

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

19/21	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°	19/21	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°
<b>480824 1999 JO<sub>6</sub></b>										<b>347558 2000 UP<sub>18</sub></b> (continuation)									
12 23	15 42.46	-10 13.3	2.806	2.090	16.0	21.4	36 W	24*	18*	4 11	19 36.07	-24 44.6	1.673	1.944	31.0	20.3	90 W	18*	84*
1 2	16 2.86	-12 12.3	2.676	2.029	18.3	21.3	40 W	25*	25*	4 21	19 54.58	-23 37.7	1.539	1.910	31.6	20.1	95 W	19*	88*
1 12	16 24.20	-14 9.1	2.540	1.968	20.6	21.2	45 W	25*	31*	5 1	20 11.84	-22 21.2	1.409	1.877	31.9	19.9	101 W	20*	86
1 22	16 46.64	-16 3.6	2.399	1.907	23.0	21.1	49 W	24*	37*	5 11	20 27.59	-20 56.1	1.285	1.845	31.7	19.6	106 W	22*	85
2 1	17 10.30	-17 56.1	2.256	1.845	25.4	21.0	53 W	23*	43*	5 21	20 41.56	-19 23.8	1.167	1.813	31.1	19.4	112 W	24*	83
2 11	17 35.39	-19 46.6	2.113	1.785	27.7	20.8	57 W	22*	49*	5 31	20 53.33	-17 45.5	1.057	1.784	29.8	19.1	119 W	27*	82
2 21	18 2.14	-21 35.2	1.970	1.725	30.1	20.7	61 W	20*	54*	6 10	21 2.53	-16 3.1	0.955	1.755	27.9	18.8	126 W	29*	80
3 2	18 30.86	-23 21.4	1.832	1.666	32.5	20.5	65 W	18*	58*	6 20	21 8.69	-14 18.3	0.864	1.728	25.2	18.4	133 W	31*	78
3 7	18 46.05	-24 13.3	1.764	1.637	33.7	20.4	66 W	17*	60*	6 30	21 11.38	-12 33.9	0.784	1.703	21.7	18.1	142 W	32*	77
3 12	19 1.85	-25 4.1	1.699	1.609	34.8	20.3	68 W	15*	62*	7 10	21 10.40	-10 52.8	0.719	1.681	17.2	17.7	151 W	34*	75
3 17	19 18.33	-25 53.5	1.635	1.581	36.0	20.2	69 W	14*	63*	7 20	21 5.86	-9 18.9	0.668	1.660	12.0	17.4	160 W	36*	73
3 22	19 35.52	-26 41.0	1.574	1.554	37.1	20.1	70 W	13*	64*	7 25	21 2.48	-8 36.1	0.650	1.651	9.4	17.2	165 W	36*	73
3 27	19 53.45	-27 26.2	1.516	1.528	38.3	20.1	72 W	11*	65*	7 30	20 58.58	-7 56.8	0.636	1.643	7.2	17.0	168 W	37*	72
4 1	20 12.14	-28 8.2	1.461	1.503	39.4	20.0	73 W	10*	66*	8 4	20 54.38	-7 21.3	0.626	1.635	6.1	16.9	170 E	38*	71
4 6	20 31.61	-28 46.4	1.409	1.478	40.5	19.9	74 W	9*	66*	8 9	20 50.12	-6 49.9	0.621	1.628	6.9	16.9	169 E	38*	71
4 11	20 51.87	-29 19.7	1.360	1.455	41.5	19.8	74 W	7*	67*	8 19	20 42.39	-6 0.4	0.625	1.616	11.7	17.1	161 E	39*	70
4 16	21 12.87	-29 47.2	1.316	1.433	42.6	19.7	75 W	6*	67*	8 29	20 37.30	-5 26.7	0.645	1.607	17.3	17.4	152 E	40*	69
4 21	21 34.55	-30 7.8	1.275	1.412	43.5	19.7	75 W	4*	67*	9 8	20 36.09	-5 4.3	0.680	1.602	22.5	17.7	143 E	40*	69
4 26	21 56.81	-30 20.6	1.239	1.393	44.5	19.6	76 W	3*	67*	9 13	20 37.09	-4 55.5	0.703	1.600	24.8	17.8	138 E	40*	69
5 1	22 19.50	-30 24.7	1.207	1.375	45.4	19.5	76 W	1*	67*	9 18	20 39.18	-4 47.5	0.728	1.599	26.8	17.9	134 E	40*	69
5 6	22 42.46	-30 19.3	1.180	1.358	46.2	19.5	76 W	—	67*	9 23	20 42.34	-4 39.4	0.756	1.600	28.6	18.1	130 E	40*	69
5 11	23 5.50	-30 4.3	1.157	1.344	46.9	19.4	76 W	—	66*	9 28	20 46.49	-4 30.4	0.786	1.601	30.2	18.2	127 E	40*	69
5 16	23 28.41	-29 39.6	1.139	1.331	47.6	19.4	76 W	—	66*	10 8	20 57.50	-4 7.9	0.853	1.605	32.7	18.5	120 E	41*	68
5 21	23 51.00	-29 5.7	1.124	1.320	48.1	19.4	76 W	—	66*	10 18	21 11.54	-3 36.8	0.928	1.613	34.4	18.7	114 E	41*	68
5 26	0 13.06	-28 23.6	1.113	1.311	48.6	19.3	76 W	—	66*	10 28	21 28.04	-2 54.6	1.010	1.624	35.5	18.9	108 E	42*	67
5 31	0 34.43	-27 34.4	1.105	1.304	48.9	19.3	76 W	—	66*	11 7	21 46.38	-2 0.4	1.098	1.638	36.1	19.1	103 E	43*	66*
6 5	0 54.98	-26 39.2	1.101	1.299	49.2	19.3	76 W	—	67*	11 17	22 6.08	+ 0 54.4	1.192	1.654	36.3	19.4	98 E	44*	64*
6 10	1 14.63	-25 39.5	1.099	1.297	49.3	19.3	76 W	—	67*	11 27	22 26.78	+ 0 22.9	1.291	1.674	36.0	19.5	94 E	45*	60*
6 15	1 33.30	-24 36.7	1.098	1.296	49.3	19.3	76 W	—	67*	12 7	22 48.14	+ 1 50.0	1.396	1.696	35.5	19.7	89 E	47*	56*
6 20	1 50.98	-23 32.2	1.100	1.298	49.3	19.3	76 W	—	68*	12 17	23 9.95	+ 3 25.3	1.505	1.720	34.7	19.9	85 E	48*	51*
6 30	2 23.27	-21 22.7	1.104	1.308	49.0	19.3	76 W	3*	69*	12 27	23 32.05	+ 5 7.1	1.618	1.746	33.7	20.1	80 E	50*	46*
7 10	2 51.62	-19 18.2	1.109	1.327	48.3	19.4	77 W	7*	71*	1 6	23 54.31	+ 6 53.2	1.734	1.774	32.5	20.2	76 E	52*	41*
7 20	3 16.23	-17 23.3	1.111	1.353	47.5	19.4	79 W	12*	73*	1 16	0 16.68	+ 8 41.6	1.853	1.803	31.2	20.4	72 E	53*	37*
7 30	3 37.24	-15 40.6	1.107	1.386	46.4	19.4	81 W	17*	74*	<b>93768 2000 W/V<sub>22</sub></b>									
8 9	3 54.74	-14 10.3	1.097	1.426	45.1	19.4	85 W	23*	76*	12 23	15 43.33	-11 31.8	2.334	1.631	20.3	18.1	35 W	23*	18*
8 19	4 8.68	-12 51.5	1.079	1.470	43.5	19.4	89 W	28*	76*	1 2	16 8.27	-14 5.1	2.300	1.648	21.8	18.1	38 W	23*	24*
8 29	4 18.81	-11 42.0	1.055	1.519	41.5	19.3	95 W	32*	76	1 12	16 33.05	-16 25.9	2.262	1.669	23.3	18.2	42 W	22*	30*
9 3	4 22.35	-11 9.5	1.040	1.545	40.3	19.3	98 W	33*	75	1 22	16 57.63	-18 34.6	2.219	1.692	24.8	18.2	46 W	21*	36*
9 8	4 24.82	-10 37.8	1.025	1.572	38.9	19.3	101 W	34*	75	2 1	17 21.89	-20 31.7	2.171	1.718	26.2	18.2	50 W	20*	42*
9 13	4 26.14	-10 6.3	1.009	1.599	37.4	19.2	105 W	35*	74	2 11	17 45.71	-22 18.4	2.118	1.746	27.5	18.3	55 W	18*	47*
9 18	4 26.27	-9 34.3	0.992	1.627	35.7	19.2	109 W	35*	74	2 21	18 8.97	-23 56.6	2.060	1.776	28.7	18.3	59 W	17*	53*
9 23	4 25.13	-9 0.7	0.976	1.656	33.8	19.1	114 W	36*	73	3 2	18 31.52	-25 28.4	1.997	1.807	29.7	18.3	65 W	16*	58*
9 28	4 22.69	-8 24.5	0.961	1.685	31.6	19.1	118 W	37*	72	3 12	18 53.17	-26 56.4	1.930	1.840	30.4	18.3	70 W	14*	64*
10 3	4 18.96	-7 44.9	0.947	1.714	29.2	19.0	123 W	37*	72	3 22	19 13.76	-28 23.9	1.859	1.875	31.0	18.2	75 W	13*	69*
10 8	4 13.94	-7 0.9	0.935	1.744	26.6	19.0	129 W	38*	71	4 1	19 33.05	-29 54.3	1.786	1.910	31.1	18.2	81 W	11*	74*
10 18	4 0.34	-5 16.9	0.923	1.804	20.7	18.8	140 W	40*	69	4 11	19 50.80	-31 31.4	1.711	1.946	31.0	18.1	88 W	10*	79*
10 28	3 43.08	-3 8.8	0.930	1.865	14.6	18.7	152 W	42*	67	4 21	20 6.74	-33 19.0	1.637	1.983	30.4	18.1	94 W	9*	82*
11 7	3 24.30	-0 39.9	0.962	1.926	9.6	18.7	161 W	44*	65	5 1	20 20.46	-35 20.7	1.565	2.020	29.3	18.0	101 W	7*	81
11 12	3 15.09	+ 0 39.7	0.989	1.957	8.5	18.7	163 W	46*	63	5 6	20 26.36	-36 27.7	1.530	2.038	28.6	17.9	105 W	7*	80
11 17	3 6.39	+ 2 0.9	1.024	1.988	8.8	18.8	162 E	47*	62	5 11	20 31.55	-37 39.1	1.498	2.057	27.7	17.9	109 W	6*	78
11 22	2 58.43	+ 3 22.5	1.065	2.018	10.1	19.0	159 E	48*	61	5 16	20 35.95	-38 54.9	1.467	2.076	26.7	17.8	113 W	5*	77
11 27	2 51.41	+ 4 43.2	1.114	2.049	12.0	19.2	155 E	50*	59	5 21	20 39.47	-40 15.2	1.438	2.095	25.6	17.8	116 W	4*	76
12 2	2 45.41	+ 6 2.3	1.169	2.080	13.9	19.4	149 E	51*	58	5 26	20 42.02	-41 39.4	1.412	2.113	24.4	17.7	120 W	3*	74
12 7	2 40.48	+ 7 19.0	1.231	2.110	15.8	19.6	144 E	52*	57	5 31	20 43.54	-43 6.9	1.389	2.132	23.1	17.7	124 W	2*	73
12 17	2 33.86	+ 9 44.5	1.370	2.170	19.1	20.0	134 E	55*	54	6 5	20 43.94	-44 36.8	1.369	2.151	21.7	17.6	128 W	—	71
12 27	2 31.27	+ 11 59.2	1.527	2.230	21.5	20.4	124 E	57*	52	6 10	20 43.16	-46 7.7	1.354	2.170	20.3	17.5	132 W	—	70
1 6	2 32.17	+ 14 4.0	1.698	2.289	23.0	20.7	115 E	59*	50	6 15	20 41.13	-47 38.3	1.343	2.188	18.9	17.5	136 W	—	68
1 16	2 35.99	+ 16 0.2	1.878	2.347	23.8	21.0	106 E	61*	47*	6 20	20 37.81	-49 6.5	1.336	2.207	17.5	17.5	139 W	—	67
12 23	15 42.72	-27 1.7	1.812	1.103	27.9	21.4	32 W	10*	24*	6 25	20 33.22	-50 30.4	1.334	2.225	16.3	17.4	142 W	—	65
1 2	16 21.69	-26 59.9	1.826	1.136	28.1	21.5	33 W	10*	25*	6 30	20 27.44	-51 47.6	1.338	2.244	15.3	17.4	144 W	—	64
1 12	16 59.09	-26 19.5	1.835	1.170	28.6	21.6	35 W	11*	27*	7 5	20 20.63	-52 56.3	1.347	2.262	14.6	17.4	146 W	—	63
1 22	17 34.68	-25 4.6	1.838	1.205	29.4	21.7	37 W	12*	30*	7 10	20								

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

19/21	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°	19/21	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°
<b>93768 2000 WN<sub>22</sub></b>										<b>2062 Aten</b>									
<i>(continuation)</i>										<i>(continuation)</i>									
10 3	19 34.55	-48 56.9	2.254	2.567	22.8	19.1	96 E	—	67	4 1	23 45.11	-8 51.9	1.775	0.897	21.8	18.9	20 W	—	13*
10 8	19 40.09	-48 11.5	2.328	2.582	22.7	19.2	93 E	—	68	4 6	0 5.49	-7 25.2	1.794	0.913	21.4	18.9	19 W	—	12*
10 13	19 46.10	-47 25.6	2.401	2.597	22.6	19.3	90 E	—	68*	4 11	0 25.39	-5 55.8	1.812	0.930	21.1	19.0	19 W	—	12*
10 18	19 52.53	-46 39.4	2.475	2.612	22.4	19.3	87 E	—	69*	4 16	0 44.84	-4 24.9	1.830	0.946	20.8	19.0	20 W	—	12*
10 23	19 59.30	-45 52.7	2.549	2.626	22.1	19.4	83 E	—	68*	4 21	1 3.88	-2 53.1	1.848	0.962	20.5	19.1	20 W	—	12*
10 28	20 6.37	-45 5.6	2.623	2.641	21.8	19.5	80 E	—	68*	4 26	1 22.55	-1 21.5	1.865	0.978	20.3	19.1	20 W	—	12*
11 2	20 13.70	-44 18.1	2.696	2.655	21.4	19.5	77 E	1	66*	5 1	1 40.87	+0 9.4	1.881	0.993	20.1	19.2	20 W	—	12*
11 7	20 21.23	-43 30.2	2.768	2.669	20.9	19.6	74 E	1	65*	5 11	2 16.67	+3 6.3	1.911	1.023	19.8	19.3	20 W	—	13*
11 17	20 36.81	-41 52.7	2.910	2.696	19.8	19.7	68 E	3*	61*	5 21	2 51.59	+5 53.2	1.938	1.051	19.7	19.3	20 W	—	14*
11 27	20 52.86	-40 13.3	3.047	2.722	18.6	19.7	62 E	5*	55*	5 31	3 25.88	+8 26.9	1.959	1.075	19.7	19.4	21 W	—	14*
12 7	21 9.19	-38 31.8	3.177	2.747	17.3	19.8	56 E	6*	50*	6 10	3 59.78	+10 44.7	1.976	1.096	19.8	19.5	21 W	—	15*
12 17	21 25.65	-36 48.5	3.299	2.772	15.8	19.9	50 E	7*	44*	6 20	4 33.48	+12 44.8	1.987	1.113	20.1	19.5	22 W	—	16*
12 27	21 42.14	-35 3.7	3.411	2.795	14.3	19.9	44 E	7*	38*	6 30	5 7.13	+14 25.8	1.992	1.127	20.5	19.6	23 W	1*	17*
1 6	21 58.56	-33 17.7	3.514	2.818	12.7	19.9	39 E	6*	33*	7 10	5 40.86	+15 46.4	1.991	1.136	21.1	19.6	24 W	4*	17*
1 16	22 14.85	-31 31.0	3.604	2.839	11.1	19.9	34 E	5*	28*	7 20	6 14.79	+16 46.0	1.983	1.142	21.9	19.6	25 W	7*	17*
<b>416591 2004 LC<sub>2</sub></b>										<b>476093 2007 TC<sub>66</sub></b>									
12 23	15 43.49	-9 1.3	0.231	0.809	134.1	21.0	36 W	25*	17*	8 9	7 23.49	+17 39.3	1.947	1.141	23.8	19.7	27 W	14*	17*
12 25	15 28.25	-5 17.4	0.222	0.836	126.3	20.2	43 W	31*	21*	8 19	7 58.43	+17 32.0	1.920	1.134	24.9	19.6	28 W	17*	16*
12 27	15 12.52	-1 18.5	0.214	0.863	118.4	19.6	51 W	38*	25*	8 29	8 33.83	+17 1.7	1.888	1.123	26.2	19.6	29 W	20*	15*
12 29	14 56.30	+2 51.5	0.209	0.890	110.5	19.0	58 W	44*	28*	9 8	9 9.77	+16 7.9	1.851	1.108	27.5	19.6	30 W	22*	14*
12 31	14 39.65	+7 7.9	0.206	0.918	102.6	18.6	66 W	50*	31*	9 18	9 46.37	+14 50.4	1.812	1.090	28.8	19.5	31 W	24*	13*
1 1	14 22.58	+11 25.2	0.205	0.945	94.8	18.3	73 W	56*	34*	9 28	10 23.70	+13 9.1	1.771	1.067	30.1	19.5	32 W	25*	12*
1 3	14 13.90	+13 32.4	0.205	0.958	91.0	18.2	77 W	58*	34*	10 8	11 1.89	+11 4.3	1.730	1.042	31.3	19.4	33 W	26*	11*
1 4	14 5.12	+15 37.7	0.206	0.972	87.2	18.1	81 W	61*	35*	10 18	11 41.06	+8 36.6	1.691	1.014	32.4	19.3	33 W	26*	10*
1 5	13 56.26	+17 40.4	0.207	0.985	83.4	18.0	84 W	63*	36*	10 28	12 21.32	+5 47.7	1.656	0.984	33.3	19.3	33 W	26*	10*
1 6	13 47.32	+19 40.0	0.209	0.999	79.8	17.9	88 W	65*	36*	11 7	13 2.81	+2 40.3	1.627	0.952	33.9	19.2	32 W	26*	9*
1 7	13 38.32	+21 35.8	0.211	1.012	76.2	17.8	92 W	67*	36*	11 17	13 45.66	-0 41.3	1.605	0.919	34.1	19.1	31 W	25*	9*
1 8	13 29.25	+23 27.4	0.213	1.025	72.7	17.7	95 W	68*	36*	11 27	14 7.62	-2 25.4	1.597	0.903	34.0	19.0	31 W	24*	8*
1 9	13 20.13	+25 14.4	0.217	1.038	69.4	17.7	99 W	70*	35*	11 27	14 29.94	-4 10.5	1.592	0.887	33.8	19.0	30 W	23*	8*
1 10	13 10.98	+26 56.3	0.220	1.052	66.1	17.7	102 W	72*	35*	12 2	14 52.65	-5 55.6	1.589	0.872	33.4	18.9	29 W	22*	8*
1 11	13 1.81	+28 33.0	0.224	1.065	62.9	17.6	105 W	74*	34*	12 7	15 15.75	-7 39.5	1.589	0.857	32.8	18.9	28 W	21*	8*
1 12	12 52.63	+30 4.2	0.228	1.078	59.8	17.6	109 W	75*	33*	12 12	15 39.23	-9 21.0	1.591	0.844	32.1	18.8	27 W	19*	8*
1 14	12 34.33	+32 49.8	0.238	1.104	54.1	17.6	115 W	78*	31*	12 17	16 3.11	-10 58.6	1.595	0.831	31.3	18.7	26 W	18*	9*
1 16	12 16.23	+35 12.7	0.249	1.130	48.7	17.6	120 W	80*	29*	12 22	16 27.35	-12 30.9	1.601	0.820	30.2	18.7	25 W	16*	9*
1 18	11 58.46	+37 13.7	0.262	1.156	43.9	17.6	126 W	82*	27*	12 27	16 51.95	-13 56.6	1.609	0.810	29.1	18.6	24 W	15*	9*
1 20	11 41.21	+38 53.9	0.276	1.181	39.5	17.6	130 W	84*	25*	1 1	17 16.87	-15 14.3	1.620	0.802	27.7	18.6	22 W	13*	9*
1 22	11 24.59	+40 14.9	0.291	1.206	35.5	17.7	135 W	85*	24*	1 6	17 42.08	-16 22.8	1.631	0.796	26.3	18.6	21 W	12*	9*
1 24	11 8.76	+41 18.7	0.307	1.231	32.0	17.7	138 W	86*	23*	1 11	18 7.51	-17 20.7	1.644	0.792	24.9	18.5	20 W	10*	9*
1 26	10 53.80	+42 7.1	0.325	1.256	29.0	17.8	142 W	87*	22*	1 16	18 33.11	-18 7.0	1.658	0.790	23.4	18.5	19 W	8*	9*
1 28	10 39.79	+42 42.3	0.343	1.280	26.4	17.9	145 W	88*	21*	<b>276786 2004 KD<sub>1</sub></b>									
1 30	10 26.78	+43 6.1	0.363	1.305	24.2	18.0	147 W	88*	21*	12 23	15 44.62	-25 14.9	2.080	1.342	22.4	21.0	31 W	11*	23*
2 1	10 14.79	+43 20.2	0.383	1.329	22.4	18.1	149 W	88*	21*	12 28	16 3.53	-25 55.3	2.047	1.321	23.3	21.0	32 W	11*	24*
2 3	10 3.81	+43 26.3	0.405	1.352	21.1	18.2	150 W	88*	21*	1 2	16 22.94	-26 27.1	2.015	1.302	24.1	20.9	33 W	10*	25*
2 5	9 53.80	+43 25.9	0.427	1.376	20.1	18.3	151 W	88*	21*	1 7	16 42.81	-26 49.5	1.985	1.283	24.9	20.9	33 W	10*	26*
2 7	9 44.73	+43 20.0	0.451	1.399	19.5	18.5	152 W	88*	21*	1 12	17 3.09	-27 1.8	1.956	1.265	25.7	20.8	34 W	10*	27*
2 9	9 36.55	+43 9.8	0.475	1.422	19.2	18.6	152 W	88*	21*	1 17	17 23.68	-27 3.3	1.930	1.247	26.4	20.8	34 W	9*	27*
2 11	9 29.20	+42 56.1	0.500	1.445	19.1	18.8	151 E	88*	21*	1 22	17 44.52	-26 53.4	1.905	1.231	27.1	20.8	35 W	9*	28*
2 13	9 22.63	+42 39.7	0.525	1.468	19.2	18.9	151 E	88*	21*	1 27	18 5.49	-26 31.8	1.882	1.217	27.7	20.7	35 W	9*	29*
2 15	9 16.77	+42 21.1	0.552	1.490	19.5	19.1	150 E	87*	22*	2 1	18 26.49	-25 58.4	1.862	1.203	28.3	20.7	35 W	9*	29*
2 17	9 11.57	+42 0.8	0.579	1.512	19.9	19.2	149 E	87*	22*	2 6	18 47.43	-25 13.3	1.843	1.191	28.9	20.7	36 W	8*	29*
2 19	9 6.98	+41 39.2	0.607	1.534	20.4	19.4	147 E	87*	22*	2 11	19 8.21	-24 16.7	1.827	1.180	29.4	20.7	36 W	8*	30*
2 21	9 2.95	+41 16.7	0.635	1.556	20.9	19.5	146 E	86*	23*	2 16	19 28.75	-23 9.2	1.813	1.171	29.9	20.6	36 W	8*	30*
2 26	8 55.04	+40 17.8	0.710	1.609	22.3	19.9	142 E	85*	24*	2 21	19 48.98	-21 51.3	1.801	1.164	30.3	20.6	36 W	8*	30*
3 2	8 49.76	+39 17.4	0.788	1.661	23.6	20.2	138 E	84*	25*	2 26	20 8.83	-20 24.1	1.791	1.158	30.6	20.6	37 W	9*	30*
3 7	8 46.58	+38 17.2	0.870	1.712	24.8	20.5	134 E	83*	26*	3 2	20 28.25	-18 48.4	1.783	1.154	31.0	20.6	37 W	9*	31*
3 12	8 45.10	+37 18.0	0.955	1.762	25.8	20.8	129 E	82*	27*	3 7	20 47.23	-17 5.4	1.777	1.152	31.2	20.6	37 W	9*	31*
3 17	8 44.99	+36 20.4	1.043	1.810	26.7	21.1	125 E	81*	28*	3 12	21 5.74	-15 16.1	1.773	1.152	31.5	20.6	37 W	9*	31*
3 22	8 45.99	+35 24.4	1.133	1.857	27.3	21.3	121 E	80*	29*	3 17	21 23.79	-13 21.6	1.770	1.153	31.7	20.6	38 W	10*	31*
12 23	15 43.75	-8 10.8	1.428	0.865	42.6	18.9	37 W	26*	17*	3 22	21 41.38	-11 23.0	1.769	1.157	31.9	20.6	38 W	10*	32*
12 28	16 7.74	-9 37.2	1.433	0.851	42.1	18.9	35 W	25*	17*	3 27	21 58.53	-9 21.5	1.770	1.162	32.0	20.6	38 W	10*	32*
1 2	16 32.04	-10 59.1	1.442	0.838	41.4	18.8	34 W	23*	18*	4 1	22 15.24	-7 18.0	1.771	1.169	32.2	20.6	39 W	11*	32*
1 7	16 56.63	-12 15.2	1.452	0.826	40.5	18.8	33 W	21*	18*	4 6	22 31.54	-5 13.6	1.774	1.177	32.3	20.7	39 W	12*	32*
1 12	17 21.46	-13 24.5	1.465	0.815	39.5</														

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

19/21	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°	19/21	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°	
<b>276786 2004 KD<sub>1</sub></b>										<b>21028 1989 TO</b>										
<i>(continuation)</i>										<i>(continuation)</i>										
6	5	1 23.90	+17 0.2	1.807	1.378	33.9	21.1	49 W	24* 36*	7	15	16 32.97	-51 13.1	2.231	3.022	14.1	18.2	134 E	—	65
6	10	1 36.83	+18 26.4	1.804	1.400	34.1	21.1	51 W	26* 36*	7	20	16 29.90	-50 27.4	2.268	3.020	15.0	18.3	130 E	—	66
6	15	1 49.58	+19 48.0	1.800	1.422	34.3	21.2	52 W	28* 36*	7	25	16 27.81	-49 40.9	2.310	3.017	15.9	18.4	126 E	—	66
6	20	2 1.13	+21 5.0	1.795	1.445	34.5	21.2	54 W	30* 36*	7	30	16 26.67	-48 54.3	2.355	3.014	16.7	18.4	122 E	—	67
6	25	2 14.47	+22 17.4	1.787	1.467	34.7	21.2	55 W	32* 36*	8	4	16 26.44	-48 8.3	2.404	3.011	17.4	18.5	118 E	—	68
6	30	2 26.61	+23 25.1	1.778	1.490	34.9	21.3	57 W	35* 36*	8	9	16 27.07	-47 23.5	2.456	3.008	18.0	18.6	114 E	—	69
7	5	2 38.52	+24 28.3	1.767	1.513	35.0	21.3	59 W	37* 36*	8	14	16 28.49	-46 40.3	2.511	3.005	18.5	18.6	110 E	—	69
7	10	2 50.19	+25 27.1	1.754	1.536	35.2	21.3	61 W	40* 35*	8	19	16 30.66	-45 58.9	2.567	3.001	19.0	18.7	106 E	—	70
7	15	3 1.60	+26 21.6	1.739	1.559	35.4	21.3	63 W	43* 35*	8	24	16 33.51	-45 19.5	2.625	2.997	19.3	18.8	102 E	—	71
7	20	3 12.73	+27 11.9	1.722	1.582	35.5	21.3	65 W	46* 35*	8	29	16 37.00	-44 42.1	2.685	2.993	19.5	18.8	98 E	—	71*
7	25	3 23.54	+27 58.1	1.703	1.605	35.6	21.3	67 W	49* 34*	9	3	16 41.07	-44 6.8	2.745	2.988	19.7	18.9	94 E	—	71*
7	30	3 34.01	+28 40.4	1.682	1.627	35.7	21.3	69 W	52* 34*	9	8	16 45.66	-43 33.3	2.806	2.983	19.7	18.9	90 E	—	71*
8	4	3 44.10	+29 19.0	1.659	1.650	35.7	21.3	72 W	55* 34*	9	18	16 56.25	-42 31.7	2.928	2.973	19.6	19.0	83 E	—	68*
8	9	3 53.78	+29 54.0	1.634	1.672	35.7	21.3	74 W	58* 34*	9	28	17 8.49	-41 35.9	3.047	2.962	19.1	19.0	76 E	—	64*
8	14	4 3.01	+30 25.7	1.608	1.694	35.6	21.3	77 W	62* 33*	10	8	17 22.07	-40 44.3	3.163	2.950	18.4	19.1	69 E	—	59*
8	19	4 11.75	+30 54.3	1.579	1.716	35.5	21.3	80 W	65* 33*	10	18	17 36.79	-39 55.2	3.272	2.937	17.4	19.1	62 E	—	54*
8	24	4 19.92	+31 20.0	1.549	1.738	35.2	21.3	83 W	68* 33*	10	28	17 52.44	-39 7.2	3.373	2.923	16.2	19.1	55 E	—	48*
8	29	4 27.48	+31 42.8	1.517	1.759	34.9	21.3	86 W	71* 32*	11	7	18 8.83	-38 18.7	3.464	2.908	14.9	19.1	49 E	—	42*
9	3	4 34.39	+32 3.1	1.484	1.780	34.5	21.2	89 W	74* 32	11	17	18 25.81	-37 28.4	3.544	2.893	13.3	19.1	42 E	—	36*
9	8	4 40.57	+32 21.0	1.450	1.801	34.0	21.2	92 W	76* 32	11	27	18 43.23	-36 35.4	3.611	2.876	11.7	19.1	36 E	—	30*
9	13	4 45.95	+32 36.7	1.415	1.821	33.3	21.2	96 W	77* 31	12	7	19 0.96	-35 38.6	3.666	2.858	10.0	19.0	30 E	—	24*
9	18	4 50.45	+32 50.2	1.380	1.841	32.5	21.1	100 W	78 31	12	17	19 18.88	-34 37.5	3.706	2.839	8.2	19.0	24 E	—	18*
9	23	4 53.99	+33 1.6	1.344	1.860	31.6	21.0	104 W	78 31	12	27	19 36.88	-33 31.7	3.731	2.820	6.5	18.9	19 E	—	13*
9	28	4 56.50	+33 10.8	1.308	1.880	30.4	21.0	108 W	78 31	1	6	19 54.85	-32 20.9	3.742	2.799	5.0	18.8	14 E	—	8*
10	3	4 57.91	+33 17.6	1.273	1.898	29.1	20.9	113 W	78 31	1	16	20 12.71	-31 5.0	3.737	2.778	3.9	18.7	11 E	—	3*
10	8	4 58.14	+33 21.7	1.239	1.917	27.5	20.8	117 W	78 31	<b>191759 2004 TA<sub>12</sub></b>										
10	13	4 57.12	+33 22.9	1.206	1.935	25.8	20.7	122 W	78 31	12	23	15 45.19	-11 2.1	2.818	2.089	15.6	20.7	35 W	23*	18*
10	18	4 54.81	+33 20.3	1.176	1.953	23.8	20.6	128 W	78 31	1	2	16 8.10	-11 25.8	2.705	2.044	17.8	20.6	39 W	25*	23*
10	23	4 51.21	+33 13.4	1.149	1.970	21.5	20.5	133 W	78 31	1	12	16 31.65	-11 35.7	2.589	2.000	19.9	20.6	44 W	27*	28*
10	28	4 46.37	+33 1.4	1.125	1.987	19.1	20.4	139 W	78 31	1	22	16 55.79	-11 30.2	2.470	1.956	22.0	20.5	48 W	28*	34*
11	2	4 40.39	+32 43.5	1.106	2.003	16.4	20.3	145 W	78 31	2	1	17 20.44	-11 7.9	2.351	1.913	24.0	20.4	52 W	29*	39*
11	7	4 33.41	+32 19.2	1.092	2.019	13.6	20.2	151 W	77 32	2	11	17 45.50	-10 27.8	2.233	1.871	26.0	20.3	56 W	30*	43*
11	12	4 25.66	+31 48.0	1.083	2.034	10.6	20.1	158 W	77 32	2	21	18 10.89	-9 29.1	2.116	1.831	27.8	20.2	60 W	30*	47*
11	17	4 17.41	+31 9.9	1.081	2.049	7.8	20.0	164 W	76 33	3	2	18 36.46	-8 11.7	2.003	1.792	29.6	20.1	63 W	31*	51*
11	22	4 8.98	+30 25.6	1.086	2.064	5.3	19.9	169 W	75 34	3	12	19 2.12	-6 36.0	1.895	1.754	31.3	19.9	67 W	32*	54*
11	27	4 0.68	+29 36.3	1.098	2.078	4.2	19.9	171 E	75 34	3	22	19 27.74	-4 43.2	1.791	1.720	32.9	19.8	70 W	34*	57*
12	2	3 52.83	+28 43.5	1.116	2.092	5.3	20.0	169 E	74 35	4	1	19 53.21	-2 35.1	1.693	1.687	34.4	19.7	73 W	35*	58*
12	7	3 45.66	+27 48.9	1.142	2.105	7.7	20.2	163 E	73 36	4	11	20 18.43	0 14.4	1.600	1.658	35.8	19.6	75 W	37*	59*
12	12	3 39.35	+26 54.4	1.174	2.118	10.2	20.3	158 E	72 37	4	21	20 43.31	+2 15.6	1.513	1.632	37.0	19.5	78 W	38*	59*
12	17	3 34.06	+26 1.5	1.213	2.130	12.7	20.5	152 E	71 38	5	1	21 7.73	+4 51.0	1.432	1.609	38.1	19.3	81 W	40*	58*
12	22	3 29.86	+25 11.9	1.257	2.142	15.1	20.7	146 E	70 39	5	6	21 19.75	+6 9.3	1.394	1.600	38.6	19.3	82 W	41*	57*
12	27	3 26.76	+24 26.4	1.307	2.153	17.2	20.9	140 E	69 40	5	11	21 31.63	+7 27.2	1.356	1.591	39.1	19.2	83 W	43*	56*
1	1	3 24.74	+23 45.9	1.361	2.164	19.0	21.0	134 E	69 40	5	16	21 43.35	+8 44.1	1.320	1.583	39.5	19.2	84 W	44*	55*
1	6	3 23.76	+23 10.5	1.420	2.175	20.6	21.2	129 E	68 41	5	21	21 54.90	+9 59.6	1.284	1.577	39.8	19.1	86 W	45*	54
1	11	3 23.76	+22 40.3	1.481	2.185	22.0	21.3	124 E	68 41	5	26	22 6.25	+11 12.8	1.250	1.571	40.1	19.0	87 W	47*	53
1	16	3 24.66	+22 15.2	1.546	2.194	23.2	21.5	119 E	67 42	5	31	22 17.38	+12 23.1	1.216	1.567	40.3	19.0	89 W	48*	52
12	23	15 44.76	-36 28.4	3.694	2.910	10.4	19.1	32 W	1* 26*	6	5	22 28.27	+13 29.8	1.183	1.564	40.5	18.9	90 W	50*	51
1	2	16 1.87	-37 45.0	3.635	2.925	12.0	19.2	38 W	2* 32*	6	10	22 38.91	+14 32.5	1.151	1.561	40.5	18.9	92 W	52*	49
1	12	16 18.73	-38 58.3	3.563	2.939	13.5	19.2	44 W	2* 38*	6	15	22 49.26	+15 30.3	1.119	1.561	40.5	18.8	94 W	54*	48
1	22	16 35.21	-40 8.7	3.479	2.952	14.9	19.2	50 W	2* 44*	6	20	22 59.28	+16 22.8	1.087	1.561	40.4	18.7	96 W	56*	48
2	1	16 51.14	-41 16.9	3.383	2.964	16.2	19.2	57 W	2* 50*	6	25	23 8.91	+17 9.0	1.057	1.562	40.1	18.7	98 W	58*	47
2	11	17 6.31	-42 23.6	3.278	2.975	17.3	19.2	64 W	1* 56*	6	30	23 18.13	+17 48.3	1.026	1.565	39.8	18.6	100 W	60*	46
2	21	17 20.51	-43 29.8	3.165	2.985	18.2	19.1	71 W	1* 61*	7	5	23 26.89	+18 19.9	0.996	1.569	39.3	18.5	102 W	61*	46
3	2	17 33.46	-44 36.6	3.046	2.994	18.9	19.1	78 W	— 65*	7	10	23 35.13	+18 43.3	0.967	1.573	38.6	18.5	105 W	63*	45
3	12	17 44.87	-45 45.0	2.923	3.002	19.2	19.0	85 W	— 68*	7	15	23 42.79	+18 57.5	0.938	1.579	37.8	18.4	108 W	64*	45
3	17	17 49.88	-46 20.2	2.861	3.006	19.3	19.0	89 W	— 69*	7	20	23 49.80	+19 1.7	0.910	1.587	36.8	18.3	111 W	64*	45
3	22	17 54.38	-46 56.0	2.798	3.009	19.3	18.9	92 W	— 69*	7	25	23 56.09	+18 55.0	0.883	1.595	35.6	18.2	114 W	64	45
3	27	17 58.29	-47 32.7	2.736	3.012	19.2	18.9	96 W	— 68	8	3	0 1.60	+18 36.5	0.857	1.604	34.1	18.1	118 W	64	45
4	1	18 1.56	-48 10.1	2.675	3.015	19.0	18.8	100 W	— 68	8	8	0 6.28	+18 5.5	0.832	1.614	32.4	18.0	122 W	63	46
4	6	18 4.14	-48 48.2	2.614	3.018	18.8	18.7	104 W	— 67	8	14	0 10.09	+17 21.4	0.809	1.625	30.4	17.9	126 W	62	47
4	11	18 5.97	-49 26.																	



EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

19/21	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	$45^\circ$ - $26^\circ$	19/21	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	$45^\circ$ - $26^\circ$	
<b>248298 2005 LX<sub>19</sub></b> (continuation)									<b>1474 Beira</b> (continuation)									
9 13	20 35.52	+47 59.2	0.797	1.536	35.9	18.1	116 E	87	3 7	17 8.98	-49 43.7	3.869	3.931	14.6	19.4	86 W	-	65*
9 18	20 27.18	+48 21.4	0.830	1.544	36.3	18.2	114 E	87	3 12	17 12.05	-50 15.7	3.792	3.922	14.7	19.3	90 W	-	66*
9 23	20 21.02	+48 29.4	0.863	1.554	36.6	18.3	112 E	87	3 17	17 14.60	-50 48.1	3.715	3.914	14.7	19.3	94 W	-	65
9 28	20 17.01	+48 27.1	0.897	1.564	36.8	18.4	111 E	87	3 22	17 16.60	-51 20.9	3.638	3.906	14.6	19.2	98 W	-	65
10 3	20 15.06	+48 17.9	0.932	1.575	36.9	18.5	109 E	87	3 27	17 17.97	-51 53.9	3.563	3.897	14.5	19.2	102 W	-	64
10 8	20 15.01	+48 4.2	0.966	1.587	36.9	18.6	108 E	87	4 1	17 18.69	-52 26.8	3.489	3.888	14.3	19.1	106 W	-	64
10 13	20 16.73	+47 47.7	1.001	1.600	36.7	18.7	106 E	87	4 6	17 18.70	-52 59.4	3.417	3.879	14.0	19.1	110 W	-	63
10 18	20 20.08	+47 30.0	1.035	1.614	36.6	18.8	105 E	87	4 11	17 17.97	-53 31.3	3.347	3.869	13.7	19.0	114 W	-	62
10 23	20 24.93	+47 12.1	1.069	1.629	36.3	18.9	104 E	88	4 16	17 16.46	-54 2.2	3.280	3.860	13.2	18.9	118 W	-	62
10 28	20 31.12	+46 54.9	1.103	1.644	36.1	19.0	103 E	88	4 21	17 14.12	-54 31.4	3.217	3.850	12.7	18.9	122 W	-	61
11 2	20 38.55	+46 39.0	1.138	1.660	35.7	19.0	102 E	88	5 1	17 6.99	-55 22.6	3.102	3.829	11.6	18.7	130 W	-	61
11 7	20 47.08	+46 24.4	1.172	1.677	35.4	19.1	101 E	89	5 11	16 56.73	-55 59.3	3.006	3.808	10.4	18.6	137 W	-	60
11 12	20 56.63	+46 11.3	1.206	1.694	35.1	19.2	101 E	89	5 21	16 43.95	-56 16.3	2.931	3.786	9.3	18.5	143 W	-	60
11 17	21 7.13	+45 59.8	1.241	1.712	34.7	19.3	100 E	89	5 26	16 36.92	-56 15.8	2.903	3.774	9.0	18.5	145 W	-	60
11 22	21 18.47	+45 50.1	1.276	1.731	34.3	19.3	99 E	89	5 31	16 29.69	-56 9.0	2.881	3.762	8.7	18.4	146 E	-	60
11 27	21 30.57	+45 42.0	1.312	1.750	33.9	19.4	98 E	89	6 5	16 22.44	-55 55.7	2.865	3.750	8.7	18.4	146 E	-	60
12 2	21 43.35	+45 35.3	1.349	1.769	33.6	19.5	97 E	89	6 10	16 15.36	-55 36.1	2.856	3.738	8.8	18.4	146 E	-	60
12 7	21 56.73	+45 29.8	1.388	1.789	33.2	19.6	96 E	89	6 15	16 8.60	-55 10.7	2.852	3.726	9.1	18.4	144 E	-	61
12 12	22 10.64	+45 25.2	1.427	1.809	32.8	19.6	95 E	89	6 20	16 2.33	-54 39.9	2.856	3.713	9.6	18.4	142 E	-	61
12 17	22 25.01	+45 21.4	1.468	1.829	32.4	19.7	94 E	89	6 25	15 56.66	-54 4.5	2.865	3.700	10.2	18.4	140 E	-	62
12 22	22 39.78	+45 18.3	1.511	1.850	32.1	19.8	93 E	87	6 30	15 51.70	-53 25.4	2.880	3.687	10.9	18.5	137 E	-	63
12 27	22 54.86	+45 15.5	1.555	1.871	31.7	19.9	92 E	85	7 5	15 47.51	-52 43.4	2.901	3.673	11.6	18.5	133 E	-	63
1 1	23 10.19	+45 13.0	1.602	1.892	31.3	19.9	91 E	84	7 10	15 44.13	-51 59.6	2.926	3.660	12.4	18.5	130 E	-	64
1 6	23 25.70	+45 10.4	1.650	1.914	30.9	20.0	90 E	82	7 15	15 41.55	-51 14.6	2.957	3.646	13.1	18.6	126 E	-	65
1 11	23 41.34	+45 7.5	1.701	1.935	30.5	20.0	88 E	81	7 20	15 39.79	-50 29.3	2.992	3.632	13.7	18.6	122 E	-	66
1 16	23 57.07	+45 4.3	1.753	1.957	30.1	20.2	87 E	79	7 25	15 38.82	-49 44.3	3.030	3.617	14.4	18.7	118 E	-	66
12 23	15 46.14	-16 16.2	0.930	0.542	79.1	19.2	33 W	19*	7 30	15 38.61	-49 0.3	3.072	3.603	14.9	18.7	114 E	-	67
12 25	15 49.58	-15 29.6	0.964	0.574	74.7	19.2	34 W	20*	8 4	15 39.12	-48 17.6	3.116	3.588	15.4	18.8	110 E	-	68
12 27	15 53.39	-14 49.1	0.997	0.606	70.9	19.3	36 W	21*	8 9	15 40.30	-47 36.7	3.163	3.573	15.9	18.8	106 E	-	68
12 29	15 57.44	-14 13.5	1.029	0.638	67.7	19.4	37 W	22*	8 14	15 42.13	-46 57.7	3.212	3.558	16.2	18.8	102 E	-	69
12 31	16 1.66	-13 41.9	1.058	0.671	64.9	19.5	38 W	23*	8 19	15 44.55	-46 20.9	3.262	3.542	16.5	18.9	98 E	-	70*
1 2	16 5.96	-13 13.4	1.086	0.703	62.4	19.5	39 W	24*	8 29	15 51.03	-45 13.9	3.366	3.510	16.7	18.9	90 E	-	68*
1 7	16 16.82	-12 12.4	1.149	0.782	57.5	19.7	42 W	26*	9 8	15 59.43	-44 15.6	3.469	3.477	16.7	19.0	82 E	-	65*
1 12	16 27.49	-11 20.8	1.203	0.860	53.9	19.9	45 W	27*	9 18	16 9.50	-43 25.4	3.570	3.444	16.3	19.0	75 E	-	61*
1 17	16 37.76	-10 34.6	1.248	0.935	51.1	20.1	48 W	29*	9 28	16 21.03	-42 42.0	3.666	3.409	15.7	19.0	67 E	-	56*
1 22	16 47.49	-9 51.0	1.285	1.007	49.0	20.3	51 W	30*	10 8	16 33.80	-42 4.1	3.754	3.373	14.9	19.0	60 E	-	50*
1 27	16 56.63	-9 8.3	1.315	1.076	47.3	20.4	54 W	31*	10 18	16 47.65	-41 30.1	3.832	3.336	13.9	19.0	53 E	-	44*
2 1	17 5.13	-8 25.5	1.338	1.143	46.0	20.6	57 W	33*	10 28	17 2.45	-40 58.6	3.899	3.299	12.7	19.0	47 E	-	39*
2 6	17 12.98	-7 41.8	1.354	1.208	44.8	20.7	60 W	34*	11 7	17 18.05	-40 28.1	3.953	3.260	11.3	18.9	40 E	-	33*
2 11	17 20.15	-6 56.7	1.365	1.270	43.8	20.8	63 W	35*	11 17	17 34.33	-39 57.4	3.992	3.220	9.9	18.8	34 E	-	27*
2 16	17 26.63	-6 9.8	1.371	1.329	42.9	20.9	66 W	36*	11 27	17 51.17	-39 25.1	4.016	3.179	8.4	18.8	28 E	-	21*
2 21	17 32.40	-5 20.9	1.371	1.387	42.0	20.9	70 W	37*	12 7	18 8.45	-38 50.4	4.024	3.137	6.9	18.7	23 E	-	15*
2 26	17 37.40	-4 29.7	1.368	1.443	41.1	21.0	73 W	39*	12 17	18 26.06	-38 12.1	4.016	3.095	5.6	18.6	18 E	-	10*
3 2	17 41.62	-3 36.3	1.360	1.496	40.3	21.0	77 W	40*	12 27	18 43.90	-37 29.8	3.991	3.051	4.7	18.5	15 E	-	5*
3 7	17 45.00	-2 40.5	1.349	1.548	39.3	21.1	81 W	41*	1 6	19 1.85	-36 42.7	3.949	3.006	4.6	18.4	14 W	-	2*
3 12	17 47.52	-1 42.5	1.335	1.598	38.3	21.1	85 W	42*	1 16	19 19.83	-35 50.6	3.891	2.960	5.4	18.4	16 W	-	7*
3 17	17 49.11	-0 42.3	1.318	1.646	37.2	21.1	90 W	44*	<b>63164 2000 YU<sub>14</sub></b>									
3 22	17 49.72	+0 20.0	1.300	1.692	36.0	21.1	94 W	45*	12 23	15 46.36	-20 56.2	3.101	2.320	12.8	20.8	32 W	15*	
3 27	17 49.28	+1 23.8	1.281	1.737	34.6	21.1	99 W	46*	1 2	16 6.55	-22 2.8	2.994	2.285	15.0	20.8	37 W	16*	
4 1	17 47.74	+2 28.9	1.261	1.780	33.1	21.0	103 W	47*	1 12	16 27.17	-23 1.4	2.879	2.250	17.1	20.8	42 W	17*	
4 6	17 45.06	+3 34.5	1.241	1.822	31.4	21.0	108 W	49	1 22	16 48.18	-23 51.3	2.757	2.215	19.1	20.7	48 W	17*	
4 11	17 41.21	+4 39.7	1.223	1.862	29.6	21.0	113 W	50	2 1	17 9.50	-24 31.9	2.628	2.179	21.1	20.6	53 W	17*	
4 16	17 36.18	+5 43.6	1.207	1.901	27.7	20.9	118 W	51	2 11	17 31.06	-25 2.8	2.495	2.142	23.0	20.5	58 W	17*	
4 21	17 29.96	+6 44.9	1.193	1.939	25.6	20.9	124 W	52	2 21	17 52.76	-25 23.8	2.358	2.106	24.8	20.4	63 W	17*	
4 26	17 22.61	+7 42.1	1.183	1.975	23.4	20.8	129 W	53	3 2	18 14.51	-25 34.9	2.219	2.069	26.4	20.3	68 W	17*	
5 1	17 14.25	+8 33.6	1.177	2.010	21.2	20.8	134 W	54	3 12	18 36.18	-25 36.3	2.078	2.032	27.9	20.2	73 W	17*	
5 6	17 5.03	+9 17.6	1.177	2.044	19.2	20.8	138 W	54	3 22	18 57.67	-25 28.6	1.938	1.996	29.3	20.0	79 W	17*	
5 11	16 55.17	+9 53.0	1.183	2.077	17.3	20.8	142 W	55	4 1	19 18.82	-25 12.5	1.799	1.959	30.5	19.8	84 W	17*	
5 16	16 44.91	+10 18.4	1.195	2.108	15.8	20.8	146 W	55	4 11	19 39.51	-24 49.1	1.662	1.923	31.4	19.7	89 W	17*	
5 21	16 34.52	+10 33.2	1.214	2.138	14.7	20.8	148 W	56	4 21	19 59.60	-24 19.8	1.529	1.888	32.1	19.5	94 W	18*	
5 26	16 24.28	+10 37.1	1.240	2.167	14.3	20.9	148 W	56	5 1	20 18.87	-23 46.5	1.401	1.853	32.5	19.2	99 W	19*	
5 31	16 14.46	+10 30.5	1.272	2.195	14.5	20.9	147 E	56	5 11	20 37.14	-23 11.3	1.278	1.819	32.5	19.0	105 W	19*	
6 5	16 5.27	+10 14.0	1.312	2.222	15.1	21.1	145 E	55	5 21	20 54.18	-22 36.5	1.161	1.786	32.1	18.7	110 W	21*	
6 10	15 56.90	+9 49.0	1.358	2.248	16.1	21.2	142 E	55	5 31	21 9.63	-22 5.0	1.052	1.755	31.2	18.5	116 W	22*	
6 15	15 49.44	+9 16.6	1.409	2.272	17.2	21.3	139 E	54	6 10	21								

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

19/21	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°	19/21	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°
<b>63164 2000 YU<sub>14</sub></b> (continuation)										<b>307067 2002 AJ<sub>10</sub></b> (continuation)									
9 18	21 26.42	-20 39.7	0.658	1.576	23.2	17.0	142 E	24	85	5 6	18 15.56	-58 18.7	2.396	3.077	15.7	20.3	124 W	-	58
9 28	21 31.11	-19 17.2	0.711	1.579	27.3	17.3	134 E	26	83	5 11	18 12.29	-58 54.7	2.340	3.063	15.1	20.2	128 W	-	57
10 8	21 39.57	-17 39.0	0.775	1.586	30.5	17.6	126 E	27	82	5 16	18 7.82	-59 27.6	2.289	3.048	14.5	20.1	131 W	-	57
10 13	21 45.01	-16 45.1	0.810	1.591	31.7	17.7	123 E	28	81	5 21	18 2.15	-59 56.2	2.242	3.033	13.9	20.1	134 W	-	56
10 18	21 51.16	-15 48.3	0.848	1.597	32.8	17.8	120 E	29	80	5 26	17 55.36	-60 19.2	2.199	3.018	13.3	20.0	137 W	-	56
10 23	21 57.95	-14 49.0	0.888	1.604	33.7	18.0	117 E	30	79	5 31	17 47.56	-60 35.5	2.162	3.003	12.8	19.9	139 W	-	55
10 28	22 5.30	-13 47.2	0.930	1.611	34.4	18.1	114 E	31	78	6 5	17 38.97	-60 43.9	2.130	2.987	12.3	19.9	141 W	-	55
11 7	22 21.32	-11 37.6	1.019	1.628	35.3	18.4	108 E	33	76	6 10	17 29.81	-60 43.5	2.104	2.972	12.1	19.8	142 W	-	55
11 17	22 38.74	-9 21.3	1.116	1.648	35.8	18.6	103 E	36	73	6 15	17 20.40	-60 33.8	2.083	2.956	12.0	19.8	143 E	-	55
11 27	22 57.19	-6 59.6	1.219	1.671	35.8	18.8	98 E	38	70*	6 20	17 11.04	-60 14.5	2.068	2.939	12.2	19.8	142 E	-	56
12 7	23 16.34	-4 34.4	1.328	1.696	35.4	19.0	93 E	40	65*	6 25	17 2.06	-59 45.8	2.059	2.923	12.5	19.7	141 E	-	56
12 17	23 35.99	-2 7.1	1.442	1.724	34.8	19.2	88 E	43	59*	6 30	16 53.76	-59 8.5	2.056	2.906	13.1	19.7	140 E	-	57
12 27	23 56.02	+0 20.8	1.561	1.753	33.9	19.4	84 E	45	53*	7 5	16 46.37	-58 23.6	2.058	2.889	13.8	19.8	137 E	-	58
1 6	0 16.31	+2 47.7	1.683	1.784	32.8	19.6	79 E	48	48*	7 10	16 40.04	-57 32.4	2.065	2.872	14.6	19.8	135 E	-	58
1 16	0 36.81	+5 12.2	1.808	1.816	31.5	19.7	75 E	50*	43*	7 15	16 34.87	-56 36.1	2.077	2.855	15.5	19.8	132 E	-	59
12 23	15 47.52	-20 14.2	3.665	2.872	10.3	21.3	31 W	15*	21*	7 20	16 30.90	-55 36.1	2.095	2.837	16.4	19.9	128 E	-	60
1 2	16 2.45	-21 4.2	3.578	2.868	12.2	21.3	38 W	17*	28*	7 25	16 28.15	-54 33.7	2.116	2.820	17.3	19.9	125 E	-	61
1 12	16 17.09	-21 48.5	3.477	2.864	14.0	21.3	45 W	19*	35*	7 30	16 26.58	-53 30.3	2.142	2.802	18.1	19.9	121 E	-	62
1 22	16 31.31	-22 27.3	3.364	2.858	15.6	21.3	52 W	19*	43*	8 4	16 26.11	-52 26.7	2.171	2.783	18.9	20.0	117 E	-	64
2 1	16 44.98	-23 0.9	3.239	2.851	17.1	21.2	59 W	20*	51*	8 9	16 26.69	-51 23.7	2.203	2.765	19.7	20.0	113 E	-	65
2 11	16 57.91	-23 29.6	3.104	2.843	18.4	21.2	66 W	20*	58*	8 14	16 28.22	-50 21.9	2.238	2.746	20.4	20.1	109 E	-	66
2 21	17 9.93	-23 54.0	2.961	2.834	19.5	21.1	73 W	20*	66*	8 19	16 30.65	-49 21.8	2.275	2.728	20.9	20.1	106 E	-	67
3 2	17 20.80	-24 14.9	2.812	2.823	20.3	21.0	81 W	20*	74*	8 24	16 33.89	-48 23.6	2.314	2.709	21.4	20.1	102 E	-	68
3 12	17 30.29	-24 33.0	2.659	2.812	20.7	20.9	88 W	20*	82*	8 29	16 37.87	-47 27.6	2.354	2.689	21.8	20.2	98 E	-	69*
3 22	17 38.12	-24 49.4	2.505	2.800	20.7	20.8	97 W	20*	89	9 3	16 42.53	-46 33.8	2.395	2.670	22.1	20.2	94 E	-	69*
4 1	17 43.96	-25 4.9	2.354	2.786	20.3	20.6	105 W	20	89	9 8	16 47.79	-45 42.1	2.437	2.650	22.3	20.2	91 E	-	69*
4 11	17 47.49	-25 20.3	2.207	2.771	19.3	20.4	114 W	20	89	9 13	16 53.62	-44 52.3	2.480	2.630	22.5	20.2	87 E	-	69*
4 21	17 48.40	-25 36.1	2.068	2.756	17.7	20.2	124 W	19	90	9 18	16 59.95	-44 4.4	2.522	2.610	22.5	20.3	84 E	-	68*
5 1	17 46.39	-25 52.1	1.943	2.739	15.4	20.0	134 W	19	90	9 28	17 13.98	-42 33.1	2.606	2.570	22.3	20.3	77 E	-	64*
5 11	17 41.36	-26 7.4	1.834	2.721	12.4	19.7	145 W	19	90	10 8	17 29.54	-41 6.2	2.687	2.529	21.8	20.3	70 E	-	60*
5 21	17 33.41	-26 20.1	1.746	2.702	8.8	19.5	156 W	19	90	10 18	17 46.36	-39 41.4	2.763	2.487	21.0	20.3	64 E	-	56*
5 26	17 28.48	-26 24.7	1.711	2.692	6.8	19.3	162 W	19	90	10 28	18 4.23	-38 16.7	2.832	2.444	20.0	20.3	57 E	-	50*
5 31	17 23.04	-26 27.8	1.683	2.682	4.7	19.2	168 W	19	90	11 7	18 22.92	-36 49.8	2.893	2.401	18.8	20.3	51 E	-	45*
6 5	17 17.23	-26 29.3	1.661	2.671	2.6	19.0	173 W	19	90	11 17	18 42.27	-35 19.0	2.945	2.357	17.4	20.2	45 E	-	39*
6 10	17 11.19	-26 28.8	1.647	2.661	1.3	18.9	176 E	19	90	11 27	19 2.12	-33 42.7	2.988	2.313	15.7	20.2	40 E	-	33*
6 15	17 5.07	-26 26.6	1.639	2.650	2.8	19.0	173 E	19	90	12 7	19 22.32	-31 59.3	3.020	2.269	14.0	20.1	34 E	-	28*
6 20	16 59.05	-26 22.6	1.639	2.639	5.0	19.1	167 E	19	90	12 17	19 42.76	-30 7.7	3.041	2.224	12.1	20.0	28 E	-	22*
6 25	16 53.29	-26 17.2	1.645	2.627	7.2	19.2	161 E	19	90	12 27	20 3.34	-28 7.1	3.051	2.180	10.1	19.9	23 E	-	16*
6 30	16 47.94	-26 10.7	1.658	2.615	9.4	19.3	155 E	19	90	1 6	20 23.95	-25 56.7	3.050	2.135	8.1	19.7	18 E	-	11*
7 5	16 43.14	-26 3.6	1.676	2.603	11.5	19.4	149 E	19	90	1 16	20 44.57	-23 35.9	3.039	2.090	5.9	19.6	13 E	-	6*
7 10	16 38.99	-25 56.3	1.701	2.591	13.4	19.5	144 E	19	90	<b>96590 1998 XB</b>									
7 20	16 32.88	-25 42.7	1.764	2.566	16.9	19.7	133 E	19	90	12 23	15 47.83	-12 58.6	1.376	0.777	44.3	18.0	34 W	21*	18*
7 30	16 29.97	-25 32.9	1.844	2.540	19.7	19.8	123 E	19	90	12 28	16 15.30	-15 7.4	1.375	0.744	43.7	17.9	32 W	19*	18*
8 9	16 30.27	-25 28.3	1.934	2.512	21.8	20.0	113 E	19*	89	1 2	16 44.07	-17 7.1	1.380	0.711	42.7	17.8	29 W	16*	17*
8 19	16 33.59	-25 29.2	2.032	2.484	23.3	20.1	104 E	19*	89	1 7	17 14.16	-18 54.1	1.390	0.680	41.0	17.7	27 W	13*	16*
8 29	16 39.69	-25 35.0	2.133	2.455	24.1	20.2	96 E	18*	90	1 12	17 45.51	-20 24.3	1.404	0.652	38.7	17.6	25 W	10*	15*
9 8	16 48.27	-25 44.2	2.235	2.425	24.5	20.3	88 E	17*	82*	1 17	18 18.00	-21 33.4	1.422	0.628	35.8	17.4	22 W	8*	14*
9 18	16 59.05	-25 55.3	2.334	2.394	24.5	20.4	81 E	17*	75*	1 22	18 51.39	-22 17.5	1.444	0.609	32.2	17.3	19 W	5*	12*
9 28	17 11.80	-26 6.3	2.430	2.362	24.1	20.4	74 E	16*	68*	1 27	19 25.31	-22 33.5	1.469	0.596	28.2	17.2	17 W	2*	10*
10 8	17 26.28	-26 15.3	2.519	2.329	23.4	20.4	68 E	15*	62*	2 1	19 59.31	-22 19.6	1.495	0.589	23.8	17.0	14 W	-	8*
10 18	17 42.30	-26 20.5	2.601	2.296	22.4	20.5	61 E	15*	55*	2 6	20 32.91	-21 35.6	1.523	0.591	19.5	17.0	12 W	-	6*
10 28	17 59.69	-26 20.2	2.675	2.261	21.2	20.4	55 E	14*	49*	2 11	21 5.62	-20 23.5	1.551	0.599	15.4	16.9	9 W	-	3*
11 7	18 18.28	-26 12.7	2.740	2.226	19.8	20.4	49 E	14*	43*	2 16	21 37.08	-18 46.5	1.580	0.614	12.0	16.9	7 W	-	1*
11 17	18 37.91	-25 56.4	2.795	2.191	18.2	20.4	44 E	13*	37*	2 21	22 7.05	-16 49.2	1.610	0.636	9.6	16.9	6 W	-	-
11 27	18 58.45	-25 30.2	2.839	2.154	16.5	20.3	38 E	13*	31*	2 26	22 35.41	-14 36.4	1.640	0.661	8.3	17.0	6 E	-	-
12 7	19 19.73	-24 52.9	2.874	2.118	14.7	20.2	33 E	12*	25*	3 2	23 2.16	-12 13.1	1.670	0.690	8.0	17.1	6 E	-	-
12 17	19 41.65	-24 3.7	2.898	2.081	12.8	20.2	28 E	10*	20*	3 7	23 27.38	-9 43.3	1.701	0.722	8.4	17.2	6 E	-	-
12 27	20 4.07	-23 1.9	2.911	2.043	10.9	20.1	23 E	9*	14*	3 12	23 51.21	-7 10.7	1.733	0.755	8.8	17.4	7 E	-	1*
1 6	20 26.87	-21 47.2	2.915	2.006	8.9	19.9	18 E	6*	10*	3 17	0 13.80	-4 38.1	1.765	0.788	9.3	17.5	7 E	-	1*
1 16	20 49.99	-20 19.5	2.909	1.968	6.8	19.8	14 E	4*	6*	3 22	0 35.30	-2 7.6	1.798	0.822	9.6	17.7	8 E	-	2*
12 23	15 47.82	-42 51.0	4.150	3.378	9.3	21.5	34 W	-	27*	3 27	0 55.88	+0 19.1	1.831	0.856	9.7	17.8	8 E	-	2*
1 2	16 4.45	-43 55.7	4.065	3.361	10.7	21.5	39 W	-	32*	4 1	1 15.66	+2 40.7	1.864	0.889	9.6	17.9	9 E	-	2*

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

19/21	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°-26°	19/21	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°-26°	
<b>96590 1998 XB</b> (continuation)									<b>33881 2000 JK<sub>66</sub></b> (continuation)									
9 28	11 29.17	+10 50.6	1.911	1.004	17.7	18.5	18 W	12*	5 1	19 48.79	-11 34.5	1.388	1.898	31.1	17.7	104 W	32*	76
10 8	12 6.60	+ 6 47.9	1.851	0.947	18.5	18.4	17 W	11*	5 11	20 2.61	-11 4.5	1.262	1.864	30.7	17.5	110 W	33*	75
10 18	12 45.95	+ 2 15.5	1.793	0.884	18.6	18.2	16 W	10*	5 21	20 14.85	-10 43.7	1.141	1.831	29.7	17.2	116 W	34*	75
10 28	13 27.92	- 2 43.9	1.739	0.818	17.9	17.9	15 W	9*	5 31	20 25.16	-10 37.9	1.029	1.798	28.1	16.9	123 W	34*	75
11 2	13 50.16	- 5 21.9	1.714	0.784	17.1	17.7	13 W	7*	6 5	20 29.49	-10 42.7	0.977	1.782	27.0	16.7	127 W	34	75
11 7	14 13.40	- 8 3.7	1.691	0.750	15.9	17.6	12 W	6*	6 10	20 33.21	-10 53.8	0.926	1.767	25.7	16.5	131 W	34	75
11 12	14 37.81	-10 47.6	1.669	0.717	14.2	17.4	10 W	4*	6 15	20 36.25	-11 12.1	0.879	1.752	24.2	16.4	135 W	34	75
11 17	15 3.52	-13 31.0	1.649	0.686	12.1	17.2	8 W	2*	6 20	20 38.58	-11 38.6	0.835	1.737	22.4	16.2	139 W	33	76
11 22	15 30.68	-16 10.8	1.631	0.658	9.3	17.0	6 W	—	6 25	20 40.14	-12 14.2	0.794	1.723	20.3	16.0	144 W	33	76
11 27	15 59.39	-18 43.0	1.614	0.632	5.9	16.7	4 W	—	6 30	20 40.91	-12 59.3	0.756	1.709	17.9	15.8	149 W	32	77
12 2	16 29.72	-21 2.7	1.597	0.612	2.0	16.4	1 W	—	7 10	20 40.13	-14 59.4	0.693	1.683	12.4	15.4	159 W	30	79
12 7	17 1.63	-23 4.5	1.582	0.598	2.6	16.4	2 E	—	7 20	20 36.48	-17 36.2	0.648	1.659	5.8	14.9	170 W	27	82
12 12	17 34.95	-24 43.0	1.567	0.590	7.4	16.6	4 E	—	7 30	20 30.93	-20 37.6	0.622	1.637	1.6	14.5	177 E	24	85
12 17	18 9.35	-25 52.8	1.553	0.590	12.3	16.7	7 E	—	8 4	20 27.94	-22 11.3	0.617	1.627	5.3	14.7	172 E	23	86
12 22	18 44.34	-26 30.1	1.539	0.597	17.0	16.9	10 E	—	8 9	20 25.12	-23 43.2	0.616	1.618	8.9	14.9	166 E	21	88
12 27	19 19.35	-26 33.1	1.527	0.611	21.3	17.1	13 E	—	8 14	20 22.71	-25 10.6	0.620	1.609	12.5	15.0	160 E	20	89
1 1	19 53.82	-26 1.8	1.518	0.631	25.1	17.3	16 E	2*	8 19	20 20.94	-26 31.3	0.628	1.601	15.9	15.2	154 E	18	89
1 6	20 27.22	-24 58.6	1.512	0.656	28.2	17.4	18 E	4*	8 24	20 20.04	-27 43.4	0.641	1.594	19.1	15.3	149 E	17	88
1 11	20 59.20	-23 27.4	1.509	0.685	30.6	17.6	21 E	6*	8 29	20 20.16	-28 45.8	0.657	1.588	22.1	15.5	144 E	16	87
1 16	21 29.52	-21 32.9	1.511	0.716	32.4	17.7	23 E	8*	9 3	20 21.40	-29 37.8	0.676	1.583	24.7	15.6	139 E	15	86
									9 8	20 23.79	-30 19.3	0.699	1.578	27.1	15.7	135 E	15	86
<b>114249 2002 WO<sub>11</sub></b>																		
12 23	15 49.03	-24 23.3	3.486	2.684	10.7	20.7	30 W	11*	9 18	20 31.99	-31 11.0	0.751	1.571	31.0	16.0	126 E	14	85
1 2	16 6.67	-25 1.0	3.382	2.656	12.7	20.7	36 W	13*	9 28	20 44.42	-31 23.0	0.812	1.568	33.9	16.2	119 E	14	85
1 12	16 24.33	-25 31.4	3.266	2.628	14.7	20.7	43 W	15*	10 8	21 0.33	-30 58.9	0.880	1.568	35.9	16.5	113 E	14	85
1 22	16 41.91	-25 54.1	3.140	2.599	16.5	20.6	49 W	15*	10 13	21 9.32	-30 34.5	0.916	1.570	36.6	16.6	110 E	14	85
2 1	16 59.29	-26 8.6	3.004	2.569	18.3	20.6	55 W	16*	10 18	21 18.86	-30 2.3	0.953	1.572	37.2	16.7	108 E	15	86
2 11	17 16.32	-26 14.6	2.860	2.538	19.9	20.5	61 W	17*	10 23	21 28.88	-29 22.9	0.992	1.575	37.6	16.8	105 E	16	87
2 21	17 32.86	-26 12.2	2.709	2.506	21.4	20.4	68 W	17*	10 28	21 39.27	-28 36.8	1.031	1.579	37.9	16.9	103 E	16	87
3 2	17 48.73	-26 1.4	2.554	2.474	22.7	20.3	74 W	18*	11 2	21 49.95	-27 44.4	1.072	1.584	38.1	17.0	100 E	17	88
3 12	18 3.71	-25 42.3	2.395	2.442	23.7	20.1	81 W	18*	11 7	22 0.84	-26 46.3	1.114	1.590	38.1	17.1	98 E	18	89
3 22	18 17.62	-25 15.3	2.235	2.409	24.4	20.0	88 W	19*	11 12	22 11.90	-25 42.9	1.158	1.596	38.1	17.2	96 E	19	89*
4 1	18 30.16	-24 40.7	2.076	2.375	24.8	19.8	95 W	20*	11 17	22 23.08	-24 34.8	1.202	1.604	38.0	17.3	94 E	20	86*
4 11	18 41.07	-23 59.2	1.919	2.341	24.8	19.6	102 W	21*	11 22	22 34.33	-23 22.3	1.248	1.612	37.8	17.3	92 E	22	83*
4 21	18 50.02	-23 11.2	1.766	2.306	24.2	19.4	110 W	22*	11 27	22 45.61	-22 6.1	1.294	1.620	37.5	17.4	90 E	23	80*
5 1	18 56.62	-22 17.2	1.620	2.271	23.1	19.1	118 W	23*	12 2	22 56.91	-20 46.7	1.342	1.630	37.2	17.5	88 E	24	77*
5 11	19 0.50	-21 17.8	1.484	2.236	21.3	18.8	126 W	24	12 7	23 8.18	-19 24.5	1.390	1.640	36.8	17.6	86 E	26	74*
5 21	19 1.30	-20 13.3	1.360	2.201	18.7	18.5	136 W	25	12 12	23 19.43	-18 0.0	1.440	1.651	36.3	17.7	84 E	27	71*
5 31	18 58.73	-19 4.2	1.251	2.166	15.3	18.2	146 W	26	12 17	23 30.64	-16 33.6	1.491	1.662	35.9	17.7	82 E	28	68*
6 10	18 52.83	-17 51.2	1.162	2.130	11.1	17.9	156 W	27	12 22	23 41.81	-15 5.8	1.542	1.674	35.3	17.8	80 E	30	65*
6 20	18 44.00	-16 35.8	1.093	2.095	6.4	17.5	167 W	28	12 27	23 52.94	-13 36.9	1.595	1.687	34.7	17.9	78 E	31	62*
6 25	18 38.76	-15 58.0	1.068	2.077	4.5	17.3	171 W	29	1 1	0 4.01	-12 7.5	1.648	1.700	34.1	18.0	76 E	33	59*
6 30	18 33.21	-15 20.9	1.048	2.060	3.9	17.2	172 E	30	1 6	0 15.02	-10 37.8	1.702	1.713	33.5	18.0	74 E	34	56*
7 5	18 27.54	-14 44.8	1.035	2.043	5.3	17.3	169 W	30	1 11	0 25.99	-9 8.1	1.757	1.727	32.8	18.1	72 E	36	53*
7 10	18 21.96	-14 10.4	1.027	2.025	7.7	17.3	165 E	31	1 16	0 36.93	-7 38.8	1.812	1.742	32.1	18.2	70 E	37	51*
7 15	18 16.67	-13 38.4	1.026	2.008	10.4	17.4	159 E	31	<b>208027 1999 JQ<sub>77</sub></b>									
7 20	18 11.86	-13 9.2	1.029	1.991	13.1	17.5	154 E	32	12 23	15 50.36	-16 25.0	2.535	1.776	16.9	21.0	32 W	18*	19*
7 30	18 4.40	-12 20.7	1.052	1.958	18.3	17.7	143 E	33	1 2	16 17.51	-17 49.1	2.451	1.743	19.0	20.9	35 W	19*	23*
8 9	18 0.51	-11 46.1	1.090	1.925	22.9	17.9	132 E	33	1 12	16 45.57	-18 58.8	2.366	1.713	21.0	20.9	39 W	19*	28*
8 19	18 0.56	-11 24.4	1.141	1.894	26.6	18.1	123 E	34	1 22	17 14.47	-19 52.2	2.282	1.684	23.0	20.8	42 W	18*	32*
8 29	18 4.57	-11 12.7	1.200	1.863	29.5	18.2	115 E	34	2 1	17 44.08	-20 27.5	2.198	1.657	24.9	20.8	45 W	18*	37*
9 8	18 12.24	-11 7.2	1.265	1.834	31.7	18.4	107 E	34	2 11	18 14.20	-20 43.5	2.117	1.633	26.8	20.7	48 W	17*	41*
9 18	18 23.20	-11 3.8	1.333	1.807	33.2	18.5	100 E	34	2 21	18 44.65	-20 39.7	2.037	1.612	28.5	20.6	51 W	17*	44*
9 28	18 37.06	-10 58.9	1.402	1.782	34.1	18.6	94 E	34	3 2	19 15.17	-20 16.0	1.960	1.594	30.2	20.6	54 W	17*	47*
10 8	18 53.41	-10 48.9	1.472	1.758	34.6	18.7	89 E	34	3 12	19 45.51	-19 33.5	1.886	1.579	31.8	20.5	57 W	16*	51*
10 18	19 11.89	-10 31.0	1.541	1.737	34.7	18.8	83 E	34	3 22	20 15.48	-18 33.6	1.815	1.568	33.3	20.5	60 W	16*	53*
10 28	19 32.19	-10 2.7	1.610	1.718	34.5	18.8	79 E	35	4 1	20 44.83	-17 18.8	1.747	1.561	34.6	20.4	62 W	16*	56*
11 7	19 53.96	-9 22.2	1.678	1.702	34.1	18.9	74 E	35	4 11	21 13.39	-15 52.0	1.681	1.557	35.8	20.4	65 W	16*	59*
11 17	20 16.95	-8 28.6	1.746	1.688	33.4	18.9	70 E	36	4 21	21 41.02	-14 16.4	1.618	1.558	36.8	20.3	68 W	17*	62*
11 27	20 40.90	-7 21.1	1.813	1.678	32.5	19.0	66 E	37	5 1	22 7.57	-12 35.7	1.557	1.562	37.7	20.2	71 W	18*	65*
12 7	21 5.57	-5 59.9	1.880	1.671	31.5	19.0	62 E	38	5 11	22 32.94	-10 53.7	1.498	1.570	38.4	20.2	75 W	19*	67*
12 17	21 30.77	-4 25.8	1.947	1.667	30.4	19.1	59 E	38	5 21	22 57.02	-9 14.0	1.440	1.581	38.8	20.1	78 W	21*	69*
12 27	21 56.33	-2 40.1	2.014	1.666	29.1	19.1	55 E	39	5 31	23 19.65	-7 40.2	1.382	1.596	39.0	20.1	82 W	23*	70*
1 6	22 22.12	-0 44.6	2.082	1.668	27.7	19.1	52 E	39	6 10	23 40.70	-6 15.9	1.324	1.615	38.9	20.0	86 W	26*	70*
1 16	22 48.05	+ 1 18.7	2.151	1.673	26.2	19.2	49 E	38	6 20	23 59.97	-5 4.2	1.267	1.636	38.4	19.9	91 W	30*	69

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

19/20	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°	19/21	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°
<b>208027 1999 JQ<sub>77</sub></b>										<b>(continuation)</b>									
<b>168956 2001 AC<sub>47</sub></b>										<b>8444 Popovich</b>									
9 28	0 31.33	-9 36.9	0.970	1.961	6.1	18.7	168 W	35	74	12 23	15 50.73	-21 20.0	3.136	2.341	12.3	19.1	30 W	14*	20*
10 3	0 26.30	-10 0.4	0.994	1.980	7.1	18.8	166 E	35	74	1 2	16 10.86	-22 20.3	3.035	2.312	14.4	19.0	36 W	15*	26*
10 8	0 21.60	-10 17.3	1.025	1.999	9.0	19.0	162 E	35	74	1 12	16 31.33	-23 12.1	2.926	2.281	16.5	19.0	41 W	16*	32*
10 18	0 13.79	-10 29.8	1.102	2.037	13.3	19.3	152 E	35	74	1 22	16 52.08	-23 54.8	2.809	2.250	18.5	19.0	47 W	17*	39*
10 28	0 8.81	-10 14.9	1.200	2.075	17.2	19.7	142 E	35	74	2 1	17 13.00	-24 28.0	2.685	2.219	20.5	18.9	52 W	17*	45*
11 7	0 6.96	-9 36.3	1.315	2.113	20.3	20.0	132 E	35	74	2 11	17 34.01	-24 51.2	2.556	2.188	22.3	18.8	57 W	17*	51*
11 17	0 8.12	-8 38.8	1.445	2.151	22.6	20.3	123 E	36	73	2 21	17 54.99	-25 4.4	2.423	2.156	24.0	18.7	63 W	17*	56*
11 27	0 11.98	-7 26.6	1.585	2.188	24.2	20.6	115 E	38	71	3 2	18 15.82	-25 7.8	2.286	2.124	25.6	18.6	68 W	17*	62*
12 7	0 18.13	-6 3.5	1.735	2.226	25.1	20.9	107 E	39	70	3 12	18 36.36	-25 1.8	2.147	2.092	27.1	18.5	73 W	17*	67*
12 17	0 26.17	-4 32.4	1.890	2.262	25.4	21.1	99 E	40	67*	3 22	18 56.48	-24 47.0	2.008	2.060	28.3	18.3	79 W	17*	73*
12 27	0 35.78	-2 55.7	2.049	2.298	25.3	21.3	92 E	42	62*	4 1	19 15.99	-24 24.3	1.869	2.028	29.3	18.2	84 W	18*	78*
<b>168956 2001 AC<sub>47</sub></b>										<b>8444 Popovich</b>									
12 23	15 50.47	-20 6.8	2.871	2.087	13.9	20.6	31 W	15*	20*	4 11	19 34.74	-23 55.2	1.732	1.997	30.1	18.0	90 W	18*	84*
1 2	16 10.23	-21 59.4	2.838	2.123	15.8	20.7	36 W	16*	26*	4 21	19 52.55	-23 21.2	1.598	1.966	30.6	17.8	95 W	19*	87*
1 12	16 29.60	-23 43.0	2.794	2.160	17.6	20.7	42 W	16*	33*	5 1	20 9.16	-22 44.1	1.467	1.935	30.7	17.6	101 W	20*	87
1 22	16 48.50	-25 18.6	2.741	2.196	19.2	20.8	47 W	16*	40*	5 11	20 24.33	-22 6.3	1.342	1.905	30.4	17.4	107 W	21*	86
2 1	17 6.78	-26 47.4	2.677	2.233	20.7	20.8	53 W	15*	46*	5 21	20 37.76	-21 30.2	1.223	1.876	29.6	17.1	114 W	22*	86
2 11	17 24.28	-28 11.0	2.605	2.269	22.0	20.8	59 W	14*	53*	5 31	20 49.05	-20 58.8	1.112	1.848	28.1	16.8	121 W	24*	85
2 21	17 40.82	-29 31.2	2.524	2.304	23.1	20.8	66 W	13*	60*	6 10	20 57.80	-20 34.8	1.010	1.821	26.0	16.5	128 W	24*	85
3 2	17 56.18	-30 50.0	2.437	2.340	23.8	20.8	73 W	13*	66*	6 20	21 3.54	-20 20.8	0.918	1.796	23.0	16.2	136 W	25	84
3 12	18 10.11	-32 9.7	2.344	2.375	24.3	20.8	80 W	12*	73*	6 30	21 5.82	-20 18.4	0.839	1.772	19.1	15.8	145 W	25	84
3 22	18 22.36	-33 32.7	2.249	2.409	24.4	20.7	87 W	11*	78*	7 10	21 4.48	-20 27.4	0.775	1.750	14.2	15.5	155 W	25	84
4 1	18 32.55	-35 1.3	2.151	2.443	24.1	20.6	95 W	9*	81*	7 20	20 59.69	-20 44.6	0.727	1.730	8.4	15.1	166 W	24	85
4 11	18 40.32	-36 37.4	2.056	2.476	23.3	20.5	103 W	8*	79	7 25	20 56.24	-20 54.5	0.710	1.720	5.3	14.9	171 W	24	85
4 21	18 45.23	-38 22.0	1.966	2.509	21.9	20.4	111 W	7*	78	7 30	20 52.34	-21 4.1	0.698	1.712	2.5	14.7	176 W	24	85
4 26	18 46.45	-39 17.4	1.923	2.525	21.1	20.4	115 W	6*	77	8 4	20 48.21	-21 12.3	0.690	1.704	2.7	14.6	176 E	24	85
5 1	18 46.78	-40 14.5	1.883	2.541	20.1	20.3	120 W	5	76	8 9	20 44.09	-21 18.2	0.688	1.696	5.6	14.8	171 E	24	85
5 6	18 46.16	-41 13.0	1.847	2.557	19.0	20.2	124 W	4	75	8 14	20 40.22	-21 21.3	0.690	1.689	8.8	14.9	165 E	24	85
5 11	18 44.55	-42 12.1	1.814	2.572	17.8	20.2	129 W	3	74	8 19	20 36.84	-21 21.0	0.696	1.683	12.0	15.1	160 E	24	85
5 16	18 41.93	-43 11.1	1.785	2.588	16.4	20.1	134 W	2	73	8 24	20 34.19	-21 16.9	0.707	1.677	15.1	15.2	154 E	24	85
5 21	18 38.27	-44 8.9	1.761	2.603	15.1	20.0	138 W	1	72	8 29	20 32.43	-21 8.9	0.722	1.672	18.0	15.3	149 E	24	85
5 26	18 33.61	-45 4.4	1.741	2.618	13.7	20.0	142 W	-	71	9 8	20 31.95	-20 41.7	0.763	1.664	23.1	15.6	140 E	24	85
5 31	18 28.01	-45 56.1	1.728	2.633	12.3	19.9	146 W	-	70	9 18	20 35.71	-20 0.2	0.817	1.659	27.2	15.9	131 E	25	84
6 5	18 21.58	-46 42.9	1.720	2.647	11.1	19.9	150 W	-	69	9 28	20 43.52	-19 5.4	0.881	1.657	30.4	16.1	123 E	26	83
6 10	18 14.48	-47 23.7	1.718	2.662	10.1	19.9	153 W	-	69	10 8	20 54.79	-17 57.9	0.953	1.657	32.7	16.4	116 E	27	82
6 15	18 6.89	-47 57.3	1.723	2.676	9.4	19.8	155 W	-	68	10 18	21 8.87	-16 38.1	1.032	1.661	34.3	16.6	110 E	28	81
6 20	17 59.05	-48 23.2	1.734	2.690	9.2	19.9	155 W	-	68	10 28	21 25.16	-15 6.4	1.118	1.667	35.3	16.8	104 E	30	79
6 25	17 51.19	-48 41.0	1.752	2.704	9.4	19.9	154 E	-	67	11 7	21 43.10	-13 23.5	1.209	1.677	35.7	17.0	99 E	32	77*
6 30	17 43.59	-48 51.0	1.776	2.717	10.0	20.0	152 E	-	67	11 17	22 2.23	-11 30.2	1.305	1.688	35.8	17.2	94	33	73*
7 5	17 36.47	-48 53.5	1.806	2.731	10.9	20.0	149 E	-	67	11 27	22 22.21	-9 27.8	1.405	1.703	35.4	17.3	89	36	68*
7 10	17 30.01	-48 49.6	1.842	2.744	12.0	20.1	146 E	-	67	12 7	22 42.76	-7 17.7	1.509	1.720	34.8	17.5	84	38	62*
7 15	17 24.37	-48 40.0	1.883	2.757	13.1	20.2	142 E	-	67	12 17	23 3.70	-5 1.6	1.617	1.739	33.9	17.7	80	40	56*
7 20	17 19.65	-48 25.8	1.930	2.769	14.2	20.3	138 E	-	68	12 27	23 24.89	-2 41.3	1.726	1.760	32.8	17.8	75	42	50*
7 25	17 15.91	-48 8.1	1.982	2.782	15.3	20.5	134 E	-	68	1 6	23 46.24	-0 18.5	1.838	1.783	31.5	17.9	71	44*	44*
7 30	17 13.18	-47 48.0	2.037	2.794	16.3	20.6	129 E	-	68	1 16	0 7.71	+ 2 5.1	1.952	1.807	30.0	18.0	67 E	46*	39*
8 4	17 11.46	-47 26.3	2.097	2.806	17.2	20.7	125 E	-	69	<b>40271 1999 JT</b>									
8 9	17 10.70	-47 3.7	2.159	2.818	18.0	20.8	121 E	-	69	12 23	15 51.07	-4 41.7	3.287	2.568	13.3	20.1	37 W	28*	14*
8 14	17 10.86	-46 40.8	2.225	2.830	18.6	20.9	117 E	-	69	1 2	16 7.38	-5 38.7	3.185	2.543	15.0	20.1	42 W	31*	21*
8 19	17 11.89	-46 18.0	2.293	2.841	19.2	20.9	113 E	-	70	1 12	16 23.61	-6 27.8	3.072	2.516	16.8	20.0	48 W	32*	28*
8 24	17 13.73	-45 55.6	2.364	2.852	19.6	21.0	109 E	-	70	1 22	16 39.67	-7 8.8	2.950	2.489	18.5	20.0	53 W	33*	35*
8 29	17 16.32	-45 33.9	2.436	2.863	19.9	21.1	105 E	-	70	2 1	16 55.44	-7 42.0	2.819	2.462	20.1	19.9	59 W	34*	43*
9 3	17 19.61	-45 12.9	2.509	2.874	20.2	21.2	101 E	-	71	2 11	17 10.79	-8 7.9	2.681	2.433	21.6	19.8	65 W	34*	50*
9 8	17 23.51	-44 52.7	2.583	2.885	20.3	21.3	97 E	-	71	2 21	17 25.61	-8 27.2	2.537	2.404	22.9	19.7	71 W	35*	56*
9 13	17 28.00	-44 33.2	2.658	2.895	20.3	21.3	93 E	-	71*	3 2	17 39.71	-8 40.9	2.388	2.374	24.0	19.6	77 W	35*	63*
9 18	17 33.01	-44 14.4	2.733	2.905	20.2	21.4	90 E	-	71*	3 12	17 52.90	-8 50.5	2.236	2.344	24.9	19.4	84 W	35*	68*
9 23	17 38.50	-43 56.1	2.808	2.915	20.1	21.5	86 E	-	70*	3 22	18 5.00	-8 57.9	2.083	2.314	25.5	19.3	90 W	35*	72*
<b>168044 2005 SG</b>										4 1	18 15.72	-9 5.5	1.930	2.282	25.7	19.1	97 W	36*	73
12 23	15 50.49	-16 37.3	1.361	0.735	44.6	20.7	32 W	18*	19*	4 11	18 24.78	-9 16.5	1.779	2.251	25.5	18.9	105 W	36*	73
12 28	16 13.89	-20 30.4	1.371	0.722	43.6	20.7	30 W	14*	20*	4 21	18 31.84	-9 34.6	1.633	2.219	24.8	18.6	112 W	35*	74
1 2	16 39.11	-24 9.9	1.383	0.712	42.4	20.6	29 W	11*	21*	5 1	18 36.48	-10 4.5	1.493	2.187	23.3	18.4	121 W	35	74
1 7	17 6.33	-27 29.5	1.399	0.705	41.1	20.6	28 W	7*	21*	5 6	18 37.77	-10 25.6	1.427	2.170	22.3	18.2	125 W	35	74
1 12	17 35.59	-30 22.3	1.417	0.703	39.6	20.6	27 W	3*	21*	5 11	18 38.30	-10 51.7	1.364	2.154	21.1	18.1	130 W	34	75
1 17	18 6.72	-32 41.7	1.439	0.705	38.0	20.6	26 W	-	20*	5									



EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

19/21	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°	19/21	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°
<b>40271 1999 JT</b>										<b>161989 Cacus</b>									
<i>(continuation)</i>																			
8 19	17 23.34	-33 53.6	1.166	1.844	29.7	17.7	116 E	11	82	12 23	15 51.61	-9 19.6	1.600	0.963	35.1	19.6	34 W	24*	16*
8 29	17 29.70	-35 38.1	1.239	1.818	32.0	17.8	107 E	9*	80	1 2	16 38.84	-9 41.1	1.584	0.935	35.3	19.5	33 W	23*	15*
9 8	17 40.55	-37 7.4	1.315	1.793	33.6	18.0	100 E	8*	79	1 12	17 27.03	-9 40.9	1.581	0.911	34.9	19.4	32 W	22*	15*
9 13	17 47.53	-37 46.3	1.354	1.781	34.1	18.0	97 E	7*	78	1 22	18 15.46	-9 19.4	1.592	0.895	33.8	19.4	30 W	20*	15*
9 18	17 55.49	-38 21.1	1.393	1.769	34.5	18.1	94 E	6*	77*	2 1	19 3.40	-8 38.7	1.615	0.885	32.1	19.3	29 W	18*	14*
9 23	18 4.36	-38 51.7	1.432	1.758	34.8	18.1	91 E	6*	76*	2 11	19 50.24	-7 41.9	1.647	0.883	30.0	19.3	27 W	16*	14*
9 28	18 14.09	-39 17.9	1.470	1.748	34.9	18.2	88 E	5*	75*	2 21	20 35.61	-6 32.7	1.685	0.889	27.7	19.3	25 W	14*	14*
10 3	18 24.61	-39 39.4	1.508	1.738	35.0	18.2	85 E	5*	73*	3 2	21 19.28	-5 14.2	1.726	0.903	25.5	19.3	23 W	11*	14*
10 8	18 35.86	-39 55.8	1.545	1.729	35.0	18.3	83 E	5*	72*	3 12	22 1.21	-3 49.6	1.768	0.924	23.7	19.4	22 W	9*	14*
10 13	18 47.77	-40 6.8	1.582	1.720	34.9	18.3	80 E	5*	70*	3 22	22 41.46	-2 21.5	1.807	0.950	22.3	19.4	21 W	7*	14*
10 18	19 0.30	-40 12.3	1.618	1.711	34.7	18.3	78 E	5*	68*	4 1	23 20.18	-0 52.6	1.844	0.981	21.6	19.5	21 W	5*	15*
10 23	19 13.36	-40 11.8	1.653	1.704	34.4	18.4	76 E	5*	67*	4 11	23 57.53	+0 34.7	1.876	1.014	21.4	19.6	22 W	3*	16*
10 28	19 26.89	-40 5.2	1.687	1.697	34.1	18.4	73 E	5*	65*	4 21	0 33.70	+1 58.3	1.903	1.049	21.6	19.8	23 W	1*	17*
11 2	19 40.82	-39 52.2	1.721	1.690	33.8	18.4	71 E	5*	64*	5 1	1 8.86	+3 15.8	1.925	1.084	22.2	19.9	24 W	—	18*
11 7	19 55.06	-39 32.7	1.754	1.685	33.4	18.5	69 E	5*	62*	5 11	1 43.15	+4 25.2	1.942	1.119	22.9	20.0	26 W	—	20*
11 12	20 9.55	-39 6.5	1.787	1.679	33.0	18.5	68 E	6*	61*	5 21	2 16.70	+5 24.6	1.954	1.154	23.8	20.1	27 W	—	21*
11 17	20 24.24	-38 33.6	1.819	1.675	32.5	18.5	66 E	6*	59*	5 31	2 49.61	+6 12.4	1.961	1.186	24.8	20.2	29 W	—	23*
11 22	20 39.04	-37 54.0	1.850	1.671	32.1	18.5	64 E	7*	58*	6 10	3 21.92	+6 47.2	1.964	1.217	25.7	20.3	31 W	—	25*
11 27	20 53.90	-37 7.9	1.881	1.668	31.6	18.5	62 E	8*	57*	6 20	3 53.68	+7 8.0	1.962	1.245	26.7	20.3	33 W	1*	27*
12 2	21 8.76	-36 15.3	1.912	1.666	31.0	18.5	61 E	8*	55*	6 30	4 24.90	+7 14.1	1.955	1.271	27.6	20.4	35 W	3*	29*
12 7	21 23.56	-35 16.6	1.942	1.665	30.5	18.6	59 E	9*	53*	7 10	4 55.55	+7 5.2	1.944	1.294	28.5	20.5	37 W	6*	31*
12 12	21 38.28	-34 11.8	1.972	1.664	29.9	18.6	57 E	10*	51*	7 20	5 25.66	+6 41.4	1.928	1.313	29.4	20.5	39 W	9*	33*
12 17	21 52.87	-33 1.5	2.002	1.664	29.3	18.6	56 E	11*	49*	7 30	5 55.18	+6 2.9	1.908	1.330	30.4	20.5	41 W	12*	34*
12 22	22 7.32	-31 45.8	2.032	1.664	28.7	18.6	54 E	12*	48*	8 9	6 24.14	+5 10.7	1.883	1.343	31.3	20.6	44 W	16*	36*
12 27	22 21.58	-30 25.4	2.062	1.666	28.1	18.6	53 E	13*	46*	8 19	6 52.54	+4 5.7	1.852	1.353	32.3	20.6	46 W	19*	37*
1 1	22 35.65	-29 0.5	2.092	1.668	27.5	18.6	52 E	14*	44*	8 29	7 20.41	+2 49.1	1.817	1.360	33.3	20.6	48 W	22*	38*
1 6	22 49.52	-27 31.7	2.122	1.671	26.8	18.7	50 E	15*	42*	9 8	7 47.81	+1 22.4	1.776	1.363	34.4	20.5	50 W	25*	39*
1 11	23 3.18	-25 59.5	2.152	1.674	26.2	18.7	49 E	16*	41*	9 18	8 14.84	-0 12.8	1.729	1.363	35.5	20.5	52 W	28*	41*
1 16	23 16.64	-24 24.2	2.183	1.679	25.5	18.7	47 E	17*	39*	9 28	8 41.58	+1 54.7	1.676	1.359	36.7	20.5	54 W	30*	42*
<b>5892 Milesdavis</b>										<b>138095 2000 DK<sub>79</sub></b>									
12 23	15 51.24	-16 35.6	3.666	2.874	10.3	19.4	31 W	18*	19*	12 23	15 51.62	-30 21.9	3.274	2.470	11.4	21.2	30 W	6*	23*
1 2	16 5.92	-17 12.0	3.603	2.894	12.1	19.4	38 W	20*	26*	1 2	16 6.22	-32 36.1	3.175	2.456	13.8	21.3	37 W	6*	30*
1 12	16 20.07	-17 41.2	3.526	2.913	13.8	19.4	45 W	22*	33*	1 12	16 21.09	-34 54.5	3.061	2.440	16.0	21.2	43 W	6*	37*
1 22	16 33.57	-18 3.3	3.436	2.931	15.3	19.5	52 W	23*	41*	1 22	16 36.22	-37 18.9	2.935	2.422	18.1	21.2	50 W	5*	44*
2 1	16 46.26	-18 18.6	3.334	2.948	16.6	19.5	59 W	24*	49*	2 1	16 51.60	-39 51.5	2.797	2.403	20.1	21.1	57 W	3*	50*
2 11	16 57.97	-18 27.3	3.222	2.965	17.7	19.4	66 W	25*	57*	2 11	17 7.21	-42 34.8	2.651	2.381	21.8	21.1	63 W	1*	55*
2 21	17 8.52	-18 30.1	3.101	2.981	18.6	19.4	74 W	26*	65*	2 21	17 23.07	-45 31.7	2.501	2.357	23.2	21.0	70 W	—	59*
3 2	17 17.69	-18 27.5	2.973	2.995	19.1	19.3	82 W	26*	73*	3 2	17 39.18	-48 45.8	2.348	2.331	24.5	20.8	77 W	—	61*
3 12	17 25.25	-18 20.2	2.842	3.009	19.3	19.2	90 W	27*	80*	3 12	17 55.60	-52 20.5	2.197	2.303	25.4	20.7	83 W	—	61*
3 22	17 30.98	-18 9.1	2.710	3.022	19.0	19.1	98 W	27*	82	3 22	18 12.47	-56 19.6	2.051	2.273	26.0	20.5	90 W	—	59*
4 1	17 34.62	-17 55.0	2.581	3.034	18.3	19.0	107 W	27	82	4 1	18 29.99	-60 46.0	1.914	2.242	26.3	20.4	95 W	—	55*
4 11	17 35.97	-17 38.7	2.457	3.045	17.1	18.9	117 W	27	82	4 6	18 39.14	-63 10.0	1.851	2.225	26.4	20.3	98 W	—	53
4 21	17 34.87	-17 21.1	2.344	3.055	15.3	18.7	127 W	28	81	4 11	18 48.68	-65 41.1	1.791	2.208	26.5	20.2	101 W	—	50
5 1	17 31.25	-17 2.8	2.246	3.064	12.9	18.5	137 W	28	81	4 16	18 58.78	-68 19.1	1.735	2.190	26.5	20.1	103 W	—	48
5 11	17 25.26	-16 44.7	2.167	3.072	10.0	18.4	148 W	28	81	4 21	19 9.71	-71 3.4	1.684	2.172	26.6	20.0	105 W	—	45
5 21	17 17.26	-16 27.4	2.111	3.079	6.6	18.2	159 W	29	80	4 23	19 14.40	-72 10.7	1.665	2.164	26.6	20.0	106 W	—	44
5 31	17 7.86	-16 11.9	2.083	3.086	3.3	18.0	170 W	29	80	4 25	19 19.33	-73 18.9	1.646	2.157	26.6	20.0	106 W	—	43
6 10	16 57.91	-15 59.2	2.083	3.091	2.6	17.9	172 E	29	80	4 27	19 24.56	-74 27.7	1.629	2.149	26.6	19.9	107 W	—	42
6 20	16 48.30	-15 50.5	2.111	3.096	5.6	18.1	163 E	29	80	4 29	19 30.17	-75 37.1	1.612	2.142	26.7	19.9	107 W	—	40
6 30	16 39.88	-15 47.0	2.167	3.100	9.0	18.3	152 E	29	80	5 1	19 36.26	-76 47.1	1.596	2.134	26.7	19.9	108 W	—	39
7 10	16 33.28	-15 49.6	2.248	3.102	12.0	18.5	141 E	29	80	5 2	19 39.53	-77 22.2	1.589	2.130	26.7	19.9	108 W	—	38
7 20	16 28.88	-15 58.5	2.348	3.104	14.5	18.7	130 E	29	80	5 3	19 42.97	-77 57.3	1.582	2.126	26.7	19.8	108 W	—	37
7 30	16 26.84	-16 13.4	2.465	3.105	16.4	18.9	120 E	29	80	5 4	19 46.62	-78 32.6	1.574	2.122	26.8	19.8	109 W	—	37
8 9	16 27.14	-16 33.6	2.593	3.105	17.7	19.1	111 E	28	81	5 5	19 50.51	-79 7.8	1.567	2.118	26.8	19.8	109 W	—	37
8 19	16 29.64	-16 58.0	2.729	3.104	18.6	19.2	102 E	27	81	5 6	19 54.68	-79 43.1	1.561	2.114	26.8	19.8	109 W	—	36
8 29	16 34.15	-17 25.4	2.869	3.102	19.0	19.3	94 E	26	81*	5 7	19 59.19	-80 18.3	1.554	2.110	26.9	19.8	109 W	—	36
9 8	16 40.47	-17 54.5	3.010	3.099	18.9	19.4	86 E	24	77*	5 8	20 4.08	-80 53.5	1.548	2.106	26.9	19.8	109 W	—	35
9 18	16 48.39	-18 24.0	3.148	3.095	18.5	19.5	78 E	23	71*	5 9	20 9.45	-81 28.6	1.542	2.102	27.0	19.8	109 W	—	35
9 28	16 57.73	-18 52.8	3.282	3.091	17.8	19.6	70 E	22	63*	5 10	20 15.38	-82 3.5	1.536	2.098	27.0	19.8	109 W	—	34
10 8	17 8.30	-19 19.7	3.408	3.085	16.8	19.6	63 E	20	56*	5 11	20 22.03	-82 38.3	1.530	2.094	27.1	19.7	109 W	—	33
10 18	17 19.94	-19 43.8	3.525	3.078	15.5	19.6	56 E	19	49*	5 12	20 29.55	-83 12.8	1.525	2.090	27.1	19.7	109 W	—	33
10 28	17 32.52	-20 4.0	3.632	3.071	14.1	19.6	49 E	18	41*										
11 7	17 45.89	-20 19.7	3.726	3.063	12.5	19.6	42 E	16	34*										

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

2020	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	$45^\circ$ - $26^\circ$	19/21	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	$45^\circ$ - $26^\circ$		
<b>138095 2000 DK<sub>79</sub></b>									<b>138095 2000 DK<sub>79</sub></b>										
<i>(continuation)</i>									<i>(continuation)</i>										
5 13	20 38.18	-83 47.0	1.520	2.086	27.2	19.7	109 W	—	32	10 18	11 33.51	-84 9.0	1.044	1.247	50.6	18.5	75 W	—	28*
5 14	20 48.22	-84 20.7	1.515	2.082	27.3	19.7	109 W	—	32	10 19	11 46.58	-84 48.2	1.034	1.242	50.9	18.4	75 W	—	27*
5 15	21 0.13	-84 53.8	1.510	2.077	27.3	19.7	109 W	—	31	10 20	12 3.54	-85 27.2	1.023	1.237	51.2	18.4	76 W	—	27*
5 16	21 14.49	-85 26.0	1.505	2.073	27.4	19.7	109 W	—	31	10 21	12 26.35	-86 5.4	1.013	1.232	51.5	18.4	76 W	—	26*
5 17	21 32.19	-85 57.1	1.501	2.069	27.5	19.7	109 W	—	30	10 22	12 58.20	-86 41.5	1.003	1.226	51.9	18.4	76 W	—	26*
5 18	21 54.44	-86 26.6	1.497	2.065	27.5	19.7	109 W	—	30*	10 23	13 43.96	-87 13.3	0.992	1.221	52.2	18.3	76 W	—	25*
5 19	22 22.93	-86 53.7	1.493	2.061	27.6	19.7	109 W	—	29*	10 24	14 48.95	-87 36.4	0.982	1.216	52.5	18.3	76 E	—	26*
5 20	22 59.78	-87 17.3	1.489	2.056	27.7	19.7	109 W	—	29*	10 25	16 11.79	-87 45.0	0.972	1.211	52.8	18.3	76 E	—	27*
5 21	23 46.87	-87 35.7	1.486	2.052	27.8	19.7	109 W	—	28*	10 26	17 36.07	-87 35.1	0.961	1.206	53.2	18.3	76 E	—	28*
5 22	0 44.08	-87 47.0	1.482	2.048	27.9	19.7	109 W	—	28*	10 27	18 43.80	-87 8.5	0.951	1.201	53.5	18.2	76 E	—	28*
5 23	1 46.92	-87 49.3	1.479	2.043	28.0	19.6	109 W	—	27*	10 28	19 31.83	-86 30.5	0.941	1.196	53.8	18.2	76 E	—	29*
5 24	2 47.33	-87 42.4	1.476	2.039	28.1	19.6	109 W	—	27*	10 29	20 5.18	-85 45.3	0.931	1.191	54.1	18.2	76 E	—	30*
5 25	3 38.91	-87 27.6	1.473	2.035	28.2	19.6	108 W	—	26*	10 30	20 28.91	-84 55.2	0.921	1.187	54.5	18.2	77 E	—	31*
5 26	4 19.88	-87 7.1	1.471	2.030	28.3	19.6	108 E	—	26*	10 31	20 46.44	-84 1.5	0.911	1.182	54.8	18.2	77 E	—	32*
5 27	4 51.61	-86 42.7	1.468	2.026	28.4	19.6	108 E	—	27*	11 1	20 59.86	-83 5.0	0.901	1.177	55.1	18.1	77 E	—	33*
5 28	5 16.23	-86 15.9	1.466	2.022	28.5	19.6	108 E	—	27*	11 2	21 10.46	-82 6.0	0.891	1.172	55.5	18.1	77 E	—	34*
5 29	5 35.64	-85 47.6	1.464	2.017	28.6	19.6	108 E	—	27*	11 3	21 19.06	-81 4.8	0.881	1.168	55.8	18.1	77 E	—	35*
5 30	5 51.25	-85 18.2	1.462	2.013	28.7	19.6	107 E	—	28*	11 4	21 26.19	-80 1.5	0.871	1.163	56.2	18.1	77 E	—	36*
5 31	6 4.06	-84 48.2	1.461	2.008	28.9	19.6	107 E	—	28*	11 5	21 32.24	-78 56.2	0.862	1.159	56.5	18.0	77 E	—	37*
6 1	6 14.78	-84 17.9	1.459	2.004	29.0	19.6	107 E	—	29*	11 6	21 37.44	-77 48.9	0.853	1.154	56.8	18.0	77 E	—	38*
6 2	6 23.92	-83 47.4	1.458	1.999	29.1	19.6	107 E	—	29*	11 7	21 41.98	-76 39.7	0.843	1.150	57.2	18.0	77 E	—	39*
6 3	6 31.82	-83 16.9	1.456	1.995	29.2	19.6	106 E	—	29*	11 8	21 46.00	-75 28.7	0.834	1.146	57.5	18.0	77 E	—	41*
6 4	6 38.75	-82 46.3	1.455	1.990	29.3	19.6	106 E	—	30*	11 9	21 49.59	-74 15.7	0.826	1.141	57.8	18.0	77 E	—	42*
6 5	6 44.91	-82 16.0	1.454	1.985	29.5	19.6	106 E	—	30*	11 10	21 52.83	-73 0.8	0.817	1.137	58.2	17.9	77 E	—	43*
6 6	6 50.44	-81 45.7	1.454	1.981	29.6	19.6	105 E	—	30*	11 11	21 55.78	-71 44.1	0.809	1.133	58.5	17.9	77 E	—	44*
6 7	6 55.46	-81 15.7	1.453	1.976	29.7	19.6	105 E	—	31*	11 12	21 58.49	-70 25.4	0.801	1.129	58.8	17.9	77 E	—	46*
6 8	7 0.05	-80 46.0	1.453	1.972	29.9	19.6	105 E	—	31*	11 13	22 0.99	-69 5.0	0.793	1.125	59.1	17.9	77 E	—	47*
6 9	7 4.28	-80 16.5	1.452	1.967	30.0	19.6	104 E	—	31*	11 14	22 3.31	-67 42.7	0.785	1.121	59.5	17.9	77 E	—	48*
6 10	7 8.21	-79 47.3	1.452	1.962	30.1	19.6	104 E	—	31*	11 15	22 5.48	-66 18.5	0.778	1.117	59.8	17.8	77 E	—	50*
6 11	7 11.89	-79 18.5	1.452	1.958	30.3	19.6	104 E	—	31*	11 16	22 7.51	-64 52.6	0.771	1.114	60.1	17.8	77 E	—	51*
6 12	7 15.34	-78 50.0	1.452	1.953	30.4	19.6	103 E	—	32*	11 17	22 9.43	-63 24.9	0.764	1.110	60.4	17.8	77 E	—	52*
6 13	7 18.60	-78 21.9	1.452	1.948	30.5	19.6	103 E	—	32*	11 19	22 12.96	-60 24.4	0.752	1.103	61.0	17.8	77 E	—	55*
6 14	7 21.70	-77 54.1	1.452	1.943	30.7	19.6	102 E	—	32*	11 21	22 16.17	-57 17.5	0.741	1.096	61.5	17.7	77 E	—	58*
6 15	7 24.65	-77 26.8	1.452	1.939	30.8	19.6	102 E	—	32*	11 23	22 19.10	-54 4.7	0.731	1.090	62.0	17.7	77 E	—	61*
6 16	7 27.47	-76 59.9	1.453	1.934	31.0	19.6	102 E	—	32*	11 25	22 21.81	-50 46.7	0.724	1.084	62.5	17.7	77 E	—	63*
6 17	7 30.17	-76 33.3	1.453	1.929	31.1	19.6	101 E	—	32*	11 27	22 24.33	-47 24.3	0.718	1.078	63.0	17.7	77 E	—	66*
6 18	7 32.78	-76 7.3	1.454	1.924	31.2	19.6	101 E	—	33*	11 29	22 26.70	-43 58.5	0.714	1.073	63.3	17.7	76 E	1	67*
6 19	7 35.29	-75 41.6	1.454	1.919	31.4	19.6	100 E	—	33*	12 1	22 28.93	-40 30.3	0.711	1.068	63.7	17.7	76 E	4	69*
6 20	7 37.72	-75 16.4	1.455	1.914	31.5	19.6	100 E	—	33*	12 3	22 31.04	-37 0.8	0.711	1.063	64.0	17.7	76 E	8	69*
6 22	7 42.37	-74 27.4	1.457	1.905	31.8	19.6	99 E	—	33*	12 5	22 33.04	-33 31.2	0.713	1.059	64.2	17.7	75 E	11	69*
6 24	7 46.77	-73 40.2	1.458	1.895	32.1	19.6	98 E	—	33*	12 7	22 34.96	-30 2.7	0.716	1.055	64.3	17.7	75 E	15	68*
6 26	7 50.96	-72 55.0	1.460	1.885	32.3	19.6	97 E	—	33*	12 9	22 36.80	-26 36.3	0.722	1.052	64.4	17.7	74 E	18	67*
6 28	7 54.98	-72 11.6	1.463	1.875	32.6	19.6	97 E	—	33*	12 11	22 38.57	-23 13.1	0.729	1.049	64.4	17.7	74 E	22	64*
6 30	7 58.85	-71 30.3	1.465	1.865	32.9	19.6	96 E	—	33*	12 13	22 40.29	-19 53.9	0.738	1.046	64.3	17.7	73 E	25	62*
7 2	8 2.59	-70 50.9	1.467	1.855	33.1	19.6	95 E	—	32*	12 15	22 41.95	-16 39.6	0.748	1.044	64.2	17.7	73 E	28	59*
7 4	8 6.21	-70 13.4	1.470	1.844	33.4	19.6	94 E	—	32*	12 17	22 43.56	-13 30.7	0.760	1.043	63.9	17.8	72 E	31	56*
7 6	8 9.74	-69 38.0	1.472	1.834	33.6	19.6	93 E	—	32*	12 22	22 47.44	+ 6 4.9	0.796	1.041	63.1	17.8	71 E	39*	48*
7 8	8 13.18	-69 4.5	1.474	1.824	33.9	19.6	92 E	—	31*	12 27	22 51.14	+ 0 40.7	0.839	1.041	62.0	17.9	69 E	45*	41*
7 10	8 16.55	-68 32.9	1.477	1.813	34.1	19.6	91 E	—	31*	1 1	22 54.72	+ 6 46.6	0.887	1.045	60.5	18.0	68 E	50*	34*
7 15	8 24.71	-67 22.7	1.482	1.787	34.7	19.5	89 E	—	30*	1 6	22 58.25	+12 15.9	0.937	1.051	58.9	18.1	66 E	54*	27*
7 20	8 32.55	-66 24.7	1.486	1.760	35.2	19.5	87 E	—	28*	1 11	23 1.81	+17 13.0	0.990	1.060	57.2	18.2	65 E	56*	21*
7 25	8 40.14	-65 38.8	1.488	1.733	35.8	19.5	85 E	—	27*	<b>5929 Manzano</b>									
7 30	8 47.52	-65 4.8	1.488	1.705	36.3	19.5	84 E	—	25*	12 23	15 52.09	- 1 24.0	3.783	3.075	11.5	19.5	39 W	31*	12*
8 4	8 54.73	-64 42.4	1.486	1.678	36.8	19.5	82 W	—	24*	1 2	16 5.41	- 1 45.2	3.697	3.074	13.0	19.5	45 W	34*	19*
8 9	9 1.80	-64 31.3	1.480	1.649	37.3	19.4	80 W	—	25*	1 12	16 18.29	- 1 56.6	3.599	3.073	14.3	19.5	51 W	37*	27*
8 14	9 8.78	-64 31.6	1.472	1.621	37.9	19.4	79 W	—	26*	1 22	16 30.60	- 1 58.3	3.490	3.071	15.6	19.5	57 W	39*	35*
8 19	9 15.70	-64 43.2	1.461	1.592	38.4	19.4	78 W	—	27*	2 1	16 42.19	- 1 50.0	3.370	3.068	16.8	19.5	64 W	41*	42*
8 24	9 22.57	-65 6.2	1.445	1.563	39.0	19.3	77 W	—	28*	2 11	16 52.88	- 1 32.0	3.242	3.063	17.7	19.4	71 W	42*	49*
8 29	9 29.41	-65 40.6	1.427	1.534	39.7	19.3	76 W	—	29*	3 2	17 2.50	- 1 4.5	3.108	3.058	18.4	19.3	78 W	43*	56*
9 3	9 36.27	-66 26.7	1.404	1.505	40.4	19.2	75 W	—	30*	3 12	17 10.84	+ 0 28.1	2.969	3.052	18.9	19.2	85 W	44*	61*
9 8	9 43.22	-67 24.7	1.378	1.475	41.2	19.2	75 W	—	30*	3 22	17 17.67	+ 0 16.3	2.829	3.045	19.0	19.1	93 W	45*	63*
9 13	9 50.34	-68 35.4	1.347	1.446	42.0	19.1	74 W	—	31*	4 1	17 22.77	+ 1 7.5	2.690	3.037	18.8	19.			

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

19/21	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°	19/21	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°
<b>5929 Manzano</b>										<b>1685 Toro</b>									
<i>(continuation)</i>										<i>(continuation)</i>									
9 28	16 49.79	-10 9.7	2.922	2.708	20.0	19.0	68 E	29*	58*	10 8	10 52.35	+16 43.2	0.857	0.801	74.0	16.0	50 W	42*	22*
10 8	17 1.36	-11 34.7	3.018	2.681	19.0	19.0	61 E	27*	51*	10 13	10 7.83	+14 4.7	0.900	0.820	70.7	16.1	51 W	41*	24*
10 18	17 14.21	-12 52.7	3.105	2.654	17.8	19.0	55 E	25*	45*	10 18	10 22.67	+11 30.5	0.940	0.843	67.7	16.1	52 W	41*	25*
10 28	17 28.23	-14 2.9	3.183	2.626	16.4	19.0	48 E	23*	38*	10 28	10 50.61	+6 36.0	1.011	0.898	62.4	16.2	53 W	41*	29*
11 7	17 43.28	-15 4.8	3.250	2.597	14.7	19.0	42 E	20*	32*	11 7	11 16.42	+2 1.4	1.067	0.962	58.2	16.4	56 W	40*	32*
11 17	17 59.26	-15 58.0	3.305	2.568	13.0	18.9	36 E	18*	25*	11 17	11 40.28	-2 13.1	1.109	1.031	54.9	16.5	59 W	39*	37*
11 27	18 16.07	-16 41.9	3.348	2.538	11.1	18.8	30 E	16*	18*	11 27	12 2.24	-6 7.8	1.135	1.102	52.3	16.6	62 W	37*	42*
12 7	18 33.61	-17 16.2	3.377	2.507	9.1	18.7	24 E	13*	12*	12 7	12 22.35	-9 43.7	1.147	1.173	50.2	16.7	66 W	35*	48*
12 17	18 51.79	-17 40.8	3.393	2.475	7.0	18.6	18 E	9*	6*	12 17	12 40.55	-13 2.1	1.145	1.243	48.5	16.8	71 W	32	55*
12 27	19 10.52	-17 55.6	3.395	2.443	4.9	18.5	12 E	5*	1*	12 27	12 56.63	-16 3.9	1.130	1.311	46.8	16.9	76 W	29	62*
1 6	19 29.72	-18 0.6	3.383	2.410	2.8	18.3	7 E	1*	—	1 6	13 10.32	-18 49.8	1.103	1.376	45.1	16.9	82 W	26	70*
1 16	19 49.32	-17 56.1	3.358	2.376	1.3	18.2	3 W	—	—	1 16	13 21.17	-21 20.1	1.066	1.438	43.2	16.8	89 W	24	79*
<b>1685 Toro</b>										<b>467460 2006 JF<sub>42</sub></b>									
12 23	15 52.14	-25 13.8	2.751	1.958	14.4	18.7	30 W	10*	22*	12 23	15 52.29	-17 26.9	0.972	0.523	75.7	20.4	31 W	17*	19*
1 2	16 14.18	-26 6.5	2.676	1.950	16.7	18.7	35 W	11*	27*	12 25	15 55.52	-17 42.1	1.002	0.551	72.0	20.4	32 W	17*	20*
1 12	16 36.40	-26 48.2	2.589	1.938	19.0	18.7	40 W	12*	32*	12 27	15 59.25	-17 59.0	1.031	0.579	68.8	20.5	33 W	18*	21*
1 22	16 58.79	-27 18.5	2.490	1.924	21.2	18.7	45 W	13*	38*	12 29	16 3.38	-18 17.1	1.057	0.606	66.1	20.6	34 W	18*	23*
2 1	17 21.26	-27 36.8	2.382	1.905	23.3	18.6	50 W	13*	43*	12 31	16 7.81	-18 35.7	1.082	0.633	63.8	20.6	35 W	18*	24*
2 11	17 43.76	-27 42.5	2.265	1.884	25.5	18.5	55 W	13*	49*	1 2	16 12.48	-18 54.6	1.104	0.658	61.8	20.7	36 W	18*	25*
2 21	18 6.23	-27 35.3	2.140	1.859	27.5	18.5	60 W	14*	54*	1 7	16 24.92	-19 41.5	1.153	0.718	57.9	20.9	38 W	18*	28*
3 2	18 28.61	-27 14.8	2.008	1.831	29.5	18.3	65 W	14*	59*	1 12	16 38.06	-20 26.1	1.192	0.772	55.2	21.0	40 W	18*	30*
3 12	18 50.84	-26 40.6	1.871	1.799	31.3	18.2	70 W	15*	64*	1 17	16 51.65	-21 7.1	1.222	0.820	53.3	21.2	42 W	18*	33*
3 22	19 12.91	-25 52.1	1.731	1.763	33.1	18.0	75 W	15*	69*	1 22	17 5.54	-21 43.9	1.243	0.864	52.0	21.3	44 W	17*	35*
4 1	19 34.79	-24 48.7	1.588	1.724	34.8	17.9	80 W	16*	74*	1 27	17 19.65	-22 16.1	1.256	0.903	51.1	21.4	46 W	17*	37*
4 6	19 45.66	-24 11.0	1.517	1.703	35.6	17.8	82 W	17*	76*	2 1	17 33.94	-22 43.5	1.263	0.937	50.6	21.4	47 W	17*	40*
4 11	19 56.49	-23 29.2	1.445	1.682	36.4	17.6	85 W	17*	79*	<b>7330 Annelemaître</b>									
4 16	20 7.31	-22 42.8	1.374	1.659	37.2	17.5	87 W	18*	81*	12 23	15 53.06	-9 41.1	3.612	2.848	11.1	19.2	34 W	24*	15*
4 21	20 18.11	-21 51.8	1.302	1.636	37.9	17.4	89 W	19*	83*	1 2	16 7.70	-9 43.9	3.547	2.868	12.8	19.2	40 W	27*	22*
4 26	20 28.91	-20 55.6	1.232	1.611	38.6	17.3	92 W	20*	84*	1 12	16 21.78	-9 36.8	3.469	2.887	14.4	19.2	47 W	30*	30*
5 1	20 39.72	-19 53.8	1.162	1.586	39.4	17.1	94 W	21*	84*	1 22	16 35.18	-9 19.5	3.378	2.905	15.8	19.2	54 W	32*	37*
5 6	20 50.59	-18 45.8	1.093	1.560	40.1	17.0	96 W	22*	83	2 1	16 47.75	-8 51.7	3.277	2.922	17.1	19.2	61 W	33*	45*
5 11	21 1.56	-17 31.0	1.025	1.533	40.8	16.8	98 W	23*	82	2 11	16 59.31	-8 13.5	3.167	2.938	18.1	19.2	68 W	35*	52*
5 16	21 12.67	-16 8.4	0.958	1.505	41.5	16.6	100 W	25*	80	2 21	17 9.69	-7 24.7	3.049	2.953	18.9	19.1	75 W	37*	59*
5 21	21 23.98	-14 36.9	0.893	1.476	42.2	16.5	101 W	26*	79	3 2	17 18.69	-6 25.8	2.927	2.967	19.3	19.1	83 W	38*	65*
5 26	21 35.54	-12 55.1	0.829	1.446	43.0	16.3	103 W	28*	77	3 12	17 26.10	-5 17.1	2.803	2.981	19.5	19.0	90 W	40*	68*
5 31	21 47.48	-11 1.5	0.768	1.416	43.9	16.1	104 W	30*	75	3 22	17 31.71	-3 59.7	2.679	2.993	19.2	18.9	99 W	41*	67
6 5	21 59.91	-8 53.8	0.709	1.385	44.9	15.9	106 W	33*	73	4 1	17 35.28	-2 34.8	2.559	3.005	18.6	18.8	107 W	42	68
6 10	22 13.00	-6 29.3	0.652	1.353	46.1	15.7	106 W	35*	70	4 11	17 36.65	-1 4.4	2.446	3.015	17.5	18.7	115 W	44	65
6 15	22 26.98	-3 45.1	0.597	1.320	47.4	15.5	107 W	38*	68	4 21	17 35.66	+0 28.5	2.345	3.025	16.0	18.5	124 W	45	64
6 20	22 42.09	-0 37.5	0.546	1.286	49.1	15.3	107 W	42*	65	5 1	17 32.30	+2 0.2	2.259	3.033	14.1	18.4	133 W	47	62
6 25	22 58.71	+2 57.5	0.499	1.252	51.2	15.1	106 W	45*	61	5 11	17 26.71	+3 25.7	2.192	3.041	12.2	18.3	141 W	48	61
6 30	23 17.33	+7 3.7	0.456	1.218	53.7	14.9	105 W	50*	57	5 16	17 23.18	+4 4.4	2.167	3.045	11.2	18.2	144 W	49	60
7 5	23 38.59	+11 44.1	0.417	1.183	56.9	14.8	103 W	54*	52	5 21	17 19.24	+4 39.7	2.148	3.048	10.4	18.1	147 W	50	59
7 10	0 3.33	+16 58.4	0.385	1.147	60.8	14.6	100 W	59*	47	5 26	17 14.96	+5 10.7	2.134	3.051	9.7	18.1	150 W	50	59
7 12	0 14.42	+19 12.5	0.374	1.133	62.6	14.6	98 W	61*	45	5 31	17 10.46	+5 37.0	2.128	3.054	9.3	18.1	151 W	51	58
7 14	0 26.28	+21 30.4	0.364	1.119	64.5	14.6	97 W	63*	42	6 10	17 1.14	+6 13.6	2.133	3.059	9.4	18.1	151 E	51	58
7 16	0 38.99	+23 50.8	0.355	1.105	66.5	14.5	95 W	64*	40	6 20	16 52.11	+6 27.6	2.164	3.062	10.6	18.2	146 E	51	58
7 18	0 52.62	+26 12.3	0.348	1.090	68.6	14.5	93 W	66*	38	6 30	16 44.14	+6 19.4	2.219	3.065	12.4	18.3	140 E	51	58
7 20	1 7.23	+28 33.3	0.341	1.076	70.8	14.5	91 W	67*	35	7 10	16 37.83	+5 51.5	2.294	3.067	14.3	18.4	132 E	51	58
7 22	1 22.85	+30 51.7	0.337	1.062	73.0	14.6	88 W	68*	33	7 20	16 33.55	+5 7.7	2.387	3.069	16.0	18.6	124 E	50	59
7 24	1 39.51	+33 5.2	0.333	1.048	75.3	14.6	86 W	69*	31	7 30	16 31.48	+4 11.9	2.494	3.069	17.4	18.7	115 E	49*	60
7 26	1 57.20	+35 11.5	0.332	1.034	77.6	14.6	84 W	69*	29	8 9	16 31.61	+3 8.2	2.611	3.068	18.4	18.9	107 E	48*	61
7 28	2 15.87	+37 8.2	0.331	1.020	79.9	14.7	81 W	69*	27	8 19	16 33.84	+2 0.0	2.735	3.066	19.0	19.0	99 E	46*	62
7 30	2 35.43	+38 53.1	0.332	1.006	82.2	14.7	79 W	68*	25	8 29	16 38.02	+0 50.2	2.862	3.063	19.2	19.1	92 E	43*	63*
8 1	2 55.72	+40 24.3	0.335	0.992	84.3	14.8	77 W	67*	24*	9 8	16 43.95	+0 19.0	2.989	3.060	19.1	19.2	84 E	41*	63*
8 3	3 16.56	+41 40.5	0.339	0.978	86.4	14.9	74 W	65*	22*	9 18	16 51.43	-1 25.6	3.115	3.055	18.7	19.3	77 E	39*	60*
8 5	3 37.69	+42 40.7	0.344	0.965	88.3	14.9	72 W	64*	21*	9 28	17 0.31	-2 28.1	3.236	3.049	18.0	19.3	70 E	37*	55*
8 7	3 58.86	+43 24.8	0.350	0.951	90.0	15.0	70 W	62*	20*	10 8	17 10.40	-3 25.4	3.351	3.043	17.1	19.3	64 E	35*	49*
8 9	4 19.81	+43 53.1	0.358	0.938	91.6	15.1	68 W	60*	19*	10 18	17 21.56	-4 16.5	3.457	3.035	16.0	19.4	57 E	33*	43*
8 11	4 40.30	+44 6.5	0.367	0.926	93.1	15.2	66 W	59*	18*	10 28	17 33.65	-5 0.5	3.554	3.027	14.7	19.4	51 E	31*	36*
8 13	5 0.12	+44 6.2	0.376	0.913	94.3	15.3	64 W	57*	17*	11 7	17 46.53	-5 36.7	3.640	3.018	13.4	19.4	45 E	29*	29*
8 15	5 19.13	+43 53.6	0.387	0.901	95.3	15.4	62 W	56*	16*	11 17	18 0.09	-6 4.6	3.714	3.007	11.9	19.4	39 E	27*	21*
8 17	5 37.21	+43 30.3	0.399	0.889	96.1														

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

19/21	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°	19/21	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°
<b>7870 1987 UP<sub>2</sub></b>										<b>22449 Ottijeff</b>									
<i>(continuation)</i>										<i>(continuation)</i>									
3 2	17 34.43	-23 6.2	2.779	2.741	20.7	19.2	77 W	21*	71*	9 3	16 29.41	-45 15.8	2.856	3.062	19.2	19.5	92 E	-	70*
3 12	17 45.41	-23 3.6	2.627	2.725	21.3	19.1	85 W	21*	78*	9 8	16 33.94	-44 49.9	2.914	3.054	19.3	19.5	88 E	-	69*
3 22	17 54.89	-22 57.0	2.472	2.709	21.6	19.0	93 W	22*	85*	9 18	16 44.48	-44 2.9	3.030	3.038	19.1	19.6	81 E	-	66*
4 1	18 2.57	-22 47.4	2.318	2.692	21.4	18.8	101 W	22*	87	9 28	16 56.77	-43 21.3	3.142	3.021	18.6	19.6	74 E	-	61*
4 11	18 8.16	-22 35.4	2.168	2.674	20.7	18.6	109 W	22	87	10 8	17 10.52	-42 43.5	3.249	3.003	17.8	19.7	67 E	-	56*
4 21	18 11.33	-22 22.1	2.024	2.655	19.4	18.4	118 W	23	86	10 18	17 25.52	-42 7.9	3.349	2.984	16.9	19.7	60 E	-	51*
5 1	18 11.76	-22 8.0	1.891	2.635	17.5	18.2	128 W	23	86	10 28	17 41.58	-41 33.0	3.439	2.964	15.7	19.7	54 E	-	46*
5 11	18 9.25	-21 53.5	1.771	2.614	14.9	18.0	138 W	23	86	11 7	17 58.51	-40 57.4	3.519	2.943	14.4	19.7	48 E	-	40*
5 21	18 3.74	-21 38.2	1.670	2.592	11.5	17.7	149 W	23	86	11 17	18 16.16	-40 19.6	3.588	2.921	12.9	19.7	41 E	-	35*
5 31	17 55.47	-21 21.9	1.590	2.569	7.5	17.4	161 W	24	85	11 27	18 34.38	-39 38.7	3.643	2.898	11.4	19.6	36 E	-	29*
6 10	17 45.10	-21 4.0	1.536	2.546	3.0	17.1	172 W	24	85	12 7	18 53.01	-38 53.7	3.685	2.873	9.8	19.6	30 E	-	24*
6 15	17 39.44	-20 54.5	1.518	2.533	1.1	16.9	177 W	24	85	12 17	19 11.93	-38 3.9	3.713	2.848	8.3	19.5	25 E	-	18*
6 20	17 33.66	-20 44.7	1.508	2.521	2.3	17.0	174 E	24	85	12 27	19 31.03	-37 8.8	3.726	2.822	6.9	19.4	20 E	-	13*
6 25	17 27.92	-20 34.9	1.504	2.509	4.6	17.1	169 E	24	85	1 6	19 50.18	-36 8.2	3.724	2.795	5.7	19.3	16 E	-	9*
6 30	17 22.41	-20 25.2	1.507	2.496	7.0	17.2	163 E	25	84	1 16	20 9.29	-35 1.9	3.707	2.766	5.1	19.3	15 E	-	5*
7 5	17 17.27	-20 16.0	1.517	2.483	9.3	17.3	157 E	25	84	<b>434110 2002 OX<sub>22</sub></b>									
7 10	17 12.64	-20 7.5	1.532	2.470	11.6	17.4	151 E	25	84	12 23	15 54.27	-20 14.4	3.537	2.728	10.3	21.5	30 W	14*	19*
7 20	17 5.30	-19 53.9	1.579	2.443	15.6	17.6	140 E	25	84	1 2	16 11.25	-20 13.6	3.416	2.686	12.5	21.5	36 W	17*	26*
7 30	17 1.01	-19 46.0	1.644	2.416	19.1	17.8	129 E	25	84	1 12	16 28.25	-20 2.8	3.283	2.643	14.5	21.4	42 W	19*	32*
8 9	16 59.96	-19 44.5	1.722	2.387	21.8	17.9	119 E	25*	84	1 22	16 45.21	-19 40.7	3.140	2.599	16.5	21.3	49 W	21*	39*
8 19	17 2.08	-19 48.8	1.810	2.358	23.8	18.1	110 E	25*	84	2 1	17 2.00	-19 6.0	2.987	2.555	18.4	21.3	55 W	23*	46*
8 29	17 7.19	-19 57.8	1.903	2.329	25.1	18.2	102 E	25*	84	2 11	17 18.50	-18 17.5	2.828	2.510	20.2	21.2	61 W	24*	52*
9 8	17 14.98	-20 9.5	1.999	2.299	25.9	18.3	94 E	24*	84*	2 21	17 34.58	-17 13.8	2.663	2.465	21.8	21.0	68 W	26*	59*
9 18	17 25.17	-20 22.0	2.094	2.268	26.3	18.4	87 E	23*	79*	3 2	17 50.08	-15 53.4	2.494	2.419	23.2	20.9	74 W	27*	65*
9 28	17 37.49	-20 33.3	2.187	2.237	26.2	18.4	80 E	23*	73*	3 12	18 4.84	-14 14.9	2.325	2.374	24.4	20.7	81 W	29*	70*
10 8	17 51.68	-20 41.2	2.276	2.205	25.7	18.5	73 E	22*	66*	3 22	18 18.67	-12 16.8	2.157	2.328	25.3	20.6	87 W	32*	74*
10 18	18 7.52	-20 43.7	2.359	2.173	25.0	18.5	67 E	22*	60*	4 1	18 31.34	-9 57.4	1.992	2.281	25.9	20.4	93 W	34*	74*
10 28	18 24.81	-20 39.2	2.436	2.141	24.0	18.5	61 E	21*	53*	4 11	18 42.64	-7 15.2	1.833	2.235	26.2	20.2	100 W	37*	71
11 7	18 43.35	-20 25.9	2.506	2.108	22.8	18.5	55 E	21*	47*	4 21	18 52.28	-4 8.8	1.682	2.189	26.1	19.9	106 W	41*	68
11 17	19 2.96	-20 2.6	2.568	2.076	21.4	18.5	50 E	21*	41*	5 1	18 59.94	-0 37.7	1.543	2.144	25.7	19.7	113 W	44*	65
11 27	19 23.50	-19 28.0	2.622	2.043	19.9	18.4	45 E	20*	34*	5 11	19 5.30	+3 16.9	1.416	2.098	24.9	19.4	119 W	48	61
12 7	19 44.80	-18 41.4	2.667	2.011	18.3	18.4	40 E	20*	28*	5 21	19 8.00	+7 31.6	1.305	2.054	24.0	19.2	124 W	53	56
12 17	20 6.74	-17 42.0	2.704	1.979	16.5	18.3	35 E	19*	23*	5 26	19 8.25	+9 44.3	1.255	2.032	23.5	19.0	127 W	55	54
12 27	20 29.18	-16 29.7	2.732	1.947	14.7	18.3	30 E	17*	17*	5 31	19 7.73	+11 58.8	1.211	2.010	23.1	18.9	129 W	57	52
1 6	20 52.02	-15 4.3	2.753	1.916	12.9	18.2	26 E	15*	13*	6 5	19 6.43	+14 13.6	1.171	1.988	22.7	18.8	131 W	59	50
1 16	21 15.18	-13 26.4	2.766	1.885	11.0	18.1	21 E	13*	8*	6 10	19 4.36	+16 26.6	1.136	1.967	22.5	18.7	132 W	61	48
<b>22449 Ottijeff</b>										6 15	19 1.54	+18 35.7	1.106	1.946	22.4	18.6	133 W	64	45
12 23	15 54.08	-34 17.6	3.918	3.105	9.1	19.8	30 W	2*	24*	6 20	18 58.01	+20 38.7	1.080	1.925	22.6	18.6	133 W	66	43
1 2	16 9.47	-35 29.5	3.854	3.116	10.8	19.9	36 W	3*	30*	6 25	18 53.87	+22 33.1	1.060	1.905	22.9	18.5	133 W	68	41
1 12	16 24.59	-36 39.3	3.776	3.126	12.3	19.9	43 W	4*	37*	6 30	18 49.25	+24 16.7	1.043	1.885	23.4	18.5	132 W	69	40
1 22	16 39.33	-37 47.4	3.684	3.135	13.8	19.9	49 W	4*	43*	7 5	18 44.32	+25 47.9	1.031	1.866	24.2	18.4	131 E	71	38
1 2	16 53.52	-38 54.6	3.580	3.143	15.1	19.9	56 W	4*	50*	7 10	18 39.24	+27 5.3	1.023	1.847	25.0	18.4	130 E	72	37
2 11	17 6.97	-40 1.4	3.466	3.150	16.3	19.9	63 W	4*	56*	7 15	18 34.22	+28 7.9	1.018	1.828	26.0	18.4	128 E	73	36
2 21	17 19.47	-41 9.1	3.343	3.156	17.2	19.8	71 W	3*	62*	7 20	18 29.46	+28 55.2	1.016	1.810	27.0	18.4	126 E	74	35
3 2	17 30.77	-42 18.4	3.214	3.160	17.9	19.8	78 W	2*	67*	7 25	18 25.17	+29 27.5	1.016	1.793	28.1	18.4	124 E	74	35
3 12	17 40.57	-43 30.4	3.081	3.164	18.2	19.7	86 W	1*	70*	7 30	18 21.55	+29 45.3	1.019	1.776	29.1	18.5	122 E	75	34
3 22	17 48.55	-44 45.9	2.946	3.167	18.3	19.6	93 W	-	71*	8 4	18 18.75	+29 49.7	1.024	1.760	30.1	18.5	119 E	75	34
3 27	17 51.74	-45 25.2	2.879	3.168	18.2	19.5	97 W	-	71	8 9	18 16.88	+29 41.9	1.031	1.745	31.1	18.5	117 E	75	34
4 1	17 54.31	-46 5.4	2.814	3.169	18.0	19.5	102 W	-	70	8 14	18 16.02	+29 23.1	1.038	1.731	32.0	18.5	115 E	74	35
4 6	17 56.22	-46 46.4	2.749	3.169	17.7	19.4	106 W	-	69	8 19	18 16.25	+28 54.7	1.047	1.717	32.9	18.6	113 E	74	35
4 11	17 57.42	-47 28.2	2.686	3.169	17.3	19.4	110 W	-	69	8 24	18 17.60	+28 17.8	1.056	1.704	33.6	18.6	111 E	73	36
4 16	17 57.84	-48 10.5	2.626	3.169	16.8	19.3	114 W	-	68	8 29	18 20.08	+27 34.0	1.067	1.692	34.3	18.6	109 E	73	36
4 21	17 57.43	-48 53.0	2.568	3.169	16.2	19.2	118 W	-	67	9 3	18 23.67	+26 44.5	1.077	1.681	35.0	18.6	107 E	72	37
4 26	17 56.14	-49 35.1	2.513	3.168	15.6	19.2	122 W	-	66	9 8	18 28.33	+25 50.1	1.089	1.670	35.5	18.7	106 E	71	38
5 1	17 53.92	-50 16.2	2.462	3.167	14.8	19.1	127 W	-	66	9 13	18 34.04	+24 51.9	1.100	1.661	36.0	18.7	104 E	70	39
5 6	17 50.77	-50 55.6	2.415	3.166	14.0	19.0	131 W	-	65	9 18	18 40.75	+23 50.7	1.113	1.653	36.4	18.7	102 E	69	40
5 11	17 46.68	-51 32.6	2.372	3.165	13.1	18.9	135 W	-	64	9 23	18 48.42	+22 47.3	1.126	1.646	36.8	18.7	101 E	68	41
5 16	17 41.68	-52 6.1	2.335	3.163	12.2	18.9	138 W	-	64	9 28	18 57.01	+21 42.6	1.140	1.639	37.1	18.8	100 E	67	42
5 21	17 35.81	-52 35.1	2.303	3.161	11.4	18.8	142 W	-	63	10 3	19 6.43	+20 37.3	1.155	1.634	37.3	18.8	98 E	66	43*
5 26	17 29.19	-52 58.8	2.277	3.159	10.6	18.8	145 W	-	63	10 8	19 16.64	+19 31.9	1.171	1.630	37.5	18.8	97 E	65	44*
5 31	17 21.96	-53 16.3	2.256	3.157	10.0	18.7	147 W	-	63	10 13	19 27.58	+18 27.1	1.188	1.627	37.6	18.8	96 E	63	45*
6 5	17 14.31	-53 26.9	2.242	3.154	9.6	18.7	149 W	-	63	10 18	19 39.18	+17 23.6	1.207	1.626	37.7				

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

19/21	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°-26°	19/21	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°-26°	
<b>3397 Leyla</b> (continuation)									<b>65742 1993 TY<sub>18</sub></b> (continuation)									
2 1	17 6.71	-33 46.5	2.994	2.532	18.2	18.7	53 W	8*	7 25	23 29.39	+ 4 24.3	0.755	1.590	30.6	18.2	127 W	49	60
2 11	17 23.28	-35 5.2	2.911	2.562	19.5	18.7	60 W	8*	7 30	23 33.22	+ 4 38.8	0.729	1.591	28.8	18.1	131 W	50	59
2 21	17 38.97	-36 22.3	2.820	2.590	20.5	18.7	67 W	7*	8 9	23 38.27	+ 4 41.6	0.683	1.595	24.5	17.8	139 W	50	59
3 2	17 53.52	-37 39.3	2.722	2.618	21.3	18.7	73 W	6*	8 19	23 39.71	+ 4 6.7	0.649	1.603	19.1	17.6	149 W	49	60
3 12	18 6.68	-38 58.2	2.619	2.646	21.7	18.7	81 W	5*	8 29	23 37.83	+ 2 55.1	0.629	1.613	12.8	17.3	159 W	48	61
3 22	18 18.15	-40 20.7	2.514	2.672	21.9	18.6	88 W	4*	9 3	23 35.94	+ 2 8.1	0.625	1.620	9.4	17.2	165 W	47	62
4 1	18 27.56	-41 48.5	2.408	2.698	21.6	18.5	96 W	3*	9 8	23 33.63	+ 1 15.8	0.625	1.627	6.0	17.0	170 W	46	63
4 6	18 31.37	-42 34.7	2.356	2.710	21.3	18.5	100 W	2*	9 13	23 31.10	+ 0 20.2	0.630	1.636	2.7	16.9	176 W	45	64
4 11	18 34.51	-43 22.5	2.305	2.723	21.0	18.4	104 W	1*	9 18	23 28.57	+ 0 36.3	0.640	1.644	2.3	16.9	176 E	44	65
4 16	18 36.92	-44 11.9	2.255	2.735	20.5	18.4	108 W	1*	9 23	23 26.25	+ 1 31.5	0.655	1.654	5.3	17.1	171 E	43	66
4 21	18 38.53	-45 2.8	2.208	2.746	19.8	18.3	112 W	—	9 28	23 24.34	+ 2 22.9	0.674	1.664	8.5	17.3	166 E	43	66
4 26	18 39.27	-45 55.0	2.162	2.758	19.1	18.2	116 W	—	10 3	23 23.01	+ 3 9.0	0.698	1.675	11.6	17.6	160 E	42	67
5 1	18 39.09	-46 47.9	2.120	2.770	18.3	18.2	120 W	—	10 8	23 22.34	+ 3 48.4	0.727	1.686	14.5	17.8	155 E	41	68
5 6	18 37.94	-47 41.0	2.081	2.781	17.4	18.1	125 W	—	10 18	23 23.25	+ 4 44.4	0.797	1.711	19.6	18.2	145 E	40	69
5 11	18 35.79	-48 33.6	2.045	2.792	16.4	18.1	129 W	—	10 28	23 27.29	+ 5 8.6	0.882	1.737	23.5	18.5	136 E	40	69
5 16	18 32.58	-49 24.8	2.014	2.803	15.3	18.0	133 W	—	11 7	23 34.20	+ 5 3.2	0.979	1.766	26.5	18.9	127 E	40	69
5 21	18 28.34	-50 13.6	1.987	2.813	14.2	17.9	137 W	—	11 17	23 43.56	+ 4 32.4	1.088	1.795	28.6	19.2	120	40	69
5 26	18 23.08	-50 58.8	1.966	2.823	13.1	17.9	141 W	—	11 27	23 54.93	+ 3 40.6	1.206	1.827	30.0	19.5	112 E	41	68
5 31	18 16.90	-51 39.1	1.950	2.834	12.1	17.8	144 W	—	12 7	0 7.90	+ 2 32.3	1.332	1.859	30.7	19.8	106 E	42	67*
6 5	18 9.93	-52 13.4	1.939	2.843	11.3	17.8	147 W	—	12 17	0 22.11	+ 1 11.5	1.464	1.892	30.9	20.0	99 E	44	64*
6 10	18 2.34	-52 40.8	1.935	2.853	10.6	17.8	149 W	—	12 27	0 37.32	+ 0 18.5	1.601	1.927	30.6	20.3	93 E	45	59*
6 15	17 54.34	-53 0.4	1.937	2.862	10.2	17.8	150 W	—	1 6	0 53.29	+ 1 54.7	1.742	1.961	30.1	20.5	87 E	47	54*
6 20	17 46.16	-53 12.0	1.945	2.872	10.1	17.8	150 E	—	1 16	1 9.90	+ 3 34.7	1.884	1.996	29.2	20.7	82 E	49	50*
6 25	17 38.08	-53 15.4	1.960	2.881	10.4	17.8	149 E	—	12 23	15 55.39	-40 40.1	2.463	1.706	17.6	20.5	32 W	—	25*
6 30	17 30.35	-53 10.9	1.980	2.889	10.9	17.9	147 E	—	12 28	16 11.86	-42 22.8	2.413	1.682	18.8	20.5	33 W	—	27*
7 5	17 23.19	-52 59.4	2.007	2.898	11.6	17.9	145 E	—	1 2	16 29.56	-44 2.1	2.363	1.658	19.9	20.5	35 W	—	28*
7 10	17 16.78	-52 41.7	2.039	2.906	12.5	18.0	142 E	—	1 7	16 48.60	-45 36.6	2.314	1.634	21.0	20.4	37 W	—	29*
7 15	17 11.25	-52 18.8	2.076	2.914	13.4	18.1	138 E	—	1 12	17 9.09	-47 4.6	2.266	1.610	22.0	20.4	38 W	—	30*
7 20	17 6.69	-51 52.0	2.118	2.922	14.4	18.2	135 E	—	1 17	17 31.09	-48 23.9	2.221	1.587	23.1	20.3	39 W	—	30*
7 25	17 3.15	-51 22.2	2.165	2.930	15.3	18.3	131 E	—	1 22	17 54.64	-49 32.5	2.177	1.565	24.1	20.3	40 W	—	30*
7 30	17 0.65	-50 50.5	2.217	2.937	16.1	18.3	127 E	—	1 27	18 19.66	-50 27.7	2.136	1.543	25.0	20.2	41 W	—	30*
8 4	16 59.16	-50 17.8	2.271	2.944	16.9	18.4	123 E	—	2 1	18 45.99	-51 7.1	2.097	1.521	25.9	20.2	42 W	—	30*
8 9	16 58.62	-49 44.8	2.330	2.951	17.6	18.5	119 E	—	2 6	19 13.37	-51 28.6	2.061	1.500	26.6	20.2	43 W	—	29*
8 14	16 59.01	-49 12.0	2.391	2.958	18.2	18.6	114 E	—	2 11	19 41.42	-51 30.1	2.029	1.480	27.4	20.1	44 W	—	29*
8 19	17 0.24	-48 39.8	2.454	2.964	18.6	18.7	111 E	—	2 16	20 9.69	-51 10.7	2.001	1.461	28.0	20.1	44 W	—	28*
8 24	17 2.28	-48 8.6	2.519	2.970	19.0	18.7	107 E	—	2 21	20 37.69	-50 29.9	1.975	1.443	28.6	20.0	44 W	—	27*
8 29	17 5.06	-47 38.6	2.586	2.976	19.3	18.8	103 E	—	2 26	21 4.99	-49 28.5	1.954	1.426	29.1	20.0	44 W	—	26*
9 3	17 8.50	-47 9.8	2.655	2.982	19.5	18.9	99 E	—	3 2	21 31.20	-48 7.7	1.936	1.409	29.5	20.0	44 W	—	25*
9 8	17 12.56	-46 42.2	2.724	2.988	19.6	18.9	95 E	—	3 7	21 56.05	-46 29.5	1.921	1.394	29.8	19.9	44 W	—	25*
9 13	17 17.18	-46 15.8	2.793	2.993	19.6	19.0	91 E	—	3 12	22 19.40	-44 36.1	1.909	1.380	30.0	19.9	44 W	—	24*
9 18	17 22.31	-45 50.5	2.863	2.998	19.6	19.1	88 E	—	3 17	22 41.21	-42 30.1	1.901	1.368	30.2	19.9	44 W	—	24*
9 23	17 27.91	-45 26.2	2.933	3.003	19.4	19.1	84 E	—	3 22	23 1.49	-40 13.9	1.895	1.357	30.3	19.9	43 W	—	23*
9 28	17 33.93	-45 2.7	3.002	3.007	19.2	19.2	81 E	—	3 27	23 20.32	-37 49.8	1.892	1.347	30.4	19.8	43 W	—	23*
10 8	17 47.08	-44 17.8	3.138	3.016	18.6	19.2	74 E	—	4 1	23 37.80	-35 19.9	1.890	1.339	30.4	19.8	43 W	—	24*
10 18	18 1.49	-43 34.4	3.269	3.023	17.7	19.3	67 E	—	4 6	23 54.06	-32 46.0	1.890	1.332	30.3	19.8	42 W	—	24*
10 28	18 16.91	-42 51.3	3.393	3.030	16.6	19.3	61 E	—	4 11	0 9.22	-30 9.5	1.891	1.327	30.3	19.8	42 W	—	25*
11 7	18 33.12	-42 7.4	3.508	3.036	15.3	19.4	54 E	—	4 16	0 23.41	-27 31.7	1.893	1.323	30.3	19.8	42 W	—	26*
11 17	18 49.94	-41 21.7	3.614	3.040	14.0	19.4	48 E	—	4 21	0 36.74	-24 53.5	1.894	1.322	30.2	19.8	41 W	—	27*
11 27	19 7.21	-40 33.6	3.708	3.044	12.5	19.4	42 E	—	4 26	0 49.31	-22 15.6	1.896	1.321	30.2	19.8	41 W	—	28*
12 7	19 24.75	-39 42.5	3.789	3.047	10.9	19.4	36 E	—	5 1	1 1.22	-19 38.8	1.897	1.323	30.3	19.8	41 W	—	29*
12 17	19 42.46	-38 48.1	3.857	3.049	9.4	19.4	30 E	—	5 11	1 23.34	-14 29.3	1.896	1.331	30.5	19.8	42 W	—	32*
12 27	20 0.20	-37 50.3	3.910	3.050	7.9	19.3	25 E	—	5 21	1 43.67	-9 26.5	1.890	1.346	31.0	19.9	43 W	—	36*
1 6	20 17.87	-36 49.1	3.948	3.050	6.6	19.3	21 E	—	5 31	2 2.61	-4 30.7	1.876	1.366	31.8	19.9	45 W	—	39*
1 16	20 35.39	-35 44.9	3.971	3.049	5.6	19.3	18 E	—	6 10	2 20.47	+ 0 18.9	1.855	1.392	32.7	19.9	48 W	5*	42*
12 23	15 55.26	-17 50.5	2.914	2.122	13.5	21.2	30 W	16*	6 20	2 37.46	+ 5 4.0	1.824	1.423	33.7	20.0	51 W	13*	43*
1 2	16 17.71	-18 40.1	2.815	2.087	15.7	21.2	35 W	18*	6 30	2 53.71	+ 9 46.4	1.786	1.458	34.7	20.0	55 W	21*	44*
1 12	16 40.68	-19 18.0	2.709	2.052	17.8	21.2	40 W	19*	7 10	3 9.28	+14 28.6	1.740	1.497	35.6	20.0	59 W	30*	43*
1 22	17 4.14	-19 43.3	2.599	2.017	20.0	21.1	44 W	19*	7 20	3 24.19	+19 13.2	1.687	1.539	36.4	20.1	64 W	39*	41*
2 1	17 27.99	-19 54.7	2.484	1.981	22.0	21.0	49 W	20*	7 30	3 38.32	+24 3.2	1.630	1.584	36.8	20.1	69 W	48*	38*
2 11	17 52.13	-19 51.5	2.367	1.947	24.0	20.9	53 W	20*	8 9	3 51.50	+29 1.5	1.569	1.630	36.9	20.0	75 W	58*	34*
2 21	18 16.48	-19 33.1	2.248	1.912	25.9	20.8	58 W	21*	8 19	4 3.43	+34 10.9	1.508	1.678	36.5	20.0	81 W	68*	30*
3 2	18 40.91	-18 59.2	2.128	1.878	27.8	20.7	62 W	21*	8 24	4 8.76	+36 50.5	1.479	1.702	36.2	20.0	84 W	73*	27*
3 12	19 5.29	-18 9.8	2.008	1.845	29.5	20.6	66 W	21*	8 29	4 13.55	+39 33.4	1.450	1.727	35.7	20.0	87 W	78*	24
3 22	19 29.55	-17 5.2	1.890	1.813	31.1	20.5	70 W	22*	9 3	4 17.71	+42 19.7	1.422	1.752	35.2	19.9	91 W	83*	22
4 1	19 53.54	-15 46.3	1															

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

19/21	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°	19/21	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°
<b>360249 2000 GQ<sub>127</sub></b>										<b>103506 2000 BD<sub>1</sub></b>									
<i>(continuation)</i>										<i>(continuation)</i>									
10 14	3 57.76	+65 23.6	1.298	1.956	27.2	19.7	116 W	70	—	7 20	17 29.64	+16 14.0	1.734	2.493	18.7	19.9	128 E	61	48
10 16	3 52.07	+66 20.4	1.298	1.966	26.8	19.7	117 W	69	—	7 25	17 26.66	+15 14.7	1.765	2.494	19.4	20.0	125 E	60	49
10 18	3 45.67	+67 14.5	1.300	1.976	26.4	19.7	118 W	68	—	7 30	17 24.39	+14 11.0	1.800	2.494	20.1	20.1	122 E	59	50
10 20	3 38.53	+68 5.4	1.302	1.986	26.0	19.7	119 W	67	—	8 4	17 22.84	+13 4.0	1.838	2.494	20.8	20.1	119 E	58	51
10 22	3 30.66	+68 52.8	1.305	1.996	25.6	19.8	120 W	66	—	8 9	17 22.01	+11 54.7	1.879	2.493	21.5	20.2	116 E	57	52
10 24	3 22.04	+69 36.5	1.309	2.006	25.3	19.8	120 W	65	—	8 14	17 21.88	+10 44.1	1.924	2.493	22.1	20.3	112 E	56	53
10 26	3 12.71	+70 15.9	1.313	2.015	25.0	19.8	121 W	65	—	8 19	17 22.45	+ 9 32.9	1.970	2.491	22.6	20.3	109 E	55	54
10 28	3 2.71	+70 51.0	1.318	2.025	24.7	19.8	122 W	64	—	8 24	17 23.69	+ 8 21.8	2.019	2.490	23.0	20.4	106 E	53	56
10 30	2 52.10	+71 21.4	1.324	2.035	24.4	19.8	122 W	64	—	8 29	17 25.57	+ 7 11.5	2.070	2.488	23.4	20.5	102 E	52	57
11 1	2 41.01	+71 46.8	1.331	2.045	24.1	19.8	123 W	63	—	9 8	17 31.09	+ 4 55.2	2.175	2.484	23.8	20.6	96 E	49	59
11 3	2 29.53	+72 7.3	1.337	2.054	23.9	19.8	123 E	63	—	9 18	17 38.76	+ 2 47.0	2.284	2.478	23.9	20.7	89 E	47	60
11 5	2 17.83	+72 22.6	1.347	2.064	23.7	19.8	123 E	63	—	9 28	17 48.33	+ 0 49.0	2.394	2.472	23.7	20.8	82 E	44	59
11 7	2 6.07	+72 33.0	1.356	2.074	23.5	19.9	123 E	62	—	10 8	17 59.53	+ 0 57.3	2.504	2.463	23.2	20.8	76 E	42	56
11 8	2 0.21	+72 36.3	1.361	2.078	23.4	19.9	123 E	62	—	10 18	18 12.15	+ 2 31.1	2.610	2.454	22.4	20.9	70 E	40	52
11 9	1 54.39	+72 38.4	1.366	2.083	23.4	19.9	123 E	62	—	10 28	18 26.02	+ 3 51.8	2.713	2.443	21.4	21.0	64 E	38	46
11 10	1 48.65	+72 39.3	1.371	2.088	23.3	19.9	123 E	62	—	11 7	18 40.93	+ 4 59.1	2.809	2.432	20.2	21.0	58 E	36	40
11 11	1 42.98	+72 39.1	1.377	2.093	23.2	19.9	123 E	62	—	11 17	18 56.74	+ 5 53.1	2.899	2.418	18.8	21.0	52 E	33	34
11 12	1 37.42	+72 37.9	1.382	2.097	23.2	19.9	123 E	62	—	11 27	19 13.32	+ 6 33.7	2.979	2.404	17.2	21.0	46 E	31	27
11 13	1 31.98	+72 35.5	1.388	2.102	23.1	19.9	123 E	62	—	12 7	19 30.52	+ 7 1.3	3.051	2.389	15.5	21.0	40 E	29	21
11 14	1 26.67	+72 32.1	1.394	2.107	23.1	19.9	123 E	62	—	12 17	19 48.23	+ 7 16.1	3.111	2.372	13.7	20.9	35 E	26	14
11 15	1 21.51	+72 27.8	1.400	2.112	23.0	19.9	123 E	63	—	12 27	20 6.36	+ 7 18.8	3.160	2.354	11.8	20.9	29 E	22	9
11 16	1 16.51	+72 22.6	1.406	2.116	23.0	20.0	123 E	63	—	1 6	20 24.81	+ 7 9.9	3.197	2.335	9.9	20.8	24 E	18	3
11 17	1 11.68	+72 16.5	1.412	2.121	23.0	20.0	123 E	63	—	1 16	20 43.51	+ 6 50.3	3.222	2.314	8.0	20.7	19 E	13	—
11 19	1 2.55	+72 2.0	1.426	2.131	22.9	20.0	123 E	63	—	<b>3288 Seleucus</b>									
11 21	0 54.19	+71 44.8	1.440	2.140	22.9	20.0	123 E	63	—	12 23	15 57.59	+20 37.5	1.862	1.109	25.5	17.9	29 W	14	19
11 23	0 46.59	+71 25.3	1.454	2.149	22.9	20.1	122 E	64	—	12 28	16 18.81	+21 14.9	1.866	1.115	25.4	18.0	29 W	13	19
11 25	0 39.78	+71 3.9	1.469	2.159	22.9	20.1	122 E	64	—	1 2	16 39.89	+21 41.8	1.872	1.123	25.4	18.0	29 W	13	20
11 27	0 33.72	+70 41.0	1.485	2.168	22.9	20.1	121 E	64	—	1 7	17 0.76	+21 58.3	1.880	1.134	25.3	18.0	30 W	12	20
11 29	0 28.40	+70 17.0	1.501	2.177	22.9	20.2	121 E	65	—	1 12	17 21.32	+22 4.6	1.890	1.148	25.3	18.0	30 W	12	21
12 1	0 23.77	+69 52.2	1.518	2.186	23.0	20.2	120 E	65	—	1 22	18 1.20	+21 48.7	1.912	1.181	25.3	18.1	31 W	12	23
12 3	0 19.81	+69 26.8	1.536	2.196	23.0	20.2	119 E	66	—	2 1	18 38.99	+20 58.9	1.936	1.222	25.5	18.2	32 W	11	25
12 5	0 16.47	+69 1.1	1.554	2.205	23.1	20.3	119 E	66	—	2 11	19 14.35	+19 41.7	1.960	1.269	25.8	18.4	34 W	12	27
12 7	0 13.70	+68 35.3	1.572	2.214	23.1	20.3	118 E	66	—	2 21	19 47.16	+18 3.3	1.982	1.321	26.3	18.5	36 W	12	29
12 9	0 11.48	+68 9.6	1.591	2.223	23.2	20.3	117 E	67	—	3 2	20 17.43	+16 9.8	2.001	1.377	26.8	18.6	39 W	12	32
12 11	0 9.76	+67 44.2	1.610	2.232	23.2	20.4	117 E	67	—	3 12	20 45.25	+14 6.6	2.014	1.435	27.5	18.7	42 W	13	35
12 13	0 8.50	+67 19.1	1.630	2.241	23.3	20.4	116 E	68	—	3 22	21 10.78	+11 57.8	2.020	1.496	28.2	18.8	45 W	14	39
12 15	0 7.67	+66 54.6	1.650	2.250	23.4	20.5	115 E	68	—	4 1	21 34.17	+ 9 47.2	2.019	1.557	28.9	19.0	49 W	16	42
12 17	0 7.24	+66 30.7	1.670	2.259	23.4	20.5	114 E	68	—	4 11	21 55.54	+ 7 37.5	2.009	1.619	29.7	19.1	53 W	17	46
12 19	0 7.17	+66 7.6	1.691	2.267	23.5	20.5	113 E	69	—	4 21	22 15.03	+ 5 31.1	1.990	1.681	30.3	19.1	58 W	19	50
12 21	0 7.45	+65 45.2	1.713	2.276	23.6	20.6	112 E	69	—	5 1	22 32.68	+ 3 29.8	1.962	1.742	30.8	19.2	62 W	21	54
12 23	0 8.04	+65 23.6	1.734	2.285	23.6	20.6	111 E	70	—	5 11	22 48.50	+ 1 35.3	1.925	1.802	31.2	19.2	68 W	24	58
12 25	0 8.92	+65 3.0	1.756	2.294	23.7	20.6	111 E	70	—	5 21	23 2.46	+ 0 10.8	1.879	1.862	31.4	19.3	73 W	28	60
12 27	0 10.06	+64 43.2	1.778	2.302	23.7	20.7	110 E	70	—	5 31	23 14.47	+ 1 47.0	1.825	1.921	31.3	19.3	80 W	32	62
1 1	0 13.98	+63 57.8	1.835	2.324	23.8	20.8	107 E	71	—	6 10	23 24.36	+ 3 11.5	1.765	1.978	30.8	19.2	86 W	36	61
1 6	0 19.21	+63 18.3	1.893	2.345	23.9	20.9	105 E	72	—	6 20	23 31.94	+ 4 22.7	1.700	2.033	29.9	19.2	94 W	41	60
1 11	0 25.56	+62 44.3	1.952	2.366	24.0	20.9	102 E	72	—	6 30	23 36.92	+ 5 18.1	1.632	2.088	28.5	19.1	101 W	46	59
1 16	0 32.88	+62 16.5	2.012	2.386	24.0	21.0	100 E	72	—	7 10	23 39.04	+ 5 55.2	1.565	2.140	26.5	19.0	110 W	50	58
<b>103506 2000 BD<sub>1</sub></b>										7 20	23 38.07	+ 6 11.3	1.502	2.192	23.7	18.9	120 W	51	58
12 23	15 55.51	+ 3 40.5	2.904	2.192	15.5	20.7	36 W	28	12*	7 30	23 33.87	+ 6 3.6	1.448	2.241	20.3	18.8	130 W	51	58
1 1	16 14.74	+ 3 34.9	2.856	2.218	17.1	20.7	42 W	31	18*	8 9	23 26.61	+ 5 30.5	1.408	2.289	16.1	18.6	141 W	51	58
1 12	16 33.38	+ 3 15.7	2.798	2.243	18.6	20.7	47 W	34	24*	8 19	23 16.78	+ 4 32.9	1.387	2.335	11.3	18.5	153 W	50	59
1 22	16 51.33	+ 2 42.7	2.733	2.267	20.1	20.8	52 W	36	31*	8 24	23 11.19	+ 3 55.9	1.386	2.357	8.8	18.4	159 W	49	60
2 1	17 8.44	+ 1 55.8	2.659	2.290	21.3	20.8	58 W	38	37*	8 29	23 5.34	+ 3 14.6	1.390	2.379	6.4	18.3	165 W	48	61
2 11	17 24.55	+ 0 54.9	2.579	2.311	22.4	20.8	63 W	40	43*	9 3	22 59.42	+ 2 30.2	1.402	2.401	4.4	18.2	170 W	48	61
2 21	17 39.53	+ 0 19.5	2.493	2.332	23.3	20.7	69 W	42	48*	9 8	22 53.58	+ 1 43.8	1.421	2.422	3.4	18.2	172 E	47	62
3 2	17 53.18	+ 1 47.1	2.402	2.351	24.0	20.7	75 W	44	53*	9 13	22 47.97	+ 0 56.6	1.446	2.443	4.2	18.3	170 E	46	63
3 12	18 5.29	+ 3 26.8	2.308	2.369	24.5	20.6	81 W	47	56*	9 18	22 42.76	+ 0 9.9	1.479	2.463	6.1	18.5	165 E	45	64
3 22	18 15.65	+ 5 17.4	2.213	2.386	24.7	20.6	87 W	49	58*	9 23	22 38.06	+ 0 35.1	1.519	2.483	8.2	18.7	159 E	44	65
4 1	18 24.01	+ 7 17.2	2.117	2.402	24.5	20.5	94 W	52	57	9 28	22 33.98	+ 1 17.4	1.565	2.503	10.2	18.8	154 E	44	65
4 11	18 30.11	+ 9 23.5	2.024	2.417	24.1	20.4	100 W	54	55	10 8	22 27.88	+ 2 31.3	1.675	2.540	13.9	19.1	142 E	42	67
4 21	18 33.67	+11 32.9	1.936	2.430	23.3	20.3	107 W	57	52	10 18	22 24.68	+ 3 28.1	1.805	2.576	16.8	19.4	132 E	42	67
4 26	18 34.42	+12 37.3	1.894	2.436	22.8	20.2	111 W	58	51	10									

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

2020	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	$45^\circ$	$-26^\circ$	19/21	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	$45^\circ$	$-26^\circ$		
<b>184990 2006 KE<sub>89</sub></b>										<b>184990 2006 KE<sub>89</sub></b>											
<i>(continuation)</i>										<i>(continuation)</i>											
2	21	17 29.01	+12 40.0	1.868	1.867	30.7	20.4	75 W	55*	41*	8	31	10 39.46	+24 49.6	1.565	0.659	25.3	17.6	16 E	6*	—
3	2	17 41.05	+14 10.9	1.736	1.844	32.0	20.3	80 W	57*	44*	9	2	10 49.63	+24 53.6	1.595	0.696	25.1	17.8	17 E	7*	—
3	12	17 51.66	+16 4.2	1.598	1.814	33.1	20.1	86 W	60*	46*	9	4	10 59.42	+24 53.5	1.625	0.732	24.9	17.9	18 E	8*	—
3	22	18 0.50	+18 22.6	1.454	1.778	34.1	19.9	91 W	63*	45*	9	6	11 8.86	+24 50.0	1.653	0.767	24.7	18.1	19 E	9*	—
4	1	18 7.00	+21 9.4	1.308	1.734	34.9	19.6	97 W	66*	43	9	8	11 17.96	+24 43.5	1.681	0.801	24.4	18.2	19 E	10*	—
4	6	18 9.15	+22 44.6	1.234	1.709	35.3	19.5	99 W	68*	41	9	13	11 39.36	+24 17.1	1.748	0.882	23.9	18.5	21 E	11*	—
4	11	18 10.40	+24 28.3	1.161	1.682	35.7	19.3	102 W	69*	40	9	18	11 59.03	+23 40.3	1.811	0.958	23.3	18.7	22 E	12*	—
4	16	18 10.57	+26 21.5	1.088	1.653	36.0	19.1	104 W	71	38	9	23	12 17.22	+22 56.8	1.870	1.029	22.7	18.9	23 E	13*	—
4	21	18 9.43	+28 24.6	1.016	1.622	36.4	19.0	107 W	73	36	9	28	12 34.13	+22 9.2	1.926	1.095	22.3	19.1	24 E	14*	—
4	26	18 6.68	+30 38.4	0.946	1.589	36.8	18.8	109 W	76	33	10	3	12 49.94	+21 19.5	1.978	1.158	21.8	19.3	25 E	14*	—
5	1	18 1.94	+33 2.9	0.877	1.553	37.3	18.6	111 W	78	31	10	8	13 4.82	+20 29.0	2.026	1.216	21.5	19.4	26 E	14*	—
5	6	17 54.68	+35 38.1	0.811	1.516	38.0	18.4	112 W	81	28	10	13	13 18.89	+19 38.8	2.071	1.271	21.2	19.5	27 E	14*	—
5	11	17 44.21	+38 23.2	0.747	1.476	38.9	18.2	113 W	83	26	10	18	13 32.27	+18 49.7	2.112	1.323	21.0	19.7	28 E	14*	—
5	13	17 38.91	+39 31.5	0.722	1.459	39.4	18.1	114 W	85	24	10	28	13 57.28	+17 17.0	2.181	1.419	20.8	19.9	31 W	18*	—
5	15	17 32.87	+40 40.6	0.698	1.442	39.9	18.0	114 W	86	23	11	7	14 20.42	+15 54.2	2.235	1.503	21.0	20.1	33 W	22*	—
5	17	17 26.01	+41 50.3	0.675	1.424	40.5	17.9	114 W	87	22	11	17	14 42.09	+14 43.2	2.272	1.578	21.4	20.2	36 W	26*	—
5	19	17 18.23	+43 0.0	0.652	1.406	41.3	17.8	114 W	88	21	11	27	15 2.55	+13 45.8	2.291	1.643	22.1	20.3	39 W	31*	—
5	21	17 9.44	+44 8.9	0.630	1.388	42.1	17.7	113 W	89	20	12	7	15 21.99	+13 2.9	2.294	1.700	23.0	20.4	42 W	36*	—
5	23	16 59.54	+45 16.3	0.609	1.369	43.0	17.7	113 W	90	19	12	17	15 40.51	+12 35.5	2.280	1.749	24.0	20.5	46 W	40*	3*
5	25	16 48.42	+46 21.2	0.589	1.349	44.1	17.6	112 W	89	18	12	27	15 58.16	+12 24.4	2.250	1.791	25.0	20.6	50 W	44*	9*
5	27	16 36.00	+47 22.1	0.569	1.330	45.3	17.5	111 W	88	17	1	6	16 14.93	+12 30.3	2.203	1.825	26.2	20.6	55 W	48*	15*
5	29	16 22.19	+48 17.7	0.551	1.309	46.6	17.5	110 E	87	16	1	16	16 30.80	+12 54.3	2.142	1.853	27.3	20.6	60 W	51*	21*
5	31	16 6.96	+49 6.3	0.533	1.289	48.2	17.4	109 E	86	15	<b>13920 Montecorvino</b>										
6	2	15 50.28	+49 45.8	0.517	1.267	49.9	17.3	107 E	85	14	12	23	15 58.73	-22 46.1	2.844	2.033	13.3	19.3	28 W	12*	19*
6	4	15 32.22	+50 14.2	0.502	1.245	51.8	17.3	105 E	85	14	1	2	16 22.84	-23 48.3	2.757	2.004	15.5	19.3	33 W	13*	24*
6	6	15 12.91	+50 29.3	0.488	1.223	53.8	17.2	103 E	85	14	1	12	16 47.56	-24 37.8	2.664	1.976	17.6	19.2	37 W	13*	29*
6	8	14 52.55	+50 29.2	0.475	1.200	56.1	17.2	101 E	85	14	1	22	17 12.81	-25 13.3	2.567	1.948	19.7	19.2	42 W	14*	34*
6	10	14 31.44	+50 12.1	0.464	1.177	58.6	17.2	98 E	85	14	2	1	17 38.49	-25 33.8	2.465	1.920	21.7	19.1	46 W	14*	39*
6	11	14 20.71	+49 56.7	0.459	1.165	59.9	17.2	97 E	85	14	2	11	18 4.45	-25 38.2	2.361	1.893	23.7	19.1	50 W	14*	44*
6	12	14 9.92	+49 36.7	0.454	1.153	61.2	17.2	96 E	85	14	2	21	18 30.56	-25 26.3	2.254	1.866	25.6	19.0	55 W	14*	48*
6	13	13 59.13	+49 12.0	0.450	1.141	62.6	17.2	94 E	86	15	3	2	18 56.65	-24 57.6	2.147	1.840	27.4	18.9	59 W	14*	53*
6	14	13 48.38	+48 42.5	0.446	1.128	64.1	17.2	93 E	86*	15	3	12	19 22.55	-24 12.5	2.038	1.815	29.2	18.8	63 W	14*	57*
6	15	13 37.71	+48 8.4	0.442	1.116	65.5	17.2	91 E	85*	16	3	22	19 48.12	-23 11.5	1.931	1.791	30.8	18.7	67 W	15*	61*
6	16	13 27.17	+47 29.7	0.439	1.103	67.1	17.2	90 E	83*	17	4	1	20 13.20	-21 55.6	1.824	1.769	32.2	18.6	71 W	15*	65*
6	17	13 16.80	+46 46.6	0.436	1.090	68.6	17.2	88 E	81*	17	4	11	20 37.65	-20 26.1	1.719	1.748	33.6	18.5	75 W	16*	69*
6	18	13 6.61	+45 59.2	0.433	1.077	70.2	17.2	86 E	78*	18	4	21	21 1.35	-18 44.6	1.616	1.728	34.8	18.4	79 W	18*	72*
6	19	12 56.65	+45 7.7	0.431	1.064	71.9	17.2	84 E	76*	19	5	1	21 24.17	-16 53.2	1.516	1.711	35.7	18.2	83 W	19*	76*
6	20	12 46.94	+44 12.5	0.429	1.051	73.6	17.2	83 E	73*	20	5	11	21 45.98	-14 53.9	1.419	1.695	36.5	18.1	87 W	21*	77*
6	22	12 28.29	+42 11.8	0.427	1.023	77.0	17.3	79 E	68*	22	5	21	22 6.67	-12 49.2	1.325	1.681	37.0	17.9	91 W	24*	77*
6	24	12 10.74	+39 59.4	0.426	0.996	80.5	17.4	75 E	63*	24	5	31	22 26.04	-10 41.9	1.235	1.670	37.2	17.8	95 W	27*	75
6	26	11 54.29	+37 37.8	0.427	0.967	84.2	17.4	71 E	57*	26*	6	10	22 43.90	-8 34.5	1.149	1.661	37.0	17.6	100 W	31*	73
6	28	11 38.87	+35 9.8	0.429	0.938	87.9	17.5	67 E	52*	28*	6	20	23 0.00	-6 30.3	1.067	1.655	36.4	17.4	105 W	35*	71
6	30	11 24.40	+32 37.6	0.433	0.907	91.7	17.6	63 E	47*	30*	6	30	23 13.96	-4 32.5	0.989	1.651	35.2	17.2	111 W	39*	69
7	2	11 10.78	+30 3.5	0.439	0.876	95.5	17.7	59 E	42*	31*	7	10	23 25.42	-2 44.7	0.917	1.649	33.3	17.0	117 W	42*	67
7	4	10 57.89	+27 29.6	0.446	0.844	99.4	17.9	55 E	37*	32*	7	20	23 33.88	-1 10.6	0.852	1.650	30.7	16.8	124 W	44	65
7	6	10 45.62	+24 57.7	0.454	0.811	103.3	18.0	51 E	32*	32*	8	30	23 38.83	+0 5.5	0.794	1.654	27.2	16.5	132 W	45	64
7	8	10 33.85	+22 29.5	0.464	0.778	107.2	18.2	47 E	27*	31*	8	9	23 39.95	+1 0.3	0.747	1.660	22.8	16.3	141 W	46	63
7	10	10 22.49	+20 6.4	0.476	0.743	111.1	18.4	43 E	22*	30*	8	19	23 37.15	+1 30.7	0.712	1.669	17.3	16.0	151 W	47	62
7	12	10 11.45	+17 49.8	0.489	0.707	115.1	18.6	39 E	17*	28*	8	29	23 30.97	+1 36.1	0.692	1.680	11.1	15.7	161 W	47	62
7	14	10 0.64	+15 41.1	0.505	0.670	119.1	18.8	35 E	13*	26*	9	3	23 26.99	+1 30.5	0.689	1.687	7.8	15.6	167 W	47	62
7	16	9 50.00	+13 41.4	0.522	0.632	123.1	19.1	31 E	9*	24*	9	8	23 22.69	+1 20.4	0.690	1.694	4.8	15.4	172 W	46	63
7	18	9 39.48	+11 52.1	0.542	0.593	127.1	19.4	28 E	5*	21*	9	13	23 18.30	+1 6.9	0.697	1.701	3.1	15.4	175 E	46	63
7	20	9 29.04	+10 14.7	0.564	0.552	131.0	19.7	24 E	1*	18*	9	18	23 14.06	+0 51.2	0.708	1.709	4.5	15.5	172 E	46	63
7	22	9 18.70	+8 50.8	0.589	0.511	134.8	20.0	21 E	—	15*	9	23	23 10.22	+0 34.7	0.724	1.718	7.3	15.7	167 E	46	63
7	24	9 8.46	+7 42.3	0.618	0.468	138.1	20.3	18 E	—	11*	9	28	23 6.97	+0 18.9	0.745	1.726	10.3	15.9	162 E	45	64
7	26	8 58.42	+6 51.6	0.652	0.424	140.6	20.5	15 E	—	8*	10	3	23 4.47	+0 5.0	0.771	1.736	13.2	16.1	157 E	45	64
7	28	8 48.73	+6 21.5	0.690	0.380	141.6	20.6	13 E	—	4*	10	8	23 2.80	-0 6.3	0.802	1.746	15.9	16.3	151 E	45	64
7	30	8 39.65	+6 15.8	0.735	0.335	140.0	20.2	12 E	—	—	—	—	—	—	—	—	—	—	—	—	—
8	1	8 31.67	+6 39.0	0.788	0.293	134.5	19.4	12 W	—	2*	10	18	23 2.17	-0 18.2	0.875	1.767	20.6	16.7	141 E	45	64
8	3	8 25.53	+7 36.2	0.850	0.254	124.0	1														

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

19/21	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°	19/21	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°
<b>7822 1991 CS</b>										<b>271073 2003 KU<sub>13</sub></b>									
<i>(continuation)</i>																			
3 22	20 51.20	+ 8 3.0	1.637	1.238	37.4	20.4	49 W	33*	32*	12 23	15 59.81	-24 11.3	2.997	2.179	12.2	20.9	28 W	10*	20*
4 1	21 23.06	+ 9 13.5	1.599	1.218	38.7	20.4	50 W	32*	34*	1 2	16 22.20	-25 51.9	2.894	2.137	14.5	20.9	33 W	11*	25*
4 11	21 55.24	+10 17.4	1.557	1.196	40.1	20.3	50 W	31*	36*	1 12	16 45.59	-27 25.2	2.784	2.095	16.7	20.8	38 W	11*	31*
4 21	22 28.09	+11 11.7	1.511	1.172	41.6	20.3	51 W	29*	37*	1 22	17 10.00	-28 50.3	2.669	2.054	18.9	20.8	42 W	11*	36*
5 1	23 1.94	+11 53.3	1.461	1.147	43.4	20.2	51 W	28*	38*	2 1	17 35.43	-30 5.8	2.551	2.013	21.0	20.7	47 W	10*	41*
5 11	23 37.18	+12 18.5	1.409	1.120	45.3	20.1	52 W	26*	39*	2 11	18 1.86	-31 10.6	2.431	1.973	23.0	20.6	51 W	9*	45*
5 21	0 14.23	+12 23.8	1.356	1.093	47.3	20.0	53 W	25*	40*	2 21	18 29.25	-32 3.6	2.310	1.934	25.0	20.5	56 W	8*	50*
5 31	0 53.42	+12 5.4	1.304	1.066	49.4	20.0	53 W	23*	41*	3 2	18 57.52	-32 43.7	2.190	1.897	26.9	20.4	60 W	7*	53*
6 10	1 34.97	+11 20.2	1.257	1.040	51.4	19.9	53 W	21*	42*	3 7	19 11.94	-32 58.6	2.130	1.878	27.8	20.3	62 W	6*	55*
6 20	2 18.91	+10 6.6	1.218	1.015	53.2	19.8	53 W	20*	43*	3 12	19 26.54	-33 10.0	2.071	1.860	28.6	20.3	64 W	6*	57*
6 30	3 4.91	+ 8 25.6	1.191	0.992	54.6	19.8	53 W	18*	43*	3 17	19 41.29	-33 17.7	2.013	1.843	29.5	20.2	66 W	5*	58*
7 5	3 28.48	+ 7 26.2	1.183	0.982	55.1	19.7	52 W	17*	43*	3 22	19 56.17	-33 21.8	1.956	1.826	30.3	20.2	68 W	5*	60*
7 10	3 52.30	+ 6 22.2	1.179	0.972	55.4	19.7	52 W	16*	43*	3 27	20 11.15	-33 22.3	1.900	1.809	31.1	20.1	69 W	4*	61*
7 15	4 16.24	+ 5 14.9	1.179	0.964	55.5	19.7	51 W	16*	43*	4 1	20 26.20	-33 19.1	1.845	1.793	31.8	20.1	71 W	4*	63*
7 20	4 40.17	+ 4 5.5	1.184	0.957	55.5	19.7	51 W	15*	43*	4 6	20 41.29	-33 12.2	1.792	1.778	32.6	20.0	73 W	4*	64*
7 25	5 3.96	+ 2 55.5	1.192	0.950	55.2	19.7	50 W	14*	43*	4 11	20 56.40	-33 1.8	1.739	1.763	33.2	19.9	75 W	3*	65*
7 30	5 27.48	+ 1 46.2	1.205	0.945	54.7	19.7	49 W	14*	42*	4 16	21 11.48	-32 47.9	1.688	1.749	33.9	19.9	76 W	3*	67*
8 4	5 50.65	+ 0 39.0	1.221	0.942	54.1	19.7	49 W	14*	42*	4 21	21 26.51	-32 30.8	1.639	1.735	34.5	19.8	78 W	3*	68*
8 9	6 13.38	+ 0 25.3	1.240	0.939	53.3	19.7	48 W	14*	41*	4 26	21 41.44	-32 10.5	1.591	1.722	35.1	19.7	80 W	3*	70*
8 19	6 57.30	- 2 22.2	1.286	0.938	51.3	19.7	46 W	14*	40*	5 1	21 56.23	-31 47.3	1.544	1.710	35.6	19.7	81 W	3*	72*
8 29	7 38.99	- 4 1.3	1.336	0.943	49.0	19.7	45 W	14*	38*	5 11	22 25.26	-30 53.4	1.455	1.688	36.5	19.5	84 W	3*	75*
9 8	8 18.49	+ 5 22.4	1.387	0.953	46.6	19.8	43 W	15*	36*	5 21	22 53.30	-29 51.4	1.373	1.669	37.3	19.4	87 W	4*	79*
9 18	8 56.02	- 6 27.2	1.433	0.968	44.4	19.8	42 W	17*	35*	5 31	23 20.02	-28 44.6	1.296	1.654	37.8	19.3	91 W	5*	82*
9 28	9 31.83	- 7 17.8	1.472	0.987	42.6	19.9	42 W	18*	34*	6 10	23 45.09	-27 35.8	1.223	1.643	38.1	19.1	94 W	7*	87*
10 8	10 6.27	- 7 55.8	1.501	1.009	41.4	19.9	42 W	20*	33*	6 20	0 8.21	-26 28.5	1.156	1.635	38.0	19.0	97 W	10*	90
10 18	10 39.68	- 8 22.6	1.518	1.033	40.6	20.0	43 W	23*	32*	6 30	0 28.96	-25 25.7	1.092	1.632	37.7	18.9	101 W	13*	89
10 28	11 12.31	- 8 38.3	1.524	1.059	40.4	20.0	44 W	25*	31*	7 10	0 46.96	-24 29.8	1.032	1.632	36.9	18.7	106 W	16*	88
11 7	11 44.47	- 8 42.3	1.517	1.086	40.7	20.1	46 W	27*	32*	7 20	1 1.73	-23 42.5	0.976	1.637	35.5	18.6	111 W	19*	88
11 17	12 16.38	- 8 33.4	1.499	1.113	41.3	20.1	48 W	30*	32*	7 30	1 12.72	-23 4.0	0.923	1.646	33.6	18.4	116 W	22*	87
11 27	12 48.22	- 8 9.3	1.471	1.140	42.0	20.2	51 W	32*	33*	8 4	1 16.63	-22 47.5	0.898	1.651	32.4	18.3	119 W	22*	87
12 7	13 20.15	- 7 27.7	1.436	1.166	43.0	20.2	54 W	34*	34*	8 9	1 19.39	-22 32.3	0.875	1.658	31.0	18.2	123 W	22	87
12 17	13 52.25	- 6 25.7	1.394	1.190	43.9	20.2	57 W	36*	36*	8 14	1 20.93	-22 17.9	0.854	1.666	29.4	18.1	126 W	23	86
12 27	14 24.54	- 5 0.5	1.348	1.213	44.8	20.2	60 W	38*	38*	8 19	1 21.20	-22 3.4	0.834	1.674	27.6	18.1	130 W	23	86
1 6	14 57.00	- 3 9.6	1.300	1.233	45.6	20.2	64 W	41*	40*	8 24	1 20.17	-21 47.8	0.817	1.684	25.6	18.0	134 W	23	86
1 16	15 29.53	- 0 51.7	1.253	1.252	46.2	20.1	67 W	43*	42*	8 29	1 17.85	-21 29.7	0.802	1.694	23.5	17.9	138 W	24	85
12 23	15 59.69	- 40 24.3	1.639	0.941	32.4	21.4	31 W	—	24*	9 3	1 14.32	-21 7.8	0.791	1.705	21.2	17.8	142 W	24	85
12 25	16 11.35	- 41 34.6	1.626	0.931	32.8	21.4	31 W	—	24*	9 8	1 9.66	-20 40.9	0.783	1.717	18.2	17.7	147 W	24	85
12 27	16 23.64	- 42 41.2	1.614	0.921	33.3	21.4	31 W	—	24*	9 13	1 4.04	-20 7.7	0.780	1.729	16.5	17.6	151 W	25	84
12 29	16 36.56	- 43 43.5	1.603	0.911	33.6	21.3	31 W	—	24*	9 18	0 57.67	-19 27.3	0.781	1.743	14.3	17.6	155 W	26	83
12 31	16 50.13	- 44 40.6	1.593	0.901	33.9	21.3	31 W	—	23*	9 23	0 50.82	-18 38.9	0.787	1.757	12.6	17.5	158 W	26	83
1 1	17 4.32	- 45 31.8	1.584	0.892	34.2	21.3	31 W	—	22*	9 28	0 43.80	-17 42.5	0.798	1.771	11.5	17.6	159 W	27	82
1 4	17 19.12	- 46 16.3	1.576	0.883	34.4	21.2	30 W	—	22*	10 3	0 36.92	-16 38.6	0.815	1.786	11.4	17.6	159 W	28	81
1 6	17 34.45	- 46 53.5	1.569	0.875	34.5	21.2	30 W	—	21*	10 8	0 30.42	-15 28.1	0.837	1.802	12.1	17.7	158 E	30	79
1 8	17 50.27	- 47 22.5	1.564	0.866	34.6	21.2	30 W	—	20*	10 13	0 24.55	-14 12.3	0.865	1.819	13.4	17.9	155 E	31	78
1 10	18 6.48	- 47 42.9	1.560	0.858	34.6	21.2	30 W	—	19*	10 18	0 19.47	-12 52.5	0.898	1.835	15.1	18.0	151 E	32	77
1 12	18 22.96	- 47 54.1	1.557	0.851	34.6	21.1	29 W	—	18*	10 23	0 15.31	-11 29.9	0.937	1.853	17.0	18.2	147 E	34	75
1 14	18 39.60	- 47 55.7	1.555	0.843	34.5	21.1	29 W	—	17*	10 28	0 12.15	-10 5.9	0.981	1.870	18.8	18.4	143 E	35	74
1 16	18 56.27	- 47 47.6	1.555	0.837	34.3	21.1	29 W	—	16*	11 2	0 9.98	- 8 41.3	1.029	1.889	20.5	18.6	138 E	36	73
1 18	19 12.83	- 47 29.8	1.556	0.831	34.0	21.1	28 W	—	14*	11 7	0 8.78	- 7 17.1	1.081	1.907	22.0	18.7	134 E	38	71
1 20	19 29.16	- 47 2.5	1.558	0.825	33.6	21.0	28 W	—	13*	11 17	0 9.10	- 4 31.5	1.198	1.945	24.5	19.1	125 E	40	69
1 22	19 45.14	- 46 25.9	1.561	0.820	33.2	21.0	27 W	—	12*	11 27	0 12.67	- 1 51.4	1.328	1.984	26.2	19.4	117 E	43	66
1 24	20 0.66	- 45 40.5	1.566	0.815	32.7	21.0	27 W	—	11*	12 7	0 18.91	+ 0 42.6	1.469	2.024	27.3	19.7	110 E	46	63
1 26	20 15.66	- 44 46.9	1.571	0.811	32.2	21.0	26 W	—	9*	12 17	0 27.32	+ 3 10.7	1.618	2.065	27.7	20.0	102 E	48	60*
1 28	20 30.07	- 43 45.8	1.578	0.807	31.5	21.0	25 W	—	8*	12 27	0 37.51	+ 5 33.5	1.773	2.106	27.7	20.2	95 E	51	55*
1 30	20 43.85	- 42 37.8	1.585	0.804	30.8	20.9	25 W	—	7*	1 6	0 49.11	+ 7 51.4	1.931	2.148	27.2	20.4	89 E	53	49*
2 1	20 56.98	- 41 23.8	1.594	0.802	30.0	20.9	24 E	—	6*	1 16	1 1.88	+10 4.6	2.092	2.190	26.4	20.6	82 E	55	43*
2 3	21 9.47	- 40 4.4	1.604	0.800	29.2	20.9	23 E	—	7*	<b>266691 2009 PB</b>									
2 5	21 21.30	- 38 40.3	1.614	0.799	28.2	20.9	23 E	—	7*	12 23	15 59.89	-21 55.6	3.402	2.578	10.4	21.5	28 W	12*	19*
2 7	21 32.52	- 37 12.3	1.625	0.798	27.3	20.9	22 E	—	7*	1 2	16 18.27	-22 33.5	3.294	2.541	12.5	21.5	34 W	14*	25*
2 9	21 43.13	- 35 40.9	1.637	0.798	26.3	20.9	21 E	—	7*	1 12	16 36.86	-23 3.4	3.174	2.502	14.6	21.4	40 W	16*	31*
2 11	21 53.19	- 34 6.8	1.649	0.799	25.2	20.9	20 E	—	7*	1 22	16 55.61	-23 24.6	3.045	2.463	16.7	21.4	46 W	17*	38*
2 16	22 16.08	- 30 2.8	1.682	0.803	22.4	20.8	18 E	—	6*	2 1</									



EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

19/21	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°	19/21	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°
<b>266691 2009 PB</b>										<b>86666 2000 FL10</b>									
<i>(continuation)</i>										<i>(continuation)</i>									
7 5	20 15.79	8 39.1	0.786	1.765	13.3	17.6	156 W	36	73	9 13	17 40.86	+10 22.1	1.514	1.866	32.6	20.5	93 E	55*	54*
7 10	20 12.88	8 1.5	0.755	1.746	11.2	17.4	161 W	37	72	9 18	17 45.26	+8 50.0	1.543	1.847	33.0	20.6	90 E	53*	55*
7 15	20 9.33	7 27.5	0.728	1.728	9.3	17.2	164 W	38	71	9 23	17 50.36	+7 20.6	1.572	1.828	33.3	20.6	87 E	51*	55*
7 20	20 5.30	6 57.9	0.705	1.710	8.2	17.1	166 W	38	71	9 28	17 56.14	+5 54.3	1.601	1.808	33.5	20.6	85 E	50*	56*
7 30	19 56.64	6 13.6	0.675	1.675	9.5	17.0	164 E	39	70	10 3	18 2.53	+4 31.4	1.629	1.787	33.7	20.6	82 E	48*	55*
8 9	19 48.77	5 50.7	0.663	1.643	14.3	17.1	156 E	39	70	10 8	18 9.52	+3 12.0	1.657	1.765	33.8	20.6	79 E	46*	54*
8 19	19 43.50	5 47.7	0.667	1.614	19.9	17.3	147 E	39	70	10 13	18 17.07	+1 56.4	1.683	1.743	33.8	20.6	76 E	45*	53*
8 24	19 42.31	5 52.2	0.675	1.600	22.6	17.3	143 E	39	70	10 18	18 25.16	+0 44.6	1.709	1.720	33.8	20.6	74 E	44*	52*
8 29	19 42.24	5 59.7	0.685	1.588	25.1	17.4	138 E	39	70	10 23	18 33.76	-0 23.0	1.733	1.696	33.7	20.6	71 E	42*	50*
9 3	19 43.36	6 9.1	0.699	1.576	27.4	17.5	134 E	39	70	10 28	18 42.86	-1 26.6	1.756	1.671	33.6	20.6	68 E	41*	48*
9 9	19 45.66	6 19.6	0.714	1.566	29.5	17.6	130 E	39	70	11 2	18 52.42	-2 25.9	1.778	1.646	33.4	20.6	66 E	40*	46*
9 13	19 49.14	6 30.3	0.732	1.556	31.4	17.7	126 E	38	71	11 7	19 2.43	-3 20.9	1.798	1.619	33.2	20.6	63 E	39*	44*
9 18	19 53.76	6 40.4	0.752	1.547	33.1	17.8	123 E	38	71	11 12	19 12.88	-4 11.6	1.816	1.592	32.9	20.6	61 E	38*	42*
9 28	20 6.23	6 55.4	0.797	1.533	35.8	18.0	116 E	38	71	11 17	19 23.76	-4 57.9	1.832	1.565	32.7	20.6	59 E	37*	39*
10 8	20 22.43	6 59.4	0.848	1.523	37.8	18.2	111 E	38	71	11 22	19 35.05	-5 39.8	1.847	1.536	32.3	20.6	56 E	36*	37*
10 18	20 41.69	6 48.9	0.904	1.518	39.1	18.3	106 E	38	71	11 27	19 46.74	-6 17.2	1.859	1.507	32.0	20.5	54 E	35*	35*
10 28	21 3.40	6 21.2	0.966	1.517	39.9	18.5	101 E	39	70*	12 7	20 11.27	-7 18.7	1.878	1.447	31.2	20.4	50 E	33*	30*
11 7	21 26.88	5 35.7	1.034	1.522	40.2	18.7	97 E	39	69*	12 17	20 37.32	-8 2.6	1.887	1.385	30.3	20.3	45 E	31*	26*
11 17	21 51.59	4 32.7	1.107	1.531	40.1	18.8	94 E	40	66*	12 27	21 4.87	-8 29.0	1.888	1.320	29.5	20.2	41 E	28*	22*
11 27	22 17.10	3 13.5	1.186	1.544	39.7	19.0	90 E	42	62*	1 6	21 33.89	-8 38.5	1.878	1.254	28.7	20.0	38 E	26*	19*
12 7	22 43.00	1 40.5	1.272	1.561	39.0	19.1	87 E	43	58*	1 16	22 4.45	-8 31.6	1.859	1.187	28.0	19.9	34 E	24*	17*
12 17	23 9.04	0 3.5	1.364	1.583	38.1	19.3	83 E	45	53*	<b>85989 1999 JD6</b>									
12 27	23 35.03	+1 55.7	1.461	1.608	37.0	19.5	80 E	47	48*	12 23	16 2.98	-11 37.2	1.501	0.826	37.5	19.1	31 W	21*	14*
1 6	0 0.83	+3 52.9	1.565	1.637	35.7	19.6	76 E	49*	44*	12 28	16 18.50	-11 46.3	1.548	0.886	36.2	19.3	32 W	21*	16*
1 16	0 26.39	+5 52.2	1.673	1.668	34.2	19.7	73 E	50*	40*	1 2	16 33.39	-11 53.3	1.588	0.942	35.3	19.4	34 W	22*	18*
<b>2340 Hathor</b>										1 7	16 47.70	-11 57.8	1.620	0.994	34.8	19.6	35 W	23*	20*
12 23	16 2.09	-21 47.6	1.193	0.561	54.8	21.3	28 W	12*	18*	1 12	17 1.49	-11 59.5	1.646	1.043	34.5	19.7	37 W	23*	22*
12 28	16 40.53	-22 36.0	1.234	0.521	50.0	21.1	24 W	9*	15*	1 22	17 27.70	-11 53.9	1.680	1.130	34.5	19.9	41 W	24*	27*
1 2	17 20.01	-22 52.6	1.281	0.490	43.2	20.9	20 W	7*	12*	2 1	17 52.30	-11 36.1	1.691	1.205	35.0	20.1	45 W	25*	32*
1 7	17 59.99	-22 36.1	1.331	0.470	34.9	20.6	16 W	4*	8*	2 11	18 15.50	-11 6.5	1.681	1.269	35.8	20.2	49 W	26*	37*
1 12	18 39.78	-21 47.5	1.381	0.464	25.6	20.4	12 W	2*	4*	2 21	18 37.50	-10 25.8	1.652	1.322	36.8	20.3	53 W	27*	42*
1 17	19 18.56	-20 29.9	1.429	0.474	16.5	20.2	8 W	—	1*	3 2	18 58.38	-9 34.6	1.605	1.365	37.9	20.3	58 W	28*	47*
1 22	19 55.60	-18 48.8	1.473	0.497	8.6	20.1	4 W	—	—	3 12	19 18.25	-8 33.6	1.543	1.398	39.1	20.3	63 W	29*	52*
1 27	20 30.44	-16 50.6	1.514	0.531	3.9	20.1	2 W	—	—	3 22	19 37.21	-7 23.6	1.467	1.422	40.3	20.3	67 W	30*	57*
2 1	21 2.89	-14 41.3	1.553	0.572	5.7	20.4	3 E	—	—	4 1	19 55.32	-6 5.0	1.378	1.437	41.5	20.2	72 W	32*	61*
2 6	21 33.02	-12 26.0	1.591	0.617	8.9	20.8	6 E	—	—	4 11	20 12.65	-4 38.4	1.278	1.442	42.7	20.1	77 W	33*	64*
2 11	22 0.99	-10 8.8	1.629	0.664	11.3	21.1	8 E	1*	—	4 21	20 29.31	-3 4.0	1.170	1.438	43.8	19.9	82 W	35*	65*
2 16	22 27.04	-7 52.5	1.668	0.711	12.9	21.3	9 E	3*	—	5 1	20 45.39	-1 21.8	1.054	1.426	44.9	19.7	87 W	37*	65*
<b>86666 2000 FL10</b>										5 11	21 1.08	+0 28.8	0.932	1.404	45.9	19.4	93 W	40*	64
12 23	16 2.80	-7 45.1	2.540	1.792	17.2	21.1	33 W	24*	12*	5 21	21 16.69	+2 29.4	0.807	1.373	47.0	19.1	97 W	43*	62
1 2	16 24.48	-7 23.7	2.512	1.833	19.1	21.2	38 W	27*	18*	5 31	21 32.74	+4 43.4	0.680	1.332	48.1	18.7	102 W	46*	59
1 12	16 45.40	-6 47.4	2.472	1.870	20.8	21.3	43 W	30*	23*	6 5	21 41.25	+5 57.5	0.616	1.308	48.8	18.5	104 W	48*	57
1 22	17 5.50	-5 56.0	2.423	1.905	22.5	21.3	48 W	32*	29*	6 10	21 50.38	+7 18.4	0.552	1.281	49.6	18.2	106 W	50*	58
2 1	17 24.70	-4 49.1	2.364	1.936	23.9	21.3	53 W	34*	35*	6 15	22 0.51	+8 48.9	0.488	1.252	50.7	17.9	107 W	52*	55
2 11	17 42.87	-3 26.6	2.296	1.965	25.3	21.3	58 W	36*	40*	6 20	22 12.21	+10 32.9	0.425	1.220	52.1	17.6	109 W	54*	53
2 21	17 59.93	-1 48.7	2.220	1.990	26.5	21.3	64 W	39*	46*	6 25	22 26.51	+12 37.1	0.363	1.185	54.2	17.2	109 W	57*	51
3 2	18 15.71	+0 4.5	2.137	2.013	27.4	21.3	69 W	41*	50*	6 30	22 45.27	+15 12.5	0.303	1.147	57.4	16.9	108 W	59*	49
3 12	18 30.05	+2 12.7	2.050	2.032	28.2	21.2	75 W	44*	54*	7 2	22 54.76	+16 27.2	0.279	1.131	59.1	16.7	107 W	61*	48
3 22	18 42.78	+4 35.4	1.958	2.049	28.7	21.2	81 W	47*	56*	7 4	23 5.89	+17 51.4	0.256	1.115	61.2	16.6	106 W	62*	46
4 1	18 53.64	+7 11.6	1.865	2.062	28.9	21.1	87 W	50*	56*	7 6	23 19.17	+19 26.7	0.234	1.098	63.8	16.4	104 W	63*	45
4 11	19 2.37	+9 59.6	1.771	2.073	28.9	21.0	93 W	53*	54	7 8	23 35.30	+21 15.0	0.213	1.081	67.0	16.3	102 W	64*	43
4 21	19 8.65	+12 57.5	1.679	2.081	28.5	20.9	99 W	57*	51	7 10	23 55.23	+23 17.2	0.192	1.063	71.1	16.1	99 W	65*	41
5 1	19 12.07	+16 1.4	1.590	2.086	27.9	20.7	105 W	61*	48	7 11	0 7.01	+24 23.3	0.183	1.053	73.5	16.1	97 W	66*	40
5 11	19 12.24	+19 5.7	1.508	2.088	27.0	20.6	110 W	64*	45	7 12	0 20.24	+25 32.1	0.174	1.044	76.1	16.1	94 W	66*	38
5 21	19 8.81	+22 2.8	1.434	2.087	25.8	20.5	116 W	67	42	7 13	0 35.13	+26 42.7	0.165	1.035	79.1	16.0	92 W	66*	37
5 26	19 5.65	+23 25.2	1.401	2.085	25.3	20.4	119 W	68	41	7 14	0 51.89	+27 53.7	0.158	1.025	82.5	16.0	89 W	65*	36
5 31	19 1.52	+24 41.5	1.371	2.083	24.7	20.3	121 W	70	39	7 15	1 10.68	+29 2.6	0.151	1.015	86.2	16.0	85 W	64*	35
6 5	18 56.46	+25 49.9	1.344	2.080	24.1	20.3	123 W	71	38	7 16	1 31.65	+30 6.4	0.144	1.006	90.2	16.1	82 W	62*	34
6 10	18 50.54	+26 48.7	1.321	2.076	23.6	20.2	125 W	72	37	7 17	1 54.81	+31 1.2	0.139	0.996	94.7	16.2	77 W	59*	33
6 15	18 43.84	+27 36.4	1.301	2.072	23.2	20.2	126 W	73	36	7 18	2 20.00	+31 42.3	0.135	0.985	99.4	16.3	73 W	56*	32*
6 20	18 36.51	+28 11.2	1.285	2.067	23.0	20.1	127 W	73	36	7 19	2 46.86	+32 5.5	0.132	0.975	104.4	16.5	68 W	52*	31*
6 25	18 28.74	+28 31.9	1.273	2.061	22.9	20.1	128 W	74	35	7 20	3 14.78	+32 7.1	0.131	0.965	109.6	16.8	63 W	48*	30*
6 30	18 20.75	+28 37.7	1.265	2.054	22.9	20.1													

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

19/21	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°	20/21	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°
<b>159898 2004 TO<sub>216</sub></b>										<b>99907 1989 VA</b>									
<i>(continuation)</i>										<i>(continuation)</i>									
2 1	17 53.52	-24 43.0	2.349	1.759	22.4	21.0	43 W	13*	36*	7 5	6 15.90	+14 42.8	1.850	0.887	14.6	19.8	13 W	—	6*
2 11	18 22.45	-24 32.8	2.259	1.732	24.3	20.9	46 W	13*	40*	7 10	6 36.05	+13 58.3	1.799	0.839	15.7	19.6	13 W	—	7*
2 21	18 51.56	-24 1.7	2.169	1.707	26.3	20.8	50 W	13*	43*	7 15	6 57.42	+13 5.9	1.744	0.786	16.7	19.5	13 W	—	6*
3 2	19 20.61	-23 9.7	2.080	1.684	28.1	20.8	53 W	13*	47*	7 20	7 20.22	+12 5.4	1.687	0.729	17.6	19.3	12 W	—	6*
3 12	19 49.40	-21 57.4	1.992	1.663	29.8	20.7	56 W	14*	50*	7 25	7 44.74	+10 56.8	1.627	0.666	18.2	19.0	12 W	—	5*
3 22	20 17.76	-20 25.9	1.907	1.644	31.5	20.6	60 W	14*	54*	7 30	8 11.33	+9 40.8	1.564	0.599	18.7	18.7	11 W	—	4*
4 1	20 45.51	-18 37.1	1.823	1.628	33.1	20.5	63 W	15*	57*	8 4	8 40.43	+8 19.6	1.498	0.528	19.1	18.4	10 W	—	2*
4 11	21 12.50	-16 33.1	1.742	1.614	34.5	20.5	66 W	16*	60*	8 9	9 12.57	+6 58.3	1.427	0.453	20.3	18.0	9 W	—	—
4 21	21 38.67	-14 16.6	1.664	1.603	35.8	20.4	69 W	17*	62*	8 11	9 26.40	+6 27.9	1.396	0.424	21.6	17.8	9 E	—	—
5 1	22 3.90	-11 50.5	1.588	1.596	36.9	20.3	72 W	19*	65*	8 13	9 40.83	+6 0.3	1.363	0.395	23.6	17.7	9 E	—	—
5 11	22 28.13	-9 17.9	1.515	1.591	37.9	20.2	75 W	21*	67*	8 15	9 55.84	+5 36.8	1.327	0.368	26.8	17.5	9 E	—	1*
5 21	22 51.30	-6 42.0	1.444	1.590	38.6	20.1	79 W	24*	68*	8 17	10 11.39	+5 19.6	1.289	0.343	31.5	17.5	10 E	—	3*
5 31	23 13.30	-4 5.9	1.375	1.592	39.1	20.1	82 W	27*	67*	8 19	10 27.36	+5 10.8	1.247	0.322	37.9	17.4	11 E	—	5*
6 10	23 34.03	-1 32.8	1.307	1.596	39.4	20.0	86 W	31*	66*	8 21	10 43.55	+5 12.9	1.200	0.306	45.9	17.5	13 E	—	6*
6 20	23 53.34	+0 54.5	1.241	1.604	39.3	19.9	90 W	36*	63	8 23	10 59.63	+5 28.4	1.150	0.297	55.3	17.6	14 E	—	8*
6 30	0 10.98	+3 12.8	1.176	1.615	38.9	19.7	95 W	41*	61	8 25	11 15.24	+5 58.3	1.097	0.296	65.5	17.8	15 E	1*	9*
7 10	0 26.67	+5 19.6	1.113	1.629	38.0	19.6	100 W	46*	59	8 27	11 30.02	+6 42.6	1.042	0.302	75.6	18.0	17 E	3*	10*
7 20	0 40.05	+7 12.1	1.052	1.646	36.5	19.5	105 W	51*	57	8 29	11 43.74	+7 39.4	0.987	0.316	85.1	18.4	18 E	5*	11*
7 30	0 50.63	+8 47.4	0.994	1.665	34.5	19.3	112 W	54*	55	8 31	11 56.34	+8 46.4	0.933	0.336	93.3	18.7	19 E	8*	11*
8 9	0 57.95	+10 2.5	0.939	1.686	31.6	19.1	119 W	55*	54	9 2	12 7.88	+10 0.7	0.882	0.360	100.1	19.0	21 E	10*	11*
8 19	1 1.50	+10 54.4	0.891	1.709	27.9	19.0	128 W	56	53	9 4	12 18.50	+11 20.1	0.833	0.387	105.6	19.4	22 E	12*	11*
8 29	1 0.94	+11 19.7	0.852	1.734	23.3	18.7	137 W	56	53	9 6	12 28.37	+12 42.6	0.788	0.415	110.0	19.6	23 E	14*	11*
9 8	0 56.41	+11 16.8	0.825	1.761	17.7	18.5	148 W	56	53	9 8	12 37.66	+14 6.9	0.745	0.444	113.3	19.9	24 E	16*	10*
9 18	0 48.56	+10 46.3	0.814	1.790	11.5	18.3	159 W	56	53	9 10	12 46.56	+15 31.9	0.706	0.474	115.8	20.1	25 E	18*	9*
9 23	0 43.81	+10 22.0	0.816	1.804	8.2	18.2	165 W	55	54	9 12	12 55.19	+16 57.0	0.669	0.504	117.5	20.2	26 E	19*	9*
9 28	0 38.80	+9 53.4	0.823	1.819	5.1	18.1	171 W	55	54	9 14	13 3.71	+18 21.6	0.634	0.533	118.7	20.3	28 E	21*	8*
10 3	0 33.78	+9 21.7	0.836	1.834	3.0	18.0	175 E	54	55	9 16	13 12.24	+19 45.2	0.602	0.562	119.4	20.3	29 E	23*	7*
10 8	0 28.98	+8 48.6	0.854	1.849	3.8	18.1	173 E	54	55	9 18	13 20.90	+21 7.7	0.571	0.591	119.7	20.4	31 E	25*	6*
10 13	0 24.60	+8 15.7	0.877	1.865	6.4	18.4	168 E	53	56	9 20	13 29.80	+22 28.8	0.543	0.618	119.6	20.3	32 E	26*	6*
10 18	0 20.81	+7 44.2	0.907	1.881	9.2	18.6	162 E	53	56	9 22	13 39.08	+23 48.2	0.515	0.645	119.3	20.3	34 E	28*	5*
10 23	0 17.76	+7 15.8	0.941	1.896	12.0	18.8	157 E	52	57	9 24	13 48.84	+25 5.8	0.490	0.672	118.7	20.2	36 E	30*	5*
10 28	0 15.54	+6 51.3	0.981	1.912	14.5	19.0	151 E	52	57	9 26	13 59.21	+26 21.3	0.465	0.697	117.9	20.1	38 E	32*	4*
11 7	0 13.69	+6 16.7	1.074	1.945	18.8	19.4	141 E	51	58	9 28	14 10.33	+27 34.2	0.442	0.722	116.9	20.0	40 E	34*	4*
11 17	0 15.19	+6 2.8	1.183	1.977	22.2	19.7	131 E	51	58	9 30	14 22.33	+28 44.1	0.420	0.745	115.7	19.9	42 E	36*	4*
11 27	0 19.76	+6 9.3	1.305	2.010	24.6	20.0	122 E	51	58	10 2	14 35.37	+29 50.3	0.399	0.768	114.3	19.8	44 E	38*	4*
12 7	0 26.92	+6 33.9	1.437	2.043	26.2	20.3	114 E	52	57	10 4	14 49.60	+30 51.8	0.379	0.791	112.7	19.6	47 E	40*	5*
12 17	0 36.20	+7 13.7	1.577	2.076	27.1	20.6	106 E	52	56*	10 6	15 5.18	+31 47.3	0.361	0.812	111.0	19.5	49 E	43*	5*
12 27	0 47.24	+8 6.0	1.723	2.108	27.5	20.8	99 E	53	53*	10 8	15 22.23	+32 35.0	0.344	0.833	109.0	19.3	52 E	45*	6*
1 6	0 59.68	+9 7.9	1.873	2.140	27.3	21.0	92 E	54	49*	10 10	15 40.88	+33 13.0	0.328	0.853	106.9	19.1	55 E	49*	8*
1 16	1 13.27	+10 16.9	2.024	2.172	26.8	21.2	85 E	55	45*	10 12	16 1.17	+33 38.6	0.314	0.872	104.5	18.9	58 E	53*	9*
12 23	16 3.28	-39 22.9	0.763	0.497	100.5	19.4	30 W	—	24*	10 14	16 23.08	+33 48.9	0.301	0.891	102.0	18.8	61 E	57*	11*
12 25	16 19.18	-38 1.6	0.798	0.467	98.7	19.3	28 W	—	22*	10 16	16 46.47	+33 41.2	0.290	0.908	99.2	18.6	64 E	58*	13*
12 27	16 34.66	-36 32.2	0.835	0.438	96.1	19.2	26 W	—	20*	10 18	17 11.08	+33 12.6	0.281	0.926	96.3	18.4	67 E	61*	16*
12 29	16 49.87	-34 55.1	0.875	0.408	92.8	19.0	25 W	—	18*	10 20	17 36.51	+32 21.4	0.274	0.942	93.2	18.3	71 E	64*	19*
12 31	17 4.99	-33 10.9	0.917	0.380	88.4	18.7	23 W	—	17*	10 22	18 2.25	+31 7.1	0.269	0.958	90.1	18.1	74 E	67*	22*
1 2	17 20.20	-31 20.2	0.962	0.354	82.9	18.5	21 W	—	15*	10 24	18 27.78	+29 30.9	0.267	0.973	86.9	18.0	78 E	69*	25*
1 4	17 35.69	-29 23.6	1.009	0.331	76.1	18.2	19 W	—	13*	10 26	18 52.59	+27 35.6	0.267	0.987	83.7	17.9	81 E	70*	29*
1 6	17 51.63	-27 22.1	1.057	0.313	68.0	17.9	17 W	1*	11*	10 28	19 16.26	+25 25.5	0.269	1.001	80.6	17.9	84 E	69*	32*
1 8	18 8.08	-25 17.5	1.104	0.300	58.9	17.6	15 W	1*	8*	10 29	19 27.57	+24 16.5	0.271	1.008	79.1	17.8	85 E	69*	34*
1 10	18 25.01	-23 11.9	1.150	0.295	49.3	17.4	13 W	2*	6*	10 30	19 38.49	+23 5.7	0.274	1.015	77.7	17.8	87 E	68*	36*
1 12	18 42.25	-21 8.0	1.193	0.298	40.1	17.2	11 W	2*	4*	10 31	19 49.02	+21 53.8	0.277	1.021	76.4	17.8	88 E	67*	38*
1 14	18 59.53	-19 8.2	1.231	0.309	32.0	17.2	10 W	2*	1*	11 1	19 59.13	+20 41.3	0.281	1.027	75.1	17.8	89 E	66*	39*
1 16	19 16.59	-17 14.2	1.266	0.326	25.9	17.2	8 W	2*	—	11 2	20 8.84	+19 28.8	0.285	1.033	73.8	17.8	90 E	64	41*
1 18	19 33.22	-15 26.7	1.297	0.348	22.1	17.2	8 W	2*	—	11 3	20 18.13	+18 16.7	0.289	1.039	72.6	17.8	91 E	63	42*
1 20	19 49.30	-13 46.0	1.326	0.374	20.3	17.4	8 W	1*	—	11 4	20 27.02	+17 5.7	0.295	1.045	71.5	17.8	92 E	62	44*
1 22	20 4.76	-12 11.9	1.352	0.401	19.9	17.6	8 W	1*	—	11 5	20 35.52	+15 55.9	0.300	1.051	70.5	17.9	93 E	61	45*
1 27	20 40.67	-8 41.6	1.411	0.475	21.4	18.1	10 E	2*	—	11 6	20 43.64	+14 47.7	0.306	1.056	69.5	17.9	94 E	60	47*
2 1	21 13.00	-5 41.5	1.467	0.549	22.9	18.5	12 E	5*	—	11 7	20 51.40	+13 41.3	0.313	1.061	68.6	17.9	94 E	59	48*
2 6	21 42.27	-3 5.5	1.523	0.619	23.4	18.9	14 E	8*	—	11 9	21 5.89	+11 34.8	0.326	1.072	67.0	18.0	95 E	57	50*
2 11	22 8.98	-0 49.0	1.578	0.685	23.2	19.2	16 E	10*	—	11 11	21 19.12	+9 37.3	0.341	1.081	65.6	18.1	96 E	55	52*
2 16	22 33.54	+1 11.3	1.634	0.746	22.6	19.4	17 E	11*	—	11 13	21 31.24	+7 49.2	0.358	1.090	64.4	18.1	97 E	53	54*
2 21	22 56.30	+2 58.1	1.689	0.802	21.6	19.6	17 E	11*	—										

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

19/21	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°	19/21	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°
<b>30105 2000 FO<sub>3</sub></b>										<b>172425 Taliajacobii</b> (continuation)									
12 23	16 3.36	-19 32.5	2.765	1.951	13.7	18.7	28 W	14*	17*	8 29	16 42.04	-46 5.7	2.795	3.112	18.7	21.0	99 E	—	70
1 2	16 27.95	-20 53.2	2.672	1.913	15.9	18.7	32 W	15*	22*	9 3	16 45.47	-45 33.5	2.853	3.105	18.9	21.0	95 E	—	70*
1 12	16 53.46	-22 2.2	2.574	1.875	18.1	18.7	36 W	15*	27*	9 8	16 49.47	-45 3.1	2.912	3.098	19.0	21.0	91 E	—	70*
1 22	17 19.89	-22 58.2	2.473	1.837	20.3	18.6	40 W	15*	32*	9 13	16 54.01	-44 34.3	2.971	3.090	19.0	21.1	87 E	—	69*
2 1	17 47.18	-23 39.5	2.370	1.801	22.4	18.5	44 W	15*	37*	9 18	16 59.03	-44 6.9	3.029	3.082	18.9	21.1	84 E	—	67*
2 11	18 15.25	-24 4.9	2.266	1.765	24.5	18.4	48 W	14*	41*	9 23	17 4.51	-43 41.0	3.087	3.074	18.7	21.1	80 E	—	66*
2 21	18 44.00	-24 13.2	2.162	1.730	26.6	18.4	52 W	14*	45*	9 28	17 10.41	-43 16.2	3.144	3.065	18.5	21.2	76 E	—	64*
3 2	19 13.30	-24 3.6	2.059	1.696	28.6	18.3	55 W	13*	49*	10 3	17 16.68	-42 52.5	3.200	3.057	18.2	21.2	73 E	—	61*
3 12	19 43.00	-23 35.8	1.959	1.664	30.5	18.2	58 W	13*	52*	10 8	17 23.30	-42 29.6	3.255	3.048	17.9	21.2	69 E	—	59*
3 22	20 12.93	-22 49.9	1.861	1.634	32.3	18.1	61 W	13*	55*	10 13	17 30.24	-42 7.3	3.308	3.039	17.4	21.2	66 E	—	56*
4 1	20 42.93	-21 46.4	1.767	1.606	34.0	18.0	64 W	12*	58*	10 18	17 37.47	-41 45.5	3.359	3.029	17.0	21.2	62 E	—	54*
4 11	21 12.82	-20 26.6	1.678	1.581	35.7	17.9	67 W	12*	61*	10 23	17 44.98	-41 24.0	3.408	3.019	16.4	21.2	59 E	—	51*
4 21	21 42.47	-18 52.3	1.593	1.559	37.2	17.8	70 W	13*	64*	10 28	17 52.72	-41 2.6	3.454	3.009	15.8	21.2	56 E	—	48*
5 1	22 11.70	-17 5.8	1.514	1.540	38.5	17.7	72 W	13*	66*	11 2	18 0.69	-40 41.1	3.498	2.999	15.2	21.2	52 E	—	45*
5 11	22 40.38	-15 10.1	1.439	1.524	39.7	17.6	75 W	14*	68*	11 7	18 8.85	-40 19.3	3.539	2.988	14.6	21.2	49 E	—	42*
5 21	23 8.39	-13 8.1	1.370	1.512	40.7	17.5	77 W	16*	70*	11 12	18 17.19	-39 57.2	3.577	2.978	13.9	21.2	46 E	—	39*
5 31	23 35.56	-11 3.7	1.304	1.504	41.6	17.4	80 W	18*	71*	11 17	18 25.69	-39 34.5	3.613	2.967	13.1	21.2	43 E	—	36*
6 10	0 1.75	-9 0.1	1.243	1.500	42.2	17.3	83 W	21*	72*	11 22	18 34.33	-39 11.2	3.645	2.955	12.4	21.2	40 E	—	34*
6 20	0 26.80	-7 0.8	1.185	1.500	42.5	17.2	86 W	25*	71*	11 27	18 43.10	-38 47.0	3.673	2.944	11.6	21.2	37 E	—	31*
6 30	0 50.47	-5 9.3	1.129	1.504	42.5	17.1	89 W	29*	69	12 2	18 51.96	-38 22.0	3.698	2.932	10.8	21.2	34 E	—	28*
7 10	1 12.51	-3 28.3	1.076	1.512	42.2	17.0	93 W	33*	67	12 7	19 0.91	-37 56.0	3.720	2.920	10.0	21.1	31 E	—	25*
7 20	1 32.61	-2 0.1	1.024	1.524	41.5	16.9	97 W	38*	66	12 12	19 9.94	-37 29.0	3.738	2.908	9.2	21.1	28 E	—	22*
7 30	1 50.36	-0 46.7	0.973	1.540	40.3	16.8	101 W	42*	65	12 17	19 19.02	-37 0.8	3.753	2.895	8.4	21.1	25 E	—	19*
8 9	2 5.30	+0 11.0	0.925	1.559	38.5	16.6	107 W	45*	64	12 22	19 28.14	-36 31.5	3.764	2.882	7.6	21.0	23 E	—	17*
8 19	2 16.89	+0 52.7	0.878	1.581	36.0	16.5	113 W	46	63	12 27	19 37.29	-36 1.0	3.770	2.869	6.9	21.0	20 E	—	14*
8 29	2 24.52	+1 18.7	0.835	1.606	32.7	16.3	121 W	46	63	1 1	19 46.46	-35 29.2	3.774	2.856	6.2	20.9	18 E	—	12*
9 8	2 27.67	+1 31.1	0.798	1.634	28.5	16.1	129 W	47	62	1 6	19 55.62	-34 56.1	3.773	2.842	5.6	20.9	16 E	—	9*
9 18	2 26.03	+1 33.0	0.769	1.664	23.3	15.9	139 W	47	62	1 11	20 4.78	-34 21.8	3.768	2.828	5.1	20.9	15 E	—	7*
9 23	2 23.42	+1 31.4	0.760	1.680	20.4	15.8	144 W	47	62	1 16	20 13.93	-33 46.2	3.760	2.814	4.8	20.8	14 E	—	5*
9 28	2 19.74	+1 29.3	0.754	1.696	17.3	15.7	150 W	46	63	<b>142989 2002 VK<sub>90</sub></b>									
10 3	2 15.13	+1 27.6	0.752	1.713	14.1	15.7	155 W	46	63	12 23	16 5.15	-13 58.2	2.506	2.506	11.1	21.5	29 W	18*	15*
10 8	2 9.78	+1 27.0	0.754	1.730	11.0	15.6	161 W	46	63	1 2	16 23.10	-14 53.1	3.214	2.472	13.1	21.5	35 W	21*	21*
10 13	2 3.92	+1 28.0	0.762	1.747	8.0	15.5	166 W	46	63	1 12	16 41.27	-15 40.6	3.101	2.437	15.2	21.4	40 W	22*	28*
10 18	1 57.82	+1 32.7	0.775	1.764	5.8	15.4	170 W	47	62	1 22	16 59.60	-16 20.3	2.977	2.401	17.2	21.4	46 W	23*	35*
10 28	1 46.03	+1 52.1	0.818	1.800	7.0	15.7	167 E	47	62	2 1	17 18.01	-16 52.1	2.846	2.365	19.1	21.3	52 W	24*	41*
11 7	1 36.34	+2 28.0	0.882	1.837	12.0	16.1	157 E	47	62	2 11	17 36.40	-17 16.1	2.708	2.328	20.9	21.2	57 W	24*	48*
11 17	1 29.93	+3 19.6	0.968	1.875	16.8	16.5	147 E	48	61	2 21	17 54.70	-17 32.8	2.564	2.291	22.6	21.1	63 W	24*	54*
11 27	1 27.26	+4 25.1	1.071	1.913	20.7	16.9	137 E	49	60	3 2	18 12.80	-17 42.7	2.416	2.253	24.2	21.0	69 W	24*	61*
12 7	1 28.19	+5 41.5	1.189	1.951	23.7	17.2	127 E	51	58	3 12	18 30.59	-17 46.7	2.265	2.215	25.6	20.9	74 W	25*	67*
12 17	1 32.30	+7 5.9	1.319	1.989	25.7	17.6	119 E	52	57	3 22	18 47.95	-17 46.1	2.113	2.177	26.8	20.7	80 W	25*	72*
12 27	1 39.13	+8 35.9	1.459	2.027	27.0	17.9	111 E	54	55*	4 1	19 4.75	-17 42.6	1.961	2.138	27.8	20.5	86 W	25*	77*
1 6	1 48.18	+10 9.3	1.606	2.065	27.6	18.1	103 E	55	53*	4 11	19 20.85	-17 38.2	1.810	2.100	28.5	20.4	92 W	25*	81*
1 16	1 59.06	+11 44.3	1.758	2.102	27.7	18.4	96 E	57	49*	4 21	19 36.08	-17 35.5	1.663	2.061	28.9	20.1	98 W	26*	82*
12 23	16 4.24	-35 58.2	3.974	3.144	8.6	21.4	28 W	—	22*	5 1	19 50.23	-17 37.7	1.519	2.023	28.8	19.9	105 W	26*	82
1 2	16 20.11	-37 3.3	3.916	3.155	10.2	21.4	34 W	1*	28*	5 11	20 3.07	-17 48.9	1.381	1.985	28.3	19.6	111 W	26*	82
1 12	16 35.76	-38 6.1	3.844	3.165	11.7	21.4	41 W	2*	35*	5 21	20 14.32	-18 13.4	1.251	1.948	27.2	19.4	118 W	26*	82
1 22	16 51.04	-39 7.0	3.757	3.174	13.2	21.5	47 W	2*	41*	5 31	20 23.59	-18 56.8	1.130	1.911	25.4	19.0	126 W	26*	83
2 1	17 5.80	-40 6.8	3.658	3.182	14.5	21.4	54 W	2*	47*	6 10	20 30.51	-20 4.1	1.020	1.875	22.8	18.7	134 W	25	84
2 11	17 19.86	-41 6.1	3.548	3.189	15.7	21.4	61 W	2*	54*	6 20	20 34.64	-21 40.2	0.923	1.841	19.3	18.3	143 W	23	86
2 21	17 33.02	-42 6.0	3.429	3.195	16.7	21.4	68 W	2*	59*	6 30	20 35.59	-23 46.9	0.843	1.808	14.9	17.9	153 W	21	88
3 2	17 45.04	-43 7.4	3.302	3.200	17.4	21.3	75 W	1*	64*	7 5	20 34.84	-25 1.0	0.809	1.792	12.5	17.7	158 W	20	89
3 12	17 55.64	-44 11.4	3.170	3.204	17.9	21.3	83 W	—	68*	7 10	20 33.28	-26 20.8	0.780	1.776	10.0	17.6	162 W	19	90
3 22	18 4.54	-45 18.9	3.037	3.207	18.1	21.2	91 W	—	70*	7 15	20 30.97	-27 44.7	0.756	1.761	7.8	17.4	166 W	17	88
4 1	18 11.34	-46 30.7	2.903	3.208	17.9	21.1	99 W	—	69	7 20	20 28.01	-29 10.8	0.737	1.746	6.3	17.2	169 W	16	87
4 11	18 15.64	-47 46.6	2.774	3.209	17.4	21.0	107 W	—	68	7 25	20 24.56	-30 36.5	0.724	1.732	6.5	17.2	169 W	14	85
4 21	18 17.03	-49 5.5	2.652	3.209	16.5	20.8	115 W	—	67	7 30	20 20.87	-31 59.2	0.716	1.718	8.2	17.2	166 E	13	84
5 1	18 15.04	-50 24.9	2.541	3.208	15.2	20.7	123 W	—	66	8 4	20 17.16	-33 16.4	0.712	1.705	10.8	17.3	162 E	12	83
5 11	18 9.39	-51 40.2	2.445	3.205	13.6	20.6	132 W	—	64	8 9	20 13.70	-34 26.2	0.713	1.693	13.7	17.4	157 E	11	82
5 21	18 0.02	-52 45.2	2.368	3.202	11.9	20.4	139 W	—	63	8 14	20 10.75	-35 27.0	0.719	1.681	16.6	17.5	152 E	10	81
5 26	17 54.05	-53 11.5	2.337	3.200	11.1	20.4	142 W	—	63	8 19	20 8.54	-36 17.7	0.729	1.670	19.4	17.6	147 E	9	80
5 31	17 47.35	-53 32.3	2.312	3.198	10.4	20.3	145 W	—	62	8 24	20 7.31	-36 57.9	0.743	1.660	22.1	17.7	142 E	8	79
6 5	17 40.08	-53 46.9	2.293	3.195	9.8	20.3	148 W	—	62	8 29	20 7.21	-37 27.5	0.760	1.650	24.6				

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

19/21	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°	19/20	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°										
<b>142989 2002 VK<sub>90</sub></b>										<b>477524 2010 EH<sub>43</sub></b>																			
<i>(continuation)</i>										<i>(continuation)</i>																			
12 2	22 46.84	-22 44.3	1.401	1.635	36.9	19.5	85 E	22	76*	3 1	12 26.44	+80 9.9	0.521	1.244	49.8	19.7	107 W	55	—	3 2	12 5.33	+79 52.0	0.517	1.243	49.7	19.7	107 W	55	—
12 7	22 58.30	-21 9.0	1.446	1.643	36.5	19.6	83 E	24	72*	3 3	11 45.16	+79 28.0	0.512	1.243	49.7	19.7	107 W	56	—	3 4	11 26.24	+78 58.1	0.508	1.242	49.6	19.7	107 W	56	—
12 12	23 9.73	-19 31.8	1.492	1.652	36.0	19.6	81 E	25	69*	3 5	11 8.75	+78 22.7	0.504	1.242	49.6	19.6	108 W	57	—	3 6	10 52.79	+77 42.1	0.500	1.241	49.5	19.6	108 E	57	—
12 17	23 21.11	-17 53.0	1.540	1.662	35.5	19.7	79 E	27	66*	3 7	10 38.36	+76 56.8	0.497	1.241	49.4	19.6	108 E	58	—	3 8	10 25.40	+76 7.1	0.493	1.240	49.4	19.6	108 E	59	—
12 22	23 32.45	-16 13.2	1.588	1.673	35.0	19.8	77 E	29	63*	3 9	10 13.81	+75 13.4	0.489	1.240	49.4	19.6	109 E	60	—	3 10	10 3.49	+74 16.1	0.486	1.239	49.3	19.5	109 E	61	—
12 27	23 43.72	-14 32.7	1.638	1.684	34.4	19.8	75 E	30	60*	3 11	9 54.30	+73 15.5	0.483	1.239	49.3	19.5	109 E	62	—	3 12	9 46.14	+72 11.9	0.480	1.238	49.2	19.5	109 E	63	—
1	1 23 54.93	-12 52.0	1.689	1.696	33.8	19.9	74 E	32	57*	3 13	9 38.89	+71 5.6	0.477	1.238	49.2	19.5	109 E	64	—	3 14	9 32.45	+69 56.7	0.475	1.237	49.2	19.5	110 E	65	—
1	6 0 6.09	-11 11.4	1.740	1.708	33.1	20.0	72 E	34	54*	3 15	9 26.73	+68 45.5	0.473	1.237	49.2	19.5	110 E	66	—	3 16	9 21.64	+67 32.2	0.470	1.236	49.2	19.5	110 E	67	—
1	11 0 17.19	-9 31.3	1.793	1.721	32.4	20.0	70 E	35	51*	3 17	9 17.12	+66 16.9	0.469	1.236	49.2	19.5	110 E	69	—	3 18	9 13.11	+64 59.9	0.467	1.235	49.2	19.4	110 E	70	—
1	16 0 28.24	-7 51.8	1.846	1.735	31.7	20.1	68 E	37	49*	3 19	9 9.54	+63 41.3	0.465	1.235	49.3	19.4	110 E	71	—	3 20	9 6.37	+62 21.2	0.464	1.234	49.3	19.4	110 E	73	2
<b>429746 2011 SA<sub>16</sub></b>										<b>477524 2010 EH<sub>43</sub></b>																			
12 23	16 5.26	-30 36.8	2.080	1.283	20.3	20.4	27 W	4*	21*	3 21	8 48.22	+45 21.8	0.471	1.230	50.6	19.5	108 E	90	17	4 3	8 47.41	+42 30.9	0.476	1.229	50.9	19.5	107 E	88	21
12 28	16 26.49	-30 50.9	2.071	1.279	20.6	20.4	27 W	4*	21*	4 4	8 46.98	+39 42.1	0.481	1.228	51.3	19.6	107 E	85	24	4 5	8 46.98	+39 42.1	0.481	1.228	51.3	19.6	107 E	85	24
1	2 16 47.67	-30 52.5	2.065	1.277	20.9	20.4	28 W	4*	21*	4 7	8 46.87	+36 56.3	0.488	1.228	51.7	19.6	106 E	82	27	4 8	8 46.87	+36 56.3	0.488	1.228	51.7	19.6	106 E	82	27
1	7 17 8.69	-30 41.8	2.060	1.278	21.2	20.4	28 W	4*	22*	4 9	8 47.04	+34 14.0	0.496	1.227	52.1	19.6	105 E	79	30	4 11	8 47.45	+31 35.7	0.504	1.226	52.4	19.7	104 E	77	32
1	12 17 29.41	-30 19.0	2.057	1.281	21.4	20.4	28 W	4*	22*	4 16	8 49.34	+25 20.0	0.530	1.225	53.4	19.8	102 E	70*	39	4 16	8 49.34	+25 20.0	0.530	1.225	53.4	19.8	102 E	70*	39
1	17 17 49.72	-29 44.8	2.056	1.286	21.7	20.5	29 W	4*	23*	4 21	8 52.24	+19 35.2	0.559	1.224	54.2	20.0	99 E	64*	44	4 21	8 52.24	+19 35.2	0.559	1.224	54.2	20.0	99 E	64*	44
1	22 18 9.53	-28 59.8	2.056	1.294	22.0	20.5	30 W	4*	23*	4 26	8 55.90	+14 21.4	0.592	1.223	54.9	20.1	96 E	58*	50	4 26	8 55.90	+14 21.4	0.592	1.223	54.9	20.1	96 E	58*	50
1	27 18 28.75	-28 4.9	2.057	1.304	22.3	20.5	30 W	5*	24*	5 1	9 0.17	+9 37.1	0.628	1.222	55.3	20.2	94 E	51*	54	5 1	9 0.17	+9 37.1	0.628	1.222	55.3	20.2	94 E	51*	54
2	1 18 47.31	-27 1.2	2.059	1.316	22.7	20.5	31 W	5*	25*	5 6	9 4.93	+5 19.3	0.665	1.222	55.6	20.4	91 E	45*	59	5 6	9 4.93	+5 19.3	0.665	1.222	55.6	20.4	91 E	45*	59
2	6 19 5.19	-25 49.5	2.062	1.331	23.0	20.6	32 W	6*	26*	5 11	9 10.10	+1 24.7	0.704	1.222	55.8	20.5	89 E	39*	63	5 11	9 10.10	+1 24.7	0.704	1.222	55.8	20.5	89 E	39*	63
2	11 19 22.36	-24 31.0	2.065	1.347	23.4	20.6	33 W	6*	27*	5 16	9 15.63	-2 9.8	0.743	1.222	55.7	20.6	87 E	34*	66*	5 16	9 15.63	-2 9.8	0.743	1.222	55.7	20.6	87 E	34*	66*
2	16 19 38.82	-23 6.6	2.068	1.365	23.8	20.7	34 W	7*	28*	5 21	9 21.51	-5 27.3	0.782	1.222	55.6	20.7	85 E	29*	69*	5 21	9 21.51	-5 27.3	0.782	1.222	55.6	20.7	85 E	29*	69*
2	21 19 54.57	-21 37.2	2.072	1.385	24.2	20.7	35 W	8*	29*	5 26	9 27.71	-8 30.6	0.820	1.222	55.3	20.8	83 E	23*	71*	5 26	9 27.71	-8 30.6	0.820	1.222	55.3	20.8	83 E	23*	71*
2	26 20 9.62	-20 3.8	2.075	1.406	24.7	20.8	36 W	9*	30*	5 31	9 34.22	-11 22.0	0.858	1.223	55.0	20.9	81 E	19*	72*	5 31	9 34.22	-11 22.0	0.858	1.223	55.0	20.9	81 E	19*	72*
3	2 20 23.99	-18 27.1	2.078	1.429	25.1	20.8	38 W	10*	31*	6 5	9 41.05	-14 3.8	0.894	1.224	54.6	21.0	79 E	14*	73*	6 5	9 41.05	-14 3.8	0.894	1.224	54.6	21.0	79 E	14*	73*
3	7 20 37.71	-16 47.9	2.080	1.453	25.5	20.9	39 W	11*	33*	6 10	9 48.19	-16 37.4	0.929	1.225	54.2	21.1	78 E	10*	72*	6 10	9 48.19	-16 37.4	0.929	1.225	54.2	21.1	78 E	10*	72*
3	12 20 50.81	-15 6.8	2.082	1.479	26.0	20.9	41 W	12*	34*	6 15	9 55.66	-19 4.3	0.962	1.226	53.7	21.1	77 E	5*	70*	6 15	9 55.66	-19 4.3	0.962	1.226	53.7	21.1	77 E	5*	70*
3	17 21 3.31	-13 24.4	2.083	1.505	26.4	21.0	42 W	13*	36*	6 20	10 3.51	-21 26.0	0.993	1.227	53.2	21.2	75 E	2*	68*	6 20	10 3.51	-21 26.0	0.993	1.227	53.2	21.2	75 E	2*	68*
3	22 21 15.24	-11 41.1	2.083	1.533	26.9	21.0	44 W	14*	38*	6 25	10 11.75	-23 43.4	1.022	1.229	52.7	21.2	74 E	—	66*	6 25	10 11.75	-23 43.4	1.022	1.229	52.7	21.2	74 E	—	66*
3	27 21 26.62	-9 57.4	2.081	1.561	27.3	21.1	46 W	15*	39*	6 30	10 20.42	-25 57.6	1.049	1.231	52.2	21.3	73 E	—	64*	6 30	10 20.42	-25 57.6	1.049	1.231	52.2	21.3	73 E	—	64*
4	1 21 37.46	-8 13.6	2.079	1.590	27.7	21.1	48 W	16*	41*	7 5	10 29.56	-28 9.1	1.074	1.233	51.8	21.3	72 E	—	61*	7 5	10 29.56	-28 9.1	1.074	1.233	51.8	21.3	72 E	—	61*
4	6 21 47.80	-6 30.2	2.075	1.620	28.1	21.2	50 W	18*	43*	7 10	10 39.23	-30 18.5	1.096	1.235	51.3	21.4	71 E	—	59*	7 10	10 39.23	-30 18.5	1.096	1.235	51.3	21.4	71 E	—	59*
4	11 21 57.66	-4 47.3	2.070	1.650	28.5	21.2	52 W	19*	44*	7 15	10 49.49	-32 26.1	1.116	1.237	50.9	21.4	71 E	—	56*	7 15	10 49.49	-32 26.1	1.116	1.237	50.9	21.4	71 E	—	56*
4	16 22 7.04	-3 5.1	2.063	1.681	28.9	21.3	54 W	20*	46*	7 20	11 0.44	-34 32.5	1.134	1.240	50.5	21.4	70 E	—	54*	7 20	11 0.44	-34 32.5	1.134	1.240	50.5	21.4	70 E	—	54*
4	21 22 15.95	-1 23.9	2.055	1.713	29.2	21.3	56 W	22*	48*	7 25	11 12.15	-36 37.7	1.150	1.242	50.1	21.4	70 E	—	52*	7 25	11 12.15	-36 37.7	1.150	1.242	50.1	21.4	70 E	—	52*
4	26 22 24.40	+0 16.1	2.045	1.744	29.5	21.3	58 W	24*	49*	7 30	11 24.72	-38 41.7	1.164	1.245	49.7	21.5	69 E	—	50*	7 30	11 24.72	-38 41.7	1.164	1.245	49.7	21.5	69 E	—	50*
5	1 22 32.40	+1 54.9	2.034	1.776	29.7	21.4	61 W	26*	50*	8 4	11 38.27	-40 44.2	1.176	1.248	49.4	21.5	69 E	—	48*	8 4	11 38.27	-40 44.2	1.176	1.248	49.4	21.5	69 E	—	48*
5	6 22 39.94	+3 32.2	2.021	1.809	29.9	21.4	63 W	28*	52*	8 9	11 52.93	-42 44.6	1.186	1.251	49.1	21.5	69 E	—	46*	8 9	11 52.93</								

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

19/21	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°-26°	19/21	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°-26°	
<b>385186 1994 AW<sub>1</sub></b>									<b>183230 2002 TC<sub>58</sub></b>									
<i>(continuation)</i>									<i>(continuation)</i>									
3 22	22 8.06	-8 26.6	1.751	1.028	29.6	20.2	31 W	8* 24*	7 20	21 50.15	-12 2.2	0.638	1.607	17.4	15.6	152 W	33	76
3 27	22 24.64	-5 38.4	1.745	1.026	30.0	20.2	31 W	9* 24*	7 30	21 55.63	-16 45.2	0.593	1.588	11.8	15.2	161 W	28	81
4 1	22 41.13	-2 47.6	1.740	1.024	30.3	20.2	31 W	10* 24*	8 9	21 59.27	-22 8.9	0.568	1.573	7.7	14.9	168 W	23	86
4 6	22 57.58	+0 4.9	1.736	1.023	30.5	20.2	31 W	11* 24*	8 14	22 0.55	-24 54.8	0.563	1.568	7.8	14.9	168 W	20	89
4 11	23 14.07	+2 57.9	1.733	1.022	30.8	20.2	31 W	12* 24*	8 19	22 1.62	-27 35.9	0.564	1.564	9.6	15.0	165 W	17	88
4 16	23 30.67	+5 50.4	1.731	1.021	31.0	20.2	32 W	13* 24*	8 24	22 2.66	-30 6.9	0.570	1.561	12.3	15.1	161 E	15	86
4 21	23 47.45	+8 41.4	1.730	1.022	31.1	20.2	32 W	14* 23*	8 29	22 3.83	-32 23.3	0.581	1.559	15.2	15.2	156 E	13	84
4 26	0 4.48	+11 29.7	1.730	1.022	31.2	20.2	32 W	15* 23*	9 3	22 5.29	-34 21.7	0.596	1.559	18.0	15.4	151 E	11	82
5 1	0 21.80	+14 14.0	1.731	1.024	31.3	20.2	32 W	16* 22*	9 8	22 7.18	-36 0.4	0.616	1.559	20.7	15.5	147 E	9	80
5 6	0 39.47	+16 53.2	1.733	1.026	31.3	20.2	32 W	16* 21*	9 13	22 9.61	-37 18.5	0.639	1.562	23.2	15.7	142 E	8	79
5 11	0 57.56	+19 26.0	1.736	1.028	31.3	20.2	32 W	17* 20*	9 18	22 12.67	-38 16.1	0.665	1.565	25.3	15.9	138 E	7	78
5 16	1 16.10	+21 51.3	1.741	1.031	31.2	20.2	32 W	18* 19*	9 23	22 16.42	-38 54.1	0.695	1.570	27.2	16.0	134 E	6	77
5 21	1 35.13	+24 7.8	1.746	1.034	31.1	20.2	32 W	19* 19*	9 28	22 20.89	-39 13.9	0.727	1.576	28.8	16.2	131 E	6	77
5 26	1 54.67	+26 14.5	1.752	1.038	30.9	20.2	32 W	19* 18*	10 3	22 26.03	-39 16.9	0.762	1.583	30.2	16.3	127 E	6	77
5 31	2 14.71	+28 10.1	1.758	1.042	30.7	20.2	32 W	20* 17*	10 8	22 31.80	-39 5.0	0.798	1.591	31.3	16.5	124 E	6	77
6 5	2 35.23	+29 53.7	1.765	1.046	30.5	20.2	32 W	20* 16*	10 13	22 38.12	-38 39.5	0.837	1.601	32.2	16.6	121 E	6	77
6 10	2 56.21	+31 24.4	1.773	1.051	30.3	20.3	32 W	21* 15*	10 18	22 44.95	-38 2.0	0.878	1.612	32.9	16.7	118 E	7	78
6 15	3 17.58	+32 41.4	1.780	1.056	30.1	20.3	31 W	21* 14*	10 23	22 52.22	-37 13.9	0.920	1.623	33.5	16.9	116 E	8	79
6 20	3 39.27	+33 44.1	1.788	1.062	29.9	20.3	31 W	22* 13*	10 28	22 59.86	-36 16.6	0.965	1.636	33.9	17.0	113 E	9	80
6 25	4 1.17	+34 32.1	1.796	1.067	29.7	20.3	31 W	22* 12*	11 2	23 7.79	-35 11.3	1.011	1.650	34.2	17.1	111 E	10	81
6 30	4 23.16	+35 5.3	1.803	1.073	29.5	20.3	31 W	22* 12*	11 7	23 15.96	-33 59.2	1.058	1.665	34.3	17.3	109 E	11	82
7 5	4 45.13	+35 23.6	1.810	1.079	29.3	20.3	31 W	23* 11*	11 12	23 24.31	-32 41.2	1.107	1.680	34.4	17.4	106 E	12	83
7 10	5 6.95	+35 27.3	1.816	1.085	29.2	20.3	31 W	23* 11*	11 17	23 32.82	-31 18.2	1.158	1.697	34.4	17.5	104 E	14	85
7 15	5 28.51	+35 16.8	1.821	1.091	29.1	20.4	31 W	23* 10*	11 22	23 41.46	-29 51.1	1.211	1.714	34.3	17.6	102 E	15	86
7 20	5 49.70	+34 52.7	1.826	1.097	29.0	20.4	32 W	24* 10*	11 27	23 50.19	-28 20.8	1.265	1.732	34.1	17.7	100 E	17	88
7 25	6 10.43	+34 15.7	1.829	1.104	29.0	20.4	32 W	24* 10*	12 2	23 58.98	-26 47.9	1.321	1.751	33.9	17.8	98 E	18	89
7 30	6 30.62	+33 26.6	1.831	1.110	29.0	20.4	32 W	24* 10*	12 7	0 7.82	-25 13.1	1.378	1.770	33.6	17.9	96 E	20	89*
8 4	6 50.23	+32 26.2	1.832	1.116	29.1	20.4	32 W	25* 11*	12 12	0 16.70	-23 37.0	1.437	1.790	33.3	18.0	93 E	21	85*
8 9	7 9.24	+31 15.4	1.832	1.122	29.3	20.4	33 W	25* 11*	12 17	0 25.61	-22 0.1	1.497	1.810	32.9	18.1	91 E	23	82*
8 14	7 27.63	+29 55.0	1.830	1.128	29.4	20.5	33 W	26* 11*	12 22	0 34.54	-20 22.7	1.559	1.831	32.5	18.2	89 E	25	78*
8 19	7 45.41	+28 25.9	1.827	1.134	29.7	20.5	34 W	26* 12*	12 27	0 43.49	-18 45.6	1.622	1.853	32.0	18.3	87 E	26	75*
8 29	8 19.22	+25 4.4	1.816	1.145	30.3	20.5	35 W	27* 13*	1 1	0 52.45	-17 8.9	1.686	1.875	31.5	18.4	85 E	28	71*
9 8	8 50.93	+21 16.2	1.800	1.155	31.1	20.5	36 W	28* 15*	1 6	1 1.42	-15 33.1	1.752	1.897	30.9	18.5	83 E	29	68*
9 18	9 20.89	+17 5.7	1.778	1.164	32.1	20.5	38 W	30* 17*	1 11	1 10.40	-13 58.5	1.819	1.920	30.3	18.6	81 E	31	65*
9 28	9 49.48	+12 36.5	1.751	1.172	33.2	20.6	40 W	30* 20*	1 16	1 19.39	-12 25.2	1.886	1.943	29.7	18.7	78 E	33	62*
10 8	10 17.09	+7 51.5	1.719	1.178	34.3	20.6	42 W	31* 23*	<b>138843 2000 VF<sub>39</sub></b>									
10 18	10 44.14	+2 53.4	1.685	1.183	35.5	20.6	44 W	31* 26*	12 23	16 7.25	-20 10.4	2.181	1.377	18.8	21.5	27 W	13*	16*
10 28	11 11.03	+2 15.0	1.647	1.187	36.7	20.5	46 W	31* 29*	1 2	16 37.43	-23 41.1	2.128	1.363	20.9	21.4	30 W	11*	21*
11 7	11 38.17	+7 30.9	1.609	1.189	37.9	20.5	47 W	29* 32*	1 12	17 9.69	-26 57.2	2.074	1.350	23.0	21.4	32 W	9*	25*
11 17	12 6.04	-12 50.7	1.570	1.189	39.0	20.5	49 W	27* 36*	1 22	17 44.28	-29 54.0	2.020	1.340	25.0	21.4	35 W	6*	29*
11 27	12 35.11	-18 9.6	1.531	1.188	40.1	20.5	51 W	24* 40*	2 1	18 21.35	-32 25.5	1.968	1.333	26.9	21.4	38 W	3*	32*
12 2	12 50.27	-20 47.0	1.512	1.187	40.7	20.5	52 W	22* 41*	2 11	19 0.78	-34 25.2	1.920	1.328	28.6	21.4	40 W	1*	34*
12 7	13 5.94	-23 21.9	1.493	1.185	41.2	20.5	52 W	20* 43*	2 21	19 42.23	-35 47.1	1.876	1.325	30.2	21.4	42 W	-	35*
12 12	13 22.20	-25 53.4	1.475	1.183	41.7	20.4	53 W	18* 45*	3 2	20 24.99	-36 26.1	1.837	1.326	31.6	21.4	44 W	-	36*
12 17	13 39.12	-28 20.4	1.457	1.181	42.2	20.4	54 W	16* 46*	3 12	21 8.09	-36 20.2	1.805	1.329	32.7	21.4	46 W	-	36*
12 22	13 56.77	-30 41.6	1.440	1.178	42.7	20.4	54 W	13* 47*	3 22	21 50.47	-35 30.6	1.779	1.335	33.6	21.4	48 W	-	36*
12 27	14 15.22	-32 55.8	1.424	1.175	43.2	20.4	55 W	11* 48*	4 1	22 31.20	-34 2.2	1.760	1.344	34.4	21.4	49 W	-	37*
1 1	14 34.54	-35 1.5	1.408	1.172	43.6	20.4	55 W	9* 49*	4 11	23 9.60	-32 2.3	1.745	1.355	34.9	21.4	51 W	-	38*
1 6	14 54.78	-36 57.3	1.392	1.168	44.1	20.4	56 W	7* 50*	4 21	23 45.35	-29 39.5	1.733	1.368	35.4	21.4	52 W	-	39*
1 11	15 15.94	-38 41.7	1.377	1.164	44.6	20.3	56 W	6* 50*	5 1	0 18.36	-27 2.2	1.724	1.384	35.8	21.5	53 W	-	41*
1 16	15 38.02	-40 13.1	1.363	1.160	45.0	20.3	56 W	4* 50*	5 11	0 48.75	-24 17.8	1.715	1.401	36.1	21.5	55 W	-	43*
<b>183230 2002 TC<sub>58</sub></b>									5 21	1 16.75	-21 32.1	1.703	1.420	36.4	21.5	56 W	-	46*
12 23	16 6.17	-6 33.8	3.286	2.514	12.2	19.9	33 W	25* 11*	<b>5653 Camarillo</b>									
1 2	16 24.34	-7 15.6	3.171	2.467	14.1	19.9	38 W	27* 18*	12 23	16 7.43	-23 55.6	2.519	1.694	14.9	20.2	26 W	10*	18*
1 12	16 42.82	-7 48.3	3.047	2.419	16.0	19.8	43 W	29* 24*	1 2	16 33.47	-25 17.0	2.509	1.734	16.7	20.3	30 W	10*	22*
1 22	17 1.56	-8 11.6	2.916	2.370	17.9	19.7	48 W	30* 31*	1 12	16 59.02	-26 21.6	2.491	1.774	18.4	20.4	35 W	11*	27*
2 1	17 20.49	-8 25.0	2.779	2.321	19.8	19.6	53 W	31* 37*	1 22	17 23.96	-27 10.3	2.464	1.813	20.1	20.5	39 W	11*	32*
2 11	17 39.53	-8 28.4	2.637	2.272	21.6	19.5	58 W	32* 44*	2 1	17 48.14	-27 44.5	2.427	1.851	21.7	20.5	44 W	11*	38*
2 21	17 58.63	-8 22.0	2.491	2.223	23.3	19.4	63 W	33* 50*	2 11	18 11.40	-28 6.0	2.381	1.888	23.3	20.6	49 W	11*	43*
3 2	18 17.70	-8 6.0	2.343	2.174	25.0	19.3	68 W	33* 55*	2 21	18 33.60	-28 16.6	2.326	1.924	24.7	20.6	54 W	11*	48*
3 12	18 36.66	-7 41.3	2.194	2.125	26.5	19.1	73 W	34* 60*	3 2	18 54.59	-28 18.7	2.262	1.959	25.9	20.6	60 W	11*	54*
3 22	18 55.45	-7 8.9	2.046	2.076	28.0	19.0	78 W	34* 64*	3 12	19 14.22	-28 14.5	2.190	1.993	27.0	20.6	65 W	11*	59*
4 1	19 13.96	-6 30.0	1.898	2.028	29.2	18.8	83 W	35* 67*	3 22	19 32.33	-28 6.6	2.111	2.025	27.8	20.6	71 W	12*	65*
4 11	19 32.13	-5 46.9	1.752	1.981	30.4													

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

19/21	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	$45^\circ$ - $26^\circ$	19/21	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	$45^\circ$ - $26^\circ$
<b>5653 Camarillo</b> (continuation)									<b>16834 1997 WU<sub>22</sub></b> (continuation)								
7 30	19 30.69	-33 24.2	1.327	2.303	9.1	19.2	159 E	12 83	11 22	2 57.87	+30 35.9	1.149	2.117	7.3	18.1	164 E	76 33
8 4	19 24.21	-33 19.2	1.355	2.309	11.2	19.4	154 E	12 83	11 27	2 49.65	+29 17.9	1.163	2.117	9.3	18.2	160 E	74 35
8 9	19 18.51	-33 9.5	1.389	2.314	13.3	19.5	148 E	12 83	12 2	2 42.37	+27 58.5	1.185	2.116	11.7	18.3	154 E	73 36
8 14	19 13.72	-32 55.9	1.428	2.318	15.3	19.6	143 E	12 83	12 7	2 36.18	+26 39.9	1.213	2.115	14.2	18.4	148 E	72 37
8 19	19 9.91	-32 39.0	1.472	2.322	17.1	19.8	138 E	12 83	12 12	2 31.15	+25 24.5	1.247	2.113	16.6	18.6	142 E	70 39
8 29	19 5.32	-31 58.6	1.572	2.329	20.1	20.0	128 E	13 84	12 17	2 27.31	+24 13.9	1.286	2.110	18.8	18.7	136 E	69 40
9 8	19 4.64	-31 12.7	1.685	2.335	22.4	20.2	118 E	14 85	12 22	2 24.67	+23 9.5	1.330	2.107	20.8	18.9	131 E	68 41
9 18	19 7.44	-30 24.2	1.807	2.338	23.9	20.5	109 E	15 86	12 27	2 23.16	+22 12.0	1.378	2.103	22.5	19.0	125 E	67 42
9 28	19 13.28	-29 33.9	1.934	2.340	24.9	20.6	101 E	15 86	1 1	2 22.71	+21 21.6	1.429	2.098	24.0	19.1	120 E	66 43
10 8	19 21.62	-28 41.8	2.065	2.341	25.2	20.8	93 E	16 86*	1 6	2 23.24	+20 38.3	1.483	2.092	25.3	19.2	115 E	66 43*
10 18	19 32.03	-27 47.4	2.195	2.339	25.1	20.9	86 E	17 80*	1 11	2 24.68	+20 2.0	1.539	2.086	26.4	19.3	110 E	65 44*
10 28	19 44.13	-26 49.7	2.323	2.337	24.6	21.0	78 E	18* 72*	1 16	2 26.95	+19 32.2	1.596	2.079	27.2	19.4	105 E	65 44*
11 7	19 57.57	-25 47.9	2.446	2.332	23.8	21.1	72 E	19* 65*	<b>5731 Zeus</b>								
11 17	20 12.09	-24 41.2	2.563	2.326	22.7	21.2	65 E	20* 57*	12 23	16 8.38	-26 51.1	2.044	1.238	20.4	18.6	26 W	7* 19*
11 27	20 27.47	-23 28.9	2.672	2.318	21.3	21.2	59 E	21* 50*	12 28	16 24.88	-27 23.0	2.079	1.287	20.5	18.8	27 W	7* 20*
12 7	20 43.50	-22 10.7	2.773	2.309	19.8	21.2	52 E	21* 43*	1 2	16 40.76	-27 47.1	2.111	1.336	20.7	18.9	29 W	7* 22*
12 17	21 0.05	-20 46.1	2.863	2.298	18.1	21.2	46 E	21* 36*	1 7	16 56.00	-28 4.2	2.140	1.385	21.1	19.0	30 W	7* 24*
12 27	21 16.98	-19 15.2	2.942	2.285	16.2	21.2	40 E	20* 29*	1 12	17 10.62	-28 15.1	2.167	1.434	21.5	19.1	32 W	8* 25*
1 6	21 34.20	-17 37.9	3.009	2.271	14.3	21.2	35 E	18* 23*	1 22	17 38.00	-28 21.0	2.209	1.531	22.4	19.3	36 W	8* 30*
1 16	21 51.64	-15 54.6	3.064	2.255	12.2	21.1	29 E	16* 17*	2 1	18 2.96	-28 10.0	2.238	1.626	23.4	19.5	41 W	9* 35*
<b>7341 1991 VK</b>									2 11	18 25.53	-27 46.3	2.252	1.719	24.4	19.7	46 W	10* 40*
12 23	16 7.43	-24 21.0	2.721	1.890	13.3	21.0	26 W	9* 18*	2 21	18 45.76	-27 13.5	2.251	1.809	25.3	19.8	51 W	11* 45*
1 2	16 29.32	-25 13.3	2.722	1.951	15.2	21.2	31 W	11* 23*	3 2	19 3.68	-26 35.0	2.236	1.897	26.1	19.9	57 W	12* 51*
1 12	16 50.26	-25 53.1	2.710	2.010	17.0	21.3	37 W	12* 29*	3 12	19 19.25	-25 53.4	2.207	1.982	26.8	20.0	64 W	13* 58*
1 22	17 10.18	-26 21.9	2.684	2.067	18.7	21.4	42 W	13* 35*	3 22	19 32.44	-25 11.1	2.166	2.064	27.1	20.1	71 W	14* 65*
2 1	17 28.96	-26 40.9	2.644	2.121	20.3	21.5	48 W	13* 42*	4 1	19 43.13	-24 30.5	2.114	2.144	27.1	20.1	78 W	16* 72*
<b>16834 1997 WU<sub>22</sub></b>									4 11	19 51.17	-23 53.3	2.053	2.221	26.7	20.1	86 W	17* 80*
12 23	16 7.77	-27 11.0	1.600	0.838	31.1	17.6	26 W	7* 10*	4 21	19 56.37	-23 21.3	1.987	2.296	25.9	20.1	95 W	19* 87*
12 28	16 36.57	-27 19.9	1.611	0.827	29.8	17.5	25 W	6* 18*	5 1	19 58.48	-22 55.8	1.918	2.369	24.4	20.0	104 W	20* 87*
1 2	17 5.25	-27 6.6	1.625	0.820	28.3	17.5	23 W	5* 16*	5 11	19 57.31	-22 37.4	1.852	2.439	22.3	19.9	114 W	22* 87*
1 7	17 33.50	-26 31.8	1.643	0.819	26.7	17.4	22 W	4* 15*	5 21	19 52.71	-22 26.0	1.793	2.506	19.5	19.8	124 W	23* 86*
1 12	18 1.06	-25 37.3	1.663	0.822	25.1	17.4	21 W	4* 14*	5 31	19 44.73	-22 20.4	1.747	2.572	16.0	19.7	136 W	23 86
1 17	18 27.72	-24 25.3	1.687	0.830	23.6	17.4	20 W	4* 13*	6 10	19 33.74	-22 18.3	1.720	2.635	11.9	19.6	148 W	23 86
1 22	18 53.35	-22 58.4	1.712	0.843	22.2	17.5	19 W	4* 12*	6 15	19 27.55	-22 17.7	1.716	2.666	9.6	19.5	154 W	23 86
1 27	19 17.85	-21 19.3	1.739	0.860	20.9	17.5	18 W	4* 11*	6 20	19 20.31	-22 16.8	1.718	2.696	7.3	19.5	160 W	23 86
2 1	19 41.19	-19 30.5	1.767	0.880	19.8	17.6	18 W	4* 11*	6 25	19 13.39	-22 15.5	1.727	2.726	4.9	19.4	167 W	23 86
2 6	20 3.39	-17 34.7	1.796	0.904	18.9	17.6	17 W	4* 10*	6 30	19 6.16	-22 13.4	1.743	2.755	2.5	19.3	173 W	23 86
2 11	20 24.47	-15 33.9	1.827	0.930	18.2	17.7	17 W	5* 10*	7 5	18 58.99	-22 10.4	1.767	2.784	0.3	19.1	179 W	23 86
2 16	20 44.52	-13 30.0	1.858	0.959	17.7	17.8	17 W	5* 10*	7 10	18 52.04	-22 6.6	1.799	2.812	2.1	19.4	174 E	23 86
2 21	21 3.60	-11 24.6	1.889	0.990	17.3	17.9	17 W	6* 10*	7 15	18 45.46	-22 1.9	1.838	2.840	4.3	19.6	168 E	23 86
2 26	21 21.79	-9 19.0	1.920	1.022	17.1	18.0	18 W	6* 10*	7 20	18 39.38	-21 56.5	1.885	2.867	6.4	19.8	162 E	23 86
3 2	21 39.15	-7 14.1	1.952	1.055	16.9	18.1	18 W	7* 10*	7 30	18 29.07	-21 44.6	1.998	2.920	10.1	20.1	150 E	23 86
3 7	21 55.77	-5 10.8	1.982	1.089	16.9	18.2	19 W	7* 11*	8 9	18 21.60	-21 32.3	2.135	2.971	13.1	20.4	138 E	23 86
3 12	22 11.72	-3 9.7	2.013	1.124	17.0	18.3	19 W	8* 11*	8 19	18 17.07	-21 20.7	2.292	3.020	15.4	20.6	128 E	24 85
3 22	22 41.85	+0 44.4	2.070	1.194	17.4	18.5	21 W	9* 13*	8 29	18 15.35	-21 10.3	2.464	3.067	16.9	20.9	118 E	24 85
4 1	23 9.98	+4 25.8	2.122	1.264	18.0	18.7	23 W	10* 15*	9 8	18 16.15	-21 1.2	2.647	3.113	17.9	21.1	108 E	24 85
4 11	23 36.47	+7 53.3	2.167	1.332	18.8	18.9	25 W	11* 17*	9 18	18 19.15	-20 52.6	2.836	3.156	18.3	21.3	99 E	24* 85
4 21	0 1.62	+11 6.8	2.205	1.399	19.7	19.0	28 W	13* 19*	9 28	18 24.04	-20 43.9	3.027	3.198	18.3	21.5	91 E	24* 82*
5 1	0 25.65	+14 6.3	2.232	1.463	20.7	19.2	31 W	15* 21*	<b>7335 1989 JA</b>								
5 11	0 48.71	+16 52.1	2.250	1.525	21.9	19.3	34 W	17* 24*	12 23	16 8.66	-17 43.8	1.973	1.186	22.3	19.9	27 W	15* 15*
5 21	1 10.94	+19 24.6	2.257	1.583	23.0	19.5	38 W	20* 26*	12 28	16 28.50	-19 12.3	1.934	1.153	23.1	19.8	27 W	14* 16*
5 31	1 32.40	+21 44.3	2.253	1.639	24.2	19.6	42 W	23* 28*	1 2	16 49.31	-20 35.1	1.898	1.120	23.8	19.8	27 W	13* 17*
6 10	1 53.12	+23 51.8	2.237	1.692	25.4	19.7	46 W	26* 30*	1 7	17 11.11	-21 50.6	1.865	1.088	24.4	19.7	27 W	11* 18*
6 20	2 13.11	+25 47.5	2.209	1.741	26.6	19.7	50 W	31* 31*	1 12	17 33.89	-22 57.0	1.836	1.058	24.9	19.6	27 W	10* 19*
6 30	2 32.29	+27 32.1	2.169	1.788	27.7	19.8	55 W	36* 32*	1 17	17 57.63	-23 52.5	1.811	1.030	25.3	19.5	27 W	8* 19*
7 10	2 50.58	+29 6.1	2.118	1.831	28.7	19.8	60 W	42* 32*	1 22	18 22.25	-24 35.1	1.790	1.004	25.5	19.4	26 W	7* 19*
7 20	3 7.83	+30 30.1	2.056	1.871	29.5	19.8	65 W	49* 32*	1 27	18 47.60	-25 3.0	1.773	0.981	25.6	19.4	26 W	5* 19*
7 30	3 23.84	+31 44.9	1.983	1.908	30.2	19.8	71 W	56* 32*	2 1	19 13.52	-25 14.7	1.760	0.960	25.6	19.3	25 W	3* 19*
8 9	3 38.34	+32 51.1	1.902	1.942	30.6	19.8	77 W	63* 31*	2 6	19 39.80	-25 9.1	1.752	0.943	25.3	19.3	24 W	2* 18*
8 19	3 51.01	+33 49.3	1.812	1.973	30.6	19.7	83 W	70* 30	2 11	20 6.20	-24 45.7	1.749	0.929	24.9	19.2	23 W	— 17*
8 24	3 56.50	+34 15.6	1.765	1.987	30.5	19.6	87 W	73* 30	2 16	20 32.48	-24 4.6	1.750	0.920	24.3	19.2	23 W	— 16*
8 29	4 1.37	+34 39.9	1.717	2.001	30.3	19.6	91 W	77* 29	2 21	20 58.43	-23 6.4	1.756	0.914	23.7	19.1	22 W	— 16*
9 3	4 5.53	+35 2.4	1.667	2.014	30.0	19.5	94 W	79* 29	2 26	21 23.82	-21 52.5	1.765	0.913	22.9	19.1	21 W	— 15*
9 8	4 8.92	+35 23.0	1.617	2.026	29.5	19.5	98 W	80* 29	3 2	21 48.48	-20 24.6	1.779	0.916	22.0	19.1	20 W	— 14*
9 13	4 11.44	+35 41.4	1.567	2.037	28.8	19.4	102 W	81* 28	3 7	22 12.31	-18 45.1	1.796	0.923	21.1	1		

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

19/21	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°	19/20	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°
<b>7335 1989 JA</b>										<b>142464 2002 TC<sub>9</sub></b>									
<i>(continuation)</i>										<i>(continuation)</i>									
5 31	3 0.96	+11 50.4	2.278	1.414	17.0	20.4	24 W	1*	18*	2 1	18 55.71	-14 5.3	1.824	1.072	26.3	20.8	29 W	15*	18*
6 10	3 25.96	+14 10.2	2.317	1.485	18.0	20.6	27 W	4*	20*	2 11	19 34.46	-12 15.7	1.834	1.088	26.5	20.9	29 W	15*	20*
6 20	3 49.89	+16 11.7	2.346	1.555	19.2	20.8	30 W	8*	23*	2 21	20 11.73	-10 7.1	1.845	1.107	26.6	21.0	30 W	15*	21*
6 30	4 12.80	+17 56.5	2.363	1.623	20.5	20.9	34 W	12*	25*	3 2	20 47.46	-7 44.5	1.857	1.128	26.8	21.0	31 W	15*	22*
7 10	4 34.71	+19 26.2	2.369	1.689	21.8	21.1	38 W	18*	27*	3 12	21 21.70	-5 12.9	1.869	1.151	27.1	21.1	32 W	15*	23*
7 20	4 55.60	+20 42.5	2.362	1.753	23.1	21.2	43 W	24*	29*	3 22	21 54.62	-2 36.7	1.878	1.174	27.5	21.1	33 W	15*	25*
7 30	5 15.44	+21 47.2	2.342	1.815	24.3	21.3	47 W	30*	30*	4 1	22 26.35	+0 0.2	1.885	1.198	28.0	21.2	34 W	15*	26*
8 9	5 34.13	+22 42.5	2.310	1.875	25.4	21.3	53 W	36*	31*	4 11	22 57.07	+2 34.6	1.887	1.222	28.6	21.3	36 W	15*	28*
8 19	5 51.59	+23 30.3	2.266	1.933	26.4	21.4	58 W	43*	33*	4 21	23 26.98	+5 3.6	1.885	1.246	29.3	21.3	37 W	15*	29*
8 29	6 7.65	+24 13.0	2.209	1.988	27.2	21.4	64 W	50*	34*	5 1	23 56.25	+7 25.0	1.878	1.269	30.2	21.4	39 W	15*	31*
9 8	6 22.16	+24 52.9	2.142	2.041	27.7	21.4	71 W	57*	35*	5 11	0 25.04	+9 36.4	1.865	1.292	31.1	21.4	41 W	16*	33*
9 18	6 34.89	+25 32.6	2.066	2.091	28.0	21.4	77 W	63*	35*	5 21	0 53.49	+11 36.2	1.845	1.313	32.1	21.5	44 W	17*	34*
9 28	6 45.52	+26 15.0	1.982	2.139	27.8	21.4	85 W	68*	36*	<b>229007 2003 XF<sub>11</sub></b>									
10 8	6 53.73	+27 2.8	1.893	2.185	27.2	21.3	93 W	72*	36*	12 23	16 10.43	-16 54.5	1.322	0.631	45.1	18.3	27 W	15*	15*
10 18	6 59.07	+27 58.5	1.801	2.228	26.0	21.2	102 W	73*	36*	12 28	16 51.21	-18 55.1	1.301	0.539	43.6	17.9	22 W	11*	11*
10 28	7 1.03	+29 4.0	1.711	2.269	24.1	21.1	111 W	74	35	1 2	17 36.37	-20 31.0	1.297	0.451	38.3	17.4	17 W	6*	7*
11 7	6 59.11	+30 19.8	1.628	2.307	21.5	20.9	122 W	75	34	1 7	18 25.82	-21 29.2	1.305	0.378	26.9	16.7	10 W	1*	2*
11 17	6 52.86	+31 43.6	1.557	2.344	18.0	20.7	133 W	77	32	1 12	19 18.66	-21 35.9	1.317	0.338	8.1	15.8	3 W	—	—
11 27	6 42.15	+33 9.6	1.503	2.378	13.9	20.6	145 W	78	31	1 14	19 40.17	-21 21.6	1.319	0.336	0.7	15.4	0 E	—	—
12 7	6 27.46	+34 28.7	1.474	2.410	9.4	20.4	157 W	79	30	1 16	20 1.50	-20 57.3	1.320	0.343	9.2	15.9	3 E	—	—
12 12	6 18.99	+35 2.4	1.469	2.425	7.2	20.3	162 W	80	29	1 18	20 22.41	-20 23.6	1.320	0.358	17.0	16.3	6 E	—	—
12 17	6 10.06	+35 30.7	1.472	2.439	5.6	20.2	166 W	81	28	1 20	20 42.70	-19 41.2	1.320	0.379	23.6	16.6	9 E	—	1*
12 22	6 0.96	+35 52.7	1.483	2.453	5.0	20.2	168 E	81	28	1 22	21 2.25	-18 51.4	1.320	0.406	29.0	16.9	12 E	3*	4*
12 27	5 51.97	+36 8.3	1.502	2.467	5.7	20.3	165 E	81	28	1 24	21 21.00	-17 55.3	1.320	0.437	33.2	17.2	14 E	5*	6*
1 1	5 43.38	+36 17.6	1.529	2.479	7.4	20.4	161 E	81	28	1 26	21 38.96	-16 54.1	1.323	0.470	36.4	17.5	16 E	6*	8*
1 6	5 35.42	+36 21.1	1.562	2.492	9.3	20.6	156 E	81	28	1 28	21 56.12	-15 48.8	1.327	0.506	38.7	17.7	19 E	8*	9*
1 11	5 28.27	+36 19.7	1.603	2.503	11.3	20.7	150 E	81	28	1 30	22 12.51	-14 40.6	1.334	0.542	40.2	17.9	21 E	10*	11*
1 16	5 22.10	+36 14.4	1.650	2.515	13.2	20.9	144 E	81	28	2 1	22 28.16	-13 30.2	1.344	0.578	41.2	18.1	23 E	12*	12*
<b>131905 2002 BQ<sub>9</sub></b>										<b>229007 2003 XF<sub>11</sub></b>									
12 23	16 9.95	-14 49.9	2.457	1.653	16.2	19.5	28 W	17*	14*	2 6	23 4.25	-10 30.0	1.377	0.671	41.9	18.5	27 E	16*	15*
1 2	16 38.99	-16 0.1	2.405	1.640	17.9	19.5	31 W	18*	18*	2 11	23 36.41	-7 31.4	1.425	0.762	41.1	18.8	30 E	19*	18*
1 12	17 8.41	-16 52.6	2.354	1.631	19.6	19.5	34 W	18*	22*	2 16	0 5.14	-4 41.0	1.485	0.851	39.4	19.1	33 E	21*	19*
1 22	17 38.05	-17 26.5	2.302	1.625	21.3	19.5	37 W	18*	26*	2 21	0 30.92	-2 2.5	1.555	0.937	37.3	19.3	35 E	23*	21*
2 1	18 7.67	-17 41.2	2.251	1.622	22.9	19.5	40 W	18*	30*	2 26	0 54.18	+0 22.5	1.633	1.021	35.1	19.6	36 E	25*	21*
2 11	18 37.04	-17 37.3	2.200	1.622	24.4	19.5	43 W	18*	34*	3 2	1 15.31	+2 33.9	1.717	1.101	32.8	19.8	37 E	26*	22*
2 21	19 5.95	-17 15.7	2.149	1.626	25.9	19.5	46 W	18*	38*	3 7	1 34.62	+4 32.3	1.805	1.179	30.6	20.0	37 E	26*	22*
3 2	19 34.19	-16 38.3	2.098	1.633	27.3	19.5	49 W	18*	42*	3 12	1 52.41	+6 18.6	1.896	1.255	28.5	20.1	37 E	26*	21*
3 12	20 1.56	-15 47.2	2.046	1.643	28.7	19.5	53 W	18*	46*	3 17	2 8.90	+7 54.1	1.989	1.328	26.4	20.3	36 E	25*	21*
3 22	20 27.94	-14 45.2	1.993	1.656	29.9	19.5	56 W	18*	49*	3 22	2 24.30	+9 19.7	2.084	1.399	24.5	20.5	36 E	25*	20*
4 1	20 53.21	-13 35.2	1.938	1.671	31.0	19.5	60 W	18*	53*	3 27	2 38.77	+10 36.6	2.178	1.467	22.6	20.6	34 E	23*	20*
4 11	21 17.26	-12 20.3	1.881	1.690	32.0	19.5	63 W	19*	57*	4 1	2 52.43	+11 45.8	2.272	1.534	20.8	20.7	33 E	22*	19*
4 21	21 40.04	-11 3.7	1.822	1.711	32.9	19.5	67 W	20*	60*	4 6	3 5.39	+12 48.0	2.365	1.599	19.0	20.9	31 E	20*	18*
5 1	22 1.45	-9 48.5	1.760	1.734	33.5	19.4	72 W	21*	64*	4 11	3 17.74	+13 43.9	2.457	1.662	17.4	21.0	30 E	19*	17*
5 11	22 21.42	-8 38.0	1.696	1.759	33.9	19.4	76 W	22*	67*	4 16	3 29.56	+14 34.2	2.547	1.724	15.8	21.1	28 E	17*	16*
5 21	22 39.83	-7 35.1	1.629	1.786	34.1	19.3	81 W	24*	70*	4 21	3 40.92	+15 19.5	2.634	1.783	14.2	21.2	26 E	14*	15*
5 31	22 56.54	-6 43.1	1.561	1.815	33.9	19.3	87 W	27*	71*	4 26	3 51.86	+16 0.1	2.719	1.842	12.7	21.2	24 E	12*	13*
6 10	23 11.35	-6 5.2	1.491	1.845	33.3	19.2	93 W	30*	70	5 1	4 2.42	+16 36.5	2.801	1.898	11.2	21.3	21 E	10*	12*
6 20	23 24.04	-5 44.4	1.420	1.876	32.3	19.1	99 W	33*	70	5 6	4 12.64	+17 9.1	2.879	1.954	9.7	21.4	19 E	7*	11*
6 30	23 34.29	-5 44.2	1.351	1.908	30.7	19.0	107 W	36*	70	5 11	4 22.55	+17 38.1	2.954	2.008	8.3	21.4	17 E	5*	9*
7 10	23 41.78	-6 7.1	1.285	1.941	28.5	18.8	114 W	38*	70	5 16	4 32.18	+18 3.8	3.025	2.061	7.0	21.5	14 E	3*	7*
7 20	23 46.17	-6 55.1	1.226	1.975	25.5	18.7	123 W	38	71	<b>118162 1951 SX</b>									
7 30	23 47.15	-8 8.4	1.175	2.009	21.7	18.5	133 W	37	72	12 23	16 10.81	-2 36.8	3.091	2.342	13.6	21.0	34 W	27*	8*
8 9	23 44.69	-9 44.1	1.138	2.043	17.2	18.3	143 W	35	74	1 2	16 29.16	-2 3.0	3.012	2.337	15.5	21.0	39 W	31*	14*
8 14	23 42.21	-10 38.3	1.126	2.061	14.8	18.3	149 W	34	75	1 12	16 47.38	-1 14.5	2.924	2.330	17.3	21.0	45 W	34*	20*
8 19	23 39.00	-11 35.2	1.119	2.078	12.2	18.2	154 W	33	76	1 22	17 5.40	-0 10.1	2.828	2.322	19.0	21.0	50 W	37*	26*
8 24	23 35.16	-12 33.2	1.117	2.095	9.7	18.1	160 W	32	77	2 1	17 23.09	+1 11.1	2.725	2.312	20.5	20.9	55 W	40*	32*
8 29	23 30.83	-13 30.6	1.121	2.112	7.3	18.0	165 W	31	78	2 11	17 40.35	+2 49.7	2.618	2.302	21.9	20.9	61 W	42*	37*
9 3	23 26.18	-14 25.7	1.132	2.130	5.4	18.0	169 W	31	78	2 21	17 57.04	+4 46.4	2.508	2.289	23.2	20.8	66 W	45*	42*
9 8	23 21.39	-15 16.9	1.148	2.147	4.8	18.0	170 W	30	79	3 2	18 13.03	+7 1.4	2.396	2.276	24.3	20.7	71 W	48*	46*
9 13	23 16.63	-16 2.9	1.171	2.164	5.7	18.1	168 E	29	80	3 12	18 28.15	+9 34.4	2.285	2.261	25.2	20.6	76 W	51*	48*
9 18	23 12.08	-16 42.6	1.199	2.181	7.6	18.2	163 E	28	81	3 22	18 42.23	+12 24.9	2.175	2.245	26.0	20.5	81 W	54*	49*
9 23	23 7.91	-17 15.2	1.234	2.198	9.7	18.4	158 E	28	81	4 1	18 55.07	+15 31.8	2.068	2.228	26.6	20.4	86 W	57*	48*
9 28	23 4.26	-17 40.4	1.275	2.215	11.8	18.6	153 E	27	82	4 11	19 6.43	+18 53.0	1.965	2.209	27.0				

EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

19/21	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°	19/20	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°		
<b>118162 1951 SX</b>										<b>364142 2006 DN<sub>62</sub></b>											
<i>(continuation)</i>										<i>(continuation)</i>											
7 10	18 54.12	+44 39.6	1.359	1.988	28.1	19.3	113 E	90	19	2 11	18 44.43	-18 7.9	2.209	1.602	23.9	21.4	41 W	17*	33*		
7 15	18 47.60	+44 37.7	1.343	1.974	28.3	19.3	113 E	90	19	2 21	19 12.97	-17 7.5	2.171	1.618	25.3	21.4	44 W	17*	37*		
7 20	18 41.26	+44 19.9	1.328	1.959	28.6	19.2	113 E	89	20	3 2	19 40.35	-15 51.1	2.131	1.636	26.6	21.4	48 W	18*	40*		
7 25	18 35.34	+43 46.5	1.315	1.944	28.9	19.2	112 E	89	20	3 12	20 6.46	-14 21.6	2.089	1.658	27.8	21.4	51 W	18*	44*		
7 30	18 30.06	+42 58.0	1.304	1.928	29.2	19.2	112 E	88	21	3 22	20 31.20	-12 41.8	2.045	1.681	29.0	21.5	55 W	19*	48*		
8 4	18 25.59	+41 55.2	1.295	1.913	29.6	19.2	111 E	87	22	4 1	20 54.50	-10 54.9	1.998	1.708	30.0	21.5	59 W	20*	51*		
8 9	18 22.06	+40 39.3	1.287	1.897	30.0	19.1	111 E	86	23	4 11	21 16.31	-9 3.8	1.947	1.736	30.9	21.5	63 W	22*	55*		
8 14	18 19.56	+39 11.5	1.280	1.881	30.5	19.1	110 E	84	25	4 21	21 36.61	-7 11.3	1.893	1.765	31.6	21.5	67 W	23*	59*		
8 19	18 18.14	+37 32.9	1.276	1.865	30.9	19.1	109 E	83	26	5 1	21 55.31	-5 20.1	1.834	1.797	32.2	21.5	72 W	25*	62*		
8 24	18 17.85	+35 45.0	1.273	1.849	31.4	19.1	108 E	81	28	5 11	22 12.36	-3 32.8	1.772	1.829	32.5	21.4	77 W	28*	64*		
8 29	18 18.68	+33 49.3	1.271	1.833	31.9	19.1	106 E	79	30	5 21	22 27.65	-1 51.9	1.706	1.863	32.6	21.4	82 W	31*	65*		
9 3	18 20.59	+31 47.2	1.272	1.817	32.4	19.1	105 E	77	32	5 31	22 41.01	-0 20.0	1.637	1.897	32.3	21.3	88 W	34*	64		
9 8	18 23.55	+29 40.1	1.274	1.801	32.9	19.1	104 E	75	34	6 10	22 52.26	+1 0.2	1.566	1.932	31.6	21.3	94 W	38*	63		
9 13	18 27.50	+27 29.2	1.278	1.784	33.5	19.1	102 E	72	37	6 20	23 1.15	+2 5.9	1.495	1.968	30.4	21.2	101 W	43*	62		
9 18	18 32.41	+25 15.8	1.284	1.768	34.0	19.1	100 E	70	39	6 30	23 7.38	+2 53.8	1.424	2.003	28.6	21.0	109 W	46*	61		
9 23	18 38.23	+23 1.0	1.292	1.751	34.5	19.1	99 E	68	41	7 10	23 10.69	+3 20.6	1.358	2.039	26.2	20.9	118 W	48*	61		
9 28	18 44.89	+20 46.3	1.301	1.735	35.0	19.1	97 E	66	43*	7 20	23 10.84	+3 23.2	1.298	2.075	23.0	20.7	127 W	48	61		
10 3	18 52.33	+18 32.5	1.313	1.718	35.5	19.1	95 E	64*	45*	7 30	23 7.76	+2 58.9	1.250	2.111	19.0	20.6	137 W	48	61		
10 8	19 0.51	+16 20.8	1.326	1.702	35.9	19.1	93 E	61*	47*	8 9	23 1.72	+2 7.4	1.217	2.146	14.4	20.4	148 W	47	62		
10 13	19 9.36	+14 12.0	1.342	1.686	36.3	19.2	91 E	59*	48*	8 19	22 53.36	+0 51.3	1.203	2.182	9.2	20.2	160 W	46	63		
10 18	19 18.85	+12 6.9	1.359	1.669	36.6	19.2	89 E	57*	49*	8 24	22 48.62	+0 6.1	1.205	2.199	6.6	20.1	166 W	45	64		
10 23	19 28.93	+10 6.5	1.378	1.653	36.9	19.2	87 E	55*	50*	8 29	22 43.75	-0 42.4	1.214	2.216	4.2	20.0	171 W	44	65		
10 28	19 39.54	+8 11.4	1.399	1.637	37.2	19.2	85 E	53*	50*	9 3	22 38.90	-1 32.6	1.229	2.234	2.9	20.0	174 E	43	66		
11 1	20 50.64	+6 22.2	1.422	1.622	37.3	19.2	82 E	51*	50*	9 8	22 34.23	-2 23.2	1.250	2.251	3.9	20.1	171 E	43	66		
11 7	20 2.18	+4 39.3	1.446	1.606	37.4	19.2	80 E	50*	50*	9 13	22 29.90	-3 12.9	1.278	2.268	6.0	20.3	166 E	42	67		
11 17	20 26.43	+1 33.9	1.498	1.576	37.4	19.3	76 E	46*	48*	9 18	22 26.04	-4 0.5	1.312	2.285	8.3	20.5	161 E	41	68		
11 27	20 51.98	-1 2.8	1.555	1.547	37.1	19.3	71 E	44*	46*	9 23	22 22.76	-4 44.8	1.352	2.301	10.6	20.6	155 E	40	69		
12 7	21 18.50	+3 10.5	1.615	1.520	36.5	19.3	67 E	41*	43*	9 28	22 20.14	-5 25.0	1.398	2.318	12.7	20.8	150 E	40	69		
12 17	21 45.75	-4 50.0	1.676	1.495	35.6	19.4	62 E	39*	39*	10 3	22 18.23	-6 0.6	1.449	2.334	14.6	21.0	144 E	39	70		
12 27	22 13.53	-6 2.9	1.738	1.472	34.4	19.4	58 E	37*	36*	10 8	22 17.03	-6 31.2	1.505	2.350	16.3	21.1	139 E	38	71		
1	6	22 41.65	+6 51.8	1.797	1.452	33.1	19.4	54 E	35*	34*	10 13	22 16.56	-6 56.8	1.566	2.366	17.8	21.3	134 E	38	71	
1	16	23 10.02	-7 19.3	1.855	1.434	31.6	19.4	50 E	32*	32*	10 18	22 16.79	-7 17.3	1.630	2.382	19.1	21.4	129 E	38	71	
<b>30717 1937 UD</b>										<b>143624 2003 HM<sub>16</sub></b>											
12 23	16 11.71	-23 31.3	3.065	2.217	11.0	19.7	25 W	9*	17*	12 23	16 12.50	-14 49.9	1.615	0.867	31.4	18.0	27 W	17*	13*		
1	2	16 33.46	-24 41.1	2.968	2.178	13.2	19.7	30 W	11*	22*	12 28	16 39.53	-13 46.9	1.606	0.850	31.2	17.9	27 W	17*	12*	
1	12	16 55.91	-25 42.3	2.862	2.139	15.5	19.7	35 W	12*	28*	1	7	17 6.73	-12 34.0	1.604	0.839	30.9	17.9	26 W	17*	10*
1	22	17 19.05	-26 33.8	2.749	2.099	17.7	19.6	40 W	12*	33*	1	7	17 33.87	-11 12.9	1.609	0.834	30.3	17.8	25 W	17*	9*
2	1	17 42.84	-27 14.8	2.629	2.059	19.9	19.6	45 W	12*	39*	1	12	18 0.76	-9 45.8	1.620	0.834	29.5	17.8	25 W	17*	8*
2	11	18 7.22	-27 44.6	2.505	2.018	22.0	19.5	50 W	12*	44*	1	17	18 27.19	-8 14.7	1.637	0.841	28.5	17.9	24 W	17*	6*
2	21	18 32.16	-28 2.6	2.378	1.976	24.1	19.4	55 W	11*	49*	1	22	18 53.01	-6 41.7	1.660	0.854	27.4	17.9	24 W	17*	5*
3	2	18 57.58	-28 8.2	2.248	1.935	26.1	19.3	59 W	11*	53*	1	27	19 18.06	-5 8.6	1.688	0.872	26.2	17.9	23 W	17*	4*
3	12	19 23.40	-28 1.2	2.118	1.893	28.0	19.2	63 W	11*	57*	2	1	19 42.24	-3 36.9	1.721	0.895	25.0	18.0	23 W	16*	4*
3	22	19 49.57	-27 41.3	1.988	1.852	29.8	19.0	67 W	11*	61*	2	6	20 5.46	-2 7.9	1.758	0.922	23.7	18.1	22 W	16*	3*
4	1	20 15.99	-27 8.8	1.860	1.811	31.6	18.9	72 W	11*	65*	2	11	20 27.69	-0 42.3	1.799	0.953	22.4	18.1	22 W	15*	3*
4	11	20 42.60	-26 23.7	1.735	1.770	33.2	18.7	75 W	11*	69*	2	21	21 9.18	+1 57.0	1.888	1.024	19.9	18.3	21 W	15*	3*
4	21	21 9.33	-25 26.4	1.614	1.731	34.8	18.6	79 W	11*	73*	3	2	21 46.85	+4 19.6	1.981	1.103	17.9	18.5	20 W	14*	3*
5	1	21 36.09	-24 17.7	1.497	1.692	36.2	18.4	83 W	11*	76*	3	12	22 21.06	+6 25.8	2.075	1.186	16.3	18.7	20 W	13*	5*
5	11	22 2.80	-22 58.3	1.386	1.655	37.5	18.2	86 W	12*	80*	3	22	22 52.23	+8 17.2	2.164	1.272	15.4	18.9	20 W	12*	7*
5	21	22 29.40	-21 29.1	1.281	1.620	38.7	18.0	89 W	14*	83*	4	1	23 20.78	+9 55.2	2.245	1.359	15.2	19.2	21 W	12*	10*
5	31	22 55.72	-19 51.7	1.182	1.587	39.7	17.8	92 W	16*	84*	4	11	23 47.08	+11 20.8	2.316	1.445	15.6	19.4	23 W	12*	13*
6	10	23 21.66	-18 7.4	1.091	1.556	40.5	17.6	95 W	18*	82	4	21	0 11.43	+12 35.0	2.374	1.529	16.4	19.6	25 W	12*	16*
6	20	23 47.03	-16 17.8	1.006	1.528	41.2	17.4	98 W	21*	80	5	1	0 34.07	+13 38.2	2.418	1.612	17.6	19.8	29 W	13*	20*
6	30	0 11.56	-14 24.9	0.927	1.504	41.5	17.2	101 W	25*	78	5	11	0 55.17	+14 30.7	2.448	1.693	19.0	20.0	33 W	14*	24*
7	10	0 34.97	-12 30.4	0.855	1.483	41.6	17.0	104 W	29*	77	5	21	1 14.88	+15 12.6	2.462	1.772	20.4	20.1	38 W	16*	28*
7	20	0 56.88	-10 36.1	0.789	1.466	41.3	16.8	108 W	32*	75	5	31	1 33.25	+15 43.7	2.460	1.848	21.8	20.2	43 W	18*	32*
7	30	1 16.75	-8 43.7	0.729	1.453	40.4	16.6	112 W	36*	73	6	10	1 50.29	+16 3.4	2.443	1.921	23.2	20.4	48 W	22*	36*
8	9	1 34.05	-6 53.5	0.674	1.445	38.9	16.4	116 W	38*	71	6	20	2 6.01	+16 11.4	2.412	1.992	24.4	20.4	54 W	26*	40*
8	19	1 48.05	-5 5.8	0.625	1.442	36.6	16.2	122 W	40	69	6	30	2 20.30	+16 6.8	2.366	2.061	25.4	20.5	60 W	31*	43*
8	29	1 57.95	+3 19.8	0.582	1.443	33.4	15.9	128 W	42	67	7	10	2 33.07	+15 48.8	2.307	2.127	26.1	20.5	67 W	37*	46*
9	8	2 3.08	+1 33.2	0.546	1.450	29.0	15.7	136 W	43	66	7	20	2 44.16	+15 16.2	2.237	2.190	26.5	20.5	74 W	43*	48*
9	18	2 2.89	+0 15.8	0.519	1.460	23.3	15.4	145 W	45	64	7	30	2 53.33	+14 27.5	2.159						



EPHEMERIDES OF NEAS AND SOME UNUSUAL MINOR PLANETS

19/21	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°	19/21	$\alpha_{2000}$	$\delta_{2000}$	$\Delta$	$r$	$\beta$	$V$	$\psi$	45°	-26°
<b>143624 2003 HM<sub>16</sub></b>										<b>5407 1992 AX</b>									
<i>(continuation)</i>										<i>(continuation)</i>									
12 7	1 44.16	-9 54.1	2.177	2.837	16.9	20.8	123 E	35	74	8 24	0 59.84	-11 20.7	1.143	2.018	19.2	16.8	139 W	34	75
12 17	1 41.48	-9 56.3	2.336	2.868	18.4	21.0	113 E	35	74	8 29	0 56.92	-12 25.3	1.127	2.032	17.0	16.7	144 W	33	76
12 27	1 41.30	-9 39.1	2.503	2.896	19.3	21.2	104 E	35	74*	9 3	0 53.11	-13 31.1	1.116	2.047	14.8	16.6	149 W	31	78
1 6	1 43.34	-9 7.5	2.674	2.923	19.6	21.4	95 E	36	71*	9 8	0 48.51	-14 36.2	1.110	2.061	12.6	16.5	153 W	30	79
1 16	1 47.31	-8 25.4	2.845	2.947	19.5	21.5	86 E	37	65*	9 13	0 43.26	-15 38.7	1.110	2.075	10.8	16.5	157 W	29	80
<b>133249 2003 RS<sub>6</sub></b>										<b>68346 2001 KZ<sub>66</sub></b>									
12 23	16 12.86	-15 35.7	2.544	1.726	15.0	20.4	27 W	16*	13*	12 7	0 2.11	-14 37.8	1.884	2.262	25.5	18.3	99 E	30	78*
1 2	16 40.83	-16 46.1	2.480	1.704	16.9	20.4	30 W	17*	18*	12 17	0 9.45	-12 56.1	2.025	2.277	25.6	18.5	92 E	32	73*
1 12	17 9.42	-17 40.2	2.415	1.684	18.8	20.4	33 W	17*	22*	12 27	0 18.50	-11 8.4	2.166	2.291	25.3	18.6	84 E	34	65*
1 22	17 38.49	-18 16.7	2.351	1.667	20.6	20.4	37 W	17*	27*	1 6	0 28.95	-9 16.5	2.305	2.303	24.6	18.8	78 E	36	58*
2 1	18 7.87	-18 34.7	2.286	1.652	22.4	20.4	40 W	17*	31*	1 16	0 40.55	-7 22.0	2.440	2.314	23.7	18.9	71 E	37*	51*
2 11	18 37.33	-18 34.1	2.222	1.640	24.1	20.3	43 W	17*	35*	12 23	16 14.27	-18 58.1	2.517	1.684	14.6	20.8	26 W	13*	14*
2 21	19 6.68	-18 15.3	2.158	1.632	25.8	20.3	46 W	17*	38*	1 2	16 41.66	-19 12.0	2.416	1.632	17.2	20.7	29 W	15*	19*
3 2	19 35.71	-17 39.5	2.095	1.626	27.4	20.3	49 W	17*	42*	1 12	17 10.31	-19 6.6	2.311	1.578	19.8	20.6	33 W	16*	23*
3 12	20 4.21	-16 48.4	2.033	1.623	28.9	20.3	52 W	16*	45*	1 22	17 40.30	-18 38.9	2.202	1.522	22.4	20.5	36 W	17*	26*
3 22	20 32.04	-15 44.2	1.971	1.624	30.3	20.2	55 W	16*	49*	2 1	18 11.66	-17 45.4	2.093	1.463	25.0	20.4	39 W	17*	30*
4 1	20 59.04	-14 29.7	1.910	1.627	31.6	20.2	58 W	17*	52*	2 11	18 44.43	-16 23.3	1.985	1.402	27.6	20.3	41 W	18*	32*
4 11	21 25.12	-13 7.9	1.848	1.634	32.7	20.2	62 W	17*	55*	2 21	19 18.66	-14 29.6	1.882	1.339	30.2	20.1	43 W	19*	34*
4 21	21 50.18	-11 41.9	1.786	1.644	33.7	20.1	65 W	18*	59*	3 2	19 54.38	-12 2.6	1.786	1.276	32.7	20.0	44 W	19*	36*
5 1	22 14.14	-10 14.9	1.724	1.657	34.6	20.1	69 W	19*	62*	3 12	20 31.61	-9 2.2	1.701	1.211	35.1	19.8	44 W	19*	36*
5 11	22 36.91	-8 50.2	1.661	1.672	35.3	20.1	73 W	20*	65*	3 22	21 10.43	-5 30.4	1.628	1.148	37.2	19.7	44 W	19*	36*
5 21	22 58.43	-7 30.8	1.596	1.690	35.7	20.0	77 W	20*	67*	3 27	21 30.46	-3 34.4	1.598	1.117	38.2	19.6	44 W	19*	35*
5 31	23 18.55	-6 20.1	1.531	1.711	35.9	20.0	82 W	24*	69*	4 1	21 50.89	-1 32.9	1.572	1.086	39.0	19.5	43 W	19*	35*
6 10	23 37.12	-5 21.2	1.465	1.733	35.8	19.9	87 W	27*	69*	4 6	22 11.74	+0 32.6	1.551	1.057	39.7	19.4	42 W	19*	34*
6 20	23 53.97	-4 36.9	1.398	1.758	35.3	19.8	92 W	31*	69	4 11	22 33.02	+2 40.7	1.534	1.028	40.3	19.4	42 W	19*	33*
6 30	0 8.80	-4 10.5	1.331	1.784	34.3	19.7	98 W	34*	68	4 16	22 54.73	+4 49.7	1.522	1.002	40.7	19.3	41 W	18*	32*
7 10	0 21.31	-4 4.6	1.266	1.812	32.9	19.6	105 W	38*	68	4 21	23 16.87	+6 57.8	1.515	0.976	40.8	19.3	39 W	18*	30*
7 20	0 31.13	-4 21.7	1.203	1.842	30.8	19.5	112 W	40*	68	4 26	23 39.41	+9 2.9	1.512	0.954	40.8	19.2	38 W	17*	29*
7 30	0 37.84	-5 3.6	1.145	1.872	28.0	19.3	120 W	40	69	5 1	0 2.33	+11 3.1	1.514	0.933	40.5	19.1	37 W	17*	28*
8 9	0 41.08	-6 10.1	1.095	1.903	24.5	19.1	129 W	39	70	5 6	0 25.60	+12 56.6	1.520	0.916	40.0	19.1	36 W	16*	26*
8 19	0 40.61	-7 38.5	1.056	1.935	20.2	19.0	139 W	37	72	5 11	0 49.18	+14 41.5	1.530	0.901	39.3	19.1	34 W	15*	25*
8 24	0 38.98	-8 29.2	1.042	1.952	17.8	18.9	144 W	37	72	5 16	1 13.00	+16 16.6	1.544	0.890	38.4	19.0	33 W	15*	24*
8 29	0 36.48	-9 22.4	1.033	1.968	15.4	18.8	149 W	36	73	5 21	1 36.99	+17 40.6	1.561	0.883	37.3	19.0	32 W	14*	22*
9 3	0 33.22	-10 16.8	1.028	1.985	12.9	18.7	154 W	35	74	5 31	2 25.07	+19 52.0	1.603	0.880	34.8	19.0	30 W	12*	20*
9 8	0 29.30	-11 10.6	1.028	2.001	10.5	18.6	159 W	34	75	6 10	3 12.58	+21 12.2	1.652	0.894	32.2	19.0	28 W	11*	19*
9 13	0 24.87	-12 2.2	1.034	2.018	8.4	18.6	163 W	33	76	6 20	3 58.70	+21 42.8	1.705	0.921	29.9	19.1	27 W	10*	18*
9 18	0 20.10	-12 49.8	1.046	2.035	7.0	18.6	166 W	32	77	6 25	4 20.99	+21 41.0	1.732	0.940	28.9	19.1	27 W	10*	17*
9 23	0 15.21	-13 31.8	1.063	2.051	6.8	18.6	166 W	31	78	6 30	4 42.67	+21 28.7	1.759	0.961	28.0	19.2	26 W	10*	17*
9 28	0 10.39	-14 7.1	1.087	2.068	7.8	18.7	164 E	31	78	7 5	5 3.69	+21 7.0	1.787	0.985	27.3	19.2	26 W	10*	17*
10 3	0 5.84	-14 34.7	1.116	2.085	9.5	18.9	160 E	30	79	7 10	5 24.01	+20 36.8	1.813	1.010	26.6	19.3	26 W	10*	17*
10 8	0 1.70	-14 54.4	1.152	2.102	11.4	19.0	155 E	30	79	7 15	5 43.61	+19 59.0	1.839	1.038	26.2	19.4	27 W	11*	18*
10 18	23 55.18	-15 9.7	1.238	2.135	15.3	19.4	146 E	30	79	7 20	6 2.49	+19 14.5	1.864	1.067	25.8	19.5	27 W	11*	18*
10 28	23 51.50	-14 55.2	1.343	2.169	18.6	19.7	136 E	30	79	7 25	6 20.64	+18 24.2	1.888	1.096	25.5	19.6	28 W	12*	18*
11 7	23 50.82	-14 15.8	1.464	2.202	21.2	20.0	126 E	31	78	7 30	6 38.08	+17 28.8	1.911	1.127	25.4	19.6	28 W	13*	19*
11 17	23 52.95	-13 16.9	1.597	2.234	23.1	20.3	118 E	32	77	8 9	7 10.90	+15 25.7	1.953	1.190	25.3	19.8	30 W	15*	20*
11 27	23 57.59	-12 3.0	1.740	2.267	24.3	20.5	109 E	33	76	8 19	7 41.17	+13 10.0	1.987	1.254	25.5	20.0	32 W	17*	22*
12 7	0 4.34	-10 37.9	1.890	2.299	24.8	20.7	101 E	34	75*	8 29	8 9.10	+10 45.7	2.014	1.318	25.9	20.1	35 W	20*	24*
12 17	0 12.82	-9 4.6	2.044	2.330	24.9	20.9	94 E	36	70*	9 8	8 34.92	+8 15.8	2.033	1.381	26.5	20.2	38 W	22*	26*
12 27	0 22.75	-7 25.4	2.200	2.361	24.6	21.1	87 E	38	63*	9 18	8 58.86	+5 42.6	2.042	1.443	27.2	20.4	41 W	25*	28*
1 6	0 33.82	-5 42.4	2.356	2.391	23.9	21.3	80 E	39	57*	9 28	9 21.05	+3 7.8	2.040	1.502	27.9	20.5	45 W	28*	31*
1 16	0 45.85	-3 57.0	2.511	2.420	22.9	21.4	73 E	41*	50*	10 8	9 41.65	+0 33.0	2.028	1.560	28.7	20.6	49 W	31*	34*
12 23	16 13.92	-14 17.6	2.125	1.328	19.8	17.2	27 W	17*	13*	10 18	10 0.75	-2 0.7	2.005	1.615	29.5	20.6	53 W	33*	37*
1 2	16 48.43	-15 48.9	2.104	1.329	20.9	17.3	29 W	17*	16*	10 28	10 18.36	-4 32.4	1.971	1.667	30.2	20.7	58 W	35*	41*
1 12	17 23.07	-16 56.4	2.086	1.334	21.9	17.3	30 W	16*	19*	11 7	10 34.50	-7 0.9	1.926	1.717	30.9	20.7	63 W	35*	46*
1 22	17 57.57	-17 39.3	2.071	1.344	22.9	17.3	32 W	16*	22*	11 17	10 49.08	-9 25.4	1.871	1.764	31.4	20.7	68 W	35*	51*
2 1	18 31.61	-17 57.6	2.057	1.359	24.0	17.4	34 W	15*	25*	11 27	11 1.97	-11 44.7	1.806	1.808	31.7	20.7	74 W	33	58*
2 11	19 4.89	-17 52.9	2.043	1.377	25.1	17.4	36 W	14*	28*	12 7	11 12.96	-13 57.4	1.733	1.849	31.7	20.7	81 W	31	65*
2 21	19 37.20	-17 27.4	2.029	1.399	26.1	17.5	39 W	14*	31*	12 17	11 21.77	-16 1.8	1.653	1.888	31.4	20.6	88 W	29	73*
3 2	20 8.33	-16 44.1	2.013	1.424	27.2	17.5	41 W	13*	34*	12 27	11 28.02	-17 55.0	1.569	1.923	30.6	20.5	95 W	27	80*
3 12	20 38.15	-15 46.5	1.995	1.452	28.3	17.6	44 W	13*	37*	1 6	11 31.27	-19 33.6	1.483	1.956	29.3	20.4	103 W	25	84
3 22	21 6.62	-14 38.0	1.973	1.482	29.4	17.6	47 W	13*	41*	1 16	11 31.03	-20 52.3	1.397	1.986	27.4	20.2	112 W	24	85
4 1	21 33.69	-13 22.3	1.947	1.514	30.4	17.7	50 W	13*	44*										
4 11	21 59.37	-12 2.9</																	