

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°
195208 2002 DZ₃										363505 2003 UC₂₀ (continuation)									
12 23	13 50.61	+15 7.3	2.331	2.243	24.7	19.8	73 W	59*	29*	6 10	4 23.86	+20 8.1	2.005	1.033	11.7	20.4	12 W	—	6*
1 2	14 5.40	+15 7.7	2.258	2.278	25.0	19.8	79 W	60*	34*	6 20	5 0.04	+21 5.6	2.008	1.043	12.6	20.5	13 W	—	6*
1 12	14 18.58	+15 25.1	2.181	2.313	25.1	19.8	85 W	60	39*	6 30	5 36.57	+21 33.9	2.001	1.044	13.6	20.5	14 W	1*	7*
1 22	14 29.90	+15 59.9	2.102	2.347	24.8	19.7	92 W	61	43*	7 10	6 13.58	+21 32.0	1.985	1.035	14.6	20.5	15 W	3*	7*
2 1	14 39.04	+16 52.2	2.024	2.381	24.2	19.6	99 W	62	46*	7 20	6 51.20	+20 58.6	1.959	1.018	15.6	20.5	16 W	4*	8*
2 11	14 45.68	+18 0.6	1.949	2.414	23.1	19.6	106 W	63	46*	7 30	7 29.54	+19 52.1	1.926	0.992	16.5	20.4	16 W	6*	8*
2 21	14 49.49	+19 22.5	1.879	2.446	21.8	19.5	113 W	64	45	8 9	8 8.75	+18 11.0	1.886	0.956	17.3	20.3	16 W	7*	7*
2 26	14 50.23	+20 7.3	1.847	2.462	20.9	19.4	117 W	65	44	8 19	8 49.07	+15 53.6	1.841	0.912	17.8	20.2	16 W	7*	7*
3 2	14 50.16	+20 53.6	1.818	2.478	20.0	19.4	121 W	66	43	8 29	9 30.80	+12 58.5	1.793	0.859	17.8	20.0	15 W	7*	5*
3 7	14 49.25	+21 40.4	1.791	2.494	19.1	19.3	125 W	67	42	9 8	10 14.39	+9 24.9	1.742	0.798	17.1	19.7	13 W	6*	4*
3 12	14 47.51	+22 26.6	1.769	2.509	18.1	19.3	128 W	67	42	9 18	11 0.49	+5 13.4	1.692	0.731	15.2	19.4	11 W	4*	2*
3 17	14 44.96	+23 11.3	1.750	2.525	17.1	19.2	132 W	68	41	9 23	11 24.72	+2 54.3	1.667	0.697	13.6	19.2	9 W	2*	1*
3 22	14 41.61	+23 53.0	1.736	2.540	16.1	19.2	135 W	69	40	9 28	11 49.90	+0 27.5	1.642	0.662	11.5	19.0	8 W	1*	—
3 27	14 37.54	+24 30.4	1.727	2.555	15.2	19.2	138 W	70	39	10 3	12 16.15	-2 5.9	1.617	0.628	8.7	18.7	5 W	—	—
4 1	14 32.83	+25 2.2	1.722	2.570	14.5	19.1	140 W	70	39	10 8	12 43.61	-4 43.8	1.592	0.596	5.0	18.4	3 W	—	—
4 6	14 27.61	+25 27.2	1.723	2.584	13.9	19.1	142 W	70	39	10 13	13 12.40	-7 23.8	1.565	0.568	0.7	18.0	0 W	—	—
4 11	14 22.01	+25 44.5	1.730	2.599	13.5	19.1	143 W	71	38	10 18	13 42.57	-10 2.5	1.537	0.544	4.9	18.1	3 E	—	—
4 16	14 16.17	+25 53.4	1.742	2.613	13.4	19.2	143 W	71	38	10 23	14 14.12	-12 35.7	1.507	0.527	11.1	18.3	6 E	—	—
4 21	14 10.25	+25 53.4	1.760	2.627	13.6	19.2	142 W	71	38	10 28	14 46.95	-14 58.6	1.475	0.519	17.8	18.4	9 E	—	3*
4 26	14 4.41	+25 44.4	1.784	2.641	14.0	19.3	141 E	71	38	11 2	15 20.85	-17 6.3	1.441	0.520	24.6	18.6	13 E	1*	6*
5 1	13 58.82	+25 26.5	1.813	2.654	14.5	19.3	139 E	70	39	11 7	15 55.54	-18 54.5	1.406	0.529	31.2	18.8	16 E	3*	9*
5 6	13 53.58	+25 0.2	1.848	2.668	15.2	19.4	136 E	70	39	11 12	16 30.68	-20 19.8	1.371	0.547	37.0	19.0	19 E	5*	12*
5 11	13 48.83	+24 26.3	1.888	2.681	16.0	19.5	133 E	69	40	11 17	17 5.92	-21 19.9	1.339	0.572	41.8	19.2	23 E	7*	15*
5 16	13 44.62	+23 45.4	1.932	2.694	16.8	19.6	130 E	69	40	11 22	17 40.91	-21 53.8	1.310	0.601	45.6	19.3	26 E	9*	18*
5 21	13 41.01	+22 58.6	1.981	2.706	17.5	19.7	126 E	68	41	11 27	18 15.33	-22 2.0	1.286	0.633	48.4	19.5	29 E	11*	20*
5 26	13 38.05	+22 6.5	2.034	2.719	18.3	19.8	123 E	67	42	12 2	18 48.90	-21 45.5	1.268	0.667	50.3	19.6	31 E	13*	22*
5 31	13 35.76	+21 10.2	2.091	2.731	18.9	19.8	119 E	66	43	12 7	19 21.35	-21 6.7	1.255	0.702	51.5	19.7	34 E	15*	24*
6 5	13 34.12	+20 10.4	2.151	2.743	19.5	19.9	115 E	65	44	12 12	19 52.52	-20 8.2	1.248	0.737	52.1	19.8	36 E	17*	26*
6 10	13 33.11	+19 8.0	2.213	2.755	20.0	20.0	112 E	64*	45	12 17	20 22.28	-18 53.1	1.246	0.770	52.2	19.9	38 E	19*	27*
6 20	13 32.90	+16 57.5	2.346	2.778	20.8	20.2	104 E	60*	47	12 22	20 50.57	-17 24.6	1.249	0.803	51.9	20.0	40 E	21*	27*
6 30	13 34.88	+14 42.7	2.486	2.800	21.1	20.3	97 E	55*	49	12 27	21 17.38	-15 45.9	1.257	0.834	51.4	20.1	41 E	23*	28*
7 10	13 38.78	+12 26.8	2.631	2.822	21.1	20.5	90 E	49*	52	1 1	21 42.76	-13 59.8	1.268	0.863	50.7	20.2	43 E	25*	28*
7 20	13 44.30	+10 11.7	2.777	2.842	20.8	20.6	83 E	44*	54*	1 6	22 6.79	-12 8.8	1.283	0.890	49.9	20.2	44 E	27*	28*
7 30	13 51.23	+7 58.8	2.922	2.861	20.2	20.7	77 E	39*	55*	1 11	22 29.60	-10 14.9	1.300	0.915	49.0	20.3	45 E	28*	28*
8 9	13 59.35	+5 49.1	3.065	2.880	19.3	20.8	70 E	35*	54*	1 16	22 51.30	-8 19.7	1.320	0.938	48.1	20.4	45 E	29*	28*
8 19	14 8.49	+3 43.3	3.204	2.898	18.2	20.9	64 E	31*	51*	87311 2000 QJ₁									
8 29	14 18.51	+1 41.7	3.335	2.914	16.9	20.9	57 E	28*	46*	12 23	13 51.78	-20 7.2	0.687	0.849	78.9	18.0	58 W	24*	46*
9 8	14 29.29	+0 15.0	3.459	2.930	15.5	21.0	51 E	25*	41*	12 28	14 23.80	-21 29.1	0.717	0.824	79.0	18.0	55 W	22*	45*
9 18	14 40.73	-2 6.8	3.573	2.945	13.9	21.0	45 E	22*	35*	1 2	14 54.85	-22 27.4	0.753	0.803	78.3	18.0	53 W	21*	43*
9 28	14 52.76	+3 53.2	3.675	2.958	12.2	21.0	39 E	19*	29*	1 7	15 24.76	-23 4.5	0.794	0.788	76.8	18.1	51 W	20*	42*
10 8	15 5.30	+5 33.9	3.766	2.971	10.4	21.0	32 E	16*	23*	1 12	15 53.45	-23 23.0	0.839	0.779	74.8	18.1	50 W	19*	41*
10 18	15 18.27	-7 8.8	3.842	2.983	8.5	21.0	26 E	14*	17*	1 17	16 20.91	-23 25.6	0.885	0.776	72.3	18.1	49 W	18*	40*
10 28	15 31.62	-8 37.5	3.904	2.994	6.7	20.9	21 E	11*	10*	1 22	16 47.11	-23 14.8	0.934	0.779	69.5	18.1	48 W	18*	39*
11 7	15 45.27	+9 59.8	3.950	3.004	4.9	20.9	15 E	8*	3*	1 27	17 12.08	-22 52.4	0.982	0.788	66.5	18.2	47 W	17*	39*
11 17	15 59.18	-11 15.6	3.980	3.013	3.4	20.8	10 E	4*	—	2 1	17 35.80	-22 20.5	1.030	0.803	63.6	18.2	47 W	17*	39*
11 27	16 13.25	+12 24.8	3.993	3.021	2.8	20.8	9 E	1*	—	2 6	17 58.31	-21 40.4	1.077	0.824	60.7	18.3	47 W	17*	39*
12 7	16 27.42	-13 27.2	3.988	3.028	3.6	20.9	11 W	5*	—	2 11	18 19.63	-20 53.8	1.123	0.849	58.1	18.4	47 W	17*	39*
12 17	16 41.62	-14 23.0	3.967	3.035	5.2	20.9	16 W	10*	2*	2 16	18 39.79	-20 1.6	1.165	0.878	55.7	18.5	47 W	17*	40*
12 27	16 55.74	-15 12.3	3.927	3.040	7.0	21.0	22 W	13*	9*	2 21	18 58.83	-19 5.2	1.206	0.910	53.5	18.6	48 W	17*	40*
1 6	17 9.68	-15 55.3	3.871	3.044	8.9	21.1	29 W	16*	16*	2 26	19 16.79	-18 5.3	1.243	0.944	51.7	18.7	48 W	17*	41*
1 16	17 23.36	-16 32.5	3.798	3.047	10.7	21.1	35 W	19*	24*	3 2	19 33.72	-17 2.9	1.276	0.981	50.0	18.7	49 W	17*	42*
										3 7	19 49.66	-15 58.7	1.307	1.019	48.6	18.8	50 W	18*	43*
										3 12	20 4.68	-14 53.3	1.333	1.059	47.4	18.9	52 W	18*	45*
12 23	13 50.70	-16 46.0	0.568	0.846	85.8	19.5	59 W	27*	46*	3 22	20 32.14	-12 41.1	1.376	1.139	45.5	19.1	55 W	19*	48*
12 28	14 23.58	-19 0.3	0.579	0.816	88.0	19.6	56 W	25*	44*	4 1	20 56.46	-10 29.8	1.405	1.221	44.1	19.3	58 W	20*	51*
1 2	14 57.60	-20 53.8	0.596	0.784	89.8	19.6	53 W	22*	42*	4 11	21 17.92	-8 22.0	1.419	1.301	43.0	19.4	62 W	22*	54*
1 7	15 32.32	-22 22.3	0.621	0.750	91.1	19.7	50 W	20*	40*	4 21	21 36.72	-6 20.0	1.419	1.380	42.1	19.5	67 W	24*	58*
1 12	16 7																		

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°
6909 Levison (continuation)										32827 1992 DF₁ (continuation)									
11 7	15 51.01	-46 23.8	4.007	3.218	9.6	20.0	33 E	—	19*	3 17	14 46.12	+ 9 31.7	1.977	2.770	14.8	19.5	135 W	55	54
11 17	16 11.09	-46 25.0	4.011	3.180	8.6	19.9	29 E	—	14*	3 22	14 44.00	+10 31.0	1.950	2.780	13.6	19.5	139 W	56	53
11 27	16 31.60	-46 24.1	4.001	3.141	7.8	19.9	26 E	—	10*	3 27	14 41.27	+11 29.9	1.928	2.791	12.4	19.4	143 W	56	53
12 7	16 52.45	-46 19.9	3.976	3.100	7.4	19.8	24 W	—	7*	4 1	14 37.98	+12 27.1	1.912	2.801	11.3	19.3	147 W	57	52
12 17	17 13.54	-46 11.5	3.937	3.059	7.3	19.7	23 W	—	10*	4 6	14 34.19	+13 21.5	1.902	2.810	10.4	19.3	149 W	58	51
12 27	17 34.75	-45 58.1	3.882	3.017	7.8	19.7	25 W	—	14*	4 11	14 30.01	+14 12.0	1.899	2.820	9.8	19.3	151 W	59	50
1	17 55.94	-45 39.2	3.812	2.973	8.7	19.7	27 W	—	17*	4 16	14 25.54	+14 57.5	1.902	2.829	9.5	19.3	152 W	60	49
1 16	18 17.00	-45 14.4	3.728	2.929	10.0	19.6	31 W	—	22*	4 21	14 20.88	+15 37.1	1.912	2.838	9.6	19.3	152 W	61	48
										4 26	14 16.16	+16 10.0	1.929	2.847	10.1	19.3	150 W	61	48
										5 1	14 11.51	+16 35.8	1.951	2.855	10.8	19.4	148 E	62	47
307543 2003 EO₄										68350 2001 MK₃									
12 23	13 53.07	- 1 43.4	2.024	1.823	29.0	19.9	64 W	42*	38*	5 11	14 2.87	+17 5.2	2.015	2.871	12.8	19.6	141 E	62	47
1	2 14 7.66	+ 4 25.4	1.962	1.865	29.6	19.9	70 W	40*	46*	5 21	13 55.70	+17 6.2	2.099	2.887	14.8	19.7	133 E	62	47
1 12	14 20.60	- 7 0.3	1.893	1.908	30.0	19.9	76 W	38	55*	5 31	13 50.52	+16 41.7	2.201	2.901	16.7	19.9	125 E	62	47
1 22	14 31.68	+ 9 29.2	1.819	1.953	30.0	19.9	83 W	36	63*	6 10	13 47.57	+15 56.4	2.318	2.914	18.2	20.1	116 E	61	48
2 1	14 40.54	-11 52.9	1.741	1.998	29.5	19.8	90 W	33	72*	6 20	13 46.84	+14 55.0	2.444	2.926	19.3	20.2	108 E	59*	49
2 11	14 46.78	-14 12.6	1.661	2.045	28.6	19.7	98 W	31	78*	6 30	13 48.23	+13 41.6	2.577	2.937	19.9	20.4	100 E	55*	50
2 21	14 49.95	-16 29.0	1.583	2.091	27.0	19.6	107 W	29	80	7 10	13 51.54	+12 19.9	2.714	2.947	20.2	20.5	93 E	50*	52
3 2	14 49.54	-18 41.6	1.509	2.138	24.6	19.5	116 W	26	83	7 20	13 56.54	+10 52.6	2.851	2.956	20.0	20.6	86 E	46*	53
3 12	14 45.17	-20 48.5	1.446	2.185	21.5	19.3	126 W	24	85	7 30	14 3.05	+ 9 22.0	2.987	2.964	19.6	20.7	79 E	42*	54*
3 22	14 36.70	-22 45.6	1.397	2.233	17.7	19.2	137 W	22	87	8 9	14 10.85	+ 7 49.9	3.119	2.971	19.0	20.8	72 E	38*	53*
3 27	14 30.99	-23 38.5	1.379	2.256	15.5	19.1	143 W	21	88	8 19	14 19.78	+ 6 17.6	3.246	2.977	18.1	20.9	66 E	35*	50*
4 1	14 24.43	-24 26.5	1.368	2.280	13.3	19.0	148 W	21	88	8 29	14 29.72	+ 4 46.5	3.366	2.982	17.0	20.9	59 E	32*	46*
4 6	14 17.17	-25 8.7	1.362	2.303	11.1	19.0	154 W	20	89	9 8	14 40.51	+ 3 17.6	3.476	2.986	15.7	20.9	53 E	29*	41*
4 11	14 9.40	-25 44.6	1.364	2.326	9.0	18.9	159 W	19	90	9 18	14 52.08	+ 1 51.7	3.577	2.989	14.3	21.0	47 E	27*	36*
4 16	14 1.34	-26 13.8	1.372	2.350	7.2	18.9	163 W	19	90	9 28	15 4.32	+ 0 29.6	3.666	2.991	12.8	21.0	42	24*	30*
4 21	13 53.22	-26 36.2	1.387	2.373	6.2	18.9	165 E	18	89	10 8	15 17.16	+ 0 47.7	3.743	2.991	11.3	20.9	36 E	22*	24*
4 26	13 45.29	-26 52.0	1.410	2.396	6.2	18.9	165 E	18	89	10 18	15 30.52	- 1 59.8	3.807	2.991	9.7	20.9	30 E	20*	17*
5 1	13 37.77	-27 2.1	1.439	2.419	7.3	19.0	162 E	18	89	10 28	15 44.34	+ 3 5.8	3.857	2.990	8.2	20.9	25 E	17*	10*
5 6	13 30.85	-27 7.3	1.476	2.442	8.8	19.2	158 E	18	89	11 7	15 58.55	- 4 5.1	3.892	2.987	6.8	20.8	21 E	15*	4*
5 11	13 24.67	-27 8.8	1.519	2.464	10.5	19.3	154 E	18	89	11 17	16 13.08	- 4 57.2	3.912	2.984	5.7	20.8	18 E	11*	—
5 16	13 19.32	-27 7.6	1.568	2.487	12.2	19.5	149 E	18	89	11 27	16 27.85	- 5 41.6	3.916	2.980	5.2	20.8	16 E	8*	—
5 21	13 14.87	-27 4.9	1.622	2.509	13.9	19.6	144 E	18	89	12 7	16 42.80	- 6 17.7	3.905	2.974	5.4	20.8	17 W	8*	—
5 26	13 11.33	-27 1.6	1.682	2.532	15.4	19.8	139 E	18	89	12 17	16 57.84	- 6 45.4	3.879	2.968	6.3	20.8	19 W	13*	—
5 31	13 8.71	-26 58.6	1.746	2.554	16.7	19.9	134 E	18	89	12 27	17 12.88	- 7 4.2	3.836	2.960	7.6	20.8	23 W	17*	1*
6 10	13 6.08	-26 56.0	1.886	2.597	18.8	20.2	124 E	18*	89	1	17 27.83	- 7 14.0	3.779	2.952	9.1	20.8	28 W	21*	8*
6 20	13 6.56	-27 0.5	2.037	2.640	20.3	20.5	116 E	16*	89	1 16	17 42.60	- 7 14.9	3.707	2.942	10.8	20.9	34 W	24*	16*
6 30	13 9.75	-27 13.8	2.198	2.683	21.2	20.7	107 E	13*	89										
7 10	13 15.20	-27 36.2	2.364	2.724	21.6	20.9	100 E	11*	88										
7 20	13 22.54	-28 7.0	2.532	2.765	21.5	21.1	92 E	8*	85*										
7 30	13 31.47	-28 45.3	2.701	2.805	21.1	21.2	85 E	5*	77*										
8 9	13 41.73	-29 30.2	2.868	2.844	20.4	21.4	78 E	3*	70*										
8 19	13 53.14	-30 20.2	3.031	2.882	19.5	21.5	72 E	1*	63*										
306462 1999 RC₃₂										32827 1992 DF₁									
12 23	13 53.19	+32 32.0	0.727	1.135	59.0	20.2	82 W	75*	16*	12 23	13 53.35	+ 0 42.9	2.809	2.555	20.4	20.3	65 W	44*	37*
12 28	13 55.31	+30 35.4	0.719	1.157	57.7	20.2	84 W	75*	20*	1	2 14 6.07	+ 0 45.2	2.710	2.584	21.2	20.3	72 W	46*	44*
1	2 13 56.47	+28 42.9	0.707	1.180	56.3	20.1	87 W	74*	25*	1 12	14 17.57	+ 1 2.5	2.605	2.612	21.7	20.2	80 W	46	50*
1 7	13 56.58	+26 53.6	0.693	1.204	54.7	20.1	90 W	72*	29*	1 22	14 27.66	+ 1 36.1	2.497	2.639	21.9	20.2	87 W	47	56*
1 12	13 55.52	+25 6.9	0.677	1.230	52.9	20.0	94 W	70	34*	2 1	14 36.07	+ 2 26.8	2.387	2.665	21.6	20.1	95 W	47	60*
1 17	13 53.15	+23 21.8	0.659	1.257	50.8	20.0	98 W	68	38*	2 11	14 42.52	+ 3 35.0	2.280	2.690	20.9	20.0	104 W	49	60*
1 22	13 49.26	+21 37.5	0.639	1.285	48.4	19.9	103 W	67	41*	2 21	14 46.74	+ 5 0.2	2.179	2.714	19.7	19.8	112 W	50	59
1 27	13 43.68	+19 52.6	0.619	1.313	45.6	19.8	108 W	65	44*	3 2	14 48.48	+ 6 40.8	2.087	2.737	18.0	19.7	121 W	52	57
2 1	13 36.21	+18 5.7	0.600	1.342	42.3	19.7	113 W	63	46	3 12	14 47.57	+ 8 32.9	2.009	2.759	15.9	19.6	130 W	54	55
2 6	13 26.72	+16 15.4	0.582	1.372	38.6	19.6	120 W	61	48										
2 11	13 15.16	+14 20.5	0.566	1.402	34.3	19.4	127 W	59	50										
2 21	12 46.20	+10 15.8	0.547	1.462	24.2	19.1	143 W	55	54										
3 2	12 11.99	+ 6 0.0	0.553	1.523	12.8	18.9	160 W	51	58										
3 12	11 37.92	+ 1 58.4	0.590	1.583	1.6	18.6	177 W	47	62										
3 17	11 22.66	+ 0 11.5	0.621	1.613	3.9	18.9	174 E	45	64										
3 22	11 9.19	- 1 23.6	0.659	1.643	8.5	19.3	166 E	44	65										
3 27	10 57.76	- 2 46.9	0.704	1.673	12.6	19.6	158 E	42	67										
4 1	10 48.44	- 3 59.1	0.755	1.702	16														

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°
68350 2001 MK₃										67381 2000 OL₈									
<i>(continuation)</i>																			
9 8	16 11.04	-1 25.9	2.065	2.072	28.2	20.3	76 E	37*	60*	12 23	13 54.49	-14 14.3	0.524	0.843	88.8	21.2	59 W	30*	44*
9 18	16 25.01	-4 10.6	2.178	2.077	27.2	20.4	71 E	34*	57*	12 25	14 9.50	-16 17.0	0.534	0.824	90.2	21.2	57 W	27*	43*
9 28	16 40.18	-6 40.4	2.289	2.081	26.0	20.5	65 E	31*	54*	12 27	14 24.52	-18 12.3	0.546	0.806	91.3	21.2	55 W	25*	43*
10 8	16 56.38	-8 55.3	2.396	2.083	24.5	20.5	60 E	29*	49*	12 29	14 39.50	-19 59.5	0.560	0.787	92.2	21.3	53 W	23*	42*
10 18	17 13.54	-10 55.3	2.498	2.083	22.9	20.6	54 E	26*	44*	12 31	14 54.41	-21 38.1	0.575	0.769	92.9	21.3	51 W	21*	41*
10 28	17 31.54	-12 40.6	2.593	2.082	21.1	20.6	49 E	24*	39*	1 2	15 9.22	-23 7.6	0.593	0.752	93.3	21.4	50 W	19*	40*
11 7	17 50.30	-14 11.2	2.679	2.078	19.2	20.6	44 E	22*	33*	1 7	15 45.62	-26 11.7	0.644	0.710	93.0	21.4	46 W	15*	38*
11 17	18 9.74	-15 27.4	2.757	2.074	17.2	20.6	38 E	20*	27*	1 12	16 20.96	-28 21.1	0.705	0.673	91.0	21.4	43 W	12*	36*
11 27	18 29.77	-16 29.3	2.825	2.067	15.0	20.6	33 E	17*	21*	1 17	16 55.11	-29 40.6	0.774	0.642	87.5	21.4	41 W	10*	34*
12 7	18 50.31	-17 17.3	2.881	2.059	12.8	20.5	28 E	15*	16*	1 22	17 28.05	-30 16.1	0.849	0.619	82.6	21.3	39 W	8*	32*
12 17	19 11.28	-17 51.8	2.926	2.049	10.5	20.5	22 E	12*	11*	1 27	17 59.73	-30 13.3	0.928	0.606	76.7	21.2	37 W	6*	31*
12 27	19 32.60	-18 13.2	2.958	2.038	8.1	20.4	17 E	8*	6*	2 1	18 30.04	-29 37.8	1.009	0.604	70.2	21.2	35 W	5*	29*
1 6	19 54.21	-18 22.2	2.978	2.024	5.6	20.3	12 E	4*	2*	2 6	18 58.83	-28 35.2	1.090	0.613	63.7	21.2	34 W	4*	28*
1 16	20 16.07	-18 19.4	2.984	2.010	3.2	20.1	6 E	—	—	2 11	19 25.97	-27 11.4	1.169	0.631	57.6	21.2	33 W	4*	27*
19764 2000 NF₅										213177 2000 SW₁₂₅									
12 23	13 54.13	-12 55.2	2.336	2.023	24.8	20.4	59 W	31*	43*	12 23	13 54.56	+1 54.4	2.417	2.197	24.0	21.2	65 W	46*	36*
1 2	14 14.70	-12 22.4	2.182	1.967	26.8	20.3	64 W	30*	50*	1 2	14 7.00	+0 25.7	2.337	2.234	24.7	21.2	72 W	45*	44*
1 12	14 36.11	-16 35.0	2.027	1.911	28.7	20.1	69 W	28*	56*	1 12	14 17.89	+0 52.9	2.249	2.271	25.1	21.2	79 W	44	51*
1 22	14 58.50	-18 18.1	1.873	1.855	30.6	19.9	74 W	27	62*	1 22	14 27.00	-2 1.5	2.156	2.308	25.2	21.1	86 W	43	59*
2 1	15 21.98	-19 54.5	1.721	1.798	32.4	19.7	78 W	25	68*	2 1	14 34.02	-3 0.5	2.058	2.345	24.8	21.1	94 W	42	65*
2 6	15 34.17	-20 39.6	1.647	1.769	33.3	19.6	80 W	24	71*	2 11	14 38.61	-3 50.2	1.961	2.381	23.8	21.0	103 W	41	68*
2 11	15 46.69	-21 22.4	1.574	1.741	34.2	19.5	82 W	24	74*	2 21	14 40.44	-4 31.4	1.865	2.416	22.3	20.8	112 W	40	69
2 16	15 59.57	-22 2.6	1.502	1.712	35.0	19.4	84 W	23	76*	3 2	14 39.17	-5 4.8	1.777	2.451	20.0	20.7	122 W	40	69
2 21	16 12.82	-22 39.9	1.432	1.684	35.9	19.3	86 W	22	79*	3 12	14 34.67	-5 31.6	1.700	2.485	17.0	20.5	133 W	39	70
2 26	16 26.46	-23 13.7	1.363	1.656	36.7	19.2	88 W	22	81*	3 22	14 26.87	-5 53.1	1.641	2.519	13.3	20.4	144 W	39	70
3 2	16 40.51	-23 43.9	1.296	1.628	37.5	19.0	90 W	21	83*	4 1	14 16.31	-6 10.9	1.604	2.552	9.0	20.2	157 W	39	70
3 7	16 54.98	-24 9.9	1.232	1.601	38.3	18.9	91 W	21	85*	4 11	14 3.82	-6 27.1	1.594	2.584	4.4	20.0	169 W	39	70
3 12	17 9.91	-24 31.3	1.169	1.574	39.1	18.8	93 W	20*	86*	4 21	13 50.62	-6 44.0	1.613	2.615	2.0	19.9	175 E	38	71
3 17	17 25.31	-24 47.6	1.109	1.547	39.9	18.7	94 W	20*	88*	5 1	13 38.02	-7 4.1	1.662	2.646	5.9	20.2	164 E	38	71
3 22	17 41.18	-24 58.1	1.052	1.520	40.7	18.5	96 W	20*	89*	5 11	13 27.17	-7 29.4	1.739	2.675	10.1	20.5	152 E	38	71
3 27	17 57.52	-25 2.4	0.997	1.495	41.5	18.4	97 W	20*	89	5 21	13 18.80	-8 1.4	1.841	2.704	13.6	20.8	141 E	37	72
4 1	18 14.33	-24 59.7	0.944	1.470	42.3	18.3	98 W	20*	89	5 31	13 13.24	-8 40.7	1.963	2.732	16.4	21.0	130 E	36	73
4 6	18 31.60	-24 49.3	0.895	1.445	43.1	18.1	99 W	20*	89	6 10	13 10.49	-9 27.4	2.101	2.759	18.5	21.3	121 E	35*	73
4 11	18 49.32	-24 30.8	0.849	1.422	43.9	18.0	100 W	20*	89	6 20	13 10.33	-10 21.0	2.251	2.785	19.9	21.5	111 E	32*	74
4 16	19 7.44	-24 3.5	0.805	1.399	44.8	17.9	101 W	20*	88	307006 2001 XQ₁									
4 21	19 25.91	-23 26.7	0.764	1.378	45.6	17.8	101 W	20*	87	12 23	13 55.44	-17 18.2	3.896	3.473	13.9	21.2	58 W	27*	45*
4 26	19 44.65	-22 40.3	0.727	1.358	46.5	17.6	102 W	21*	87	1 2	14 2.43	-18 46.1	3.775	3.491	14.9	21.2	66 W	26*	54*
5 1	20 3.58	-21 44.0	0.693	1.339	47.3	17.5	102 W	21*	86	1 12	14 8.27	-20 11.5	3.645	3.509	15.7	21.2	74 W	25	64*
5 6	20 22.62	-20 37.8	0.661	1.321	48.2	17.4	103 W	22*	85	1 22	14 12.77	-21 34.2	3.508	3.525	16.1	21.1	83 W	23	74*
5 11	20 41.66	-19 22.1	0.633	1.305	49.0	17.3	103 W	23*	83	2 1	14 15.64	-22 53.6	3.368	3.541	16.1	21.1	92 W	22	84*
5 16	21 0.60	-17 57.4	0.608	1.291	49.8	17.2	103 W	24*	82	2 11	14 16.65	-24 9.1	3.228	3.556	15.8	21.0	101 W	21	88*
5 21	21 19.29	-16 24.7	0.586	1.278	50.5	17.1	103 W	25*	80	2 21	14 15.56	-25 19.3	3.094	3.570	15.0	20.8	111 W	20	89
5 26	21 37.61	-14 45.4	0.566	1.267	51.1	17.1	103 W	26*	79	3 2	14 12.17	-26 22.6	2.970	3.583	13.7	20.7	121 W	19	90
5 31	21 55.46	-13 0.9	0.549	1.258	51.7	17.0	103 W	28*	77	3 12	14 6.44	-27 16.4	2.861	3.595	12.0	20.6	131 W	18	89
6 5	22 12.73	-11 12.9	0.534	1.252	52.0	16.9	103 W	29*	75	3 22	13 58.47	-27 58.1	2.772	3.606	9.9	20.4	142 W	17	88
6 10	22 29.34	-9 23.1	0.521	1.247	52.3	16.9	104 W	31*	73	4 1	13 48.62	-28 24.9	2.707	3.616	7.6	20.3	151 W	17	88
6 15	22 45.18	-7 33.4	0.511	1.244	52.3	16.8	104 W	33*	72	4 6	13 43.19	-28 32.2	2.686	3.621	6.5	20.2	156 W	16	87
6 20	23 0.16	-5 45.4	0.501	1.243	52.2	16.8	105 W	35*	70	4 11	13 37.55	-28 35.4	2.671	3.626	5.6	20.2	159 W	16	87
6 25	23 14.19	-4 0.8	0.494	1.245	51.8	16.8	106 W	38*	68	4 16	13 31.81	-28 34.5	2.664	3.630	5.0	20.2	161 E	16	87
6 30	23 27.21	-2 21.1	0.487	1.248	51.2	16.7	107 W	40*	66	4 21	13 26.06	-28 29.7	2.665	3.634	4.9	20.1	162 E	17	88
7 5	23 39.16	-0 47.3	0.481	1.254	50.4	16.7	108 W	42*	65	4 26	13 20.44	-28 21.4	2.674	3.638	5.3	20.2	161 E	17	88
7 10	23 50.00	+0 39.6	0.476	1.261	49.3	16.6	110 W	44*	63	5 1	13 15.05	-28 10.2	2.690	3.642	6.1	20.2	158 E	17	88
7 15	23 59.63	+1 58.7	0.472	1.271	47.9	16.6	112 W	46*	62	5 6	13 9.98	-27 56.6	2.714	3.645	7.0	20.3	154 E	17	88
7 20	0 7.97	+3 9.1	0.468	1.282	46.2	16.5	114 W	48*	61	5 11	13 5.31	-27 41.3	2.744	3.649	8.1	20.4	149 E	17	88
7 30	0 20.58	+5 1.7	0.462	1.311	42.0	16.5	120 W	50	59	5 16	13 1.10	-27 24.9	2.781	3.652	9.2	20.4	145 E	18	89
8 9	0 27.51	+6 14.4	0.460	1.345	36.6	16.3	128 W	51	58	5 21	12 57.40	-27 8.0	2.824	3.655	10.3	20.5	140 E	18	89
8 19	0 28.61	+6 45.4	0.462	1.385	30.0	16.2	137 W	52	57	5 26	12 54.25	-26 51.4	2.872	3.657	11.3	20.6	135 E	18	89
8 29	0 24.43	+6 35.7	0.471	1.430	22.3	16.1	147 W	52	57	5 31	12 51.66	-26 35.5	2.926	3.659	12.3	20.7	130 E	18	89
9 3	0 20.80	+6 17.6	0.480	1.454	18.3	16.1	153 W	51	58	6 5	12 49.64	-26 20.9	2.984	3.662	13.1	20.8	125 E	18*	90
9 8	0 16.45	+5 52.5	0.493	1.478	14.1	16.0	159 W	51	58	6 10	12 48.18	-26 7.9	3.045	3.664	13.8	20.8	120 E	18*	90
9 13	0 11.67	+5 22.0	0.509	1.504	9.9	16.0	165 W	50	59	6 15	12 47.27	-25 56.9	3.110	3.665	14.5	20.9	116 E	17*	90
9 18	0 6.77	+4 48.2	0.529	1.529	5.9	15.9	171 W	50	59	6 20	12 46.89	-25 48.0	3.178	3.667	15.0	21.0	111 E	16*	9

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°
307006 2001 XQ₁										288860 2004 RQ₂₂₂									
<i>(continuation)</i>																			
9 8	13 33.16	-28 45.2	4.237	3.660	12.0	21.5	49 E	—	40*	12 23	13 56.38	-10 0.5	2.664	2.333	21.4	21.3	60 W	34*	42*
9 13	13 38.29	-29 12.5	4.284	3.658	11.4	21.5	46 E	—	36*	1 2	14 11.05	-10 12.4	2.572	2.364	22.5	21.3	67 W	35*	49*
9 18	13 43.59	-29 41.1	4.328	3.655	10.8	21.5	43 E	—	33*	1 12	14 24.55	-10 10.0	2.473	2.393	23.2	21.3	74 W	35	56*
9 23	13 49.07	-30 11.0	4.368	3.653	10.1	21.5	40 E	—	29*	1 22	14 36.69	-9 52.0	2.368	2.423	23.7	21.2	81 W	35	63*
9 28	13 54.70	-30 42.0	4.405	3.650	9.4	21.5	37 E	—	26*	2 1	14 47.19	-9 17.0	2.260	2.451	23.7	21.1	89 W	36	69*
10 3	14 0.48	-31 14.0	4.437	3.646	8.8	21.4	34 E	—	23*	2 11	14 55.79	-8 23.7	2.151	2.479	23.3	21.0	97 W	37	72*
10 8	14 6.40	-31 46.9	4.465	3.643	8.1	21.4	31 E	—	20*	2 21	15 2.19	-7 11.5	2.045	2.506	22.3	20.9	106 W	38	71
10 13	14 12.46	-32 20.7	4.488	3.639	7.4	21.4	28 E	—	17*	3 2	15 6.08	-5 39.9	1.945	2.533	20.7	20.8	115 W	39	70
10 18	14 18.66	-32 55.3	4.507	3.635	6.8	21.4	26 E	—	14*	3 12	15 7.25	-3 50.1	1.855	2.558	18.5	20.6	125 W	41	68
10 23	14 24.98	-33 30.6	4.522	3.631	6.3	21.4	23 E	—	11*	3 22	15 5.58	-1 44.9	1.780	2.583	15.8	20.5	135 W	43	66
10 28	14 31.41	-34 6.6	4.533	3.627	5.8	21.3	22 E	—	8*	3 27	15 3.69	-0 38.1	1.750	2.595	14.3	20.4	140 W	44	65
11 2	14 37.95	-34 43.1	4.538	3.623	5.4	21.3	20 E	—	5*	4 1	15 1.14	+0 30.3	1.726	2.607	12.7	20.3	145 W	46	63
11 7	14 44.60	-35 20.1	4.540	3.618	5.1	21.3	19 W	—	4*	4 6	14 58.00	+1 39.3	1.707	2.619	11.2	20.2	150 W	47	62
11 12	14 51.34	-35 57.6	4.536	3.613	5.0	21.3	19 W	—	6*	4 11	14 54.34	+2 47.5	1.695	2.631	9.7	20.2	154 W	48	61
11 17	14 58.18	-36 35.5	4.528	3.608	5.1	21.3	19 W	—	9*	4 16	14 50.25	+3 53.7	1.689	2.642	8.5	20.1	157 W	49	60
11 22	15 5.10	-37 13.8	4.516	3.602	5.3	21.3	20 W	—	11*	4 21	14 45.85	+4 56.7	1.690	2.653	7.8	20.1	159 W	50	59
11 27	15 12.10	-37 52.4	4.499	3.597	5.7	21.3	21 W	—	13*	4 26	14 41.25	+5 55.3	1.698	2.664	7.6	20.1	159 W	51	58
12 2	15 19.16	-38 31.3	4.478	3.591	6.1	21.3	23 W	—	16*	5 1	14 36.60	+6 48.2	1.713	2.675	8.1	20.2	158 W	52	57
12 7	15 26.28	-39 10.4	4.452	3.585	6.7	21.3	25 W	—	18*	5 6	14 32.03	+7 34.8	1.735	2.685	9.0	20.2	155 E	53	56
12 12	15 33.45	-39 49.8	4.422	3.578	7.3	21.3	28 W	—	21*	5 11	14 27.65	+8 14.4	1.764	2.696	10.2	20.3	152 E	53	56
12 17	15 40.66	-40 29.4	4.388	3.572	8.0	21.3	30 W	—	24*	5 21	14 19.89	+9 11.7	1.839	2.716	13.0	20.6	143 E	54	55
12 22	15 47.90	-41 9.3	4.349	3.565	8.6	21.3	33 W	—	27*	5 31	14 13.98	+9 40.2	1.935	2.735	15.6	20.8	134 E	55	54
12 27	15 55.15	-41 49.4	4.307	3.558	9.3	21.3	36 W	—	30*	6 10	14 10.31	+9 42.8	2.047	2.753	17.7	21.0	125 E	55	54
1 1	16 2.41	-42 29.8	4.261	3.551	10.0	21.3	39 W	—	32*	6 20	14 8.95	+9 23.9	2.173	2.770	19.3	21.2	116 E	54*	55
1 6	16 9.67	-43 10.5	4.212	3.543	10.7	21.3	42 W	—	35*	6 30	14 9.85	+8 47.8	2.308	2.787	20.4	21.4	107 E	52*	55
1 11	16 16.90	-43 51.5	4.159	3.536	11.4	21.3	45 W	—	38*										
1 16	16 24.09	-44 32.9	4.102	3.528	12.0	21.3	48 W	—	41*										
132124 2002 CW₂₃₇										16635 1993 QO									
12 23	13 56.22	+2 56.9	1.816	1.667	32.5	18.4	65 W	47*	35*	12 23	13 56.96	-30 45.5	3.401	2.941	15.8	20.1	54 W	13*	47*
1 2	14 15.93	+0 9.6	1.745	1.679	33.3	18.3	70 W	45*	42*	1 2	14 8.91	-32 38.0	3.291	2.945	17.0	20.0	61 W	12*	55*
1 12	14 34.46	+2 32.5	1.672	1.694	34.0	18.3	74 W	42*	49*	1 12	14 20.05	-34 29.6	3.172	2.949	18.0	20.0	68 W	11	62*
1 22	14 51.68	+5 9.9	1.595	1.711	34.4	18.2	79 W	40	57*	1 22	14 30.14	-36 20.0	3.047	2.951	18.8	19.9	75 W	9	69*
2 1	15 7.31	+7 43.6	1.516	1.731	34.5	18.1	85 W	37	64*	2 1	14 38.88	-38 9.1	2.917	2.953	19.3	19.9	82 W	7	74*
2 11	15 21.06	+10 15.3	1.435	1.754	34.2	18.0	91 W	35	71*	2 11	14 45.94	-39 56.4	2.785	2.954	19.5	19.8	90 W	5	76*
2 21	15 32.53	+12 47.1	1.354	1.778	33.5	17.9	98 W	32	77*	2 16	14 48.72	-40 49.0	2.719	2.954	19.5	19.7	94 W	4	75
3 2	15 41.20	+15 21.4	1.274	1.805	32.0	17.8	105 W	30	79	2 21	14 50.93	-41 40.8	2.653	2.954	19.4	19.7	98 W	3	74
3 12	15 46.48	+18 0.4	1.198	1.833	29.9	17.6	113 W	27	82	2 26	14 52.50	-42 31.4	2.589	2.953	19.2	19.6	102 W	2	73
3 22	15 47.73	+20 45.0	1.129	1.862	26.9	17.4	122 W	24	85	3 2	14 53.38	-43 20.6	2.525	2.952	18.9	19.5	106 W	2	73
4 1	15 44.33	+23 33.6	1.071	1.893	23.0	17.2	132 W	21	88	3 7	14 53.53	-44 7.9	2.464	2.951	18.4	19.5	110 W	1	72
4 6	15 40.77	+24 57.7	1.048	1.909	20.8	17.1	137 W	20	89	3 12	14 52.89	-44 52.8	2.404	2.950	17.9	19.4	114 W	—	71
4 11	15 35.98	+26 20.3	1.029	1.925	18.4	17.0	143 W	19	90	3 17	14 51.43	-45 34.9	2.348	2.949	17.3	19.3	118 W	—	70
4 16	15 30.02	+27 39.7	1.015	1.941	15.8	16.9	148 W	17	88	3 22	14 49.11	-46 13.3	2.294	2.947	16.6	19.2	122 W	—	70
4 21	15 23.01	+28 54.5	1.006	1.957	13.3	16.8	153 W	16	87	3 27	14 45.93	-46 47.3	2.244	2.945	15.9	19.2	126 W	—	69
4 26	15 15.14	+30 2.8	1.004	1.974	10.8	16.8	158 W	15	86	4 1	14 41.90	-47 16.1	2.198	2.943	15.1	19.1	130 W	—	69
5 1	15 6.68	+31 3.4	1.007	1.991	8.8	16.7	162 W	14	85	4 6	14 37.09	-47 38.8	2.157	2.940	14.2	19.0	134 W	—	68
5 6	14 57.95	+31 55.3	1.017	2.008	7.7	16.7	165 W	13	84	4 11	14 31.58	-47 54.7	2.120	2.938	13.2	18.9	137 W	—	68
5 11	14 49.26	+32 38.0	1.034	2.025	7.7	16.8	164 E	12	83	4 16	14 25.49	-48 3.0	2.088	2.935	12.5	18.9	141 W	—	68
5 16	14 40.93	+33 11.9	1.057	2.042	8.9	16.9	162 E	12	83	4 21	14 18.96	-48 3.2	2.062	2.932	11.8	18.8	143 W	—	68
5 21	14 33.23	+33 37.6	1.086	2.059	10.6	17.0	158 E	11	82	4 26	14 12.18	-47 54.9	2.042	2.928	11.2	18.8	146 E	—	68
5 26	14 26.41	+33 56.3	1.120	2.077	12.6	17.2	153 E	11	82	5 1	14 5.36	-47 38.2	2.028	2.925	10.8	18.7	147 E	—	68
5 31	14 20.62	+34 9.4	1.161	2.094	14.6	17.3	149 E	11	82	5 6	13 58.70	-47 13.6	2.020	2.921	10.7	18.7	147 E	—	69
6 5	14 15.96	+34 18.6	1.206	2.111	16.5	17.5	144 E	11	82	5 11	13 52.38	-46 41.7	2.018	2.917	10.9	18.7	147 E	—	69
6 10	14 12.47	+34 25.0	1.255	2.129	18.2	17.7	139 E	11	82	5 16	13 46.57	-46 3.4	2.023	2.912	11.4	18.8	145 E	—	70
6 15	14 10.12	+34 30.0	1.309	2.146	19.8	17.8	134 E	10	81	5 21	13 41.40	-45 19.9	2.033	2.908	12.0	18.8	143 E	—	71
6 20	14 8.89	+34 34.3	1.366	2.164	21.1	18.0	130 E	10*	81	5 26	13 36.98	-44 32.4	2.049	2.903	12.8	18.8	140 E	—	71
6 25	14 8.72	+34 39.0	1.426	2.181	22.3	18.1	126 E	10*	81	5 31	13 33.38	-43 42.4	2.070	2.898	13.7	18.9	137 E	—	72
6 30	14 9.54	+34 44.4	1.489	2.198	23.2	18.3	121 E	9*	81	6 5	13 30.64	-42 51.1	2.097	2.892	14.7	18.9	134 E	—	73
7 5	14 11.28	+34 51.0	1.555	2.216	24.0	18.4	117 E	9*	81	6 10	13 28.75	-41 59.8	2.128	2.887	15.6	19.0	130 E	—	74
7 10	14 13.85	+34 59.0	1.622	2.233	24.6	18.5	114 E	8*	81	6 15	13 27.70	-41 9.4	2.163	2.881	16.6	19.1	126 E	—	75
7 15	14 17.18	+35 8.5	1.691	2.250	25.1	18.7	110 E	7*	81	6 20	13 27.47	-40 20.7	2.203	2.875	17.4	19.1	122 E	—	76
7 20	14 21.21	+35 19.4	1.762	2.267	25.5	18.8	106 E	6*	81	6 25	13 28.02	-39 34.5	2.245	2.869	18.2	19.2	118 E	—	76
7 30	14 31.13	+35 45.4	1.906	2.301	25.8	19.0	99 E	5*	80	6 30	13 29.30	-38 51.4	2.291	2.862	18.9	19.2	114 E	—	77
8 9	14 43.19	+36 16.3	2.053	2.335	25.7	19.													

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°
16635 1993 QO										154229 2002 JN₉₇									
<i>(continuation)</i>										<i>(continuation)</i>									
12 27	18 16.54	-34 0.3	3.436	2.476	4.3	19.2	11 W	—	1*	2 1	14 35.40	-3 15.9	1.437	1.794	33.2	19.9	94 W	42	65*
1 2	18 38.33	-33 17.8	3.397	2.447	5.0	19.2	13 W	—	5*	2 11	14 36.33	-2 37.7	1.391	1.885	30.6	19.9	104 W	42	67
1 16	19 0.03	-32 25.1	3.347	2.417	6.5	19.2	16 W	—	9*	2 21	14 33.19	-1 39.8	1.346	1.972	27.2	19.8	114 W	43	66
119039 2001 FZ₉₁										14223 Dolby									
12 23	13 57.52	-9 41.2	3.724	3.341	14.8	19.8	60 W	34*	41*	12 23	13 58.88	-8 29.3	3.389	3.020	16.4	20.6	60 W	35*	40*
1 2	14 7.79	-10 52.8	3.589	3.335	15.8	19.8	67 W	34*	50*	1 2	14 9.63	-9 18.4	3.246	3.008	17.6	20.6	67 W	35*	48*
1 12	14 17.22	-11 59.2	3.448	3.330	16.6	19.7	75 W	33	58*	1 12	14 19.55	-10 0.1	3.095	2.996	18.5	20.5	75 W	35	57*
1 22	14 25.64	-13 0.4	3.302	3.325	17.1	19.6	83 W	32	67*	1 22	14 28.44	-10 33.7	2.939	2.982	19.1	20.4	83 W	34	65*
2 1	14 32.81	-13 55.9	3.154	3.321	17.3	19.5	91 W	31	74*	2 1	14 36.04	-10 58.5	2.779	2.968	19.4	20.3	91 W	34	72*
2 11	14 38.53	-14 45.6	3.007	3.317	17.1	19.4	100 W	30	79	2 11	14 42.11	-11 13.8	2.620	2.952	19.2	20.1	100 W	34	75*
2 21	14 42.58	-15 29.3	2.865	3.315	16.4	19.3	109 W	30	79	2 21	14 46.35	-11 19.1	2.464	2.936	18.6	20.0	109 W	34	75
3 2	14 44.74	-16 6.6	2.731	3.313	15.3	19.1	118 W	29	80	3 2	14 48.48	-11 13.7	2.315	2.919	17.4	19.8	118 W	34	75
3 12	14 44.87	-16 37.3	2.609	3.311	13.7	19.0	128 W	28	81	3 12	14 48.25	-10 57.5	2.177	2.901	15.6	19.6	128 W	34	75
3 22	14 42.91	-17 1.1	2.502	3.310	11.6	18.8	138 W	28	81	3 22	14 45.52	-10 30.6	2.054	2.882	13.1	19.3	139 W	34	75
4 1	14 38.97	-17 17.7	2.415	3.310	9.0	18.6	149 W	28	81	4 1	14 40.28	-9 53.8	1.952	2.862	10.0	19.1	150 W	35	74
4 11	14 33.34	-17 27.2	2.353	3.311	6.0	18.4	160 W	28	81	4 11	14 32.85	-9 9.3	1.873	2.841	6.4	18.8	162 W	36	73
4 21	14 26.52	-17 30.3	2.316	3.312	2.8	18.2	171 W	27	82	4 21	14 23.79	-8 20.5	1.821	2.820	2.8	18.5	172 W	37	72
5 1	14 19.17	-17 28.4	2.308	3.313	1.3	18.1	176 E	28	81	4 26	14 18.91	-7 56.0	1.806	2.809	2.0	18.5	174 W	37	72
5 11	14 12.05	-17 23.9	2.328	3.316	4.3	18.3	166 E	28	81	5 1	14 13.96	-7 32.1	1.798	2.797	3.2	18.5	171 E	37	72
5 21	14 5.83	-17 19.4	2.375	3.319	7.5	18.5	155 E	28	81	5 6	14 9.07	-7 9.8	1.797	2.786	5.1	18.6	166 E	38	71
5 31	14 1.07	-17 17.6	2.447	3.323	10.3	18.7	144 E	28	81	5 11	14 4.36	-6 49.5	1.803	2.774	7.1	18.7	160 E	38	71
6 10	13 58.13	-17 20.9	2.540	3.327	12.7	18.9	134 E	28	81	5 21	13 55.94	-6 17.1	1.834	2.750	11.0	18.9	149 E	39	70
6 20	13 57.15	-17 30.8	2.651	3.332	14.6	19.0	124 E	27	82	5 31	13 49.43	-5 58.5	1.889	2.725	14.5	19.1	138 E	39	70
6 30	13 58.16	-17 48.1	2.776	3.337	16.0	19.2	115 E	26	82	6 10	13 45.29	-5 55.1	1.962	2.699	17.5	19.2	127 E	39	70
7 10	14 1.06	-18 12.8	2.910	3.344	17.0	19.3	106 E	23	82	6 20	13 43.68	-6 6.9	2.049	2.672	19.7	19.4	117 E	38*	70
7 20	14 5.72	-18 44.5	3.051	3.350	17.5	19.5	98 E	20	83	6 30	13 44.58	-6 32.9	2.145	2.645	21.4	19.5	108 E	36*	71
7 30	14 11.97	-19 22.6	3.195	3.358	17.6	19.6	90 E	18	82*	7 10	13 47.84	-7 11.5	2.246	2.616	22.5	19.6	100 E	32*	71
8 9	14 19.64	-20 5.9	3.340	3.366	17.4	19.7	83 E	15	77*	7 20	13 53.25	-8 0.6	2.350	2.587	23.1	19.7	92 E	29*	72
8 19	14 28.58	-20 53.6	3.484	3.374	16.9	19.7	75 E	13	69*	7 30	14 0.62	-8 58.6	2.452	2.557	23.3	19.8	84 E	26*	72*
8 29	14 38.65	-21 44.5	3.624	3.383	16.1	19.8	68 E	11	62*	8 9	14 9.72	-10 3.5	2.552	2.527	23.0	19.8	77 E	23*	68*
9 8	14 49.72	-22 37.5	3.758	3.393	15.1	19.9	61 E	9	55*	8 19	14 20.41	-11 13.6	2.646	2.496	22.5	19.9	70 E	20*	63*
9 18	15 1.69	-23 31.7	3.884	3.403	13.9	19.9	55 E	7	48*	8 29	14 32.54	-12 27.3	2.734	2.464	21.6	19.9	64 E	18	57*
9 28	15 14.45	-24 26.1	4.002	3.414	12.6	19.9	48 E	6	42*	9 8	14 45.99	-13 43.1	2.814	2.431	20.5	19.9	58 E	16	51*
10 8	15 27.90	-25 19.7	4.110	3.425	11.1	19.9	41 E	4	35*	9 18	15 0.69	-14 59.5	2.886	2.398	19.2	19.9	52 E	14	46*
10 18	15 41.98	-26 11.8	4.206	3.437	9.6	19.9	35 E	2	29*	9 28	15 16.56	-16 15.1	2.948	2.365	17.8	19.8	46 E	13	40*
10 28	15 56.60	-27 1.5	4.289	3.449	7.9	19.9	29 E	2	22*	10 8	15 33.54	-17 28.2	2.999	2.331	16.1	19.8	40 E	11	34*
11 7	16 11.65	-27 48.2	4.358	3.462	6.2	19.9	22 E	—	16*	10 18	15 51.61	-18 37.5	3.040	2.296	14.4	19.7	35 E	10	29*
11 17	16 27.08	-28 31.3	4.413	3.475	4.6	19.8	16 E	—	10*	10 28	16 10.71	-19 41.5	3.071	2.262	12.6	19.7	30 E	8	23*
11 27	16 42.78	-29 10.4	4.453	3.488	3.0	19.8	11 E	—	4*	11 7	16 30.80	-20 38.7	3.090	2.227	10.6	19.6	24 E	7	18*
12 7	16 58.66	-29 45.1	4.478	3.502	2.0	19.7	7 E	—	—	11 17	16 51.84	-21 27.6	3.099	2.191	8.6	19.4	19 E	5	12*
12 17	17 14.62	-30 15.3	4.486	3.517	2.5	19.8	9 W	—	2*	11 27	17 13.77	-22 6.7	3.098	2.156	6.5	19.3	14 E	3	7*
12 27	17 30.56	-30 40.9	4.478	3.532	3.8	19.9	14 W	—	8*	12 7	17 36.52	-22 34.8	3.086	2.121	4.4	19.2	10 E	—	2*
1 6	17 46.36	-31 2.1	4.455	3.547	5.4	19.9	20 W	—	14*	12 17	18 0.01	-22 50.5	3.065	2.086	2.3	19.0	5 E	—	—
1 16	18 1.91	-31 19.1	4.416	3.563	7.1	20.0	26 W	—	1*	12 27	18 24.15	-22 52.7	3.034	2.051	0.2	18.7	0 E	—	—
209519 2004 RQ₃₂₆										86667 2000 FO₁₀									
12 23	13 58.44	-4 19.2	2.207	1.945	26.5	20.7	62 W	39*	39*	12 23	13 59.32	-21 47.3	1.182	1.027	52.3	19.9	56 W	22*	45*
1 2	14 13.69	-6 37.1	2.133	1.977	27.3	20.6	67 W	38*	46*	1 2	14 19.34	-23 6.3	1.177	1.108	50.9	20.1	61 W	22*	51*
1 12	14 27.62	-8 47.8	2.054	2.010	28.0	20.6	74 W	36*	54*	1 12	14 38.61	-24 12.3	1.150	1.177	50.0	20.1	66 W	21*	58*
1 22	14 40.03	-10 52.3	1.968	2.044	28.3	20.6	80 W	34	63*	1 22	14 56.95	-25 4.8	1.103	1.234	49.4	20.1	72 W	20	64*
2 1	14 50.61	-12 51.0	1.878	2.078	28.3	20.5	87 W	32	71*	2 1	15 14.06	-25 42.8	1.041	1.281	48.9	20.1	78 W	19	71*
2 11	14 59.01	-14 44.9	1.787	2.113	27.7	20.4	95 W	30	78*	2 6	15 22.06	-25 56.0	1.004	1.301	48.6	20.0	82 W	19	75*
2 21	15 4.81	-16 35.0	1.695	2.147	26.7	20.3	103 W	28	81	2 11	15 29.64	-26 5.1	0.964	1.318	48.2	19.9	85 W	19	79*
3 2	15 7.54	-18 21.5	1.607	2.181	24.9	20.2	112 W	27	82	2 16	15 36.73	-26 9.7	0.922	1.333	47.8	19.8	88 W	19	82*
3 12	15 6.75	-20 3.9	1.526	2.216	22.4	20.0	122 W	25	84	2 21	15 43.26	-26 9.4	0.877	1.345	47.3	19.7	92 W	19	86*
3 22	15 2.14	-21 40.4	1.457	2.250	19.2	19.9	132 W	23	86	2 26	15 49.14	-26 3.8	0.831	1.355	46.6	19.6	96 W	19	90*
4 1	14 53.65	-23 7.2	1.404	2.284	15.2	19.7	143 W	22	87	3 2	15 54.25	-25 52.0	0.782	1.362	45.8	19.5	100 W	19	90
4 6	14 48.08	-23 45.5	1.385	2.301	13.0	19.6	149 W	21	88	3 7	15 58.48	-25 33.2	0.733	1.367	44.8	19.3	104 W	19	90
4 11	14 41.78	-24 19.4	1.373	2.318	10.7	19.5	154 W	21	88	3 12	16 1.69	-25 6.3	0.683	1.370	43.6	19.1	108 W	20	89
4 16	14 34.90	-24 48.6	1.366	2.334	8.5	19.4	160 W	20	89	3 17	16 3.67	-24 29.6	0.632	1.370	42.0	18.9	113 W	21	88
4 21	14 27.63	-25 12.4	1.367	2.351	6.5	19.3	165 W	20	89										
4 26	14 20.18	-25 31.0	1.374	2.367	5.1	19.3	168 W	19	90										
5 1	14 12.79	-25 44.3	1.388	2.384	4.9	19.3	168 E	19	90										
5 6	14 5.67	-25 53.1	1.410	2.400	6.0	19.4	166 E	19	90										
5 11	13 59.03	-25 57.9	1.438	2.416	7.7	19.6	161 E	19	90										
5 16	13 53.00	-25 59.5	1.472	2.432	9.7	19.7	156 E	19	90										
5 21	13 4																		

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°
86667 2000 FO₁₀										66407 1999 LQ₂₈									
<i>(continuation)</i>										<i>(continuation)</i>									
3 22	16 4.19	-23 40.9	0.581	1.368	40.1	18.7	118 W	21	88	7 30	16 13.55	-44 11.9	0.396	1.260	44.3	19.1	120 E	1*	72
3 27	16 2.94	-22 37.2	0.531	1.364	37.7	18.4	123 W	22	87	8 4	16 10.49	-46 23.5	0.421	1.252	47.3	19.3	115 E	—	70
4 1	15 59.57	-21 14.5	0.482	1.357	34.7	18.1	129 W	24	85	8 9	16 9.88	-48 19.9	0.446	1.243	49.7	19.5	111 E	—	68
4 6	15 53.69	-19 27.4	0.435	1.348	31.1	17.8	136 W	26	83	8 14	16 11.62	-50 4.1	0.471	1.235	51.8	19.6	107 E	—	66
4 11	15 44.81	-17 9.1	0.391	1.337	26.6	17.4	143 W	28	81	8 19	16 15.59	-51 38.3	0.496	1.226	53.4	19.8	103 E	—	64
4 16	15 32.41	-14 11.1	0.351	1.323	21.2	17.0	152 W	31	78	8 24	16 21.72	-53 4.3	0.520	1.217	54.9	19.9	100 E	—	63
4 21	15 15.99	-10 24.9	0.316	1.307	15.0	16.5	160 W	35	74	8 29	16 29.89	-54 23.1	0.543	1.207	56.0	20.0	98 E	—	62*
4 26	14 55.32	-5 45.2	0.287	1.288	9.9	16.1	167 W	39	70	9 3	16 40.01	-55 35.0	0.564	1.198	57.0	20.1	95 E	—	60*
5 1	14 30.59	-0 16.1	0.266	1.266	11.7	16.0	165 E	45	64	9 8	16 52.04	-56 40.0	0.584	1.189	57.9	20.2	93 E	—	59*
5 3	14 19.74	+ 2 5.8	0.260	1.257	14.8	16.0	161 E	47	62	9 13	17 5.93	-57 37.6	0.602	1.179	58.6	20.3	91 E	—	58*
5 5	14 8.45	+ 4 30.9	0.255	1.247	18.4	16.1	157 E	50	59	9 18	17 21.67	-58 27.2	0.618	1.170	59.2	20.3	89 E	—	57*
5 7	13 56.82	+ 6 57.1	0.252	1.237	22.5	16.1	152 E	52	57	9 23	17 39.21	-59 7.9	0.633	1.160	59.8	20.4	87 E	—	56*
5 9	13 44.97	+ 9 22.2	0.250	1.227	26.7	16.2	147 E	54	55	9 28	17 58.43	-59 38.5	0.645	1.151	60.3	20.4	86 E	—	55*
5 11	13 33.01	+ 11 43.9	0.250	1.216	31.1	16.3	142 E	57	52	10 3	18 19.17	-59 57.6	0.656	1.142	60.7	20.4	84 E	—	55*
5 13	13 21.05	+ 14 0.2	0.251	1.205	35.4	16.5	136 E	59	50	10 8	18 41.21	-60 3.6	0.664	1.133	61.2	20.5	83 E	—	55*
5 15	13 9.21	+ 16 9.5	0.253	1.193	39.7	16.6	131 E	61	48	10 13	19 4.32	-59 55.1	0.671	1.124	61.6	20.5	82 E	—	55*
5 17	12 57.60	+ 18 10.5	0.256	1.180	43.9	16.7	126 E	63	46	10 18	19 28.19	-59 30.7	0.675	1.115	62.0	20.5	81 E	—	55*
5 19	12 46.30	+ 20 2.5	0.260	1.168	47.9	16.8	121 E	65	44	10 23	19 52.47	-58 49.2	0.677	1.107	62.4	20.5	81 E	—	56*
5 21	12 35.39	+ 21 45.3	0.265	1.155	51.8	16.9	116 E	67	42	10 28	20 16.78	-57 49.7	0.678	1.100	62.8	20.5	80 E	—	57*
5 26	12 10.07	+ 25 22.7	0.281	1.120	60.9	17.3	105 E	70*	39	11 2	20 40.78	-56 31.6	0.677	1.092	63.2	20.5	79 E	—	58*
5 31	11 47.66	+ 28 11.4	0.298	1.082	69.0	17.6	95 E	69*	36	11 7	21 4.19	-54 54.2	0.674	1.086	63.6	20.5	79 E	—	60*
6 5	11 27.79	+ 30 23.2	0.316	1.041	76.5	17.9	86 E	65*	34	11 12	21 26.80	-52 57.4	0.670	1.080	64.0	20.5	79 E	—	62*
6 10	11 9.71	+ 32 8.8	0.335	0.996	83.6	18.1	77 E	59*	32	11 17	21 48.51	-50 41.2	0.665	1.074	64.4	20.4	78 E	—	64*
6 12	11 2.79	+ 32 45.6	0.342	0.978	86.4	18.3	74 E	56*	31*	11 22	22 9.25	-48 5.9	0.659	1.069	64.7	20.4	78 E	—	66*
6 14	10 55.96	+ 33 20.0	0.349	0.959	89.2	18.4	71 E	54*	31*	11 27	22 28.99	-45 11.8	0.653	1.065	65.1	20.4	78 E	—	68*
6 16	10 49.16	+ 33 52.1	0.356	0.939	92.1	18.5	67 E	51*	30*	12 2	22 47.76	-41 59.5	0.646	1.061	65.4	20.4	78 E	—	70*
6 18	10 42.33	+ 34 22.3	0.362	0.919	94.9	18.6	64 E	49*	29*	12 7	23 5.63	-38 29.8	0.640	1.058	65.6	20.4	78 E	—	72*
6 20	10 35.40	+ 34 50.6	0.369	0.898	97.9	18.7	61 E	46*	28*	12 12	23 22.70	-34 43.4	0.634	1.056	65.8	20.4	78 E	—	74*
6 22	10 28.30	+ 35 17.2	0.375	0.877	100.9	18.9	58 E	44*	26*	12 17	23 39.07	-30 41.8	0.629	1.055	66.0	20.3	78 E	—	76*
6 24	10 20.98	+ 35 41.9	0.382	0.855	103.9	19.0	55 E	42*	25*	12 22	23 54.86	-26 26.8	0.626	1.055	66.0	20.3	78 E	—	78*
6 26	10 13.37	+ 36 4.6	0.388	0.832	107.1	19.1	51 E	39*	23*	12 27	24 0.16	-22 0.4	0.624	1.055	66.0	20.3	79 E	—	80*
6 28	10 5.41	+ 36 25.0	0.395	0.809	110.5	19.3	48 E	37*	21*	1 1	0 25.06	-17 25.4	0.624	1.056	65.9	20.3	79 E	—	82*
6 30	9 57.04	+ 36 42.7	0.401	0.786	113.9	19.5	45 E	34*	19*	1 6	0 39.66	-12 44.5	0.626	1.058	65.7	20.3	79 E	—	84*
7 5	9 34.16	+ 37 11.1	0.420	0.724	123.2	20.1	37 E	28*	13*	1 11	0 54.09	- 8 0.9	0.631	1.061	65.5	20.3	79 E	—	86*
7 10	9 8.54	+ 37 6.5	0.444	0.659	133.4	21.0	28 E	21*	7*	1 16	1 8.44	- 3 17.8	0.638	1.064	65.1	20.4	79 E	—	88*
7 15	8 41.38	+ 36 14.4	0.477	0.592	143.7	22.2	20 E	14*	—	12 23	13 59.85	+ 6 53.2	2.539	2.328	22.8	20.8	66 W	50*	32*
7 20	8 15.39	+ 34 24.7	0.525	0.524	151.4	23.5	14 E	7*	—	1 2	14 11.44	+ 5 52.6	2.476	2.384	23.2	20.9	73 W	51*	39*
12 23	13 59.73	+ 8 19.0	1.204	1.204	48.9	21.5	67 W	51*	31*	1 12	14 21.29	+ 5 5.0	2.406	2.440	23.4	20.8	80 W	50	47*
1 2	14 31.56	+ 7 34.8	1.150	1.223	48.8	21.5	69 W	51*	34*	1 22	14 29.19	+ 4 30.2	2.330	2.495	23.2	20.8	88 W	50	53*
1 12	15 2.15	+ 6 59.9	1.125	1.241	48.8	21.5	72 W	51*	38*	2 1	14 34.88	+ 4 7.9	2.251	2.550	22.6	20.8	96 W	49	58*
1 22	15 31.43	+ 6 35.6	1.096	1.258	48.8	21.4	74 W	51*	42*	2 11	14 38.10	+ 3 57.0	2.172	2.605	21.5	20.7	105 W	49	60
2 1	15 59.28	+ 6 23.0	1.064	1.273	48.9	21.4	77 W	51*	45*	3 2	14 38.61	+ 3 56.1	2.096	2.659	19.8	20.6	114 W	49	60
2 11	16 25.62	+ 6 21.8	1.027	1.288	48.9	21.3	79 W	51*	49*	3 2	14 36.24	+ 4 3.1	2.029	2.713	17.6	20.5	124 W	49	60
2 21	16 50.38	+ 6 31.2	0.986	1.301	48.9	21.3	82 W	51*	51*	3 12	14 31.00	+ 4 14.7	1.976	2.766	14.8	20.4	135 W	49	60
3 2	17 13.41	+ 6 49.9	0.939	1.312	48.9	21.2	86 W	51*	54*	3 22	14 23.12	+ 4 26.9	1.942	2.819	11.6	20.3	145 W	49	60
3 12	17 34.61	+ 7 15.4	0.888	1.322	48.7	21.1	89 W	52*	55*	4 1	14 13.13	+ 4 35.2	1.932	2.871	8.3	20.2	156 W	50	59
3 22	17 53.83	+ 7 45.0	0.832	1.330	48.5	20.9	93 W	52*	56*	4 11	14 1.90	+ 4 35.2	1.949	2.923	5.7	20.1	163 W	50	59
4 1	18 10.81	+ 8 14.7	0.772	1.336	47.9	20.8	97 W	53*	56	4 21	13 50.42	+ 4 23.9	1.996	2.974	5.4	20.2	164 E	49	60
4 11	18 25.26	+ 8 38.7	0.708	1.340	47.1	20.6	102 W	53*	55	5 1	13 39.70	+ 3 59.6	2.072	3.024	7.6	20.4	157 E	49	60
4 21	18 36.77	+ 8 49.8	0.641	1.342	45.7	20.3	107 W	54*	55	5 11	13 30.55	+ 3 22.4	2.176	3.073	10.3	20.7	147 E	48	61
4 26	18 41.21	+ 8 47.1	0.607	1.342	44.7	20.2	110 W	54*	55	5 21	13 23.46	+ 2 34.0	2.304	3.122	12.7	20.9	137 E	48	61
5 1	18 44.65	+ 8 36.5	0.572	1.342	43.5	20.0	113 W	54	55	5 31	13 18.65	+ 1 36.1	2.452	3.170	14.8	21.2	127 E	47	62
5 6	18 46.97	+ 8 15.7	0.538	1.341	42.1	19.8	117 W	53	56	6 10	13 16.12	+ 0 30.9	2.616	3.217	16.2	21.4	118 E	45*	63
5 11	18 48.06	+ 7 42.0	0.504	1.340	40.3	19.6	121 W	53	56	12 23	14 0.89	-14 49.2	3.301	2.891	16.6	20.4	57 W	29*	43*
5 16	18 47.73	+ 6 52.1	0.470	1.339	38.1	19.4	125 W	52	57	1 2	14 12.54	-15 55.3	3.166	2.882	17.9	20.3	64 W	29*	51*
5 21	18 45.79	+ 5 41.8	0.438	1.337	35.4	19.2	130 W	51*	58	1 12	14 23.40	-16 55.							

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

20/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°-26°	19/21	α_{2000}	δ_{2000}	Δ	r	β	V	ψ	45°-26°
138127 2000 EE₁₄ (continuation)									138127 2000 EE₁₄ (continuation)								
4 19	23 28.94	+22 22.4	0.665	0.598	105.2	19.0	35 W	26* 17*	1 12	15 54.51	-41 0.6	0.419	0.781	106.1	18.6	50 W	2* 44*
4 21	23 41.94	+21 47.7	0.691	0.573	104.9	19.0	33 W	24* 17*	1 14	15 52.50	-40 2.8	0.409	0.799	104.4	18.5	52 W	3* 46*
4 23	23 54.83	+21 9.2	0.718	0.548	104.4	18.9	32 W	22* 16*	1 16	15 51.06	-39 1.7	0.399	0.816	102.7	18.4	54 W	5* 48*
4 25	0 7.68	+20 27.5	0.747	0.522	103.5	18.9	30 W	20* 16*	249595 1997 GH₂₈								
4 27	0 20.54	+19 43.1	0.779	0.495	102.1	18.8	29 W	18* 16*	12 23	14 1.44	-13 15.9	1.954	1.653	30.2	21.5	58 W	30* 42*
4 29	0 33.48	+18 56.7	0.812	0.469	100.2	18.6	27 W	16* 15*	1 2	14 21.18	-15 31.7	1.912	1.701	30.9	21.5	63 W	29* 49*
5 1	0 46.60	+18 9.2	0.849	0.442	97.6	18.5	26 W	14* 15*	1 12	14 39.63	-17 35.2	1.862	1.750	31.4	21.5	68 W	27* 56*
5 3	0 59.99	+17 21.4	0.887	0.416	94.3	18.3	24 W	12* 14*	1 22	14 56.61	-19 27.0	1.805	1.798	31.7	21.5	74 W	26 63*
5 5	1 13.76	+16 34.3	0.928	0.391	90.2	18.1	23 W	10* 14*	2 1	15 11.83	-21 7.8	1.741	1.847	31.7	21.5	80 W	24 71*
5 7	1 28.02	+15 49.2	0.972	0.368	85.1	17.8	21 W	8* 13*	2 11	15 24.97	-22 38.4	1.672	1.894	31.3	21.4	87 W	22 79*
5 9	1 42.86	+15 7.4	1.017	0.347	78.9	17.6	20 W	5* 12*	3 2	15 35.64	-24 0.0	1.600	1.941	30.5	21.4	94 W	21 87*
5 11	1 58.38	+14 30.5	1.063	0.329	71.7	17.3	18 W	3* 11*	3 21	15 43.35	-25 12.9	1.525	1.987	29.2	21.3	102 W	20 89
5 13	2 14.57	+14 0.0	1.110	0.317	63.6	17.1	16 W	1* 10*	3 12	15 47.61	-26 17.3	1.452	2.032	27.2	21.2	111 W	19 90
5 15	2 31.38	+13 37.1	1.156	0.310	54.9	16.9	15 W	— 8*	3 22	15 47.97	-27 12.2	1.384	2.076	24.4	21.0	121 W	18 89
5 17	2 48.65	+13 22.7	1.200	0.310	46.2	16.7	13 W	— 7*	4 1	15 44.08	-27 55.1	1.326	2.119	20.9	20.9	131 W	17 88
5 19	3 6.13	+13 16.6	1.241	0.316	38.1	16.6	11 W	— 5*	4 11	15 36.02	-28 22.0	1.281	2.160	16.6	20.7	142 W	17 88
5 21	3 23.58	+13 17.8	1.279	0.328	31.1	16.5	10 W	— 3*	4 21	15 24.40	-28 28.8	1.255	2.201	11.8	20.5	153 W	17 88
5 23	3 40.78	+13 25.1	1.313	0.345	25.6	16.6	8 W	— 1*	5 1	15 10.49	-28 12.8	1.253	2.240	7.0	20.4	164 W	17 88
5 25	3 57.57	+13 36.9	1.343	0.366	21.9	16.6	8 W	—	5 6	15 3.24	-27 56.7	1.262	2.259	5.2	20.3	168 W	17 88
5 27	4 13.85	+13 51.6	1.371	0.389	19.7	16.7	7 W	—	5 11	14 56.11	-27 36.0	1.277	2.277	4.6	20.3	170 E	17 88
5 29	4 29.57	+14 8.0	1.397	0.414	18.9	16.9	8 E	—	5 16	14 49.32	-27 11.7	1.299	2.296	5.6	20.4	167 E	18 89
5 31	4 44.73	+14 25.2	1.421	0.440	18.8	17.0	8 E	—	5 21	14 43.05	-26 44.8	1.327	2.314	7.4	20.6	163 E	18 89
6 2	4 59.33	+14 42.5	1.443	0.467	19.2	17.2	9 E	— 1*	5 26	14 37.46	-26 16.7	1.362	2.331	9.5	20.7	158 E	19 90
6 4	5 13.40	+14 59.2	1.465	0.493	19.7	17.4	9 E	— 3*	5 31	14 32.67	-25 48.5	1.402	2.349	11.5	20.9	152 E	19 90
6 6	5 26.95	+15 15.1	1.486	0.520	20.3	17.5	10 E	— 4*	6 5	14 28.74	-25 21.4	1.449	2.365	13.5	21.1	147 E	20 89
6 8	5 40.02	+15 29.9	1.506	0.546	20.8	17.7	11 E	— 5*	6 10	14 25.70	-24 56.1	1.500	2.382	15.3	21.2	142 E	20 89
6 10	5 52.64	+15 43.4	1.527	0.571	21.2	17.8	12 E	— 6*	6 15	14 23.54	-24 33.4	1.556	2.398	16.9	21.4	137 E	20 89
6 15	6 22.39	+16 10.9	1.575	0.632	21.8	18.1	13 E	— 7*	22753 1998 WT								
6 20	6 49.85	+16 29.1	1.622	0.689	21.9	18.4	15 E	— 9*	12 23	14 1.95	-14 4.5	1.162	1.041	52.7	20.1	57 W	30* 42*
6 25	7 15.36	+16 38.5	1.668	0.740	21.5	18.6	16 E	— 9*	12 28	14 28.18	-16 27.2	1.121	0.990	55.1	19.9	56 W	27* 42*
6 30	7 39.18	+16 39.6	1.712	0.787	21.0	18.8	16 E	— 10*	1 2	14 56.85	-18 45.5	1.088	0.938	57.5	19.8	54 W	24* 42*
7 5	8 1.53	+16 33.4	1.753	0.829	20.2	18.9	16 E	— 10*	1 7	15 28.07	-20 53.8	1.065	0.885	59.7	19.7	51 W	22* 41*
7 10	8 22.64	+16 20.6	1.793	0.866	19.4	19.0	16 E	— 10*	1 12	16 1.78	-22 44.7	1.051	0.831	61.7	19.6	48 W	19* 39*
7 15	8 42.68	+16 2.0	1.829	0.899	18.4	19.1	16 E	— 10*	1 17	16 37.72	-24 10.8	1.049	0.777	63.1	19.5	45 W	16* 37*
7 20	9 1.79	+15 38.2	1.862	0.928	17.5	19.2	16 E	— 10*	1 22	17 15.37	-25 5.1	1.059	0.724	63.8	19.4	41 W	13* 34*
7 25	9 20.13	+15 9.7	1.892	0.952	16.5	19.3	15 E	— 9*	1 27	17 54.05	-25 22.6	1.082	0.672	63.3	19.3	38 W	11* 31*
7 30	9 37.79	+14 37.0	1.918	0.972	15.6	19.3	15 E	— 1*	2 1	18 32.98	-25 1.0	1.116	0.625	61.5	19.1	34 W	9* 27*
8 9	10 11.54	+13 20.4	1.957	1.001	13.8	19.4	14 E	— 1*	2 6	19 11.47	-24 0.8	1.162	0.584	58.0	18.9	30 W	7* 24*
8 19	10 43.83	+11 50.6	1.980	1.014	12.2	19.3	12 E	— 2*	2 11	19 49.00	-22 25.0	1.217	0.551	52.8	18.8	26 W	5* 20*
8 29	11 15.32	+10 8.8	1.984	1.011	11.1	19.3	11 E	— 2*	2 13	20 3.65	-21 37.7	1.241	0.541	50.3	18.7	25 W	4* 19*
9 8	11 46.63	+8 15.2	1.969	0.993	10.4	19.2	10 E	— 3*	2 15	20 18.07	-20 45.9	1.265	0.533	47.6	18.6	23 W	3* 17*
9 18	12 18.39	+6 9.2	1.934	0.960	10.4	19.1	10 E	— 3*	2 17	20 32.22	-19 49.9	1.291	0.528	44.7	18.6	22 W	3* 16*
9 28	12 51.29	+3 49.2	1.880	0.910	11.1	19.0	10 E	— 4*	2 19	20 46.11	-18 50.2	1.317	0.525	41.6	18.5	21 W	2* 15*
10 8	13 26.15	+1 12.2	1.805	0.843	12.5	18.8	11 E	— 5*	2 21	20 59.70	-17 47.2	1.343	0.524	38.5	18.5	19 W	1* 13*
10 13	13 44.63	+0 14.3	1.761	0.803	13.5	18.6	11 E	— 5*	2 23	21 13.00	-16 41.5	1.370	0.526	35.4	18.4	18 W	1* 12*
10 18	14 4.02	+1 47.3	1.710	0.758	14.8	18.5	11 E	— 5*	2 25	21 25.98	-15 33.6	1.396	0.530	32.3	18.4	17 W	— 11*
10 23	14 24.51	+3 28.0	1.655	0.708	16.3	18.3	12 E	— 6*	2 27	21 38.63	-14 23.9	1.423	0.537	29.3	18.4	15 W	— 9*
10 28	14 46.30	+5 18.4	1.593	0.653	18.3	18.1	12 E	— 6*	2 29	21 50.96	-13 13.0	1.449	0.545	26.4	18.4	14 W	— 8*
11 2	15 9.65	+7 20.7	1.524	0.594	20.9	17.9	12 E	— 6*	3 2	22 2.95	-12 1.3	1.475	0.556	23.7	18.4	13 W	— 7*
11 7	15 34.82	+9 38.7	1.448	0.531	24.7	17.7	13 E	— 6*	3 7	22 31.49	+9 1.2	1.539	0.591	17.7	18.4	10 W	— 4*
11 12	16 2.03	+12 17.9	1.361	0.464	30.6	17.4	14 E	— 7*	3 12	22 58.05	+6 3.9	1.601	0.633	12.9	18.5	8 W	— 2*
11 17	16 31.20	+15 26.5	1.260	0.399	40.1	17.2	15 E	— 7*	3 17	23 22.79	+3 13.3	1.661	0.682	9.4	18.6	6 W	—
11 19	16 43.25	+16 52.8	1.215	0.375	45.4	17.1	16 E	— 6*	3 22	23 45.91	+0 31.4	1.721	0.733	6.9	18.7	5 W	—
11 21	16 55.31	+18 26.7	1.167	0.353	51.8	17.1	16 E	— 6*	3 27	0 7.62	+2 0.6	1.779	0.787	5.2	18.9	4 W	—
11 23	17 7.16	+20 9.0	1.115	0.335	59.4	17.1	17 E	— 5*	4 1	0 28.09	+4 22.3	1.836	0.841	4.2	19.0	3 W	—
11 25	17 18.46	+22 0.3	1.061	0.320	68.1	17.2	18 E	— 4*	4 11	1 5.95	+8 34.8	1.947	0.948	3.3	19.4	3 W	—
11 27	17 28.78	+24 0.5	1.004	0.312	77.9	17.3	18 E	— 3*	4 21	1 40.56	+12 9.0	2.051	1.050	3.6	19.7	4 W	—
11 29	17 37.65	+26 8.9	0.947	0.309	88.2	17.5	18 E	— 2*	5 1	2 12.69	+15 9.0	2.148	1.147	4.4	20.0	5 W	—
12 1	17 44.62	+28 23.3	0.890	0.313	98.5	17.9	18 E	— 12*	5 11	2 42.85	+17 39.0	2.234	1.238	5.7	20.4	7 W	—
12 3	17 49.35	+30 40.9	0.836	0.323	108.2	18.3	18 E	— 12*	5 21	3 11.43	+19 42.7	2.310	1.322	7.3	20.7	10 W	— 3*
12 5	17 51.69	+32 58.2	0.786	0.339	116.7	18.8	18 E	— 12*	5 31	3 38.71	+21 23.1	2.373	1.400	9.0	20.9	12 W	1* 5*
12 7	17 51.64	+35 11.4	0.740	0.359	123.8	19.4	18 E	— 11*	6 10	4 4.86	+22 43.0	2.422	1.472	10.8	21.1	16 W	4* 8*
12 9	17 49.33	+37 17.3	0.699	0.381	129.1	19.9	17 E	— 10*	6 20	4 30.01	+23 44.4	2.457	1.537	12.7	21.3	19 W	7* 11*
12 11	17 45.00	+39 12.8	0.663	0.406	132.7	20.2	18 E	— 8*	4544 Xanthus								
12 13	17 38.94	+40 55.5	0.632	0.432	134.7	20.5	18 E	— 6*	12 23	14 2.92	+4 35.1	1.455	1.296	41.4	20.1	61 W	39* 38*
12 15	17 31.47	+42 23.6	0.605	0.458	135.2	20.6	19 E	— 4*	1 2	14 27.95	+7 33.2	1.390	1.				

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°	
4544 Xanthus										88453 2001 QF₉₁										
<i>(continuation)</i>										<i>(continuation)</i>										
3 17	18 14.72	-28 38.6	0.806	1.206	55.1	19.0	83 W	15*	77*	6 20	13 30.14	-42 50.3	2.238	2.916	17.0	20.7	123 E	1*	73	
3 22	18 35.96	-29 51.4	0.770	1.191	56.3	19.0	84 W	14*	77*	6 25	13 30.48	-42 6.6	2.287	2.918	17.8	20.7	119 E	1*	74	
3 27	18 58.63	-30 57.8	0.736	1.176	57.6	18.9	84 W	12*	77*	6 30	13 31.57	-41 25.8	2.338	2.919	18.4	20.8	115 E	1*	75	
4 1	19 22.84	-31 55.5	0.705	1.159	59.0	18.8	84 W	10*	76*	7 5	13 33.37	-40 48.2	2.393	2.920	18.9	20.9	111 E	1*	75	
4 6	19 48.66	-32 41.3	0.676	1.142	60.5	18.7	83 W	8*	75*	7 10	13 35.82	-40 14.1	2.449	2.920	19.4	21.0	107 E	1*	76	
4 11	20 16.10	-33 11.6	0.650	1.123	62.2	18.6	83 W	7*	74*	7 15	13 38.87	-39 43.6	2.508	2.921	19.8	21.0	104 E	—	76	
4 16	20 45.02	-33 22.5	0.627	1.105	64.1	18.6	82 W	5*	72*	7 20	13 42.47	-39 16.6	2.567	2.921	20.0	21.1	100 E	—	77*	
4 21	21 15.15	-33 10.3	0.608	1.085	66.0	18.5	80 W	3*	71*	7 25	13 46.59	-38 53.3	2.628	2.921	20.2	21.1	96 E	—	76*	
4 26	21 46.09	-32 31.7	0.593	1.065	68.0	18.5	79 W	2*	69*	7 30	13 51.19	-38 33.4	2.689	2.920	20.3	21.2	93 E	—	75*	
5 1	22 17.33	-31 24.7	0.581	1.044	70.1	18.5	77 W	1*	67*	8 4	13 56.21	-38 16.9	2.751	2.920	20.3	21.2	89 E	—	73*	
5 6	22 48.36	-29 48.8	0.574	1.023	72.3	18.5	75 W	—	65*	8 9	14 1.64	-38 3.5	2.813	2.919	20.3	21.3	86 E	—	71*	
5 11	23 18.69	-27 45.2	0.572	1.001	74.3	18.5	73 W	—	64*	8 14	14 7.43	-37 53.0	2.874	2.918	20.1	21.3	82 E	—	68*	
5 16	23 47.91	-25 16.8	0.573	0.979	76.3	18.5	70 W	—	62*	8 19	14 13.58	-37 45.2	2.935	2.916	19.9	21.4	79 E	—	65*	
5 21	0 15.78	-22 27.7	0.579	0.958	78.1	18.5	68 W	—	60*	8 24	14 20.06	-37 39.9	2.995	2.915	19.6	21.4	76 E	—	63*	
5 26	0 42.16	-19 22.5	0.589	0.936	79.7	18.6	65 W	—	58*	8 29	14 26.84	-37 36.8	3.055	2.913	19.3	21.4	72 E	—	60*	
5 31	1 7.09	-16 5.7	0.603	0.915	81.0	18.6	63 W	—	56*	9 3	14 33.90	-37 35.8	3.112	2.911	18.9	21.4	69 E	—	57*	
6 5	1 30.67	-12 41.3	0.621	0.894	82.0	18.7	61 W	2*	54*	9 8	14 41.23	-37 36.4	3.169	2.908	18.4	21.5	66 E	—	54*	
6 10	1 53.12	-9 13.1	0.642	0.874	82.6	18.7	59 W	3*	53*	9 13	14 48.82	-37 38.6	3.223	2.906	17.9	21.5	63 E	—	51*	
6 15	2 14.63	-5 43.9	0.666	0.856	82.8	18.8	57 W	5*	51*	162385 2000 BM₁₉										
6 20	2 35.45	-2 16.6	0.692	0.839	82.6	18.8	55 W	8*	49*	12 23	14 3.58	-5 20.4	0.995	0.992	59.3	20.7	60 W	38*	38*	
6 25	2 55.79	+1 6.7	0.722	0.823	82.0	18.8	53 W	10*	47*	1	2	14 43.21	-8 29.3	0.956	0.969	61.4	20.6	60 W	35*	41*
6 30	3 15.87	+4 24.1	0.753	0.810	81.1	18.9	52 W	13*	44*	1	12	15 27.13	-11 38.0	0.920	0.936	64.0	20.5	59 W	32*	43*
6 30	3 15.87	+4 24.1	0.753	0.810	81.1	18.9	52 W	13*	44*	1	22	16 16.38	-14 36.5	0.892	0.893	66.9	20.5	57 W	28*	44*
7 5	3 35.89	+7 33.8	0.787	0.799	79.8	18.9	51 W	16*	42*	1	27	16 43.24	-15 56.7	0.883	0.867	68.4	20.4	55 W	26*	43*
7 10	3 56.03	+10 34.0	0.822	0.790	78.1	18.9	50 W	19*	40*	2	1	17 11.64	-17 7.2	0.879	0.839	69.9	20.4	53 W	24*	43*
7 15	4 16.43	+13 23.1	0.859	0.784	76.3	18.9	49 W	21*	37*	2	6	17 41.52	-18 4.8	0.879	0.808	71.3	20.4	51 W	22*	42*
7 20	4 37.17	+15 59.4	0.896	0.782	74.2	18.9	48 W	24*	35*	2	11	18 12.76	-18 45.9	0.886	0.776	72.5	20.3	49 W	19*	40*
7 30	5 19.85	+20 27.3	0.972	0.785	69.7	19.0	46 W	28*	31*	2	16	18 45.16	-19 7.2	0.899	0.741	73.4	20.3	46 W	17*	38*
8 9	6 3.98	+23 48.2	1.046	0.800	65.0	19.0	46 W	32*	26*	2	21	19 18.42	-19 6.0	0.919	0.704	73.7	20.2	43 W	15*	36*
8 19	6 48.85	+25 57.4	1.117	0.826	60.6	19.1	45 W	35*	23*	2	26	19 52.21	-18 40.2	0.948	0.666	73.3	20.2	40 W	12*	34*
8 24	7 11.21	+26 35.4	1.150	0.841	58.6	19.1	45 W	36*	21*	3	2	20 26.23	-17 48.4	0.984	0.628	72.0	20.1	37 W	10*	31*
8 29	7 33.34	+26 56.7	1.181	0.859	56.7	19.2	45 W	37*	20*	3	7	21 0.19	-16 30.5	1.029	0.590	69.6	20.0	34 W	8*	28*
9 3	7 55.10	+27 2.2	1.211	0.878	55.0	19.2	45 W	37*	19*	3	12	21 33.94	-14 46.6	1.082	0.554	65.9	19.8	31 W	5*	25*
9 8	8 16.40	+26 53.2	1.238	0.897	53.4	19.3	46 W	38*	18*	3	17	22 7.37	-12 37.7	1.141	0.522	60.6	19.6	27 W	3*	21*
9 13	8 37.13	+26 31.2	1.263	0.918	52.0	19.3	46 W	39*	17*	3	22	22 40.43	-10 5.5	1.205	0.497	53.9	19.5	24 W	1*	18*
9 18	8 57.24	+25 57.6	1.286	0.940	50.8	19.4	46 W	40*	16*	3	27	23 13.04	-7 13.0	1.271	0.481	45.8	19.3	20 W	—	14*
9 23	9 16.68	+25 14.0	1.306	0.961	49.7	19.4	47 W	40*	16*	4	1	23 45.11	-4 4.7	1.336	0.475	37.0	19.1	17 W	—	11*
9 28	9 35.44	+24 21.7	1.324	0.983	48.8	19.5	48 W	41*	15*	4	6	0 16.47	-0 47.0	1.398	0.481	28.2	19.0	13 W	—	7*
10 3	9 53.52	+23 22.1	1.339	1.005	48.0	19.5	48 W	42*	15*	4	11	0 46.98	+2 32.7	1.455	0.498	20.0	18.9	10 W	—	4*
10 8	10 10.95	+22 16.3	1.352	1.026	47.3	19.6	49 W	42*	15*	4	16	1 16.56	+5 47.7	1.507	0.523	12.9	18.8	7 W	—	—
10 13	10 27.75	+21 5.4	1.362	1.047	46.7	19.6	50 W	43*	16*	4	21	1 45.18	+8 52.7	1.553	0.555	7.1	18.8	4 W	—	—
10 18	10 43.95	+19 50.5	1.369	1.068	46.2	19.7	51 W	44*	16*	4	26	2 12.90	+11 43.8	1.596	0.591	3.1	18.8	2 W	—	—
10 23	10 59.59	+18 32.4	1.374	1.088	45.9	19.7	52 W	45*	17*	5	1	2 39.79	+14 18.8	1.635	0.629	2.7	18.9	2 E	—	—
10 28	11 14.70	+17 11.9	1.376	1.108	45.6	19.8	53 W	46*	18*	5	6	3 5.93	+16 36.7	1.672	0.667	4.8	19.2	3 E	—	—
11 7	11 43.55	+14 25.9	1.372	1.145	45.3	19.8	55 W	47*	20*	5	11	3 31.40	+18 37.1	1.707	0.705	6.6	19.5	5 E	—	—
11 17	12 10.83	+11 36.6	1.357	1.178	45.2	19.8	58 W	48*	23*	5	21	4 20.56	+21 46.6	1.772	0.777	9.0	19.9	7 E	—	—
11 27	12 36.79	+8 47.0	1.332	1.208	45.4	19.9	61 W	49*	27*	5	31	5 7.54	+23 51.6	1.830	0.840	10.1	20.2	8 E	—	—
12 7	13 1.70	+5 58.9	1.297	1.234	45.7	19.9	64 W	48*	31*	6	10	5 52.45	+24 58.6	1.881	0.894	10.4	20.4	9 E	—	—
12 17	13 25.79	+3 13.7	1.252	1.256	46.2	19.8	67 W	47*	36*	6	15	6 14.15	+25 12.6	1.904	0.916	10.3	20.5	9 E	—	—
12 27	13 49.19	+0 31.9	1.199	1.274	46.7	19.8	71 W	45*	42*	6	20	6 35.35	+25 14.6	1.925	0.937	10.2	20.5	9 E	—	—
1	14 12.08	-2 6.7	1.138	1.288	47.3	19.7	74 W	43*	49*	6	25	6 56.07	+25 5.5	1.943	0.955	9.9	20.6	9 E	—	—
1	14 34.59	-4 42.7	1.071	1.297	47.9	19.6	78 W	40	55*	6	30	7 16.30	+24 46.1	1.960	0.970	9.7	20.6	9 E	—	—
88453 2001 QF₉₁										88453 2001 QF₉₁										
12 23	14 2.92	-29 25.7	3.164	2.695	17.0	21.3	53 W	14*	46*	7	5	7 36.07	+24 17.1	1.973	0.982	9.4	20.7	9 E	—	—
1	14 15.66	-31 32.2	3.072	2.716	18.3	21.3	60 W	13*	53*	7	10	7 55.41	+23 39.0	1.985	0.992	9.0	20.7	9 E	—	—
1	14 27.54	-33 37.1	2.972	2.736	19.3	21.2	67 W	11*	61*	7	15	8 14.33	+22 52.6	1.993	0.999	8.7	20.7	9 E	—	—
1	14 38.33	-35 40.7	2.865	2.755	20.0	21.2	74 W	9	68*	7	20	8 32.89	+21 58.3	1.999	1.0					

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°
162385 2000 BM₁₉										131634 2001 XN₆₈									
<i>(continuation)</i>										<i>(continuation)</i>									
11 19	17 15.57	-25 34.1	1.178	0.475	55.3	19.4	23 E	4*	17*	12 17	19 55.39	-21 29.2	3.496	2.706	10.9	20.8	31 E	14*	22*
11 21	17 29.39	-25 58.6	1.143	0.475	59.2	19.4	24 E	4*	18*	12 27	20 11.23	-20 6.1	3.585	2.727	8.8	20.7	25 E	12*	15*
11 23	17 43.27	-26 17.7	1.107	0.477	63.1	19.5	26 E	5*	19*	1 6	20 26.88	-18 39.1	3.659	2.748	6.7	20.7	19 E	9*	9*
11 25	17 57.18	-26 31.0	1.072	0.481	66.9	19.5	27 E	6*	20*	1 16	20 42.30	-17 8.3	3.719	2.768	4.5	20.7	13 E	5*	3*
11 27	18 11.06	-26 38.5	1.036	0.487	70.5	19.6	28 E	7*	21*	128353 2004 GK₃₉									
11 29	18 24.89	-26 40.1	1.001	0.495	74.0	19.7	29 E	7*	22*	12 23	14 4.28	-10 16.5	2.951	2.570	19.0	21.4	58 W	33*	40*
12 1	18 38.64	-26 35.7	0.966	0.503	77.3	19.7	30 E	8*	23*	1 2	14 18.00	-11 24.9	2.815	2.555	20.4	21.3	65 W	33*	48*
12 3	18 52.30	-26 25.3	0.932	0.513	80.4	19.8	31 E	9*	24*	1 12	14 31.11	-12 26.3	2.673	2.539	21.6	21.2	72 W	33*	55*
12 5	19 5.84	-26 9.0	0.898	0.525	83.2	19.9	32 E	10*	24*	1 22	14 43.44	-13 20.3	2.525	2.522	22.5	21.1	79 W	32	63*
12 7	19 19.26	-26 46.7	0.866	0.537	85.8	19.9	33 E	11*	25*	2 1	14 54.75	-14 6.3	2.374	2.505	23.1	21.0	86 W	31	71*
12 12	19 52.30	-24 25.2	0.791	0.571	91.2	20.1	35 E	13*	27*	2 11	15 4.77	-14 43.8	2.222	2.486	23.3	20.8	94 W	30	77*
12 17	20 24.64	-22 27.7	0.723	0.608	95.0	20.2	38 E	16*	28*	2 21	15 13.19	-15 12.6	2.071	2.466	23.0	20.6	102 W	30	79*
12 22	20 56.38	-19 55.0	0.664	0.646	97.3	20.3	41 E	19*	30*	3 2	15 19.64	-15 32.1	1.923	2.446	22.4	20.4	110 W	29	80
12 27	21 27.61	-16 48.9	0.615	0.684	98.2	20.3	44 E	23*	31*	3 12	15 23.74	-15 42.0	1.783	2.425	21.0	20.2	119 W	29	80
1 1	21 58.39	-13 12.3	0.574	0.722	98.0	20.2	47 E	27*	31*	3 22	15 25.09	-15 42.0	1.652	2.403	18.9	20.0	129 W	29	80
1 6	22 28.73	-9 10.5	0.543	0.758	96.8	20.1	50 E	31*	32*	4 1	15 23.39	-15 31.8	1.535	2.381	16.0	19.7	139 W	29	80
1 11	22 58.60	-4 50.7	0.520	0.792	94.9	20.1	53 E	36*	32*	4 11	15 18.52	-15 11.5	1.436	2.358	12.3	19.4	150 W	30	79
1 16	23 27.93	-0 22.0	0.506	0.823	92.3	20.0	57 E	40*	32*	4 21	15 10.69	-14 41.9	1.358	2.334	7.8	19.1	162 W	30	79
131634 2001 XN₆₈										310442 2000 CH₅₉									
12 23	14 4.04	-30 21.5	2.090	1.692	27.7	19.2	53 W	13*	46*	5 6	14 55.02	-13 45.8	1.288	2.296	1.2	18.5	177 W	31	78
12 28	14 17.01	-32 6.2	2.064	1.699	28.2	19.2	55 W	12*	48*	5 11	14 49.35	-13 26.2	1.278	2.284	3.1	18.6	173 E	32	77
1 2	14 30.13	-33 47.3	2.038	1.707	28.7	19.2	57 W	11*	50*	5 16	14 43.74	-13 7.3	1.274	2.271	5.8	18.8	167 E	32	77
1 7	14 43.40	-35 24.7	2.012	1.716	29.2	19.2	58 W	9*	52*	5 21	14 38.38	-12 49.8	1.277	2.258	8.4	18.9	161 E	32	77
1 12	14 56.81	-36 58.0	1.986	1.725	29.7	19.2	60 W	8*	54*	5 26	14 33.42	-12 34.5	1.285	2.245	11.0	19.0	155 E	32	77
1 17	15 10.34	-38 27.0	1.960	1.734	30.1	19.2	62 W	6*	56*	5 31	14 29.03	-12 22.1	1.300	2.231	13.5	19.1	149 E	33	76
1 22	15 23.96	-39 51.5	1.933	1.744	30.5	19.2	64 W	5*	58*	6 10	14 22.35	-12 7.9	1.343	2.205	18.0	19.3	138 E	33	76
1 27	15 37.64	-41 11.5	1.906	1.755	30.8	19.1	66 W	4*	59*	6 20	14 18.84	-12 9.5	1.403	2.177	21.7	19.5	128 E	33*	76
2 1	15 51.33	-42 26.8	1.879	1.766	31.2	19.1	68 W	2*	60*	6 30	14 18.69	-12 27.4	1.474	2.150	24.6	19.6	118 E	33*	76
2 6	16 4.98	-43 37.4	1.851	1.778	31.4	19.1	70 W	1*	62*	7 10	14 21.76	-13 0.4	1.553	2.122	26.9	19.8	110 E	30*	77
2 11	16 18.54	-44 43.2	1.823	1.790	31.7	19.1	72 W	—	63*	7 20	14 27.79	-13 46.3	1.637	2.093	28.4	19.9	102 E	27*	78
2 16	16 31.96	-45 44.6	1.795	1.803	31.9	19.1	75 W	—	63*	7 30	14 36.51	-14 42.8	1.723	2.065	29.4	20.0	94 E	24*	79
2 21	16 45.15	-46 41.5	1.766	1.816	32.0	19.1	77 W	—	64*	8 9	14 47.62	-15 47.2	1.808	2.037	29.8	20.1	88 E	22*	78*
2 26	16 58.05	-47 34.3	1.736	1.829	32.1	19.1	79 W	—	64*	8 19	15 0.90	-16 56.9	1.892	2.009	29.9	20.2	81 E	20*	74*
3 2	17 10.57	-48 23.2	1.706	1.843	32.1	19.0	82 W	—	65*	8 29	15 16.16	-18 9.3	1.973	1.980	29.6	20.2	76 E	18*	69*
3 7	17 22.63	-49 8.6	1.676	1.857	32.1	19.0	84 W	—	65*	9 8	15 33.22	-19 21.9	2.049	1.953	29.0	20.3	70 E	17*	64*
3 12	17 34.15	-49 50.7	1.645	1.872	32.0	19.0	87 W	—	65*	9 18	15 51.97	-20 32.2	2.121	1.925	28.2	20.3	65 E	16*	59*
3 17	17 45.03	-50 30.0	1.614	1.886	31.8	19.0	89 W	—	65*	9 28	16 12.31	-21 37.7	2.188	1.898	27.2	20.3	60 E	15*	54*
3 22	17 55.19	-51 6.9	1.583	1.901	31.6	18.9	92 W	—	65*	10 8	16 34.11	-22 35.9	2.250	1.872	26.1	20.3	55 E	14*	49*
3 27	18 4.51	-51 41.9	1.551	1.916	31.2	18.9	95 W	—	64*	10 18	16 57.29	-23 24.3	2.306	1.846	24.7	20.3	51 E	14*	45*
4 1	18 12.90	-52 15.1	1.519	1.932	30.8	18.9	98 W	—	64	10 28	17 21.71	-24 0.7	2.357	1.822	23.3	20.3	47 E	13*	40*
4 6	18 20.25	-52 47.0	1.488	1.948	30.3	18.8	101 W	—	63	11 7	17 47.22	-24 22.8	2.402	1.799	21.8	20.2	42 E	13*	36*
4 11	18 26.46	-53 17.6	1.457	1.963	29.6	18.8	104 W	—	63	11 17	18 13.67	-24 28.7	2.443	1.776	20.2	20.2	38 E	12*	31*
4 16	18 31.44	-53 47.2	1.426	1.979	28.9	18.7	108 W	—	62	11 27	18 40.86	-24 17.0	2.479	1.756	18.5	20.1	34 E	12*	27*
4 21	18 35.05	-54 15.5	1.397	1.995	28.0	18.7	111 W	—	62	12 7	19 8.58	-23 46.6	2.510	1.737	16.8	20.1	31 E	11*	22*
4 26	18 37.18	-54 42.3	1.368	2.012	27.0	18.6	115 W	—	61	12 17	19 36.63	-22 56.9	2.538	1.720	15.0	20.0	27 E	11*	18*
5 1	18 37.76	-55 7.0	1.341	2.028	25.8	18.6	119 W	—	61	12 27	20 4.81	-21 48.1	2.561	1.704	13.3	20.0	23 E	10*	14*
5 6	18 36.72	-55 28.6	1.316	2.045	24.6	18.5	123 W	—	61	1 6	20 32.92	-20 20.8	2.582	1.691	11.4	19.9	20 E	8*	11*
5 11	18 34.04	-55 46.1	1.294	2.061	23.2	18.4	126 W	—	60	1 16	21 0.83	-18 36.2	2.599	1.680	9.6	19.8	17 E	7*	7*
5 16	18 29.72	-55 58.3	1.274	2.078	21.7	18.4	130 W	—	60	310442 2000 CH₅₉									
5 21	18 23.86	-56 3.4	1.258	2.094	20.2	18.3	134 W	—	60	12 23	14 5.39	-77 11.9	0.054	0.958	116.6	18.1	61 W	—	34*
5 26	18 16.62	-55 59.8	1.245	2.111	18.7	18.3	138 W	—	60	12 24	11 53.73	-81 4.0	0.051	0.965	109.8	17.5	67 W	—	35*
5 31	18 8.30	-55 46.0	1.237	2.127	17.2	18.2	142 W	—	60	12 25	8 42.82	-79 48.6	0.050	0.972	102.4	17.1	75 W	—	36
6 5	17 59.26	-55 21.0	1.233	2.144	15.8	18.2	145 W	—	61	12 26	6 59.37	-73 53.7	0.049	0.978	94.7	16.7	82 W	—	42
6 10	17 49.89	-54 44.3	1.234	2.161	14.6	18.1	148 W	—	61	12 27	6 14.16	-66 28.9	0.049	0.985	87.0	16.4	90 E	—	50
6 15	17 40.60	-53 56.0	1.241	2.177	13.8	18.1	149 W	—	62	12 28	5 50.68	-58 50.5	0.050	0.991	79.6	16.2	98 E	—	57
6 20	17 31.78	-52 56.9	1.253	2.194	13.3	18.2	150 E	—	63	12 29	5 36.60	-51 31.2	0.052	0.998	72.8	16.0	104 E	—	64
6 25	17 23.75	-51 48.4	1.272	2.210	13.3	18.2	150 E	—	64	12 30	5 27.29	-44 47.2	0.055	1.004	66.7	16.0	110 E	—	71
6 30	17 16.77	-50 32.5	1.296	2.227	13.8	18.3	149 E	—	65	12 31	5 20.72	-38 45.6	0.059	1.010	61.5	16.0	116 E	6	77
7 5	17 10.98	-49 11.5	1.325	2.243	14.6	18.4	146 E	—	67	1 1	5 15.87	-33 27.2	0.063	1.016	57.1	16.0	120 E	12	83
7 10	17 6.43	-47 47.4	1.361	2.260	15.6	18.5	143 E	—	68	1 2	5 12.17	-28 49.1	0.068	1.022	53.4	16.1	123 E	16	87
7 15	17 3.12	-46 22.2	1.401	2.276	16.7	18.6	140 E	—	70	1 3	5 9.27	-24 47.2	0.073	1.028	50.5	16.1	126 E	20	89
7 20	17 1.01	-44 57.7	1.447	2.292	17.8	18.7	136 E	—	71	1 4	5 6.96	-21 16.5	0.078	1.034	48.0	16.2	129 E	24	85
7 25	17 0.04	-43 35.1																	

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°						
310442 2000 CH₅₉										54071 2000 GQ₁₄₆															
<i>(continuation)</i>										<i>(continuation)</i>															
1	24	5	0.77	+5	23.9	0.215	1.132	42.4	18.5	129 E	50	59	5	21	22	3.33	-53	3.8	0.639	1.324	47.8	18.6	104 W	—	63
1	26	5	1.86	+6	25.9	0.230	1.140	43.0	18.7	128 E	51	58	5	26	22	19.00	-55	6.2	0.636	1.338	46.6	18.6	106 W	—	61
1	28	5	3.14	+7	21.7	0.245	1.148	43.6	18.8	127 E	52	57	5	31	22	33.88	-57	7.2	0.635	1.353	45.4	18.6	108 W	—	59
1	30	5	4.57	+8	12.4	0.260	1.155	44.2	19.0	125 E	53	56	6	5	22	47.81	-59	6.7	0.635	1.367	44.3	18.6	110 W	—	57
2	1	5	6.17	+8	58.8	0.276	1.162	44.8	19.1	124 E	54	55	6	10	23	0.53	-61	5.2	0.635	1.381	43.1	18.6	112 W	—	55
2	6	5	10.76	+10	39.2	0.315	1.177	46.2	19.5	120 E	56	53	6	15	23	11.76	-63	2.7	0.637	1.395	42.0	18.6	113 W	—	53
2	11	5	16.10	+12	2.5	0.355	1.191	47.5	19.8	117 E	57	52	6	20	23	21.09	-64	59.1	0.639	1.408	41.0	18.6	115 W	—	51
2	16	5	22.09	+13	12.9	0.395	1.202	48.7	20.1	114 E	58	51	6	22	23	24.19	-65	45.3	0.640	1.414	40.6	18.6	115 W	—	50
2	21	5	28.68	+14	13.4	0.435	1.212	49.8	20.4	111 E	59	50	6	24	23	26.88	-66	31.1	0.642	1.419	40.2	18.6	116 W	—	49
2	26	5	35.81	+15	5.7	0.475	1.219	50.8	20.6	107 E	60	49	6	26	23	29.11	-67	16.5	0.643	1.424	39.8	18.6	116 W	—	49
3	2	5	43.44	+15	51.0	0.515	1.224	51.7	20.8	104 E	61	48	6	28	23	30.86	-68	1.4	0.645	1.429	39.4	18.6	117 W	—	48
3	7	5	51.51	+16	30.2	0.554	1.227	52.5	21.0	101 E	62	47	6	30	23	32.08	-68	45.8	0.647	1.434	39.0	18.6	117 W	—	47
3	12	5	59.96	+17	3.8	0.592	1.228	53.2	21.2	98 E	62	47*	7	2	23	32.72	-69	29.4	0.649	1.439	38.7	18.6	118 W	—	47
3	17	6	8.75	+17	32.5	0.629	1.227	53.8	21.3	95 E	62*	46*	7	4	23	32.73	-70	12.2	0.652	1.444	38.3	18.6	118 W	—	46
3	22	6	17.87	+17	56.5	0.666	1.224	54.4	21.4	93 E	62*	46*	7	6	23	32.06	-70	54.0	0.654	1.449	38.0	18.6	119 W	—	45
7	8	23	30.65	-71	34.7	0.657	1.454	37.7	18.6	119 W	—	44	7	8	23	30.65	-71	34.7	0.657	1.454	37.7	18.6	119 W	—	44
7	10	23	28.43	-72	14.0	0.660	1.458	37.4	18.6	119 W	—	44	7	10	23	28.43	-72	14.0	0.660	1.458	37.4	18.6	119 W	—	44
7	12	23	25.34	-72	51.6	0.663	1.463	37.1	18.6	120 W	—	43	7	12	23	25.34	-72	51.6	0.663	1.463	37.1	18.6	120 W	—	43
7	14	23	21.33	-73	27.4	0.667	1.468	36.9	18.6	120 W	—	43	7	14	23	21.33	-73	27.4	0.667	1.468	36.9	18.6	120 W	—	43
7	16	23	16.33	-74	1.0	0.670	1.472	36.7	18.7	120 W	—	42	7	16	23	16.33	-74	1.0	0.670	1.472	36.7	18.7	120 W	—	42
7	18	23	10.31	-74	32.0	0.674	1.476	36.4	18.7	120 W	—	41	7	18	23	10.31	-74	32.0	0.674	1.476	36.4	18.7	120 W	—	41
7	20	23	3.25	-75	0.1	0.678	1.481	36.2	18.7	121 W	—	41	7	20	23	3.25	-75	0.1	0.678	1.481	36.2	18.7	121 W	—	41
7	22	23	55.17	-75	24.8	0.682	1.485	36.0	18.7	121 W	—	41	7	22	23	55.17	-75	24.8	0.682	1.485	36.0	18.7	121 W	—	41
7	24	23	46.10	-75	45.6	0.687	1.489	35.9	18.7	121 W	—	40	7	24	23	46.10	-75	45.6	0.687	1.489	35.9	18.7	121 W	—	40
7	26	23	36.14	-76	2.3	0.692	1.493	35.7	18.7	121 W	—	40	7	26	23	36.14	-76	2.3	0.692	1.493	35.7	18.7	121 W	—	40
7	28	22	25.42	-76	14.5	0.697	1.498	35.6	18.8	121 W	—	40	7	28	22	25.42	-76	14.5	0.697	1.498	35.6	18.8	121 W	—	40
7	30	22	14.12	-76	21.8	0.702	1.501	35.5	18.8	121 W	—	40	7	30	22	14.12	-76	21.8	0.702	1.501	35.5	18.8	121 W	—	40
8	1	22	8.32	-76	23.6	0.705	1.503	35.4	18.8	121 W	—	40	8	1	22	8.32	-76	23.6	0.705	1.503	35.4	18.8	121 W	—	40
8	1	22	2.45	-76	24.1	0.708	1.505	35.4	18.8	121 W	—	40	8	1	22	2.45	-76	24.1	0.708	1.505	35.4	18.8	121 W	—	40
8	2	21	56.55	-76	23.3	0.711	1.507	35.4	18.8	121 W	—	40	8	2	21	56.55	-76	23.3	0.711	1.507	35.4	18.8	121 W	—	40
8	3	21	50.64	-76	21.2	0.714	1.509	35.3	18.8	121 W	—	40	8	3	21	50.64	-76	21.2	0.714	1.509	35.3	18.8	121 W	—	40
8	4	21	44.76	-76	17.8	0.717	1.511	35.3	18.8	121 W	—	40	8	4	21	44.76	-76	17.8	0.717	1.511	35.3	18.8	121 W	—	40
8	5	21	38.93	-76	13.2	0.720	1.513	35.3	18.8	121 W	—	40	8	5	21	38.93	-76	13.2	0.720	1.513	35.3	18.8	121 W	—	40
8	6	21	33.18	-76	7.3	0.723	1.515	35.2	18.8	120 W	—	40	8	6	21	33.18	-76	7.3	0.723	1.515	35.2	18.8	120 W	—	40
8	7	21	27.54	-76	0.1	0.726	1.517	35.2	18.9	120 W	—	40	8	7	21	27.54	-76	0.1	0.726	1.517	35.2	18.9	120 W	—	40
8	8	21	22.02	-75	51.7	0.729	1.518	35.2	18.9	120 W	—	40	8	8	21	22.02	-75	51.7	0.729	1.518	35.2	18.9	120 W	—	40
8	9	21	16.66	-75	42.1	0.733	1.520	35.2	18.9	120 W	—	40	8	9	21	16.66	-75	42.1	0.733	1.520	35.2	18.9	120 W	—	40
8	10	21	11.46	-75	31.4	0.736	1.522	35.2	18.9	120 E	—	40	8	10	21	11.46	-75	31.4	0.736	1.522	35.2	18.9	120 E	—	40
8	11	21	6.45	-75	19.5	0.740	1.524	35.2	18.9	120 E	—	41	8	11	21	6.45	-75	19.5	0.740	1.524	35.2	18.9	120 E	—	41
8	12	21	1.64	-75	6.5	0.743	1.525	35.2	18.9	120 E	—	41	8	12	21	1.64	-75	6.5	0.743	1.525	35.2	18.9	120 E	—	41
8	13	20	57.04	-74	52.6	0.747	1.527	35.2	18.9	120 E	—	41	8	13	20	57.04	-74	52.6	0.747	1.527	35.2	18.9	120 E	—	41
8	14	20	52.66	-74	37.6	0.750	1.529	35.2	18.9	119 E	—	41	8	14	20	52.66	-74	37.6	0.750	1.529	35.2	18.9	119 E	—	41
8	15	20	48.50	-74	21.6	0.754	1.530	35.3	19.0	119 E	—	42	8	15	20	48.50	-74	21.6	0.754	1.530	35.3	19.0	119 E	—	42
8	16	20	44.56	-74	4.8	0.758	1.532	35.3	19.0	119 E	—	42	8	16	20	44.56	-74	4.8	0.758	1.532	35.3	19.0	119 E	—	42
8	17	20	40.85	-73	47.1	0.762	1.534	35.3	19.0	119 E	—	42	8	17	20	40.85	-73	47.1	0.762	1.534	35.3	19.0	119 E	—	42
8	18	20	37.38	-73	28.5	0.766	1.535	35.3	19.0	119 E	—	43	8	18	20	37.38	-73	28.5	0.766	1.535	35.3	19.0	119 E	—	43
8	19	20	34.12	-73	9.2	0.770	1.537	35.4	19.0	119 E	—	43	8	19	20	34.12	-73	9.2	0.770	1.537	35.4	19.0	119 E	—	43
8	21	20	28.28	-72	28.5	0.779	1.540	35.4	19.0	118 E	—	44	8	21	20	28.28	-72	28.5	0.779	1.540	35.4	19.0	118 E	—	44
8	23	20	23.30	-71	45.3	0.787	1.543	35.5	19.1	118 E	—	44	8	23	20	23.30	-71	45.3	0.787	1.543	35.5	19.1	118 E	—	44
8	25	20	19.11	-70	59.8	0.796	1.546	35.6	19.1	117 E	—	45	8	25	20	19.11	-70	59.8	0.796	1.546	35.6	19.1	117 E	—	45
8	27	20	15.67	-70	12.4	0.805	1.549	35.7	19.1	117 E	—	46	8	27	20	15.67	-70	12.4	0.805	1.549	35.7	19.1	117 E	—	46
8	29	20	12.92	-69	23.3	0.815	1.551	35.8	19.2	116 E	—	47	8	29	20	12.92	-69	23.3	0.815	1.551	35.8	19.2	116 E	—	47
8	31	20	10.78	-68	32.8	0.825	1.554	35.9	19.2	115 E	—	47	8	31	20	10.78	-68	32.8	0.825	1.554	35.9	19.2	115 E	—	47
9	2	20	9.21	-67	41.1	0.835	1.557	36.0	19.2	115 E	—	48	9	2	20	9.21	-67	41.1	0.835	1.557	36.0	19.2	115 E	—	48
9	4	20	8.15	-66	48.3	0.845	1.559	36.2	19.3	114 E	—	49	9	4	20	8.15	-66								

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°										
165494 2001 BD₄₂										345722 2007 BG₂₉ (continuation)																			
12 23	14 6.94	- 5 8.3	2.356	2.041	24.5	20.6	59 W	38*	37*	10 8	12 1.17	+10 42.1	1.905	1.039	20.4	20.7	21 W	15*	—	10 18	12 35.47	+ 6 34.8	1.861	1.002	21.3	20.6	21 W	15*	—
1 2	14 25.14	- 5 10.3	2.283	2.076	25.5	20.6	65 W	39*	43*	10 18	12 35.47	+ 6 34.8	1.861	1.002	21.3	20.6	21 W	15*	—	10 28	13 10.87	+ 2 6.1	1.813	0.956	22.0	20.5	21 W	15*	—
1 12	14 42.19	- 4 55.4	2.205	2.111	26.2	20.6	72 W	40*	49*	11 7	13 48.09	- 2 42.1	1.765	0.903	22.3	20.3	20 W	14*	1*	11 17	14 28.07	- 7 46.1	1.718	0.844	22.1	20.1	19 W	12*	2*
1 22	14 57.89	- 4 22.6	2.122	2.147	26.6	20.6	78 W	41	55*	11 7	13 48.09	- 2 42.1	1.765	0.903	22.3	20.3	20 W	14*	1*	11 17	14 28.07	- 7 46.1	1.718	0.844	22.1	20.1	19 W	12*	2*
2 1	15 11.97	- 3 30.7	2.037	2.183	26.7	20.5	85 W	41	60*	11 22	14 49.43	-10 21.8	1.696	0.812	21.7	19.9	18 W	11*	2*	11 27	15 11.94	-12 58.1	1.674	0.779	21.0	19.8	16 W	10*	3*
2 11	15 24.17	- 2 19.3	1.951	2.218	26.4	20.5	92 W	43	64*	12 2	15 35.79	-15 33.2	1.653	0.746	20.0	19.7	15 W	8*	3*	12 7	16 1.19	-18 4.1	1.633	0.713	18.7	19.5	13 W	6*	3*
2 21	15 34.19	- 0 48.3	1.866	2.254	25.6	20.4	100 W	44	65*	12 12	16 28.34	-20 27.5	1.615	0.680	16.9	19.3	12 W	3*	3*	12 17	16 57.41	-22 38.7	1.597	0.648	14.7	19.1	10 W	1*	2*
3 2	15 41.69	+ 1 1.5	1.786	2.289	24.4	20.3	108 W	46	63	12 22	17 28.50	-24 32.1	1.581	0.619	12.1	18.9	8 W	—	—	12 27	18 1.58	-26 1.4	1.565	0.594	9.4	18.7	6 W	—	—
3 12	15 46.37	+ 3 7.7	1.713	2.324	22.6	20.2	116 W	48	61	1 1	18 36.43	-26 59.6	1.549	0.574	7.7	18.5	4 W	—	—	1 6	19 12.60	-27 20.6	1.534	0.560	8.7	18.5	5 E	—	—
3 17	15 47.58	+ 4 15.8	1.680	2.342	21.6	20.1	120 W	49	60	1 11	19 49.40	-26 59.6	1.518	0.554	12.2	18.6	7 E	—	—	1 16	20 26.01	-25 55.2	1.503	0.556	16.8	18.7	9 E	—	—
3 22	15 48.00	+ 5 26.2	1.651	2.359	20.5	20.1	124 W	50	59	12 27	15 11.94	-12 58.1	1.674	0.779	21.0	19.8	16 W	10*	3*	12 27	15 35.79	-15 33.2	1.653	0.746	20.0	19.7	15 W	8*	3*
3 27	15 47.63	+ 6 38.2	1.625	2.376	19.2	20.0	128 W	52	57	12 27	15 35.79	-15 33.2	1.653	0.746	20.0	19.7	15 W	8*	3*	12 27	15 35.79	-15 33.2	1.653	0.746	20.0	19.7	15 W	8*	3*
4 1	15 46.48	+ 7 50.5	1.603	2.393	18.0	20.0	132 W	53	56	12 27	15 35.79	-15 33.2	1.653	0.746	20.0	19.7	15 W	8*	3*	12 27	15 35.79	-15 33.2	1.653	0.746	20.0	19.7	15 W	8*	3*
4 6	15 44.57	+ 9 1.9	1.586	2.410	16.7	19.9	136 W	54	55	1 1	18 36.43	-26 59.6	1.549	0.574	7.7	18.5	4 W	—	—	1 16	20 26.01	-25 55.2	1.503	0.556	16.8	18.7	9 E	—	—
4 11	15 41.96	+10 11.2	1.574	2.427	15.4	19.9	140 W	55	54	1 6	19 12.60	-27 20.6	1.534	0.560	8.7	18.5	5 E	—	—	1 16	20 26.01	-25 55.2	1.503	0.556	16.8	18.7	9 E	—	—
4 16	15 38.71	+11 17.1	1.566	2.444	14.3	19.8	143 W	56	53	1 11	19 49.40	-26 59.6	1.518	0.554	12.2	18.6	7 E	—	—	1 16	20 26.01	-25 55.2	1.503	0.556	16.8	18.7	9 E	—	—
4 21	15 34.90	+12 18.1	1.565	2.460	13.4	19.8	146 W	57	52	1 16	20 26.01	-25 55.2	1.503	0.556	16.8	18.7	9 E	—	—	1 16	20 26.01	-25 55.2	1.503	0.556	16.8	18.7	9 E	—	—
4 26	15 30.64	+13 12.9	1.569	2.477	12.7	19.8	147 W	58	51	12 23	14 8.16	-49 33.7	3.155	2.668	16.9	20.0	52 W	—	—	12 23	14 8.16	-49 33.7	3.155	2.668	16.9	20.0	52 W	—	—
5 1	15 26.07	+14 0.4	1.580	2.493	12.3	19.8	148 W	59	50	1 2	14 26.62	-51 27.4	3.125	2.715	17.6	20.1	57 W	—	—	1 2	14 26.62	-51 27.4	3.125	2.715	17.6	20.1	57 W	—	—
5 6	15 21.34	+14 39.7	1.596	2.509	12.3	19.8	148 W	60	49	1 12	14 44.05	-53 15.0	3.086	2.761	18.3	20.1	62 W	—	—	1 12	14 44.05	-53 15.0	3.086	2.761	18.3	20.1	62 W	—	—
5 11	15 16.57	+15 10.3	1.618	2.525	12.6	19.9	147 W	60	49	1 22	15 0.16	-54 57.2	3.037	2.806	18.9	20.1	67 W	—	—	1 22	15 0.16	-54 57.2	3.037	2.806	18.9	20.1	67 W	—	—
5 21	15 7.48	+15 44.7	1.678	2.556	14.0	20.1	142 E	61	48	1 27	15 7.58	-55 46.4	3.009	2.828	19.1	20.1	70 W	—	—	1 27	15 7.58	-55 46.4	3.009	2.828	19.1	20.1	70 W	—	—
5 31	14 59.75	+15 44.2	1.760	2.587	15.8	20.3	136 E	61	48	2 1	15 14.51	-56 34.4	2.980	2.850	19.3	20.1	73 W	—	—	2 1	15 14.51	-56 34.4	2.980	2.850	19.3	20.1	73 W	—	—
6 10	14 54.06	+15 13.6	1.859	2.617	17.6	20.5	129 E	60	49	2 6	15 20.88	-57 21.2	2.948	2.872	19.4	20.1	76 W	—	—	2 6	15 20.88	-57 21.2	2.948	2.872	19.4	20.1	76 W	—	—
6 15	14 52.08	+14 49.0	1.914	2.632	18.4	20.6	125 E	60	49	2 11	15 26.63	-58 6.7	2.915	2.894	19.6	20.1	79 W	—	—	2 11	15 26.63	-58 6.7	2.915	2.894	19.6	20.1	79 W	—	—
6 20	14 50.71	+14 19.1	1.973	2.646	19.2	20.7	121 E	59	50	2 16	15 31.69	-58 51.1	2.881	2.915	19.6	20.1	82 W	—	—	2 16	15 31.69	-58 51.1	2.881	2.915	19.6	20.1	82 W	—	—
6 25	14 49.94	+13 44.7	2.034	2.661	19.8	20.8	117 E	59	50	2 21	15 35.96	-59 34.2	2.846	2.936	19.6	20.1	85 W	—	—	2 21	15 35.96	-59 34.2	2.846	2.936	19.6	20.1	85 W	—	—
6 30	14 49.77	+13 6.5	2.099	2.675	20.4	20.9	114 E	58*	51	2 26	15 39.38	-60 15.8	2.810	2.957	19.6	20.1	89 W	—	—	2 26	15 39.38	-60 15.8	2.810	2.957	19.6	20.1	89 W	—	—
7 5	14 50.18	+12 25.4	2.165	2.689	20.8	20.9	110 E	57*	52	3 2	15 41.83	-60 55.8	2.773	2.978	19.4	20.1	92 W	—	—	3 2	15 41.83	-60 55.8	2.773	2.978	19.4	20.1	92 W	—	—
7 10	14 51.13	+11 41.8	2.233	2.702	21.2	21.0	106 E	55*	52	3 7	15 43.26	-61 33.7	2.737	2.999	19.2	20.0	95 W	—	—	3 7	15 43.26	-61 33.7	2.737	2.999	19.2	20.0	95 W	—	—
7 15	14 52.60	+10 56.4	2.303	2.716	21.4	21.1	103 E	54*	53	3 12	15 43.57	-62 9.3	2.700	3.019	19.0	20.0	99 W	—	—	3 12	15 43.57	-62 9.3	2.700	3.019	19.0	20.0	99 W	—	—
7 20	14 54.56	+10 9.4	2.374	2.729	21.6	21.2	99 E	52*	54	3 17	15 42.70	-62 41.9	2.664	3.039	18.6	20.0	102 W	—	—	3 17	15 42.70	-62 41.9	2.664	3.039	18.6	20.0	102 W	—	—
7 25	14 56.99	+9 21.5	2.445	2.742	21.6	21.3	96 E	50*	55	3 22	15 40.57	-63 10.9	2.630	3.059	18.2	20.0	106 W	—	—	3 22	15 40.57	-63 10.9	2.630	3.059	18.2	20.0	106 W	—	—
7 30	14 59.85	+ 8 32.9	2.518	2.755	21.6	21.4	92 E	48*	55	3 27	15 37.17	-63 35.4	2.597	3.079	17.8	19.9	110 W	—	—	3 27	15 37.17	-63 35.4	2.597	3.079	17.8	19.9	110 W	—	—
8 4	15 3.11	+ 7 44.0	2.591	2.768	21.5	21.4	89 E	46*	56	4 1	15 32.50	-63 54.6	2.566	3.098	17.2	19.9	113 W	—	—	4 1	15 32.50	-63 54.6	2.566	3.098	17.2	19.9	113 W	—	—
8 9	15 6.75	+ 6 55.0	2.664	2.781	21.3	21.5	86 E	45*	57*	4 6	15 26.64	-64 7.4	2.537	3.118	16.7	19.9	117 W	—	—	4 6	15 26.64	-64 7.4	2.537	3.118	16.7	19.9	117 W	—	—
345722 2007 BG₂₉																													
12 23	14 7.61	+ 8 13.0	1.004	1.076	56.3	20.4	65 W	51*	30*	4 11	15 19.71	-64 12.9	2.512	3.137	16.0	19.9	120 W	—	—	4 11	15 19.71	-64 12.9	2.512	3.137	16.0	19.9	120 W	—	—
1 2	14 45.35	+ 5 21.0	0.956	1.048	58.6	20.3	65 W	48*	33*	4 16	15 11.88	-64 10.2	2.490	3.156	15.4	19.8	123 W	—	—	4 16	15 11.88	-64 10.2	2.490	3.156	15.4				

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°
17493 Wildcat										425711 2011 BZ22									
<i>(continuation)</i>										<i>(continuation)</i>									
11 12	16 19.89	-36 12.3	4.623	3.743	6.2	21.2	24 E	-	16*	8 29	19 56.05	-17 3.4	1.226	2.113	17.2	19.5	142 E	28	81
11 17	16 26.81	-36 5.8	4.656	3.752	5.5	21.2	21 E	-	13*	9 8	19 52.93	-15 3.3	1.350	2.155	20.5	19.8	132 E	30	79
11 22	16 33.72	-35 59.5	4.685	3.761	4.8	21.1	18 E	-	10*	9 18	19 53.47	-13 19.8	1.489	2.196	22.8	20.2	122 E	32	77
11 27	16 40.61	-35 53.1	4.708	3.770	4.2	21.1	16 E	-	7*	9 28	19 57.09	-11 49.4	1.639	2.238	24.2	20.5	114 E	33	76
12 2	16 47.47	-35 46.7	4.726	3.778	3.7	21.1	14 E	-	4*	10 8	20 3.21	-10 28.0	1.798	2.280	25.0	20.7	106 E	35	74
12 7	16 54.30	-35 40.2	4.740	3.787	3.4	21.1	13 W	-	1*	10 18	20 11.32	-9 12.2	1.962	2.322	25.1	21.0	98 E	36	73*
12 12	17 1.08	-35 33.5	4.748	3.795	3.3	21.1	13 W	-	3*	10 28	20 21.02	-7 58.9	2.129	2.363	24.9	21.2	91 E	37	69*
12 17	17 7.79	-35 26.6	4.751	3.803	3.6	21.1	14 W	-	6*	11 7	20 31.96	-6 45.8	2.297	2.405	24.2	21.3	84 E	38	63*
12 22	17 14.43	-35 19.4	4.748	3.810	4.0	21.2	16 W	-	9*	200175 1999 JH14									
12 27	17 20.97	-35 11.9	4.741	3.818	4.6	21.2	18 W	-	12*	12 23	14 10.86	+6 15.7	1.836	1.657	32.2	19.8	64 W	49*	30*
1	17 27.42	-35 4.1	4.728	3.825	5.2	21.2	21 W	-	15*	1	14 33.34	+4 20.5	1.777	1.671	33.0	19.7	68 W	48*	36*
1	17 33.75	-34 55.9	4.710	3.832	6.0	21.3	24 W	-	18*	1	12 14 54.58	+2 35.3	1.716	1.687	33.6	19.7	72 W	47*	42*
1	17 39.94	-34 47.5	4.687	3.839	6.7	21.3	27 W	-	21*	1	22 15 14.43	+1 0.5	1.652	1.707	34.0	19.7	76 W	46*	48*
1	17 46.00	-34 38.7	4.659	3.846	7.5	21.3	31 W	-	25*	2	15 32.67	-0 24.2	1.585	1.728	34.2	19.6	81 W	45*	55*
415987 2002 AE9										2	11 15 49.03	-1 39.7	1.514	1.752	34.2	19.5	86 W	43	60*
12 23	14 9.75	+3 32.1	0.974	1.019	59.1	21.1	63 W	46*	32*	2	21 16 3.21	-2 47.7	1.441	1.778	33.8	19.5	92 W	42	65*
12 28	14 39.85	+3 38.2	0.947	0.981	61.3	21.0	61 W	46*	30*	3	2 16 14.82	-3 50.3	1.367	1.806	32.8	19.3	99 W	41	68*
1	15 11.40	+3 40.5	0.930	0.942	63.4	21.0	59 W	45*	29*	3	12 16 23.42	-4 50.7	1.293	1.835	31.4	19.2	106 W	40	69
1	15 43.97	+3 36.8	0.923	0.902	65.2	20.9	56 W	44*	27*	3	22 16 28.55	-5 52.2	1.221	1.866	29.1	19.1	114 W	39	70
1	16 17.04	+3 25.2	0.927	0.863	66.5	20.9	54 W	42*	25*	4	1 16 29.71	-6 58.5	1.154	1.897	26.1	18.9	123 W	38	71
1	16 50.06	+3 4.0	0.942	0.824	67.3	20.8	51 W	40*	23*	4	11 16 26.56	-8 13.3	1.098	1.930	22.1	18.7	134 W	37	72
1	17 22.55	+2 32.6	0.967	0.787	67.4	20.8	48 W	37*	21*	4	21 16 19.08	-9 38.6	1.055	1.963	17.2	18.5	145 W	35	74
1	17 54.14	+1 51.0	1.001	0.751	66.6	20.7	44 W	35*	20*	5	1 16 7.73	-11 14.2	1.031	1.997	11.5	18.3	157 W	34	75
2	18 24.66	+0 59.7	1.043	0.718	65.0	20.7	41 W	32*	19*	5	6 16 0.97	-12 5.0	1.028	2.014	8.5	18.2	163 W	33	76
2	18 54.10	+0 0.2	1.092	0.689	62.5	20.6	38 W	29*	18*	5	11 15 53.77	-12 57.1	1.031	2.031	5.5	18.1	169 W	32	77
2	19 22.55	+1 6.8	1.145	0.665	59.2	20.5	35 W	26*	18*	5	16 15 46.35	-13 49.5	1.041	2.049	3.1	18.0	174 W	31	78
2	19 50.18	+2 17.7	1.201	0.647	55.3	20.5	33 W	22*	17*	5	21 15 38.97	-14 41.8	1.057	2.066	3.1	18.0	174 E	30	79
2	20 17.15	+3 30.2	1.258	0.636	50.9	20.4	30 W	19*	17*	5	26 15 31.87	-15 33.2	1.080	2.083	5.3	18.2	169 E	29	80
2	20 43.61	+4 41.1	1.314	0.633	46.4	20.4	28 W	16*	17*	5	31 15 25.28	-16 23.5	1.109	2.101	8.0	18.4	163 E	29	80
3	21 9.62	+5 47.3	1.369	0.638	42.0	20.3	25 W	13*	16*	6	5 15 19.38	-17 12.3	1.145	2.118	10.6	18.6	157 E	28	81
3	21 35.20	+6 46.2	1.421	0.650	38.0	20.4	24 W	9*	16*	6	10 15 14.28	-17 59.6	1.187	2.135	13.0	18.8	152 E	27	82
3	22 0.33	+7 35.6	1.469	0.670	34.6	20.4	22 W	6*	16*	6	20 15 6.82	-19 29.4	1.285	2.170	17.2	19.1	141 E	26	83
3	22 49.02	+8 42.0	1.558	0.725	29.9	20.6	21 W	1*	15*	6	30 15 3.16	-20 54.1	1.402	2.205	20.4	19.5	131 E	24	85
4	1 23 35.20	+9 6.2	1.635	0.795	27.5	20.8	22 W	-	15*	7	10 15 3.11	-22 15.0	1.532	2.239	22.8	19.8	122 E	22*	86
4	1 18.61	+8 55.7	1.704	0.872	26.5	21.1	23 W	-	15*	7	20 15 6.26	-23 33.0	1.673	2.273	24.3	20.0	113 E	20*	88
4	21 0 59.23	+8 20.3	1.767	0.951	26.1	21.3	25 W	-	15*	7	30 15 12.20	-24 48.7	1.821	2.306	25.1	20.3	105 E	18*	89
425711 2011 BZ22										8	9 15 20.51	-26 2.0	1.974	2.339	25.4	20.5	98 E	15*	90
12 23	14 10.17	-34 5.8	2.205	1.766	25.8	20.6	51 W	10*	45*	8	19 15 30.82	-27 12.6	2.130	2.372	25.3	20.7	91 E	13*	84*
12 28	14 24.62	-35 51.2	2.162	1.753	26.6	20.6	53 W	8*	47*	8	29 15 42.87	-28 20.1	2.287	2.404	24.7	20.8	84 E	12*	77*
1	14 39.64	-37 33.5	2.121	1.741	27.3	20.6	54 W	7*	48*	9	8 15 56.38	-29 23.8	2.442	2.435	23.8	21.0	78 E	10*	71*
1	14 55.23	-39 11.8	2.080	1.730	28.0	20.5	56 W	5*	50*	9	18 16 11.15	-30 23.1	2.594	2.465	22.7	21.1	71 E	9*	64*
1	15 11.43	-40 45.3	2.040	1.719	28.7	20.5	57 W	4*	51*	9	28 16 27.04	-31 17.2	2.742	2.495	21.4	21.2	65 E	8*	59*
1	15 28.25	-42 13.2	2.002	1.709	29.4	20.5	59 W	2*	52*	10	8 16 43.86	-32 5.4	2.883	2.525	19.9	21.3	59 E	6*	53*
1	15 45.65	-43 34.7	1.965	1.700	30.1	20.4	60 W	1*	53*	10	18 17 1.50	-32 47.2	3.018	2.553	18.3	21.4	53 E	5*	47*
1	16 3.63	-44 48.9	1.929	1.692	30.7	20.4	61 W	-	54*	10	28 17 19.82	-33 21.9	3.144	2.581	16.5	21.4	48 E	4*	41*
1	16 22.11	-45 55.2	1.894	1.684	31.3	20.4	63 W	-	54*	11	7 17 38.68	-33 49.2	3.260	2.607	14.7	21.5	42 E	3*	36*
2	16 41.02	-46 52.8	1.860	1.678	31.8	20.3	64 W	-	54*	11	17 17 57.99	-34 8.6	3.366	2.633	12.8	21.5	36 E	2*	30*
2	17 0.27	-47 41.1	1.826	1.672	32.4	20.3	65 W	-	55*	1065 Amundsenia									
2	17 19.75	-48 19.8	1.794	1.668	32.9	20.3	66 W	-	55*	12 23	14 10.94	-18 52.5	3.045	2.590	17.9	17.5	54 W	24*	42*
2	17 39.32	-48 48.8	1.762	1.664	33.4	20.2	68 W	-	55*	1	2 14 25.65	-20 29.1	2.903	2.560	19.5	17.4	60 W	24*	49*
2	17 58.80	-49 7.9	1.731	1.661	33.8	20.2	69 W	-	56*	1	12 14 40.10	-22 2.8	2.754	2.531	20.9	17.3	67 W	23*	57*
3	18 18.05	-49 17.3	1.701	1.660	34.3	20.2	71 W	-	56*	1	22 14 54.14	-23 33.4	2.600	2.500	22.1	17.2	73 W	21	65*
3	18 36.91	-49 17.4	1.670	1.659	34.7	20.1	72 W	-	57*	2	1 15 7.59	-25 0.8	2.442	2.469	23.1	17.1	80 W	20	73*
3	18 55.25	-49 8.7	1.640	1.659	35.0	20.1	74 W	-	57*	2	11 15 20.23	-26 25.1	2.282	2.437	23.8	16.9	87 W	19	81*
3	19 12.94	-48 52.1	1.610	1.660	35.4	20.1	75 W	-	58*	2	21 15 31.78	-27 46.5	2.123	2.405	24.2	16.8	94 W	17	88*
3	19 29.86	-48 28.2	1.580	1.663	35.7	20.1	77 W	-	59*	3	2 15 41.90	-29 5.1	1.966	2.372	24.2	16.6	102 W	16	87
3	19 45.92	-47 57.9	1.549	1.666	35.9	20.0	78 W	-	60*	3	12 15 50.19	-30 21.0	1.814	2.339	23.6	16.4	109 W	15	86
4	20 1.06	-47 22.1	1.518	1.670	36.1	20.0	80 W	-	61*	3	22 15 56.17	-31 34.0	1.669	2.305	22.5	16.1	118 W	13	84
4	20 15.22	-46 41.8	1.487	1.675	36.3</														

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°
1065 Amundsenia (continuation)										20826 2000 UV₁₃ (continuation)									
7 20	15 1.60	-29 36.4	1.249	1.897	29.5	15.3	113 E	14*	86	1 12	15 35.04	-23 15.3	0.990	0.896	62.6	15.9	54 W	20*	45*
7 30	15 11.47	-29 5.7	1.311	1.866	31.5	15.4	106 E	13*	87	1 17	15 58.72	-27 51.4	1.009	0.891	62.0	15.9	53 W	15*	46*
8 9	15 24.63	-28 46.9	1.376	1.837	33.0	15.5	99 E	13*	87	1 22	16 23.87	-32 1.0	1.033	0.892	61.0	15.9	52 W	11*	46*
8 19	15 40.68	-28 36.6	1.443	1.809	33.9	15.6	93 E	13*	86*	1 27	16 50.41	-35 39.1	1.062	0.898	59.6	15.9	52 W	7*	46*
8 29	15 59.27	-28 31.3	1.511	1.783	34.5	15.7	88 E	13*	81*	2 1	17 18.10	-38 42.1	1.096	0.910	57.9	16.0	52 W	3*	45*
9 8	16 20.07	-28 26.9	1.579	1.759	34.6	15.7	83 E	13*	76*	2 6	17 46.54	-41 8.6	1.133	0.927	56.1	16.0	51 W	—	44*
9 18	16 42.78	-28 19.3	1.646	1.737	34.4	15.8	78 E	13*	71*	2 11	18 15.25	-42 59.1	1.171	0.950	54.2	16.1	51 W	—	43*
9 28	17 7.12	-28 4.9	1.712	1.718	34.0	15.9	73 E	14*	67*	2 16	18 43.67	-44 16.0	1.211	0.976	52.3	16.2	51 W	—	42*
10 8	17 32.79	-27 40.3	1.777	1.701	33.3	15.9	69 E	14*	63*	2 21	19 11.26	-45 2.9	1.251	1.007	50.5	16.3	52 W	—	41*
10 18	17 59.49	-27 2.7	1.842	1.686	32.4	15.9	65 E	15*	59*	2 26	19 37.60	-45 24.2	1.291	1.040	48.8	16.4	52 W	—	41*
10 28	18 26.95	-26 10.1	1.907	1.675	31.4	16.0	61 E	16*	55*	3 2	20 2.35	-45 24.6	1.329	1.077	47.2	16.5	53 W	—	40*
11 7	18 54.83	-25 0.9	1.970	1.666	30.2	16.0	58 E	17*	51*	3 7	20 25.36	-45 8.6	1.366	1.115	45.8	16.6	54 W	—	40*
11 17	19 22.89	-23 34.7	2.034	1.661	28.8	16.0	54 E	19*	46*	3 12	20 46.58	-44 40.3	1.401	1.156	44.5	16.7	55 W	—	41*
11 27	19 50.89	-21 51.6	2.098	1.659	27.4	16.0	51 E	20*	41*	3 17	21 6.05	-44 3.2	1.433	1.198	43.3	16.7	56 W	—	41*
12 7	20 18.60	-19 52.6	2.162	1.660	25.9	16.1	47 E	21*	36*	3 22	21 23.86	-43 20.5	1.462	1.241	42.3	16.8	57 W	—	42*
12 17	20 45.91	-17 38.9	2.226	1.664	24.2	16.1	44 E	23*	31*	3 27	21 40.10	-42 34.4	1.488	1.284	41.4	16.9	58 W	—	43*
12 27	21 12.71	-15 12.5	2.291	1.671	22.5	16.1	41 E	23*	27*	4 1	21 54.89	-41 47.0	1.510	1.329	40.6	17.0	60 W	—	44*
1 6	21 38.94	-12 35.5	2.355	1.682	20.7	16.1	37 E	23*	22*	4 6	22 8.37	-40 59.8	1.529	1.374	39.9	17.1	62 W	—	46*
1 16	22 4.59	-9 50.3	2.419	1.695	18.9	16.1	34 E	23*	18*	4 11	22 20.64	-40 13.9	1.545	1.419	39.2	17.2	64 W	—	48*
414008 2007 GN₄₉										20826 2000 UV₁₃ (continuation)									
12 23	14 11.02	-12 16.5	2.497	2.108	22.7	21.4	56 W	31*	39*	4 16	22 31.80	-39 30.4	1.557	1.464	38.6	17.2	66 W	—	50*
1 2	14 27.99	-12 17.3	2.433	2.156	23.8	21.4	62 W	32*	46*	4 21	22 41.92	-38 50.1	1.566	1.509	38.1	17.3	68 W	—	52*
1 12	14 43.64	-12 2.4	2.360	2.204	24.6	21.4	69 W	33*	53*	4 26	22 51.08	-38 13.6	1.571	1.554	37.6	17.4	70 W	—	55*
1 22	14 57.78	-11 30.8	2.280	2.251	25.1	21.4	76 W	33*	59*	5 1	22 59.31	-37 41.4	1.573	1.599	37.0	17.4	73 W	—	58*
2 1	15 10.16	-10 41.4	2.195	2.298	25.2	21.4	83 W	34	66*	5 11	23 13.10	-36 51.5	1.568	1.687	35.9	17.5	79 W	—	64*
2 11	15 20.53	-9 33.4	2.108	2.345	24.9	21.3	91 W	35	71*	5 21	23 23.45	-36 23.0	1.551	1.775	34.6	17.5	85 W	—	70*
2 21	15 28.61	-8 6.5	2.020	2.392	24.1	21.2	100 W	37	72*	5 31	23 30.20	-36 17.4	1.526	1.860	33.0	17.6	92 W	—	76*
3 2	15 34.11	-6 20.7	1.937	2.438	22.7	21.2	108 W	39	70	6 10	23 33.11	-36 34.9	1.494	1.944	31.0	17.5	100 W	1*	79*
3 12	15 36.80	-4 17.3	1.861	2.483	20.8	21.0	118 W	41	68	6 15	23 32.99	-36 51.9	1.478	1.985	29.8	17.5	104 W	2*	79
3 22	15 36.55	-1 59.3	1.797	2.528	18.3	20.9	127 W	43	66	6 20	23 31.75	-37 13.9	1.462	2.026	28.4	17.5	108 W	3*	79
4 1	15 33.36	+0 28.0	1.750	2.573	15.4	20.8	137 W	45	64	6 25	23 29.32	-37 40.1	1.446	2.067	27.0	17.5	113 W	4*	78
4 11	15 27.54	+2 56.7	1.725	2.616	12.4	20.7	146 W	48	61	6 30	23 25.65	-38 9.6	1.432	2.106	25.3	17.5	118 W	5*	78
4 21	15 19.65	+5 17.2	1.724	2.659	9.9	20.6	153 W	50	59	7 5	23 20.72	-38 41.0	1.420	2.145	23.6	17.4	122 W	6*	77
5 1	15 10.53	+7 19.6	1.750	2.701	8.8	20.7	156 W	52	57	7 10	23 14.52	-39 12.9	1.412	2.183	21.7	17.4	127 W	6*	77
5 11	15 1.20	+8 55.9	1.803	2.742	9.6	20.8	153 E	54	55	7 15	23 7.08	-39 43.6	1.407	2.221	19.8	17.4	132 W	5	76
5 21	14 52.61	+10 2.1	1.882	2.783	11.6	21.0	146 E	55	54	7 20	22 58.49	-40 11.1	1.406	2.259	17.8	17.3	137 W	5	76
5 31	14 45.54	+10 37.8	1.984	2.822	13.8	21.2	138 E	56	53	7 25	22 48.89	-40 33.3	1.411	2.296	15.9	17.3	142 W	4	75
6 10	14 40.48	+10 46.2	2.105	2.861	15.9	21.5	130 E	56	53	7 30	22 38.50	-40 48.4	1.421	2.332	14.1	17.3	146 W	4	75
370307 2002 RH₅₂										20826 2000 UV₁₃ (continuation)									
12 23	14 11.70	-12 23.2	1.670	1.379	36.1	20.2	56 W	31*	39*	8 4	22 27.60	-40 54.9	1.439	2.368	12.6	17.3	149 W	4	75
1 2	14 32.36	-15 36.3	1.661	1.448	36.0	20.3	60 W	29*	46*	8 9	22 16.50	-40 51.8	1.462	2.404	11.5	17.3	152 W	4	75
1 12	14 51.44	-18 34.0	1.643	1.517	36.0	20.4	65 W	26*	53*	8 14	22 5.50	-40 38.9	1.493	2.439	10.9	17.4	153 W	4	75
1 22	15 8.81	-21 18.6	1.614	1.586	35.8	20.4	71 W	24*	61*	8 19	21 54.91	-40 16.3	1.531	2.473	10.9	17.5	153 W	5	76
2 1	15 24.20	-23 52.1	1.576	1.654	35.4	20.4	77 W	21	69*	8 24	21 45.01	-39 44.9	1.576	2.507	11.4	17.6	151 E	5	76
2 11	15 37.26	-26 16.7	1.531	1.721	34.7	20.4	83 W	19	77*	8 29	21 36.01	-39 5.7	1.628	2.541	12.2	17.7	148 E	6	77
2 21	15 47.56	-28 34.5	1.480	1.788	33.6	20.4	91 W	16	84*	9 3	21 28.04	-38 20.2	1.687	2.574	13.2	17.9	144 E	7	78
3 2	15 54.52	-30 47.0	1.425	1.852	32.0	20.4	98 W	14	85	9 8	21 21.18	-37 29.9	1.752	2.607	14.3	18.0	140 E	8	79
3 7	15 56.55	-31 51.3	1.397	1.884	30.9	20.3	103 W	13	84	9 13	21 15.44	-36 36.2	1.822	2.639	15.4	18.2	136 E	8	79
3 12	15 57.52	-32 54.2	1.370	1.915	29.7	20.3	107 W	12	83	9 18	21 10.82	-35 40.2	1.898	2.670	16.4	18.3	131 E	9	80
3 17	15 57.33	-33 55.3	1.344	1.946	28.4	20.2	112 W	11	82	9 23	21 7.26	-34 42.9	1.979	2.701	17.3	18.5	127 E	10	81
3 22	15 55.91	-34 54.1	1.319	1.976	26.8	20.2	116 W	10	81	9 28	21 4.71	-33 45.0	2.064	2.732	18.1	18.6	122 E	11	82
3 27	15 53.21	-35 49.8	1.296	2.006	25.1	20.1	121 W	9	80	10 3	21 3.08	-32 47.3	2.152	2.762	18.7	18.7	118 E	12	83
4 1	15 49.19	-36 41.3	1.276	2.035	23.2	20.1	126 W	8	79	10 8	21 2.28	-31 50.1	2.244	2.792	19.2	18.9	113 E	13	84
4 6	15 43.89	-37 27.5	1.259	2.064	21.2	20.0	132 W	7	78	10 13	21 2.25	-30 53.6	2.338	2.821	19.6	19.0	109 E	14	85
4 11	15 37.37	-38 7.0	1.246	2.093	19.1	20.0	137 W	7	78	10 18	21 2.89	-29 58.1	2.435	2.850	19.8	19.1	104 E	15	86
4 16	15 29.76	-38 38.6	1.238	2.121	17.0	19.9	142 W	6	77	10 28	21 5.96	-28 10.0	2.632	2.906	19.9	19.3	96 E	17	88
4 21	15 21.25	-39 1.0	1.235	2.148	14.8	19.8	147 W	6	77	11 7	21 10.95	-26 25.8	2.833	2.961	19.5	19.5	88 E	19	81*
4 26	15 12.10	-39 13.2	1.238	2.176	12.8	19.8	151 W	6	77	11 17	21 17.46	-24 45.0	3.033	3.013	18.8	19.7	79 E	20	72*
5 1	15 2.63	-39 15.0	1.247	2.202	11.2	19.8	155 W	6	77	11 27	21 25.14	-23 6.8	3.229	3.064	17.8	19.8	72 E	22	63*
5 6	14 53.18	-39 6.7	1.263	2.228	10.0	19.8	157 W	6	77	12 7	21 33.72	-21 30.7	3.418	3.114	16.5	19.9	64 E	23*	54*
5 11	14 44.07	-38 49.2	1.285	2.254	9.6	19.8	158 E	6	77	12 17	21 42.98	-19 56.0	3.599	3.162	15.0	20.0	56 E	24*	45*
5 16	14 35.55	-38 23.9	1.313	2.279	9.9	19.9	157 E	7	78	12 27	21 52.74	-18 22.3	3.768	3.208	13.4	20.1	49 E	24*	37*
5 21	14 27.86	-37 52.4	1.348	2.303	10.9	20.0													

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°
277142 2005 LG₈										3671 Dionysus									
<i>(continuation)</i>										<i>(continuation)</i>									
4 21	13 25.26	-12 42.7	1.567	2.567	2.9	20.0	172 E	32	77	3 17	19 10.93	-15 14.3	1.057	1.171	52.7	18.8	70 W	25*	62*
4 26	13 17.71	-11 29.2	1.609	2.597	5.4	20.2	166 E	34	75	3 22	19 35.78	-15 28.1	1.032	1.142	54.3	18.7	69 W	23*	61*
5 1	13 10.86	-10 19.6	1.659	2.626	7.8	20.5	159 E	35	74	3 27	20 1.22	-15 32.5	1.012	1.115	55.7	18.7	67 W	21*	60*
5 6	13 4.82	-9 15.3	1.717	2.654	10.0	20.6	153 E	36	73	4 1	20 27.04	-15 27.0	0.998	1.091	56.9	18.6	66 W	20*	59*
5 11	12 59.61	-8 17.0	1.782	2.682	12.0	20.8	146 E	37	72	4 6	20 53.04	-15 11.1	0.990	1.069	58.0	18.6	65 W	18*	59*
5 16	12 55.24	-7 25.2	1.853	2.709	13.8	21.0	140 E	38	71	4 11	21 18.97	-14 44.8	0.987	1.050	58.8	18.6	64 W	17*	57*
5 21	12 51.72	-6 39.9	1.929	2.734	15.4	21.2	134 E	38	71	4 16	21 44.63	-14 8.7	0.989	1.034	59.4	18.6	63 W	15*	56*
5 26	12 49.00	-6 1.3	2.011	2.759	16.7	21.3	129 E	39	70	4 21	22 9.78	-13 23.6	0.995	1.022	59.7	18.6	61 W	14*	55*
5 31	12 47.05	-5 29.1	2.096	2.784	17.7	21.5	123 E	40*	69	4 26	22 34.26	-12 30.6	1.006	1.013	59.8	18.6	60 W	12*	54*
306919 2001 UU₁₇										3671 Dionysus									
12 23	14 13.81	-9 41.9	2.501	2.116	22.7	20.7	56 W	33*	38*	5 1	22 57.92	-11 31.3	1.021	1.009	59.5	18.6	60 W	11*	54*
1 2	14 30.89	-9 34.7	2.435	2.163	23.8	20.7	62 W	35*	44*	5 6	23 20.67	-10 27.1	1.038	1.008	59.1	18.6	59 W	10*	53*
1 12	14 46.68	-9 11.3	2.362	2.210	24.6	20.7	69 W	36*	51*	5 11	23 42.47	-9 19.4	1.058	1.011	58.4	18.6	58 W	10*	52*
1 22	15 1.02	-8 30.6	2.282	2.256	25.0	20.7	76 W	36*	57*	5 16	0 3.30	-8 9.7	1.080	1.018	57.5	18.7	58 W	9*	52*
2 1	15 13.64	-7 31.6	2.198	2.303	25.1	20.7	83 W	37	63*	5 21	0 23.15	-6 59.2	1.102	1.029	56.6	18.7	58 W	9*	52*
2 11	15 24.29	-6 13.6	2.113	2.349	24.8	20.6	91 W	39	67*	5 26	0 42.03	-5 49.1	1.125	1.043	55.5	18.8	58 W	9*	52*
2 21	15 32.70	-4 36.3	2.027	2.395	24.0	20.6	99 W	40	69*	5 31	0 59.98	-4 40.5	1.149	1.061	54.5	18.8	58 W	10*	52*
3 2	15 38.59	-2 40.4	1.946	2.440	22.7	20.5	108 W	42	67	6 5	1 17.03	-3 34.2	1.172	1.081	53.4	18.9	59 W	11*	52*
3 12	15 41.71	-0 27.7	1.873	2.485	20.9	20.4	117 W	45	64	6 10	1 33.23	-2 30.6	1.193	1.105	52.3	18.9	59 W	12*	53*
3 22	15 41.91	+1 58.2	1.813	2.529	18.6	20.3	126 W	47	62	6 20	2 3.22	-0 34.0	1.233	1.159	50.2	19.0	61 W	15*	53*
3 27	15 40.91	+3 14.2	1.788	2.551	17.3	20.2	130 W	48	61	6 30	2 30.17	+1 6.4	1.264	1.220	48.3	19.2	64 W	19*	55*
4 1	15 39.18	+4 31.0	1.769	2.573	16.0	20.2	135 W	50	59	7 10	2 54.27	+2 29.4	1.287	1.287	46.5	19.3	67 W	23*	56*
4 6	15 36.78	+5 47.4	1.754	2.595	14.6	20.1	139 W	51	58	7 20	3 15.62	+3 35.1	1.299	1.358	44.9	19.4	71 W	29*	57*
4 11	15 33.77	+7 2.1	1.745	2.616	13.3	20.1	143 W	52	57	7 30	3 34.19	+4 23.9	1.300	1.431	43.3	19.4	75 W	34*	58*
4 16	15 30.21	+8 14.0	1.742	2.637	12.2	20.0	146 W	53	56	8 9	3 49.89	+4 56.9	1.291	1.505	41.6	19.5	81 W	40*	58*
4 21	15 26.20	+9 21.7	1.745	2.658	11.2	20.0	149 W	54	55	8 19	4 2.52	+5 15.6	1.273	1.580	39.8	19.5	87 W	45*	59*
4 26	15 21.84	+10 24.0	1.755	2.679	10.5	20.0	151 W	55	54	8 29	4 11.78	+5 21.4	1.246	1.654	37.5	19.5	94 W	49*	59
5 1	15 17.27	+11 19.7	1.771	2.700	10.3	20.1	151 W	56	53	9 8	4 17.33	+5 16.5	1.215	1.728	34.8	19.4	102 W	50*	59
5 6	15 12.60	+12 8.1	1.794	2.721	10.4	20.1	151 W	57	52	9 18	4 18.78	+5 3.2	1.181	1.801	31.5	19.4	111 W	50	59
5 11	15 7.98	+12 48.6	1.823	2.741	10.8	20.2	149 E	58	51	9 28	4 15.79	+4 44.5	1.151	1.873	27.4	19.3	121 W	50	59
5 21	14 59.28	+13 45.2	1.900	2.781	12.4	20.4	144 E	59	50	10 8	4 8.32	+4 24.3	1.128	1.943	22.5	19.2	132 W	49	60
5 31	14 52.00	+14 9.7	1.998	2.820	14.4	20.6	136 E	59	50	10 13	4 3.00	+4 15.0	1.122	1.978	19.9	19.1	138 W	49	60
6 10	14 46.66	+14 5.9	2.116	2.859	16.2	20.8	128 E	59	50	10 18	3 56.75	+4 7.0	1.121	2.012	17.1	19.1	144 W	49	60
6 20	14 43.49	+13 38.9	2.248	2.896	17.6	21.0	120 E	59	50	10 23	3 49.74	+4 1.0	1.124	2.045	14.2	19.0	150 W	49	60
6 30	14 42.53	+12 54.0	2.392	2.933	18.7	21.2	112 E	58*	51	10 28	3 42.15	+3 57.7	1.133	2.079	11.5	19.0	155 W	49	60
7 10	14 43.67	+11 56.1	2.543	2.969	19.3	21.4	105 E	55*	52	11 7	3 26.22	+4 0.6	1.172	2.144	7.0	18.9	165 W	49	60
310429 1999 XP₁₉										3671 Dionysus									
12 23	14 14.65	-11 44.4	2.783	2.364	20.0	20.8	55 W	31*	38*	11 17	3 10.83	+4 18.1	1.238	2.207	6.8	19.1	165 E	49	60
1 2	14 28.13	-13 0.1	2.715	2.412	21.1	20.8	62 W	31*	46*	11 27	2 57.68	+4 50.6	1.333	2.269	10.3	19.5	156 E	50	59
1 12	14 40.37	-14 6.8	2.636	2.459	21.9	20.8	69 W	31*	54*	12 7	2 47.76	+5 36.4	1.453	2.329	14.1	19.8	145 E	51	58
1 22	14 51.16	-15 4.4	2.550	2.506	22.4	20.8	76 W	30	63*	12 17	2 41.41	+6 32.7	1.595	2.387	17.2	20.2	134 E	52	57
2 1	15 0.26	-15 52.9	2.457	2.552	22.6	20.8	84 W	29	71*	12 27	2 38.54	+7 37.0	1.754	2.443	19.5	20.5	124 E	53	56
2 11	15 7.39	-16 32.4	2.360	2.596	22.3	20.7	92 W	28	78*	1 6	2 38.78	+8 46.7	1.926	2.498	21.0	20.8	114 E	54	55
2 21	15 12.27	-17 2.7	2.262	2.640	21.6	20.6	101 W	28	81*	1 16	2 41.66	+9 59.8	2.108	2.550	21.8	21.1	105 E	55	54*
3 2	15 14.60	-17 23.8	2.167	2.682	20.2	20.5	111 W	28	81	164216 2004 OT₁₁									
3 12	15 14.16	-17 35.2	2.079	2.724	18.3	20.4	121 W	27	82	12 23	14 15.06	-28 49.3	1.665	1.293	36.1	20.3	51 W	15*	43*
3 22	15 10.86	-17 36.6	2.002	2.765	15.7	20.3	131 W	27	82	12 28	14 36.68	-30 46.2	1.618	1.255	37.4	20.2	51 W	13*	44*
4 1	15 4.78	-17 27.7	1.942	2.804	12.4	20.1	143 W	28	81	1 2	14 59.89	-32 34.0	1.576	1.217	38.6	20.2	51 W	11*	44*
4 11	14 56.35	-17 8.7	1.904	2.842	8.7	20.0	155 W	28	81	1 7	15 24.75	-34 9.3	1.539	1.180	39.7	20.1	50 W	9*	44*
4 21	14 46.27	-16 41.1	1.892	2.880	4.6	19.8	167 W	28	81	1 12	15 51.20	-35 28.4	1.507	1.144	40.7	20.0	49 W	7*	44*
4 26	14 40.91	-16 24.9	1.897	2.898	2.4	19.7	173 W	29	80	1 17	16 19.10	-36 27.3	1.480	1.110	41.6	19.9	49 W	6*	43*
5 1	14 35.51	-16 7.6	1.908	2.916	0.4	19.5	179 W	29	80	1 22	16 48.16	-37 2.7	1.459	1.078	42.4	19.8	48 W	4*	42*
5 6	14 30.22	-15 50.0	1.928	2.934	1.9	19.7	175 E	29	80	1 27	17 19.98	-37 11.7	1.444	1.048	43.0	19.8	47 W	3*	40*
5 11	14 25.14	-15 32.5	1.954	2.951	3.9	19.9	168 E	29	80	2 1	17 48.08	-36 52.6	1.434	1.021	43.4	19.7	45 W	3*	39*
5 16	14 20.39	-15 15.6	1.988	2.968	5.9	20.0	163 E	30	79	2 6	18 17.93	-36 5.2	1.429	0.996	43.6	19.6	44 W	2*	38*
5 21	14 16.06	-15 0.0	2.029	2.985	7.7	20.2	157 E	30	79	2 11	18 47.07	-34 50.5	1.430	0.976	43.5	19.6	43 W	2*	37*
5 31	14 8.94	-14 34.1	2.129	3.018	11.0	20.4	145 E	30	79	2 16	19 15.11	-33 11.0	1.435	0.959	43.3	19.6	42 W	1*	35*
6 10	14 4.12	-14 17.5	2.251	3.050	13.7	20.7	135 E	31	78	2 21	19 41.81	-31 9.8	1.445	0.946	42.8	19.5	41 W	2*	34*
6 20	14 1.68	-14 11.4	2.391	3.081	15.8	20.9	124 E	31*	78	2 26	20 7.03	-28 50.6	1.458	0.938	42.2	19.5	40 W	2*	33*
6 30	14 1.52	-14 15.9	2.544	3.110	17.3	21.1	115 E	29*	78	3 2	20 30.71	-26 17.3	1.475	0.935	41.4	19.5	39 W	2*	32*
7 10	14 3.45	-14 30.4	2.706	3.139	18.2	21.3	106 E	27*	79	3 7	20 52.92	-23 33.4	1.495	0.937	40.6	19.5	38 W	3*	32*
7 20	14 7.22	-14 53.6	2.873	3.166	18.6	21.4	97 E	24*	79	3 12	21 13.74	-20 42.3	1.517	0.943	39.6	19.5	37 W	4*	31*
3671 Dionysus										3671 Dionysus									
12 23	14 15.00	-1 26.5	2.070	1.780	28.3	20.5	59 W	41*	34*	3 17	21 33.30	-17 46.9							

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°
164216 2004 OT₁₁										6042 Cheshirecat									
<i>(continuation)</i>										<i>(continuation)</i>									
8 19	2 51.98	+41 22.1	1.730	2.047	29.6	21.2	93 W	84*	23	12 27	16 4.09	-12 49.4	4.546	3.779	8.5	19.7	35 W	22*	19*
8 29	2 54.26	+43 12.9	1.684	2.115	28.0	21.2	100 W	88	21	1 6	16 14.93	-13 22.4	4.421	3.748	10.1	19.6	42 W	25*	27*
9 8	2 52.24	+44 48.5	1.639	2.181	25.9	21.1	109 W	90	19	1 16	16 25.45	-13 50.4	4.281	3.716	11.6	19.6	49 W	27*	36*
9 18	2 45.52	+46 2.7	1.598	2.246	23.4	21.1	117 W	89	18	58149 1987 SX₁₁									
9 28	2 34.17	+46 46.5	1.568	2.308	20.4	21.0	126 W	88	17	12 23	14 16.41	-2 27.5	3.823	3.414	14.2	21.4	58 W	40*	34*
10 8	2 19.07	+46 51.1	1.552	2.368	17.3	20.9	135 W	88	17	1 2	14 25.93	-2 22.8	3.709	3.434	15.2	21.4	66 W	42*	41*
10 18	2 1.94	+46 10.5	1.557	2.427	14.4	20.9	143 W	89	18	1 12	14 34.48	-2 6.9	3.586	3.454	15.9	21.3	74 W	43*	49*
10 28	1 45.04	+44 45.8	1.584	2.483	12.3	20.9	148 E	90	19	1 22	14 41.89	-1 39.0	3.457	3.473	16.3	21.3	83 W	43	56*
11 7	1 30.47	+42 46.9	1.638	2.537	11.7	21.0	149 E	88	21	2 1	14 47.95	-0 58.4	3.326	3.491	16.4	21.2	91 W	44	61*
11 17	1 19.52	+40 28.9	1.718	2.590	12.7	21.2	145 E	85	24	2 11	14 52.48	-0 4.8	3.195	3.509	16.1	21.1	100 W	45	64*
11 27	1 12.68	+38 8.0	1.823	2.640	14.5	21.4	138 E	83	26	2 21	14 55.29	+1 1.4	3.069	3.525	15.3	21.0	110 W	46	63
218863 2006 WO₁₂₇																			
12 23	14 15.39	-13 7.5	1.354	1.120	45.7	18.9	55 W	30*	39*	3 2	14 56.20	+2 19.5	2.952	3.541	14.2	20.9	119 W	47	62
1 2	14 47.45	-14 6.9	1.381	1.182	44.3	19.1	57 W	29*	42*	3 12	14 55.13	+3 47.3	2.850	3.555	12.6	20.8	129 W	49	60
1 12	15 16.91	-14 41.4	1.400	1.249	43.1	19.2	60 W	29*	46*	3 22	14 52.09	+5 21.5	2.766	3.569	10.8	20.6	138 W	50	59
1 22	15 43.69	-14 53.1	1.410	1.321	42.1	19.3	64 W	29*	51*	4 1	14 47.21	+6 57.9	2.705	3.582	8.8	20.5	147 W	52	57
2 1	16 7.66	-14 44.0	1.410	1.396	41.1	19.4	69 W	30*	56*	4 11	14 40.83	+8 30.5	2.670	3.595	7.1	20.4	154 W	54	55
2 11	16 28.70	-14 16.2	1.400	1.472	40.1	19.5	74 W	30*	62*	4 16	14 37.22	+9 13.7	2.663	3.600	6.6	20.4	156 W	54	55
2 21	16 46.67	-13 32.2	1.381	1.548	38.9	19.5	80 W	31*	67*	4 21	14 33.42	+9 53.9	2.663	3.606	6.4	20.4	156 W	55	54
3 2	17 1.33	-12 33.9	1.355	1.625	37.5	19.5	86 W	32*	72*	4 26	14 29.52	+10 30.3	2.670	3.611	6.6	20.4	156 W	56	53
3 12	17 12.46	-11 23.8	1.322	1.700	35.7	19.5	93 W	34*	75*	5 1	14 25.60	+11 2.6	2.685	3.617	7.1	20.5	154 E	56	53
3 22	17 19.79	-10 4.1	1.285	1.775	33.4	19.5	101 W	35	74	5 11	14 18.02	+11 53.0	2.734	3.626	8.6	20.6	147 E	57	52
4 1	17 23.02	-8 37.6	1.248	1.848	30.5	19.4	110 W	36	73	5 21	14 11.26	+12 23.6	2.809	3.635	10.5	20.7	139 E	57	52
4 11	17 21.98	-7 8.1	1.214	1.920	26.9	19.3	120 W	38	71	5 31	14 5.79	+12 34.5	2.906	3.643	12.3	20.9	130 E	58	51
4 16	17 19.86	-6 23.6	1.201	1.956	24.9	19.3	125 W	39	70	6 10	14 1.91	+12 27.6	3.019	3.650	13.8	21.0	121 E	57	52
4 21	17 16.69	-5 40.1	1.189	1.991	22.7	19.3	130 W	39	70	6 20	13 59.76	+12 5.3	3.147	3.657	14.9	21.1	112 E	57*	52
4 26	17 12.55	-4 58.4	1.182	2.025	20.4	19.2	135 W	40	69	6 30	13 59.35	+11 30.4	3.283	3.662	15.6	21.3	104 E	54*	52
5 1	17 7.51	-4 19.6	1.178	2.059	18.1	19.2	141 W	41	68	7 10	14 0.62	+10 45.7	3.424	3.667	16.0	21.4	96 E	50*	53
5 6	17 1.74	-3 44.3	1.180	2.093	15.7	19.1	146 W	41	68	7 20	14 3.43	+9 53.7	3.568	3.671	16.1	21.5	88 E	46*	54
5 11	16 55.37	-3 13.4	1.187	2.126	13.4	19.1	151 W	42	67	189054 2000 SW₂₇₈									
5 16	16 48.60	-2 47.6	1.199	2.159	11.3	19.1	155 W	42	67	12 23	14 17.09	-6 2.5	3.122	2.712	17.7	20.8	57 W	37*	35*
5 21	16 41.62	-2 27.5	1.218	2.191	9.7	19.1	159 W	43	66	1 2	14 30.12	-7 21.6	2.966	2.674	19.2	20.7	63 W	37*	43*
5 31	16 27.87	-2 5.7	1.274	2.254	8.8	19.2	160 E	43	66	1 12	14 42.73	-8 36.4	2.803	2.636	20.5	20.6	70 W	36*	51*
6 10	16 15.62	-2 8.2	1.356	2.315	10.7	19.5	155 E	43	66	1 22	14 54.77	-9 46.8	2.635	2.598	21.7	20.4	77 W	35	59*
6 20	16 5.87	-2 32.0	1.461	2.375	13.7	19.8	146 E	42	67	2 1	15 6.03	-10 52.9	2.463	2.558	22.5	20.3	84 W	34	67*
6 30	15 59.14	-3 12.9	1.587	2.432	16.6	20.1	137 E	42	67	2 11	15 16.28	-11 55.2	2.290	2.518	23.1	20.1	92 W	33	73*
7 10	15 55.51	-4 5.9	1.731	2.488	18.8	20.4	128 E	41	68	2 21	15 25.24	-12 54.3	2.119	2.478	23.2	19.9	99 W	32	77*
7 20	15 54.75	-5 6.6	1.888	2.541	20.5	20.7	119 W	40*	69	3 2	15 32.54	-13 51.1	1.951	2.437	22.8	19.7	107 W	31	78
7 30	15 56.58	-6 11.7	2.055	2.593	21.5	21.0	111 E	38*	70	3 12	15 37.80	-14 46.7	1.789	2.396	21.9	19.4	116 W	30	79
8 9	16 0.62	-7 18.4	2.230	2.643	22.0	21.2	103 E	36*	71	3 22	15 40.56	-15 42.6	1.637	2.354	20.3	19.1	125 W	29	80
8 19	16 6.54	-8 24.6	2.409	2.692	22.0	21.4	95 E	34*	72	4 1	15 40.34	-16 39.6	1.498	2.312	17.9	18.8	135 W	28	81
										6042 Cheshirecat									
12 23	14 16.30	+0 42.3	4.825	4.415	11.1	20.2	60 W	43*	32*	4 11	15 36.75	-17 38.9	1.374	2.270	14.6	18.5	145 W	27	82
1 2	14 23.00	+0 27.7	4.681	4.411	11.9	20.2	68 W	45*	40*	4 21	15 29.61	-18 40.2	1.270	2.228	10.4	18.1	156 W	26	83
1 12	14 28.86	+0 21.3	4.528	4.405	12.5	20.1	77 W	45*	48*	5 1	15 19.13	-19 42.0	1.189	2.185	5.4	17.7	168 W	25	84
1 22	14 33.72	+0 23.2	4.368	4.400	12.9	20.1	85 W	45*	56*	5 6	15 12.88	-20 12.6	1.158	2.164	2.8	17.5	174 W	25	84
2 1	14 37.42	+0 33.6	4.207	4.393	12.9	20.0	94 W	46	61*	5 11	15 6.17	-20 42.5	1.134	2.143	1.5	17.3	177 E	24	85
2 11	14 39.78	+0 52.5	4.047	4.386	12.6	19.9	104 W	46	63*	5 16	14 59.18	-21 11.5	1.116	2.122	3.8	17.4	172 E	24	85
2 21	14 40.68	+1 19.4	3.893	4.378	12.0	19.8	113 W	46	63	5 21	14 52.16	-21 39.5	1.105	2.101	6.7	17.5	166 E	23	86
3 2	14 40.00	+1 53.3	3.750	4.369	11.0	19.7	123 W	47	62	5 26	14 45.33	-22 6.5	1.100	2.080	9.7	17.6	160 E	23	86
3 12	14 37.71	+2 32.8	3.622	4.360	9.6	19.5	133 W	48	61	5 31	14 38.94	-22 32.8	1.101	2.060	12.6	17.7	154 E	22	87
3 22	14 33.85	+3 15.7	3.515	4.350	8.0	19.4	143 W	48	61	6 5	14 33.18	-22 58.7	1.107	2.039	15.3	17.8	148 E	22	87
4 1	14 28.58	+3 59.4	3.431	4.339	6.2	19.2	152 W	49	60	6 10	14 28.22	-23 24.6	1.118	2.019	18.0	17.9	142 E	22	87
4 11	14 22.19	+4 40.4	3.375	4.328	4.6	19.1	160 W	50	59	6 15	14 24.18	-23 51.0	1.134	1.999	20.4	18.0	137 E	21	88
4 21	14 15.10	+5 15.6	3.348	4.316	4.1	19.1	162 W	50	59	6 20	14 21.15	-24 18.3	1.154	1.979	22.7	18.1	131 E	21	88
5 1	14 7.77	+5 42.1	3.351	4.303	5.0	19.1	158 E	51	58	6 30	14 18.32	-25 17.4	1.202	1.939	26.5	18.2	122 E	19*	89
5 11	14 0.73	+5 57.6	3.382	4.289	6.7	19.2	150 E	51	58	7 10	14 19.81	-26 24.0	1.258	1.901	29.5	18.4	113 E	16*	90
5 21	13 54.42	+6 1.1	3.441	4.275	8.6	19.3	141 E	51	58	7 20	14 25.41	-27 38.5	1.319	1.865	31.7	18.5	105 E	14*	88
5 31	13 49.22	+																	

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°
189054 2000 SW₂₇₈ (continuation)										5510 1988 RF₇ (continuation)									
12 12	20 44.52	-30 57.6	2.163	1.647	25.7	19.1	46 E	11*	40*	3 12	15 43.83	-12 20.0	1.846	2.436	21.7	17.8	115 W	33	76
12 17	21 0.03	-29 39.4	2.196	1.654	24.9	19.2	45 E	12*	38*	3 22	15 46.77	-12 4.9	1.710	2.413	20.0	17.6	124 W	33	76
12 22	21 15.18	-28 16.5	2.229	1.661	24.1	19.2	44 E	13*	36*	4 1	15 46.82	-11 40.7	1.586	2.389	17.6	17.3	134 W	33	76
12 27	21 29.96	-26 49.6	2.263	1.670	23.3	19.2	42 E	14*	34*	4 11	15 43.78	-11 8.7	1.479	2.365	14.4	17.0	144 W	34	75
1 1	21 44.38	-25 19.1	2.298	1.679	22.4	19.2	41 E	15*	32*	4 21	15 37.66	-10 31.0	1.390	2.340	10.5	16.7	155 W	34	75
1 6	21 58.43	-23 45.6	2.334	1.689	21.6	19.2	39 E	15*	30*	5 1	15 28.85	-9 51.0	1.324	2.314	6.2	16.4	166 W	35	74
1 11	22 12.13	-22 9.7	2.370	1.700	20.7	19.2	38 E	16*	28*	5 6	15 23.70	-9 31.6	1.301	2.301	4.5	16.3	170 W	35	74
1 16	22 25.50	-20 31.9	2.407	1.712	19.8	19.3	36 E	16*	27*	5 11	15 18.25	-9 13.5	1.284	2.287	3.9	16.2	171 W	36	73
463282 2012 HR₁₅										5510 1988 RF₇ (continuation)									
12 23	14 17.55	+18 15.4	0.780	1.012	65.1	18.9	69 W	59*	22*	5 16	15 12.65	-8 57.3	1.273	2.274	4.9	16.2	169 E	36	73
12 28	14 26.11	+19 58.1	0.815	1.072	61.0	19.0	72 W	62*	23*	5 31	14 56.78	-8 27.1	1.280	2.233	11.7	16.5	153 E	37	72
1 2	14 33.77	+21 35.2	0.846	1.132	57.5	19.1	76 W	65*	25*	6 10	14 48.55	-8 26.8	1.312	2.205	16.3	16.7	142 E	37	72
1 7	14 40.44	+23 9.9	0.874	1.192	54.2	19.2	80 W	67*	26*	6 20	14 43.19	-8 44.2	1.362	2.176	20.3	16.9	132 E	36	73
1 12	14 46.08	+24 44.4	0.898	1.252	51.3	19.3	83 W	69*	28*	6 30	14 41.11	-9 18.5	1.426	2.147	23.6	17.0	122 E	36*	73
1 17	14 50.62	+26 20.3	0.920	1.311	48.5	19.3	87 W	71*	29*	7 10	14 42.33	-10 8.0	1.500	2.118	26.2	17.2	113 E	34*	74
1 22	14 54.00	+27 58.4	0.940	1.370	45.9	19.4	91 W	73*	30*	7 20	14 46.67	-11 9.8	1.579	2.089	28.0	17.3	105 E	31*	75
2 1	14 56.88	+31 22.2	0.974	1.485	41.0	19.5	99 W	76	31*	7 30	14 53.90	-12 21.3	1.662	2.060	29.2	17.5	98 E	28*	76
2 11	14 54.09	+34 50.9	1.006	1.597	36.3	19.6	106 W	80	29*	8 9	15 3.72	-13 39.7	1.746	2.031	29.9	17.5	91 E	26*	78*
2 21	14 45.11	+38 12.7	1.042	1.705	31.9	19.7	114 W	83	26	8 19	15 15.88	-15 2.3	1.828	2.001	30.2	17.6	84 E	23*	76*
2 26	14 38.22	+39 45.3	1.063	1.758	29.9	19.8	118 W	85	24	8 29	15 30.18	-16 26.7	1.909	1.973	30.1	17.7	78 E	21*	71*
3 2	14 29.83	+41 8.7	1.086	1.810	27.9	19.8	121 W	86	23	9 8	15 46.44	-17 50.3	1.985	1.944	29.7	17.7	73 E	20*	66*
3 7	14 20.09	+42 20.0	1.113	1.861	26.2	19.9	124 W	87	22	9 18	16 4.51	-19 10.6	2.058	1.916	29.0	17.8	68 E	18*	61*
3 12	14 9.25	+43 16.8	1.144	1.911	24.7	19.9	127 W	88	21	9 28	16 24.28	-20 25.4	2.126	1.888	28.1	17.8	63 E	17*	56*
3 17	13 57.63	+43 57.6	1.180	1.961	23.4	20.0	129 W	89	20	10 8	16 45.61	-21 32.2	2.190	1.861	27.0	17.8	58 E	16*	52*
3 22	13 45.60	+44 21.0	1.220	2.009	22.4	20.1	130 W	89	20	10 18	17 8.41	-22 28.5	2.248	1.835	25.8	17.8	53 E	15*	47*
3 27	13 33.58	+44 26.8	1.264	2.057	21.7	20.2	130 W	89	20	10 28	17 32.54	-23 12.2	2.301	1.811	24.4	17.7	49 E	15*	42*
4 1	13 21.96	+44 15.7	1.314	2.104	21.2	20.3	130 W	89	20	11 7	17 57.84	-23 41.1	2.349	1.787	23.0	17.7	45 E	14*	38*
4 6	13 11.08	+43 49.2	1.369	2.150	21.0	20.3	130 W	89	20	11 17	18 24.15	-23 53.3	2.392	1.765	21.4	17.7	41 E	14*	33*
4 11	13 1.20	+43 9.1	1.428	2.196	21.0	20.6	128 E	88	21	11 27	18 51.28	-23 47.4	2.431	1.744	19.8	17.6	37 E	13*	29*
4 16	12 52.45	+42 17.7	1.492	2.241	21.1	20.8	127 E	87	22	12 7	19 18.99	-23 22.4	2.466	1.725	18.1	17.6	33 E	13*	24*
4 21	12 44.93	+41 17.2	1.561	2.284	21.3	20.9	124 E	86	23	12 17	19 47.09	-22 37.8	2.496	1.709	16.4	17.5	29 E	12*	20*
4 26	12 38.64	+40 9.5	1.633	2.328	21.5	21.0	122 E	85	24	12 27	20 15.36	-21 33.7	2.524	1.694	14.7	17.5	26 E	11*	16*
5 1	12 33.56	+38 56.5	1.710	2.370	21.8	21.2	119 E	84	25	1 6	20 43.61	-20 10.9	2.548	1.681	12.9	17.4	22 E	10*	13*
5 6	12 29.61	+37 39.9	1.790	2.412	22.0	21.3	116 E	83	26	1 16	21 11.69	-18 30.7	2.569	1.671	11.1	17.4	19 E	8*	10*
5 11	12 26.70	+36 21.1	1.873	2.453	22.2	21.5	113 E	81	28	17435 di Giovanni									
12 23	14 17.75	-15 31.7	1.750	1.404	34.2	20.0	53 W	27*	39*	12 23	14 18.62	-14 2.2	2.255	1.848	25.3	18.6	54 W	29*	38*
1 2	14 45.22	-18 8.8	1.732	1.442	34.6	20.0	56 W	26*	44*	1 2	14 40.02	-14 22.1	2.194	1.881	26.5	18.6	59 W	29*	44*
1 12	15 11.72	-20 25.8	1.710	1.485	35.0	20.1	60 W	24*	49*	1 12	15 0.37	-14 24.6	2.127	1.916	27.5	18.6	64 W	30*	50*
1 22	15 37.08	-22 22.9	1.683	1.531	35.3	20.1	64 W	22*	55*	1 22	15 19.49	-14 9.1	2.055	1.951	28.3	18.6	70 W	31*	56*
2 1	16 1.03	-24 1.1	1.651	1.579	35.4	20.1	68 W	21*	61*	2 1	15 37.11	-13 34.6	1.978	1.987	28.8	18.5	76 W	31*	62*
2 11	16 23.27	-25 22.3	1.613	1.630	35.4	20.2	73 W	19*	66*	2 11	15 52.98	-12 40.8	1.897	2.024	28.9	18.5	83 W	32	68*
2 21	16 43.52	-26 28.9	1.569	1.682	35.2	20.2	79 W	18*	72*	2 21	16 6.80	-11 27.4	1.814	2.060	28.7	18.4	90 W	34	72*
3 2	17 1.37	-27 23.5	1.520	1.735	34.7	20.1	85 W	18*	79*	3 2	16 18.25	-9 54.6	1.732	2.098	28.0	18.3	97 W	35	74*
3 12	17 16.46	-28 8.9	1.467	1.789	33.7	20.1	91 W	17*	85*	3 12	16 26.99	-8 3.2	1.652	2.135	26.7	18.2	105 W	37	72
3 22	17 28.37	-28 47.9	1.411	1.843	32.3	20.0	98 W	16*	87*	3 22	16 32.73	-5 54.8	1.577	2.172	24.9	18.1	113 W	39	70
4 1	17 36.60	-29 22.6	1.354	1.898	30.3	20.0	106 W	16	87	4 1	16 35.19	-3 32.4	1.512	2.209	22.6	18.0	122 W	41	68
4 11	17 40.73	-29 54.5	1.300	1.952	27.7	19.9	115 W	15	86	4 6	16 35.15	-2 17.7	1.484	2.228	21.2	17.9	126 W	43	66
4 21	17 40.41	-30 23.2	1.252	2.005	24.2	19.7	125 W	15	86	4 11	16 34.28	-1 1.6	1.460	2.246	19.7	17.9	131 W	44	65
5 1	17 35.47	-30 46.5	1.214	2.058	20.0	19.6	136 W	14	85	4 16	16 32.57	+0 14.7	1.440	2.265	18.2	17.8	135 W	45	64
5 6	17 31.36	-30 54.8	1.200	2.085	17.6	19.5	141 W	14	85	4 21	16 30.09	+1 30.0	1.424	2.283	16.6	17.7	139 W	47	62
5 11	17 26.29	-31 0.2	1.191	2.111	15.1	19.4	147 W	14	85	4 26	16 26.89	+2 43.1	1.414	2.301	15.1	17.7	143 W	48	61
5 16	17 20.39	-31 2.1	1.187	2.137	12.5	19.4	153 W	14	85	5 1	16 23.07	+3 52.4	1.409	2.319	13.7	17.7	147 W	49	60
5 21	17 13.84	-30 59.9	1.188	2.162	9.8	19.3	159 W	14	85	5 6	16 18.75	+4 56.7	1.409	2.337	12.5	17.6	150 W	50	59
5 26	17 6.87	-30 53.5	1.195	2.188	7.2	19.2	164 W	14	85	5 11	16 14.06	+5 54.6	1.416	2.355	11.7	17.6	152 W	51	58
5 31	16 59.72	-30 42.9	1.209	2.213	4.9	19.2	169 W	14	85	5 16	16 9.14	+6 45.3	1.429	2.373	11.3	17.7	153 W	52	57
6 5	16 52.65	-30 28.5	1.229	2.238	3.6	19.1	172 E	15	86	5 21	16 4.15	+7 27.8	1.448	2.390	11.4	17.7	152 W	52	57
6 10	16 45.88	-30 10.8	1.255	2.263	4.2	19.2	171 E	15	86	5 31	15 54.55	+8 26.4	1.503	2.425	12.7	17.9	148 E	53	56
6 15	16 39.61	-29 50.6	1.288	2.287	6.1	19.4	166 E	15	86	6 10	15 46.33	+8 50.2	1.581	2.459	14.8	18.1	142 E	54	55
6 20	16 33.99	-29 28.8	1.327	2.311	8.3	19.6	161 E	16	87	6 20	15 40.21	+8 43.0	1.677	2.492	17.1	18.3	134 E	54	55
6 25	16 29.15	-29 6.3	1.372	2.335	10.4	19.8	155 E	16	87	6 25	15 38.07	+8 29.4	1.732	2.509	18.1	18.4	130 E	53	56
6 30	16 25.18	-28 44.0	1.423	2.359	12.4	20.0	150 E	16	87	6 30	15 36.57	+8 10.2	1.790	2.525	19.0	18.5	126 E	53	56
7 10	16 19.91	-28 2.6	1.539	2.405	15.9	20.3	140 E	17	88	7 5	15 35.72	+7 46.3	1.852	2.541	19.8	18.7	122		

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°										
17435 di Giovanni (continuation)										143404 2003 BD44 (continuation)																			
11 17	17 44.80	-6 4.2	3.649	2.898	11.4	20.1	35 E	25*	18*	1 12	15 51.86	-19 40.4	1.384	1.080	45.0	19.5	51 W	22*	40*	1 12	15 51.86	-19 40.4	1.384	1.080	45.0	19.5	51 W	22*	40*
11 27	17 59.93	-6 21.5	3.730	2.918	9.7	20.1	30 E	22*	11*	1 17	16 18.55	-20 43.7	1.350	1.035	46.4	19.4	50 W	21*	40*	1 17	16 18.55	-20 43.7	1.350	1.035	46.4	19.4	50 W	21*	40*
12 7	18 15.22	-6 29.5	3.799	2.937	8.2	20.1	25 E	19*	4*	1 22	16 46.64	-21 32.9	1.324	0.992	47.7	19.3	48 W	19*	39*	1 22	16 46.64	-21 32.9	1.324	0.992	47.7	19.3	48 W	19*	39*
12 17	18 30.59	-6 28.1	3.853	2.955	6.8	20.1	21 E	15*	—	1 27	17 15.93	-22 5.0	1.307	0.950	48.6	19.2	46 W	18*	38*	1 27	17 15.93	-22 5.0	1.307	0.950	48.6	19.2	46 W	18*	38*
12 27	18 45.93	-6 17.4	3.893	2.972	5.8	20.1	18 E	10*	—	2 1	17 46.10	-22 17.6	1.297	0.912	49.3	19.1	45 W	16*	37*	2 1	17 46.10	-22 17.6	1.297	0.912	49.3	19.1	45 W	16*	37*
1	6 19 1.16	-5 57.7	3.917	2.989	5.4	20.1	17 W	7*	—	2 6	18 16.80	-22 9.1	1.296	0.876	49.5	19.0	42 W	15*	35*	2 6	18 16.80	-22 9.1	1.296	0.876	49.5	19.0	42 W	15*	35*
1 16	19 16.20	-5 29.2	3.926	3.004	5.7	20.1	18 W	11*	—	2 11	18 47.64	-21 39.0	1.303	0.844	49.2	18.9	40 W	13*	33*	2 11	18 47.64	-21 39.0	1.303	0.844	49.2	18.9	40 W	13*	33*
164220 2004 QW16										149537 2003 GE42																			
12 23	14 18.93	-10 54.8	2.943	2.504	18.7	21.5	55 W	32*	37*	2 26	20 17.31	-18 11.1	1.369	0.797	47.1	18.8	36 W	10*	30*	2 26	20 17.31	-18 11.1	1.369	0.797	47.1	18.8	36 W	10*	30*
1	2 14 33.20	-11 3.5	2.826	2.508	20.1	21.5	61 W	33*	44*	3 2	20 45.34	-16 30.8	1.403	0.775	43.1	18.8	32 W	8*	26*	3 2	20 45.34	-16 30.8	1.403	0.775	43.1	18.8	32 W	8*	26*
1 12	14 46.72	-10 59.3	2.700	2.511	21.4	21.4	68 W	34*	51*	3 7	21 12.15	-14 40.3	1.442	0.775	40.7	18.7	31 W	7*	24*	3 7	21 12.15	-14 40.3	1.442	0.775	40.7	18.7	31 W	7*	24*
1 22	14 59.30	-10 40.8	2.567	2.512	22.3	21.3	76 W	34*	59*	3 12	21 37.70	-12 42.6	1.484	0.783	38.1	18.8	29 W	6*	23*	3 12	21 37.70	-12 42.6	1.484	0.783	38.1	18.8	29 W	6*	23*
2	1 15 10.71	-10 6.3	2.429	2.512	22.9	21.2	83 W	35	65*	3 17	22 1.98	-10 40.8	1.529	0.798	35.6	18.8	28 W	6*	22*	3 17	22 1.98	-10 40.8	1.529	0.798	35.6	18.8	28 W	6*	22*
2 11	15 20.69	-9 14.0	2.289	2.511	23.1	21.1	91 W	36	70*	3 22	22 25.02	-8 37.3	1.575	0.819	33.2	18.8	27 W	5*	21*	3 22	22 25.02	-8 37.3	1.575	0.819	33.2	18.8	27 W	5*	21*
2 21	15 28.94	-8 2.4	2.149	2.509	22.9	20.9	99 W	37	72*	3 27	22 46.85	-6 34.3	1.622	0.846	31.0	18.9	26 W	5*	20*	3 27	22 46.85	-6 34.3	1.622	0.846	31.0	18.9	26 W	5*	20*
3	2 15 35.13	-6 30.0	2.013	2.505	22.1	20.8	108 W	39	70	4 1	23 7.54	-4 33.5	1.670	0.877	29.1	19.0	25 W	4*	19*	4 1	23 7.54	-4 33.5	1.670	0.877	29.1	19.0	25 W	4*	19*
3 12	15 38.91	-4 36.2	1.886	2.500	20.7	20.6	117 W	40	69	4 6	23 27.17	-2 36.3	1.717	0.913	27.5	19.1	25 W	4*	19*	4 6	23 27.17	-2 36.3	1.717	0.913	27.5	19.1	25 W	4*	19*
3 22	15 39.99	-2 21.6	1.770	2.494	18.8	20.4	126 W	43	66	4 11	23 45.82	-0 43.6	1.763	0.952	26.2	19.2	25 W	4*	19*	4 11	23 45.82	-0 43.6	1.763	0.952	26.2	19.2	25 W	4*	19*
4	1 15 38.12	+0 11.3	1.670	2.486	16.3	20.2	136 W	45	64	4 21	0 20.50	+2 46.2	1.853	1.037	24.4	19.5	25 W	4*	19*	4 21	0 20.50	+2 46.2	1.853	1.037	24.4	19.5	25 W	4*	19*
4 6	15 36.06	+1 32.8	1.628	2.482	14.9	20.1	140 W	47	62	5 1	0 52.14	+5 53.5	1.935	1.128	23.5	19.7	27 W	4*	20*	5 1	0 52.14	+5 53.5	1.935	1.128	23.5	19.7	27 W	4*	20*
4 11	15 33.28	+2 56.4	1.591	2.477	13.5	20.0	145 W	48	61	5 11	1 21.22	+8 38.0	2.009	1.221	23.3	19.9	28 W	6*	22*	5 11	1 21.22	+8 38.0	2.009	1.221	23.3	19.9	28 W	6*	22*
4 16	15 29.82	+4 20.8	1.561	2.472	12.3	19.9	148 W	49	60	5 21	1 48.12	+11 0.6	2.072	1.314	23.4	20.2	31 W	7*	24*	5 21	1 48.12	+11 0.6	2.072	1.314	23.4	20.2	31 W	7*	24*
4 21	15 25.74	+5 44.4	1.536	2.467	11.2	19.8	152 W	51	58	5 31	2 13.12	+13 2.9	2.123	1.407	23.9	20.4	34 W	10*	27*	5 31	2 13.12	+13 2.9	2.123	1.407	23.9	20.4	34 W	10*	27*
4 26	15 21.13	+7 5.6	1.519	2.461	10.5	19.7	154 W	52	57	6 10	2 36.39	+14 46.4	2.162	1.497	24.6	20.6	38 W	13*	29*	6 10	2 36.39	+14 46.4	2.162	1.497	24.6	20.6	38 W	13*	29*
5	1 15 16.12	+8 22.8	1.508	2.455	10.3	19.7	154 W	53	56	6 20	2 58.07	+16 12.9	2.187	1.586	25.4	20.8	42 W	17*	32*	6 20	2 58.07	+16 12.9	2.187	1.586	25.4	20.8	42 W	17*	32*
5 6	15 10.86	+9 34.3	1.504	2.449	10.6	19.7	154 W	55	54	6 30	3 18.20	+17 23.8	2.198	1.672	26.2	20.9	47 W	22*	34*	6 30	3 18.20	+17 23.8	2.198	1.672	26.2	20.9	47 W	22*	34*
5 11	15 5.47	+10 38.8	1.507	2.442	11.4	19.7	151 E	56	53	7 10	3 36.78	+18 20.7	2.194	1.756	27.0	21.0	52 W	27*	37*	7 10	3 36.78	+18 20.7	2.194	1.756	27.0	21.0	52 W	27*	37*
5 16	15 0.12	+11 35.2	1.516	2.436	12.6	19.8	148 E	57	52	7 20	3 53.78	+19 4.8	2.177	1.836	27.7	21.1	57 W	34*	39*	7 20	3 53.78	+19 4.8	2.177	1.836	27.7	21.1	57 W	34*	39*
5 21	14 54.95	+12 22.6	1.532	2.428	14.0	19.8	145 E	57	52	7 30	4 9.06	+19 37.5	2.147	1.914	28.2	21.2	63 W	40*	40*	7 30	4 9.06	+19 37.5	2.147	1.914	28.2	21.2	63 W	40*	40*
5 31	14 45.72	+13 29.4	1.578	2.413	17.0	20.0	136 E	58	51	8 9	4 22.50	+20 0.0	2.104	1.989	28.5	21.3	69 W	47*	42*	8 9	4 22.50	+20 0.0	2.104	1.989	28.5	21.3	69 W	47*	42*
6 10	14 38.65	+13 59.8	1.643	2.396	19.8	20.2	127 E	59	50	8 19	4 33.90	+20 13.4	2.050	2.061	28.5	21.3	76 W	54*	43*	8 19	4 33.90	+20 13.4	2.050	2.061	28.5	21.3	76 W	54*	43*
6 20	14 34.24	+13 58.0	1.722	2.378	22.1	20.3	118 E	59	50	8 29	4 42.98	+20 18.6	1.987	2.131	28.1	21.3	84 W	60*	43*	8 29	4 42.98	+20 18.6	1.987	2.131	28.1	21.3	84 W	60*	43*
6 25	14 33.10	+13 46.8	1.765	2.369	23.1	20.4	114 E	59*	50	9 8	4 49.46	+20 16.7	1.917	2.197	27.3	21.2	92 W	64*	44	9 8	4 49.46	+20 16.7	1.917	2.197	27.3	21.2	92 W	64*	44
6 30	14 32.67	+13 29.7	1.809	2.359	23.9	20.5	110 E	58*	51	9 18	4 52.98	+20 8.1	1.844	2.261	25.9	21.2	101 W	65	44	9 18	4 52.98	+20 8.1	1.844	2.261	25.9	21.2	101 W	65	44
7	5 14 32.94	+13 7.5	1.855	2.349	24.6	20.5	106 E	57*	51	9 28	4 53.19	+19 53.3	1.771	2.323	23.8	21.1	111 W	65	44	9 28	4 53.19	+19 53.3	1.771	2.323	23.8	21.1	111 W	65	44
7 10	14 33.87	+12 41.0	1.902	2.339	25.1	20.6	102 E	55*	51	10 8	4 49.83	+19 32.2	1.704	2.382	21.0	21.0	121 W	65	44	10 8	4 49.83	+19 32.2	1.704	2.382	21.0	21.0	121 W	65	44
7 15	14 35.44	+12 10.6	1.949	2.328	25.6	20.7	99 E	53*	52	10 18	4 42.82	+19 4.5	1.648	2.438	17.4	20.8	133 W	64	45	10 18	4 42.82	+19 4.5	1.648	2.438	17.4	20.8	133 W	64	45
7 20	14 37.62	+11 37.1	1.997	2.317	25.9	20.7	95 E	51*	52	10 28	4 32.39	+18 30.1	1.610	2.492	13.1	20.7	145 W	64	45	10 28	4 32.39	+18 30.1	1.610	2.492	13.1	20.7	145 W	64	45
7 25	14 40.39	+11 0.8	2.044	2.306	26.1	20.8	91 E	50*	53	11 7	4 19.33	+17 49.7	1.596	2.544	8.2	20.5	158 W	63	46	11 7	4 19.33	+17 49.7	1.59						

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°
149537 2003 GE₄₂										59836 1999 RN₄₄									
<i>(continuation)</i>																			
6 30	19 34.14	+31 15.8	0.869	1.665	30.5	16.7	124 W	76	33	12 23	14 23.12	-13 4.1	2.979	2.509	18.2	21.1	53 W	29*	37*
7 5	19 32.17	+30 28.7	0.857	1.672	29.4	16.7	126 W	75	34	1 2	14 39.16	-13 51.2	2.838	2.480	19.9	21.0	59 W	30*	44*
7 10	19 29.94	+29 22.6	0.848	1.680	28.4	16.6	128 W	74	35	1 12	14 54.98	-14 29.3	2.690	2.449	21.4	20.9	65 W	30*	51*
7 15	19 27.64	+27 57.2	0.841	1.688	27.3	16.6	130 E	73	36	1 22	15 10.46	-14 57.0	2.537	2.418	22.7	20.8	72 W	30*	58*
7 20	19 25.43	+26 13.1	0.837	1.698	26.2	16.6	132 E	71	38	2 1	15 25.42	-15 13.3	2.380	2.387	23.9	20.7	78 W	30	66*
7 25	19 23.51	+24 11.5	0.837	1.708	25.2	16.5	134 E	69	40	2 11	15 39.66	-15 17.0	2.222	2.355	24.7	20.5	85 W	30	72*
7 30	19 22.04	+21 54.4	0.841	1.719	24.4	16.5	136 E	67	42	2 21	15 52.97	-15 6.8	2.063	2.322	25.2	20.4	92 W	30	77*
8 4	19 21.15	+19 24.8	0.848	1.731	23.8	16.6	136 E	64	45	3 2	16 5.02	-14 41.7	1.907	2.289	25.3	20.2	99 W	30	79
8 9	19 20.91	+16 45.8	0.861	1.744	23.5	16.6	137 E	62	47	3 12	16 15.52	-14 0.6	1.755	2.255	24.9	19.9	107 W	31	78
8 14	19 21.41	+14 0.8	0.879	1.757	23.4	16.6	136 E	59	50	3 22	16 24.08	-13 2.6	1.610	2.221	24.0	19.7	115 W	32	77
8 19	19 22.67	+11 13.4	0.901	1.771	23.6	16.7	135 E	56	53	4 1	16 30.29	-11 47.1	1.475	2.187	22.5	19.4	123 W	33	76
8 24	19 24.72	+ 8 27.0	0.929	1.786	24.0	16.8	134 E	53	56	4 11	16 33.77	-10 14.6	1.351	2.153	20.3	19.1	132 W	35	74
8 29	19 27.55	+ 5 44.8	0.962	1.802	24.6	16.9	132 E	51	58	4 21	16 34.19	- 8 26.6	1.242	2.119	17.4	18.8	141 W	37	72
9 3	19 31.13	+ 3 9.3	1.000	1.817	25.3	17.1	130 E	48	61	4 26	16 33.20	- 7 27.8	1.194	2.102	15.8	18.7	145 W	38	71
9 8	19 35.40	+ 0 42.6	1.043	1.834	26.1	17.2	127 E	46	63	5 1	16 31.40	- 6 26.9	1.151	2.085	14.1	18.5	150 W	39	70
9 13	19 40.32	- 1 34.1	1.090	1.851	26.8	17.3	124 E	43	66	5 6	16 28.86	- 5 24.8	1.113	2.068	12.4	18.3	154 W	40	69
9 18	19 45.84	- 3 39.8	1.142	1.869	27.5	17.5	121 E	41	68	5 11	16 25.63	- 4 22.7	1.081	2.051	10.8	18.2	158 W	41	68
9 28	19 58.49	- 7 17.0	1.257	1.905	28.6	17.8	114 E	38	71	5 16	16 21.81	- 3 22.0	1.054	2.034	9.7	18.1	160 W	42	67
10 8	20 12.88	-10 8.9	1.386	1.943	29.3	18.0	108 E	35	74	5 21	16 17.53	- 2 24.0	1.032	2.017	9.3	18.0	161 W	43	66
10 18	20 28.61	-12 19.2	1.525	1.982	29.5	18.3	102 E	33	76	5 26	16 12.94	- 1 30.4	1.017	2.000	9.8	18.0	160 W	43	66
10 23	20 36.87	-13 10.1	1.598	2.002	29.4	18.4	98 E	32	77*	5 31	16 8.24	- 0 42.7	1.007	1.984	11.0	18.0	158 E	44	65
10 28	20 45.33	-13 52.3	1.673	2.022	29.3	18.5	95 E	31	77*	6 5	16 3.61	- 0 2.0	1.002	1.967	12.8	18.0	155 E	45	64
11 2	20 53.97	-14 26.5	1.749	2.043	29.0	18.6	92 E	31	76*	6 10	15 59.25	+ 0 30.8	1.003	1.951	14.9	18.1	150 E	46	63
11 7	21 2.74	-14 53.2	1.827	2.063	28.7	18.7	89 E	30	74*	6 20	15 51.96	+ 1 10.5	1.018	1.919	19.4	18.2	141 E	46	63
11 12	21 11.62	-15 13.1	1.905	2.084	28.3	18.8	86 E	30	72*	6 30	15 47.49	+ 1 15.2	1.048	1.888	23.5	18.4	132 E	46	63
11 17	21 20.58	-15 26.8	1.984	2.105	27.8	18.9	83 E	30	69*	7 10	15 46.47	+ 0 48.6	1.090	1.858	27.1	18.5	124 E	46	63
11 22	21 29.62	-15 34.6	2.064	2.126	27.2	19.0	80 E	29	66*	7 15	15 47.30	+ 0 25.4	1.115	1.843	28.6	18.6	120 E	45*	64
11 27	21 38.69	-15 37.1	2.144	2.147	26.6	19.1	77 E	29	63*	7 20	15 49.04	- 0 3.5	1.141	1.829	30.0	18.7	116 E	45*	64
12 7	21 56.90	-15 28.2	2.303	2.190	25.2	19.3	71 E	30	57*	7 25	15 51.66	- 0 37.2	1.169	1.815	31.2	18.8	112 E	44*	65
12 17	22 15.11	-15 3.3	2.461	2.233	23.6	19.4	65 E	30	51*	7 30	15 55.15	- 1 15.0	1.197	1.801	32.3	18.8	109 E	43*	65
12 27	22 33.23	-14 25.3	2.615	2.276	21.8	19.5	59 E	30	44*	8 4	15 59.45	- 1 56.1	1.227	1.788	33.1	18.9	105 E	42*	66
1 6	22 51.22	-13 37.0	2.763	2.319	20.0	19.6	54 E	29	39*	8 9	16 4.54	- 2 39.8	1.257	1.776	33.9	19.0	102 E	41*	67
1 16	23 9.03	-12 40.6	2.905	2.361	18.0	19.7	48 E	27	34*	8 19	16 16.90	- 4 12.4	1.319	1.752	35.0	19.1	97 E	39*	68
77971 Donolo										34706 2001 OP₈₃									
12 23	14 23.09	+ 6 16.3	3.260	2.916	17.2	21.0	61 W	48*	28*	12 23	14 23.18	- 7 51.2	2.194	1.813	26.3	19.1	55 W	34*	35*
1 2	14 35.11	+ 5 53.9	3.127	2.904	18.3	20.9	68 W	50*	35*	1 2	14 42.24	- 9 25.8	2.148	1.860	27.2	19.1	60 W	34*	41*
1 12	14 46.34	+ 5 43.1	2.988	2.890	19.2	20.9	75 W	50*	42*	1 12	15 0.04	-10 47.7	2.095	1.907	27.9	19.1	65 W	34*	48*
1 22	14 56.61	+ 5 44.6	2.845	2.876	19.8	20.8	82 W	51	48*	1 22	15 16.40	-11 57.5	2.033	1.955	28.5	19.2	71 W	33*	56*
2 1	15 5.67	+ 5 58.9	2.698	2.861	20.1	20.6	89 W	51	53*	2 1	15 31.08	-12 55.4	1.965	2.002	28.7	19.1	78 W	32	63*
2 11	15 13.28	+ 6 26.2	2.552	2.845	20.1	20.5	97 W	51	56*	2 11	15 43.82	-13 42.3	1.891	2.050	28.6	19.1	85 W	31	70*
2 21	15 19.13	+ 7 6.1	2.408	2.827	19.8	20.4	105 W	52	57	2 21	15 54.32	-14 19.2	1.814	2.096	28.1	19.0	92 W	31	76*
3 2	15 22.92	+ 7 57.8	2.270	2.809	19.0	20.2	113 W	53	56	3 2	16 2.20	-14 47.0	1.734	2.142	27.1	19.0	100 W	30	79
3 12	15 24.35	+ 8 59.2	2.142	2.790	17.7	20.0	121 W	54	55	3 12	16 7.11	-15 6.8	1.655	2.188	25.5	18.9	109 W	30	79
3 22	15 23.16	+10 6.8	2.026	2.771	16.1	19.8	130 W	55	54	3 22	16 8.71	-15 19.7	1.581	2.233	23.1	18.7	118 W	30	79
3 27	15 21.53	+10 41.5	1.974	2.760	15.1	19.7	134 W	56	53	4 1	16 6.73	-15 26.3	1.515	2.277	20.1	18.6	129 W	30	79
4 1	15 19.21	+11 15.7	1.926	2.750	14.1	19.6	138 W	56	53	4 11	16 1.20	-15 27.5	1.463	2.320	16.2	18.4	140 W	30	79
4 6	15 16.22	+11 48.5	1.883	2.739	13.1	19.5	142 W	57	52	4 21	15 52.43	-15 23.8	1.429	2.362	11.7	18.3	151 W	30	79
4 11	15 12.60	+12 18.8	1.846	2.728	12.2	19.4	145 W	57	52	5 1	15 41.24	-15 16.4	1.419	2.403	6.8	18.1	164 W	30	79
4 16	15 8.39	+12 45.8	1.815	2.717	11.3	19.4	148 W	58	51	5 6	15 35.11	-15 11.9	1.423	2.423	4.3	18.0	170 W	30	79
4 21	15 3.69	+13 8.5	1.789	2.706	10.7	19.3	150 W	58	51	5 11	15 28.86	-15 7.3	1.435	2.443	2.0	17.9	175 W	30	79
4 26	14 58.58	+13 25.8	1.770	2.694	10.5	19.3	151 W	58	51	5 16	15 22.66	-15 2.9	1.453	2.462	1.9	17.9	175 E	30	79
5 1	14 53.20	+13 36.8	1.757	2.682	10.5	19.2	151 W	59	50	5 21	15 16.69	-14 59.0	1.478	2.482	4.0	18.1	170 E	30	79
5 6	14 47.68	+13 41.1	1.750	2.670	11.0	19.2	150 E	59	50	5 26	15 11.09	-14 56.3	1.511	2.501	6.3	18.3	164 E	30	79
5 11	14 42.16	+13 38.1	1.750	2.658	11.7	19.3	148 E	59	50	5 31	15 6.01	-14 54.9	1.549	2.520	8.5	18.4	158 E	30	79
5 21	14 31.64	+13 10.0	1.766	2.633	13.9	19.3	141 E	58	51	6 10	14 57.75	-14 57.7	1.644	2.556	12.5	18.8	147 E	30	79
5 31	14 22.64	+12 13.6	1.805	2.607	16.4	19.4	133 E	57	52	6 20	14 52.32	-15 8.7	1.761	2.592	15.7	19.1	136 E	30	79
6 10	14 15.87	+10 52.7	1.862	2.581	18.8	19.6	125 E	56	53	6 30	14 49.82	-15 28.7	1.894	2.627	18.2	19.3	126 E	29*	79
6 20	14 11.68	+ 9 12.6	1.933	2.553	20.9	19.7	116 E	54*	55	7 10	14 50.06	-15 56.9	2.040	2.660	19.9	19.6	117 E	28*	80
6 30	14 10.19	+ 7 18.3	2.015	2.525	22.5	19.8	108 E	51*	57	7 20	14 52.77	-16 32.3	2.196	2.692	21.0	19.8	108 E	26*	81
7 10	14 11.29	+ 5 14.2	2.105	2.496	23.6	19.9	100 E	46*	59	7 30	14 57.64	-17 13.6	2.358	2.723	21.5	20.0	100 E	24*	81
7 20	14 14.79	+ 3 4.0	2.198	2.466	24.3	20.0	93 E	41*	61	8 9	15 4.36	-17 59.3	2.522	2.753	21.6	20.2	92 E	22*	82*
7 30	14 20.48	+ 0 50.0	2.292</																

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°
34706 2001 OP₈₃										414903 2010 XT₄₅									
(continuation)										(continuation)									
8 29	15 22.35	-19 38.1	2.851	2.809	20.5	20.4	77 E	18*	71*	1 12	15 24.43	-19 10.7	1.773	1.492	33.7	20.9	57 W	24*	46*
9 8	15 33.20	-20 28.8	3.010	2.836	19.6	20.5	70 E	16*	64*	1 17	15 40.41	-19 32.8	1.721	1.473	34.8	20.9	59 W	24*	48*
9 18	15 45.06	-21 18.8	3.163	2.861	18.3	20.6	64 E	14*	58*	1 22	15 56.79	-19 48.6	1.670	1.453	35.9	20.8	60 W	24*	50*
9 28	15 57.79	-22 7.2	3.308	2.885	16.9	20.7	57 E	13*	51*	1 27	16 13.56	-19 57.5	1.621	1.434	37.0	20.7	61 W	24*	51*
10 8	16 11.28	-22 53.0	3.443	2.908	15.3	20.7	50 E	11*	44*	2 1	16 30.71	-19 58.8	1.572	1.414	38.1	20.7	62 W	24*	53*
10 18	16 25.42	-23 35.5	3.568	2.929	13.6	20.8	44 E	10*	38*	2 6	16 48.20	-19 52.0	1.525	1.395	39.1	20.6	63 W	24*	54*
10 28	16 40.12	-24 14.1	3.680	2.950	11.7	20.8	37 E	8*	31*	2 11	17 6.03	-19 36.5	1.480	1.376	40.2	20.5	64 W	24*	56*
11 7	16 55.26	-24 48.0	3.778	2.969	9.8	20.8	31 E	6*	24*	2 16	17 24.16	-19 12.0	1.437	1.357	41.3	20.5	65 W	24*	57*
11 17	17 10.78	-25 17.0	3.861	2.987	7.8	20.8	24 E	4*	18*	2 21	17 42.55	-18 38.1	1.396	1.339	42.3	20.4	66 W	24*	57*
11 27	17 26.57	-25 40.6	3.929	3.004	5.7	20.7	18 E	2*	11*	2 26	18 1.16	-17 54.4	1.356	1.321	43.4	20.3	66 W	24*	58*
12 7	17 42.53	-25 58.5	3.979	3.019	3.7	20.6	11 E	—	5*	3 2	18 19.93	-17 0.9	1.320	1.304	44.4	20.3	67 W	24*	59*
12 17	17 58.59	-26 10.9	4.013	3.034	1.7	20.5	5 E	—	—	3 12	18 57.75	-14 44.9	1.253	1.271	46.4	20.2	68 W	25*	59*
12 27	18 14.65	-26 17.7	4.028	3.047	1.2	20.5	4 W	—	—	3 22	19 35.65	-11 52.7	1.198	1.241	48.2	20.1	68 W	26*	59*
1 6	18 30.59	-26 19.1	4.026	3.059	3.0	20.7	9 W	—	3*	4 1	20 13.23	-8 29.7	1.153	1.215	49.8	20.0	68 W	28*	59*
1 16	18 46.35	-26 15.4	4.006	3.070	5.0	20.8	16 W	—	10*	4 6	20 31.82	-6 39.1	1.135	1.203	50.6	20.0	68 W	28*	58*
152931 2000 EA₁₀₇										37568 1989 TP									
12 23	14 24.06	+12 34.0	1.427	1.338	41.5	19.1	64 W	54*	24*	12 23	14 24.65	-22 14.7	2.387	1.908	23.2	20.0	50 W	20*	40*
1 2	14 49.89	+10 45.0	1.343	1.319	43.3	19.0	67 W	53*	29*	1 2	14 47.05	-23 6.2	2.287	1.898	25.0	19.9	55 W	21*	45*
1 12	15 16.33	+8 55.1	1.253	1.293	45.4	18.9	69 W	52*	34*	1 12	15 9.41	-23 42.7	2.182	1.887	26.7	19.9	60 W	21*	51*
1 22	15 43.89	+7 1.5	1.158	1.259	47.8	18.7	72 W	51*	39*	1 22	15 31.62	-24 2.5	2.071	1.877	28.3	19.8	65 W	21*	57*
1 27	15 58.28	+6 2.1	1.109	1.239	49.2	18.6	72 W	50*	41*	2 1	15 53.48	-24 3.6	1.956	1.865	29.8	19.7	70 W	21*	62*
2 1	16 13.21	+5 0.1	1.059	1.218	50.7	18.5	73 W	49*	44*	2 11	16 14.79	-23 44.3	1.837	1.854	31.0	19.6	75 W	21*	68*
2 6	16 28.83	+3 54.5	1.009	1.194	52.4	18.4	74 W	48*	46*	2 16	16 25.17	-23 26.5	1.777	1.848	31.5	19.5	78 W	21*	71*
2 11	16 45.31	+2 44.2	0.959	1.168	54.2	18.3	74 W	47*	48*	2 21	16 35.32	-23 2.8	1.717	1.842	32.0	19.5	81 W	22*	74*
2 16	17 2.87	+1 28.4	0.909	1.140	56.3	18.2	74 W	45*	50*	2 26	16 45.20	-22 33.2	1.656	1.836	32.4	19.4	84 W	22*	77*
2 21	17 21.76	+0 5.7	0.861	1.111	58.6	18.1	73 W	43*	52*	3 2	16 54.77	-21 57.2	1.596	1.829	32.7	19.3	87 W	23*	79*
2 26	17 42.29	+1 24.9	0.814	1.079	61.2	18.0	73 W	41*	53*	3 7	17 4.00	-21 14.7	1.536	1.823	33.0	19.2	90 W	24*	82*
3 2	18 4.81	-3 4.4	0.769	1.045	64.1	17.9	72 W	39*	54*	3 12	17 12.83	-20 25.5	1.476	1.817	33.1	19.1	93 W	25*	83*
3 12	18 57.51	-6 49.4	0.692	0.972	71.1	17.7	68 W	33*	55*	3 17	17 21.24	-19 29.3	1.417	1.810	33.2	19.0	96 W	26*	83*
3 22	20 2.83	-10 49.5	0.642	0.890	79.3	17.7	61 W	24*	53*	3 22	17 29.16	-18 25.9	1.358	1.804	33.1	18.9	99 W	27	82
4 1	21 20.18	-14 0.1	0.634	0.803	87.3	17.7	53 W	14*	47*	4 6	20 50.24	-4 44.1	1.119	1.193	51.2	19.9	68 W	29*	58*
4 6	22 1.20	-14 47.8	0.650	0.758	90.3	17.8	49 W	9*	43*	4 11	21 8.48	+2 45.9	1.106	1.184	51.9	19.9	68 W	29*	57*
4 11	22 41.87	-14 52.1	0.681	0.712	91.9	17.8	45 W	4*	39*	4 21	21 26.52	+0 45.6	1.095	1.176	52.4	19.9	68 W	30*	56*
4 16	23 20.80	-14 10.5	0.727	0.667	92.0	17.8	42 W	—	35*	4 26	21 44.35	+1 15.3	1.085	1.170	52.8	19.8	68 W	31*	55*
4 21	23 57.12	-12 45.4	0.787	0.624	90.1	17.7	38 W	—	31*	5 1	22 1.97	+3 15.7	1.078	1.165	53.2	19.8	68 W	31*	54*
4 26	0 30.51	-10 41.4	0.859	0.584	86.2	17.6	35 W	—	28*	5 6	22 19.37	+5 14.4	1.072	1.162	53.5	19.8	68 W	32*	53*
5 1	1 1.14	-8 3.7	0.941	0.550	80.4	17.5	33 W	—	25*	5 11	22 36.57	+7 10.4	1.068	1.160	53.7	19.8	68 W	33*	52*
5 6	1 29.47	-4 57.4	1.030	0.524	72.9	17.3	30 W	—	22*	5 16	22 53.57	+9 2.9	1.065	1.159	53.9	19.8	68 W	34*	51*
5 11	1 56.04	-1 28.8	1.123	0.509	64.0	17.2	27 W	—	20*	5 21	23 10.36	+10 50.9	1.062	1.161	54.0	19.8	68 W	35*	50*
5 16	2 21.33	+2 14.5	1.216	0.507	54.6	17.0	24 W	—	17*	5 26	23 26.95	+12 33.9	1.060	1.163	54.0	19.8	68 W	36*	49*
5 21	2 45.73	+6 3.4	1.305	0.517	45.5	17.0	21 W	—	15*	5 31	23 43.32	+14 11.2	1.058	1.167	53.9	19.8	69 W	37*	48*
5 26	3 9.48	+9 48.7	1.389	0.540	37.2	17.0	19 W	—	13*	6 10	0 15.45	+17 6.8	1.054	1.180	53.7	19.8	70 W	39*	46*
5 31	3 32.75	+13 23.1	1.465	0.571	30.3	17.0	17 W	—	11*	6 20	0 46.69	+19 35.4	1.048	1.198	53.3	19.8	71 W	42*	44*
6 5	3 55.66	+16 41.2	1.534	0.609	24.9	17.1	15 W	—	9*	6 30	1 16.87	+21 35.1	1.039	1.221	52.7	19.9	73 W	46*	42*
6 10	4 18.28	+19 40.5	1.597	0.652	21.0	17.2	13 W	—	7*	7 10	1 45.81	+23 5.1	1.025	1.248	52.0	19.9	75 W	50*	41*
6 20	5 2.91	+24 38.3	1.705	0.742	16.5	17.5	12 W	2*	4*	7 20	2 13.23	+24 5.5	1.006	1.279	51.1	19.8	78 W	54*	40*
6 30	5 46.77	+28 17.0	1.796	0.832	15.1	17.8	12 W	5*	1*	7 30	2 38.75	+24 36.1	0.982	1.313	50.0	19.8	82 W	59*	39
7 10	6 29.71	+30 43.8	1.873	0.918	15.2	18.1	14 W	7*	—	8 9	3 2.00	+24 37.2	0.952	1.348	48.6	19.8	87 W	63*	39
7 15	6 50.75	+31 33.1	1.907	0.958	15.5	18.3	15 W	8*	—	8 14	3 12.62	+24 26.9	0.935	1.367	47.8	19.7	89 W	65*	40
7 20	7 11.43	+32 7.9	1.938	0.996	15.8	18.4	15 W	9*	—	8 19	3 22.48	+24 9.3	0.916	1.386	46.9	19.7	92 W	66*	40
7 25	7 31.72	+32 29.3	1.966	1.033	16.2	18.5	16 W	10*	—	8 24	3 31.49	+23 44.3	0.897	1.405	45.8	19.6	95 W	67*	40
7 30	7 51.56	+32 38.4	1.991	1.067	16.6	18.6	18 W	11*	—	8 29	3 39.60	+23 11.9	0.877	1.424	44.6	19.6	98 W	68*	41
8 4	8 10.93	+32 36.5	2.013	1.100	17.1	18.7	19 W	12*	—	9 3	3 46.72	+22 32.2	0.856	1.444	43.3	19.5	101 W	68*	41
8 9	8 29.81	+32 24.5	2.033	1.130	17.5	18.8	20 W	13*	—	9 8	3 52.79	+21 45.1	0.834	1.463	41.7	19.5	105 W	67	42
8 14	8 48.20	+32 3.4	2.050	1.159	18.0	18.9	21 W	14*	—	9 18	4 1.38	+19 48.2	0.791	1.503	38.0	19.3	113 W	65	44
8 19	9 6.08	+31 34.2	2.064	1.185	18.4	19.0	22 W	15*	—	9 28	4 4.72	+17 20.8	0.752	1.542	33.3	19.1	122 W	62	47
8 24	9 23.46	+30 57.8	2.076	1.210	18.9	19.1	23 W	16*	—	10 8	4 2.49	+14 25.2	0.719	1.580	27.5	18.9	133 W	59	50
8 29	9 40.35	+30 14.9	2.085	1.232	19.4	19.1	24 W	17*	—	10 13	3 59.28	+12 48.6	0.707	1.599	24.2	18.8	139 W	58	51
9 8	10 12.72	+28 32.7	2.095	1.271	20.5	19.2	26 W	19*	—	10 18	3 54.77	+11 8.0	0.698	1.618	20.8	18.7	145 W	56	53
9 18	10 43.43	+26 32.6	2.095	1.303	21.6	19.3	28 W	21*	—	10 23	3 49.13	+9 25.5	0.694	1.637	17.2	18.6	151 W	54	55
9 28	11 12.69	+24 18.8	2.084	1.326	22.8	19.4	31 W	24*	—	10 28	3 42.60	+7 43.8	0.695	1.655	13.8	18.5	157 W	53	56
10 8	11 40.77	+21 54.5	2.063	1.343	24.0	19.4	33 W	26*	—	11 2	3 35.47	+6 5.8	0.702	1.673	10.8	18.4	162 W	51	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°
37568 1989 TP									124192 Moletai								
<i>(continuation)</i>									<i>(continuation)</i>								
4 1	17 43.33	-15 56.2	1.245	1.791	32.5	18.7	105 W	29 80	8 4	21 3.95	-3 57.1	0.738	1.741	7.8	17.6	167 W	41 68
4 11	17 54.91	-12 55.0	1.139	1.778	31.5	18.5	112 W	32 77	8 9	20 59.13	-4 12.0	0.753	1.757	7.1	17.6	168 E	41 68
4 21	18 3.44	-9 21.6	1.041	1.765	29.8	18.2	119 W	36 73	8 14	20 54.64	-4 31.3	0.772	1.772	8.0	17.7	166 E	40 69
5 1	18 8.41	-5 17.6	0.956	1.752	27.6	17.9	126 W	40 69	8 19	20 50.67	-4 53.9	0.797	1.788	9.8	17.9	163 E	40 69
5 6	18 9.44	-3 5.7	0.918	1.746	26.3	17.8	130 W	42 67	8 24	20 47.38	-5 18.4	0.826	1.804	12.0	18.1	158 E	40 69
5 11	18 9.45	-0 49.0	0.884	1.740	25.0	17.7	133 W	44 65	8 29	20 44.92	-5 43.7	0.860	1.820	14.3	18.3	154 E	39 70
5 16	18 8.43	+1 31.0	0.855	1.733	23.7	17.6	136 W	47 62	9 3	20 43.33	-6 8.5	0.898	1.837	16.5	18.5	149 E	39 70
5 21	18 6.37	+3 52.0	0.829	1.727	22.5	17.5	139 W	49 60	9 8	20 42.63	-6 32.0	0.940	1.854	18.5	18.7	144 E	38 71
5 26	18 3.32	+6 11.1	0.809	1.721	21.6	17.4	141 W	51 58	9 18	20 43.89	-7 12.8	1.037	1.888	22.0	19.0	135 E	38 71
5 31	17 59.37	+8 25.3	0.793	1.715	20.9	17.3	143 W	53 56	9 28	20 48.47	-7 41.9	1.147	1.922	24.7	19.4	127 E	37 72
6 5	17 54.67	+10 31.4	0.782	1.709	20.6	17.2	144 W	56 53	10 8	20 55.86	-7 57.4	1.268	1.956	26.6	19.7	119 E	37 72
6 10	17 49.39	+12 26.5	0.776	1.703	20.8	17.2	143 W	57 52	10 18	21 5.57	-7 58.8	1.398	1.991	27.8	20.0	111 E	37 72
6 15	17 43.73	+14 7.9	0.775	1.697	21.4	17.2	142 W	59 50	10 28	21 17.15	-7 46.1	1.535	2.026	28.4	20.2	104 E	37 72
6 20	17 37.92	+15 33.6	0.777	1.692	22.3	17.3	141 E	61 48	11 7	21 30.15	-7 20.2	1.678	2.060	28.5	20.4	98 E	38 71*
6 25	17 32.22	+16 42.0	0.784	1.686	23.5	17.3	139 E	62 47	11 17	21 44.25	-6 41.9	1.825	2.094	28.2	20.7	91 E	38 67*
6 30	17 26.90	+17 33.0	0.795	1.681	24.9	17.4	136 E	63 46	11 27	21 59.19	-5 52.4	1.975	2.128	27.5	20.8	85 E	39 61*
7 5	17 22.16	+18 6.8	0.808	1.675	26.4	17.5	133 E	63 46	12 7	22 14.73	-4 52.7	2.124	2.162	26.6	21.0	79 E	40 55*
7 10	17 18.17	+18 24.5	0.825	1.670	27.8	17.5	130 E	63 46	12 17	22 30.72	-3 44.4	2.273	2.194	25.4	21.2	73 E	41* 48*
7 15	17 15.06	+18 27.5	0.843	1.665	29.2	17.6	127 E	63 46	12 27	22 47.03	-2 28.3	2.420	2.227	24.0	21.3	67 E	42* 42*
7 20	17 12.93	+18 17.2	0.864	1.661	30.6	17.7	124 E	63 46	1 6	23 3.55	-1 6.0	2.563	2.258	22.4	21.4	61 E	42* 36*
7 25	17 11.84	+17 55.4	0.887	1.656	31.8	17.8	121 E	63 46	1 16	23 20.22	+0 21.3	2.701	2.289	20.7	21.5	55 E	40* 30*
7 30	17 11.82	+17 23.9	0.911	1.652	32.9	17.9	118 E	62 47	41588 2000 SC₄₆								
8 4	17 12.84	+16 44.4	0.937	1.648	33.9	18.0	115 E	62 47	12 23	14 25.92	-27 28.8	2.127	1.652	26.6	17.1	49 W	15* 41*
8 9	17 14.88	+15 58.5	0.963	1.644	34.7	18.0	112 E	61 48	1 2	14 53.50	-28 57.1	2.084	1.674	27.7	17.1	52 W	15* 45*
8 14	17 17.88	+15 7.4	0.990	1.640	35.5	18.1	110 E	60 49	1 12	15 20.54	-30 3.6	2.036	1.698	28.7	17.2	56 W	14* 49*
8 19	17 21.82	+14 12.3	1.018	1.637	36.1	18.2	107 E	59* 50	1 22	15 46.74	-30 48.2	1.984	1.725	29.7	17.2	60 W	13* 54*
8 24	17 26.64	+13 14.3	1.046	1.633	36.7	18.3	105 E	58* 51	2 1	16 11.77	-31 11.5	1.927	1.754	30.6	17.2	65 W	13* 59*
8 29	17 32.29	+12 14.4	1.075	1.631	37.1	18.3	103 E	57* 52	2 11	16 35.28	-31 14.2	1.864	1.785	31.3	17.1	70 W	13* 64*
9 3	17 38.72	+11 13.6	1.105	1.628	37.5	18.4	101 E	56* 53	2 21	16 56.93	-30 57.7	1.796	1.818	31.7	17.1	75 W	14* 69*
9 8	17 45.86	+10 12.6	1.134	1.625	37.8	18.4	99 E	55* 54	3 2	17 16.35	-30 23.7	1.724	1.852	31.9	17.1	81 W	14* 75*
9 13	17 53.67	+9 11.9	1.164	1.623	38.0	18.5	97 E	54* 55	3 12	17 33.19	-29 33.7	1.648	1.887	31.7	17.0	87 W	15* 81*
9 18	18 2.12	+8 12.2	1.195	1.621	38.2	18.6	95 E	53* 56*	3 22	17 47.11	-28 29.5	1.570	1.923	31.1	16.9	94 W	16* 87*
9 23	18 11.15	+7 14.1	1.226	1.620	38.2	18.6	93 E	52* 57*	4 1	17 57.73	-27 12.2	1.492	1.960	29.9	16.8	102 W	18* 89
9 28	18 20.73	+6 18.2	1.257	1.618	38.3	18.7	91 E	51* 57*	4 11	18 4.72	-25 43.2	1.416	1.997	28.1	16.7	110 W	19 90
10 8	18 41.34	+4 34.5	1.322	1.616	38.1	18.8	87 E	49* 57*	4 21	18 7.79	-24 3.2	1.345	2.035	25.5	16.6	119 W	21 88
10 18	19 3.62	+3 4.2	1.388	1.615	37.8	18.9	84 E	48* 56*	5 1	18 6.74	-22 13.2	1.283	2.073	22.1	16.4	129 W	23 86
10 28	19 27.31	+1 49.9	1.457	1.616	37.3	19.0	80 E	47* 54*	5 11	18 1.70	-20 14.7	1.235	2.111	17.9	16.2	140 W	25 84
11 7	19 52.08	+0 53.3	1.529	1.617	36.6	19.1	77 E	46* 51*	5 16	17 57.82	-19 13.2	1.218	2.130	15.6	16.1	146 W	26 83
11 17	20 17.67	+0 15.2	1.603	1.620	35.7	19.1	73 E	45* 47*	5 21	17 53.16	-18 10.8	1.206	2.149	13.1	16.0	151 W	27 82
11 27	20 43.82	+0 4.1	1.680	1.624	34.7	19.2	70 E	44* 43*	5 26	17 47.87	-17 8.4	1.199	2.168	10.5	15.9	157 W	28 81
12 7	21 10.29	+0 5.0	1.760	1.628	33.5	19.3	66 E	44* 39*	5 31	17 42.12	-16 6.8	1.199	2.187	8.0	15.9	163 W	29 80
12 17	21 36.90	+0 11.1	1.841	1.634	32.2	19.4	62 E	43* 35*	6 5	17 36.11	-15 6.9	1.205	2.206	5.8	15.8	167 W	30 79
12 27	22 3.51	+0 42.7	1.923	1.641	30.7	19.4	59 E	43* 31*	6 10	17 30.03	-14 9.9	1.217	2.225	4.4	15.8	170 W	31 78
1 6	22 29.97	+1 27.6	2.007	1.649	29.2	19.5	55 E	41* 27*	6 15	17 24.07	-13 16.5	1.237	2.244	4.7	15.8	170 E	32 77
1 16	22 56.23	+2 23.5	2.090	1.657	27.5	19.5	51 E	40* 24*	6 20	17 18.40	-12 27.6	1.263	2.262	6.2	16.0	166 E	33 76
124192 Moletai									6 25	17 13.20	-11 43.9	1.295	2.281	8.3	16.1	161 E	33 76
12 23	14 24.87	-18 30.2	2.182	1.736	26.0	20.6	51 W	24* 39*	6 30	17 8.58	-11 5.7	1.334	2.299	10.4	16.3	156 E	34 75
1 2	14 51.53	-20 25.5	2.081	1.707	27.9	20.5	54 W	23* 43*	7 10	17 1.45	-10 6.4	1.427	2.336	14.4	16.6	145 E	35 74
1 12	15 19.14	-22 7.5	1.982	1.679	29.7	20.4	58 W	22* 48*	7 20	16 57.34	-9 28.6	1.541	2.372	17.6	16.9	135 E	36 73
1 22	15 47.67	-23 33.0	1.883	1.653	31.5	20.3	61 W	21* 53*	7 30	16 56.27	-9 9.2	1.669	2.407	20.0	17.2	126 E	36 73
1 27	16 2.24	-24 8.7	1.835	1.641	32.3	20.3	63 W	20* 55*	8 9	16 58.02	-9 4.1	1.810	2.442	21.7	17.5	117 E	36* 73
2 1	16 16.99	-24 39.3	1.787	1.630	33.1	20.2	65 W	20* 57*	8 19	17 2.24	-9 9.2	1.960	2.476	22.8	17.7	109 E	36* 73
2 6	16 31.87	-25 4.3	1.740	1.619	33.9	20.2	66 W	19* 59*	8 29	17 8.62	-9 20.9	2.115	2.509	23.3	17.9	101 E	35* 73
2 11	16 46.87	-25 23.6	1.694	1.609	34.6	20.1	68 W	19* 61*	9 8	17 16.81	-9 35.9	2.274	2.541	23.3	18.1	93 E	34* 74*
2 16	17 1.95	-25 36.9	1.649	1.599	35.4	20.1	70 W	18* 63*	9 18	17 26.53	-9 51.6	2.433	2.573	22.9	18.3	86 E	34* 71*
2 21	17 17.07	-25 44.0	1.604	1.590	36.1	20.0	71 W	18* 65*	9 28	17 37.54	-10 5.9	2.592	2.604	22.2	18.4	80 E	33* 67*
2 26	17 32.17	-25 44.8	1.560	1.582	36.7	20.0	73 W	18* 67*	10 8	17 49.61	-10 17.0	2.747	2.634	21.3	18.5	73 E	32* 61*
3 2	17 47.20	-25 39.3	1.517	1.575	37.3	19.9	74 W	18* 68*	10 18	18 2.56	-10 23.5	2.898	2.663	20.1	18.6	67 E	31* 54*
3 7	18 2.12	-25 27.3	1.475	1.568	37.9	19.8	76 W	18* 70*	10 28	18 16.24	-10 24.4	3.043	2.691	18.7	18.7	60 E	31* 48*
3 12	18 16.88	-25 9.1	1.434	1.562	38.4	19.8	78 W	18* 72*	11 7	18 30.47	-10 18.7	3.180	2.719	17.2	18.8	54 E	30* 40*
3 22	18 45.73	-24 14.5	1.355	1.553	39.3	19.7	81 W	19* 75*	11 17	18 45.15	-10 5.9	3.308	2.745	15.5	18.8	48 E	28* 33*
4 1	19 13.30	-22 57.3	1.279	1.547	40.0	19.6	85 W	19* 78*	11 27	19 0.15	-9 45.5	3.425	2.771	13.8	18.9	42 E	27* 26*
4 11	19 39.24	-21 20.3	1.206	1.545	40.4	19.4	88 W	21* 81*	12 7	19 15.35	-9 17.3	3.530	2.796	12.0	18.9	36 E	25* 18*
4 21	20 3.23	-19 27.3	1.137	1.546	40.5	19.3	92 W	22* 83*	12 17	19 30.67	-8 41.2	3.623	2.819	10.2	18.9	30 E	22* 11*

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°
126410 2002 BU₁₈										175943 2000 GE₁									
<i>(continuation)</i>										<i>(continuation)</i>									
4 1	15 0.83	+ 5 25.1	2.683	3.540	9.6	20.3	144 W	50	59	9 28	0 0.69	-25 54.7	0.679	1.632	16.9	17.0	152 E	19	90
4 11	14 54.82	+ 6 39.4	2.615	3.530	7.7	20.2	152 W	52	57	10 3	23 58.22	-27 25.7	0.720	1.653	19.1	17.3	147 E	18	89
4 16	14 51.30	+ 7 14.4	2.591	3.524	7.0	20.1	155 W	52	57	10 8	23 56.29	-28 33.1	0.766	1.675	21.1	17.5	143 E	16	87
4 21	14 47.50	+ 7 47.0	2.574	3.519	6.5	20.1	157 W	53	56	10 13	23 55.03	-29 19.1	0.815	1.696	23.0	17.7	138 E	16	87
4 26	14 43.51	+ 8 16.7	2.564	3.513	6.4	20.1	157 W	53	56	10 18	23 54.48	-29 46.2	0.867	1.717	24.6	17.9	134 E	15	86
5 1	14 39.41	+ 8 42.8	2.561	3.507	6.7	20.1	156 W	54	55	10 23	23 54.71	-29 56.8	0.923	1.739	25.9	18.1	130 E	15	86
5 11	14 31.24	+ 9 22.5	2.577	3.494	8.1	20.1	151 E	54	55	10 28	23 55.69	-29 53.5	0.981	1.761	27.1	18.3	126 E	15	86
5 21	14 23.64	+ 9 43.9	2.618	3.480	10.1	20.2	143 E	55	54	11 2	23 57.40	-29 38.3	1.041	1.782	28.0	18.5	122 E	15	86
5 31	14 17.19	+ 9 46.4	2.682	3.466	12.1	20.4	134 E	55	54	11 7	23 59.78	-29 13.2	1.103	1.804	28.8	18.7	119 E	16	87
6 10	14 12.30	+ 9 31.0	2.766	3.450	13.9	20.5	125 E	55	54	11 12	0 2.79	-28 39.7	1.168	1.826	29.3	18.8	115 E	16	87
6 20	14 9.22	+ 9 0.0	2.864	3.434	15.4	20.6	116 E	54	55	11 17	0 6.37	-27 59.1	1.234	1.847	29.8	19.0	112 E	17	88
6 30	14 8.02	+ 8 15.8	2.974	3.417	16.5	20.7	107 E	52	56	11 22	0 10.48	-27 12.6	1.301	1.869	30.0	19.1	109 E	18	89
7 10	14 8.67	+ 7 21.3	3.090	3.398	17.2	20.8	99 E	48	57	11 27	0 15.06	-26 21.4	1.369	1.890	30.2	19.3	106 E	19	90
7 20	14 11.07	+ 6 18.7	3.209	3.379	17.5	20.9	91 E	44	58	12 2	0 20.06	-25 26.2	1.439	1.912	30.2	19.4	102 E	20	89
7 30	14 15.10	+ 5 10.3	3.328	3.359	17.5	21.0	83 E	40	59	12 7	0 25.43	-24 27.8	1.509	1.933	30.2	19.5	99 E	21	88
8 9	14 20.58	+ 3 57.9	3.444	3.338	17.1	21.0	76 E	36	58	12 12	0 31.12	-23 26.7	1.581	1.954	30.1	19.6	96 E	22	87*
8 19	14 27.38	+ 2 43.0	3.554	3.317	16.5	21.0	68 E	33	54*	12 17	0 37.12	-22 23.6	1.652	1.974	29.8	19.8	94 E	23	84*
8 29	14 35.38	+ 1 26.9	3.656	3.294	15.6	21.1	61 E	30	49*	12 22	0 43.38	-21 18.8	1.725	1.995	29.5	19.9	91 E	24	80*
9 8	14 44.43	+ 0 10.8	3.749	3.271	14.5	21.1	55 E	27	44*	12 27	0 49.88	-20 12.8	1.797	2.015	29.2	20.0	88 E	25	77*
9 18	14 54.43	- 1 4.4	3.831	3.246	13.3	21.0	48 E	25	38*	1 1	0 56.59	-19 6.0	1.869	2.036	28.8	20.1	85 E	26	73*
9 28	15 5.30	+ 2 17.7	3.900	3.221	11.9	21.0	42 E	22	31*	1 6	1 3.48	-17 58.6	1.942	2.056	28.3	20.2	82 E	27	70*
10 8	15 16.95	+ 3 28.1	3.955	3.195	10.5	21.0	35 E	20	25*	1 11	1 10.55	-16 51.1	2.014	2.075	27.8	20.2	80 E	28	66*
10 18	15 29.29	+ 4 35.1	3.996	3.167	8.9	20.9	30 E	18	18*	1 16	1 17.77	-15 43.5	2.086	2.095	27.2	20.3	77 E	29	63*
10 28	15 42.27	+ 5 37.7	4.021	3.139	7.4	20.8	24 E	15	11*	140288 2001 SN₂₈₉									
11 7	15 55.81	+ 6 35.2	4.031	3.111	5.9	20.8	19 E	12	4*	12 23	14 26.93	+ 3 38.8	1.254	1.127	48.5	19.3	59 W	45*	28*
11 17	16 9.85	+ 7 27.0	4.025	3.081	4.8	20.7	15 E	9	—	12 28	14 39.19	- 0 33.1	1.196	1.092	50.7	19.2	59 W	42*	33*
11 27	16 24.32	+ 8 12.4	4.002	3.050	4.3	20.6	13 E	5	—	1 2	14 52.35	- 5 7.1	1.142	1.058	52.9	19.1	59 W	38*	37*
12 7	16 39.15	+ 8 50.7	3.964	3.019	4.6	20.6	14 W	7	—	1 7	15 6.75	-10 4.6	1.091	1.026	55.2	19.0	59 W	33*	41*
12 17	16 54.27	+ 9 21.7	3.909	2.986	5.7	20.6	18 W	12	—	1 12	15 22.82	-15 25.7	1.046	0.996	57.5	18.9	59 W	28*	45*
12 27	17 9.61	+ 9 44.6	3.839	2.953	7.3	20.6	22 W	16	3*	1 17	15 41.12	-21 7.8	1.009	0.969	59.6	18.8	58 W	23*	48*
1 6	17 25.06	+ 9 59.4	3.755	2.919	9.0	20.6	28 W	19	10*	1 22	16 2.37	-27 4.5	0.980	0.944	61.5	18.7	57 W	17*	50*
1 16	17 40.57	+ 10 5.8	3.657	2.884	10.8	20.6	33 W	22	17*	1 24	16 11.89	-29 29.0	0.971	0.935	62.1	18.7	57 W	14*	51*
175943 2000 GE₁										1 26	16 22.07	-31 53.1	0.964	0.926	62.7	18.7	57 W	12*	51*
12 23	14 26.44	+ 2 52.0	2.191	1.833	26.4	20.1	56 W	39	32*	1 28	16 32.99	-34 15.7	0.959	0.919	63.2	18.7	56 W	9*	50*
1 2	14 51.35	+ 3 14.2	2.063	1.790	28.5	20.0	60 W	40	36*	1 30	16 44.71	-36 35.7	0.956	0.911	63.6	18.7	56 W	6*	50*
1 12	15 17.17	+ 3 20.4	1.936	1.747	30.4	19.9	64 W	40	41*	2 1	16 57.28	-38 51.6	0.955	0.905	63.9	18.6	56 W	4*	49*
1 22	15 43.92	+ 3 8.2	1.813	1.703	32.3	19.7	68 W	41	45*	2 3	17 10.76	-41 2.0	0.956	0.899	64.1	18.6	55 W	1*	48*
2 1	16 11.53	+ 2 35.5	1.696	1.661	34.1	19.6	71 W	42	49*	2 5	17 25.18	-43 5.5	0.959	0.894	64.2	18.6	55 W	—	47*
2 11	16 39.95	+ 1 40.7	1.585	1.619	35.9	19.4	74 W	42	52*	2 7	17 40.56	-45 0.5	0.963	0.889	64.2	18.6	54 W	—	46*
2 21	17 9.06	+ 0 23.4	1.482	1.578	37.5	19.3	76 W	44	54*	2 9	17 56.88	-46 45.7	0.970	0.886	64.0	18.6	54 W	—	44*
3 2	17 38.70	+ 1 16.0	1.388	1.538	39.2	19.1	79 W	45	55*	2 11	18 14.09	-48 19.7	0.979	0.883	63.8	18.6	53 W	—	43*
3 12	18 8.67	+ 3 15.2	1.304	1.501	40.7	19.0	80 W	46	56*	2 13	18 32.10	-49 41.4	0.989	0.880	63.4	18.7	53 W	—	41*
3 17	18 23.73	+ 4 21.0	1.265	1.483	41.5	18.9	81 W	47	56*	2 15	18 50.77	-50 50.0	1.001	0.879	63.0	18.7	52 W	—	40*
3 22	18 38.80	+ 5 30.3	1.228	1.466	42.3	18.8	82 W	48	55*	2 17	19 9.90	-51 44.8	1.015	0.878	62.4	18.7	52 W	—	38*
3 27	18 53.85	+ 6 42.4	1.194	1.449	43.0	18.8	82 W	48	55*	2 19	19 29.29	-52 25.6	1.030	0.878	61.8	18.7	52 W	—	36*
4 1	19 8.85	+ 7 56.4	1.161	1.433	43.8	18.7	83 W	49	54*	2 21	19 48.70	-52 52.7	1.047	0.879	61.0	18.7	51 W	—	35*
4 6	19 23.80	+ 9 11.5	1.130	1.419	44.5	18.6	83 W	50	54*	2 23	20 7.88	-53 6.5	1.065	0.881	60.2	18.7	51 W	—	33*
4 11	19 38.66	+ 10 26.9	1.102	1.405	45.2	18.6	84 W	51	53*	2 25	20 26.61	-53 7.9	1.084	0.883	59.4	18.7	50 W	—	32*
4 16	19 53.43	+ 11 41.7	1.074	1.392	45.8	18.5	84 W	51	52*	2 27	20 44.70	-52 57.9	1.104	0.886	58.5	18.8	50 W	—	31*
4 21	20 8.07	+ 12 55.2	1.048	1.380	46.5	18.5	84 W	52	51*	2 29	21 2.01	-52 37.6	1.124	0.890	57.5	18.8	49 W	—	29*
4 26	20 22.57	+ 14 6.4	1.023	1.369	47.1	18.4	85 W	53	50*	3 2	21 18.43	-52 8.5	1.146	0.895	56.5	18.8	49 W	—	28*
5 1	20 36.92	+ 15 14.4	0.999	1.360	47.6	18.4	85 W	53	49*	3 4	21 33.91	-51 31.7	1.168	0.900	55.5	18.8	48 W	—	27*
5 6	20 51.10	+ 16 18.4	0.976	1.351	48.1	18.3	86 W	54	48	3 6	21 48.41	-50 48.4	1.190	0.906	54.5	18.9	48 W	—	26*
5 11	21 5.11	+ 17 17.8	0.953	1.344	48.6	18.3	86 W	54	47	3 8	22 1.96	-49 59.9	1.213	0.913	53.4	18.9	48 W	—	25*
5 16	21 18.94	+ 18 11.8	0.930	1.338	49.0	18.2	87 W	55	46	3 10	22 14.58	-49 7.2	1.236	0.920	52.4	18.9	47 W	—	24*
5 21	21 32.55	+ 18 59.6	0.908	1.334	49.3	18.2	88 W	56	45	3 12	22 26.33	-48 11.1	1.260	0.928	51.3	18.9	47 W	—	24*
5 26	21 45.92	+ 19 40.6	0.885	1.331	49.6	18.1	89 W	57	44	3 14	22 37.25	-47 12.4	1.283	0.937	50.3	19.0	46 W	—	23*
5 31	21 59.04	+ 20 13.9	0.863	1.329	49.7	18.0	90 W	57	44	3 16	22 47.42	-46 11.9	1.306	0.946	49.3	19.0	46 W	—	23*
6 5	22 11.89	+ 20 38.8	0.840	1.329	49.8	18.0	91 W	58	43	3 18	22 56.88	-45 10.0	1.330	0.956	48.3	19.0	46 W	—	22*
6 10	22 24.44	+ 20 54.5	0.817	1.330	49.7	17.9	92 W	59	43	3 20	23 5.70	-44 7.3	1.353	0.966	47.3	19.1	45 W	—	22*
6 15	22 36.66	+ 21 0.3	0.793	1.333	49.5	17.9	94 W	60	43	3 22	23 13.94	-43 4.1	1.375	0.976	46.4	19.1	45 W	—	22*
6 20	22 48.48	+ 20 55.2	0.770	1.337	49.1	17.8	96 W	61	43	3 24	23 21.65								

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°
140288 2001 SN₂₈₉										353947 1999 CT₈									
<i>(continuation)</i>																			
7 10	1 48.79	-3 46.4	1.539	1.757	35.1	20.3	84 W	28*	68*	12 23	14 30.42	+34 42.0	0.750	1.093	61.2	20.6	77 W	71*	9*
7 20	1 47.35	-1 32.9	1.460	1.823	33.8	20.2	93 W	37*	66	12 28	14 25.37	+34 14.8	0.726	1.126	59.6	20.5	81 W	75*	13*
7 30	1 42.05	+0 35.4	1.377	1.885	31.6	20.1	103 W	44*	63	1 2	14 19.17	+33 51.9	0.698	1.158	57.8	20.4	85 W	77*	18*
8 9	1 32.15	+2 39.5	1.297	1.946	28.4	20.0	114 W	48	61	1 7	14 11.43	+33 33.4	0.667	1.190	55.7	20.3	90 W	79*	22*
8 19	1 17.02	+4 37.8	1.228	2.003	23.9	19.8	127 W	50	59	1 12	14 1.67	+33 18.6	0.633	1.221	53.3	20.2	96 W	78*	26*
8 29	0 56.52	+6 26.6	1.178	2.059	18.2	19.6	140 W	51	58	1 17	13 49.35	+33 6.2	0.599	1.252	50.3	20.0	102 W	78	29*
9 3	0 44.51	+7 15.4	1.163	2.085	15.0	19.5	148 W	52	57	1 22	13 33.81	+32 53.2	0.564	1.282	46.7	19.9	109 W	78	31*
9 8	0 31.61	+7 59.3	1.156	2.111	11.7	19.4	155 W	53	56	1 27	13 14.40	+32 34.3	0.531	1.311	42.3	19.7	116 W	78	31
9 13	0 18.14	+8 37.4	1.158	2.137	8.5	19.3	162 W	54	55	2 1	12 50.67	+32 1.3	0.502	1.339	37.0	19.4	125 W	77	32
9 18	0 4.48	+9 9.2	1.169	2.162	5.7	19.2	168 W	54	55	2 6	12 22.65	+31 3.5	0.479	1.366	30.8	19.2	135 W	76	33
9 23	23 51.03	+9 34.6	1.190	2.186	4.5	19.2	170 E	55	54	2 11	11 51.20	+29 30.4	0.464	1.393	23.8	19.0	145 W	75	34
9 28	23 38.19	+9 54.1	1.221	2.209	5.7	19.3	167 E	55	54	2 13	11 38.02	+28 41.9	0.460	1.403	21.0	18.9	149 W	74	35
10 3	23 26.26	+10 8.4	1.261	2.232	8.2	19.5	161 E	55	54	2 15	11 24.71	+27 46.8	0.459	1.413	18.1	18.8	154 W	73	36
10 8	23 15.48	+10 18.5	1.309	2.255	10.8	19.7	155 E	55	54	2 17	11 11.43	+26 45.4	0.459	1.423	15.3	18.7	158 W	72	37
10 13	23 6.00	+10 25.7	1.366	2.277	13.2	19.9	148 E	55	54	2 19	10 58.32	+25 38.6	0.461	1.433	12.7	18.7	161 W	71	38
10 18	22 57.88	+10 31.1	1.429	2.298	15.4	20.1	142 E	56	53	2 21	10 45.55	+24 27.0	0.466	1.443	10.5	18.6	165 W	69	40
10 23	22 51.13	+10 35.7	1.498	2.318	17.4	20.3	136 E	56	53	2 23	10 33.25	+23 11.8	0.472	1.453	9.0	18.6	167 W	68	41
10 28	22 45.71	+10 40.6	1.572	2.339	19.0	20.5	130 E	56	53	2 25	10 21.51	+21 54.2	0.480	1.462	8.5	18.6	167 E	67	42
11 7	22 38.47	+10 53.4	1.732	2.377	21.4	20.8	119 E	56	53	2 27	10 10.44	+20 35.3	0.490	1.471	9.0	18.7	167 E	66	43
11 17	22 35.40	+11 13.2	1.903	2.413	22.8	21.1	109 E	56	53*	2 29	10 0.08	+19 16.3	0.502	1.480	10.4	18.8	164 E	64	45
11 27	22 35.71	+11 42.2	2.079	2.446	23.4	21.3	100 E	57	50*	3 2	9 50.47	+17 58.2	0.516	1.489	12.2	19.0	162 E	63	46
12 7	22 38.70	+12 21.0	2.256	2.478	23.4	21.5	91 E	57	45*	3 3	9 41.62	+16 41.7	0.531	1.498	14.1	19.1	158 E	62	47
257610 1999 RM₂₁₅										3674 Erbisbühl									
12 23	14 29.24	-21 51.9	3.086	2.550	16.9	21.4	49 W	20*	39*	12 23	14 30.55	-33 24.1	3.832	3.244	12.8	18.2	47 W	9*	41*
1 2	14 45.55	-23 14.6	2.952	2.521	18.6	21.3	55 W	21*	45*	1 2	14 42.91	-34 46.7	3.727	3.246	14.2	18.2	54 W	9*	48*
1 12	15 1.75	-24 32.5	2.810	2.490	20.3	21.2	61 W	20*	53*	1 12	14 54.58	-36 7.8	3.610	3.246	15.3	18.2	61 W	9*	55*
1 22	15 17.76	-25 45.1	2.661	2.459	21.7	21.1	68 W	19*	60*	1 22	15 5.38	-37 27.5	3.483	3.246	16.3	18.1	68 W	8*	62*
2 1	15 33.40	-26 52.2	2.508	2.427	23.0	21.0	74 W	18*	67*	2 1	15 15.05	-38 45.7	3.349	3.244	17.1	18.1	75 W	6	68*
2 11	15 48.48	-27 53.3	2.351	2.395	24.0	20.9	80 W	17	74*	2 11	15 23.31	-40 2.1	3.209	3.241	17.6	18.0	83 W	5	73*
2 21	16 2.80	-28 48.4	2.193	2.362	24.7	20.7	87 W	16	81*	2 21	15 29.85	-41 16.3	3.066	3.237	17.8	17.9	91 W	4	75*
3 2	16 16.05	-29 37.4	2.036	2.328	25.1	20.5	94 W	15	86*	2 26	15 32.35	-41 52.4	2.994	3.235	17.7	17.9	95 W	3	74
3 12	16 27.89	-30 20.2	1.880	2.294	25.1	20.3	101 W	15	86	3 2	15 34.28	-42 27.5	2.923	3.232	17.6	17.8	99 W	3	74
3 22	16 37.95	-30 56.8	1.729	2.260	24.6	20.1	109 W	14	85	3 7	15 35.59	-43 1.5	2.853	3.229	17.4	17.7	103 W	2	73
4 1	16 45.73	-31 26.8	1.585	2.225	23.6	19.8	117 W	14	85	3 12	15 36.24	-43 34.0	2.784	3.226	17.1	17.7	108 W	1	72
4 6	16 48.62	-31 39.1	1.516	2.208	22.8	19.7	121 W	13	84	3 17	15 36.19	-44 4.9	2.717	3.223	16.6	17.6	112 W	1	72
4 11	16 50.75	-31 49.3	1.450	2.190	21.8	19.6	126 W	13	84	3 22	15 35.39	-44 33.5	2.652	3.219	16.1	17.5	116 W	—	71
4 16	16 52.07	-31 57.3	1.386	2.173	20.7	19.4	130 W	13	84	4 1	15 31.47	-45 22.2	2.532	3.211	14.8	17.4	125 W	—	71
4 21	16 52.51	-32 2.7	1.326	2.155	19.3	19.3	135 W	13	84	4 11	15 24.48	-45 55.2	2.427	3.202	13.1	17.2	134 W	—	70
5 1	16 50.61	-32 3.7	1.217	2.120	16.0	18.9	145 W	13	84	4 21	15 14.73	-46 7.5	2.341	3.192	11.2	17.1	142 W	—	70
5 11	16 45.02	-31 48.3	1.126	2.085	11.9	18.6	155 W	13	84	4 26	15 9.03	-46 4.2	2.306	3.186	10.3	17.0	145 W	—	70
5 21	16 36.17	-31 12.1	1.055	2.049	7.3	18.2	165 W	14	85	5 1	15 2.97	-45 54.2	2.277	3.181	9.5	16.9	149 W	—	70
5 26	16 30.85	-30 45.3	1.028	2.032	5.2	18.0	169 W	14	85	5 6	14 56.71	-45 37.2	2.255	3.175	8.9	16.9	151 W	—	70
5 31	16 25.22	-30 12.8	1.006	2.015	4.2	17.9	172 E	15	86	5 11	14 50.39	-45 13.5	2.239	3.168	8.5	16.8	152 E	—	71
6 5	16 19.50	-29 35.0	0.991	1.997	5.2	17.9	170 E	15	86	5 16	14 44.20	-44 43.2	2.230	3.162	8.5	16.8	153 E	—	71
6 10	16 13.93	-28 52.8	0.981	1.980	7.4	18.0	165 E	16	87	5 21	14 38.28	-44 7.1	2.228	3.155	8.8	16.8	152 E	1	72
6 15	16 8.75	-28 7.3	0.977	1.963	10.1	18.1	160 E	17	88	5 26	14 32.79	-43 25.9	2.232	3.148	9.4	16.9	150 E	2	73
6 20	16 4.16	-27 19.7	0.979	1.947	12.9	18.2	155 E	18	89	5 31	14 27.84	-42 40.6	2.243	3.141	10.2	16.9	147 E	2	73
6 25	16 0.36	-26 31.7	0.985	1.930	15.6	18.3	149 E	18	89	6 5	14 23.53	-41 52.5	2.259	3.133	11.1	16.9	143 E	3	74
6 30	15 57.49	-25 44.6	0.996	1.913	18.3	18.3	144 E	19	90	6 10	14 19.92	-41 2.5	2.282	3.125	12.2	17.0	140 E	4	75
7 5	15 55.62	-24 59.5	1.011	1.897	20.7	18.4	139 E	20	89	6 15	14 17.05	-40 11.8	2.310	3.117	13.2	17.1	135 E	5	76
7 10	15 54.80	-24 17.4	1.030	1.881	23.0	18.5	134 E	21	88	6 20	14 14.92	-39 21.3	2.343	3.108	14.2	17.1	131 E	6*	77
7 20	15 56.34	-23 4.6	1.077	1.850	27.0	18.7	124 E	22*	87	6 25	14 13.55	-38 32.0	2.381	3.100	15.2	17.2	127 E	6*	77
7 30	16 1.97	-22 8.4	1.132	1.821	30.1	18.9	116 E	22*	86	6 30	14 12.91	-37 44.6	2.423	3.091	16.1	17.2	123 E	7*	78
8 9	16 11.31	-21 27.7	1.194	1.792	32.5	19.0	108 E	23*	85	7 10	14 13.73	-36 17.6	2.517	3.072	17.6	17.4	114 E	7*	80
8 19	16 23.90	-20 59.4	1.260	1.766	34.2	19.2	101 E	23*	85	7 20	14 17.10	-35 3.1	2.621	3.052	18.7	17.5	105 E	6*	81
8 29	16 39.37	-20 39.5	1.328	1.741	35.3	19.3	95 E	23*	85	7 30	14 22.73	-34 2.3	2.731	3.031	19.4	17.6	97 E	5*	82*
9 8	16 57.29	-20 23.8	1.396	1.719	35.9	19.4	90 E	23*	82*	8 9	14 30.32	-33 14.9	2.844	3.010	19.7	17.7	89 E	5*	78*
9 18	17 17.31	-20 7.9	1.465	1.699	36.1	19.5	85 E	23*	77*	8 19	14 39.61	-32 39.7	2.957	2.987	19.6	17.7	82 E	4*	72*
9 28	17 39.14	-19 48.2	1.534	1.682	35.9	19.5	80 E	24*	73*	8 29	14 50.40	-32 15.1	3.067	2.962	19.2	17.8	75 E	3*	66*
10 8	18 2.46	-19 21.2	1.603	1.667	35.5	19.6	76 E	24*	68*	9 8	15 2.50	-31 59.3	3.171	2.937	18.5	17.8	68 E	3*	59*
10 18	18 26.98	-18 44.1	1.672	1.655	34.8	19.6	72 E	25*	63*	9 18	15 15.77	-31 50.3	3.269	2.911	17.5	17.8	61 E	2*	53*
10 28	18 52.45	-17 54.7	1.740	1.647	34.0	19.7	68 E	26*	59*	9 28	15 30								

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°
3674 Erbisbühl										2102 Tantalus									
<i>(continuation)</i>										<i>(continuation)</i>									
11 27	17 12.53	-31 27.7	3.626	2.699	6.2	17.4	17 E	—	11*	1 14	18 37.02	+42 54.6	0.590	0.918	78.1	17.4	66 W	47*	—
12 7	17 31.56	-31 11.7	3.621	2.664	4.3	17.3	12 E	—	5*	1 16	18 45.80	+42 14.8	0.622	0.915	77.0	17.5	65 W	47*	—
12 17	17 50.91	-30 48.8	3.600	2.628	3.0	17.2	8 E	—	—	1 18	18 53.59	+41 35.3	0.654	0.912	75.8	17.5	64 W	46*	—
12 27	18 10.50	-30 18.1	3.564	2.592	2.9	17.1	8 W	—	—	1 20	19 0.55	+40 56.6	0.686	0.910	74.7	17.6	63 W	46*	—
1 6	18 30.22	-29 38.9	3.513	2.555	4.2	17.1	11 W	—	5*	1 22	19 6.82	+40 18.5	0.717	0.908	73.5	17.6	62 W	46*	—
1 16	18 49.99	-28 50.7	3.448	2.516	6.1	17.2	16 W	—	10*	1 24	19 12.50	+39 41.2	0.748	0.906	72.3	17.7	61 W	45*	—
12 23	14 31.31	-17 6.6	2.547	2.052	21.4	21.0	50 W	25*	37*	1 30	19 17.69	+39 4.7	0.777	0.905	71.2	17.7	60 W	45*	—
1 2	14 52.77	-18 34.8	2.423	2.018	23.4	21.0	55 W	25*	43*	1 28	19 22.45	+38 28.8	0.806	0.904	70.0	17.8	60 W	45*	—
1 12	15 14.72	-19 54.1	2.295	1.983	25.3	20.9	59 W	24*	49*	2 1	19 30.94	+37 19.0	0.862	0.904	68.9	17.8	59 W	45*	—
1 22	15 37.16	-21 3.0	2.164	1.948	27.0	20.7	64 W	23*	55*	2 6	19 40.07	+35 54.7	0.926	0.907	65.1	17.9	57 W	45*	—
2 1	15 59.99	-22 0.0	2.033	1.914	28.7	20.6	69 W	23*	60*	2 11	19 48.04	+34 33.0	0.983	0.912	62.6	18.0	55 W	46*	—
2 11	16 23.14	-22 43.6	1.901	1.880	30.2	20.5	74 W	22*	66*	2 16	19 55.18	+33 13.4	1.033	0.919	60.4	18.1	54 W	46*	—
2 21	16 46.49	-23 12.5	1.771	1.846	31.6	20.3	78 W	22*	71*	2 21	20 1.75	+31 55.6	1.076	0.929	58.5	18.1	53 W	46*	2*
3 2	17 9.87	-23 25.6	1.643	1.814	32.9	20.2	83 W	21*	76*	2 26	20 7.89	+30 39.4	1.111	0.942	56.9	18.2	53 W	47*	6*
3 12	17 33.08	-23 22.0	1.518	1.782	33.9	20.0	88 W	21*	81*	3 2	20 13.70	+29 24.3	1.138	0.956	55.7	18.2	53 W	47*	10*
3 22	17 55.90	-23 1.2	1.397	1.751	34.6	19.8	92 W	22*	85*	3 12	20 24.63	+26 56.1	1.167	0.990	54.1	18.3	54 W	47*	17*
4 1	18 18.03	-22 23.1	1.281	1.722	35.2	19.6	97 W	22*	86	3 22	20 34.90	+24 27.8	1.166	1.030	53.5	18.4	56 W	47*	24*
4 11	18 39.20	-21 28.0	1.171	1.694	35.3	19.3	102 W	23*	85	4 1	20 44.57	+21 54.8	1.135	1.073	53.7	18.4	60 W	48*	31*
4 21	18 59.05	-20 17.0	1.066	1.668	35.1	19.1	107 W	24*	84	4 6	20 49.14	+20 34.1	1.110	1.096	53.9	18.4	62 W	48*	35*
5 1	19 17.18	-18 51.4	0.969	1.644	34.5	18.8	113 W	26*	83	4 11	20 53.52	+19 9.0	1.079	1.119	54.2	18.4	65 W	47*	38*
5 11	19 33.19	-17 13.9	0.880	1.623	33.3	18.6	118 W	28*	81	4 16	20 57.68	+17 37.9	1.042	1.143	54.5	18.4	68 W	47*	41*
5 21	19 46.61	-15 27.5	0.799	1.604	31.5	18.3	124 W	30*	79	4 21	21 1.57	+15 58.8	1.000	1.167	54.6	18.3	71 W	47*	45*
5 31	19 56.92	-13 36.7	0.728	1.588	28.9	18.0	131 W	31*	78	4 26	21 5.12	+14 9.2	0.954	1.190	54.6	18.3	75 W	47*	48*
6 10	20 3.74	-11 47.3	0.666	1.575	25.5	17.7	138 W	33	76	5 1	21 8.27	+12 5.9	0.904	1.214	54.5	18.2	79 W	46*	51*
6 15	20 5.72	-10 55.2	0.640	1.570	23.5	17.5	142 W	34	75	5 6	21 10.93	+9 44.6	0.851	1.237	54.0	18.1	83 W	46*	54*
6 20	20 6.74	-10 6.2	0.616	1.565	21.4	17.4	146 W	35	74	5 11	21 12.99	+7 0.3	0.797	1.261	53.2	18.0	88 W	45*	57
6 25	20 6.80	-9 21.3	0.596	1.562	19.0	17.2	150 W	36	73	5 16	21 14.30	+3 46.7	0.741	1.284	51.9	17.8	93 W	43*	60
6 30	20 5.98	-8 41.6	0.579	1.559	16.5	17.1	154 W	36	73	5 21	21 14.64	-0 4.4	0.686	1.306	50.0	17.6	99 W	41*	64
7 5	20 4.40	-8 8.0	0.566	1.557	14.0	16.9	158 W	37	72	5 26	21 13.73	-4 42.3	0.633	1.328	47.4	17.4	105 W	38*	69
7 10	20 2.20	-7 41.1	0.557	1.556	11.7	16.8	162 W	37	72	5 31	21 11.19	-10 17.0	0.584	1.350	43.9	17.2	113 W	33*	74
7 20	19 56.65	-7 9.6	0.550	1.556	8.8	16.7	166 E	38	71	6 5	21 6.51	-16 56.5	0.542	1.371	39.6	16.9	120 W	28*	81
7 30	19 51.18	-7 7.9	0.559	1.560	10.4	16.8	164 E	38	71	6 10	20 58.97	-24 41.6	0.509	1.392	34.7	16.7	129 W	20*	89
8 9	19 47.63	-7 30.3	0.584	1.568	14.8	17.0	157 E	37	72	6 12	20 54.93	-28 3.8	0.499	1.400	32.6	16.6	132 W	17	88
8 14	19 46.98	-7 47.9	0.602	1.573	17.2	17.2	153 E	37	72	6 14	20 50.18	-31 33.1	0.491	1.408	30.6	16.5	135 W	13	84
8 19	19 47.23	-8 8.2	0.624	1.578	19.5	17.4	149 E	37	72	6 16	20 44.63	-35 7.2	0.486	1.416	28.6	16.4	138 W	10	81
8 24	19 48.43	-8 29.9	0.649	1.585	21.7	17.5	145 E	37	72	6 18	20 38.16	-38 43.6	0.483	1.423	26.9	16.4	141 W	6	77
8 29	19 50.61	-8 51.8	0.678	1.592	23.8	17.7	141 E	36	73	6 20	20 30.67	-42 19.2	0.483	1.431	25.5	16.4	143 W	3	74
9 3	19 53.74	-9 12.9	0.709	1.600	25.6	17.8	137 E	36	73	6 22	20 22.03	-45 50.7	0.486	1.438	24.4	16.4	144 W	—	70
9 8	19 57.75	-9 32.4	0.743	1.609	27.2	18.0	133 E	35	74	6 24	20 12.11	-49 14.9	0.491	1.446	23.8	16.4	145 W	—	67
9 18	20 8.20	-10 4.0	0.820	1.629	29.9	18.3	126 E	35	74	6 26	20 0.79	-52 28.6	0.498	1.453	23.6	16.4	145 W	—	64
9 28	20 21.45	-10 22.3	0.906	1.651	31.8	18.6	120 E	35	74	6 28	19 47.95	-55 29.0	0.508	1.461	23.8	16.5	145 W	—	61
10 8	20 36.87	-10 25.1	1.001	1.675	33.1	18.9	114 E	35	74	6 30	19 33.54	-58 13.7	0.520	1.468	24.3	16.5	143 W	—	58
10 18	20 53.91	-10 11.8	1.105	1.702	33.8	19.2	108 E	35	74	7 2	19 17.55	-60 41.0	0.534	1.475	25.2	16.6	142 W	—	55
10 28	21 12.15	-9 42.4	1.215	1.730	34.1	19.4	103 E	35	74	7 4	19 0.04	-62 49.5	0.551	1.482	26.2	16.7	140 W	—	53
11 7	21 31.17	-8 57.7	1.332	1.760	33.9	19.7	97 E	36	72*	7 6	18 41.20	-64 38.8	0.569	1.488	27.2	16.9	138 E	—	51
11 17	21 50.70	-7 59.3	1.455	1.791	33.5	19.9	92 E	37	69*	7 8	18 21.35	-66 8.9	0.588	1.495	28.4	17.0	136 E	—	50
11 27	22 10.53	-6 48.6	1.582	1.823	32.7	20.1	87 E	38	64*	7 10	18 0.90	-67 20.4	0.609	1.502	29.9	17.1	133 E	—	49
12 7	22 30.49	-5 27.5	1.712	1.856	31.7	20.3	82 E	40	58*	7 11	17 50.60	-67 49.6	0.620	1.505	30.1	17.2	132 E	—	48
12 17	22 50.47	-3 57.7	1.845	1.890	30.5	20.4	77 E	41	52*	7 12	17 40.35	-68 14.7	0.632	1.508	30.6	17.2	131 E	—	48
12 27	23 10.42	-2 20.9	1.980	1.924	29.1	20.6	72 E	43*	47*	7 13	17 30.19	-68 36.0	0.643	1.511	31.1	17.3	130 E	—	47
1 6	23 30.28	-0 39.1	2.115	1.959	27.6	20.7	67 E	44*	41*	7 14	17 20.21	-68 53.6	0.655	1.514	31.6	17.3	129 E	—	47
1 16	23 50.04	+1 6.3	2.249	1.993	25.9	20.8	62 E	44*	36*	7 15	17 10.44	-69 7.9	0.667	1.518	32.1	17.4	127 E	—	47
12 23	14 31.71	+40 13.3	0.278	0.976	83.3	16.1	80 W	74*	5*	7 16	17 0.95	-69 19.1	0.680	1.521	32.6	17.4	126 E	—	47
12 24	14 50.46	+41 46.9	0.287	0.973	83.7	16.2	79 W	72*	2*	7 17	16 51.77	-69 27.5	0.692	1.524	33.1	17.5	125 E	—	47
12 25	15 8.92	+43 4.1	0.296	0.969	84.0	16.2	79 W	69*	—	7 18	16 42.95	-69 33.3	0.705	1.527	33.5	17.6	124 E	—	46
12 26	15 26.86	+44 5.7	0.306	0.966	84.2	16.3	78 W	67*	—	7 19	16 34.50	-69 37.0	0.718	1.530	33.9	17.6	123 E	—	46
12 27	15 44.11	+44 53.2	0.317	0.963	84.3	16.4	77 W	65*	—	7 20	16 26.45	-69 38.6	0.731	1.533	34.3	17.7	122 E	—	46
12 28	16 0.53	+45 28.3	0.329	0.960	84.3	16.5	76 W	63*	—	7 22	16 11.58	-69 37.0	0.757	1.539	35.0	17.8	120 E	—	46
12 29	16 16.04	+45 52.6	0.342	0.957	84.3	16.5	75 W	61*	—	7 24	15 58.38	-69 30.1	0.784	1.544	35.7	17.9	118 E	—	46
12 30	16 30.59	+46 7.8	0.356	0.954	84.2	16.6	75 W	60*	—	7 26	15 46.78	-69 19.7	0.812	1.550	36.2	18.0	116 E	—	47
12 31	16 44.18	+46 15.4	0.370	0.951	84.0	16.7	74 W	58*	—	7 28	15 36.71	-69 6.8	0.840	1.556	36.7	18.1	114 E	—	47
1 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°
2102 Tantalus										138258 2000 GD₂									
<i>(continuation)</i>										<i>(continuation)</i>									
9 3	15 0.31	-66 23.5	1.350	1.636	38.0	19.2	87 E	—	45*	4 11	23 16.70	-44 37.0	0.701	0.886	77.3	20.8	60 W	—	37*
9 8	15 6.33	-66 27.9	1.412	1.643	37.6	19.3	84 E	—	44*	4 21	0 19.59	-35 21.8	0.729	0.805	81.7	20.8	52 W	—	33*
9 13	15 13.81	-66 37.4	1.471	1.650	37.1	19.4	81 E	—	43*	5 1	1 6.95	-24 13.4	0.784	0.711	84.6	20.8	45 W	—	29*
9 18	15 22.65	-66 51.2	1.527	1.656	36.5	19.5	79 E	—	42*	5 11	1 45.45	-11 59.6	0.867	0.607	84.6	20.7	37 W	—	26*
9 23	15 32.81	-67 8.8	1.580	1.661	36.0	19.6	76 E	—	41*	5 21	2 22.37	+1 0.0	0.982	0.502	78.8	20.3	29 W	—	22*
9 28	15 44.26	-67 29.3	1.629	1.666	35.4	19.6	74 E	—	40*	5 26	2 42.97	+7 40.3	1.052	0.455	72.5	20.0	25 W	—	19*
10 3	15 57.01	-67 51.9	1.676	1.669	34.8	19.7	72 E	—	39*	5 31	3 6.80	+14 16.9	1.128	0.418	63.6	19.7	22 W	1*	15*
10 8	16 11.11	-68 15.9	1.718	1.672	34.2	19.7	70 E	—	38*	6 5	3 35.22	+20 31.1	1.207	0.399	52.5	19.4	18 W	4*	11*
10 13	16 26.61	-68 40.4	1.757	1.674	33.7	19.7	69 E	—	37*	6 10	4 8.83	+25 55.9	1.283	0.400	41.0	19.3	15 W	5*	5*
10 18	16 43.58	-69 4.5	1.793	1.676	33.2	19.8	67 E	—	36*	6 12	4 23.58	+27 45.7	1.311	0.407	36.8	19.2	14 W	6*	3*
10 23	17 2.07	-69 27.2	1.825	1.676	32.7	19.8	65 E	—	36*	6 14	4 38.93	+29 22.2	1.339	0.417	33.2	19.2	13 W	6*	1*
10 28	17 22.10	-69 47.3	1.853	1.676	32.2	19.8	64 E	—	36*	6 16	4 54.73	+30 44.5	1.365	0.430	30.0	19.2	12 W	6*	—
11 2	17 43.66	-70 3.5	1.877	1.675	31.8	19.8	63 E	—	36*	6 18	5 10.82	+31 52.4	1.390	0.444	27.4	19.3	12 W	6*	—
11 7	18 6.72	-70 14.5	1.898	1.673	31.4	19.8	62 E	—	36*	6 20	5 27.05	+32 46.2	1.414	0.461	25.3	19.3	11 W	5*	—
11 12	18 31.16	-70 18.9	1.915	1.670	31.1	19.9	61 E	—	36*	6 22	5 43.26	+33 26.2	1.437	0.480	23.7	19.4	11 W	5*	—
11 17	18 56.77	-70 15.3	1.929	1.667	30.8	19.9	60 E	—	36*	6 24	5 59.31	+33 53.4	1.460	0.499	22.5	19.5	11 W	4*	—
11 19	19 7.29	-70 11.3	1.934	1.665	30.7	19.9	59 E	—	36*	6 26	6 15.10	+34 8.6	1.482	0.520	21.6	19.6	11 W	3*	—
11 21	19 17.92	-70 5.7	1.938	1.664	30.6	19.9	59 E	—	36*	6 28	6 30.51	+34 12.9	1.503	0.540	20.9	19.7	11 E	3*	—
11 23	19 28.65	-69 58.5	1.942	1.662	30.6	19.9	59 E	—	36*	6 30	6 45.48	+34 7.4	1.524	0.562	20.4	19.8	11 E	4*	—
11 25	19 39.45	-69 49.6	1.945	1.660	30.5	19.9	59 E	—	36*	7 2	6 59.96	+33 53.1	1.545	0.583	20.1	19.9	11 E	5*	—
11 27	19 50.29	-69 38.9	1.948	1.658	30.4	19.9	58 E	—	37*	7 4	7 13.90	+33 31.2	1.565	0.605	19.7	20.0	12 E	5*	—
11 29	20 1.16	-69 26.3	1.950	1.655	30.4	19.9	58 E	—	37*	7 6	7 27.29	+33 2.5	1.585	0.626	19.5	20.1	12 E	6*	—
12 1	20 12.01	-69 11.9	1.952	1.653	30.3	19.9	58 E	—	37*	7 8	7 40.13	+32 28.1	1.605	0.647	19.2	20.2	12 E	6*	—
12 3	20 22.84	-68 55.5	1.954	1.651	30.3	19.9	58 E	—	37*	7 10	7 52.41	+31 48.7	1.625	0.668	18.9	20.2	12 E	6*	—
12 5	20 33.61	-68 37.1	1.955	1.648	30.3	19.8	57 E	—	38*	7 12	8 4.15	+31 5.1	1.645	0.688	18.6	20.3	12 E	6*	—
12 7	20 44.30	-68 16.8	1.955	1.645	30.2	19.8	57 E	—	38*	7 14	8 15.38	+30 17.9	1.664	0.709	18.3	20.4	13 E	7*	—
12 9	20 54.89	-67 54.5	1.955	1.642	30.2	19.8	57 E	—	38*	7 16	8 26.11	+29 27.8	1.684	0.728	18.0	20.5	13 E	7*	—
12 11	21 5.36	-67 30.1	1.955	1.639	30.2	19.8	57 E	—	38*	7 18	8 36.36	+28 35.2	1.703	0.748	17.7	20.5	13 E	6*	—
12 13	21 15.70	-67 3.7	1.955	1.636	30.2	19.8	57 E	—	39*	7 20	8 46.18	+27 40.7	1.722	0.766	17.3	20.6	13 E	6*	—
12 15	21 25.89	-66 35.4	1.954	1.633	30.2	19.8	57 E	—	39*	7 25	9 8.95	+25 17.9	1.768	0.811	16.4	20.8	13 E	6*	2*
12 17	21 35.91	-66 5.0	1.953	1.630	30.2	19.8	56 E	—	39*	7 30	9 29.52	+22 49.6	1.813	0.853	15.4	20.9	13 E	5*	3*
12 22	22 0.17	-64 40.4	1.948	1.621	30.3	19.8	56 E	—	40*	8 4	9 48.28	+20 18.8	1.855	0.892	14.3	21.0	13 E	4*	3*
12 27	22 23.20	-63 3.9	1.943	1.611	30.3	19.8	56 E	—	41*	8 9	10 5.55	+17 47.5	1.895	0.928	13.1	21.1	12 E	3*	4*
1	22 44.98	-61 15.9	1.936	1.601	30.4	19.8	56 E	—	42*	8 14	10 21.62	+15 17.0	1.933	0.960	11.9	21.2	11 E	2*	4*
1	6 23 5.52	-59 16.9	1.928	1.589	30.6	19.7	55 E	—	42*	8 19	10 36.71	+12 47.9	1.967	0.989	10.7	21.2	10 E	1*	3*
1	11 23 24.89	-57 7.5	1.920	1.577	30.7	19.7	55 E	—	43*	8 24	10 51.00	+10 20.8	1.999	1.015	9.5	21.3	10 E	—	3*
1	16 23 43.18	-54 48.5	1.911	1.565	30.9	19.7	55 E	—	44*	8 29	11 4.66	+7 55.8	2.026	1.039	8.3	21.3	9 E	—	2*
347538 2000 AP₁										70056 1999 JJ₈									
12 23	14 31.91	+3 24.5	1.928	1.633	30.7	20.8	58 W	44*	27*	12 23	14 32.67	-17 33.2	2.689	2.178	20.0	19.9	49 W	24*	37*
1	2 14 56.22	+1 57.8	1.881	1.653	31.5	20.8	61 W	44*	33*	1	2 14 52.99	-18 12.9	2.557	2.143	22.0	19.9	55 W	25*	42*
1	12 15 19.42	+0 43.7	1.831	1.676	32.2	20.8	65 W	44*	38*	1	12 15 13.55	-18 39.8	2.420	2.107	23.8	19.8	60 W	25*	48*
1	22 15 41.37	+0 17.4	1.778	1.701	32.8	20.8	69 W	44*	44*	1	22 15 34.27	-18 51.7	2.279	2.072	25.6	19.6	65 W	26*	55*
2	1 16 1.85	+1 5.7	1.721	1.727	33.2	20.8	74 W	44*	50*	2	1 15 55.02	-18 46.6	2.136	2.036	27.2	19.5	71 W	26*	61*
2	11 16 20.66	+1 41.8	1.660	1.756	33.4	20.7	79 W	43*	55*	2	11 16 15.67	-18 22.1	1.993	2.001	28.6	19.4	76 W	27*	66*
2	21 16 37.56	+2 7.2	1.596	1.785	33.4	20.7	84 W	43*	60*	2	21 16 36.06	-17 35.9	1.850	1.966	29.8	19.2	82 W	27*	72*
3	2 16 52.23	+2 23.6	1.528	1.817	33.1	20.6	90 W	43*	64*	3	2 16 55.96	-16 25.7	1.710	1.932	30.8	19.0	87 W	29*	76*
3	12 17 4.37	+2 33.7	1.458	1.849	32.3	20.5	96 W	42*	66*	3	12 17 15.14	-14 49.2	1.574	1.898	31.5	18.8	93 W	30*	78*
3	22 17 13.61	+2 40.5	1.387	1.882	31.1	20.4	103 W	42	67	3	22 17 33.33	-12 44.4	1.443	1.865	31.9	18.6	98 W	32*	77*
4	1 17 19.53	+2 47.7	1.317	1.915	29.2	20.3	111 W	42	67	4	1 17 50.21	-10 9.3	1.320	1.833	32.0	18.4	104 W	35*	74*
4	11 17 21.76	+3 0.1	1.252	1.949	26.6	20.1	119 W	42	67	4	11 18 5.44	-7 3.4	1.206	1.802	31.7	18.1	109 W	38	71
4	21 17 20.02	+3 22.4	1.193	1.984	23.3	20.0	129 W	42	67	4	21 18 18.67	+3 26.9	1.103	1.773	31.1	17.9	114 W	42	67
5	1 17 14.21	+3 59.5	1.147	2.018	19.1	19.8	139 W	41	68	5	1 18 29.47	+0 37.3	1.012	1.746	30.1	17.6	120 W	46	63
5	11 17 4.76	+4 55.2	1.117	2.053	14.4	19.6	150 W	40	69										
5	21 16 52.55	+6 10.5	1.109	2.087	9.7	19.5	160 W	39	70										
5	31 16 39.05	+7 43.4	1.124	2.122	6.8	19.4	166 W	37	72										
6	5 16 32.37	+8 34.9	1.142	2.139	7.0	19.5	165 E	36	73										
6	10 16 26.00	+9 28.8	1.166	2.156	8.2	19.6	162 E	36	73										
6	15 16 20.12	+10 24.1	1.197	2.173	10.0	19.7	158 E	35	74										
6	20 16 14.88	+11 20.2	1.233	2.189	12.0	19.9	153 E	34	75										
6	25 16 10.40	+12 16.5	1.276	2.206	14.0	20.0	148 E	33	76										
6	30 16 6.74	+13 12.4	1.324	2.223	15.9	20.2	143 E	32	77										
7	10 16 2.03	+15 1.9	1.433	2.255	19.2	20.5	133 E	30	79										
7	20 16 0.72	+16 46.5	1.559	2.287	21.6	20.8	124 E	28*	81										
7	30 16 2.60	+18 25.5	1.696	2.319	23.3	21.1	115 E	26*	82										
8	9 16 7.29	+19 58.4	1.843	2.349	24.4	21.3	107 E	24*	84										
138258 2000 GD₂										70056 1999 JJ₈									
12 23	14 32.05	-8 51.6	1.221	0.994	51.5	21.4	52 W	33*	33*										

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°	
70056 1999 JJ₈									20187 Janapittichová									
<i>(continuation)</i>									<i>(continuation)</i>									
5 6	18 33.84	+ 2 47.8	0.971	1.733	29.5	17.5	122 W	48 61	4 11	16 9.60	-46 7.3	2.060	2.785	16.6	18.1	127 W	—	70
5 11	18 37.47	+ 5 2.5	0.934	1.720	29.0	17.4	124 W	50 59	4 16	16 6.81	-46 21.4	2.003	2.775	15.6	18.0	132 W	—	70
5 16	18 40.31	+ 7 19.9	0.900	1.709	28.4	17.3	127 W	52 57	4 21	16 3.12	-46 30.5	1.950	2.764	14.6	17.9	136 W	—	69
5 21	18 42.32	+ 9 38.1	0.870	1.697	27.8	17.2	129 W	55 54	4 26	15 58.59	-46 33.7	1.902	2.753	13.5	17.8	140 W	—	69
5 26	18 43.49	+11 54.9	0.844	1.686	27.3	17.1	130 W	57 52	5 1	15 53.30	-46 30.1	1.859	2.742	12.3	17.7	144 W	—	69
5 31	18 43.81	+14 7.9	0.821	1.676	26.9	17.0	132 W	59 50	5 6	15 47.40	-46 19.1	1.822	2.731	11.3	17.6	148 W	—	70
6 5	18 43.34	+16 14.5	0.802	1.667	26.6	16.9	133 W	61 48	5 11	15 41.04	-46 0.1	1.791	2.720	10.3	17.5	151 W	—	70
6 10	18 42.10	+18 12.2	0.787	1.658	26.4	16.9	133 W	63 46	5 16	15 34.42	-45 32.8	1.765	2.708	9.6	17.4	154 W	—	70
6 15	18 40.19	+19 58.5	0.775	1.650	26.4	16.8	134 W	65 44	5 21	15 27.73	-44 57.4	1.746	2.696	9.2	17.4	155 E	—	71
6 20	18 37.71	+21 31.1	0.766	1.642	26.5	16.8	134 W	67 42	5 26	15 21.19	-44 14.2	1.734	2.684	9.3	17.4	155 E	1	72
6 25	18 34.82	+22 47.9	0.760	1.636	26.8	16.8	134 W	68 41	5 31	15 15.02	-43 24.1	1.728	2.672	9.9	17.4	153 E	2	73
6 30	18 31.73	+23 47.4	0.757	1.630	27.1	16.8	133 E	69 40	6 5	15 9.38	-42 28.2	1.728	2.660	10.8	17.4	151 E	3	74
7 5	18 28.62	+24 29.0	0.757	1.625	27.6	16.8	132 E	69 40	6 10	15 5.42	-41 28.0	1.735	2.647	11.9	17.4	147 E	4	75
7 10	18 25.71	+24 52.6	0.759	1.621	28.1	16.8	131 E	70 39	6 15	15 0.23	-40 24.7	1.747	2.634	13.3	17.5	143 E	5	76
7 15	18 23.17	+24 58.2	0.764	1.617	28.7	16.8	130 E	70 39	6 20	14 56.90	-39 19.9	1.765	2.621	14.7	17.5	139 E	6	77
7 20	18 21.18	+24 46.7	0.770	1.615	29.4	16.9	129 E	70 39	6 25	14 54.44	-38 14.9	1.789	2.608	16.0	17.6	135 E	7	78
7 25	18 19.92	+24 19.1	0.779	1.613	30.0	16.9	127 E	69 40	6 30	14 52.89	-37 11.0	1.817	2.594	17.4	17.7	130 E	8*	79
7 30	18 19.50	+23 37.1	0.790	1.612	30.6	16.9	126 E	69 40	7 5	14 52.21	-36 9.3	1.849	2.581	18.6	17.7	126 E	9*	80
8 4	18 20.00	+22 42.5	0.803	1.612	31.2	17.0	125 E	68 41	7 10	14 52.38	-35 10.3	1.885	2.567	19.7	17.8	121 E	9*	81
8 9	18 21.45	+21 37.1	0.817	1.613	31.8	17.1	123 E	67 42	7 15	14 53.36	-34 14.8	1.925	2.553	20.8	17.9	117 E	10*	82
8 14	18 23.87	+20 22.7	0.834	1.614	32.3	17.1	122 E	65 44	7 20	14 55.09	-33 23.1	1.967	2.538	21.7	17.9	113 E	10*	83
8 19	18 27.25	+19 1.1	0.853	1.617	32.8	17.2	120 E	64 45	7 30	15 0.68	-31 51.7	2.057	2.510	23.1	18.1	104 E	10*	84
8 24	18 31.58	+17 34.0	0.873	1.620	33.3	17.2	118 E	63 46	8 9	15 8.75	-30 36.3	2.152	2.480	24.0	18.2	96 E	10*	85*
8 29	18 36.83	+16 3.3	0.896	1.624	33.7	17.3	117 E	61 48	8 19	15 18.97	-29 35.2	2.250	2.450	24.4	18.2	89 E	10*	81*
9 3	18 42.91	+14 30.6	0.920	1.629	34.1	17.4	115 E	60 49	8 29	15 31.05	-28 46.3	2.348	2.419	24.4	18.3	82	10*	75*
9 8	18 49.78	+12 57.4	0.947	1.635	34.4	17.5	114 E	58 51	9 8	15 44.75	-28 6.7	2.442	2.387	24.0	18.4	75 E	10*	68*
9 13	18 57.37	+11 24.9	0.976	1.642	34.7	17.6	112 E	56 53	9 18	15 59.86	-27 33.7	2.533	2.355	23.4	18.4	68 E	10*	62*
9 18	19 5.62	+ 9 54.3	1.007	1.649	34.9	17.6	110 E	55 54	9 28	16 16.23	-27 4.7	2.617	2.323	22.4	18.4	62 E	10*	56*
9 23	19 14.47	+ 8 26.8	1.041	1.657	35.1	17.7	108 E	53 56	10 8	16 33.70	-26 36.9	2.694	2.290	21.2	18.4	56 E	10*	50*
9 28	19 23.86	+ 7 3.5	1.077	1.666	35.2	17.8	106 E	52 57	10 18	16 52.15	-26 7.9	2.763	2.257	19.8	18.4	50 E	11*	44*
10 3	19 33.71	+ 5 45.0	1.115	1.675	35.3	17.9	105 E	51 58	10 28	17 11.48	-25 35.4	2.822	2.223	18.2	18.3	44 E	11*	38*
10 8	19 43.96	+ 4 32.0	1.156	1.685	35.3	18.0	103 E	50 59	11 7	17 31.54	-24 57.4	2.871	2.189	16.5	18.3	39 E	10*	32*
10 18	20 5.43	+ 2 24.3	1.244	1.707	35.2	18.2	99 E	47 61*	11 17	17 52.26	-24 12.1	2.911	2.155	14.6	18.2	33 E	10*	26*
10 28	20 27.86	+ 0 42.9	1.342	1.732	34.9	18.4	95 E	46 62*	11 27	18 13.51	-23 17.7	2.939	2.122	12.7	18.1	28 E	10*	20*
11 7	20 50.85	+ 0 31.7	1.447	1.758	34.3	18.6	90 E	44 61*	12 7	18 35.19	-22 13.0	2.958	2.088	10.7	18.0	23 E	9*	14*
11 17	21 14.10	+ 1 20.3	1.561	1.786	33.5	18.7	86 44	58*	12 17	18 57.21	-20 56.7	2.966	2.054	8.6	17.9	18 E	7*	9*
11 27	21 37.38	+ 1 44.8	1.680	1.816	32.5	18.9	81 E	43 55*	12 27	19 19.47	-19 27.9	2.963	2.021	6.6	17.8	14 E	5*	4*
12 7	22 0.49	+ 1 47.7	1.805	1.847	31.3	19.1	77 E	43 50*	1 6	19 41.89	-17 46.0	2.952	1.988	4.6	17.6	9 E	3*	—
12 17	22 23.31	+ 1 32.0	1.934	1.879	29.9	19.2	72 E	43* 46*	1 16	20 4.41	-15 50.6	2.931	1.955	3.0	17.5	6 E	—	—
12 27	22 45.79	+ 1 0.5	2.064	1.913	28.3	19.3	67 E	43* 41*	418198 2008 CN₇₀									
1 6	23 7.87	+ 0 16.2	2.196	1.947	26.6	19.5	62 E	43* 36*	12 23	14 36.17	-13 10.8	0.988	0.830	64.9	20.9	50 W	28*	34*
1 16	23 29.56	+ 0 38.2	2.327	1.981	24.8	19.6	58 E	41* 32*	12 28	15 7.72	-13 23.6	0.983	0.793	66.2	20.8	48 W	27*	32*
162117 1998 SD₁₅									1 2	15 40.50	-13 27.1	0.987	0.755	67.2	20.7	45 W	26*	30*
12 23	14 33.36	-29 15.8	0.889	0.749	73.2	20.7	47 W	13* 39*	1 7	16 14.19	-13 21.7	1.000	0.717	67.6	20.7	42 W	25*	28*
12 28	15 7.18	-28 5.3	0.908	0.719	73.4	20.6	44 W	13* 37*	1 12	16 48.45	-13 8.8	1.022	0.679	67.1	20.6	39 W	24*	25*
1 2	15 40.91	-26 30.8	0.932	0.690	72.9	20.6	42 W	14* 34*	1 17	17 22.95	-12 50.1	1.055	0.642	65.7	20.5	37 W	23*	23*
1 7	16 14.24	-24 36.8	0.964	0.664	71.6	20.5	40 W	15* 31*	1 22	17 57.44	-12 27.9	1.096	0.608	63.1	20.4	33 W	20*	20*
1 12	16 46.98	-22 28.8	1.002	0.643	69.6	20.5	38 W	15* 29*	1 27	18 31.74	-12 4.0	1.146	0.578	59.2	20.2	30 W	18*	18*
1 17	17 19.00	-20 12.5	1.046	0.626	66.7	20.4	36 W	16* 26*	2 1	19 5.74	-11 39.5	1.202	0.553	54.0	20.1	27 W	16*	15*
1 22	17 50.21	-17 53.3	1.096	0.615	63.0	20.4	34 W	16* 24*	2 6	19 39.36	-11 14.9	1.263	0.536	47.8	20.0	24 W	13*	13*
1 27	18 20.53	-15 35.8	1.150	0.611	58.8	20.3	32 W	16* 22*	2 11	20 12.48	-10 49.3	1.325	0.529	40.8	19.8	20 W	10*	11*
2 1	18 49.90	-13 23.4	1.208	0.614	54.3	20.3	30 W	16* 19*	2 21	21 16.58	- 9 48.5	1.444	0.543	26.5	19.7	14 W	5*	6*
2 6	19 18.26	-11 18.0	1.267	0.623	49.7	20.3	29 W	16* 18*	3 2	22 16.51	- 8 26.2	1.550	0.591	15.0	19.6	9 W	—	2*
2 11	19 45.56	- 9 20.7	1.327	0.638	45.1	20.4	27 W	16* 16*	3 12	23 11.37	- 6 40.3	1.641	0.659	8.4	19.7	6 W	—	—
2 16	20 11.77	- 7 31.6	1.386	0.658	40.9	20.4	26 W	15* 15*	3 17	23 36.90	- 5 40.4	1.682	0.696	7.2	19.9	5 W	—	—
2 21	20 36.88	- 5 50.4	1.444	0.683	37.0	20.5	25 W	14* 13*	3 22	0 1.25	- 4 37.1	1.721	0.735	7.3	20.0	5 W	—	—
3 2	21 23.87	- 2 49.1	1.554	0.741	30.6	20.6	22 W	12* 12*	3 27	0 24.53	- 3 31.6	1.757	0.773	7.9	20.2	6 E	—	—
3 12	22 6.89	+ 0 11.6	1.653	0.805	26.0	20.8	21 W	11* 11*	4 1	0 46.81	- 2 25.0	1.792	0.810	8.7	20.4	7 E	—	—
3 22	22 46.56	+ 2 6.6	1.739	0.870	22.9	21.0	20 W	9* 11*	4 6	1 8.21	- 1 18.1	1.826	0.846	9.5	20.6	8 E	—	—
4 1	23 23.49	+ 4 8.6	1.813	0.934	21.0	21.2	20 W	8* 12*	4 11	1 28.81	- 0 11.8	1.858	0.881	10.1	20.7	9 E	—	—
4 11	23 58.24	+ 5 56.2	1.872	0.993	20.3	21.4	20 W	6* 13*	4 16	1 48.72	+ 0 53.5	1.888	0.914	10.6	20.9	10 E	—	1*
20187 Janapittichová									4 21	2 8.01	+ 1 57.0	1.917	0.946	11.0	21.0	10 E	—	1*
12 23	14 35.12	-33 44.5	3.550	2.955	13.9	19.3	46 W	9* 40*	4 26	2 26.76	+ 2 58.4	1.944	0.975	11.3	21.1	11 E	—	1*
1 2	14 49.89	-35 7.8	3.439	2.944														

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°
154269 2002 SM										58683 1998 AJ₁₀									
<i>(continuation)</i>										<i>(continuation)</i>									
2 6	18 15.52	-29 29.2	1.401	0.962	44.7	20.2	43 W	8*	37*	2 11	15 37.97	-15 1.9	2.569	2.682	21.5	20.5	86 W	30	72*
2 11	18 41.83	-29 57.4	1.418	0.964	44.0	20.2	43 W	6*	37*	2 21	15 47.13	-15 22.0	2.410	2.661	21.8	20.4	94 W	30	78*
2 16	19 7.70	-30 5.6	1.438	0.971	43.2	20.2	42 W	5*	36*	3 2	15 54.65	-15 34.2	2.253	2.639	21.6	20.2	102 W	29	80
2 21	19 32.87	-29 55.2	1.459	0.981	42.4	20.2	42 W	4*	36*	3 12	16 0.20	-15 38.7	2.099	2.616	20.9	20.0	110 W	29	80
2 26	19 57.15	-29 28.0	1.482	0.995	41.5	20.3	42 W	3*	35*	3 22	16 3.42	-15 35.6	1.953	2.593	19.5	19.8	120 W	29	80
3 2	20 20.38	-28 46.1	1.507	1.012	40.7	20.3	42 W	2*	35*	4 1	16 3.97	-15 25.3	1.817	2.568	17.5	19.6	129 W	30	79
3 7	20 42.47	-27 51.9	1.531	1.031	39.9	20.4	42 W	1*	35*	4 11	16 1.62	-15 8.1	1.696	2.543	14.8	19.3	140 W	30	79
3 12	21 3.39	-26 47.7	1.556	1.054	39.1	20.4	42 W	1*	35*	4 21	15 56.29	-14 44.9	1.593	2.517	11.3	19.0	151 W	30	79
3 17	21 23.14	-25 35.5	1.581	1.079	38.4	20.5	42 W	—	35*	5 1	15 48.23	-14 16.9	1.512	2.490	7.2	18.7	162 W	31	78
3 22	21 41.76	-24 17.4	1.604	1.106	37.8	20.6	43 W	—	36*	5 11	15 38.10	-13 46.8	1.457	2.462	3.0	18.4	173 W	31	78
3 27	21 59.29	-22 55.1	1.627	1.135	37.2	20.6	44 W	—	36*	5 16	15 32.58	-13 31.9	1.440	2.448	2.3	18.3	174 W	31	78
4 1	22 15.78	-21 30.0	1.648	1.165	36.8	20.7	44 W	—	37*	5 21	15 26.95	-13 17.8	1.429	2.434	3.8	18.4	171 E	32	77
4 6	22 31.32	-20 3.5	1.668	1.197	36.4	20.8	45 W	—	38*	5 26	15 21.38	-13 5.0	1.425	2.419	6.0	18.5	165 E	32	77
4 11	22 45.97	-18 36.4	1.686	1.229	36.1	20.9	46 W	1*	39*	5 31	15 16.04	-12 54.2	1.427	2.404	8.4	18.6	160 E	32	77
4 16	22 59.81	-17 9.7	1.701	1.262	35.9	20.9	47 W	1*	41*	6 10	15 6.64	-12 40.1	1.450	2.374	13.0	18.7	148 E	32	77
4 21	23 12.89	-15 44.0	1.714	1.296	35.7	21.0	49 W	2*	42*	6 20	14 59.67	-12 38.3	1.494	2.343	17.2	18.9	137 E	32	77
4 26	23 25.27	-14 19.8	1.725	1.331	35.6	21.1	50 W	3*	44*	6 30	14 55.69	-12 50.4	1.555	2.312	20.6	19.1	127 E	32*	77
5 1	23 36.99	-12 57.7	1.733	1.365	35.5	21.1	52 W	4*	46*	7 10	14 54.88	-13 16.1	1.628	2.280	23.4	19.3	117 E	31*	77
5 6	23 48.09	-11 37.8	1.739	1.400	35.5	21.2	54 W	5*	48*	7 20	14 57.17	-13 54.1	1.709	2.248	25.4	19.4	108 E	29*	78
5 11	23 58.62	-10 20.5	1.742	1.435	35.4	21.2	55 W	6*	49*	7 30	15 2.37	-14 42.6	1.795	2.215	26.8	19.5	100 E	27*	79
5 16	0 8.60	-9 6.0	1.742	1.470	35.4	21.3	57 W	8*	51*	8 9	15 10.21	-15 39.3	1.882	2.181	27.7	19.6	93 E	24*	80*
5 21	0 18.06	-7 54.4	1.739	1.505	35.4	21.3	60 W	9*	53*	8 19	15 20.45	-16 41.7	1.968	2.148	28.0	19.7	86 E	22*	78*
5 26	0 27.00	-6 45.9	1.733	1.540	35.4	21.4	62 W	11*	55*	8 29	15 32.87	-17 47.6	2.052	2.114	28.0	19.7	79 E	20*	73*
5 31	0 35.43	-5 40.5	1.724	1.574	35.4	21.4	64 W	13*	57*	9 8	15 47.28	-18 54.7	2.132	2.080	27.6	19.8	73 E	19*	67*
6 5	0 43.37	-4 38.4	1.713	1.609	35.4	21.5	67 W	15*	59*	9 18	16 3.53	-20 0.7	2.207	2.046	27.0	19.8	68 E	18*	61*
6 10	0 50.82	-3 39.5	1.699	1.642	35.3	21.5	69 W	18*	61*	9 28	16 21.49	-21 3.3	2.276	2.012	26.1	19.8	62 E	16*	56*
6 15	0 57.75	-2 44.0	1.682	1.676	35.2	21.5	72 W	20*	62*	10 8	16 41.04	-22 0.2	2.339	1.978	25.0	19.8	57 E	15*	51*
58175 1990 SE₁₅										152748 1998 YF₂₇									
12 23	14 36.66	-17 54.3	2.915	2.375	18.0	20.9	48 W	24*	36*	12 23	14 37.02	+20 43.8	1.630	1.535	36.1	20.7	67 W	59*	17*
1 2	14 54.41	-19 6.3	2.786	2.348	19.8	20.9	54 W	24*	42*	1 2	15 10.85	+21 36.7	1.598	1.546	36.4	20.6	69 W	61*	18*
1 12	15 12.15	-20 11.0	2.651	2.319	21.5	20.8	60 W	24*	49*	1 12	15 43.63	+22 33.9	1.574	1.559	36.6	20.6	71 W	63*	20*
1 22	15 29.79	-21 7.7	2.510	2.290	23.1	20.7	66 W	24*	56*	1 22	16 14.89	+23 35.7	1.558	1.574	36.6	20.6	73 W	64*	22*
2 1	15 47.20	-21 55.6	2.365	2.261	24.5	20.6	72 W	23*	63*	2 1	16 44.17	+24 42.2	1.546	1.591	36.6	20.6	74 W	65*	24*
2 11	16 4.19	-22 34.2	2.217	2.231	25.6	20.4	78 W	22*	70*	2 11	17 11.12	+25 53.2	1.537	1.609	36.5	20.6	76 W	66*	26*
2 21	16 20.60	-23 3.0	2.067	2.201	26.6	20.3	84 W	22*	77*	2 21	17 35.50	+27 8.8	1.527	1.629	36.3	20.7	77 W	67*	28*
3 2	16 36.15	-23 21.8	1.918	2.171	27.2	20.1	91 W	22*	84*	3 2	17 57.08	+28 28.7	1.514	1.650	36.2	20.7	79 W	68*	30*
3 12	16 50.57	-23 30.3	1.770	2.140	27.4	19.9	97 W	21	88	3 22	18 31.14	+31 17.0	1.475	1.695	35.8	20.7	84 W	72*	31*
3 22	17 3.53	-23 28.6	1.626	2.109	27.2	19.7	104 W	22	87	4 1	18 43.18	+32 42.4	1.446	1.719	35.5	20.6	87 W	74*	31*
4 1	17 14.61	-23 16.7	1.488	2.078	26.5	19.4	112 W	22	87	4 11	18 51.52	+34 4.4	1.411	1.743	35.1	20.6	91 W	76	30
4 11	17 23.38	-22 54.9	1.356	2.047	25.2	19.2	120 W	22	87	4 21	18 55.83	+35 18.8	1.369	1.768	34.5	20.5	95 W	79*	29
4 21	17 29.38	-22 23.2	1.235	2.017	23.1	18.9	128 W	23	86	5 1	18 55.68	+36 18.3	1.323	1.793	33.6	20.5	100 W	81*	28
5 1	17 32.11	-21 42.0	1.125	1.986	20.1	18.5	137 W	23	86	5 6	18 53.84	+36 39.4	1.299	1.806	33.1	20.4	102 W	82	27
5 11	17 31.29	-20 51.3	1.030	1.956	16.3	18.2	147 W	24	85	5 11	18 50.81	+36 52.9	1.275	1.818	32.5	20.4	105 W	82	27
5 21	17 26.85	-19 52.0	0.952	1.927	11.5	17.8	158 W	25	84	5 16	18 46.57	+36 57.0	1.251	1.831	31.8	20.4	108 W	82	27
5 26	17 23.40	-19 19.6	0.920	1.912	8.8	17.6	163 W	26	83	5 21	18 41.18	+36 49.9	1.228	1.843	31.0	20.3	110 W	82	27
5 31	17 19.27	-18 45.9	0.894	1.898	6.1	17.4	169 W	26	83	5 26	18 34.70	+36 29.4	1.205	1.856	30.1	20.3	113 W	81	28
6 5	17 14.63	-18 11.4	0.872	1.884	3.6	17.2	173 W	27	82	5 31	18 27.30	+35 53.6	1.185	1.868	29.2	20.2	116 W	81	28
6 10	17 9.69	-17 36.9	0.857	1.870	3.0	17.1	175 E	27	82	6 5	18 19.15	+35 0.9	1.167	1.880	28.2	20.2	119 W	80	29
6 15	17 4.64	-17 3.1	0.847	1.856	5.1	17.2	171 E	28	81	6 10	18 10.48	+33 49.9	1.152	1.893	27.2	20.1	122 W	79	30
6 20	16 59.73	-16 31.0	0.842	1.843	8.0	17.3	165 E	28	81	6 15	18 1.56	+32 19.9	1.141	1.905	26.2	20.1	124 W	77	32
6 25	16 55.18	-16 1.4	0.842	1.830	11.1	17.4	160 E	29	80	6 20	17 52.66	+30 31.0	1.134	1.917	25.4	20.1	126 E	76	33
6 30	16 51.23	-15 35.2	0.848	1.817	14.2	17.5	154 E	29	80	6 25	17 44.05	+28 24.1	1.132	1.929	24.7	20.0	128 E	73	36
7 5	16 48.04	-15 13.0	0.858	1.805	17.1	17.7	149 E	30	79	6 30	17 36.00	+26 0.9	1.136	1.941	24.1	20.0	129 E	71	38
7 10	16 45.72	-14 55.2	0.872	1.793	19.8	17.8	143 E	30	79	7 5	17 28.70	+23 24.2	1.145	1.953	23.9	20.1	129 E	68	41
7 20	16 44.04	-14 33.2	0.910	1.770	24.6	18.0	134 E	30	79	7 10	17 22.28	+20 37.2	1.161	1.964	23.8	20.1	129 E	66	43
7 30	16 46.55	-14 28.7	0.959	1.749	28.5	18.2	125 E	31	78	7 15	17 16.85	+17 43.4	1.183	1.976	24.0	20.2	128 E	63	46
8 9	16 53.10	-14 38.4	1.017	1.730	31.5	18.4	117 E	30*	79	7 20	17 12.46	+14 46.0	1.211	1.987	24.4	20.2	126 E	60	49
8 19	17 3.33	-14 57.8	1.081	1.713	33.8	18.5	110 E	30*	79	7 25	17 9.13	+11 48.4	1.245	1.998	25.0	20.3	124 E	57	52
8 29	17 16.84	-15 22.3	1.149	1.698	35.3	18.7	104 E	29*	79	7 30	17 6.84	+8 53.2	1.285	2.009	25.6	20.4	121 E	54	55
9 8	17 33.17	-15 47.1	1.220	1.685	36.3	18.8	98 E	29*	80	8 4	17 5.55	+6 2.8	1.331	2.020	26.3	20.5	118 E	51	58
9 18	17 51.91	-16 8.0	1.293	1.675	36.8	19.0	93 E	28*	80*	8 9	17 5.19	+3 18.8	1.381	2.030	26.9	20.6	115 E	48	61
9 28	18 12.68	-16 21.4	1.368	1.668	36.9	19.1	88 E	28*	77*	8 14	17 5.								