85
4 16	13 31.76	-23 13.5	1.760	2.747	4.8	20.2	167 E	22	87	4 6	18 8.91	-31 16.3	0.996	1.577	37.9	19.0	104 W	14*	85
4 21	13 24.90	-23 15.1	1.780	2.767	4.9	20.3	166 E	22	87	4 11	18 21.36	-31 23.3	0.953	1.567	37.8	18.9	107 W	14*	85
4 26	13 18.35	-23 13.1	1.808	2.787	5.9	20.4	164 E	22	87	4 16	18 33.45	-31 26.4	0.911	1.558	37.6	18.8	109 W	14*	85
5 1	13 12.25	-23 8.2	1.843	2.807	7.3	20.5	159 E	22	87	4 21	18 45.11	-31 25.7	0.871	1.549	37.2	18.7	111 W	14*	85
5 6	13 6.72	-23 1.2	1.884	2.827	8.9	20.6	154 E	22	87	4 26	18 56.24	-31 21.4	0.833	1.542	36.7	18.5	114 W	14*	85
5 11	13 1.84	-22 53.0	1.933	2.847	10.5	20.8	149 E	22	87	5 1	19 6.74	-31 13.7	0.797	1.535	36.1	18.4	116 W	14*	85
5 16	12 57.66	-22 44.5	1.987	2.866	12.0	20.9	144 E	22	87	5 6	19 16.55	-31 3.1	0.762	1.530	35.3	18.3	119 W	14*	85
5 21	12 54.21	-22 36.2	2.047	2.886	13.4	21.0	139 E	22	87	5 11	19 25.56	-30 49.8	0.730	1.525	34.3	18.2	122 W	14*	85
5 26	12 51.51	-22 28.9	2.111	2.905	14.6	21.2	134 E	23	86	5 16	19 33.68	-30 34.3	0.699	1.521	33.2	18.0	125 W	14*	85
5 31	12 49.54	-22 23.0	2.180	2.923	15.7	21.3	129 E	23	86	5 21	19 40.79	-30 16.8	0.671	1.519	31.8	17.9	128 W	15	86
6 5	12 48.28	-22 19.0	2.253	2.942	16.6	21.4	124 E	22*	86	5 26	19 46.81	-29 57.6	0.644	1.517	30.2	17.8	131 W	15	86
6 10	12 52.51	-21 50.0	2.208	2.857	17.9	17.4	120 E	23*	86	5 31	19 51.65	-29 37.1	0.620	1.516	28.3	17.6	135 W	15	86
6 20	12 52.78	-21 25.9	2.343	2.868	19.3	17.6	111 E	21*	85	6 10	19 57.63	-28 52.0	0.579	1.518	23.9	17.3	143 W	16	87
6 30	12 55.42	-21 15.2	2.484	2.877	20.2	17.8	102 E	18*	85	6 20	19 58.54	-28 1.5	0.549	1.523	18.3	17.1	152 W	17	88
6 30	12 55.42	-21 15.2	2.484	2.877	20.2	17.8	102 E	18*	85	6 30	19 54.92	-27 4.0	0.533	1.532	11.9	16.8	162 W	18	89
7 5	19 51.87	-26 32.1	0.531	1.538	8.5	16.6	167 W	18	89	7 10	19 48.31	-25 58.1	0.532	1.545	5.2	16.5	172 W	19	90
7 15	19 44.53	-25 22.2	0.538	1.553	2.7	16.4	176 W	20	89	7 15	19 44.53	-25 22.2	0.538	1.553	2.7	16.4	176 W	20	89
7 20	19 40.81	-24 44.9	0.548	1.562	3.7	16.5	174 E	20	89	7 20	19 40.81	-24 44.9	0.548	1.562	3.7	16.5	174 E	20	89
7 25	19 37.45	-24 6.6	0.562	1.572	6.7	16.7	170 E	21	88	7 25	19 37.45	-24 6.6	0.562	1.572	6.7	16.7	170 E	21	88
7 30	19 34.71	-23 28.0	0.580	1.582	9.9	17.0	165 E	22	87	7 30	19 34.71	-23 28.0	0.580	1.582	9.9	17.0	165 E	22	87
8 4	19 32.74	-22 49.7	0.603	1.593	12.9	17.2	159 E	22	87	8 4	19 32.74	-22 49.7	0.603	1.593	12.9	17.2	159 E	22	87
8 9	19 31.66	-22 12.2	0.629	1.605	15.8	17.4	155 E	23	86	8 9	19 31.66	-22 12.2	0.629	1.605	15.8	17.4	155 E	23	86
8 19	19 32.34	-21 1.0	0.694	1.631	20.7	17.8	145 E	24	85	8 19	19 32.34	-21 1.0	0.694	1.631	20.7	17.8	145 E	24	85
8 29	19 36.82	-19 54.9	0.772	1.659	24														