

EPHEMERIDES

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
317549	2002 <i>UM</i> ₃₄		1 1.0	47°26	1°9/ 1.4	17	506374	2017 <i>QH</i> ₂₆		1 1.0	231°67	1°0/ 1.1	18
11 23	7 12.41	+17 12.8	1.399	2.191	19.4	20.5	11 23	7 10.12	+20 44.1	2.541	3.301	12.5	21.5
12 3	7 8.49	+17 22.9	1.344	2.216	15.3	20.3	12 3	7 5.52	+20 27.3	2.438	3.293	9.9	21.3
12 13	7 1.35	+17 43.4	1.310	2.242	10.6	20.1	12 13	6 58.85	+20 12.6	2.358	3.285	6.9	21.1
12 23	6 51.86	+18 12.1	1.298	2.268	5.5	19.9	12 23	6 50.59	+19 59.4	2.306	3.276	3.5	20.8
1 2	6 41.31	+18 46.0	1.313	2.295	1.9	19.7	1 2	6 41.48	+19 47.1	2.285	3.267	1.0	20.6
1 12	6 31.27	+19 21.7	1.356	2.322	5.9	20.1	1 12	6 32.42	+19 35.5	2.294	3.257	4.1	20.8
1 22	6 23.08	+19 56.5	1.424	2.349	10.5	20.4	1 22	6 24.28	+19 24.8	2.332	3.247	7.5	21.0
2 1	6 17.68	+20 29.0	1.516	2.377	14.5	20.7	2 1	6 17.80	+19 15.3	2.398	3.237	10.6	21.2
42255	2001 <i>OT</i> ₂₂		1 1.0	97°46	2°8/31.7	18	424857	2008 <i>UP</i> ₃₄₅		1 1.0	294°85	2°0/ 1.2	17
11 23	7 18.98	+28 6.8	1.556	2.339	18.2	19.6	11 23	7 8.83	+18 30.1	2.202	2.971	13.9	21.4
12 3	7 13.75	+28 38.4	1.491	2.358	14.4	19.4	12 3	7 4.84	+18 4.3	2.102	2.961	11.1	21.2
12 13	7 5.04	+29 10.1	1.447	2.377	10.0	19.2	12 13	6 58.56	+17 42.0	2.025	2.951	7.8	20.9
12 23	6 53.70	+29 36.4	1.427	2.396	5.3	19.0	12 23	6 50.52	+17 23.4	1.974	2.941	4.2	20.7
1 2	6 41.10	+29 52.4	1.435	2.414	2.8	18.9	1 2	6 41.50	+17 8.6	1.952	2.932	2.0	20.5
1 12	6 28.98	+29 55.6	1.471	2.431	6.4	19.2	1 12	6 32.52	+16 57.3	1.960	2.922	4.8	20.7
1 22	6 18.85	+29 47.3	1.534	2.449	10.8	19.5	1 22	6 24.57	+16 49.7	1.996	2.913	8.5	20.9
2 1	6 11.78	+29 30.8	1.621	2.465	14.6	19.7	2 1	6 18.48	+16 45.7	2.059	2.904	11.9	21.1
109822	2001 <i>RC</i> ₁₁₁		1 1.0	328°77	4°4/ 2.0	18	345097	2005 <i>NH</i> ₁		1 1.0	86°09	0°3/31.9	18
11 23	7 9.41	+10 41.3	1.847	2.610	16.4	19.8	11 23	7 22.17	+22 2.5	1.596	2.365	18.3	21.5
12 3	7 5.63	+10 31.4	1.760	2.609	13.4	19.6	12 3	7 15.66	+22 25.6	1.543	2.404	14.4	21.4
12 13	6 59.28	+10 34.1	1.694	2.609	9.9	19.4	12 13	7 5.97	+22 53.4	1.512	2.441	9.7	21.2
12 23	6 50.90	+10 50.1	1.652	2.609	6.4	19.2	12 23	6 54.01	+23 21.7	1.507	2.478	4.7	21.0
1 2	6 41.40	+11 19.2	1.638	2.608	4.4	19.0	1 2	6 41.14	+23 46.7	1.530	2.513	0.6	20.7
1 12	6 31.97	+11 59.3	1.652	2.608	6.4	19.2	1 12	6 28.94	+24 6.0	1.583	2.548	5.5	21.2
1 22	6 23.74	+12 47.4	1.693	2.608	9.9	19.4	1 22	6 18.74	+24 19.2	1.664	2.581	9.9	21.5
2 1	6 17.62	+13 40.2	1.760	2.607	13.5	19.6	2 1	6 11.44	+24 27.5	1.771	2.613	13.6	21.8
323524	2004 <i>RY</i> ₁₁₅		1 1.0	186°60	0°6/31.9	18	331039	2009 <i>VG</i> ₅₃		1 1.0	220°07	0°9/ 1.2	18
11 23	7 12.21	+24 28.4	2.418	3.182	13.0	22.1	11 23	7 10.60	+20 31.6	2.146	2.915	14.2	21.8
12 3	7 7.29	+24 37.1	2.324	3.181	10.3	21.9	12 3	7 6.29	+20 25.9	2.052	2.913	11.3	21.6
12 13	7 0.11	+24 47.1	2.253	3.181	7.0	21.7	12 13	6 59.58	+20 23.9	1.981	2.910	7.8	21.4
12 23	6 51.21	+24 56.3	2.209	3.179	3.4	21.5	12 23	6 51.01	+20 24.5	1.936	2.906	3.9	21.1
1 2	6 41.38	+25 2.8	2.195	3.178	0.7	21.2	1 2	6 41.44	+20 26.5	1.921	2.903	1.0	20.9
1 12	6 31.63	+25 5.2	2.212	3.176	4.3	21.5	1 12	6 31.96	+20 28.9	1.935	2.900	4.6	21.1
1 22	6 22.94	+25 3.4	2.259	3.173	7.8	21.7	1 22	6 23.58	+20 31.2	1.978	2.896	8.5	21.4
2 1	6 16.11	+24 58.3	2.333	3.170	10.9	21.9	2 1	6 17.18	+20 33.5	2.047	2.892	11.9	21.6
413541	2005 <i>SX</i> ₁₄₆		1 1.0	73°73	3°3/ 1.5	18	184327	2005 <i>GD</i> ₈₁		1 1.0	181°62	0°3/31.9	18
11 23	7 9.92	+14 32.4	1.894	2.663	15.9	21.6	11 23	7 13.74	+21 32.2	2.343	3.101	13.5	21.6
12 3	7 5.91	+14 12.8	1.811	2.667	12.8	21.4	12 3	7 8.62	+22 7.1	2.248	3.103	10.7	21.4
12 13	6 59.38	+14 1.4	1.749	2.671	9.2	21.2	12 13	7 1.13	+22 47.0	2.176	3.103	7.3	21.2
12 23	6 50.90	+13 58.8	1.713	2.675	5.4	20.9	12 23	6 51.77	+23 29.4	2.133	3.103	3.6	20.9
1 2	6 41.42	+14 4.9	1.704	2.680	3.3	20.8	1 2	6 41.36	+24 10.9	2.119	3.102	0.5	20.7
1 12	6 32.08	+14 18.5	1.724	2.684	5.7	21.0	1 12	6 30.96	+24 48.7	2.138	3.101	4.4	21.0
1 22	6 23.97	+14 38.1	1.772	2.688	9.4	21.2	1 22	6 21.59	+25 21.0	2.186	3.099	8.1	21.2
2 1	6 17.99	+15 2.1	1.844	2.692	12.9	21.4	2 1	6 14.12	+25 47.8	2.261	3.096	11.3	21.4
319573	2006 <i>SZ</i> ₈₉		1 1.0	101°75	1°1/31.8	17	301415	2009 <i>DV</i> ₄₈		1 1.0	294°13	3°9/31.4	18
11 23	7 13.89	+25 10.0	1.844	2.622	15.9	22.1	11 23	7 13.65	+30 16.6	1.570	2.362	17.6	21.0
12 3	7 9.24	+25 25.1	1.767	2.633	12.6	21.9	12 3	7 10.20	+30 53.8	1.476	2.348	14.2	20.7
12 13	7 1.74	+25 41.9	1.712	2.643	8.6	21.7	12 13	7 3.16	+31 31.0	1.403	2.333	10.2	20.4
12 23	6 52.06	+25 57.3	1.682	2.653	4.3	21.4	12 23	6 53.10	+32 2.5	1.353	2.319	5.9	20.2
1 2	6 41.29	+26 8.1	1.681	2.663	1.2	21.2	1 2	6 41.20	+32 22.1	1.330	2.305	4.0	20.0
1 12	6 30.78	+26 12.8	1.709	2.673	5.2	21.5	1 12	6 29.24	+32 25.8	1.333	2.291	7.3	20.2
1 22	6 21.76	+26 11.2	1.765	2.682	9.4	21.8	1 22	6 18.94	+32 14.1	1.363	2.277	11.9	20.4
2 1	6 15.19	+26 4.9	1.846	2.692	13.0	22.0	2 1	6 11.71	+31 50.3	1.416	2.264	16.1	20.6
83604	2001 <i>SG</i> ₂₇₀		1 1.0	88°02	3°8/31.8	18	224241	2005 <i>SX</i> ₁₁₆		1 1.0	162°78	2°3/ 1.5	18
11 23	7 15.36	+36 1.1	2.435	3.191	13.1	18.7	11 23	7 11.57	+15 50.2	2.311	3.066	13.7	21.7
12 3	7 9.75	+36 6.9	2.357	3.204	10.5	18.6	12 3	7 6.73	+15 41.2	2.222	3.071	11.0	21.6
12 13	7 1.71	+36 6.1	2.302	3.216	7.7	18.4	12 13	6 59.70	+15 38.5	2.156	3.076	7.8	21.4
12 23	6 51.91	+35 55.1	2.273	3.229	4.9	18.2	12 23	6 51.02	+15 41.9	2.116	3.080	4.4	21.2
1 2	6 41.33	+35 31.6	2.274	3.241	3.8	18.2	1 2	6 41.47	+15 50.8	2.106	3.084	2.3	21.0
1 12	6 31.12	+34 55.5	2.305	3.253	5.5	18.3	1 12	6 32.03	+16 4.0	2.127	3.087	4.7	21.2
1 22	6 22.29	+34 9.1	2.366	3.265	8.2	18.5	1 22	6 23.62	+16 20.4	2.177	3.090	8.1	21.4
2 1	6 15.60	+33 15.9	2.453	3.277	10.9	18.7	2 1	6 17.03	+16 39.1	2.253	3.092	11.2	21.6
107133	2001 <i>AW</i> ₅₀		1 1.0	299°04	0°7/ 1.1	18	170676	2003 <i>YE</i> ₁₈₀		1 1.0	277°08	2°7/31.6	18
11 23	7 10.63	+20 33.3	1.574	2.365	17.6	20.3	11 23	7 13.26	+27 59.3	1.756	2.540	16.3	20.2
12 3	7 7.45	+20 39.0	1.478	2.351	14.1	20.0	12 3	7 9.24	+28 32.2	1.669	2.537	13.0	20.0
12 13	7 1.05	+20 51.4	1.402	2.336	9.8	19.7	12 13	7 2.08	+29 6.4	1.603	2.534	9.1	19.8
12 23	6 51.98	+21 8.6	1.350	2.322	4.9	19.4	12 23	6 52.41	+29 37.1	1.562	2.530	4.9	19.5
1 2	6 41.29	+21 28.1	1.325	2.307	0.8	19.1	1 2	6 41.32	+29 59.5	1.548	2.527	2.8	19.4
1 12	6 30.51	+21 47.4	1.327	2.293	5.9	19.4	1 12	6 30.30	+30 10.8	1.564	2.524	6.1	19.6
1 22	6 21.14	+22 4.7	1.355	2.280	11.0	19.6	1 22	6 20.80	+30 10.8	1.606	2.520	10.4	19.8
2 1	6 14.46	+22 19.9	1.407	2.266	15.5	19.9	2 1	6 13.93	+30 1.7	1.672	2.517	14.2	20.0
426546	2013 <i>RN</i> ₈₄		1 1.0	344°71	4°3/31.5	18	79764	1998 <i>TY</i> ₃₆		1 1.0	99°91	1°1/31.8	18
11 23	7 12.59	+34 3.9	2.006										

EPHEMERIDES

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
113876	2002 <i>TE</i> ₂₆₁		1 1.0	64°13	6°6/ 2.1	18	265316	2004 <i>NH</i> ₁		1 1.0	102°97	0°1/ 1.0	18
11 23	7 14.02	+ 9 51.2	1.290	2.070	21.3	19.4	11 23	7 13.88	+23 12.5	2.208	2.972	14.0	20.7
12 3	7 9.90	+ 9 2.8	1.234	2.091	17.4	19.2	12 3	7 8.56	+23 3.2	2.134	2.992	11.0	20.5
12 13	7 2.42	+ 8 30.3	1.196	2.112	13.0	19.0	12 13	7 0.90	+22 55.1	2.082	3.010	7.5	20.3
12 23	6 52.45	+ 8 16.6	1.180	2.133	8.8	18.8	12 23	6 51.57	+22 46.9	2.058	3.029	3.7	20.1
1 2	6 41.34	+ 8 23.0	1.189	2.155	6.6	18.7	1 2	6 41.48	+22 37.3	2.064	3.047	0.4	19.9
1 12	6 30.75	+ 8 47.6	1.224	2.176	8.6	18.9	1 12	6 31.70	+22 26.0	2.100	3.065	4.3	20.2
1 22	6 22.11	+ 9 26.5	1.283	2.197	12.5	19.2	1 22	6 23.19	+22 13.4	2.166	3.082	8.0	20.5
2 1	6 16.40	+10 14.8	1.365	2.219	16.3	19.5	2 1	6 16.71	+22 0.4	2.258	3.099	11.1	20.7
159662	2002 <i>EY</i> ₁₂₄		1 1.0	99°12	0°3/31.9	18	186238	2001 <i>XJ</i> ₁₃₉		1 1.0	358°47	0°4/31.9	18
11 23	7 16.23	+22 23.8	1.741	2.516	16.8	20.0	11 23	7 11.12	+22 43.6	1.911	2.690	15.4	20.4
12 3	7 11.08	+22 42.2	1.673	2.537	13.2	19.8	12 3	7 7.09	+23 1.9	1.824	2.690	12.2	20.2
12 13	7 2.98	+23 5.0	1.626	2.557	9.0	19.6	12 13	7 0.36	+23 24.4	1.758	2.690	8.4	20.0
12 23	6 52.68	+23 28.9	1.605	2.576	4.4	19.4	12 23	6 51.50	+23 48.5	1.718	2.690	4.1	19.7
1 2	6 41.32	+23 50.8	1.613	2.596	0.6	19.1	1 2	6 41.47	+24 11.3	1.707	2.690	0.6	19.4
1 12	6 30.33	+24 8.1	1.649	2.614	5.2	19.5	1 12	6 31.53	+24 30.3	1.725	2.690	5.0	19.8
1 22	6 20.96	+24 20.4	1.714	2.633	9.6	19.8	1 22	6 22.88	+24 44.6	1.771	2.690	9.2	20.0
2 1	6 14.16	+24 28.3	1.804	2.650	13.3	20.1	2 1	6 16.48	+24 54.5	1.842	2.690	12.9	20.2
490739	2010 <i>SU</i> ₅		1 1.0	50°23	7°1/ 1.9	18	204167	2004 <i>BP</i> ₃₁		1 1.0	359°02	0°9/31.8	18
11 23	7 10.11	+ 7 51.6	1.619	2.382	18.4	20.9	11 23	7 8.71	+23 52.8	2.016	2.798	14.6	20.1
12 3	7 6.27	+ 6 49.5	1.552	2.396	15.2	20.7	12 3	7 5.09	+24 17.4	1.929	2.797	11.5	19.9
12 13	6 59.69	+ 6 0.9	1.505	2.409	11.7	20.5	12 13	6 58.93	+24 45.6	1.864	2.796	7.9	19.6
12 23	6 51.09	+ 5 29.4	1.481	2.424	8.5	20.4	12 23	6 50.78	+25 14.4	1.824	2.796	3.9	19.4
1 2	6 41.50	+ 5 17.5	1.483	2.438	7.1	20.3	1 2	6 41.55	+25 40.9	1.813	2.796	1.0	19.2
1 12	6 32.21	+ 5 25.0	1.512	2.453	8.5	20.4	1 12	6 32.40	+26 2.5	1.832	2.796	4.9	19.5
1 22	6 24.39	+ 5 49.5	1.566	2.468	11.5	20.6	1 22	6 24.43	+26 18.3	1.878	2.797	8.8	19.7
2 1	6 18.90	+ 6 26.9	1.644	2.483	14.7	20.9	2 1	6 18.55	+26 28.6	1.949	2.798	12.3	19.9
160302	2003 <i>FZ</i> ₁₀₁		1 1.0	284°96	6°6/ 2.4	18	26444	2000 <i>AB</i> ₅₈		1 1.0	206°08	1°8/ 1.5	18
11 23	7 8.24	+ 5 22.8	1.966	2.709	16.2	20.2	11 23	7 12.27	+15 32.0	2.367	3.118	13.6	19.1
12 3	7 4.74	+ 4 54.7	1.860	2.690	13.7	20.0	12 3	7 7.43	+15 50.4	2.265	3.112	10.9	18.9
12 13	6 58.77	+ 4 40.8	1.775	2.670	10.8	19.8	12 13	7 0.32	+16 17.1	2.185	3.106	7.7	18.7
12 23	6 50.76	+ 4 44.1	1.713	2.651	8.0	19.5	12 23	6 51.42	+16 51.1	2.133	3.099	4.2	18.5
1 2	6 41.52	+ 5 6.4	1.678	2.631	6.6	19.4	1 2	6 41.49	+17 30.5	2.111	3.091	1.8	18.3
1 12	6 32.12	+ 5 47.0	1.671	2.611	7.9	19.5	1 12	6 31.50	+18 12.9	2.120	3.083	4.5	18.5
1 22	6 23.68	+ 6 43.1	1.690	2.591	10.8	19.6	1 22	6 22.44	+18 55.9	2.159	3.073	8.1	18.7
2 1	6 17.18	+ 7 50.6	1.734	2.571	14.1	19.7	2 1	6 15.14	+19 37.9	2.226	3.064	11.4	18.9
106867	2000 <i>YR</i> ₂₈		1 1.0	338°42	5°9/ 3.6	18	405937	2006 <i>RN</i> ₃₃		1 1.0	77°52	7°4/31.6	17
11 23	7 14.70	+ 2 8.8	1.053	1.829	25.4	19.1	11 23	7 23.16	+41 24.2	1.755	2.514	17.3	21.4
12 3	7 12.05	+ 3 28.3	0.971	1.824	21.4	18.8	12 3	7 17.12	+42 14.2	1.699	2.538	14.3	21.3
12 13	7 5.14	+ 5 33.0	0.905	1.820	16.3	18.5	12 13	7 7.36	+42 53.2	1.663	2.563	11.1	21.1
12 23	6 54.40	+ 8 25.3	0.859	1.816	10.4	18.1	12 23	6 54.84	+43 13.1	1.651	2.587	8.4	21.0
1 2	6 41.09	+11 57.7	0.838	1.812	6.0	17.9	1 2	6 41.15	+43 8.2	1.666	2.611	7.5	21.0
1 12	6 27.36	+15 51.4	0.844	1.810	8.7	18.0	1 12	6 28.18	+42 37.7	1.708	2.634	8.9	21.2
1 22	6 15.52	+19 43.1	0.877	1.808	14.7	18.3	1 22	6 17.53	+41 46.1	1.777	2.658	11.6	21.4
2 1	6 7.47	+23 14.6	0.934	1.806	20.3	18.6	2 1	6 10.21	+40 40.7	1.869	2.681	14.3	21.6
210393	2007 <i>VN</i> ₁₇₉		1 1.0	94°72	0°5/ 1.1	18	332919	2011 <i>CY</i> ₁		1 1.0	2°05	6°4/ 2.9	18
11 23	7 8.81	+20 50.8	2.425	3.192	12.9	21.4	11 23	7 6.51	+ 5 58.7	1.630	2.394	18.2	19.6
12 3	7 4.53	+20 58.4	2.341	3.200	10.1	21.2	12 3	7 3.70	+ 5 49.7	1.548	2.393	15.2	19.4
12 13	6 58.18	+21 9.6	2.280	3.208	6.9	21.0	12 13	6 58.16	+ 5 59.3	1.486	2.392	11.7	19.2
12 23	6 50.29	+21 23.1	2.246	3.216	3.4	20.8	12 23	6 50.48	+ 6 29.5	1.446	2.393	8.3	19.0
1 2	6 41.60	+21 37.3	2.241	3.224	0.6	20.6	1 2	6 41.60	+ 7 20.4	1.432	2.394	6.4	18.9
1 12	6 33.04	+21 50.7	2.267	3.232	4.0	20.9	1 12	6 32.78	+ 8 29.0	1.445	2.396	7.8	19.0
1 22	6 25.49	+22 2.7	2.322	3.240	7.4	21.1	1 22	6 25.24	+ 9 49.9	1.484	2.398	11.1	19.1
2 1	6 19.64	+22 13.0	2.404	3.247	10.5	21.3	2 1	6 19.96	+11 17.2	1.547	2.401	14.6	19.4
217992	2001 <i>WM</i> ₆₄		1 1.0	123°06	0°7/ 1.1	18	463242	2012 <i>FK</i> ₁₃		1 1.0	144°11	2°2/ 1.4	18
11 23	7 12.15	+21 24.5	2.016	2.788	14.9	20.4	11 23	7 10.69	+16 41.3	2.009	2.777	15.1	22.0
12 3	7 7.58	+21 15.5	1.932	2.794	11.8	20.2	12 3	7 6.45	+16 32.6	1.922	2.780	12.1	21.8
12 13	7 0.48	+21 9.5	1.870	2.800	8.1	20.0	12 13	6 59.74	+16 30.8	1.858	2.782	8.5	21.6
12 23	6 51.46	+21 5.4	1.834	2.805	4.0	19.7	12 23	6 51.14	+16 35.4	1.819	2.785	4.7	21.3
1 2	6 41.47	+21 1.8	1.828	2.810	0.8	19.5	1 2	6 41.54	+16 45.6	1.808	2.787	2.2	21.2
1 12	6 31.66	+20 57.9	1.851	2.816	4.8	19.8	1 12	6 32.05	+17 0.1	1.827	2.790	5.1	21.4
1 22	6 23.14	+20 53.8	1.902	2.821	8.7	20.0	1 22	6 23.75	+17 17.6	1.874	2.792	8.9	21.6
2 1	6 16.74	+20 49.7	1.979	2.825	12.2	20.3	2 1	6 17.48	+17 37.0	1.947	2.794	12.4	21.8
281161	2007 <i>EK</i> ₅		1 1.0	160°86	2°6/ 1.5	18	348578	2005 <i>WN</i> ₈₁		1 1.0	60°01	1°8/31.8	18
11 23	7 15.33	+15 50.5	1.880	2.641	16.2	21.7	11 23	7 17.54	+24 34.5	1.261	2.061	20.7	20.2
12 3	7 10.22	+15 43.7	1.795	2.648	13.0	21.4	12 3	7 13.11	+25 12.6	1.210	2.087	16.3	20.0
12 13	7 2.39	+15 44.9	1.732	2.654	9.2	21.2	12 13	7 4.83	+25 54.9	1.178	2.114	11.1	19.8
12 23	6 52.44	+15 53.7	1.694	2.659	5.1	21.0	12 23	6 53.70	+26 35.7	1.169	2.141	5.5	19.5
1 2	6 41.37	+16 9.0	1.685	2.664	2.6	20.8	1 2	6 41.28	+27 9.0	1.186	2.168	2.0	19.4
1 12	6 30.44	+16 29.0	1.706	2.668	5.5	21.0	1 12	6 29.53	+27 31.2	1.230	2.194	6.7	19.8
1 22	6 20.86	+16 52.2	1.755	2.671	9.6	21.3	1 22	6 20.09	+27 42.5	1.299	2.221	11.6	20.1
2 1	6 13.58	+17 17.2	1.830	2.673	13.2	21.5	2 1	6 14.04	+27 45.1	1.391	2.248	15.8	20.4
301732	2010 <i>GF</i> ₁₃₁		1 1.0	54°89	4°1/31.2	18	70131	1999 <i>NQ</i> ₆		1 1.0	58°89	1°5/ 1.3	18
11 23	7 15.30	+28 51.5											

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1 1.0

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
132187	2002 <i>EC</i> ₃₀		1 1.0 255°28	1°0/31.9	18		203758	2002 <i>RK</i> ₁₅₃		1 1.0 25°05	2°2/ 1.3	18	
11 23	7 13.79	+24 22.6	1.776	2.557	16.3	20.4	11 23	7 9.17	+18 12.7	2.059	2.831	14.7	19.7
12 3	7 9.66	+24 40.9	1.677	2.544	13.0	20.1	12 3	7 5.16	+17 43.1	1.974	2.834	11.7	19.6
12 13	7 2.44	+25 2.8	1.599	2.531	9.0	19.8	12 13	6 58.80	+17 17.8	1.911	2.838	8.2	19.3
12 23	6 52.67	+25 24.9	1.547	2.518	4.5	19.5	12 23	6 50.66	+16 56.8	1.874	2.841	4.5	19.1
1 2	6 41.37	+25 43.7	1.522	2.505	1.2	19.3	1 2	6 41.63	+16 40.4	1.866	2.845	2.2	19.0
1 12	6 29.99	+25 56.3	1.527	2.491	5.7	19.6	1 12	6 32.78	+16 28.5	1.887	2.849	5.0	19.2
1 22	6 19.97	+26 2.1	1.558	2.477	10.3	19.8	1 22	6 25.08	+16 21.1	1.936	2.853	8.7	19.4
2 1	6 12.51	+26 2.0	1.615	2.463	14.4	20.0	2 1	6 19.35	+16 17.9	2.011	2.858	12.0	19.6
467287	2016 <i>ET</i> ₁₉₄		1 1.0 195°29	0°1/ 1.0	18		157290	2004 <i>RX</i> ₃₀₆		1 1.0 81°60	6°6/ 2.4	18	
11 23	7 10.16	+21 42.0	2.144	2.916	14.1	21.0	11 23	7 9.70	+ 4 56.8	2.092	2.826	15.6	19.9
12 3	7 6.01	+21 56.3	2.054	2.916	11.2	20.8	12 3	7 5.29	+ 4 10.8	2.023	2.845	13.0	19.8
12 13	6 59.45	+22 14.8	1.986	2.916	7.7	20.6	12 13	6 58.71	+ 3 38.1	1.975	2.863	10.2	19.6
12 23	6 51.02	+22 35.4	1.944	2.915	3.8	20.3	12 23	6 50.56	+ 3 21.4	1.951	2.882	7.7	19.5
1 2	6 41.56	+22 56.0	1.932	2.915	0.4	20.0	1 2	6 41.66	+ 3 22.0	1.955	2.900	6.6	19.5
1 12	6 32.18	+23 14.5	1.949	2.914	4.5	20.4	1 12	6 33.00	+ 3 39.4	1.987	2.918	7.5	19.6
1 22	6 23.91	+23 29.9	1.995	2.914	8.4	20.6	1 22	6 25.47	+ 4 11.1	2.047	2.937	9.8	19.7
2 1	6 17.62	+23 42.1	2.067	2.913	11.8	20.8	2 1	6 19.79	+ 4 53.7	2.131	2.954	12.4	19.9
226885	2004 <i>TS</i> ₁₂₉		1 1.0 104°61	2°0/31.7	18		80664	2000 <i>BZ</i> ₁₀		1 1.0 63°25	4°0/31.4	17	
11 23	7 13.04	+27 46.0	2.110	2.882	14.3	20.8	11 23	7 17.14	+28 40.7	1.288	2.089	20.3	18.8
12 3	7 8.30	+28 8.8	2.031	2.893	11.3	20.6	12 3	7 13.17	+29 36.3	1.228	2.104	16.1	18.5
12 13	7 0.99	+28 31.5	1.974	2.903	7.8	20.4	12 13	7 5.18	+30 33.3	1.187	2.120	11.3	18.3
12 23	6 51.74	+28 50.7	1.944	2.913	4.1	20.2	12 23	6 54.02	+31 24.1	1.169	2.137	6.4	18.1
1 2	6 41.50	+29 3.1	1.943	2.923	2.1	20.1	1 2	6 41.28	+32 0.9	1.177	2.153	4.1	18.0
1 12	6 31.47	+29 7.1	1.972	2.933	5.0	20.3	1 12	6 29.02	+32 19.6	1.211	2.170	7.7	18.2
1 22	6 22.77	+29 3.0	2.030	2.942	8.6	20.6	1 22	6 19.07	+32 21.1	1.270	2.187	12.4	18.6
2 1	6 16.24	+28 52.4	2.113	2.952	11.9	20.8	2 1	6 12.66	+32 9.6	1.352	2.203	16.5	18.9
430067	2013 <i>SQ</i> ₃₆		1 1.0 11°02	0°6/31.9	18		182396	2001 <i>QF</i> ₂₈₇		1 1.0 138°80	0°5/31.9	18	
11 23	7 9.68	+24 3.4	1.889	2.673	15.4	21.0	11 23	7 14.61	+24 18.8	2.370	3.129	13.3	21.7
12 3	7 5.97	+24 11.9	1.805	2.674	12.1	20.7	12 3	7 9.10	+24 25.4	2.288	3.143	10.5	21.6
12 13	6 59.58	+24 22.8	1.743	2.676	8.3	20.5	12 13	7 1.31	+24 33.1	2.229	3.156	7.2	21.4
12 23	6 51.12	+24 33.7	1.706	2.678	4.1	20.3	12 23	6 51.83	+24 39.8	2.198	3.168	3.5	21.2
1 2	6 41.56	+24 42.2	1.697	2.680	0.8	20.0	1 2	6 41.52	+24 43.6	2.197	3.180	0.7	20.9
1 12	6 32.15	+24 46.8	1.717	2.683	5.0	20.3	1 12	6 31.43	+24 43.4	2.228	3.191	4.2	21.2
1 22	6 24.06	+24 47.0	1.765	2.686	9.1	20.6	1 22	6 22.52	+24 39.3	2.288	3.201	7.8	21.5
2 1	6 18.22	+24 43.8	1.838	2.689	12.8	20.8	2 1	6 15.54	+24 32.3	2.375	3.211	10.8	21.7
454925	2015 <i>TP</i> ₁₅₄		1 1.0 36°73	5°3/ 1.7	18		90347	2003 <i>GF</i> ₃₅		1 1.0 326°72	6°0/ 2.7	18	
11 23	7 11.30	+12 45.8	1.356	2.144	20.1	21.0	11 23	7 7.65	+ 6 26.9	1.777	2.534	17.2	19.4
12 3	7 7.96	+12 4.3	1.284	2.149	16.4	20.8	12 3	7 4.45	+ 6 17.7	1.686	2.526	14.4	19.2
12 13	7 1.31	+11 34.6	1.231	2.154	12.0	20.5	12 13	6 58.65	+ 6 25.2	1.615	2.519	11.0	18.9
12 23	6 52.07	+11 19.1	1.200	2.160	7.6	20.3	12 23	6 50.75	+ 6 51.5	1.567	2.513	7.8	18.7
1 2	6 41.47	+11 18.9	1.194	2.166	5.3	20.2	1 2	6 41.63	+ 7 36.8	1.545	2.506	6.0	18.6
1 12	6 31.12	+11 33.3	1.215	2.173	7.8	20.4	1 12	6 32.48	+ 8 38.7	1.551	2.500	7.4	18.7
1 22	6 22.51	+11 59.6	1.260	2.179	12.1	20.6	1 22	6 24.47	+ 9 52.8	1.583	2.495	10.7	18.9
2 1	6 16.74	+12 34.5	1.328	2.187	16.3	20.9	2 1	6 18.60	+11 13.9	1.640	2.489	14.2	19.1
427670	2004 <i>BV</i> ₁₃₀		1 1.0 164°72	1°4/31.9	18		400575	2008 <i>YE</i> ₁₉		1 1.0 74°81	0°1/ 1.0	17	
11 23	7 11.94	+28 11.3	2.466	3.231	12.7	21.2	11 23	7 14.77	+21 45.8	1.526	2.313	18.3	21.8
12 3	7 7.05	+28 5.9	2.374	3.232	10.1	21.0	12 3	7 10.39	+22 5.3	1.459	2.330	14.4	21.6
12 13	6 59.94	+27 58.6	2.306	3.233	7.0	20.8	12 13	7 2.79	+22 30.5	1.413	2.347	9.9	21.3
12 23	6 51.17	+27 47.2	2.265	3.234	3.6	20.6	12 23	6 52.72	+22 58.3	1.392	2.364	4.8	21.1
1 2	6 41.57	+27 30.2	2.254	3.235	1.4	20.4	1 2	6 41.44	+23 24.8	1.398	2.381	0.5	20.8
1 12	6 32.15	+27 7.4	2.274	3.236	4.3	20.6	1 12	6 30.53	+23 47.3	1.432	2.398	5.7	21.2
1 22	6 23.84	+26 39.7	2.324	3.237	7.7	20.8	1 22	6 21.40	+24 4.5	1.492	2.414	10.4	21.5
2 1	6 17.40	+26 9.1	2.400	3.238	10.7	21.0	2 1	6 15.08	+24 17.0	1.577	2.431	14.4	21.8
240635	2005 <i>AS</i> ₃₃		1 1.0 57°08	1°8/ 1.3	17		66587	1999 <i>RB</i> ₁₆₇		1 1.0 54°42	6°7/31.2	18	
11 23	7 14.33	+18 20.5	1.369	2.161	19.7	20.3	11 23	7 17.55	+35 51.5	1.460	2.249	18.9	18.4
12 3	7 10.12	+18 17.6	1.312	2.184	15.6	20.1	12 3	7 13.39	+36 57.4	1.399	2.263	15.3	18.2
12 13	7 2.57	+18 23.4	1.275	2.208	10.8	19.9	12 13	7 5.27	+37 57.8	1.358	2.278	11.4	18.1
12 23	6 52.56	+18 36.3	1.262	2.232	5.5	19.7	12 23	6 54.06	+38 43.7	1.340	2.294	8.0	17.9
1 2	6 41.43	+18 53.8	1.274	2.256	1.9	19.5	1 2	6 41.29	+39 7.4	1.348	2.309	6.8	17.9
1 12	6 30.85	+19 13.6	1.314	2.280	6.1	19.9	1 12	6 29.00	+39 6.0	1.383	2.325	9.0	18.0
1 22	6 22.21	+19 33.9	1.380	2.305	10.8	20.2	1 22	6 18.99	+38 42.2	1.442	2.341	12.5	18.3
2 1	6 16.49	+19 53.8	1.469	2.329	14.9	20.5	2 1	6 12.46	+38 2.6	1.523	2.357	15.9	18.5
375113	2007 <i>TF</i> ₂₈₄		1 1.0 57°16	3°9/ 1.6	18		281277	2007 <i>RN</i> ₄₂		1 1.0 163°56	4°6/ 1.9	18	
11 23	7 9.67	+13 7.8	2.071	2.831	15.0	20.5	11 23	7 7.68	+ 9 11.3	2.421	3.163	13.5	20.8
12 3	7 5.27	+12 31.0	2.005	2.854	12.0	20.3	12 3	7 3.60	+ 8 37.3	2.331	3.165	11.1	20.6
12 13	6 58.68	+12 2.2	1.960	2.876	8.7	20.2	12 13	6 57.56	+ 8 12.3	2.263	3.166	8.4	20.5
12 23	6 50.52	+11 42.5	1.941	2.899	5.5	20.0	12 23	6 50.04	+ 7 57.9	2.221	3.167	5.9	20.3
1 2	6 41.66	+11 32.5	1.951	2.921	3.9	19.9	1 2	6 41.75	+ 7 55.0	2.208	3.168	4.6	20.2
1 12	6 33.10	+11 31.9	1.990	2.944	5.7	20.1	1 12	6 33.54	+ 8 3.4	2.224	3.168	5.9	20.3
1 22	6 25.74	+11 39.5	2.057	2.967	8.7	20.3	1 22	6 26.22	+ 8 21.9	2.268	3.169	8.5	20.5
2 1	6 20.28	+11 53.8	2.149	2.990	11.6	20.6	2 1	6 20.49	+ 8 48.4	2.339	3.170	11.2	20.6
450363	2004 <i>YL</i> ₁₅		1 1.0 28°79	0°5/31.9	18		233533	2007 <i>HC</i> ₆₈		1 1.0 312°36	0°2/ 1.1	18	
11 23	7 10.83	+21 32.1											

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1 1.0

1 1.1

2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
455791	2005 <i>RU</i> ₂₅		1 1.0	74°77	3°8/ 1.6 18		442639	2012 <i>TB</i> ₆₉		1 1.1	101°17	2°1/ 1.4 18	
11 23	7 14.64	+13 29.5	1.913	2.669	16.2	20.7	11 23	7 16.89	+17 50.4	1.520	2.298	18.7	22.1
12 3	7 9.19	+12 57.9	1.856	2.703	12.9	20.6	12 3	7 11.95	+17 42.2	1.453	2.316	14.9	21.9
12 13	7 1.34	+12 35.1	1.820	2.736	9.3	20.4	12 13	7 3.79	+17 42.0	1.406	2.334	10.4	21.6
12 23	6 51.81	+12 21.8	1.810	2.769	5.7	20.3	12 23	6 53.22	+17 48.6	1.383	2.352	5.5	21.4
1 2	6 41.59	+12 18.0	1.830	2.801	3.8	20.2	1 2	6 41.49	+18 0.3	1.388	2.369	2.1	21.2
1 12	6 31.82	+12 22.9	1.878	2.834	5.8	20.4	1 12	6 30.16	+18 15.1	1.421	2.385	6.0	21.5
1 22	6 23.50	+12 35.2	1.955	2.865	9.1	20.7	1 22	6 20.62	+18 31.7	1.481	2.401	10.6	21.8
2 1	6 17.33	+12 53.0	2.057	2.896	12.2	20.9	2 1	6 13.88	+18 49.1	1.565	2.417	14.6	22.1
275474	2011 <i>DA</i> ₂₃		1 1.0	37°65	0°3/31.9 18		134466	1998 <i>TD</i> ₁₉		1 1.1	64°60	0°4/ 1.1 17	
11 23	7 10.05	+22 42.5	2.014	2.792	14.7	20.8	11 23	7 16.06	+21 44.3	1.577	2.359	18.0	20.0
12 3	7 6.09	+22 59.4	1.929	2.795	11.7	20.6	12 3	7 11.04	+21 44.7	1.521	2.388	14.1	19.8
12 13	6 59.60	+23 20.0	1.866	2.798	8.0	20.4	12 13	7 2.98	+21 49.5	1.486	2.417	9.6	19.6
12 23	6 51.14	+23 42.1	1.829	2.801	3.9	20.1	12 23	6 52.73	+21 56.2	1.475	2.447	4.7	19.4
1 2	6 41.64	+24 2.9	1.821	2.804	0.6	19.8	1 2	6 41.55	+22 2.5	1.493	2.476	0.6	19.2
1 12	6 32.25	+24 20.4	1.842	2.807	4.7	20.2	1 12	6 30.94	+22 7.0	1.539	2.505	5.4	19.6
1 22	6 24.08	+24 33.8	1.891	2.811	8.7	20.4	1 22	6 22.15	+22 9.5	1.612	2.533	9.8	19.9
2 1	6 18.02	+24 43.1	1.966	2.814	12.2	20.6	2 1	6 16.05	+22 10.6	1.710	2.562	13.6	20.2
219367	2000 <i>SD</i> ₁₅		1 1.0	54°54	3°5/31.9 18		31556	Shatner		1 1.1	118°67	1°7/ 1.4 18	
11 23	7 16.47	+32 49.7	1.741	2.520	16.7	20.2	11 23	7 12.46	+17 0.2	2.255	3.012	14.0	19.8
12 3	7 11.52	+32 52.1	1.671	2.534	13.3	20.0	12 3	7 7.45	+17 2.3	2.177	3.029	11.1	19.6
12 13	7 3.41	+32 48.6	1.622	2.548	9.4	19.8	12 13	7 0.22	+17 10.7	2.123	3.045	7.7	19.4
12 23	6 52.96	+32 35.2	1.598	2.563	5.5	19.6	12 23	6 51.36	+17 24.5	2.095	3.061	4.1	19.2
1 2	6 41.48	+32 8.9	1.602	2.578	3.5	19.5	1 2	6 41.69	+17 42.1	2.097	3.077	1.7	19.1
1 12	6 30.49	+31 29.9	1.635	2.593	6.2	19.7	1 12	6 32.23	+18 2.2	2.129	3.092	4.5	19.3
1 22	6 21.36	+30 41.3	1.695	2.608	10.0	20.0	1 22	6 23.89	+18 23.4	2.191	3.106	7.9	19.5
2 1	6 15.00	+29 47.6	1.779	2.623	13.5	20.2	2 1	6 17.43	+18 44.8	2.280	3.120	11.1	19.7
1259	Ogyalla		1 1.0	245°54	0°4/31.9 18 R		394436	2007 <i>PN</i> ₇		1 1.1	104°36	1°1/ 1.3 17	
11 23	7 9.26	+23 28.7	2.571	3.336	12.2	16.0	11 23	7 15.70	+18 38.1	1.811	2.579	16.5	21.7
12 3	7 4.99	+23 42.8	2.468	3.327	9.7	15.8	12 3	7 10.53	+18 52.2	1.741	2.600	13.1	21.5
12 13	6 58.63	+23 59.2	2.388	3.317	6.7	15.6	12 13	7 2.59	+19 13.4	1.693	2.620	9.0	21.3
12 23	6 50.63	+24 16.1	2.336	3.307	3.3	15.4	12 23	6 52.58	+19 39.7	1.671	2.640	4.5	21.1
1 2	6 41.72	+24 31.5	2.314	3.297	0.6	15.1	1 2	6 41.57	+20 8.2	1.677	2.660	1.1	20.9
1 12	6 32.79	+24 43.8	2.322	3.286	4.0	15.4	1 12	6 30.86	+20 36.4	1.714	2.679	5.1	21.2
1 22	6 24.75	+24 52.5	2.360	3.276	7.4	15.6	1 22	6 21.66	+21 2.8	1.778	2.697	9.3	21.5
2 1	6 18.36	+24 57.6	2.425	3.265	10.5	15.8	2 1	6 14.86	+21 26.6	1.869	2.714	12.9	21.8
351240	2004 <i>RP</i> ₁₇		1 1.0	75°08	0°6/31.9 18		487864	2015 <i>TE</i> ₁₁₅		1 1.1	117°38	0°6/ 1.2 18	
11 23	7 17.25	+22 28.0	1.476	2.262	18.8	21.6	11 23	7 14.60	+19 20.1	1.757	2.530	16.7	21.7
12 3	7 12.35	+22 56.4	1.418	2.288	14.8	21.4	12 3	7 9.94	+19 44.5	1.680	2.542	13.3	21.5
12 13	7 4.10	+23 30.3	1.380	2.313	10.1	21.2	12 13	7 2.37	+20 16.6	1.624	2.554	9.1	21.3
12 23	6 53.35	+24 5.4	1.366	2.338	4.9	20.9	12 23	6 52.55	+20 53.8	1.594	2.565	4.5	21.1
1 2	6 41.45	+24 37.1	1.380	2.363	0.8	20.7	1 2	6 41.56	+21 32.6	1.593	2.576	0.7	20.8
1 12	6 30.05	+25 2.4	1.423	2.388	5.8	21.1	1 12	6 30.76	+22 9.7	1.621	2.586	5.2	21.1
1 22	6 20.61	+25 20.4	1.492	2.413	10.5	21.4	1 22	6 21.43	+22 43.0	1.677	2.597	9.6	21.4
2 1	6 14.12	+25 32.1	1.585	2.437	14.5	21.7	2 1	6 14.57	+23 11.8	1.758	2.606	13.4	21.7
165099	2000 <i>GJ</i> ₁₅₄		1 1.0	191°80	3°9/ 1.7 18		250137	2002 <i>RZ</i> ₂₁		1 1.1	120°06	0°6/ 1.2 18	
11 23	7 8.32	+10 59.7	2.630	3.371	12.6	20.6	11 23	7 14.36	+20 18.4	2.033	2.798	15.0	21.7
12 3	7 3.95	+10 25.6	2.535	3.370	10.3	20.4	12 3	7 9.25	+20 27.9	1.956	2.814	11.9	21.5
12 13	6 57.73	+9 58.7	2.463	3.369	7.7	20.2	12 13	7 1.61	+20 42.2	1.902	2.830	8.2	21.3
12 23	6 50.13	+9 40.0	2.417	3.367	5.1	20.1	12 23	6 52.09	+20 59.6	1.874	2.845	4.0	21.1
1 2	6 41.78	+9 30.5	2.401	3.365	3.9	20.0	1 2	6 41.62	+21 17.6	1.876	2.859	0.7	20.9
1 12	6 33.50	+9 30.1	2.415	3.363	5.3	20.1	1 12	6 31.39	+21 34.6	1.908	2.873	4.7	21.2
1 22	6 26.05	+9 38.1	2.459	3.360	7.9	20.2	1 22	6 22.47	+21 49.5	1.969	2.886	8.6	21.5
2 1	6 20.09	+9 53.2	2.529	3.358	10.5	20.4	2 1	6 15.70	+22 2.3	2.056	2.899	12.0	21.7
202346	2005 <i>EL</i> ₁₅₃		1 1.1	109°12	2°1/31.2 18		315516	2008 <i>AE</i> ₆₈		1 1.1	353°77	1°4/ 1.3 18	
11 23	7 12.17	+24 48.8	2.305	3.072	13.4	19.8	11 23	7 9.16	+18 12.9	1.495	2.290	18.2	20.4
12 3	7 7.63	+26 1.3	2.216	3.075	10.6	19.6	12 3	7 6.29	+18 24.1	1.413	2.287	14.6	20.2
12 13	7 0.64	+27 18.9	2.151	3.078	7.3	19.4	12 13	7 0.26	+18 44.9	1.350	2.284	10.2	19.9
12 23	6 51.70	+28 36.9	2.113	3.082	3.9	19.2	12 23	6 51.67	+19 13.9	1.312	2.283	5.2	19.6
1 2	6 41.61	+29 50.3	2.107	3.085	2.2	19.1	1 2	6 41.65	+19 48.2	1.299	2.281	1.5	19.4
1 12	6 31.46	+30 54.4	2.131	3.088	5.0	19.3	1 12	6 31.69	+20 24.4	1.314	2.281	5.9	19.6
1 22	6 22.34	+31 47.0	2.185	3.092	8.5	19.5	1 22	6 23.25	+20 59.9	1.354	2.281	10.8	19.9
2 1	6 15.16	+32 27.8	2.266	3.095	11.5	19.7	2 1	6 17.49	+21 33.0	1.418	2.281	15.2	20.2
335865	2007 <i>RM</i> ₅₄		1 1.1	123°70	2°4/31.7 18		448235	2008 <i>WT</i> ₂₃		1 1.1	90°77	1°1/31.9 15	
11 23	7 12.69	+30 50.6	2.698	3.456	11.9	21.9	11 23	7 18.24	+24 40.8	1.590	2.371	17.9	22.0
12 3	7 7.45	+31 8.4	2.617	3.469	9.4	21.7	12 3	7 12.99	+24 59.7	1.527	2.393	14.1	21.8
12 13	7 0.13	+31 23.6	2.560	3.483	6.6	21.6	12 13	7 4.48	+25 21.2	1.484	2.416	9.7	21.6
12 23	6 51.27	+31 33.5	2.531	3.495	3.8	21.4	12 23	6 53.54	+25 41.1	1.467	2.438	4.7	21.4
1 2	6 41.67	+31 35.8	2.533	3.508	2.4	21.3	1 2	6 41.49	+25 55.9	1.477	2.460	1.3	21.2
1 12	6 32.28	+31 29.4	2.565	3.520	4.5	21.5	1 12	6 29.92	+26 3.3	1.517	2.481	5.7	21.5
1 22	6 23.97	+31 15.0	2.627	3.532	7.3	21.7	1 22	6 20.22	+26 3.7	1.583	2.502	10.2	21.8
2 1	6 17.43	+30 54.5	2.716	3.543	9.9	21.9	2 1	6 13.38	+25 58.9	1.674	2.522	14.0	22.1
255873	2006 <i>SL</i> ₂₁₁		1 1.1	124°38	1°7/31.7 18		133326	2003 <i>SA</i> ₉₃		1 1.1	12°93	1°2/31.9 18	
11 23	7 15.42	+25 42.7	2.101	2.868	14.6	21.2							

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
512188	2015 <i>RX</i> ₂₃₆		1.1 120°64	0°2/ 1.0 18			245732	2006 <i>DB</i> ₆₄		1.1 299°15	1°9/ 1.4 18		
11 23	7 17.85	+21 5.7	1.871	2.636	16.2	21.6	11 23	7 10.97	+18 17.6	1.486	2.278	18.5	21.0
12 3	7 12.25	+21 39.4	1.799	2.657	12.8	21.4	12 3	7 7.92	+18 14.8	1.393	2.265	14.9	20.7
12 13	7 3.81	+22 19.0	1.748	2.676	8.7	21.2	12 13	7 1.55	+18 20.5	1.320	2.252	10.5	20.4
12 23	6 53.21	+23 1.0	1.724	2.695	4.2	21.0	12 23	6 52.43	+18 33.9	1.270	2.240	5.5	20.1
1 2	6 41.53	+23 41.5	1.730	2.713	0.5	20.8	1 2	6 41.64	+18 53.2	1.246	2.228	1.9	19.8
1 12	6 30.12	+24 17.1	1.766	2.730	5.0	21.1	1 12	6 30.76	+19 15.9	1.249	2.215	6.3	20.1
1 22	6 20.20	+24 46.5	1.831	2.746	9.2	21.4	1 22	6 21.36	+19 40.1	1.278	2.204	11.4	20.4
2 1	6 12.73	+25 9.6	1.922	2.762	12.8	21.7	2 1	6 14.73	+20 4.4	1.330	2.192	16.0	20.6
154561	2003 <i>HS</i> ₁₆		1.1 229°70	2°7/31.5 18			168912	2000 <i>YV</i> ₂		1.1 321°90	3°8/31.2 18		
11 23	7 12.64	+28 21.9	2.005	2.782	14.8	20.5	11 23	7 12.37	+28 12.7	1.487	2.285	18.2	19.4
12 3	7 8.40	+28 59.0	1.916	2.780	11.8	20.3	12 3	7 9.36	+29 10.9	1.401	2.277	14.6	19.1
12 13	7 1.36	+29 37.0	1.850	2.778	8.3	20.0	12 13	7 2.75	+30 13.0	1.335	2.269	10.3	18.9
12 23	6 52.12	+30 11.6	1.809	2.777	4.6	19.8	12 23	6 53.08	+31 12.6	1.293	2.261	5.9	18.6
1 2	6 41.64	+30 38.3	1.797	2.775	2.7	19.7	1 2	6 41.58	+32 2.3	1.277	2.254	4.0	18.5
1 12	6 31.22	+30 54.6	1.814	2.773	5.6	19.9	1 12	6 30.00	+32 36.5	1.288	2.247	7.5	18.6
1 22	6 22.10	+30 59.9	1.860	2.771	9.4	20.1	1 22	6 20.11	+32 53.7	1.325	2.240	12.0	18.9
2 1	6 15.28	+30 56.0	1.930	2.769	12.8	20.3	2 1	6 13.33	+32 56.4	1.384	2.234	16.3	19.1
520904	2014 <i>WM</i> ₅₂₈		1.1 132°75	2°9/31.6 18			217540	2007 <i>BS</i> ₃		1.1 67°00	3°2/ 2.1 18		
11 23	7 13.80	+30 36.4	2.115	2.886	14.4	22.2	11 23	7 10.82	+11 54.8	1.804	2.568	16.7	20.1
12 3	7 9.08	+31 1.1	2.031	2.890	11.4	22.0	12 3	7 6.81	+12 15.0	1.727	2.580	13.5	19.9
12 13	7 1.66	+31 23.8	1.969	2.895	8.1	21.8	12 13	7 0.16	+12 48.9	1.672	2.591	9.7	19.7
12 23	6 52.19	+31 40.5	1.934	2.899	4.6	21.6	12 23	6 51.50	+13 35.5	1.641	2.603	5.7	19.5
1 2	6 41.64	+31 47.6	1.927	2.903	3.0	21.5	1 2	6 41.77	+14 32.6	1.639	2.615	3.2	19.4
1 12	6 31.28	+31 43.7	1.950	2.906	5.5	21.7	1 12	6 32.18	+15 36.1	1.665	2.627	5.6	19.6
1 22	6 22.26	+31 29.3	2.001	2.910	9.0	21.9	1 22	6 23.89	+16 42.0	1.720	2.639	9.5	19.8
2 1	6 15.50	+31 7.0	2.078	2.913	12.2	22.1	2 1	6 17.80	+17 46.8	1.800	2.651	13.0	20.1
439268	2012 <i>UE</i> ₈		1.1 138°75	1°8/31.8 18			389996	2012 <i>TO</i> ₂₉₆		1.1 208°49	3°1/31.6 18		
11 23	7 19.85	+25 54.5	1.769	2.539	16.8	22.7	11 23	7 17.67	+28 35.7	1.617	2.399	17.6	21.3
12 3	7 14.18	+26 25.6	1.693	2.553	13.3	22.5	12 3	7 13.15	+29 10.1	1.529	2.396	14.1	21.0
12 13	7 5.33	+26 58.7	1.639	2.567	9.2	22.2	12 13	7 5.09	+29 45.5	1.462	2.392	9.9	20.8
12 23	6 54.02	+27 29.3	1.610	2.579	4.7	22.0	12 23	6 54.12	+30 16.3	1.420	2.388	5.5	20.5
1 2	6 41.46	+27 53.0	1.610	2.591	1.9	21.8	1 2	6 41.49	+30 36.9	1.405	2.383	3.2	20.3
1 12	6 29.18	+28 6.9	1.641	2.602	5.7	22.1	1 12	6 28.91	+30 43.8	1.419	2.378	6.7	20.5
1 22	6 18.59	+28 11.1	1.699	2.612	10.0	22.4	1 22	6 18.07	+30 37.4	1.459	2.373	11.3	20.8
2 1	6 10.73	+28 7.8	1.782	2.621	13.7	22.6	2 1	6 10.24	+30 20.9	1.523	2.367	15.4	21.0
502552	2015 <i>BD</i> ₄₆₉		1.1 241°20	4°9/31.2 17			230992	2005 <i>CX</i> ₁₄		1.1 325°45	2°8/ 1.8 18		
11 23	7 13.96	+39 22.3	2.782	3.529	11.8	21.7	11 23	7 7.94	+13 41.1	2.061	2.827	14.9	20.3
12 3	7 8.86	+39 55.6	2.683	3.519	9.8	21.5	12 3	7 4.38	+13 48.9	1.968	2.822	12.0	20.0
12 13	7 1.37	+40 22.6	2.608	3.509	7.5	21.3	12 13	6 58.46	+14 7.0	1.896	2.817	8.6	19.8
12 23	6 52.03	+40 39.2	2.559	3.499	5.6	21.2	12 23	6 50.68	+14 35.0	1.849	2.813	5.0	19.6
1 2	6 41.68	+40 41.6	2.539	3.488	4.9	21.2	1 2	6 41.86	+15 11.6	1.831	2.809	2.8	19.4
1 12	6 31.39	+40 28.4	2.549	3.478	6.2	21.2	1 12	6 33.03	+15 54.5	1.843	2.805	5.1	19.6
1 22	6 22.22	+40 0.4	2.587	3.467	8.4	21.3	1 22	6 25.23	+16 41.0	1.882	2.801	8.8	19.8
2 1	6 15.00	+39 20.8	2.651	3.456	10.8	21.5	2 1	6 19.33	+17 28.5	1.947	2.797	12.3	20.0
32348	2000 <i>QL</i> ₁₀₃		1.1 258°56	2°4/31.4 18			330382	2006 <i>XL</i> ₉		1.1 339°61	9°7/ 1.5 18		
11 23	7 12.48	+26 47.4	2.082	2.855	14.5	17.7	11 23	7 3.62	+ 6 46.6	1.321	2.111	20.5	20.1
12 3	7 8.30	+27 34.2	1.981	2.844	11.5	17.5	12 3	7 2.24	+ 5 18.4	1.235	2.092	17.4	19.9
12 13	7 1.38	+28 24.3	1.903	2.832	8.1	17.2	12 13	6 57.71	+ 4 2.9	1.166	2.075	14.0	19.6
12 23	6 52.19	+29 13.4	1.851	2.820	4.3	17.0	12 23	6 50.58	+ 3 7.1	1.119	2.059	10.9	19.4
1 2	6 41.65	+29 56.8	1.829	2.807	2.5	16.8	1 2	6 41.87	+ 2 37.2	1.094	2.044	9.7	19.3
1 12	6 30.97	+30 30.7	1.836	2.795	5.5	17.0	1 12	6 33.09	+ 2 36.0	1.092	2.031	11.2	19.3
1 22	6 21.43	+30 53.7	1.871	2.782	9.4	17.2	1 22	6 25.73	+ 3 2.2	1.113	2.020	14.6	19.5
2 1	6 14.08	+31 6.6	1.932	2.769	12.9	17.4	2 1	6 21.03	+ 3 50.7	1.154	2.010	18.4	19.7
87488	2000 <i>QG</i> ₁₅₄		1.1 296°74	2°0/ 1.1 18			221270	2005 <i>UN</i> ₃₂₁		1.1 297°79	2°1/31.7 18		
11 23	7 15.13	+29 52.4	1.821	2.600	16.1	18.8	11 23	7 11.25	+26 54.4	1.872	2.655	15.5	20.6
12 3	7 10.66	+29 35.4	1.721	2.586	12.9	18.6	12 3	7 7.62	+27 22.1	1.773	2.642	12.4	20.4
12 13	7 3.08	+29 13.5	1.643	2.572	9.1	18.3	12 13	7 1.06	+27 51.7	1.697	2.628	8.6	20.1
12 23	6 53.01	+28 43.8	1.590	2.559	4.8	18.1	12 23	6 52.10	+28 19.5	1.645	2.615	4.6	19.9
1 2	6 41.57	+28 4.2	1.565	2.545	2.0	17.8	1 2	6 41.72	+28 41.4	1.622	2.602	2.2	19.7
1 12	6 30.26	+27 15.0	1.569	2.532	5.7	18.0	1 12	6 31.28	+28 54.4	1.627	2.589	5.7	19.9
1 22	6 20.48	+26 18.9	1.600	2.519	10.1	18.3	1 22	6 22.12	+28 58.1	1.659	2.576	9.9	20.1
2 1	6 13.32	+25 20.4	1.657	2.506	14.1	18.5	2 1	6 15.36	+28 53.7	1.716	2.563	13.8	20.3
313460	2002 <i>SC</i> ₃₈		1.1 63°30	0°2/ 1.1 16			89146	2001 <i>UO</i> ₃₃		1.1 174°10	4°9/30.7 18		
11 23	7 16.58	+22 32.2	1.557	2.340	18.1	21.5	11 23	7 15.69	+33 10.5	2.061	2.829	14.8	19.6
12 3	7 11.50	+22 28.4	1.502	2.370	14.2	21.4	12 3	7 11.01	+34 24.3	1.976	2.830	11.9	19.4
12 13	7 3.32	+22 28.0	1.468	2.400	9.7	21.2	12 13	7 3.32	+35 37.4	1.913	2.831	8.8	19.2
12 23	6 52.93	+22 28.8	1.458	2.429	4.7	21.0	12 23	6 53.18	+36 43.3	1.877	2.832	5.9	19.0
1 2	6 41.62	+22 28.4	1.476	2.459	0.5	20.7	1 2	6 41.62	+37 35.2	1.870	2.833	5.0	18.9
1 12	6 30.91	+22 26.0	1.522	2.488	5.4	21.1	1 12	6 30.03	+38 9.2	1.892	2.833	7.1	19.1
1 22	6 22.07	+22 21.6	1.596	2.518	9.9	21.5	1 22	6 19.81	+38 24.6	1.942	2.833	10.2	19.3
2 1	6 15.97	+22 16.4	1.694	2.547	13.7	21.8	2 1	6 12.07	+38 24.3	2.016	2.833	13.2	19.5
169379	2001 <i>UH</i> ₁₈₉		1.1 128°78	0°3/ 1.1 18			421398	2013 <i>VK</i> ₇		1.1 204°64	4°5/31.3 18		
11 23	7 11.13	+23 21.3	2.552	3.314	12.4								

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
85936	1999 <i>CH</i> ₁₄₉		1 1.1 196°13	2.4/ 1.5	18		59522	1999 <i>JR</i> ₂₁		1 1.1 117°57	1.3/ 1.2	18	
11 23	7 10.89	+15 57.7	2.082	2.846	14.8	20.6	11 23	7 15.91	+20 31.9	1.768	2.541	16.7	18.3
12 3	7 6.63	+15 50.0	1.990	2.845	11.9	20.4	12 3	7 10.85	+20 15.5	1.692	2.553	13.3	18.0
12 13	6 59.95	+15 49.5	1.920	2.843	8.4	20.2	12 13	7 2.93	+20 3.0	1.637	2.566	9.2	17.8
12 23	6 51.40	+15 55.9	1.876	2.842	4.7	19.9	12 23	6 52.85	+19 53.3	1.608	2.578	4.6	17.6
1 2	6 41.83	+16 8.5	1.861	2.840	2.4	19.8	1 2	6 41.71	+19 45.2	1.608	2.590	1.3	17.4
1 12	6 32.31	+16 25.9	1.876	2.837	5.1	20.0	1 12	6 30.88	+19 38.3	1.636	2.601	5.3	17.7
1 22	6 23.89	+16 46.7	1.918	2.835	8.8	20.2	1 22	6 21.60	+19 32.5	1.693	2.612	9.6	18.0
2 1	6 17.44	+17 9.6	1.987	2.833	12.2	20.4	2 1	6 14.79	+19 28.3	1.775	2.622	13.4	18.2
135395	2001 <i>TD</i> ₂₀₄		1 1.1 172°43	4.1/31.1	18		127997	2003 <i>HQ</i> ₅₀		1 1.1 215°05	0°1/ 1.1	18	
11 23	7 12.80	+35 22.9	2.720	3.475	11.9	20.5	11 23	7 13.98	+20 16.4	1.734	2.512	16.8	20.3
12 3	7 7.89	+36 7.7	2.631	3.477	9.6	20.3	12 3	7 9.80	+20 46.8	1.643	2.508	13.4	20.1
12 13	7 0.68	+36 49.0	2.566	3.478	7.1	20.2	12 13	7 2.58	+21 25.3	1.573	2.504	9.3	19.8
12 23	6 51.72	+37 22.5	2.529	3.480	4.9	20.0	12 23	6 52.86	+22 9.2	1.528	2.499	4.6	19.5
1 2	6 41.79	+37 44.4	2.521	3.481	4.1	20.0	1 2	6 41.69	+22 54.2	1.512	2.495	0.5	19.2
1 12	6 31.94	+37 52.9	2.543	3.481	5.7	20.1	1 12	6 30.48	+23 36.6	1.524	2.490	5.5	19.5
1 22	6 23.13	+37 48.2	2.594	3.482	8.1	20.2	1 22	6 20.63	+24 13.7	1.564	2.484	10.2	19.8
2 1	6 16.19	+37 32.5	2.671	3.482	10.5	20.4	2 1	6 13.30	+24 44.9	1.629	2.479	14.3	20.0
38131	1999 <i>JR</i> ₄₇		1 1.1 118°41	0°3/ 1.1	18		125753	2001 <i>XX</i> ₁₂₃		1 1.1 227°94	1°0/ 1.2	18	
11 23	7 16.63	+23 13.5	1.861	2.631	16.1	20.0	11 23	7 14.09	+20 10.3	1.728	2.505	16.8	20.6
12 3	7 11.33	+23 20.8	1.787	2.648	12.7	19.8	12 3	7 9.85	+20 10.4	1.635	2.499	13.5	20.3
12 13	7 3.20	+23 30.7	1.734	2.663	8.7	19.6	12 13	7 2.57	+20 16.1	1.562	2.492	9.4	20.1
12 23	6 52.96	+23 40.9	1.708	2.679	4.2	19.4	12 23	6 52.84	+20 26.0	1.515	2.485	4.7	19.8
1 2	6 41.68	+23 48.6	1.710	2.693	0.5	19.1	1 2	6 41.70	+20 37.9	1.495	2.478	1.1	19.5
1 12	6 30.71	+23 52.4	1.742	2.707	5.0	19.5	1 12	6 30.56	+20 49.9	1.505	2.470	5.5	19.8
1 22	6 21.27	+23 52.3	1.803	2.721	9.2	19.8	1 22	6 20.81	+21 1.0	1.541	2.462	10.2	20.1
2 1	6 14.26	+23 49.3	1.889	2.734	12.8	20.0	2 1	6 13.58	+21 11.2	1.603	2.454	14.4	20.3
31359	1998 <i>UA</i> ₂₈		1 1.1 316°88	18°5/28.8	18		422062	2014 <i>QV</i> ₃₇₅		1 1.1 18°80	4°1/ 1.7	18	
11 23	7 8.10	- 6 58.0	1.334	2.063	23.2	18.2	11 23	7 9.55	+14 6.7	1.602	2.384	17.8	20.8
12 3	7 5.88	-10 5.2	1.255	2.041	21.4	18.0	12 3	7 6.19	+13 36.8	1.524	2.386	14.4	20.6
12 13	7 0.34	-12 55.8	1.192	2.021	19.7	17.8	12 13	6 59.95	+13 16.5	1.466	2.390	10.4	20.4
12 23	6 51.96	-15 15.8	1.148	2.000	18.6	17.7	12 23	6 51.49	+13 7.1	1.431	2.393	6.3	20.2
1 2	6 41.75	-16 51.8	1.124	1.981	18.6	17.6	1 2	6 41.85	+13 8.7	1.423	2.397	4.1	20.0
1 12	6 31.27	-17 35.6	1.118	1.962	19.6	17.6	1 12	6 32.37	+13 20.7	1.442	2.402	6.6	20.2
1 22	6 22.16	-17 26.8	1.130	1.945	21.4	17.7	1 22	6 24.34	+13 41.1	1.487	2.407	10.6	20.4
2 1	6 15.80	-16 31.6	1.157	1.928	23.7	17.8	2 1	6 18.72	+14 7.7	1.556	2.412	14.5	20.7
294970	2008 <i>EQ</i> ₅		1 1.1 316°54	5°3/ 1.8	18		39063	2000 <i>UZ</i> ₁₁₀		1 1.1 244°16	2°3/31.7	18	
11 23	7 8.17	+11 25.5	1.628	2.404	17.7	20.5	11 23	7 12.52	+28 11.3	2.104	2.877	14.3	19.8
12 3	7 5.25	+10 50.2	1.534	2.391	14.6	20.2	12 3	7 8.20	+28 38.3	2.009	2.872	11.4	19.6
12 13	6 59.46	+10 26.0	1.460	2.378	10.9	20.0	12 13	7 1.20	+29 5.8	1.938	2.866	8.0	19.4
12 23	6 51.34	+10 15.2	1.409	2.365	7.2	19.7	12 23	6 52.09	+29 29.8	1.892	2.860	4.3	19.2
1 2	6 41.83	+10 19.1	1.384	2.353	5.3	19.6	1 2	6 41.78	+29 46.9	1.875	2.854	2.4	19.0
1 12	6 32.26	+10 37.6	1.386	2.341	7.4	19.7	1 12	6 31.51	+29 54.7	1.888	2.848	5.3	19.2
1 22	6 23.95	+11 8.3	1.414	2.330	11.3	19.9	1 22	6 22.45	+29 53.2	1.929	2.842	9.0	19.4
2 1	6 18.00	+11 48.2	1.465	2.319	15.3	20.1	2 1	6 15.59	+29 43.9	1.996	2.835	12.4	19.6
461479	2002 <i>RG</i> ₂₅₂		1 1.1 144°64	4°5/ 2.0	18		58536	1997 <i>EQ</i> ₈		1 1.1 129°46	1°7/ 1.4	18	
11 23	7 8.18	+ 9 4.5	2.451	3.191	13.4	21.8	11 23	7 10.87	+17 52.1	2.179	2.943	14.2	20.4
12 3	7 3.99	+ 8 37.0	2.363	3.195	11.0	21.7	12 3	7 6.44	+17 47.3	2.094	2.950	11.3	20.3
12 13	6 57.87	+ 8 18.8	2.297	3.199	8.3	21.5	12 13	6 59.71	+17 48.2	2.031	2.956	7.9	20.1
12 23	6 50.29	+ 8 11.3	2.257	3.203	5.8	21.4	12 23	6 51.24	+17 54.0	1.995	2.963	4.2	19.8
1 2	6 41.95	+ 8 15.1	2.246	3.207	4.5	21.3	1 2	6 41.88	+18 3.6	1.988	2.969	1.7	19.7
1 12	6 33.71	+ 8 29.7	2.265	3.210	5.7	21.4	1 12	6 32.66	+18 15.8	2.011	2.975	4.6	19.9
1 22	6 26.35	+ 8 53.7	2.312	3.213	8.3	21.5	1 22	6 24.54	+18 29.6	2.063	2.980	8.2	20.1
2 1	6 20.57	+ 9 24.8	2.385	3.217	10.9	21.7	2 1	6 18.32	+18 44.3	2.141	2.985	11.5	20.3
94724	2001 <i>XY</i> ₆₃		1 1.1 22°94	1°9/ 1.3	18		271313	2003 <i>VP</i> ₆		1 1.1 146°78	1°1/31.9	18	
11 23	7 11.35	+19 23.0	1.294	2.097	20.1	18.7	11 23	7 10.75	+25 27.6	2.255	3.027	13.6	21.3
12 3	7 8.36	+19 6.1	1.223	2.102	16.0	18.4	12 3	7 6.46	+25 44.7	2.166	3.028	10.7	21.1
12 13	7 1.83	+18 56.2	1.171	2.107	11.2	18.2	12 13	6 59.80	+26 3.1	2.100	3.029	7.4	20.9
12 23	6 52.50	+18 52.6	1.141	2.112	5.8	17.9	12 23	6 51.32	+26 20.3	2.060	3.030	3.7	20.6
1 2	6 41.73	+18 54.0	1.137	2.119	2.0	17.6	1 2	6 41.87	+26 33.8	2.049	3.031	1.2	20.4
1 12	6 31.24	+18 59.1	1.159	2.126	6.5	18.0	1 12	6 32.52	+26 41.9	2.069	3.032	4.5	20.7
1 22	6 22.65	+19 6.6	1.205	2.134	11.7	18.3	1 22	6 24.28	+26 44.3	2.117	3.033	8.2	20.9
2 1	6 17.10	+19 16.2	1.274	2.142	16.2	18.6	2 1	6 17.98	+26 41.8	2.192	3.034	11.4	21.1
324495	2006 <i>UD</i> ₂₄₈		1 1.1 351°34	4°7/ 1.5	18		223684	2004 <i>PM</i> ₉₃		1 1.1 28°93	1°2/ 1.0	18	
11 23	7 8.38	+14 21.9	1.470	2.261	18.7	20.6	11 23	7 12.76	+27 7.6	1.761	2.546	16.3	20.0
12 3	7 5.60	+13 33.9	1.389	2.256	15.2	20.3	12 3	7 8.60	+26 57.2	1.682	2.551	12.9	19.8
12 13	6 59.75	+12 54.3	1.326	2.252	11.1	20.1	12 13	7 1.51	+26 45.4	1.624	2.557	8.9	19.6
12 23	6 51.46	+12 25.4	1.287	2.249	6.9	19.8	12 23	6 52.20	+26 29.6	1.592	2.563	4.5	19.3
1 2	6 41.83	+12 9.0	1.273	2.246	4.8	19.7	1 2	6 41.79	+26 8.1	1.587	2.569	1.3	19.1
1 12	6 32.32	+12 5.4	1.286	2.245	7.3	19.8	1 12	6 31.69	+25 40.8	1.611	2.576	5.3	19.4
1 22	6 24.32	+12 13.6	1.323	2.244	11.6	20.1	1 22	6 23.15	+25 9.4	1.663	2.584	9.6	19.7
2 1	6 18.91	+12 31.5	1.383	2.244	15.7	20.3	2 1	6 17.12	+24 36.3	1.739	2.591	13.4	19.9
404139	2013 <i>CP</i> ₁₆		1 1.1 269°79	0°8/ 1.0	18		18425	1993 <i>YL</i>		1 1.1 271°73	0°8/31.9	18	
11 23	7 14.25	+24 51.4	1.705										

EPHEMERIDES

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
180910	2005 <i>KB</i> ₁₁		1 1.1 158°13	1°1/31.9	18		35448	1998 <i>CX</i> ₂		1 1.1 318°57	3°6/ 1.8	18	
11 23	7 15.09	+25 53.2	2.356	3.116	13.4	21.8	11 23	7 10.60	+13 56.9	1.546	2.328	18.3	18.3
12 3	7 9.67	+26 6.6	2.268	3.124	10.6	21.6	12 3	7 7.32	+13 48.0	1.460	2.324	14.9	18.1
12 13	7 1.88	+26 20.4	2.204	3.131	7.3	21.4	12 13	7 0.96	+13 50.8	1.394	2.319	10.7	17.8
12 23	6 52.30	+26 32.2	2.168	3.137	3.6	21.2	12 23	6 52.12	+14 6.0	1.351	2.315	6.3	17.6
1 2	6 41.79	+26 39.5	2.161	3.143	1.2	21.0	1 2	6 41.86	+14 32.6	1.334	2.311	3.6	17.4
1 12	6 31.44	+26 40.8	2.186	3.148	4.4	21.3	1 12	6 31.61	+15 8.2	1.345	2.307	6.5	17.6
1 22	6 22.26	+26 36.5	2.240	3.153	8.0	21.5	1 22	6 22.79	+15 49.8	1.381	2.304	11.0	17.8
2 1	6 15.05	+26 27.7	2.322	3.157	11.1	21.7	2 1	6 16.54	+16 34.4	1.442	2.300	15.2	18.0
145174	2005 <i>JC</i> ₅		1 1.1 207°90	6°2/ 2.8	18		491247	2011 <i>UV</i> ₂₂₈		1 1.1 4°85	2°1/31.8	18	
11 23	7 10.47	+4 58.9	1.957	2.695	16.4	20.4	11 23	7 9.11	+25 17.1	1.215	2.033	20.3	20.7
12 3	7 6.42	+4 45.1	1.866	2.692	13.8	20.2	12 3	7 7.17	+25 48.8	1.144	2.032	16.2	20.4
12 13	6 59.90	+4 47.3	1.795	2.690	10.7	20.0	12 13	7 1.39	+26 25.1	1.092	2.032	11.2	20.1
12 23	6 51.44	+5 7.6	1.748	2.687	7.8	19.8	12 23	6 52.48	+27 1.3	1.061	2.034	5.7	19.8
1 2	6 41.87	+5 46.4	1.729	2.684	6.2	19.7	1 2	6 41.83	+27 31.5	1.055	2.037	2.2	19.6
1 12	6 32.31	+6 41.9	1.738	2.680	7.4	19.8	1 12	6 31.38	+27 51.6	1.074	2.041	7.0	19.9
1 22	6 23.83	+7 50.1	1.774	2.677	10.3	19.9	1 22	6 22.96	+28 0.5	1.117	2.046	12.4	20.2
2 1	6 17.33	+9 6.4	1.836	2.673	13.5	20.1	2 1	6 17.87	+28 0.3	1.182	2.052	17.0	20.5
182616	2001 <i>UL</i> ₈₀		1 1.1 23°27	2°3/31.7	18		458914	2011 <i>UY</i> ₂₅₁		1 1.1 49°79	1°0/ 1.3	16	
11 23	7 12.11	+26 53.2	1.728	2.515	16.4	20.4	11 23	7 14.39	+19 32.5	1.321	2.118	20.1	21.8
12 3	7 8.36	+27 26.2	1.647	2.518	13.1	20.2	12 3	7 10.38	+19 44.1	1.269	2.143	15.8	21.6
12 13	7 1.55	+28 1.2	1.588	2.520	9.1	19.9	12 13	7 2.92	+20 4.1	1.235	2.170	10.8	21.4
12 23	6 52.32	+28 33.7	1.553	2.523	4.8	19.7	12 23	6 52.93	+20 29.7	1.225	2.197	5.4	21.2
1 2	6 41.79	+28 59.4	1.546	2.526	2.4	19.5	1 2	6 41.81	+20 57.3	1.241	2.224	1.0	21.0
1 12	6 31.39	+29 15.2	1.568	2.530	5.9	19.8	1 12	6 31.27	+21 23.9	1.284	2.251	6.0	21.4
1 22	6 22.50	+29 20.8	1.616	2.533	10.1	20.0	1 22	6 22.74	+21 47.6	1.353	2.279	10.9	21.7
2 1	6 16.20	+29 17.9	1.688	2.537	13.9	20.3	2 1	6 17.21	+22 8.0	1.445	2.307	15.0	22.0
235043	2003 <i>FH</i> ₅₇		1 1.1 238°58	3°2/31.6	18		209590	2004 <i>XD</i> ₁₂₂		1 1.1 333°63	2°2/31.8	18	
11 23	7 16.29	+28 47.3	1.706	2.487	16.9	21.2	11 23	7 10.91	+26 33.4	1.350	2.158	19.2	20.1
12 3	7 11.99	+29 24.7	1.613	2.478	13.5	21.0	12 3	7 8.41	+26 52.8	1.266	2.148	15.4	19.8
12 13	7 4.30	+30 3.3	1.540	2.469	9.6	20.7	12 13	7 2.20	+27 14.4	1.200	2.138	10.7	19.5
12 23	6 53.80	+30 37.9	1.493	2.460	5.4	20.5	12 23	6 52.90	+27 33.8	1.158	2.130	5.6	19.2
1 2	6 41.63	+31 2.6	1.473	2.450	3.3	20.3	1 2	6 41.79	+27 46.3	1.140	2.121	2.3	19.0
1 12	6 29.42	+31 14.0	1.482	2.440	6.6	20.5	1 12	6 30.71	+27 48.8	1.149	2.114	6.8	19.2
1 22	6 18.77	+31 11.8	1.517	2.430	11.0	20.7	1 22	6 21.45	+27 41.2	1.182	2.108	12.1	19.5
2 1	6 10.97	+30 58.8	1.577	2.419	15.0	20.9	2 1	6 15.41	+27 26.1	1.237	2.102	16.8	19.8
156751	Chelseafferrell		1 1.1 4°30	1°9/31.7	18 R		455873	2005 <i>UZ</i> ₉₁		1 1.1 36°96	0°3/ 1.1	18	
11 23	7 12.58	+23 2.5	1.298	2.103	19.9	20.3	11 23	7 11.97	+22 55.6	1.844	2.624	15.8	20.9
12 3	7 9.75	+23 57.1	1.222	2.103	15.9	20.0	12 3	7 7.85	+22 45.9	1.760	2.627	12.5	20.7
12 13	7 3.13	+25 1.3	1.165	2.103	11.0	19.7	12 13	7 0.98	+22 38.2	1.698	2.630	8.6	20.4
12 23	6 53.34	+26 9.4	1.131	2.103	5.5	19.4	12 23	6 51.99	+22 31.1	1.661	2.633	4.2	20.2
1 2	6 41.70	+27 13.8	1.123	2.104	2.0	19.2	1 2	6 41.91	+22 23.1	1.653	2.636	0.5	19.9
1 12	6 30.09	+28 8.1	1.141	2.106	7.0	19.5	1 12	6 32.02	+22 13.6	1.673	2.639	5.0	20.2
1 22	6 20.38	+28 48.9	1.184	2.108	12.3	19.8	1 22	6 23.51	+22 2.7	1.721	2.642	9.3	20.5
2 1	6 13.97	+29 16.9	1.248	2.110	16.9	20.1	2 1	6 17.32	+21 51.5	1.794	2.646	13.0	20.7
494204	2016 <i>HO</i> ₁₁		1 1.1 205°48	2°5/31.5	17		195993	2002 <i>RZ</i> ₂₂₄		1 1.1 133°74	0°3/ 1.0	18	
11 23	7 11.35	+30 28.1	2.670	3.432	11.9	22.1	11 23	7 10.56	+21 45.2	2.472	3.235	12.7	20.4
12 3	7 6.68	+30 55.5	2.574	3.429	9.5	22.0	12 3	7 6.04	+22 15.3	2.385	3.243	10.0	20.2
12 13	6 59.85	+31 21.5	2.502	3.425	6.7	21.8	12 13	6 59.39	+22 49.5	2.322	3.250	6.9	20.0
12 23	6 51.34	+31 42.9	2.458	3.422	3.9	21.6	12 23	6 51.13	+23 25.7	2.286	3.257	3.4	19.8
1 2	6 41.92	+31 56.9	2.443	3.418	2.6	21.5	1 2	6 42.00	+24 1.1	2.280	3.263	0.5	19.6
1 12	6 32.55	+32 1.8	2.459	3.413	4.7	21.6	1 12	6 32.94	+24 33.4	2.306	3.270	4.0	19.9
1 22	6 24.15	+31 57.7	2.504	3.409	7.6	21.8	1 22	6 24.85	+25 1.2	2.361	3.276	7.4	20.1
2 1	6 17.49	+31 46.0	2.576	3.404	10.3	22.0	2 1	6 18.47	+25 24.3	2.443	3.282	10.4	20.3
490361	2009 <i>HR</i> ₁₁		1 1.1 167°57	0°7/ 1.3	18		372231	2008 <i>UG</i> ₈₆		1 1.1 33°07	0°5/ 1.2	18	
11 23	7 13.22	+19 41.1	2.366	3.123	13.4	22.7	11 23	7 9.87	+21 18.4	1.639	2.430	17.0	20.6
12 3	7 8.16	+19 53.3	2.275	3.128	10.6	22.5	12 3	7 6.31	+21 19.4	1.577	2.449	13.4	20.4
12 13	7 0.86	+20 10.3	2.207	3.132	7.3	22.3	12 13	6 59.92	+21 25.1	1.535	2.469	9.2	20.2
12 23	6 51.83	+20 30.6	2.167	3.136	3.7	22.1	12 23	6 51.44	+21 33.8	1.517	2.489	4.5	20.0
1 2	6 41.88	+20 52.1	2.157	3.139	0.8	21.9	1 2	6 41.98	+21 43.3	1.527	2.510	0.7	19.7
1 12	6 32.00	+21 13.1	2.178	3.142	4.2	22.2	1 12	6 32.90	+21 52.0	1.565	2.532	5.2	20.1
1 22	6 23.17	+21 32.5	2.228	3.144	7.8	22.4	1 22	6 25.38	+21 59.3	1.630	2.555	9.5	20.4
2 1	6 16.16	+21 50.0	2.306	3.145	11.0	22.6	2 1	6 20.28	+22 5.1	1.719	2.578	13.2	20.7
78034	2002 <i>JF</i> ₈₂		1 1.1 68°40	4°5/31.4	18		305788	2009 <i>DF</i> ₇₀		1 1.1 338°29	1°4/ 1.3	17	
11 23	7 17.00	+30 49.6	1.526	2.315	18.2	19.1	11 23	7 8.99	+20 1.3	1.332	2.138	19.5	21.2
12 3	7 12.61	+31 45.8	1.463	2.331	14.5	18.9	12 3	7 6.70	+19 53.5	1.248	2.128	15.6	20.9
12 13	7 4.62	+32 40.9	1.420	2.348	10.3	18.7	12 13	7 0.91	+19 52.4	1.182	2.120	10.9	20.6
12 23	6 53.85	+33 27.9	1.401	2.364	6.2	18.5	12 23	6 52.24	+19 57.3	1.140	2.112	5.6	20.3
1 2	6 41.68	+34 0.1	1.409	2.381	4.5	18.4	1 2	6 41.88	+20 6.2	1.122	2.104	1.5	20.0
1 12	6 29.90	+34 14.2	1.444	2.398	7.4	18.6	1 12	6 31.55	+20 17.2	1.130	2.098	6.4	20.3
1 22	6 20.11	+34 11.2	1.506	2.415	11.3	18.9	1 22	6 22.91	+20 28.8	1.163	2.092	11.9	20.5
2 1	6 13.46	+33 55.1	1.591	2.432	15.0	19.2	2 1	6 17.27	+20 40.7	1.217	2.088	16.6	20.8
155646	2000 <i>GT</i> ₅₇		1 1.1 312°15	3°5/ 1.4	18		467712	2009 <i>AT</i> ₃₀		1 1.1 310°51	0°5/ 1.2	18	
11 23	7 11.28	+16 47.4	1.378	2.173	19.								

EPHEMERIDES

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
296205	2009 <i>CC</i> ₁		1 1.1	28°08	4°6/ 2.1	17	168353	1995 <i>VQ</i> ₅		1 1.1	155°30	4°8/30.5	18
11 23	7 9.39	+11 59.4	1.266	2.061	20.9	20.3	11 23	7 13.50	+36 59.9	2.745	3.496	11.9	20.9
12 3	7 6.74	+11 52.0	1.200	2.070	16.9	20.1	12 3	7 8.59	+38 4.8	2.659	3.500	9.7	20.8
12 13	7 0.70	+12 1.2	1.153	2.080	12.3	19.8	12 13	7 1.31	+39 6.0	2.598	3.503	7.4	20.6
12 23	6 52.01	+12 27.6	1.127	2.090	7.5	19.6	12 23	6 52.16	+39 58.7	2.565	3.507	5.4	20.5
1 2	6 41.92	+13 9.7	1.126	2.101	4.6	19.5	1 2	6 41.96	+40 38.2	2.560	3.510	4.9	20.5
1 12	6 32.11	+14 3.5	1.151	2.114	7.3	19.7	1 12	6 31.77	+41 2.0	2.586	3.513	6.2	20.6
1 22	6 24.08	+15 3.9	1.200	2.126	11.9	20.0	1 22	6 22.62	+41 10.1	2.640	3.516	8.5	20.7
2 1	6 18.97	+16 6.3	1.271	2.140	16.2	20.2	2 1	6 15.36	+41 4.6	2.720	3.518	10.7	20.9
322832	2001 <i>TU</i> ₁₁		1 1.1	18°57	9°2/30.4	16	3193	<i>Elliot</i>		1 1.1	6°42	5°2/31.5	18
11 23	7 14.71	+39 52.6	1.453	2.242	18.9	20.1	11 23	7 13.72	+31 32.8	1.242	2.051	20.4	16.2
12 3	7 11.78	+41 27.1	1.389	2.248	15.8	19.9	12 3	7 11.08	+32 20.0	1.171	2.051	16.5	16.0
12 13	7 4.68	+42 54.3	1.346	2.255	12.5	19.8	12 13	7 4.25	+33 6.0	1.118	2.052	11.9	15.7
12 23	6 54.14	+44 3.5	1.325	2.262	9.9	19.6	12 23	6 53.97	+33 42.8	1.088	2.053	7.2	15.5
1 2	6 41.71	+44 44.8	1.328	2.270	9.2	19.6	1 2	6 41.78	+34 2.7	1.082	2.055	5.3	15.4
1 12	6 29.55	+44 53.9	1.356	2.280	11.0	19.7	1 12	6 29.85	+34 1.7	1.101	2.058	8.5	15.6
1 22	6 19.67	+44 33.4	1.407	2.290	13.9	19.9	1 22	6 20.19	+33 41.5	1.143	2.062	13.2	15.8
2 1	6 13.47	+43 50.4	1.480	2.300	17.0	20.2	2 1	6 14.22	+33 7.6	1.207	2.066	17.6	16.1
207743	2007 <i>RK</i> ₂₄₇		1 1.1	50°63	0°1/ 1.1	18	93018	2000 <i>RT</i> ₉₂		1 1.1	6°07	5°0/31.7	18
11 23	7 14.87	+25 59.0	1.994	2.766	15.1	19.4	11 23	7 15.39	+33 3.0	1.401	2.198	19.1	19.0
12 3	7 9.61	+25 20.1	1.924	2.785	11.9	19.3	12 3	7 11.94	+33 35.3	1.326	2.198	15.5	18.8
12 13	7 1.81	+24 39.2	1.876	2.805	8.1	19.1	12 13	7 4.57	+34 3.5	1.269	2.198	11.2	18.5
12 23	6 52.24	+23 55.4	1.854	2.825	3.9	18.9	12 23	6 54.03	+34 20.8	1.236	2.199	6.9	18.3
1 2	6 41.92	+23 8.9	1.862	2.846	0.4	18.6	1 2	6 41.79	+34 20.9	1.228	2.201	5.1	18.2
1 12	6 32.07	+22 21.0	1.901	2.866	4.6	19.0	1 12	6 29.84	+34 1.5	1.246	2.202	8.0	18.4
1 22	6 23.70	+21 34.0	1.968	2.887	8.5	19.3	1 22	6 20.02	+33 25.2	1.290	2.205	12.3	18.6
2 1	6 17.57	+20 50.0	2.062	2.908	11.8	19.5	2 1	6 13.62	+32 37.7	1.355	2.207	16.4	18.9
71828	2000 <i>UE</i> ₅₃		1 1.1	139°41	0°1/ 1.1	18	6942	<i>Yurigulyaev</i>		1 1.1	97°28	1°7/31.8	18
11 23	7 19.12	+22 8.3	1.629	2.403	17.8	20.0	11 23	7 16.60	+25 18.7	1.582	2.367	17.8	17.8
12 3	7 13.81	+22 19.7	1.553	2.416	14.1	19.8	12 3	7 12.02	+25 49.8	1.511	2.380	14.1	17.6
12 13	7 5.24	+22 35.7	1.498	2.427	9.7	19.5	12 13	7 4.12	+26 23.9	1.461	2.393	9.7	17.4
12 23	6 54.14	+22 53.5	1.467	2.438	4.8	19.3	12 23	6 53.64	+26 56.6	1.435	2.405	4.9	17.1
1 2	6 41.73	+23 9.6	1.465	2.448	0.5	19.0	1 2	6 41.84	+27 23.1	1.437	2.418	1.8	16.9
1 12	6 29.59	+23 21.7	1.492	2.457	5.6	19.4	1 12	6 30.33	+27 40.3	1.467	2.430	6.0	17.2
1 22	6 19.19	+23 29.4	1.547	2.466	10.3	19.7	1 22	6 20.61	+27 47.9	1.524	2.442	10.5	17.5
2 1	6 11.61	+23 33.5	1.626	2.474	14.4	19.9	2 1	6 13.75	+27 47.9	1.605	2.454	14.5	17.8
62204	2000 <i>SP</i> ₅₅		1 1.1	288°56	2°0/31.8	18	98400	2000 <i>UR</i> ₇		1 1.1	92°82	1°0/31.9	18
11 23	7 12.67	+27 47.1	1.922	2.701	15.3	19.7	11 23	7 16.89	+23 46.4	1.667	2.446	17.3	19.3
12 3	7 8.56	+28 1.8	1.830	2.695	12.2	19.5	12 3	7 11.92	+24 12.8	1.600	2.466	13.6	19.1
12 13	7 1.59	+28 16.3	1.760	2.690	8.5	19.3	12 13	7 3.85	+24 42.9	1.554	2.485	9.3	18.9
12 23	6 52.37	+28 27.3	1.715	2.685	4.5	19.0	12 23	6 53.43	+25 13.0	1.534	2.505	4.6	18.6
1 2	6 41.90	+28 31.3	1.699	2.679	2.1	18.8	1 2	6 41.87	+25 38.8	1.541	2.524	1.1	18.4
1 12	6 31.51	+28 26.8	1.712	2.674	5.4	19.0	1 12	6 30.68	+25 57.8	1.578	2.543	5.5	18.8
1 22	6 22.48	+28 14.2	1.752	2.669	9.5	19.3	1 22	6 21.19	+26 9.4	1.642	2.561	9.9	19.1
2 1	6 15.82	+27 55.5	1.818	2.664	13.2	19.5	2 1	6 14.39	+26 14.9	1.731	2.579	13.7	19.3
494735	2005 <i>UA</i> ₂₄₂		1 1.1	39°28	5°8/31.3	17	338890	2004 <i>CS</i> ₃		1 1.1	251°68	3°0/ 1.9	18
11 23	7 16.06	+33 11.8	1.388	2.185	19.3	21.2	11 23	7 7.74	+12 36.2	2.523	3.273	12.8	20.9
12 3	7 12.10	+34 20.5	1.342	2.213	15.4	21.0	12 3	7 3.80	+12 34.1	2.421	3.265	10.4	20.8
12 13	7 4.33	+35 24.9	1.315	2.241	11.1	20.8	12 13	6 57.89	+12 40.4	2.342	3.256	7.6	20.6
12 23	6 53.71	+36 16.6	1.311	2.270	7.3	20.7	12 23	6 50.46	+12 55.3	2.288	3.247	4.6	20.4
1 2	6 41.81	+36 48.6	1.334	2.300	5.9	20.7	1 2	6 42.16	+13 18.2	2.265	3.238	3.0	20.2
1 12	6 30.55	+36 58.1	1.382	2.331	8.3	20.9	1 12	6 33.83	+13 47.8	2.271	3.229	4.7	20.3
1 22	6 21.57	+36 47.6	1.456	2.362	11.9	21.2	1 22	6 26.30	+14 22.3	2.307	3.220	7.7	20.5
2 1	6 15.92	+36 22.5	1.552	2.393	15.3	21.5	2 1	6 20.30	+15 0.0	2.370	3.210	10.7	20.7
251187	2006 <i>UR</i> ₈₀		1 1.1	56°65	5°3/ 1.9	18	283526	2001 <i>TH</i> ₁₃₀		1 1.1	307°34	4°7/ 1.6	18
11 23	7 11.44	+11 9.9	1.599	2.370	18.3	20.2	11 23	7 11.77	+13 51.4	1.478	2.261	19.0	20.7
12 3	7 7.47	+10 30.3	1.534	2.387	14.9	20.0	12 3	7 8.36	+13 11.2	1.394	2.256	15.5	20.4
12 13	7 0.70	+10 2.9	1.488	2.404	11.0	19.9	12 13	7 1.76	+12 40.3	1.328	2.252	11.3	20.2
12 23	6 51.84	+9 49.4	1.466	2.421	7.2	19.7	12 23	6 52.58	+12 20.8	1.286	2.247	7.0	19.9
1 2	6 41.99	+9 50.8	1.471	2.439	5.3	19.6	1 2	6 41.95	+12 14.0	1.269	2.243	4.7	19.8
1 12	6 32.47	+10 5.9	1.503	2.456	7.2	19.8	1 12	6 31.39	+12 19.7	1.280	2.239	7.4	19.9
1 22	6 24.46	+10 32.4	1.561	2.474	10.7	20.0	1 22	6 22.35	+12 36.4	1.316	2.235	11.8	20.2
2 1	6 18.85	+11 7.0	1.643	2.492	14.2	20.3	2 1	6 16.00	+13 1.6	1.374	2.231	16.0	20.4
167867	2005 <i>EC</i> ₂₃		1 1.1	168°43	1°9/31.8	18	432565	2010 <i>JK</i> ₁₁₅		1 1.1	262°44	3°0/ 2.1	17
11 23	7 11.77	+28 58.6	2.678	3.438	11.9	20.8	11 23	7 7.96	+11 10.8	2.632	3.375	12.5	21.5
12 3	7 6.91	+29 14.7	2.586	3.441	9.5	20.7	12 3	7 3.95	+11 20.6	2.521	3.359	10.2	21.3
12 13	6 59.94	+29 29.5	2.519	3.443	6.6	20.5	12 13	6 58.01	+11 40.2	2.433	3.344	7.5	21.1
12 23	6 51.40	+29 40.4	2.479	3.445	3.6	20.3	12 23	6 50.53	+12 9.6	2.372	3.328	4.7	20.9
1 2	6 42.03	+29 45.2	2.469	3.447	1.9	20.2	1 2	6 42.15	+12 48.1	2.340	3.312	3.0	20.8
1 12	6 32.77	+29 42.7	2.490	3.449	4.3	20.4	1 12	6 33.67	+13 33.8	2.339	3.296	4.7	20.8
1 22	6 24.51	+29 33.1	2.541	3.450	7.3	20.5	1 22	6 25.90	+14 24.5	2.368	3.279	7.6	21.0
2 1	6 17.96	+29 18.0	2.619	3.451	10.1	20.7	2 1	6 19.58	+15 17.7	2.424	3.263	10.5	21.2
29290	1993 <i>FF</i> ₈₄		1 1.1	86°66	2°5/ 1.6	18	19119	<i>Dimpna</i>		1 1.1	76°36	0°1/ 1.1	18
11 23	7 15.66	+16 14.8	1.507	2.285	18.9	19.5	11 23	7					

EPHEMERIDES

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
48031	2001 <i>DL</i> ₃₉		1.1 256°27	0°1/ 1.1 18			323572	2004 <i>TT</i> ₁₂₉		1.1 175°36	3°2/31.5 18		
11 23	7 15.68	+23 18.2	1.465	2.255	18.8	20.0	11 23	7 14.85	+32 6.8	2.537	3.294	12.6	21.5
12 3	7 11.80	+23 10.7	1.375	2.247	15.0	19.7	12 3	7 9.59	+32 40.7	2.446	3.296	10.1	21.3
12 13	7 4.34	+23 5.9	1.305	2.239	10.5	19.4	12 13	7 1.95	+33 12.3	2.379	3.298	7.2	21.1
12 23	6 53.93	+23 1.6	1.258	2.230	5.2	19.1	12 23	6 52.47	+33 37.7	2.340	3.300	4.4	20.9
1 2	6 41.82	+22 55.2	1.238	2.221	0.5	18.7	1 2	6 42.00	+33 53.3	2.330	3.301	3.2	20.9
1 12	6 29.74	+22 45.4	1.246	2.213	6.2	19.1	1 12	6 31.62	+33 57.4	2.351	3.301	5.2	21.0
1 22	6 19.38	+22 32.7	1.280	2.204	11.6	19.4	1 22	6 22.36	+33 50.3	2.401	3.301	8.1	21.2
2 1	6 12.07	+22 19.0	1.336	2.195	16.2	19.6	2 1	6 15.05	+33 34.0	2.478	3.300	10.9	21.3
180471	2004 <i>CH</i> ₄₃		1.1 145°33	1°1/ 1.4 18			412478	2014 <i>HX</i> ₁₅₇		1.1 150°91	0°5/ 1.2 18		
11 23	7 12.49	+18 6.0	1.934	2.704	15.6	20.6	11 23	7 16.26	+20 21.5	2.047	2.808	15.1	21.8
12 3	7 8.15	+18 24.4	1.849	2.708	12.4	20.4	12 3	7 10.91	+20 36.0	1.963	2.818	12.0	21.6
12 13	7 1.19	+18 50.6	1.785	2.712	8.6	20.2	12 13	7 2.95	+20 55.6	1.902	2.828	8.3	21.4
12 23	6 52.16	+19 22.9	1.747	2.716	4.4	20.0	12 23	6 52.98	+21 18.3	1.867	2.837	4.1	21.2
1 2	6 42.00	+19 58.7	1.738	2.720	1.2	19.7	1 2	6 41.96	+21 41.4	1.862	2.845	0.6	20.9
1 12	6 31.93	+20 35.1	1.758	2.723	4.9	20.0	1 12	6 31.09	+22 2.9	1.888	2.853	4.7	21.3
1 22	6 23.08	+21 10.0	1.807	2.727	9.0	20.3	1 22	6 21.50	+22 21.5	1.943	2.859	8.7	21.5
2 1	6 16.41	+21 42.1	1.881	2.730	12.7	20.5	2 1	6 14.10	+22 37.1	2.024	2.865	12.2	21.8
414746	2010 <i>EH</i> ₂₀		1.1 69°56	4°4/ 2.9 14 C			456444	2006 <i>VM</i> ₆₈		1.1 55°22	0°4/ 1.2 18		
11 23	7 21.19	+ 6 33.9	1.965	2.684	17.0	22.5	11 23	7 14.31	+21 48.6	1.542	2.329	18.1	21.4
12 3	7 14.13	+ 7 4.5	1.918	2.737	13.7	22.4	12 3	7 9.94	+21 49.1	1.483	2.353	14.2	21.2
12 13	7 4.68	+ 7 50.7	1.892	2.790	10.1	22.3	12 13	7 2.47	+21 54.0	1.444	2.377	9.7	21.0
12 23	6 53.59	+ 8 51.2	1.893	2.841	6.5	22.1	12 23	6 52.75	+22 1.2	1.429	2.401	4.8	20.8
1 2	6 41.89	+10 2.6	1.924	2.891	4.4	22.1	1 2	6 42.00	+22 8.2	1.442	2.425	0.6	20.5
1 12	6 30.75	+11 20.7	1.988	2.940	5.8	22.3	1 12	6 31.74	+22 13.5	1.483	2.450	5.4	20.9
1 22	6 21.14	+12 40.6	2.081	2.987	8.9	22.6	1 22	6 23.26	+22 16.7	1.551	2.474	10.0	21.3
2 1	6 13.77	+13 58.6	2.203	3.033	11.8	22.8	2 1	6 17.47	+22 18.4	1.643	2.499	13.8	21.6
417821	2007 <i>FF</i> ₂₂		1.1 273°51	4°2/31.3 18			28092	Joannekear		1.1 289°68	2°1/ 1.3 18		
11 23	7 13.82	+32 51.1	2.038	2.810	14.8	21.5	11 23	7 13.73	+19 33.7	1.448	2.238	18.9	18.7
12 3	7 9.61	+33 32.3	1.941	2.799	11.9	21.3	12 3	7 10.11	+19 7.4	1.362	2.233	15.2	18.5
12 13	7 2.45	+34 11.5	1.866	2.788	8.7	21.1	12 13	7 3.08	+18 46.0	1.296	2.228	10.7	18.2
12 23	6 52.89	+34 43.4	1.817	2.777	5.5	20.9	12 23	6 53.28	+18 29.3	1.253	2.223	5.6	17.9
1 2	6 41.93	+35 3.1	1.797	2.766	4.3	20.8	1 2	6 41.94	+18 16.8	1.237	2.218	2.2	17.6
1 12	6 30.94	+35 7.6	1.805	2.754	6.6	20.9	1 12	6 30.68	+18 8.1	1.247	2.213	6.4	17.9
1 22	6 21.27	+34 57.2	1.840	2.743	10.0	21.1	1 22	6 21.10	+18 3.1	1.284	2.208	11.5	18.2
2 1	6 14.03	+34 34.8	1.900	2.731	13.3	21.2	2 1	6 14.41	+18 2.0	1.343	2.203	16.0	18.4
60508	2000 <i>DJ</i> ₁₀₇		1.1 150°75	2°4/ 1.8 18			455159	1998 <i>MT</i> ₂₂		1.1 91°77	1°4/ 1.5 17		
11 23	7 8.92	+13 39.3	2.589	3.337	12.6	19.9	11 23	7 15.43	+17 7.9	1.868	2.632	16.2	21.2
12 3	7 4.57	+13 45.5	2.498	3.342	10.1	19.8	12 3	7 10.26	+17 26.8	1.802	2.657	12.9	21.1
12 13	6 58.32	+13 59.6	2.431	3.347	7.2	19.6	12 13	7 2.45	+17 54.0	1.758	2.683	8.9	20.9
12 23	6 50.63	+14 21.2	2.391	3.352	4.2	19.4	12 23	6 52.70	+18 27.5	1.739	2.708	4.6	20.7
1 2	6 42.17	+14 49.2	2.380	3.356	2.4	19.3	1 2	6 42.01	+19 4.4	1.750	2.732	1.5	20.5
1 12	6 33.77	+15 22.1	2.401	3.360	4.3	19.4	1 12	6 31.65	+19 41.8	1.791	2.756	4.9	20.8
1 22	6 26.22	+15 57.9	2.451	3.364	7.3	19.6	1 22	6 22.73	+20 17.7	1.861	2.779	8.9	21.1
2 1	6 20.19	+16 35.0	2.528	3.368	10.1	19.8	2 1	6 16.08	+20 50.9	1.956	2.802	12.4	21.3
29178	1990 <i>RW</i> ₈		1.1 131°25	0°3/ 1.1 18			356762	2011 <i>UJ</i> ₂₅₆		1.1 98°38	1°5/ 1.1 17		
11 23	7 18.65	+24 12.7	1.845	2.613	16.3	19.5	11 23	7 20.28	+27 51.2	1.702	2.475	17.2	21.3
12 3	7 13.00	+24 6.6	1.768	2.627	12.9	19.3	12 3	7 14.46	+27 42.2	1.633	2.495	13.6	21.1
12 13	7 4.43	+24 1.6	1.712	2.641	8.8	19.1	12 13	7 5.48	+27 30.9	1.586	2.515	9.4	20.9
12 23	6 53.68	+23 55.4	1.683	2.654	4.3	18.8	12 23	6 54.19	+27 14.4	1.564	2.534	4.7	20.7
1 2	6 41.88	+23 46.0	1.683	2.666	0.5	18.6	1 2	6 41.88	+26 50.5	1.571	2.553	1.5	20.5
1 12	6 30.41	+23 32.7	1.713	2.678	5.1	18.9	1 12	6 30.10	+26 19.3	1.608	2.572	5.5	20.8
1 22	6 20.53	+23 16.5	1.771	2.689	9.4	19.2	1 22	6 20.20	+25 43.2	1.672	2.590	9.8	21.1
2 1	6 13.18	+22 59.0	1.856	2.699	13.1	19.5	2 1	6 13.10	+25 5.5	1.762	2.607	13.6	21.4
235723	2004 <i>TT</i> ₁₆₈		1.1 118°27	1°0/ 1.3 18			28604	2000 <i>EB</i> ₁₅₁		1.1 199°98	0°5/ 1.0 18		
11 23	7 16.89	+19 28.7	1.867	2.632	16.2	20.8	11 23	7 10.19	+23 52.2	2.764	3.523	11.6	19.9
12 3	7 11.50	+19 36.5	1.795	2.652	12.8	20.6	12 3	7 5.61	+24 6.7	2.664	3.520	9.2	19.7
12 13	7 3.35	+19 50.3	1.744	2.670	8.8	20.4	12 13	6 59.07	+24 22.9	2.589	3.516	6.3	19.5
12 23	6 53.14	+20 7.9	1.719	2.688	4.4	20.2	12 23	6 51.03	+24 39.2	2.542	3.512	3.1	19.3
1 2	6 41.93	+20 27.2	1.723	2.705	1.0	20.0	1 2	6 42.17	+24 53.6	2.526	3.508	0.6	19.0
1 12	6 31.01	+20 45.9	1.757	2.722	5.0	20.3	1 12	6 33.33	+25 4.7	2.540	3.504	3.8	19.3
1 22	6 21.56	+21 3.1	1.820	2.738	9.1	20.6	1 22	6 25.35	+25 12.0	2.585	3.499	6.9	19.5
2 1	6 14.48	+21 18.4	1.909	2.753	12.7	20.9	2 1	6 18.91	+25 15.8	2.657	3.494	9.8	19.7
285091	1994 <i>AL</i> ₇		1.1 30°89	0°5/ 1.1 17			90806	Rudaki		1.1 22°98	7°3/ 2.9 17		
11 23	7 13.43	+24 3.7	1.110	1.927	21.9	20.7	11 23	7 29.10	+44 8.4	0.998	1.794	25.2	17.6
12 3	7 10.66	+24 1.4	1.048	1.935	17.4	20.4	12 3	7 23.74	+43 9.1	0.943	1.808	20.9	17.4
12 13	7 3.78	+24 2.6	1.004	1.944	12.0	20.2	12 13	7 12.67	+41 41.9	0.904	1.823	15.8	17.1
12 23	6 53.65	+24 4.0	0.981	1.954	5.9	19.9	12 23	6 57.68	+39 38.8	0.884	1.840	10.5	16.9
1 2	6 41.88	+24 2.4	0.982	1.965	0.8	19.6	1 2	6 41.59	+36 59.6	0.889	1.858	7.4	16.8
1 12	6 30.60	+23 56.0	1.008	1.976	6.9	20.0	1 12	6 27.43	+33 55.9	0.920	1.879	9.5	17.0
1 22	6 21.66	+23 45.6	1.057	1.988	12.6	20.4	1 22	6 17.22	+30 46.7	0.976	1.900	14.2	17.3
2 1	6 16.31	+23 33.1	1.128	2.001	17.5	20.7	2 1	6 11.81	+27 49.0	1.054	1.923	18.8	17.7
79681	1998 <i>SL</i> ₅₃		1.1 153°36	4°2/ 1.8 18			122744	2000 <i>SX</i> ₅₄		1.1 124°07	0°3/ 1.1 18		
11 23	7 15.26	+12 28.2	1.800	2.557	17.0	20.3	11 23	7 17.25	+23 10.				

EPHEMERIDES

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
416723	2005 <i>CM</i> ₇₆		1 1.1 277°28	4.6/ 2.8 18			276329	2002 <i>TM</i> ₂₅₁		1 1.1 63°25	2.6/ 1.7 18		
11 23	7 8.74	+ 6 40.8	2.243	2.980	14.6	20.9	11 23	7 9.36	+14 52.6	2.122	2.885	14.6	20.5
12 3	7 4.84	+ 6 52.1	2.145	2.974	12.1	20.8	12 3	7 5.26	+14 48.0	2.048	2.901	11.6	20.3
12 13	6 58.76	+ 7 18.1	2.068	2.968	9.2	20.6	12 13	6 58.95	+14 51.4	1.996	2.917	8.3	20.1
12 23	6 50.97	+ 7 59.4	2.016	2.962	6.3	20.4	12 23	6 50.99	+15 2.5	1.970	2.933	4.7	19.9
1 2	6 42.17	+ 8 55.3	1.993	2.956	4.7	20.3	1 2	6 42.23	+15 20.3	1.972	2.949	2.6	19.8
1 12	6 33.33	+10 3.1	1.999	2.950	5.9	20.3	1 12	6 33.67	+15 43.3	2.004	2.966	4.8	20.0
1 22	6 25.38	+11 19.2	2.035	2.944	8.8	20.5	1 22	6 26.23	+16 9.8	2.065	2.982	8.2	20.2
2 1	6 19.13	+12 39.2	2.098	2.938	11.9	20.7	2 1	6 20.65	+16 38.1	2.151	2.998	11.4	20.4
448456	2010 <i>ET</i> ₇₉		1 1.1 318°06	2.6/ 1.6 18			319854	2006 <i>WD</i> ₃₄		1 1.1 3°85	5.5/ 1.7 18		
11 23	7 10.98	+16 40.8	1.392	2.186	19.4	21.5	11 23	7 11.01	+10 57.2	1.841	2.601	16.6	20.7
12 3	7 8.12	+16 37.2	1.306	2.178	15.6	21.2	12 3	7 7.00	+10 3.6	1.755	2.601	13.6	20.5
12 13	7 1.85	+16 44.3	1.239	2.171	11.1	20.9	12 13	7 0.41	+ 9 18.9	1.690	2.601	10.3	20.3
12 23	6 52.76	+17 1.8	1.195	2.164	6.1	20.6	12 23	6 51.81	+ 8 45.9	1.650	2.601	7.0	20.1
1 2	6 42.00	+17 27.9	1.177	2.157	2.6	20.4	1 2	6 42.15	+ 8 26.5	1.637	2.601	5.5	20.0
1 12	6 31.22	+17 59.8	1.185	2.151	6.6	20.6	1 12	6 32.60	+ 8 21.5	1.652	2.601	7.2	20.1
1 22	6 22.03	+18 34.7	1.218	2.145	11.7	20.9	1 22	6 24.28	+ 8 29.6	1.695	2.601	10.5	20.3
2 1	6 15.72	+19 10.2	1.274	2.140	16.4	21.2	2 1	6 18.10	+ 8 48.8	1.761	2.601	13.8	20.5
432068	2008 <i>YP</i> ₉₅		1 1.1 335°30	0.1/ 1.2 18			448471	2010 <i>GA</i> ₂₈		1 1.1 266°43	14.8/ 1.5 18		
11 23	7 8.19	+22 25.3	1.997	2.779	14.7	21.5	11 23	7 10.80	- 9 36.2	1.765	2.444	19.9	21.6
12 3	7 4.85	+22 29.9	1.902	2.770	11.7	21.3	12 3	7 7.19	-11 39.4	1.679	2.429	18.2	21.4
12 13	6 59.00	+22 37.9	1.830	2.762	8.1	21.1	12 13	7 0.82	-13 22.8	1.610	2.414	16.5	21.2
12 23	6 51.14	+22 47.6	1.783	2.754	4.0	20.8	12 23	6 52.16	-14 37.5	1.561	2.399	15.3	21.1
1 2	6 42.17	+22 57.1	1.764	2.747	0.4	20.5	1 2	6 42.11	-15 15.5	1.533	2.384	14.8	21.0
1 12	6 33.23	+23 4.8	1.774	2.740	4.7	20.8	1 12	6 31.91	-15 13.0	1.527	2.368	15.4	21.0
1 22	6 25.42	+23 10.1	1.812	2.734	8.8	21.1	1 22	6 22.82	-14 31.6	1.542	2.352	16.9	21.1
2 1	6 19.67	+23 13.1	1.875	2.728	12.5	21.3	2 1	6 15.92	-13 17.2	1.576	2.336	18.8	21.2
352122	2007 <i>EU</i> ₁₉₀		1 1.1 199°31	2.7/31.9 18			331847	2003 <i>UV</i> ₂₅₉		1 1.1 53°13	7.0/ 1.3 18		
11 23	7 18.73	+29 39.5	1.711	2.487	17.0	20.8	11 23	7 13.06	+ 8 24.4	1.912	2.657	16.5	19.8
12 3	7 13.77	+29 51.8	1.622	2.485	13.6	20.6	12 3	7 8.14	+ 6 47.3	1.847	2.678	13.7	19.7
12 13	7 5.43	+30 2.0	1.555	2.483	9.6	20.4	12 13	7 0.86	+ 5 20.0	1.805	2.700	10.7	19.5
12 23	6 54.38	+30 5.6	1.512	2.480	5.3	20.1	12 23	6 51.88	+ 4 6.9	1.789	2.723	8.0	19.4
1 2	6 41.87	+29 58.4	1.498	2.477	2.8	19.9	1 2	6 42.17	+ 3 11.5	1.800	2.745	7.0	19.4
1 12	6 29.52	+29 38.9	1.512	2.473	6.2	20.1	1 12	6 32.82	+ 2 35.9	1.839	2.768	8.2	19.5
1 22	6 18.88	+29 8.9	1.554	2.469	10.6	20.4	1 22	6 24.80	+ 2 19.3	1.905	2.790	10.7	19.7
2 1	6 11.13	+28 32.3	1.620	2.464	14.6	20.6	2 1	6 18.84	+ 2 19.3	1.996	2.813	13.3	19.9
25627	2000 <i>AU</i> ₅₀		1 1.1 99°69	0.5/ 1.1 18			240520	2004 <i>FU</i> ₆₇		1 1.1 285°63	1.4/31.8 18		
11 23	7 11.58	+24 29.8	2.214	2.984	13.8	18.3	11 23	7 9.50	+25 35.6	2.404	3.174	12.9	20.6
12 3	7 7.10	+24 31.3	2.129	2.990	10.9	18.1	12 3	7 5.60	+26 4.1	2.297	3.158	10.2	20.4
12 13	7 0.27	+24 33.9	2.067	2.996	7.5	17.9	12 13	6 59.39	+26 34.9	2.214	3.143	7.1	20.1
12 23	6 51.65	+24 35.6	2.031	3.002	3.7	17.7	12 23	6 51.34	+27 5.4	2.157	3.127	3.6	19.9
1 2	6 42.14	+24 34.8	2.025	3.008	0.6	17.4	1 2	6 42.20	+27 32.4	2.130	3.111	1.5	19.7
1 12	6 32.79	+24 30.4	2.049	3.014	4.4	17.7	1 12	6 32.97	+27 53.7	2.133	3.096	4.5	19.9
1 22	6 24.61	+24 22.7	2.102	3.020	8.1	18.0	1 22	6 24.64	+28 8.3	2.166	3.080	8.1	20.1
2 1	6 18.40	+24 12.5	2.181	3.026	11.3	18.2	2 1	6 18.11	+28 16.5	2.224	3.064	11.3	20.3
114503	2003 <i>AG</i> ₇₇		1 1.1 260°00	5.9/30.5 18			372960	2011 <i>BS</i> ₁₀₃		1 1.1 1°08	1.4/31.9 18		
11 23	7 15.69	+34 34.8	1.881	2.654	15.8	19.9	11 23	7 12.20	+26 29.1	1.958	2.737	15.1	21.8
12 3	7 11.51	+35 54.7	1.796	2.652	12.9	19.6	12 3	7 8.07	+26 38.1	1.871	2.736	12.0	21.6
12 13	7 4.02	+37 13.5	1.733	2.650	9.6	19.4	12 13	7 1.20	+26 47.4	1.806	2.736	8.3	21.3
12 23	6 53.79	+38 23.5	1.696	2.647	6.8	19.3	12 23	6 52.23	+26 54.3	1.766	2.736	4.2	21.1
1 2	6 41.92	+39 17.0	1.687	2.645	6.0	19.2	1 2	6 42.12	+26 56.1	1.755	2.736	1.5	20.9
1 12	6 29.99	+39 49.4	1.706	2.642	8.1	19.3	1 12	6 32.16	+26 51.3	1.773	2.737	5.1	21.2
1 22	6 19.57	+40 0.2	1.751	2.640	11.3	19.5	1 22	6 23.52	+26 40.3	1.819	2.737	9.1	21.4
2 1	6 11.91	+39 52.9	1.820	2.638	14.4	19.7	2 1	6 17.15	+26 24.9	1.890	2.737	12.7	21.6
245627	2005 <i>XV</i> ₄		1 1.1 85°39	5.1/31.6 18			178890	2001 <i>OC</i> ₄₀		1 1.1 91°63	1.4/ 1.6 18		
11 23	7 24.14	+20 16.4	1.155	1.946	22.7	19.8	11 23	7 13.60	+16 17.9	1.921	2.685	15.8	19.9
12 3	7 18.59	+18 18.6	1.088	1.957	18.3	19.6	12 3	7 8.89	+16 49.6	1.849	2.704	12.6	19.7
12 13	7 8.87	+16 18.4	1.039	1.969	13.1	19.3	12 13	7 1.61	+17 31.1	1.798	2.723	8.7	19.5
12 23	6 56.02	+14 20.4	1.014	1.980	7.7	19.1	12 23	6 52.36	+18 20.0	1.773	2.741	4.5	19.3
1 2	6 41.75	+12 31.7	1.016	1.991	5.2	19.0	1 2	6 42.12	+19 12.9	1.777	2.759	1.4	19.1
1 12	6 28.22	+10 59.5	1.045	2.002	8.9	19.2	1 12	6 32.08	+20 6.4	1.812	2.777	4.8	19.4
1 22	6 17.23	+ 9 48.8	1.098	2.013	14.1	19.5	1 22	6 23.34	+20 57.3	1.875	2.794	8.8	19.7
2 1	6 9.93	+ 9 0.4	1.173	2.023	18.6	19.8	2 1	6 16.78	+21 44.1	1.965	2.812	12.3	19.9
338248	2002 <i>TJ</i> ₁₇₈		1 1.1 68°65	0.1/ 1.1 18			217078	2001 <i>TF</i> ₃₈		1 1.1 8°07	1.8/ 1.1 18		
11 23	7 17.79	+23 54.3	1.306	2.102	20.3	20.4	11 23	7 7.98	+23 56.6	1.135	1.959	21.0	18.2
12 3	7 13.36	+23 43.1	1.244	2.119	16.1	20.2	12 3	7 6.15	+22 48.6	1.071	1.962	16.7	17.9
12 13	7 5.19	+23 34.2	1.201	2.136	11.0	19.9	12 13	7 0.53	+21 38.3	1.025	1.966	11.6	17.6
12 23	6 54.21	+23 25.1	1.181	2.153	5.4	19.7	12 23	6 52.03	+20 27.2	1.000	1.973	5.9	17.3
1 2	6 41.93	+23 13.4	1.188	2.171	0.5	19.4	1 2	6 42.15	+19 18.0	1.000	1.982	1.9	17.1
1 12	6 30.21	+22 58.4	1.221	2.188	6.2	19.8	1 12	6 32.78	+18 14.4	1.024	1.993	6.9	17.5
1 22	6 20.68	+22 41.3	1.280	2.206	11.4	20.2	1 22	6 25.53	+17 19.9	1.073	2.005	12.3	17.8
2 1	6 14.41	+22 24.2	1.362	2.223	15.8	20.5	2 1	6 21.47	+16 36.5	1.142	2.020	16.9	18.1
421602	2014 <i>OV</i> ₂₂₉		1 1.1 157°09	2.1/31.8 18			306011	2010 <i>CV</i> ₁₅₈		1 1.1 187°65	1.9/ 1.5 18		
11 23	7 15.60	+28 9.5											

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
260942	2005 <i>SP</i> ₁₂		1 1.1	59°24	5°3/31.8	18	161583	2005 <i>GZ</i> ₁₁₉		1 1.2	140°71	4°5/31.6	18
11 23	7 18.66	+35 50.8	1.690	2.466	17.2	20.1	11 23	7 20.36	+36 21.8	2.339	3.088	13.8	20.9
12 3	7 13.57	+36 21.4	1.630	2.487	13.9	19.9	12 3	7 14.10	+36 53.5	2.260	3.101	11.2	20.7
12 13	7 5.08	+36 44.9	1.591	2.509	10.2	19.8	12 13	7 5.11	+37 19.5	2.205	3.114	8.2	20.6
12 23	6 54.08	+36 55.0	1.576	2.531	6.7	19.6	12 23	6 54.06	+37 34.5	2.176	3.127	5.6	20.4
1 2	6 41.98	+36 47.4	1.588	2.554	5.3	19.6	1 2	6 42.01	+37 34.7	2.177	3.138	4.5	20.4
1 12	6 30.47	+36 21.2	1.628	2.576	7.3	19.7	1 12	6 30.27	+37 18.8	2.208	3.149	6.2	20.5
1 22	6 20.98	+35 39.7	1.695	2.598	10.7	20.0	1 22	6 20.01	+36 48.8	2.268	3.159	8.9	20.7
2 1	6 14.49	+34 48.5	1.786	2.621	13.9	20.2	2 1	6 12.12	+36 8.4	2.354	3.169	11.7	20.9
55189	2001 <i>QW</i> ₂₉₄		1 1.1	355°08	9°5/3.6	18	47626	2000 <i>BS</i> ₄₉		1 1.2	82°79	6°4/31.8	18
11 23	7 3.24	+2 50.6	1.282	2.062	21.4	18.4	11 23	7 20.48	+38 37.6	1.713	2.482	17.3	19.0
12 3	7 1.99	+2 10.8	1.206	2.055	18.3	18.1	12 3	7 15.33	+39 13.7	1.642	2.492	14.2	18.8
12 13	6 57.61	+1 54.3	1.147	2.049	14.8	17.9	12 13	7 6.53	+39 41.0	1.591	2.502	10.7	18.6
12 23	6 50.68	+2 6.8	1.108	2.045	11.4	17.7	12 23	6 54.91	+39 52.4	1.564	2.512	7.6	18.4
1 2	6 42.27	+2 51.0	1.091	2.042	9.6	17.6	1 2	6 41.94	+39 42.2	1.564	2.522	6.4	18.4
1 12	6 33.89	+4 4.6	1.097	2.041	10.6	17.6	1 12	6 29.45	+39 9.2	1.592	2.532	8.3	18.5
1 22	6 27.00	+5 40.9	1.127	2.042	13.7	17.8	1 22	6 19.06	+38 17.1	1.646	2.542	11.4	18.7
2 1	6 22.77	+7 30.7	1.178	2.044	17.4	18.0	2 1	6 11.86	+37 12.5	1.724	2.551	14.6	18.9
186938	2004 <i>QS</i>		1 1.1	140°30	4°9/2.6	18	113556	2002 <i>TH</i> ₃₁		1 1.2	74°52	0°2/1.2	18
11 23	7 10.41	+6 34.6	2.418	3.146	13.9	21.6	11 23	7 10.80	+21 30.5	2.214	2.983	13.9	20.1
12 3	7 5.80	+6 23.0	2.334	3.156	11.5	21.4	12 3	7 6.39	+21 39.8	2.139	2.999	10.9	19.9
12 13	6 59.21	+6 23.3	2.272	3.166	8.8	21.3	12 13	6 59.73	+21 52.7	2.087	3.016	7.5	19.7
12 23	6 51.12	+6 36.6	2.235	3.175	6.2	21.1	12 23	6 51.41	+22 7.5	2.061	3.032	3.7	19.5
1 2	6 42.25	+7 3.1	2.227	3.184	4.9	21.1	1 2	6 42.27	+22 22.2	2.065	3.048	0.4	19.3
1 12	6 33.49	+7 41.2	2.249	3.192	6.0	21.1	1 12	6 33.35	+22 35.3	2.099	3.065	4.2	19.6
1 22	6 25.66	+8 28.5	2.300	3.200	8.4	21.3	1 22	6 25.57	+22 46.1	2.162	3.081	7.8	19.9
2 1	6 19.45	+9 21.9	2.378	3.208	11.0	21.5	2 1	6 19.68	+22 54.6	2.252	3.097	11.0	20.1
366709	2003 <i>WV</i> ₁₃₆		1 1.1	55°54	0°1/1.2	18	248076	2004 <i>PG</i> ₆₅		1 1.2	189°08	1°5/31.9	18
11 23	7 17.48	+21 29.0	1.918	2.683	15.8	20.5	11 23	7 17.06	+25 16.5	1.897	2.667	15.8	22.0
12 3	7 11.51	+21 45.9	1.874	2.731	12.3	20.4	12 3	7 12.09	+25 45.2	1.806	2.667	12.6	21.8
12 13	7 3.05	+22 6.5	1.852	2.780	8.3	20.2	12 13	7 4.13	+26 16.9	1.737	2.665	8.7	21.5
12 23	6 52.89	+22 28.2	1.857	2.828	4.0	20.1	12 23	6 53.77	+26 47.7	1.694	2.664	4.4	21.3
1 2	6 42.11	+22 48.2	1.892	2.875	0.4	19.9	1 2	6 42.04	+27 13.4	1.680	2.661	1.6	21.1
1 12	6 31.91	+23 4.9	1.957	2.922	4.5	20.3	1 12	6 30.35	+27 31.1	1.695	2.658	5.4	21.3
1 22	6 23.31	+23 17.7	2.050	2.968	8.3	20.6	1 22	6 20.05	+27 40.1	1.739	2.654	9.7	21.6
2 1	6 17.00	+23 27.3	2.170	3.013	11.5	20.9	2 1	6 12.23	+27 41.9	1.809	2.650	13.5	21.8
28310	1999 <i>CT</i> ₈₁		1 1.1	333°96	2°5/1.5	18	429340	2010 <i>FW</i> ₁₅		1 1.2	7°53	5°8/30.9	18
11 23	7 7.83	+17 22.3	1.934	2.712	15.3	18.4	11 23	7 14.00	+38 59.9	2.313	3.071	13.6	21.0
12 3	7 4.57	+16 58.8	1.839	2.702	12.3	18.2	12 3	7 9.53	+39 54.6	2.229	3.072	11.2	20.9
12 13	6 58.80	+16 40.7	1.766	2.693	8.7	18.0	12 13	7 2.26	+40 43.6	2.168	3.072	8.7	20.7
12 23	6 51.08	+16 28.3	1.718	2.684	4.9	17.7	12 23	6 52.80	+41 20.9	2.133	3.072	6.5	20.6
1 2	6 42.25	+16 21.7	1.697	2.676	2.5	17.6	1 2	6 42.14	+41 41.7	2.125	3.073	5.9	20.5
1 12	6 33.46	+16 20.5	1.706	2.669	5.3	17.7	1 12	6 31.58	+41 43.5	2.146	3.073	7.3	20.6
1 22	6 25.79	+16 24.0	1.741	2.662	9.3	17.9	1 22	6 22.36	+41 27.3	2.194	3.074	9.7	20.8
2 1	6 20.15	+16 31.5	1.801	2.655	12.9	18.2	2 1	6 15.45	+40 56.7	2.267	3.074	12.3	21.0
243075	2007 <i>HZ</i> ₃₈		1 1.1	276°09	4°3/1.8	18	62060	2000 <i>RB</i> ₇₁		1 1.2	92°88	4°9/2.3	18
11 23	7 9.30	+11 38.4	2.076	2.832	15.0	21.2	11 23	7 15.22	+9 33.6	1.714	2.467	17.9	20.0
12 3	7 5.57	+11 13.5	1.972	2.817	12.3	21.0	12 3	7 10.24	+9 21.6	1.650	2.491	14.6	19.8
12 13	6 59.44	+10 57.7	1.889	2.802	9.2	20.7	12 13	7 2.54	+9 23.8	1.606	2.515	10.8	19.6
12 23	6 51.40	+10 52.4	1.832	2.787	6.0	20.5	12 23	6 52.82	+9 40.7	1.586	2.539	7.0	19.4
1 2	6 42.22	+10 58.3	1.803	2.772	4.3	20.4	1 2	6 42.16	+10 11.7	1.594	2.562	4.9	19.4
1 12	6 32.96	+11 14.9	1.802	2.756	6.1	20.5	1 12	6 31.84	+10 54.1	1.631	2.585	6.7	19.5
1 22	6 24.67	+11 40.5	1.829	2.741	9.5	20.6	1 22	6 23.01	+11 44.2	1.695	2.606	10.1	19.8
2 1	6 18.25	+12 13.1	1.882	2.725	12.9	20.8	2 1	6 16.54	+12 38.4	1.784	2.628	13.5	20.0
439947	2001 <i>SQ</i> ₂₉₀		1 1.1	88°16	1°3/31.9	18	239779	2010 <i>CU</i> ₉₄		1 1.2	39°30	4°6/2.3	18
11 23	7 19.70	+24 20.0	1.569	2.347	18.2	21.7	11 23	7 7.65	+8 58.0	2.191	2.940	14.6	20.9
12 3	7 14.25	+24 48.0	1.509	2.374	14.4	21.5	12 3	7 3.95	+8 41.9	2.106	2.944	12.0	20.7
12 13	7 5.50	+25 19.3	1.470	2.401	9.8	21.3	12 13	6 58.12	+8 37.1	2.042	2.948	9.0	20.5
12 23	6 54.29	+25 49.3	1.456	2.427	4.8	21.1	12 23	6 50.67	+8 44.8	2.003	2.951	6.1	20.3
1 2	6 41.97	+26 13.6	1.470	2.453	1.4	20.9	1 2	6 42.36	+9 5.1	1.992	2.956	4.6	20.2
1 12	6 30.16	+26 29.7	1.513	2.478	5.7	21.2	1 12	6 34.13	+9 36.7	2.010	2.960	6.0	20.3
1 22	6 20.27	+26 37.4	1.584	2.502	10.2	21.5	1 22	6 26.87	+10 17.3	2.056	2.964	8.8	20.5
2 1	6 13.29	+26 38.7	1.679	2.526	14.0	21.8	2 1	6 21.34	+11 4.0	2.127	2.968	11.7	20.7
388875	2008 <i>RR</i> ₂₁		1 1.1	163°22	4°0/1.8	18	457137	2008 <i>FA</i> ₉₁		1 1.2	227°07	1°2/31.9	18
11 23	7 15.74	+12 18.1	2.013	2.759	15.8	22.6	11 23	7 13.73	+25 19.1	2.090	2.860	14.5	22.1
12 3	7 10.46	+11 52.9	1.927	2.767	12.8	22.4	12 3	7 9.21	+25 36.6	1.992	2.852	11.6	21.9
12 13	7 2.64	+11 36.8	1.862	2.773	9.4	22.2	12 13	7 2.02	+25 55.9	1.916	2.845	8.0	21.6
12 23	6 52.88	+11 30.6	1.823	2.779	5.9	22.0	12 23	6 52.70	+26 14.3	1.867	2.837	4.0	21.4
1 2	6 42.10	+11 34.6	1.813	2.784	4.0	21.9	1 2	6 42.17	+26 28.6	1.846	2.828	1.3	21.2
1 12	6 31.45	+11 47.9	1.833	2.787	6.0	22.0	1 12	6 31.63	+26 36.9	1.856	2.819	4.9	21.4
1 22	6 22.02	+12 9.1	1.882	2.790	9.5	22.2	1 22	6 22.26	+26 38.6	1.894	2.810	8.9	21.6
2 1	6 14.70	+12 36.0	1.957	2.792	12.8	22.4	2 1	6 15.06	+26 34.9	1.958	2.801	12.5	21.8
27757	1991 <i>PO</i> ₁₈		1 1.2	181°93	2°9/31.8	18	343051	2009 <i>BS</i> ₁₇₇		1 1.2	207°08	4°7/31.4	18
11 23	7 19.81	+29 47.0	1.963	2.727	15.5								

EPHEMERIDES

1 1.2

1 1.2

2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
304843	2007 <i>RF</i> ₄₀		1 1.2 31°98	1.6/ 1.4 16			291517	2006 <i>DS</i> ₂₁₁		1 1.2 48°07	4.7/ 1.9 18		
11 23	7 10.90	+18 29.1	1.258	2.063	20.4	20.8	11 23	7 11.76	+12 46.9	1.448	2.230	19.3	20.6
12 3	7 8.08	+18 34.1	1.196	2.075	16.3	20.6	12 3	7 8.28	+12 19.2	1.376	2.238	15.7	20.4
12 13	7 1.73	+18 49.1	1.153	2.089	11.3	20.3	12 13	7 1.65	+12 3.8	1.323	2.245	11.5	20.2
12 23	6 52.65	+19 12.3	1.131	2.103	5.8	20.0	12 23	6 52.58	+12 2.0	1.293	2.253	7.1	19.9
1 2	6 42.19	+19 40.6	1.135	2.118	1.6	19.8	1 2	6 42.23	+12 14.1	1.288	2.261	4.7	19.8
1 12	6 32.11	+20 10.7	1.165	2.133	6.3	20.2	1 12	6 32.10	+12 38.3	1.310	2.270	7.1	20.0
1 22	6 23.95	+20 39.9	1.220	2.150	11.4	20.5	1 22	6 23.59	+13 11.8	1.358	2.279	11.4	20.3
2 1	6 18.82	+21 7.0	1.297	2.167	15.9	20.8	2 1	6 17.74	+13 51.4	1.429	2.287	15.4	20.5
281737	2008 <i>YB</i> ₁₉		1 1.2 83°37	2.8/ 2.3 18			161187	2002 <i>TD</i> ₁₃₉		1 1.2 67°76	0.3/ 1.2 18		
11 23	7 9.61	+10 47.5	2.405	3.149	13.6	20.5	11 23	7 11.91	+22 47.7	2.154	2.923	14.2	19.7
12 3	7 5.29	+11 17.9	2.320	3.159	11.0	20.3	12 3	7 7.28	+22 37.1	2.080	2.941	11.2	19.5
12 13	6 58.95	+11 59.9	2.257	3.169	7.9	20.1	12 13	7 0.34	+22 28.2	2.030	2.959	7.6	19.3
12 23	6 51.06	+12 52.7	2.221	3.179	4.8	20.0	12 23	6 51.72	+22 19.8	2.006	2.976	3.7	19.1
1 2	6 42.34	+13 54.1	2.215	3.190	2.8	19.8	1 2	6 42.32	+22 10.8	2.011	2.994	0.4	18.9
1 12	6 33.68	+15 1.1	2.240	3.200	4.6	20.0	1 12	6 33.21	+22 0.8	2.047	3.012	4.3	19.2
1 22	6 25.93	+16 10.2	2.295	3.210	7.7	20.2	1 22	6 25.33	+21 49.9	2.111	3.030	8.0	19.5
2 1	6 19.81	+17 18.5	2.378	3.220	10.6	20.4	2 1	6 19.43	+21 39.0	2.201	3.048	11.2	19.7
467344	2002 <i>US</i> ₄₃		1 1.2 99°80	1.6/ 1.6 18			473989	2016 <i>EC</i> ₂₀₂		1 1.2 194°49	3.0/ 31.7 18		
11 23	7 5.69	+15 58.2	3.712	4.454	9.2	22.1	11 23	7 13.92	+30 41.1	2.164	2.933	14.1	21.8
12 3	7 1.38	+15 50.8	3.634	4.476	7.3	22.0	12 3	7 9.33	+31 9.1	2.074	2.932	11.3	21.6
12 13	6 55.82	+15 47.1	3.581	4.498	5.1	21.9	12 13	7 2.06	+31 35.4	2.007	2.931	8.0	21.4
12 23	6 49.38	+15 47.1	3.556	4.519	2.9	21.7	12 23	6 52.71	+31 56.1	1.966	2.930	4.7	21.2
1 2	6 42.51	+15 50.4	3.563	4.540	1.6	21.6	1 2	6 42.23	+32 7.3	1.954	2.929	3.1	21.1
1 12	6 35.77	+15 56.5	3.601	4.561	3.0	21.8	1 12	6 31.85	+32 7.2	1.971	2.927	5.5	21.3
1 22	6 29.65	+16 4.7	3.670	4.581	5.2	22.0	1 22	6 22.73	+31 56.1	2.017	2.926	8.9	21.5
2 1	6 24.57	+16 14.6	3.768	4.602	7.2	22.1	2 1	6 15.82	+31 36.5	2.089	2.924	12.1	21.7
49512	1999 <i>CJ</i> ₂₇		1 1.2 27°08	3.8/ 31.5 18			278763	2008 <i>SD</i> ₁₃₈		1 1.2 59°98	0.8/ 1.3 18		
11 23	7 11.30	+27 33.5	1.180	1.997	20.8	17.2	11 23	7 10.43	+19 42.6	2.024	2.797	14.8	20.9
12 3	7 8.88	+28 32.3	1.129	2.015	16.5	17.0	12 3	7 6.36	+19 53.7	1.949	2.811	11.7	20.7
12 13	7 2.51	+29 33.4	1.096	2.034	11.4	16.7	12 13	6 59.87	+20 10.3	1.896	2.825	8.1	20.5
12 23	6 53.08	+30 29.5	1.085	2.055	6.3	16.5	12 23	6 51.56	+20 30.9	1.868	2.838	4.0	20.3
1 2	6 42.16	+31 12.9	1.099	2.077	3.9	16.5	1 2	6 42.35	+20 53.2	1.870	2.852	0.8	20.1
1 12	6 31.77	+31 39.4	1.138	2.100	7.6	16.7	1 12	6 33.32	+21 15.2	1.901	2.866	4.5	20.4
1 22	6 23.64	+31 49.1	1.201	2.124	12.3	17.1	1 22	6 25.51	+21 35.8	1.960	2.881	8.4	20.6
2 1	6 18.93	+31 45.3	1.286	2.149	16.4	17.4	2 1	6 19.72	+21 54.3	2.045	2.895	11.7	20.9
136855	1998 <i>EE</i> ₅		1 1.2 150°79	1.4/ 31.9 18			517536	2014 <i>SZ</i> ₁₄₂		1 1.2 106°89	13.6/ 5.7 17		
11 23	7 10.91	+27 35.4	2.834	3.593	11.4	20.7	11 23	7 13.39	-19 11.7	2.359	2.940	17.4	22.1
12 3	7 6.12	+27 48.2	2.745	3.599	9.0	20.6	12 3	7 8.20	-21 2.3	2.310	2.964	16.2	22.1
12 13	6 59.40	+28 0.3	2.679	3.605	6.2	20.4	12 13	7 0.86	-22 29.0	2.278	2.987	15.0	22.0
12 23	6 51.24	+28 9.7	2.642	3.610	3.2	20.2	12 23	6 51.97	-23 25.7	2.265	3.009	14.1	22.0
1 2	6 42.34	+28 14.4	2.635	3.615	1.4	20.1	1 2	6 42.31	-23 48.3	2.272	3.031	13.7	22.0
1 12	6 33.56	+28 13.5	2.659	3.620	3.9	20.3	1 12	6 32.87	-23 36.2	2.301	3.052	13.7	22.0
1 22	6 25.69	+28 6.9	2.714	3.625	6.8	20.5	1 22	6 24.52	-22 52.6	2.350	3.073	14.3	22.1
2 1	6 19.40	+27 55.9	2.795	3.629	9.5	20.7	2 1	6 17.97	-21 42.9	2.419	3.093	15.1	22.2
446304	2014 <i>EN</i> ₁₄		1 1.2 166°82	3.7/ 1.9 18			54538	2000 <i>QC</i> ₅₁		1 1.2 217°69	5.7/ 31.0 18		
11 23	7 15.45	+12 55.2	1.791	2.548	17.1	22.1	11 23	7 16.94	+43 32.4	2.995	3.723	11.5	19.1
12 3	7 10.66	+12 44.6	1.705	2.553	13.8	21.9	12 3	7 11.28	+44 10.8	2.898	3.716	9.6	19.0
12 13	7 3.04	+12 44.9	1.641	2.557	10.0	21.7	12 13	7 3.18	+44 41.4	2.826	3.708	7.7	18.9
12 23	6 53.20	+12 56.4	1.601	2.561	6.1	21.4	12 23	6 53.19	+44 59.4	2.779	3.700	6.2	18.7
1 2	6 42.15	+13 18.3	1.589	2.564	3.7	21.3	1 2	6 42.19	+45 1.1	2.761	3.691	5.7	18.7
1 12	6 31.20	+13 48.8	1.607	2.566	6.1	21.5	1 12	6 31.30	+44 44.9	2.773	3.682	6.7	18.8
1 22	6 21.58	+14 25.3	1.652	2.567	10.1	21.7	1 22	6 21.55	+44 12.2	2.813	3.673	8.5	18.9
2 1	6 14.31	+15 5.3	1.723	2.568	13.8	21.9	2 1	6 13.81	+43 26.1	2.878	3.663	10.5	19.0
425503	2010 <i>GR</i> ₁₄₆		1 1.2 242°55	2.8/ 2.1 16			276653	2003 <i>US</i> ₃₀₈		1 1.2 133°50	0.8/ 1.3 18		
11 23	7 8.36	+10 39.9	3.237	3.965	10.7	22.4	11 23	7 10.58	+20 20.3	2.299	3.064	13.5	20.8
12 3	7 3.91	+10 49.2	3.117	3.946	8.7	22.2	12 3	7 6.24	+20 20.7	2.211	3.068	10.7	20.6
12 13	6 57.84	+11 6.7	3.022	3.927	6.4	22.1	12 13	6 59.69	+20 25.0	2.145	3.072	7.4	20.4
12 23	6 50.50	+11 32.3	2.954	3.907	4.1	21.9	12 23	6 51.47	+20 32.0	2.107	3.077	3.7	20.2
1 2	6 42.40	+12 5.5	2.917	3.887	2.8	21.8	1 2	6 42.36	+20 40.4	2.098	3.080	0.8	20.0
1 12	6 34.20	+12 45.0	2.912	3.866	4.1	21.8	1 12	6 33.36	+20 48.9	2.119	3.084	4.2	20.3
1 22	6 26.56	+13 29.1	2.938	3.845	6.5	22.0	1 22	6 25.40	+20 56.9	2.169	3.088	7.8	20.5
2 1	6 20.07	+14 15.9	2.993	3.823	9.0	22.1	2 1	6 19.25	+21 4.2	2.246	3.091	11.0	20.7
364394	2006 <i>VE</i> ₈₅		1 1.2 66°58	7.1/ 2.1 17			162912	2001 <i>MD</i> ₁₂		1 1.2 60°53	2.1/ 31.6 18		
11 23	7 12.80	+ 7 35.1	1.690	2.443	18.1	20.4	11 23	7 12.34	+25 58.2	2.091	2.864	14.4	19.3
12 3	7 8.33	+ 6 27.7	1.627	2.464	15.0	20.2	12 3	7 7.91	+26 49.9	2.022	2.885	11.3	19.1
12 13	7 1.22	+ 5 33.6	1.586	2.485	11.6	20.1	12 13	7 0.96	+27 44.0	1.977	2.906	7.8	19.0
12 23	6 52.18	+ 4 56.4	1.567	2.506	8.5	20.0	12 23	6 52.11	+28 36.1	1.958	2.926	4.1	18.8
1 2	6 42.26	+ 4 38.4	1.576	2.528	7.1	19.9	1 2	6 42.30	+29 21.9	1.968	2.947	2.1	18.7
1 12	6 32.70	+ 4 39.7	1.611	2.549	8.4	20.0	1 12	6 32.69	+29 58.4	2.009	2.968	5.0	18.9
1 22	6 24.61	+ 4 58.1	1.673	2.570	11.2	20.3	1 22	6 24.36	+30 24.6	2.078	2.989	8.5	19.2
2 1	6 18.80	+ 5 29.7	1.758	2.591	14.1	20.5	2 1	6 18.15	+30 41.3	2.172	3.010	11.6	19.4
493805	2015 <i>VH</i> ₅₅		1 1.2 353°78	4.0/ 1.6 17			495076	2011 <i>HT</i> ₂₉		1 1.2 171°05	4.4/ 2.2 17		
11 23	7 9.74	+15 32.8											

EPHEMERIDES

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
239469	2007 <i>TG</i> ₄₂₈		1 1.2 221°14	0°4/ 1.3 17			187881	2000 <i>QY</i> ₂₁₁		1 1.2 78°91	1°7/ 1.5 18		
11 23	7 9.05	+20 49.1	2.739	3.498	11.7	21.1	11 23	7 13.18	+17 55.5	1.921	2.689	15.7	20.8
12 3	7 4.78	+21 0.4	2.638	3.492	9.3	20.9	12 3	7 8.50	+17 50.4	1.853	2.710	12.5	20.6
12 13	6 58.59	+21 15.3	2.560	3.486	6.4	20.7	12 13	7 1.30	+17 51.6	1.806	2.732	8.7	20.5
12 23	6 50.92	+21 32.4	2.510	3.480	3.2	20.5	12 23	6 52.26	+17 58.2	1.785	2.753	4.6	20.3
1 2	6 42.43	+21 50.2	2.490	3.473	0.4	20.3	1 2	6 42.36	+18 8.8	1.793	2.774	1.8	20.1
1 12	6 33.93	+22 7.3	2.501	3.466	3.7	20.5	1 12	6 32.75	+18 22.0	1.830	2.795	4.9	20.4
1 22	6 26.23	+22 22.7	2.542	3.458	6.9	20.7	1 22	6 24.51	+18 36.6	1.896	2.815	8.7	20.6
2 1	6 20.02	+22 36.2	2.610	3.451	9.8	20.9	2 1	6 18.42	+18 51.9	1.987	2.836	12.1	20.9
60474	2000 <i>DT</i> ₃₂		1 1.2 14°10	0°1/ 1.2 18			79491	1998 <i>FS</i> ₄₂		1 1.2 358°43	0°6/ 1.3 18		
11 23	7 10.04	+22 15.9	1.998	2.776	14.8	19.5	11 23	7 7.68	+21 31.1	1.832	2.620	15.6	18.7
12 3	7 6.24	+22 20.2	1.912	2.778	11.8	19.3	12 3	7 4.65	+21 26.8	1.747	2.617	12.4	18.4
12 13	6 59.93	+22 27.9	1.848	2.779	8.1	19.1	12 13	6 58.98	+21 26.5	1.682	2.615	8.6	18.2
12 23	6 51.67	+22 37.2	1.810	2.781	4.0	18.9	12 23	6 51.26	+21 28.7	1.643	2.614	4.3	17.9
1 2	6 42.36	+22 46.2	1.800	2.783	0.4	18.6	1 2	6 42.44	+21 32.0	1.631	2.614	0.7	17.7
1 12	6 33.17	+22 53.5	1.819	2.785	4.7	18.9	1 12	6 33.72	+21 35.1	1.647	2.614	4.9	18.0
1 22	6 25.19	+22 58.3	1.866	2.788	8.7	19.2	1 22	6 26.26	+21 37.4	1.691	2.616	9.2	18.2
2 1	6 19.29	+23 1.0	1.939	2.790	12.2	19.4	2 1	6 20.98	+21 39.2	1.759	2.618	12.9	18.5
1256	Normannia		1 1.2 113°01	0°9/ 1.4 18			161986	3418 <i>T</i> ₋₂		1 1.2 180°91	2°0/ 31.8 18		
11 23	7 5.91	+19 21.1	3.265	4.019	10.1	15.9	11 23	7 15.37	+27 30.9	2.186	2.951	14.1	20.7
12 3	7 1.88	+19 16.3	3.174	4.025	8.0	15.8	12 3	7 10.37	+27 58.2	2.095	2.953	11.2	20.5
12 13	6 56.35	+19 14.5	3.107	4.031	5.5	15.6	12 13	7 2.75	+28 26.1	2.027	2.953	7.8	20.2
12 23	6 49.73	+19 14.9	3.069	4.037	2.8	15.4	12 23	6 53.08	+28 50.9	1.985	2.953	4.2	20.0
1 2	6 42.55	+19 17.1	3.061	4.043	0.9	15.3	1 2	6 42.28	+29 9.2	1.973	2.953	2.1	19.9
1 12	6 35.45	+19 20.4	3.085	4.049	3.2	15.5	1 12	6 31.54	+29 18.8	1.992	2.952	5.0	20.1
1 22	6 29.03	+19 24.4	3.139	4.054	5.8	15.6	1 22	6 22.03	+29 19.5	2.039	2.950	8.7	20.3
2 1	6 23.81	+19 28.9	3.220	4.060	8.2	15.8	2 1	6 14.66	+29 12.9	2.112	2.948	12.0	20.5
106596	2000 <i>WE</i> ₁₁₀		1 1.2 16°41	3°0/ 31.9 18			434176	2002 <i>UA</i>		1 1.2 73°50	11°5/ 29.9 18		
11 23	7 11.77	+28 24.4	1.203	2.018	20.6	19.2	11 23	7 34.86	+42 32.9	1.395	2.153	21.1	21.1
12 3	7 9.37	+28 43.3	1.138	2.023	16.4	19.0	12 3	7 28.33	+45 16.6	1.361	2.193	17.6	21.0
12 13	7 2.97	+29 1.9	1.090	2.029	11.5	18.7	12 13	7 16.47	+47 47.9	1.347	2.232	14.3	20.9
12 23	6 53.41	+29 14.9	1.065	2.036	6.1	18.5	12 23	7 0.19	+49 49.9	1.358	2.270	12.0	20.9
1 2	6 42.20	+29 17.2	1.064	2.044	3.1	18.3	1 2	6 41.64	+51 8.8	1.394	2.308	11.6	20.9
1 12	6 31.40	+29 6.8	1.088	2.053	7.2	18.6	1 12	6 23.82	+51 40.7	1.456	2.345	13.0	21.1
1 22	6 22.80	+28 45.3	1.136	2.063	12.3	18.9	1 22	6 9.34	+51 32.3	1.541	2.381	15.4	21.4
2 1	6 17.65	+28 16.6	1.205	2.074	16.9	19.2	2 1	5 59.78	+50 55.5	1.646	2.416	17.7	21.6
118310	1998 <i>VP</i> ₃₂		1 1.2 346°35	5°4/ 3.9 18			247984	2004 <i>CL</i> ₇₁		1 1.2 330°58	2°2/ 1.7 18		
11 23	7 9.48	+ 1 26.9	1.072	1.854	24.7	17.8	11 23	7 7.49	+15 47.4	2.022	2.794	14.9	20.4
12 3	7 8.08	+ 3 1.5	0.984	1.840	20.9	17.5	12 3	7 4.27	+15 53.2	1.926	2.785	12.0	20.2
12 13	7 2.71	+ 5 25.3	0.912	1.828	16.0	17.2	12 13	6 58.63	+16 7.7	1.851	2.777	8.5	19.9
12 23	6 53.69	+ 8 41.4	0.860	1.818	10.2	16.8	12 23	6 51.10	+16 30.5	1.802	2.769	4.7	19.7
1 2	6 42.14	+12 42.2	0.834	1.810	5.6	16.5	1 2	6 42.45	+17 0.0	1.782	2.761	2.2	19.5
1 12	6 30.00	+17 7.0	0.836	1.803	8.1	16.7	1 12	6 33.78	+17 34.3	1.790	2.754	5.0	19.7
1 22	6 19.47	+21 29.4	0.864	1.799	14.2	17.0	1 22	6 26.14	+18 11.0	1.826	2.747	8.8	19.9
2 1	6 12.48	+25 28.0	0.918	1.796	20.0	17.3	2 1	6 20.41	+18 48.2	1.887	2.741	12.4	20.1
426237	2012 <i>PX</i> ₄		1 1.2 83°01	1°4/ 1.0 18			318868	2005 <i>TY</i> ₇₉		1 1.2 119°84	2°2/ 31.9 18		
11 23	7 12.05	+27 43.4	2.329	3.097	13.3	20.7	11 23	7 21.03	+28 10.9	1.709	2.481	17.2	21.3
12 3	7 7.42	+27 44.2	2.245	3.104	10.5	20.5	12 3	7 15.28	+28 26.3	1.638	2.498	13.7	21.1
12 13	7 0.49	+27 43.8	2.184	3.111	7.3	20.3	12 13	7 6.27	+28 40.8	1.588	2.515	9.5	20.9
12 23	6 51.85	+27 39.8	2.150	3.119	3.7	20.1	12 23	6 54.80	+28 49.9	1.563	2.531	5.0	20.7
1 2	6 42.36	+27 30.4	2.145	3.126	1.5	19.9	1 2	6 42.14	+28 49.8	1.567	2.547	2.3	20.6
1 12	6 33.07	+27 15.2	2.170	3.133	4.4	20.2	1 12	6 29.90	+28 39.2	1.600	2.562	5.8	20.8
1 22	6 24.94	+26 54.7	2.225	3.140	7.8	20.4	1 22	6 19.51	+28 19.7	1.662	2.576	10.1	21.1
2 1	6 18.75	+26 30.9	2.306	3.148	10.9	20.6	2 1	6 11.97	+27 54.4	1.748	2.590	13.8	21.4
218937	2008 <i>CU</i> ₁₁₉		1 1.2 266°13	4°9/ 1.7 18			222755	2002 <i>CH</i> ₂₉		1 1.2 271°98	5°6/ 31.5 18		
11 23	7 10.93	+11 37.5	1.905	2.664	16.1	20.6	11 23	7 17.06	+37 57.3	2.075	2.836	14.9	20.3
12 3	7 7.06	+10 55.9	1.806	2.653	13.3	20.4	12 3	7 12.35	+38 31.2	1.976	2.823	12.3	20.1
12 13	7 0.60	+10 22.9	1.729	2.641	9.9	20.1	12 13	7 4.48	+38 58.7	1.899	2.809	9.3	19.9
12 23	6 52.07	+10 0.6	1.676	2.629	6.6	19.9	12 23	6 54.06	+39 13.9	1.847	2.795	6.7	19.7
1 2	6 42.34	+ 9 50.6	1.651	2.618	4.9	19.8	1 2	6 42.19	+39 11.4	1.823	2.781	5.7	19.6
1 12	6 32.56	+ 9 53.0	1.654	2.605	6.8	19.9	1 12	6 30.36	+38 49.1	1.828	2.767	7.4	19.7
1 22	6 23.89	+10 6.8	1.684	2.593	10.3	20.1	1 22	6 20.03	+38 8.6	1.860	2.753	10.5	19.8
2 1	6 17.29	+10 30.2	1.739	2.581	13.8	20.3	2 1	6 12.33	+37 14.7	1.916	2.739	13.6	20.0
169345	2001 <i>TS</i> ₂₁₁		1 1.2 75°86	2°9/ 31.2 18			84628	2002 <i>VB</i> ₄₉		1 1.2 320°27	0°4/ 1.3 18		
11 23	7 12.60	+28 21.1	2.332	3.099	13.3	19.9	11 23	7 8.27	+20 19.4	1.476	2.276	18.2	18.6
12 3	7 8.04	+29 27.9	2.255	3.112	10.5	19.7	12 3	7 6.16	+20 38.0	1.375	2.253	14.6	18.3
12 13	7 1.07	+30 36.2	2.201	3.126	7.4	19.5	12 13	7 0.74	+21 5.7	1.294	2.230	10.3	18.0
12 23	6 52.22	+31 41.2	2.176	3.140	4.3	19.4	12 23	6 52.46	+21 40.6	1.235	2.208	5.2	17.6
1 2	6 42.34	+32 38.1	2.180	3.153	3.0	19.3	1 2	6 42.32	+22 19.2	1.203	2.186	0.6	17.2
1 12	6 32.53	+33 23.5	2.215	3.167	5.3	19.5	1 12	6 31.88	+22 57.6	1.197	2.165	6.1	17.5
1 22	6 23.83	+33 56.2	2.278	3.181	8.4	19.7	1 22	6 22.80	+23 32.6	1.217	2.145	11.6	17.8
2 1	6 17.11	+34 17.0	2.368	3.194	11.2	19.9	2 1	6 16.48	+24 2.9	1.259	2.126	16.4	18.0
426427	2013 <i>QV</i> ₂₃		1 1.2 71°26	0°8/ 1.1 18			184565	2005 <i>QD</i> ₇₄		1 1.2 131°06	5°9/ 2.5 18		
11 23	7 12.04	+24 33.6	2.010	2.786</									

EPHEMERIDES

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
158167	2001 <i>QS</i> ₁₉₇		1 1.2 51°42'	3°8'	1.5	18	297001	2010 <i>FW</i> ₂₈		1 1.2 314°46'	4°5'	1.9	18
11 23	7 15.33	+16 45.2	1.235	2.031	21.3	19.2	11 23	7 10.50	+13 35.6	1.397	2.186	19.6	20.8
12 3	7 11.33	+16 1.9	1.181	2.053	17.0	19.0	12 3	7 7.76	+13 11.9	1.309	2.176	16.0	20.5
12 13	7 3.77	+15 27.6	1.146	2.076	12.0	18.8	12 13	7 1.69	+13 0.1	1.241	2.167	11.7	20.3
12 23	6 53.60	+15 3.5	1.132	2.099	6.8	18.6	12 23	6 52.86	+13 1.8	1.194	2.158	7.1	20.0
1 2	6 42.27	+14 49.9	1.144	2.122	3.8	18.5	1 2	6 42.39	+13 17.2	1.173	2.149	4.5	19.8
1 12	6 31.55	+14 46.4	1.182	2.145	7.1	18.7	1 12	6 31.85	+13 44.9	1.178	2.140	7.3	19.9
1 22	6 22.94	+14 51.6	1.245	2.169	11.8	19.1	1 22	6 22.83	+14 21.8	1.208	2.132	12.1	20.2
2 1	6 17.42	+15 3.7	1.330	2.193	16.0	19.4	2 1	6 16.61	+15 4.7	1.260	2.125	16.6	20.4
9301	1985 <i>RB</i> ₄		1 1.2 134°64'	0°7'	1.3	18	213309	2001 <i>RV</i> ₈₀		1 1.2 87°92'	4°6'	31.1	18
11 23	7 18.44	+20 17.3	1.813	2.578	16.6	19.7	11 23	7 21.55	+33 13.4	2.133	2.887	14.8	21.1
12 3	7 12.95	+20 23.4	1.737	2.594	13.2	19.5	12 3	7 15.22	+34 28.2	2.076	2.922	11.8	20.9
12 13	7 4.56	+20 35.0	1.681	2.608	9.1	19.3	12 13	7 6.01	+35 39.8	2.043	2.957	8.5	20.8
12 23	6 53.96	+20 49.7	1.652	2.622	4.5	19.1	12 23	6 54.65	+36 41.5	2.037	2.990	5.6	20.7
1 2	6 42.24	+21 5.3	1.652	2.635	0.8	18.8	1 2	6 42.25	+37 27.7	2.061	3.023	4.7	20.7
1 12	6 30.78	+21 19.6	1.682	2.647	5.1	19.2	1 12	6 30.21	+37 55.6	2.116	3.056	6.5	20.8
1 22	6 20.84	+21 31.8	1.740	2.658	9.5	19.5	1 22	6 19.76	+38 6.0	2.199	3.087	9.3	21.1
2 1	6 13.38	+21 42.2	1.824	2.668	13.2	19.7	2 1	6 11.83	+38 2.2	2.307	3.118	12.0	21.3
427047	2014 <i>TP</i> ₅₆		1 1.2 86°75'	0°3'	1.3	18	240508	2004 <i>EK</i> ₈₀		1 1.2 318°22'	1°5'	1.6	18
11 23	7 12.14	+20 18.2	1.931	2.704	15.4	20.9	11 23	7 7.80	+16 31.7	2.049	2.821	14.7	20.2
12 3	7 7.93	+20 39.6	1.851	2.713	12.2	20.7	12 3	7 4.61	+16 54.7	1.945	2.806	11.8	20.0
12 13	7 1.12	+21 7.0	1.793	2.723	8.4	20.5	12 13	6 58.98	+17 27.4	1.864	2.791	8.3	19.8
12 23	6 52.28	+21 38.3	1.761	2.732	4.2	20.3	12 23	6 51.36	+18 8.5	1.808	2.776	4.4	19.5
1 2	6 42.38	+22 10.5	1.758	2.741	0.5	20.0	1 2	6 42.53	+18 55.8	1.780	2.762	1.5	19.3
1 12	6 32.63	+22 40.8	1.784	2.750	4.8	20.4	1 12	6 33.57	+19 46.2	1.782	2.748	4.8	19.5
1 22	6 24.14	+23 7.8	1.839	2.759	8.9	20.6	1 22	6 25.56	+20 36.7	1.812	2.734	8.8	19.7
2 1	6 17.84	+23 30.7	1.919	2.769	12.4	20.9	2 1	6 19.46	+21 25.1	1.867	2.721	12.5	19.9
478156	2011 <i>UP</i> ₁₅₉		1 1.2 226°91'	19°4'	31.9	18	128463	2004 <i>OD</i> ₅		1 1.2 245°70'	0°5'	1.1	18
11 23	7 14.78	-7 51.6	1.182	1.907	25.8	20.7	11 23	7 12.88	+24 32.5	1.959	2.735	15.2	20.1
12 3	7 11.45	-10 58.4	1.121	1.905	23.6	20.6	12 3	7 8.61	+24 31.5	1.870	2.734	12.1	19.9
12 13	7 4.38	-13 41.0	1.076	1.903	21.5	20.4	12 13	7 1.66	+24 31.9	1.803	2.733	8.3	19.6
12 23	6 54.20	-15 44.5	1.047	1.901	19.9	20.3	12 23	6 52.60	+24 31.3	1.762	2.733	4.1	19.4
1 2	6 42.21	-16 55.9	1.037	1.899	19.4	20.3	1 2	6 42.43	+24 27.8	1.749	2.732	0.6	19.1
1 12	6 30.26	-17 9.2	1.046	1.896	20.2	20.3	1 12	6 32.38	+24 20.4	1.765	2.731	4.9	19.4
1 22	6 20.12	-16 28.0	1.072	1.894	21.9	20.4	1 22	6 23.63	+24 9.3	1.810	2.730	9.0	19.7
2 1	6 13.18	-15 2.3	1.113	1.891	24.0	20.5	2 1	6 17.11	+23 55.8	1.880	2.729	12.7	19.9
463289	2012 <i>HN</i> ₃₁		1 1.2 237°27'	1°3'	1.5	17	414560	2009 <i>SD</i> ₂₉₆		1 1.2 75°07'	1°7'	1.6	18
11 23	7 11.40	+17 25.5	2.456	3.210	13.0	22.3	11 23	7 10.73	+16 45.6	1.977	2.746	15.3	21.3
12 3	7 6.95	+17 38.6	2.346	3.196	10.5	22.1	12 3	7 6.75	+16 57.7	1.894	2.753	12.2	21.1
12 13	7 0.30	+17 58.3	2.259	3.182	7.3	21.9	12 13	7 0.29	+17 18.0	1.833	2.759	8.5	20.9
12 23	6 51.89	+18 23.6	2.200	3.167	3.9	21.7	12 23	6 51.91	+17 45.4	1.798	2.766	4.5	20.7
1 2	6 42.43	+18 52.7	2.170	3.152	1.3	21.5	1 2	6 42.50	+18 17.9	1.791	2.772	1.7	20.5
1 12	6 32.87	+19 23.8	2.172	3.136	4.3	21.6	1 12	6 33.19	+18 52.9	1.814	2.779	4.8	20.7
1 22	6 24.14	+19 55.1	2.203	3.119	7.9	21.8	1 22	6 25.05	+19 28.3	1.865	2.785	8.7	21.0
2 1	6 17.07	+20 25.4	2.261	3.102	11.1	22.0	2 1	6 18.96	+20 2.5	1.941	2.792	12.3	21.2
54442	2000 <i>MS</i> ₅		1 1.2 210°00'	5°1'	2.6	18	194065	2001 <i>SX</i> ₁₂₉		1 1.2 153°00'	3°9'	1.8	18
11 23	7 10.78	+6 5.1	2.445	3.169	13.9	19.5	11 23	7 15.43	+13 8.7	1.846	2.602	16.7	21.3
12 3	7 6.29	+5 52.7	2.343	3.162	11.6	19.4	12 3	7 10.52	+12 45.8	1.763	2.610	13.5	21.1
12 13	6 59.73	+5 52.5	2.264	3.155	8.9	19.2	12 13	7 2.90	+12 32.3	1.701	2.617	9.8	20.9
12 23	6 51.56	+6 5.9	2.210	3.148	6.4	19.0	12 23	6 53.20	+12 29.1	1.665	2.624	6.0	20.7
1 2	6 42.47	+6 33.2	2.185	3.140	5.1	18.9	1 2	6 42.39	+12 36.0	1.657	2.630	3.9	20.6
1 12	6 33.34	+7 13.4	2.189	3.131	6.2	19.0	1 12	6 31.73	+12 51.9	1.678	2.635	6.1	20.7
1 22	6 25.03	+8 3.8	2.223	3.122	8.7	19.1	1 22	6 22.41	+13 15.1	1.727	2.640	9.9	20.9
2 1	6 18.32	+9 1.5	2.284	3.112	11.5	19.3	2 1	6 15.34	+13 43.6	1.801	2.644	13.4	21.2
145542	2006 <i>HA</i> ₈₂		1 1.2 162°72'	0°6'	1.3	18	153344	2001 <i>OR</i> ₁₀₆		1 1.2 155°55'	1°7'	1.0	18
11 23	7 15.08	+20 38.5	2.048	2.812	15.0	21.4	11 23	7 20.65	+27 43.3	2.079	2.836	15.0	20.7
12 3	7 10.12	+20 44.9	1.960	2.817	11.9	21.2	12 3	7 14.49	+27 50.9	1.994	2.847	11.9	20.5
12 13	7 2.56	+20 55.8	1.895	2.822	8.2	21.0	12 13	7 5.53	+27 57.4	1.932	2.857	8.3	20.3
12 23	6 52.99	+21 9.5	1.856	2.826	4.1	20.8	12 23	6 54.44	+27 59.4	1.897	2.865	4.3	20.1
1 2	6 42.35	+21 23.8	1.847	2.830	0.7	20.5	1 2	6 42.29	+27 54.1	1.892	2.873	1.7	19.9
1 12	6 31.82	+21 37.1	1.868	2.833	4.7	20.8	1 12	6 30.38	+27 40.4	1.918	2.880	5.0	20.1
1 22	6 22.54	+21 48.6	1.918	2.836	8.7	21.1	1 22	6 19.95	+27 19.6	1.974	2.886	8.9	20.4
2 1	6 15.40	+21 58.1	1.994	2.837	12.3	21.3	2 1	6 11.91	+26 54.2	2.056	2.891	12.3	20.6
84571	2002 <i>VR</i> ₁₃		1 1.2 89°25'	2°3'	1.5	18	114070	2002 <i>VG</i> ₃₀		1 1.2 336°09'	3°5'	1.5	18
11 23	7 12.74	+17 23.4	1.820	2.592	16.3	19.4	11 23	7 12.05	+17 18.4	1.302	2.101	20.2	19.6
12 3	7 8.44	+17 8.0	1.742	2.602	13.0	19.2	12 3	7 9.17	+16 39.8	1.222	2.096	16.4	19.3
12 13	7 1.46	+16 59.3	1.686	2.611	9.2	19.0	12 13	7 2.72	+16 8.2	1.159	2.091	11.7	19.0
12 23	6 52.46	+16 56.8	1.654	2.621	5.0	18.8	12 23	6 53.36	+15 44.9	1.119	2.087	6.7	18.7
1 2	6 42.41	+16 59.7	1.651	2.631	2.3	18.6	1 2	6 42.36	+15 30.4	1.104	2.083	3.6	18.5
1 12	6 32.58	+17 7.0	1.677	2.640	5.3	18.9	1 12	6 31.47	+15 24.9	1.115	2.080	7.2	18.8
1 22	6 24.11	+17 17.7	1.730	2.650	9.4	19.1	1 22	6 22.33	+15 27.6	1.150	2.077	12.3	19.0
2 1	6 17.89	+17 30.9	1.808	2.659	13.0	19.4	2 1	6 16.23	+15 37.5	1.207	2.074	17.0	19.3
426293	2012 <i>TH</i> ₈₂		1 1.2 219°40'	6°1'	30.6	18	154748	2004 <i>OS</i> ₉		1 1.2 110°45'	1°8'	31.8	18
11 23	7 16.61	+42 55.3	2.829	3.563	11.9								

EPHEMERIDES

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
148369	2000 SW ₁₀₈		1 1.2 137°19	1.2/ 1.5	18		336846	2011 FC ₃₄		1 1.2 182°42	2°1/ 1.7	18	
11 23	7 12.52	+18 43.8	2.330	3.087	13.6	20.9	11 23	7 9.15	+15 32.1	2.730	3.479	12.0	21.4
12 3	7 7.69	+18 44.9	2.245	3.098	10.8	20.7	12 3	7 4.79	+15 26.7	2.634	3.479	9.6	21.2
12 13	7 0.68	+18 51.0	2.184	3.108	7.5	20.5	12 13	6 58.59	+15 27.1	2.561	3.479	6.8	21.1
12 23	6 52.01	+19 0.9	2.150	3.118	3.9	20.3	12 23	6 50.99	+15 33.0	2.516	3.479	3.9	20.9
1 2	6 42.50	+19 13.3	2.145	3.127	1.2	20.1	1 2	6 42.65	+15 43.8	2.501	3.478	2.1	20.7
1 12	6 33.13	+19 26.9	2.172	3.136	4.2	20.3	1 12	6 34.34	+15 58.6	2.517	3.477	4.1	20.9
1 22	6 24.82	+19 40.7	2.227	3.144	7.7	20.6	1 22	6 26.84	+16 16.3	2.562	3.476	7.0	21.1
2 1	6 18.32	+19 54.3	2.310	3.152	10.9	20.8	2 1	6 20.79	+16 36.0	2.635	3.475	9.8	21.2
429749	2011 SC ₁₁₃		1 1.2 30°49	24°2/13.8	18		133470	2003 SJ ₂₄₈		1 1.2 119°56	1°1/ 1.4	18	
11 23	7 8.35	-19 57.7	0.927	1.636	32.4	20.2	11 23	7 16.07	+19 32.5	1.957	2.720	15.6	21.5
12 3	7 6.99	-22 7.4	0.889	1.643	30.5	20.0	12 3	7 10.85	+19 32.7	1.882	2.738	12.4	21.3
12 13	7 1.54	-23 27.5	0.860	1.652	28.4	19.9	12 13	7 3.01	+19 38.1	1.829	2.754	8.6	21.1
12 23	6 52.84	-23 43.7	0.840	1.663	26.4	19.8	12 23	6 53.22	+19 47.2	1.802	2.770	4.4	20.9
1 2	6 42.44	-22 45.6	0.833	1.674	24.9	19.8	1 2	6 42.46	+19 58.2	1.804	2.786	1.1	20.7
1 12	6 32.40	-20 33.4	0.839	1.686	24.2	19.8	1 12	6 31.97	+20 9.5	1.836	2.801	4.8	21.0
1 22	6 24.60	-17 19.1	0.860	1.700	24.5	19.9	1 22	6 22.84	+20 20.3	1.897	2.815	8.8	21.2
2 1	6 20.34	-13 22.7	0.898	1.714	25.7	20.0	2 1	6 15.94	+20 30.4	1.984	2.829	12.3	21.5
206838	2004 EV ₇₀		1 1.2 342°90	0°7/ 1.3	18		97686	2000 GK ₂₀		1 1.2 358°50	7°2/31.0	18	
11 23	7 8.07	+20 40.0	1.952	2.734	15.0	20.7	11 23	7 10.58	+37 18.5	1.533	2.329	17.8	18.1
12 3	7 4.86	+20 39.7	1.860	2.727	12.0	20.4	12 3	7 8.24	+38 22.0	1.458	2.325	14.7	17.9
12 13	6 59.13	+20 44.0	1.789	2.721	8.3	20.2	12 13	7 2.22	+39 19.9	1.403	2.322	11.2	17.7
12 23	6 51.40	+20 51.6	1.744	2.715	4.2	20.0	12 23	6 53.18	+40 4.0	1.371	2.320	8.2	17.5
1 2	6 42.57	+21 1.0	1.727	2.710	0.8	19.7	1 2	6 42.45	+40 26.9	1.363	2.320	7.3	17.4
1 12	6 33.77	+21 10.7	1.738	2.705	4.8	20.0	1 12	6 31.87	+40 24.9	1.381	2.321	9.3	17.5
1 22	6 26.12	+21 19.9	1.777	2.701	8.9	20.2	1 22	6 23.20	+39 59.6	1.423	2.323	12.6	17.7
2 1	6 20.51	+21 28.2	1.841	2.697	12.6	20.4	2 1	6 17.70	+39 16.6	1.487	2.326	16.0	18.0
215951	2005 NC ₂₃		1 1.2 187°31	1°7/ 1.5	18		157941	1999 XT ₂₅₀		1 1.2 80°78	0°5/ 1.1	18	
11 23	7 13.74	+18 15.7	2.284	3.039	13.9	21.6	11 23	7 11.88	+23 9.7	2.056	2.829	14.6	20.7
12 3	7 8.78	+18 2.1	2.188	3.039	11.1	21.4	12 3	7 7.64	+23 28.5	1.976	2.839	11.6	20.6
12 13	7 1.52	+17 53.0	2.116	3.038	7.8	21.2	12 13	7 0.88	+23 50.6	1.918	2.848	7.9	20.3
12 23	6 52.49	+17 47.8	2.070	3.037	4.2	21.0	12 23	6 52.22	+24 13.5	1.886	2.857	3.9	20.1
1 2	6 42.49	+17 45.9	2.054	3.034	1.7	20.8	1 2	6 42.56	+24 34.5	1.883	2.866	0.6	19.9
1 12	6 32.55	+17 46.6	2.069	3.032	4.6	21.0	1 12	6 33.05	+24 51.5	1.910	2.876	4.6	20.2
1 22	6 23.67	+17 49.4	2.113	3.028	8.2	21.2	1 22	6 24.77	+25 3.8	1.966	2.885	8.5	20.5
2 1	6 16.66	+17 54.1	2.184	3.024	11.5	21.4	2 1	6 18.57	+25 11.7	2.047	2.894	11.9	20.7
195740	2002 PN ₉₅		1 1.2 96°36	3°4/ 2.1	18		260801	2005 NW ₁₀₀		1 1.2 87°80	4°0/ 2.4	18	
11 23	7 9.37	+11 37.2	2.275	3.025	14.1	20.2	11 23	7 12.57	+10 1.1	1.951	2.701	16.1	20.4
12 3	7 5.25	+11 36.1	2.192	3.034	11.4	20.0	12 3	7 8.01	+10 6.3	1.880	2.721	13.1	20.2
12 13	6 59.04	+11 44.9	2.131	3.044	8.3	19.8	12 13	7 1.03	+10 24.6	1.830	2.740	9.6	20.0
12 23	6 51.24	+12 3.8	2.096	3.053	5.2	19.7	12 23	6 52.25	+10 55.9	1.805	2.760	6.1	19.9
1 2	6 42.61	+12 31.9	2.090	3.062	3.4	19.6	1 2	6 42.56	+11 38.7	1.809	2.779	4.0	19.8
1 12	6 34.08	+13 7.5	2.113	3.070	5.1	19.7	1 12	6 33.10	+12 30.3	1.842	2.798	5.8	19.9
1 22	6 26.53	+13 48.3	2.166	3.079	8.1	19.9	1 22	6 24.86	+13 27.0	1.903	2.817	9.0	20.2
2 1	6 20.69	+14 31.9	2.245	3.088	11.1	20.1	2 1	6 18.67	+14 25.7	1.991	2.836	12.3	20.4
454410	2014 NS ₄₅		1 1.2 128°88	0°6/ 1.3	18		93263	2000 ST ₁₇₀		1 1.2 138°19	3°2/31.6	18	
11 23	7 15.98	+21 52.5	1.940	2.707	15.6	20.9	11 23	7 15.17	+30 56.7	2.245	3.009	13.8	19.8
12 3	7 10.87	+21 42.9	1.860	2.719	12.4	20.7	12 3	7 10.21	+31 33.5	2.162	3.017	11.0	19.7
12 13	7 3.08	+21 36.1	1.802	2.730	8.5	20.4	12 13	7 2.65	+32 8.7	2.103	3.025	7.8	19.5
12 23	6 53.26	+21 30.6	1.770	2.740	4.2	20.2	12 23	6 53.10	+32 38.0	2.070	3.032	4.6	19.3
1 2	6 42.43	+21 24.9	1.768	2.750	0.7	20.0	1 2	6 42.50	+32 57.6	2.066	3.039	3.2	19.2
1 12	6 31.86	+21 18.3	1.795	2.760	4.8	20.3	1 12	6 32.03	+33 5.2	2.093	3.046	5.5	19.4
1 22	6 22.67	+21 11.0	1.851	2.769	8.9	20.6	1 22	6 22.83	+33 1.3	2.148	3.052	8.7	19.6
2 1	6 15.77	+21 3.7	1.933	2.778	12.5	20.8	2 1	6 15.79	+32 48.0	2.228	3.058	11.7	19.8
96531	1998 RL ₆₈		1 1.2 82°82	6°2/31.4	18		122351	2000 QH ₄₄		1 1.2 152°54	3°0/ 1.8	18	
11 23	7 18.32	+40 5.0	2.161	2.914	14.6	19.8	11 23	7 14.49	+14 20.5	1.844	2.605	16.5	19.9
12 3	7 12.98	+40 54.2	2.093	2.931	12.0	19.7	12 3	7 9.88	+14 17.5	1.761	2.612	13.3	19.7
12 13	7 4.65	+41 35.4	2.048	2.948	9.3	19.5	12 13	7 2.55	+14 24.4	1.698	2.618	9.5	19.5
12 23	6 54.05	+42 2.4	2.028	2.965	7.0	19.4	12 23	6 53.10	+14 41.0	1.660	2.623	5.5	19.2
1 2	6 42.37	+42 10.5	2.035	2.981	6.2	19.4	1 2	6 42.50	+15 5.9	1.651	2.628	3.0	19.1
1 12	6 31.03	+41 58.1	2.071	2.998	7.6	19.5	1 12	6 32.01	+15 37.0	1.671	2.633	5.6	19.3
1 22	6 21.35	+41 27.4	2.135	3.014	10.0	19.7	1 22	6 22.82	+16 11.9	1.720	2.637	9.6	19.5
2 1	6 14.26	+40 43.1	2.222	3.030	12.5	19.9	2 1	6 15.88	+16 48.7	1.793	2.640	13.3	19.7
402259	2005 QE ₄₅		1 1.2 154°23	4°6/31.5	18		362129	2009 DL ₃₂		1 1.2 271°22	0°7/ 1.3	18	
11 23	7 18.37	+35 50.4	2.335	3.088	13.7	21.7	11 23	7 12.77	+20 20.2	1.756	2.535	16.5	21.6
12 3	7 12.74	+36 30.0	2.252	3.095	11.1	21.5	12 3	7 9.05	+20 26.9	1.656	2.521	13.3	21.4
12 13	7 4.38	+37 4.9	2.192	3.103	8.2	21.3	12 13	7 2.35	+20 39.9	1.577	2.507	9.3	21.1
12 23	6 53.92	+37 29.9	2.158	3.109	5.6	21.2	12 23	6 53.17	+20 57.4	1.522	2.493	4.7	20.8
1 2	6 42.37	+37 40.5	2.154	3.115	4.6	21.1	1 2	6 42.48	+21 17.0	1.495	2.478	0.8	20.5
1 12	6 31.01	+37 35.2	2.180	3.121	6.3	21.2	1 12	6 31.68	+21 36.3	1.497	2.464	5.4	20.8
1 22	6 21.02	+37 15.0	2.234	3.126	9.0	21.4	1 22	6 22.12	+21 53.9	1.527	2.449	10.2	21.0
2 1	6 13.33	+36 43.4	2.315	3.130	11.8	21.6	2 1	6 15.00	+22 9.3	1.580	2.434	14.4	21.2
367559	2009 SX ₆₈		1 1.2 79°39	2°1/ 1.7	18		201740	2003 UQ ₂₆₄		1 1.2 67°74	1°0/31.9	18	
11 23	7 10.94	+16 31.8	1.980	2.748	15.3	21.7	11 23	7 11.60	+23 19.2	2.086	2.		

EPHEMERIDES

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
43886	1995 <i>GR</i> ₇		1.2 147°71	0°7/ 1.4 18			9972	Minoruoda		1.2 254°97	0°2/ 1.2 18		
11 23	7 18.25	+19 24.8	1.750	2.516	17.1	20.3	11 23	7 15.28	+20 39.4	1.765	2.539	16.7	18.0
12 3	7 13.07	+19 44.6	1.669	2.527	13.6	20.1	12 3	7 11.23	+21 15.1	1.659	2.521	13.4	17.8
12 13	7 4.86	+20 11.9	1.610	2.537	9.4	19.9	12 13	7 4.02	+22 0.0	1.574	2.504	9.4	17.5
12 23	6 54.27	+20 44.1	1.576	2.546	4.7	19.6	12 23	6 54.11	+22 50.9	1.514	2.485	4.7	17.2
1 2	6 42.41	+21 17.8	1.571	2.554	0.8	19.3	1 2	6 42.45	+23 43.4	1.483	2.466	0.5	16.8
1 12	6 30.69	+21 49.9	1.596	2.562	5.3	19.7	1 12	6 30.48	+24 32.9	1.481	2.446	5.6	17.1
1 22	6 20.49	+22 18.5	1.650	2.569	9.8	20.0	1 22	6 19.69	+25 16.1	1.507	2.426	10.5	17.4
2 1	6 12.84	+22 43.2	1.728	2.574	13.7	20.2	2 1	6 11.41	+25 52.1	1.557	2.406	14.9	17.6
426656	2013 <i>SB</i> ₈₆		1.2 19°29	7°2/ 1.3 18			229742	2007 <i>HV</i> ₈₂		1.2 223°15	1°6/ 1.6 18		
11 23	7 16.67	+41 33.2	1.651	2.425	17.6	19.7	11 23	7 14.27	+17 12.8	1.666	2.441	17.5	20.6
12 3	7 12.53	+41 54.2	1.585	2.435	14.6	19.6	12 3	7 10.28	+17 27.0	1.574	2.436	14.0	20.3
12 13	7 4.72	+42 2.7	1.539	2.446	11.3	19.4	12 13	7 3.21	+17 51.3	1.503	2.431	9.9	20.1
12 23	6 54.18	+41 52.2	1.516	2.459	8.4	19.2	12 23	6 53.61	+18 24.2	1.457	2.426	5.2	19.8
1 2	6 42.43	+41 17.9	1.519	2.472	7.2	19.2	1 2	6 42.51	+19 2.9	1.438	2.420	1.7	19.5
1 12	6 31.30	+40 20.2	1.549	2.486	8.7	19.3	1 12	6 31.35	+19 44.0	1.448	2.414	5.7	19.8
1 22	6 22.35	+39 4.2	1.604	2.501	11.6	19.5	1 22	6 21.56	+20 24.5	1.485	2.407	10.4	20.0
2 1	6 16.57	+37 37.2	1.683	2.517	14.6	19.8	2 1	6 14.29	+21 2.9	1.546	2.401	14.6	20.3
272589	2005 <i>VA</i> ₅₈		1.2 193°92	1°4/ 1.5 18			165541	2001 <i>DS</i> ₂₀		1.2 287°36	2°3/31.8 18		
11 23	7 15.55	+18 1.1	1.819	2.586	16.5	21.3	11 23	7 13.44	+26 22.1	1.677	2.464	16.9	20.4
12 3	7 10.96	+18 11.7	1.728	2.585	13.2	21.1	12 3	7 10.01	+26 56.6	1.577	2.447	13.6	20.1
12 13	7 3.47	+18 30.4	1.657	2.583	9.3	20.9	12 13	7 3.28	+27 34.9	1.498	2.430	9.5	19.8
12 23	6 53.64	+18 55.7	1.612	2.580	4.8	20.6	12 23	6 53.76	+28 12.5	1.443	2.413	5.1	19.5
1 2	6 42.47	+19 25.1	1.595	2.577	1.4	20.4	1 2	6 42.49	+28 44.3	1.416	2.396	2.4	19.3
1 12	6 31.29	+19 55.8	1.608	2.573	5.3	20.6	1 12	6 31.02	+29 6.2	1.416	2.379	6.3	19.5
1 22	6 21.42	+20 25.8	1.649	2.569	9.8	20.9	1 22	6 20.93	+29 17.0	1.443	2.362	11.0	19.7
2 1	6 13.92	+20 54.0	1.715	2.564	13.7	21.1	2 1	6 13.55	+29 18.0	1.494	2.345	15.2	20.0
88758	2001 <i>SW</i> ₆₄		1.2 121°97	1°5/ 1.5 18			319521	2006 <i>RC</i> ₂₂		1.2 70°13	8°9/30.4 18		
11 23	7 13.33	+18 1.9	2.146	2.906	14.5	20.7	11 23	7 21.55	+41 36.6	1.700	2.464	17.6	20.0
12 3	7 8.50	+18 0.9	2.066	2.920	11.5	20.5	12 3	7 16.79	+43 16.7	1.642	2.482	14.7	19.9
12 13	7 1.33	+18 5.8	2.009	2.933	8.0	20.3	12 13	7 8.03	+44 48.3	1.605	2.499	11.8	19.7
12 23	6 52.40	+18 15.4	1.978	2.945	4.2	20.1	12 23	6 56.04	+46 0.9	1.591	2.517	9.5	19.6
1 2	6 42.59	+18 28.4	1.976	2.958	1.5	19.9	1 2	6 42.32	+46 45.5	1.604	2.535	9.0	19.7
1 12	6 32.95	+18 43.3	2.005	2.969	4.5	20.2	1 12	6 28.93	+46 58.6	1.643	2.553	10.4	19.8
1 22	6 24.48	+18 59.1	2.063	2.981	8.2	20.4	1 22	6 17.74	+46 42.9	1.707	2.571	12.9	20.0
2 1	6 17.97	+19 15.2	2.147	2.992	11.5	20.6	2 1	6 10.05	+46 5.4	1.792	2.589	15.5	20.2
426789	2013 <i>TR</i> ₁₂₈		1.2 7°91	4°6/31.8 18			381234	2007 <i>TT</i> ₁₁		1.2 31°00	12°2/28.7 18		
11 23	7 13.35	+34 30.1	1.829	2.609	15.9	20.6	11 23	7 24.53	+55 6.6	2.095	2.805	16.3	20.0
12 3	7 9.51	+34 55.6	1.749	2.610	12.9	20.4	12 3	7 20.05	+57 7.2	2.039	2.812	14.7	19.9
12 13	7 2.55	+35 15.9	1.690	2.612	9.4	20.1	12 13	7 10.92	+58 52.8	2.002	2.820	13.2	19.8
12 23	6 53.17	+35 25.9	1.655	2.614	6.1	20.0	12 23	6 57.76	+60 12.6	1.988	2.828	12.4	19.8
1 2	6 42.53	+35 21.2	1.647	2.616	4.6	19.9	1 2	6 42.17	+60 57.8	1.997	2.837	12.3	19.8
1 12	6 32.13	+35 0.4	1.668	2.619	6.8	20.0	1 12	6 26.62	+61 4.8	2.028	2.846	13.1	19.9
1 22	6 23.33	+34 25.5	1.715	2.623	10.3	20.2	1 22	6 13.53	+60 36.9	2.081	2.855	14.3	20.0
2 1	6 17.18	+33 40.5	1.786	2.627	13.6	20.4	2 1	6 4.62	+59 41.8	2.154	2.865	15.8	20.1
69505	1997 <i>CX</i> ₂₁		1.2 342°09	2°1/ 1.3 18			76766	2000 <i>KO</i> ₂₉		1.2 201°32	3°1/31.2 18		
11 23	7 8.03	+20 46.3	1.235	2.050	20.2	18.6	11 23	7 12.46	+30 30.3	2.680	3.439	12.0	20.2
12 3	7 6.35	+20 11.1	1.152	2.037	16.3	18.3	12 3	7 7.83	+31 25.0	2.585	3.436	9.6	20.1
12 13	7 1.01	+19 39.2	1.087	2.025	11.5	18.0	12 13	7 0.97	+32 19.9	2.513	3.434	6.8	19.9
12 23	6 52.67	+19 10.9	1.043	2.015	6.0	17.7	12 23	6 52.32	+33 10.8	2.470	3.431	4.2	19.7
1 2	6 42.56	+18 46.5	1.024	2.006	2.1	17.4	1 2	6 42.65	+33 53.8	2.457	3.427	3.1	19.6
1 12	6 32.50	+18 26.4	1.029	1.998	6.9	17.7	1 12	6 32.92	+34 26.1	2.474	3.424	5.1	19.8
1 22	6 24.21	+18 11.2	1.059	1.991	12.4	18.0	1 22	6 24.10	+34 46.7	2.521	3.420	7.8	19.9
2 1	6 19.05	+18 1.4	1.109	1.986	17.4	18.2	2 1	6 17.01	+34 56.7	2.595	3.416	10.5	20.1
77728	2001 <i>OZ</i> ₆₆		1.2 56°97	2°6/31.5 18			119392	2001 <i>TK</i> ₃₃		1.2 185°21	7°3/30.5 18		
11 23	7 11.50	+28 6.5	2.217	2.989	13.7	19.4	11 23	7 19.08	+40 50.5	2.107	2.860	15.0	19.8
12 3	7 7.38	+28 55.5	2.134	2.995	10.9	19.2	12 3	7 14.17	+42 6.5	2.025	2.860	12.5	19.7
12 13	7 0.77	+29 45.8	2.075	3.001	7.6	19.0	12 13	7 5.93	+43 16.4	1.965	2.860	9.9	19.5
12 23	6 52.22	+30 33.2	2.042	3.008	4.3	18.8	12 23	6 54.96	+44 12.2	1.930	2.860	7.8	19.4
1 2	6 42.62	+31 13.4	2.038	3.015	2.7	18.7	1 2	6 42.43	+44 47.0	1.923	2.859	7.3	19.3
1 12	6 33.07	+31 43.6	2.064	3.021	5.2	18.9	1 12	6 29.92	+44 57.2	1.943	2.858	8.8	19.4
1 22	6 24.68	+32 2.7	2.119	3.028	8.5	19.1	1 22	6 18.99	+44 43.9	1.990	2.857	11.2	19.6
2 1	6 18.31	+32 12.0	2.199	3.035	11.6	19.3	2 1	6 10.85	+44 11.8	2.060	2.856	13.8	19.7
92577	2000 <i>OD</i> ₆₀		1.2 144°80	1°8/ 1.1 18			22681	1998 <i>QL</i> ₄₄		1.2 134°93	0°7/ 1.4 18		
11 23	7 18.56	+27 41.5	1.801	2.573	16.4	20.1	11 23	7 10.94	+20 5.2	2.224	2.990	13.9	18.8
12 3	7 13.35	+27 48.0	1.720	2.581	13.1	19.9	12 3	7 6.72	+20 13.6	2.135	2.993	11.0	18.6
12 13	7 5.05	+27 53.6	1.660	2.588	9.1	19.7	12 13	7 0.20	+20 26.7	2.069	2.997	7.6	18.4
12 23	6 54.36	+27 54.8	1.626	2.595	4.7	19.4	12 23	6 51.93	+20 43.1	2.030	3.000	3.8	18.2
1 2	6 42.45	+27 48.3	1.620	2.601	1.9	19.2	1 2	6 42.70	+21 1.0	2.020	3.003	0.7	17.9
1 12	6 30.81	+27 33.2	1.644	2.607	5.5	19.5	1 12	6 33.56	+21 18.7	2.040	3.006	4.3	18.2
1 22	6 20.79	+27 10.6	1.695	2.612	9.8	19.8	1 22	6 25.47	+21 35.1	2.089	3.009	8.0	18.5
2 1	6 13.41	+26 43.5	1.772	2.617	13.5	20.0	2 1	6 19.25	+21 49.9	2.165	3.012	11.3	18.7
473835	2016 <i>ET</i> ₁₂₄		1.2 53°08	1°5/ 1.1 18			310038	2010 <i>GB</i> ₁₀₈		1.2 131°96	1°5/31.9 18		
11 23	7 12.82	+27 7.6	1.980	2.757	15.0	21.1	11 23						

EPHEMERIDES

1 1.2

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
57239	2001 <i>QD</i> ₈₁		1 1.2 121°65	0°7/ 1.2 18			246273	2007 <i>TW</i> ₄₄		1 1.3 300°68	4°5/31.1 18		
11 23	7 18.95	+25 15.3	1.675	2.450	17.4	19.6	11 23	7 12.73	+34 29.2	2.291	3.057	13.5	20.5
12 3	7 13.74	+25 9.8	1.599	2.462	13.8	19.4	12 3	7 8.57	+35 20.4	2.200	3.052	11.0	20.3
12 13	7 5.35	+25 4.9	1.544	2.474	9.5	19.1	12 13	7 1.76	+36 9.0	2.131	3.047	8.1	20.1
12 23	6 54.53	+24 57.8	1.515	2.485	4.7	18.9	12 23	6 52.84	+36 49.9	2.089	3.042	5.5	20.0
1 2	6 42.51	+24 46.1	1.513	2.496	0.8	18.6	1 2	6 42.70	+37 18.3	2.075	3.038	4.6	19.9
1 12	6 30.84	+24 29.2	1.541	2.506	5.4	19.0	1 12	6 32.55	+37 31.5	2.090	3.033	6.4	20.0
1 22	6 20.91	+24 8.3	1.596	2.516	10.0	19.3	1 22	6 23.58	+37 29.5	2.133	3.028	9.2	20.2
2 1	6 13.73	+23 45.6	1.676	2.526	13.9	19.5	2 1	6 16.76	+37 14.7	2.201	3.024	12.1	20.3
223685	Hartopp		1 1.2 11°39	0°7/ 1.2 18			230495	2002 <i>TE</i> ₂₃₂		1 1.3 75°84	5°6/31.9 18		
11 23	7 14.15	+24 25.4	1.698	2.481	16.9	19.6	11 23	7 17.99	+39 55.4	2.239	2.991	14.2	19.9
12 3	7 9.92	+23 39.8	1.615	2.483	13.4	19.4	12 3	7 12.61	+40 20.1	2.163	3.001	11.7	19.8
12 13	7 2.70	+22 52.4	1.553	2.485	9.3	19.2	12 13	7 4.36	+40 36.1	2.109	3.011	8.9	19.6
12 23	6 53.23	+22 2.8	1.516	2.487	4.6	18.9	12 23	6 53.99	+40 38.4	2.080	3.021	6.5	19.5
1 2	6 42.62	+21 11.5	1.507	2.490	0.8	18.6	1 2	6 42.62	+40 23.2	2.079	3.032	5.6	19.4
1 12	6 32.31	+20 20.3	1.527	2.494	5.3	18.9	1 12	6 31.62	+39 49.8	2.107	3.042	6.9	19.5
1 22	6 23.57	+19 31.6	1.575	2.498	9.9	19.2	1 22	6 22.20	+39 0.9	2.164	3.052	9.5	19.7
2 1	6 17.37	+18 47.8	1.647	2.502	13.8	19.5	2 1	6 15.25	+38 1.1	2.245	3.062	12.1	19.9
241554	2010 <i>FA</i> ₉₃		1 1.2 166°25	0°4/ 1.4 18			459100	2012 <i>BP</i> ₁₀₀		1 1.3 269°04	3°1/31.9 16		
11 23	7 9.42	+20 49.2	2.763	3.520	11.7	21.7	11 23	7 16.01	+31 3.8	1.852	2.628	15.9	22.1
12 3	7 5.06	+20 56.8	2.669	3.523	9.2	21.5	12 3	7 11.62	+31 15.6	1.758	2.619	12.8	21.9
12 13	6 58.83	+21 7.6	2.600	3.525	6.4	21.3	12 13	7 4.09	+31 24.4	1.685	2.611	9.1	21.6
12 23	6 51.19	+21 20.4	2.558	3.527	3.2	21.1	12 23	6 54.05	+31 25.8	1.637	2.602	5.2	21.4
1 2	6 42.80	+21 33.8	2.546	3.529	0.5	20.9	1 2	6 42.61	+31 16.0	1.616	2.593	3.1	21.2
1 12	6 34.46	+21 46.7	2.566	3.531	3.6	21.1	1 12	6 31.24	+30 53.6	1.625	2.584	6.0	21.4
1 22	6 26.95	+21 58.2	2.615	3.532	6.7	21.3	1 22	6 21.38	+30 20.1	1.661	2.575	10.1	21.6
2 1	6 20.93	+22 8.2	2.692	3.533	9.5	21.5	2 1	6 14.14	+29 39.2	1.722	2.566	13.9	21.8
389603	2011 <i>HX</i> ₅		1 1.2 230°74	1°1/ 1.0 18			12091	Jesmalmquist		1 1.3 177°97	3°3/ 1.8 18		
11 23	7 17.37	+23 19.8	1.724	2.499	17.0	21.8	11 23	7 13.38	+14 8.8	1.950	2.709	15.8	18.8
12 3	7 12.93	+23 51.9	1.624	2.488	13.6	21.5	12 3	7 8.93	+13 52.4	1.861	2.710	12.8	18.6
12 13	7 5.21	+24 30.1	1.546	2.476	9.5	21.2	12 13	7 1.90	+13 44.5	1.793	2.711	9.2	18.4
12 23	6 54.71	+25 10.6	1.493	2.463	4.8	20.9	12 23	6 52.86	+13 45.6	1.751	2.712	5.5	18.1
1 2	6 42.49	+25 48.6	1.468	2.450	1.2	20.7	1 2	6 42.71	+13 55.3	1.737	2.712	3.3	18.0
1 12	6 30.09	+26 19.8	1.472	2.437	5.8	20.9	1 12	6 32.63	+14 12.5	1.752	2.712	5.6	18.1
1 22	6 19.05	+26 42.6	1.504	2.422	10.7	21.2	1 22	6 23.74	+14 35.4	1.796	2.711	9.4	18.4
2 1	6 10.69	+26 57.5	1.560	2.407	14.9	21.4	2 1	6 16.94	+15 2.4	1.865	2.710	12.9	18.6
306605	2000 <i>LV</i> ₂₅		1 1.2 64°35	10°9/ 2.9 18			246871	1993 <i>TL</i> ₁₄		1 1.3 76°51	2°0/ 1.6 18		
11 23	7 20.38	- 3 14.9	1.929	2.610	18.3	19.4	11 23	7 15.83	+17 7.4	1.800	2.565	16.7	20.6
12 3	7 13.63	- 5 22.7	1.890	2.657	15.9	19.3	12 3	7 10.71	+17 5.0	1.740	2.595	13.2	20.4
12 13	7 4.53	- 7 10.7	1.873	2.703	13.5	19.2	12 13	7 2.93	+17 10.2	1.701	2.625	9.2	20.3
12 23	6 53.85	- 8 32.5	1.880	2.749	11.7	19.2	12 23	6 53.24	+17 21.7	1.688	2.654	4.9	20.1
1 2	6 42.61	- 9 23.8	1.913	2.793	10.9	19.2	1 2	6 42.70	+17 37.9	1.703	2.683	2.0	19.9
1 12	6 31.93	- 9 44.3	1.973	2.837	11.4	19.3	1 12	6 32.56	+17 57.0	1.748	2.712	5.1	20.2
1 22	6 22.77	- 9 37.0	2.058	2.881	12.7	19.5	1 22	6 23.94	+18 17.3	1.821	2.740	9.0	20.5
2 1	6 15.80	- 9 7.5	2.165	2.923	14.4	19.7	2 1	6 17.64	+18 37.9	1.919	2.768	12.5	20.8
358642	2007 <i>VC</i> ₂₈₀		1 1.2 204°09	1°9/ 1.5 18			110741	2001 <i>UA</i> ₁		1 1.3 88°86	4°3/31.2 18		
11 23	7 14.10	+18 22.2	1.929	2.696	15.7	21.4	11 23	7 18.17	+31 39.8	1.979	2.746	15.3	18.9
12 3	7 9.60	+18 5.7	1.836	2.693	12.6	21.2	12 3	7 12.93	+32 48.3	1.914	2.768	12.2	18.8
12 13	7 2.42	+17 54.3	1.765	2.690	8.9	21.0	12 13	7 4.73	+33 55.5	1.871	2.791	8.8	18.6
12 23	6 53.12	+17 47.7	1.719	2.686	4.8	20.7	12 23	6 54.25	+34 54.8	1.855	2.813	5.6	18.4
1 2	6 42.64	+17 45.1	1.702	2.682	2.0	20.5	1 2	6 42.61	+35 40.5	1.868	2.835	4.4	18.4
1 12	6 32.22	+17 45.7	1.714	2.678	5.2	20.7	1 12	6 31.21	+36 9.3	1.910	2.857	6.5	18.6
1 22	6 23.04	+17 49.1	1.755	2.673	9.3	21.0	1 22	6 21.37	+36 21.4	1.980	2.878	9.7	18.8
2 1	6 16.05	+17 54.8	1.820	2.668	13.1	21.2	2 1	6 14.05	+36 19.7	2.076	2.899	12.7	19.0
159549	2001 <i>SN</i> ₉₁		1 1.2 351°92	5°1/ 1.8 18			453960	2012 <i>BR</i> ₄₀		1 1.3 271°26	0°7/ 1.4 18		
11 23	7 10.99	+13 33.3	1.323	2.116	20.3	20.0	11 23	7 12.16	+18 50.9	1.875	2.649	15.8	21.5
12 3	7 8.22	+12 52.3	1.245	2.113	16.6	19.8	12 3	7 8.43	+19 14.7	1.772	2.634	12.7	21.3
12 13	7 2.05	+12 22.4	1.185	2.110	12.2	19.5	12 13	7 1.90	+19 47.3	1.691	2.620	8.9	21.0
12 23	6 53.13	+12 5.9	1.147	2.109	7.6	19.3	12 23	6 53.02	+20 26.6	1.635	2.605	4.5	20.7
1 2	6 42.65	+12 4.1	1.134	2.107	5.1	19.1	1 2	6 42.70	+21 9.7	1.607	2.590	0.8	20.4
1 12	6 32.27	+12 16.4	1.146	2.107	7.8	19.3	1 12	6 32.19	+21 53.1	1.609	2.575	5.1	20.7
1 22	6 23.57	+12 40.7	1.183	2.106	12.4	19.5	1 22	6 22.79	+22 34.0	1.638	2.560	9.7	20.9
2 1	6 17.75	+13 13.7	1.242	2.107	16.8	19.8	2 1	6 15.63	+23 11.1	1.693	2.544	13.7	21.2
37345	2001 <i>SV</i> ₁₅₃		1 1.2 168°35	1°4/31.9 18			187752	1995 <i>MF</i> ₆		1 1.3 109°37	2°5/ 1.6 18		
11 23	7 11.16	+27 32.5	2.963	3.719	11.0	19.7	11 23	7 18.76	+17 11.6	1.636	2.403	18.1	21.4
12 3	7 6.36	+27 48.5	2.870	3.722	8.7	19.5	12 3	7 13.39	+16 53.4	1.567	2.424	14.4	21.2
12 13	6 59.69	+28 4.2	2.801	3.725	6.0	19.4	12 13	7 5.00	+16 42.5	1.520	2.444	10.1	21.0
12 23	6 51.61	+28 17.3	2.760	3.728	3.2	19.2	12 23	6 54.35	+16 38.6	1.497	2.463	5.5	20.8
1 2	6 42.79	+28 25.9	2.750	3.730	1.4	19.0	1 2	6 42.62	+16 40.5	1.502	2.482	2.5	20.6
1 12	6 34.05	+28 28.8	2.772	3.732	3.8	19.2	1 12	6 31.28	+16 47.1	1.537	2.500	5.8	20.9
1 22	6 26.15	+28 26.0	2.823	3.734	6.6	19.4	1 22	6 21.63	+16 57.2	1.599	2.518	10.1	21.2
2 1	6 19.76	+28 18.5	2.903	3.735	9.2	19.6	2 1	6 14.60	+17 10.1	1.686	2.534	13.9	21.4
423805	2006 <i>HG</i> ₉₄		1 1.2 134°63	3°9/ 2.3 18			368048	2012 <i>HJ</i> ₂₇		1 1.3 80°03	4°3/ 2.5 18		
11 23	7 8.76	+10 32.9	2.262	3.011	14.2								

EPHEMERIDES

1 1.3

1 1.3

2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
194786	2001 YR ₈₄		1.3 345°54	0°5/ 1.4 18			293550	2007 HE ₂₈		1.3 161°75	1°0/ 1.5 18		
11 23	7 9.51	+19 47.2	1.260	2.070	20.2	19.6	11 23	7 16.68	+19 34.4	2.004	2.764	15.4	22.0
12 3	7 7.53	+20 9.3	1.180	2.063	16.2	19.3	12 3	7 11.49	+19 36.7	1.917	2.771	12.3	21.8
12 13	7 1.91	+20 42.1	1.118	2.056	11.3	19.0	12 13	7 3.64	+19 44.2	1.852	2.777	8.5	21.5
12 23	6 53.22	+21 23.2	1.078	2.051	5.7	18.7	12 23	6 53.73	+19 55.4	1.814	2.783	4.4	21.3
1 2	6 42.70	+22 8.2	1.063	2.046	0.6	18.3	1 2	6 42.71	+20 8.4	1.805	2.787	1.1	21.1
1 12	6 32.14	+22 52.2	1.074	2.043	6.5	18.7	1 12	6 31.82	+20 21.6	1.826	2.791	4.8	21.3
1 22	6 23.34	+23 31.7	1.109	2.040	12.1	19.0	1 22	6 22.21	+20 33.9	1.877	2.794	8.9	21.6
2 1	6 17.68	+24 5.1	1.165	2.038	17.0	19.3	2 1	6 14.80	+20 45.3	1.953	2.797	12.5	21.8
365177	2009 FR ₁		1.3 313°82	4°2/31.7 17			81826	2000 KP ₄₂		1.3 351°20	4°2/ 2.9 18		
11 23	7 13.76	+30 51.5	1.482	2.278	18.3	21.4	11 23	7 11.87	+ 7 27.3	1.688	2.443	18.0	18.7
12 3	7 10.81	+31 24.9	1.391	2.264	14.8	21.1	12 3	7 8.29	+ 8 12.0	1.597	2.440	14.9	18.5
12 13	7 4.14	+31 57.4	1.320	2.251	10.7	20.8	12 13	7 1.83	+ 9 18.2	1.527	2.438	11.1	18.2
12 23	6 54.32	+32 23.2	1.272	2.238	6.3	20.6	12 23	6 53.00	+10 45.7	1.481	2.437	7.0	18.0
1 2	6 42.61	+32 35.8	1.249	2.225	4.2	20.4	1 2	6 42.76	+12 30.9	1.462	2.436	4.2	17.8
1 12	6 30.83	+32 31.8	1.254	2.213	7.5	20.6	1 12	6 32.41	+14 27.3	1.473	2.435	6.3	18.0
1 22	6 20.81	+32 11.8	1.283	2.201	12.1	20.8	1 22	6 23.26	+16 27.0	1.513	2.434	10.3	18.2
2 1	6 13.96	+31 39.9	1.335	2.190	16.5	21.0	2 1	6 16.44	+18 23.3	1.579	2.434	14.3	18.4
164811	1999 JR ₁₃₅		1.3 180°86	2°1/31.8 18			426107	2012 FT ₄₃		1.3 265°75	6°9/ 1.9 18		
11 23	7 17.62	+27 7.7	2.152	2.913	14.4	21.0	11 23	7 10.42	+ 5 36.6	2.134	2.867	15.4	21.5
12 3	7 12.31	+27 41.5	2.060	2.915	11.5	20.8	12 3	7 6.50	+ 4 41.1	2.028	2.849	13.0	21.3
12 13	7 4.27	+28 16.6	1.991	2.916	8.0	20.6	12 13	7 0.25	+ 3 56.2	1.943	2.831	10.4	21.1
12 23	6 54.07	+28 49.1	1.948	2.916	4.3	20.4	12 23	6 52.11	+ 3 25.2	1.882	2.812	8.0	20.9
1 2	6 42.65	+29 14.9	1.936	2.915	2.1	20.2	1 2	6 42.84	+ 3 11.1	1.849	2.794	6.9	20.8
1 12	6 31.26	+29 31.4	1.954	2.914	5.1	20.4	1 12	6 33.44	+ 3 14.8	1.843	2.775	8.0	20.8
1 22	6 21.12	+29 38.2	2.001	2.911	8.9	20.6	1 22	6 24.95	+ 3 35.4	1.865	2.755	10.6	20.9
2 1	6 13.21	+29 36.7	2.075	2.908	12.3	20.8	2 1	6 18.24	+ 4 10.1	1.911	2.736	13.6	21.1
463796	2014 SG ₃₀₀		1.3 70°33	2°3/31.9 18			32712	4135 T-2		1.3 120°11	4°4/31.4 18		
11 23	7 14.15	+28 12.3	1.882	2.659	15.6	21.6	11 23	7 15.49	+33 7.5	2.004	2.775	15.1	18.6
12 3	7 9.91	+28 31.7	1.797	2.662	12.5	21.3	12 3	7 11.01	+33 56.1	1.922	2.778	12.1	18.4
12 13	7 2.76	+28 50.8	1.735	2.664	8.7	21.1	12 13	7 3.57	+34 42.4	1.861	2.781	8.8	18.2
12 23	6 53.35	+29 5.8	1.698	2.666	4.7	20.9	12 23	6 53.78	+35 20.8	1.827	2.785	5.7	18.0
1 2	6 42.72	+29 13.2	1.689	2.669	2.3	20.7	1 2	6 42.71	+35 46.0	1.821	2.788	4.5	17.9
1 12	6 32.24	+29 11.1	1.709	2.671	5.5	20.9	1 12	6 31.74	+35 55.1	1.843	2.791	6.6	18.1
1 22	6 23.19	+29 0.1	1.757	2.673	9.5	21.2	1 22	6 22.21	+35 48.7	1.893	2.794	9.9	18.3
2 1	6 16.57	+28 42.3	1.830	2.676	13.1	21.4	2 1	6 15.15	+35 29.9	1.968	2.797	13.0	18.5
213642	2002 RH ₈₃		1.3 65°00	5°9/ 2.6 17			17346	2395 T-3		1.3 49°15	0°1/ 1.3 18		
11 23	7 13.14	+ 8 29.3	1.613	2.372	18.6	20.5	11 23	7 9.80	+23 6.0	2.417	3.184	12.9	19.2
12 3	7 8.88	+ 8 0.4	1.553	2.396	15.2	20.3	12 3	7 5.69	+23 7.4	2.327	3.186	10.2	19.0
12 13	7 1.85	+ 7 46.6	1.512	2.419	11.5	20.1	12 13	6 59.45	+23 10.6	2.260	3.188	7.0	18.8
12 23	6 52.79	+ 7 49.7	1.495	2.443	7.8	20.0	12 23	6 51.59	+23 14.4	2.220	3.190	3.5	18.6
1 2	6 42.78	+ 8 9.8	1.504	2.467	5.9	19.9	1 2	6 42.89	+23 17.1	2.209	3.193	0.3	18.3
1 12	6 33.13	+ 8 44.8	1.540	2.491	7.4	20.1	1 12	6 34.28	+23 17.8	2.229	3.195	4.0	18.6
1 22	6 24.99	+ 9 30.9	1.604	2.514	10.6	20.3	1 22	6 26.66	+23 16.3	2.278	3.197	7.5	18.9
2 1	6 19.23	+10 23.9	1.691	2.538	13.9	20.6	2 1	6 20.77	+23 12.9	2.353	3.199	10.6	19.1
164644	1995 SH ₁₄		1.3 205°70	0°3/ 1.3 17			409470	2005 SC ₄₈		1.3 118°92	2°8/ 1.7 18		
11 23	7 9.74	+21 26.5	2.845	3.601	11.4	21.6	11 23	7 12.84	+15 16.7	2.135	2.891	14.7	21.9
12 3	7 5.32	+21 32.6	2.744	3.597	9.0	21.4	12 3	7 8.14	+14 58.3	2.055	2.904	11.8	21.7
12 13	6 59.05	+21 41.4	2.667	3.592	6.2	21.2	12 13	7 1.13	+14 46.9	1.998	2.916	8.4	21.5
12 23	6 51.36	+21 51.7	2.618	3.588	3.1	21.0	12 23	6 52.41	+14 42.4	1.966	2.928	4.9	21.3
1 2	6 42.89	+22 2.2	2.600	3.583	0.4	20.7	1 2	6 42.83	+14 44.6	1.963	2.940	2.8	21.2
1 12	6 34.43	+22 11.8	2.612	3.577	3.6	21.0	1 12	6 33.43	+14 52.6	1.991	2.951	5.0	21.4
1 22	6 26.76	+22 19.8	2.655	3.572	6.7	21.2	1 22	6 25.17	+15 5.4	2.047	2.962	8.4	21.6
2 1	6 20.54	+22 26.2	2.726	3.565	9.5	21.4	2 1	6 18.83	+15 21.7	2.129	2.972	11.6	21.8
290784	2005 VU ₄₀		1.3 243°28	1°2/ 1.5 18			446837	2001 SW ₉₀		1.3 133°39	13°2/31.7 18		
11 23	7 11.41	+18 53.7	2.091	2.858	14.6	21.4	11 23	7 40.86	+56 32.9	1.849	2.543	18.7	21.4
12 3	7 7.37	+18 57.3	1.994	2.852	11.7	21.2	12 3	7 33.47	+58 3.4	1.791	2.555	16.7	21.3
12 13	7 0.85	+19 6.9	1.919	2.846	8.2	21.0	12 13	7 20.28	+59 15.3	1.750	2.567	14.9	21.2
12 23	6 52.39	+19 21.1	1.871	2.840	4.2	20.7	12 23	7 2.32	+59 55.1	1.731	2.579	13.6	21.1
1 2	6 42.80	+19 38.4	1.851	2.833	1.2	20.5	1 2	6 42.05	+59 52.2	1.735	2.589	13.2	21.1
1 12	6 33.21	+19 57.2	1.861	2.826	4.7	20.7	1 12	6 22.78	+59 4.5	1.762	2.599	13.8	21.2
1 22	6 24.68	+20 15.9	1.899	2.819	8.6	20.9	1 22	6 7.31	+57 39.1	1.812	2.609	15.3	21.3
2 1	6 18.12	+20 34.0	1.963	2.812	12.2	21.1	2 1	5 57.15	+55 48.2	1.882	2.617	17.0	21.5
200818	2001 XD ₁₈₈		1.3 358°14	0°3/ 1.3 18			138250	2000 FS ₅₆		1.3 287°94	1°9/31.9 18		
11 23	7 14.04	+23 41.4	1.389	2.187	19.2	20.2	11 23	7 12.94	+25 30.9	1.769	2.552	16.3	20.4
12 3	7 10.67	+23 21.2	1.309	2.185	15.4	19.9	12 3	7 9.35	+26 6.7	1.674	2.542	13.0	20.1
12 13	7 3.75	+23 2.4	1.249	2.184	10.7	19.7	12 13	7 2.69	+26 46.6	1.600	2.532	9.1	19.8
12 23	6 53.98	+22 43.4	1.212	2.184	5.3	19.3	12 23	6 53.48	+27 26.6	1.551	2.521	4.7	19.6
1 2	6 42.68	+22 22.6	1.200	2.184	0.5	19.0	1 2	6 42.74	+28 1.8	1.530	2.511	2.0	19.4
1 12	6 31.60	+21 59.9	1.216	2.184	6.1	19.4	1 12	6 31.90	+28 28.5	1.537	2.501	5.8	19.6
1 22	6 22.35	+21 36.6	1.257	2.185	11.4	19.7	1 22	6 22.38	+28 45.4	1.572	2.491	10.2	19.8
2 1	6 16.13	+21 14.5	1.321	2.186	16.0	20.0	2 1	6 15.38	+28 53.3	1.631	2.480	14.2	20.0
167346	2003 VU ₈		1.3 213°89	0°9/ 1.4 18			277935	2006 LK ₄		1.3 103°19	1°7/ 1.9 18		
11 23	7 14.68	+20 11.0	2.049	2.813	15.0	21.0	11 23	7 10.73	+14 37.8	2.559	3.306	12.7	20.3
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EPHEMERIDES

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
235446	2003 <i>YT</i> ₁₃₉		1 1.3 356°94	0°7/ 1.5 18			428361	2007 <i>RL</i> ₅₉		1 1.3 108°83	3°7/31.7 18		
11 23	7 8.64	+17 31.0	1.820	2.601	16.0	19.6	11 23	7 14.85	+34 22.9	2.452	3.209	13.0	21.2
12 3	7 5.61	+18 15.2	1.732	2.598	12.8	19.4	12 3	7 9.81	+34 49.6	2.372	3.220	10.4	21.1
12 13	6 59.89	+19 10.5	1.665	2.596	8.9	19.2	12 13	7 2.34	+35 11.9	2.315	3.231	7.6	20.9
12 23	6 52.02	+20 14.5	1.624	2.594	4.5	18.9	12 23	6 53.06	+35 26.0	2.285	3.241	4.9	20.8
1 2	6 42.88	+21 23.0	1.611	2.594	0.7	18.6	1 2	6 42.88	+35 28.6	2.285	3.251	3.8	20.7
1 12	6 33.69	+22 31.2	1.626	2.593	5.0	18.9	1 12	6 32.91	+35 18.5	2.314	3.261	5.5	20.8
1 22	6 25.66	+23 35.2	1.670	2.594	9.3	19.2	1 22	6 24.18	+34 56.8	2.372	3.271	8.2	21.0
2 1	6 19.81	+24 32.6	1.739	2.595	13.1	19.4	2 1	6 17.48	+34 26.3	2.456	3.281	10.9	21.2
314230	2005 <i>PV</i> ₁		1 1.3 143°13	6°3/31.6 18			522184	2016 <i>AU</i> ₂₅₇		1 1.3 24°62	0°5/ 1.2 18		
11 23	7 21.79	+40 59.5	2.182	2.928	14.7	21.3	11 23	7 11.51	+21 41.4	1.569	2.361	17.7	21.4
12 3	7 15.87	+41 39.5	2.104	2.936	12.2	21.1	12 3	7 8.28	+22 13.0	1.493	2.366	14.0	21.1
12 13	7 6.79	+42 10.8	2.047	2.944	9.5	20.9	12 13	7 1.93	+22 51.7	1.437	2.371	9.7	20.9
12 23	6 55.31	+42 27.0	2.016	2.951	7.2	20.8	12 23	6 53.08	+23 34.3	1.405	2.377	4.8	20.6
1 2	6 42.63	+42 23.2	2.012	2.958	6.3	20.8	1 2	6 42.87	+24 16.2	1.400	2.383	0.6	20.3
1 12	6 30.27	+41 57.8	2.038	2.965	7.7	20.9	1 12	6 32.78	+24 53.5	1.423	2.390	5.6	20.7
1 22	6 19.62	+41 13.6	2.091	2.971	10.2	21.0	1 22	6 24.23	+25 24.2	1.472	2.397	10.3	21.0
2 1	6 11.70	+40 15.8	2.169	2.976	12.8	21.2	2 1	6 18.30	+25 47.8	1.546	2.405	14.4	21.3
43288	2000 <i>FB</i> ₁₆		1 1.3 204°39	0°5/ 1.2 18			429252	2010 <i>BU</i> ₃₆		1 1.3 293°12	0°5/ 1.4 17		
11 23	7 16.51	+22 7.3	1.812	2.584	16.4	18.9	11 23	7 9.19	+20 12.6	2.301	3.069	13.4	21.6
12 3	7 11.96	+22 36.6	1.719	2.580	13.1	18.7	12 3	7 5.47	+20 27.9	2.200	3.059	10.7	21.4
12 13	7 4.36	+23 12.2	1.647	2.576	9.1	18.4	12 13	6 59.50	+20 48.5	2.122	3.049	7.4	21.2
12 23	6 54.28	+23 50.7	1.600	2.571	4.5	18.2	12 23	6 51.76	+21 12.8	2.070	3.040	3.7	20.9
1 2	6 42.72	+24 28.1	1.582	2.565	0.7	17.9	1 2	6 42.98	+21 38.7	2.048	3.031	0.5	20.7
1 12	6 31.10	+25 0.6	1.594	2.559	5.3	18.2	1 12	6 34.15	+22 4.3	2.055	3.021	4.2	20.9
1 22	6 20.82	+25 26.6	1.634	2.553	9.9	18.4	1 22	6 26.24	+22 28.0	2.092	3.012	8.0	21.2
2 1	6 13.02	+25 46.1	1.699	2.546	13.9	18.7	2 1	6 20.09	+22 49.2	2.154	3.003	11.3	21.4
236770	2007 <i>ON</i> ₇		1 1.3 165°83	3°1/ 1.9 18			408993	2002 <i>TF</i> ₃₂₄		1 1.3 351°72	1°1/ 1.1 18		
11 23	7 15.04	+13 30.2	2.118	2.865	15.1	21.7	11 23	7 11.96	+24 30.2	1.526	2.322	17.9	21.3
12 3	7 10.00	+13 22.9	2.029	2.871	12.2	21.5	12 3	7 8.87	+24 46.1	1.444	2.319	14.3	21.0
12 13	7 2.53	+13 24.4	1.962	2.876	8.8	21.3	12 13	7 2.47	+25 5.6	1.381	2.316	9.9	20.8
12 23	6 53.19	+13 34.8	1.921	2.881	5.2	21.0	12 23	6 53.41	+25 25.3	1.342	2.314	5.0	20.5
1 2	6 42.83	+13 53.3	1.910	2.885	3.1	20.9	1 2	6 42.85	+25 41.4	1.330	2.313	1.2	20.2
1 12	6 32.55	+14 18.4	1.929	2.888	5.3	21.1	1 12	6 32.37	+25 51.4	1.345	2.312	5.9	20.5
1 22	6 23.39	+14 48.3	1.977	2.890	8.8	21.3	1 22	6 23.50	+25 54.5	1.386	2.311	10.7	20.8
2 1	6 16.21	+15 21.0	2.051	2.891	12.1	21.5	2 1	6 17.40	+25 52.1	1.450	2.311	15.0	21.1
221920	2009 <i>KF</i> ₅		1 1.3 127°84	6°0/ 2.8 18			467268	2016 <i>EQ</i> ₁₈₅		1 1.3 173°69	3°7/ 2.1 18		
11 23	7 11.96	+ 5 30.5	2.064	2.796	15.9	20.9	11 23	7 9.87	+11 41.7	2.211	2.962	14.4	21.2
12 3	7 7.52	+ 5 5.2	1.984	2.806	13.2	20.7	12 3	7 5.88	+11 28.9	2.120	2.963	11.7	21.0
12 13	7 0.79	+ 4 53.9	1.925	2.817	10.3	20.5	12 13	6 59.69	+11 25.6	2.051	2.963	8.6	20.8
12 23	6 52.30	+ 4 58.6	1.890	2.827	7.5	20.4	12 23	6 51.80	+11 32.5	2.008	2.964	5.5	20.6
1 2	6 42.91	+ 5 20.0	1.883	2.836	6.0	20.3	1 2	6 42.99	+11 49.3	1.993	2.964	3.7	20.5
1 12	6 33.64	+ 5 56.7	1.905	2.845	7.1	20.4	1 12	6 34.22	+12 14.9	2.008	2.964	5.4	20.6
1 22	6 25.47	+ 6 45.8	1.955	2.854	9.7	20.6	1 22	6 26.42	+12 47.3	2.052	2.964	8.5	20.8
2 1	6 19.19	+ 7 43.3	2.030	2.862	12.6	20.8	2 1	6 20.38	+13 24.3	2.121	2.964	11.7	21.0
458729	2011 <i>LO</i> ₄		1 1.3 201°06	4°3/ 2.4 17			321366	2009 <i>OE</i> ₂		1 1.3 146°09	3°0/ 1.9 18		
11 23	7 7.45	+ 6 15.3	3.248	3.963	10.9	22.6	11 23	7 13.07	+14 39.9	2.313	3.062	13.9	21.2
12 3	7 3.20	+ 5 49.3	3.146	3.958	9.1	22.5	12 3	7 8.27	+14 58.4	2.226	3.071	11.1	21.1
12 13	6 57.44	+ 5 31.7	3.068	3.953	7.1	22.3	12 13	7 1.26	+15 25.7	2.162	3.080	7.9	20.9
12 23	6 50.56	+ 5 23.6	3.016	3.948	5.2	22.2	12 23	6 52.55	+16 0.7	2.124	3.088	4.4	20.7
1 2	6 43.06	+ 5 25.7	2.994	3.942	4.3	22.1	1 2	6 42.93	+16 41.5	2.117	3.096	2.0	20.5
1 12	6 35.56	+ 5 37.9	3.002	3.936	5.1	22.2	1 12	6 33.38	+17 25.6	2.140	3.103	4.4	20.7
1 22	6 28.67	+ 5 59.1	3.040	3.930	7.0	22.3	1 22	6 24.82	+18 10.5	2.194	3.110	7.9	20.9
2 1	6 22.92	+ 6 27.7	3.105	3.922	9.0	22.4	2 1	6 18.05	+18 54.5	2.274	3.116	11.0	21.1
416875	2005 <i>PE</i> ₂₉		1 1.3 65°14	0°6/ 1.4 18			163503	2002 <i>SU</i> ₄₆		1 1.3 140°96	4°9/ 2.3 18		
11 23	7 12.69	+20 13.5	1.763	2.542	16.5	21.4	11 23	7 9.30	+ 6 52.6	2.779	3.500	12.4	20.1
12 3	7 8.69	+20 25.4	1.688	2.553	13.1	21.2	12 3	7 4.81	+ 6 14.3	2.693	3.510	10.3	19.9
12 13	7 1.89	+20 43.4	1.634	2.564	9.0	21.0	12 13	6 58.62	+ 5 45.0	2.630	3.519	8.0	19.8
12 23	6 52.94	+21 5.5	1.604	2.575	4.5	20.8	12 23	6 51.16	+ 5 26.3	2.593	3.527	5.9	19.7
1 2	6 42.87	+21 29.1	1.603	2.586	0.7	20.5	1 2	6 43.06	+ 5 19.3	2.586	3.535	4.9	19.6
1 12	6 32.99	+21 51.7	1.631	2.597	5.0	20.9	1 12	6 35.06	+ 5 23.9	2.609	3.543	5.8	19.7
1 22	6 24.52	+22 11.9	1.686	2.609	9.3	21.1	1 22	6 27.85	+ 5 38.9	2.660	3.551	7.8	19.8
2 1	6 18.41	+22 29.3	1.766	2.620	13.1	21.4	2 1	6 22.02	+ 6 2.7	2.738	3.558	10.0	20.0
396579	2000 <i>QC</i> ₁₆₉		1 1.3 62°71	3°7/ 1.9 18			48331	2002 <i>NR</i> ₅₆		1 1.3 62°57	1°2/ 1.6 18		
11 23	7 15.51	+14 42.6	1.400	2.182	19.9	20.6	11 23	7 13.62	+18 29.8	2.052	2.815	15.0	19.1
12 3	7 11.23	+14 23.3	1.343	2.206	15.9	20.4	12 3	7 8.70	+18 36.7	1.994	2.849	11.8	19.0
12 13	7 3.71	+14 15.5	1.306	2.230	11.3	20.2	12 13	7 1.46	+18 49.4	1.958	2.883	8.1	18.8
12 23	6 53.81	+14 19.2	1.291	2.255	6.6	20.0	12 23	6 52.57	+19 6.4	1.948	2.917	4.2	18.6
1 2	6 42.82	+14 33.4	1.302	2.279	3.7	19.9	1 2	6 42.96	+19 25.8	1.968	2.950	1.2	18.5
1 12	6 32.30	+14 55.8	1.341	2.304	6.5	20.1	1 12	6 33.72	+19 46.0	2.018	2.983	4.4	18.8
1 22	6 23.63	+15 23.8	1.406	2.328	10.9	20.5	1 22	6 25.78	+20 5.5	2.097	3.016	8.0	19.1
2 1	6 17.76	+15 55.1	1.494	2.353	14.8	20.8	2 1	6 19.86	+20 23.9	2.202	3.049	11.1	19.3
397966	2008 <i>YT</i> ₁₄₂		1 1.3 99°79	0°2/ 1.3 17			432444	2010 <i>CA</i> ₄₀		1 1.3 196°62	2°4/31.8 17		
11 23	7 16.23	+20 54.1											

EPHEMERIDES

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
460932	2014 <i>WV</i> ₂₃₂		1 1.3 69°00	0°6/ 1.2 18			362960	2013 <i>BF</i> ₁₅		1 1.3 257°40	1°2/ 1.5 18		
11 23	7 12.43	+22 31.3	1.921	2.697	15.4	21.2	11 23	7 14.49	+18 33.2	1.820	2.591	16.4	21.6
12 3	7 8.36	+22 59.7	1.842	2.706	12.2	21.0	12 3	7 10.47	+18 44.8	1.713	2.572	13.2	21.4
12 13	7 1.63	+23 32.9	1.785	2.716	8.4	20.8	12 13	7 3.48	+19 4.6	1.627	2.554	9.3	21.1
12 23	6 52.84	+24 7.9	1.754	2.725	4.1	20.6	12 23	6 53.97	+19 31.2	1.565	2.534	4.9	20.8
1 2	6 42.94	+24 41.3	1.752	2.735	0.7	20.3	1 2	6 42.87	+20 2.1	1.532	2.515	1.2	20.5
1 12	6 33.18	+25 10.1	1.779	2.744	4.8	20.7	1 12	6 31.51	+20 34.3	1.528	2.494	5.4	20.7
1 22	6 24.71	+25 33.1	1.833	2.754	8.9	20.9	1 22	6 21.28	+21 5.7	1.552	2.474	10.1	21.0
2 1	6 18.45	+25 50.3	1.914	2.763	12.5	21.2	2 1	6 13.40	+21 35.0	1.601	2.452	14.4	21.2
254043	2004 <i>GO</i> ₂₁		1 1.3 247°20	4°4/30.9 18			519117	2010 <i>MB</i> ₂₉		1 1.3 234°20	3°5/ 2.3 17		
11 23	7 15.99	+30 56.3	2.057	2.825	14.8	20.7	11 23	7 8.32	+10 2.7	2.844	3.578	11.9	22.9
12 3	7 11.64	+32 9.6	1.958	2.814	11.9	20.5	12 3	7 4.21	+9 56.1	2.736	3.567	9.8	22.7
12 13	7 4.26	+33 25.3	1.882	2.803	8.7	20.3	12 13	6 58.35	+9 58.0	2.652	3.556	7.3	22.5
12 23	6 54.34	+34 36.8	1.832	2.791	5.5	20.1	12 23	6 51.12	+10 9.1	2.594	3.544	4.8	22.3
1 2	6 42.81	+35 37.6	1.812	2.780	4.4	20.0	1 2	6 43.10	+10 29.2	2.566	3.532	3.5	22.2
1 12	6 31.04	+36 22.4	1.821	2.768	6.8	20.1	1 12	6 35.04	+10 57.4	2.568	3.520	4.7	22.3
1 22	6 20.45	+36 49.8	1.858	2.755	10.2	20.3	1 22	6 27.64	+11 32.1	2.601	3.507	7.3	22.4
2 1	6 12.25	+37 1.2	1.920	2.743	13.6	20.5	2 1	6 21.57	+12 11.4	2.660	3.495	9.9	22.6
442621	2012 <i>SD</i>		1 1.3 126°39	3°4/31.9 17			425204	2009 <i>VJ</i> ₁₈		1 1.3 144°69	2°2/31.9 18		
11 23	7 20.44	+29 5.6	1.520	2.302	18.6	22.4	11 23	7 14.02	+28 30.0	2.219	2.986	13.9	21.7
12 3	7 15.63	+29 41.3	1.446	2.312	14.8	22.1	12 3	7 9.38	+28 55.1	2.133	2.990	11.0	21.5
12 13	7 7.13	+30 17.2	1.393	2.322	10.4	21.9	12 13	7 2.21	+29 19.8	2.069	2.995	7.7	21.3
12 23	6 55.70	+30 47.1	1.364	2.331	5.8	21.7	12 23	6 53.10	+29 40.7	2.032	2.999	4.2	21.1
1 2	6 42.72	+31 5.1	1.362	2.340	3.4	21.5	1 2	6 42.95	+29 54.5	2.024	3.003	2.3	21.0
1 12	6 30.03	+31 8.2	1.388	2.348	6.8	21.8	1 12	6 32.92	+29 59.5	2.047	3.007	5.0	21.2
1 22	6 19.32	+30 57.5	1.441	2.356	11.3	22.1	1 22	6 24.08	+29 55.6	2.098	3.010	8.4	21.4
2 1	6 11.79	+30 36.8	1.517	2.363	15.3	22.3	2 1	6 17.33	+29 44.5	2.175	3.013	11.6	21.6
339033	2004 <i>HX</i> ₄₆		1 1.3 261°72	6°4/31.3 18			409794	2006 <i>GO</i> ₁₄		1 1.3 218°95	1°1/ 1.1 18		
11 23	7 19.22	+34 55.5	1.528	2.311	18.4	20.8	11 23	7 16.12	+24 22.6	2.011	2.778	15.1	22.3
12 3	7 15.36	+35 53.9	1.440	2.301	15.1	20.5	12 3	7 11.43	+24 47.9	1.911	2.770	12.1	22.0
12 13	7 7.47	+36 50.1	1.371	2.291	11.3	20.3	12 13	7 3.91	+25 16.8	1.833	2.761	8.4	21.8
12 23	6 56.13	+37 35.2	1.325	2.280	7.8	20.1	12 23	6 54.07	+25 45.9	1.782	2.752	4.2	21.5
1 2	6 42.68	+38 0.6	1.305	2.269	6.5	20.0	1 2	6 42.87	+26 11.6	1.760	2.742	1.2	21.3
1 12	6 29.14	+38 1.4	1.312	2.258	8.9	20.1	1 12	6 31.59	+26 31.0	1.768	2.732	5.1	21.5
1 22	6 17.54	+37 38.8	1.345	2.247	12.9	20.3	1 22	6 21.50	+26 43.3	1.804	2.721	9.3	21.8
2 1	6 9.41	+36 58.5	1.399	2.236	16.9	20.5	2 1	6 13.69	+26 49.1	1.867	2.709	13.0	22.0
709	<i>Fringilla</i>		1 1.3 100°32	5°6/31.9 18			10166	<i>Takarajima</i>		1 1.3 82°67	0°6/ 1.2 18 R		
11 23	7 19.68	+39 54.2	2.228	2.977	14.3	14.0	11 23	7 14.47	+22 56.0	1.808	2.585	16.2	17.9
12 3	7 13.99	+40 18.4	2.151	2.988	11.8	13.8	12 3	7 10.07	+23 18.9	1.735	2.599	12.8	17.7
12 13	7 5.38	+40 33.9	2.097	2.999	9.0	13.6	12 13	7 2.84	+23 46.2	1.684	2.614	8.8	17.5
12 23	6 54.61	+40 35.5	2.068	3.010	6.5	13.5	12 23	6 53.45	+24 14.5	1.657	2.628	4.3	17.3
1 2	6 42.82	+40 19.2	2.067	3.020	5.6	13.5	1 2	6 42.94	+24 40.5	1.660	2.643	0.7	17.0
1 12	6 31.42	+39 44.5	2.096	3.030	7.0	13.6	1 12	6 32.67	+25 1.6	1.691	2.657	5.0	17.4
1 22	6 21.64	+38 54.0	2.152	3.040	9.5	13.7	1 22	6 23.84	+25 16.9	1.750	2.671	9.2	17.7
2 1	6 14.39	+37 52.7	2.234	3.050	12.1	13.9	2 1	6 17.41	+25 26.9	1.835	2.685	12.9	17.9
401014	2011 <i>SV</i> ₄		1 1.3 155°32	3°1/31.9 18			19071	1047 <i>T</i> ₋₃		1 1.3 136°47	0°4/ 1.4 18		
11 23	7 19.44	+30 26.7	1.830	2.600	16.3	21.8	11 23	7 13.87	+22 12.6	2.235	2.997	13.9	19.1
12 3	7 14.25	+30 49.0	1.747	2.605	13.1	21.6	12 3	7 9.01	+22 3.7	2.149	3.005	11.0	18.9
12 13	7 5.86	+31 9.3	1.686	2.611	9.2	21.3	12 13	7 1.80	+21 56.9	2.087	3.013	7.6	18.7
12 23	6 54.98	+31 22.6	1.651	2.616	5.3	21.1	12 23	6 52.84	+21 51.0	2.051	3.021	3.8	18.5
1 2	6 42.79	+31 24.8	1.643	2.620	3.2	21.0	1 2	6 42.99	+21 44.7	2.045	3.028	0.5	18.3
1 12	6 30.82	+31 13.9	1.666	2.624	6.0	21.2	1 12	6 33.31	+21 37.3	2.069	3.035	4.3	18.6
1 22	6 20.49	+30 51.5	1.716	2.627	10.0	21.4	1 22	6 24.78	+21 29.1	2.123	3.041	8.0	18.8
2 1	6 12.87	+30 21.0	1.790	2.630	13.6	21.7	2 1	6 18.20	+21 20.6	2.203	3.048	11.2	19.0
20924	9526 <i>P-L</i>		1 1.3 252°42	6°5/30.9 18			273997	2007 <i>OT</i> ₂		1 1.3 112°90	0°2/ 1.3 18		
11 23	7 17.35	+38 25.0	2.008	2.770	15.3	18.2	11 23	7 11.75	+22 12.1	2.521	3.281	12.6	21.3
12 3	7 12.89	+39 25.6	1.920	2.766	12.6	18.0	12 3	7 7.08	+22 32.4	2.440	3.295	9.9	21.2
12 13	7 5.15	+40 21.1	1.855	2.761	9.8	17.8	12 13	7 0.36	+22 56.0	2.383	3.309	6.8	21.0
12 23	6 54.75	+41 4.2	1.814	2.756	7.3	17.6	12 23	6 52.10	+23 20.8	2.353	3.323	3.4	20.8
1 2	6 42.80	+41 28.5	1.800	2.751	6.5	17.6	1 2	6 43.05	+23 44.5	2.353	3.336	0.3	20.6
1 12	6 30.88	+41 30.7	1.815	2.746	8.2	17.7	1 12	6 34.13	+24 5.4	2.385	3.349	3.8	20.9
1 22	6 20.50	+41 11.8	1.856	2.740	11.0	17.8	1 22	6 26.19	+24 22.6	2.446	3.362	7.2	21.1
2 1	6 12.85	+40 36.2	1.921	2.735	13.9	18.0	2 1	6 19.94	+24 36.1	2.534	3.375	10.1	21.3
248831	2006 <i>SC</i> ₃₆₅		1 1.3 123°83	2°8/31.9 18			464869	2005 <i>JL</i> ₂₂		1 1.3 232°28	4°5/ 2.9 17		
11 23	7 19.14	+30 47.8	2.214	2.971	14.2	21.5	11 23	7 8.83	+ 3 43.2	3.248	3.948	11.2	22.3
12 3	7 13.27	+31 12.1	2.139	2.989	11.3	21.3	12 3	7 4.38	+ 3 41.3	3.133	3.933	9.4	22.2
12 13	7 4.75	+31 33.8	2.086	3.007	8.0	21.1	12 13	6 58.35	+ 3 50.2	3.040	3.918	7.4	22.0
12 23	6 54.28	+31 48.9	2.061	3.025	4.6	21.0	12 23	6 51.10	+ 4 11.0	2.975	3.901	5.5	21.9
1 2	6 42.86	+31 54.1	2.066	3.041	2.9	20.9	1 2	6 43.13	+ 4 43.9	2.939	3.885	4.6	21.8
1 12	6 31.73	+31 48.1	2.101	3.057	5.2	21.1	1 12	6 35.07	+ 5 27.9	2.934	3.867	5.3	21.8
1 22	6 22.02	+31 31.8	2.166	3.072	8.5	21.3	1 22	6 27.56	+ 6 21.1	2.959	3.849	7.1	21.9
2 1	6 14.57	+31 8.0	2.257	3.087	11.5	21.5	2 1	6 21.19	+ 7 20.9	3.013	3.831	9.3	22.0
485489	2011 <i>SN</i> ₁₃₈		1 1.3 182°54	2°4/ 1.7 18			519091	2010 <i>LO</i> ₈₃		1 1.3 181°75	4°0/ 3.0 17		
11 23	7 15.75	+16 8.1	2.064	2.818	15.2	22.8	11						

EPHEMERIDES

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
113498	2002 <i>TU</i> ₅		1 1.3	21°19'	3°2'	1.9 18	233985	1995 <i>SX</i> ₃₀		1 1.3	131°40'	1°6'	31.9 18
11 23	7 8.33	+14 41.2	1.819	2.594	16.2	19.5	11 23	7 11.87	+27 46.3	2.643	3.403	12.1	21.3
12 3	7 5.11	+14 23.6	1.741	2.601	13.0	19.3	12 3	7 7.21	+28 4.0	2.556	3.411	9.5	21.1
12 13	6 59.38	+14 14.8	1.685	2.609	9.4	19.1	12 13	7 0.49	+28 21.4	2.493	3.418	6.6	21.0
12 23	6 51.73	+14 15.3	1.654	2.617	5.5	18.9	12 23	6 52.20	+28 35.8	2.458	3.426	3.5	20.8
1 2	6 43.08	+14 24.6	1.649	2.625	3.2	18.8	1 2	6 43.11	+28 45.1	2.453	3.433	1.7	20.6
1 12	6 34.59	+14 41.6	1.673	2.635	5.6	19.0	1 12	6 34.14	+28 47.9	2.479	3.439	4.1	20.8
1 22	6 27.33	+15 4.5	1.723	2.645	9.3	19.2	1 22	6 26.14	+28 44.2	2.534	3.446	7.2	21.0
2 1	6 22.15	+15 31.1	1.799	2.655	12.8	19.4	2 1	6 19.84	+28 35.3	2.616	3.452	9.9	21.2
125672	2001 <i>XU</i> ₇₈		1 1.3	96°42'	0°9'	1.5 18	162077	1997 <i>WG</i> ₁₁		1 1.3	56°24'	1°0'	1.5 18
11 23	7 14.29	+19 35.0	2.031	2.796	15.1	20.2	11 23	7 11.14	+20 9.9	2.039	2.811	14.8	20.3
12 3	7 9.46	+19 42.7	1.959	2.815	11.9	20.0	12 3	7 7.03	+20 5.0	1.964	2.825	11.7	20.1
12 13	7 2.16	+19 55.9	1.908	2.834	8.2	19.8	12 13	7 0.53	+20 4.4	1.912	2.839	8.1	19.9
12 23	6 53.03	+20 12.7	1.884	2.853	4.2	19.6	12 23	6 52.26	+20 7.1	1.885	2.854	4.1	19.7
1 2	6 43.00	+20 31.2	1.889	2.872	0.9	19.4	1 2	6 43.11	+20 11.7	1.886	2.869	1.0	19.5
1 12	6 33.21	+20 49.4	1.924	2.890	4.5	19.7	1 12	6 34.17	+20 17.1	1.918	2.884	4.5	19.8
1 22	6 24.69	+21 6.4	1.988	2.908	8.4	20.0	1 22	6 26.45	+20 22.6	1.977	2.899	8.3	20.1
2 1	6 18.27	+21 21.6	2.078	2.925	11.7	20.2	2 1	6 20.73	+20 28.1	2.063	2.914	11.6	20.3
394389	2007 <i>EP</i> ₇₀		1 1.3	311°22'	2°3'	31.9 18	217984	2001 <i>VD</i> ₁₀₈		1 1.3	36°84'	5°5'	1.6 18
11 23	7 13.77	+25 44.3	1.345	2.147	19.5	21.3	11 23	7 12.33	+12 17.7	1.757	2.521	17.1	19.9
12 3	7 11.03	+26 15.7	1.259	2.137	15.7	21.0	12 3	7 8.30	+11 7.3	1.677	2.526	14.0	19.7
12 13	7 4.47	+26 51.8	1.192	2.128	11.0	20.7	12 13	7 1.59	+10 4.3	1.619	2.531	10.5	19.5
12 23	6 54.66	+27 27.8	1.147	2.118	5.7	20.4	12 23	6 52.85	+9 11.9	1.585	2.536	7.1	19.3
1 2	6 42.86	+27 57.5	1.128	2.109	2.3	20.1	1 2	6 43.06	+8 32.9	1.578	2.542	5.6	19.3
1 12	6 30.97	+28 16.6	1.135	2.101	6.9	20.4	1 12	6 33.47	+8 8.8	1.599	2.547	7.4	19.4
1 22	6 20.88	+28 23.9	1.167	2.093	12.3	20.7	1 22	6 25.20	+7 59.3	1.646	2.553	10.7	19.6
2 1	6 14.07	+28 21.5	1.221	2.085	17.1	20.9	2 1	6 19.17	+8 2.8	1.718	2.559	14.0	19.8
458580	2011 <i>FM</i> ₇		1 1.3	43°52'	5°2'	2.8 18	353276	2010 <i>FL</i> ₈₃		1 1.3	195°77'	1°0'	1.5 18
11 23	7 9.15	+7 19.0	1.991	2.738	15.9	20.0	11 23	7 15.33	+18 58.3	1.914	2.680	15.8	21.8
12 3	7 5.52	+7 12.4	1.909	2.744	13.1	19.9	12 3	7 10.77	+19 10.8	1.821	2.678	12.7	21.6
12 13	6 59.56	+7 20.1	1.847	2.750	10.0	19.7	12 13	7 3.42	+19 30.4	1.749	2.675	8.9	21.4
12 23	6 51.81	+7 43.4	1.810	2.756	6.9	19.5	12 23	6 53.85	+19 55.2	1.703	2.672	4.5	21.1
1 2	6 43.10	+8 22.0	1.800	2.763	5.2	19.4	1 2	6 42.99	+20 22.8	1.686	2.669	1.0	20.8
1 12	6 34.46	+9 13.6	1.819	2.770	6.4	19.5	1 12	6 32.11	+20 50.7	1.699	2.665	5.0	21.1
1 22	6 26.89	+10 14.6	1.866	2.777	9.4	19.7	1 22	6 22.46	+21 17.0	1.740	2.660	9.3	21.3
2 1	6 21.22	+11 21.0	1.938	2.784	12.5	19.9	2 1	6 15.06	+21 41.0	1.807	2.655	13.2	21.6
433485	2013 <i>WJ</i> ₈		1 1.3	327°17'	2°7'	1.5 18	228400	2001 <i>DK</i> ₇₆		1 1.3	304°31'	3°7'	2.2 18
11 23	7 9.34	+17 17.3	2.086	2.855	14.6	20.6	11 23	7 9.02	+12 14.5	1.999	2.761	15.4	20.1
12 3	7 5.72	+16 39.6	1.989	2.846	11.7	20.4	12 3	7 5.63	+12 7.6	1.901	2.751	12.6	19.8
12 13	6 59.74	+16 5.7	1.914	2.837	8.4	20.2	12 13	6 59.81	+12 11.5	1.824	2.741	9.2	19.6
12 23	6 51.92	+15 36.6	1.864	2.828	4.8	19.9	12 23	6 52.03	+12 26.6	1.772	2.731	5.7	19.4
1 2	6 43.09	+15 12.9	1.843	2.820	2.7	19.8	1 2	6 43.12	+12 52.5	1.748	2.721	3.7	19.2
1 12	6 34.29	+14 55.2	1.851	2.812	5.2	19.9	1 12	6 34.14	+13 27.7	1.753	2.712	5.7	19.3
1 22	6 26.54	+14 43.4	1.887	2.805	8.8	20.1	1 22	6 26.17	+14 9.5	1.785	2.703	9.3	19.5
2 1	6 20.68	+14 37.5	1.948	2.797	12.3	20.3	2 1	6 20.11	+14 55.3	1.843	2.694	12.8	19.7
114338	2002 <i>XQ</i> ₆₈		1 1.3	71°98'	6°9'	2.7 18	153849	2001 <i>XC</i> ₄₅		1 1.3	55°03'	5°6'	1.2 18
11 23	7 16.55	+7 56.8	1.348	2.114	21.3	19.7	11 23	7 20.51	+37 19.4	1.667	2.439	17.6	19.2
12 3	7 12.07	+7 18.1	1.293	2.140	17.5	19.5	12 3	7 15.31	+37 40.4	1.606	2.460	14.2	19.0
12 13	7 4.34	+6 57.4	1.257	2.166	13.2	19.3	12 13	7 6.60	+37 52.5	1.565	2.480	10.6	18.8
12 23	6 54.19	+6 57.2	1.243	2.191	9.1	19.2	12 23	6 55.30	+37 49.6	1.549	2.502	7.1	18.7
1 2	6 42.95	+7 18.0	1.254	2.217	6.9	19.1	1 2	6 42.90	+37 27.4	1.559	2.523	5.6	18.6
1 12	6 32.20	+7 57.0	1.292	2.242	8.5	19.3	1 12	6 31.14	+36 45.9	1.597	2.545	7.5	18.8
1 22	6 23.32	+8 49.5	1.355	2.267	12.1	19.6	1 22	6 21.50	+35 49.3	1.662	2.566	10.8	19.0
2 1	6 17.28	+9 50.1	1.441	2.292	15.7	19.9	2 1	6 14.95	+34 43.8	1.751	2.588	14.0	19.3
502126	2015 <i>BA</i> ₁₆		1 1.3	276°70'	0°5'	1.2 18	423121	2004 <i>BL</i> ₁₃₀		1 1.3	224°92'	1°1'	1.6 17
11 23	7 10.90	+24 9.4	2.300	3.069	13.4	21.1	11 23	7 9.65	+18 32.1	2.741	3.495	11.8	21.9
12 3	7 6.80	+24 16.4	2.206	3.066	10.6	20.9	12 3	7 5.40	+18 35.9	2.637	3.487	9.4	21.7
12 13	7 0.41	+24 25.3	2.134	3.063	7.3	20.7	12 13	6 59.25	+18 44.2	2.556	3.479	6.6	21.5
12 23	6 52.23	+24 33.9	2.090	3.060	3.6	20.5	12 23	6 51.62	+18 56.1	2.503	3.471	3.5	21.3
1 2	6 43.09	+24 40.4	2.074	3.057	0.6	20.2	1 2	6 43.17	+19 10.7	2.480	3.462	1.1	21.1
1 12	6 33.99	+24 43.4	2.089	3.054	4.3	20.5	1 12	6 34.68	+19 26.6	2.489	3.453	3.8	21.3
1 22	6 25.93	+24 42.6	2.133	3.051	7.9	20.7	1 22	6 26.97	+19 43.0	2.527	3.444	6.9	21.5
2 1	6 19.72	+24 38.7	2.202	3.049	11.2	20.9	2 1	6 20.72	+19 59.1	2.592	3.434	9.8	21.7
518474	2005 <i>RQ</i> ₅₂		1 1.3	43°44'	4°1'	31.5 18	460931	2014 <i>WA</i> ₂₃₂		1 1.3	61°25'	7°7'	30.5 18
11 23	7 12.33	+35 13.6	2.472	3.234	12.8	21.5	11 23	7 19.28	+39 12.3	1.798	2.564	16.7	20.5
12 3	7 7.95	+35 47.7	2.389	3.239	10.3	21.3	12 3	7 14.70	+40 46.6	1.738	2.583	13.8	20.4
12 13	7 1.19	+36 17.5	2.330	3.244	7.6	21.1	12 13	7 6.51	+42 14.4	1.700	2.602	10.8	20.2
12 23	6 52.60	+36 39.0	2.297	3.250	5.1	21.0	12 23	6 55.46	+43 26.6	1.686	2.621	8.4	20.1
1 2	6 43.07	+36 48.6	2.292	3.255	4.1	20.9	1 2	6 42.88	+44 15.2	1.699	2.640	7.8	20.1
1 12	6 33.67	+36 44.8	2.317	3.261	5.7	21.1	1 12	6 30.54	+44 36.5	1.740	2.659	9.3	20.2
1 22	6 25.44	+36 28.4	2.370	3.267	8.3	21.2	1 22	6 20.10	+44 32.3	1.806	2.678	11.9	20.4
2 1	6 19.18	+36 1.9	2.449	3.273	10.9	21.4	2 1	6 12.77	+44 8.1	1.894	2.698	14.5	20.7
326316	1999 <i>UH</i> ₂₉		1 1.3	108°18'	4°8'	31.3 18	427079	2014 <i>UO</i> ₃₀		1 1.3	138°14'	0°2'	1.3 18
11 23	7 16.70	+35 7.8	2.215	2.975	14.1	21.1</							

EPHEMERIDES

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
465344	2007 <i>VM</i> ₂₃₉		1 1.3 135°23	2°6/ 1.8 18			429005	2009 <i>BG</i> ₅₂		1 1.3 113°47	7°9/ 2.0 17		
11 23	7 9.56	+15 0.6	2.684	3.432	12.2	21.7	11 23	7 33.01	+41 28.8	1.258	2.029	22.2	21.1
12 3	7 5.18	+14 35.6	2.595	3.438	9.8	21.5	12 3	7 26.83	+41 37.0	1.188	2.038	18.5	20.9
12 13	6 58.99	+14 15.8	2.529	3.445	7.0	21.3	12 13	7 15.41	+41 29.3	1.136	2.046	14.2	20.6
12 23	6 51.44	+14 1.6	2.491	3.450	4.2	21.1	12 23	6 59.92	+40 54.9	1.106	2.054	10.0	20.4
1 2	6 43.21	+13 53.0	2.482	3.456	2.6	21.0	1 2	6 42.64	+39 46.6	1.101	2.062	7.9	20.3
1 12	6 35.07	+13 50.0	2.504	3.462	4.3	21.2	1 12	6 26.43	+38 6.3	1.122	2.069	10.0	20.5
1 22	6 27.78	+13 52.0	2.555	3.467	7.1	21.4	1 22	6 13.60	+36 4.6	1.169	2.076	14.0	20.7
2 1	6 21.96	+13 58.3	2.634	3.472	9.8	21.5	2 1	6 5.42	+33 55.5	1.238	2.083	18.2	21.0
105029	2000 <i>KG</i> ₃₃		1 1.3 180°12	2°5/ 1.6 18			432572	2010 <i>OR</i> ₄₇		1 1.3 309°61	10°9/ 4.8 18		
11 23	7 13.95	+16 7.9	2.557	3.300	12.9	20.6	11 23	7 6.94	-10 38.9	2.337	2.992	16.1	21.1
12 3	7 8.75	+15 37.7	2.461	3.302	10.3	20.4	12 3	7 3.58	-11 32.0	2.247	2.982	14.6	20.9
12 13	7 1.50	+15 11.7	2.388	3.303	7.4	20.2	12 13	6 58.18	-12 4.9	2.174	2.972	13.0	20.8
12 23	6 52.72	+14 50.2	2.342	3.303	4.3	20.0	12 23	6 51.18	-12 12.9	2.121	2.962	11.7	20.7
1 2	6 43.12	+14 33.7	2.327	3.303	2.5	19.9	1 2	6 43.27	-11 52.3	2.092	2.953	11.0	20.6
1 12	6 33.60	+14 22.1	2.344	3.302	4.5	20.0	1 12	6 35.33	-11 2.9	2.087	2.943	11.2	20.6
1 22	6 25.01	+14 15.4	2.390	3.300	7.6	20.2	1 22	6 28.21	-9 47.5	2.107	2.934	12.3	20.7
2 1	6 18.07	+14 13.2	2.464	3.298	10.6	20.4	2 1	6 22.66	-8 11.3	2.149	2.925	13.9	20.8
301106	2008 <i>VW</i> ₆₉		1 1.3 235°58	4°4/31.8 18			46652	1995 <i>SV</i> ₃₀		1 1.3 39°73	2°9/31.9 18		
11 23	7 19.82	+33 7.5	1.786	2.557	16.6	21.1	11 23	7 13.98	+29 5.2	1.648	2.436	17.1	19.8
12 3	7 15.05	+33 37.8	1.690	2.547	13.5	20.9	12 3	7 10.16	+29 29.6	1.579	2.448	13.6	19.6
12 13	7 6.80	+34 4.9	1.615	2.536	9.8	20.6	12 13	7 3.16	+29 53.2	1.530	2.461	9.5	19.4
12 23	6 55.68	+34 22.8	1.565	2.526	6.1	20.4	12 23	6 53.74	+30 11.3	1.506	2.474	5.2	19.2
1 2	6 42.88	+34 25.8	1.543	2.514	4.5	20.2	1 2	6 43.10	+30 19.9	1.509	2.488	2.9	19.1
1 12	6 30.08	+34 11.2	1.549	2.502	7.0	20.4	1 12	6 32.78	+30 17.0	1.540	2.502	6.0	19.3
1 22	6 18.91	+33 40.4	1.583	2.490	11.0	20.6	1 22	6 24.14	+30 3.6	1.598	2.516	10.1	19.6
2 1	6 10.65	+32 58.1	1.640	2.477	14.8	20.8	2 1	6 18.21	+29 42.6	1.679	2.531	13.8	19.8
206108	2002 <i>RC</i> ₂₀₉		1 1.3 102°58	0°1/ 1.3 18			313893	2004 <i>JO</i> ₁₀		1 1.3 275°03	1°7/ 1.7 18		
11 23	7 12.03	+22 15.3	2.441	3.202	12.9	21.8	11 23	7 11.74	+16 41.8	1.908	2.677	15.8	20.5
12 3	7 7.35	+22 23.2	2.362	3.218	10.2	21.7	12 3	7 8.10	+16 56.0	1.804	2.662	12.7	20.3
12 13	7 0.58	+22 33.8	2.307	3.233	7.0	21.5	12 13	7 1.74	+17 19.6	1.721	2.647	9.0	20.0
12 23	6 52.26	+22 45.4	2.279	3.249	3.5	21.3	12 23	6 53.13	+17 51.8	1.663	2.631	4.9	19.7
1 2	6 43.16	+22 56.3	2.280	3.263	0.3	21.0	1 2	6 43.13	+18 30.3	1.634	2.615	1.7	19.5
1 12	6 34.24	+23 5.1	2.313	3.278	3.9	21.4	1 12	6 32.95	+19 12.3	1.634	2.600	5.2	19.7
1 22	6 26.35	+23 11.5	2.375	3.293	7.3	21.6	1 22	6 23.82	+19 54.9	1.662	2.584	9.5	19.9
2 1	6 20.21	+23 15.6	2.464	3.307	10.2	21.8	2 1	6 16.82	+20 36.3	1.715	2.568	13.5	20.1
17137	1999 <i>JK</i> ₈₄		1 1.3 6°57	6°0/ 3.3 18			238723	2005 <i>GD</i> ₇₉		1 1.3 205°54	4°2/ 2.7 18		
11 23	7 7.40	+4 21.5	2.103	2.839	15.5	17.5	11 23	7 8.35	+6 35.1	2.954	3.673	11.8	21.0
12 3	7 4.07	+4 13.5	2.016	2.840	13.0	17.4	12 3	7 4.15	+6 27.9	2.852	3.669	9.8	20.8
12 13	6 58.56	+4 21.1	1.949	2.841	10.2	17.2	12 13	6 58.28	+6 30.7	2.773	3.664	7.5	20.7
12 23	6 51.36	+4 46.2	1.906	2.842	7.5	17.0	12 23	6 51.14	+6 44.4	2.720	3.658	5.4	20.5
1 2	6 43.22	+5 28.9	1.891	2.844	6.0	16.9	1 2	6 43.29	+7 9.2	2.697	3.653	4.2	20.4
1 12	6 35.11	+6 27.2	1.903	2.846	6.9	17.0	1 12	6 35.42	+7 44.0	2.704	3.647	5.1	20.5
1 22	6 27.95	+7 37.2	1.944	2.848	9.4	17.1	1 22	6 28.21	+8 26.9	2.741	3.640	7.3	20.6
2 1	6 22.54	+8 54.5	2.010	2.851	12.3	17.3	2 1	6 22.25	+9 15.7	2.806	3.633	9.6	20.8
317014	2001 <i>QY</i> ₁₂₉		1 1.3 77°91	3°8/ 1.2 18			58609	1997 <i>UZ</i> ₁		1 1.3 161°61	4°2/31.6 18		
11 23	7 20.54	+33 44.6	1.803	2.571	16.6	20.5	11 23	7 19.61	+31 46.8	1.821	2.591	16.4	19.8
12 3	7 14.94	+33 51.0	1.735	2.591	13.3	20.3	12 3	7 14.63	+32 34.2	1.739	2.596	13.2	19.5
12 13	7 6.17	+33 51.2	1.689	2.610	9.5	20.1	12 13	7 6.34	+33 20.2	1.678	2.600	9.5	19.3
12 23	6 55.08	+33 40.5	1.668	2.629	5.7	20.0	12 23	6 55.40	+33 58.7	1.643	2.604	5.9	19.1
1 2	6 42.96	+33 16.0	1.675	2.649	3.8	19.9	1 2	6 42.98	+34 23.6	1.636	2.607	4.3	19.0
1 12	6 31.39	+32 37.5	1.712	2.668	6.2	20.1	1 12	6 30.69	+34 31.9	1.658	2.610	6.8	19.2
1 22	6 21.68	+31 48.3	1.776	2.687	9.8	20.3	1 22	6 20.02	+34 24.2	1.707	2.612	10.5	19.4
2 1	6 14.77	+30 53.3	1.866	2.705	13.2	20.6	2 1	6 12.15	+34 3.9	1.780	2.613	14.0	19.6
489382	2006 <i>UG</i> ₂₆₀		1 1.3 190°54	7°6/ 2.3 18			412754	2014 <i>OF</i> ₃₇₅		1 1.3 59°72	4°1/ 1.3 18		
11 23	7 12.25	+3 10.6	2.173	2.891	15.5	22.4	11 23	7 20.83	+34 5.1	1.587	2.364	18.1	20.5
12 3	7 7.77	+2 5.9	2.083	2.890	13.2	22.3	12 3	7 15.59	+34 7.0	1.523	2.383	14.5	20.3
12 13	7 1.04	+1 13.3	2.014	2.889	10.7	22.1	12 13	7 6.82	+34 1.7	1.479	2.403	10.4	20.1
12 23	6 52.57	+0 36.7	1.970	2.887	8.5	22.0	12 23	6 55.46	+33 44.2	1.460	2.422	6.2	19.9
1 2	6 43.14	+0 18.9	1.953	2.885	7.6	21.9	1 2	6 43.00	+33 11.2	1.468	2.442	4.1	19.8
1 12	6 33.75	+0 20.9	1.963	2.882	8.5	21.9	1 12	6 31.18	+32 23.2	1.504	2.461	6.7	20.0
1 22	6 25.34	+0 41.1	2.001	2.879	10.6	22.1	1 22	6 21.49	+31 24.5	1.567	2.481	10.6	20.3
2 1	6 18.72	+1 16.5	2.063	2.875	13.2	22.2	2 1	6 14.88	+30 20.9	1.655	2.501	14.2	20.6
401876	2001 <i>OH</i> ₁₇		1 1.3 83°84	1°0/ 1.3 18			178135	2006 <i>TE</i> ₅₃		1 1.3 145°76	0°9/ 1.1 18		
11 23	7 17.69	+26 15.8	1.842	2.613	16.2	20.7	11 23	7 15.66	+24 11.7	2.248	3.009	13.9	21.2
12 3	7 12.43	+26 10.5	1.773	2.634	12.8	20.5	12 3	7 10.54	+24 36.2	2.164	3.019	11.0	21.1
12 13	7 4.34	+26 4.8	1.726	2.655	8.8	20.3	12 13	7 2.99	+25 3.3	2.102	3.029	7.6	20.9
12 23	6 54.17	+25 56.0	1.705	2.675	4.4	20.1	12 23	6 53.55	+25 30.0	2.068	3.038	3.8	20.6
1 2	6 43.05	+25 42.4	1.713	2.695	1.0	19.9	1 2	6 43.13	+25 53.5	2.064	3.046	1.0	20.4
1 12	6 32.35	+25 23.4	1.750	2.715	5.0	20.2	1 12	6 32.82	+26 11.5	2.090	3.054	4.4	20.7
1 22	6 23.25	+25 0.3	1.816	2.735	9.0	20.5	1 22	6 23.67	+26 23.3	2.146	3.061	8.1	21.0
2 1	6 16.63	+24 35.3	1.907	2.755	12.6	20.7	2 1	6 16.54	+26 29.8	2.229	3.068	11.3	21.2
133124	2003 <i>PP</i> ₁		1 1.3 121°77	0°8/ 1.5 18			270618	2002 <i>PL</i> ₂₃		1 1.3 103°31	2°5/ 1.7 18		
11 23	7 16.87	+20 36.0	1.906	2.671									

EPHEMERIDES

1 1.3

1 1.4

2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
465775	2009 <i>WF</i> ₂₃₄		1 1.3 84°25	2°5/31.8	18		104797	2000 <i>HG</i> ₄₁		1 1.3 220°42	1°3/31.9	18	
11 23	7 14.68	+27 53.3	2.019	2.791	14.9	21.6	11 23	7 14.98	+24 11.9	2.424	3.181	13.1	20.3
12 3	7 10.12	+28 31.9	1.945	2.806	11.8	21.4	12 3	7 10.12	+24 52.9	2.317	3.171	10.5	20.1
12 13	7 2.85	+29 11.2	1.894	2.821	8.2	21.2	12 13	7 2.85	+25 38.1	2.235	3.160	7.3	19.9
12 23	6 53.53	+29 46.9	1.869	2.836	4.5	21.0	12 23	6 53.62	+26 24.1	2.180	3.148	3.7	19.6
1 2	6 43.14	+30 14.9	1.872	2.850	2.5	20.9	1 2	6 43.19	+27 7.3	2.155	3.136	1.3	19.4
1 12	6 32.94	+30 32.7	1.905	2.865	5.3	21.1	1 12	6 32.61	+27 44.6	2.162	3.124	4.5	19.6
1 22	6 24.11	+30 40.1	1.967	2.879	8.9	21.4	1 22	6 22.94	+28 14.2	2.198	3.110	8.1	19.8
2 1	6 17.54	+30 38.8	2.053	2.893	12.1	21.6	2 1	6 15.11	+28 36.2	2.262	3.096	11.4	20.0
73091	2002 <i>GW</i> ₁₉		1 1.3 175°96	0°1/ 1.3	18		463950	2014 <i>VH</i>		1 1.3 315°82	2°0/31.8	18	
11 23	7 16.42	+22 57.9	2.160	2.920	14.4	21.0	11 23	7 12.52	+25 7.0	1.921	2.699	15.3	20.9
12 3	7 11.26	+23 3.1	2.068	2.922	11.5	20.8	12 3	7 8.79	+25 54.8	1.830	2.695	12.2	20.7
12 13	7 3.56	+23 11.0	1.999	2.925	7.9	20.6	12 13	7 2.24	+26 47.3	1.762	2.692	8.5	20.5
12 23	6 53.88	+23 19.2	1.956	2.926	3.9	20.4	12 23	6 53.39	+27 40.3	1.719	2.689	4.4	20.2
1 2	6 43.12	+23 25.8	1.944	2.927	0.3	20.0	1 2	6 43.20	+28 28.8	1.705	2.685	2.0	20.0
1 12	6 32.44	+23 29.2	1.962	2.927	4.5	20.4	1 12	6 32.95	+29 8.9	1.720	2.682	5.4	20.3
1 22	6 22.95	+23 29.2	2.009	2.926	8.4	20.6	1 22	6 23.92	+29 38.8	1.763	2.679	9.5	20.5
2 1	6 15.55	+23 26.6	2.083	2.925	11.9	20.8	2 1	6 17.17	+29 58.7	1.831	2.676	13.1	20.7
190978	2001 <i>XD</i> ₁₀₁		1 1.3 47°53	1°7/ 1.3	18	1.3	360298	2001 <i>QP</i> ₁₈₄		1 1.3 132°67	5°8/ 2.5	18	
11 23	7 17.56	+27 48.5	1.335	2.132	19.9	19.1	11 23	7 12.74	+ 6 19.6	2.234	2.961	14.9	21.0
12 3	7 13.56	+27 39.0	1.269	2.143	15.8	18.8	12 3	7 7.99	+ 5 40.1	2.154	2.974	12.4	20.9
12 13	7 5.78	+27 27.7	1.221	2.155	11.0	18.6	12 13	7 1.10	+ 5 12.2	2.096	2.986	9.7	20.7
12 23	6 55.10	+27 10.8	1.197	2.168	5.6	18.3	12 23	6 52.60	+ 4 58.1	2.063	2.998	7.1	20.6
1 2	6 43.03	+26 45.9	1.198	2.180	1.7	18.1	1 2	6 43.29	+ 4 59.0	2.059	3.009	5.8	20.5
1 12	6 31.47	+26 12.8	1.227	2.193	6.3	18.4	1 12	6 34.12	+ 5 14.4	2.083	3.020	6.8	20.6
1 22	6 22.05	+25 34.4	1.281	2.207	11.4	18.8	1 22	6 25.98	+ 5 42.5	2.136	3.030	9.3	20.8
2 1	6 15.90	+24 54.5	1.358	2.221	15.7	19.1	2 1	6 19.61	+ 6 20.2	2.214	3.040	11.9	21.0
301590	2010 <i>CB</i> ₂₉		1 1.3 224°15	2°0/ 1.0	18		188411	2004 <i>ER</i> ₇₇		1 1.3 338°60	11°5/30.2	18	
11 23	7 17.28	+26 37.9	1.793	2.567	16.4	21.9	11 23	7 13.42	+43 11.6	1.310	2.105	20.3	20.5
12 3	7 12.81	+27 5.0	1.697	2.560	13.2	21.7	12 3	7 12.15	+44 46.3	1.231	2.089	17.5	20.3
12 13	7 5.16	+27 34.3	1.624	2.552	9.2	21.4	12 13	7 6.15	+46 12.4	1.171	2.074	14.5	20.0
12 23	6 54.88	+28 1.6	1.575	2.544	4.9	21.1	12 23	6 55.92	+47 17.6	1.130	2.060	12.1	19.9
1 2	6 43.05	+28 22.3	1.555	2.535	2.1	20.9	1 2	6 43.02	+47 49.2	1.112	2.047	11.6	19.8
1 12	6 31.15	+28 33.4	1.563	2.526	5.8	21.1	1 12	6 30.03	+47 40.5	1.117	2.035	13.4	19.9
1 22	6 20.68	+28 34.5	1.600	2.516	10.2	21.4	1 22	6 19.51	+46 54.1	1.143	2.026	16.4	20.0
2 1	6 12.83	+28 27.4	1.661	2.506	14.2	21.6	2 1	6 13.31	+45 39.1	1.187	2.017	19.8	20.2
281356	2007 <i>VH</i> ₁₆₇		1 1.3 128°37	3°2/ 1.9	18		179721	2002 <i>RC</i> ₈₅		1 1.3 65°25	5°3/ 2.4	18	
11 23	7 10.22	+12 14.9	2.964	3.697	11.5	21.0	11 23	7 13.12	+10 12.3	1.626	2.389	18.3	19.8
12 3	7 5.45	+11 40.3	2.880	3.711	9.3	20.9	12 3	7 9.03	+ 9 40.4	1.561	2.409	14.9	19.6
12 13	6 59.05	+11 11.5	2.819	3.724	6.8	20.7	12 13	7 2.15	+ 9 21.8	1.516	2.428	11.1	19.4
12 23	6 51.47	+10 49.3	2.786	3.737	4.5	20.6	12 23	6 53.20	+ 9 18.1	1.495	2.448	7.4	19.3
1 2	6 43.33	+10 34.3	2.784	3.750	3.2	20.5	1 2	6 43.25	+ 9 29.7	1.500	2.467	5.4	19.2
1 12	6 35.30	+10 26.6	2.812	3.762	4.5	20.6	1 12	6 33.61	+ 9 54.9	1.533	2.487	7.1	19.3
1 22	6 28.07	+10 25.6	2.871	3.774	6.8	20.8	1 22	6 25.44	+10 30.8	1.593	2.506	10.5	19.6
2 1	6 22.16	+10 30.6	2.957	3.785	9.1	21.0	2 1	6 19.64	+11 13.9	1.676	2.526	13.9	19.8
32463	2000 <i>SO</i> ₁₂₉		1 1.3 233°47	5°4/ 1.9	18		315659	2008 <i>DX</i> ₅₇		1 1.4 233°77	2°5/ 1.1	17	
11 23	7 8.85	+ 6 45.3	2.662	3.387	12.8	19.7	11 23	7 17.61	+30 46.6	2.353	3.110	13.5	21.6
12 3	7 4.72	+ 5 51.6	2.564	3.382	10.7	19.6	12 3	7 12.31	+30 54.4	2.246	3.096	10.9	21.4
12 13	6 58.77	+ 5 6.2	2.489	3.376	8.4	19.4	12 13	7 4.38	+30 59.4	2.161	3.082	7.7	21.2
12 23	6 51.44	+ 4 31.4	2.440	3.370	6.4	19.3	12 23	6 54.37	+30 58.0	2.103	3.068	4.4	20.9
1 2	6 43.34	+ 4 9.1	2.419	3.365	5.4	19.2	1 2	6 43.17	+30 47.5	2.075	3.052	2.5	20.8
1 12	6 35.27	+ 4 0.0	2.428	3.359	6.4	19.2	1 12	6 31.97	+30 26.5	2.078	3.037	5.0	20.9
1 22	6 27.95	+ 4 3.5	2.465	3.352	8.5	19.4	1 22	6 21.92	+29 56.3	2.111	3.020	8.5	21.1
2 1	6 22.05	+ 4 18.0	2.528	3.346	10.8	19.5	2 1	6 13.96	+29 19.5	2.170	3.003	11.8	21.3
30170	Makaylaruth		1 1.3 63°77	0°2/ 1.3	18		456380	2006 <i>UO</i> ₇₈		1 1.4 18°57	0°5/ 1.4	18	
11 23	7 13.37	+22 11.5	1.742	2.523	16.6	19.2	11 23	7 11.54	+22 26.1	1.402	2.202	18.9	21.2
12 3	7 9.45	+22 27.7	1.663	2.529	13.2	19.0	12 3	7 8.63	+22 15.4	1.330	2.207	15.1	21.0
12 13	7 2.62	+22 48.9	1.605	2.536	9.1	18.8	12 13	7 2.36	+22 8.3	1.278	2.214	10.4	20.7
12 23	6 53.52	+23 12.3	1.572	2.543	4.5	18.5	12 23	6 53.48	+22 3.4	1.249	2.221	5.2	20.4
1 2	6 43.19	+23 34.8	1.567	2.550	0.4	18.2	1 2	6 43.24	+21 58.8	1.245	2.228	0.6	20.1
1 12	6 33.02	+23 54.0	1.590	2.557	5.1	18.6	1 12	6 33.27	+21 53.2	1.269	2.237	5.8	20.5
1 22	6 24.27	+24 8.7	1.641	2.564	9.5	18.8	1 22	6 25.05	+21 46.8	1.317	2.247	10.8	20.8
2 1	6 17.95	+24 19.1	1.717	2.572	13.4	19.1	2 1	6 19.67	+21 40.4	1.389	2.257	15.1	21.1
398878	2013 <i>CH</i> ₇₂		1 1.3 72°71	0°3/ 1.4	18		517671	2015 <i>CB</i> ₁₃		1 1.4 196°82	8°7/ 4.6	18	
11 23	7 16.61	+23 26.1	1.512	2.299	18.4	20.7	11 23	7 19.68	- 0 46.4	1.326	2.058	23.2	21.3
12 3	7 12.36	+23 9.4	1.438	2.307	14.7	20.4	12 3	7 15.44	- 0 24.3	1.239	2.057	19.9	21.0
12 13	7 4.76	+22 54.5	1.383	2.315	10.2	20.2	12 13	7 7.45	+ 0 31.0	1.169	2.055	15.9	20.8
12 23	6 54.60	+22 39.7	1.353	2.324	5.1	19.9	12 23	6 56.26	+ 2 4.1	1.119	2.053	11.7	20.5
1 2	6 43.12	+22 23.4	1.349	2.333	0.4	19.6	1 2	6 43.03	+ 4 14.5	1.094	2.049	8.9	20.4
1 12	6 31.97	+22 5.1	1.374	2.341	5.7	20.0	1 12	6 29.56	+ 6 54.0	1.097	2.046	9.9	20.4
1 22	6 22.59	+21 46.0	1.425	2.350	10.6	20.3	1 22	6 17.68	+ 9 49.0	1.127	2.041	13.8	20.6
2 1	6 16.07	+21 27.5	1.500	2.359	14.8	20.6	2 1	6 8.91	+12 45.7	1.183	2.036	18.2	20.9
97926	2000 <i>QO</i> ₉₉		1 1.3 44°69	2°9/ 1.9	17		35750	1999 <i>GP</i> ₃₄		1 1.4 245°89	1°6/ 1.2	18	
11 23	7 13.80	+14 59.8	1.22										

EPHEMERIDES

1 1.4

1 1.4

2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
162175	1999 <i>JJ</i> ₄₅		1 1.4 164°43	1°3/	1.1 18		253173	2002 <i>WV</i> ₂₅		1 1.4 99°34	0°4/	1.5 18	
11 23	7 17.54	+25 3.8	2.072	2.834	14.9	21.2	11 23	7 14.61	+20 12.9	1.875	2.645	16.0	21.2
12 3	7 12.36	+25 31.2	1.984	2.840	11.8	21.0	12 3	7 10.11	+20 31.3	1.799	2.659	12.7	21.0
12 13	7 4.45	+26 1.0	1.919	2.845	8.2	20.8	12 13	7 2.91	+20 55.8	1.744	2.672	8.7	20.8
12 23	6 54.40	+26 29.9	1.881	2.850	4.2	20.5	12 23	6 53.63	+21 24.0	1.716	2.686	4.4	20.6
1 2	6 43.18	+26 54.2	1.872	2.854	1.4	20.3	1 2	6 43.27	+21 53.2	1.716	2.699	0.5	20.3
1 12	6 32.04	+27 11.5	1.894	2.857	4.9	20.6	1 12	6 33.09	+22 20.5	1.745	2.712	4.8	20.7
1 22	6 22.18	+27 21.1	1.944	2.859	8.8	20.8	1 22	6 24.27	+22 44.6	1.803	2.724	9.0	21.0
2 1	6 14.55	+27 24.1	2.021	2.861	12.3	21.0	2 1	6 17.71	+23 5.1	1.887	2.737	12.6	21.2
494955	2009 <i>RH</i> ₁₉		1 1.4 90°21	4°1/31.9	18		415192	2012 <i>GG</i> ₂₄		1 1.4 292°24	7°8/	2.7 18	
11 23	7 18.90	+34 17.3	2.053	2.815	15.0	21.6	11 23	7 9.41	+3 49.0	1.885	2.623	17.0	21.3
12 3	7 13.43	+34 45.2	1.985	2.835	12.1	21.5	12 3	7 6.09	+3 0.7	1.790	2.612	14.5	21.1
12 13	7 5.09	+35 7.9	1.938	2.855	8.7	21.3	12 13	7 0.25	+2 26.9	1.714	2.601	11.6	20.9
12 23	6 54.63	+35 20.8	1.918	2.875	5.6	21.2	12 23	6 52.40	+2 11.5	1.662	2.589	9.0	20.7
1 2	6 43.18	+35 19.9	1.926	2.894	4.2	21.1	1 2	6 43.35	+2 17.2	1.635	2.578	7.8	20.6
1 12	6 32.11	+35 4.2	1.964	2.913	6.1	21.3	1 12	6 34.23	+2 44.2	1.635	2.567	8.8	20.6
1 22	6 22.63	+34 35.6	2.030	2.932	9.2	21.5	1 22	6 26.12	+3 30.1	1.661	2.556	11.4	20.7
2 1	6 15.64	+33 58.0	2.121	2.951	12.2	21.7	2 1	6 20.00	+4 30.4	1.711	2.545	14.4	20.9
148651	2001 <i>SQ</i> ₁₁₀		1 1.4 27°65	4°7/	1.5 18		350738	2001 <i>YK</i> ₂₇		1 1.4 16°89	1°9/	1.1 18	
11 23	7 12.22	+15 44.7	1.483	2.269	18.8	18.7	11 23	7 11.22	+24 30.7	1.134	1.953	21.4	20.7
12 3	7 8.68	+14 35.5	1.414	2.279	15.2	18.5	12 3	7 9.32	+25 3.1	1.070	1.958	17.0	20.4
12 13	7 2.11	+13 32.4	1.365	2.289	11.0	18.3	12 13	7 3.40	+25 41.5	1.023	1.964	11.8	20.1
12 23	6 53.25	+12 38.4	1.340	2.301	6.8	18.1	12 23	6 54.20	+26 20.7	0.998	1.971	6.0	19.8
1 2	6 43.27	+11 55.9	1.340	2.313	4.7	18.0	1 2	6 43.23	+26 54.5	0.997	1.979	2.0	19.6
1 12	6 33.63	+11 26.8	1.368	2.326	7.1	18.1	1 12	6 32.53	+27 18.4	1.021	1.989	7.0	20.0
1 22	6 25.62	+11 10.9	1.421	2.339	11.1	18.4	1 22	6 23.98	+27 31.1	1.068	1.999	12.5	20.3
2 1	6 20.17	+11 7.0	1.498	2.354	14.9	18.7	2 1	6 18.92	+27 34.5	1.136	2.011	17.3	20.6
282927	2007 <i>PB</i> ₂₄		1 1.4 69°71	0°1/	1.4 18		80194	1999 <i>VE</i> ₄₄		1 1.4 130°58	2°0/	1.1 18	
11 23	7 18.08	+23 45.8	1.508	2.292	18.6	20.2	11 23	7 19.61	+26 11.7	1.567	2.347	18.2	20.3
12 3	7 13.32	+23 33.3	1.445	2.312	14.7	20.0	12 3	7 14.84	+26 37.7	1.492	2.357	14.5	20.0
12 13	7 5.26	+23 22.8	1.402	2.333	10.1	19.8	12 13	7 6.60	+27 5.9	1.436	2.366	10.1	19.8
12 23	6 54.77	+23 12.0	1.383	2.354	5.0	19.6	12 23	6 55.60	+27 31.7	1.405	2.375	5.2	19.5
1 2	6 43.17	+22 59.2	1.392	2.375	0.3	19.3	1 2	6 43.14	+27 50.1	1.402	2.383	2.0	19.4
1 12	6 32.07	+22 43.8	1.429	2.396	5.5	19.7	1 12	6 30.92	+27 58.5	1.428	2.391	6.1	19.6
1 22	6 22.85	+22 26.9	1.493	2.416	10.2	20.0	1 22	6 20.50	+27 56.9	1.480	2.399	10.7	19.9
2 1	6 16.50	+22 10.0	1.580	2.437	14.2	20.3	2 1	6 13.06	+27 47.8	1.556	2.406	14.8	20.2
371760	2007 <i>GB</i> ₁₄		1 1.4 264°11	8°3/	3.6 18		415318	2013 <i>HS</i> ₁₄		1 1.4 164°57	3°8/31.5	18	
11 23	7 9.32	- 0 36.5	2.089	2.800	16.3	21.2	11 23	7 17.57	+31 55.4	2.185	2.946	14.3	22.1
12 3	7 5.67	- 1 13.8	1.998	2.796	14.1	21.0	12 3	7 12.49	+32 44.6	2.099	2.951	11.5	21.9
12 13	6 59.76	- 1 34.0	1.926	2.791	11.6	20.9	12 13	7 4.62	+33 32.6	2.036	2.955	8.3	21.7
12 23	6 52.06	- 1 33.3	1.877	2.786	9.5	20.7	12 23	6 54.53	+34 14.1	1.999	2.958	5.2	21.5
1 2	6 43.35	- 1 9.7	1.855	2.781	8.3	20.6	1 2	6 43.21	+34 44.1	1.992	2.962	3.9	21.4
1 12	6 34.62	- 0 23.6	1.859	2.776	9.0	20.7	1 12	6 31.95	+34 59.8	2.015	2.964	6.0	21.6
1 22	6 26.84	+ 0 41.7	1.889	2.771	11.0	20.8	1 22	6 21.98	+35 1.2	2.066	2.966	9.2	21.8
2 1	6 20.84	+ 2 1.1	1.945	2.766	13.5	20.9	2 1	6 14.30	+34 50.8	2.142	2.968	12.3	22.0
359087	2008 <i>YQ</i> ₁₆₅		1 1.4 270°52	1°6/	1.6 18		214312	2005 <i>JM</i> ₃₁		1 1.4 172°67	0°1/	1.4 18	
11 23	7 13.46	+18 52.7	1.713	2.490	17.0	21.8	11 23	7 16.12	+23 0.2	2.386	3.140	13.4	21.4
12 3	7 9.81	+18 47.7	1.613	2.477	13.7	21.5	12 3	7 10.76	+22 55.4	2.293	3.144	10.6	21.3
12 13	7 3.13	+18 49.3	1.534	2.462	9.7	21.2	12 13	7 3.08	+22 52.2	2.223	3.147	7.3	21.1
12 23	6 53.94	+18 56.7	1.479	2.448	5.1	20.9	12 23	6 53.66	+22 49.0	2.181	3.150	3.7	20.8
1 2	6 43.22	+19 8.3	1.452	2.434	1.6	20.6	1 2	6 43.30	+22 44.2	2.168	3.152	0.3	20.5
1 12	6 32.36	+19 22.2	1.453	2.419	5.6	20.9	1 12	6 33.06	+22 37.3	2.188	3.153	4.1	20.9
1 22	6 22.77	+19 37.2	1.481	2.404	10.3	21.1	1 22	6 23.89	+22 28.2	2.237	3.153	7.8	21.1
2 1	6 15.62	+19 52.6	1.533	2.390	14.6	21.3	2 1	6 16.61	+22 17.9	2.313	3.153	11.0	21.3
323489	2004 <i>PP</i> ₅₃		1 1.4 141°99	0°5/	1.5 18		90179	2003 <i>AE</i> ₂₈		1 1.4 67°44	2°0/	1.8 18	
11 23	7 13.34	+19 49.0	2.449	3.203	13.1	21.8	11 23	7 15.11	+16 14.1	1.369	2.156	20.0	18.9
12 3	7 8.46	+20 5.9	2.363	3.214	10.4	21.7	12 3	7 11.42	+16 31.1	1.301	2.169	16.0	18.7
12 13	7 1.45	+20 27.6	2.300	3.224	7.2	21.5	12 13	7 4.30	+17 0.8	1.253	2.183	11.2	18.5
12 23	6 52.81	+20 52.5	2.265	3.234	3.6	21.3	12 23	6 54.49	+17 41.2	1.228	2.196	6.0	18.2
1 2	6 43.32	+21 18.3	2.260	3.243	0.6	21.0	1 2	6 43.24	+18 28.7	1.228	2.210	2.0	18.0
1 12	6 33.91	+21 43.3	2.287	3.252	3.9	21.3	1 12	6 32.25	+19 18.6	1.256	2.224	6.1	18.3
1 22	6 25.50	+22 6.1	2.343	3.260	7.4	21.6	1 22	6 23.05	+20 7.4	1.311	2.238	11.1	18.6
2 1	6 18.82	+22 26.3	2.427	3.268	10.4	21.8	2 1	6 16.78	+20 52.5	1.388	2.251	15.4	18.9
394420	2007 <i>HH</i> ₆₉		1 1.4 216°55	4°1/	1.9 17		127	<i>Johanna</i>		1 1.4 336°07	4°6/31.4	18	
11 23	7 15.78	+11 45.4	2.206	2.944	14.8	23.6	11 23	7 14.15	+32 32.6	1.820	2.600	16.0	12.8
12 3	7 10.74	+11 20.8	2.099	2.933	12.2	23.4	12 3	7 10.48	+33 24.0	1.734	2.596	12.9	12.6
12 13	7 3.27	+11 4.7	2.014	2.922	9.0	23.2	12 13	7 3.63	+34 14.1	1.670	2.593	9.4	12.4
12 23	6 53.84	+10 58.0	1.956	2.909	5.8	22.9	12 23	6 54.20	+34 56.9	1.630	2.590	6.0	12.2
1 2	6 43.24	+11 1.4	1.927	2.896	4.1	22.8	1 2	6 43.27	+35 26.4	1.618	2.587	4.7	12.1
1 12	6 32.55	+11 14.2	1.928	2.881	5.9	22.9	1 12	6 32.35	+35 39.0	1.633	2.584	7.0	12.2
1 22	6 22.81	+11 35.3	1.958	2.865	9.2	23.1	1 22	6 22.92	+35 34.9	1.675	2.581	10.6	12.5
2 1	6 14.95	+12 2.7	2.015	2.849	12.6	23.2	2 1	6 16.13	+35 17.3	1.741	2.579	14.1	12.7
369408	2009 <i>WM</i> ₄₄		1 1.4 354°33	1°5/	1.4 18		30143	2000 <i>GU</i> ₂₉		1 1.4 102°67	6°6/31.3	18	
11 23	7 11.31	+21 11.4	1.707	2.4									

EPHEMERIDES

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
456363	2006 <i>TH</i> ₁₀₉		1 1.4 45°40	8:7/29.8	17		49384	Hubertnaudot		1 1.4 329°97	6°5/30.5	18	
11 23	7 19.42	+39 46.8	1.736	2.504	17.1	21.3	11 23	7 13.53	+32 54.6	1.543	2.336	17.8	18.3
12 3	7 15.43	+41 37.3	1.663	2.507	14.3	21.1	12 3	7 10.90	+34 26.0	1.457	2.325	14.6	18.1
12 13	7 7.54	+43 23.5	1.611	2.511	11.4	20.9	12 13	7 4.54	+35 59.8	1.391	2.315	10.9	17.8
12 23	6 56.34	+44 54.8	1.584	2.515	9.2	20.8	12 23	6 54.93	+37 27.1	1.349	2.305	7.6	17.6
1 2	6 43.12	+46 1.0	1.584	2.518	8.8	20.8	1 2	6 43.24	+38 38.0	1.334	2.296	6.6	17.5
1 12	6 29.82	+46 36.4	1.610	2.522	10.4	20.9	1 12	6 31.29	+39 25.3	1.344	2.287	9.1	17.7
1 22	6 18.36	+46 41.9	1.660	2.526	13.1	21.1	1 22	6 20.99	+39 47.3	1.380	2.279	12.9	17.8
2 1	6 10.25	+46 22.9	1.733	2.530	15.9	21.3	2 1	6 13.87	+39 47.3	1.437	2.272	16.6	18.1
306481	1999 <i>TL</i> ₃₁		1 1.4 53°08	3°6/31.9	17		506346	2017 <i>OY</i> ₄₈		1 1.4 164°35	2°6/2.2	17	
11 23	7 18.42	+29 40.1	1.380	2.174	19.5	20.3	11 23	7 8.69	+11 39.0	3.391	4.118	10.3	23.0
12 3	7 14.14	+30 15.6	1.326	2.198	15.5	20.1	12 3	7 4.17	+11 33.5	3.296	4.124	8.3	22.8
12 13	7 6.13	+30 49.7	1.291	2.222	10.9	19.9	12 13	6 58.19	+11 34.4	3.225	4.130	6.1	22.7
12 23	6 55.32	+31 16.3	1.280	2.247	6.1	19.7	12 23	6 51.14	+11 41.8	3.182	4.135	3.9	22.6
1 2	6 43.22	+31 29.7	1.295	2.272	3.7	19.6	1 2	6 43.53	+11 55.4	3.170	4.139	2.6	22.5
1 12	6 31.71	+31 28.0	1.336	2.297	6.9	19.8	1 12	6 35.95	+12 14.4	3.190	4.143	3.8	22.6
1 22	6 22.39	+31 12.8	1.404	2.322	11.2	20.2	1 22	6 29.00	+12 37.8	3.240	4.147	6.0	22.7
2 1	6 16.31	+30 48.6	1.494	2.348	15.1	20.5	2 1	6 23.17	+13 4.4	3.319	4.150	8.2	22.9
345147	2005 <i>SW</i> ₁₀₇		1 1.4 124°87	3°6/1.9	18		445296	2010 <i>AN</i> ₁₀₄		1 1.4 23°76	8°7/3.1	18	
11 23	7 17.64	+14 19.8	1.720	2.479	17.6	21.7	11 23	7 33.33	+45 54.3	1.259	2.025	22.5	20.3
12 3	7 12.58	+13 58.0	1.645	2.495	14.2	21.5	12 3	7 27.11	+45 33.0	1.189	2.030	19.0	20.1
12 13	7 4.64	+13 45.5	1.591	2.509	10.2	21.3	12 13	7 15.51	+44 48.4	1.136	2.037	15.0	19.9
12 23	6 54.51	+13 42.6	1.563	2.524	6.1	21.1	12 23	6 59.97	+43 30.0	1.104	2.045	11.0	19.7
1 2	6 43.27	+13 49.1	1.562	2.537	3.6	20.9	1 2	6 42.97	+41 32.4	1.098	2.054	8.8	19.6
1 12	6 32.29	+14 3.5	1.590	2.550	6.1	21.1	1 12	6 27.43	+39 1.1	1.118	2.063	10.2	19.7
1 22	6 22.80	+14 24.1	1.646	2.562	10.0	21.4	1 22	6 15.51	+36 10.6	1.164	2.073	13.9	19.9
2 1	6 15.76	+14 49.0	1.727	2.574	13.7	21.6	2 1	6 8.27	+33 17.7	1.235	2.084	17.9	20.2
400158	2006 <i>VR</i> ₆₉		1 1.4 67°74	5°2/1.9	18		504306	2007 <i>HL</i> ₂₂		1 1.4 163°67	0°1/1.4	17	
11 23	7 17.41	+12 7.4	1.702	2.458	17.9	21.4	11 23	7 6.28	+22 28.3	3.827	4.577	8.8	22.4
12 3	7 12.02	+11 7.0	1.648	2.491	14.5	21.3	12 3	7 2.23	+22 39.2	3.730	4.580	6.9	22.3
12 13	7 3.95	+10 16.6	1.614	2.524	10.7	21.1	12 13	6 56.84	+22 51.8	3.659	4.583	4.8	22.1
12 23	6 54.02	+9 38.6	1.605	2.557	7.0	21.0	12 23	6 50.48	+23 5.0	3.617	4.586	2.4	22.0
1 2	6 43.32	+9 14.4	1.624	2.589	5.2	20.9	1 2	6 43.59	+23 17.8	3.606	4.589	0.2	21.7
1 12	6 33.13	+9 4.2	1.671	2.621	6.9	21.1	1 12	6 36.74	+23 29.2	3.627	4.592	2.7	22.0
1 22	6 24.54	+9 6.6	1.746	2.653	10.2	21.4	1 22	6 30.44	+23 38.9	3.679	4.594	5.0	22.2
2 1	6 18.32	+9 19.2	1.845	2.684	13.3	21.6	2 1	6 25.17	+23 46.6	3.759	4.596	7.2	22.3
236817	2007 <i>RC</i> ₂₈		1 1.4 42°05	9°3/31.5	18		51744	2001 <i>KP</i> ₅₆		1 1.4 107°94	0°3/1.5	18 R	
11 23	7 20.74	+46 46.2	1.908	2.655	16.5	19.3	11 23	7 16.13	+19 47.4	2.026	2.787	15.2	19.7
12 3	7 15.96	+47 55.7	1.852	2.673	14.1	19.2	12 3	7 11.06	+20 15.6	1.953	2.808	12.0	19.5
12 13	7 7.42	+48 52.0	1.816	2.691	11.7	19.1	12 13	7 3.44	+20 50.1	1.902	2.827	8.3	19.3
12 23	6 55.99	+49 27.0	1.803	2.711	9.8	19.0	12 23	6 53.89	+21 28.3	1.877	2.846	4.1	19.1
1 2	6 43.17	+49 34.0	1.815	2.730	9.3	19.0	1 2	6 43.36	+22 6.8	1.882	2.865	0.4	18.8
1 12	6 30.87	+49 11.6	1.853	2.750	10.2	19.1	1 12	6 33.02	+22 43.0	1.917	2.883	4.5	19.2
1 22	6 20.73	+48 23.7	1.916	2.770	12.2	19.3	1 22	6 23.97	+23 14.9	1.982	2.901	8.4	19.5
2 1	6 13.86	+47 17.3	2.001	2.791	14.3	19.4	2 1	6 17.07	+23 42.2	2.073	2.918	11.8	19.7
164565	2006 <i>KE</i> ₅₉		1 1.4 10°96	4°9/2.2	18		202634	2006 <i>HU</i> ₁₅₃		1 1.4 34°86	3°9/1.9	18	
11 23	7 10.82	+12 18.6	1.416	2.201	19.6	19.5	11 23	7 10.18	+12 52.2	2.187	2.941	14.4	20.8
12 3	7 7.97	+11 52.0	1.339	2.201	16.0	19.2	12 3	7 6.22	+12 15.0	2.098	2.942	11.8	20.6
12 13	7 1.93	+11 38.4	1.281	2.203	11.8	19.0	12 13	7 0.06	+11 45.0	2.031	2.943	8.7	20.4
12 23	6 53.35	+11 39.6	1.245	2.205	7.4	18.7	12 23	6 52.22	+11 23.5	1.989	2.945	5.6	20.2
1 2	6 43.35	+11 56.0	1.235	2.208	4.9	18.6	1 2	6 43.49	+11 11.5	1.977	2.946	3.9	20.1
1 12	6 33.45	+12 25.6	1.250	2.211	7.3	18.7	1 12	6 34.83	+11 8.9	1.993	2.947	5.6	20.2
1 22	6 25.10	+13 5.3	1.291	2.214	11.6	19.0	1 22	6 27.18	+11 15.0	2.037	2.948	8.7	20.4
2 1	6 19.42	+13 51.3	1.355	2.218	15.7	19.2	2 1	6 21.31	+11 28.4	2.107	2.950	11.8	20.6
181619	2006 <i>WZ</i> ₁₆₀		1 1.4 129°72	1°0/1.2	18		151872	2003 <i>JD</i> ₁₄		1 1.4 195°87	2°5/31.9	17	
11 23	7 14.75	+23 50.4	1.960	2.732	15.3	21.0	11 23	7 16.26	+31 47.8	2.969	3.714	11.2	21.6
12 3	7 10.30	+24 19.9	1.877	2.738	12.2	20.8	12 3	7 10.62	+32 6.0	2.867	3.710	9.0	21.4
12 13	7 3.12	+24 53.3	1.816	2.745	8.4	20.6	12 13	7 2.90	+32 21.5	2.789	3.706	6.4	21.3
12 23	6 53.81	+25 27.1	1.781	2.751	4.2	20.3	12 23	6 53.59	+32 31.5	2.740	3.701	3.8	21.1
1 2	6 43.33	+25 57.8	1.775	2.757	1.1	20.1	1 2	6 43.40	+32 33.3	2.722	3.695	2.5	21.0
1 12	6 32.93	+26 22.5	1.799	2.763	4.9	20.4	1 12	6 33.26	+32 25.8	2.735	3.688	4.4	21.1
1 22	6 23.83	+26 40.2	1.851	2.769	9.0	20.7	1 22	6 24.04	+32 9.4	2.779	3.681	7.1	21.3
2 1	6 16.98	+26 51.4	1.928	2.774	12.5	20.9	2 1	6 16.47	+31 46.0	2.851	3.673	9.6	21.4
21303	1996 <i>XJ</i> ₁		1 1.4 111°28	0°7/1.2	18		4785	Petrov		1 1.4 35°86	0°6/1.3	18	
11 23	7 17.47	+23 22.8	1.866	2.635	16.1	18.8	11 23	7 13.58	+24 23.8	1.740	2.523	16.5	17.6
12 3	7 12.41	+23 46.9	1.793	2.653	12.7	18.6	12 3	7 9.70	+24 27.1	1.659	2.526	13.1	17.4
12 13	7 4.51	+24 14.8	1.742	2.670	8.7	18.4	12 13	7 2.88	+24 32.5	1.599	2.530	9.1	17.1
12 23	6 54.45	+24 42.9	1.716	2.686	4.3	18.2	12 23	6 53.76	+24 37.5	1.563	2.534	4.5	16.9
1 2	6 43.29	+25 7.9	1.719	2.702	0.8	18.0	1 2	6 43.41	+24 39.4	1.556	2.539	0.7	16.6
1 12	6 32.37	+25 27.2	1.753	2.718	5.0	18.3	1 12	6 33.23	+24 37.0	1.577	2.543	5.2	16.9
1 22	6 22.92	+25 40.1	1.814	2.733	9.1	18.6	1 22	6 24.50	+24 30.2	1.625	2.548	9.6	17.2
2 1	6 15.88	+25 47.5	1.902	2.747	12.7	18.8	2 1	6 18.25	+24 20.4	1.697	2.553	13.5	17.5
494143	2016 <i>CN</i> ₂₀₈		1 1.4 47°75	5°3/2.9	18		430430	1999 <i>UF</i> ₃₈		1 1.4 133°31	17°1/4.6	18	
11 23	7 10.56	+7 45.9	1.757	2.513	17.4	20.9							

EPHEMERIDES

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
453014	2007 <i>QC</i> ₁₃		1.4 112°46	0°8/ 1.6 18			224672	2006 <i>AY</i> ₄₅		1.4 40°45	1°0/ 1.6 18		
11 23	7 17.49	+19 42.2	1.897	2.659	16.1	22.0	11 23	7 11.73	+19 58.6	1.884	2.660	15.7	20.7
12 3	7 12.27	+19 52.1	1.824	2.679	12.7	21.8	12 3	7 7.94	+19 57.1	1.802	2.665	12.5	20.5
12 13	7 4.34	+20 7.7	1.773	2.699	8.8	21.6	12 13	7 1.51	+20 0.8	1.741	2.669	8.7	20.2
12 23	6 54.36	+20 27.0	1.749	2.718	4.5	21.4	12 23	6 53.05	+20 8.4	1.705	2.674	4.5	20.0
1 2	6 43.38	+20 47.7	1.753	2.736	0.8	21.1	1 2	6 43.51	+20 18.4	1.697	2.679	1.0	19.7
1 12	6 32.66	+21 7.5	1.788	2.753	4.8	21.5	1 12	6 34.09	+20 29.1	1.718	2.684	4.8	20.0
1 22	6 23.36	+21 25.4	1.851	2.770	8.9	21.8	1 22	6 25.92	+20 39.5	1.767	2.690	9.0	20.3
2 1	6 16.36	+21 41.1	1.940	2.787	12.4	22.0	2 1	6 19.92	+20 49.5	1.841	2.695	12.6	20.5
495494	2014 <i>UO</i> ₁₂₆		1.4 140°00	2°0/ 1.8 18			158918	2004 <i>RX</i> ₃₅		1.4 55°99	0°2/ 1.4 18		
11 23	7 12.36	+16 38.8	2.159	2.918	14.5	22.1	11 23	7 12.46	+21 49.8	1.859	2.637	15.8	19.6
12 3	7 8.02	+16 36.7	2.072	2.924	11.6	21.9	12 3	7 8.58	+22 12.2	1.781	2.646	12.5	19.4
12 13	7 1.35	+16 41.4	2.007	2.929	8.2	21.7	12 13	7 1.99	+22 39.8	1.725	2.656	8.6	19.2
12 23	6 52.89	+16 52.4	1.969	2.935	4.5	21.5	12 23	6 53.30	+23 9.9	1.695	2.665	4.3	19.0
1 2	6 43.48	+17 8.4	1.960	2.940	2.0	21.3	1 2	6 43.50	+23 39.4	1.692	2.675	0.4	18.7
1 12	6 34.15	+17 27.9	1.981	2.944	4.6	21.5	1 12	6 33.84	+24 5.5	1.719	2.685	4.8	19.0
1 22	6 25.90	+17 49.4	2.030	2.949	8.3	21.8	1 22	6 25.49	+24 26.9	1.773	2.696	9.0	19.3
2 1	6 19.53	+18 11.9	2.106	2.953	11.6	22.0	2 1	6 19.39	+24 43.5	1.853	2.706	12.6	19.5
493375	2014 <i>WE</i> ₁₀₆		1.4 169°70	8°6/29.5 18			110821	2001 <i>UA</i> ₅₁		1.4 56°88	8°3/ 3.1 18		
11 23	7 24.56	+44 55.9	2.279	3.009	14.6	22.1	11 23	7 10.64	+2 50.6	1.781	2.518	17.9	19.6
12 3	7 18.93	+46 42.3	2.201	3.013	12.5	22.0	12 3	7 6.96	+1 52.8	1.710	2.529	15.2	19.4
12 13	7 9.69	+48 21.5	2.146	3.016	10.4	21.8	12 13	7 0.76	+1 11.5	1.658	2.540	12.2	19.3
12 23	6 57.38	+49 44.2	2.117	3.019	8.9	21.7	12 23	6 52.65	+0 50.7	1.629	2.551	9.6	19.1
1 2	6 43.17	+50 42.1	2.116	3.021	8.7	21.7	1 2	6 43.55	+0 52.9	1.625	2.562	8.3	19.1
1 12	6 28.77	+51 10.8	2.141	3.022	9.9	21.8	1 12	6 34.63	+1 17.5	1.647	2.574	9.2	19.1
1 22	6 15.95	+51 11.2	2.193	3.023	11.8	21.9	1 22	6 26.94	+2 1.5	1.696	2.586	11.5	19.3
2 1	6 6.10	+50 48.5	2.268	3.024	13.9	22.1	2 1	6 21.33	+2 59.9	1.767	2.598	14.2	19.5
58081	4817 <i>T-2</i>		1.4 221°34	3°9/31.7 18			275194	2009 <i>WK</i> ₁₂₀		1.4 0°78	0°9/ 1.2 18		
11 23	7 18.19	+29 59.8	1.667	2.447	17.3	19.7	11 23	7 12.09	+24 10.9	1.978	2.755	15.0	21.1
12 3	7 13.98	+30 45.9	1.579	2.442	13.9	19.4	12 3	7 8.27	+24 31.3	1.890	2.754	11.9	20.9
12 13	7 6.26	+31 32.9	1.511	2.438	10.0	19.2	12 13	7 1.80	+24 54.8	1.824	2.754	8.3	20.7
12 23	6 55.64	+32 14.6	1.468	2.433	5.9	18.9	12 23	6 53.24	+25 18.7	1.784	2.754	4.2	20.4
1 2	6 43.30	+32 44.6	1.453	2.427	3.9	18.8	1 2	6 43.52	+25 39.8	1.772	2.754	1.0	20.2
1 12	6 30.93	+32 58.7	1.465	2.422	6.9	19.0	1 12	6 33.84	+25 55.8	1.789	2.754	4.8	20.5
1 22	6 20.18	+32 57.0	1.505	2.416	11.2	19.2	1 22	6 25.37	+26 6.0	1.834	2.755	8.9	20.7
2 1	6 12.36	+32 42.5	1.568	2.410	15.1	19.4	2 1	6 19.07	+26 10.8	1.905	2.755	12.5	20.9
343902	2011 <i>JF</i> ₁₂		1.4 237°70	4°6/31.5 18			126332	2002 <i>AB</i> ₁₅₂		1.4 154°06	2°4/ 1.1 18		
11 23	7 18.41	+30 16.0	1.501	2.288	18.5	20.6	11 23	7 19.24	+28 55.0	1.915	2.682	15.8	19.7
12 3	7 14.61	+31 12.9	1.416	2.283	15.0	20.4	12 3	7 14.01	+29 12.1	1.832	2.689	12.6	19.5
12 13	7 6.98	+32 11.5	1.351	2.279	10.8	20.1	12 13	7 5.77	+29 28.1	1.770	2.695	8.8	19.3
12 23	6 56.10	+33 4.7	1.310	2.274	6.5	19.9	12 23	6 55.19	+29 38.8	1.734	2.701	4.8	19.1
1 2	6 43.27	+33 44.3	1.295	2.268	4.6	19.7	1 2	6 43.39	+29 40.7	1.727	2.706	2.4	18.9
1 12	6 30.37	+34 5.3	1.308	2.263	7.7	19.9	1 12	6 31.78	+29 32.1	1.750	2.711	5.5	19.1
1 22	6 19.27	+34 7.2	1.346	2.258	12.2	20.1	1 22	6 21.69	+29 14.0	1.801	2.715	9.5	19.4
2 1	6 11.45	+33 53.9	1.407	2.252	16.4	20.4	2 1	6 14.13	+28 49.1	1.877	2.718	13.0	19.6
178478	1999 <i>RE</i> ₂₃₈		1.4 171°04	0°8/ 1.6 18			359029	2008 <i>VA</i> ₇₉		1.4 226°16	0°5/ 1.5 18		
11 23	7 17.74	+18 40.9	1.691	2.460	17.5	20.3	11 23	7 14.63	+19 15.7	1.784	2.556	16.6	21.0
12 3	7 13.12	+19 4.2	1.605	2.464	14.0	20.1	12 3	7 10.63	+19 45.1	1.690	2.551	13.3	20.7
12 13	7 5.37	+19 36.6	1.540	2.467	9.8	19.8	12 13	7 3.67	+20 23.5	1.618	2.546	9.3	20.5
12 23	6 55.09	+20 15.7	1.499	2.469	5.0	19.6	12 23	6 54.29	+21 8.3	1.571	2.541	4.7	20.2
1 2	6 43.35	+20 57.7	1.487	2.470	0.9	19.3	1 2	6 43.44	+21 55.8	1.552	2.535	0.5	19.9
1 12	6 31.63	+21 38.9	1.505	2.471	5.4	19.6	1 12	6 32.50	+22 42.1	1.562	2.529	5.2	20.2
1 22	6 21.35	+22 16.6	1.550	2.471	10.1	19.9	1 22	6 22.81	+23 24.2	1.601	2.523	9.8	20.5
2 1	6 13.65	+22 49.9	1.620	2.471	14.3	20.1	2 1	6 15.50	+24 1.0	1.664	2.516	13.9	20.7
520712	2014 <i>QO</i> ₄₆₇		1.4 153°99	0°6/ 1.5 18			492095	2013 <i>JX</i> ₅₄		1.4 212°78	6°0/30.6 18		
11 23	7 14.29	+20 4.8	1.960	2.727	15.4	22.4	11 23	7 18.27	+34 26.8	1.901	2.669	15.8	21.4
12 3	7 9.90	+20 17.9	1.873	2.732	12.3	22.2	12 3	7 13.92	+35 53.7	1.814	2.667	12.9	21.2
12 13	7 2.85	+20 36.9	1.808	2.735	8.5	22.0	12 13	7 6.20	+37 20.2	1.750	2.664	9.7	21.0
12 23	6 53.72	+20 59.9	1.769	2.739	4.3	21.7	12 23	6 55.65	+38 38.6	1.712	2.661	6.9	20.8
1 2	6 43.45	+21 24.3	1.759	2.742	0.6	21.4	1 2	6 43.35	+39 40.4	1.701	2.658	6.1	20.8
1 12	6 33.24	+21 47.8	1.779	2.745	4.7	21.7	1 12	6 30.89	+40 20.4	1.719	2.655	8.1	20.9
1 22	6 24.26	+22 9.0	1.827	2.748	8.9	22.0	1 22	6 19.88	+40 37.8	1.764	2.651	11.3	21.0
2 1	6 17.44	+22 27.5	1.901	2.750	12.5	22.2	2 1	6 11.64	+40 36.0	1.832	2.648	14.4	21.2
59724	1999 <i>KV</i> ₁₃		1.4 189°43	0°1/ 1.4 18			309897	2009 <i>EM</i> ₂		1.4 278°27	2°2/31.9 18		
11 23	7 13.39	+22 4.0	2.370	3.130	13.3	19.9	11 23	7 14.67	+25 20.8	1.646	2.431	17.2	20.8
12 3	7 8.78	+22 22.1	2.274	3.129	10.6	19.7	12 3	7 11.14	+26 3.9	1.554	2.423	13.8	20.6
12 13	7 1.87	+22 44.1	2.202	3.128	7.3	19.5	12 13	7 4.31	+26 52.3	1.483	2.415	9.7	20.3
12 23	6 53.18	+23 7.8	2.156	3.126	3.6	19.3	12 23	6 54.71	+27 41.4	1.436	2.406	5.1	20.0
1 2	6 43.48	+23 30.8	2.140	3.124	0.3	19.0	1 2	6 43.42	+28 25.3	1.417	2.398	2.2	19.8
1 12	6 33.79	+23 51.2	2.156	3.121	4.1	19.3	1 12	6 31.99	+28 59.5	1.426	2.390	6.1	20.0
1 22	6 25.08	+24 7.8	2.200	3.118	7.8	19.5	1 22	6 22.01	+29 22.2	1.462	2.381	10.8	20.3
2 1	6 18.17	+24 20.7	2.272	3.115	11.0	19.7	2 1	6 14.74	+29 34.3	1.521	2.373	15.0	20.5
209907	2005 <i>NB</i> ₅		1.4 210°95	0°9/ 1.6 18			63626	2001 <i>QH</i> ₈₀		1.4 64°59	5°6/31.6 18		

EPHEMERIDES

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
353611	2011 <i>UE</i> ₁₅		1 1.4 161°53	0°1/ 1.4 18			193903	2001 <i>QC</i> ₂₄₅		1 1.4 105°88	3°9/ 2.2 18		
11 23	7 17.27	+22 49.0	1.997	2.760	15.3	21.7	11 23	7 17.43	+12 43.7	1.702	2.459	17.8	21.2
12 3	7 12.19	+22 48.5	1.909	2.766	12.2	21.4	12 3	7 12.41	+12 30.5	1.633	2.480	14.4	21.1
12 13	7 4.39	+22 50.6	1.845	2.771	8.4	21.2	12 13	7 4.55	+12 28.7	1.585	2.501	10.4	20.9
12 23	6 54.49	+22 53.2	1.806	2.776	4.2	21.0	12 23	6 54.56	+12 38.6	1.562	2.521	6.3	20.7
1 2	6 43.47	+22 54.3	1.796	2.779	0.3	20.7	1 2	6 43.52	+12 59.1	1.566	2.540	3.9	20.6
1 12	6 32.59	+22 52.7	1.817	2.783	4.7	21.0	1 12	6 32.77	+13 28.3	1.599	2.559	6.1	20.7
1 22	6 23.03	+22 48.4	1.867	2.785	8.9	21.3	1 22	6 23.53	+14 3.4	1.660	2.577	9.9	21.0
2 1	6 15.71	+22 42.3	1.942	2.788	12.5	21.5	2 1	6 16.72	+14 41.8	1.747	2.594	13.5	21.3
442628	2012 <i>SH</i> ₅₀		1 1.4 174°33	1°0/ 1.6 18			233481	2006 <i>SB</i> ₂₉		1 1.4 346°22	0°3/ 1.5 18		
11 23	7 20.00	+20 3.1	1.917	2.674	16.1	22.3	11 23	7 9.71	+22 30.2	2.002	2.781	14.8	20.0
12 3	7 14.46	+20 1.9	1.827	2.679	12.9	22.1	12 3	7 6.32	+22 21.5	1.910	2.775	11.8	19.7
12 13	7 6.04	+20 5.6	1.759	2.683	9.0	21.9	12 13	7 0.42	+22 15.1	1.840	2.770	8.2	19.5
12 23	6 55.36	+20 12.5	1.717	2.685	4.6	21.6	12 23	6 52.57	+22 10.0	1.795	2.766	4.1	19.3
1 2	6 43.42	+20 20.7	1.704	2.686	1.0	21.4	1 2	6 43.64	+22 4.7	1.779	2.762	0.4	18.9
1 12	6 31.56	+20 28.6	1.721	2.687	5.0	21.6	1 12	6 34.76	+21 58.5	1.791	2.758	4.6	19.3
1 22	6 21.07	+20 35.4	1.768	2.686	9.4	21.9	1 22	6 27.03	+21 51.4	1.831	2.755	8.6	19.5
2 1	6 12.94	+20 41.4	1.841	2.684	13.2	22.1	2 1	6 21.33	+21 43.8	1.897	2.753	12.3	19.7
274239	2008 <i>NK</i> ₁		1 1.4 108°91	3°0/ 2.2 18			331379	2012 <i>DX</i> ₈₇		1 1.4 240°61	1°2/ 1.2 18		
11 23	7 12.09	+12 58.0	2.334	3.080	13.9	20.8	11 23	7 14.38	+25 36.1	2.150	2.917	14.3	21.5
12 3	7 7.49	+12 52.7	2.256	3.097	11.2	20.6	12 3	7 9.99	+25 50.7	2.048	2.907	11.4	21.3
12 13	7 0.81	+12 56.0	2.200	3.113	8.1	20.4	12 13	7 2.99	+26 6.9	1.969	2.897	7.9	21.0
12 23	6 52.60	+13 7.7	2.171	3.129	4.9	20.3	12 23	6 53.88	+26 21.9	1.917	2.886	4.1	20.8
1 2	6 43.60	+13 27.1	2.171	3.145	3.0	20.2	1 2	6 43.55	+26 32.8	1.893	2.875	1.2	20.6
1 12	6 34.76	+13 52.7	2.201	3.160	4.8	20.3	1 12	6 33.17	+26 37.6	1.899	2.864	4.7	20.8
1 22	6 26.92	+14 22.8	2.261	3.175	7.8	20.5	1 22	6 23.89	+26 36.2	1.934	2.852	8.7	21.0
2 1	6 20.79	+14 55.4	2.347	3.189	10.7	20.7	2 1	6 16.69	+26 29.6	1.996	2.840	12.2	21.2
325335	2008 <i>JR</i> ₃₆		1 1.4 328°39	8°5/ 2.2 18			247478	2002 <i>JJ</i> ₁₄₁		1 1.4 209°34	2°6/ 1.6 18		
11 23	7 8.58	+ 5 46.8	1.607	2.368	18.6	20.7	11 23	7 16.09	+17 10.5	2.153	2.905	14.7	21.4
12 3	7 5.93	+ 4 34.0	1.518	2.356	15.8	20.4	12 3	7 11.07	+16 37.9	2.052	2.899	11.9	21.2
12 13	7 0.45	+ 3 34.1	1.448	2.344	12.7	20.2	12 13	7 3.56	+16 9.4	1.974	2.892	8.5	21.0
12 23	6 52.69	+ 2 52.4	1.399	2.333	9.8	20.0	12 23	6 54.11	+15 45.3	1.921	2.885	4.9	20.7
1 2	6 43.59	+ 2 33.1	1.376	2.323	8.5	19.9	1 2	6 43.55	+15 26.0	1.899	2.877	2.6	20.6
1 12	6 34.41	+ 2 37.9	1.378	2.313	9.8	20.0	1 12	6 33.00	+15 11.6	1.907	2.868	5.1	20.7
1 22	6 26.45	+ 3 5.1	1.404	2.304	12.7	20.1	1 22	6 23.54	+15 2.3	1.944	2.858	8.9	20.9
2 1	6 20.76	+ 3 50.4	1.453	2.295	16.1	20.3	2 1	6 16.05	+14 57.9	2.008	2.848	12.3	21.1
161828	2006 <i>WF</i> ₁₇₈		1 1.4 61°43	1°6/ 1.8 18			517598	2014 <i>WA</i> ₃₆₀		1 1.4 353°82	13°2/ 4.6 18		
11 23	7 12.02	+17 2.7	1.847	2.619	16.1	20.4	11 23	7 7.95	- 8 35.3	1.740	2.433	19.7	20.5
12 3	7 8.23	+17 15.3	1.764	2.624	12.9	20.2	12 3	7 5.12	-10 0.7	1.665	2.430	17.8	20.4
12 13	7 1.78	+17 36.6	1.703	2.629	9.1	20.0	12 13	6 59.71	-11 2.9	1.607	2.428	15.8	20.2
12 23	6 53.24	+18 5.5	1.667	2.634	4.8	19.7	12 23	6 52.26	-11 34.6	1.567	2.426	14.1	20.1
1 2	6 43.56	+18 39.5	1.658	2.640	1.6	19.5	1 2	6 43.67	-11 30.6	1.549	2.425	13.3	20.0
1 12	6 33.95	+19 15.9	1.679	2.645	5.0	19.8	1 12	6 35.09	-10 49.9	1.554	2.424	13.6	20.1
1 22	6 25.57	+19 52.3	1.728	2.651	9.1	20.0	1 22	6 27.66	- 9 36.3	1.581	2.424	14.9	20.1
2 1	6 19.38	+20 27.1	1.802	2.657	12.9	20.3	2 1	6 22.31	- 7 56.9	1.629	2.424	16.8	20.3
193672	2001 <i>DA</i> ₉₁		1 1.4 293°14	1°7/ 1.5 17			331688	2002 <i>QB</i> ₁₁₂		1 1.4 26°16	7°6/ 3.5 18		
11 23	7 12.00	+19 44.0	2.052	2.821	14.8	20.8	11 23	7 7.94	+ 2 51.2	1.814	2.555	17.4	20.2
12 3	7 8.21	+19 18.4	1.938	2.797	12.0	20.6	12 3	7 4.86	+ 2 17.6	1.741	2.564	14.8	20.1
12 13	7 1.84	+18 55.5	1.847	2.773	8.5	20.3	12 13	6 59.35	+ 2 1.5	1.687	2.574	11.8	19.9
12 23	6 53.34	+18 35.1	1.781	2.749	4.6	20.0	12 23	6 52.01	+ 2 6.1	1.656	2.584	9.1	19.8
1 2	6 43.55	+18 17.2	1.743	2.724	1.7	19.8	1 2	6 43.69	+ 2 32.6	1.651	2.595	7.6	19.7
1 12	6 33.59	+18 1.5	1.735	2.700	5.0	20.0	1 12	6 35.51	+ 3 19.4	1.672	2.606	8.4	19.8
1 22	6 24.64	+17 48.5	1.755	2.676	9.2	20.2	1 22	6 28.48	+ 4 22.4	1.719	2.618	10.8	19.9
2 1	6 17.68	+17 38.5	1.801	2.652	13.1	20.4	2 1	6 23.44	+ 5 36.5	1.790	2.631	13.6	20.1
455997	2005 <i>XG</i> ₆₈		1 1.4 356°91	2°8/31.8 18			393706	2004 <i>TS</i> ₁₆₃		1 1.4 83°79	1°3/ 1.2 18		
11 23	7 13.86	+28 16.9	1.945	2.721	15.3	21.3	11 23	7 19.75	+24 32.8	1.584	2.361	18.1	21.7
12 3	7 9.89	+28 59.1	1.858	2.721	12.2	21.1	12 3	7 14.64	+24 59.3	1.523	2.387	14.3	21.5
12 13	7 3.07	+29 42.6	1.793	2.721	8.6	20.8	12 13	7 6.28	+25 29.0	1.482	2.412	9.8	21.3
12 23	6 53.95	+30 23.0	1.754	2.720	4.8	20.6	12 23	6 55.46	+25 57.5	1.466	2.437	4.9	21.1
1 2	6 43.53	+30 55.6	1.743	2.720	2.9	20.5	1 2	6 43.48	+26 20.5	1.479	2.461	1.4	20.9
1 12	6 33.13	+31 17.0	1.761	2.720	5.7	20.7	1 12	6 31.94	+26 35.4	1.520	2.485	5.6	21.2
1 22	6 24.03	+31 26.7	1.807	2.720	9.5	20.9	1 22	6 22.25	+26 42.1	1.588	2.508	10.0	21.5
2 1	6 17.27	+31 26.2	1.878	2.721	13.0	21.1	2 1	6 15.38	+26 42.4	1.681	2.531	13.9	21.8
421696	2014 <i>PC</i> ₇		1 1.4 33°29	5°0/ 2.5 16			61260	2000 <i>OF</i> ₂₇		1 1.4 144°34	1°1/ 1.6 18		
11 23	7 10.91	+11 39.0	1.271	2.063	21.0	20.7	11 23	7 17.43	+19 18.4	1.989	2.748	15.5	20.7
12 3	7 8.06	+11 21.3	1.218	2.084	17.0	20.5	12 3	7 12.22	+19 21.3	1.907	2.759	12.4	20.5
12 13	7 1.93	+11 19.7	1.183	2.106	12.4	20.3	12 13	7 4.37	+19 29.7	1.846	2.770	8.6	20.3
12 23	6 53.33	+11 35.1	1.169	2.130	7.7	20.1	12 23	6 54.49	+19 42.1	1.812	2.780	4.4	20.1
1 2	6 43.58	+12 6.3	1.180	2.154	5.0	20.0	1 2	6 43.54	+19 56.5	1.808	2.790	1.1	19.9
1 12	6 34.25	+12 49.9	1.217	2.179	7.2	20.2	1 12	6 32.75	+20 11.3	1.833	2.799	4.7	20.2
1 22	6 26.74	+13 41.1	1.279	2.205	11.4	20.6	1 22	6 23.26	+20 25.3	1.888	2.807	8.8	20.4
2 1	6 22.01	+14 35.6	1.363	2.231	15.3	20.9	2 1	6 15.96	+20 38.3	1.969	2.814	12.3	20.7
83590	2001 <i>SE</i> ₂₄₇		1 1.4 196°69	3°9/ 2.3 18			243423	2009 <i>CP</i> ₇		1 1.4 186°77	1°2/ 1.6 18		
11 23	7 8.71	+10 20.8</											

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
362780	2011 <i>WB</i> ₁₀₇		1 1.4 31°84	0°5/ 1.5 18			38138	1999 <i>JM</i> ₅₆		1 1.4 150°79	0°1/ 1.5 18		
11 23	7 12.71	+21 14.6	1.394	2.191	19.2	20.1	11 23	7 17.05	+21 27.6	2.001	2.763	15.3	20.5
12 3	7 9.62	+21 17.6	1.325	2.200	15.3	19.9	12 3	7 12.02	+21 41.4	1.917	2.772	12.2	20.3
12 13	7 3.15	+21 26.8	1.276	2.210	10.6	19.6	12 13	7 4.32	+21 59.7	1.854	2.780	8.4	20.0
12 23	6 54.05	+21 39.8	1.250	2.221	5.3	19.4	12 23	6 54.52	+22 20.3	1.818	2.788	4.2	19.8
1 2	6 43.57	+21 54.0	1.249	2.232	0.6	19.0	1 2	6 43.61	+22 40.4	1.811	2.795	0.3	19.5
1 12	6 33.37	+22 7.0	1.276	2.244	5.8	19.4	1 12	6 32.82	+22 57.9	1.835	2.801	4.7	19.9
1 22	6 24.94	+22 17.7	1.328	2.257	10.8	19.8	1 22	6 23.30	+23 11.9	1.888	2.806	8.8	20.1
2 1	6 19.36	+22 26.1	1.403	2.270	15.1	20.1	2 1	6 16.00	+23 22.5	1.966	2.811	12.4	20.4
351442	2005 <i>JD</i> ₁₆		1 1.4 273°07	2°6/31.7 18			29633	<i>Weatherwax</i>		1 1.4 276°84	2°4/ 1.6 18		
11 23	7 12.09	+28 28.7	2.359	3.127	13.1	20.5	11 23	7 14.69	+18 43.0	1.522	2.306	18.5	18.8
12 3	7 8.07	+29 12.1	2.259	3.117	10.5	20.3	12 3	7 11.19	+18 16.0	1.428	2.295	14.9	18.5
12 13	7 1.62	+29 56.8	2.183	3.108	7.4	20.1	12 13	7 4.37	+17 54.3	1.354	2.283	10.6	18.2
12 23	6 53.20	+30 39.1	2.133	3.098	4.2	19.9	12 23	6 54.80	+17 38.1	1.304	2.272	5.8	17.9
1 2	6 43.62	+31 14.9	2.112	3.088	2.6	19.8	1 2	6 43.59	+17 26.9	1.280	2.260	2.4	17.7
1 12	6 33.95	+31 41.4	2.121	3.079	5.1	19.9	1 12	6 32.30	+17 20.5	1.283	2.249	6.3	17.9
1 22	6 25.24	+31 57.5	2.160	3.069	8.4	20.1	1 22	6 22.49	+17 18.4	1.313	2.238	11.3	18.1
2 1	6 18.44	+32 4.0	2.224	3.059	11.5	20.3	2 1	6 15.42	+17 20.7	1.366	2.226	15.8	18.4
345728	2007 <i>CF</i> ₃₅		1 1.4 323°62	2°8/ 2.0 18			186233	2001 <i>XU</i> ₈₄		1 1.4 50°74	0°9/ 1.7 18		
11 23	7 13.33	+14 49.6	1.387	2.174	19.8	20.4	11 23	7 13.59	+17 38.6	1.598	2.378	17.9	19.5
12 3	7 10.30	+14 59.1	1.304	2.171	16.1	20.1	12 3	7 9.75	+18 12.8	1.534	2.399	14.2	19.3
12 13	7 3.85	+15 22.7	1.240	2.168	11.5	19.9	12 13	7 2.94	+18 57.4	1.491	2.421	9.8	19.1
12 23	6 54.54	+15 59.8	1.198	2.165	6.5	19.6	12 23	6 53.87	+19 49.4	1.473	2.443	5.0	18.9
1 2	6 43.54	+16 47.9	1.183	2.163	2.8	19.3	1 2	6 43.66	+20 44.4	1.482	2.465	0.9	18.7
1 12	6 32.49	+17 42.6	1.194	2.160	6.4	19.5	1 12	6 33.72	+21 38.1	1.519	2.487	5.2	19.0
1 22	6 23.01	+18 39.3	1.230	2.158	11.6	19.8	1 22	6 25.33	+22 27.3	1.584	2.510	9.6	19.3
2 1	6 16.41	+19 34.7	1.290	2.156	16.2	20.1	2 1	6 19.45	+23 10.6	1.674	2.532	13.5	19.6
404786	2014 <i>JB</i> ₅₂		1 1.4 219°26	10°9/ 1.4 18			270790	2002 <i>RP</i> ₂₂₄		1 1.4 159°52	3°9/31.6 18		
11 23	7 16.14	- 2 23.0	2.012	2.704	17.4	21.2	11 23	7 21.16	+29 25.7	1.711	2.483	17.2	21.2
12 3	7 11.28	- 4 12.1	1.918	2.694	15.4	21.0	12 3	7 16.17	+30 23.3	1.630	2.489	13.8	21.0
12 13	7 3.84	- 5 48.0	1.845	2.684	13.3	20.8	12 13	7 7.71	+31 22.6	1.570	2.494	9.8	20.8
12 23	6 54.32	- 7 3.9	1.794	2.673	11.6	20.7	12 23	6 56.41	+32 16.8	1.536	2.499	5.8	20.6
1 2	6 43.57	- 7 53.6	1.770	2.662	10.9	20.6	1 2	6 43.50	+32 59.0	1.529	2.504	3.9	20.5
1 12	6 32.71	- 8 14.1	1.771	2.649	11.7	20.7	1 12	6 30.64	+33 24.7	1.552	2.507	6.8	20.7
1 22	6 22.87	- 8 5.9	1.797	2.636	13.6	20.8	1 22	6 19.46	+33 33.8	1.602	2.510	10.9	20.9
2 1	6 15.02	- 7 32.7	1.846	2.622	15.9	20.9	2 1	6 11.20	+33 29.2	1.677	2.512	14.6	21.1
413041	2001 <i>PL</i> ₃₅		1 1.4 162°60	2°2/ 1.3 18			384154	2009 <i>AH</i> ₂₀		1 1.4 148°14	1°2/ 1.3 18		
11 23	7 19.65	+20 44.2	2.112	2.864	15.0	20.3	11 23	7 12.54	+27 3.7	2.528	3.290	12.5	21.2
12 3	7 13.72	+19 41.6	2.019	2.867	12.0	20.1	12 3	7 7.97	+27 5.1	2.437	3.292	9.9	21.1
12 13	7 5.25	+18 38.4	1.950	2.871	8.4	19.9	12 13	7 1.25	+27 5.7	2.369	3.295	6.9	20.9
12 23	6 54.87	+17 35.5	1.908	2.874	4.6	19.7	12 23	6 52.91	+27 3.6	2.329	3.297	3.5	20.7
1 2	6 43.55	+16 34.3	1.897	2.876	2.2	19.5	1 2	6 43.72	+26 57.1	2.318	3.299	1.2	20.5
1 12	6 32.46	+15 37.2	1.918	2.879	5.1	19.7	1 12	6 34.65	+26 45.4	2.338	3.301	4.0	20.7
1 22	6 22.67	+14 46.1	1.968	2.881	8.9	20.0	1 22	6 26.58	+26 28.9	2.387	3.303	7.3	20.9
2 1	6 15.05	+14 2.8	2.046	2.882	12.3	20.2	2 1	6 20.27	+26 9.1	2.464	3.305	10.3	21.1
169361	2001 <i>UQ</i> ₇₅		1 1.4 76°81	2°9/31.6 18			252459	2001 <i>TS</i> ₂₂₈		1 1.4 62°16	1°1/ 1.4 18		
11 23	7 12.61	+29 22.8	2.391	3.156	13.0	19.7	11 23	7 18.60	+27 56.7	1.704	2.481	17.1	20.1
12 3	7 8.31	+30 14.7	2.310	3.166	10.4	19.5	12 3	7 13.53	+27 33.5	1.635	2.498	13.5	19.9
12 13	7 1.65	+31 6.9	2.252	3.175	7.3	19.3	12 13	7 5.39	+27 7.4	1.586	2.515	9.4	19.7
12 23	6 53.16	+31 55.3	2.221	3.184	4.3	19.1	12 23	6 55.00	+26 36.2	1.563	2.533	4.8	19.5
1 2	6 43.67	+32 35.7	2.220	3.194	2.9	19.1	1 2	6 43.60	+25 58.6	1.568	2.550	1.2	19.3
1 12	6 34.23	+33 5.5	2.249	3.203	5.1	19.2	1 12	6 32.69	+25 15.7	1.602	2.568	5.2	19.6
1 22	6 25.86	+33 23.9	2.307	3.212	8.1	19.4	1 22	6 23.53	+24 29.8	1.664	2.586	9.5	19.9
2 1	6 19.38	+33 31.9	2.391	3.222	10.9	19.6	2 1	6 17.04	+23 44.4	1.751	2.603	13.3	20.2
431367	2007 <i>DS</i> ₁₀₂		1 1.4 198°43	15°1/31.9 16			349525	2008 <i>RL</i> ₉₅		1 1.4 17°69	3°0/ 1.3 18		
11 23	7 38.91	+52 21.8	1.312	2.054	22.9	20.8	11 23	7 14.64	+29 24.6	1.130	1.946	21.6	20.1
12 3	7 33.90	+53 57.5	1.245	2.053	20.4	20.6	12 3	7 12.22	+29 27.0	1.065	1.950	17.3	19.8
12 13	7 22.07	+55 15.8	1.193	2.051	17.8	20.5	12 13	7 5.53	+29 26.5	1.018	1.956	12.2	19.5
12 23	7 4.20	+55 58.7	1.161	2.049	15.8	20.3	12 23	6 55.43	+29 18.2	0.992	1.962	6.6	19.2
1 2	6 42.98	+55 49.8	1.149	2.046	15.1	20.3	1 2	6 43.59	+28 57.9	0.990	1.970	3.0	19.1
1 12	6 22.58	+54 43.9	1.160	2.043	16.2	20.3	1 12	6 32.19	+28 24.8	1.012	1.979	7.3	19.3
1 22	6 6.64	+52 50.5	1.192	2.040	18.5	20.5	1 22	6 23.19	+27 42.4	1.059	1.989	12.7	19.7
2 1	5 57.02	+50 27.2	1.244	2.036	21.2	20.7	2 1	6 17.85	+26 55.9	1.126	2.000	17.4	20.0
62186	2000 <i>SS</i> ₃₉		1 1.4 98°01	1°4/ 1.7 18			516189	2016 <i>RJ</i> ₄₂		1 1.4 148°23	15°8/ 4.5 18		
11 23	7 18.79	+18 9.7	1.374	2.157	20.1	19.7	11 23	7 18.09	- 8 39.3	1.388	2.083	23.8	22.1
12 3	7 14.40	+18 24.7	1.307	2.173	16.1	19.4	12 3	7 13.71	-10 35.5	1.325	2.092	21.4	22.0
12 13	7 6.45	+18 50.1	1.260	2.189	11.2	19.2	12 13	7 5.96	-12 4.6	1.278	2.100	19.0	21.8
12 23	6 55.71	+19 23.3	1.235	2.205	5.8	18.9	12 23	6 55.51	-12 56.5	1.248	2.108	16.9	21.7
1 2	6 43.52	+20 0.5	1.238	2.220	1.4	18.7	1 2	6 43.58	-13 3.4	1.239	2.115	15.9	21.7
1 12	6 31.64	+20 37.7	1.267	2.235	6.0	19.0	1 12	6 31.80	-12 23.8	1.251	2.120	16.3	21.7
1 22	6 21.66	+21 12.2	1.324	2.249	11.1	19.4	1 22	6 21.69	-11 3.4	1.285	2.125	17.8	21.8
2 1	6 14.75	+21 43.1	1.404	2.263	15.5	19.7	2 1	6 14.43	- 9 12.4	1.338	2.129	20.0	22.0
384118	2008 <i>WP</i> ₁₃₉		1 1.4 40°66	1°5/ 1.9 18			246296	2007 <i>TR</i> ₈₉		1 1.4 15°89	3°8/31.4 18		
11 23	7 9.62	+1											

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
104719	2000 GY ₁₇₄		1 1.4 153°84	0°5/ 1.3 18			218053	2002 DT ₁		1 1.4 150°02	0°3/ 1.5 18		
11 23	7 11.73	+23 44.9	2.522	3.283	12.6	20.6	11 23	7 21.49	+21 52.3	1.802	2.563	16.8	21.6
12 3	7 7.34	+23 57.1	2.431	3.287	9.9	20.5	12 3	7 15.79	+21 55.9	1.721	2.575	13.4	21.4
12 13	7 0.84	+24 11.4	2.364	3.290	6.9	20.3	12 13	7 7.05	+22 3.3	1.661	2.587	9.3	21.2
12 23	6 52.74	+24 25.7	2.324	3.293	3.4	20.1	12 23	6 55.95	+22 12.3	1.627	2.597	4.7	20.9
1 2	6 43.77	+24 38.2	2.313	3.296	0.5	19.8	1 2	6 43.61	+22 20.3	1.623	2.606	0.4	20.6
1 12	6 34.87	+24 47.4	2.334	3.299	3.9	20.1	1 12	6 31.49	+22 25.4	1.648	2.614	5.1	21.0
1 22	6 26.91	+24 52.9	2.383	3.301	7.3	20.3	1 22	6 20.91	+22 27.4	1.703	2.621	9.6	21.3
2 1	6 20.64	+24 55.0	2.460	3.304	10.3	20.5	2 1	6 12.90	+22 27.2	1.783	2.627	13.4	21.5
82909	2001 QV ₁₀₀		1 1.4 169°04	0°1/ 1.4 18			412343	2013 LL ₅		1 1.4 76°77	2°3/ 31.8 18		
11 23	7 14.98	+21 5.7	2.340	3.096	13.6	20.4	11 23	7 15.39	+25 12.4	1.788	2.566	16.3	20.9
12 3	7 10.09	+21 35.9	2.248	3.100	10.8	20.2	12 3	7 11.24	+26 10.0	1.713	2.577	13.0	20.7
12 13	7 2.86	+22 11.2	2.179	3.104	7.5	20.0	12 13	7 4.08	+27 12.3	1.659	2.588	9.0	20.5
12 23	6 53.80	+22 49.3	2.137	3.107	3.7	19.8	12 23	6 54.55	+28 14.1	1.631	2.599	4.8	20.2
1 2	6 43.71	+23 27.0	2.126	3.109	0.3	19.5	1 2	6 43.69	+29 9.7	1.631	2.611	2.3	20.1
1 12	6 33.62	+24 1.8	2.146	3.111	4.2	19.8	1 12	6 32.93	+29 54.7	1.660	2.622	5.7	20.3
1 22	6 24.54	+24 32.1	2.196	3.112	7.8	20.0	1 22	6 23.61	+30 27.3	1.717	2.633	9.7	20.6
2 1	6 17.31	+24 57.4	2.272	3.113	11.1	20.2	2 1	6 16.78	+30 48.4	1.799	2.644	13.3	20.9
206882	2004 GF ₁		1 1.4 269°59	1°8/ 2.1 18			276292	2002 TW ₇₆		1 1.4 58°49	1°0/ 1.6 18		
11 23	7 10.10	+14 4.2	2.538	3.285	12.8	20.3	11 23	7 17.87	+21 14.3	1.225	2.023	21.3	20.2
12 3	7 6.11	+14 36.4	2.432	3.276	10.3	20.1	12 3	7 13.94	+21 3.3	1.167	2.043	16.9	20.0
12 13	7 0.08	+15 18.6	2.349	3.267	7.4	19.9	12 13	7 6.22	+20 58.3	1.128	2.062	11.7	19.7
12 23	6 52.43	+16 9.5	2.293	3.257	4.1	19.6	12 23	6 55.61	+20 57.2	1.111	2.082	5.9	19.5
1 2	6 43.79	+17 7.1	2.268	3.248	1.8	19.5	1 2	6 43.64	+20 57.6	1.120	2.103	1.0	19.2
1 12	6 35.04	+18 8.3	2.274	3.238	4.1	19.6	1 12	6 32.22	+20 58.0	1.155	2.123	6.3	19.6
1 22	6 27.03	+19 10.3	2.310	3.228	7.4	19.8	1 22	6 22.98	+20 58.1	1.215	2.144	11.6	20.0
2 1	6 20.54	+20 10.6	2.374	3.219	10.5	20.0	2 1	6 17.03	+20 58.4	1.297	2.164	16.0	20.3
194073	2001 SY ₁₄₄		1 1.4 328°00	4°4/ 31.9 18			170328	2003 SO ₈₇		1 1.4 168°65	1°7/ 1.1 18		
11 23	7 16.61	+31 19.0	1.378	2.175	19.4	20.0	11 23	7 18.06	+25 52.0	2.197	2.955	14.3	21.3
12 3	7 13.46	+31 49.5	1.297	2.169	15.7	19.7	12 3	7 12.77	+26 27.5	2.107	2.960	11.4	21.1
12 13	7 6.35	+32 18.3	1.234	2.164	11.3	19.4	12 13	7 4.85	+27 5.3	2.040	2.965	7.9	20.9
12 23	6 55.92	+32 38.7	1.194	2.159	6.7	19.2	12 23	6 54.85	+27 41.6	2.001	2.968	4.1	20.6
1 2	6 43.58	+32 44.3	1.179	2.155	4.4	19.0	1 2	6 43.68	+28 12.6	1.991	2.971	1.7	20.5
1 12	6 31.32	+32 31.9	1.191	2.151	7.7	19.2	1 12	6 32.55	+28 35.5	2.012	2.974	4.8	20.7
1 22	6 21.07	+32 3.2	1.227	2.147	12.4	19.4	1 22	6 22.60	+28 49.5	2.063	2.975	8.5	20.9
2 1	6 14.23	+31 23.3	1.286	2.143	16.8	19.7	2 1	6 14.78	+28 55.6	2.140	2.976	11.9	21.1
464599	2016 CC ₁₂₁		1 1.4 82°87	0°4/ 1.5 18			317557	2002 VD ₃		1 1.4 56°55	5°5/ 1.8 16		
11 23	7 15.45	+22 35.2	1.970	2.738	15.4	21.1	11 23	7 15.30	+13 4.5	1.568	2.337	18.6	20.3
12 3	7 10.62	+22 23.0	1.897	2.756	12.2	20.9	12 3	7 10.90	+11 52.6	1.504	2.356	15.1	20.1
12 13	7 3.22	+22 13.0	1.846	2.773	8.4	20.7	12 13	7 3.59	+10 49.5	1.460	2.375	11.2	19.9
12 23	6 53.92	+22 3.7	1.821	2.791	4.2	20.5	12 23	6 54.16	+9 58.2	1.441	2.395	7.4	19.7
1 2	6 43.73	+21 53.9	1.825	2.809	0.5	20.2	1 2	6 43.74	+9 21.4	1.448	2.415	5.5	19.7
1 12	6 33.83	+21 43.2	1.860	2.826	4.5	20.6	1 12	6 33.71	+9 0.1	1.483	2.435	7.5	19.8
1 22	6 25.29	+21 31.7	1.922	2.843	8.5	20.9	1 22	6 25.29	+8 53.6	1.544	2.455	11.0	20.1
2 1	6 18.95	+21 20.3	2.011	2.860	11.9	21.1	2 1	6 19.35	+8 59.7	1.629	2.475	14.4	20.3
195837	2002 QT ₆₅		1 1.4 116°45	0°0/ 1.4 18			432569	2010 LY ₁₀₃		1 1.4 144°22	16°1/ 8.1 18		
11 23	7 12.01	+22 24.9	2.313	3.077	13.5	21.4	11 23	7 16.87	-13 32.0	1.339	2.016	25.3	21.7
12 3	7 7.72	+22 32.5	2.226	3.083	10.7	21.3	12 3	7 13.03	-14 24.5	1.270	2.021	23.0	21.5
12 13	7 1.18	+22 43.1	2.162	3.089	7.4	21.1	12 13	7 5.69	-14 40.7	1.213	2.025	20.5	21.4
12 23	6 52.93	+22 54.8	2.124	3.094	3.7	20.8	12 23	6 55.49	-14 10.7	1.173	2.029	18.1	21.2
1 2	6 43.78	+23 5.8	2.117	3.100	0.2	20.5	1 2	6 43.66	-12 48.3	1.152	2.032	16.4	21.1
1 12	6 34.72	+23 14.7	2.139	3.105	4.1	20.9	1 12	6 31.87	-10 35.3	1.153	2.035	16.3	21.1
1 22	6 26.70	+23 21.0	2.190	3.110	7.7	21.1	1 22	6 21.76	-7 41.8	1.177	2.038	17.7	21.2
2 1	6 20.50	+23 24.8	2.268	3.115	10.9	21.3	2 1	6 14.59	-4 23.3	1.223	2.041	20.0	21.4
424300	2007 TW ₂₆₆		1 1.4 102°29	0°2/ 1.5 18			208681	2002 GL ₉₇		1 1.4 358°98	3°5/ 1.0 18		
11 23	7 11.74	+21 43.5	2.511	3.270	12.7	21.7	11 23	7 14.75	+29 24.4	1.386	2.185	19.2	20.1
12 3	7 7.22	+21 49.1	2.430	3.284	10.0	21.6	12 3	7 11.80	+29 53.3	1.308	2.184	15.4	19.8
12 13	7 0.67	+21 57.6	2.372	3.298	6.9	21.4	12 13	7 5.07	+30 22.0	1.250	2.183	10.9	19.6
12 23	6 52.62	+22 7.4	2.342	3.311	3.4	21.2	12 23	6 55.24	+30 44.9	1.214	2.182	6.2	19.3
1 2	6 43.80	+22 17.2	2.341	3.324	0.3	20.9	1 2	6 43.68	+30 56.2	1.204	2.182	3.6	19.1
1 12	6 35.13	+22 25.6	2.372	3.337	3.8	21.2	1 12	6 32.25	+30 52.8	1.220	2.183	7.1	19.3
1 22	6 27.43	+22 32.1	2.432	3.350	7.1	21.5	1 22	6 22.73	+30 35.8	1.262	2.184	11.9	19.6
2 1	6 21.40	+22 36.9	2.519	3.363	10.0	21.7	2 1	6 16.45	+30 8.9	1.325	2.186	16.2	19.9
422937	2002 TG ₃₁₁		1 1.4 342°72	6°5/ 30.3 16			69800	1998 RD ₁₃		1 1.4 101°39	0°9/ 1.6 18		
11 23	7 14.19	+36 34.5	1.990	2.761	15.1	21.1	11 23	7 11.95	+19 54.2	2.200	2.965	14.1	19.4
12 3	7 10.66	+38 3.2	1.904	2.756	12.5	20.9	12 3	7 7.74	+19 55.3	2.115	2.971	11.2	19.2
12 13	7 3.98	+39 30.0	1.841	2.751	9.6	20.8	12 13	7 1.24	+20 0.9	2.052	2.978	7.8	19.0
12 23	6 54.64	+40 47.3	1.803	2.746	7.2	20.6	12 23	6 53.00	+20 9.8	2.016	2.985	4.0	18.8
1 2	6 43.67	+41 47.4	1.793	2.742	6.6	20.6	1 2	6 43.82	+20 20.6	2.009	2.991	0.9	18.5
1 12	6 32.54	+42 25.6	1.811	2.739	8.4	20.7	1 12	6 34.75	+20 31.8	2.031	2.997	4.3	18.8
1 22	6 22.75	+42 41.0	1.855	2.736	11.2	20.8	1 22	6 26.75	+20 42.7	2.083	3.004	8.0	19.0
2 1	6 15.56	+42 36.9	1.922	2.733	14.0	21.0	2 1	6 20.62	+20 52.8	2.161	3.010	11.2	19.3
155844	2000 YZ ₁₁₂		1 1.4 88°81	0°6/ 1.6 18			256206	2006 VV ₉₆		1 1.4 19°10	1°2/ 1.6 18		
11 23	7 13.86	+17 50.9	2.105	2.865	14.8	19.6	11 23	7 12.27	+19 50.0	1.			

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
105723	2000 <i>SH</i> ₈₁		1.4 341°85	6°1/31.2	18		185367	2006 <i>VW</i> ₁₁₄		1.5 170°51	1°5/1.2	18	
11 23	7 11.53	+31 5.6	1.240	2.054	20.2	18.9	11 23	7 16.78	+26 48.5	2.245	3.005	13.9	21.1
12 3	7 10.06	+32 19.4	1.161	2.043	16.4	18.7	12 3	7 11.68	+27 5.2	2.154	3.008	11.1	20.9
12 13	7 4.44	+33 36.1	1.100	2.033	12.0	18.4	12 13	7 4.05	+27 22.4	2.087	3.011	7.7	20.7
12 23	6 55.19	+34 47.1	1.061	2.025	7.8	18.1	12 23	6 54.45	+27 36.9	2.046	3.014	4.0	20.5
1 2	6 43.68	+35 42.1	1.047	2.017	6.2	18.0	1 2	6 43.79	+27 45.9	2.035	3.016	1.6	20.3
1 12	6 32.02	+36 13.8	1.056	2.011	9.3	18.2	1 12	6 33.22	+27 47.7	2.055	3.017	4.6	20.6
1 22	6 22.36	+36 21.1	1.089	2.006	13.9	18.4	1 22	6 23.82	+27 42.4	2.104	3.018	8.3	20.8
2 1	6 16.35	+36 8.2	1.142	2.002	18.3	18.6	2 1	6 16.49	+27 31.6	2.179	3.019	11.5	21.0
351660	2005 <i>YJ</i> ₂₀₅		1.4 329°90	1°7/1.8	18		41819	2000 <i>WK</i> ₄₄		1.5 277°95	0°4/1.6	18	
11 23	7 8.37	+18 6.7	1.201	2.014	20.8	21.1	11 23	7 11.89	+19 50.5	2.090	2.858	14.6	19.5
12 3	7 7.16	+18 13.4	1.113	1.997	16.9	20.8	12 3	7 8.18	+20 15.3	1.983	2.842	11.7	19.3
12 13	7 2.22	+18 32.2	1.042	1.980	12.0	20.5	12 13	7 1.91	+20 47.3	1.899	2.826	8.2	19.0
12 23	6 54.03	+19 2.4	0.993	1.965	6.4	20.1	12 23	6 53.53	+21 24.5	1.840	2.810	4.2	18.7
1 2	6 43.76	+19 41.1	0.968	1.950	1.7	19.8	1 2	6 43.84	+22 4.2	1.810	2.793	0.4	18.4
1 12	6 33.22	+20 24.0	0.967	1.937	6.8	20.1	1 12	6 33.97	+22 43.1	1.810	2.777	4.6	18.7
1 22	6 24.31	+21 7.1	0.989	1.925	12.7	20.4	1 22	6 25.05	+23 19.2	1.839	2.760	8.8	18.9
2 1	6 18.61	+21 47.8	1.033	1.914	18.0	20.6	2 1	6 18.09	+23 51.2	1.894	2.744	12.5	19.1
178876	2001 <i>NS</i> ₉		1.4 64°02	5°4/3.3	18		362962	2013 <i>BS</i> ₃₄		1.5 277°20	0°3/1.5	18	
11 23	7 12.65	+6 31.4	1.713	2.462	18.0	19.6	11 23	7 15.13	+22 30.5	1.582	2.366	17.8	21.4
12 3	7 8.78	+6 40.0	1.640	2.475	14.9	19.4	12 3	7 11.58	+22 26.3	1.486	2.354	14.3	21.1
12 13	7 2.21	+7 6.8	1.586	2.489	11.3	19.2	12 13	7 4.71	+22 25.8	1.410	2.341	10.1	20.8
12 23	6 53.56	+7 52.6	1.556	2.503	7.7	19.0	12 23	6 55.07	+22 27.1	1.358	2.329	5.1	20.5
1 2	6 43.81	+8 55.9	1.553	2.518	5.5	18.9	1 2	6 43.75	+22 27.8	1.333	2.316	0.4	20.1
1 12	6 34.19	+10 12.6	1.578	2.532	6.8	19.0	1 12	6 32.33	+22 26.2	1.336	2.303	5.7	20.5
1 22	6 25.88	+11 37.1	1.631	2.546	10.1	19.2	1 22	6 22.38	+22 22.0	1.365	2.290	10.8	20.8
2 1	6 19.81	+13 4.0	1.709	2.561	13.6	19.5	2 1	6 15.15	+22 16.2	1.418	2.278	15.4	21.0
324483	2006 <i>UL</i> ₁₃₅		1.4 349°99	5°6/2.2	18		68445	2001 <i>RF</i> ₁₄₇		1.5 223°26	4°0/1.9	18	
11 23	7 11.28	+10 48.2	1.694	2.460	17.6	21.1	11 23	7 10.39	+11 45.2	2.555	3.296	12.9	19.6
12 3	7 7.88	+10 1.1	1.609	2.458	14.5	20.9	12 3	7 6.15	+11 2.4	2.457	3.292	10.6	19.4
12 13	7 1.72	+9 24.5	1.545	2.456	11.0	20.7	12 13	6 59.99	+10 25.9	2.382	3.287	7.9	19.2
12 23	6 53.37	+9 1.2	1.503	2.455	7.4	20.5	12 23	6 52.36	+9 57.0	2.333	3.283	5.3	19.1
1 2	6 43.82	+8 52.7	1.489	2.454	5.6	20.4	1 2	6 43.92	+9 37.1	2.314	3.278	4.0	19.0
1 12	6 34.32	+8 59.4	1.501	2.453	7.4	20.5	1 12	6 35.51	+9 26.5	2.325	3.273	5.4	19.0
1 22	6 26.08	+9 19.4	1.540	2.453	10.9	20.7	1 22	6 27.92	+9 24.8	2.364	3.269	8.0	19.2
2 1	6 20.10	+9 49.8	1.602	2.453	14.4	20.9	2 1	6 21.85	+9 31.1	2.430	3.264	10.7	19.4
366917	2005 <i>UH</i> ₂₀₂		1.5 71°36	2°8/1.9	18		472602	2015 <i>DZ</i> ₁₄₇		1.5 269°81	6°0/3.1	17	
11 23	7 12.14	+15 52.1	1.920	2.687	15.8	21.4	11 23	7 8.91	+3 20.7	2.492	3.209	13.8	21.8
12 3	7 8.21	+15 32.9	1.836	2.690	12.7	21.2	12 3	7 5.17	+3 2.5	2.384	3.192	11.7	21.6
12 13	7 1.74	+15 21.0	1.773	2.694	9.1	21.0	12 13	6 59.46	+2 57.4	2.296	3.176	9.4	21.4
12 23	6 53.32	+15 16.6	1.734	2.698	5.2	20.8	12 23	6 52.17	+3 7.7	2.233	3.159	7.2	21.3
1 2	6 43.83	+15 19.2	1.724	2.702	2.8	20.6	1 2	6 43.93	+3 34.3	2.198	3.143	6.0	21.2
1 12	6 34.45	+15 28.0	1.743	2.706	5.3	20.8	1 12	6 35.57	+4 16.6	2.192	3.126	6.8	21.2
1 22	6 26.25	+15 41.7	1.790	2.710	9.1	21.0	1 22	6 27.93	+5 12.2	2.215	3.109	9.0	21.3
2 1	6 20.13	+15 59.1	1.862	2.714	12.6	21.3	2 1	6 21.75	+6 17.5	2.263	3.092	11.6	21.4
129279	2005 <i>RL</i> ₁₁		1.5 18°74	4°0/1.9	18		59078	1998 <i>VT</i> ₁₉		1.5 79°50	7°0/2.9	18	
11 23	7 9.94	+15 54.4	1.384	2.179	19.4	18.7	11 23	7 14.27	+5 47.1	1.773	2.513	17.8	19.4
12 3	7 7.32	+15 10.2	1.316	2.187	15.7	18.5	12 3	7 9.76	+4 55.9	1.709	2.535	14.9	19.2
12 13	7 1.52	+14 34.4	1.267	2.196	11.3	18.2	12 13	7 2.68	+4 19.6	1.666	2.558	11.6	19.1
12 23	6 53.30	+14 8.7	1.241	2.206	6.7	18.0	12 23	6 53.72	+4 1.2	1.646	2.580	8.6	18.9
1 2	6 43.84	+13 54.0	1.241	2.217	4.0	17.9	1 2	6 43.86	+4 2.4	1.652	2.602	7.1	18.9
1 12	6 34.66	+13 50.4	1.266	2.229	6.8	18.1	1 12	6 34.30	+4 22.2	1.686	2.624	8.1	19.0
1 22	6 27.12	+13 56.4	1.317	2.243	11.1	18.3	1 22	6 26.09	+4 57.6	1.747	2.645	10.7	19.2
2 1	6 22.23	+14 10.2	1.390	2.257	15.2	18.6	2 1	6 20.07	+5 44.5	1.832	2.666	13.6	19.4
426562	2013 <i>RL</i> ₉₄		1.5 38°15	2°0/1.3	18		401374	2013 <i>BR</i> ₇₇		1.5 226°04	0°9/1.3	18	
11 23	7 14.00	+29 21.0	2.039	2.812	14.8	20.7	11 23	7 16.84	+24 14.8	1.888	2.658	15.9	22.0
12 3	7 9.68	+29 20.9	1.958	2.819	11.7	20.5	12 3	7 12.38	+24 30.5	1.790	2.650	12.7	21.7
12 13	7 2.72	+29 18.2	1.899	2.826	8.2	20.3	12 13	7 4.94	+24 49.5	1.713	2.641	8.9	21.5
12 23	6 53.77	+29 10.4	1.866	2.833	4.4	20.1	12 23	6 55.08	+25 8.6	1.662	2.631	4.5	21.2
1 2	6 43.82	+28 55.0	1.861	2.841	2.1	20.0	1 2	6 43.77	+25 24.5	1.639	2.622	0.9	20.9
1 12	6 34.10	+28 31.6	1.886	2.849	4.9	20.2	1 12	6 32.38	+25 34.7	1.646	2.611	5.2	21.2
1 22	6 25.73	+28 1.6	1.940	2.858	8.6	20.4	1 22	6 22.27	+25 38.7	1.681	2.600	9.6	21.4
2 1	6 19.58	+27 27.5	2.018	2.866	12.0	20.6	2 1	6 14.55	+25 37.4	1.741	2.589	13.6	21.7
330118	2005 <i>XA</i> ₁₁₂		1.5 10°50	0°2/1.5	18		85693	1998 <i>RK</i> ₅₉		1.5 62°34	3°9/2.0	18	
11 23	7 12.34	+21 42.0	1.870	2.647	15.7	21.9	11 23	7 15.78	+14 55.7	1.321	2.107	20.6	18.7
12 3	7 8.62	+21 49.5	1.783	2.648	12.5	21.7	12 3	7 12.00	+14 29.4	1.259	2.124	16.6	18.5
12 13	7 2.18	+22 1.5	1.718	2.648	8.7	21.5	12 13	7 4.79	+14 14.4	1.215	2.140	11.9	18.3
12 23	6 53.60	+22 16.1	1.678	2.649	4.4	21.2	12 23	6 54.94	+14 11.5	1.193	2.157	7.0	18.1
1 2	6 43.83	+22 30.9	1.667	2.650	0.3	20.9	1 2	6 43.80	+14 20.0	1.197	2.174	3.9	17.9
1 12	6 34.12	+22 44.0	1.684	2.651	4.8	21.3	1 12	6 33.04	+14 38.2	1.228	2.192	6.9	18.2
1 22	6 25.67	+22 54.4	1.729	2.652	9.1	21.5	1 22	6 24.14	+15 3.4	1.284	2.209	11.5	18.5
2 1	6 19.45	+23 2.2	1.799	2.654	12.9	21.8	2 1	6 18.18	+15 33.1	1.363	2.226	15.7	18.8
333103	2011 <i>UY</i> ₃₀₇		1.5 11°15	2°9/1.4	18		268622	2006 <i>DX</i> ₂₀		1.5 9°33	4°0/2.3	18	
11 23	7 13.68	+30 15.0	1.199	2.011	20.8	20.2	11 23	7 9.91	+12 6.7	1.885			

EPHEMERIDES

1 1.5

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
195963	2002 <i>RD</i> ₁₇₄		1 1.5 30°72	4.9/ 2.2	18		490435	2009 <i>SA</i> ₁₁₄		1 1.5 128°33	0.2/ 1.5	18	
11 23	7 9.85	+11 56.1	1.759	2.527	16.9	19.2	11 23	7 14.83	+22 28.0	2.249	3.009	13.9	21.9
12 3	7 6.46	+11 11.4	1.689	2.540	13.8	19.1	12 3	7 9.96	+22 27.4	2.166	3.020	11.0	21.8
12 13	7 0.53	+10 36.7	1.640	2.554	10.2	18.9	12 13	7 2.75	+22 29.2	2.105	3.031	7.6	21.6
12 23	6 52.70	+10 14.0	1.615	2.569	6.7	18.7	12 23	6 53.78	+22 31.8	2.072	3.041	3.8	21.4
1 2	6 43.94	+10 4.4	1.616	2.584	4.9	18.6	1 2	6 43.92	+22 33.5	2.068	3.051	0.3	21.1
1 12	6 35.40	+10 7.6	1.645	2.600	6.6	18.8	1 12	6 34.22	+22 33.4	2.095	3.061	4.2	21.4
1 22	6 28.15	+10 22.1	1.701	2.616	9.9	19.0	1 22	6 25.66	+22 31.3	2.151	3.070	7.8	21.7
2 1	6 23.01	+10 45.2	1.781	2.633	13.1	19.2	2 1	6 19.03	+22 27.8	2.234	3.079	11.1	21.9
162004	1991 <i>VE</i>		1 1.5 250°58	14.7/30.0	17 R		517662	2015 <i>BK</i> ₅₄₄		1 1.5 357°59	0.1/ 1.5	18	
11 23	8 25.15	+25 25.3	0.690	1.442	37.4	19.7	11 23	7 11.17	+19 58.8	2.210	2.976	14.0	21.3
12 3	8 23.88	+27 38.3	0.569	1.410	33.4	19.1	12 3	7 7.32	+20 34.2	2.118	2.975	11.1	21.1
12 13	8 12.72	+31 12.7	0.456	1.368	27.2	18.4	12 13	7 1.13	+21 16.5	2.048	2.975	7.7	20.9
12 23	7 43.45	+36 37.3	0.358	1.316	18.7	17.5	12 23	6 53.08	+22 3.3	2.005	2.975	3.9	20.6
1 2	6 39.74	+43 20.6	0.284	1.254	15.9	16.8	1 2	6 43.96	+22 51.3	1.992	2.975	0.2	20.3
1 12	4 48.44	+46 57.9	0.246	1.180	33.3	16.9	1 12	6 34.80	+23 37.4	2.009	2.975	4.3	20.7
1 22	2 51.46	+42 20.9	0.246	1.094	57.7	17.4	1 22	6 26.62	+24 19.3	2.055	2.975	8.1	20.9
2 1	1 35.02	+33 35.9	0.273	0.994	80.3	18.2	2 1	6 20.29	+24 55.9	2.127	2.975	11.4	21.1
419032	2009 <i>QY</i> ₅₅		1 1.5 115°24	3.9/ 2.3	18		520784	2014 <i>SO</i> ₃₅₇		1 1.5 56°43	7.8/ 3.8	18	
11 23	7 13.14	+11 11.0	2.266	3.007	14.4	22.6	11 23	7 10.51	+1 44.8	1.849	2.579	17.5	21.2
12 3	7 8.42	+10 50.0	2.188	3.023	11.7	22.4	12 3	7 6.87	+1 12.5	1.777	2.591	14.9	21.0
12 13	7 1.57	+10 38.1	2.133	3.040	8.6	22.2	12 13	7 0.79	+0 58.4	1.724	2.604	12.0	20.9
12 23	6 53.14	+10 36.2	2.103	3.055	5.6	22.1	12 23	6 52.86	+1 5.5	1.694	2.617	9.3	20.8
1 2	6 43.92	+10 44.2	2.103	3.071	3.9	22.0	1 2	6 43.98	+1 35.1	1.690	2.630	7.9	20.7
1 12	6 34.86	+11 1.3	2.132	3.085	5.4	22.1	1 12	6 35.24	+2 25.5	1.712	2.643	8.6	20.8
1 22	6 26.84	+11 25.7	2.191	3.100	8.3	22.3	1 22	6 27.67	+3 32.4	1.761	2.656	10.8	20.9
2 1	6 20.58	+11 55.4	2.275	3.114	11.2	22.5	2 1	6 22.10	+4 50.4	1.834	2.670	13.6	21.1
240531	2004 <i>FN</i> ₁₄₆		1 1.5 253°60	9.0/ 4.3	18		491929	2013 <i>CU</i> ₉₇		1 1.5 196°70	0.4/ 1.4	18	
11 23	7 8.06	- 9 19.3	2.874	3.516	13.6	21.0	11 23	7 16.99	+23 31.5	2.063	2.825	14.9	22.8
12 3	7 4.20	-10 1.6	2.773	3.502	12.2	20.9	12 3	7 12.12	+23 41.8	1.967	2.823	11.9	22.5
12 13	6 58.62	-10 27.5	2.690	3.488	10.8	20.7	12 13	7 4.55	+23 55.0	1.894	2.820	8.3	22.3
12 23	6 51.70	-10 33.6	2.629	3.473	9.6	20.6	12 23	6 54.82	+24 8.6	1.847	2.816	4.2	22.1
1 2	6 43.99	-10 17.2	2.594	3.458	9.0	20.6	1 2	6 43.87	+24 19.8	1.829	2.812	0.5	21.8
1 12	6 36.22	- 9 38.1	2.585	3.443	9.2	20.6	1 12	6 32.92	+24 26.8	1.841	2.807	4.7	22.1
1 22	6 29.07	- 8 38.3	2.602	3.428	10.3	20.6	1 22	6 23.16	+24 29.2	1.883	2.801	8.8	22.3
2 1	6 23.20	- 7 21.3	2.643	3.412	11.8	20.7	2 1	6 15.59	+24 27.8	1.950	2.795	12.5	22.5
59727	1999 <i>KC</i> ₁₅		1 1.5 262°89	6.5/ 1.9	18		492940	2014 <i>SD</i> ₅		1 1.5 74°56	2.0/ 2.1	18	
11 23	7 11.99	+ 7 51.9	2.058	2.798	15.7	20.0	11 23	7 13.17	+15 5.5	1.857	2.621	16.3	20.9
12 3	7 7.98	+ 6 45.1	1.960	2.788	13.1	19.8	12 3	7 9.10	+15 26.9	1.781	2.635	13.0	20.7
12 13	7 1.59	+ 5 47.0	1.883	2.777	10.3	19.6	12 13	7 2.41	+15 58.9	1.726	2.649	9.2	20.5
12 23	6 53.30	+ 5 1.2	1.830	2.766	7.7	19.4	12 23	6 53.71	+16 40.2	1.697	2.663	5.1	20.3
1 2	6 43.91	+ 4 30.6	1.805	2.756	6.5	19.3	1 2	6 43.93	+17 28.0	1.696	2.677	2.0	20.1
1 12	6 34.48	+ 4 16.8	1.809	2.745	7.8	19.3	1 12	6 34.29	+18 18.8	1.725	2.691	5.0	20.4
1 22	6 26.03	+ 4 19.3	1.839	2.733	10.5	19.5	1 22	6 25.90	+19 9.6	1.782	2.704	9.0	20.6
2 1	6 19.46	+ 4 36.0	1.894	2.722	13.5	19.6	2 1	6 19.67	+19 57.9	1.865	2.718	12.5	20.9
146634	2001 <i>US</i> ₄₂		1 1.5 14°23	0.9/ 1.6	18		318775	2005 <i>SF</i> ₉₀		1 1.5 104°00	1.1/ 1.3	18	
11 23	7 12.46	+20 20.8	1.730	2.511	16.7	20.3	11 23	7 15.00	+25 6.9	1.988	2.759	15.1	21.1
12 3	7 8.92	+20 20.1	1.647	2.512	13.3	20.1	12 3	7 10.53	+25 21.9	1.908	2.768	12.0	20.9
12 13	7 2.50	+20 24.9	1.584	2.514	9.3	19.8	12 13	7 3.39	+25 38.7	1.849	2.777	8.3	20.7
12 23	6 53.82	+20 33.7	1.545	2.515	4.8	19.6	12 23	6 54.19	+25 54.4	1.817	2.786	4.2	20.5
1 2	6 43.89	+20 44.7	1.534	2.517	0.9	19.3	1 2	6 43.91	+26 6.1	1.813	2.795	1.1	20.3
1 12	6 34.05	+20 56.0	1.552	2.519	5.1	19.6	1 12	6 33.79	+26 12.1	1.838	2.804	4.8	20.6
1 22	6 25.56	+21 6.6	1.596	2.521	9.6	19.9	1 22	6 24.98	+26 12.1	1.893	2.812	8.7	20.8
2 1	6 19.43	+21 16.3	1.665	2.524	13.5	20.1	2 1	6 18.39	+26 7.4	1.972	2.820	12.2	21.1
102004	1999 <i>RC</i> ₈₁		1 1.5 347°44	6.9/31.5	18		285324	1999 <i>CM</i> ₁₄₇		1 1.5 265°74	2.1/ 1.9	18	
11 23	7 16.44	+35 47.9	1.450	2.241	18.9	18.9	11 23	7 9.80	+16 2.2	2.416	3.172	13.2	21.7
12 3	7 13.44	+36 47.6	1.372	2.237	15.5	18.7	12 3	7 5.98	+15 58.7	2.314	3.163	10.6	21.5
12 13	7 6.43	+37 43.3	1.313	2.233	11.7	18.4	12 13	7 0.06	+16 1.8	2.235	3.155	7.6	21.3
12 23	6 56.07	+38 26.3	1.277	2.230	8.2	18.2	12 23	6 52.51	+16 11.0	2.182	3.146	4.3	21.1
1 2	6 43.75	+38 48.3	1.266	2.228	6.9	18.2	1 2	6 44.01	+16 25.6	2.158	3.137	2.1	20.9
1 12	6 31.52	+38 45.0	1.280	2.226	9.2	18.3	1 12	6 35.47	+16 44.5	2.165	3.128	4.3	21.0
1 22	6 21.32	+38 18.1	1.320	2.225	12.9	18.5	1 22	6 27.76	+17 6.2	2.200	3.119	7.7	21.2
2 1	6 14.59	+37 33.7	1.381	2.224	16.7	18.7	2 1	6 21.67	+17 29.6	2.263	3.110	10.9	21.4
96717	1999 <i>KG</i> ₉		1 1.5 238°90	1.5/ 1.7	18		449791	2014 <i>OQ</i> ₂₁₆		1 1.5 248°76	2.7/31.9	18	
11 23	7 15.27	+18 39.1	1.829	2.598	16.4	20.6	11 23	7 16.52	+27 20.9	1.687	2.467	17.0	22.0
12 3	7 11.14	+18 36.0	1.730	2.587	13.2	20.3	12 3	7 12.65	+28 0.1	1.595	2.461	13.7	21.8
12 13	7 4.10	+18 39.4	1.651	2.576	9.3	20.1	12 13	7 5.44	+28 42.2	1.525	2.454	9.7	21.5
12 23	6 54.69	+18 48.4	1.597	2.565	5.0	19.8	12 23	6 55.47	+29 22.1	1.480	2.447	5.3	21.2
1 2	6 43.85	+19 1.3	1.572	2.553	1.6	19.5	1 2	6 43.84	+29 54.3	1.461	2.440	2.8	21.1
1 12	6 32.89	+19 16.3	1.575	2.541	5.3	19.7	1 12	6 32.12	+30 14.8	1.472	2.433	6.2	21.3
1 22	6 23.14	+19 32.1	1.607	2.529	9.8	20.0	1 22	6 21.88	+30 22.8	1.509	2.426	10.7	21.5
2 1	6 15.70	+19 48.1	1.663	2.516	13.9	20.2	2 1	6 14.38	+30 20.1	1.570	2.419	14.8	21.7
237708	2001 <i>UB</i> ₁₅₃		1 1.5 99°76	4.5/31.0	18		7959	<i>Alysecherri</i>		1 1.5 115°03	12.5/ 1.1	18	
11 23	7 14.32	+34 41.2	2.518	3.2									

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
260754	2005 <i>MO</i> ₂₅		1 1.5 115°14	0°2/ 1.5 18			462074	2007 <i>EF</i> ₂₁₈		1 1.5 292°57	2°2/ 1.1 18		
11 23	7 16.37	+23 1.8	2.139	2.900	14.5	21.8	11 23	7 14.03	+27 53.7	1.967	2.742	15.2	21.8
12 3	7 11.26	+23 9.3	2.062	2.917	11.5	21.6	12 3	7 10.07	+28 17.0	1.875	2.738	12.1	21.6
12 13	7 3.68	+23 19.5	2.008	2.934	7.9	21.4	12 13	7 3.29	+28 40.8	1.806	2.734	8.5	21.4
12 23	6 54.26	+23 30.0	1.980	2.950	3.9	21.2	12 23	6 54.27	+29 1.4	1.762	2.730	4.6	21.1
1 2	6 43.92	+23 38.7	1.982	2.966	0.3	20.9	1 2	6 43.97	+29 15.1	1.746	2.726	2.3	20.9
1 12	6 33.80	+23 44.2	2.015	2.981	4.3	21.3	1 12	6 33.70	+29 19.7	1.760	2.722	5.3	21.1
1 22	6 24.93	+23 46.3	2.077	2.996	8.1	21.5	1 22	6 24.70	+29 15.2	1.801	2.718	9.2	21.4
2 1	6 18.13	+23 45.5	2.165	3.010	11.4	21.8	2 1	6 17.98	+29 3.2	1.867	2.715	12.8	21.6
192186	2007 <i>GA</i> ₅		1 1.5 157°16	1°7/ 1.8 18			520945	2014 <i>YJ</i> ₂		1 1.5 59°00	11°4/ 6.9 18		
11 23	7 12.28	+18 9.2	2.158	2.920	14.4	21.3	11 23	7 19.41	- 7 12.0	1.037	1.771	28.2	20.5
12 3	7 8.11	+17 59.7	2.068	2.922	11.5	21.1	12 3	7 15.98	- 6 31.9	0.970	1.781	24.6	20.2
12 13	7 1.60	+17 55.5	2.000	2.924	8.1	20.9	12 13	7 8.33	- 5 3.3	0.916	1.792	20.2	20.0
12 23	6 53.28	+17 56.1	1.959	2.925	4.4	20.7	12 23	6 57.12	- 2 39.2	0.879	1.803	15.5	19.8
1 2	6 43.98	+18 0.5	1.946	2.927	1.7	20.5	1 2	6 43.82	+ 0 38.3	0.866	1.814	11.9	19.6
1 12	6 34.74	+18 7.7	1.963	2.928	4.5	20.7	1 12	6 30.56	+ 4 34.4	0.878	1.825	11.9	19.6
1 22	6 26.56	+18 16.8	2.009	2.929	8.2	20.9	1 22	6 19.45	+ 8 45.5	0.916	1.837	15.4	19.9
2 1	6 20.27	+18 27.4	2.081	2.930	11.6	21.1	2 1	6 12.04	+12 48.9	0.979	1.849	19.8	20.2
329603	2003 <i>FJ</i> ₉₆		1 1.5 256°81	1°4/ 1.2 18			258227	2001 <i>TZ</i> ₇₅		1 1.5 61°29	6°6/31.0 18		
11 23	7 13.85	+24 42.0	2.072	2.842	14.6	20.8	11 23	7 19.16	+35 55.1	1.700	2.474	17.2	20.0
12 3	7 9.82	+25 14.2	1.971	2.831	11.7	20.5	12 3	7 14.80	+37 19.1	1.639	2.493	14.0	19.9
12 13	7 3.11	+25 50.3	1.891	2.819	8.2	20.3	12 13	7 6.88	+38 39.1	1.598	2.511	10.6	19.7
12 23	6 54.18	+26 27.0	1.838	2.808	4.2	20.0	12 23	6 56.13	+39 46.4	1.582	2.530	7.6	19.6
1 2	6 43.92	+27 0.4	1.814	2.796	1.4	19.8	1 2	6 43.88	+40 33.1	1.594	2.548	6.7	19.5
1 12	6 33.52	+27 27.6	1.819	2.783	4.9	20.0	1 12	6 31.87	+40 55.4	1.632	2.567	8.5	19.7
1 22	6 24.19	+27 46.9	1.853	2.771	9.0	20.3	1 22	6 21.74	+40 54.6	1.697	2.586	11.5	19.9
2 1	6 16.98	+27 58.9	1.913	2.759	12.6	20.5	2 1	6 14.66	+40 35.6	1.784	2.605	14.5	20.2
240371	2003 <i>SZ</i> ₂₂₀		1 1.5 23°05	6°7/ 1.7 18			482945	2014 <i>JJ</i> ₆₉		1 1.5 347°93	3°0/ 1.1 18		
11 23	7 17.63	+39 14.0	1.428	2.216	19.3	20.1	11 23	7 14.04	+26 54.7	1.244	2.053	20.4	20.9
12 3	7 13.93	+39 29.0	1.371	2.231	15.8	19.9	12 3	7 11.71	+27 29.8	1.167	2.048	16.4	20.7
12 13	7 6.27	+39 32.1	1.332	2.249	11.9	19.7	12 13	7 5.37	+28 8.7	1.108	2.044	11.6	20.4
12 23	6 55.70	+39 16.6	1.316	2.267	8.3	19.5	12 23	6 55.64	+28 45.6	1.071	2.041	6.3	20.1
1 2	6 43.88	+38 38.3	1.325	2.287	6.7	19.5	1 2	6 43.92	+29 13.9	1.059	2.039	3.0	19.9
1 12	6 32.78	+37 37.8	1.359	2.308	8.4	19.7	1 12	6 32.22	+29 28.8	1.072	2.037	7.3	20.1
1 22	6 24.04	+36 21.1	1.420	2.330	11.8	19.9	1 22	6 22.51	+29 30.0	1.109	2.036	12.6	20.4
2 1	6 18.66	+34 55.9	1.503	2.353	15.2	20.2	2 1	6 16.28	+29 20.2	1.168	2.036	17.4	20.7
436357	2010 <i>JO</i> ₁₅₁		1 1.5 316°06	7°0/ 1.8 17			302931	2003 <i>SP</i> ₂₈₄		1 1.5 135°39	0°2/ 1.5 18		
11 23	7 8.93	+ 6 41.6	2.075	2.818	15.5	20.7	11 23	7 17.94	+22 22.9	2.010	2.771	15.3	21.7
12 3	7 5.62	+ 5 28.7	1.973	2.801	13.1	20.5	12 3	7 12.71	+22 23.6	1.929	2.784	12.2	21.5
12 13	7 0.02	+ 4 24.6	1.893	2.784	10.5	20.3	12 13	7 4.82	+22 27.2	1.871	2.796	8.4	21.3
12 23	6 52.58	+ 3 33.3	1.837	2.768	8.1	20.1	12 23	6 54.91	+22 31.7	1.839	2.808	4.2	21.0
1 2	6 44.05	+ 2 58.3	1.807	2.752	7.0	20.0	1 2	6 43.97	+22 35.1	1.836	2.819	0.3	20.7
1 12	6 35.43	+ 2 41.4	1.805	2.736	8.2	20.0	1 12	6 33.23	+22 36.2	1.863	2.830	4.6	21.1
1 22	6 27.72	+ 2 42.4	1.829	2.721	10.7	20.2	1 22	6 23.82	+22 34.8	1.920	2.839	8.6	21.4
2 1	6 21.78	+ 2 59.3	1.878	2.706	13.6	20.3	2 1	6 16.64	+22 31.6	2.003	2.848	12.1	21.6
379970	2012 <i>RL</i> ₂₆		1 1.5 55°49	1°9/ 1.9 18			142443	2002 <i>SW</i> ₅₆		1 1.5 84°67	1°2/ 1.2 18		
11 23	7 9.79	+16 9.9	2.351	3.109	13.4	20.5	11 23	7 15.34	+23 39.0	1.755	2.533	16.6	19.9
12 3	7 5.95	+16 10.6	2.260	3.111	10.8	20.3	12 3	7 11.24	+24 16.0	1.678	2.542	13.2	19.7
12 13	7 0.02	+16 18.0	2.192	3.113	7.6	20.1	12 13	7 4.16	+24 57.9	1.622	2.552	9.1	19.5
12 23	6 52.48	+16 31.8	2.150	3.114	4.3	19.9	12 23	6 54.73	+25 40.8	1.591	2.561	4.6	19.3
1 2	6 44.06	+16 50.8	2.137	3.116	1.9	19.8	1 2	6 44.00	+26 20.2	1.588	2.570	1.3	19.0
1 12	6 35.67	+17 13.6	2.154	3.118	4.3	19.9	1 12	6 33.39	+26 52.5	1.615	2.580	5.3	19.3
1 22	6 28.19	+17 38.5	2.200	3.120	7.7	20.1	1 22	6 24.22	+27 16.3	1.668	2.589	9.6	19.6
2 1	6 22.37	+18 4.5	2.273	3.122	10.8	20.3	2 1	6 17.54	+27 32.0	1.747	2.598	13.4	19.9
423556	2005 <i>UV</i> ₃₅₁		1 1.5 44°84	2°4/ 1.7 18			15688	1981 <i>UW</i> ₂₃		1 1.5 93°09	5°0/31.3 18		
11 23	7 13.51	+18 32.5	1.856	2.626	16.1	20.6	11 23	7 20.28	+32 40.8	1.896	2.661	16.0	17.2
12 3	7 9.42	+17 58.0	1.771	2.629	12.9	20.4	12 3	7 15.16	+33 57.4	1.830	2.682	12.8	17.0
12 13	7 2.67	+17 27.7	1.708	2.633	9.1	20.2	12 13	7 6.87	+35 12.5	1.786	2.703	9.4	16.8
12 23	6 53.86	+17 1.9	1.670	2.636	5.1	19.9	12 23	6 56.07	+36 18.9	1.768	2.723	6.2	16.7
1 2	6 43.98	+16 40.7	1.660	2.639	2.4	19.8	1 2	6 43.94	+37 9.7	1.779	2.742	5.0	16.7
1 12	6 34.25	+16 24.5	1.679	2.643	5.3	20.0	1 12	6 32.01	+37 41.1	1.818	2.762	7.1	16.8
1 22	6 25.80	+16 13.3	1.726	2.647	9.3	20.2	1 22	6 21.68	+37 53.4	1.886	2.781	10.2	17.1
2 1	6 19.56	+16 7.1	1.798	2.651	13.0	20.5	2 1	6 14.05	+37 49.9	1.977	2.799	13.3	17.3
237274	2008 <i>WY</i> ₁₃₄		1 1.5 263°94	3°8/31.2 18			166065	2002 <i>CU</i> ₆₉		1 1.5 235°31	0°3/ 1.6 18		
11 23	7 13.45	+31 35.8	2.463	3.225	12.8	20.2	11 23	7 15.90	+21 9.6	1.862	2.632	16.1	21.2
12 3	7 9.26	+32 39.1	2.365	3.217	10.3	20.0	12 3	7 11.68	+21 20.0	1.762	2.622	12.9	21.0
12 13	7 2.58	+33 42.9	2.291	3.209	7.5	19.8	12 13	7 4.54	+21 36.0	1.684	2.611	9.0	20.7
12 23	6 53.89	+34 42.3	2.243	3.201	4.8	19.6	12 23	6 54.99	+21 55.4	1.631	2.601	4.6	20.4
1 2	6 43.97	+35 32.4	2.226	3.192	3.8	19.5	1 2	6 44.00	+22 15.4	1.606	2.589	0.4	20.1
1 12	6 33.90	+36 9.6	2.238	3.184	5.7	19.6	1 12	6 32.88	+22 33.6	1.611	2.577	5.1	20.4
1 22	6 24.78	+36 32.8	2.279	3.176	8.6	19.8	1 22	6 22.97	+22 48.8	1.643	2.565	9.6	20.7
2 1	6 17.56	+36 43.1	2.346	3.168	11.4	20.0	2 1	6 15.38	+23 0.9	1.701	2.552	13.7	20.9
277699	2006 <i>CT</i> ₄₇		1 1.5 297°47	4°3/ 2.3 18			32803	1990 <i>SR</i> ₁		1 1.5 109°15	1°1/ 1.4 18		
11 23	7 12.70	+12											

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
281852	2010 <i>CP</i> ₇₇		1 1.5 231°94	3°7/ 2.5 18			447026	2004 <i>OC</i> ₁₂		1 1.5 118°42	1°8/ 1.2 17		
11 23	7 9.52	+10 41.6	2.409	3.152	13.6	20.6	11 23	7 19.80	+25 31.7	1.743	2.514	17.0	21.7
12 3	7 5.70	+10 31.7	2.313	3.150	11.1	20.4	12 3	7 14.75	+26 6.3	1.669	2.529	13.5	21.5
12 13	6 59.85	+10 31.4	2.240	3.147	8.3	20.2	12 13	7 6.56	+26 43.7	1.617	2.545	9.3	21.3
12 23	6 52.44	+10 41.3	2.192	3.144	5.4	20.0	12 23	6 55.92	+27 19.5	1.590	2.559	4.8	21.1
1 2	6 44.15	+11 1.2	2.173	3.141	3.7	19.9	1 2	6 44.00	+27 48.9	1.592	2.573	1.9	20.9
1 12	6 35.84	+11 30.1	2.183	3.138	5.2	20.0	1 12	6 32.30	+28 8.9	1.623	2.587	5.5	21.2
1 22	6 28.38	+12 6.0	2.223	3.135	8.0	20.2	1 22	6 22.21	+28 19.0	1.682	2.600	9.8	21.4
2 1	6 22.48	+12 46.5	2.289	3.132	10.9	20.4	2 1	6 14.78	+28 20.9	1.767	2.612	13.5	21.7
61917	2000 <i>RH</i> ₁		1 1.5 123°38	1°0/ 1.4 18			379092	2008 <i>XM</i> ₃₁		1 1.5 344°39	0°8/ 1.4 18		
11 23	7 19.53	+24 50.1	1.892	2.657	16.0	20.5	11 23	7 11.10	+25 11.7	1.899	2.681	15.4	21.2
12 3	7 14.18	+25 5.1	1.817	2.674	12.7	20.3	12 3	7 7.77	+25 12.7	1.808	2.675	12.3	21.0
12 13	7 5.94	+25 22.0	1.763	2.690	8.8	20.1	12 13	7 1.72	+25 14.7	1.738	2.669	8.5	20.7
12 23	6 55.52	+25 37.6	1.736	2.705	4.4	19.8	12 23	6 53.52	+25 15.7	1.694	2.664	4.3	20.5
1 2	6 43.99	+25 48.8	1.737	2.720	1.0	19.6	1 2	6 44.12	+25 13.4	1.677	2.660	0.9	20.2
1 12	6 32.72	+25 53.7	1.769	2.734	4.9	19.9	1 12	6 34.77	+25 6.6	1.689	2.656	4.9	20.5
1 22	6 22.93	+25 52.3	1.829	2.747	9.1	20.2	1 22	6 26.67	+24 55.4	1.728	2.652	9.1	20.7
2 1	6 15.59	+25 46.3	1.915	2.760	12.7	20.5	2 1	6 20.77	+24 41.2	1.793	2.650	12.8	20.9
394512	2007 <i>TT</i> ₂₇₃		1 1.5 90°64	4°5/ 2.2 18			91467	1999 <i>RQ</i> ₈₃		1 1.5 263°09	6°3/31.1 18		
11 23	7 18.25	+12 19.8	1.812	2.562	17.2	22.1	11 23	7 18.15	+38 59.5	2.167	2.922	14.5	19.5
12 3	7 12.82	+11 41.3	1.750	2.591	13.9	22.0	12 3	7 13.67	+39 57.1	2.069	2.909	12.1	19.3
12 13	7 4.76	+11 12.7	1.709	2.619	10.2	21.8	12 13	7 6.04	+40 49.7	1.994	2.896	9.4	19.1
12 23	6 54.82	+10 55.3	1.693	2.647	6.5	21.7	12 23	6 55.81	+41 30.7	1.944	2.883	7.1	19.0
1 2	6 44.04	+10 49.4	1.705	2.674	4.5	21.6	1 2	6 44.01	+41 53.8	1.921	2.869	6.4	18.9
1 12	6 33.64	+10 54.4	1.746	2.701	6.3	21.8	1 12	6 32.09	+41 55.6	1.927	2.856	7.9	19.0
1 22	6 24.72	+11 8.6	1.816	2.727	9.6	22.0	1 22	6 21.53	+41 36.7	1.960	2.842	10.6	19.1
2 1	6 18.07	+11 30.0	1.911	2.752	12.8	22.3	2 1	6 13.52	+41 0.9	2.017	2.828	13.4	19.3
499608	2010 <i>TA</i> ₁₇₂		1 1.5 248°55	4°3/ 2.1 18			426858	2013 <i>WJ</i> ₄		1 1.5 0°07	4°1/31.5 18		
11 23	7 12.53	+12 9.7	1.955	2.710	15.9	21.4	11 23	7 11.34	+30 44.1	1.877	2.661	15.5	20.6
12 3	7 8.64	+11 39.4	1.858	2.702	13.0	21.2	12 3	7 8.26	+31 41.8	1.794	2.659	12.4	20.4
12 13	7 2.21	+11 17.9	1.782	2.694	9.7	20.9	12 13	7 2.25	+32 40.0	1.733	2.658	8.9	20.2
12 23	6 53.74	+11 6.9	1.730	2.685	6.3	20.7	12 23	6 53.87	+33 33.2	1.696	2.658	5.5	20.0
1 2	6 44.08	+11 7.2	1.707	2.677	4.3	20.6	1 2	6 44.11	+34 15.7	1.687	2.658	4.1	19.9
1 12	6 34.37	+11 18.3	1.712	2.668	6.2	20.7	1 12	6 34.35	+34 43.6	1.706	2.659	6.5	20.1
1 22	6 25.73	+11 38.8	1.745	2.659	9.7	20.9	1 22	6 25.91	+34 56.2	1.752	2.661	10.0	20.3
2 1	6 19.09	+12 6.6	1.803	2.649	13.2	21.1	2 1	6 19.87	+34 55.4	1.822	2.664	13.4	20.5
108794	2001 <i>OL</i> ₆₇		1 1.5 81°89	1°6/ 1.8 18			83169	2001 <i>QR</i> ₂₈₁		1 1.5 62°22	2°4/31.7 18		
11 23	7 14.11	+18 24.7	1.835	2.605	16.3	20.3	11 23	7 12.88	+26 42.2	2.317	3.083	13.4	18.8
12 3	7 9.90	+18 21.9	1.759	2.618	13.0	20.1	12 3	7 8.74	+27 43.4	2.229	3.087	10.6	18.7
12 13	7 3.00	+18 25.6	1.705	2.631	9.1	19.9	12 13	7 2.19	+28 47.8	2.166	3.091	7.4	18.5
12 23	6 54.06	+18 34.8	1.675	2.643	4.8	19.6	12 23	6 53.72	+29 51.1	2.129	3.095	4.1	18.3
1 2	6 44.07	+18 47.9	1.674	2.656	1.6	19.4	1 2	6 44.13	+30 48.4	2.122	3.099	2.5	18.2
1 12	6 34.27	+19 3.1	1.702	2.668	4.9	19.7	1 12	6 34.49	+31 36.3	2.146	3.104	5.0	18.3
1 22	6 25.80	+19 19.1	1.758	2.681	9.0	20.0	1 22	6 25.86	+32 12.9	2.199	3.108	8.3	18.5
2 1	6 19.57	+19 35.3	1.839	2.693	12.7	20.2	2 1	6 19.14	+32 38.5	2.278	3.112	11.3	18.8
145847	1999 <i>CQ</i> ₁₃		1 1.5 267°91	1°8/ 1.3 18			425970	2011 <i>HH</i> ₅₀		1 1.5 147°07	5°5/ 3.3 18		
11 23	7 15.61	+27 46.1	1.920	2.694	15.5	20.2	11 23	7 9.08	+ 2 57.5	2.793	3.500	12.7	21.8
12 3	7 11.41	+27 51.0	1.824	2.685	12.4	20.0	12 3	7 4.95	+ 2 37.3	2.705	3.506	10.7	21.7
12 13	7 4.29	+27 55.2	1.749	2.677	8.7	19.7	12 13	6 59.12	+ 2 29.2	2.638	3.512	8.5	21.5
12 23	6 54.83	+27 55.5	1.699	2.668	4.6	19.5	12 23	6 52.01	+ 2 34.5	2.597	3.518	6.5	21.4
1 2	6 44.04	+27 48.9	1.678	2.659	1.8	19.3	1 2	6 44.22	+ 2 53.9	2.584	3.524	5.5	21.3
1 12	6 33.27	+27 34.2	1.686	2.650	5.2	19.5	1 12	6 36.48	+ 3 26.8	2.601	3.529	6.1	21.4
1 22	6 23.81	+27 12.1	1.722	2.642	9.4	19.7	1 22	6 29.46	+ 4 10.8	2.646	3.534	8.0	21.5
2 1	6 16.74	+26 45.0	1.783	2.633	13.2	19.9	2 1	6 23.77	+ 5 3.3	2.718	3.538	10.1	21.7
194184	2001 <i>TM</i> ₆₃		1 1.5 44°73	2°9/ 1.1 17			113199	2002 <i>RM</i> ₁₁₁		1 1.5 117°14	0°9/ 1.4 18		
11 23	7 16.36	+26 52.3	1.314	2.114	20.0	20.2	11 23	7 18.47	+25 28.6	2.090	2.850	14.8	20.3
12 3	7 13.11	+27 32.5	1.248	2.124	15.9	20.0	12 3	7 13.01	+25 32.7	2.014	2.868	11.7	20.1
12 13	7 6.01	+28 15.9	1.200	2.134	11.2	19.7	12 13	7 4.97	+25 37.3	1.960	2.886	8.1	19.9
12 23	6 55.83	+28 56.3	1.175	2.145	6.0	19.5	12 23	6 54.99	+25 39.9	1.934	2.903	4.1	19.7
1 2	6 43.99	+29 27.4	1.176	2.156	3.0	19.3	1 2	6 44.07	+25 38.2	1.937	2.919	0.9	19.5
1 12	6 32.42	+29 45.2	1.203	2.167	6.9	19.6	1 12	6 33.42	+25 31.3	1.970	2.935	4.5	19.8
1 22	6 22.90	+29 49.4	1.256	2.179	11.8	19.9	1 22	6 24.14	+25 19.6	2.033	2.950	8.3	20.1
2 1	6 16.67	+29 42.9	1.330	2.191	16.1	20.2	2 1	6 17.06	+25 4.7	2.122	2.965	11.7	20.3
69045	2002 <i>XN</i> ₅₉		1 1.5 51°69	5°0/ 2.4 18			244145	2001 <i>WU</i> ₁₈		1 1.5 112°12	4°7/ 2.2 18		
11 23	7 40.48	+39 5.6	1.135	1.906	24.2	16.8	11 23	7 10.13	+ 9 0.7	2.576	3.308	13.0	20.4
12 3	7 31.62	+38 12.5	1.093	1.946	19.5	16.6	12 3	7 5.89	+ 8 15.5	2.491	3.316	10.8	20.3
12 13	7 17.89	+37 1.8	1.068	1.986	14.0	16.4	12 13	6 59.81	+ 7 38.4	2.428	3.324	8.2	20.1
12 23	7 1.09	+35 27.5	1.067	2.027	8.4	16.3	12 23	6 52.36	+ 7 11.1	2.391	3.331	5.8	20.0
1 2	6 43.76	+33 30.1	1.092	2.067	5.0	16.2	1 2	6 44.21	+ 6 55.0	2.383	3.339	4.7	19.9
1 12	6 28.50	+31 18.3	1.147	2.107	7.7	16.5	1 12	6 36.15	+ 6 50.3	2.405	3.346	5.7	20.0
1 22	6 16.99	+29 4.8	1.228	2.147	12.4	16.8	1 22	6 28.93	+ 6 56.1	2.455	3.353	8.0	20.1
2 1	6 9.92	+27 0.4	1.333	2.187	16.6	17.2	2 1	6 23.19	+ 7 10.8	2.532	3.360	10.5	20.3
26073	5168 <i>T</i> ₋₃		1 1.5 265°11	0°9/ 1.8 18 R			61001	2000 <i>KJ</i> ₃₁		1 1.5 135°13	1°2/ 1.3 18		
11 23	7 11.18	+18 15.8	2.229										

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
75778	2000 AY ₁₉₈		1 1.5 230°36	5°4/ 2.9 18			52238	1979 OM ₉		1 1.5 271°65	1°8/ 1.6 18		
11 23	7 9.69	+ 5 12.8	2.537	3.258	13.5	19.8	11 23	7 14.84	+20 20.7	1.905	2.674	15.8	19.2
12 3	7 5.74	+ 4 49.6	2.436	3.250	11.3	19.6	12 3	7 10.64	+19 44.8	1.805	2.663	12.7	19.0
12 13	6 59.86	+ 4 38.0	2.357	3.243	8.9	19.4	12 13	7 3.70	+19 10.7	1.728	2.653	9.0	18.7
12 23	6 52.47	+ 4 39.7	2.303	3.235	6.6	19.3	12 23	6 54.56	+18 38.6	1.675	2.643	4.8	18.4
1 2	6 44.21	+ 4 55.6	2.277	3.226	5.4	19.2	1 2	6 44.16	+18 8.5	1.651	2.632	1.8	18.2
1 12	6 35.90	+ 5 25.2	2.280	3.217	6.3	19.2	1 12	6 33.78	+17 41.0	1.657	2.622	5.2	18.4
1 22	6 28.35	+ 6 6.5	2.312	3.209	8.6	19.3	1 22	6 24.60	+17 17.2	1.691	2.612	9.5	18.7
2 1	6 22.26	+ 6 56.5	2.370	3.199	11.1	19.5	2 1	6 17.65	+16 57.7	1.750	2.601	13.3	18.9
45686	2000 EM ₁₃₉		1 1.5 91°57	4°6/ 2.5 18 R			139971	2001 SM ₁₄		1 1.5 244°13	0°8/ 1.7 18		
11 23	7 10.22	+ 9 26.3	2.261	3.003	14.4	18.6	11 23	7 10.82	+19 58.2	2.560	3.317	12.5	20.6
12 3	7 6.29	+ 9 0.7	2.176	3.010	11.8	18.4	12 3	7 6.75	+20 0.5	2.456	3.309	10.0	20.4
12 13	7 0.27	+ 8 45.3	2.113	3.016	8.9	18.2	12 13	7 0.62	+20 6.8	2.376	3.300	7.0	20.2
12 23	6 52.67	+ 8 41.3	2.076	3.023	6.1	18.1	12 23	6 52.90	+20 16.1	2.323	3.291	3.6	20.0
1 2	6 44.22	+ 8 49.3	2.066	3.029	4.6	18.0	1 2	6 44.26	+20 27.0	2.300	3.282	0.8	19.7
1 12	6 35.84	+ 9 8.4	2.086	3.035	5.8	18.1	1 12	6 35.58	+20 38.4	2.307	3.273	3.8	19.9
1 22	6 28.41	+ 9 36.9	2.134	3.042	8.5	18.2	1 22	6 27.73	+20 49.4	2.344	3.264	7.3	20.1
2 1	6 22.66	+10 12.3	2.208	3.048	11.4	18.4	2 1	6 21.45	+20 59.6	2.408	3.254	10.3	20.3
53145	1999 BT ₉		1 1.5 79°66	2°6/ 2.0 18			249835	2001 OD ₆₆		1 1.5 74°50	2°8/ 1.4 18		
11 23	7 14.42	+15 43.3	1.804	2.569	16.7	18.9	11 23	7 22.72	+31 21.3	1.823	2.587	16.6	19.7
12 3	7 10.11	+15 37.3	1.733	2.587	13.3	18.7	12 3	7 16.62	+31 21.8	1.763	2.617	13.2	19.5
12 13	7 3.13	+15 40.1	1.683	2.604	9.5	18.5	12 13	7 7.50	+31 17.9	1.725	2.648	9.2	19.3
12 23	6 54.15	+15 51.1	1.657	2.622	5.3	18.3	12 23	6 56.24	+31 5.6	1.713	2.678	5.2	19.1
1 2	6 44.15	+16 8.9	1.660	2.639	2.6	18.2	1 2	6 44.10	+30 42.5	1.730	2.707	2.8	19.0
1 12	6 34.39	+16 31.8	1.692	2.656	5.2	18.4	1 12	6 32.58	+30 8.6	1.776	2.737	5.5	19.3
1 22	6 25.99	+16 57.6	1.752	2.673	9.2	18.7	1 22	6 22.90	+29 26.9	1.851	2.766	9.2	19.6
2 1	6 19.81	+17 24.9	1.837	2.690	12.7	18.9	2 1	6 15.92	+28 41.2	1.952	2.794	12.6	19.8
276197	2002 QF ₂₈		1 1.5 68°49	5°8/ 2.7 18			489123	2006 CX ₄₆		1 1.5 7°55	0°7/ 1.7 17		
11 23	7 15.24	+ 9 54.5	1.323	2.099	21.1	20.4	11 23	7 10.73	+19 35.8	1.172	1.984	21.2	21.3
12 3	7 11.66	+ 9 32.9	1.258	2.113	17.3	20.1	12 3	7 8.96	+19 53.2	1.101	1.985	17.0	21.0
12 13	7 4.70	+ 9 28.3	1.211	2.127	12.9	19.9	12 13	7 3.38	+20 21.4	1.048	1.986	11.9	20.7
12 23	6 55.09	+ 9 42.7	1.186	2.142	8.4	19.7	12 23	6 54.67	+20 58.1	1.016	1.988	6.1	20.4
1 2	6 44.11	+10 15.4	1.186	2.156	5.8	19.6	1 2	6 44.16	+21 38.9	1.009	1.992	0.7	20.0
1 12	6 33.40	+11 3.4	1.212	2.171	7.8	19.8	1 12	6 33.75	+22 19.0	1.026	1.997	6.4	20.5
1 22	6 24.45	+12 1.7	1.264	2.185	11.9	20.0	1 22	6 25.25	+22 55.0	1.068	2.002	12.1	20.8
2 1	6 18.38	+13 5.2	1.338	2.200	16.0	20.3	2 1	6 19.99	+23 25.6	1.131	2.009	17.0	21.1
377496	2005 EP ₁₄₅		1 1.5 333°42	1°0/ 1.3 18			422449	2014 ST ₃₀₆		1 1.5 114°87	3°7/ 2.2 18		
11 23	7 10.72	+24 27.6	1.906	2.688	15.3	21.2	11 23	7 14.48	+12 51.4	2.150	2.896	14.9	21.5
12 3	7 7.55	+24 44.7	1.812	2.679	12.2	21.0	12 3	7 9.67	+12 23.8	2.073	2.912	12.1	21.3
12 13	7 1.65	+25 4.9	1.740	2.671	8.5	20.7	12 13	7 2.59	+12 4.4	2.018	2.928	8.8	21.2
12 23	6 53.55	+25 25.5	1.692	2.663	4.3	20.5	12 23	6 53.83	+11 53.9	1.988	2.944	5.5	21.0
1 2	6 44.19	+25 43.5	1.673	2.655	1.0	20.2	1 2	6 44.22	+11 52.5	1.988	2.959	3.7	20.9
1 12	6 34.78	+25 56.5	1.682	2.648	4.9	20.5	1 12	6 34.80	+11 59.7	2.017	2.973	5.4	21.0
1 22	6 26.55	+26 3.6	1.718	2.642	9.2	20.7	1 22	6 26.51	+12 14.1	2.075	2.987	8.5	21.2
2 1	6 20.52	+26 5.6	1.780	2.636	12.9	20.9	2 1	6 20.09	+12 34.1	2.160	3.001	11.6	21.5
462164	2007 TR ₁₉₂		1 1.5 86°11	4°8/ 31.6 18			429739	2011 OA ₆		1 1.5 156°87	0°8/ 1.7 18		
11 23	7 15.78	+36 40.8	2.364	3.120	13.4	21.2	11 23	7 10.53	+20 37.5	2.898	3.650	11.3	21.9
12 3	7 11.11	+37 24.4	2.285	3.129	10.9	21.1	12 3	7 6.12	+20 27.7	2.804	3.653	9.0	21.8
12 13	7 3.81	+38 3.1	2.229	3.137	8.2	20.9	12 13	6 59.95	+20 20.2	2.734	3.657	6.2	21.6
12 23	6 54.51	+38 31.9	2.199	3.146	5.8	20.8	12 23	6 52.47	+20 14.4	2.692	3.660	3.2	21.4
1 2	6 44.15	+38 46.6	2.197	3.155	4.9	20.7	1 2	6 44.30	+20 9.7	2.681	3.663	0.8	21.2
1 12	6 33.93	+38 45.3	2.225	3.163	6.4	20.8	1 12	6 36.19	+20 5.4	2.701	3.666	3.4	21.4
1 22	6 24.99	+38 29.0	2.280	3.172	8.9	21.0	1 22	6 28.88	+20 1.4	2.751	3.669	6.4	21.6
2 1	6 18.20	+38 0.7	2.361	3.180	11.5	21.2	2 1	6 22.96	+19 57.9	2.828	3.671	9.1	21.8
397473	2007 OB ₂		1 1.5 75°57	1°6/ 1.8 18			149262	2002 TY ₄₀		1 1.5 15°60	1°4/ 1.4 18		
11 23	7 21.90	+17 38.2	1.701	2.460	17.8	21.2	11 23	7 11.06	+24 51.3	1.281	2.091	19.9	19.2
12 3	7 15.79	+17 45.0	1.651	2.502	14.1	21.1	12 3	7 8.89	+25 7.1	1.214	2.097	15.8	19.0
12 13	7 6.84	+17 59.5	1.621	2.543	9.7	20.9	12 13	7 3.10	+25 26.6	1.166	2.104	11.0	18.7
12 23	6 55.88	+18 19.8	1.617	2.584	5.1	20.7	12 23	6 54.41	+25 45.9	1.140	2.112	5.6	18.5
1 2	6 44.09	+18 43.0	1.642	2.623	1.6	20.6	1 2	6 44.19	+26 0.8	1.139	2.121	1.4	18.2
1 12	6 32.87	+19 7.1	1.697	2.662	5.0	20.9	1 12	6 34.23	+26 8.5	1.164	2.132	6.2	18.6
1 22	6 23.38	+19 30.3	1.780	2.700	9.2	21.2	1 22	6 26.17	+26 8.8	1.213	2.144	11.4	18.9
2 1	6 16.44	+19 52.0	1.890	2.737	12.7	21.5	2 1	6 21.19	+26 3.2	1.284	2.157	15.8	19.2
274265	2008 PJ ₇		1 1.5 125°27	1°7/ 1.8 18			125902	2001 XF ₂₁₈		1 1.5 225°22	5°9/ 30.9 18		
11 23	7 13.06	+18 53.3	2.153	2.915	14.4	20.7	11 23	7 18.79	+36 50.1	2.191	2.947	14.4	20.5
12 3	7 8.74	+18 34.6	2.066	2.920	11.5	20.5	12 3	7 14.10	+38 2.1	2.097	2.940	11.8	20.3
12 13	7 2.06	+18 19.9	2.000	2.924	8.1	20.3	12 13	7 6.34	+39 11.4	2.026	2.932	9.1	20.1
12 23	6 53.61	+18 9.1	1.961	2.928	4.4	20.1	12 23	6 56.01	+40 11.2	1.981	2.924	6.7	19.9
1 2	6 44.20	+18 1.6	1.951	2.932	1.7	19.9	1 2	6 44.11	+40 54.9	1.965	2.916	6.0	19.9
1 12	6 34.90	+17 56.9	1.971	2.936	4.5	20.1	1 12	6 32.04	+41 18.3	1.977	2.907	7.6	19.9
1 22	6 26.70	+17 54.6	2.019	2.939	8.2	20.3	1 22	6 21.24	+41 21.2	2.017	2.898	10.4	20.1
2 1	6 20.40	+17 54.7	2.094	2.943	11.6	20.6	2 1	6 12.90	+41 6.8	2.081	2.889	13.2	20.3
134841	2000 JL ₅₇		1 1.5 192°88	2°8/ 31.5 18			457080	2008 EA ₉₆		1 1.5 259°96	7°2/ 30.9 16		
11 23	7 13.92	+30 41.9	3.029	3.777	10.9	21.1	11 23	7 20.60	+40 19.8	2.052	2.805	15.3</	

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
518528	2006 SE ₂₈₅		1 1.5	56°57	13°7/	4.5 18	26549	Tankanran		1 1.5	117°99	3°3/	2.1 18
11 23	7 21.87	- 6 45.1	1.604	2.284	21.6	20.4	11 23	7 18.19	+14 24.4	1.743	2.500	17.5	19.8
12 3	7 15.61	- 9 16.0	1.575	2.331	19.0	20.3	12 3	7 13.17	+14 8.3	1.670	2.518	14.1	19.6
12 13	7 6.60	-11 20.2	1.565	2.378	16.5	20.2	12 13	7 5.32	+14 1.7	1.617	2.535	10.1	19.4
12 23	6 55.72	-12 49.6	1.576	2.424	14.6	20.2	12 23	6 55.31	+14 4.7	1.590	2.551	6.0	19.2
1 2	6 44.15	-13 39.1	1.610	2.469	13.8	20.3	1 2	6 44.21	+14 16.5	1.590	2.567	3.3	19.1
1 12	6 33.24	-13 48.7	1.668	2.514	14.0	20.4	1 12	6 33.35	+14 35.5	1.620	2.582	5.8	19.3
1 22	6 24.08	-13 23.8	1.748	2.559	15.1	20.6	1 22	6 23.95	+14 59.8	1.678	2.596	9.7	19.5
2 1	6 17.43	-12 32.2	1.849	2.603	16.6	20.8	2 1	6 16.95	+15 27.4	1.761	2.610	13.4	19.8
105184	2000 OZ ₃₀		1 1.5	77°51	3°5/	2.2 18	160117	2000 SY ₂₅₃		1 1.5	339°31	4°2/	2.4 18
11 23	7 18.43	+13 52.0	1.554	2.319	18.9	20.1	11 23	7 11.19	+13 2.5	1.407	2.193	19.6	19.5
12 3	7 13.48	+13 43.9	1.496	2.348	15.2	20.0	12 3	7 8.65	+12 49.6	1.324	2.188	16.0	19.3
12 13	7 5.52	+13 47.5	1.458	2.378	10.9	19.8	12 13	7 2.84	+12 50.2	1.258	2.182	11.8	19.0
12 23	6 55.35	+14 2.4	1.444	2.406	6.3	19.6	12 23	6 54.34	+13 5.6	1.215	2.178	7.2	18.7
1 2	6 44.17	+14 26.9	1.458	2.435	3.5	19.5	1 2	6 44.25	+13 35.2	1.198	2.174	4.3	18.6
1 12	6 33.41	+14 58.3	1.500	2.463	6.0	19.7	1 12	6 34.10	+14 16.4	1.206	2.170	6.9	18.7
1 22	6 24.36	+15 33.9	1.569	2.490	10.1	20.0	1 22	6 25.41	+15 5.4	1.240	2.167	11.6	19.0
2 1	6 17.91	+16 11.1	1.663	2.517	13.8	20.3	2 1	6 19.44	+15 58.2	1.296	2.165	16.0	19.2
522226	2016 AV ₂₆₅		1 1.5	128°12	3°2/	2.0 18	138254	2000 FD ₆₁		1 1.5	126°22	2°7/	2.4 18
11 23	7 12.54	+14 13.6	2.338	3.085	13.8	21.3	11 23	7 14.24	+12 34.5	2.025	2.775	15.6	19.9
12 3	7 8.04	+13 42.4	2.252	3.094	11.2	21.1	12 3	7 9.84	+12 56.9	1.941	2.784	12.6	19.7
12 13	7 1.44	+13 17.4	2.189	3.102	8.1	20.9	12 13	7 2.96	+13 31.3	1.878	2.793	9.1	19.5
12 23	6 53.27	+12 59.4	2.152	3.110	5.0	20.7	12 23	6 54.15	+14 16.9	1.841	2.802	5.3	19.3
1 2	6 44.28	+12 48.8	2.144	3.117	3.2	20.6	1 2	6 44.27	+15 11.2	1.833	2.810	2.7	19.1
1 12	6 35.40	+12 45.5	2.167	3.124	5.0	20.8	1 12	6 34.43	+16 10.9	1.855	2.818	5.0	19.3
1 22	6 27.51	+12 48.8	2.219	3.131	8.0	21.0	1 22	6 25.69	+17 12.3	1.906	2.825	8.7	19.5
2 1	6 21.33	+12 57.6	2.297	3.138	11.0	21.2	2 1	6 18.94	+18 12.6	1.984	2.833	12.1	19.8
367907	2012 BC ₅₅		1 1.5	315°54	0°8/	1.4 18	125854	2001 XM ₁₈₇		1 1.5	203°60	2°1/	1.9 18
11 23	7 13.64	+23 42.4	1.763	2.544	16.4	20.9	11 23	7 15.27	+16 49.2	1.757	2.525	17.0	20.2
12 3	7 10.06	+24 1.3	1.673	2.540	13.1	20.7	12 3	7 11.21	+16 50.5	1.666	2.523	13.7	20.0
12 13	7 3.51	+24 24.3	1.605	2.536	9.1	20.5	12 13	7 4.25	+17 0.6	1.596	2.520	9.7	19.8
12 23	6 54.55	+24 48.4	1.561	2.532	4.6	20.2	12 23	6 54.92	+17 18.7	1.551	2.517	5.3	19.5
1 2	6 44.21	+25 10.2	1.546	2.528	0.9	19.9	1 2	6 44.23	+17 42.9	1.534	2.514	2.1	19.3
1 12	6 33.85	+25 27.0	1.558	2.525	5.2	20.2	1 12	6 33.51	+18 11.0	1.545	2.511	5.4	19.5
1 22	6 24.83	+25 37.6	1.598	2.522	9.7	20.5	1 22	6 24.07	+18 40.6	1.584	2.507	9.8	19.7
2 1	6 18.24	+25 42.8	1.663	2.519	13.7	20.7	2 1	6 16.98	+19 10.4	1.649	2.503	13.9	20.0
208165	2000 OL ₃₃		1 1.5	144°02	2°3/	1.8 18	32686	2072 T ₋₁		1 1.5	290°46	0°3/	1.6 18 R
11 23	7 17.29	+17 50.5	1.811	2.574	16.7	20.6	11 23	7 10.72	+21 27.8	2.312	3.078	13.4	19.5
12 3	7 12.51	+17 29.8	1.728	2.582	13.4	20.4	12 3	7 6.99	+21 31.7	2.207	3.065	10.7	19.3
12 13	7 4.91	+17 15.0	1.667	2.590	9.5	20.2	12 13	7 1.00	+21 39.3	2.126	3.053	7.5	19.1
12 23	6 55.13	+17 5.8	1.631	2.597	5.2	20.0	12 23	6 53.20	+21 49.2	2.071	3.040	3.8	18.8
1 2	6 44.19	+17 1.4	1.623	2.603	2.3	19.8	1 2	6 44.34	+21 59.6	2.045	3.028	0.4	18.5
1 12	6 33.40	+17 1.3	1.645	2.609	5.3	20.0	1 12	6 35.41	+22 9.2	2.049	3.016	4.1	18.8
1 22	6 24.00	+17 4.7	1.695	2.615	9.5	20.3	1 22	6 27.39	+22 17.2	2.082	3.003	7.9	19.0
2 1	6 16.95	+17 11.2	1.770	2.620	13.3	20.5	2 1	6 21.13	+22 23.5	2.141	2.991	11.3	19.2
330375	2006 WH ₁₈₄		1 1.5	348°30	0°2/	1.5 18	518520	2006 QD ₁₈₈		1 1.5	145°48	0°8/	1.7 18
11 23	7 8.05	+20 6.4	1.370	2.176	19.0	19.9	11 23	7 10.58	+20 9.9	2.568	3.326	12.4	21.9
12 3	7 6.48	+20 43.7	1.285	2.166	15.3	19.7	12 3	7 6.48	+20 9.7	2.476	3.329	9.9	21.7
12 13	7 1.55	+21 32.3	1.220	2.157	10.7	19.4	12 13	7 0.38	+20 13.0	2.407	3.331	6.9	21.5
12 23	6 53.77	+22 29.3	1.177	2.149	5.4	19.1	12 23	6 52.78	+20 19.0	2.364	3.333	3.5	21.3
1 2	6 44.24	+23 29.6	1.160	2.143	0.4	18.7	1 2	6 44.37	+20 26.4	2.352	3.335	0.8	21.1
1 12	6 34.59	+24 27.3	1.169	2.138	6.0	19.1	1 12	6 36.00	+20 34.2	2.370	3.336	3.7	21.3
1 22	6 26.43	+25 18.4	1.203	2.134	11.3	19.3	1 22	6 28.50	+20 41.8	2.418	3.338	7.0	21.6
2 1	6 21.11	+26 0.8	1.259	2.132	16.0	19.6	2 1	6 22.57	+20 48.9	2.493	3.340	10.0	21.7
449567	2014 JD ₄		1 1.5	131°03	3°4/	2.0 18	15413	Beaglehole		1 1.5	17°67	1°5/	1.1 18
11 23	7 17.02	+15 3.2	1.760	2.521	17.2	22.2	11 23	7 12.13	+24 10.6	2.171	2.941	14.1	18.8
12 3	7 12.31	+14 38.2	1.681	2.531	13.9	22.0	12 3	7 8.30	+24 58.5	2.082	2.942	11.2	18.6
12 13	7 4.77	+14 21.3	1.623	2.542	10.0	21.8	12 13	7 2.00	+25 51.1	2.015	2.943	7.7	18.4
12 23	6 55.06	+14 13.2	1.590	2.552	5.9	21.6	12 23	6 53.73	+26 44.7	1.975	2.944	4.0	18.2
1 2	6 44.21	+14 13.6	1.585	2.561	3.4	21.5	1 2	6 44.32	+27 35.1	1.965	2.946	1.5	18.0
1 12	6 33.53	+14 21.6	1.609	2.570	5.9	21.6	1 12	6 34.86	+28 18.9	1.984	2.948	4.7	18.2
1 22	6 24.26	+14 35.8	1.660	2.578	9.8	21.9	1 22	6 26.45	+28 54.1	2.033	2.949	8.4	18.5
2 1	6 17.34	+14 54.8	1.737	2.586	13.5	22.1	2 1	6 19.99	+29 20.5	2.107	2.951	11.7	18.7
279056	2008 WY		1 1.5	112°28	4°2/31.6	18	285400	1999 TY ₂₉₃		1 1.5	136°84	0°8/	1.4 18
11 23	7 15.75	+34 4.5	2.323	3.083	13.5	21.3	11 23	7 18.52	+24 33.0	2.049	2.810	15.1	22.3
12 3	7 11.10	+34 51.2	2.242	3.091	10.9	21.1	12 3	7 13.25	+24 46.6	1.968	2.823	12.0	22.1
12 13	7 3.86	+35 34.8	2.184	3.098	8.0	20.9	12 13	7 5.30	+25 2.1	1.910	2.835	8.3	21.9
12 23	6 54.59	+36 10.6	2.152	3.106	5.3	20.8	12 23	6 55.31	+25 16.8	1.878	2.847	4.2	21.7
1 2	6 44.23	+36 34.2	2.148	3.113	4.3	20.7	1 2	6 44.25	+25 27.6	1.875	2.858	0.9	21.5
1 12	6 33.96	+36 43.2	2.175	3.120	6.0	20.8	1 12	6 33.37	+25 33.1	1.903	2.868	4.6	21.8
1 22	6 24.91	+36 38.0	2.229	3.127	8.8	21.0	1 22	6 23.82	+25 33.0	1.960	2.878	8.6	22.0
2 1	6 17.99	+36 21.3	2.310	3.134	11.5	21.2	2 1	6 16.50	+25 28.5	2.043	2.887	12.0	22.3
224637	2005 YG ₁₆₆		1 1.5	40°75	2°0/	1.9 18	137085	1998 XD ₁₈		1 1.5	250°98	5°0/	1.8 18
11 23	7 11.70	+16 40.5	1.879	2.649	15.9	20.5	11 23	7 14.11	+12 45.4	1.875	2.631	16.	

EPHEMERIDES

1 1.5

1 1.6

2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
423371	2005 <i>JY</i> ₅₀		1 1.5 298°64	1°3/ 1.2 18			27035	1998 <i>RM</i> ₃₄		1 1.6 288°29	3°7/ 2.3 18		
11 23	7 11.53	+24 58.0	2.240	3.010	13.7	21.1	11 23	7 13.95	+13 26.2	1.459	2.238	19.4	18.5
12 3	7 7.79	+25 26.6	2.142	3.002	10.9	20.9	12 3	7 10.78	+13 23.9	1.373	2.234	15.8	18.3
12 13	7 1.64	+25 58.1	2.067	2.995	7.6	20.7	12 13	7 4.31	+13 35.3	1.307	2.230	11.5	18.0
12 23	6 53.55	+26 29.7	2.018	2.987	3.9	20.5	12 23	6 55.13	+14 1.0	1.263	2.226	6.8	17.8
1 2	6 44.34	+26 58.3	1.998	2.980	1.3	20.3	1 2	6 44.31	+14 39.4	1.244	2.222	3.7	17.6
1 12	6 35.06	+27 21.2	2.008	2.972	4.5	20.5	1 12	6 33.42	+15 27.3	1.253	2.218	6.6	17.7
1 22	6 26.77	+27 37.3	2.047	2.965	8.2	20.7	1 22	6 23.98	+16 20.7	1.288	2.214	11.3	18.0
2 1	6 20.36	+27 47.1	2.111	2.958	11.6	20.9	2 1	6 17.26	+17 15.7	1.347	2.211	15.8	18.2
114466	2003 <i>AA</i> ₃₇		1 1.5 284°41	2°1/ 2.3 18			188325	2003 <i>KW</i> ₁₃		1 1.6 182°26	6°1/ 2.6 18		
11 23	7 10.51	+13 29.9	2.454	3.202	13.2	19.1	11 23	7 11.74	+ 4 30.6	2.541	3.254	13.7	21.0
12 3	7 6.71	+13 58.4	2.341	3.185	10.7	18.9	12 3	7 7.30	+ 3 41.8	2.448	3.255	11.5	20.8
12 13	7 0.78	+14 37.5	2.251	3.167	7.7	18.7	12 13	7 0.92	+ 3 3.6	2.377	3.255	9.2	20.7
12 23	6 53.12	+15 26.5	2.188	3.150	4.4	18.5	12 23	6 53.08	+ 2 38.3	2.332	3.255	7.1	20.5
1 2	6 44.37	+16 23.3	2.154	3.132	2.1	18.3	1 2	6 44.42	+ 2 27.9	2.315	3.254	6.1	20.5
1 12	6 35.43	+17 25.2	2.151	3.115	4.3	18.4	1 12	6 35.79	+ 2 32.6	2.327	3.253	6.9	20.5
1 22	6 27.20	+18 29.0	2.178	3.097	7.7	18.6	1 22	6 27.97	+ 2 51.3	2.367	3.251	8.9	20.6
2 1	6 20.52	+19 31.9	2.232	3.080	11.0	18.8	2 1	6 21.65	+ 3 21.5	2.433	3.249	11.3	20.8
11368	1998 <i>HN</i> ₁₁₅		1 1.5 177°50	2°1/ 2.2 18			375110	2007 <i>TX</i> ₂₁₉		1 1.6 46°17	0°6/ 1.7 18		
11 23	7 12.46	+14 47.9	2.400	3.147	13.5	18.2	11 23	7 11.51	+20 45.0	2.035	2.807	14.8	20.7
12 3	7 8.10	+14 56.8	2.305	3.149	10.9	18.0	12 3	7 7.69	+20 49.8	1.959	2.819	11.7	20.5
12 13	7 1.60	+15 13.6	2.233	3.150	7.8	17.8	12 13	7 1.46	+20 59.1	1.904	2.832	8.1	20.3
12 23	6 53.45	+15 37.9	2.188	3.150	4.4	17.6	12 23	6 53.40	+21 11.3	1.875	2.845	4.1	20.1
1 2	6 44.36	+16 8.3	2.172	3.151	2.1	17.4	1 2	6 44.41	+21 24.7	1.875	2.858	0.6	19.9
1 12	6 35.27	+16 42.8	2.187	3.150	4.3	17.6	1 12	6 35.57	+21 37.6	1.904	2.872	4.3	20.2
1 22	6 27.06	+17 19.4	2.232	3.150	7.7	17.8	1 22	6 27.91	+21 49.0	1.962	2.885	8.2	20.4
2 1	6 20.52	+17 56.5	2.304	3.149	10.8	18.0	2 1	6 22.23	+21 58.9	2.045	2.899	11.6	20.7
19872	Chendonghua		1 1.5 128°21	0°1/ 1.6 18			301604	2010 <i>CM</i> ₁₅₁		1 1.6 191°05	1°2/ 1.3 18		
11 23	7 19.13	+22 18.0	1.921	2.682	15.9	19.8	11 23	7 18.65	+24 29.1	2.059	2.819	15.0	22.0
12 3	7 13.83	+22 23.9	1.843	2.698	12.6	19.6	12 3	7 13.63	+24 59.0	1.963	2.818	12.0	21.7
12 13	7 5.75	+22 33.3	1.788	2.713	8.7	19.4	12 13	7 5.80	+25 32.6	1.891	2.816	8.4	21.5
12 23	6 55.55	+22 43.9	1.758	2.727	4.4	19.2	12 23	6 55.71	+26 6.2	1.844	2.813	4.3	21.3
1 2	6 44.28	+22 53.2	1.758	2.741	0.2	18.9	1 2	6 44.29	+26 35.9	1.827	2.809	1.3	21.0
1 12	6 33.23	+22 59.6	1.788	2.754	4.7	19.3	1 12	6 32.83	+26 58.8	1.841	2.805	4.9	21.3
1 22	6 23.59	+23 2.6	1.847	2.766	8.9	19.5	1 22	6 22.57	+27 13.9	1.884	2.800	9.0	21.5
2 1	6 16.29	+23 3.1	1.931	2.778	12.5	19.8	2 1	6 14.54	+27 21.9	1.953	2.794	12.6	21.7
487868	2015 <i>TZ</i> ₁₂₃		1 1.5 58°71	3°8/ 2.4 17			82152	2001 <i>FR</i> ₁₆₉		1 1.6 222°43	1°5/ 1.3 18		
11 23	7 14.28	+13 11.6	1.432	2.211	19.6	21.6	11 23	7 19.24	+25 13.8	1.709	2.483	17.2	20.8
12 3	7 10.78	+13 6.8	1.363	2.223	15.9	21.4	12 3	7 14.80	+25 35.1	1.614	2.475	13.8	20.6
12 13	7 4.07	+13 15.8	1.314	2.236	11.5	21.1	12 13	7 7.02	+25 59.8	1.538	2.466	9.7	20.3
12 23	6 54.85	+13 38.6	1.287	2.249	6.8	20.9	12 23	6 56.48	+26 23.8	1.488	2.457	5.0	20.0
1 2	6 44.31	+14 13.6	1.286	2.262	3.8	20.8	1 2	6 44.25	+26 42.8	1.466	2.448	1.5	19.8
1 12	6 33.98	+14 57.5	1.312	2.276	6.4	21.0	1 12	6 31.91	+26 53.8	1.472	2.437	5.7	20.0
1 22	6 25.28	+15 46.3	1.364	2.290	10.9	21.3	1 22	6 21.02	+26 56.1	1.506	2.426	10.5	20.3
2 1	6 19.28	+16 36.6	1.440	2.303	15.0	21.5	2 1	6 12.84	+26 51.3	1.565	2.415	14.7	20.5
378418	2007 <i>RV</i> ₁₇₄		1 1.6 94°18	3°2/ 31.8 18			112877	2002 <i>QR</i> ₄₀		1 1.6 59°12	1°2/ 1.8 18		
11 23	7 13.81	+31 1.5	2.355	3.119	13.3	21.2	11 23	7 15.32	+19 12.1	1.532	2.314	18.4	19.8
12 3	7 9.49	+31 42.8	2.271	3.125	10.6	21.0	12 3	7 11.40	+19 15.6	1.466	2.332	14.6	19.6
12 13	7 2.73	+32 23.1	2.209	3.130	7.6	20.8	12 13	7 4.36	+19 26.7	1.421	2.350	10.2	19.4
12 23	6 54.07	+32 58.2	2.175	3.136	4.6	20.7	12 23	6 54.94	+19 43.5	1.399	2.369	5.3	19.1
1 2	6 44.36	+33 24.1	2.169	3.141	3.2	20.6	1 2	6 44.34	+20 3.4	1.405	2.387	1.2	18.9
1 12	6 34.72	+33 38.7	2.193	3.146	5.3	20.7	1 12	6 34.05	+20 24.0	1.438	2.406	5.4	19.2
1 22	6 26.17	+33 41.8	2.246	3.152	8.3	20.9	1 22	6 25.41	+20 43.7	1.498	2.425	10.0	19.5
2 1	6 19.60	+33 35.0	2.324	3.157	11.2	21.1	2 1	6 19.40	+21 1.8	1.583	2.444	14.0	19.8
101240	1998 <i>SG</i> ₈₁		1 1.6 110°14	0°3/ 1.5 18			215321	2001 <i>TW</i> ₁₃₈		1 1.6 156°87	6°2/ 31.1 18		
11 23	7 16.88	+23 19.1	1.889	2.658	15.9	20.7	11 23	7 23.67	+42 9.1	2.643	3.370	12.9	22.0
12 3	7 12.17	+23 27.4	1.812	2.671	12.6	20.5	12 3	7 17.36	+43 11.5	2.562	3.379	10.8	21.9
12 13	7 4.67	+23 38.7	1.756	2.684	8.7	20.3	12 13	7 8.22	+44 6.7	2.505	3.389	8.6	21.7
12 23	6 55.04	+23 50.4	1.726	2.696	4.4	20.0	12 23	6 56.85	+44 48.6	2.475	3.397	6.8	21.6
1 2	6 44.32	+23 59.9	1.725	2.708	0.4	19.7	1 2	6 44.26	+45 11.9	2.474	3.404	6.3	21.6
1 12	6 33.81	+24 5.6	1.753	2.720	4.8	20.1	1 12	6 31.76	+45 14.4	2.502	3.411	7.4	21.7
1 22	6 24.69	+24 7.1	1.810	2.731	8.9	20.4	1 22	6 20.60	+44 57.3	2.558	3.417	9.3	21.8
2 1	6 17.89	+24 5.4	1.892	2.742	12.6	20.6	2 1	6 11.79	+44 24.5	2.640	3.422	11.4	22.0
310113	2010 <i>VR</i> ₁₉₁		1 1.6 158°77	1°0/ 1.7 18			183322	2002 <i>VO</i> ₄₉		1 1.6 9°57	2°2/ 1.9 18		
11 23	7 14.19	+19 41.9	2.010	2.776	15.2	21.3	11 23	7 8.97	+17 8.5	1.290	2.095	20.0	19.6
12 3	7 9.93	+19 41.1	1.922	2.778	12.1	21.1	12 3	7 7.11	+17 11.4	1.219	2.097	16.1	19.3
12 13	7 3.11	+19 45.5	1.855	2.780	8.5	20.8	12 13	7 1.87	+17 25.8	1.167	2.101	11.4	19.0
12 23	6 54.28	+19 53.7	1.814	2.783	4.4	20.6	12 23	6 53.89	+17 50.7	1.136	2.105	6.2	18.8
1 2	6 44.36	+20 4.2	1.802	2.785	1.1	20.4	1 2	6 44.39	+18 23.7	1.130	2.111	2.2	18.5
1 12	6 34.49	+20 15.4	1.820	2.786	4.6	20.6	1 12	6 35.02	+19 1.2	1.150	2.119	6.1	18.8
1 22	6 25.79	+20 26.4	1.866	2.788	8.7	20.9	1 22	6 27.32	+19 39.8	1.194	2.127	11.2	19.1
2 1	6 19.16	+20 36.8	1.938	2.789	12.2	21.1	2 1	6 22.47	+20 16.9	1.260	2.137	15.8	19.4
465534	2008 <i>UR</i> ₂₆₅		1 1.6 45°69	5°0/ 31.6 18			350455	1997 <i>SB</i> ₅		1 1.6 112°23	2°9/ 1.9 17		
11 23	7 15.61	+34 50.9	1.962										

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
350679	2001 <i>UO</i> ₁₅₈		1 1.6	26°54	3°2/31.9	17	427780	2005 <i>CU</i> ₂₉		1 1.6	197°51	12°3/	2.0 18
11 23	7 12.92	+25 29.5	1.057	1.880	22.4	20.5	11 23	7 36.52	+46 51.1	1.181	1.947	23.7	20.9
12 3	7 11.15	+26 27.9	1.003	1.892	17.8	20.2	12 3	7 31.55	+47 45.8	1.110	1.946	20.5	20.7
12 13	7 5.11	+27 32.6	0.966	1.906	12.4	20.0	12 13	7 20.23	+48 23.7	1.055	1.945	16.9	20.5
12 23	6 55.62	+28 36.2	0.950	1.921	6.6	19.7	12 23	7 3.53	+48 28.6	1.019	1.944	13.7	20.3
1 2	6 44.32	+29 30.0	0.957	1.937	3.3	19.6	1 2	6 44.00	+47 46.4	1.005	1.942	12.3	20.2
1 12	6 33.40	+30 7.7	0.989	1.955	7.6	19.9	1 12	6 25.34	+46 14.4	1.015	1.940	13.7	20.3
1 22	6 24.83	+30 28.3	1.044	1.974	12.9	20.2	1 22	6 10.70	+44 3.7	1.048	1.938	17.0	20.4
2 1	6 19.95	+30 34.5	1.120	1.994	17.5	20.6	2 1	6 1.77	+41 32.4	1.102	1.935	20.8	20.7
187635	2007 <i>CH</i> ₂		1 1.6	113°92	3°4/	2.4 18	12259	Szukalski		1 1.6	203°34	2°3/	1.9 18
11 23	7 12.68	+12 23.9	2.069	2.821	15.2	21.0	11 23	7 17.67	+16 41.5	1.777	2.539	17.0	18.6
12 3	7 8.53	+12 20.8	1.986	2.829	12.4	20.8	12 3	7 13.15	+16 37.8	1.683	2.536	13.8	18.3
12 13	7 2.03	+12 28.0	1.924	2.838	9.0	20.6	12 13	7 5.65	+16 42.5	1.609	2.531	9.8	18.1
12 23	6 53.72	+12 45.5	1.888	2.846	5.5	20.4	12 23	6 55.73	+16 54.9	1.560	2.526	5.4	17.8
1 2	6 44.43	+13 12.6	1.880	2.854	3.4	20.3	1 2	6 44.36	+17 13.5	1.540	2.520	2.3	17.6
1 12	6 35.22	+13 47.3	1.901	2.861	5.2	20.4	1 12	6 32.92	+17 36.3	1.548	2.513	5.5	17.8
1 22	6 27.07	+14 27.1	1.951	2.869	8.6	20.6	1 22	6 22.76	+18 1.3	1.585	2.506	10.0	18.0
2 1	6 20.83	+15 9.5	2.028	2.876	11.9	20.9	2 1	6 15.00	+18 27.3	1.647	2.498	14.1	18.3
396532	2014 <i>GZ</i> ₃₆		1 1.6	216°69	1°5/	1.9 18	428454	2007 <i>TD</i> ₄₂₆		1 1.6	339°21	8°4/30.7	18
11 23	7 17.06	+18 1.4	1.711	2.480	17.3	22.0	11 23	7 18.68	+45 8.0	2.156	2.900	14.9	20.5
12 3	7 12.86	+18 10.3	1.617	2.474	14.0	21.7	12 3	7 14.43	+46 20.2	2.074	2.896	12.8	20.3
12 13	7 5.57	+18 27.9	1.542	2.468	9.9	21.4	12 13	7 6.79	+47 23.5	2.014	2.893	10.6	20.2
12 23	6 55.72	+18 52.8	1.493	2.461	5.2	21.2	12 23	6 56.36	+48 10.1	1.978	2.890	8.9	20.1
1 2	6 44.33	+19 22.4	1.471	2.453	1.5	20.9	1 2	6 44.33	+48 33.0	1.968	2.887	8.4	20.1
1 12	6 32.82	+19 53.8	1.478	2.445	5.4	21.1	1 12	6 32.33	+48 29.3	1.985	2.884	9.5	20.1
1 22	6 22.61	+20 24.7	1.513	2.436	10.2	21.4	1 22	6 21.95	+48 0.5	2.027	2.882	11.6	20.2
2 1	6 14.89	+20 53.8	1.573	2.427	14.4	21.6	2 1	6 14.42	+47 11.8	2.092	2.880	13.8	20.4
90217	2003 <i>AH</i> ₈₇		1 1.6	81°20	3°9/	1.9 18	462048	2007 <i>DT</i> ₁₁₁		1 1.6	175°35	4°9/31.6	18
11 23	7 15.79	+15 32.2	1.462	2.241	19.3	19.4	11 23	7 19.11	+37 55.9	2.578	3.321	12.8	22.1
12 3	7 12.03	+14 54.5	1.385	2.246	15.7	19.1	12 3	7 13.65	+38 37.6	2.489	3.323	10.5	22.0
12 13	7 5.00	+14 25.1	1.327	2.250	11.3	18.9	12 13	7 5.61	+39 14.0	2.423	3.325	8.0	21.8
12 23	6 55.38	+14 5.4	1.291	2.254	6.7	18.6	12 23	6 55.54	+39 40.1	2.384	3.327	5.7	21.7
1 2	6 44.35	+13 56.1	1.283	2.259	3.9	18.5	1 2	6 44.38	+39 51.7	2.374	3.327	4.9	21.6
1 12	6 33.48	+13 56.6	1.301	2.263	6.7	18.7	1 12	6 33.29	+39 46.9	2.394	3.328	6.3	21.7
1 22	6 24.22	+14 5.8	1.345	2.268	11.2	18.9	1 22	6 23.40	+39 26.6	2.443	3.328	8.7	21.8
2 1	6 17.70	+14 22.1	1.412	2.272	15.4	19.2	2 1	6 15.63	+38 54.0	2.518	3.327	11.1	22.0
58284	1993 <i>VW</i> ₃		1 1.6	70°22	4°2/31.9	18	404645	2014 <i>HT</i> ₃₀		1 1.6	129°50	4°0/	2.3 18
11 23	7 22.98	+30 24.0	1.458	2.239	19.3	19.0	11 23	7 16.40	+12 45.3	1.731	2.489	17.5	21.2
12 3	7 17.83	+31 14.9	1.406	2.269	15.3	18.9	12 3	7 11.93	+12 28.3	1.652	2.499	14.3	21.0
12 13	7 8.95	+32 4.4	1.373	2.299	10.8	18.7	12 13	7 4.61	+12 22.3	1.594	2.509	10.4	20.8
12 23	6 57.25	+32 45.1	1.365	2.329	6.4	18.5	12 23	6 55.10	+12 28.0	1.560	2.519	6.4	20.6
1 2	6 44.28	+33 10.6	1.384	2.358	4.2	18.4	1 2	6 44.41	+12 44.7	1.554	2.528	4.0	20.4
1 12	6 31.89	+33 18.1	1.430	2.387	7.0	18.7	1 12	6 33.85	+13 11.0	1.577	2.536	6.1	20.6
1 22	6 21.69	+33 9.6	1.503	2.416	11.1	19.0	1 22	6 24.66	+13 44.1	1.627	2.544	10.0	20.8
2 1	6 14.75	+32 49.5	1.600	2.444	14.7	19.3	2 1	6 17.82	+14 21.5	1.702	2.552	13.7	21.1
111862	2002 <i>EO</i> ₈₆		1 1.6	260°04	2°7/	1.0 18	248233	2005 <i>EG</i> ₂₂₂		1 1.6	283°70	0°1/	1.6 18
11 23	7 16.83	+27 27.6	1.760	2.538	16.6	20.1	11 23	7 12.97	+23 38.2	2.241	3.007	13.8	20.3
12 3	7 12.96	+28 4.3	1.661	2.525	13.4	19.9	12 3	7 8.85	+23 23.8	2.138	2.996	11.0	20.1
12 13	7 5.82	+28 43.7	1.583	2.511	9.5	19.6	12 13	7 2.33	+23 10.1	2.058	2.985	7.7	19.9
12 23	6 55.93	+29 21.2	1.530	2.497	5.2	19.3	12 23	6 53.93	+22 55.9	2.004	2.974	3.9	19.6
1 2	6 44.32	+29 51.4	1.504	2.483	2.7	19.1	1 2	6 44.46	+22 40.1	1.979	2.962	0.2	19.3
1 12	6 32.51	+30 10.4	1.508	2.469	6.1	19.3	1 12	6 34.99	+22 22.4	1.985	2.951	4.3	19.6
1 22	6 22.05	+30 17.1	1.538	2.455	10.5	19.6	1 22	6 26.54	+22 3.2	2.019	2.940	8.1	19.8
2 1	6 14.22	+30 13.3	1.592	2.440	14.6	19.8	2 1	6 19.98	+21 43.7	2.079	2.929	11.6	20.0
224258	2005 <i>SK</i> ₂₂₅		1 1.6	66°88	1°8/	1.9 18	404288	2013 <i>EM</i> ₁₀₅		1 1.6	260°47	4°0/	2.3 18
11 23	7 13.47	+18 15.8	1.837	2.608	16.2	20.9	11 23	7 13.55	+13 14.6	1.691	2.458	17.6	21.9
12 3	7 9.49	+18 6.9	1.760	2.619	12.9	20.7	12 3	7 10.00	+12 55.5	1.599	2.451	14.4	21.7
12 13	7 2.84	+18 4.2	1.703	2.629	9.1	20.5	12 13	7 3.53	+12 47.0	1.526	2.444	10.5	21.4
12 23	6 54.16	+18 7.2	1.672	2.639	4.9	20.2	12 23	6 54.68	+12 50.1	1.478	2.437	6.5	21.2
1 2	6 44.42	+18 14.5	1.668	2.649	1.8	20.0	1 2	6 44.43	+13 4.8	1.456	2.430	4.0	21.0
1 12	6 34.84	+18 24.7	1.694	2.660	5.0	20.3	1 12	6 34.10	+13 29.7	1.462	2.423	6.3	21.1
1 22	6 26.56	+18 36.9	1.747	2.671	9.0	20.6	1 22	6 25.02	+14 2.4	1.495	2.416	10.5	21.4
2 1	6 20.48	+18 50.1	1.826	2.681	12.7	20.8	2 1	6 18.27	+14 40.3	1.552	2.408	14.5	21.6
152867	1999 <i>XT</i> ₂₂₃		1 1.6	28°61	0°1/	1.6 17	95762	2003 <i>EX</i> ₄₃		1 1.6	197°58	3°6/	2.2 18
11 23	7 14.27	+19 48.8	1.238	2.040	20.9	20.1	11 23	7 15.20	+13 40.6	1.715	2.478	17.5	20.6
12 3	7 11.64	+20 24.6	1.167	2.045	16.7	19.9	12 3	7 11.21	+13 29.2	1.626	2.477	14.2	20.3
12 13	7 5.23	+21 12.3	1.115	2.050	11.6	19.6	12 13	7 4.30	+13 28.6	1.557	2.476	10.4	20.1
12 23	6 55.68	+22 7.9	1.084	2.056	5.9	19.3	12 23	6 55.04	+13 39.1	1.513	2.474	6.2	19.8
1 2	6 44.35	+23 5.6	1.079	2.062	0.3	18.9	1 2	6 44.43	+14 0.1	1.495	2.471	3.6	19.7
1 12	6 33.10	+23 59.4	1.100	2.069	6.3	19.4	1 12	6 33.79	+14 29.7	1.507	2.469	6.0	19.8
1 22	6 23.75	+24 45.4	1.146	2.077	11.9	19.7	1 22	6 24.43	+15 5.3	1.545	2.466	10.2	20.1
2 1	6 17.64	+25 22.4	1.214	2.085	16.7	20.0	2 1	6 17.43	+15 44.3	1.609	2.463	14.2	20.3
448154	2008 <i>SQ</i> ₂₂₂		1 1.6	102°40	4°1/	1.2 15	54947	2001 <i>PM</i> ₃		1 1.6	27°18	8°7/	3.2 18
11 23	7 22.59	+31 56.3											

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
80820	2000 CQ ₁₂₉		1.6 141°72	1.2/ 1.8	18		519030	2010 JT ₁₄₅		1.6 198°30	9°1/29.7	18	
11 23	7 18.94	+18 56.7	1.838	2.599	16.6	21.0	11 23	7 27.39	+55 12.0	2.944	3.623	12.6	21.8
12 3	7 13.86	+19 1.0	1.758	2.611	13.2	20.8	12 3	7 21.13	+56 30.1	2.865	3.620	11.3	21.7
12 13	7 5.91	+19 11.7	1.699	2.622	9.3	20.6	12 13	7 11.36	+57 36.2	2.807	3.617	10.1	21.6
12 23	6 55.75	+19 27.3	1.665	2.633	4.8	20.3	12 23	6 58.68	+58 23.3	2.773	3.613	9.3	21.5
1 2	6 44.41	+19 45.6	1.660	2.642	1.2	20.1	1 2	6 44.30	+58 45.3	2.765	3.609	9.2	21.5
1 12	6 33.21	+20 4.3	1.685	2.651	5.0	20.4	1 12	6 29.92	+58 39.5	2.782	3.604	9.8	21.5
1 22	6 23.41	+20 22.2	1.739	2.660	9.3	20.6	1 22	6 17.19	+58 7.7	2.823	3.600	10.9	21.6
2 1	6 15.98	+20 38.8	1.818	2.667	13.0	20.9	2 1	6 7.40	+57 15.0	2.887	3.594	12.2	21.7
77346	2001 FC ₁₀₈		1.6 228°33	2°3/ 2.1	18		104823	2000 HK ₅₆		1.6 87°13	7°2/31.0	18	
11 23	7 11.32	+15 30.1	2.371	3.124	13.5	20.5	11 23	7 23.09	+39 13.2	1.928	2.683	16.1	19.6
12 3	7 7.31	+15 25.1	2.272	3.118	10.9	20.3	12 3	7 17.74	+40 39.1	1.868	2.706	13.3	19.5
12 13	7 1.15	+15 26.9	2.195	3.113	7.8	20.1	12 13	7 8.92	+41 58.4	1.830	2.728	10.3	19.4
12 23	6 53.31	+15 35.4	2.144	3.107	4.5	19.9	12 23	6 57.37	+43 2.7	1.817	2.751	7.9	19.3
1 2	6 44.52	+15 49.8	2.123	3.101	2.3	19.8	1 2	6 44.37	+43 44.5	1.831	2.772	7.2	19.3
1 12	6 35.70	+16 8.9	2.132	3.095	4.5	19.9	1 12	6 31.63	+44 0.8	1.873	2.794	8.7	19.4
1 22	6 27.74	+16 31.4	2.170	3.089	7.8	20.1	1 22	6 20.71	+43 53.4	1.942	2.815	11.1	19.6
2 1	6 21.44	+16 55.8	2.235	3.082	11.0	20.3	2 1	6 12.76	+43 27.4	2.034	2.836	13.7	19.8
252020	2000 HD ₈₃		1.6 261°35	3°7/31.7	18		38271	1999 RW ₃₅		1.6 102°39	1°1/ 1.4	18	
11 23	7 16.15	+30 5.2	1.911	2.684	15.6	20.6	11 23	7 14.38	+25 15.6	2.117	2.885	14.4	19.7
12 3	7 12.20	+30 55.9	1.816	2.675	12.6	20.4	12 3	7 10.03	+25 31.1	2.034	2.892	11.5	19.6
12 13	7 5.17	+31 47.7	1.742	2.666	9.0	20.1	12 13	7 3.16	+25 48.3	1.973	2.900	7.9	19.3
12 23	6 55.57	+32 35.4	1.694	2.657	5.4	19.9	12 23	6 54.36	+26 4.4	1.938	2.907	4.1	19.1
1 2	6 44.42	+33 13.0	1.674	2.647	3.8	19.8	1 2	6 44.52	+26 16.6	1.932	2.914	1.1	18.9
1 12	6 33.11	+33 36.6	1.682	2.637	6.4	19.9	1 12	6 34.79	+26 23.4	1.956	2.921	4.5	19.2
1 22	6 23.10	+33 45.3	1.719	2.628	10.2	20.1	1 22	6 26.26	+26 24.3	2.009	2.928	8.3	19.4
2 1	6 15.56	+33 41.2	1.779	2.618	13.8	20.3	2 1	6 19.79	+26 20.5	2.088	2.935	11.6	19.6
244550	2002 VP ₃₅		1.6 23°20	5°5/ 1.8	18		85842	1998 YK ₇		1.6 347°29	1°4/ 1.3	18	
11 23	7 12.82	+14 20.3	1.433	2.217	19.4	19.6	11 23	7 11.85	+23 30.5	1.517	2.313	18.0	18.9
12 3	7 9.60	+13 7.3	1.362	2.224	15.8	19.4	12 3	7 9.26	+24 8.4	1.433	2.307	14.4	18.6
12 13	7 3.24	+12 1.7	1.311	2.231	11.7	19.1	12 13	7 3.38	+24 53.1	1.368	2.302	10.0	18.3
12 23	6 54.47	+11 6.9	1.282	2.240	7.6	18.9	12 23	6 54.76	+25 40.6	1.327	2.298	5.1	18.0
1 2	6 44.48	+10 26.2	1.279	2.249	5.5	18.8	1 2	6 44.50	+26 25.6	1.313	2.295	1.5	17.8
1 12	6 34.74	+10 1.0	1.303	2.259	7.7	19.0	1 12	6 34.18	+27 3.6	1.325	2.292	5.9	18.1
1 22	6 26.61	+9 51.1	1.352	2.270	11.6	19.2	1 22	6 25.33	+27 32.2	1.364	2.290	10.8	18.4
2 1	6 21.11	+9 54.5	1.423	2.281	15.4	19.5	2 1	6 19.23	+27 51.6	1.425	2.289	15.1	18.6
182967	2002 LK ₂₂		1.6 94°15	1°1/ 1.7	18		93614	2000 UZ ₆₅		1.6 70°22	0°7/ 1.5	18	
11 23	7 21.75	+20 43.9	1.459	2.235	19.5	20.1	11 23	7 14.46	+24 11.3	1.910	2.684	15.6	19.8
12 3	7 16.56	+20 34.2	1.396	2.258	15.5	19.9	12 3	7 10.34	+24 22.6	1.830	2.692	12.4	19.6
12 13	7 7.96	+20 29.9	1.353	2.280	10.7	19.7	12 13	7 3.51	+24 36.3	1.773	2.701	8.6	19.4
12 23	6 56.78	+20 29.1	1.333	2.303	5.5	19.5	12 23	6 54.58	+24 49.9	1.741	2.711	4.3	19.2
1 2	6 44.38	+20 29.7	1.342	2.324	1.1	19.2	1 2	6 44.54	+25 0.7	1.737	2.720	0.7	18.9
1 12	6 32.46	+20 30.1	1.378	2.345	5.7	19.6	1 12	6 34.66	+25 6.9	1.762	2.729	4.7	19.2
1 22	6 22.47	+20 30.3	1.442	2.366	10.5	19.9	1 22	6 26.11	+25 8.2	1.816	2.738	8.8	19.5
2 1	6 15.45	+20 30.7	1.529	2.386	14.7	20.2	2 1	6 19.79	+25 5.5	1.895	2.747	12.4	19.7
226333	2003 FB ₄₀		1.6 229°21	2°0/ 1.2	18		450295	2004 MB		1.6 179°12	2°6/ 2.0	18	
11 23	7 15.71	+27 59.6	2.353	3.113	13.4	21.4	11 23	7 17.78	+15 45.1	2.071	2.819	15.3	22.8
12 3	7 11.08	+28 24.3	2.249	3.103	10.7	21.2	12 3	7 12.68	+15 32.6	1.978	2.822	12.4	22.6
12 13	7 3.94	+28 49.5	2.169	3.092	7.6	21.0	12 13	7 5.01	+15 27.0	1.907	2.823	8.9	22.4
12 23	6 54.80	+29 11.8	2.115	3.081	4.1	20.7	12 23	6 55.33	+15 28.4	1.862	2.824	5.1	22.1
1 2	6 44.47	+29 28.0	2.090	3.069	2.1	20.6	1 2	6 44.52	+15 35.9	1.846	2.824	2.6	22.0
1 12	6 34.06	+29 35.8	2.097	3.058	4.7	20.7	1 12	6 33.73	+15 48.4	1.861	2.823	5.1	22.1
1 22	6 24.67	+29 35.0	2.132	3.045	8.3	20.9	1 22	6 24.08	+16 4.6	1.904	2.821	8.9	22.4
2 1	6 17.22	+29 26.8	2.194	3.032	11.5	21.1	2 1	6 16.48	+16 23.6	1.975	2.818	12.4	22.6
367380	2008 HN ₅₃		1.6 118°74	1°9/ 2.1	18		464450	2016 BT ₃₆		1.6 335°97	2°1/ 1.3	16	
11 23	7 14.00	+15 32.2	2.333	3.081	13.8	21.8	11 23	7 10.49	+25 44.3	1.403	2.208	18.7	21.7
12 3	7 9.27	+15 43.8	2.252	3.097	11.1	21.6	12 3	7 8.62	+26 10.8	1.314	2.193	15.1	21.4
12 13	7 2.39	+16 3.0	2.195	3.112	7.8	21.4	12 13	7 3.21	+26 41.6	1.244	2.180	10.6	21.1
12 23	6 53.88	+16 28.8	2.164	3.127	4.3	21.2	12 23	6 54.80	+27 12.4	1.196	2.167	5.6	20.8
1 2	6 44.53	+16 59.6	2.162	3.142	1.9	21.1	1 2	6 44.54	+27 38.2	1.174	2.156	2.1	20.6
1 12	6 35.28	+17 33.4	2.192	3.156	4.2	21.3	1 12	6 34.13	+27 54.9	1.179	2.146	6.4	20.8
1 22	6 27.05	+18 8.0	2.251	3.170	7.6	21.5	1 22	6 25.29	+28 1.4	1.207	2.136	11.6	21.1
2 1	6 20.56	+18 42.2	2.338	3.183	10.7	21.7	2 1	6 19.43	+27 59.1	1.258	2.128	16.3	21.3
29382	1996 HM ₁₆		1.6 217°02	2°8/ 2.0	18		258199	2001 SR ₃₀₄		1.6 140°14	3°8/ 2.3	18	
11 23	7 14.19	+15 13.5	2.267	3.016	14.2	19.7	11 23	7 14.04	+12 17.8	2.191	2.935	14.7	21.6
12 3	7 9.68	+14 52.6	2.165	3.008	11.5	19.5	12 3	7 9.45	+11 54.1	2.106	2.944	12.0	21.4
12 13	7 2.85	+14 37.9	2.085	3.000	8.3	19.3	12 13	7 2.61	+11 38.9	2.044	2.953	8.8	21.2
12 23	6 54.21	+14 29.7	2.031	2.992	4.9	19.0	12 23	6 54.05	+11 33.1	2.007	2.961	5.6	21.0
1 2	6 44.51	+14 27.9	2.007	2.983	2.8	18.9	1 2	6 44.59	+11 36.8	1.999	2.969	3.8	20.9
1 12	6 34.76	+14 32.1	2.013	2.973	4.9	19.0	1 12	6 35.23	+11 49.1	2.021	2.977	5.4	21.0
1 22	6 25.96	+14 41.4	2.048	2.963	8.4	19.2	1 22	6 26.91	+12 8.8	2.072	2.984	8.5	21.2
2 1	6 18.94	+14 54.9	2.110	2.953	11.7	19.4	2 1	6 20.42	+12 33.9	2.148	2.990	11.6	21.4
325213	2008 GX ₉		1.6 118°93	1°3/ 1.3	18		432278	2009 SW ₁₄₅		1.6 148°46	0°5/ 1.8	17	
11 23	7 15.44	+25 9.6	2.084	2.851	14.7	21.4	11 23	7 6.98	+20 14.0	3.933	4.677	8.7	22.1
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EPHEMERIDES

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
403119	2008 <i>DV</i> ₁₄		1 1.6	49°62	8°1/31.6	18	459264	2012 <i>FM</i> ₅₆		1 1.6	265°03	3°2/ 2.3	17
11 23	7 21.75	+42 14.4	1.812	2.569	16.9	20.6	11 23	7 12.83	+13 33.0	2.120	2.872	14.9	22.3
12 3	7 17.21	+43 14.1	1.735	2.571	14.2	20.5	12 3	7 8.97	+13 25.7	2.008	2.853	12.2	22.0
12 13	7 8.88	+44 4.6	1.679	2.574	11.3	20.3	12 13	7 2.64	+13 27.5	1.918	2.833	8.9	21.8
12 23	6 57.49	+44 37.6	1.646	2.576	8.9	20.1	12 23	6 54.27	+13 38.8	1.853	2.813	5.4	21.5
1 2	6 44.44	+44 45.6	1.639	2.578	8.1	20.1	1 2	6 44.63	+13 59.1	1.817	2.793	3.2	21.3
1 12	6 31.60	+44 25.9	1.659	2.581	9.5	20.2	1 12	6 34.77	+14 27.2	1.811	2.772	5.3	21.4
1 22	6 20.74	+43 41.3	1.704	2.583	12.1	20.3	1 22	6 25.79	+15 0.9	1.833	2.751	9.1	21.6
2 1	6 13.11	+42 38.6	1.773	2.586	14.9	20.5	2 1	6 18.65	+15 38.3	1.881	2.729	12.7	21.8
115910	2003 <i>WV</i> ₃		1 1.6	117°90	0°3/ 1.5	18	348459	2005 <i>SS</i> ₁₄		1 1.6	89°39	4°4/31.9	18
11 23	7 12.34	+21 51.6	2.257	3.022	13.7	20.2	11 23	7 23.45	+30 26.6	1.486	2.265	19.1	21.0
12 3	7 8.33	+22 19.4	2.167	3.024	10.9	20.0	12 3	7 18.40	+31 23.1	1.426	2.288	15.2	20.8
12 13	7 1.98	+22 52.1	2.099	3.026	7.6	19.8	12 13	7 9.55	+32 18.9	1.386	2.310	10.9	20.6
12 23	6 53.82	+23 27.2	2.059	3.028	3.8	19.5	12 23	6 57.76	+33 6.5	1.370	2.332	6.5	20.4
1 2	6 44.62	+24 1.8	2.047	3.030	0.4	19.2	1 2	6 44.49	+33 38.7	1.381	2.354	4.4	20.3
1 12	6 35.42	+24 33.3	2.066	3.033	4.2	19.6	1 12	6 31.65	+33 52.1	1.420	2.375	7.2	20.6
1 22	6 27.22	+25 0.2	2.114	3.035	7.9	19.8	1 22	6 20.93	+33 47.9	1.485	2.396	11.3	20.9
2 1	6 20.86	+25 22.1	2.189	3.037	11.2	20.0	2 1	6 13.48	+33 30.6	1.574	2.416	15.0	21.1
368161	1999 <i>RU</i> ₂₃		1 1.6	39°11	17°3/ 8.7	18	76369	2000 <i>EW</i> ₁₇₆		1 1.6	193°85	4°2/ 1.4	18
11 23	7 11.76	- 9 14.4	0.915	1.670	29.9	19.7	11 23	7 21.64	+35 21.9	2.039	2.795	15.3	19.7
12 3	7 9.92	-10 38.6	0.877	1.687	26.7	19.6	12 3	7 16.20	+35 32.5	1.948	2.794	12.4	19.5
12 13	7 4.06	-11 19.6	0.849	1.706	23.2	19.4	12 13	7 7.67	+35 36.7	1.879	2.793	9.2	19.3
12 23	6 55.08	-11 6.8	0.836	1.727	20.0	19.3	12 23	6 56.74	+35 29.6	1.835	2.791	5.9	19.1
1 2	6 44.57	- 9 55.2	0.839	1.748	17.8	19.3	1 2	6 44.54	+35 7.3	1.820	2.789	4.2	19.0
1 12	6 34.55	- 7 50.1	0.861	1.770	17.5	19.3	1 12	6 32.54	+34 29.1	1.835	2.787	6.3	19.1
1 22	6 26.78	- 5 6.0	0.902	1.793	18.9	19.5	1 22	6 22.11	+33 37.4	1.878	2.784	9.6	19.3
2 1	6 22.44	- 2 1.3	0.963	1.817	21.4	19.8	2 1	6 14.27	+32 37.1	1.947	2.781	12.9	19.5
87860	2000 <i>SR</i> ₂₂₆		1 1.6	120°91	6°1/ 3.1	18	4272	Entsuji		1 1.6	61°61	7°0/ 3.1	18
11 23	7 12.50	+ 4 22.6	2.330	3.047	14.6	20.3	11 23	7 16.91	+ 7 41.1	1.371	2.135	21.1	16.2
12 3	7 8.02	+ 3 46.2	2.252	3.061	12.3	20.1	12 3	7 12.64	+ 6 58.5	1.320	2.163	17.4	16.0
12 13	7 1.50	+ 3 22.4	2.194	3.075	9.7	20.0	12 13	7 5.20	+ 6 33.8	1.286	2.192	13.2	15.8
12 23	6 53.47	+ 3 13.4	2.162	3.088	7.3	19.9	12 23	6 55.42	+ 6 29.7	1.274	2.220	9.2	15.7
1 2	6 44.65	+ 3 20.3	2.157	3.101	6.1	19.8	1 2	6 44.60	+ 6 46.7	1.288	2.249	7.0	15.6
1 12	6 35.95	+ 3 42.6	2.182	3.113	6.9	19.9	1 12	6 34.25	+ 7 22.4	1.328	2.278	8.4	15.8
1 22	6 28.20	+ 4 17.9	2.234	3.126	9.1	20.0	1 22	6 25.70	+ 8 12.1	1.393	2.306	11.8	16.1
2 1	6 22.10	+ 5 3.2	2.313	3.137	11.5	20.2	2 1	6 19.87	+ 9 10.4	1.482	2.334	15.3	16.3
305142	2007 <i>VY</i> ₁₇₁		1 1.6	140°64	2°7/ 1.9	18	226837	2004 <i>SZ</i> ₁₆		1 1.6	138°26	0°3/ 1.5	18
11 23	7 17.01	+16 27.9	1.899	2.656	16.2	21.5	11 23	7 14.90	+21 50.6	2.488	3.241	12.9	21.0
12 3	7 12.21	+16 7.0	1.816	2.666	13.1	21.3	12 3	7 10.01	+22 18.2	2.403	3.253	10.2	20.8
12 13	7 4.73	+15 52.9	1.755	2.675	9.3	21.1	12 13	7 2.95	+22 49.7	2.341	3.265	7.1	20.6
12 23	6 55.20	+15 45.5	1.720	2.683	5.3	20.9	12 23	6 54.25	+23 22.9	2.307	3.276	3.5	20.4
1 2	6 44.58	+15 44.3	1.713	2.691	2.7	20.7	1 2	6 44.65	+23 55.0	2.303	3.286	0.3	20.2
1 12	6 34.11	+15 48.4	1.736	2.699	5.3	20.9	1 12	6 35.11	+24 24.0	2.331	3.296	3.9	20.5
1 22	6 24.93	+15 57.1	1.787	2.706	9.2	21.1	1 22	6 26.54	+24 48.4	2.388	3.306	7.3	20.7
2 1	6 17.95	+16 9.2	1.863	2.712	12.8	21.4	2 1	6 19.70	+25 8.2	2.473	3.314	10.3	20.9
108702	2001 <i>OX</i> ₁₆		1 1.6	275°44	0°6/ 1.7	18	34736	2001 <i>QG</i> ₆₉		1 1.6	12°18	5°0/ 2.2	18
11 23	7 12.45	+21 56.0	2.305	3.068	13.5	19.6	11 23	7 9.66	+11 26.1	1.935	2.696	15.9	18.0
12 3	7 8.35	+21 41.2	2.205	3.060	10.8	19.4	12 3	7 6.35	+10 34.4	1.853	2.698	13.0	17.8
12 13	7 1.96	+21 28.4	2.127	3.053	7.5	19.2	12 13	7 0.66	+ 9 51.3	1.792	2.702	9.8	17.6
12 23	6 53.80	+21 16.5	2.076	3.045	3.9	19.0	12 23	6 53.16	+ 9 19.1	1.755	2.706	6.7	17.4
1 2	6 44.64	+21 4.8	2.054	3.037	0.6	18.7	1 2	6 44.69	+ 8 59.6	1.746	2.710	5.0	17.3
1 12	6 35.49	+20 52.9	2.062	3.029	4.1	19.0	1 12	6 36.32	+ 8 53.1	1.764	2.715	6.6	17.4
1 22	6 27.31	+20 40.8	2.100	3.021	7.9	19.2	1 22	6 29.05	+ 8 58.9	1.809	2.721	9.6	17.6
2 1	6 20.94	+20 29.1	2.164	3.013	11.2	19.4	2 1	6 23.70	+ 9 14.7	1.879	2.727	12.7	17.8
256973	2008 <i>EQ</i> ₁₀₄		1 1.6	33°32	8°2/ 3.3	18	104176	2000 <i>EX</i> ₈₅		1 1.6	301°43	2°1/ 1.9	18
11 23	7 11.04	+ 3 34.7	1.703	2.445	18.4	20.3	11 23	7 12.01	+17 6.8	1.677	2.456	17.2	19.6
12 3	7 7.76	+ 2 43.0	1.626	2.450	15.6	20.2	12 3	7 9.04	+17 5.2	1.577	2.440	14.0	19.3
12 13	7 1.81	+ 2 8.0	1.567	2.454	12.5	20.0	12 13	7 3.09	+17 12.6	1.497	2.424	10.0	19.0
12 23	6 53.80	+ 1 53.7	1.532	2.459	9.7	19.8	12 23	6 54.64	+17 28.4	1.441	2.408	5.5	18.7
1 2	6 44.64	+ 2 2.6	1.521	2.464	8.2	19.7	1 2	6 44.63	+17 51.3	1.411	2.392	2.1	18.5
1 12	6 35.56	+ 2 34.2	1.536	2.470	9.1	19.8	1 12	6 34.41	+18 18.9	1.410	2.377	5.6	18.7
1 22	6 27.71	+ 3 25.0	1.577	2.476	11.7	20.0	1 22	6 25.37	+18 48.9	1.435	2.362	10.3	18.9
2 1	6 22.02	+ 4 29.7	1.642	2.481	14.7	20.2	2 1	6 18.70	+19 19.7	1.484	2.347	14.7	19.1
358573	2007 <i>TA</i> ₃₈₃		1 1.6	255°51	4°1/31.7	18	46069	2001 <i>DY</i> ₁₀₀		1 1.6	273°07	0°7/ 1.8	18
11 23	7 18.13	+30 49.9	1.867	2.638	16.0	21.1	11 23	7 14.29	+18 40.1	1.770	2.543	16.7	19.5
12 3	7 14.02	+31 39.9	1.766	2.624	13.0	20.9	12 3	7 10.79	+19 7.8	1.667	2.527	13.5	19.2
12 13	7 6.63	+32 31.0	1.687	2.609	9.4	20.6	12 13	7 4.30	+19 45.4	1.584	2.512	9.5	18.9
12 23	6 56.46	+33 17.2	1.632	2.594	5.8	20.4	12 23	6 55.27	+20 31.0	1.527	2.496	4.9	18.6
1 2	6 44.53	+33 52.3	1.606	2.578	4.1	20.3	1 2	6 44.61	+21 21.0	1.497	2.480	0.7	18.3
1 12	6 32.35	+34 11.9	1.608	2.562	6.7	20.4	1 12	6 33.66	+22 11.3	1.496	2.464	5.2	18.6
1 22	6 21.49	+34 15.1	1.638	2.545	10.7	20.6	1 22	6 23.83	+22 58.6	1.523	2.447	10.0	18.8
2 1	6 13.25	+34 4.6	1.692	2.529	14.4	20.8	2 1	6 16.34	+23 41.0	1.575	2.431	14.3	19.0
264237	2010 <i>TZ</i> ₁₈		1 1.6	160°64	4°0/ 1.9	18	445590	2011 <i>SW</i> ₃₂		1 1.6	49°72	1°3/ 1.5	17
11 23	7 15.12	+14 4.0	2.061										

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
452735	2006 <i>BG</i> ₃₅		1.6 196°74	1.3/ 1.9	18		381269	2007 <i>TS</i> ₂₂₆		1.6 333°32	13°5/25.9	18	
11 23	7 16.00	+17 51.7	1.714	2.484	17.2	21.9	11 23	7 20.21	+52 3.8	1.842	2.578	17.4	19.9
12 3	7 12.01	+18 9.1	1.625	2.483	13.9	21.6	12 3	7 17.98	+54 31.8	1.761	2.558	15.7	19.7
12 13	7 5.00	+18 35.9	1.556	2.482	9.8	21.4	12 13	7 11.00	+56 50.6	1.701	2.539	14.3	19.6
12 23	6 55.52	+19 10.4	1.512	2.480	5.1	21.1	12 23	6 59.41	+58 47.4	1.663	2.521	13.5	19.5
1 2	6 44.60	+19 49.5	1.496	2.478	1.3	20.8	1 2	6 44.42	+60 9.5	1.648	2.503	13.7	19.5
1 12	6 33.62	+20 29.9	1.508	2.476	5.3	21.1	1 12	6 28.53	+60 49.1	1.655	2.486	14.9	19.5
1 22	6 23.95	+21 8.7	1.549	2.473	9.9	21.4	1 22	6 14.63	+60 46.7	1.683	2.471	16.6	19.6
2 1	6 16.72	+21 44.4	1.614	2.470	14.0	21.6	2 1	6 5.14	+60 9.4	1.728	2.456	18.5	19.7
130463	2000 <i>QR</i> ₇₄		1.6 20°14	1.4/ 1.8	18		39393	5564 <i>P-L</i>		1.6 43°86	2°2/ 1.3	17	
11 23	7 12.87	+20 6.1	1.252	2.056	20.6	18.9	11 23	7 16.75	+25 27.1	1.231	2.035	20.9	18.9
12 3	7 10.39	+19 55.4	1.182	2.061	16.5	18.6	12 3	7 13.53	+26 2.2	1.175	2.054	16.6	18.7
12 13	7 4.26	+19 51.8	1.132	2.067	11.6	18.4	12 13	7 6.42	+26 41.4	1.137	2.073	11.5	18.5
12 23	6 55.22	+19 54.2	1.103	2.073	6.0	18.1	12 23	6 56.26	+27 18.9	1.122	2.092	6.0	18.2
1 2	6 44.61	+20 0.6	1.098	2.081	1.4	17.8	1 2	6 44.60	+27 48.7	1.131	2.113	2.2	18.0
1 12	6 34.23	+20 9.0	1.120	2.089	6.2	18.1	1 12	6 33.38	+28 7.1	1.167	2.134	6.6	18.4
1 22	6 25.71	+20 18.1	1.166	2.098	11.5	18.5	1 22	6 24.33	+28 14.0	1.228	2.155	11.6	18.7
2 1	6 20.27	+20 27.5	1.234	2.108	16.2	18.8	2 1	6 18.61	+28 11.8	1.310	2.176	16.0	19.0
419186	2009 <i>UY</i> ₁₁		1.6 51°93	4°6/31.6	15		49536	1999 <i>CS</i> ₆₀		1.6 2°90	1°3/ 1.8	18	
11 23	7 20.21	+30 49.1	1.638	2.415	17.6	20.8	11 23	7 11.38	+19 56.3	1.468	2.263	18.5	18.6
12 3	7 15.36	+32 3.8	1.590	2.450	14.0	20.7	12 3	7 8.75	+19 47.7	1.389	2.262	14.8	18.3
12 13	7 7.16	+33 17.0	1.563	2.486	10.0	20.5	12 13	7 2.92	+19 45.5	1.329	2.262	10.4	18.1
12 23	6 56.45	+34 21.3	1.561	2.521	6.2	20.4	12 23	6 54.52	+19 48.6	1.292	2.262	5.5	17.8
1 2	6 44.57	+35 9.8	1.588	2.557	4.7	20.3	1 2	6 44.67	+19 55.5	1.281	2.264	1.4	17.5
1 12	6 33.16	+35 39.1	1.642	2.593	7.0	20.6	1 12	6 34.91	+20 4.3	1.297	2.266	5.6	17.8
1 22	6 23.64	+35 50.1	1.723	2.629	10.4	20.8	1 22	6 26.68	+20 13.9	1.339	2.269	10.6	18.1
2 1	6 17.01	+35 46.4	1.829	2.664	13.6	21.1	2 1	6 21.12	+20 23.8	1.404	2.273	14.9	18.3
215044	Joãoalves		1.6 345°37	0°6/ 1.5	17		183450	2003 <i>BL</i> ₁₈		1.6 20°44	7°6/ 4.6	18	
11 23	7 12.04	+23 44.6	1.316	2.121	19.7	21.1	11 23	7 12.22	+ 0 12.5	1.829	2.549	18.0	19.8
12 3	7 9.90	+23 51.1	1.234	2.114	15.8	20.8	12 3	7 8.60	+ 0 13.2	1.742	2.550	15.4	19.6
12 13	7 4.10	+24 2.0	1.171	2.108	11.1	20.6	12 13	7 2.40	+ 0 35.7	1.674	2.552	12.4	19.4
12 23	6 55.25	+24 14.4	1.130	2.102	5.6	20.2	12 23	6 54.14	+ 1 23.0	1.629	2.553	9.5	19.2
1 2	6 44.61	+24 24.7	1.114	2.097	0.7	19.9	1 2	6 44.69	+ 2 35.1	1.610	2.555	7.7	19.1
1 12	6 33.97	+24 30.1	1.124	2.094	6.2	20.2	1 12	6 35.21	+ 4 8.7	1.619	2.557	8.3	19.2
1 22	6 25.07	+24 30.2	1.159	2.091	11.7	20.5	1 22	6 26.83	+ 5 57.6	1.656	2.559	10.9	19.3
2 1	6 19.26	+24 26.1	1.216	2.089	16.5	20.8	2 1	6 20.50	+ 7 54.3	1.718	2.561	13.9	19.5
147375	2003 <i>EH</i> ₅		1.6 262°50	0°9/ 1.8	18		403557	2010 <i>KR</i> ₈₈		1.6 63°92	5°5/ 2.9	16	
11 23	7 13.65	+20 6.6	2.039	2.806	15.0	20.8	11 23	7 13.79	+ 9 2.5	1.638	2.396	18.4	21.1
12 3	7 9.73	+20 5.3	1.936	2.793	12.0	20.6	12 3	7 9.90	+ 8 39.4	1.572	2.415	15.1	20.9
12 13	7 3.21	+20 8.9	1.854	2.779	8.5	20.3	12 13	7 3.24	+ 8 31.0	1.525	2.433	11.3	20.7
12 23	6 54.56	+20 16.2	1.797	2.766	4.4	20.1	12 23	6 54.49	+ 8 38.9	1.502	2.452	7.6	20.6
1 2	6 44.65	+20 25.5	1.770	2.752	0.9	19.8	1 2	6 44.68	+ 9 2.9	1.505	2.471	5.5	20.5
1 12	6 34.62	+20 35.4	1.772	2.739	4.7	20.0	1 12	6 35.11	+ 9 40.8	1.536	2.490	7.0	20.6
1 22	6 25.62	+20 44.9	1.802	2.725	8.9	20.3	1 22	6 26.96	+10 29.1	1.593	2.508	10.4	20.9
2 1	6 18.67	+20 53.7	1.858	2.711	12.6	20.5	2 1	6 21.12	+11 23.5	1.675	2.527	13.8	21.1
210866	2001 <i>RB</i> ₈₅		1.6 30°34	6°1/ 1.2	18		305682	2009 <i>BA</i> ₁₁₅		1.6 301°26	0°2/ 1.7	17	
11 23	7 18.48	+40 23.7	2.047	2.804	15.2	19.5	11 23	7 14.31	+20 48.7	1.586	2.370	17.8	20.8
12 3	7 13.80	+40 50.1	1.971	2.811	12.6	19.4	12 3	7 11.02	+21 5.4	1.497	2.365	14.3	20.6
12 13	7 6.02	+41 7.3	1.916	2.818	9.7	19.2	12 13	7 4.52	+21 29.5	1.428	2.359	10.0	20.3
12 23	6 55.89	+41 9.8	1.886	2.826	7.2	19.1	12 23	6 55.37	+21 58.6	1.383	2.354	5.1	20.0
1 2	6 44.60	+40 53.2	1.882	2.834	6.1	19.0	1 2	6 44.63	+22 29.2	1.365	2.349	0.3	19.6
1 12	6 33.64	+40 16.5	1.907	2.843	7.5	19.1	1 12	6 33.82	+22 58.0	1.375	2.343	5.5	20.0
1 22	6 24.35	+39 22.8	1.959	2.852	10.1	19.3	1 22	6 24.42	+23 22.7	1.412	2.338	10.4	20.3
2 1	6 17.69	+38 17.2	2.036	2.861	12.8	19.5	2 1	6 17.65	+23 43.1	1.472	2.334	14.8	20.5
487642	2015 <i>OV</i> ₂₄		1.6 49°05	1°0/ 1.5	18		99276	2001 <i>QC</i> ₂₀		1.6 123°26	1°5/ 1.2	18	
11 23	7 18.88	+23 34.4	1.148	1.952	22.1	20.4	11 23	7 9.15	+29 17.1	3.811	4.558	8.9	20.3
12 3	7 15.18	+23 54.3	1.099	1.978	17.4	20.2	12 3	7 4.78	+29 34.6	3.725	4.571	7.0	20.2
12 13	7 7.46	+24 19.5	1.069	2.005	12.0	20.0	12 13	6 58.98	+29 50.9	3.664	4.584	4.9	20.0
12 23	6 56.71	+24 45.3	1.060	2.032	6.0	19.7	12 23	6 52.15	+30 4.4	3.632	4.596	2.7	19.9
1 2	6 44.57	+25 6.6	1.076	2.059	1.0	19.5	1 2	6 44.79	+30 13.6	3.631	4.608	1.5	19.8
1 12	6 33.10	+25 20.2	1.119	2.087	6.4	19.9	1 12	6 37.49	+30 17.6	3.661	4.619	3.1	20.0
1 22	6 23.99	+25 26.2	1.186	2.115	11.7	20.3	1 22	6 30.83	+30 16.4	3.722	4.631	5.2	20.1
2 1	6 18.34	+25 26.3	1.275	2.144	16.1	20.7	2 1	6 25.29	+30 10.5	3.812	4.642	7.2	20.3
151182	2001 <i>XU</i> ₂₁₁		1.6 43°47	3°1/ 2.3	18		349985	2010 <i>ER</i> ₁₂₇		1.6 298°13	4°8/31.7	18	
11 23	7 12.19	+14 12.9	1.682	2.454	17.4	19.5	11 23	7 16.66	+30 27.7	1.443	2.236	18.9	20.7
12 3	7 8.76	+14 8.9	1.607	2.464	14.1	19.3	12 3	7 13.79	+31 23.5	1.354	2.224	15.3	20.4
12 13	7 2.55	+14 16.0	1.553	2.475	10.1	19.1	12 13	7 7.02	+32 21.7	1.284	2.212	11.1	20.2
12 23	6 54.19	+14 33.8	1.523	2.486	5.9	18.9	12 23	6 56.87	+33 14.9	1.237	2.200	6.8	19.9
1 2	6 44.68	+15 1.2	1.519	2.497	3.1	18.7	1 2	6 44.57	+33 54.9	1.215	2.189	4.9	19.7
1 12	6 35.31	+15 35.6	1.544	2.508	5.6	18.9	1 12	6 32.05	+34 15.9	1.220	2.177	8.0	19.9
1 22	6 27.28	+16 14.2	1.596	2.520	9.7	19.2	1 22	6 21.25	+34 17.1	1.251	2.166	12.6	20.1
2 1	6 21.53	+16 54.5	1.672	2.532	13.4	19.4	2 1	6 13.75	+34 2.2	1.303	2.155	16.9	20.3
29285	1993 <i>FD</i> ₄₂		1.6 48°06	0°4/ 1.5	18		6051	Anaximenes		1.6 221°96	3°8/ 2.9	18	
11 23	7 12.32	+23 23.3	2.063	2.835	14.6	18.7	11 23	7 9.77	+ 8 0.				

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
260123	2004 <i>PX</i> ₆₃		1 1.6 125°12	2°0/ 1.9 18			243610	1998 <i>YR</i> ₁₃		1 1.6 29°72	5°9/ 1.6 18		
11 23	7 13.51	+17 57.6	2.037	2.800	15.1	20.8	11 23	7 15.32	+13 38.4	1.579	2.349	18.5	19.8
12 3	7 9.37	+17 40.6	1.950	2.803	12.1	20.6	12 3	7 11.34	+12 9.2	1.502	2.354	15.2	19.6
12 13	7 2.76	+17 29.0	1.884	2.806	8.6	20.4	12 13	7 4.37	+10 45.7	1.445	2.359	11.4	19.4
12 23	6 54.25	+17 22.4	1.844	2.809	4.7	20.2	12 23	6 55.13	+9 32.0	1.413	2.365	7.7	19.2
1 2	6 44.71	+17 20.2	1.832	2.812	2.0	20.0	1 2	6 44.70	+8 32.2	1.407	2.372	5.9	19.1
1 12	6 35.24	+17 21.7	1.850	2.815	4.8	20.2	1 12	6 34.50	+7 49.1	1.429	2.379	7.9	19.2
1 22	6 26.91	+17 26.2	1.896	2.818	8.6	20.4	1 22	6 25.79	+7 23.4	1.477	2.386	11.5	19.4
2 1	6 20.57	+17 33.2	1.969	2.820	12.1	20.6	2 1	6 19.57	+7 13.7	1.548	2.393	15.1	19.7
58076	2208 <i>T</i> ₂		1 1.6 123°60	2°3/ 1.3 18			422259	2014 <i>SQ</i> ₁₃₅		1 1.6 82°10	2°5/ 2.3 18		
11 23	7 20.06	+27 10.6	1.660	2.435	17.5	20.1	11 23	7 12.62	+14 20.5	1.978	2.737	15.6	20.9
12 3	7 15.36	+27 37.6	1.584	2.446	14.0	19.8	12 3	7 8.75	+14 32.4	1.894	2.744	12.6	20.7
12 13	7 7.33	+28 6.0	1.528	2.456	9.8	19.6	12 13	7 2.39	+14 54.5	1.831	2.751	9.0	20.5
12 23	6 56.67	+28 31.0	1.497	2.465	5.2	19.4	12 23	6 54.10	+15 26.3	1.794	2.757	5.1	20.3
1 2	6 44.61	+28 47.9	1.494	2.474	2.3	19.2	1 2	6 44.74	+16 5.7	1.785	2.764	2.5	20.1
1 12	6 32.75	+28 54.2	1.520	2.483	5.8	19.4	1 12	6 35.42	+16 50.0	1.806	2.770	4.9	20.3
1 22	6 22.57	+28 50.0	1.573	2.492	10.2	19.7	1 22	6 27.21	+17 36.3	1.855	2.777	8.7	20.6
2 1	6 15.20	+28 37.9	1.650	2.500	14.1	20.0	2 1	6 20.99	+18 22.4	1.930	2.784	12.2	20.8
394411	2007 <i>GN</i> ₅₈		1 1.6 253°22	3°1/ 2.0 18			278481	2007 <i>UK</i> ₃₇		1 1.6 136°51	1°8/ 1.1 18		
11 23	7 15.73	+16 3.4	1.614	2.386	18.0	22.3	11 23	7 13.71	+27 23.4	2.765	3.519	11.7	21.2
12 3	7 12.06	+15 44.7	1.517	2.375	14.7	22.0	12 3	7 8.98	+27 57.3	2.679	3.529	9.3	21.0
12 13	7 5.22	+15 34.3	1.440	2.363	10.6	21.7	12 13	7 2.21	+28 31.9	2.617	3.539	6.5	20.8
12 23	6 55.74	+15 32.7	1.387	2.352	6.1	21.4	12 23	6 53.90	+29 4.2	2.582	3.548	3.5	20.6
1 2	6 44.65	+15 39.5	1.361	2.339	3.1	21.2	1 2	6 44.76	+29 31.4	2.579	3.557	1.8	20.5
1 12	6 33.39	+15 53.4	1.362	2.327	6.2	21.4	1 12	6 35.66	+29 51.5	2.606	3.566	4.0	20.7
1 22	6 23.45	+16 12.7	1.391	2.314	10.9	21.6	1 22	6 27.45	+30 4.0	2.664	3.575	6.9	20.9
2 1	6 16.05	+16 36.1	1.443	2.301	15.3	21.8	2 1	6 20.86	+30 9.6	2.749	3.583	9.6	21.1
291294	2006 <i>BZ</i> ₁₃₂		1 1.6 243°04	1°0/ 1.8 18			8999	Tashadunn		1 1.6 80°76	1°3/ 1.8 18		
11 23	7 16.53	+20 5.4	1.861	2.628	16.2	21.7	11 23	7 19.75	+19 15.5	1.385	2.168	20.0	18.0
12 3	7 12.33	+20 3.4	1.758	2.615	13.1	21.5	12 3	7 15.24	+19 16.0	1.324	2.189	16.0	17.8
12 13	7 5.21	+20 6.7	1.676	2.601	9.2	21.2	12 13	7 7.25	+19 24.6	1.282	2.211	11.1	17.6
12 23	6 55.67	+20 14.1	1.619	2.587	4.8	20.9	12 23	6 56.60	+19 39.1	1.263	2.232	5.8	17.3
1 2	6 44.65	+20 23.5	1.590	2.573	1.0	20.6	1 2	6 44.65	+19 56.7	1.270	2.253	1.4	17.1
1 12	6 33.47	+20 33.3	1.591	2.558	5.1	20.9	1 12	6 33.12	+20 14.8	1.306	2.273	5.8	17.4
1 22	6 23.45	+20 42.4	1.620	2.542	9.7	21.1	1 22	6 23.51	+20 31.9	1.367	2.294	10.7	17.8
2 1	6 15.74	+20 50.8	1.674	2.526	13.8	21.3	2 1	6 16.89	+20 47.7	1.453	2.314	15.0	18.1
226799	2004 <i>RU</i> ₂₀₁		1 1.6 140°38	1°9/ 1.3 18			374637	2006 <i>HV</i> ₆₅		1 1.6 92°20	2°0/ 1.2 18		
11 23	7 15.32	+27 25.7	2.220	2.984	14.0	21.5	11 23	7 13.70	+27 10.3	2.242	3.009	13.8	21.3
12 3	7 10.78	+27 49.7	2.134	2.990	11.1	21.3	12 3	7 9.51	+27 43.0	2.157	3.014	10.9	21.1
12 13	7 3.73	+28 14.2	2.070	2.995	7.8	21.1	12 13	7 2.87	+28 16.8	2.095	3.020	7.6	21.0
12 23	6 54.74	+28 36.0	2.033	3.000	4.2	20.9	12 23	6 54.33	+28 48.4	2.059	3.026	4.1	20.7
1 2	6 44.69	+28 51.7	2.025	3.005	1.9	20.8	1 2	6 44.75	+29 14.3	2.052	3.032	2.0	20.6
1 12	6 34.72	+28 59.5	2.047	3.009	4.7	21.0	1 12	6 35.22	+29 32.1	2.076	3.037	4.7	20.8
1 22	6 25.91	+28 59.3	2.098	3.013	8.2	21.2	1 22	6 26.79	+29 41.4	2.128	3.043	8.2	21.0
2 1	6 19.12	+28 52.3	2.175	3.017	11.4	21.4	2 1	6 20.33	+29 42.9	2.206	3.049	11.3	21.2
2899	Runrun Shaw		1 1.6 120°19	2°1/ 1.3 18			453367	2009 <i>BA</i> ₃₄		1 1.6 347°99	0°3/ 1.7 18		
11 23	7 21.09	+26 38.2	1.662	2.435	17.6	17.4	11 23	7 9.36	+20 16.8	1.207	2.021	20.7	20.7
12 3	7 16.10	+27 5.4	1.588	2.449	14.0	17.1	12 3	7 8.06	+20 37.3	1.127	2.012	16.6	20.4
12 13	7 7.79	+27 34.3	1.536	2.463	9.8	16.9	12 13	7 3.03	+21 8.5	1.066	2.004	11.7	20.1
12 23	6 56.88	+28 0.2	1.508	2.476	5.2	16.7	12 23	6 54.84	+21 47.7	1.026	1.998	6.0	19.7
1 2	6 44.62	+28 18.5	1.508	2.489	2.1	16.5	1 2	6 44.72	+22 30.7	1.009	1.993	0.3	19.3
1 12	6 32.60	+28 26.5	1.537	2.501	5.7	16.8	1 12	6 34.50	+23 12.3	1.018	1.989	6.4	19.7
1 22	6 22.30	+28 24.5	1.594	2.512	10.1	17.1	1 22	6 26.01	+23 49.0	1.051	1.986	12.2	20.0
2 1	6 14.81	+28 14.9	1.675	2.523	14.0	17.3	2 1	6 20.70	+24 19.5	1.105	1.985	17.2	20.3
107615	2001 <i>EK</i> ₅		1 1.6 188°79	1°3/ 1.4 18			22398	1994 <i>WF</i> ₁		1 1.6 80°34	0°1/ 1.7 18		
11 23	7 20.44	+24 37.1	1.899	2.662	16.1	21.2	11 23	7 13.60	+22 14.6	2.086	2.854	14.6	18.6
12 3	7 15.37	+25 3.7	1.806	2.661	12.8	21.0	12 3	7 9.41	+22 18.5	2.004	2.863	11.6	18.4
12 13	7 7.25	+25 33.8	1.735	2.660	9.0	20.7	12 13	7 2.77	+22 25.6	1.945	2.872	8.0	18.2
12 23	6 56.66	+26 3.8	1.689	2.658	4.6	20.5	12 23	6 54.26	+22 34.2	1.911	2.881	4.1	18.0
1 2	6 44.63	+26 29.4	1.673	2.655	1.3	20.2	1 2	6 44.76	+22 42.3	1.907	2.890	0.2	17.7
1 12	6 32.55	+26 47.7	1.687	2.651	5.2	20.5	1 12	6 35.39	+22 48.6	1.932	2.899	4.3	18.0
1 22	6 21.81	+26 57.8	1.729	2.646	9.5	20.7	1 22	6 27.19	+22 52.4	1.986	2.908	8.2	18.3
2 1	6 13.53	+27 0.8	1.797	2.641	13.4	21.0	2 1	6 20.99	+22 54.2	2.066	2.917	11.6	18.5
351681	2006 <i>BG</i> ₂₇		1 1.6 2°14	4°1/ 1.2 18			406923	2009 <i>FP</i> ₄₉		1 1.6 230°15	2°9/ 2.2 18		
11 23	7 11.91	+29 38.9	1.095	1.918	21.8	20.1	11 23	7 14.23	+14 30.4	1.894	2.654	16.2	21.8
12 3	7 10.65	+30 7.1	1.027	1.915	17.5	19.8	12 3	7 10.29	+14 25.8	1.798	2.648	13.2	21.6
12 13	7 5.07	+30 34.8	0.976	1.914	12.5	19.5	12 13	7 3.66	+14 30.8	1.723	2.641	9.5	21.3
12 23	6 55.88	+30 55.5	0.945	1.914	7.2	19.2	12 23	6 54.85	+14 45.5	1.672	2.634	5.6	21.1
1 2	6 44.65	+31 2.6	0.938	1.916	4.1	19.0	1 2	6 44.74	+15 8.8	1.649	2.627	2.9	20.9
1 12	6 33.63	+30 52.7	0.954	1.919	7.9	19.3	1 12	6 34.54	+15 38.8	1.656	2.619	5.4	21.0
1 22	6 24.88	+30 27.6	0.993	1.924	13.3	19.6	1 22	6 25.44	+16 13.2	1.691	2.611	9.5	21.3
2 1	6 19.87	+29 52.1	1.053	1.930	18.1	19.9	2 1	6 18.47	+16 50.0	1.751	2.603	13.3	21.5
274266	2008 <i>PB</i> ₈		1 1.6 191°39	3°6/ 2.3 18			328637	2009 <i>SX</i> ₂₀₈		1 1.6 153°52	2°8/ 2.1 18		
11 23	7 17.73	+13 12.0	1.947	2.694	16.2	22.1							

EPHEMERIDES

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
4450 Pan			1.6 270°67	3°5/	1.3 18	R	489114 2006 <i>BF</i> ₂₅₀			1.6 6°39	6°2/	1.6 18	
11 23	7 42.77	+27 24.5	1.246	2.004	23.2	20.2	11 23	7 15.66	+35 24.0	1.110	1.924	22.1	20.6
12 3	7 37.66	+27 53.2	1.107	1.956	19.6	19.8	12 3	7 13.81	+35 43.7	1.043	1.923	18.1	20.3
12 13	7 26.46	+28 30.1	0.985	1.905	14.6	19.3	12 13	7 7.30	+35 54.7	0.994	1.925	13.4	20.1
12 23	7 8.47	+29 6.9	0.884	1.850	8.3	18.7	12 23	6 57.00	+35 49.1	0.965	1.927	8.6	19.8
1 2	6 44.13	+29 29.1	0.810	1.790	3.6	18.2	1 2	6 44.70	+35 20.2	0.959	1.931	6.2	19.7
1 12	6 16.06	+29 21.2	0.765	1.726	10.4	18.4	1 12	6 32.84	+34 27.4	0.977	1.936	9.0	19.9
1 22	5 48.48	+28 37.8	0.748	1.658	19.4	18.5	1 22	6 23.58	+33 16.1	1.017	1.943	13.7	20.2
2 1	5 25.60	+27 28.8	0.754	1.585	28.0	18.7	2 1	6 18.30	+31 55.3	1.079	1.951	18.2	20.5
245015 2004 <i>CB</i> ₁₁₅			1.6 337°33	6°4/	4.6 17		31753 1999 <i>JL</i> ₉₄			1.6 184°18	0°6/	1.9 18	
11 23	7 11.35	+0 33.4	2.084	2.796	16.3	19.7	11 23	7 11.54	+18 10.5	2.620	3.371	12.4	19.0
12 3	7 7.70	+0 57.4	1.984	2.789	13.9	19.5	12 3	7 7.38	+18 44.5	2.523	3.371	9.9	18.8
12 13	7 1.71	+1 42.7	1.905	2.783	11.1	19.3	12 13	7 1.22	+19 25.4	2.449	3.371	6.9	18.6
12 23	6 53.83	+2 51.0	1.849	2.776	8.3	19.1	12 23	6 53.49	+20 11.2	2.403	3.371	3.6	18.4
1 2	6 44.80	+4 21.6	1.821	2.771	6.5	19.0	1 2	6 44.85	+20 59.6	2.388	3.371	0.6	18.1
1 12	6 35.64	+6 10.7	1.823	2.765	7.2	19.0	1 12	6 36.15	+21 47.8	2.403	3.370	3.7	18.4
1 22	6 27.37	+8 12.0	1.854	2.760	9.7	19.2	1 22	6 28.23	+22 33.7	2.450	3.369	7.0	18.6
2 1	6 20.90	+10 18.6	1.912	2.756	12.7	19.4	2 1	6 21.83	+23 15.8	2.523	3.368	10.0	18.8
244924 2003 <i>WK</i> ₁₇₅			1.6 163°90	0°2/	1.6 18		242224 2003 <i>SV</i> ₄₅			1.6 111°86	1°3/	1.4 18	
11 23	7 17.64	+22 57.4	2.157	2.915	14.5	21.6	11 23	7 19.62	+24 56.3	1.906	2.670	15.9	21.6
12 3	7 12.58	+23 5.2	2.068	2.920	11.6	21.4	12 3	7 14.41	+25 21.7	1.833	2.689	12.6	21.4
12 13	7 4.98	+23 5.8	2.001	2.926	8.0	21.2	12 13	7 6.34	+25 49.5	1.782	2.708	8.7	21.2
12 23	6 55.40	+23 27.0	1.961	2.930	4.0	21.0	12 23	6 56.10	+26 16.1	1.757	2.726	4.5	21.0
1 2	6 44.74	+23 36.5	1.951	2.934	0.3	20.7	1 2	6 44.75	+26 37.7	1.762	2.744	1.3	20.8
1 12	6 34.16	+23 42.6	1.971	2.937	4.4	21.0	1 12	6 33.64	+26 52.1	1.796	2.761	4.9	21.1
1 22	6 24.75	+23 45.1	2.020	2.939	8.3	21.2	1 22	6 24.00	+26 58.9	1.859	2.777	8.9	21.4
2 1	6 17.41	+23 44.6	2.097	2.941	11.7	21.5	2 1	6 16.75	+26 59.5	1.948	2.793	12.5	21.6
370207 2002 <i>FL</i> ₂₁			1.6 327°73	4°7/	1.0 18		519475 2012 <i>CD</i> ₁₇			1.6 35°48	10°6/	6.9 18	
11 23	7 14.41	+33 19.6	1.678	2.463	16.9	20.4	11 23	7 17.51	-6 24.8	0.990	1.737	28.5	20.1
12 3	7 11.38	+33 50.8	1.586	2.450	13.8	20.1	12 3	7 14.84	-5 31.6	0.925	1.746	24.8	19.9
12 13	7 4.94	+34 18.9	1.514	2.438	10.1	19.9	12 13	7 7.92	-3 47.6	0.872	1.756	20.2	19.6
12 23	6 55.67	+34 38.0	1.465	2.426	6.5	19.6	12 23	6 57.38	-1 6.4	0.836	1.766	15.1	19.4
1 2	6 44.73	+34 42.6	1.443	2.414	4.7	19.5	1 2	6 44.69	+2 28.3	0.823	1.778	11.2	19.2
1 12	6 33.74	+34 29.8	1.448	2.404	7.2	19.6	1 12	6 32.00	+6 39.1	0.836	1.790	11.2	19.3
1 22	6 24.31	+34 0.8	1.479	2.393	11.1	19.8	1 22	6 21.44	+11 0.4	0.876	1.803	15.0	19.5
2 1	6 17.70	+33 19.6	1.534	2.384	15.0	20.0	2 1	6 14.60	+15 8.7	0.939	1.817	19.7	19.9
258070 2001 <i>OF</i> ₉₉			1.6 93°26	1°6/	1.4 17		18950 Marakessler			1.6 65°42	2°9/	1.2 18	
11 23	7 20.27	+27 6.9	2.073	2.831	15.0	21.6	11 23	7 16.00	+29 27.9	1.886	2.661	15.7	19.1
12 3	7 14.53	+27 23.1	2.008	2.860	11.9	21.4	12 3	7 11.86	+29 55.6	1.806	2.667	12.6	18.9
12 13	7 6.16	+27 39.1	1.965	2.889	8.2	21.2	12 13	7 4.79	+30 22.6	1.747	2.673	8.9	18.6
12 23	6 55.89	+27 51.5	1.949	2.916	4.3	21.1	12 23	6 55.41	+30 44.7	1.713	2.679	5.0	18.4
1 2	6 44.74	+27 57.4	1.963	2.944	1.7	20.9	1 2	6 44.78	+30 57.6	1.708	2.685	2.9	18.3
1 12	6 33.95	+27 55.6	2.007	2.970	4.7	21.2	1 12	6 34.30	+30 59.2	1.731	2.691	5.6	18.5
1 22	6 24.61	+27 46.7	2.081	2.996	8.3	21.4	1 22	6 25.23	+30 49.9	1.782	2.697	9.4	18.7
2 1	6 17.54	+27 32.6	2.181	3.021	11.5	21.7	2 1	6 18.60	+30 32.1	1.857	2.704	12.9	19.0
326025 2010 <i>XO</i> ₆			1.6 339°84	4°7/	2.6 18		336029 2007 <i>UB</i> ₁₄₀			1.6 121°63	1°9/	1.8 18	
11 23	7 11.60	+10 56.5	1.811	2.571	16.8	21.2	11 23	7 12.98	+18 15.9	2.617	3.365	12.5	20.6
12 3	7 8.21	+10 34.0	1.723	2.569	13.8	21.0	12 3	7 8.28	+17 43.4	2.529	3.374	10.0	20.4
12 13	7 2.20	+10 23.0	1.656	2.567	10.3	20.8	12 13	7 1.66	+17 13.9	2.464	3.382	7.1	20.2
12 23	6 54.10	+10 25.2	1.612	2.566	6.8	20.6	12 23	6 53.62	+16 47.5	2.427	3.390	3.9	20.0
1 2	6 44.81	+10 40.8	1.595	2.564	4.7	20.5	1 2	6 44.86	+16 24.6	2.420	3.398	1.9	19.9
1 12	6 35.51	+11 8.5	1.606	2.563	6.4	20.6	1 12	6 36.23	+16 5.3	2.444	3.406	4.0	20.1
1 22	6 27.35	+11 45.9	1.644	2.562	10.0	20.8	1 22	6 28.51	+15 49.8	2.498	3.414	7.1	20.3
2 1	6 21.29	+12 29.9	1.707	2.561	13.5	21.0	2 1	6 22.35	+15 38.2	2.579	3.421	9.9	20.5
7392 Kowalski			1.6 281°00	2°6/	1.2 18		197655 2004 <i>NZ</i>			1.6 121°98	1°0/	1.8 17	
11 23	7 15.11	+29 1.2	2.001	2.773	15.0	17.3	11 23	7 19.50	+19 47.9	1.812	2.574	16.7	21.7
12 3	7 11.19	+29 22.8	1.900	2.760	12.1	17.0	12 3	7 14.34	+19 49.2	1.737	2.591	13.3	21.5
12 13	7 4.41	+29 44.1	1.821	2.746	8.6	16.8	12 13	7 6.32	+19 56.1	1.683	2.607	9.3	21.3
12 23	6 55.29	+30 1.4	1.767	2.733	4.8	16.5	12 23	6 56.10	+20 7.0	1.655	2.623	4.8	21.1
1 2	6 44.76	+30 10.8	1.741	2.720	2.6	16.4	1 2	6 44.77	+20 19.5	1.655	2.638	1.0	20.9
1 12	6 34.14	+30 9.9	1.745	2.706	5.5	16.5	1 12	6 33.67	+20 31.9	1.686	2.652	4.9	21.2
1 22	6 24.72	+29 58.8	1.777	2.693	9.4	16.7	1 22	6 24.03	+20 43.3	1.744	2.666	9.2	21.5
2 1	6 17.58	+29 39.7	1.833	2.680	13.1	16.9	2 1	6 16.79	+20 53.5	1.829	2.679	12.9	21.7
109205 2001 <i>QP</i> ₈₁			1.6 68°01	0°0/	1.6 18		115039 2003 <i>QB</i> ₁₀₉			1.6 32°73	5°2/	31.9 18	
11 23	7 22.17	+23 42.0	1.369	2.153	20.1	19.2	11 23	7 17.13	+32 2.8	1.387	2.182	19.4	19.0
12 3	7 17.08	+23 29.7	1.314	2.181	15.9	19.0	12 3	7 13.97	+32 54.7	1.319	2.190	15.6	18.8
12 13	7 8.41	+23 19.9	1.279	2.210	11.0	18.7	12 13	7 6.91	+33 45.1	1.270	2.197	11.4	18.5
12 23	6 57.12	+23 10.1	1.268	2.238	5.5	18.5	12 23	6 56.69	+34 26.3	1.244	2.206	7.1	18.3
1 2	6 44.70	+22 58.1	1.283	2.267	0.2	18.2	1 2	6 44.74	+34 51.1	1.243	2.215	5.2	18.2
1 12	6 32.94	+22 43.3	1.327	2.295	5.7	18.7	1 12	6 33.04	+34 55.5	1.269	2.224	7.9	18.4
1 22	6 23.32	+22 26.8	1.396	2.322	10.6	19.0	1 22	6 23.38	+34 41.1	1.319	2.234	12.1	18.7
2 1	6 16.81	+22 10.5	1.490	2.350	14.8	19.3	2 1	6 17.05	+34 12.6	1.392	2.245	16.0	18.9
384596 2010 <i>OL</i> ₁₇			1.6 359°50	3°1/	2.6 18		469282 1995 <i>UK</i> ₁₁			1.6 104°31	2°0/	1.2 18	
11 23	7 9.60	+12 7.6	2.253	3.005	14.1	20.7	11 23	7 14.03	+28				

EPHEMERIDES

1 1.6

1 1.6

2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
177749	2005 <i>JU</i> ₆₉		1 1.6 95°85	1.4/ 1.4	18		37196	2000 <i>WR</i> ₇₆		1 1.6 163°86	0°0/ 1.7	18	
11 23	7 17.56	+25 13.8	1.851	2.622	16.1	21.2	11 23	7 14.97	+22 55.1	2.300	3.059	13.7	19.9
12 3	7 12.92	+25 38.3	1.778	2.638	12.8	21.0	12 3	7 10.32	+22 53.9	2.209	3.063	10.9	19.7
12 13	7 5.40	+26 5.2	1.726	2.653	8.9	20.8	12 13	7 3.35	+22 54.8	2.141	3.066	7.6	19.5
12 23	6 55.67	+26 30.8	1.699	2.668	4.6	20.6	12 23	6 54.59	+22 56.1	2.100	3.069	3.8	19.3
1 2	6 44.79	+26 51.5	1.702	2.683	1.4	20.4	1 2	6 44.87	+22 56.4	2.088	3.071	0.1	19.0
1 12	6 34.13	+27 4.9	1.733	2.698	5.0	20.7	1 12	6 35.22	+22 54.4	2.107	3.073	4.1	19.3
1 22	6 24.92	+27 10.6	1.793	2.713	9.1	20.9	1 22	6 26.62	+22 50.2	2.155	3.075	7.8	19.6
2 1	6 18.11	+27 10.0	1.878	2.727	12.7	21.2	2 1	6 19.90	+22 44.4	2.230	3.076	11.0	19.8
87912	2000 <i>SS</i> ₃₁₃		1 1.6 211°02	1°7/ 1.5	18		85325	1995 <i>MO</i> ₁		1 1.6 284°68	3°4/ 2.3	18	
11 23	7 17.43	+28 37.1	2.322	3.080	13.6	19.8	11 23	7 10.11	+12 56.8	2.331	3.082	13.8	20.0
12 3	7 12.40	+28 36.1	2.223	3.075	10.9	19.6	12 3	7 6.49	+12 36.2	2.229	3.071	11.2	19.8
12 13	7 4.86	+28 33.1	2.147	3.069	7.7	19.3	12 13	7 0.74	+12 23.2	2.148	3.061	8.3	19.6
12 23	6 55.37	+28 25.6	2.097	3.064	4.1	19.1	12 23	6 53.31	+12 18.5	2.094	3.050	5.2	19.4
1 2	6 44.80	+28 11.3	2.077	3.058	1.7	18.9	1 2	6 44.91	+12 22.6	2.068	3.040	3.4	19.2
1 12	6 34.30	+27 49.5	2.088	3.051	4.5	19.1	1 12	6 36.45	+12 34.7	2.071	3.029	5.1	19.3
1 22	6 24.93	+27 21.3	2.128	3.044	8.1	19.3	1 22	6 28.82	+12 53.7	2.103	3.018	8.2	19.5
2 1	6 17.57	+26 48.8	2.196	3.037	11.4	19.5	2 1	6 22.81	+13 18.0	2.161	3.008	11.3	19.7
2333	Porthan		1 1.6 327°86	7°3/30.8	18 18 A		24672	1989 <i>OJ</i>		1 1.6 117°68	7°3/31.0	18	
11 23	7 15.50	+35 51.8	1.602	2.387	17.6	15.7	11 23	7 24.50	+41 8.0	2.108	2.851	15.3	19.3
12 3	7 12.78	+37 15.7	1.515	2.376	14.6	15.5	12 3	7 18.82	+42 29.2	2.040	2.868	12.7	19.2
12 13	7 6.30	+38 38.6	1.449	2.365	11.2	15.3	12 13	7 9.76	+43 43.3	1.995	2.885	10.1	19.0
12 23	6 56.56	+39 51.5	1.407	2.355	8.2	15.1	12 23	6 57.99	+44 42.1	1.975	2.901	8.0	19.0
1 2	6 44.74	+40 45.0	1.390	2.346	7.3	15.0	1 2	6 44.74	+45 18.5	1.982	2.916	7.4	18.9
1 12	6 32.70	+41 13.0	1.399	2.337	9.4	15.1	1 12	6 31.65	+45 29.6	2.018	2.931	8.6	19.1
1 22	6 22.31	+41 15.0	1.433	2.328	12.9	15.3	1 22	6 20.27	+45 16.9	2.081	2.945	10.9	19.2
2 1	6 15.11	+40 55.2	1.489	2.321	16.4	15.5	2 1	6 11.75	+44 45.7	2.168	2.959	13.3	19.4
295726	2008 <i>UE</i> ₅₈		1 1.6 181°94	3°1/ 2.2	18		224934	2007 <i>DM</i> ₆₀		1 1.6 247°62	2°0/ 1.3	18	
11 23	7 16.79	+14 52.9	1.822	2.580	16.8	21.9	11 23	7 15.27	+27 27.2	2.164	2.930	14.2	21.1
12 3	7 12.35	+14 38.9	1.732	2.581	13.6	21.6	12 3	7 11.05	+27 52.3	2.063	2.920	11.4	20.9
12 13	7 5.09	+14 33.7	1.663	2.581	9.8	21.4	12 13	7 4.17	+28 18.4	1.984	2.910	8.0	20.7
12 23	6 55.58	+14 37.4	1.619	2.581	5.8	21.2	12 23	6 55.15	+28 42.2	1.932	2.899	4.4	20.4
1 2	6 44.80	+14 49.5	1.603	2.580	3.1	21.0	1 2	6 44.85	+29 0.0	1.909	2.888	2.0	20.2
1 12	6 34.02	+15 8.5	1.617	2.579	5.6	21.2	1 12	6 34.46	+29 9.6	1.915	2.877	5.0	20.4
1 22	6 24.49	+15 32.5	1.658	2.577	9.7	21.4	1 22	6 25.16	+29 10.3	1.950	2.866	8.7	20.6
2 1	6 17.23	+15 59.8	1.724	2.575	13.5	21.6	2 1	6 17.93	+29 3.6	2.011	2.855	12.2	20.8
221778	2007 <i>KC</i>		1 1.6 207°01	0°2/ 1.7	17		266321	2007 <i>CL</i> ₆₅		1 1.6 92°68	2°4/ 1.3	18	
11 23	7 7.28	+21 12.9	3.815	4.561	8.9	21.3	11 23	7 18.38	+29 19.6	2.056	2.819	15.0	20.7
12 3	7 3.36	+21 21.7	3.710	4.557	7.0	21.2	12 3	7 13.27	+29 36.4	1.984	2.838	11.9	20.6
12 13	6 58.09	+21 32.7	3.630	4.552	4.9	21.0	12 13	7 5.46	+29 51.5	1.934	2.857	8.3	20.4
12 23	6 51.80	+21 45.0	3.579	4.547	2.5	20.8	12 23	6 55.64	+30 1.5	1.910	2.876	4.6	20.2
1 2	6 44.96	+21 57.6	3.559	4.543	0.2	20.6	1 2	6 44.84	+30 3.1	1.916	2.894	2.4	20.1
1 12	6 38.10	+22 9.8	3.571	4.537	2.6	20.8	1 12	6 34.33	+29 55.1	1.951	2.912	5.0	20.3
1 22	6 31.76	+22 20.8	3.614	4.532	5.0	21.0	1 22	6 25.23	+29 38.5	2.016	2.930	8.6	20.5
2 1	6 26.42	+22 30.6	3.686	4.527	7.2	21.1	2 1	6 18.42	+29 15.7	2.106	2.948	11.8	20.8
272345	2005 <i>SP</i> ₁₃₄		1 1.6 137°57	0°5/ 1.5	18		489896	2008 <i>JN</i> ₂₃		1 1.6 147°55	2°5/ 31.9	18	
11 23	7 19.96	+22 27.3	1.712	2.481	17.3	20.9	11 23	7 16.68	+28 17.1	2.381	3.138	13.3	22.3
12 3	7 15.11	+22 52.1	1.634	2.492	13.8	20.6	12 3	7 11.77	+29 0.9	2.295	3.147	10.6	22.2
12 13	7 7.11	+23 22.4	1.576	2.503	9.6	20.4	12 13	7 4.42	+29 45.6	2.233	3.155	7.5	22.0
12 23	6 56.62	+23 54.6	1.543	2.513	4.8	20.2	12 23	6 55.17	+30 27.1	2.198	3.162	4.2	21.8
1 2	6 44.77	+24 24.6	1.539	2.522	0.6	19.9	1 2	6 44.86	+31 1.6	2.192	3.169	2.5	21.7
1 12	6 33.05	+24 49.2	1.564	2.531	5.2	20.2	1 12	6 34.57	+31 26.2	2.218	3.176	4.8	21.9
1 22	6 22.86	+25 7.3	1.617	2.539	9.8	20.5	1 22	6 25.36	+31 40.5	2.273	3.182	8.0	22.1
2 1	6 15.30	+25 19.4	1.695	2.546	13.7	20.8	2 1	6 18.10	+31 45.4	2.354	3.187	11.0	22.3
397916	2008 <i>VH</i> ₅₃		1 1.6 39°16	2°8/ 1.9	17		340594	2006 <i>QH</i> ₁		1 1.6 203°34	6°7/ 31.3	17	
11 23	7 15.66	+18 53.9	1.160	1.965	21.9	20.4	11 23	7 22.30	+47 12.8	3.000	3.710	11.8	21.4
12 3	7 12.55	+18 18.1	1.105	1.982	17.5	20.2	12 3	7 16.27	+47 57.2	2.908	3.706	10.1	21.3
12 13	7 5.66	+17 49.8	1.068	2.001	12.3	20.0	12 13	7 7.55	+48 32.2	2.839	3.701	8.4	21.2
12 23	6 55.91	+17 29.4	1.052	2.021	6.7	19.7	12 23	6 56.74	+48 52.6	2.795	3.695	7.1	21.1
1 2	6 44.81	+17 16.5	1.060	2.041	2.8	19.6	1 2	6 44.80	+48 53.9	2.780	3.690	6.7	21.1
1 12	6 34.22	+17 10.4	1.094	2.062	6.7	19.9	1 12	6 32.96	+48 34.5	2.793	3.683	7.5	21.1
1 22	6 25.76	+17 10.4	1.153	2.084	11.8	20.2	1 22	6 22.40	+47 55.9	2.834	3.677	9.0	21.2
2 1	6 20.51	+17 15.5	1.233	2.106	16.3	20.5	2 1	6 14.04	+47 2.1	2.900	3.670	10.8	21.3
424859	2008 <i>UB</i> ₃₅₆		1 1.6 22°14	0°3/ 1.7	18		432072	2008 <i>YJ</i> ₁₀₅		1 1.6 2°45	3°4/ 1.9	18	
11 23	7 12.09	+22 53.0	1.813	2.594	16.0	21.1	11 23	7 17.20	+34 27.0	1.703	2.482	17.0	20.2
12 3	7 8.63	+22 42.5	1.735	2.601	12.7	20.9	12 3	7 13.13	+34 0.6	1.620	2.480	13.8	20.0
12 13	7 2.45	+22 34.4	1.678	2.608	8.8	20.7	12 13	7 5.77	+33 24.9	1.556	2.480	9.9	19.8
12 23	6 54.20	+22 27.4	1.645	2.616	4.5	20.5	12 23	6 55.91	+32 36.6	1.518	2.481	5.9	19.5
1 2	6 44.87	+22 19.9	1.641	2.624	0.3	20.1	1 2	6 44.83	+31 33.7	1.507	2.483	3.4	19.4
1 12	6 35.72	+22 11.3	1.665	2.633	4.7	20.5	1 12	6 34.13	+30 18.0	1.524	2.486	6.0	19.6
1 22	6 27.89	+22 1.7	1.717	2.643	8.9	20.8	1 22	6 25.19	+28 54.3	1.569	2.490	10.0	19.8
2 1	6 22.31	+21 51.7	1.793	2.653	12.7	21.0	2 1	6 19.03	+27 28.4	1.639	2.495	13.8	20.1
121040	1999 <i>CP</i> ₁₃		1 1.6 188°02	1°3/ 1.5	18		124279	2001 <i>QR</i> ₂₈		1 1.6 30°94	3°1/ 1.3	17	
11 23	7 19.46	+26 22.2	1.813	2.582	16								

EPHEMERIDES

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
359269	2009 <i>FV</i> ₇₄		1 1.6 320°75	7°0/30.9	18		425100	2009 <i>SP</i> ₁₀₂		1 1.7 121°88	8°0/ 4.2	18	
11 23	7 14.74	+33 13.0	1.414	2.211	19.0	20.3	11 23	7 13.72	- 5 12.8	2.779	3.433	13.7	22.6
12 3	7 12.66	+34 39.2	1.325	2.195	15.6	20.1	12 3	7 8.61	- 6 7.6	2.709	3.457	12.1	22.5
12 13	7 6.56	+36 8.2	1.256	2.180	11.7	19.8	12 13	7 1.78	- 6 47.3	2.660	3.479	10.3	22.4
12 23	6 56.87	+37 30.5	1.209	2.165	8.2	19.6	12 23	6 53.69	- 7 8.8	2.634	3.500	8.8	22.3
1 2	6 44.78	+38 35.5	1.188	2.151	7.1	19.5	1 2	6 44.99	- 7 10.2	2.636	3.521	8.1	22.3
1 12	6 32.30	+39 15.1	1.192	2.137	9.7	19.6	1 12	6 36.42	- 6 51.7	2.666	3.541	8.4	22.4
1 22	6 21.55	+39 27.6	1.220	2.125	13.8	19.8	1 22	6 28.68	- 6 15.3	2.722	3.560	9.5	22.5
2 1	6 14.27	+39 17.0	1.269	2.113	17.9	20.0	2 1	6 22.36	- 5 24.5	2.804	3.579	11.0	22.6
461091	2015 <i>AP</i> ₂₇₃		1 1.6 265°63	3°4/31.7	16		461995	2006 <i>WA</i> ₁₀₉		1 1.7 30°19	0°9/ 1.5	18	
11 23	7 14.36	+30 49.2	2.304	3.068	13.5	21.4	11 23	7 13.75	+23 7.8	1.575	2.363	17.7	21.2
12 3	7 10.29	+31 37.3	2.205	3.059	10.9	21.2	12 3	7 10.53	+23 35.2	1.499	2.370	14.1	21.0
12 13	7 3.64	+32 25.7	2.129	3.050	7.9	21.0	12 13	7 4.14	+24 8.1	1.444	2.376	9.8	20.7
12 23	6 54.89	+33 9.8	2.080	3.041	4.8	20.8	12 23	6 55.23	+24 42.9	1.413	2.384	5.0	20.5
1 2	6 44.88	+33 45.0	2.060	3.032	3.5	20.7	1 2	6 44.93	+25 15.5	1.409	2.391	0.9	20.2
1 12	6 34.74	+34 8.2	2.070	3.022	5.6	20.8	1 12	6 34.74	+25 42.3	1.432	2.400	5.4	20.5
1 22	6 25.63	+34 18.6	2.108	3.013	8.8	21.0	1 22	6 26.07	+26 1.8	1.482	2.408	10.1	20.8
2 1	6 18.53	+34 17.5	2.171	3.004	11.8	21.2	2 1	6 20.04	+26 14.6	1.556	2.417	14.2	21.1
490774	2010 <i>UL</i> ₄₀		1 1.7 215°85	3°3/ 2.1	18		55429	2001 <i>TQ</i> ₅₂		1 1.7 291°05	0°2/ 1.6	18	
11 23	7 14.56	+14 40.6	2.099	2.851	15.0	22.2	11 23	7 11.25	+22 28.5	2.351	3.116	13.2	19.5
12 3	7 10.22	+14 11.2	2.002	2.846	12.2	22.0	12 3	7 7.52	+22 44.4	2.250	3.108	10.6	19.3
12 13	7 3.44	+13 48.4	1.925	2.840	8.9	21.8	12 13	7 1.55	+23 3.9	2.173	3.099	7.3	19.1
12 23	6 54.72	+13 32.9	1.875	2.834	5.4	21.6	12 23	6 53.78	+23 25.2	2.122	3.091	3.7	18.8
1 2	6 44.89	+13 25.1	1.853	2.828	3.3	21.4	1 2	6 44.98	+23 46.1	2.100	3.083	0.3	18.5
1 12	6 35.04	+13 24.8	1.861	2.821	5.4	21.5	1 12	6 36.12	+24 4.5	2.108	3.075	4.0	18.8
1 22	6 26.22	+13 31.3	1.898	2.814	9.0	21.7	1 22	6 28.15	+24 19.5	2.145	3.067	7.7	19.0
2 1	6 19.32	+13 43.5	1.960	2.806	12.4	21.9	2 1	6 21.92	+24 30.9	2.209	3.059	11.0	19.2
354166	2002 <i>CJ</i> ₂₅₄		1 1.7 325°93	1°6/ 1.9	18		125904	2001 <i>XR</i> ₂₁₈		1 1.7 120°02	0°7/ 1.6	17	
11 23	7 11.68	+18 50.2	1.347	2.146	19.7	20.8	11 23	7 20.84	+23 48.6	1.804	2.569	16.7	21.1
12 3	7 9.57	+18 47.9	1.258	2.134	15.9	20.5	12 3	7 15.52	+24 2.0	1.730	2.586	13.3	20.9
12 13	7 3.94	+18 54.6	1.188	2.122	11.3	20.2	12 13	7 7.22	+24 18.3	1.678	2.603	9.2	20.7
12 23	6 55.33	+19 9.4	1.141	2.111	6.0	19.9	12 23	6 56.64	+24 34.5	1.651	2.620	4.6	20.5
1 2	6 44.88	+19 30.2	1.118	2.100	1.7	19.6	1 2	6 44.89	+24 47.1	1.653	2.636	0.7	20.2
1 12	6 34.25	+19 54.2	1.121	2.090	6.2	19.8	1 12	6 33.39	+24 54.4	1.685	2.651	5.0	20.6
1 22	6 25.17	+20 19.0	1.149	2.081	11.7	20.1	1 22	6 23.45	+24 56.1	1.745	2.665	9.3	20.9
2 1	6 19.00	+20 43.2	1.199	2.073	16.6	20.4	2 1	6 16.03	+24 53.4	1.831	2.679	13.0	21.1
274698	2008 <i>UV</i> ₅₉		1 1.7 244°50	5°1/31.5	18		198050	2004 <i>RR</i> ₂₉₄		1 1.7 308°61	0°7/ 1.6	18	
11 23	7 16.51	+36 31.7	2.311	3.068	13.7	20.5	11 23	7 14.89	+24 10.3	1.430	2.225	18.9	20.6
12 3	7 12.10	+37 22.1	2.220	3.063	11.2	20.4	12 3	7 12.05	+24 15.5	1.340	2.213	15.2	20.3
12 13	7 4.93	+38 8.5	2.151	3.059	8.5	20.2	12 13	7 5.63	+24 24.3	1.269	2.202	10.7	20.0
12 23	6 55.54	+38 45.6	2.108	3.055	6.0	20.0	12 23	6 56.19	+24 33.6	1.220	2.191	5.5	19.7
1 2	6 44.87	+39 8.4	2.094	3.050	5.1	20.0	1 2	6 44.89	+24 40.0	1.198	2.181	0.8	19.3
1 12	6 34.18	+39 14.2	2.108	3.046	6.7	20.0	1 12	6 33.48	+24 41.0	1.202	2.170	6.0	19.7
1 22	6 24.69	+39 3.3	2.151	3.041	9.4	20.2	1 22	6 23.68	+24 36.3	1.231	2.160	11.4	19.9
2 1	6 17.42	+38 38.7	2.218	3.037	12.1	20.4	2 1	6 16.85	+24 27.4	1.284	2.151	16.2	20.2
425791	2011 <i>CM</i> ₈₇		1 1.7 186°91	0°3/ 1.7	18		469218	2016 <i>HE</i> ₂		1 1.7 299°13	5°6/30.9	18	
11 23	7 14.59	+22 42.1	2.357	3.115	13.4	21.3	11 23	7 15.59	+35 16.8	2.106	2.872	14.6	20.8
12 3	7 9.98	+22 30.9	2.262	3.115	10.7	21.1	12 3	7 11.82	+36 29.2	2.011	2.861	12.0	20.6
12 13	7 3.11	+22 21.3	2.190	3.114	7.4	20.9	12 13	7 5.06	+37 40.5	1.939	2.851	9.1	20.4
12 23	6 54.49	+22 12.0	2.145	3.114	3.8	20.7	12 23	6 55.77	+38 44.0	1.892	2.840	6.5	20.2
1 2	6 44.92	+22 1.9	2.129	3.113	0.3	20.4	1 2	6 44.91	+39 33.0	1.874	2.830	5.7	20.2
1 12	6 35.42	+21 50.6	2.145	3.111	4.0	20.7	1 12	6 33.84	+40 3.2	1.883	2.820	7.5	20.3
1 22	6 26.93	+21 38.2	2.189	3.110	7.7	20.9	1 22	6 23.96	+40 13.8	1.920	2.810	10.4	20.4
2 1	6 20.26	+21 25.5	2.261	3.108	10.9	21.1	2 1	6 16.46	+40 7.2	1.981	2.800	13.4	20.6
87687	2000 <i>SL</i> ₁₂		1 1.7 79°28	5°2/ 1.0	18		89221	2001 <i>UH</i> ₁₂₂		1 1.7 73°69	1°9/ 1.9	18	
11 23	7 21.50	+33 9.7	1.527	2.307	18.6	19.1	11 23	7 14.54	+17 59.0	1.828	2.597	16.4	19.9
12 3	7 17.02	+33 58.2	1.461	2.322	15.0	18.9	12 3	7 10.43	+17 48.6	1.753	2.610	13.1	19.7
12 13	7 8.77	+34 43.4	1.416	2.337	10.9	18.7	12 13	7 3.64	+17 44.8	1.699	2.623	9.2	19.5
12 23	6 57.55	+35 18.0	1.394	2.352	7.0	18.5	12 23	6 54.83	+17 46.8	1.669	2.636	5.0	19.2
1 2	6 44.81	+35 35.3	1.398	2.368	5.2	18.4	1 2	6 44.96	+17 53.5	1.668	2.649	1.9	19.1
1 12	6 32.43	+35 32.4	1.430	2.383	7.6	18.6	1 12	6 35.27	+18 3.5	1.696	2.662	5.0	19.3
1 22	6 22.09	+35 11.5	1.488	2.398	11.4	18.9	1 22	6 26.91	+18 15.6	1.752	2.675	9.0	19.6
2 1	6 14.98	+34 37.6	1.570	2.412	15.1	19.1	2 1	6 20.76	+18 29.2	1.832	2.688	12.6	19.8
51333	2000 <i>ME</i>		1 1.7 331°61	0°6/ 1.7	18		331006	2009 <i>UA</i> ₈₃		1 1.7 188°09	5°2/ 2.4	18	
11 23	7 13.14	+23 12.1	2.057	2.827	14.7	18.2	11 23	7 12.71	+ 7 58.9	2.465	3.191	13.7	21.2
12 3	7 9.24	+22 42.3	1.960	2.820	11.8	18.0	12 3	7 8.27	+ 7 11.9	2.370	3.190	11.4	21.0
12 13	7 2.81	+22 12.6	1.886	2.814	8.2	17.8	12 13	7 1.83	+ 6 33.6	2.298	3.189	8.9	20.8
12 23	6 54.41	+21 42.5	1.838	2.807	4.2	17.5	12 23	6 53.84	+ 6 6.2	2.251	3.188	6.4	20.7
1 2	6 44.94	+21 11.5	1.818	2.801	0.7	17.3	1 2	6 45.01	+ 5 51.2	2.233	3.186	5.2	20.6
1 12	6 35.52	+20 40.1	1.828	2.795	4.5	17.5	1 12	6 36.18	+ 5 49.0	2.245	3.184	6.3	20.7
1 22	6 27.25	+20 9.4	1.867	2.790	8.5	17.8	1 22	6 28.20	+ 5 58.7	2.285	3.181	8.7	20.8
2 1	6 21.00	+19 40.8	1.931	2.785	12.1	18.0	2 1	6 21.78	+ 6 18.6	2.351	3.178	11.3	21.0
204933	2008 <i>UE</i> ₄₂		1 1.7 345°02	0°1/ 1.6	18		450874	2007 <i>YD</i> ₇₄		1 1.7 4°41	6°7/ 3.5	18	
11 23	7 10.54	+22 42.9	1.										

EPHEMERIDES

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
175043	2004 FZ ₈₀		1 1.7 246°72	0°2/ 1.7 18			422236	2014 SD ₁₉		1 1.7 52°28	1°3/ 1.9 18		
11 23	7 11.05	+20 43.0	2.642	3.398	12.2	20.6	11 23	7 14.63	+19 32.2	1.626	2.406	17.6	21.1
12 3	7 7.07	+21 0.4	2.538	3.390	9.7	20.4	12 3	7 10.88	+19 29.3	1.556	2.420	14.0	20.9
12 13	7 1.09	+21 22.0	2.457	3.381	6.8	20.2	12 13	7 4.18	+19 32.7	1.506	2.434	9.8	20.7
12 23	6 53.53	+21 46.6	2.404	3.373	3.4	20.0	12 23	6 55.20	+19 41.3	1.480	2.449	5.1	20.4
1 2	6 45.04	+22 12.0	2.381	3.364	0.3	19.7	1 2	6 45.07	+19 52.9	1.482	2.464	1.3	20.2
1 12	6 36.48	+22 36.5	2.389	3.356	3.6	20.0	1 12	6 35.17	+20 5.7	1.512	2.480	5.1	20.5
1 22	6 28.69	+22 58.9	2.426	3.347	7.0	20.2	1 22	6 26.77	+20 18.6	1.569	2.495	9.6	20.8
2 1	6 22.41	+23 18.5	2.491	3.338	10.0	20.3	2 1	6 20.84	+20 31.0	1.650	2.511	13.5	21.1
240081	2002 AB ₁₄₄		1 1.7 282°64	1°4/ 1.9 18			288444	2004 EW ₄₇		1 1.7 320°34	5°4/31.7 18		
11 23	7 14.56	+18 22.9	1.577	2.357	18.1	21.1	11 23	7 14.75	+36 35.4	2.059	2.827	14.8	20.9
12 3	7 11.30	+18 30.5	1.485	2.349	14.6	20.8	12 3	7 11.17	+37 17.1	1.962	2.813	12.2	20.6
12 13	7 4.85	+18 47.2	1.413	2.341	10.3	20.6	12 13	7 4.59	+37 54.4	1.887	2.799	9.2	20.4
12 23	6 55.72	+19 11.6	1.364	2.333	5.5	20.3	12 23	6 55.55	+38 21.7	1.837	2.786	6.5	20.2
1 2	6 44.98	+19 41.1	1.343	2.325	1.4	20.0	1 2	6 45.05	+38 33.5	1.813	2.773	5.5	20.2
1 12	6 34.09	+20 12.8	1.349	2.317	5.6	20.2	1 12	6 34.48	+38 27.0	1.818	2.761	7.2	20.2
1 22	6 24.57	+20 43.9	1.382	2.309	10.6	20.5	1 22	6 25.21	+38 3.0	1.850	2.749	10.2	20.4
2 1	6 17.64	+21 13.2	1.439	2.302	15.0	20.7	2 1	6 18.37	+37 25.1	1.906	2.737	13.3	20.6
165776	2001 QD ₂₆₅		1 1.7 273°50	4°8/31.9 18			219013	6253 P-L		1 1.7 133°99	2°4/ 2.1 18		
11 23	7 16.40	+37 16.9	2.398	3.151	13.3	19.6	11 23	7 14.18	+16 0.1	2.156	2.910	14.6	21.2
12 3	7 11.86	+37 50.2	2.306	3.147	10.9	19.4	12 3	7 9.78	+15 47.8	2.071	2.918	11.8	21.0
12 13	7 4.68	+38 18.1	2.236	3.143	8.3	19.2	12 13	7 3.06	+15 42.2	2.007	2.925	8.4	20.8
12 23	6 55.41	+38 36.0	2.193	3.140	5.8	19.1	12 23	6 54.55	+15 43.1	1.970	2.933	4.8	20.6
1 2	6 45.01	+38 39.6	2.178	3.136	4.9	19.0	1 2	6 45.09	+15 49.9	1.961	2.940	2.4	20.5
1 12	6 34.65	+38 27.3	2.192	3.132	6.3	19.1	1 12	6 35.72	+16 1.5	1.983	2.946	4.7	20.6
1 22	6 25.51	+38 0.1	2.234	3.128	8.9	19.2	1 22	6 27.41	+16 16.8	2.033	2.952	8.2	20.9
2 1	6 18.51	+37 21.2	2.301	3.124	11.6	19.4	2 1	6 20.97	+16 34.5	2.110	2.958	11.5	21.1
165722	2001 QP ₆₈		1 1.7 119°70	1°1/ 1.6 18			136415	2005 CE ₄₃		1 1.7 209°01	1°1/ 1.5 18		
11 23	7 16.22	+27 55.7	2.751	3.500	11.9	19.9	11 23	7 18.65	+25 55.1	2.187	2.944	14.4	21.1
12 3	7 10.82	+27 46.1	2.667	3.514	9.4	19.8	12 3	7 13.61	+26 1.0	2.086	2.938	11.5	20.8
12 13	7 3.42	+27 34.7	2.607	3.529	6.6	19.6	12 13	7 5.91	+26 7.6	2.008	2.931	8.0	20.6
12 23	6 54.58	+27 19.7	2.575	3.542	3.4	19.4	12 23	6 56.09	+26 12.0	1.956	2.924	4.2	20.4
1 2	6 45.04	+27 0.0	2.574	3.556	1.1	19.3	1 2	6 45.05	+26 11.8	1.933	2.916	1.1	20.1
1 12	6 35.71	+26 35.4	2.605	3.569	3.7	19.5	1 12	6 33.99	+26 5.5	1.942	2.907	4.6	20.4
1 22	6 27.39	+26 6.9	2.666	3.582	6.7	19.7	1 22	6 24.06	+25 53.4	1.980	2.897	8.5	20.6
2 1	6 20.75	+25 36.1	2.755	3.594	9.4	19.9	2 1	6 16.23	+25 37.0	2.044	2.887	12.0	20.8
181811	1998 RV ₁₄		1 1.7 15°73	2°9/ 1.3 18			309870	2009 DR ₉₂		1 1.7 252°74	0°8/ 1.8 18		
11 23	7 12.83	+27 45.4	1.276	2.085	20.0	20.4	11 23	7 15.54	+20 13.1	1.864	2.633	16.1	21.6
12 3	7 10.65	+28 12.1	1.209	2.090	16.0	20.2	12 3	7 11.64	+20 18.4	1.762	2.621	13.0	21.4
12 13	7 4.67	+28 39.9	1.161	2.097	11.2	19.9	12 13	7 4.85	+20 29.5	1.682	2.608	9.1	21.1
12 23	6 55.66	+29 3.8	1.135	2.105	6.1	19.7	12 23	6 55.69	+20 45.0	1.626	2.595	4.7	20.8
1 2	6 45.00	+29 18.4	1.133	2.113	2.9	19.5	1 2	6 45.07	+21 2.5	1.599	2.582	0.8	20.5
1 12	6 34.60	+29 20.6	1.157	2.123	6.7	19.8	1 12	6 34.28	+21 19.9	1.601	2.568	5.0	20.8
1 22	6 26.16	+29 11.2	1.206	2.134	11.7	20.1	1 22	6 24.64	+21 35.8	1.631	2.555	9.5	21.0
2 1	6 20.93	+28 53.0	1.276	2.146	16.1	20.4	2 1	6 17.26	+21 49.8	1.686	2.541	13.6	21.2
112622	2002 PY ₇₀		1 1.7 117°83	2°8/ 2.0 18			208191	2000 QM ₂₀₂		1 1.7 103°73	2°0/ 2.2 18		
11 23	7 12.37	+15 47.1	2.287	3.040	13.9	19.5	11 23	7 10.85	+15 24.3	2.607	3.354	12.5	20.7
12 3	7 8.21	+15 15.1	2.196	3.043	11.2	19.3	12 3	7 6.73	+15 27.0	2.521	3.365	10.0	20.5
12 13	7 1.89	+14 48.3	2.128	3.045	8.1	19.1	12 13	7 0.74	+15 36.3	2.459	3.376	7.2	20.3
12 23	6 53.93	+14 27.3	2.087	3.047	4.8	18.9	12 23	6 53.32	+15 51.7	2.424	3.386	4.1	20.1
1 2	6 45.07	+14 12.6	2.074	3.049	2.8	18.8	1 2	6 45.16	+16 12.1	2.418	3.396	2.0	20.0
1 12	6 36.29	+14 4.1	2.091	3.051	4.8	18.9	1 12	6 37.06	+16 36.2	2.443	3.407	3.9	20.2
1 22	6 28.47	+14 1.4	2.137	3.053	8.0	19.1	1 22	6 29.80	+17 2.5	2.498	3.417	6.9	20.4
2 1	6 22.38	+14 4.0	2.209	3.055	11.1	19.3	2 1	6 24.02	+17 29.7	2.580	3.426	9.7	20.6
227774	2006 VV ₉₅		1 1.7 107°75	5°1/31.8 17			375593	2008 VZ ₃₉		1 1.7 65°24	5°0/31.3 18		
11 23	7 24.10	+31 20.9	1.494	2.271	19.1	20.9	11 23	7 16.36	+34 35.0	2.152	2.916	14.4	20.6
12 3	7 19.23	+32 26.9	1.428	2.288	15.3	20.7	12 3	7 12.08	+35 41.7	2.077	2.926	11.7	20.4
12 13	7 10.45	+33 32.6	1.382	2.304	11.1	20.5	12 13	7 4.98	+36 45.8	2.025	2.937	8.7	20.3
12 23	6 58.54	+34 29.7	1.360	2.320	6.9	20.3	12 23	6 55.65	+37 41.4	1.998	2.948	6.0	20.1
1 2	6 44.93	+35 9.9	1.365	2.335	5.1	20.2	1 2	6 45.08	+38 22.8	2.000	2.959	5.1	20.1
1 12	6 31.59	+35 28.8	1.397	2.350	7.7	20.4	1 12	6 34.56	+38 46.8	2.031	2.971	6.7	20.2
1 22	6 20.33	+35 27.5	1.456	2.364	11.8	20.7	1 22	6 25.35	+38 53.4	2.089	2.982	9.5	20.4
2 1	6 12.43	+35 10.7	1.539	2.378	15.5	21.0	2 1	6 18.43	+38 45.5	2.172	2.993	12.3	20.6
390843	2004 RP ₇₁		1 1.7 125°90	0°1/ 1.7 17			25764	Divyanag		1 1.7 94°76	1°2/ 1.9 18		
11 23	7 19.93	+21 16.9	1.910	2.669	16.1	22.4	11 23	7 19.19	+19 54.7	1.485	2.264	19.1	19.1
12 3	7 14.65	+21 34.5	1.833	2.686	12.8	22.2	12 3	7 14.80	+19 51.4	1.416	2.279	15.2	18.9
12 13	7 6.58	+21 57.2	1.779	2.703	8.9	22.0	12 13	7 7.06	+19 54.8	1.366	2.294	10.6	18.7
12 23	6 56.35	+22 22.3	1.750	2.719	4.5	21.8	12 23	6 56.72	+20 3.0	1.339	2.308	5.5	18.4
1 2	6 45.01	+22 46.7	1.751	2.735	0.2	21.5	1 2	6 45.05	+20 13.8	1.340	2.323	1.2	18.1
1 12	6 33.85	+23 7.9	1.783	2.749	4.7	21.9	1 12	6 33.65	+20 25.0	1.369	2.337	5.6	18.5
1 22	6 24.09	+23 24.9	1.843	2.763	8.9	22.1	1 22	6 24.01	+20 35.5	1.425	2.351	10.4	18.8
2 1	6 16.66	+23 37.9	1.929	2.776	12.5	22.4	2 1	6 17.19	+20 45.2	1.504	2.364	14.6	19.1
137203	1999 LX		1 1.7 83°26	1°5/ 1.9 18			200810	2001 XR ₁₇₃		1 1.7 48°01	0°2/ 1.7 18		
11 23	7 19.76	+18 0.6	1.338	2.122	20.6	19.9	11 23	7 15.65	+20 3.6	1.386	2.178	19.6	

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
270418	2002 <i>CM</i> ₂₂		1 1.7 279°24	5°6/ 1.0	17		462420	2008 <i>TG</i> ₆₄		1 1.7 32°24	1°5/ 1.9	18	
11 23	7 21.10	+38 34.4	2.161	2.912	14.7	20.9	11 23	7 12.09	+18 35.7	2.072	2.838	14.8	21.6
12 3	7 16.25	+39 2.1	2.048	2.887	12.2	20.7	12 3	7 8.35	+18 28.3	1.985	2.841	11.8	21.4
12 13	7 8.18	+39 23.3	1.957	2.861	9.4	20.5	12 13	7 2.21	+18 26.3	1.919	2.844	8.3	21.2
12 23	6 57.43	+39 31.9	1.891	2.836	6.8	20.3	12 23	6 54.22	+18 29.0	1.880	2.847	4.5	20.9
1 2	6 45.03	+39 22.4	1.852	2.810	5.7	20.1	1 2	6 45.21	+18 35.5	1.869	2.850	1.5	20.7
1 12	6 32.49	+38 52.2	1.843	2.783	7.3	20.2	1 12	6 36.26	+18 44.4	1.887	2.853	4.5	20.9
1 22	6 21.29	+38 3.0	1.862	2.757	10.4	20.3	1 22	6 28.39	+18 54.9	1.933	2.857	8.3	21.2
2 1	6 12.67	+36 59.4	1.906	2.730	13.6	20.5	2 1	6 22.43	+19 6.2	2.006	2.860	11.7	21.4
15241	1989 <i>ST</i> ₃		1 1.7 11°70	1°3/ 1.9	18		491980	2013 <i>EY</i> ₂₉		1 1.7 315°43	4°4/ 31.8	17	
11 23	7 12.40	+19 0.6	1.531	2.319	18.2	18.6	11 23	7 14.32	+28 47.0	1.391	2.191	19.1	21.4
12 3	7 9.53	+19 4.8	1.451	2.320	14.6	18.4	12 3	7 12.17	+29 45.5	1.300	2.175	15.5	21.1
12 13	7 3.53	+19 17.2	1.392	2.322	10.2	18.1	12 13	7 6.16	+30 48.8	1.227	2.159	11.2	20.8
12 23	6 55.03	+19 36.3	1.356	2.325	5.4	17.8	12 23	6 56.76	+31 50.3	1.178	2.144	6.7	20.5
1 2	6 45.12	+19 59.7	1.346	2.328	1.3	17.6	1 2	6 45.12	+32 41.4	1.153	2.129	4.5	20.3
1 12	6 35.27	+20 24.6	1.364	2.332	5.4	17.9	1 12	6 33.14	+33 15.5	1.155	2.115	7.9	20.5
1 22	6 26.89	+20 49.0	1.407	2.337	10.2	18.1	1 22	6 22.78	+33 30.6	1.181	2.101	12.7	20.7
2 1	6 21.07	+21 11.8	1.475	2.342	14.5	18.4	2 1	6 15.69	+33 28.9	1.229	2.088	17.3	21.0
113547	2002 <i>TX</i> ₂₇		1 1.7 199°31	2°9/ 1.1	18		307691	2003 <i>UL</i> ₁₄		1 1.7 61°40	3°1/ 1.0	17	
11 23	7 14.48	+30 40.7	2.404	3.165	13.1	20.4	11 23	7 20.12	+26 30.7	1.457	2.242	19.1	20.8
12 3	7 10.17	+31 11.9	2.312	3.164	10.5	20.2	12 3	7 15.77	+27 34.4	1.401	2.268	15.1	20.6
12 13	7 3.44	+31 42.0	2.243	3.163	7.5	20.0	12 13	7 7.85	+28 41.5	1.366	2.295	10.5	20.4
12 23	6 54.82	+32 7.2	2.200	3.162	4.5	19.8	12 23	6 57.18	+29 45.1	1.355	2.322	5.8	20.2
1 2	6 45.14	+32 24.2	2.187	3.161	2.9	19.7	1 2	6 45.13	+30 37.9	1.371	2.349	3.2	20.2
1 12	6 35.47	+32 30.8	2.204	3.160	5.0	19.8	1 12	6 33.47	+31 15.4	1.414	2.376	6.5	20.4
1 22	6 26.85	+32 27.0	2.249	3.159	8.1	20.0	1 22	6 23.75	+31 37.0	1.485	2.402	10.8	20.7
2 1	6 20.14	+32 14.5	2.321	3.157	11.0	20.2	2 1	6 17.10	+31 45.4	1.579	2.429	14.6	21.0
186884	2004 <i>JD</i> ₂₇		1 1.7 268°80	4°3/ 31.4	18		456291	2006 <i>SD</i> ₉₅		1 1.7 33°04	1°8/ 1.9	18	
11 23	7 17.20	+30 10.7	1.986	2.755	15.2	20.8	11 23	7 13.27	+18 40.4	1.415	2.207	19.2	21.5
12 3	7 13.28	+31 22.3	1.882	2.738	12.4	20.6	12 3	7 10.28	+18 34.2	1.348	2.219	15.4	21.3
12 13	7 6.25	+32 37.5	1.800	2.721	9.0	20.4	12 13	7 4.03	+18 36.1	1.301	2.232	10.8	21.1
12 23	6 56.55	+33 50.1	1.744	2.704	5.7	20.1	12 23	6 55.27	+18 45.1	1.277	2.246	5.7	20.8
1 2	6 45.08	+34 53.1	1.717	2.687	4.3	20.0	1 2	6 45.21	+18 59.2	1.278	2.260	1.8	20.6
1 12	6 33.22	+35 40.8	1.719	2.669	6.8	20.1	1 12	6 35.39	+19 16.1	1.307	2.275	5.6	20.9
1 22	6 22.46	+36 11.0	1.749	2.652	10.4	20.3	1 22	6 27.24	+19 34.2	1.361	2.291	10.4	21.2
2 1	6 14.11	+36 25.0	1.803	2.634	14.0	20.5	2 1	6 21.81	+19 52.4	1.438	2.307	14.6	21.5
283264	2011 <i>FT</i> ₁₅₁		1 1.7 274°66	4°0/ 1.4	18		153271	2001 <i>CL</i> ₄₂		1 1.7 166°56	16°0/ 30.6	18	
11 23	7 18.09	+34 58.9	2.202	2.960	14.2	20.1	11 23	8 2.22	+53 27.9	1.447	2.144	22.9	20.7
12 3	7 13.39	+35 10.7	2.102	2.950	11.6	19.9	12 3	7 54.15	+55 59.8	1.386	2.157	20.5	20.6
12 13	7 5.86	+35 17.1	2.025	2.940	8.6	19.7	12 13	7 37.96	+58 18.4	1.342	2.167	18.1	20.5
12 23	6 56.10	+35 13.7	1.973	2.929	5.5	19.5	12 23	7 13.84	+60 0.6	1.318	2.175	16.4	20.4
1 2	6 45.10	+34 56.9	1.950	2.919	4.0	19.3	1 2	6 44.63	+60 43.6	1.318	2.181	16.0	20.4
1 12	6 34.15	+34 25.6	1.956	2.908	5.9	19.4	1 12	6 15.79	+60 18.7	1.342	2.183	17.1	20.4
1 22	6 24.51	+33 41.5	1.991	2.898	9.1	19.6	1 22	5 52.46	+58 56.4	1.387	2.184	19.1	20.6
2 1	6 17.15	+32 48.3	2.052	2.887	12.3	19.8	2 1	5 37.23	+56 57.9	1.451	2.182	21.4	20.7
206430	2003 <i>SH</i> ₁₇₈		1 1.7 212°99	8°3/ 31.5	18		238112	2003 <i>KL</i> ₃₆		1 1.7 182°02	0°6/ 1.6	18	
11 23	7 24.83	+42 46.6	1.848	2.598	16.9	20.2	11 23	7 18.55	+22 30.5	2.039	2.798	15.2	21.3
12 3	7 19.91	+43 48.8	1.765	2.595	14.3	20.0	12 3	7 13.71	+22 58.7	1.946	2.799	12.1	21.1
12 13	7 11.06	+44 42.4	1.701	2.592	11.5	19.8	12 13	7 6.11	+23 31.9	1.875	2.799	8.5	20.9
12 23	6 58.97	+45 18.3	1.662	2.588	9.1	19.7	12 23	6 56.29	+24 7.2	1.830	2.799	4.3	20.6
1 2	6 45.02	+45 28.4	1.648	2.584	8.4	19.6	1 2	6 45.19	+24 40.7	1.815	2.798	0.6	20.3
1 12	6 31.16	+45 9.4	1.661	2.580	9.7	19.7	1 12	6 34.03	+25 9.6	1.831	2.797	4.7	20.6
1 22	6 19.27	+44 23.8	1.701	2.575	12.4	19.8	1 22	6 24.05	+25 32.3	1.876	2.795	8.8	20.9
2 1	6 10.71	+43 18.6	1.763	2.571	15.2	20.0	2 1	6 16.25	+25 48.9	1.946	2.792	12.5	21.1
253	<i>Mathilde</i>		1 1.7 93°53	3°4/ 2.5	18 R		424739	2008 <i>SR</i> ₂₇₁		1 1.7 22°34	5°9/ 31.5	18	
11 23	7 16.40	+13 0.1	2.042	2.788	15.6	14.9	11 23	7 16.13	+36 46.0	1.979	2.746	15.3	20.8
12 3	7 11.43	+12 46.3	1.974	2.813	12.6	14.8	12 3	7 12.30	+37 44.3	1.900	2.750	12.6	20.6
12 13	7 4.11	+12 41.9	1.927	2.838	9.1	14.6	12 13	7 5.37	+38 38.2	1.844	2.754	9.5	20.5
12 23	6 55.06	+12 46.9	1.906	2.863	5.6	14.4	12 23	6 55.98	+39 21.2	1.812	2.758	6.9	20.3
1 2	6 45.17	+13 0.7	1.914	2.887	3.4	14.3	1 2	6 45.20	+39 47.3	1.807	2.763	5.9	20.3
1 12	6 35.52	+13 21.8	1.952	2.911	5.2	14.5	1 12	6 34.49	+39 53.7	1.830	2.768	7.5	20.4
1 22	6 27.10	+13 48.2	2.019	2.934	8.5	14.7	1 22	6 25.24	+39 41.1	1.880	2.773	10.4	20.5
2 1	6 20.66	+14 18.1	2.112	2.957	11.6	15.0	2 1	6 18.54	+39 13.3	1.953	2.779	13.3	20.7
414500	2009 <i>RZ</i> ₇₀		1 1.7 62°70	20°4/ 2.3	18		63646	2001 <i>QA</i> ₁₀₂		1 1.7 30°90	5°0/ 2.6	18	
11 23	7 20.82	- 3 40.0	0.917	1.678	29.4	20.5	11 23	7 11.68	+11 59.5	1.459	2.239	19.3	19.1
12 3	7 17.24	- 7 33.4	0.879	1.693	26.3	20.4	12 3	7 8.79	+11 27.6	1.393	2.251	15.7	18.9
12 13	7 9.33	-10 57.8	0.855	1.709	23.4	20.2	12 13	7 2.89	+11 8.7	1.346	2.265	11.6	18.7
12 23	6 58.04	-13 34.8	0.848	1.725	21.2	20.2	12 23	6 54.66	+11 4.4	1.321	2.279	7.5	18.5
1 2	6 45.07	-15 9.5	0.859	1.741	20.4	20.2	1 2	6 45.25	+11 15.1	1.322	2.294	5.0	18.4
1 12	6 32.62	-15 37.5	0.887	1.758	21.1	20.3	1 12	6 36.06	+11 39.0	1.349	2.309	7.0	18.6
1 22	6 22.64	-15 5.8	0.932	1.775	22.8	20.5	1 22	6 28.38	+12 13.2	1.402	2.325	10.8	18.8
2 1	6 16.40	-13 48.4	0.992	1.791	24.9	20.7	2 1	6 23.20	+12 54.0	1.478	2.342	14.6	19.1
195924	2002 <i>RJ</i> ₉₂		1 1.7 159°21	0°6/ 1.8	18		150487	2000 <i>QY</i> ₁₁		1 1.7 61°21	4°5/ 2.9	18	
11 23	7 12.54</												

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
69663	1998 <i>FM</i> ₁₁₉		1.7 238°90	4.7/ 2.3	18		295494	2008 <i>RQ</i> ₃₂		1.7 118°55	1°0/ 1.9	18	
11 23	7 15.32	+11 44.2	1.983	2.730	16.0	20.8	11 23	7 13.40	+19 29.8	2.251	3.010	13.9	21.7
12 3	7 11.13	+11 6.6	1.880	2.718	13.2	20.6	12 3	7 9.18	+19 31.2	2.164	3.017	11.1	21.5
12 13	7 4.34	+10 37.4	1.798	2.705	9.9	20.4	12 13	7 2.70	+19 37.5	2.100	3.023	7.8	21.3
12 23	6 55.43	+10 18.4	1.740	2.692	6.6	20.2	12 23	6 54.47	+19 47.4	2.062	3.030	4.1	21.0
1 2	6 45.24	+10 10.8	1.711	2.678	4.7	20.0	1 2	6 45.31	+19 59.4	2.054	3.036	1.0	20.8
1 12	6 34.91	+10 14.9	1.710	2.664	6.4	20.1	1 12	6 36.22	+20 12.2	2.076	3.042	4.1	21.1
1 22	6 25.60	+10 29.5	1.738	2.649	9.9	20.3	1 22	6 28.15	+20 24.8	2.126	3.048	7.7	21.3
2 1	6 18.28	+10 52.9	1.790	2.634	13.5	20.4	2 1	6 21.89	+20 36.7	2.204	3.054	11.0	21.5
491962	2013 <i>DL</i> ₂		1.7 290°86	0°3/ 1.8	18		213711	2002 <i>UQ</i> ₃₈		1.7 98°92	4°5/ 31.8	17	
11 23	7 16.83	+23 14.4	1.560	2.344	18.1	21.4	11 23	7 20.66	+32 26.7	1.907	2.671	15.9	21.1
12 3	7 13.18	+22 58.0	1.471	2.337	14.6	21.1	12 3	7 15.68	+33 23.8	1.837	2.689	12.8	20.9
12 13	7 6.20	+22 43.5	1.401	2.331	10.2	20.8	12 13	7 7.58	+34 18.9	1.789	2.707	9.3	20.7
12 23	6 56.50	+22 29.3	1.355	2.325	5.2	20.5	12 23	6 57.05	+35 5.9	1.767	2.724	5.9	20.6
1 2	6 45.22	+22 13.7	1.336	2.319	0.4	20.1	1 2	6 45.24	+35 38.8	1.773	2.741	4.5	20.5
1 12	6 33.96	+21 56.0	1.345	2.313	5.5	20.5	1 12	6 33.62	+35 54.7	1.808	2.758	6.6	20.7
1 22	6 24.23	+21 37.1	1.380	2.307	10.6	20.8	1 22	6 23.58	+35 54.0	1.871	2.774	9.9	20.9
2 1	6 17.26	+21 18.4	1.439	2.302	15.0	21.0	2 1	6 16.15	+35 40.2	1.959	2.790	13.0	21.2
216620	2002 <i>VP</i> ₁₃₃		1.7 122°36	9°9/ 1.9	18		433834	2015 <i>BQ</i> ₂₄₅		1.7 88°17	1°5/ 1.5	18	
11 23	7 16.90	+0 0 17.1	2.018	2.719	17.1	19.8	11 23	7 15.06	+27 50.9	2.329	3.091	13.5	20.9
12 3	7 11.98	- 1 40.4	1.941	2.728	14.8	19.6	12 3	7 10.47	+27 52.7	2.245	3.100	10.7	20.7
12 13	7 4.63	- 3 25.2	1.886	2.736	12.5	19.5	12 13	7 3.55	+27 53.4	2.185	3.109	7.5	20.5
12 23	6 55.44	- 4 51.0	1.855	2.745	10.7	19.4	12 23	6 54.87	+27 50.5	2.151	3.118	3.9	20.3
1 2	6 45.26	- 5 52.4	1.850	2.752	9.9	19.4	1 2	6 45.31	+27 42.3	2.146	3.127	1.5	20.1
1 12	6 35.19	- 6 26.7	1.872	2.760	10.7	19.4	1 12	6 35.90	+27 27.8	2.172	3.136	4.2	20.3
1 22	6 26.24	- 6 34.6	1.920	2.767	12.5	19.6	1 22	6 27.62	+27 7.9	2.227	3.145	7.7	20.6
2 1	6 19.25	- 6 19.7	1.991	2.775	14.6	19.7	2 1	6 21.26	+26 44.2	2.308	3.154	10.8	20.8
207034	2004 <i>WM</i> ₂		1.7 343°07	1°5/ 1.9	18		171401	2006 <i>QC</i> ₁₂₉		1.7 242°10	2°3/ 2.6	18	
11 23	7 10.56	+20 12.7	1.235	2.044	20.5	20.5	11 23	7 11.13	+13 4.0	2.580	3.321	12.8	20.0
12 3	7 9.00	+19 59.7	1.153	2.034	16.6	20.2	12 3	7 7.18	+13 25.1	2.476	3.315	10.4	19.8
12 13	7 3.77	+19 53.6	1.088	2.025	11.7	19.9	12 13	7 1.26	+13 55.6	2.396	3.309	7.5	19.6
12 23	6 55.45	+19 53.7	1.046	2.017	6.2	19.6	12 23	6 53.76	+14 35.1	2.343	3.302	4.4	19.4
1 2	6 45.25	+19 58.2	1.027	2.010	1.5	19.3	1 2	6 45.34	+15 21.9	2.319	3.296	2.3	19.3
1 12	6 34.99	+20 5.3	1.034	2.004	6.4	19.6	1 12	6 36.81	+16 13.7	2.326	3.289	4.1	19.4
1 22	6 26.42	+20 13.7	1.064	1.999	12.1	19.9	1 22	6 29.02	+17 7.8	2.364	3.283	7.2	19.6
2 1	6 20.96	+20 22.9	1.115	1.995	17.1	20.1	2 1	6 22.70	+18 1.9	2.429	3.276	10.2	19.8
52681	1998 <i>DK</i> ₃₄		1.7 325°72	0°2/ 1.8	18 R		223592	2004 <i>GT</i> ₂₀		1.7 208°17	0°4/ 1.9	18	
11 23	7 10.75	+21 47.8	2.101	2.874	14.4	19.0	11 23	7 15.54	+19 16.5	2.545	3.291	12.8	21.1
12 3	7 7.49	+21 54.0	2.002	2.863	11.5	18.8	12 3	7 10.78	+19 45.2	2.439	3.284	10.3	20.9
12 13	7 1.77	+22 4.2	1.926	2.854	8.0	18.6	12 13	7 3.82	+20 20.2	2.356	3.277	7.2	20.7
12 23	6 54.11	+22 16.9	1.874	2.844	4.1	18.3	12 23	6 55.10	+20 59.5	2.301	3.269	3.7	20.4
1 2	6 45.30	+22 30.0	1.852	2.835	0.2	18.0	1 2	6 45.30	+21 40.5	2.277	3.260	0.4	20.1
1 12	6 36.42	+22 41.9	1.858	2.826	4.3	18.3	1 12	6 35.37	+22 20.7	2.284	3.251	3.8	20.4
1 22	6 28.54	+22 51.6	1.893	2.818	8.3	18.5	1 22	6 26.25	+22 58.1	2.322	3.241	7.4	20.6
2 1	6 22.57	+22 59.0	1.953	2.810	11.9	18.7	2 1	6 18.76	+23 31.7	2.388	3.230	10.6	20.8
15257	1990 <i>RQ</i> ₈		1.7 107°65	0°5/ 1.6	18 R		463841	2014 <i>TY</i> ₇₅		1.7 22°26	0°6/ 1.6	18	
11 23	7 13.63	+24 1.5	2.582	3.338	12.4	19.4	11 23	7 14.95	+23 58.6	1.799	2.576	16.3	21.5
12 3	7 9.03	+24 13.1	2.500	3.352	9.8	19.3	12 3	7 11.19	+24 7.3	1.713	2.577	13.0	21.3
12 13	7 2.39	+24 26.4	2.442	3.366	6.8	19.1	12 13	7 4.52	+24 18.9	1.649	2.578	9.1	21.1
12 23	6 54.24	+24 39.3	2.412	3.380	3.4	18.9	12 23	6 55.55	+24 30.9	1.610	2.579	4.6	20.8
1 2	6 45.30	+24 50.2	2.411	3.394	0.5	18.7	1 2	6 45.29	+24 40.4	1.598	2.581	0.6	20.5
1 12	6 36.48	+24 57.6	2.442	3.408	3.7	18.9	1 12	6 35.10	+24 45.5	1.615	2.582	4.9	20.8
1 22	6 28.62	+25 1.2	2.502	3.421	6.9	19.2	1 22	6 26.24	+24 45.7	1.660	2.584	9.3	21.1
2 1	6 22.41	+25 1.5	2.590	3.434	9.8	19.4	2 1	6 19.75	+24 42.1	1.729	2.586	13.2	21.3
380228	2001 <i>SU</i> ₁₂₅		1.7 53°88	2°5/ 1.4	18		79521	1998 <i>ML</i> ₂₉		1.7 114°90	2°3/ 1.4	18	
11 23	7 14.70	+29 53.3	2.172	2.940	14.1	20.6	11 23	7 23.41	+27 47.5	1.677	2.445	17.6	20.0
12 3	7 10.43	+30 8.8	2.094	2.950	11.3	20.5	12 3	7 17.98	+28 10.4	1.606	2.464	14.1	19.8
12 13	7 3.65	+30 22.5	2.037	2.961	8.0	20.3	12 13	7 9.22	+28 33.5	1.557	2.482	9.8	19.6
12 23	6 54.96	+30 31.1	2.007	2.972	4.5	20.1	12 23	6 57.88	+28 52.0	1.532	2.499	5.3	19.4
1 2	6 45.29	+30 31.8	2.005	2.983	2.5	20.0	1 2	6 45.25	+29 1.5	1.536	2.516	2.4	19.2
1 12	6 35.79	+30 23.4	2.033	2.994	4.9	20.1	1 12	6 32.94	+28 59.9	1.569	2.532	5.7	19.5
1 22	6 27.53	+30 6.5	2.090	3.005	8.2	20.4	1 22	6 22.43	+28 48.2	1.630	2.548	10.0	19.7
2 1	6 21.35	+29 43.3	2.172	3.017	11.4	20.6	2 1	6 14.77	+28 29.3	1.716	2.562	13.8	20.0
284638	2007 <i>VR</i> ₃₂₁		1.7 317°43	2°0/ 1.1	18		293083	2006 <i>WV</i> ₁₈₈		1.7 68°58	0°9/ 1.9	18	
11 23	7 12.17	+25 54.8	2.275	3.043	13.5	20.3	11 23	7 16.00	+20 57.9	1.733	2.507	16.9	21.0
12 3	7 8.55	+26 41.9	2.178	3.036	10.8	20.1	12 3	7 11.85	+20 48.6	1.659	2.521	13.5	20.8
12 13	7 2.50	+27 32.5	2.104	3.030	7.6	19.9	12 13	7 4.84	+20 43.6	1.606	2.534	9.4	20.6
12 23	6 54.49	+28 23.1	2.056	3.024	4.1	19.6	12 23	6 55.64	+20 41.6	1.578	2.547	4.8	20.3
1 2	6 45.30	+29 9.6	2.038	3.017	2.0	19.5	1 2	6 45.31	+20 41.0	1.578	2.561	0.9	20.1
1 12	6 35.99	+29 48.4	2.050	3.011	4.7	19.7	1 12	6 35.21	+20 40.6	1.606	2.574	4.9	20.4
1 22	6 27.62	+30 18.1	2.090	3.005	8.3	19.9	1 22	6 26.56	+20 40.2	1.662	2.588	9.3	20.7
2 1	6 21.12	+30 38.5	2.156	3.000	11.5	20.1	2 1	6 20.30	+20 39.9	1.743	2.601	13.1	20.9
226902	2004 <i>TD</i> ₁₆₈		1.7 45°09	0°3/ 1.7	18		8433	<i>Brachyrhynchus</i>		1.7 282°82	7°2/ 31.1	18	
11 23	7 13.62	+22 27.9	1.932	2.705	15.5	20							

EPHEMERIDES

1 1.7

1 1.7

2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
82298	2001 <i>KL</i> ₄₀		1 1.7 117°21	4.8/ 2.8	18		169267	2001 <i>SE</i> ₁₈₆		1 1.7 226°90	8.8/ 4.6	18	
11 23	7 16.10	+ 8 16.5	2.361	3.082	14.4	19.6	11 23	7 9.51	- 5 52.3	2.521	3.190	14.7	20.4
12 3	7 10.89	+ 7 43.3	2.287	3.105	11.8	19.5	12 3	7 5.84	- 6 36.2	2.432	3.188	13.0	20.2
12 13	7 3.63	+ 7 20.4	2.234	3.127	9.0	19.3	12 13	7 0.28	- 7 3.3	2.361	3.186	11.2	20.1
12 23	6 54.86	+ 7 9.1	2.208	3.148	6.3	19.2	12 23	6 53.26	- 7 10.0	2.314	3.184	9.7	20.0
1 2	6 45.35	+ 7 10.0	2.212	3.169	4.9	19.1	1 2	6 45.41	- 6 53.9	2.291	3.182	8.9	19.9
1 12	6 36.01	+ 7 22.6	2.245	3.189	5.9	19.2	1 12	6 37.55	- 6 15.0	2.295	3.179	9.1	19.9
1 22	6 27.70	+ 7 45.1	2.307	3.208	8.4	19.4	1 22	6 30.44	- 5 15.9	2.325	3.177	10.4	20.0
2 1	6 21.09	+ 8 15.3	2.396	3.226	11.0	19.6	2 1	6 24.77	- 4 0.9	2.380	3.174	12.2	20.1
299043	2005 <i>BL</i>		1 1.7 52°25	2.7/ 1.5	18		194092	2001 <i>SG</i> ₁₈₆		1 1.7 129°01	0.3/ 1.8	17	
11 23	7 19.07	+28 57.3	1.425	2.215	19.2	19.8	11 23	7 20.23	+20 38.2	1.816	2.578	16.7	21.6
12 3	7 15.15	+29 8.2	1.359	2.228	15.4	19.6	12 3	7 15.14	+20 55.9	1.739	2.593	13.3	21.4
12 13	7 7.55	+29 17.6	1.312	2.242	10.8	19.3	12 13	7 7.12	+21 19.7	1.683	2.608	9.3	21.2
12 23	6 57.13	+29 20.9	1.288	2.256	5.9	19.1	12 23	6 56.83	+21 46.9	1.653	2.622	4.7	21.0
1 2	6 45.28	+29 14.0	1.291	2.270	2.7	18.9	1 2	6 45.32	+22 14.2	1.652	2.635	0.3	20.7
1 12	6 33.82	+28 55.6	1.320	2.285	6.2	19.2	1 12	6 33.98	+22 38.8	1.681	2.648	4.8	21.1
1 22	6 24.36	+28 27.6	1.376	2.300	10.9	19.5	1 22	6 24.07	+22 59.5	1.738	2.660	9.2	21.3
2 1	6 18.01	+27 54.1	1.455	2.315	15.0	19.8	2 1	6 16.60	+23 16.1	1.821	2.671	13.0	21.6
370559	2003 <i>UF</i> ₁₂₀		1 1.7 67°40	5.4/ 2.6	18		244370	2002 <i>OL</i> ₁₄		1 1.7 103°28	6.0/ 3.2	18	
11 23	7 11.39	+ 8 35.5	2.176	2.916	14.9	21.2	11 23	7 14.90	+ 6 38.9	1.881	2.618	17.0	20.5
12 3	7 7.60	+ 7 52.9	2.088	2.918	12.4	21.1	12 3	7 10.61	+ 6 10.6	1.807	2.633	14.2	20.3
12 13	7 1.61	+ 7 20.4	2.022	2.920	9.5	20.9	12 13	7 3.80	+ 5 56.7	1.753	2.648	10.9	20.1
12 23	6 53.95	+ 7 0.0	1.981	2.922	6.8	20.7	12 23	6 55.09	+ 5 59.1	1.723	2.662	7.8	20.0
1 2	6 45.37	+ 6 53.2	1.967	2.925	5.4	20.6	1 2	6 45.37	+ 6 18.6	1.719	2.676	6.1	19.9
1 12	6 36.83	+ 6 59.9	1.982	2.927	6.5	20.7	1 12	6 35.80	+ 6 53.7	1.744	2.690	7.2	20.0
1 22	6 29.23	+ 7 18.9	2.025	2.929	9.1	20.9	1 22	6 27.43	+ 7 41.0	1.797	2.703	10.0	20.2
2 1	6 23.37	+ 7 47.5	2.093	2.932	12.0	21.1	2 1	6 21.11	+ 8 36.5	1.875	2.716	13.0	20.4
338309	2002 <i>VR</i> ₁₇		1 1.7 76°20	0.3/ 1.7	18		143056	2002 <i>WB</i> ₆		1 1.7 170°36	6.1/ 31.4	18	
11 23	7 20.90	+20 47.7	1.363	2.147	20.2	20.8	11 23	7 22.74	+39 8.3	2.277	3.020	14.3	20.3
12 3	7 16.45	+21 23.8	1.305	2.171	16.1	20.6	12 3	7 17.27	+40 9.5	2.192	3.024	11.8	20.1
12 13	7 8.39	+22 8.6	1.265	2.195	11.1	20.4	12 13	7 8.73	+41 5.4	2.130	3.027	9.2	20.0
12 23	6 57.53	+22 57.5	1.249	2.220	5.6	20.2	12 23	6 57.72	+41 49.1	2.094	3.030	6.9	19.8
1 2	6 45.27	+23 44.9	1.260	2.243	0.4	19.8	1 2	6 45.31	+42 14.7	2.086	3.032	6.1	19.8
1 12	6 33.40	+24 26.1	1.299	2.267	5.8	20.3	1 12	6 32.92	+42 19.3	2.108	3.034	7.5	19.9
1 22	6 23.51	+24 58.9	1.364	2.290	10.8	20.7	1 22	6 21.93	+42 3.9	2.157	3.035	10.0	20.0
2 1	6 16.72	+25 23.6	1.453	2.313	15.0	21.0	2 1	6 13.45	+41 32.4	2.231	3.035	12.6	20.2
454808	2015 <i>RJ</i> ₇₃		1 1.7 34°52	1.0/ 1.9	18		103524	2000 <i>BO</i> ₇		1 1.7 318°58	3.0/ 1.2	18	
11 23	7 16.25	+19 55.4	1.439	2.226	19.2	21.4	11 23	7 15.51	+26 19.3	1.310	2.112	20.0	19.0
12 3	7 12.91	+20 0.0	1.359	2.227	15.4	21.2	12 3	7 13.15	+27 3.9	1.226	2.103	16.1	18.7
12 13	7 6.12	+20 12.4	1.298	2.228	10.8	20.9	12 13	7 6.86	+27 54.3	1.160	2.094	11.4	18.4
12 23	6 56.52	+20 30.7	1.260	2.230	5.6	20.6	12 23	6 57.16	+28 44.8	1.116	2.085	6.3	18.1
1 2	6 45.30	+20 52.0	1.248	2.231	1.0	20.3	1 2	6 45.32	+29 27.9	1.098	2.077	3.1	17.9
1 12	6 34.12	+21 13.3	1.264	2.232	5.7	20.6	1 12	6 33.27	+29 57.9	1.105	2.070	7.2	18.1
1 22	6 24.56	+21 32.8	1.305	2.234	10.9	20.9	1 22	6 23.01	+30 13.0	1.137	2.063	12.5	18.4
2 1	6 17.86	+21 50.0	1.370	2.236	15.4	21.2	2 1	6 16.09	+30 15.0	1.191	2.056	17.3	18.7
228277	1999 <i>VD</i> ₁₀₈		1 1.7 49°85	5.0/ 31.4	18		76330	2000 <i>EX</i> ₁₄₈		1 1.7 0°11	9.7/ 31.4	18	
11 23	7 16.92	+32 23.2	1.822	2.597	16.2	19.9	11 23	7 17.51	+41 20.6	1.388	2.175	19.8	17.9
12 3	7 13.00	+33 38.5	1.754	2.612	13.0	19.7	12 3	7 15.21	+42 38.0	1.317	2.172	16.7	17.7
12 13	7 5.91	+34 53.1	1.707	2.627	9.5	19.5	12 13	7 8.46	+43 46.6	1.265	2.171	13.4	17.5
12 23	6 56.31	+35 59.8	1.686	2.642	6.3	19.3	12 23	6 57.96	+44 35.7	1.235	2.170	10.6	17.3
1 2	6 45.32	+36 51.9	1.692	2.657	5.1	19.3	1 2	6 45.30	+44 55.3	1.228	2.171	9.7	17.3
1 12	6 34.43	+37 25.2	1.727	2.673	7.1	19.4	1 12	6 32.78	+44 41.0	1.245	2.173	11.4	17.4
1 22	6 25.07	+37 39.5	1.788	2.689	10.4	19.7	1 22	6 22.60	+43 55.9	1.284	2.175	14.4	17.5
2 1	6 18.33	+37 37.7	1.873	2.705	13.5	19.9	2 1	6 16.27	+42 48.4	1.345	2.179	17.7	17.8
455551	2004 <i>JZ</i> ₉		1 1.7 272°03	3.0/ 2.6	18		17498	1992 <i>EP</i> ₄		1 1.7 187°57	0.1/ 1.8	18	
11 23	7 13.10	+12 49.4	1.896	2.655	16.2	21.5	11 23	7 18.08	+21 18.7	1.410	2.197	19.5	18.4
12 3	7 9.54	+13 1.9	1.801	2.649	13.2	21.3	12 3	7 14.56	+21 35.2	1.328	2.197	15.7	18.2
12 13	7 3.34	+13 26.9	1.726	2.643	9.6	21.0	12 13	7 7.41	+21 59.2	1.266	2.197	11.0	17.9
12 23	6 55.00	+14 4.1	1.676	2.637	5.7	20.8	12 23	6 57.26	+22 28.0	1.226	2.197	5.6	17.6
1 2	6 45.36	+14 51.9	1.654	2.631	3.0	20.6	1 2	6 45.33	+22 57.2	1.213	2.196	0.2	17.2
1 12	6 35.59	+15 47.0	1.661	2.625	5.3	20.7	1 12	6 33.38	+23 23.2	1.227	2.196	5.9	17.6
1 22	6 26.88	+16 45.8	1.697	2.620	9.3	21.0	1 22	6 23.12	+23 43.9	1.267	2.195	11.3	17.9
2 1	6 20.21	+17 45.1	1.758	2.614	13.1	21.2	2 1	6 15.89	+23 59.5	1.330	2.194	15.9	18.2
501707	2014 <i>UL</i> ₂₂		1 1.7 119°21	1.3/ 2.1	18		134452	1998 <i>SZ</i> ₁₀₄		1 1.7 75°82	5.8/ 3.2	17	
11 23	7 13.64	+17 45.4	2.069	2.831	14.9	21.3	11 23	7 15.38	+ 7 45.9	1.719	2.465	18.1	19.8
12 3	7 9.64	+17 58.2	1.982	2.835	12.0	21.1	12 3	7 11.14	+ 7 21.8	1.653	2.487	14.9	19.6
12 13	7 3.19	+18 18.4	1.917	2.840	8.4	20.9	12 13	7 4.23	+ 7 12.8	1.608	2.509	11.3	19.4
12 23	6 54.82	+18 44.7	1.877	2.844	4.5	20.6	12 23	6 55.31	+ 7 20.6	1.586	2.531	7.8	19.3
1 2	6 45.37	+19 14.9	1.866	2.848	1.3	20.4	1 2	6 45.39	+ 7 45.1	1.590	2.552	5.8	19.2
1 12	6 35.93	+19 46.6	1.885	2.852	4.4	20.6	1 12	6 35.72	+ 8 24.3	1.623	2.574	7.1	19.3
1 22	6 27.57	+20 17.9	1.933	2.856	8.3	20.9	1 22	6 27.41	+ 9 14.4	1.683	2.595	10.2	19.6
2 1	6 21.16	+20 47.6	2.007	2.860	11.8	21.1	2 1	6 21.33	+10 11.1	1.767	2.616	13.4	19.8
468193	2015 <i>AM</i> ₂₄₈		1 1.7 281°52	1.1/ 1.5	18		458173	2010					

EPHEMERIDES

1 1.7

1 1.8

2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
79478	1998 <i>CB</i> ₁		1 1.7 43°88'	10.7/ 6.9	18		188022	2001 <i>UD</i> ₆₂		1 1.8 337°07'	9.2/ 2.3	18	
11 23	7 10.65	- 9 55.0	2.065	2.727	17.8	18.7	11 23	7 10.73	+ 5 10.9	1.612	2.366	18.8	19.6
12 3	7 7.03	-10 28.6	2.000	2.744	15.9	18.6	12 3	7 8.00	+ 3 40.5	1.526	2.357	16.1	19.4
12 13	7 1.21	-10 38.2	1.951	2.762	13.8	18.4	12 13	7 2.46	+ 2 22.4	1.459	2.349	13.1	19.1
12 23	6 53.75	-10 19.9	1.924	2.780	12.0	18.4	12 23	6 54.64	+ 1 22.4	1.414	2.341	10.4	19.0
1 2	6 45.47	- 9 31.6	1.919	2.799	10.9	18.3	1 2	6 45.48	+ 0 45.8	1.394	2.334	9.2	18.9
1 12	6 37.34	- 8 15.1	1.940	2.818	10.9	18.4	1 12	6 36.28	+ 0 34.9	1.399	2.328	10.3	18.9
1 22	6 30.26	- 6 35.7	1.986	2.837	12.0	18.5	1 22	6 28.27	+ 0 48.8	1.428	2.322	13.0	19.1
2 1	6 24.96	- 4 40.2	2.057	2.856	13.6	18.6	2 1	6 22.50	+ 1 23.4	1.480	2.317	16.1	19.2
167244	2003 <i>UB</i> ₉₅		1 1.7 341°89'	8.3/31.1	18		82415	2001 <i>NM</i> ₁₆		1 1.8 158°20'	0.9/ 2.0	18	
11 23	7 13.56	+35 53.1	1.280	2.085	20.1	19.3	11 23	7 16.28	+18 4.0	2.379	3.125	13.6	20.1
12 3	7 12.25	+37 16.4	1.201	2.074	16.7	19.1	12 3	7 11.39	+18 27.7	2.288	3.133	10.9	20.0
12 13	7 6.63	+38 38.1	1.140	2.063	12.9	18.8	12 13	7 4.25	+18 58.2	2.220	3.140	7.6	19.8
12 23	6 57.21	+39 48.1	1.101	2.053	9.4	18.6	12 23	6 55.35	+19 33.6	2.180	3.146	4.0	19.5
1 2	6 45.37	+40 34.9	1.086	2.045	8.4	18.5	1 2	6 45.47	+20 11.5	2.170	3.152	0.9	19.3
1 12	6 33.33	+40 51.7	1.094	2.037	10.7	18.6	1 12	6 35.59	+20 49.5	2.191	3.157	4.0	19.6
1 22	6 23.36	+40 38.6	1.125	2.031	14.6	18.8	1 22	6 26.66	+21 25.5	2.242	3.162	7.6	19.8
2 1	6 17.17	+40 1.7	1.176	2.027	18.5	19.0	2 1	6 19.49	+21 58.6	2.321	3.165	10.7	20.0
231976	2001 <i>QB</i> ₁₃₁		1 1.7 79°14'	5.3/ 3.1	18		95025	2002 <i>AV</i> ₂₀		1 1.8 29°94'	0.4/ 1.7	17	
11 23	7 11.20	+ 6 30.5	2.362	3.089	14.2	20.2	11 23	7 13.69	+21 28.8	1.067	1.885	22.5	19.7
12 3	7 7.15	+ 6 1.5	2.286	3.106	11.8	20.1	12 3	7 11.70	+21 53.9	1.014	1.900	17.9	19.5
12 13	7 1.14	+ 5 44.2	2.232	3.122	9.1	19.9	12 13	7 5.63	+22 28.2	0.978	1.917	12.4	19.2
12 23	6 53.68	+ 5 40.0	2.204	3.139	6.6	19.8	12 23	6 56.36	+23 7.5	0.963	1.935	6.3	18.9
1 2	6 45.48	+ 5 49.5	2.203	3.156	5.3	19.7	1 2	6 45.45	+23 46.1	0.971	1.954	0.4	18.6
1 12	6 37.40	+ 6 11.9	2.231	3.173	6.1	19.8	1 12	6 34.96	+24 19.1	1.004	1.975	6.4	19.1
1 22	6 30.24	+ 6 45.2	2.288	3.189	8.4	20.0	1 22	6 26.69	+24 44.5	1.061	1.996	12.1	19.5
2 1	6 24.66	+ 7 26.5	2.371	3.205	10.9	20.2	2 1	6 21.87	+25 2.3	1.139	2.019	16.8	19.8
327260	2005 <i>SD</i> ₁₂₂		1 1.8 314°04'	8.0/ 2.7	18		325595	2009 <i>SB</i> ₁₅₉		1 1.8 211°05'	5.6/ 2.5	18	
11 23	7 11.93	+ 4 44.8	1.856	2.594	17.2	21.5	11 23	7 13.32	+ 7 29.1	2.388	3.113	14.1	21.2
12 3	7 8.51	+ 3 34.6	1.767	2.589	14.7	21.3	12 3	7 8.99	+ 6 39.9	2.289	3.107	11.8	21.0
12 13	7 2.55	+ 2 36.8	1.699	2.584	11.8	21.1	12 13	7 2.56	+ 5 59.8	2.212	3.102	9.2	20.8
12 23	6 54.58	+ 1 56.0	1.654	2.579	9.3	21.0	12 23	6 54.50	+ 5 31.2	2.161	3.096	6.8	20.6
1 2	6 45.45	+ 1 35.7	1.634	2.575	8.0	20.9	1 2	6 45.50	+ 5 15.8	2.138	3.089	5.6	20.5
1 12	6 36.29	+ 1 37.2	1.641	2.570	9.0	20.9	1 12	6 36.47	+ 5 14.2	2.145	3.082	6.6	20.6
1 22	6 28.20	+ 1 58.9	1.674	2.566	11.5	21.1	1 22	6 28.27	+ 5 25.6	2.179	3.075	9.0	20.7
2 1	6 22.11	+ 2 37.2	1.730	2.562	14.4	21.2	2 1	6 21.68	+ 5 47.9	2.240	3.067	11.7	20.9
492985	2014 <i>SB</i> ₁₆₁		1 1.8 131°06'	1.9/ 1.5	18		323456	2004 <i>HJ</i> ₇₄		1 1.8 252°55'	4.1/ 2.4	18	
11 23	7 17.02	+27 12.8	1.927	2.697	15.6	21.8	11 23	7 13.60	+12 4.5	2.090	2.838	15.2	21.4
12 3	7 12.70	+27 29.7	1.842	2.701	12.4	21.6	12 3	7 9.70	+11 39.8	1.985	2.825	12.5	21.2
12 13	7 5.52	+27 47.1	1.778	2.704	8.7	21.4	12 13	7 3.36	+11 24.0	1.901	2.811	9.3	21.0
12 23	6 56.09	+28 1.6	1.740	2.708	4.7	21.2	12 23	6 55.03	+11 18.2	1.843	2.797	6.0	20.7
1 2	6 45.42	+28 9.7	1.730	2.711	1.9	21.0	1 2	6 45.50	+11 23.0	1.813	2.783	4.1	20.6
1 12	6 34.83	+28 9.6	1.750	2.714	5.1	21.2	1 12	6 35.82	+11 37.9	1.811	2.768	5.8	20.7
1 22	6 25.59	+28 1.4	1.798	2.717	9.1	21.5	1 22	6 27.07	+12 1.3	1.838	2.753	9.2	20.8
2 1	6 18.68	+27 47.1	1.871	2.720	12.7	21.7	2 1	6 20.17	+12 31.3	1.891	2.738	12.7	21.0
89301	2001 <i>VH</i> ₃₀		1 1.8 130°90'	3.0/ 2.2	18		161139	2002 <i>RJ</i> ₁₅₀		1 1.8 72°61'	1.9/ 1.5	18	
11 23	7 15.94	+14 55.4	2.307	3.050	14.1	19.6	11 23	7 15.67	+28 54.5	2.196	2.961	14.1	19.9
12 3	7 10.97	+14 24.5	2.224	3.063	11.4	19.5	12 3	7 11.18	+29 0.3	2.115	2.970	11.2	19.7
12 13	7 3.83	+13 59.5	2.164	3.076	8.2	19.3	12 13	7 4.20	+29 4.5	2.055	2.979	7.9	19.5
12 23	6 55.06	+13 40.9	2.130	3.088	5.0	19.1	12 23	6 55.33	+29 4.3	2.022	2.988	4.3	19.3
1 2	6 45.46	+13 29.1	2.126	3.100	3.0	19.0	1 2	6 45.50	+28 57.2	2.018	2.997	2.0	19.1
1 12	6 36.00	+13 24.0	2.152	3.111	4.8	19.1	1 12	6 35.84	+28 42.5	2.044	3.007	4.6	19.3
1 22	6 27.58	+13 24.8	2.208	3.122	8.0	19.4	1 22	6 27.39	+28 20.9	2.098	3.016	8.1	19.6
2 1	6 20.94	+13 30.8	2.291	3.132	11.0	19.6	2 1	6 21.00	+27 54.6	2.179	3.025	11.3	19.8
174847	2003 <i>YM</i> ₁₅₄		1 1.8 242°21'	4.2/31.5	18		238419	2004 <i>FX</i> ₅₂		1 1.8 304°17'	6.0/ 2.8	18	
11 23	7 18.28	+30 12.1	1.977	2.744	15.4	19.7	11 23	7 9.80	+ 5 57.0	2.361	3.090	14.2	20.4
12 3	7 14.13	+31 23.4	1.880	2.735	12.4	19.5	12 3	7 6.26	+ 5 8.9	2.266	3.083	12.0	20.2
12 13	7 6.87	+32 37.5	1.805	2.725	9.0	19.3	12 13	7 0.70	+ 4 31.2	2.191	3.077	9.5	20.1
12 23	6 56.98	+33 48.4	1.756	2.716	5.7	19.0	12 23	6 53.57	+ 4 6.3	2.142	3.072	7.2	19.9
1 2	6 45.40	+34 49.0	1.736	2.705	4.3	18.9	1 2	6 45.55	+ 3 56.3	2.119	3.066	6.0	19.8
1 12	6 33.54	+35 34.0	1.745	2.695	6.7	19.1	1 12	6 37.49	+ 4 1.6	2.126	3.060	6.9	19.9
1 22	6 22.86	+36 1.6	1.782	2.685	10.3	19.3	1 22	6 30.24	+ 4 20.8	2.159	3.054	9.1	20.0
2 1	6 14.61	+36 13.3	1.843	2.674	13.7	19.5	2 1	6 24.54	+ 4 51.7	2.218	3.049	11.7	20.2
51414	2001 <i>EK</i> ₁₂		1 1.8 121°02'	7.2/ 3.7	18		522473	2016 <i>DR</i> ₃₃		1 1.8 239°02'	3.2/ 1.9	18	
11 23	7 15.13	+ 1 38.8	2.208	2.911	15.7	19.3	11 23	7 15.36	+15 18.1	2.440	3.181	13.5	21.5
12 3	7 10.36	+ 0 59.3	2.133	2.930	13.4	19.2	12 3	7 10.65	+14 32.9	2.330	3.167	11.0	21.3
12 13	7 3.42	+ 0 34.9	2.079	2.947	10.8	19.0	12 13	7 3.75	+13 51.4	2.243	3.154	8.0	21.1
12 23	6 54.86	+ 0 28.2	2.050	2.964	8.4	18.9	12 23	6 55.13	+13 14.7	2.183	3.140	5.0	20.9
1 2	6 45.48	+ 0 40.7	2.047	2.980	7.2	18.9	1 2	6 45.51	+12 43.8	2.153	3.125	3.2	20.8
1 12	6 36.23	+ 1 11.5	2.073	2.996	7.8	18.9	1 12	6 35.82	+12 19.6	2.153	3.110	5.0	20.9
1 22	6 28.01	+ 1 57.8	2.127	3.011	9.8	19.1	1 22	6 26.99	+12 2.5	2.184	3.095	8.2	21.0
2 1	6 21.55	+ 2 55.5	2.206	3.025	12.2	19.3	2 1	6 19.81	+11 52.3	2.241	3.079	11.3	21.2
215501	2002 <i>TF</i> ₂₅₇		1 1.8 118°63'	6.2/31.4	18		184136	2004 <i>JB</i> ₁₈		1 1.8 265°60'	2.3/ 1.9	18	
11 23	7 22.79	+											

EPHEMERIDES

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
461275	2015 <i>XK</i> ₆₃		1 1.8 18 ^o 35	3 ^o 7/	2.5	18	304017	2006 <i>DA</i> ₂₃		1 1.8 185 ^o 70	0 ^o 7/	1.6	18
11 23	7 12.80	+13 55.3	1.425	2.209	19.5	20.9	11 23	7 18.85	+23 39.7	2.037	2.797	15.2	21.8
12 3	7 10.06	+13 47.2	1.349	2.212	15.9	20.6	12 3	7 14.02	+23 58.8	1.944	2.797	12.1	21.6
12 13	7 4.09	+13 52.1	1.291	2.215	11.5	20.4	12 13	7 6.42	+24 21.3	1.872	2.797	8.5	21.4
12 23	6 55.54	+14 10.4	1.256	2.219	6.8	20.1	12 23	6 56.61	+24 44.3	1.827	2.796	4.3	21.1
1 2	6 45.51	+14 40.8	1.246	2.224	3.7	20.0	1 2	6 45.52	+25 4.7	1.811	2.794	0.7	20.8
1 12	6 35.53	+15 20.5	1.263	2.229	6.4	20.1	1 12	6 34.40	+25 20.1	1.825	2.792	4.7	21.1
1 22	6 27.05	+16 5.7	1.305	2.234	11.0	20.4	1 22	6 24.47	+25 29.5	1.869	2.788	8.8	21.4
2 1	6 21.23	+16 53.1	1.371	2.240	15.2	20.7	2 1	6 16.75	+25 33.7	1.938	2.785	12.5	21.6
356300	2010 <i>GF</i> ₂₇		1 1.8 150 ^o 22	0 ^o 3/	1.8	18	493750	2015 <i>TZ</i> ₂₅₁		1 1.8 35 ^o 65	5 ^o 0/	2.5	17
11 23	7 17.89	+19 57.0	1.887	2.649	16.1	21.4	11 23	7 13.75	+13 18.3	1.267	2.057	21.1	20.9
12 3	7 13.35	+20 23.0	1.802	2.656	12.9	21.2	12 3	7 10.97	+12 42.0	1.203	2.069	17.2	20.7
12 13	7 5.99	+20 56.3	1.738	2.663	9.0	20.9	12 13	7 4.75	+12 18.5	1.158	2.081	12.6	20.5
12 23	6 56.38	+21 34.2	1.700	2.669	4.6	20.7	12 23	6 55.84	+12 10.0	1.134	2.095	7.9	20.2
1 2	6 45.49	+22 13.3	1.691	2.674	0.3	20.4	1 2	6 45.54	+12 16.6	1.135	2.109	5.0	20.1
1 12	6 34.62	+22 50.1	1.712	2.679	4.7	20.7	1 12	6 35.50	+12 36.8	1.161	2.124	7.3	20.3
1 22	6 25.01	+23 22.7	1.761	2.684	9.0	21.0	1 22	6 27.24	+13 7.5	1.212	2.139	11.8	20.6
2 1	6 17.67	+23 50.3	1.837	2.688	12.8	21.2	2 1	6 21.86	+13 44.9	1.285	2.155	16.0	20.9
339612	2005 <i>OK</i> ₁₂		1 1.8 56 ^o 77	5 ^o 3/	1.5	17	430241	2013 <i>WN</i> ₉		1 1.8 43 ^o 89	1 ^o 6/	1.5	18
11 23	7 22.09	+33 34.2	1.313	2.104	20.5	20.2	11 23	7 13.53	+26 47.9	2.123	2.893	14.3	21.5
12 3	7 18.24	+34 3.6	1.247	2.114	16.6	20.0	12 3	7 9.63	+27 6.3	2.042	2.901	11.4	21.3
12 13	7 10.14	+34 28.1	1.198	2.124	12.1	19.8	12 13	7 3.23	+27 25.5	1.983	2.909	7.9	21.1
12 23	6 58.67	+34 40.2	1.173	2.134	7.6	19.5	12 23	6 54.91	+27 42.4	1.950	2.918	4.2	20.9
1 2	6 45.44	+34 33.3	1.172	2.144	5.3	19.4	1 2	6 45.57	+27 54.3	1.946	2.926	1.6	20.7
1 12	6 32.64	+34 5.6	1.198	2.155	8.0	19.6	1 12	6 36.33	+27 59.3	1.971	2.935	4.6	20.9
1 22	6 22.18	+33 20.7	1.248	2.166	12.4	19.9	1 22	6 28.27	+27 57.4	2.024	2.944	8.2	21.1
2 1	6 15.37	+32 25.3	1.321	2.177	16.5	20.2	2 1	6 22.23	+27 49.7	2.104	2.954	11.5	21.4
367265	2007 <i>TO</i> ₆₈		1 1.8 52 ^o 27	1 ^o 4/	1.7	18	79173	1993 <i>FE</i> ₄₁		1 1.8 242 ^o 82	1 ^o 0/	1.5	18
11 23	7 16.50	+27 33.0	1.994	2.763	15.2	20.7	11 23	7 12.64	+25 4.7	2.506	3.267	12.6	20.1
12 3	7 11.86	+27 29.0	1.928	2.786	12.0	20.6	12 3	7 8.60	+25 23.4	2.408	3.263	10.1	19.9
12 13	7 4.63	+27 23.7	1.884	2.810	8.3	20.4	12 13	7 2.39	+25 43.8	2.333	3.258	7.0	19.7
12 23	6 55.51	+27 14.7	1.865	2.833	4.3	20.2	12 23	6 54.47	+26 3.8	2.286	3.254	3.6	19.5
1 2	6 45.52	+27 0.4	1.875	2.857	1.4	20.0	1 2	6 45.58	+26 21.0	2.267	3.249	1.0	19.3
1 12	6 35.88	+26 40.2	1.915	2.880	4.5	20.3	1 12	6 36.66	+26 33.5	2.280	3.245	4.0	19.5
1 22	6 27.65	+26 15.3	1.983	2.904	8.3	20.6	1 22	6 28.62	+26 40.7	2.321	3.240	7.4	19.7
2 1	6 21.61	+25 47.9	2.077	2.928	11.5	20.8	2 1	6 22.26	+26 43.0	2.390	3.235	10.4	19.9
297503	2000 <i>WO</i> ₁₂₉		1 1.8 329 ^o 70	4 ^o 5/	31.9	18	334636	2002 <i>VH</i> ₁₁₈		1 1.8 140 ^o 20	1 ^o 7/	2.0	17
11 23	7 16.74	+30 10.7	1.494	2.284	18.5	19.9	11 23	7 20.42	+18 34.0	1.762	2.523	17.2	21.3
12 3	7 13.75	+31 6.1	1.410	2.279	14.9	19.7	12 3	7 15.38	+18 24.2	1.683	2.535	13.8	21.1
12 13	7 7.05	+32 3.3	1.347	2.274	10.8	19.4	12 13	7 7.38	+18 20.6	1.624	2.546	9.7	20.9
12 23	6 57.22	+32 55.5	1.306	2.270	6.6	19.2	12 23	6 57.07	+18 22.2	1.590	2.556	5.2	20.7
1 2	6 45.47	+33 35.1	1.292	2.266	4.6	19.0	1 2	6 45.54	+18 27.5	1.585	2.566	1.7	20.5
1 12	6 33.63	+33 56.9	1.305	2.262	7.5	19.2	1 12	6 34.17	+18 35.1	1.609	2.575	5.2	20.7
1 22	6 23.48	+34 0.5	1.343	2.259	11.9	19.4	1 22	6 24.25	+18 44.0	1.661	2.583	9.5	21.0
2 1	6 16.44	+33 48.8	1.403	2.256	16.0	19.7	2 1	6 16.78	+18 53.9	1.739	2.591	13.4	21.2
39219	2000 <i>YV</i> ₄		1 1.8 112 ^o 18	0 ^o 9/	1.9	18	313489	2002 <i>TA</i> ₃₇₀		1 1.8 85 ^o 31	3 ^o 4/	2.7	18
11 23	7 14.77	+20 15.5	2.114	2.875	14.7	19.8	11 23	7 15.86	+12 19.5	1.806	2.561	17.0	21.3
12 3	7 10.46	+20 12.6	2.030	2.884	11.7	19.6	12 3	7 11.56	+12 23.5	1.735	2.580	13.8	21.1
12 13	7 3.72	+20 13.9	1.968	2.892	8.2	19.4	12 13	7 4.60	+12 39.7	1.685	2.599	10.0	21.0
12 23	6 55.13	+20 18.4	1.932	2.900	4.2	19.2	12 23	6 55.61	+13 7.8	1.659	2.618	6.0	20.8
1 2	6 45.55	+20 24.5	1.925	2.907	0.9	19.0	1 2	6 45.58	+13 46.0	1.661	2.636	3.4	20.6
1 12	6 36.06	+20 30.9	1.948	2.915	4.3	19.3	1 12	6 35.72	+14 31.4	1.692	2.654	5.5	20.8
1 22	6 27.70	+20 37.0	2.000	2.922	8.1	19.5	1 22	6 27.16	+15 20.7	1.751	2.672	9.2	21.1
2 1	6 21.29	+20 42.7	2.078	2.929	11.5	19.7	2 1	6 20.78	+16 11.0	1.836	2.690	12.7	21.3
174862	2004 <i>BD</i> ₂		1 1.8 69 ^o 54	2 ^o 9/	1.3	18	330981	2009 <i>TQ</i> ₂₂		1 1.8 32 ^o 58	3 ^o 2/	2.3	18
11 23	7 18.78	+28 27.2	1.620	2.400	17.7	20.0	11 23	7 12.66	+14 52.6	1.893	2.657	16.0	20.6
12 3	7 14.58	+29 0.5	1.552	2.415	14.1	19.8	12 3	7 9.07	+14 29.5	1.809	2.661	13.0	20.4
12 13	7 7.06	+29 34.2	1.503	2.431	9.9	19.6	12 13	7 2.93	+14 14.4	1.746	2.664	9.4	20.2
12 23	6 56.95	+30 3.2	1.480	2.446	5.5	19.3	12 23	6 54.81	+14 7.8	1.707	2.668	5.6	19.9
1 2	6 45.50	+30 22.5	1.483	2.462	2.9	19.2	1 2	6 45.60	+14 9.7	1.696	2.672	3.2	19.8
1 12	6 34.32	+30 29.3	1.515	2.477	6.0	19.4	1 12	6 36.45	+14 19.2	1.713	2.676	5.4	19.9
1 22	6 24.85	+30 24.3	1.574	2.493	10.2	19.7	1 22	6 28.46	+14 35.0	1.758	2.680	9.1	20.2
2 1	6 18.18	+30 10.2	1.657	2.508	14.0	20.0	2 1	6 22.50	+14 55.4	1.829	2.684	12.7	20.4
152245	2005 <i>SH</i> ₈₉		1 1.8 320 ^o 10	6 ^o 3/	31.6	18	56585	2000 <i>JZ</i> ₂₉		1 1.8 51 ^o 46	1 ^o 6/	1.7	18
11 23	7 17.21	+36 17.9	1.756	2.531	16.7	20.2	11 23	7 19.38	+26 52.5	1.321	2.115	20.2	18.2
12 3	7 13.82	+37 15.5	1.668	2.522	13.8	20.0	12 3	7 15.65	+26 50.5	1.255	2.127	16.1	18.0
12 13	7 6.92	+38 9.6	1.600	2.514	10.5	19.8	12 13	7 8.10	+26 48.5	1.207	2.140	11.3	17.8
12 23	6 57.09	+38 52.8	1.557	2.506	7.5	19.6	12 23	6 57.57	+26 42.8	1.182	2.152	5.9	17.5
1 2	6 45.49	+39 17.8	1.539	2.498	6.3	19.5	1 2	6 45.54	+26 29.8	1.183	2.166	1.6	17.2
1 12	6 33.81	+39 20.8	1.549	2.491	8.3	19.6	1 12	6 33.90	+26 8.8	1.211	2.179	6.1	17.6
1 22	6 23.71	+39 2.4	1.585	2.484	11.6	19.8	1 22	6 24.34	+25 41.5	1.265	2.193	11.2	17.9
2 1	6 16.51	+38 27.0	1.643	2.477	14.9	20.0	2 1	6 18.02	+25 11.4	1.341	2.207	15.7	18.2
23202	2000 <i>S</i>												

EPHEMERIDES

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
216976	2000 <i>NO</i> ₁₃		1 1.8 36°47'	0°8'	1.7 18		345073	2005 <i>JO</i> ₆₅		1 1.8 131°30'	0°7'	1.6 18	
11 23	7 16.75	+26 6.4	1.453	2.244	18.8	18.5	11 23	7 22.05	+22 24.1	1.692	2.458	17.6	21.3
12 3	7 13.01	+25 51.9	1.392	2.263	14.9	18.3	12 3	7 16.97	+22 56.6	1.616	2.473	14.0	21.1
12 13	7 5.92	+25 37.2	1.351	2.283	10.4	18.1	12 13	7 8.67	+23 35.1	1.561	2.487	9.8	20.9
12 23	6 56.33	+25 19.9	1.333	2.303	5.3	17.9	12 23	6 57.82	+24 15.6	1.531	2.500	5.0	20.6
1 2	6 45.58	+24 58.3	1.342	2.325	0.8	17.6	1 2	6 45.59	+24 53.4	1.530	2.513	0.7	20.4
1 12	6 35.29	+24 32.3	1.378	2.347	5.4	18.0	1 12	6 33.49	+25 24.8	1.559	2.525	5.2	20.7
1 22	6 26.86	+24 3.4	1.441	2.369	10.1	18.3	1 22	6 22.98	+25 48.2	1.615	2.536	9.8	21.0
2 1	6 21.26	+23 34.2	1.527	2.392	14.2	18.6	2 1	6 15.14	+26 4.4	1.697	2.547	13.8	21.3
56198	1999 <i>GB</i> ₉		1 1.8 224°99'	6°1'	2.8 18		144187	2004 <i>BU</i> ₁₁₉		1 1.8 267°27'	10°0'	29.9 18	
11 23	7 12.89	+5 56.0	2.276	3.000	14.8	19.3	11 23	7 23.87	+45 7.7	1.889	2.635	16.7	20.0
12 3	7 8.83	+5 13.3	2.177	2.993	12.5	19.1	12 3	7 19.80	+46 49.3	1.803	2.624	14.4	19.8
12 13	7 2.58	+4 41.6	2.099	2.985	9.8	18.9	12 13	7 11.61	+48 23.9	1.737	2.613	12.1	19.6
12 23	6 54.61	+4 23.5	2.045	2.977	7.4	18.8	12 23	6 59.76	+49 41.1	1.695	2.602	10.4	19.5
1 2	6 45.62	+4 20.7	2.020	2.968	6.1	18.7	1 2	6 45.53	+50 30.5	1.679	2.591	10.1	19.4
1 12	6 36.56	+4 33.5	2.023	2.959	7.0	18.7	1 12	6 30.97	+50 46.2	1.688	2.580	11.4	19.5
1 22	6 28.35	+5 0.4	2.054	2.950	9.5	18.8	1 22	6 18.21	+50 29.1	1.721	2.568	13.7	19.6
2 1	6 21.80	+5 38.5	2.110	2.940	12.2	19.0	2 1	6 8.93	+49 45.7	1.776	2.557	16.2	19.8
230798	2004 <i>EF</i> ₃₁		1 1.8 274°91'	2°2'	2.0 18		305661	Joejackson		1 1.8 47°59'	0°9'	1.9 15	
11 23	7 16.64	+18 59.2	1.464	2.248	19.1	20.8	11 23	7 17.02	+20 36.7	1.288	2.083	20.6	22.2
12 3	7 13.38	+18 37.2	1.371	2.236	15.5	20.5	12 3	7 13.59	+20 34.3	1.230	2.102	16.4	21.9
12 13	7 6.65	+18 21.1	1.296	2.225	11.1	20.2	12 13	7 6.55	+20 39.0	1.189	2.122	11.4	21.7
12 23	6 57.01	+18 10.8	1.245	2.213	6.1	19.9	12 23	6 56.77	+20 48.5	1.172	2.142	5.9	21.5
1 2	6 45.56	+18 5.3	1.220	2.201	2.2	19.6	1 2	6 45.62	+21 0.2	1.180	2.163	0.9	21.2
1 12	6 33.96	+18 4.0	1.222	2.189	6.2	19.8	1 12	6 34.88	+21 11.6	1.214	2.184	5.8	21.6
1 22	6 23.83	+18 6.0	1.249	2.177	11.4	20.1	1 22	6 26.11	+21 21.6	1.274	2.205	10.9	21.9
2 1	6 16.53	+18 11.1	1.300	2.166	16.1	20.3	2 1	6 20.37	+21 30.3	1.357	2.227	15.3	22.2
401356	2013 <i>BT</i> ₂₁		1 1.8 214°71'	1°2'	1.6 18		400318	2007 <i>TU</i> ₃₃₈		1 1.8 127°50'	3°4'	1.1 18	
11 23	7 19.01	+25 28.0	1.820	2.589	16.4	21.3	11 23	7 22.18	+30 17.6	2.027	2.784	15.3	22.5
12 3	7 14.60	+25 40.5	1.726	2.584	13.2	21.1	12 3	7 16.70	+31 4.6	1.951	2.801	12.3	22.3
12 13	7 7.10	+25 55.1	1.653	2.579	9.2	20.9	12 13	7 8.28	+31 51.0	1.898	2.817	8.8	22.1
12 23	6 57.08	+26 8.4	1.605	2.573	4.8	20.6	12 23	6 57.55	+32 31.5	1.871	2.833	5.2	22.0
1 2	6 45.57	+26 17.0	1.585	2.567	1.3	20.3	1 2	6 45.61	+33 0.8	1.874	2.847	3.4	21.9
1 12	6 34.01	+26 18.6	1.594	2.560	5.2	20.6	1 12	6 33.81	+33 16.3	1.907	2.861	5.8	22.0
1 22	6 23.81	+26 13.1	1.632	2.553	9.7	20.8	1 22	6 23.47	+33 18.1	1.968	2.875	9.2	22.3
2 1	6 16.10	+26 2.2	1.694	2.546	13.7	21.1	2 1	6 15.57	+33 8.9	2.055	2.887	12.4	22.5
323926	2005 <i>TZ</i> ₁₁₅		1 1.8 92°41'	2°6'	1.4 18		460814	2014 <i>WC</i> ₅₃		1 1.8 140°06'	0°1'	1.8 18	
11 23	7 17.37	+28 58.1	1.923	2.693	15.6	21.3	11 23	7 14.78	+21 49.3	2.129	2.893	14.5	21.8
12 3	7 13.03	+29 22.2	1.843	2.701	12.5	21.1	12 3	7 10.58	+22 0.1	2.041	2.897	11.6	21.6
12 13	7 5.80	+29 45.9	1.784	2.709	8.8	20.9	12 13	7 3.91	+22 15.1	1.975	2.900	8.1	21.4
12 23	6 56.30	+30 5.0	1.750	2.716	4.9	20.7	12 23	6 55.32	+22 32.0	1.935	2.904	4.1	21.1
1 2	6 45.60	+30 15.6	1.745	2.724	2.6	20.6	1 2	6 45.66	+22 48.8	1.924	2.908	0.1	20.8
1 12	6 35.02	+30 15.8	1.769	2.731	5.4	20.8	1 12	6 36.03	+23 3.6	1.943	2.911	4.2	21.1
1 22	6 25.83	+30 6.0	1.821	2.738	9.2	21.0	1 22	6 27.49	+23 15.3	1.991	2.914	8.1	21.4
2 1	6 19.03	+29 48.3	1.899	2.746	12.7	21.2	2 1	6 20.92	+23 24.0	2.066	2.917	11.6	21.6
298942	2004 <i>TY</i> ₂₅₃		1 1.8 190°56'	1°3'	1.6 18		30855	1991 <i>VQ</i> ₉		1 1.8 114°14'	0°7'	1.9 18	
11 23	7 20.00	+25 11.3	2.006	2.766	15.4	21.8	11 23	7 19.22	+20 8.7	1.619	2.391	18.0	20.5
12 3	7 15.05	+25 32.1	1.912	2.765	12.3	21.6	12 3	7 14.77	+20 16.6	1.544	2.403	14.4	20.3
12 13	7 7.22	+25 55.4	1.839	2.763	8.6	21.3	12 13	7 7.16	+20 31.3	1.489	2.415	10.1	20.0
12 23	6 57.08	+26 17.9	1.793	2.761	4.5	21.1	12 23	6 57.06	+20 50.5	1.458	2.427	5.2	19.8
1 2	6 45.59	+26 35.9	1.776	2.758	1.3	20.8	1 2	6 45.63	+21 11.3	1.455	2.438	0.7	19.5
1 12	6 34.05	+26 46.9	1.789	2.754	4.9	21.1	1 12	6 34.36	+21 31.0	1.481	2.449	5.2	19.8
1 22	6 23.77	+26 50.4	1.831	2.749	9.0	21.3	1 22	6 24.65	+21 48.2	1.534	2.460	9.9	20.1
2 1	6 15.77	+26 47.8	1.899	2.744	12.7	21.5	2 1	6 17.58	+22 2.9	1.612	2.470	14.0	20.4
201406	2002 <i>VZ</i> ₉₇		1 1.8 358°79'	0°5'	1.7 18		433728	2015 <i>AB</i> ₇₇		1 1.8 0°94'	0°0'	1.8 18	
11 23	7 10.22	+22 52.7	1.747	2.534	16.3	20.1	11 23	7 14.06	+24 12.9	1.951	2.724	15.3	20.8
12 3	7 7.63	+23 8.1	1.662	2.531	13.0	19.9	12 3	7 10.26	+23 56.3	1.862	2.723	12.2	20.6
12 13	7 2.23	+23 28.1	1.598	2.530	9.1	19.6	12 13	7 3.81	+23 40.4	1.795	2.723	8.5	20.3
12 23	6 54.58	+23 50.3	1.558	2.528	4.6	19.4	12 23	6 55.29	+23 23.7	1.753	2.723	4.3	20.1
1 2	6 45.65	+24 11.7	1.545	2.528	0.5	19.1	1 2	6 45.66	+23 5.0	1.740	2.723	0.1	19.7
1 12	6 36.72	+24 29.9	1.560	2.529	4.9	19.4	1 12	6 36.13	+22 44.1	1.756	2.724	4.5	20.1
1 22	6 29.04	+24 43.4	1.602	2.531	9.3	19.7	1 22	6 27.83	+22 21.8	1.800	2.725	8.7	20.3
2 1	6 23.64	+24 52.4	1.669	2.533	13.2	19.9	2 1	6 21.67	+21 59.3	1.869	2.726	12.4	20.6
512293	2016 <i>GW</i> ₂₂₅		1 1.8 219°05'	4°9'	31.1 17		32130	2000 <i>LN</i> ₁₆		1 1.8 143°10'	7°0'	3.4 18	
11 23	7 18.73	+41 42.4	3.420	4.142	10.3	23.0	11 23	7 12.64	+3 36.0	2.075	2.798	16.1	18.9
12 3	7 13.22	+42 31.1	3.316	4.130	8.6	22.9	12 3	7 8.76	+2 54.3	1.990	2.801	13.6	18.7
12 13	7 5.52	+43 14.5	3.236	4.118	6.9	22.7	12 13	7 2.58	+2 26.7	1.925	2.805	10.9	18.5
12 23	6 56.09	+43 48.3	3.183	4.105	5.4	22.6	12 23	6 54.63	+2 16.3	1.884	2.808	8.4	18.4
1 2	6 45.62	+44 8.7	3.159	4.092	5.0	22.6	1 2	6 45.68	+2 24.9	1.869	2.811	7.1	18.3
1 12	6 35.05	+44 13.9	3.166	4.078	5.9	22.6	1 12	6 36.75	+2 52.0	1.882	2.814	7.9	18.4
1 22	6 25.30	+44 3.9	3.202	4.063	7.6	22.7	1 22	6 28.81	+3 35.2	1.923	2.816	10.1	18.5
2 1	6 17.17	+43 40.9	3.265	4.048	9.4	22.8	2 1	6 22.67	+4 30.3	1.988	2.819	12.8	18.7
142611	2002 <i>TT</i> ₁₃₅		1 1.8 177°23'	7°2'	31.8 18		377055	2002 <i>TK</i> ₂₅₆		1 1.8 45°59'	7°7'	31.2 18	
11 23	7 24.34	+41 45.1	2.036	2.781	15.7	20.1							

EPHEMERIDES

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
101290	1998 <i>SO</i> ₁₂₅		1.8	72°85	1.4/ 1.5	18	522064	2015 <i>XU</i> ₄₁₇		1.8	201°74	1.9/ 1.9	18
11 23	7 18.09	+24 16.3	1.669	2.446	17.4	20.1	11 23	7 15.68	+18 35.6	2.453	3.200	13.2	21.4
12 3	7 13.81	+24 48.2	1.602	2.465	13.8	19.9	12 3	7 10.88	+18 5.6	2.353	3.197	10.7	21.3
12 13	7 6.42	+25 24.1	1.555	2.484	9.6	19.7	12 13	7 3.91	+17 38.4	2.275	3.193	7.6	21.1
12 23	6 56.65	+25 59.8	1.534	2.503	4.9	19.4	12 23	6 55.27	+17 14.2	2.225	3.189	4.2	20.8
1 2	6 45.65	+26 31.0	1.540	2.522	1.4	19.2	1 2	6 45.71	+16 52.9	2.204	3.184	1.9	20.7
1 12	6 34.88	+26 54.5	1.575	2.541	5.2	19.5	1 12	6 36.17	+16 34.8	2.215	3.179	4.3	20.8
1 22	6 25.70	+27 9.3	1.637	2.560	9.6	19.8	1 22	6 27.55	+16 20.1	2.256	3.173	7.6	21.0
2 1	6 19.12	+27 16.8	1.724	2.578	13.4	20.1	2 1	6 20.62	+16 8.9	2.324	3.167	10.8	21.2
341384	2007 <i>TB</i> ₁₂₄		1.8	104°95	1.1/ 2.1	18	172394	2003 <i>AL</i> ₇₈		1.8	272°53	1.9/ 1.1	18
11 23	7 12.05	+18 54.3	2.427	3.183	13.1	21.4	11 23	7 13.39	+25 32.2	2.476	3.236	12.8	19.7
12 3	7 8.04	+18 56.3	2.338	3.188	10.5	21.2	12 3	7 9.38	+26 28.1	2.380	3.234	10.2	19.5
12 13	7 1.94	+19 3.3	2.271	3.193	7.3	21.0	12 13	7 3.08	+27 27.9	2.307	3.231	7.1	19.3
12 23	6 54.26	+19 14.1	2.232	3.199	3.9	20.8	12 23	6 54.96	+28 27.9	2.261	3.228	3.9	19.1
1 2	6 45.70	+19 27.6	2.222	3.204	1.1	20.6	1 2	6 45.72	+29 24.0	2.246	3.225	1.9	18.9
1 12	6 37.18	+19 42.3	2.242	3.209	3.9	20.8	1 12	6 36.35	+30 12.6	2.261	3.222	4.5	19.1
1 22	6 29.57	+19 57.2	2.291	3.213	7.3	21.1	1 22	6 27.83	+30 51.8	2.306	3.219	7.7	19.3
2 1	6 23.59	+20 11.7	2.368	3.218	10.3	21.3	2 1	6 21.03	+31 21.5	2.378	3.216	10.8	19.5
502484	2015 <i>BX</i> ₃₅₄		1.8	303°72	2.7/ 2.0	18	235251	2003 <i>SU</i> ₃₂₀		1.8	12°68	2.7/ 1.4	18
11 23	7 12.17	+17 13.6	2.194	2.953	14.2	20.5	11 23	7 10.83	+27 37.7	1.393	2.198	18.8	20.4
12 3	7 8.49	+16 35.6	2.087	2.938	11.6	20.2	12 3	7 8.86	+28 3.3	1.326	2.205	15.0	20.2
12 13	7 2.49	+16 1.2	2.003	2.923	8.3	20.0	12 13	7 3.44	+28 30.0	1.278	2.213	10.5	19.9
12 23	6 54.63	+15 31.1	1.945	2.907	4.9	19.8	12 23	6 55.30	+28 53.2	1.253	2.223	5.7	19.7
1 2	6 45.69	+15 6.0	1.915	2.893	2.7	19.6	1 2	6 45.71	+29 8.2	1.254	2.234	2.7	19.5
1 12	6 36.67	+14 46.5	1.915	2.878	4.9	19.7	1 12	6 36.34	+29 12.5	1.280	2.246	6.2	19.8
1 22	6 28.57	+14 32.6	1.944	2.863	8.5	19.9	1 22	6 28.71	+29 6.1	1.332	2.260	10.8	20.1
2 1	6 22.25	+14 24.5	1.998	2.849	12.0	20.1	2 1	6 23.94	+28 51.6	1.406	2.275	14.9	20.4
217251	2003 <i>UM</i> ₂₅		1.8	131°43	2.8/ 2.2	18	451068	2009 <i>AR</i> ₂₅		1.8	40°63	1.4/ 2.1	17
11 23	7 23.01	+16 37.4	1.781	2.531	17.4	20.7	11 23	7 15.02	+18 25.8	1.361	2.153	19.9	21.4
12 3	7 17.24	+16 12.0	1.705	2.550	14.0	20.5	12 3	7 12.02	+18 35.6	1.292	2.162	15.9	21.2
12 13	7 8.56	+15 53.3	1.651	2.568	10.0	20.3	12 13	7 5.57	+18 55.5	1.241	2.172	11.2	20.9
12 23	6 57.66	+15 41.3	1.622	2.585	5.7	20.1	12 23	6 56.38	+19 23.5	1.214	2.183	5.9	20.7
1 2	6 45.64	+15 35.5	1.622	2.601	2.8	19.9	1 2	6 45.70	+19 56.4	1.212	2.194	1.4	20.4
1 12	6 33.89	+15 35.2	1.653	2.616	5.5	20.1	1 12	6 35.18	+20 30.5	1.236	2.206	5.7	20.7
1 22	6 23.65	+15 39.6	1.711	2.629	9.6	20.4	1 22	6 26.38	+21 3.0	1.287	2.218	10.8	21.1
2 1	6 15.87	+15 48.0	1.796	2.642	13.3	20.7	2 1	6 20.45	+21 32.5	1.360	2.230	15.3	21.4
109571	2001 <i>QV</i> ₂₆₈		1.8	125°93	0.2/ 1.9	18	375612	2008 <i>WY</i> ₄₁		1.8	23°57	1.5/ 1.5	18
11 23	7 16.81	+19 36.1	2.172	2.926	14.5	19.9	11 23	7 12.98	+25 54.0	1.824	2.606	15.9	20.7
12 3	7 12.08	+20 12.5	2.089	2.939	11.6	19.7	12 3	7 9.65	+26 12.7	1.747	2.613	12.7	20.4
12 13	7 4.91	+20 55.8	2.029	2.952	8.0	19.6	12 13	7 3.52	+26 33.1	1.691	2.621	8.8	20.2
12 23	6 55.83	+21 43.3	1.996	2.964	4.1	19.3	12 23	6 55.21	+26 52.1	1.660	2.629	4.6	20.0
1 2	6 45.69	+22 31.6	1.993	2.976	0.2	19.0	1 2	6 45.72	+27 6.5	1.656	2.638	1.5	19.8
1 12	6 35.59	+23 17.3	2.020	2.987	4.2	19.4	1 12	6 36.36	+27 14.1	1.681	2.647	5.0	20.1
1 22	6 26.57	+23 58.3	2.077	2.998	8.0	19.6	1 22	6 28.34	+27 14.6	1.733	2.657	9.0	20.3
2 1	6 19.51	+24 33.7	2.162	3.008	11.3	19.9	2 1	6 22.60	+27 9.3	1.810	2.667	12.7	20.6
3544	<i>Borodino</i>		1.8	153°45	3.3/ 2.6	18 R	63875	2001 <i>RY</i> ₁₃₅		1.8	7°70	0.2/ 1.8	18
11 23	7 17.22	+12 27.4	2.128	2.867	15.2	17.2	11 23	7 10.99	+22 5.6	1.914	2.693	15.4	18.7
12 3	7 12.34	+12 24.0	2.041	2.876	12.4	17.0	12 3	7 7.94	+22 23.9	1.829	2.694	12.2	18.5
12 13	7 5.05	+12 30.5	1.976	2.885	9.1	16.8	12 13	7 2.29	+22 47.2	1.766	2.696	8.5	18.3
12 23	6 55.88	+12 47.1	1.936	2.893	5.6	16.6	12 23	6 54.59	+23 13.2	1.728	2.698	4.3	18.0
1 2	6 45.69	+13 12.6	1.926	2.900	3.3	16.5	1 2	6 45.74	+23 38.9	1.718	2.701	0.3	17.7
1 12	6 35.53	+13 45.4	1.947	2.907	5.1	16.6	1 12	6 36.90	+24 2.1	1.737	2.705	4.5	18.1
1 22	6 26.45	+14 23.0	1.996	2.912	8.6	16.8	1 22	6 29.22	+24 21.1	1.783	2.709	8.7	18.3
2 1	6 19.28	+15 3.2	2.072	2.917	11.8	17.0	2 1	6 23.62	+24 35.8	1.854	2.714	12.3	18.5
451466	2011 <i>UM</i> ₂₂		1.8	40°52	1.6/ 1.9	18	422485	2014 <i>SB</i> ₃₃₆		1.8	179°03	2.4/ 2.3	18
11 23	7 16.41	+20 46.1	1.450	2.237	19.1	20.9	11 23	7 14.92	+15 41.2	2.122	2.875	14.9	21.9
12 3	7 12.88	+20 19.9	1.376	2.244	15.3	20.7	12 3	7 10.65	+15 32.5	2.030	2.876	12.0	21.7
12 13	7 6.02	+19 57.9	1.322	2.252	10.7	20.4	12 13	7 3.96	+15 31.1	1.959	2.876	8.6	21.4
12 23	6 56.54	+19 39.5	1.291	2.260	5.7	20.2	12 23	6 55.38	+15 36.8	1.914	2.877	5.0	21.2
1 2	6 45.68	+19 24.0	1.286	2.268	1.6	19.9	1 2	6 45.72	+15 48.8	1.898	2.877	2.5	21.1
1 12	6 35.04	+19 11.0	1.308	2.277	5.7	20.2	1 12	6 36.07	+16 5.9	1.912	2.876	4.8	21.2
1 22	6 26.08	+19 0.7	1.357	2.286	10.6	20.5	1 22	6 27.44	+16 26.4	1.955	2.875	8.4	21.4
2 1	6 19.91	+18 53.3	1.429	2.295	14.9	20.8	2 1	6 20.71	+16 49.3	2.024	2.874	11.9	21.6
13292	1998 <i>QT</i> ₉₀		1.8	174°23	2.1/ 1.3	18	419492	2010 <i>ES</i> ₇₅		1.8	327°33	6.4/ 3.1	18
11 23	7 18.28	+27 0.9	2.057	2.820	15.0	18.5	11 23	7 9.68	+ 5 43.4	2.121	2.856	15.4	21.0
12 3	7 13.65	+27 34.7	1.968	2.822	12.0	18.3	12 3	7 6.49	+ 5 2.3	2.027	2.849	13.0	20.8
12 13	7 6.24	+28 10.3	1.900	2.824	8.4	18.1	12 13	7 1.08	+ 4 33.4	1.953	2.843	10.3	20.6
12 23	6 56.60	+28 43.8	1.859	2.825	4.6	17.9	12 23	6 53.93	+ 4 19.6	1.904	2.837	7.7	20.4
1 2	6 45.68	+29 10.8	1.847	2.826	2.1	17.7	1 2	6 45.76	+ 4 22.5	1.881	2.831	6.4	20.3
1 12	6 34.74	+29 28.7	1.864	2.826	5.1	17.9	1 12	6 37.54	+ 4 42.1	1.886	2.825	7.3	20.4
1 22	6 25.03	+29 36.7	1.911	2.826	8.9	18.2	1 22	6 30.20	+ 5 16.5	1.918	2.819	9.8	20.5
2 1	6 17.54	+29 36.2	1.983	2.826	12.4	18.4	2 1	6 24.58	+ 6 2.4	1.975	2.814	12.6	20.7
235092	2003 <i>HA</i> ₅₈		1.8	207°78	0.4/ 1.7	18	298957	2005 <i>MK</i> ₉		1.8	130°90	2.6/ 2.6	18
11 23	7 18.73	+21 3.5	2.044	2.801	15.2	21.2	11						

EPHEMERIDES

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
286627	2002 <i>EZ</i> ₁₇		1.8 131°49	3°2/ 2.5 18			30765	1981 <i>EJ</i> ₄₈		1.8 7°52 29°9/25.7 17			
11 23	7 16.97	+14 8.3	1.831	2.587	16.8	21.1	11 23	7 4.41	+71 36.6	0.705	1.484	34.5	17.1
12 3	7 12.55	+13 57.9	1.750	2.597	13.6	20.9	12 3	7 18.31	+74 19.8	0.694	1.485	33.7	17.1
12 13	7 5.41	+13 57.4	1.690	2.606	9.9	20.7	12 13	7 18.99	+76 2.8	0.691	1.491	32.8	17.0
12 23	6 56.15	+14 6.6	1.655	2.615	5.9	20.4	12 23	7 5.58	+76 32.3	0.693	1.502	31.8	17.0
1 2	6 45.73	+14 24.6	1.647	2.624	3.2	20.3	1 2	6 45.55	+75 34.3	0.703	1.517	31.0	17.1
1 12	6 35.40	+14 49.8	1.669	2.632	5.5	20.5	1 12	6 30.35	+73 9.6	0.722	1.537	30.3	17.1
1 22	6 26.33	+15 19.8	1.719	2.639	9.4	20.7	1 22	6 24.90	+69 35.0	0.751	1.561	29.9	17.2
2 1	6 19.48	+15 52.5	1.794	2.647	13.0	20.9	2 1	6 28.20	+65 12.4	0.792	1.588	30.0	17.4
239078	2006 <i>GX</i> ₃₆		1.8 279°59	1°0/ 1.6 18			4523	MIT		1.8 306°85	6°8/ 2.5 18		
11 23	7 13.84	+24 36.5	2.175	2.942	14.1	21.1	11 23	7 11.75	+ 8 24.6	1.784	2.538	17.3	17.1
12 3	7 9.93	+24 56.9	2.083	2.940	11.3	20.9	12 3	7 8.70	+ 7 25.1	1.687	2.523	14.5	16.9
12 13	7 3.55	+25 19.9	2.013	2.939	7.9	20.7	12 13	7 2.97	+ 6 36.0	1.609	2.509	11.4	16.6
12 23	6 55.21	+25 43.0	1.969	2.938	4.1	20.5	12 23	6 55.05	+ 6 0.8	1.554	2.496	8.3	16.4
1 2	6 45.75	+26 3.1	1.954	2.936	1.0	20.2	1 2	6 45.80	+ 5 42.8	1.526	2.482	6.8	16.3
1 12	6 36.28	+26 18.2	1.969	2.935	4.4	20.5	1 12	6 36.40	+ 5 43.0	1.525	2.469	8.1	16.3
1 22	6 27.85	+26 27.5	2.013	2.934	8.2	20.7	1 22	6 28.06	+ 6 0.4	1.549	2.456	11.2	16.5
2 1	6 21.38	+26 31.4	2.082	2.932	11.6	20.9	2 1	6 21.80	+ 6 32.1	1.597	2.443	14.7	16.7
280445	2004 <i>BJ</i> ₁₂₅		1.8 216°33	0°4/ 1.7 18			520871	2014 <i>WO</i> ₂₀₇		1.8 123°61	1°7/ 1.5 18		
11 23	7 12.83	+23 7.5	2.332	3.095	13.4	21.3	11 23	7 17.79	+26 44.8	2.280	3.037	13.9	22.2
12 3	7 8.90	+23 24.5	2.239	3.095	10.7	21.1	12 3	7 12.81	+27 11.7	2.200	3.052	11.0	22.0
12 13	7 2.71	+23 44.7	2.169	3.095	7.4	20.9	12 13	7 5.37	+27 39.5	2.143	3.066	7.7	21.8
12 23	6 54.74	+24 5.9	2.126	3.095	3.8	20.6	12 23	6 56.07	+28 5.0	2.113	3.079	4.1	21.6
1 2	6 45.76	+24 25.9	2.111	3.095	0.5	20.4	1 2	6 45.78	+28 24.8	2.112	3.093	1.7	21.5
1 12	6 36.78	+24 42.7	2.127	3.094	4.0	20.7	1 12	6 35.61	+28 37.0	2.143	3.105	4.4	21.7
1 22	6 28.75	+24 55.4	2.172	3.094	7.6	20.9	1 22	6 26.60	+28 41.4	2.202	3.118	7.9	21.9
2 1	6 22.49	+25 4.0	2.244	3.094	10.9	21.1	2 1	6 19.58	+28 39.1	2.288	3.129	11.0	22.2
224855	2006 <i>YZ</i> ₂₀		1.8 105°44	1°2/ 1.6 18			276878	2004 <i>RW</i> ₂₄₀		1.8 58°48	2°2/ 1.5 18		
11 23	7 23.19	+23 35.6	1.558	2.330	18.6	20.8	11 23	7 16.36	+27 56.5	1.862	2.636	15.9	21.3
12 3	7 18.06	+24 8.3	1.492	2.352	14.8	20.6	12 3	7 12.28	+28 16.7	1.786	2.647	12.7	21.1
12 13	7 9.50	+24 46.0	1.446	2.373	10.3	20.3	12 13	7 5.32	+28 37.0	1.732	2.658	8.9	20.9
12 23	6 58.28	+25 24.0	1.424	2.393	5.2	20.1	12 23	6 56.13	+28 53.5	1.703	2.670	4.8	20.7
1 2	6 45.70	+25 57.2	1.431	2.413	1.2	19.9	1 2	6 45.78	+29 2.8	1.702	2.681	2.2	20.5
1 12	6 33.41	+26 22.2	1.466	2.432	5.5	20.2	1 12	6 35.61	+29 3.0	1.729	2.693	5.2	20.8
1 22	6 22.94	+26 37.9	1.529	2.451	10.2	20.5	1 22	6 26.85	+28 54.4	1.785	2.705	9.1	21.0
2 1	6 15.38	+26 46.0	1.617	2.469	14.2	20.8	2 1	6 20.48	+28 39.1	1.865	2.717	12.6	21.3
56020	1998 <i>VW</i> ₁₀		1.8 12°66	1°1/ 1.7 17			488033	2015 <i>UL</i> ₃₆		1.8 333°96	3°3/ 2.4 18		
11 23	7 12.23	+24 3.9	1.057	1.880	22.3	19.1	11 23	7 12.73	+14 59.1	1.347	2.138	20.1	20.9
12 3	7 10.93	+24 15.0	0.994	1.883	17.9	18.8	12 3	7 10.46	+14 53.6	1.263	2.131	16.4	20.6
12 13	7 5.45	+24 31.3	0.947	1.887	12.5	18.5	12 13	7 4.75	+15 0.9	1.196	2.124	11.9	20.3
12 23	6 56.54	+24 49.0	0.921	1.893	6.4	18.2	12 23	6 56.15	+15 21.6	1.152	2.118	6.9	20.1
1 2	6 45.73	+25 3.5	0.917	1.900	1.1	17.9	1 2	6 45.78	+15 54.2	1.133	2.112	3.3	19.8
1 12	6 35.14	+25 11.5	0.938	1.909	6.7	18.3	1 12	6 35.27	+16 35.4	1.140	2.107	6.5	20.0
1 22	6 26.73	+25 12.3	0.982	1.919	12.6	18.6	1 22	6 26.27	+17 21.6	1.171	2.103	11.6	20.3
2 1	6 21.89	+25 7.6	1.046	1.930	17.6	18.9	2 1	6 20.11	+18 9.2	1.225	2.099	16.3	20.5
456870	2007 <i>VQ</i> ₄₂		1.8 61°27	2°7/ 1.5 17			291461	2006 <i>DY</i> ₅₉		1.8 230°72	0°6/ 1.7 18		
11 23	7 22.71	+28 11.4	1.498	2.277	18.9	20.9	11 23	7 18.28	+23 51.9	1.875	2.642	16.1	21.8
12 3	7 17.61	+28 37.3	1.447	2.310	15.0	20.8	12 3	7 13.99	+24 2.8	1.776	2.633	12.9	21.6
12 13	7 9.04	+29 2.8	1.416	2.343	10.4	20.6	12 13	7 6.72	+24 16.9	1.698	2.624	9.1	21.4
12 23	6 57.93	+29 22.6	1.409	2.376	5.6	20.4	12 23	6 56.99	+24 31.5	1.645	2.614	4.7	21.1
1 2	6 45.71	+29 32.3	1.430	2.409	2.7	20.3	1 2	6 45.77	+24 43.6	1.620	2.603	0.7	20.7
1 12	6 34.09	+29 30.1	1.479	2.442	5.9	20.6	1 12	6 34.42	+24 50.7	1.626	2.593	5.0	21.0
1 22	6 24.51	+29 17.4	1.554	2.475	10.2	20.9	1 22	6 24.31	+24 52.4	1.659	2.581	9.5	21.3
2 1	6 17.93	+28 57.7	1.654	2.507	13.9	21.2	2 1	6 16.56	+24 49.6	1.718	2.570	13.5	21.5
451401	2011 <i>KT</i> ₁₂		1.8 132°09	4°1/ 2.9 18			85340	1995 <i>SV</i> ₄₂		1.8 292°25	0°3/ 1.8 18		
11 23	7 19.38	+ 9 44.2	2.046	2.775	16.1	22.3	11 23	7 11.95	+22 48.7	2.348	3.112	13.3	20.3
12 3	7 14.03	+ 9 45.1	1.967	2.794	13.1	22.2	12 3	7 8.31	+23 2.1	2.244	3.100	10.6	20.1
12 13	7 6.20	+ 9 58.5	1.910	2.812	9.8	22.0	12 13	7 2.39	+23 18.9	2.163	3.089	7.4	19.9
12 23	6 56.48	+10 24.7	1.879	2.829	6.3	21.8	12 23	6 54.65	+23 37.2	2.108	3.077	3.8	19.6
1 2	6 45.75	+11 2.4	1.876	2.845	4.1	21.7	1 2	6 45.82	+23 54.8	2.082	3.066	0.3	19.3
1 12	6 35.15	+11 49.2	1.904	2.860	5.6	21.8	1 12	6 36.89	+24 9.9	2.087	3.054	4.0	19.6
1 22	6 25.71	+12 41.8	1.962	2.875	8.9	22.1	1 22	6 28.84	+24 21.5	2.120	3.043	7.7	19.8
2 1	6 18.31	+13 37.1	2.046	2.888	12.1	22.3	2 1	6 22.53	+24 29.6	2.180	3.031	11.1	20.0
258071	2001 <i>OW</i> ₁₀₃		1.8 109°67	2°6/ 1.6 18			313576	2003 <i>ER</i> ₄		1.8 353°36	10°8/31.4 18		
11 23	7 22.54	+31 21.0	2.197	2.947	14.5	20.4	11 23	7 15.42	+42 54.5	1.312	2.104	20.4	19.7
12 3	7 16.52	+31 25.7	2.123	2.969	11.6	20.2	12 3	7 14.08	+44 15.3	1.241	2.097	17.4	19.5
12 13	7 7.86	+31 26.6	2.072	2.990	8.2	20.0	12 13	7 8.10	+45 25.9	1.187	2.090	14.3	19.3
12 23	6 57.25	+31 20.3	2.047	3.010	4.7	19.9	12 23	6 58.12	+46 14.8	1.154	2.085	11.7	19.1
1 2	6 45.75	+31 4.3	2.053	3.030	2.6	19.7	1 2	6 45.77	+46 31.1	1.143	2.082	10.9	19.1
1 12	6 34.58	+30 38.0	2.089	3.049	4.9	19.9	1 12	6 33.51	+46 9.9	1.155	2.080	12.4	19.1
1 22	6 24.87	+30 3.5	2.155	3.067	8.2	20.2	1 22	6 23.68	+45 14.8	1.189	2.079	15.3	19.3
2 1	6 17.43	+29 23.7	2.248	3.085	11.3	20.4	2 1	6 17.92	+43 54.9	1.243	2.080	18.6	19.5
278766	2008 <i>SY</i> ₁₄₃		1.8 284°90	0°0/ 1.8 18			397972	2009 <i>AY</i> ₃₃		1.8 65°37	1°9/ 1.5 17		
11 23	7 12.80	+22 33.3	2.200	2.965	14.0	21.0	11						

EPHEMERIDES

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
39984	1998 <i>HQ</i> ₁₈		1.8 201°26'	2°5/ 2.2 18			72900	2001 <i>KB</i> ₆₁		1.8 58°30'	5°0/ 2.7 18		
11 23	7 16.40	+17 9.8	1.811	2.575	16.7	19.6	11 23	7 12.25	+10 0.7	2.069	2.815	15.4	19.0
12 3	7 12.32	+16 49.8	1.721	2.574	13.5	19.4	12 3	7 8.44	+9 19.6	1.990	2.825	12.7	18.8
12 13	7 5.42	+16 36.3	1.651	2.572	9.7	19.2	12 13	7 2.37	+8 48.3	1.933	2.836	9.6	18.6
12 23	6 56.27	+16 29.2	1.606	2.570	5.5	18.9	12 23	6 54.59	+8 28.8	1.900	2.847	6.6	18.5
1 2	6 45.83	+16 28.2	1.588	2.568	2.5	18.7	1 2	6 45.91	+8 22.1	1.895	2.858	5.0	18.4
1 12	6 35.38	+16 32.3	1.600	2.565	5.3	18.9	1 12	6 37.35	+8 28.1	1.919	2.869	6.2	18.5
1 22	6 26.17	+16 40.5	1.640	2.562	9.6	19.1	1 22	6 29.83	+8 45.1	1.970	2.880	9.0	18.7
2 1	6 19.21	+16 52.0	1.704	2.559	13.4	19.4	2 1	6 24.13	+9 10.9	2.047	2.891	12.0	18.9
239319	2007 <i>RP</i> ₃₆		1.8 129°86'	0°8/ 1.7 18			222101	1999 <i>TR</i> ₂₀₄		1.8 86°29'	3°4/ 2.2 17		
11 23	7 20.44	+24 20.5	1.999	2.758	15.5	21.6	11 23	7 18.15	+16 44.7	1.401	2.181	19.9	20.5
12 3	7 15.17	+24 33.9	1.921	2.773	12.3	21.4	12 3	7 14.39	+16 10.5	1.326	2.188	16.2	20.3
12 13	7 7.16	+24 49.6	1.864	2.788	8.6	21.2	12 13	7 7.19	+15 44.4	1.270	2.195	11.6	20.0
12 23	6 57.04	+25 4.6	1.834	2.802	4.4	20.9	12 23	6 57.27	+15 27.0	1.237	2.202	6.7	19.8
1 2	6 45.82	+25 16.0	1.833	2.815	0.8	20.7	1 2	6 45.86	+15 18.4	1.231	2.209	3.4	19.6
1 12	6 34.77	+25 22.0	1.862	2.828	4.6	21.0	1 12	6 34.63	+15 18.0	1.251	2.216	6.5	19.8
1 22	6 25.08	+25 22.4	1.920	2.840	8.6	21.3	1 22	6 25.09	+15 24.8	1.297	2.223	11.3	20.1
2 1	6 17.66	+25 18.4	2.005	2.851	12.1	21.5	2 1	6 18.42	+15 37.4	1.366	2.229	15.6	20.4
178661	2000 <i>QC</i> ₆₅		1.8 169°26'	4°5/31.7 18			223289	2003 <i>HH</i> ₄₆		1.8 280°16'	7°3/31.0 18		
11 23	7 20.55	+36 11.9	2.657	3.397	12.5	20.7	11 23	7 20.64	+39 54.0	2.033	2.788	15.4	20.6
12 3	7 15.01	+37 0.3	2.568	3.402	10.2	20.6	12 3	7 16.56	+41 1.9	1.928	2.765	13.0	20.4
12 13	7 6.97	+37 44.9	2.503	3.406	7.7	20.4	12 13	7 9.00	+42 5.6	1.845	2.743	10.3	20.2
12 23	6 56.95	+38 20.9	2.464	3.410	5.4	20.3	12 23	6 58.41	+42 57.5	1.786	2.720	8.0	20.0
1 2	6 45.82	+38 43.8	2.456	3.413	4.5	20.2	1 2	6 45.84	+43 29.5	1.754	2.697	7.3	19.9
1 12	6 34.70	+38 51.5	2.478	3.415	5.9	20.3	1 12	6 32.90	+43 36.9	1.750	2.674	8.9	20.0
1 22	6 24.67	+38 44.3	2.529	3.417	8.3	20.5	1 22	6 21.32	+43 19.5	1.771	2.651	11.7	20.1
2 1	6 16.63	+38 24.7	2.607	3.418	10.8	20.6	2 1	6 12.51	+42 41.7	1.817	2.627	14.7	20.2
492973	2014 <i>SW</i> ₁₄₇		1.8 104°25'	6°8/31.2 18			426567	2013 <i>RU</i> ₉₇		1.8 101°19'	3°4/31.9 18		
11 23	7 22.27	+38 43.0	2.023	2.776	15.5	21.0	11 23	7 16.34	+30 49.9	2.264	3.025	13.8	21.1
12 3	7 17.34	+40 2.5	1.953	2.790	12.8	20.8	12 3	7 11.96	+31 40.2	2.182	3.034	11.1	20.9
12 13	7 9.11	+41 16.7	1.904	2.803	9.9	20.7	12 13	7 4.99	+32 30.1	2.123	3.042	8.0	20.7
12 23	6 58.20	+42 17.9	1.881	2.817	7.6	20.6	12 23	6 56.01	+33 14.9	2.091	3.051	4.9	20.5
1 2	6 45.80	+42 58.9	1.885	2.829	6.8	20.5	1 2	6 45.89	+33 50.1	2.088	3.060	3.5	20.5
1 12	6 33.49	+43 16.2	1.918	2.842	8.3	20.7	1 12	6 35.81	+34 12.7	2.115	3.068	5.5	20.6
1 22	6 22.76	+43 10.9	1.977	2.855	10.8	20.8	1 22	6 26.86	+34 22.5	2.171	3.077	8.5	20.8
2 1	6 14.79	+42 47.5	2.061	2.867	13.4	21.0	2 1	6 19.98	+34 21.1	2.252	3.085	11.5	21.0
489074	2006 <i>AP</i> ₁₉		1.8 353°23'	2°1/ 1.7 18			62913	2000 <i>UK</i> ₁₁₀		1.8 174°69'	3°3/ 2.5 18		
11 23	7 12.40	+27 48.4	1.093	1.914	21.8	20.4	11 23	7 13.35	+13 50.2	2.081	2.834	15.1	20.0
12 3	7 11.26	+27 44.5	1.019	1.907	17.6	20.1	12 3	7 9.47	+13 31.9	1.990	2.835	12.3	19.8
12 13	7 5.85	+27 39.3	0.962	1.902	12.5	19.8	12 13	7 3.20	+13 21.8	1.921	2.835	9.0	19.6
12 23	6 56.87	+27 28.8	0.926	1.897	6.7	19.4	12 23	6 55.08	+13 20.5	1.877	2.835	5.5	19.4
1 2	6 45.83	+27 9.2	0.913	1.895	2.2	19.1	1 2	6 45.91	+13 27.8	1.861	2.836	3.3	19.2
1 12	6 34.89	+26 39.3	0.923	1.893	7.0	19.4	1 12	6 36.74	+13 42.8	1.875	2.836	5.2	19.4
1 22	6 26.10	+26 1.4	0.957	1.893	12.9	19.7	1 22	6 28.59	+14 3.9	1.917	2.836	8.7	19.6
2 1	6 20.95	+25 20.0	1.011	1.895	18.1	20.0	2 1	6 22.30	+14 29.4	1.984	2.836	12.0	19.8
129001	2004 <i>TY</i> ₂₄₇		1.8 195°72'	0°8/ 1.5 18			430306	2013 <i>WS</i> ₁₀₇		1.8 56°71'	0°9/ 1.9 18		
11 23	7 15.80	+22 55.3	2.652	3.400	12.3	20.1	11 23	7 13.90	+21 23.2	2.270	3.030	13.8	20.5
12 3	7 11.06	+23 37.1	2.550	3.397	9.8	19.9	12 3	7 9.69	+21 1.5	2.179	3.033	11.0	20.3
12 13	7 4.16	+24 23.3	2.472	3.394	6.8	19.7	12 13	7 3.22	+20 41.8	2.112	3.035	7.7	20.1
12 23	6 55.53	+25 11.1	2.422	3.390	3.5	19.5	12 23	6 55.03	+20 23.5	2.070	3.038	4.0	19.9
1 2	6 45.87	+25 57.3	2.403	3.385	0.9	19.3	1 2	6 45.92	+20 6.1	2.059	3.041	0.9	19.6
1 12	6 36.08	+26 39.1	2.416	3.381	3.8	19.5	1 12	6 36.89	+19 49.6	2.077	3.044	4.1	19.9
1 22	6 27.08	+27 14.5	2.460	3.375	7.2	19.7	1 22	6 28.89	+19 34.1	2.124	3.047	7.7	20.1
2 1	6 19.69	+27 43.2	2.531	3.369	10.2	19.9	2 1	6 22.71	+19 20.2	2.198	3.050	11.0	20.3
369826	2012 <i>HZ</i> ₇₃		1.8 340°68'	1°8/ 1.5 18			410066	2007 <i>CT</i> ₂		1.8 65°32'	2°6/ 2.4 18		
11 23	7 14.26	+26 1.8	1.722	2.505	16.7	21.4	11 23	7 14.39	+15 28.8	1.803	2.568	16.7	21.2
12 3	7 11.07	+26 23.7	1.634	2.500	13.4	21.1	12 3	7 10.56	+15 24.6	1.728	2.581	13.4	21.0
12 13	7 4.81	+26 48.1	1.566	2.496	9.4	20.9	12 13	7 4.07	+15 29.7	1.674	2.595	9.6	20.8
12 23	6 56.06	+27 11.4	1.523	2.492	5.0	20.6	12 23	6 55.53	+15 43.5	1.645	2.608	5.5	20.6
1 2	6 45.85	+27 29.6	1.507	2.489	1.8	20.4	1 2	6 45.91	+16 4.6	1.643	2.622	2.6	20.5
1 12	6 35.61	+27 40.0	1.520	2.486	5.4	20.6	1 12	6 36.42	+16 31.0	1.670	2.635	5.1	20.6
1 22	6 26.73	+27 42.0	1.559	2.483	9.8	20.9	1 22	6 28.21	+17 0.5	1.725	2.649	9.1	20.9
2 1	6 20.33	+27 36.8	1.622	2.481	13.8	21.1	2 1	6 22.17	+17 31.3	1.805	2.663	12.7	21.2
490293	2008 <i>YR</i> ₁₃₅		1.8 164°92'	1°0/ 1.7 18			341324	2007 <i>TA</i> ₁₇		1.8 176°93'	3°6/31.9 18		
11 23	7 20.33	+25 54.9	1.836	2.602	16.4	21.7	11 23	7 15.69	+33 13.3	2.542	3.297	12.6	21.3
12 3	7 15.50	+25 53.8	1.749	2.606	13.1	21.5	12 3	7 11.23	+33 52.0	2.451	3.297	10.2	21.1
12 13	7 7.65	+25 53.2	1.683	2.609	9.2	21.2	12 13	7 4.38	+34 28.3	2.384	3.298	7.5	20.9
12 23	6 57.40	+25 50.1	1.643	2.612	4.8	21.0	12 23	6 55.67	+34 58.2	2.343	3.298	4.8	20.8
1 2	6 45.85	+25 41.9	1.631	2.614	1.0	20.7	1 2	6 45.91	+35 18.0	2.331	3.298	3.6	20.7
1 12	6 34.41	+25 27.5	1.649	2.616	5.0	21.0	1 12	6 36.14	+35 25.5	2.350	3.299	5.3	20.8
1 22	6 24.42	+25 7.8	1.695	2.617	9.4	21.3	1 22	6 27.39	+35 20.8	2.397	3.298	8.0	21.0
2 1	6 16.91	+24 44.9	1.767	2.618	13.2	21.5	2 1	6 20.52	+35 5.9	2.470	3.298	10.7	21.1
490197	2008 <i>UT</i> ₃₂₈		1.8 54°22'	4°7/ 1.2 18			420666	2012 <i>JZ</i> ₅₁		1.8 307°09'	0°7/ 1.7 18		
11 23	7 19.86	+31 3.5	1.380	2.171	19.7	21.							

EPHEMERIDES

1 1.8

1 1.9

2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
199746	2006 JZ ₁₁		1 1.8 268°30	0°7/ 1.7 18			494872	2008 GG ₈₁		1 1.8 164°38	3°9/31.7 18		
11 23	7 13.38	+22 25.8	2.238	3.001	13.9	20.0	11 23	7 18.59	+31 40.5	2.287	3.043	13.8	21.8
12 3	7 9.56	+22 59.8	2.142	2.998	11.1	19.8	12 3	7 13.85	+32 40.3	2.199	3.046	11.2	21.6
12 13	7 3.34	+23 38.9	2.069	2.995	7.7	19.6	12 13	7 6.42	+33 39.8	2.134	3.050	8.1	21.4
12 23	6 55.20	+24 20.5	2.023	2.991	3.9	19.4	12 23	6 56.81	+34 33.8	2.096	3.053	5.2	21.3
1 2	6 45.92	+25 1.1	2.005	2.988	0.7	19.1	1 2	6 45.93	+35 17.1	2.087	3.055	3.9	21.2
1 12	6 36.54	+25 38.0	2.018	2.985	4.2	19.4	1 12	6 34.99	+35 46.2	2.109	3.058	5.9	21.3
1 22	6 28.12	+26 9.1	2.060	2.982	8.0	19.6	1 22	6 25.16	+36 0.5	2.159	3.059	8.9	21.5
2 1	6 21.54	+26 34.0	2.129	2.978	11.4	19.8	2 1	6 17.46	+36 1.8	2.235	3.061	11.8	21.7
463457	2013 PX ₁₀		1 1.8 149°58	2°1/ 1.3 18			519128	2010 MX ₆₀		1 1.8 160°25	5°0/ 2.7 18		
11 23	7 16.65	+27 20.1	2.258	3.018	13.9	21.8	11 23	7 11.45	+ 7 33.5	2.706	3.427	12.7	21.7
12 3	7 12.12	+27 56.3	2.171	3.024	11.1	21.6	12 3	7 7.28	+ 6 46.6	2.614	3.430	10.6	21.5
12 13	7 5.07	+28 34.0	2.106	3.029	7.8	21.4	12 13	7 1.33	+ 6 8.0	2.545	3.432	8.3	21.4
12 23	6 56.04	+29 9.3	2.068	3.034	4.3	21.2	12 23	6 54.03	+ 5 39.6	2.501	3.435	6.1	21.2
1 2	6 45.90	+29 38.6	2.059	3.038	2.1	21.0	1 2	6 45.99	+ 5 22.8	2.487	3.437	5.0	21.2
1 12	6 35.77	+29 59.1	2.081	3.042	4.7	21.2	1 12	6 37.98	+ 5 18.1	2.502	3.439	5.8	21.2
1 22	6 26.73	+30 10.3	2.132	3.046	8.2	21.4	1 22	6 30.72	+ 5 24.6	2.546	3.441	7.9	21.4
2 1	6 19.68	+30 13.1	2.209	3.050	11.4	21.6	2 1	6 24.84	+ 5 40.8	2.616	3.442	10.3	21.5
463869	2014 UT ₃₂		1 1.8 82°69	2°4/ 2.4 18			147378	2003 EP ₂₂		1 1.8 262°31	1°8/ 1.5 17		
11 23	7 13.91	+15 46.4	1.977	2.737	15.6	21.7	11 23	7 17.32	+27 4.7	2.306	3.064	13.7	20.9
12 3	7 10.00	+15 42.2	1.895	2.745	12.6	21.5	12 3	7 12.90	+27 27.9	2.188	3.040	11.1	20.7
12 13	7 3.60	+15 46.2	1.834	2.754	9.0	21.3	12 13	7 5.85	+27 52.6	2.093	3.016	7.8	20.5
12 23	6 55.29	+15 57.9	1.799	2.762	5.1	21.1	12 23	6 56.60	+28 15.6	2.024	2.991	4.3	20.2
1 2	6 45.93	+16 16.2	1.792	2.771	2.4	20.9	1 2	6 45.95	+28 33.5	1.985	2.965	1.8	20.0
1 12	6 36.64	+16 39.3	1.814	2.779	4.8	21.1	1 12	6 35.01	+28 43.5	1.976	2.939	4.7	20.1
1 22	6 28.48	+17 5.4	1.864	2.787	8.6	21.4	1 22	6 24.98	+28 45.0	1.997	2.913	8.6	20.3
2 1	6 22.32	+17 32.8	1.941	2.796	12.1	21.6	2 1	6 16.88	+28 39.1	2.044	2.886	12.1	20.5
147715	2005 KO ₆		1 1.8 173°71	1°6/ 2.1 18			246303	2007 TB ₁₂₉		1 1.9 126°97	0°6/ 1.8 18		
11 23	7 16.54	+18 30.1	2.090	2.845	15.0	20.9	11 23	7 19.51	+23 35.5	1.947	2.708	15.7	22.2
12 3	7 12.02	+18 18.9	1.998	2.847	12.0	20.7	12 3	7 14.57	+23 49.8	1.868	2.722	12.5	22.0
12 13	7 4.99	+18 12.9	1.929	2.849	8.5	20.5	12 13	7 6.84	+24 7.1	1.810	2.735	8.7	21.8
12 23	6 56.01	+18 11.4	1.885	2.851	4.6	20.3	12 23	6 56.97	+24 24.7	1.779	2.747	4.4	21.5
1 2	6 45.93	+18 13.3	1.870	2.851	1.6	20.0	1 2	6 45.96	+24 39.6	1.776	2.759	0.6	21.3
1 12	6 35.88	+18 17.8	1.886	2.852	4.6	20.3	1 12	6 35.10	+24 49.7	1.804	2.771	4.6	21.6
1 22	6 26.93	+18 23.9	1.931	2.852	8.4	20.5	1 22	6 25.58	+24 54.6	1.861	2.782	8.7	21.9
2 1	6 19.96	+18 31.5	2.001	2.852	12.0	20.7	2 1	6 18.35	+24 55.2	1.943	2.792	12.3	22.1
501351	2013 YV ₁₉		1 1.8 295°34	3°9/ 1.8 18			492570	2014 OW ₁₆₀		1 1.9 196°95	3°4/ 1.3 18		
11 23	7 14.41	+14 54.9	2.344	3.089	13.8	20.0	11 23	7 20.44	+30 17.7	1.869	2.635	16.1	22.4
12 3	7 10.14	+13 49.0	2.228	3.067	11.4	19.8	12 3	7 15.87	+30 49.9	1.779	2.634	13.0	22.2
12 13	7 3.63	+12 45.3	2.136	3.046	8.5	19.5	12 13	7 8.13	+31 21.4	1.710	2.632	9.3	22.0
12 23	6 55.33	+11 45.6	2.070	3.024	5.5	19.3	12 23	6 57.79	+31 47.3	1.666	2.629	5.5	21.8
1 2	6 45.94	+10 52.3	2.034	3.002	3.9	19.2	1 2	6 45.95	+32 2.6	1.651	2.626	3.4	21.6
1 12	6 36.44	+10 7.3	2.028	2.981	5.7	19.3	1 12	6 34.09	+32 4.3	1.664	2.623	6.0	21.8
1 22	6 27.78	+ 9 31.9	2.052	2.959	8.8	19.4	1 22	6 23.67	+31 52.8	1.706	2.619	9.9	22.0
2 1	6 20.79	+ 9 6.5	2.101	2.938	12.0	19.6	2 1	6 15.83	+31 31.2	1.772	2.615	13.6	22.2
369059	2008 DC ₆₈		1 1.8 287°26	2°8/ 2.1 16			362499	2010 TK ₃₄		1 1.9 127°72	4°4/ 31.9 18		
11 23	7 14.39	+17 2.6	1.843	2.610	16.3	21.8	11 23	7 21.69	+33 36.4	2.175	2.928	14.6	22.2
12 3	7 10.96	+16 36.7	1.733	2.588	13.3	21.5	12 3	7 16.32	+34 27.7	2.099	2.943	11.8	22.1
12 13	7 4.70	+16 16.4	1.644	2.566	9.7	21.3	12 13	7 8.09	+35 16.3	2.045	2.957	8.6	21.9
12 23	6 56.07	+16 2.2	1.579	2.543	5.6	21.0	12 23	6 57.63	+35 56.6	2.018	2.971	5.6	21.7
1 2	6 45.93	+15 54.1	1.542	2.521	2.8	20.7	1 2	6 45.96	+36 23.4	2.019	2.985	4.4	21.7
1 12	6 35.52	+15 52.0	1.534	2.498	5.6	20.9	1 12	6 34.41	+36 34.2	2.051	2.997	6.2	21.8
1 22	6 26.14	+15 55.1	1.552	2.476	10.0	21.1	1 22	6 24.25	+36 29.5	2.111	3.009	9.1	22.0
2 1	6 18.93	+16 3.0	1.596	2.453	14.1	21.3	2 1	6 16.44	+36 12.4	2.197	3.021	12.0	22.2
457672	2009 DP ₄₉		1 1.8 308°48	3°6/ 2.5 17			350700	2001 WM ₃₆		1 1.9 78°43	2°3/ 1.4 17		
11 23	7 12.73	+14 33.4	1.533	2.312	18.5	21.6	11 23	7 21.32	+25 12.4	1.470	2.251	19.1	21.4
12 3	7 10.14	+14 17.8	1.437	2.298	15.2	21.3	12 3	7 16.91	+26 1.3	1.407	2.272	15.2	21.2
12 13	7 4.39	+14 13.0	1.361	2.284	11.1	21.1	12 13	7 8.93	+26 54.8	1.365	2.294	10.6	20.9
12 23	6 56.00	+14 19.9	1.307	2.270	6.7	20.8	12 23	6 58.16	+27 46.9	1.347	2.316	5.6	20.7
1 2	6 45.93	+14 38.2	1.279	2.256	3.6	20.5	1 2	6 45.95	+28 31.3	1.356	2.337	2.3	20.6
1 12	6 35.63	+15 6.3	1.278	2.243	6.4	20.7	1 12	6 34.04	+29 3.5	1.393	2.358	6.1	20.9
1 22	6 26.59	+15 41.4	1.303	2.230	11.0	20.9	1 22	6 24.01	+29 22.8	1.457	2.379	10.6	21.2
2 1	6 20.06	+16 20.7	1.351	2.218	15.5	21.1	2 1	6 17.00	+29 31.1	1.545	2.399	14.6	21.5
424297	2007 TH ₂₅₆		1 1.8 74°44	10°4/ 29.7 18			24564	6056 P-L		1 1.9 47°45	6°3/ 2.9 18		
11 23	7 27.52	+52 43.4	2.363	3.066	14.8	20.8	11 23	7 14.42	+ 9 55.3	1.464	2.233	19.7	18.6
12 3	7 22.27	+54 32.4	2.306	3.081	13.1	20.7	12 3	7 11.10	+ 9 6.6	1.397	2.245	16.3	18.4
12 13	7 13.05	+56 8.7	2.270	3.096	11.6	20.6	12 13	7 4.72	+ 8 31.6	1.348	2.258	12.4	18.2
12 23	7 0.46	+57 23.2	2.258	3.111	10.6	20.6	12 23	6 55.98	+ 8 13.3	1.322	2.271	8.5	18.0
1 2	6 45.86	+58 8.2	2.271	3.127	10.4	20.6	1 2	6 46.00	+ 8 13.2	1.320	2.285	6.3	17.9
1 12	6 31.23	+58 20.6	2.309	3.142	11.1	20.7	1 12	6 36.23	+ 8 30.6	1.346	2.299	7.9	18.0
1 22	6 18.53	+58 2.8	2.370	3.157	12.4	20.8	1 22	6 27.98	+ 9 2.3	1.396	2.313	11.4	18.2
2 1	6 9.21	+57 20.9	2.452	3.172	13.8	20.9	2 1	6 22.26	+ 9 44.4	1.470	2.328	15.0	18.5
144354	2004 DB ₄₁		1 1.8 279°48	1°0/ 2.1 18			332424	2007 RN ₃₁₀		1 1.9 53°21	7°0/ 4.7 18		
11 23	7 11.53	+18 40.7	2.429	3.186	13.1	19.8	11 23	7 11.64	+ 0 20.3	2.110</			

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
16930	Respighi		1 1.9	61°49	0°6/ 1.7	18	286703	2002 <i>GJ</i> ₃₁		1 1.9	233°31	0°3/ 1.9	18
11 23	7 13.41	+23 27.1	2.249	3.013	13.8	18.4	11 23	7 17.30	+20 57.8	1.908	2.673	15.9	21.6
12 3	7 9.36	+23 45.0	2.172	3.028	10.9	18.3	12 3	7 13.19	+21 11.9	1.808	2.663	12.8	21.4
12 13	7 3.03	+24 5.7	2.118	3.043	7.6	18.1	12 13	7 6.21	+21 32.0	1.728	2.654	9.0	21.1
12 23	6 54.98	+24 27.0	2.090	3.059	3.8	17.9	12 23	6 56.86	+21 55.9	1.675	2.643	4.7	20.8
1 2	6 46.03	+24 46.3	2.091	3.074	0.6	17.6	1 2	6 46.05	+22 20.7	1.649	2.632	0.3	20.5
1 12	6 37.20	+25 2.0	2.123	3.090	4.0	18.0	1 12	6 35.07	+22 43.8	1.653	2.621	4.8	20.8
1 22	6 29.43	+25 13.1	2.183	3.105	7.6	18.2	1 22	6 25.21	+23 3.6	1.686	2.609	9.3	21.0
2 1	6 23.51	+25 20.1	2.270	3.121	10.7	18.4	2 1	6 17.59	+23 19.7	1.744	2.597	13.3	21.3
463900	2014 <i>UT</i> ₁₀₈		1 1.9	114°11	0°9/ 2.0	18	238376	2004 <i>CN</i> ₈₆		1 1.9	277°26	1°9/ 2.4	18
11 23	7 15.54	+20 20.1	2.107	2.867	14.7	21.8	11 23	7 11.38	+16 3.7	2.391	3.144	13.4	20.7
12 3	7 11.18	+20 15.5	2.023	2.876	11.8	21.6	12 3	7 7.73	+16 5.6	2.290	3.137	10.8	20.5
12 13	7 4.37	+20 15.2	1.961	2.885	8.2	21.4	12 13	7 1.96	+16 14.5	2.211	3.130	7.7	20.3
12 23	6 55.69	+20 17.8	1.926	2.893	4.3	21.2	12 23	6 54.52	+16 30.0	2.159	3.122	4.4	20.0
1 2	6 46.02	+20 22.1	1.919	2.902	0.9	21.0	1 2	6 46.09	+16 50.9	2.136	3.115	1.9	19.8
1 12	6 36.44	+20 26.7	1.942	2.910	4.3	21.2	1 12	6 37.59	+17 15.8	2.143	3.108	4.2	20.0
1 22	6 28.00	+20 31.0	1.995	2.918	8.1	21.5	1 22	6 29.90	+17 42.9	2.179	3.101	7.6	20.2
2 1	6 21.52	+20 35.1	2.073	2.925	11.5	21.7	2 1	6 23.81	+18 11.1	2.241	3.094	10.8	20.4
458603	2011 <i>FH</i> ₄₄		1 1.9	110°05	5°6/ 3.2	18	204217	2004 <i>CB</i> ₈₀		1 1.9	330°91	1°7/ 2.3	18
11 23	7 11.77	+6 32.8	2.255	2.984	14.8	21.4	11 23	7 10.99	+16 51.3	2.124	2.887	14.5	19.9
12 3	7 7.95	+6 0.7	2.169	2.989	12.3	21.2	12 3	7 7.73	+16 57.6	2.028	2.881	11.7	19.6
12 13	7 2.02	+5 40.3	2.103	2.994	9.6	21.0	12 13	7 2.13	+17 11.5	1.953	2.875	8.3	19.4
12 23	6 54.47	+5 33.6	2.063	2.998	7.0	20.9	12 23	6 54.66	+17 32.3	1.904	2.870	4.6	19.2
1 2	6 46.04	+5 41.6	2.050	3.003	5.6	20.8	1 2	6 46.09	+17 58.6	1.883	2.864	1.7	19.0
1 12	6 37.62	+6 3.7	2.065	3.007	6.5	20.9	1 12	6 37.45	+18 28.3	1.892	2.859	4.4	19.2
1 22	6 30.11	+6 37.8	2.109	3.012	8.9	21.0	1 22	6 29.74	+18 59.4	1.929	2.854	8.2	19.4
2 1	6 24.25	+7 21.1	2.178	3.016	11.6	21.2	2 1	6 23.84	+19 30.4	1.992	2.850	11.7	19.6
445027	2008 <i>PO</i> ₈		1 1.9	79°91	3°0/ 1.7	17	83485	2001 <i>SY</i> ₉₅		1 1.9	246°18	1°7/ 1.5	18
11 23	7 25.34	+29 47.3	1.467	2.243	19.4	21.6	11 23	7 14.21	+27 43.3	2.495	3.254	12.7	20.7
12 3	7 19.98	+30 0.8	1.408	2.269	15.5	21.4	12 3	7 10.03	+27 59.4	2.395	3.247	10.2	20.5
12 13	7 10.92	+30 12.0	1.369	2.294	10.9	21.2	12 13	7 3.58	+28 15.6	2.318	3.241	7.2	20.3
12 23	6 59.08	+30 15.5	1.354	2.319	6.0	21.0	12 23	6 55.34	+28 29.2	2.267	3.234	3.9	20.1
1 2	6 45.97	+30 7.1	1.365	2.344	3.0	20.8	1 2	6 46.09	+28 37.6	2.247	3.227	1.7	19.9
1 12	6 33.45	+29 45.9	1.406	2.369	6.2	21.1	1 12	6 36.79	+28 39.2	2.257	3.220	4.2	20.1
1 22	6 23.10	+29 14.5	1.473	2.393	10.6	21.4	1 22	6 28.43	+28 33.9	2.296	3.213	7.5	20.3
2 1	6 15.95	+28 37.3	1.564	2.417	14.6	21.7	2 1	6 21.81	+28 22.8	2.362	3.205	10.6	20.5
334929	2004 <i>BP</i> ₄		1 1.9	245°74	2°5/ 2.6	18	219426	2000 <i>SL</i> ₃₆₈		1 1.9	57°29	1°2/ 1.8	18
11 23	7 11.42	+13 34.8	2.444	3.190	13.3	20.6	11 23	7 20.61	+27 51.4	1.718	2.490	17.1	19.8
12 3	7 7.66	+13 40.7	2.345	3.186	10.8	20.4	12 3	7 15.59	+27 31.9	1.654	2.513	13.6	19.6
12 13	7 1.84	+13 55.2	2.269	3.182	7.8	20.2	12 13	7 7.54	+27 10.2	1.610	2.537	9.5	19.4
12 23	6 54.42	+14 18.2	2.218	3.178	4.7	20.0	12 23	6 57.29	+26 43.9	1.592	2.560	4.9	19.2
1 2	6 46.05	+14 48.6	2.197	3.174	2.5	19.9	1 2	6 46.07	+26 11.6	1.602	2.584	1.2	19.0
1 12	6 37.61	+15 24.5	2.206	3.169	4.3	20.0	1 12	6 35.31	+25 33.8	1.641	2.608	4.9	19.3
1 22	6 29.97	+16 4.0	2.245	3.165	7.5	20.2	1 22	6 26.28	+24 52.7	1.708	2.632	9.2	19.6
2 1	6 23.87	+16 44.9	2.310	3.160	10.6	20.4	2 1	6 19.84	+24 11.5	1.801	2.656	12.8	19.9
305723	2009 <i>CT</i> ₂₈		1 1.9	265°52	0°2/ 1.9	18	327237	2005 <i>RK</i> ₄₆		1 1.9	263°70	5°0/ 3.2	18
11 23	7 16.17	+21 10.7	1.755	2.528	16.8	21.4	11 23	7 12.79	+8 26.8	1.968	2.711	16.2	21.3
12 3	7 12.59	+21 22.5	1.655	2.516	13.5	21.2	12 3	7 9.24	+8 14.8	1.875	2.708	13.4	21.1
12 13	7 5.97	+21 40.5	1.576	2.503	9.5	20.9	12 13	7 3.23	+8 16.2	1.803	2.705	10.2	20.9
12 23	6 56.79	+22 2.6	1.521	2.490	4.9	20.6	12 23	6 55.24	+8 32.4	1.755	2.703	7.0	20.7
1 2	6 46.01	+22 25.8	1.494	2.477	0.2	20.2	1 2	6 46.09	+9 3.6	1.735	2.700	5.0	20.6
1 12	6 35.03	+22 47.3	1.495	2.464	5.1	20.6	1 12	6 36.88	+9 47.9	1.743	2.697	6.3	20.6
1 22	6 25.24	+23 5.4	1.524	2.450	9.9	20.8	1 22	6 28.66	+10 42.2	1.779	2.694	9.5	20.8
2 1	6 17.86	+23 19.9	1.578	2.437	14.1	21.0	2 1	6 22.35	+11 42.6	1.840	2.691	12.8	21.0
429338	2010 <i>FO</i> ₁₂		1 1.9	15°45	4°7/ 1.1	18	399410	2001 <i>TP</i> ₁₉₉		1 1.9	53°44	4°8/ 3.1	17
11 23	7 16.29	+35 25.4	2.127	2.890	14.5	20.9	11 23	7 15.34	+10 29.6	1.573	2.335	18.9	20.8
12 3	7 12.26	+36 1.4	2.043	2.892	11.8	20.7	12 3	7 11.49	+10 13.9	1.514	2.361	15.4	20.6
12 13	7 5.40	+36 33.0	1.980	2.894	8.8	20.5	12 13	7 4.78	+10 12.7	1.474	2.386	11.4	20.4
12 23	6 56.33	+36 55.2	1.944	2.896	6.0	20.3	12 23	6 55.95	+10 26.8	1.458	2.412	7.3	20.3
1 2	6 46.03	+37 3.6	1.935	2.898	4.7	20.2	1 2	6 46.09	+10 55.1	1.468	2.438	4.8	20.2
1 12	6 35.81	+36 56.0	1.954	2.901	6.4	20.4	1 12	6 36.53	+11 35.1	1.506	2.465	6.5	20.3
1 22	6 26.91	+36 33.6	2.001	2.904	9.3	20.5	1 22	6 28.47	+12 22.9	1.570	2.491	10.1	20.6
2 1	6 20.31	+35 59.5	2.074	2.907	12.3	20.7	2 1	6 22.78	+13 14.6	1.659	2.518	13.6	20.9
54050	2000 <i>GE</i> ₁₂₆		1 1.9	227°18	4°2/ 2.8	18	139318	2001 <i>KD</i> ₂₆		1 1.9	199°43	2°3/ 1.4	18
11 23	7 11.26	+8 31.3	2.844	3.566	12.2	19.6	11 23	7 19.05	+28 19.5	2.319	3.073	13.7	21.1
12 3	7 7.18	+8 4.0	2.737	3.556	10.1	19.4	12 3	7 14.09	+28 48.7	2.220	3.069	11.0	20.9
12 13	7 1.32	+7 44.8	2.653	3.546	7.8	19.2	12 13	7 6.54	+29 18.5	2.144	3.065	7.8	20.6
12 23	6 54.10	+7 35.0	2.595	3.535	5.5	19.1	12 23	6 56.92	+29 45.1	2.095	3.060	4.4	20.4
1 2	6 46.07	+7 35.5	2.567	3.524	4.3	19.0	1 2	6 46.08	+30 4.8	2.076	3.054	2.3	20.3
1 12	6 37.98	+7 46.1	2.568	3.513	5.2	19.0	1 12	6 35.16	+30 15.2	2.087	3.048	4.8	20.4
1 22	6 30.53	+8 5.6	2.599	3.501	7.5	19.1	1 22	6 25.31	+30 16.0	2.128	3.041	8.3	20.6
2 1	6 24.37	+8 32.6	2.657	3.489	9.9	19.3	2 1	6 17.47	+30 8.6	2.196	3.033	11.5	20.8
313886	2004 <i>HO</i> ₄₆		1 1.9	306°59	1°8/ 1.5	16	90656	2399 <i>T</i> ₋₃		1 1.9	160°96	2°4/ 2.2	18
11 23	7 15.05	+25 41.2	1.707	2.489	16.8	21.5							

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
109233	2001 QV ₉₃		1.9 104°85	2°5/ 1.6 18	R		47500	2000 AX ₅₀		1.9 72°15	2°3/ 1.5 18		
11 23	7 17.62	+31 49.8	2.656	3.405	12.3	19.2	11 23	7 17.87	+26 47.4	1.681	2.460	17.2	19.6
12 3	7 12.34	+31 55.7	2.577	3.421	9.8	19.1	12 3	7 13.94	+27 20.5	1.606	2.469	13.7	19.4
12 13	7 4.91	+31 58.1	2.521	3.437	7.0	18.9	12 13	7 6.83	+27 55.8	1.551	2.478	9.6	19.2
12 23	6 55.89	+31 54.4	2.492	3.453	4.1	18.7	12 23	6 57.17	+28 28.7	1.520	2.488	5.2	18.9
1 2	6 46.11	+31 42.5	2.493	3.469	2.5	18.7	1 2	6 46.13	+28 54.5	1.517	2.497	2.3	18.8
1 12	6 36.54	+31 21.9	2.526	3.484	4.3	18.8	1 12	6 35.21	+29 10.0	1.542	2.507	5.6	19.0
1 22	6 28.05	+30 53.7	2.588	3.499	7.1	19.0	1 22	6 25.82	+29 14.8	1.595	2.516	9.9	19.3
2 1	6 21.37	+30 20.1	2.678	3.513	9.8	19.2	2 1	6 19.08	+29 10.9	1.672	2.526	13.7	19.5
463335	2012 LO ₁₇		1.9 268°96	1°9/ 2.4 17			293606	2007 KL		1.9 124°85	3°1/ 1.4 17		
11 23	7 13.50	+15 55.9	2.088	2.846	14.9	21.7	11 23	7 23.61	+29 37.9	1.812	2.575	16.7	21.5
12 3	7 9.87	+16 7.7	1.983	2.832	12.1	21.5	12 3	7 18.23	+30 8.5	1.738	2.591	13.4	21.3
12 13	7 3.74	+16 28.6	1.899	2.819	8.7	21.2	12 13	7 9.63	+30 38.3	1.685	2.606	9.5	21.1
12 23	6 55.56	+16 57.8	1.841	2.806	4.9	21.0	12 23	6 58.53	+31 2.2	1.657	2.621	5.4	20.9
1 2	6 46.11	+17 33.7	1.812	2.792	1.9	20.8	1 2	6 46.12	+31 15.2	1.658	2.635	3.1	20.8
1 12	6 36.47	+18 13.7	1.812	2.778	4.6	20.9	1 12	6 33.95	+31 15.3	1.689	2.648	5.8	21.0
1 22	6 27.73	+18 55.2	1.841	2.765	8.6	21.1	1 22	6 23.42	+31 3.1	1.747	2.661	9.7	21.3
2 1	6 20.86	+19 36.3	1.896	2.751	12.3	21.3	2 1	6 15.59	+30 42.0	1.831	2.673	13.3	21.5
467050	2016 DR ₃		1.9 58°89	6°5/ 3.7 18			374339	2005 UP ₆		1.9 183°30	16°2/ 28.3 16		
11 23	7 12.54	+ 4 46.7	1.903	2.637	17.0	21.3	11 23	7 36.81	+50 35.2	1.329	2.076	22.4	20.8
12 3	7 9.03	+ 4 24.6	1.819	2.641	14.3	21.1	12 3	7 33.61	+53 25.9	1.269	2.077	20.0	20.6
12 13	7 3.05	+ 4 18.4	1.755	2.645	11.2	20.9	12 13	7 23.73	+56 6.0	1.226	2.077	17.8	20.5
12 23	6 55.13	+ 4 30.6	1.715	2.649	8.3	20.8	12 23	7 7.21	+58 15.7	1.204	2.077	16.4	20.4
1 2	6 46.12	+ 5 2.0	1.701	2.654	6.6	20.7	1 2	6 46.00	+59 35.0	1.203	2.076	16.4	20.4
1 12	6 37.12	+ 5 50.8	1.715	2.658	7.5	20.7	1 12	6 24.15	+59 54.1	1.223	2.075	17.7	20.4
1 22	6 29.18	+ 6 53.3	1.756	2.663	10.1	20.9	1 22	6 6.08	+59 17.8	1.262	2.074	19.8	20.6
2 1	6 23.19	+ 8 4.8	1.822	2.667	13.2	21.1	2 1	5 54.64	+58 1.3	1.318	2.072	22.1	20.7
280725	2005 GV ₁₈₀		1.9 126°77	4°4/ 2.9 18			202324	2005 EG ₆₈		1.9 296°88	2°9/ 2.3 18		
11 23	7 11.38	+ 8 45.0	2.512	3.242	13.4	20.7	11 23	7 11.96	+15 34.7	2.148	2.906	14.6	20.5
12 3	7 7.43	+ 8 20.3	2.423	3.247	11.1	20.6	12 3	7 8.53	+15 10.8	2.040	2.889	11.9	20.3
12 13	7 1.56	+ 8 5.2	2.357	3.253	8.4	20.4	12 13	7 2.74	+14 52.9	1.955	2.872	8.6	20.0
12 23	6 54.25	+ 8 0.9	2.316	3.258	5.9	20.3	12 23	6 55.03	+14 41.7	1.894	2.855	5.2	19.8
1 2	6 46.15	+ 8 7.9	2.303	3.264	4.4	20.2	1 2	6 46.17	+14 37.4	1.862	2.839	2.9	19.6
1 12	6 38.07	+ 8 25.6	2.321	3.269	5.5	20.2	1 12	6 37.16	+14 39.5	1.860	2.822	5.0	19.7
1 22	6 30.80	+ 8 52.3	2.367	3.274	7.9	20.4	1 22	6 29.04	+14 47.5	1.885	2.806	8.7	19.9
2 1	6 25.02	+ 9 25.9	2.440	3.278	10.5	20.6	2 1	6 22.70	+15 0.2	1.936	2.790	12.2	20.1
196295	2003 EP ₆₁		1.9 341°27	0°3/ 1.8 18			414793	2010 RR ₁₃₈		1.9 91°80	14°7/ 3.8 17		
11 23	7 15.36	+21 20.4	1.376	2.170	19.6	20.3	11 23	8 3.01	+66 0.9	2.039	2.666	18.9	21.2
12 3	7 12.72	+21 47.0	1.294	2.167	15.7	20.0	12 3	7 53.35	+67 20.5	1.994	2.686	17.5	21.2
12 13	7 6.47	+22 22.6	1.230	2.163	11.1	19.7	12 13	7 35.87	+68 17.7	1.964	2.706	16.1	21.1
12 23	6 57.21	+23 3.8	1.190	2.161	5.7	19.4	12 23	7 12.14	+68 37.8	1.953	2.726	15.2	21.1
1 2	6 46.11	+23 45.8	1.175	2.158	0.4	19.0	1 2	6 45.97	+68 9.6	1.962	2.745	14.7	21.1
1 12	6 34.90	+24 23.9	1.187	2.156	5.9	19.4	1 12	6 22.23	+66 52.2	1.992	2.764	14.9	21.1
1 22	6 25.30	+24 55.2	1.224	2.154	11.3	19.7	1 22	6 4.35	+64 55.0	2.044	2.783	15.7	21.2
2 1	6 18.69	+25 19.3	1.284	2.153	16.0	20.0	2 1	5 53.46	+62 32.2	2.117	2.801	16.7	21.4
180533	2004 DO ₇₀		1.9 358°52	0°3/ 1.9 18			238977	2006 BL ₁₈₀		1.9 278°07	2°3/ 2.4 18		
11 23	7 13.90	+21 24.8	1.541	2.329	18.1	20.6	11 23	7 15.22	+15 51.1	1.585	2.359	18.2	21.3
12 3	7 11.04	+21 32.0	1.458	2.327	14.5	20.4	12 3	7 12.11	+15 59.1	1.489	2.348	14.9	21.0
12 13	7 4.97	+21 45.2	1.395	2.326	10.2	20.1	12 13	7 5.82	+16 18.7	1.413	2.337	10.7	20.8
12 23	6 56.30	+22 2.4	1.355	2.325	5.2	19.8	12 23	6 56.84	+16 49.5	1.360	2.326	6.0	20.5
1 2	6 46.13	+22 20.6	1.342	2.325	0.3	19.4	1 2	6 46.16	+17 29.2	1.334	2.314	2.3	20.2
1 12	6 35.95	+22 37.3	1.356	2.326	5.3	19.8	1 12	6 35.23	+18 14.5	1.335	2.303	5.7	20.4
1 22	6 27.23	+22 51.0	1.397	2.327	10.2	20.1	1 22	6 25.54	+19 1.6	1.364	2.292	10.6	20.6
2 1	6 21.13	+23 1.6	1.461	2.328	14.6	20.4	2 1	6 18.38	+19 48.0	1.416	2.281	15.1	20.9
170790	2004 DY ₄		1.9 270°31	6°5/ 30.9 18			26051	3200 T- ₂		1.9 94°91	0°2/ 1.9 18		
11 23	7 18.43	+41 26.1	2.497	3.239	13.2	20.4	11 23	7 14.36	+21 2.8	2.184	2.945	14.2	19.6
12 3	7 14.04	+42 30.5	2.400	3.227	11.1	20.2	12 3	7 10.24	+21 16.0	2.100	2.954	11.3	19.5
12 13	7 6.79	+43 29.5	2.326	3.215	8.9	20.1	12 13	7 3.76	+21 33.8	2.039	2.963	7.9	19.3
12 23	6 57.18	+44 16.9	2.277	3.203	7.1	19.9	12 23	6 55.47	+21 54.3	2.004	2.972	4.0	19.0
1 2	6 46.12	+44 46.9	2.257	3.191	6.6	19.9	1 2	6 46.18	+22 15.3	1.998	2.981	0.3	18.7
1 12	6 34.89	+44 56.2	2.264	3.178	7.7	19.9	1 12	6 36.95	+22 34.8	2.022	2.990	4.1	19.1
1 22	6 24.80	+44 45.3	2.298	3.166	9.9	20.1	1 22	6 28.79	+22 51.6	2.075	2.999	7.8	19.3
2 1	6 16.93	+44 17.1	2.357	3.153	12.2	20.2	2 1	6 22.50	+23 5.5	2.155	3.007	11.1	19.5
99932	2000 VO ₃₄		1.9 3°94	0°1/ 1.9 18			311050	2004 BO ₁₄₃		1.9 83°88	0°6/ 1.8 18		
11 23	7 16.92	+21 58.8	1.243	2.043	20.9	18.8	11 23	7 18.28	+22 39.8	1.751	2.522	16.9	21.0
12 3	7 14.27	+22 10.5	1.166	2.042	16.9	18.5	12 3	7 13.91	+23 6.8	1.680	2.539	13.4	20.8
12 13	7 7.70	+22 29.7	1.108	2.042	11.9	18.2	12 13	7 6.58	+23 38.8	1.630	2.557	9.3	20.6
12 23	6 57.87	+22 53.2	1.072	2.043	6.1	17.9	12 23	6 56.97	+24 12.4	1.606	2.575	4.7	20.4
1 2	6 46.11	+23 16.7	1.060	2.043	0.2	17.4	1 2	6 46.16	+24 43.6	1.609	2.592	0.7	20.1
1 12	6 34.36	+23 36.4	1.074	2.044	6.3	17.9	1 12	6 35.54	+25 9.6	1.642	2.609	4.9	20.5
1 22	6 24.48	+23 50.8	1.113	2.045	12.0	18.2	1 22	6 26.38	+25 29.0	1.703	2.626	9.2	20.8
2 1	6 17.90	+24 0.2	1.174	2.047	16.9	18.5	2 1	6 19.67	+25 42.2	1.789	2.643	12.9	21.0
51096	2000 HP ₇		1.9 94°50	3°7/ 2.8 18	R		79425	1997 OA ₁		1.9 176°66	1°9/ 1.6 18		
11 23	7 12.08	+10 58.8	2.382	3.121	13.8	18.9	11 23	7 18.75	+27 39.0	2.110	2.871	14.7	20.3

EPHEMERIDES

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
61341	2000 <i>PC</i> ₃		1.9 181°86	3°0/ 1.5 18			305022	2007 <i>TK</i> ₃₈₃		1.9 291°75	3°9/ 2.4 18		
11 23	7 21.71	+29 57.2	1.846	2.610	16.4	20.2	11 23	7 14.64	+14 49.1	1.648	2.419	17.8	21.0
12 3	7 16.89	+30 21.2	1.757	2.611	13.2	20.0	12 3	7 11.37	+14 15.0	1.555	2.409	14.6	20.8
12 13	7 8.86	+30 44.2	1.690	2.612	9.4	19.7	12 13	7 5.12	+13 48.9	1.481	2.400	10.7	20.5
12 23	6 58.25	+31 1.3	1.648	2.612	5.4	19.5	12 23	6 56.41	+13 32.2	1.430	2.391	6.6	20.3
1 2	6 46.16	+31 8.1	1.634	2.611	3.1	19.4	1 2	6 46.23	+13 25.6	1.407	2.382	3.9	20.1
1 12	6 34.11	+31 2.1	1.650	2.610	5.8	19.5	1 12	6 35.93	+13 28.8	1.410	2.373	6.3	20.2
1 22	6 23.56	+30 44.2	1.693	2.608	9.9	19.8	1 22	6 26.88	+13 40.8	1.441	2.364	10.6	20.4
2 1	6 15.63	+30 17.4	1.762	2.606	13.6	20.0	2 1	6 20.20	+13 59.8	1.495	2.355	14.7	20.7
81221	2000 <i>FY</i> ₂₁		1.9 172°30	1°7/ 2.4 18 R			159057	2004 <i>TL</i> ₁₄₄		1.9 39°93	1°7/ 1.6 18		
11 23	7 12.61	+15 29.1	2.430	3.179	13.3	19.6	11 23	7 15.05	+25 54.2	1.885	2.660	15.7	19.9
12 3	7 8.64	+15 46.5	2.335	3.179	10.7	19.4	12 3	7 11.37	+26 20.7	1.803	2.665	12.5	19.7
12 13	7 2.57	+16 12.2	2.263	3.180	7.7	19.2	12 13	7 4.88	+26 49.5	1.743	2.671	8.8	19.4
12 23	6 54.86	+16 44.9	2.217	3.181	4.3	19.0	12 23	6 56.17	+27 17.1	1.708	2.677	4.6	19.2
1 2	6 46.21	+17 23.1	2.201	3.181	1.7	18.8	1 2	6 46.23	+27 39.8	1.702	2.683	1.7	19.0
1 12	6 37.50	+18 4.4	2.216	3.182	4.0	19.0	1 12	6 36.35	+27 54.9	1.724	2.689	5.0	19.3
1 22	6 29.62	+18 46.6	2.260	3.182	7.4	19.2	1 22	6 27.75	+28 1.9	1.774	2.696	9.0	19.5
2 1	6 23.34	+19 27.9	2.332	3.182	10.5	19.4	2 1	6 21.43	+28 1.7	1.849	2.703	12.6	19.7
378150	2006 <i>VY</i> ₁₁₄		1.9 116°12	7°2/31.2 17			489268	2006 <i>SB</i> ₂₂		1.9 128°99	2°9/ 1.5 18		
11 23	7 23.64	+39 40.1	1.986	2.736	15.8	21.5	11 23	7 21.01	+30 22.9	2.073	2.831	15.0	22.4
12 3	7 18.67	+41 0.2	1.914	2.748	13.1	21.4	12 3	7 15.80	+30 47.2	1.994	2.844	12.0	22.2
12 13	7 10.24	+42 14.5	1.864	2.760	10.3	21.2	12 13	7 7.77	+31 9.9	1.936	2.856	8.6	22.0
12 23	6 59.00	+43 14.7	1.838	2.771	8.0	21.1	12 23	6 57.57	+31 26.5	1.905	2.868	5.0	21.8
1 2	6 46.16	+43 53.5	1.841	2.782	7.2	21.1	1 2	6 46.22	+31 33.3	1.903	2.879	2.9	21.7
1 12	6 33.40	+44 7.1	1.871	2.792	8.6	21.2	1 12	6 35.05	+31 28.6	1.931	2.890	5.3	21.9
1 22	6 22.29	+43 56.9	1.928	2.802	11.1	21.4	1 22	6 25.26	+31 13.2	1.988	2.900	8.8	22.1
2 1	6 14.07	+43 27.8	2.008	2.812	13.8	21.5	2 1	6 17.81	+30 49.7	2.070	2.910	12.0	22.3
160751	2000 <i>SC</i> ₈₃		1.9 188°67	2°4/ 1.5 18			492971	2014 <i>SL</i> ₁₄₄		1.9 106°86	14°1/ 8.1 18		
11 23	7 21.61	+28 46.2	2.076	2.832	15.1	21.1	11 23	7 14.64	-22 8.0	2.392	2.947	17.7	21.9
12 3	7 16.43	+29 9.9	1.982	2.832	12.1	20.9	12 3	7 10.18	-23 47.2	2.339	2.965	16.6	21.8
12 13	7 8.35	+29 33.5	1.910	2.830	8.6	20.7	12 13	7 3.56	-25 1.8	2.301	2.982	15.6	21.7
12 23	6 57.93	+29 52.8	1.864	2.828	4.8	20.4	12 23	6 55.33	-25 45.8	2.280	3.000	14.7	21.7
1 2	6 46.18	+30 3.8	1.847	2.826	2.5	20.3	1 2	6 46.26	-25 55.1	2.278	3.016	14.2	21.7
1 12	6 34.41	+30 4.3	1.861	2.822	5.2	20.4	1 12	6 37.28	-25 29.0	2.296	3.033	14.2	21.7
1 22	6 23.91	+29 54.4	1.904	2.818	9.0	20.7	1 22	6 29.30	-24 30.3	2.333	3.049	14.6	21.8
2 1	6 15.74	+29 36.5	1.972	2.813	12.5	20.9	2 1	6 23.04	-23 4.6	2.390	3.064	15.3	21.9
194037	2001 <i>SW</i> ₈₄		1.9 175°98	1°9/ 2.2 18			410579	2008 <i>GT</i> ₁₀₃		1.9 341°57	14°2/ 3.9 18		
11 23	7 19.27	+17 55.0	1.841	2.599	16.6	21.6	11 23	7 7.25	- 4 8.3	1.399	2.137	21.9	20.7
12 3	7 14.63	+17 46.1	1.751	2.602	13.4	21.4	12 3	7 5.91	- 5 53.4	1.320	2.123	19.6	20.5
12 13	7 7.12	+17 43.7	1.683	2.603	9.6	21.1	12 13	7 1.55	- 7 16.9	1.256	2.111	17.3	20.3
12 23	6 57.31	+17 47.1	1.639	2.605	5.2	20.9	12 23	6 54.68	- 8 9.5	1.211	2.099	15.2	20.2
1 2	6 46.20	+17 55.1	1.624	2.605	1.9	20.7	1 2	6 46.26	- 8 23.2	1.186	2.089	14.2	20.1
1 12	6 35.09	+18 6.1	1.639	2.605	5.1	20.9	1 12	6 37.67	- 7 55.1	1.182	2.080	14.7	20.1
1 22	6 25.25	+18 18.9	1.682	2.604	9.4	21.1	1 22	6 30.32	- 6 48.3	1.199	2.072	16.5	20.2
2 1	6 17.71	+18 32.9	1.750	2.603	13.3	21.4	2 1	6 25.38	- 5 10.8	1.235	2.066	19.1	20.3
242410	2004 <i>GB</i> ₁₂		1.9 313°93	10°3/ 6.1 18			455181	2000 <i>DX</i> ₉₀		1.9 267°25	1°6/ 1.7 18		
11 23	7 10.31	- 9 39.0	2.296	2.950	16.3	20.1	11 23	7 17.36	+26 34.4	1.882	2.653	15.9	21.8
12 3	7 6.98	-10 8.7	2.198	2.938	14.7	20.0	12 3	7 13.47	+26 47.5	1.780	2.639	12.8	21.5
12 13	7 1.53	-10 17.1	2.118	2.926	13.0	19.8	12 13	7 6.57	+27 1.8	1.699	2.625	9.1	21.3
12 23	6 54.39	- 9 59.5	2.058	2.914	11.4	19.7	12 23	6 57.17	+27 14.2	1.643	2.611	4.8	21.0
1 2	6 46.23	- 9 13.2	2.022	2.902	10.4	19.6	1 2	6 46.24	+27 20.9	1.615	2.597	1.6	20.7
1 12	6 37.95	- 7 58.3	2.012	2.891	10.5	19.6	1 12	6 35.15	+27 19.9	1.617	2.582	5.2	20.9
1 22	6 30.44	- 6 18.6	2.028	2.879	11.7	19.6	1 22	6 25.27	+27 10.9	1.646	2.568	9.6	21.2
2 1	6 24.52	- 4 20.2	2.068	2.869	13.6	19.7	2 1	6 17.77	+26 55.8	1.700	2.553	13.6	21.4
215252	2001 <i>MB</i> ₁₂		1.9 157°35	1°9/ 1.4 18			333033	2011 <i>SO</i> ₆₆		1.9 103°21	1°5/ 2.2 16		
11 23	7 18.48	+25 50.9	2.208	2.965	14.2	21.2	11 23	7 19.80	+18 53.6	1.760	2.523	17.1	21.8
12 3	7 13.70	+26 35.5	2.119	2.971	11.4	21.0	12 3	7 14.95	+18 48.8	1.689	2.542	13.7	21.7
12 13	7 6.32	+27 23.1	2.054	2.977	8.0	20.8	12 13	7 7.22	+18 50.3	1.638	2.561	9.6	21.4
12 23	6 56.86	+28 9.8	2.016	2.982	4.3	20.6	12 23	6 57.31	+18 56.8	1.613	2.579	5.1	21.2
1 2	6 46.22	+28 51.2	2.007	2.987	1.9	20.4	1 2	6 46.28	+19 6.5	1.615	2.597	1.5	21.0
1 12	6 35.53	+29 24.2	2.029	2.991	4.7	20.6	1 12	6 35.49	+19 17.7	1.647	2.615	4.9	21.3
1 22	6 25.95	+29 47.3	2.080	2.995	8.3	20.9	1 22	6 26.16	+19 29.4	1.708	2.632	9.2	21.6
2 1	6 18.42	+30 1.4	2.158	2.998	11.6	21.1	2 1	6 19.23	+19 41.0	1.793	2.648	12.9	21.8
282496	2004 <i>PW</i> ₄₀		1.9 86°18	1°4/ 2.2 18			318121	2004 <i>KL</i> ₁₄		1.9 224°64	4°8/ 2.9 16		
11 23	7 20.69	+17 51.8	1.611	2.377	18.3	21.0	11 23	7 14.23	+ 8 4.1	2.431	3.154	14.0	22.3
12 3	7 15.82	+18 4.8	1.548	2.403	14.6	20.8	12 3	7 9.94	+ 7 40.9	2.324	3.144	11.6	22.1
12 13	7 7.88	+18 26.6	1.505	2.429	10.2	20.6	12 13	7 3.54	+ 7 27.9	2.239	3.132	9.0	21.9
12 23	6 57.62	+18 55.1	1.487	2.454	5.4	20.4	12 23	6 55.43	+ 7 26.6	2.180	3.120	6.3	21.7
1 2	6 46.21	+19 27.1	1.497	2.479	1.4	20.1	1 2	6 46.30	+ 7 37.9	2.149	3.108	4.8	21.6
1 12	6 35.12	+19 59.5	1.536	2.504	5.1	20.5	1 12	6 37.04	+ 8 1.1	2.148	3.095	5.9	21.7
1 22	6 25.65	+20 30.2	1.603	2.528	9.6	20.8	1 22	6 28.55	+ 8 34.6	2.176	3.081	8.6	21.8
2 1	6 18.78	+20 58.0	1.694	2.551	13.4	21.1	2 1	6 21.61	+ 9 15.9	2.231	3.067	11.4	22.0
348124	2004 <i>BY</i> ₂		1.9 249°76	3°1/ 1.5 18			465496	2008 <i>TX</i> ₁₆₇		1.9 263°08	2°4/ 2.3 18		
11 23	7 19.78	+30 58.4	1.999	2.762									

EPHEMERIDES

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
101296	1998 SE ₁₂₇		1 1.9	43°26	4°0/ 1.2	18	351771	2006 EX ₅₅		1 1.9	255°31	0°5/ 2.0	18
11 23	7 18.18	+28 54.7	1.388	2.182	19.5	19.2	11 23	7 17.66	+21 29.8	1.735	2.507	17.0	22.0
12 3	7 14.83	+29 49.4	1.330	2.201	15.5	19.0	12 3	7 13.86	+21 27.6	1.635	2.494	13.7	21.7
12 13	7 7.76	+30 45.4	1.291	2.220	11.0	18.8	12 13	7 6.95	+21 29.9	1.556	2.482	9.7	21.5
12 23	6 57.78	+31 35.5	1.275	2.241	6.4	18.6	12 23	6 57.45	+21 35.2	1.501	2.469	5.1	21.2
1 2	6 46.29	+32 12.9	1.286	2.262	4.0	18.5	1 2	6 46.34	+21 41.0	1.473	2.456	0.5	20.8
1 12	6 35.12	+32 33.5	1.323	2.283	7.0	18.7	1 12	6 35.05	+21 45.7	1.475	2.443	5.2	21.1
1 22	6 25.92	+32 37.7	1.385	2.305	11.2	19.0	1 22	6 25.01	+21 48.4	1.503	2.430	10.0	21.4
2 1	6 19.86	+32 29.0	1.470	2.327	15.1	19.3	2 1	6 17.43	+21 49.6	1.557	2.416	14.3	21.6
466053	2011 QF ₂₃		1 1.9	94°01	15°3/ 9.1	16 C	459952	2014 ND ₅₁		1 1.9	56°13	1°6/ 2.3	16
11 23	7 29.12	-13 57.3	1.388	2.033	25.7	22.5	11 23	7 16.58	+17 46.4	1.539	2.317	18.6	21.7
12 3	7 22.45	-14 59.1	1.348	2.074	23.0	22.4	12 3	7 12.81	+17 54.4	1.475	2.337	14.8	21.5
12 13	7 12.38	-15 24.6	1.321	2.114	20.1	22.3	12 13	7 5.96	+18 11.7	1.431	2.358	10.4	21.3
12 23	6 59.85	-15 6.3	1.311	2.153	17.4	22.3	12 23	6 56.75	+18 36.5	1.411	2.379	5.6	21.1
1 2	6 46.28	-14 0.9	1.323	2.190	15.7	22.3	1 2	6 46.35	+19 5.9	1.418	2.400	1.6	20.9
1 12	6 33.36	-12 12.8	1.358	2.225	15.4	22.3	1 12	6 36.21	+19 37.0	1.453	2.421	5.2	21.2
1 22	6 22.52	-9 52.7	1.417	2.258	16.4	22.5	1 22	6 27.64	+20 7.3	1.514	2.443	9.7	21.5
2 1	6 14.73	-7 14.0	1.499	2.290	18.2	22.7	2 1	6 21.65	+20 35.6	1.600	2.464	13.7	21.8
330134	2005 YJ ₁₂₆		1 1.9	97°20	1°3/ 1.6	18	254664	2005 KA ₁₃		1 1.9	131°09	6°2/ 3.4	18
11 23	7 15.89	+24 51.8	2.059	2.826	14.8	21.6	11 23	7 15.35	+4 48.5	2.219	2.934	15.3	21.0
12 3	7 11.77	+25 21.3	1.976	2.833	11.8	21.4	12 3	7 10.79	+4 12.8	2.138	2.947	12.9	20.9
12 13	7 5.03	+25 53.8	1.915	2.841	8.2	21.2	12 13	7 4.05	+3 50.1	2.079	2.960	10.2	20.7
12 23	6 56.24	+26 26.1	1.880	2.848	4.3	20.9	12 23	6 55.66	+3 42.7	2.045	2.972	7.6	20.6
1 2	6 46.31	+26 54.5	1.874	2.856	1.3	20.7	1 2	6 46.39	+3 51.6	2.038	2.984	6.2	20.5
1 12	6 36.41	+27 16.5	1.897	2.863	4.6	21.0	1 12	6 37.20	+4 16.1	2.060	2.995	7.0	20.6
1 22	6 27.69	+27 31.0	1.949	2.870	8.4	21.2	1 22	6 28.99	+4 54.0	2.110	3.006	9.3	20.7
2 1	6 21.06	+27 38.8	2.027	2.877	11.8	21.4	2 1	6 22.52	+5 41.8	2.186	3.016	11.9	20.9
108922	2001 PU ₁₆		1 1.9	50°53	8°4/ 3.7	18	246345	Carolharris		1 1.9	194°40	0°5/ 2.0	18
11 23	7 10.95	-0 11.9	2.200	2.906	15.7	19.7	11 23	7 12.96	+21 1.6	2.798	3.547	11.7	21.4
12 3	7 7.36	-1 17.7	2.124	2.915	13.6	19.5	12 3	7 8.66	+20 58.7	2.699	3.546	9.4	21.2
12 13	7 1.68	-2 8.7	2.068	2.924	11.3	19.4	12 13	7 2.47	+20 58.5	2.623	3.544	6.5	21.0
12 23	6 54.43	-2 41.0	2.035	2.934	9.4	19.3	12 23	6 54.84	+21 0.0	2.575	3.542	3.4	20.8
1 2	6 46.33	-2 51.9	2.027	2.944	8.4	19.3	1 2	6 46.40	+21 2.1	2.556	3.539	0.5	20.6
1 12	6 38.30	-2 40.9	2.047	2.953	8.9	19.3	1 12	6 37.95	+21 4.1	2.569	3.537	3.4	20.8
1 22	6 31.19	-2 10.2	2.092	2.963	10.5	19.4	1 22	6 30.27	+21 5.4	2.613	3.534	6.5	21.0
2 1	6 25.72	-1 23.6	2.161	2.974	12.6	19.6	2 1	6 24.03	+21 6.2	2.684	3.530	9.4	21.2
411404	2010 VF ₁₂₀		1 1.9	11°94	1°9/ 2.2	18	106265	2000 UX ₆₂		1 1.9	38°27	1°6/ 1.8	17
11 23	7 12.11	+18 37.6	1.448	2.240	18.8	20.8	11 23	7 17.87	+26 16.5	1.300	2.098	20.3	19.4
12 3	7 9.68	+18 28.1	1.373	2.243	15.2	20.6	12 3	7 14.69	+26 20.5	1.236	2.110	16.2	19.2
12 13	7 4.06	+18 26.5	1.316	2.247	10.7	20.3	12 13	7 7.73	+26 25.7	1.190	2.123	11.3	18.9
12 23	6 55.90	+18 32.0	1.283	2.252	5.8	20.1	12 23	6 57.81	+26 28.2	1.167	2.137	5.9	18.6
1 2	6 46.31	+18 43.2	1.275	2.257	1.9	19.8	1 2	6 46.37	+26 24.5	1.169	2.151	1.6	18.4
1 12	6 36.82	+18 58.1	1.294	2.264	5.6	20.1	1 12	6 35.28	+26 12.8	1.197	2.166	6.0	18.7
1 22	6 28.83	+19 14.9	1.339	2.271	10.4	20.4	1 22	6 26.20	+25 54.4	1.251	2.181	11.1	19.1
2 1	6 23.46	+19 32.4	1.407	2.279	14.7	20.7	2 1	6 20.30	+25 32.1	1.327	2.197	15.6	19.4
72150	2000 YO ₉₃		1 1.9	126°50	1°0/ 1.7	18	116526	2004 BS ₄₇		1 1.9	12°97	0°9/ 2.1	18
11 23	7 19.20	+22 55.9	1.848	2.614	16.3	19.7	11 23	7 12.60	+20 3.4	2.093	2.859	14.6	19.7
12 3	7 14.66	+23 32.1	1.768	2.625	13.0	19.5	12 3	7 9.06	+20 3.4	2.004	2.861	11.7	19.5
12 13	7 7.20	+24 13.8	1.710	2.635	9.1	19.3	12 13	7 3.10	+20 8.1	1.937	2.862	8.2	19.3
12 23	6 57.41	+24 57.2	1.677	2.645	4.7	19.0	12 23	6 55.27	+20 16.6	1.896	2.864	4.3	19.1
1 2	6 46.31	+25 37.9	1.673	2.655	1.0	18.8	1 2	6 46.40	+20 27.2	1.883	2.866	0.9	18.8
1 12	6 35.27	+26 12.2	1.698	2.665	4.9	19.1	1 12	6 37.53	+20 38.4	1.899	2.868	4.2	19.1
1 22	6 25.56	+26 38.6	1.752	2.673	9.2	19.4	1 22	6 29.71	+20 49.3	1.944	2.870	8.1	19.3
2 1	6 18.23	+26 57.3	1.831	2.682	12.9	19.6	2 1	6 23.78	+20 59.4	2.015	2.873	11.6	19.5
351677	2006 AM ₇₈		1 1.9	35°92	2°6/ 1.8	17	38706	2000 QP ₈₃		1 1.9	159°22	3°6/ 1.5	18 R
11 23	7 18.85	+28 38.1	1.213	2.016	21.2	20.5	11 23	7 22.40	+31 16.1	1.842	2.606	16.4	19.1
12 3	7 15.80	+28 42.7	1.150	2.027	17.0	20.2	12 3	7 17.48	+31 43.7	1.758	2.610	13.3	18.9
12 13	7 8.65	+28 46.0	1.106	2.040	12.0	20.0	12 13	7 9.32	+32 9.4	1.695	2.615	9.5	18.7
12 23	6 58.30	+28 43.1	1.084	2.053	6.5	19.7	12 23	6 58.57	+32 27.8	1.657	2.619	5.7	18.4
1 2	6 46.31	+28 29.8	1.086	2.067	2.6	19.5	1 2	6 46.38	+32 34.3	1.647	2.622	3.6	18.3
1 12	6 34.76	+28 5.1	1.115	2.082	6.6	19.8	1 12	6 34.30	+32 26.4	1.667	2.625	6.1	18.5
1 22	6 25.45	+27 31.5	1.167	2.098	11.8	20.2	1 22	6 23.77	+32 5.3	1.715	2.628	9.9	18.7
2 1	6 19.59	+26 53.4	1.242	2.114	16.3	20.5	2 1	6 15.92	+31 34.5	1.787	2.630	13.5	18.9
206717	2004 BC ₅₁		1 1.9	239°27	1°3/ 1.7	18	427380	2014 XC ₂₆		1 1.9	81°43	0°5/ 1.9	18
11 23	7 15.10	+27 29.7	2.751	3.502	11.9	20.7	11 23	7 17.34	+22 32.9	2.026	2.788	15.2	21.4
12 3	7 10.54	+27 32.6	2.643	3.491	9.5	20.6	12 3	7 12.68	+22 16.6	1.950	2.804	12.1	21.2
12 13	7 3.88	+27 34.7	2.558	3.479	6.7	20.4	12 13	7 5.49	+22 2.4	1.896	2.821	8.4	21.0
12 23	6 55.58	+27 34.1	2.501	3.467	3.6	20.1	12 23	6 56.42	+21 49.0	1.869	2.837	4.3	20.8
1 2	6 46.35	+27 28.8	2.474	3.455	1.3	19.9	1 2	6 46.41	+21 35.3	1.870	2.853	0.5	20.5
1 12	6 37.06	+27 17.9	2.478	3.442	3.8	20.1	1 12	6 36.62	+21 21.0	1.901	2.869	4.3	20.9
1 22	6 28.61	+27 1.7	2.512	3.429	7.0	20.3	1 22	6 28.11	+21 6.4	1.961	2.885	8.2	21.1
2 1	6 21.75	+26 41.4	2.574	3.416	9.9	20.5	2 1	6 21.69	+20 52.4	2.047	2.901	11.6	21.4
457233	2008 KH ₄₃		1 1.9	165°48	3°9/ 3.3	17	152019	2004 KO ₁₀		1 1.9	279°12	2°5/ 31.8	18
11 23	7 14.34	+8 10.7	2.648	3.366	13.1	22.4	11 23	7 20.52	+22 54.2	2.052	2.807	15.3	

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
50742	2000 <i>EZ</i> ₁₅₈		1.9 300°89	8:2/ 2.8 18			76565	2000 <i>GR</i> ₁₀₆		1.9 319°94	2°0/ 1.7 18		
11 23	7 12.76	+ 5 13.1	1.764	2.506	17.8	18.5	11 23	7 14.17	+26 29.3	1.527	2.319	18.0	18.7
12 3	7 9.62	+ 4 3.2	1.671	2.495	15.2	18.2	12 3	7 11.75	+26 46.6	1.431	2.303	14.6	18.4
12 13	7 3.78	+ 3 5.7	1.597	2.485	12.3	18.0	12 13	7 5.89	+27 6.4	1.354	2.286	10.4	18.1
12 23	6 55.76	+ 2 25.4	1.547	2.475	9.5	17.8	12 23	6 57.09	+27 24.7	1.301	2.271	5.6	17.8
1 2	6 46.42	+ 2 6.2	1.521	2.465	8.2	17.7	1 2	6 46.44	+27 37.3	1.274	2.255	2.0	17.5
1 12	6 36.95	+ 2 9.4	1.522	2.455	9.2	17.8	1 12	6 35.56	+27 40.9	1.274	2.241	6.0	17.7
1 22	6 28.55	+ 2 33.8	1.548	2.445	11.9	17.9	1 22	6 26.11	+27 35.0	1.299	2.227	11.0	18.0
2 1	6 22.23	+ 3 15.4	1.598	2.436	15.1	18.1	2 1	6 19.46	+27 21.5	1.347	2.214	15.6	18.2
147011	2002 <i>PP</i> ₁₄₀		1.9 155°68	0°4/ 1.9 18			134796	2000 <i>ER</i> ₁₉		1.9 21°40	0°9/ 1.8 18		
11 23	7 22.22	+22 31.3	1.678	2.444	17.7	20.7	11 23	7 15.40	+23 26.1	1.568	2.354	17.9	19.6
12 3	7 17.31	+22 19.5	1.594	2.450	14.2	20.5	12 3	7 12.27	+23 48.4	1.488	2.356	14.3	19.3
12 13	7 9.18	+22 10.4	1.531	2.456	10.0	20.2	12 13	7 5.90	+24 15.8	1.429	2.360	10.0	19.1
12 23	6 58.49	+22 2.3	1.493	2.462	5.2	20.0	12 23	6 56.92	+24 45.0	1.393	2.363	5.2	18.8
1 2	6 46.41	+21 53.3	1.483	2.466	0.4	19.6	1 2	6 46.44	+25 11.9	1.384	2.367	0.9	18.5
1 12	6 34.45	+21 42.3	1.502	2.470	5.1	20.0	1 12	6 36.00	+25 33.2	1.403	2.372	5.4	18.9
1 22	6 24.06	+21 29.7	1.550	2.474	9.9	20.3	1 22	6 27.05	+25 47.6	1.449	2.376	10.1	19.1
2 1	6 16.32	+21 17.0	1.622	2.477	14.0	20.5	2 1	6 20.75	+25 55.6	1.518	2.382	14.3	19.4
147582	2004 <i>FG</i> ₁₃₀		1.9 322°10	2°0/ 2.4 18			27300	2000 <i>AA</i> ₁₆₈		1.9 291°10	4°4/ 2.9 18 R		
11 23	7 14.48	+16 26.4	1.305	2.098	20.5	20.1	11 23	7 14.87	+11 25.0	1.477	2.248	19.5	17.4
12 3	7 12.23	+16 42.0	1.220	2.090	16.7	19.8	12 3	7 12.01	+11 24.4	1.387	2.240	16.1	17.1
12 13	7 6.35	+17 11.7	1.153	2.083	12.0	19.5	12 13	7 5.90	+11 39.8	1.315	2.232	12.0	16.9
12 23	6 57.37	+17 54.5	1.108	2.076	6.6	19.2	12 23	6 57.04	+12 12.3	1.266	2.225	7.5	16.6
1 2	6 46.41	+18 46.9	1.087	2.069	2.0	18.9	1 2	6 46.45	+13 0.9	1.242	2.217	4.4	16.4
1 12	6 35.22	+19 43.9	1.093	2.063	6.2	19.1	1 12	6 35.63	+14 2.0	1.246	2.210	6.7	16.5
1 22	6 25.58	+20 40.5	1.124	2.058	11.8	19.4	1 22	6 26.13	+15 10.5	1.275	2.202	11.3	16.7
2 1	6 18.93	+21 33.5	1.178	2.052	16.8	19.7	2 1	6 19.23	+16 21.5	1.328	2.195	15.8	17.0
182510	2001 <i>SZ</i> ₂₅₅		1.9 176°29	3°6/ 1.1 18			210199	2007 <i>PU</i> ₂₄		1.9 92°70	0°8/ 2.1 18		
11 23	7 19.11	+31 18.7	2.172	2.930	14.4	20.9	11 23	7 20.13	+20 34.1	1.706	2.473	17.4	20.5
12 3	7 14.48	+32 4.8	2.082	2.932	11.6	20.7	12 3	7 15.35	+20 33.3	1.638	2.494	13.9	20.3
12 13	7 7.06	+32 50.3	2.015	2.933	8.4	20.5	12 13	7 7.60	+20 37.9	1.589	2.514	9.7	20.1
12 23	6 57.39	+33 30.2	1.975	2.934	5.2	20.3	12 23	6 57.59	+20 45.8	1.566	2.534	5.0	19.9
1 2	6 46.42	+33 59.8	1.963	2.934	3.7	20.2	1 2	6 46.45	+20 55.0	1.571	2.554	0.8	19.7
1 12	6 35.40	+34 15.8	1.981	2.934	5.7	20.4	1 12	6 35.58	+21 3.5	1.605	2.573	4.9	20.0
1 22	6 25.58	+34 18.1	2.027	2.934	9.0	20.6	1 22	6 26.25	+21 10.7	1.667	2.592	9.3	20.3
2 1	6 17.98	+34 8.7	2.100	2.933	12.2	20.8	2 1	6 19.41	+21 16.7	1.754	2.611	13.1	20.6
354200	2002 <i>EU</i> ₁₀₉		1.9 335°00	0°5/ 1.9 17			447247	2005 <i>UB</i> ₂₂₀		1.9 45°76	1°8/ 2.1 15		
11 23	7 13.31	+22 26.0	1.325	2.127	19.8	21.4	11 23	7 18.10	+20 30.8	1.250	2.045	21.1	21.9
12 3	7 11.36	+22 41.8	1.240	2.117	16.0	21.2	12 3	7 14.82	+20 2.5	1.185	2.057	16.9	21.6
12 13	7 5.76	+23 4.7	1.173	2.108	11.3	20.9	12 13	7 7.82	+19 39.5	1.138	2.070	11.9	21.4
12 23	6 57.06	+23 31.8	1.128	2.099	5.8	20.5	12 23	6 57.89	+19 21.5	1.114	2.083	6.3	21.1
1 2	6 46.42	+23 58.9	1.108	2.092	0.5	20.1	1 2	6 46.45	+19 7.4	1.114	2.096	1.8	20.9
1 12	6 35.61	+24 22.1	1.114	2.085	6.0	20.5	1 12	6 35.34	+18 56.8	1.141	2.110	6.1	21.2
1 22	6 26.41	+24 39.3	1.145	2.078	11.6	20.8	1 22	6 26.21	+18 49.4	1.193	2.125	11.4	21.5
2 1	6 20.24	+24 50.7	1.198	2.073	16.5	21.1	2 1	6 20.22	+18 45.5	1.267	2.139	16.0	21.8
416617	2004 <i>RL</i> ₁₃₆		1.9 95°27	6°4/ 2.9 18			451105	2009 <i>EH</i> ₁₄		1.9 324°14	2°2/ 1.6 17		
11 23	7 14.65	+ 6 27.5	2.126	2.853	15.6	20.9	11 23	7 14.64	+26 23.0	1.402	2.199	19.1	21.9
12 3	7 10.32	+ 5 28.2	2.050	2.867	13.1	20.7	12 3	7 12.41	+26 43.9	1.311	2.186	15.4	21.6
12 13	7 3.75	+ 4 40.0	1.995	2.881	10.3	20.6	12 13	7 6.51	+27 7.8	1.240	2.174	11.0	21.3
12 23	6 55.53	+ 4 5.9	1.965	2.895	7.7	20.4	12 23	6 57.47	+27 30.6	1.192	2.162	5.9	21.0
1 2	6 46.44	+ 3 48.1	1.962	2.909	6.4	20.4	1 2	6 46.45	+27 47.2	1.169	2.150	2.2	20.8
1 12	6 37.47	+ 3 46.8	1.988	2.922	7.3	20.5	1 12	6 35.24	+27 54.0	1.172	2.139	6.4	21.0
1 22	6 29.56	+ 4 0.6	2.041	2.936	9.6	20.6	1 22	6 25.63	+27 50.3	1.200	2.129	11.6	21.2
2 1	6 23.43	+ 4 26.7	2.120	2.949	12.2	20.8	2 1	6 19.06	+27 38.2	1.250	2.120	16.3	21.5
96211	1993 <i>FU</i> ₂₃		1.9 241°28	3°1/ 2.5 18			264462	2001 <i>DH</i> ₇		1.9 278°64	2°3/ 2.5 17		
11 23	7 13.74	+14 25.0	2.183	2.933	14.6	20.4	11 23	7 13.69	+15 9.3	2.340	3.087	13.8	21.5
12 3	7 9.85	+14 3.9	2.083	2.926	11.9	20.1	12 3	7 9.90	+15 10.7	2.217	3.060	11.3	21.3
12 13	7 3.64	+13 49.9	2.006	2.920	8.7	19.9	12 13	7 3.81	+15 20.1	2.117	3.032	8.2	21.0
12 23	6 55.58	+13 43.6	1.954	2.913	5.3	19.7	12 23	6 55.77	+15 37.3	2.042	3.004	4.8	20.7
1 2	6 46.45	+13 45.0	1.931	2.906	3.1	19.6	1 2	6 46.47	+16 1.5	1.997	2.975	2.3	20.5
1 12	6 37.25	+13 53.6	1.938	2.899	5.0	19.7	1 12	6 36.87	+16 31.0	1.982	2.946	4.5	20.6
1 22	6 28.97	+14 8.1	1.973	2.892	8.5	19.9	1 22	6 27.95	+17 4.0	1.996	2.917	8.2	20.8
2 1	6 22.47	+14 27.3	2.034	2.884	11.8	20.1	2 1	6 20.67	+17 38.9	2.037	2.887	11.8	21.0
469244	2016 <i>JY</i> ₁₈		1.9 348°12	2°8/31.9 18			288909	2004 <i>RK</i> ₃₄₅		1.9 139°36	0°5/ 1.9 18		
11 23	7 14.47	+26 34.0	2.040	2.811	14.8	20.3	11 23	7 17.03	+24 17.6	2.336	3.091	13.6	21.6
12 3	7 10.98	+27 39.5	1.949	2.808	11.9	20.1	12 3	7 12.26	+24 21.9	2.249	3.100	10.8	21.4
12 13	7 4.76	+28 49.6	1.881	2.806	8.4	19.9	12 13	7 5.16	+24 27.6	2.186	3.108	7.5	21.2
12 23	6 56.29	+29 59.6	1.839	2.804	4.8	19.7	12 23	6 56.29	+24 32.8	2.149	3.117	3.9	21.0
1 2	6 46.44	+31 3.6	1.825	2.802	2.8	19.5	1 2	6 46.47	+24 35.4	2.141	3.124	0.5	20.7
1 12	6 36.42	+31 57.0	1.842	2.801	5.5	19.7	1 12	6 36.74	+24 34.4	2.165	3.132	4.0	21.0
1 22	6 27.47	+32 37.5	1.886	2.800	9.1	19.9	1 22	6 28.08	+24 29.7	2.218	3.139	7.5	21.3
2 1	6 20.64	+33 5.2	1.956	2.799	12.5	20.1	2 1	6 21.27	+24 22.0	2.298	3.145	10.7	21.5
296784	2009 <i>UU</i> ₁₅₁		1.9 215°11	3°5/ 2.3 18			313462	2002 <i>SQ</i> ₇₁		1.9 152°55	0°4/ 1.8 18		
11 23	7 15.20	+14 25.5	2.232	2.977									

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
247689	2003 <i>BM</i> ₁₈		1 1.9 345°70	2°3/ 1.7 18			366446	2001 <i>YQ</i> ₁₇		1 1.9 43°29	0°4/ 2.0 18		
11 23	7 15.09	+30 9.8	2.301	3.064	13.6	20.3	11 23	7 15.97	+22 27.7	1.801	2.575	16.4	20.4
12 3	7 10.98	+30 16.5	2.209	3.062	10.9	20.1	12 3	7 12.14	+22 15.6	1.719	2.580	13.1	20.2
12 13	7 4.43	+30 20.9	2.139	3.061	7.7	19.9	12 13	7 5.46	+22 6.2	1.658	2.585	9.2	20.0
12 23	6 55.98	+30 20.2	2.095	3.059	4.4	19.7	12 23	6 56.59	+21 58.2	1.621	2.590	4.7	19.7
1 2	6 46.49	+30 11.9	2.080	3.058	2.3	19.6	1 2	6 46.52	+21 50.0	1.612	2.596	0.4	19.4
1 12	6 37.06	+29 54.9	2.094	3.056	4.6	19.7	1 12	6 36.55	+21 40.9	1.633	2.601	4.7	19.7
1 22	6 28.72	+29 30.1	2.138	3.055	8.0	19.9	1 22	6 27.93	+21 30.9	1.680	2.607	9.1	20.0
2 1	6 22.33	+28 59.6	2.208	3.054	11.1	20.1	2 1	6 21.60	+21 20.8	1.753	2.613	12.9	20.3
83031	2001 <i>QJ</i> ₁₈₁		1 1.9 55°64	1°4/ 1.6 18			242634	2005 <i>ME</i> ₂₈		1 1.9 278°33	7°1/ 4.8 17		
11 23	7 14.19	+25 9.5	2.161	2.928	14.2	18.8	11 23	7 11.29	- 2 1.7	2.570	3.254	14.2	20.7
12 3	7 10.27	+25 40.3	2.084	2.941	11.3	18.6	12 3	7 7.57	- 2 10.2	2.462	3.240	12.3	20.5
12 13	7 3.93	+26 13.5	2.029	2.955	7.8	18.4	12 13	7 1.91	- 2 2.1	2.374	3.225	10.2	20.4
12 23	6 55.71	+26 46.1	2.000	2.968	4.1	18.2	12 23	6 54.70	- 1 34.9	2.309	3.211	8.3	20.2
1 2	6 46.49	+27 14.8	2.000	2.982	1.4	18.1	1 2	6 46.53	- 0 47.3	2.271	3.196	7.1	20.1
1 12	6 37.36	+27 37.1	2.030	2.996	4.4	18.3	1 12	6 38.22	+ 0 19.4	2.263	3.181	7.5	20.1
1 22	6 29.34	+27 52.2	2.089	3.010	8.0	18.6	1 22	6 30.56	+ 1 42.1	2.282	3.166	9.2	20.2
2 1	6 23.27	+28 0.7	2.174	3.024	11.2	18.8	2 1	6 24.30	+ 3 16.2	2.329	3.152	11.5	20.3
276256	2002 <i>RU</i> ₂₂₅		1 1.9 143°31	0°1/ 1.9 18			14618	1998 <i>UK</i> ₇		1 1.9 34°62	8°6/30.6 18		
11 23	7 23.21	+22 34.8	1.818	2.576	16.8	21.8	11 23	7 20.95	+38 37.0	1.602	2.375	18.1	17.2
12 3	7 17.78	+22 33.9	1.737	2.589	13.5	21.6	12 3	7 17.60	+40 24.4	1.532	2.380	15.1	17.0
12 13	7 9.33	+22 36.2	1.678	2.601	9.4	21.4	12 13	7 10.23	+42 8.1	1.482	2.386	11.9	16.9
12 23	6 58.53	+22 39.4	1.644	2.612	4.8	21.2	12 23	6 59.42	+43 37.5	1.457	2.392	9.4	16.7
1 2	6 46.49	+22 41.0	1.639	2.622	0.1	20.8	1 2	6 46.51	+44 41.9	1.457	2.398	8.7	16.7
1 12	6 34.61	+22 39.6	1.664	2.632	4.8	21.2	1 12	6 33.50	+45 15.4	1.483	2.405	10.4	16.8
1 22	6 24.21	+22 35.3	1.718	2.640	9.3	21.5	1 22	6 22.38	+45 18.5	1.534	2.412	13.3	17.0
2 1	6 16.32	+22 29.0	1.798	2.648	13.1	21.8	2 1	6 14.67	+44 57.0	1.606	2.419	16.2	17.2
440474	2005 <i>SU</i> ₂₆₃		1 1.9 93°51	1°6/ 2.3 18			368178	2000 <i>KW</i> ₉		1 1.9 234°27	1°4/ 2.2 13 C		
11 23	7 21.37	+18 1.1	1.545	2.313	18.9	21.5	11 23	7 16.49	+18 37.2	2.363	3.110	13.7	22.8
12 3	7 16.61	+18 6.6	1.479	2.335	15.1	21.3	12 3	7 11.99	+18 32.2	2.251	3.096	11.1	22.6
12 13	7 8.63	+18 20.8	1.434	2.358	10.6	21.1	12 13	7 5.15	+18 32.0	2.163	3.081	7.9	22.4
12 23	6 58.18	+18 41.9	1.413	2.380	5.7	20.9	12 23	6 56.42	+18 35.8	2.101	3.066	4.3	22.1
1 2	6 46.49	+19 7.1	1.419	2.401	1.6	20.7	1 2	6 46.53	+18 42.6	2.068	3.050	1.4	21.9
1 12	6 35.10	+19 33.4	1.454	2.422	5.3	21.0	1 12	6 36.48	+18 51.3	2.067	3.033	4.2	22.1
1 22	6 25.39	+19 59.0	1.516	2.442	9.9	21.3	1 22	6 27.28	+19 0.8	2.095	3.016	7.9	22.3
2 1	6 18.39	+20 22.8	1.603	2.462	14.0	21.6	2 1	6 19.81	+19 10.8	2.150	2.998	11.4	22.4
187631	2007 <i>BS</i> ₆₃		1 1.9 125°89	3°0/ 2.6 18			398660	2012 <i>UQ</i> ₄₈		1 1.9 255°19	6°0/ 2.6 18		
11 23	7 14.38	+13 54.2	2.010	2.764	15.6	20.9	11 23	7 16.80	+11 20.4	1.520	2.285	19.3	21.3
12 3	7 10.50	+13 48.8	1.923	2.768	12.6	20.7	12 3	7 13.40	+10 29.8	1.429	2.276	16.1	21.0
12 13	7 4.16	+13 52.9	1.857	2.772	9.2	20.5	12 13	7 6.78	+ 9 49.6	1.356	2.267	12.2	20.8
12 23	6 55.88	+14 6.4	1.816	2.775	5.5	20.3	12 23	6 57.47	+ 9 23.0	1.306	2.258	8.3	20.5
1 2	6 46.51	+14 28.4	1.803	2.779	3.0	20.1	1 2	6 46.53	+ 9 12.4	1.282	2.249	6.0	20.4
1 12	6 37.14	+14 57.2	1.819	2.783	5.0	20.2	1 12	6 35.42	+ 9 18.1	1.284	2.239	7.9	20.5
1 22	6 28.82	+15 30.6	1.864	2.786	8.7	20.5	1 22	6 25.63	+ 9 38.7	1.312	2.229	11.9	20.7
2 1	6 22.45	+16 6.3	1.935	2.789	12.1	20.7	2 1	6 18.42	+10 11.1	1.363	2.220	16.1	20.9
317514	2002 <i>TQ</i> ₇₅		1 1.9 267°98	3°3/ 2.3 18			34714	2001 <i>OB</i> ₁₀₅		1 1.9 91°76	0°6/ 1.8 18		
11 23	7 15.60	+15 44.2	1.879	2.639	16.3	20.0	11 23	7 17.03	+23 17.4	1.898	2.666	15.9	19.1
12 3	7 11.88	+15 12.7	1.775	2.624	13.3	19.7	12 3	7 12.85	+23 36.7	1.819	2.677	12.6	18.9
12 13	7 5.40	+14 47.4	1.691	2.609	9.7	19.5	12 13	7 5.91	+23 59.9	1.762	2.688	8.8	18.7
12 23	6 56.65	+14 29.1	1.633	2.594	5.9	19.2	12 23	6 56.81	+24 24.1	1.730	2.699	4.5	18.4
1 2	6 46.51	+14 18.4	1.602	2.578	3.3	19.0	1 2	6 46.53	+24 46.1	1.726	2.709	0.6	18.2
1 12	6 36.18	+14 15.3	1.600	2.563	5.7	19.1	1 12	6 36.36	+25 3.4	1.752	2.720	4.6	18.5
1 22	6 26.92	+14 19.0	1.626	2.547	9.8	19.3	1 22	6 27.47	+25 15.3	1.806	2.730	8.8	18.8
2 1	6 19.77	+14 28.7	1.676	2.531	13.7	19.5	2 1	6 20.83	+25 22.0	1.886	2.740	12.4	19.0
399239	2014 <i>HH</i> ₉		1 1.9 186°69	2°4/ 2.4 18			69733	1998 <i>JS</i> ₂		1 1.9 308°15	0°9/ 1.7 18		
11 23	7 18.78	+16 25.3	1.841	2.597	16.7	22.1	11 23	7 13.94	+21 31.3	1.468	2.260	18.7	18.2
12 3	7 14.34	+16 18.1	1.749	2.598	13.5	21.9	12 3	7 11.79	+22 11.6	1.366	2.238	15.1	17.9
12 13	7 7.04	+16 18.9	1.678	2.597	9.7	21.6	12 13	7 6.16	+23 3.0	1.284	2.217	10.7	17.5
12 23	6 57.45	+16 27.3	1.632	2.596	5.5	21.4	12 23	6 57.41	+24 2.0	1.225	2.195	5.6	17.2
1 2	6 46.50	+16 42.0	1.615	2.594	2.4	21.2	1 2	6 46.53	+25 3.3	1.191	2.174	0.9	16.8
1 12	6 35.51	+17 1.4	1.626	2.592	5.2	21.4	1 12	6 35.13	+26 0.5	1.185	2.154	6.0	17.1
1 22	6 25.73	+17 23.6	1.666	2.589	9.5	21.6	1 22	6 24.97	+26 49.3	1.204	2.134	11.6	17.4
2 1	6 18.20	+17 47.3	1.732	2.585	13.4	21.8	2 1	6 17.64	+27 28.1	1.247	2.115	16.5	17.6
290229	2005 <i>SP</i> ₆₃		1 1.9 79°91	1°9/ 2.3 18			159657	2002 <i>ER</i> ₄₆		1 1.9 270°56	4°1/ 2.7 18		
11 23	7 15.50	+17 45.0	1.885	2.649	16.1	21.3	11 23	7 13.52	+11 24.5	2.257	2.997	14.4	20.6
12 3	7 11.51	+17 36.9	1.806	2.660	12.9	21.1	12 3	7 9.75	+10 59.8	2.142	2.976	12.0	20.3
12 13	7 4.89	+17 35.6	1.748	2.670	9.2	20.9	12 13	7 3.68	+10 43.6	2.048	2.954	9.0	20.1
12 23	6 56.25	+17 40.4	1.715	2.681	5.0	20.6	12 23	6 55.72	+10 37.2	1.980	2.932	6.0	19.9
1 2	6 46.51	+17 49.9	1.710	2.691	1.9	20.4	1 2	6 46.56	+10 41.4	1.941	2.909	4.1	19.7
1 12	6 36.89	+18 2.7	1.735	2.701	4.8	20.7	1 12	6 37.17	+10 55.7	1.931	2.886	5.6	19.8
1 22	6 28.49	+18 17.5	1.787	2.712	8.8	20.9	1 22	6 28.55	+11 19.0	1.949	2.863	8.9	19.9
2 1	6 22.22	+18 33.4	1.865	2.722	12.4	21.2	2 1	6 21.60	+11 49.4	1.994	2.839	12.2	20.1
122417	2000 <i>QG</i> ₉₆		1 1.9 117°98	1°3/ 1.7 18 R			207893	2008 <i>SK</i> ₂₅₁		1 1.9 24°29	0°0/ 1.9 18		
11 23	7 22.06	+25 16.											

EPHEMERIDES

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
405188	2003 <i>AM</i> ₇₅		1 1.9 23°87	9°8/ 2.2	18		67119	2000 <i>AP</i> ₁₂₂		1 1.9 247°24	3°2/ 2.4	18	
11 23	7 25.21	+45 12.7	1.432	2.199	20.2	19.8	11 23	7 17.78	+16 11.0	1.631	2.399	18.1	20.1
12 3	7 21.31	+45 52.2	1.369	2.207	17.2	19.6	12 3	7 14.09	+15 46.9	1.534	2.389	14.8	19.8
12 13	7 12.74	+46 16.4	1.323	2.217	13.9	19.4	12 13	7 7.23	+15 30.5	1.457	2.378	10.8	19.6
12 23	7 0.52	+46 15.3	1.299	2.227	11.0	19.3	12 23	6 57.74	+15 22.3	1.404	2.367	6.3	19.3
1 2	6 46.55	+45 41.3	1.298	2.238	9.8	19.3	1 2	6 46.62	+15 22.3	1.377	2.355	3.2	19.1
1 12	6 33.26	+44 33.9	1.322	2.249	10.9	19.3	1 12	6 35.30	+15 29.5	1.379	2.344	6.0	19.2
1 22	6 22.70	+42 59.9	1.371	2.262	13.6	19.5	1 22	6 25.27	+15 42.8	1.407	2.332	10.7	19.5
2 1	6 16.11	+41 9.9	1.442	2.275	16.7	19.8	2 1	6 17.72	+16 0.7	1.460	2.319	15.0	19.7
52574	1997 <i>MS</i> ₂		1 1.9 64°71	0°3/ 2.1	18		471004	2009 <i>SY</i> ₂₂₇		1 1.9 184°62	0°7/ 1.8	17	
11 23	7 17.82	+17 56.9	1.641	2.411	17.9	18.5	11 23	7 9.84	+25 22.8	3.654	4.401	9.2	21.9
12 3	7 13.81	+18 50.1	1.573	2.431	14.2	18.3	12 3	7 5.83	+25 33.0	3.554	4.400	7.3	21.8
12 13	7 6.77	+19 54.6	1.525	2.451	9.9	18.1	12 13	7 0.37	+25 43.7	3.479	4.400	5.1	21.6
12 23	6 57.33	+21 6.6	1.502	2.471	5.1	17.9	12 23	6 53.80	+25 53.6	3.432	4.400	2.6	21.5
1 2	6 46.59	+22 20.4	1.507	2.491	0.3	17.5	1 2	6 46.64	+26 1.4	3.417	4.399	0.7	21.3
1 12	6 35.97	+23 30.5	1.542	2.511	4.9	18.0	1 12	6 39.47	+26 6.4	3.433	4.398	2.8	21.5
1 22	6 26.80	+24 32.8	1.605	2.531	9.5	18.3	1 22	6 32.87	+26 8.1	3.479	4.397	5.2	21.7
2 1	6 20.13	+25 25.8	1.692	2.551	13.4	18.6	2 1	6 27.36	+26 6.8	3.554	4.396	7.4	21.8
487098	2014 <i>OE</i> ₁₃₉		1 1.9 250°89	0°6/ 2.1	18		256875	2008 <i>DR</i> ₁₉		1 1.9 14°43	3°5/ 2.5	18	
11 23	7 17.88	+21 11.7	1.734	2.504	17.0	22.1	11 23	7 13.65	+15 1.5	1.606	2.381	18.0	21.0
12 3	7 14.08	+21 10.1	1.635	2.494	13.8	21.8	12 3	7 10.60	+14 38.1	1.525	2.383	14.6	20.8
12 13	7 7.17	+21 13.4	1.556	2.483	9.7	21.6	12 13	7 4.61	+14 24.0	1.464	2.385	10.7	20.6
12 23	6 57.68	+21 20.0	1.503	2.471	5.1	21.3	12 23	6 56.28	+14 20.1	1.426	2.388	6.4	20.3
1 2	6 46.59	+21 27.6	1.476	2.459	0.6	20.9	1 2	6 46.62	+14 26.0	1.414	2.391	3.5	20.2
1 12	6 35.34	+21 34.3	1.479	2.447	5.1	21.2	1 12	6 37.00	+14 40.6	1.430	2.394	5.9	20.3
1 22	6 25.33	+21 39.2	1.509	2.435	9.9	21.5	1 22	6 28.70	+15 2.1	1.472	2.398	10.1	20.6
2 1	6 17.77	+21 42.7	1.563	2.423	14.2	21.7	2 1	6 22.78	+15 28.2	1.538	2.402	14.1	20.8
395443	2011 <i>SF</i> ₂₅₀		1 1.9 124°27	0°6/ 1.9	18		258252	2001 <i>TA</i> ₁₇₉		1 1.9 31°70	6°5/ 1.2	18	
11 23	7 21.25	+23 41.4	1.879	2.640	16.3	22.4	11 23	7 19.66	+36 58.1	1.574	2.352	18.2	20.0
12 3	7 16.17	+23 55.1	1.802	2.655	13.0	22.2	12 3	7 16.12	+37 46.7	1.505	2.361	14.9	19.8
12 13	7 8.19	+24 12.0	1.746	2.670	9.0	22.0	12 13	7 8.82	+38 29.1	1.455	2.369	11.3	19.6
12 23	6 57.99	+24 28.9	1.716	2.685	4.6	21.7	12 23	6 58.52	+38 57.6	1.429	2.379	8.0	19.4
1 2	6 46.60	+24 42.9	1.716	2.699	0.6	21.4	1 2	6 46.62	+39 5.5	1.429	2.389	6.6	19.4
1 12	6 35.39	+24 51.7	1.745	2.712	4.7	21.8	1 12	6 34.97	+38 50.3	1.455	2.400	8.4	19.5
1 22	6 25.59	+24 55.1	1.802	2.724	8.9	22.1	1 22	6 25.27	+38 14.4	1.506	2.411	11.7	19.7
2 1	6 18.18	+24 54.1	1.886	2.736	12.6	22.3	2 1	6 18.73	+37 23.8	1.580	2.422	15.0	19.9
491854	2013 <i>AW</i> ₁₀₇		1 1.9 221°20	0°6/ 1.9	18		315561	2008 <i>CZ</i> ₃₂		1 1.9 314°15	1°5/ 1.8	16	
11 23	7 20.15	+24 58.6	1.786	2.554	16.7	22.0	11 23	7 15.24	+25 30.2	1.614	2.400	17.5	21.9
12 3	7 15.75	+24 53.1	1.691	2.549	13.5	21.8	12 3	7 12.35	+25 45.3	1.520	2.388	14.1	21.6
12 13	7 8.22	+24 48.5	1.617	2.543	9.5	21.5	12 13	7 6.18	+26 3.3	1.445	2.376	10.0	21.3
12 23	6 58.15	+24 42.4	1.568	2.537	4.9	21.2	12 23	6 57.25	+26 20.9	1.395	2.364	5.3	21.0
1 2	6 46.60	+24 32.4	1.547	2.530	0.6	20.9	1 2	6 46.64	+26 34.0	1.371	2.353	1.5	20.7
1 12	6 35.02	+24 17.3	1.555	2.523	5.0	21.2	1 12	6 35.85	+26 39.9	1.374	2.342	5.6	21.0
1 22	6 24.81	+23 57.7	1.592	2.516	9.7	21.4	1 22	6 26.45	+26 38.0	1.404	2.332	10.4	21.2
2 1	6 17.12	+23 35.6	1.653	2.508	13.8	21.7	2 1	6 19.68	+26 29.7	1.458	2.322	14.8	21.5
206842	2004 <i>EJ</i> ₆₁		1 1.9 215°42	2°9/ 2.9	18		460668	2014 <i>UA</i> ₁₅₇		1 1.9 229°65	4°5/ 2.3	18	
11 23	7 11.29	+10 47.3	3.013	3.738	11.5	21.1	11 23	7 16.05	+11 27.2	2.413	3.143	13.9	21.3
12 3	7 7.23	+10 50.2	2.906	3.731	9.4	20.9	12 3	7 11.45	+10 35.7	2.305	3.131	11.5	21.1
12 13	7 1.49	+11 1.5	2.823	3.724	7.0	20.7	12 13	7 4.67	+9 50.1	2.220	3.120	8.7	20.9
12 23	6 54.44	+11 21.2	2.766	3.717	4.5	20.6	12 23	6 56.17	+9 12.3	2.161	3.107	6.0	20.7
1 2	6 46.62	+11 48.8	2.740	3.709	2.9	20.4	1 2	6 46.66	+8 44.0	2.132	3.095	4.5	20.6
1 12	6 38.72	+12 23.1	2.744	3.701	4.1	20.5	1 12	6 37.05	+8 26.2	2.133	3.081	5.8	20.7
1 22	6 31.42	+13 2.4	2.780	3.693	6.6	20.7	1 22	6 28.26	+8 18.9	2.163	3.067	8.6	20.8
2 1	6 25.33	+13 44.7	2.843	3.684	9.1	20.8	2 1	6 21.09	+8 21.0	2.220	3.053	11.6	21.0
368075	2012 <i>KV</i> ₁₄		1 1.9 68°25	0°4/ 1.9	18		439921	2001 <i>QM</i> ₁₇₂		1 1.9 49°36	0°9/ 2.0	17	
11 23	7 17.12	+22 11.7	1.973	2.737	15.5	19.9	11 23	7 20.01	+22 34.4	1.227	2.023	21.4	20.4
12 3	7 12.63	+22 38.9	1.907	2.763	12.2	19.7	12 3	7 16.35	+22 6.7	1.169	2.042	17.1	20.2
12 13	7 5.58	+23 10.8	1.864	2.789	8.5	19.6	12 13	7 8.87	+21 42.5	1.128	2.061	11.9	20.0
12 23	6 56.58	+23 44.1	1.846	2.814	4.3	19.4	12 23	6 58.46	+21 20.3	1.110	2.080	6.2	19.7
1 2	6 46.62	+24 15.6	1.857	2.840	0.4	19.1	1 2	6 46.65	+20 59.1	1.117	2.100	0.9	19.4
1 12	6 36.87	+24 42.8	1.898	2.865	4.3	19.5	1 12	6 35.33	+20 38.6	1.150	2.120	6.0	19.8
1 22	6 28.41	+25 4.4	1.967	2.890	8.2	19.7	1 22	6 26.14	+20 19.8	1.209	2.141	11.3	20.2
2 1	6 22.09	+25 20.6	2.063	2.915	11.6	20.0	2 1	6 20.18	+20 3.9	1.290	2.162	15.8	20.5
495459	2014 <i>TO</i> ₄₄		1 1.9 134°72	6°6/31.3	18		90743	1993 <i>FE</i> ₅₈		1 1.9 119°57	1°3/ 2.2	18	
11 23	7 23.16	+39 24.4	2.177	2.923	14.8	21.6	11 23	7 15.57	+19 7.5	2.176	2.932	14.5	20.5
12 3	7 18.06	+40 38.7	2.101	2.932	12.3	21.5	12 3	7 11.25	+19 1.4	2.091	2.941	11.6	20.4
12 13	7 9.79	+41 47.7	2.046	2.941	9.6	21.3	12 13	7 4.58	+19 0.2	2.028	2.949	8.1	20.2
12 23	6 58.94	+42 44.1	2.018	2.950	7.4	21.2	12 23	6 56.11	+19 2.9	1.991	2.957	4.4	19.9
1 2	6 46.61	+43 21.2	2.017	2.959	6.6	21.2	1 2	6 46.66	+19 8.4	1.984	2.965	1.3	19.7
1 12	6 34.29	+43 35.7	2.045	2.967	8.0	21.3	1 12	6 37.29	+19 15.4	2.006	2.973	4.2	20.0
1 22	6 23.43	+43 28.4	2.100	2.975	10.4	21.4	1 22	6 28.97	+19 23.2	2.057	2.981	7.9	20.2
2 1	6 15.16	+43 3.5	2.179	2.982	12.9	21.6	2 1	6 22.53	+19 31.4	2.135	2.988	11.2	20.4
14453	1993 <i>FV</i> ₇		1 1.9 138°79	4°4/ 1.2	18		29190	1990 <i>UZ</i> ₄		1 1.9 9°39	1°2/ 1.6	18	
11 23	7 22.95	+31 12.8	1.703										

EPHEMERIDES

1 1.9

1 1.9

2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
26582	2000 <i>EV</i> ₁₀₇		1 1.9 86°43	1°6/ 2.1 18			466454	2013 <i>TM</i> ₉₈		1 1.9 66°54	0°3/ 1.9 18		
11 23	7 19.93	+20 29.9	1.809	2.572	16.7	17.6	11 23	7 14.41	+22 27.9	2.156	2.920	14.3	21.3
12 3	7 14.99	+19 59.2	1.738	2.591	13.4	17.4	12 3	7 10.43	+22 45.7	2.077	2.933	11.4	21.1
12 13	7 7.27	+19 31.8	1.687	2.610	9.4	17.2	12 13	7 4.06	+23 7.3	2.021	2.946	7.9	20.9
12 23	6 57.48	+19 7.3	1.663	2.629	5.0	17.0	12 23	6 55.86	+23 30.4	1.990	2.959	4.0	20.7
1 2	6 46.67	+18 45.3	1.666	2.648	1.6	16.8	1 2	6 46.70	+23 52.6	1.989	2.972	0.3	20.4
1 12	6 36.16	+18 25.9	1.700	2.666	4.8	17.1	1 12	6 37.62	+24 11.6	2.017	2.985	4.1	20.8
1 22	6 27.11	+18 9.5	1.761	2.685	9.0	17.4	1 22	6 29.62	+24 26.6	2.074	2.998	7.8	21.0
2 1	6 20.40	+17 56.6	1.848	2.703	12.6	17.6	2 1	6 23.54	+24 37.6	2.158	3.011	11.1	21.3
70325	1999 <i>RT</i> ₁₅₆		1 1.9 70°71	1°7/ 2.3 18			201987	2004 <i>PA</i> ₆₆		1 1.9 128°19	1°0/ 2.2 18		
11 23	7 18.70	+18 37.5	1.562	2.335	18.5	20.2	11 23	7 20.94	+19 23.3	1.887	2.642	16.4	21.7
12 3	7 14.50	+18 31.2	1.497	2.356	14.8	20.0	12 3	7 15.84	+19 28.5	1.809	2.658	13.1	21.5
12 13	7 7.19	+18 32.3	1.451	2.376	10.4	19.8	12 13	7 7.95	+19 39.8	1.753	2.674	9.2	21.3
12 23	6 57.53	+18 39.6	1.430	2.397	5.6	19.5	12 23	6 57.90	+19 55.3	1.722	2.689	4.8	21.0
1 2	6 46.68	+18 51.1	1.436	2.418	1.7	19.3	1 2	6 46.71	+20 12.9	1.720	2.703	1.0	20.8
1 12	6 36.12	+19 4.8	1.470	2.438	5.2	19.6	1 12	6 35.66	+20 30.4	1.749	2.716	4.6	21.1
1 22	6 27.17	+19 19.5	1.531	2.459	9.7	19.9	1 22	6 25.96	+20 46.5	1.806	2.729	8.8	21.4
2 1	6 20.80	+19 34.2	1.617	2.479	13.7	20.2	2 1	6 18.56	+21 1.0	1.889	2.741	12.5	21.6
132347	2002 <i>GD</i> ₄₆		1 1.9 201°90	3°3/ 1.3 18			449167	2013 <i>BD</i> ₈		1 1.9 32°11	2°6/ 1.5 17		
11 23	7 20.49	+29 27.4	1.923	2.687	15.8	20.3	11 23	7 16.50	+24 47.5	1.214	2.019	21.1	21.1
12 3	7 16.04	+30 11.7	1.830	2.684	12.8	20.1	12 3	7 14.12	+25 38.6	1.150	2.028	16.8	20.8
12 13	7 8.48	+30 57.3	1.760	2.681	9.2	19.9	12 13	7 7.77	+26 36.6	1.104	2.039	11.8	20.6
12 23	6 58.35	+31 38.8	1.714	2.677	5.4	19.7	12 23	6 58.16	+27 35.3	1.080	2.050	6.3	20.3
1 2	6 46.68	+32 10.7	1.698	2.673	3.4	19.5	1 2	6 46.71	+28 27.1	1.081	2.062	2.6	20.1
1 12	6 34.89	+32 29.3	1.710	2.668	5.9	19.7	1 12	6 35.41	+29 6.0	1.107	2.074	6.8	20.4
1 22	6 24.40	+32 34.0	1.751	2.663	9.8	19.9	1 22	6 26.11	+29 30.3	1.158	2.087	12.0	20.7
2 1	6 16.40	+32 27.0	1.817	2.658	13.4	20.1	2 1	6 20.19	+29 41.6	1.231	2.101	16.5	21.0
172626	2003 <i>XY</i> ₄		1 1.9 59°04	4°5/ 2.0 17			430360	2014 <i>AG</i> ₁₂		1 1.9 19°17	2°0/ 2.5 18		
11 23	7 25.88	+34 55.3	1.505	2.277	19.1	19.0	11 23	7 11.22	+16 29.1	1.924	2.693	15.6	20.7
12 3	7 20.61	+34 57.8	1.445	2.300	15.5	18.9	12 3	7 8.18	+16 32.2	1.843	2.699	12.6	20.5
12 13	7 11.56	+34 52.4	1.405	2.324	11.2	18.7	12 13	7 2.67	+16 43.7	1.782	2.705	9.0	20.3
12 23	6 59.72	+34 33.6	1.388	2.348	6.9	18.5	12 23	6 55.23	+17 2.9	1.747	2.712	5.0	20.1
1 2	6 46.68	+33 57.7	1.399	2.371	4.5	18.4	1 2	6 46.73	+17 28.1	1.740	2.720	2.0	19.9
1 12	6 34.31	+33 5.2	1.437	2.395	6.8	18.6	1 12	6 38.26	+17 57.3	1.761	2.728	4.6	20.1
1 22	6 24.19	+32 1.0	1.502	2.419	10.7	18.9	1 22	6 30.89	+18 28.3	1.809	2.737	8.5	20.4
2 1	6 17.32	+30 51.5	1.591	2.443	14.4	19.2	2 1	6 25.47	+18 59.4	1.884	2.746	12.0	20.6
135428	2001 <i>UQ</i> ₁₁₇		1 1.9 89°10	4°2/ 2.7 18			273418	2006 <i>WY</i> ₁₆		1 1.9 45°05	4°8/ 1.5 17		
11 23	7 12.07	+10 31.0	2.479	3.213	13.4	19.9	11 23	7 21.11	+30 22.4	1.090	1.898	22.7	20.8
12 3	7 8.10	+9 53.1	2.392	3.221	11.0	19.7	12 3	7 18.24	+31 4.8	1.036	1.914	18.3	20.5
12 13	7 2.19	+9 23.2	2.328	3.228	8.3	19.6	12 13	7 10.80	+31 46.4	0.999	1.932	13.1	20.3
12 23	6 54.83	+9 2.6	2.290	3.236	5.7	19.4	12 23	6 59.69	+32 19.0	0.983	1.949	7.7	20.1
1 2	6 46.69	+8 52.2	2.281	3.243	4.2	19.3	1 2	6 46.72	+32 34.6	0.991	1.968	4.8	20.0
1 12	6 38.61	+8 52.1	2.301	3.251	5.4	19.4	1 12	6 34.26	+32 30.0	1.024	1.987	8.1	20.2
1 22	6 31.36	+9 1.2	2.350	3.258	7.9	19.6	1 22	6 24.40	+32 7.7	1.080	2.006	13.0	20.5
2 1	6 25.63	+9 18.1	2.425	3.265	10.5	19.8	2 1	6 18.44	+31 33.7	1.158	2.026	17.5	20.9
457094	2008 <i>EL</i> ₁₃₁		1 1.9 339°86	2°1/ 2.4 18			125102	2001 <i>UH</i> ₃₅		1 1.9 286°63	7°7/ 3.5 18		
11 23	7 11.41	+16 51.4	1.451	2.241	18.9	21.3	11 23	7 14.16	+5 49.3	1.548	2.300	19.5	19.1
12 3	7 9.42	+16 57.3	1.362	2.231	15.3	21.1	12 3	7 11.24	+5 7.1	1.458	2.291	16.6	18.9
12 13	7 4.21	+17 14.4	1.293	2.222	11.0	20.8	12 13	7 5.29	+4 41.2	1.386	2.283	13.1	18.7
12 23	6 56.29	+17 42.2	1.246	2.214	6.1	20.5	12 23	6 56.79	+4 36.0	1.335	2.274	9.7	18.4
1 2	6 46.68	+18 18.5	1.225	2.206	2.1	20.2	1 2	6 46.73	+4 53.9	1.310	2.265	7.8	18.3
1 12	6 36.91	+18 59.8	1.230	2.200	5.7	20.4	1 12	6 36.47	+5 34.4	1.310	2.256	8.9	18.4
1 22	6 28.47	+19 42.6	1.261	2.194	10.8	20.7	1 22	6 27.43	+6 33.8	1.336	2.248	12.2	18.5
2 1	6 22.65	+20 24.2	1.314	2.189	15.4	20.9	2 1	6 20.78	+7 46.4	1.385	2.240	16.0	18.7
143001	2002 <i>VO</i> ₁₀₁		1 1.9 51°72	3°8/ 2.4 18			347375	2012 <i>RL</i> ₁₂		1 1.9 113°05	4°5/ 1.4 18		
11 23	7 15.93	+15 29.0	1.684	2.452	17.6	19.6	11 23	7 28.93	+32 17.4	1.707	2.465	17.8	21.6
12 3	7 12.15	+14 43.6	1.606	2.459	14.3	19.4	12 3	7 22.79	+33 4.5	1.642	2.490	14.3	21.5
12 13	7 5.52	+14 5.2	1.549	2.467	10.4	19.2	12 13	7 13.07	+33 49.0	1.598	2.514	10.4	21.3
12 23	6 56.69	+13 35.1	1.516	2.476	6.4	19.0	12 23	7 0.59	+34 23.8	1.580	2.537	6.4	21.1
1 2	6 46.69	+13 14.4	1.509	2.484	3.8	18.8	1 2	6 46.72	+34 42.7	1.589	2.560	4.5	21.0
1 12	6 36.82	+13 3.5	1.531	2.493	6.1	19.0	1 12	6 33.24	+34 43.0	1.628	2.581	6.8	21.2
1 22	6 28.32	+13 1.6	1.580	2.502	10.0	19.2	1 22	6 21.71	+34 26.6	1.695	2.602	10.4	21.5
2 1	6 22.14	+13 7.6	1.653	2.511	13.7	19.5	2 1	6 13.26	+33 58.1	1.786	2.621	13.9	21.7
374667	2006 <i>KX</i> ₇₁		1 1.9 47°63	6°7/ 3.2 18			360453	2002 <i>QC</i> ₄₉		1 1.9 99°86	1°6/ 2.3 18		
11 23	7 11.97	+5 10.2	2.138	2.865	15.5	20.7	11 23	7 17.66	+17 59.5	1.841	2.602	16.5	22.0
12 3	7 8.34	+4 13.7	2.056	2.871	13.1	20.5	12 3	7 13.31	+18 1.2	1.765	2.617	13.2	21.8
12 13	7 2.54	+3 29.1	1.995	2.878	10.4	20.4	12 13	7 6.23	+18 10.2	1.709	2.631	9.3	21.6
12 23	6 55.07	+2 59.6	1.958	2.884	8.0	20.2	12 23	6 57.04	+18 25.2	1.679	2.645	5.0	21.4
1 2	6 46.69	+2 47.3	1.948	2.890	6.7	20.2	1 2	6 46.74	+18 44.3	1.678	2.659	1.6	21.2
1 12	6 38.36	+2 52.5	1.965	2.897	7.6	20.2	1 12	6 36.56	+19 5.4	1.705	2.673	4.7	21.4
1 22	6 30.98	+3 13.7	2.010	2.904	9.8	20.4	1 22	6 27.68	+19 26.8	1.761	2.686	8.9	21.7
2 1	6 25.31	+3 47.8	2.079	2.911	12.3	20.5	2 1	6 21.04	+19 47.7	1.843	2.699	12.5	21.9
126882	2002 <i>EH</i> ₉₇		1 1.9 268°90	3°7/ 2.8 18			123536	2000 <i>XU</i> ₁₇		1 1.9 26°88	5°3/ 1.8 18		
11 23	7 13.08	+11 55.1	2.186	2.93									

EPHEMERIDES

1 1.9

1 2.0

2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V		
193180	2000 <i>PU</i> ₂₅		1	1.9	171°78	18°4/ 7.7	18	4798	Mercator		1	1.9	208°85	0°3/ 1.9	18
11 23	7 17.73	-14 32.3	1.322	1.994	25.8	20.3	11 23	7 20.10	+21 54.0	1.656	2.427	17.7	17.4		
12 3	7 14.53	-16 16.1	1.257	1.995	23.8	20.1	12 3	7 16.03	+22 15.5	1.564	2.423	14.3	17.2		
12 13	7 7.81	-17 26.8	1.204	1.997	21.7	20.0	12 13	7 8.68	+22 43.6	1.492	2.418	10.1	16.9		
12 23	6 58.15	-17 53.0	1.166	1.998	19.8	19.8	12 23	6 58.56	+23 15.3	1.445	2.414	5.2	16.6		
1 2	6 46.74	-17 25.7	1.146	1.998	18.6	19.8	1 2	6 46.77	+23 46.6	1.425	2.408	0.3	16.3		
1 12	6 35.25	-16 2.9	1.144	1.999	18.5	19.7	1 12	6 34.81	+24 13.7	1.434	2.402	5.3	16.6		
1 22	6 25.32	-13 51.4	1.163	1.999	19.6	19.8	1 22	6 24.23	+24 34.9	1.471	2.396	10.2	16.9		
2 1	6 18.28	-11 3.9	1.200	1.998	21.5	19.9	2 1	6 16.30	+24 50.2	1.532	2.389	14.6	17.1		
157983	2000 <i>HL</i> ₉₆		1	1.9	265°09	4°2/ 2.8	18	19784	2000 <i>QJ</i> ₈₁		1	1.9	251°19	3°3/ 2.8	18
11 23	7 16.00	+12 46.7	1.605	2.370	18.4	20.3	11 23	7 11.23	+11 49.1	2.559	3.298	13.0	19.5		
12 3	7 12.75	+12 29.6	1.508	2.358	15.2	20.0	12 3	7 7.54	+11 37.4	2.459	3.293	10.6	19.3		
12 13	7 6.39	+12 24.3	1.430	2.346	11.3	19.7	12 13	7 1.92	+11 33.8	2.381	3.288	7.9	19.1		
12 23	6 57.40	+12 32.2	1.375	2.333	7.1	19.5	12 23	6 54.79	+11 39.0	2.330	3.282	5.1	18.9		
1 2	6 46.74	+12 53.3	1.346	2.320	4.3	19.3	1 2	6 46.78	+11 52.9	2.307	3.277	3.3	18.8		
1 12	6 35.83	+13 25.8	1.345	2.307	6.5	19.4	1 12	6 38.72	+12 14.5	2.314	3.272	4.6	18.9		
1 22	6 26.11	+14 6.9	1.370	2.294	10.9	19.6	1 22	6 31.39	+12 42.4	2.350	3.266	7.4	19.1		
2 1	6 18.83	+14 53.3	1.420	2.281	15.3	19.8	2 1	6 25.50	+13 14.7	2.414	3.261	10.3	19.2		
219365	2000 <i>SC</i> ₁₀		1	1.9	37°37	5°5/ 1.0	18	353687	2011 <i>UP</i> ₃₀₆		1	1.9	144°76	2°6/ 1.6	18
11 23	7 17.99	+33 17.6	1.589	2.372	17.8	19.7	11 23	7 21.59	+28 20.3	1.891	2.654	16.1	21.7		
12 3	7 14.61	+34 18.4	1.523	2.385	14.4	19.5	12 3	7 16.73	+28 50.7	1.809	2.662	12.9	21.5		
12 13	7 7.70	+35 16.8	1.478	2.399	10.6	19.3	12 13	7 8.82	+29 21.7	1.748	2.670	9.1	21.3		
12 23	6 57.99	+36 5.5	1.457	2.413	7.0	19.1	12 23	6 58.48	+29 48.7	1.713	2.678	5.1	21.0		
1 2	6 46.75	+36 37.7	1.462	2.428	5.5	19.1	1 2	6 46.79	+30 7.2	1.706	2.685	2.6	20.9		
1 12	6 35.70	+36 49.9	1.493	2.444	7.6	19.3	1 12	6 35.17	+30 14.5	1.729	2.691	5.4	21.1		
1 22	6 26.43	+36 42.8	1.551	2.460	11.1	19.5	1 22	6 24.99	+30 10.7	1.780	2.697	9.4	21.3		
2 1	6 20.10	+36 20.6	1.632	2.476	14.5	19.7	2 1	6 17.31	+29 58.2	1.857	2.702	13.0	21.6		
74409	1998 <i>YN</i> ₂₈		1	1.9	253°11	1°1/ 1.7	18	94497	2001 <i>UB</i> ₅₀		1	2.0	22°09	8°7/ 3.4	18
11 23	7 14.42	+23 41.6	2.338	3.098	13.5	19.5	11 23	7 10.73	+ 5 9.8	1.238	2.082	18.2	19.2		
12 3	7 10.52	+24 20.3	2.238	3.091	10.8	19.3	12 3	7 5.03	+ 4 22.7	1.184	2.086	14.4	19.0		
12 13	7 4.27	+25 3.6	2.161	3.085	7.5	19.1	12 13	6 56.66	+ 3 58.5	1.151	2.091	10.8	18.8		
12 23	6 56.09	+25 48.4	2.110	3.078	3.9	18.8	1 2	6 46.79	+ 4 0.6	1.142	2.096	8.8	18.7		
1 2	6 46.76	+26 31.2	2.089	3.071	1.1	18.6	1 12	6 36.98	+ 4 28.7	1.157	2.102	9.9	18.8		
1 12	6 37.27	+27 9.0	2.099	3.065	4.2	18.8	1 22	6 28.71	+ 5 18.7	1.195	2.109	13.2	19.0		
1 22	6 28.66	+27 39.9	2.138	3.058	7.9	19.0	2 1	6 23.15	+ 6 24.1	1.255	2.116	16.9	19.2		
2 1	6 21.84	+28 3.6	2.204	3.051	11.1	19.2	2 11	6 20.94	+ 7 37.6	1.334	2.124	20.2	19.5		
256137	2006 <i>VZ</i> ₁₂		1	1.9	358°51	0°3/ 2.0	18	466485	2013 <i>VG</i> ₁₁		1	2.0	69°29	1°2/ 2.2	18
11 23	7 23.77	+29 18.9	1.519	2.295	18.8	19.2	11 23	7 10.56	+19 20.0	2.075	2.927	11.6	21.0		
12 3	7 18.99	+28 8.9	1.432	2.293	15.2	18.9	12 3	7 4.08	+19 15.4	2.022	2.944	8.1	20.8		
12 13	7 10.59	+26 49.8	1.364	2.292	10.7	18.7	12 23	6 55.88	+19 14.5	1.994	2.961	4.3	20.6		
12 23	6 59.38	+25 20.2	1.322	2.291	5.6	18.4	1 2	6 46.80	+19 16.1	1.996	2.978	1.2	20.4		
1 2	6 46.75	+23 41.4	1.308	2.291	0.3	18.0	1 12	6 37.88	+19 19.4	2.028	2.995	4.1	20.7		
1 12	6 34.48	+21 58.1	1.323	2.291	5.5	18.4	1 22	6 30.07	+19 23.6	2.088	3.013	7.7	20.9		
1 22	6 24.12	+20 16.9	1.366	2.293	10.7	18.7	2 1	6 24.13	+19 28.4	2.175	3.030	11.0	21.2		
2 1	6 16.81	+18 43.9	1.434	2.295	15.2	18.9	2 11	6 20.52	+19 33.7	2.284	3.047	13.6	21.4		
445095	2008 <i>TG</i> ₁₇₅		1	1.9	51°46	5°3/ 1.4	17	127863	2003 <i>FE</i> ₁₁₈		1	2.0	222°50	0°1/ 1.9	18
11 23	7 21.40	+32 35.2	1.335	2.126	20.2	21.5	11 23	7 14.58	+21 17.2	1.600	2.459	14.0	20.0		
12 3	7 17.90	+33 20.2	1.271	2.139	16.4	21.3	12 3	7 7.62	+21 53.8	1.528	2.454	9.9	19.7		
12 13	7 10.29	+34 2.5	1.227	2.151	11.9	21.0	12 23	6 58.03	+22 35.5	1.481	2.450	5.1	19.4		
12 23	6 59.40	+34 34.4	1.204	2.165	7.5	20.8	1 2	6 46.80	+23 18.2	1.461	2.445	0.1	19.0		
1 2	6 46.75	+34 48.5	1.207	2.179	5.3	20.7	1 12	6 35.40	+23 57.9	1.471	2.439	5.2	19.4		
1 12	6 34.44	+34 41.7	1.236	2.193	7.9	20.9	1 22	6 25.29	+24 31.7	1.508	2.434	10.0	19.7		
1 22	6 24.32	+34 16.4	1.289	2.207	12.1	21.2	2 1	6 17.70	+24 59.2	1.570	2.428	14.2	19.9		
2 1	6 17.69	+33 38.0	1.366	2.221	16.1	21.5	2 11	6 13.38	+25 21.0	1.652	2.422	17.7	20.1		
52608	1997 <i>TM</i> ₁₉		1	1.9	22°17	7°7/ 1.7	18	149242	2002 <i>RG</i> ₂₂₄		1	2.0	66°83	1°1/ 1.8	18
11 23	7 21.36	+40 4.4	1.480	2.257	19.2	18.9	11 23	7 16.93	+22 8.8	1.197	2.068	16.9	19.7		
12 3	7 17.86	+40 42.3	1.412	2.264	15.9	18.7	12 3	7 9.51	+23 11.3	1.156	2.088	11.7	19.4		
12 13	7 10.24	+41 10.1	1.362	2.271	12.4	18.5	12 23	6 58.99	+24 18.3	1.137	2.107	6.0	19.2		
12 23	6 59.34	+41 19.4	1.335	2.279	9.1	18.3	1 2	6 46.80	+25 22.5	1.144	2.127	1.1	18.9		
1 2	6 46.75	+41 3.4	1.333	2.288	7.7	18.3	1 12	6 34.87	+26 17.5	1.178	2.147	6.1	19.3		
1 12	6 34.56	+40 20.6	1.356	2.297	9.2	18.4	1 22	6 24.95	+27 0.3	1.238	2.167	11.4	19.6		
1 22	6 24.62	+39 15.6	1.404	2.308	12.4	18.6	2 1	6 18.32	+27 31.1	1.321	2.187	15.9	20.0		
2 1	6 18.17	+37 56.2	1.475	2.319	15.8	18.8	2 11	6 15.56	+27 52.3	1.422	2.206	19.5	20.3		
197999	2004 <i>RP</i> ₁₇₇		1	1.9	174°67	3°6/ 2.5	18	125464	2001 <i>WK</i> ₈		1	2.0	31°65	2°7/ 1.4	18
11 23	7 18.54	+14 50.2	1.803	2.558	17.0	20.8	11 23	7 14.19	+25 18.7	1.218	2.094	16.3	19.3		
12 3	7 14.17	+14 19.7	1.715	2.560	13.9	20.6	12 3	7 7.83	+26 28.7	1.167	2.100	11.5	19.1		
12 13	7 6.96	+13 57.0	1.647	2.562	10.2	20.4	12 23	6 58.26	+27 40.7	1.138	2.108	6.2	18.8		
12 23	6 57.50	+13 42.9	1.604	2.563	6.2	20.1	1 2	6 46.80	+28 46.7	1.135	2.115	2.7	18.6		
1 2	6 46.76	+13 37.6	1.589	2.564	3.6	20.0	1 12	6 35.34	+29 39.7	1.158	2.124	6.7	18.9		
1 12	6 36.03	+13 40.6	1.602	2.564	5.8	20.1	1 22	6 25.73	+30 16.8	1.206	2.133	11.8	19.2		
1 22	6 26.54	+13 50.9	1.644	2.564	9.8	20.4	2 1	6 19.35	+30 39.2	1.276	2.142	16.3	19.5		
2 1	6 19.32	+14 7.0	1.710	2.563	13.5	20.6	2 11	6 16.92	+30 50.0	1.365	2.152	20.0	19.7		
59472	1999 <i>HX</i>		1	1.9	137°76	8°5/ 3.9	18	222002	1998 <i>HN</i> ₁₀		1				