

EPHEMERIDES

4 3.9

4 4.0

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
242967	2006 <i>ST</i> ₈₃		4 3.9 209°99	0°9/ 2.8 18			392143	2009 <i>HV</i> ₂₆		4 4.0 293°51	0°0/ 3.8 17		
3 2	13 12.25	- 5 34.5	2.482	3.326	10.4	20.6	3 2	13 13.31	- 7 23.3	2.218	3.060	11.5	21.2
3 12	13 7.81	- 4 41.8	2.400	3.322	7.5	20.4	3 12	13 8.83	- 6 58.4	2.127	3.046	8.5	20.9
3 22	13 1.94	- 3 40.1	2.344	3.319	4.3	20.2	3 22	13 2.67	- 6 23.3	2.061	3.033	5.0	20.7
4 1	12 55.16	- 2 33.9	2.317	3.315	1.1	20.0	4 1	12 55.38	- 5 41.3	2.022	3.020	1.2	20.4
4 11	12 48.17	- 1 28.3	2.320	3.311	3.1	20.1	4 11	12 47.76	- 4 56.9	2.011	3.006	2.8	20.5
4 21	12 41.65	- 0 28.5	2.351	3.306	6.4	20.3	4 21	12 40.61	- 4 15.2	2.029	2.993	6.6	20.7
5 1	12 36.21	+ 0 21.1	2.409	3.302	9.5	20.5	5 1	12 34.66	- 3 40.9	2.073	2.980	10.1	20.9
5 11	12 32.32	+ 0 57.5	2.491	3.297	12.2	20.7	5 11	12 30.47	- 3 17.6	2.140	2.967	13.2	21.1
114996	2003 <i>QL</i> ₇₂		4 3.9 66°30	0°5/ 3.5 18			433893	2015 <i>BZ</i> ₄₀₉		4 4.0 280°42	0°0/ 3.9 17		
3 2	13 14.96	-10 7.9	1.374	2.229	16.5	18.5	3 2	13 15.40	- 7 46.4	1.880	2.724	13.2	21.1
3 12	13 10.46	- 8 38.6	1.325	2.251	11.9	18.3	3 12	13 10.58	- 7 22.7	1.798	2.718	9.7	20.9
3 22	13 3.66	- 6 49.7	1.298	2.273	6.8	18.1	3 22	13 3.77	- 6 47.1	1.739	2.712	5.7	20.6
4 1	12 55.55	- 4 50.5	1.297	2.296	1.5	17.8	4 1	12 55.65	- 6 3.2	1.708	2.706	1.4	20.3
4 11	12 47.39	- 2 53.0	1.324	2.318	4.1	18.0	4 11	12 47.17	- 5 16.4	1.704	2.699	3.1	20.4
4 21	12 40.31	- 1 8.3	1.376	2.340	9.1	18.3	4 21	12 39.31	- 4 32.8	1.728	2.693	7.4	20.7
5 1	12 35.22	+ 0 15.1	1.453	2.362	13.4	18.7	5 1	12 32.94	- 3 57.7	1.777	2.687	11.4	20.9
5 11	12 32.60	+ 1 13.5	1.550	2.384	17.0	18.9	5 11	12 28.65	- 3 35.1	1.848	2.681	14.7	21.1
421517	2014 <i>OJ</i> ₁₀₆		4 3.9 128°72	0°7/ 3.4 18			287490	2003 <i>BJ</i> ₁₉		4 4.0 53°96	3°3/ 31.8 18		
3 2	13 19.52	- 6 17.2	1.814	2.657	13.6	22.3	3 2	13 15.01	+ 2 21.7	1.993	2.855	11.7	20.1
3 12	13 13.40	- 5 38.7	1.751	2.672	9.9	22.1	3 12	13 9.97	+ 3 3.4	1.938	2.869	8.5	19.9
3 22	13 5.27	- 4 49.2	1.713	2.687	5.7	21.9	3 22	13 3.22	+ 3 47.3	1.908	2.882	5.1	19.7
4 1	12 55.94	- 3 53.8	1.703	2.701	1.3	21.6	4 1	12 55.49	+ 4 27.9	1.906	2.886	3.3	19.6
4 11	12 46.45	- 2 58.9	1.721	2.714	3.5	21.8	4 11	12 47.65	+ 4 59.7	1.932	2.910	5.2	19.8
4 21	12 37.82	- 2 10.8	1.767	2.726	7.8	22.1	4 21	12 40.54	+ 5 18.9	1.984	2.924	8.5	20.0
5 1	12 30.88	- 1 34.4	1.839	2.738	11.6	22.3	5 1	12 34.86	+ 5 23.0	2.062	2.939	11.6	20.2
5 11	12 26.15	- 1 12.8	1.932	2.750	14.8	22.6	5 11	12 31.08	+ 5 11.7	2.160	2.953	14.2	20.4
383734	2007 <i>VS</i> ₄		4 3.9 123°40	3°3/ 8.2 17			486638	2013 <i>OC</i> ₄		4 4.0 175°77	15°1/ 10.7 18		
3 2	13 16.03	-19 32.6	2.783	3.559	11.2	21.7	3 2	13 36.56	-31 48.6	1.279	2.015	23.9	20.6
3 12	13 10.39	-19 32.4	2.707	3.576	8.9	21.5	3 12	13 28.34	-34 26.6	1.205	2.018	21.1	20.4
3 22	13 3.36	-19 17.8	2.657	3.593	6.3	21.4	3 22	13 15.38	-36 36.7	1.149	2.020	18.3	20.2
4 1	12 55.49	-18 49.9	2.634	3.609	4.0	21.3	4 1	12 58.61	-38 4.9	1.112	2.021	15.9	20.0
4 11	12 47.47	-18 11.3	2.640	3.625	3.4	21.2	4 11	12 40.09	-38 42.2	1.099	2.021	15.1	20.0
4 21	12 39.99	-17 25.9	2.676	3.640	5.2	21.4	4 21	12 22.49	-38 29.3	1.107	2.021	16.0	20.0
5 1	12 33.63	-16 38.3	2.740	3.655	7.6	21.6	5 1	12 8.25	-37 37.8	1.136	2.020	18.4	20.2
5 11	12 28.83	-15 53.2	2.830	3.670	10.0	21.7	5 11	11 58.83	-36 25.5	1.184	2.018	21.2	20.3
354958	2006 <i>GD</i> ₃₈		4 4.0 342°45	0°3/ 3.7 18			208233	2000 <i>SD</i> ₂₆₅		4 4.0 81°68	1°8/ 2.6 18		
3 2	13 11.15	- 9 28.4	1.164	2.036	17.6	19.5	3 2	13 19.95	- 3 43.8	1.452	2.312	15.5	20.3
3 12	13 8.37	- 8 27.8	1.094	2.028	13.0	19.2	3 12	13 14.01	- 3 3.1	1.403	2.333	11.1	20.1
3 22	13 2.83	- 7 3.4	1.044	2.021	7.6	18.9	3 22	13 5.72	- 2 12.7	1.377	2.353	6.3	19.8
4 1	12 55.44	- 5 22.6	1.017	2.015	1.7	18.5	4 1	12 56.08	- 1 19.1	1.376	2.373	2.0	19.6
4 11	12 47.55	- 3 37.2	1.014	2.010	4.5	18.6	4 11	12 46.37	- 0 30.3	1.403	2.394	4.7	19.8
4 21	12 40.57	- 2 0.4	1.034	2.005	10.4	18.9	4 21	12 37.77	+ 0 7.3	1.455	2.414	9.3	20.1
5 1	12 35.73	- 0 43.2	1.077	2.001	15.7	19.2	5 1	12 31.23	+ 0 29.1	1.532	2.433	13.4	20.4
5 11	12 33.76	+ 0 7.8	1.137	1.999	20.1	19.5	5 11	12 27.26	+ 0 33.2	1.628	2.453	16.8	20.7
471159	2010 <i>GK</i> ₁₅₃		4 4.0 241°27	7°6/ 15.5 17			62761	2000 <i>UA</i> ₁₂		4 4.0 162°42	4°6/ 30.2 18		
3 2	13 16.08	-38 26.2	3.211	3.846	12.4	21.8	3 2	13 18.47	+ 7 48.6	2.331	3.184	10.6	19.1
3 12	13 10.73	-38 49.3	3.095	3.829	11.2	21.7	3 12	13 12.31	+ 8 37.1	2.268	3.190	7.9	19.0
3 22	13 3.74	-38 52.3	2.998	3.811	9.8	21.5	3 22	13 4.53	+ 9 23.8	2.232	3.196	5.5	18.8
4 1	12 55.63	-38 33.0	2.925	3.793	8.5	21.4	4 1	12 55.80	+10 3.3	2.225	3.201	4.6	18.8
4 11	12 47.13	-37 51.3	2.876	3.774	7.7	21.3	4 11	12 46.93	+10 30.5	2.246	3.205	6.3	18.9
4 21	12 39.00	-36 49.3	2.853	3.755	7.8	21.3	4 21	12 38.70	+10 42.4	2.296	3.209	8.9	19.0
5 1	12 31.97	-35 31.7	2.857	3.735	8.7	21.3	5 1	12 31.80	+10 37.6	2.371	3.212	11.5	19.2
5 11	12 26.60	-34 4.5	2.886	3.715	10.1	21.4	5 11	12 26.70	+10 16.7	2.466	3.214	13.8	19.4
377944	2006 <i>HX</i> ₈₆		4 4.0 112°66	1°5/ 2.5 17			210704	2000 <i>SB</i> ₁₄₆		4 4.0 254°26	0°6/ 4.8 18		
3 2	13 15.19	- 3 29.1	2.003	2.856	12.1	21.0	3 2	13 12.21	-11 8.6	2.613	3.437	10.5	21.0
3 12	13 10.18	- 2 49.3	1.934	2.861	8.8	20.8	3 12	13 7.84	-10 23.3	2.512	3.420	7.9	20.8
3 22	13 3.40	- 2 1.7	1.890	2.866	5.0	20.6	3 22	13 2.01	- 9 25.4	2.436	3.403	4.8	20.6
4 1	12 55.53	- 1 11.1	1.874	2.871	1.6	20.4	4 1	12 55.24	- 8 17.8	2.389	3.386	1.5	20.3
4 11	12 47.45	- 0 23.3	1.886	2.876	3.8	20.5	4 11	12 48.17	- 7 5.3	2.372	3.368	2.3	20.4
4 21	12 40.04	+ 0 16.3	1.926	2.881	7.6	20.8	4 21	12 41.48	- 5 53.2	2.385	3.350	5.7	20.6
5 1	12 34.04	+ 0 43.6	1.991	2.885	11.1	21.0	5 1	12 35.81	- 4 46.7	2.425	3.331	8.9	20.7
5 11	12 29.97	+ 0 56.5	2.078	2.890	14.1	21.2	5 11	12 31.63	- 3 50.4	2.490	3.313	11.7	20.9
246054	2006 <i>UX</i> ₃₃₈		4 4.0 208°30	4°2/ 29.6 18			501564	2014 <i>NT</i> ₂₈		4 4.0 328°30	5°7/ 30.6 17		
3 2	13 14.21	+ 8 8.8	2.769	3.624	9.1	21.3	3 2	13 13.53	+ 1 42.1	1.118	2.008	16.7	20.8
3 12	13 9.09	+ 8 59.3	2.696	3.619	6.8	21.2	3 12	13 10.21	+ 3 9.8	1.053	1.997	12.2	20.5
3 22	13 2.63	+ 9 48.6	2.651	3.613	4.8	21.0	3 22	13 3.98	+ 4 47.6	1.009	1.987	7.7	20.3
4 1	12 55.34	+10 31.8	2.635	3.608	4.2	21.0	4 1	12 55.76	+ 6 23.3	0.989	1.978	5.7	20.1
4 11	12 47.88	+11 4.6	2.647	3.602	5.7	21.1	4 11	12 47.01	+ 7 43.3	0.991	1.969	9.0	20.3
4 21	12 40.87	+11 24.1	2.688	3.595	8.0	21.2	4 21	12 39.23	+ 8 36.9	1.016	1.961	13.9	20.5
5 1	12 34.88	+11 28.5	2.754	3.588	10.3	21.3	5 1	12 33.70	+ 8 58.5	1.060	1.954	18.6	20.7
5 11	12 30.35	+11 17.9	2.841	3.581	12.4	21.5	5 11	12 31.21	+ 8 48.1	1.120	1.948	22.6	21.0
286264	2001 <i>VR</i> ₂₅		4 4.0 162°54	0°5/ 3.6 18			110340	2001 <i>SC</i> ₂₉₂		4 4.0 186°61			

EPHEMERIDES

4 4.0

4 4.0

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
24034	1999 <i>SF</i> ₂		4 4.0 135°09	1°6/ 2.5 18			504376	2007 <i>VK</i> ₈₁		4 4.0 142°47	2°4/ 6.9 17		
3 2	13 17.98	- 4 1.7	1.898	2.747	12.9	19.2	3 2	13 12.92	-16 42.0	2.310	3.115	12.3	22.0
3 12	13 12.24	- 3 10.2	1.834	2.759	9.3	19.0	3 12	13 8.46	-16 9.1	2.227	3.119	9.5	21.8
3 22	13 4.61	- 2 9.6	1.796	2.771	5.3	18.8	3 22	13 2.41	-15 19.6	2.169	3.122	6.4	21.6
4 1	12 55.84	- 1 5.7	1.785	2.782	1.7	18.6	4 1	12 55.37	-14 15.8	2.137	3.126	3.3	21.4
4 11	12 46.91	- 0 5.3	1.803	2.793	4.1	18.8	4 11	12 48.12	-13 2.5	2.135	3.129	2.8	21.4
4 21	12 38.76	+ 0 45.6	1.849	2.802	8.0	19.0	4 21	12 41.43	-11 45.6	2.161	3.132	5.7	21.6
5 1	12 32.18	+ 1 22.5	1.921	2.812	11.6	19.3	5 1	12 35.96	-10 31.6	2.215	3.135	9.0	21.8
5 11	12 27.69	+ 1 43.0	2.014	2.821	14.7	19.5	5 11	12 32.20	- 9 25.9	2.293	3.138	11.9	22.0
83191	2001 <i>QP</i> ₃₂₇		4 4.0 135°56	0°1/ 3.9 18			101930	1999 <i>RU</i> ₂₀		4 4.0 213°28	0°2/ 4.3 16		
3 2	13 13.48	- 7 56.7	2.322	3.159	11.2	20.1	3 2	13 17.35	- 9 23.5	1.977	2.810	13.0	20.6
3 12	13 8.77	- 7 18.5	2.247	3.164	8.2	19.9	3 12	13 11.97	- 8 44.5	1.889	2.804	9.7	20.4
3 22	13 2.54	- 6 30.0	2.197	3.169	4.8	19.7	3 22	13 4.61	- 7 51.5	1.826	2.796	5.8	20.1
4 1	12 55.36	- 5 35.1	2.176	3.174	1.1	19.5	4 1	12 55.93	- 6 48.2	1.790	2.788	1.5	19.8
4 11	12 48.00	- 4 38.7	2.184	3.179	2.7	19.6	4 11	12 46.87	- 5 40.8	1.783	2.779	3.0	19.9
4 21	12 41.19	- 3 46.0	2.221	3.183	6.2	19.8	4 21	12 38.41	- 4 35.9	1.805	2.769	7.3	20.1
5 1	12 35.59	- 3 1.5	2.284	3.187	9.5	20.0	5 1	12 31.41	- 3 39.8	1.853	2.759	11.2	20.3
5 11	12 31.64	- 2 28.7	2.371	3.191	12.3	20.2	5 11	12 26.47	- 2 57.3	1.924	2.748	14.6	20.5
130425	2000 <i>PF</i> ₁₉		4 4.0 184°39	1°7/ 5.4 18			405175	2002 <i>VF</i> ₁₁₃		4 4.0 91°95	0°8/ 4.8 18		
3 2	13 20.95	-11 20.0	1.761	2.589	14.7	19.9	3 2	13 19.23	-10 44.4	1.857	2.687	13.9	22.0
3 12	13 14.78	-11 18.2	1.681	2.589	11.1	19.7	3 12	13 13.09	-10 10.7	1.805	2.716	10.3	21.8
3 22	13 6.29	-11 1.7	1.624	2.589	6.9	19.4	3 22	13 5.06	- 9 23.1	1.776	2.744	6.2	21.6
4 1	12 56.28	-10 32.7	1.594	2.589	2.7	19.2	4 1	12 55.99	- 8 25.8	1.775	2.772	1.9	21.4
4 11	12 45.87	- 9 55.6	1.592	2.588	3.2	19.2	4 11	12 46.89	- 7 25.0	1.803	2.799	2.8	21.5
4 21	12 36.19	- 9 16.3	1.618	2.586	7.5	19.5	4 21	12 38.70	- 6 27.1	1.859	2.826	6.9	21.8
5 1	12 28.27	- 8 41.1	1.669	2.584	11.7	19.7	5 1	12 32.20	- 5 37.9	1.942	2.851	10.6	22.1
5 11	12 22.78	- 8 15.2	1.743	2.581	15.3	19.9	5 11	12 27.84	- 5 1.4	2.047	2.877	13.6	22.3
210509	1998 <i>MW</i> ₃₀		4 4.0 279°82	5°5/ 27.7 18			213807	2003 <i>GY</i> ₄₁		4 4.0 15°26	7°0/ 29.5 17		
3 2	13 11.64	+ 9 5.7	2.313	3.179	10.2	20.0	3 2	13 18.44	+13 2.7	1.773	2.637	12.9	19.5
3 12	13 7.52	+10 33.6	2.243	3.169	7.7	19.8	3 12	13 12.70	+13 36.2	1.720	2.641	10.0	19.3
3 22	13 1.86	+12 0.8	2.198	3.158	5.8	19.7	3 22	13 4.93	+14 1.9	1.691	2.646	7.7	19.2
4 1	12 55.22	+13 20.3	2.182	3.147	5.7	19.6	4 1	12 55.97	+14 12.9	1.688	2.652	7.1	19.2
4 11	12 48.33	+14 25.5	2.194	3.137	7.5	19.7	4 11	12 46.90	+14 4.4	1.711	2.659	8.7	19.3
4 21	12 41.93	+15 11.8	2.232	3.126	10.0	19.9	4 21	12 38.71	+13 34.7	1.759	2.666	11.5	19.5
5 1	12 36.68	+15 36.8	2.294	3.115	12.5	20.0	5 1	12 32.25	+12 44.4	1.829	2.674	14.3	19.7
5 11	12 33.07	+15 40.6	2.375	3.105	14.8	20.2	5 11	12 28.01	+11 36.4	1.920	2.682	16.8	19.9
437544	2013 <i>YK</i> ₁₂₅		4 4.0 127°12	2°2/ 1.5 18			107277	2001 <i>BA</i> ₇₃		4 4.0 313°21	9°0/ 27.6 18		
3 2	13 14.30	- 0 32.8	2.469	3.320	10.2	21.8	3 2	13 15.84	+10 45.8	1.306	2.189	15.3	17.8
3 12	13 9.21	+ 0 13.9	2.405	3.331	7.3	21.7	3 12	13 11.92	+12 13.9	1.223	2.157	12.0	17.5
3 22	13 2.72	+ 1 4.8	2.367	3.342	4.2	21.5	3 22	13 5.10	+13 41.9	1.163	2.125	9.5	17.3
4 1	12 55.40	+ 1 55.5	2.359	3.352	2.2	21.3	4 1	12 56.13	+14 57.0	1.125	2.093	9.3	17.2
4 11	12 47.96	+ 2 41.1	2.380	3.362	4.0	21.5	4 11	12 46.34	+15 46.9	1.111	2.062	12.0	17.2
4 21	12 41.08	+ 3 17.6	2.429	3.372	6.9	21.7	4 21	12 37.20	+16 3.4	1.119	2.032	16.1	17.4
5 1	12 35.35	+ 3 42.0	2.505	3.382	9.8	21.9	5 1	12 30.09	+15 43.2	1.146	2.002	20.2	17.5
5 11	12 31.19	+ 3 52.9	2.603	3.391	12.2	22.1	5 11	12 25.94	+14 48.8	1.187	1.973	23.9	17.7
117120	2004 <i>PF</i> ₂₁		4 4.0 237°93	1°5/ 2.4 18			70968	1999 <i>XA</i> ₂₀		4 4.0 325°66	5°5/ 30.9 18		
3 2	13 15.18	- 4 9.5	2.145	2.993	11.6	20.5	3 2	13 19.32	+ 7 52.0	1.672	2.538	13.4	17.8
3 12	13 10.24	- 3 18.2	2.057	2.981	8.4	20.3	3 12	13 13.63	+ 8 21.9	1.601	2.529	10.1	17.6
3 22	13 3.52	- 2 17.3	1.993	2.968	4.8	20.1	3 22	13 5.65	+ 8 49.1	1.553	2.521	6.9	17.4
4 1	12 55.63	- 1 11.8	1.958	2.955	1.6	19.8	4 1	12 56.19	+ 9 6.9	1.532	2.513	5.6	17.3
4 11	12 47.39	- 0 7.8	1.952	2.941	3.8	20.0	4 11	12 46.38	+ 9 9.2	1.538	2.506	7.6	17.4
4 21	12 39.65	+ 0 48.8	1.974	2.927	7.6	20.2	4 21	12 37.36	+ 8 52.7	1.569	2.499	11.0	17.6
5 1	12 33.20	+ 1 32.9	2.023	2.913	11.2	20.3	5 1	12 30.11	+ 8 16.4	1.623	2.492	14.6	17.8
5 11	12 28.59	+ 2 1.5	2.093	2.897	14.3	20.5	5 11	12 25.28	+ 7 21.7	1.697	2.486	17.7	17.9
67499	2000 <i>RV</i> ₄₁		4 4.0 117°35	3°4/ 7.1 18			405311	2003 <i>UX</i> ₆₆		4 4.0 192°72	3°1/ 31.9 17		
3 2	13 17.45	-17 15.8	1.598	2.416	16.4	19.3	3 2	13 18.75	+ 1 2.8	2.126	2.977	11.6	22.0
3 12	13 12.34	-16 57.0	1.527	2.424	12.7	19.1	3 12	13 12.77	+ 1 58.5	2.050	2.975	8.4	21.8
3 22	13 4.89	-16 15.4	1.477	2.432	8.6	18.9	3 22	13 4.97	+ 2 58.9	2.000	2.973	5.1	21.6
4 1	12 55.96	-15 13.3	1.452	2.440	4.6	18.6	4 1	12 56.01	+ 3 58.2	1.978	2.969	3.1	21.5
4 11	12 46.73	-13 56.9	1.454	2.448	3.9	18.6	4 11	12 46.78	+ 4 50.2	1.986	2.965	5.1	21.6
4 21	12 38.39	-12 34.7	1.483	2.456	7.6	18.9	4 21	12 38.17	+ 5 29.9	2.023	2.959	8.5	21.8
5 1	12 31.91	-11 16.2	1.537	2.463	11.7	19.1	5 1	12 30.96	+ 5 53.7	2.085	2.953	11.8	22.0
5 11	12 27.93	-10 9.0	1.613	2.470	15.4	19.3	5 11	12 25.69	+ 6 0.4	2.168	2.946	14.6	22.1
210079	2006 <i>QV</i> ₂₇		4 4.0 301°06	1°8/ 2.7 17			140237	2001 <i>SG</i> ₂₄₈		4 4.0 148°95	1°6/ 2.4 18		
3 2	13 16.71	- 3 42.8	1.412	2.278	15.4	20.2	3 2	13 16.30	- 1 33.2	2.423	3.269	10.5	20.3
3 12	13 12.31	- 3 11.6	1.323	2.255	11.4	19.9	3 12	13 10.76	- 1 12.3	2.350	3.273	7.6	20.1
3 22	13 5.19	- 2 28.4	1.255	2.233	6.6	19.5	3 22	13 3.70	- 0 46.8	2.303	3.277	4.4	19.9
4 1	12 56.11	- 1 38.5	1.212	2.210	2.0	19.2	4 1	12 55.70	- 0 20.5	2.285	3.281	1.6	19.7
4 11	12 46.28	- 0 50.0	1.195	2.187	5.0	19.3	4 11	12 47.51	+ 0 2.8	2.296	3.284	3.5	19.8
4 21	12 37.07	- 0 10.7	1.203	2.165	10.3	19.5	4 21	12 39.88	+ 0 19.5	2.336	3.288	6.7	20.0
5 1	12 29.76	+ 0 12.4	1.234	2.143	15.3	19.8	5 1	12 33.44	+ 0 26.9	2.403	3.291	9.7	20.2
5 11	12 25.23	+ 0 15.7	1.283	2.122	19.6	20.0	5 11	12 28.67	+ 0 23.4	2.493	3.294	12.3	20.4
181625	2006 <i>WD</i> ₁₉₃		4 4.0 189°29	0°4/ 3.5 17			230665	2003 <i>SD</i> ₁₉₈		4 4.0 48°50	0°4/		

EPHEMERIDES

4 4.0

4 4.1

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
190295	1995 <i>SQ</i> ₂₇		4 4.0 110°84	0°2/ 3.8 18			296390	2009 <i>FR</i> ₆₈		4 4.0 284°13	1°7/ 2.7 17		
3 2	13 17.94	- 8 55.2	1.431	2.283	16.1	20.5	3 2	13 17.23	- 4 4.7	1.537	2.397	14.7	20.9
3 12	13 12.78	- 8 1.4	1.370	2.294	11.8	20.3	3 12	13 12.50	- 3 27.5	1.447	2.377	10.8	20.6
3 22	13 5.17	- 6 50.2	1.331	2.305	6.9	20.0	3 22	13 5.23	- 2 38.1	1.381	2.357	6.3	20.2
4 1	12 56.06	- 5 28.1	1.317	2.315	1.6	19.7	4 1	12 56.16	- 1 42.1	1.339	2.337	1.9	19.9
4 11	12 46.72	- 4 4.4	1.330	2.325	3.9	19.9	4 11	12 46.45	- 0 47.2	1.325	2.316	4.7	20.0
4 21	12 38.38	- 2 48.5	1.370	2.335	8.9	20.2	4 21	12 37.35	- 0 1.1	1.336	2.296	9.8	20.3
5 1	12 32.05	- 1 48.2	1.433	2.345	13.5	20.5	5 1	12 30.03	+ 0 29.7	1.371	2.275	14.4	20.5
5 11	12 28.33	- 1 8.0	1.517	2.354	17.2	20.8	5 11	12 25.29	+ 0 41.4	1.425	2.255	18.5	20.7
523084	2016 <i>QJ</i> ₉₄		4 4.0 317°82	8°2/24.7 18			333206	2012 <i>HV</i> ₃		4 4.0 38°41	21°1/23.2 17		
3 2	13 11.97	+15 46.5	1.984	2.851	11.6	20.4	3 2	13 35.51	+37 0.4	1.049	1.867	23.1	20.0
3 12	13 8.06	+17 25.4	1.919	2.835	9.5	20.2	3 12	13 26.53	+38 25.3	1.025	1.871	21.7	19.9
3 22	13 2.32	+18 58.1	1.880	2.819	8.3	20.1	3 22	13 13.35	+39 6.5	1.016	1.875	21.1	19.8
4 1	12 55.40	+20 15.6	1.866	2.804	8.7	20.1	4 1	12 57.95	+38 49.2	1.024	1.879	21.5	19.9
4 11	12 48.17	+21 10.3	1.878	2.789	10.5	20.2	4 11	12 42.91	+37 28.5	1.048	1.884	22.7	20.0
4 21	12 41.52	+21 38.2	1.913	2.774	12.9	20.3	4 21	12 30.39	+35 11.1	1.089	1.888	24.5	20.1
5 1	12 36.24	+21 38.0	1.969	2.760	15.4	20.4	5 1	12 21.73	+32 9.9	1.144	1.894	26.4	20.3
5 11	12 32.90	+21 11.6	2.042	2.746	17.6	20.6	5 11	12 17.30	+28 40.3	1.212	1.899	28.2	20.5
385517	2004 <i>HP</i> ₂₀		4 4.0 335°93	2°9/ 1.5 17			134711	1999 <i>XV</i> ₂₄₁		4 4.0 127°49	3°0/ 1.1 18		
3 2	13 14.51	+ 0 46.0	1.839	2.703	12.5	20.5	3 2	13 17.89	- 0 23.1	1.890	2.746	12.6	20.4
3 12	13 9.97	+ 1 17.3	1.762	2.694	9.1	20.3	3 12	13 12.18	+ 0 41.8	1.833	2.761	9.0	20.2
3 22	13 3.46	+ 1 53.1	1.710	2.686	5.4	20.1	3 22	13 4.60	+ 1 52.5	1.801	2.775	5.3	20.0
4 1	12 55.67	+ 2 28.1	1.684	2.678	2.9	19.9	4 1	12 55.93	+ 3 2.3	1.796	2.789	3.0	19.9
4 11	12 47.56	+ 2 56.3	1.686	2.671	5.1	20.0	4 11	12 47.14	+ 4 3.9	1.821	2.802	5.2	20.1
4 21	12 40.08	+ 3 13.0	1.714	2.664	8.9	20.2	4 21	12 39.15	+ 4 51.8	1.873	2.814	8.8	20.3
5 1	12 34.07	+ 3 15.0	1.767	2.657	12.5	20.4	5 1	12 32.74	+ 5 22.3	1.950	2.826	12.2	20.5
5 11	12 30.13	+ 3 0.9	1.840	2.651	15.6	20.6	5 11	12 28.38	+ 5 34.3	2.048	2.838	15.0	20.8
186032	2001 <i>RA</i> ₃₄		4 4.0 87°69	8°3/10.9 18			323742	2005 <i>ME</i> ₄₂		4 4.0 301°49	0°7/ 3.4 17		
3 2	13 20.91	-27 5.5	1.767	2.524	17.4	19.7	3 2	13 13.62	- 7 48.4	1.504	2.362	15.1	20.7
3 12	13 15.05	-28 3.2	1.691	2.530	14.8	19.5	3 12	13 9.95	- 6 56.3	1.408	2.336	11.2	20.4
3 22	13 6.62	-28 36.3	1.634	2.537	11.9	19.3	3 22	13 3.79	- 5 45.5	1.334	2.310	6.6	20.0
4 1	12 56.45	-28 41.7	1.600	2.544	9.3	19.2	4 1	12 55.83	- 4 21.2	1.285	2.284	1.5	19.6
4 11	12 45.78	-28 19.7	1.592	2.551	8.3	19.1	4 11	12 47.19	- 2 52.2	1.263	2.257	4.2	19.8
4 21	12 35.88	-27 35.0	1.609	2.558	9.4	19.2	4 21	12 39.08	- 1 28.5	1.266	2.231	9.6	20.0
5 1	12 27.91	-26 35.7	1.650	2.564	11.8	19.4	5 1	12 32.69	- 0 19.4	1.293	2.206	14.5	20.2
5 11	12 22.61	-25 31.5	1.714	2.571	14.6	19.5	5 11	12 28.84	+ 0 28.7	1.339	2.181	18.8	20.4
505811	2015 <i>BV</i> ₄₁₆		4 4.0 249°35	5°4/ 8.8 18			308182	2005 <i>CN</i> ₃₈		4 4.0 74°13	2°6/ 1.9 18		
3 2	13 20.31	-22 18.9	2.251	3.017	13.9	21.5	3 2	13 18.18	- 3 18.7	1.421	2.285	15.5	20.5
3 12	13 14.28	-22 50.2	2.142	2.998	11.4	21.2	3 12	13 12.73	- 2 8.6	1.378	2.310	11.0	20.3
3 22	13 6.09	-23 3.9	2.055	2.978	8.7	21.0	3 22	13 5.02	- 0 48.9	1.358	2.335	6.3	20.1
4 1	12 56.35	-22 58.4	1.994	2.958	6.2	20.8	4 1	12 56.03	+ 0 32.1	1.363	2.359	2.6	19.9
4 11	12 45.97	-22 34.6	1.962	2.937	5.5	20.7	4 11	12 47.03	+ 1 44.8	1.396	2.384	5.3	20.1
4 21	12 35.97	-21 55.8	1.957	2.916	7.3	20.8	4 21	12 39.16	+ 2 41.6	1.455	2.408	9.8	20.5
5 1	12 27.31	-21 7.9	1.980	2.893	10.2	20.9	5 1	12 33.31	+ 3 18.1	1.537	2.432	13.7	20.8
5 11	12 20.76	-20 17.9	2.026	2.871	13.2	21.1	5 11	12 29.94	+ 3 32.9	1.638	2.455	17.0	21.0
301024	2008 <i>SH</i> ₇₄		4 4.0 217°59	2°3/ 5.9 17			480260	2015 <i>HR</i> ₆₄		4 4.0 286°46	1°7/ 6.0 17		
3 2	13 20.45	-13 28.5	1.728	2.550	15.1	21.9	3 2	13 12.33	-14 12.5	2.148	2.969	12.6	21.6
3 12	13 14.61	-13 18.4	1.639	2.542	11.6	21.6	3 12	13 8.21	-13 36.8	2.059	2.963	9.6	21.4
3 22	13 6.34	-12 50.5	1.572	2.534	7.5	21.3	3 22	13 2.39	-12 44.6	1.994	2.956	6.2	21.1
4 1	12 56.40	-12 6.5	1.532	2.524	3.3	21.1	4 1	12 55.46	-11 38.8	1.956	2.949	2.7	20.9
4 11	12 45.93	-11 11.4	1.519	2.514	3.4	21.0	4 11	12 48.22	-10 24.5	1.946	2.942	2.7	20.9
4 21	12 36.12	-10 12.1	1.534	2.503	7.7	21.3	4 21	12 41.51	- 9 8.3	1.965	2.935	6.2	21.1
5 1	12 28.06	- 9 16.3	1.575	2.492	12.1	21.5	5 1	12 36.06	- 7 56.7	2.010	2.928	9.8	21.3
5 11	12 22.48	- 8 30.6	1.637	2.480	15.9	21.7	5 11	12 32.41	- 6 55.5	2.078	2.922	13.0	21.5
50173	2000 <i>AK</i> ₁₅₉		4 4.0 190°19	2°3/ 5.9 18			39069	2000 <i>VM</i> ₁₀		4 4.0 101°92	0°6/ 4.8 18		
3 2	13 21.14	-13 44.4	1.760	2.579	15.1	19.6	3 2	13 12.25	-10 48.6	2.465	3.293	11.0	18.9
3 12	13 15.00	-13 35.3	1.677	2.578	11.5	19.4	3 12	13 7.83	-10 6.7	2.392	3.302	8.1	18.8
3 22	13 6.49	-13 8.6	1.616	2.577	7.4	19.1	3 22	13 2.01	- 9 13.2	2.344	3.312	4.9	18.6
4 1	12 56.42	-12 26.1	1.582	2.575	3.4	18.9	4 1	12 55.34	- 8 11.4	2.325	3.322	1.5	18.3
4 11	12 45.92	-11 32.9	1.576	2.572	3.4	18.9	4 11	12 48.53	- 7 6.3	2.335	3.331	2.3	18.4
4 21	12 36.14	-10 35.6	1.599	2.568	7.5	19.1	4 21	12 42.24	- 6 3.1	2.374	3.340	5.6	18.6
5 1	12 28.13	- 9 41.7	1.646	2.563	11.7	19.3	5 1	12 37.07	- 5 6.7	2.440	3.349	8.7	18.9
5 11	12 22.57	- 8 57.5	1.717	2.557	15.4	19.6	5 11	12 33.45	- 4 20.7	2.531	3.358	11.4	19.0
196520	2003 <i>OP</i> ₆		4 4.0 172°20	4°4/29.1 17			174181	2002 <i>PR</i> ₁₃₃		4 4.1 260°32	1°9/ 5.6 17		
3 2	13 15.31	+ 8 40.5	2.756	3.609	9.2	21.1	3 2	13 17.79	-12 11.0	1.666	2.499	15.1	20.9
3 12	13 9.89	+ 9 45.2	2.693	3.613	6.9	21.0	3 12	13 12.71	-12 4.3	1.580	2.490	11.5	20.7
3 22	13 3.13	+10 48.4	2.657	3.617	5.0	20.8	3 22	13 5.26	-11 40.8	1.516	2.481	7.3	20.4
4 1	12 55.58	+11 44.7	2.651	3.619	4.5	20.8	4 1	12 56.18	-11 2.8	1.478	2.472	3.0	20.1
4 11	12 47.89	+12 29.4	2.674	3.622	6.0	20.9	4 11	12 46.58	-10 15.2	1.467	2.463	3.3	20.1
4 21	12 40.69	+12 59.4	2.725	3.623	8.2	21.0	4 21	12 37.65	- 9 24.6	1.483	2.454	7.8	20.4
5 1	12 34.56	+13 13.0	2.801	3.624	10.5	21.2	5 1	12 30.45	- 8 38.3	1.524	2.444	12.2	20.6
5 11	12 29.91	+13 10.4	2.899	3.624	12.4	21.3	5 11	12 25.69	- 8 2.6	1.586	2.435	16.0	20.8
106907	2000 <i>YZ</i> ₄₇		4 4.0 101°23	0°6/ 3.5 18			516705	2008 <i>VC</i> ₈₂		4 4.1 109°26	3°4/31.		

EPHEMERIDES

4 4.1

4 4.1

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
379575	2011 <i>BD</i> ₄₃		4 4.1 342°12	5°3/31.0	17		148662	2001 <i>SA</i> ₁₃₈		4 4.1 263°63	0°0/ 3.8	17	
3 2	13 17.31	+ 5 48.0	1.509	2.382	14.2	20.5	3 2	13 16.16	- 8 11.3	1.818	2.662	13.6	20.9
3 12	13 12.35	+ 6 29.5	1.443	2.377	10.5	20.2	3 12	13 11.34	- 7 39.2	1.728	2.648	10.1	20.7
3 22	13 4.99	+ 7 11.0	1.399	2.371	6.9	20.0	3 22	13 4.39	- 6 53.4	1.662	2.634	6.0	20.4
4 1	12 56.09	+ 7 44.9	1.381	2.366	5.4	19.9	4 1	12 55.99	- 5 57.7	1.622	2.620	1.4	20.0
4 11	12 46.85	+ 8 3.8	1.389	2.362	7.6	20.0	4 11	12 47.12	- 4 58.4	1.610	2.605	3.3	20.1
4 21	12 38.45	+ 8 3.2	1.421	2.358	11.4	20.2	4 21	12 38.81	- 4 2.1	1.625	2.590	7.8	20.4
5 1	12 31.92	+ 7 41.3	1.476	2.355	15.2	20.4	5 1	12 32.02	- 3 15.4	1.666	2.575	12.0	20.6
5 11	12 27.91	+ 6 58.9	1.550	2.352	18.5	20.7	5 11	12 27.43	- 2 43.0	1.728	2.560	15.6	20.8
308674	2006 <i>DS</i> ₃		4 4.1 323°78	3°8/ 6.3	17		465680	2009 <i>SE</i> ₂₀₃		4 4.1 230°53	2°4/ 2.1	18	
3 2	13 18.19	-13 20.1	1.232	2.080	18.5	19.8	3 2	13 21.10	+ 0 31.7	2.011	2.860	12.2	21.8
3 12	13 13.81	-13 54.2	1.151	2.066	14.4	19.5	3 12	13 14.69	+ 0 47.7	1.928	2.851	8.9	21.6
3 22	13 6.30	-14 9.5	1.089	2.054	9.6	19.2	3 22	13 6.22	+ 1 7.3	1.869	2.842	5.3	21.4
4 1	12 56.50	-14 5.4	1.050	2.042	5.0	18.9	4 1	12 56.41	+ 1 26.2	1.838	2.833	2.4	21.2
4 11	12 45.85	-13 45.2	1.035	2.030	4.8	18.8	4 11	12 46.23	+ 1 39.8	1.837	2.823	4.5	21.3
4 21	12 35.98	-13 15.4	1.044	2.019	9.6	19.0	4 21	12 36.65	+ 1 44.0	1.864	2.813	8.3	21.5
5 1	12 28.38	-12 44.5	1.075	2.010	14.7	19.3	5 1	12 28.58	+ 1 36.3	1.917	2.802	11.9	21.7
5 11	12 24.02	-12 21.1	1.124	2.000	19.3	19.5	5 11	12 22.63	+ 1 15.4	1.992	2.791	15.1	21.9
367158	2006 <i>VY</i> ₂₂		4 4.1 211°37	0°1/ 3.9	17		387133	2012 <i>TV</i> ₁₉₄		4 4.1 41°86	1°5/ 2.5	17	
3 2	13 17.35	- 7 53.4	2.090	2.925	12.4	22.4	3 2	13 14.35	- 3 2.3	2.045	2.899	11.9	21.0
3 12	13 11.90	- 7 17.1	2.002	2.919	9.1	22.1	3 12	13 9.62	- 2 28.3	1.977	2.904	8.6	20.8
3 22	13 4.56	- 6 28.9	1.940	2.911	5.4	21.9	3 22	13 3.17	- 1 47.3	1.933	2.909	4.9	20.6
4 1	12 56.00	- 5 32.7	1.905	2.903	1.2	21.6	4 1	12 55.67	- 1 3.8	1.917	2.914	1.7	20.3
4 11	12 47.08	- 4 34.0	1.900	2.895	3.0	21.7	4 11	12 47.97	+ 0 23.3	1.929	2.919	3.8	20.5
4 21	12 38.72	- 3 38.7	1.924	2.886	7.1	21.9	4 21	12 40.90	+ 0 9.4	1.968	2.924	7.4	20.7
5 1	12 31.74	- 2 52.4	1.974	2.876	10.8	22.1	5 1	12 35.18	+ 0 30.6	2.033	2.929	10.8	21.0
5 11	12 26.72	- 2 18.9	2.046	2.865	14.0	22.3	5 11	12 31.32	+ 0 38.1	2.120	2.935	13.7	21.2
62341	2000 <i>SE</i> ₁₃₁		4 4.1 257°41	6°7/10.5	18		232879	2004 <i>VX</i> ₅₆		4 4.1 174°46	0°9/ 5.1	18	
3 2	13 16.56	-25 40.0	1.909	2.674	16.0	19.6	3 2	13 17.17	-10 21.2	2.334	3.157	11.7	21.0
3 12	13 11.72	-26 1.7	1.819	2.670	13.4	19.4	3 12	13 11.56	-10 6.7	2.252	3.159	8.7	20.9
3 22	13 4.64	-25 59.6	1.750	2.665	10.5	19.2	3 22	13 4.27	- 9 41.0	2.196	3.161	5.3	20.6
4 1	12 56.04	-25 32.0	1.704	2.660	7.8	19.0	4 1	12 55.94	- 9 6.7	2.167	3.163	1.8	20.4
4 11	12 46.95	-24 41.0	1.684	2.655	6.7	19.0	4 11	12 47.35	- 8 27.6	2.168	3.164	2.4	20.5
4 21	12 38.49	-23 31.9	1.690	2.650	8.1	19.0	4 21	12 39.31	- 7 48.4	2.198	3.164	6.0	20.7
5 1	12 31.66	-22 12.9	1.722	2.645	10.9	19.2	5 1	12 32.54	- 7 13.5	2.256	3.164	9.3	20.9
5 11	12 27.15	-20 53.1	1.777	2.640	13.9	19.4	5 11	12 27.54	- 6 46.8	2.337	3.164	12.2	21.1
505215	2012 <i>TO</i> ₂₈₀		4 4.1 36°31	2°5/ 6.9	17		504368	2007 <i>VM</i> ₄₆		4 4.1 359°33	4°3/ 7.5	16	
3 2	13 12.52	-16 31.2	2.002	2.817	13.6	21.0	3 2	13 16.28	-17 46.1	1.427	2.252	17.6	20.5
3 12	13 8.41	-15 59.9	1.924	2.821	10.5	20.8	3 12	13 11.90	-17 48.7	1.352	2.251	13.9	20.2
3 22	13 2.51	-15 9.9	1.869	2.825	7.0	20.6	3 22	13 4.90	-17 27.0	1.297	2.251	9.7	20.0
4 1	12 55.50	-14 3.9	1.840	2.830	3.5	20.4	4 1	12 56.14	-16 41.8	1.265	2.250	5.6	19.7
4 11	12 48.25	-12 47.4	1.839	2.834	3.1	20.4	4 11	12 46.89	-15 38.4	1.258	2.251	4.7	19.7
4 21	12 41.62	-11 27.2	1.866	2.839	6.3	20.6	4 21	12 38.50	-14 25.2	1.277	2.251	8.3	19.9
5 1	12 36.39	-10 10.8	1.920	2.843	9.9	20.8	5 1	12 32.13	-13 12.3	1.319	2.252	12.7	20.1
5 11	12 33.06	- 9 4.4	1.996	2.848	13.1	21.0	5 11	12 28.49	-12 8.8	1.382	2.252	16.7	20.4
470085	2006 <i>SL</i> ₃₈₀		4 4.1 279°38	5°0/28.9	17		499102	2009 <i>GQ</i> ₂		4 4.1 351°50	0°2/ 3.9	17	
3 2	13 12.55	+ 7 24.0	2.224	3.090	10.6	21.2	3 2	13 16.46	- 5 29.1	1.128	2.003	17.8	20.5
3 12	13 8.25	+ 8 40.9	2.155	3.083	7.9	21.0	3 12	13 12.47	- 5 34.9	1.060	1.996	13.2	20.2
3 22	13 2.36	+ 9 58.0	2.111	3.076	5.6	20.8	3 22	13 5.42	- 5 28.2	1.012	1.990	7.8	19.9
4 1	12 55.46	+11 8.3	2.096	3.069	5.2	20.8	4 1	12 56.29	- 5 13.1	0.987	1.985	1.8	19.5
4 11	12 48.33	+12 5.5	2.108	3.062	7.0	20.9	4 11	12 46.56	- 4 56.1	0.985	1.982	4.4	19.6
4 21	12 41.73	+12 45.1	2.147	3.055	9.7	21.0	4 21	12 37.82	- 4 44.1	1.007	1.980	10.3	20.0
5 1	12 36.33	+13 4.6	2.210	3.048	12.4	21.2	5 1	12 31.44	- 4 43.1	1.050	1.979	15.5	20.2
5 11	12 32.64	+13 3.9	2.292	3.040	14.8	21.3	5 11	12 28.23	- 4 57.2	1.110	1.979	20.0	20.5
138690	2000 <i>SY</i> ₅₆		4 4.1 202°57	0°0/ 3.9	17		140721	2001 <i>UT</i> ₉₃		4 4.1 166°98	6°4/27.0	18	
3 2	13 13.42	- 7 55.7	2.848	3.677	9.6	21.6	3 2	13 16.61	+16 25.4	2.630	3.477	9.8	20.6
3 12	13 8.59	- 7 25.7	2.760	3.673	7.1	21.5	3 12	13 10.91	+17 20.7	2.575	3.480	7.9	20.5
3 22	13 2.44	- 6 47.2	2.698	3.668	4.1	21.3	3 22	13 3.77	+18 8.7	2.547	3.483	6.6	20.4
4 1	12 55.48	- 6 3.1	2.665	3.663	1.0	21.0	4 1	12 55.81	+18 44.0	2.546	3.486	6.6	20.4
4 11	12 48.30	- 5 17.1	2.663	3.658	2.2	21.1	4 11	12 47.72	+19 2.3	2.574	3.488	7.9	20.5
4 21	12 41.53	- 4 33.2	2.691	3.652	5.3	21.3	4 21	12 40.22	+19 1.9	2.627	3.490	9.8	20.6
5 1	12 35.71	- 3 55.1	2.746	3.646	8.2	21.5	5 1	12 33.90	+18 42.4	2.703	3.491	11.7	20.8
5 11	12 31.29	- 3 25.8	2.825	3.640	10.7	21.6	5 11	12 29.19	+18 5.6	2.800	3.492	13.5	20.9
275935	2001 <i>UA</i> ₅₂		4 4.1 143°35	1°5/ 2.5	16		36706	2000 <i>RK</i> ₂₉		4 4.1 112°32	4°5/ 8.5	18	
3 2	13 17.32	- 3 22.1	2.121	2.967	11.8	21.9	3 2	13 18.46	-20 27.0	2.068	2.853	14.3	18.9
3 12	13 11.68	- 2 39.6	2.054	2.977	8.5	21.7	3 12	13 12.71	-20 36.7	1.996	2.867	11.4	18.7
3 22	13 4.32	- 1 49.7	2.012	2.987	4.9	21.5	3 22	13 5.02	-20 27.2	1.945	2.881	8.3	18.5
4 1	12 55.92	- 0 57.3	1.999	2.996	1.7	21.3	4 1	12 56.13	-19 59.0	1.921	2.895	5.4	18.4
4 11	12 47.36	- 0 7.9	2.015	3.004	3.7	21.5	4 11	12 47.00	-19 15.4	1.924	2.909	4.6	18.3
4 21	12 39.46	+ 0 33.3	2.059	3.012	7.4	21.7	4 21	12 38.59	-18 21.8	1.956	2.922	6.7	18.5
5 1	12 32.96	+ 1 2.6	2.130	3.019	10.7	21.9	5 1	12 31.72	-17 24.7	2.014	2.934	9.7	18.7
5 11	12 28.34	+ 1 17.7	2.223	3.026	13.6	22.1	5 11	12 26.94	-16 30.9	2.095	2.946	12.6	18.9
470189	2006 <i>VM</i> ₁₆		4 4.1 226°13	2°9/31.8	1								

EPHEMERIDES

4 4.1

4 4.1

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
419809	2010 <i>WD</i> ₆₂		4 4.1 96°79	0°2/ 4.3 17			47611	2000 <i>BL</i> ₁		4 4.1 237°79	0°5/ 4.6 18		
3 2	13 17.06	- 8 44.7	1.707	2.551	14.3	21.4	3 2	13 15.02	- 9 26.5	2.133	2.967	12.2	20.1
3 12	13 11.90	- 8 16.4	1.639	2.559	10.5	21.2	3 12	13 10.18	- 9 1.9	2.048	2.962	9.1	19.9
3 22	13 4.63	- 7 34.5	1.595	2.567	6.2	20.9	3 22	13 3.58	- 8 25.2	1.987	2.956	5.5	19.7
4 1	12 56.05	- 6 43.1	1.577	2.575	1.6	20.6	4 1	12 55.82	- 7 39.5	1.954	2.951	1.6	19.4
4 11	12 47.23	- 5 48.7	1.587	2.583	3.2	20.8	4 11	12 47.76	- 6 49.7	1.949	2.945	2.6	19.5
4 21	12 39.20	- 4 58.0	1.624	2.590	7.7	21.1	4 21	12 40.23	- 6 1.3	1.972	2.939	6.6	19.7
5 1	12 32.86	- 4 16.8	1.685	2.598	11.7	21.3	5 1	12 34.00	- 5 19.3	2.022	2.933	10.2	19.9
5 11	12 28.79	- 3 49.5	1.769	2.605	15.1	21.6	5 11	12 29.63	- 4 48.0	2.095	2.926	13.3	20.1
419613	2010 <i>RY</i> ₁₄₉		4 4.1 239°87	1°9/ 5.7 17			361588	2007 <i>RU</i> ₂₄₂		4 4.1 235°47	1°3/ 2.9 17		
3 2	13 19.19	-12 28.6	1.879	2.702	14.1	22.1	3 2	13 19.62	- 4 39.2	1.911	2.755	13.0	22.2
3 12	13 13.60	-12 19.4	1.784	2.689	10.7	21.9	3 12	13 13.83	- 3 59.8	1.818	2.740	9.5	21.9
3 22	13 5.76	-11 54.5	1.711	2.674	6.9	21.6	3 22	13 5.86	- 3 9.8	1.749	2.723	5.5	21.6
4 1	12 56.37	-11 15.8	1.665	2.659	2.8	21.3	4 1	12 56.40	- 2 13.9	1.708	2.706	1.6	21.3
4 11	12 46.42	-10 27.6	1.648	2.643	3.1	21.3	4 11	12 46.44	- 1 18.3	1.697	2.688	4.0	21.5
4 21	12 37.02	- 9 36.1	1.658	2.627	7.3	21.5	4 21	12 37.02	- 0 29.5	1.713	2.669	8.3	21.7
5 1	12 29.17	- 8 47.8	1.695	2.610	11.5	21.7	5 1	12 29.11	+ 0 7.1	1.755	2.649	12.4	21.9
5 11	12 23.59	- 8 8.8	1.754	2.593	15.1	21.9	5 11	12 23.39	+ 0 27.8	1.819	2.629	15.9	22.1
232592	2003 <i>UZ</i> ₁		4 4.1 180°81	1°1/ 5.3 17			100529	1997 <i>CA</i> ₁₁		4 4.1 273°58	5°0/30.6 17		
3 2	13 15.38	-11 18.5	2.243	3.068	12.0	21.3	3 2	13 15.96	+ 3 8.9	1.577	2.449	13.8	20.0
3 12	13 10.33	-10 56.5	2.161	3.069	9.0	21.1	3 12	13 11.38	+ 4 26.4	1.504	2.438	10.1	19.8
3 22	13 3.60	-10 21.9	2.104	3.069	5.6	20.9	3 22	13 4.49	+ 5 49.5	1.454	2.427	6.5	19.5
4 1	12 55.81	- 9 37.3	2.074	3.069	2.0	20.7	4 1	12 56.07	+ 7 9.4	1.430	2.416	5.0	19.4
4 11	12 47.75	- 8 47.2	2.073	3.069	2.5	20.7	4 11	12 47.22	+ 8 16.3	1.433	2.405	7.5	19.5
4 21	12 40.24	- 7 56.8	2.101	3.068	6.1	20.9	4 21	12 39.10	+ 9 3.1	1.461	2.394	11.5	19.7
5 1	12 34.01	- 7 11.2	2.155	3.068	9.5	21.1	5 1	12 32.70	+ 9 25.5	1.511	2.383	15.3	19.9
5 11	12 29.56	- 6 34.9	2.233	3.066	12.5	21.3	5 11	12 28.72	+ 9 22.8	1.580	2.372	18.7	20.1
52644	1997 <i>XR</i> ₁₀		4 4.1 59°41	0°6/ 3.6 18			93420	2000 <i>SC</i> ₃₀₇		4 4.1 331°84	3°4/ 6.3 17		
3 2	13 17.64	- 6 9.3	1.559	2.413	14.9	18.4	3 2	13 18.52	-13 21.4	1.558	2.390	16.0	18.2
3 12	13 12.37	- 5 43.8	1.502	2.428	10.8	18.2	3 12	13 13.48	-13 55.0	1.474	2.380	12.4	18.0
3 22	13 4.90	- 5 6.9	1.469	2.444	6.2	18.0	3 22	13 5.86	-14 13.1	1.411	2.372	8.3	17.7
4 1	12 56.11	- 4 23.5	1.461	2.460	1.4	17.7	4 1	12 56.43	-14 15.6	1.373	2.363	4.4	17.4
4 11	12 47.16	- 3 40.4	1.481	2.475	3.7	17.9	4 11	12 46.38	-14 5.1	1.362	2.356	4.2	17.4
4 21	12 39.15	- 3 3.7	1.527	2.491	8.3	18.2	4 21	12 37.01	-13 46.5	1.376	2.348	8.1	17.6
5 1	12 32.99	- 2 38.7	1.597	2.507	12.4	18.5	5 1	12 29.49	-13 26.2	1.415	2.342	12.5	17.8
5 11	12 29.22	- 2 28.3	1.687	2.523	15.8	18.7	5 11	12 24.62	-13 10.5	1.474	2.336	16.3	18.1
343014	2009 <i>BV</i> ₉₂		4 4.1 9°56	4°2/30.4 17			418131	2008 <i>AR</i> ₉		4 4.1 151°92	4°5/30.8 16		
3 2	13 12.59	+ 3 30.1	1.985	2.853	11.5	20.4	3 2	13 16.87	+ 2 57.7	1.751	2.616	13.0	21.9
3 12	13 8.40	+ 4 43.3	1.921	2.854	8.4	20.2	3 12	13 11.70	+ 4 14.5	1.689	2.621	9.4	21.7
3 22	13 2.50	+ 5 59.6	1.882	2.854	5.4	20.0	3 22	13 4.49	+ 5 35.1	1.653	2.625	6.0	21.5
4 1	12 55.54	+ 7 11.8	1.871	2.855	4.2	19.9	4 1	12 56.04	+ 6 51.5	1.643	2.629	4.5	21.4
4 11	12 48.38	+ 8 12.8	1.887	2.857	6.3	20.0	4 11	12 47.37	+ 7 55.4	1.662	2.633	6.8	21.5
4 21	12 41.83	+ 8 57.5	1.930	2.858	9.4	20.2	4 21	12 39.48	+ 8 40.9	1.706	2.636	10.3	21.7
5 1	12 36.63	+ 9 22.7	1.997	2.859	12.5	20.4	5 1	12 33.22	+ 9 4.7	1.774	2.639	13.7	21.9
5 11	12 33.28	+ 9 27.7	2.083	2.861	15.2	20.6	5 11	12 29.15	+ 9 6.5	1.862	2.642	16.6	22.1
131646	2001 <i>XH</i> ₈₈		4 4.1 127°56	3°1/ 6.7 18			45269	2000 <i>AR</i> ₈		4 4.1 207°85	2°5/ 6.3 18		
3 2	13 20.52	-15 43.9	1.694	2.509	15.7	19.8	3 2	13 19.15	-14 21.0	1.946	2.760	14.0	19.8
3 12	13 14.50	-15 38.3	1.625	2.521	12.1	19.6	3 12	13 13.44	-14 18.0	1.857	2.755	10.8	19.6
3 22	13 6.19	-15 13.3	1.578	2.534	8.1	19.4	3 22	13 5.60	-13 58.9	1.793	2.750	7.1	19.4
4 1	12 56.43	-14 30.6	1.556	2.545	4.1	19.2	4 1	12 56.33	-13 25.1	1.754	2.745	3.5	19.1
4 11	12 46.41	-13 35.5	1.563	2.557	3.7	19.2	4 11	12 46.64	-12 40.5	1.744	2.739	3.3	19.1
4 21	12 37.27	-12 35.1	1.597	2.567	7.4	19.4	4 21	12 37.56	-11 50.8	1.762	2.732	6.9	19.3
5 1	12 29.99	-11 37.1	1.656	2.577	11.4	19.7	5 1	12 30.02	-11 2.6	1.807	2.725	10.8	19.5
5 11	12 25.18	-10 48.1	1.738	2.587	14.8	19.9	5 11	12 24.67	-10 21.6	1.874	2.717	14.2	19.7
421812	2014 <i>QQ</i> ₄₇		4 4.1 114°43	4°7/ 7.9 18			253331	2003 <i>FY</i> ₂		4 4.1 53°32	21°9/27.7 18		
3 2	13 18.14	-19 21.5	1.487	2.299	17.7	21.1	3 2	13 43.11	+39 29.3	1.020	1.822	24.6	19.7
3 12	13 13.15	-19 20.1	1.414	2.304	14.0	20.9	3 12	13 31.77	+40 24.7	1.002	1.836	23.0	19.6
3 22	13 5.58	-18 53.4	1.361	2.309	9.9	20.6	3 22	13 16.16	+40 31.1	1.000	1.850	22.0	19.6
4 1	12 56.32	-18 2.1	1.332	2.314	6.0	20.4	4 1	12 58.66	+39 35.0	1.014	1.865	22.0	19.6
4 11	12 46.64	-16 51.5	1.328	2.319	5.0	20.4	4 11	12 42.13	+37 35.1	1.045	1.880	22.8	19.8
4 21	12 37.88	-15 30.3	1.351	2.324	8.2	20.6	4 21	12 28.76	+34 41.6	1.094	1.896	24.3	19.9
5 1	12 31.14	-14 8.9	1.398	2.328	12.3	20.8	5 1	12 19.67	+31 10.6	1.159	1.912	26.0	20.1
5 11	12 27.12	-12 56.5	1.467	2.332	16.2	21.0	5 11	12 15.02	+27 18.8	1.238	1.928	27.6	20.3
266840	2009 <i>UN</i> ₂₄		4 4.1 263°84	1°3/ 2.9 18			30585	2001 <i>PE</i> ₁₄		4 4.1 219°79	1°4/ 5.5 18		
3 2	13 16.27	- 4 14.3	1.804	2.658	13.2	20.7	3 2	13 17.39	-12 6.1	2.210	3.029	12.4	20.2
3 12	13 11.31	- 3 40.0	1.728	2.655	9.6	20.4	3 12	13 11.93	-11 44.6	2.116	3.020	9.4	19.9
3 22	13 4.31	- 2 56.3	1.676	2.652	5.5	20.2	3 22	13 4.63	-11 9.3	2.046	3.010	5.9	19.7
4 1	12 56.00	- 2 7.9	1.651	2.648	1.6	19.9	4 1	12 56.10	-10 22.4	2.004	2.999	2.3	19.5
4 11	12 47.36	- 1 21.2	1.654	2.645	3.9	20.1	4 11	12 47.19	- 9 28.5	1.992	2.988	2.6	19.5
4 21	12 39.39	- 0 42.2	1.683	2.642	8.2	20.3	4 21	12 38.78	- 8 32.9	2.008	2.975	6.4	19.7
5 1	12 32.98	- 0 15.6	1.738	2.639	12.1	20.5	5 1	12 31.67	- 7 41.4	2.052	2.963	10.0	19.9
5 11	12 28.72	- 0 4.3	1.814	2.636	15.4	20.7	5 11	12 26.46	- 6 59.0	2.119	2.950	13.2	20.0
301063	2008 <i>UE</i> ₁₂₆		4 4.1 143°30	2°8/ 6.5 18			194201	2001 <i>TQ</i> ₉₁		4 4.1 80°59	1°4/ 5.		

EPHEMERIDES

4 4.1

4 4.1

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
470510	2008 <i>CJ</i> ₁₁₆		4 4.1 177°44	6°9/ 8.5	17	R	347127	2010 <i>JO</i> ₁₇₄		4 4.1 195°55	1°6/ 2.2	17	
3 2	13 32.26	-22 22.9	1.557	2.329	18.8	22.9	3 2	13 14.24	-2 20.8	2.511	3.358	10.2	21.3
3 12	13 23.77	-23 4.3	1.473	2.335	15.3	22.6	3 12	13 9.33	-1 41.7	2.432	3.356	7.3	21.1
3 22	13 12.00	-23 20.9	1.411	2.339	11.5	22.4	3 22	13 2.97	-0 56.8	2.380	3.354	4.2	20.9
4 1	12 57.93	-23 9.0	1.373	2.341	8.0	22.2	4 1	12 55.70	-0 10.2	2.356	3.352	1.6	20.7
4 11	12 43.12	-22 29.8	1.363	2.341	7.0	22.1	4 11	12 48.23	+0 33.5	2.362	3.349	3.5	20.8
4 21	12 29.30	-21 29.9	1.380	2.339	9.6	22.3	4 21	12 41.23	+1 10.2	2.397	3.347	6.6	21.0
5 1	12 17.92	-20 19.7	1.423	2.336	13.5	22.5	5 1	12 35.33	+1 36.5	2.458	3.344	9.6	21.2
5 11	12 9.89	-19 10.6	1.489	2.330	17.2	22.7	5 11	12 30.99	+1 50.4	2.542	3.340	12.2	21.4
388371	2006 <i>UU</i> ₆₃		4 4.1 326°37	5°5/ 29.6	17		489763	2008 <i>AG</i> ₅₄		4 4.1 82°70	1°3/ 2.7	17	
3 2	13 16.04	+9 36.7	2.074	2.936	11.3	20.3	3 2	13 13.75	-3 49.5	2.267	3.116	11.0	21.9
3 12	13 10.88	+10 23.6	2.007	2.932	8.6	20.1	3 12	13 9.05	-3 10.5	2.200	3.125	8.0	21.7
3 22	13 3.95	+11 7.5	1.966	2.928	6.2	20.0	3 22	13 2.81	-2 24.5	2.158	3.133	4.5	21.5
4 1	12 55.93	+11 41.9	1.952	2.924	5.6	19.9	4 1	12 55.66	-1 35.7	2.145	3.142	1.4	21.3
4 11	12 47.68	+12 1.7	1.965	2.920	7.3	20.0	4 11	12 48.35	-0 49.3	2.160	3.151	3.4	21.5
4 21	12 40.07	+12 3.4	2.005	2.916	10.0	20.2	4 21	12 41.62	-0 9.8	2.204	3.159	6.8	21.7
5 1	12 33.85	+11 46.0	2.068	2.913	12.8	20.4	5 1	12 36.11	+0 19.1	2.274	3.168	9.9	21.9
5 11	12 29.53	+11 10.5	2.151	2.909	15.3	20.5	5 11	12 32.27	+0 35.1	2.366	3.176	12.6	22.1
430210	2013 <i>TM</i> ₁₄₅		4 4.1 155°00	2°0/ 6.1	17		377399	2004 <i>SY</i> ₃		4 4.1 271°02	3°1/ 6.3	17	
3 2	13 18.08	-13 20.0	2.319	3.129	12.2	22.1	3 2	13 21.08	-13 29.9	1.905	2.720	14.2	20.6
3 12	13 12.25	-13 15.9	2.239	3.136	9.3	21.9	3 12	13 15.04	-14 1.1	1.810	2.707	11.0	20.3
3 22	13 4.71	-12 59.1	2.184	3.143	6.0	21.8	3 22	13 6.67	-14 19.1	1.738	2.694	7.4	20.1
4 1	12 56.11	-12 31.0	2.157	3.148	2.8	21.5	4 1	12 56.66	-14 23.8	1.692	2.681	3.9	19.8
4 11	12 47.26	-11 55.4	2.159	3.154	2.7	21.6	4 11	12 46.04	-14 17.2	1.675	2.668	3.7	19.8
4 21	12 38.99	-11 16.5	2.191	3.159	5.9	21.8	4 21	12 35.93	-14 3.1	1.686	2.654	7.3	20.0
5 1	12 32.03	-10 39.4	2.250	3.163	9.1	22.0	5 1	12 27.39	-13 46.7	1.723	2.641	11.2	20.2
5 11	12 26.90	-10 8.3	2.333	3.167	12.0	22.2	5 11	12 21.17	-13 33.4	1.783	2.627	14.7	20.4
43162	1999 <i>XE</i> ₁₂₆		4 4.1 254°72	4°1/ 8.2	18	R	141161	2001 <i>XE</i> ₁₂₅		4 4.1 24°97	1°3/ 2.7	17	
3 2	13 15.59	-19 26.6	2.051	2.846	14.1	19.1	3 2	13 13.54	-3 57.7	1.985	2.840	12.1	20.0
3 12	13 10.80	-19 28.8	1.960	2.840	11.2	18.9	3 12	13 9.11	-3 21.2	1.917	2.844	8.8	19.8
3 22	13 4.05	-19 11.9	1.892	2.834	8.0	18.7	3 22	13 2.95	-2 36.5	1.873	2.848	5.0	19.6
4 1	12 55.98	-18 36.5	1.849	2.828	5.1	18.5	4 1	12 55.71	-1 48.4	1.856	2.853	1.5	19.3
4 11	12 47.51	-17 45.8	1.834	2.821	4.3	18.5	4 11	12 48.27	-1 2.6	1.867	2.858	3.7	19.5
4 21	12 39.60	-16 45.3	1.846	2.815	6.7	18.6	4 21	12 41.45	-0 24.3	1.906	2.863	7.5	19.7
5 1	12 33.11	-15 41.9	1.885	2.808	10.0	18.8	5 1	12 36.00	+0 2.3	1.969	2.869	10.9	19.9
5 11	12 28.65	-14 42.4	1.946	2.802	13.2	19.0	5 11	12 32.43	+0 14.9	2.055	2.875	13.9	20.2
114573	2003 <i>BJ</i> ₆₈		4 4.1 327°32	0°5/ 3.7	17		214428	2005 <i>QG</i> ₂₈		4 4.1 306°94	0°3/ 3.8	17	
3 2	13 14.98	-5 34.2	2.016	2.864	12.3	19.6	3 2	13 15.81	-5 41.6	2.145	2.988	11.8	20.5
3 12	13 10.24	-5 19.0	1.934	2.857	9.0	19.4	3 12	13 10.80	-5 34.1	2.057	2.977	8.7	20.2
3 22	13 3.66	-4 55.0	1.877	2.851	5.2	19.2	3 22	13 3.99	-5 18.5	1.994	2.967	5.1	20.0
4 1	12 55.88	-4 25.7	1.846	2.844	1.2	18.9	4 1	12 55.99	-4 57.8	1.958	2.956	1.2	19.7
4 11	12 47.77	-3 55.7	1.844	2.838	3.1	19.0	4 11	12 47.63	-4 35.9	1.951	2.946	2.9	19.8
4 21	12 40.22	-3 29.7	1.869	2.832	7.1	19.2	4 21	12 39.77	-4 17.1	1.972	2.936	6.8	20.0
5 1	12 34.03	-3 12.0	1.920	2.827	10.8	19.5	5 1	12 33.19	-4 5.1	2.019	2.926	10.4	20.2
5 11	12 29.77	-3 5.6	1.993	2.822	14.0	19.6	5 11	12 28.48	-4 2.8	2.089	2.916	13.5	20.4
250358	2003 <i>SY</i> ₂₅₈		4 4.1 234°53	0°0/ 3.9	16		505290	2012 <i>VO</i> ₉₉		4 4.1 143°27	1°1/ 2.7	17	
3 2	13 20.27	-7 14.6	1.912	2.749	13.3	21.1	3 2	13 14.23	-4 0.5	2.631	3.473	9.9	22.2
3 12	13 14.32	-6 57.3	1.819	2.735	9.9	20.8	3 12	13 9.21	-3 21.8	2.560	3.481	7.2	22.1
3 22	13 6.17	-6 28.8	1.750	2.721	5.9	20.6	3 22	13 2.85	-2 36.9	2.515	3.489	4.1	21.9
4 1	12 56.51	-5 52.2	1.709	2.707	1.4	20.2	4 1	12 55.68	-1 49.3	2.500	3.497	1.2	21.7
4 11	12 46.34	-5 12.5	1.696	2.692	3.2	20.3	4 11	12 48.37	-1 3.5	2.515	3.505	3.0	21.8
4 21	12 36.72	-4 35.4	1.712	2.676	7.7	20.6	4 21	12 41.56	-0 23.5	2.558	3.512	6.1	22.0
5 1	12 28.63	-4 6.1	1.754	2.659	11.8	20.8	5 1	12 35.82	+0 7.3	2.629	3.519	8.9	22.2
5 11	12 22.77	-3 48.8	1.818	2.642	15.3	21.0	5 11	12 31.56	+0 26.8	2.723	3.525	11.4	22.4
268611	2006 <i>CY</i> ₃₀		4 4.1 203°86	1°4/ 2.6	18	R	522711	2016 <i>LT</i> ₆₀		4 4.1 202°41	4°9/ 28.9	17	
3 2	13 14.23	-4 57.6	1.966	2.818	12.4	20.5	3 2	13 14.97	+8 52.5	2.482	3.340	9.9	22.1
3 12	13 9.68	-4 2.1	1.891	2.817	9.0	20.2	3 12	13 9.88	+9 59.3	2.414	3.336	7.5	22.0
3 22	13 3.31	-2 56.1	1.840	2.816	5.1	20.0	3 22	13 3.30	+11 4.6	2.372	3.332	5.4	21.8
4 1	12 55.79	-1 45.1	1.817	2.814	1.6	19.7	4 1	12 55.80	+12 2.5	2.359	3.327	5.0	21.8
4 11	12 48.01	-0 36.0	1.822	2.813	3.8	19.9	4 11	12 48.10	+12 47.7	2.374	3.322	6.6	21.9
4 21	12 40.85	+0 24.8	1.855	2.811	7.8	20.1	4 21	12 40.90	+13 16.6	2.417	3.317	9.0	22.0
5 1	12 35.07	+1 12.1	1.914	2.809	11.4	20.4	5 1	12 34.85	+13 27.2	2.483	3.311	11.5	22.2
5 11	12 31.23	+1 42.7	1.994	2.808	14.5	20.6	5 11	12 30.41	+13 19.9	2.571	3.305	13.7	22.3
386509	2009 <i>BD</i> ₁₀₅		4 4.1 332°68	3°3/ 7.1	17		178760	2000 <i>VQ</i> ₆₄		4 4.1 161°04	1°4/ 2.2	18	
3 2	13 14.12	-16 0.8	1.892	2.710	14.2	20.8	3 2	13 12.87	-2 47.1	2.909	3.752	9.0	21.4
3 12	13 9.85	-16 6.4	1.804	2.701	11.1	20.5	3 12	13 8.14	-2 3.2	2.835	3.757	6.5	21.2
3 22	13 3.54	-15 54.7	1.739	2.693	7.6	20.3	3 22	13 2.20	-1 13.9	2.788	3.762	3.7	21.1
4 1	12 55.87	-15 26.7	1.698	2.685	4.2	20.1	4 1	12 55.53	-0 23.0	2.770	3.766	1.4	20.9
4 11	12 47.78	-14 46.1	1.685	2.678	3.7	20.0	4 11	12 48.72	+0 25.3	2.783	3.770	3.0	21.0
4 21	12 40.25	-13 58.3	1.699	2.671	6.9	20.2	4 21	12 42.33	+1 7.4	2.825	3.774	5.8	21.2
5 1	12 34.19	-13 9.8	1.738	2.665	10.6	20.4	5 1	12 36.89	+1 40.2	2.895	3.777	8.4	21.4
5 11	12 30.23	-12 27.1	1.800	2.659	13.9	20.6	5 11	12 32.78	+2 1.8	2.988	3.780	10.7	21.5
413000	1999 <i>TW</i> ₂₆₁		4 4.1 186°15	0°6/ 4.7	16		509210	2006 <i>ST</i> ₁₂₆		4 4.1 183°32	2°5/ 31.6	18	
3 2	13 18.77	-9 49.1	2.073	2.901									

EPHEMERIDES

4 4.1

4 4.1

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
172538	2003 <i>UZ</i> ₃₆		4 4.1 114°21'	3°6/ 7.1 18			343825	2011 <i>HS</i> ₂₂		4 4.1 240°14'	4°1/30.6 18		
3 2	13 19.42	-16 29.5	1.659	2.475	16.0	20.0	3 2	13 16.50	+ 5 30.2	2.339	3.195	10.5	21.2
3 12	13 13.84	-16 35.3	1.587	2.483	12.5	19.8	3 12	13 11.15	+ 6 20.8	2.257	3.182	7.8	21.0
3 22	13 5.91	-16 21.3	1.537	2.491	8.5	19.6	3 22	13 4.13	+ 7 12.6	2.201	3.169	5.1	20.8
4 1	12 56.46	-15 48.5	1.512	2.498	4.7	19.4	4 1	12 56.04	+ 7 59.8	2.173	3.155	4.1	20.8
4 11	12 46.67	-15 1.5	1.514	2.506	4.1	19.4	4 11	12 47.64	+ 8 37.2	2.174	3.140	5.8	20.8
4 21	12 37.72	-14 6.9	1.542	2.513	7.5	19.6	4 21	12 39.72	+ 9 0.6	2.203	3.125	8.7	21.0
5 1	12 30.62	-13 12.5	1.596	2.520	11.5	19.8	5 1	12 33.01	+ 9 7.6	2.257	3.110	11.6	21.1
5 11	12 26.01	-12 25.5	1.672	2.527	15.0	20.1	5 11	12 28.04	+ 8 57.8	2.332	3.094	14.2	21.3
138605	2000 <i>QW</i> ₁₇₇		4 4.1 293°84'	4°3/29.4 18			411226	2010 <i>OO</i> ₁₀₆		4 4.1 93°02'	5°7/ 9.3 18		
3 2	13 11.11	+ 2 10.3	2.096	2.963	11.1	19.7	3 2	13 21.83	-22 40.6	1.871	2.645	16.0	20.8
3 12	13 7.43	+ 4 1.3	2.011	2.944	8.1	19.4	3 12	13 15.33	-23 4.5	1.808	2.670	12.9	20.7
3 22	13 2.05	+ 6 0.0	1.953	2.925	5.2	19.2	3 22	13 6.64	-23 6.2	1.767	2.694	9.6	20.5
4 1	12 55.54	+ 7 58.2	1.924	2.907	4.4	19.1	4 1	12 56.63	-22 45.4	1.752	2.718	6.7	20.4
4 11	12 48.68	+ 9 46.7	1.924	2.888	6.7	19.2	4 11	12 46.44	-22 5.0	1.763	2.741	5.7	20.4
4 21	12 42.28	+11 18.0	1.951	2.869	9.9	19.4	4 21	12 37.15	-21 11.2	1.802	2.764	7.5	20.5
5 1	12 37.08	+12 26.9	2.003	2.850	13.1	19.5	5 1	12 29.70	-20 11.5	1.867	2.786	10.4	20.7
5 11	12 33.65	+13 11.3	2.074	2.832	15.8	19.7	5 11	12 24.63	-19 13.7	1.955	2.808	13.3	21.0
98358	2000 <i>SA</i> ₃₃₇		4 4.1 176°43'	1°4/ 2.9 18			416634	2004 <i>RZ</i> ₃₃₃		4 4.1 115°65'	5°2/28.9 18		
3 2	13 20.89	- 3 34.4	1.793	2.640	13.6	19.4	3 2	13 15.86	+ 7 45.3	2.189	3.050	10.9	21.0
3 12	13 14.70	- 3 8.7	1.719	2.643	9.9	19.1	3 12	13 10.55	+ 9 10.9	2.143	3.068	8.1	20.9
3 22	13 6.32	- 2 34.8	1.670	2.644	5.7	18.9	3 22	13 3.67	+10 34.8	2.123	3.085	5.8	20.7
4 1	12 56.56	- 1 57.1	1.648	2.645	1.7	18.6	4 1	12 55.90	+11 49.9	2.132	3.102	5.3	20.7
4 11	12 46.48	- 1 21.5	1.654	2.646	4.0	18.8	4 11	12 48.06	+12 49.7	2.169	3.119	7.1	20.9
4 21	12 37.16	- 0 53.5	1.688	2.645	8.3	19.0	4 21	12 40.91	+13 30.4	2.233	3.135	9.6	21.1
5 1	12 29.54	- 0 37.2	1.748	2.645	12.3	19.3	5 1	12 35.10	+13 50.4	2.321	3.150	12.2	21.3
5 11	12 24.22	- 0 35.2	1.829	2.644	15.6	19.5	5 11	12 31.06	+13 50.4	2.429	3.165	14.3	21.4
377410	2004 <i>TB</i> ₇₄		4 4.1 51°08'	1°6/ 5.8 18			505935	2015 <i>FT</i> ₃₉		4 4.1 249°00'	2°0/ 2.2 17		
3 2	13 12.97	-14 48.5	1.656	2.488	15.2	20.2	3 2	13 16.77	- 0 35.9	2.241	3.091	11.1	21.1
3 12	13 8.96	-13 50.5	1.593	2.503	11.5	20.0	3 12	13 11.36	- 0 14.3	2.161	3.086	8.1	20.9
3 22	13 2.94	-12 31.5	1.554	2.519	7.2	19.8	3 22	13 4.26	+ 0 11.6	2.107	3.081	4.7	20.7
4 1	12 55.73	-10 56.6	1.540	2.534	2.9	19.6	4 1	12 56.07	+ 0 37.8	2.081	3.076	2.0	20.5
4 11	12 48.37	- 9 14.2	1.554	2.551	3.0	19.6	4 11	12 47.62	+ 1 0.0	2.084	3.071	3.9	20.6
4 21	12 41.83	- 7 34.0	1.595	2.567	7.2	19.9	4 21	12 39.70	+ 1 14.3	2.116	3.066	7.4	20.8
5 1	12 36.95	- 6 4.5	1.661	2.583	11.2	20.2	5 1	12 33.06	+ 1 18.0	2.173	3.061	10.6	21.0
5 11	12 34.22	- 4 52.1	1.750	2.600	14.7	20.4	5 11	12 28.21	+ 1 9.4	2.253	3.056	13.4	21.2
160308	2003 <i>GX</i> ₁₂		4 4.1 349°75'	0°9/ 3.3 17			288646	2004 <i>PV</i> ₄₂		4 4.1 247°32'	2°0/ 2.2 17		
3 2	13 12.66	- 5 13.0	1.839	2.695	12.8	19.6	3 2	13 17.49	- 1 50.2	2.138	2.986	11.6	21.5
3 12	13 8.69	- 4 43.5	1.762	2.690	9.4	19.4	3 12	13 12.08	- 1 12.2	2.045	2.970	8.5	21.3
3 22	13 2.82	- 4 4.1	1.709	2.685	5.4	19.1	3 22	13 4.78	- 0 27.3	1.979	2.953	4.9	21.1
4 1	12 55.72	- 3 19.2	1.683	2.681	1.3	18.9	4 1	12 56.22	+ 0 20.1	1.940	2.936	2.0	20.8
4 11	12 48.32	- 2 34.7	1.684	2.677	3.5	19.0	4 11	12 47.25	+ 1 4.2	1.930	2.918	4.2	20.9
4 21	12 41.52	- 1 56.4	1.711	2.674	7.7	19.3	4 21	12 38.76	+ 1 40.0	1.949	2.899	7.9	21.1
5 1	12 36.16	- 1 29.0	1.763	2.672	11.5	19.5	5 1	12 31.58	+ 2 3.3	1.994	2.880	11.5	21.3
5 11	12 32.79	- 1 15.9	1.837	2.670	14.8	19.7	5 11	12 26.31	+ 2 11.8	2.061	2.861	14.6	21.5
393217	2013 <i>ED</i> ₁₇		4 4.1 130°00'	2°8/31.1 17			64520	2001 <i>VF</i> ₉₈		4 4.1 219°10'	2°1/ 1.6 17		
3 2	13 11.71	+ 2 9.2	2.761	3.617	9.1	21.3	3 2	13 14.33	- 3 49.1	2.114	2.965	11.7	19.7
3 12	13 7.35	+ 3 11.1	2.697	3.624	6.5	21.1	3 12	13 9.70	- 2 27.4	2.031	2.958	8.4	19.5
3 22	13 1.76	+ 4 15.6	2.659	3.631	4.0	21.0	3 22	13 3.35	- 0 55.0	1.974	2.950	4.8	19.2
4 1	12 55.44	+ 5 18.0	2.651	3.638	2.8	20.9	4 1	12 55.87	+ 0 41.8	1.946	2.942	2.1	19.0
4 11	12 48.99	+ 6 13.4	2.672	3.645	4.4	21.0	4 11	12 48.10	+ 2 15.2	1.948	2.933	4.4	19.2
4 21	12 42.99	+ 6 58.1	2.722	3.652	7.0	21.2	4 21	12 40.86	+ 3 38.0	1.978	2.924	8.1	19.4
5 1	12 37.98	+ 7 29.4	2.798	3.658	9.4	21.4	5 1	12 34.91	+ 4 44.7	2.034	2.915	11.6	19.6
5 11	12 34.32	+ 7 46.2	2.897	3.664	11.6	21.5	5 11	12 30.78	+ 5 32.0	2.112	2.905	14.5	19.8
503178	2015 <i>GM</i> ₄₃		4 4.1 30°04'	4°6/30.9 17			269777	1999 <i>TO</i> ₁₃₂		4 4.1 270°87'	1°1/ 4.9 17		
3 2	13 15.08	+ 4 34.1	1.713	2.584	12.9	20.9	3 2	13 18.92	-10 11.9	1.682	2.519	14.8	21.5
3 12	13 10.39	+ 5 25.6	1.659	2.592	9.4	20.7	3 12	13 13.74	-10 1.7	1.584	2.498	11.2	21.2
3 22	13 3.74	+ 6 18.0	1.629	2.601	6.1	20.5	3 22	13 6.06	- 9 36.3	1.509	2.477	6.9	20.9
4 1	12 55.92	+ 7 4.2	1.625	2.610	4.6	20.4	4 1	12 56.59	- 8 57.9	1.459	2.456	2.3	20.5
4 11	12 47.95	+ 7 37.7	1.647	2.620	6.7	20.6	4 11	12 46.43	- 8 11.7	1.437	2.434	3.3	20.5
4 21	12 40.78	+ 7 53.9	1.696	2.630	10.0	20.8	4 21	12 36.78	- 7 24.1	1.442	2.411	8.2	20.8
5 1	12 35.24	+ 7 50.9	1.767	2.641	13.3	21.0	5 1	12 28.80	- 6 42.4	1.472	2.389	12.8	21.0
5 11	12 31.82	+ 7 29.1	1.859	2.652	16.2	21.2	5 11	12 23.31	- 6 12.4	1.523	2.366	16.9	21.2
376970	2002 <i>JR</i> ₁₄₉		4 4.1 333°32'	2°7/ 1.6 17			417726	2007 <i>CJ</i> ₃₇		4 4.1 4°15'	7°9/27.2 17		
3 2	13 15.02	- 0 44.3	1.761	2.625	13.0	20.9	3 2	13 12.60	+ 9 11.6	1.433	2.317	14.1	19.9
3 12	13 10.45	+ 0 1.5	1.689	2.621	9.4	20.7	3 12	13 9.00	+11 6.8	1.382	2.317	10.8	19.7
3 22	13 3.86	+ 0 54.1	1.641	2.617	5.5	20.4	3 22	13 3.13	+13 0.2	1.354	2.317	8.3	19.6
4 1	12 55.97	+ 1 47.4	1.619	2.614	2.7	20.2	4 1	12 55.83	+14 39.7	1.351	2.318	8.3	19.6
4 11	12 47.78	+ 2 34.5	1.625	2.611	5.1	20.4	4 11	12 48.27	+15 54.5	1.373	2.319	10.7	19.7
4 21	12 40.27	+ 3 9.6	1.658	2.608	9.0	20.6	4 21	12 41.58	+16 38.3	1.418	2.321	14.0	19.9
5 1	12 34.31	+ 3 28.6	1.714	2.605	12.8	20.8	5 1	12 36.71	+16 49.5	1.483	2.324	17.2	20.1
5 11	12 30.48	+ 3 29.7	1.791	2.603	16.0	21.0	5 11	12 34.23	+16 30.4	1.564	2.327	20.0	20.3
373280	2012 <i>HL</i> ₄₀		4 4.1 257°60'	2°8/ 1.6 18			231465	2007 <i>PS</i> ₄		4 4.1 307°15'	0°6/ 4.7 17		

EPHEMERIDES

4 4.1

4 4.1

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
61149	2000 <i>NU</i> ₁₁		4 4.1 217°45	2°2/ 1.9 18			7902	Hanff		4 4.1 108°26	1°1/ 3.0 18		
3 2	13 17.29	- 4 3.9	1.782	2.635	13.4	19.1	3 2	13 14.67	- 5 6.0	2.052	2.901	12.0	17.7
3 12	13 12.18	- 2 49.5	1.700	2.627	9.7	18.9	3 12	13 9.93	- 4 24.5	1.981	2.905	8.7	17.5
3 22	13 4.94	- 1 22.7	1.643	2.619	5.6	18.6	3 22	13 3.46	- 3 33.7	1.934	2.909	5.0	17.3
4 1	12 56.28	+ 0 9.8	1.614	2.610	2.2	18.4	4 1	12 55.92	- 2 38.4	1.915	2.913	1.3	17.0
4 11	12 47.23	+ 1 39.0	1.613	2.600	4.9	18.5	4 11	12 48.16	- 1 44.4	1.925	2.917	3.4	17.2
4 21	12 38.82	+ 2 56.7	1.640	2.589	9.1	18.8	4 21	12 41.02	- 0 57.3	1.962	2.921	7.2	17.4
5 1	12 32.00	+ 3 56.5	1.691	2.578	13.1	19.0	5 1	12 35.24	+ 0 21.4	2.026	2.925	10.7	17.6
5 11	12 27.39	+ 4 35.0	1.764	2.566	16.6	19.2	5 11	12 31.31	+ 0 0.3	2.111	2.928	13.7	17.8
69322	1993 <i>FX</i> ₄₁		4 4.1 299°72	1°2/ 2.9 18			519120	2010 <i>MZ</i> ₃₄		4 4.1 118°19	3°6/ 31.8 17		
3 2	13 11.98	- 7 34.0	1.755	2.610	13.5	19.3	3 2	13 18.01	+ 4 6.8	2.088	2.944	11.5	20.6
3 12	13 8.43	- 6 17.5	1.661	2.588	9.9	19.0	3 12	13 12.31	+ 4 36.5	2.020	2.947	8.4	20.4
3 22	13 2.82	- 4 43.4	1.591	2.567	5.7	18.7	3 22	13 4.83	+ 5 6.9	1.978	2.949	5.3	20.2
4 1	12 55.79	- 2 57.8	1.547	2.545	1.5	18.4	4 1	12 56.25	+ 5 33.0	1.963	2.951	3.6	20.1
4 11	12 48.28	- 1 9.8	1.532	2.524	4.1	18.5	4 11	12 47.47	+ 5 50.0	1.977	2.953	5.4	20.2
4 21	12 41.29	+ 0 31.1	1.544	2.503	8.7	18.7	4 21	12 39.35	+ 5 54.3	2.019	2.955	8.6	20.4
5 1	12 35.74	+ 1 56.1	1.580	2.482	13.0	18.9	5 1	12 32.64	+ 5 44.2	2.085	2.957	11.7	20.6
5 11	12 32.33	+ 2 59.7	1.637	2.461	16.7	19.1	5 11	12 27.87	+ 5 19.5	2.173	2.959	14.4	20.8
265511	2005 <i>JZ</i> ₁₈₃		4 4.1 349°63	2°5/ 31.8 18			133513	2003 <i>SV</i> ₂₉₉		4 4.1 291°82	0°5/ 3.6 18		
3 2	13 11.07	+ 1 52.9	2.764	3.621	9.0	20.3	3 2	13 12.47	- 8 37.5	1.891	2.738	13.0	19.7
3 12	13 6.94	+ 2 33.0	2.691	3.619	6.5	20.1	3 12	13 8.58	- 7 33.7	1.805	2.727	9.6	19.5
3 22	13 1.57	+ 3 15.5	2.643	3.617	4.0	20.0	3 22	13 2.81	- 6 14.3	1.743	2.717	5.6	19.2
4 1	12 55.44	+ 3 56.5	2.625	3.615	2.5	19.9	4 1	12 55.79	- 4 44.6	1.708	2.707	1.3	18.9
4 11	12 49.14	+ 4 31.8	2.636	3.614	4.1	20.0	4 11	12 48.42	- 3 12.5	1.702	2.696	3.4	19.0
4 21	12 43.26	+ 4 58.2	2.675	3.612	6.7	20.1	4 21	12 41.62	- 1 45.8	1.723	2.686	7.7	19.3
5 1	12 38.32	+ 5 13.1	2.740	3.611	9.2	20.3	5 1	12 36.20	- 0 31.9	1.770	2.676	11.6	19.5
5 11	12 34.74	+ 5 15.5	2.827	3.610	11.5	20.4	5 11	12 32.75	+ 0 24.3	1.839	2.666	15.0	19.7
417160	2005 <i>WO</i> ₃₂		4 4.1 105°04	4°5/ 8.9 18			268390	2005 <i>UN</i> ₁₂₉		4 4.1 99°99	3°4/ 1.4 18		
3 2	13 16.79	-21 47.2	2.006	2.789	14.8	21.3	3 2	13 20.56	+ 2 46.5	1.815	2.672	13.0	20.7
3 12	13 11.58	-21 36.5	1.934	2.804	11.8	21.1	3 12	13 14.32	+ 3 12.5	1.754	2.682	9.4	20.5
3 22	13 4.44	-21 4.3	1.885	2.819	8.6	20.9	3 22	13 6.04	+ 3 40.2	1.718	2.691	5.7	20.3
4 1	12 56.14	-20 11.7	1.860	2.834	5.6	20.8	4 1	12 56.54	+ 4 4.3	1.709	2.700	3.4	20.2
4 11	12 47.64	-19 2.9	1.864	2.849	4.6	20.7	4 11	12 46.87	+ 4 19.3	1.728	2.709	5.5	20.3
4 21	12 39.88	-17 44.7	1.895	2.863	6.6	20.9	4 21	12 38.03	+ 4 21.7	1.775	2.718	9.1	20.5
5 1	12 33.67	-16 24.9	1.953	2.877	9.7	21.1	5 1	12 30.88	+ 4 9.4	1.846	2.727	12.5	20.8
5 11	12 29.54	-15 10.7	2.035	2.890	12.7	21.3	5 11	12 25.97	+ 3 42.3	1.938	2.735	15.5	21.0
319206	2005 <i>YH</i> ₁₉₈		4 4.1 289°60	1°9/ 2.4 17			165467	2001 <i>AA</i> ₂₉		4 4.1 142°40	0°3/ 3.8 18		
3 2	13 15.56	- 3 10.6	1.783	2.641	13.1	20.7	3 2	13 20.23	- 6 56.5	1.838	2.677	13.6	20.5
3 12	13 11.03	- 2 28.4	1.691	2.620	9.6	20.5	3 12	13 14.12	- 6 28.3	1.769	2.688	10.0	20.3
3 22	13 4.34	- 1 36.1	1.624	2.600	5.6	20.2	3 22	13 5.96	- 5 49.0	1.725	2.698	5.8	20.1
4 1	12 56.17	- 0 39.1	1.583	2.580	2.0	19.9	4 1	12 56.53	- 5 2.7	1.709	2.707	1.3	19.8
4 11	12 47.48	+ 0 15.7	1.570	2.559	4.5	20.0	4 11	12 46.88	- 4 15.4	1.721	2.716	3.3	20.0
4 21	12 39.31	+ 1 1.7	1.583	2.539	8.9	20.2	4 21	12 38.02	- 3 32.9	1.761	2.724	7.6	20.2
5 1	12 32.64	+ 1 33.2	1.621	2.519	13.0	20.4	5 1	12 30.82	- 3 0.3	1.827	2.731	11.4	20.5
5 11	12 28.17	+ 1 47.1	1.679	2.498	16.6	20.6	5 11	12 25.85	- 2 41.0	1.915	2.738	14.7	20.7
122377	2000 <i>QU</i> ₆₅		4 4.1 189°02	2°7/ 31.9 17			68707	2002 <i>CX</i> ₂₃₅		4 4.1 314°05	18°0/ 20.5 18		
3 2	13 16.95	+ 1 22.5	2.476	3.325	10.2	21.2	3 2	13 17.56	-45 22.8	1.488	2.142	24.1	18.1
3 12	13 11.33	+ 2 11.4	2.400	3.324	7.4	21.0	3 12	13 14.23	-47 14.5	1.398	2.124	22.7	17.9
3 22	13 4.18	+ 3 3.9	2.350	3.322	4.5	20.9	3 22	13 7.15	-48 30.9	1.321	2.107	21.1	17.8
4 1	12 56.08	+ 3 55.1	2.329	3.320	2.7	20.7	4 1	12 57.02	-49 1.0	1.258	2.091	19.6	17.6
4 11	12 47.76	+ 4 39.9	2.339	3.317	4.5	20.8	4 11	12 45.48	-48 37.7	1.211	2.075	18.4	17.5
4 21	12 39.96	+ 5 14.4	2.377	3.313	7.5	21.0	4 21	12 34.64	-47 20.2	1.182	2.060	18.0	17.4
5 1	12 33.32	+ 5 35.5	2.442	3.309	10.4	21.2	5 1	12 26.53	-45 16.0	1.170	2.045	18.6	17.3
5 11	12 28.33	+ 5 42.1	2.529	3.303	12.9	21.4	5 11	12 22.49	-42 40.1	1.176	2.031	20.0	17.4
473151	2015 <i>KR</i> ₁₄		4 4.1 135°48	2°8/ 8.1 18			257148	2008 <i>HL</i> ₁₅		4 4.1 217°34	1°1/ 2.5 17		
3 2	13 11.99	-19 50.3	2.624	3.409	11.6	21.4	3 2	13 11.28	- 3 59.7	3.012	3.854	8.8	21.4
3 12	13 7.72	-19 6.7	2.538	3.414	9.1	21.2	3 12	13 7.05	- 3 11.4	2.926	3.848	6.3	21.2
3 22	13 2.07	-18 5.8	2.476	3.419	6.3	21.0	3 22	13 1.63	- 2 16.8	2.868	3.842	3.6	21.1
4 1	12 55.57	-16 49.8	2.442	3.424	3.7	20.9	4 1	12 55.48	- 1 19.5	2.839	3.836	1.2	20.9
4 11	12 48.90	-15 23.2	2.437	3.428	3.0	20.8	4 11	12 49.15	- 0 23.5	2.840	3.829	2.8	21.0
4 21	12 42.72	-13 51.8	2.462	3.432	5.2	21.0	4 21	12 43.18	+ 0 27.2	2.871	3.822	5.6	21.2
5 1	12 37.64	-12 21.8	2.516	3.437	8.0	21.1	5 1	12 38.07	+ 1 9.1	2.929	3.815	8.2	21.3
5 11	12 34.06	-10 59.0	2.595	3.441	10.6	21.3	5 11	12 34.21	+ 1 40.0	3.012	3.808	10.5	21.5
423232	2004 <i>SY</i> ₁₈		4 4.1 276°40	0°6/ 3.5 17			331129	2010 <i>VB</i> ₄₈		4 4.1 86°79	2°0/ 2.4 18		
3 2	13 12.93	- 9 3.0	1.838	2.684	13.3	20.7	3 2	13 20.37	- 2 5.4	1.769	2.621	13.5	21.4
3 12	13 8.99	- 7 48.2	1.748	2.671	9.8	20.5	3 12	13 14.07	- 1 28.3	1.721	2.647	9.7	21.2
3 22	13 3.08	- 6 15.8	1.683	2.657	5.7	20.2	3 22	13 5.81	- 0 44.9	1.698	2.673	5.5	21.0
4 1	12 55.85	- 4 31.7	1.646	2.644	1.3	19.9	4 1	12 56.47	- 0 0.8	1.702	2.698	2.1	20.9
4 11	12 48.23	- 2 44.4	1.636	2.630	3.6	20.0	4 11	12 47.11	+ 0 37.9	1.734	2.723	4.4	21.1
4 21	12 41.17	- 1 3.1	1.655	2.617	8.1	20.2	4 21	12 38.70	+ 1 6.3	1.794	2.747	8.3	21.3
5 1	12 35.54	+ 0 24.0	1.699	2.603	12.2	20.5	5 1	12 32.03	+ 1 21.1	1.879	2.771	11.8	21.6
5 11	12 31.97	+ 1 31.4	1.765	2.589	15.7	20.7	5 11	12 27.58	+ 1 21.0	1.986	2.794	14.8	21.8
196223	2003 <i>BO</i> ₅₃		4 4.1 18°16	0°2/ 4.3 18			168772	2000 <i>RW</i> ₂₁		4 4.1 258°91	3°1/ 6.6 17		

EPHEMERIDES

4 4.1

4 4.1

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
376768	1999 <i>XD</i> ₂₅₃		4 4.1 112°39	1°3/ 2.7 17			396246	2014 <i>BH</i> ₄₅		4 4.1 11°61	4°4/30.0 17		
3 2	13 16.43	- 3 59.4	2.217	3.062	11.4	22.3	3 2	13 12.15	+ 4 15.9	2.033	2.901	11.3	20.2
3 12	13 11.00	- 3 17.7	2.156	3.079	8.2	22.1	3 12	13 8.12	+ 5 33.3	1.970	2.902	8.2	20.0
3 22	13 3.98	- 2 28.8	2.121	3.095	4.7	21.9	3 22	13 2.43	+ 6 53.0	1.933	2.903	5.4	19.8
4 1	12 56.04	- 1 37.3	2.114	3.111	1.5	21.7	4 1	12 55.71	+ 8 7.9	1.923	2.905	4.5	19.7
4 11	12 47.99	- 0 48.5	2.136	3.126	3.4	21.9	4 11	12 48.80	+ 9 10.9	1.941	2.907	6.4	19.8
4 21	12 40.60	- 0 7.0	2.187	3.142	6.9	22.1	4 21	12 42.49	+ 9 57.1	1.985	2.909	9.5	20.0
5 1	12 34.53	+ 0 23.4	2.265	3.156	10.1	22.3	5 1	12 37.48	+10 23.3	2.053	2.911	12.4	20.2
5 11	12 30.23	+ 0 40.6	2.365	3.171	12.8	22.5	5 11	12 34.26	+10 29.1	2.142	2.914	15.0	20.4
162707	2000 <i>UW</i> ₆₉		4 4.1 178°38	0°8/ 4.9 18			316492	2010 <i>VJ</i> ₉₃		4 4.1 124°62	1°4/ 2.3 17		
3 2	13 19.75	-10 2.4	1.828	2.659	14.0	20.5	3 2	13 12.42	- 2 1.5	2.903	3.749	9.0	21.5
3 12	13 13.92	- 9 42.2	1.749	2.661	10.5	20.3	3 12	13 7.86	- 1 29.1	2.831	3.754	6.5	21.3
3 22	13 5.93	- 9 8.0	1.694	2.662	6.4	20.1	3 22	13 2.11	- 0 52.3	2.785	3.759	3.7	21.1
4 1	12 56.55	- 8 22.9	1.666	2.663	2.0	19.8	4 1	12 55.63	- 0 14.4	2.768	3.764	1.4	21.0
4 11	12 46.83	- 7 32.4	1.667	2.663	3.0	19.8	4 11	12 49.01	+ 0 20.8	2.782	3.769	3.0	21.1
4 21	12 37.81	- 6 42.8	1.696	2.663	7.4	20.1	4 21	12 42.81	+ 0 50.0	2.824	3.774	5.8	21.3
5 1	12 30.44	- 6 0.2	1.750	2.661	11.4	20.3	5 1	12 37.55	+ 1 10.7	2.893	3.779	8.3	21.5
5 11	12 25.34	- 5 29.4	1.827	2.660	14.9	20.6	5 11	12 33.61	+ 1 21.0	2.986	3.783	10.6	21.6
348937	2006 <i>TE</i> ₆₉		4 4.1 212°10	4°4/29.7 18			209564	2004 <i>XO</i> ₁₃		4 4.1 123°82	5°0/30.6 18		
3 2	13 14.00	+ 6 58.5	2.458	3.318	9.9	20.6	3 2	13 20.97	+ 5 40.1	1.805	2.664	12.9	20.9
3 12	13 9.22	+ 8 0.4	2.389	3.314	7.4	20.4	3 12	13 14.55	+ 6 47.9	1.756	2.682	9.5	20.7
3 22	13 2.98	+ 9 2.2	2.345	3.310	5.1	20.3	3 22	13 6.14	+ 7 55.4	1.732	2.700	6.3	20.5
4 1	12 55.83	+ 9 58.1	2.331	3.306	4.5	20.2	4 1	12 56.60	+ 8 55.0	1.736	2.716	5.1	20.5
4 11	12 48.47	+10 42.8	2.344	3.302	6.1	20.3	4 11	12 46.98	+ 9 39.8	1.768	2.732	7.1	20.6
4 21	12 41.61	+11 12.6	2.386	3.298	8.6	20.5	4 21	12 38.29	+10 5.3	1.826	2.748	10.3	20.9
5 1	12 35.88	+11 25.4	2.451	3.293	11.2	20.6	5 1	12 31.33	+10 10.1	1.909	2.762	13.4	21.1
5 11	12 31.73	+11 21.0	2.538	3.288	13.5	20.8	5 11	12 26.58	+ 9 55.0	2.011	2.776	16.0	21.3
380032	2013 <i>QD</i> ₆₉		4 4.1 214°95	10°7/13.2 18			375095	2007 <i>RL</i> ₃₁₇		4 4.1 139°68	0°0/ 3.9 18		
3 2	13 27.86	-36 47.3	2.307	2.964	16.3	21.2	3 2	13 19.86	- 8 9.7	1.857	2.694	13.7	22.6
3 12	13 20.38	-38 22.1	2.209	2.958	14.7	21.0	3 12	13 13.85	- 7 37.4	1.789	2.706	10.0	22.4
3 22	13 10.09	-39 34.6	2.131	2.951	13.0	20.9	3 22	13 5.81	- 6 52.7	1.746	2.717	5.9	22.1
4 1	12 57.66	-40 18.8	2.075	2.943	11.5	20.7	4 1	12 56.54	- 6 0.0	1.730	2.728	1.4	21.9
4 11	12 44.26	-40 31.6	2.044	2.935	10.8	20.7	4 11	12 47.07	- 5 5.2	1.742	2.738	3.1	22.0
4 21	12 31.24	-40 13.9	2.039	2.927	11.1	20.7	4 21	12 38.38	- 4 14.6	1.783	2.747	7.4	22.3
5 1	12 19.92	-39 31.1	2.057	2.918	12.3	20.7	5 1	12 31.33	- 3 33.7	1.850	2.756	11.2	22.5
5 11	12 11.27	-38 32.2	2.098	2.908	14.0	20.8	5 11	12 26.48	- 3 6.1	1.939	2.764	14.5	22.8
20800	2000 <i>SV</i> ₁₇₂		4 4.1 123°51	6°7/28.6 18			337646	2001 <i>TX</i> ₁₂₄		4 4.1 89°01	3°8/ 8.5 18		
3 2	13 19.27	+13 5.7	2.015	2.872	11.9	18.4	3 2	13 15.48	-19 55.2	2.318	3.104	12.9	20.3
3 12	13 13.22	+14 1.3	1.963	2.879	9.3	18.3	3 12	13 10.44	-19 55.6	2.245	3.118	10.3	20.2
3 22	13 5.34	+14 50.3	1.935	2.886	7.2	18.2	3 22	13 3.75	-19 38.9	2.194	3.132	7.4	20.0
4 1	12 56.39	+15 25.7	1.935	2.893	6.9	18.2	4 1	12 56.04	-19 6.1	2.169	3.145	4.7	19.9
4 11	12 47.32	+15 42.4	1.962	2.900	8.5	18.3	4 11	12 48.14	-18 20.4	2.173	3.159	3.9	19.8
4 21	12 39.04	+15 37.8	2.014	2.906	11.0	18.4	4 21	12 40.84	-17 26.7	2.205	3.172	5.9	20.0
5 1	12 32.31	+15 11.9	2.090	2.913	13.5	18.6	5 1	12 34.84	-16 30.8	2.264	3.186	8.7	20.2
5 11	12 27.61	+14 26.9	2.185	2.919	15.8	18.8	5 11	12 30.63	-15 38.3	2.347	3.199	11.4	20.4
514062	2014 <i>OT</i> ₃₉₄		4 4.1 253°35	2°3/30.4 18			138540	2000 <i>PZ</i> ₁₄		4 4.1 169°44	4°9/28.1 18		
3 2	13 7.65	+ 5 55.6	4.466	5.319	5.9	21.3	3 2	13 13.76	+10 51.8	2.837	3.691	8.9	20.1
3 12	13 4.09	+ 6 30.4	4.391	5.315	4.3	21.2	3 12	13 8.87	+12 0.8	2.777	3.695	6.8	20.0
3 22	12 59.79	+ 7 5.0	4.345	5.312	2.9	21.1	3 22	13 2.70	+13 6.9	2.745	3.698	5.2	19.9
4 1	12 55.05	+ 7 36.8	4.328	5.308	2.3	21.1	4 1	12 55.78	+14 4.8	2.741	3.701	5.0	19.9
4 11	12 50.20	+ 8 3.6	4.342	5.305	3.3	21.1	4 11	12 48.72	+14 50.0	2.767	3.703	6.4	19.9
4 21	12 45.60	+ 8 23.5	4.384	5.301	4.9	21.2	4 21	12 42.13	+15 19.5	2.819	3.705	8.4	20.1
5 1	12 41.55	+ 8 35.1	4.453	5.298	6.5	21.4	5 1	12 36.54	+15 32.0	2.897	3.706	10.5	20.2
5 11	12 38.31	+ 8 37.7	4.546	5.294	7.9	21.5	5 11	12 32.34	+15 27.7	2.994	3.707	12.3	20.4
425305	2009 <i>YU</i> ₈		4 4.1 88°03	3°9/ 8.1 17			61758	2000 <i>QA</i> ₁₆₄		4 4.1 129°27	6°6/10.9 18		
3 2	13 16.48	-19 6.5	1.962	2.760	14.5	20.6	3 2	13 18.34	-26 39.8	2.043	2.795	15.5	18.8
3 12	13 11.39	-19 0.9	1.892	2.774	11.4	20.4	3 12	13 12.90	-27 1.0	1.962	2.803	13.0	18.7
3 22	13 4.37	-18 35.6	1.843	2.788	8.0	20.2	3 22	13 5.36	-26 58.9	1.903	2.810	10.2	18.5
4 1	12 56.18	-17 52.1	1.821	2.802	4.9	20.1	4 1	12 56.46	-26 32.4	1.868	2.818	7.7	18.4
4 11	12 47.76	-16 54.7	1.826	2.815	4.0	20.0	4 11	12 47.22	-25 43.6	1.859	2.825	6.6	18.3
4 21	12 40.08	-15 49.6	1.859	2.829	6.6	20.2	4 21	12 38.66	-24 37.8	1.877	2.832	7.7	18.4
5 1	12 33.93	-14 44.1	1.918	2.842	9.9	20.4	5 1	12 31.71	-23 22.7	1.920	2.839	10.2	18.5
5 11	12 29.86	-13 44.7	2.000	2.855	12.9	20.6	5 11	12 26.97	-22 6.6	1.988	2.845	12.9	18.7
59735	1999 <i>LY</i> ₃		4 4.1 271°32	1°7/ 2.4 17			99670	2002 <i>JK</i> ₆		4 4.1 53°48	1°2/ 5.3 17		
3 2	13 15.88	- 3 48.5	2.047	2.897	12.0	19.8	3 2	13 14.77	-11 54.4	1.721	2.559	14.5	19.7
3 12	13 11.08	- 2 56.5	1.947	2.872	8.8	19.5	3 12	13 10.30	-11 23.0	1.656	2.570	10.9	19.5
3 22	13 4.33	- 1 54.0	1.871	2.846	5.1	19.3	3 22	13 3.80	-10 35.0	1.613	2.581	6.7	19.3
4 1	12 56.21	- 0 45.9	1.823	2.819	1.8	19.0	4 1	12 56.07	- 9 34.4	1.596	2.592	2.4	19.0
4 11	12 47.59	+ 0 21.2	1.803	2.792	4.1	19.1	4 11	12 48.12	- 8 27.7	1.606	2.603	2.9	19.1
4 21	12 39.38	+ 1 20.7	1.812	2.765	8.2	19.3	4 21	12 40.95	- 7 22.3	1.644	2.615	7.2	19.4
5 1	12 32.46	+ 2 7.0	1.847	2.737	12.0	19.4	5 1	12 35.41	- 6 25.1	1.706	2.626	11.1	19.6
5 11	12 27.50	+ 2 36.5	1.902	2.708	15.4	19.6	5 11	12 32.02	- 5 41.2	1.791	2.638	14.5	19.9
199165	2005 <i>YK</i> ₁₈₀		4 4.1 153°76	1°5/ 2.7 18			423672	2005 <i>YV</i> ₁₈₆		4 4.1 152°37	1°9/ 6.4 16		

EPHEMERIDES

4 4.1

4 4.2

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
370960	2005 <i>SU</i> ₉₂		4 4.1 222°95	0°1/ 4.3 17			505141	2012 <i>KR</i> ₁₆		4 4.1 236°33	3°6/30.9 18		
3 2	13 18.55	- 7 29.7	1.934	2.772	13.1	22.2	3 2	13 17.02	+ 3 54.8	2.426	3.278	10.3	22.3
3 12	13 13.01	- 7 15.3	1.850	2.767	9.7	22.0	3 12	13 11.56	+ 4 51.8	2.337	3.261	7.6	22.1
3 22	13 5.42	- 6 49.9	1.790	2.761	5.8	21.7	3 22	13 4.46	+ 5 51.6	2.275	3.244	4.9	21.9
4 1	12 56.49	- 6 16.8	1.758	2.755	1.4	21.4	4 1	12 56.27	+ 6 48.7	2.242	3.226	3.7	21.7
4 11	12 47.17	- 5 40.9	1.754	2.749	3.0	21.5	4 11	12 47.74	+ 7 37.5	2.238	3.207	5.5	21.8
4 21	12 38.45	- 5 7.3	1.778	2.743	7.3	21.8	4 21	12 39.65	+ 8 13.5	2.263	3.188	8.4	22.0
5 1	12 31.23	- 4 41.1	1.828	2.736	11.2	22.0	5 1	12 32.70	+ 8 33.6	2.313	3.168	11.3	22.1
5 11	12 26.14	- 4 25.9	1.900	2.729	14.6	22.2	5 11	12 27.45	+ 8 36.9	2.385	3.147	13.9	22.3
345685	2006 <i>UX</i> ₁₄₆		4 4.1 83°97	4°3/ 9.0 17			64298	2001 <i>UE</i> ₁₅		4 4.1 131°31	1°5/ 2.6 18		
3 2	13 16.01	-21 17.6	2.322	3.099	13.2	20.8	3 2	13 15.77	- 4 31.7	1.865	2.717	12.9	19.7
3 12	13 10.84	-21 25.7	2.249	3.115	10.6	20.6	3 12	13 10.90	- 3 39.1	1.796	2.722	9.3	19.5
3 22	13 3.99	-21 16.2	2.199	3.130	7.8	20.4	3 22	13 4.13	- 2 36.4	1.752	2.727	5.3	19.2
4 1	12 56.11	-20 49.5	2.174	3.145	5.2	20.3	4 1	12 56.18	- 1 29.5	1.735	2.732	1.7	19.0
4 11	12 48.03	-20 8.6	2.178	3.160	4.4	20.3	4 11	12 48.00	- 0 25.2	1.746	2.736	4.0	19.2
4 21	12 40.56	-19 18.1	2.210	3.175	6.1	20.4	4 21	12 40.51	+ 0 30.0	1.785	2.741	8.0	19.4
5 1	12 34.42	-18 23.9	2.269	3.189	8.7	20.6	5 1	12 34.52	+ 1 11.1	1.848	2.745	11.7	19.6
5 11	12 30.09	-17 31.7	2.352	3.204	11.3	20.8	5 11	12 30.57	+ 1 35.3	1.934	2.749	14.9	19.9
93103	2000 <i>SA</i> ₄₄		4 4.1 140°62	2°7/ 6.0 18			126366	2002 <i>AF</i> ₁₈₅		4 4.1 123°30	7°0/27.3 18		
3 2	13 24.84	-11 59.4	1.934	2.747	14.1	19.8	3 2	13 15.51	+11 4.6	1.898	2.765	12.0	20.0
3 12	13 17.65	-12 41.9	1.852	2.750	10.8	19.6	3 12	13 10.64	+12 45.0	1.849	2.772	9.3	19.9
3 22	13 8.17	-13 12.8	1.795	2.753	7.1	19.4	3 22	13 3.93	+14 21.3	1.825	2.779	7.3	19.8
4 1	12 57.16	-13 32.1	1.766	2.756	3.5	19.2	4 1	12 56.12	+15 44.5	1.828	2.786	7.2	19.8
4 11	12 45.71	-13 41.3	1.766	2.759	3.5	19.2	4 11	12 48.15	+16 47.0	1.858	2.793	9.1	19.9
4 21	12 34.95	-13 43.6	1.794	2.761	7.1	19.4	4 21	12 40.91	+17 24.6	1.913	2.799	11.8	20.1
5 1	12 25.88	-13 43.4	1.850	2.764	10.8	19.6	5 1	12 35.19	+17 36.2	1.990	2.805	14.4	20.2
5 11	12 19.17	-13 45.1	1.929	2.766	14.1	19.8	5 11	12 31.46	+17 23.4	2.085	2.811	16.7	20.4
499555	2010 <i>RV</i> ₁₄₄		4 4.1 258°33	1°2/ 5.1 17			436705	2011 <i>TB</i> ₁₁		4 4.1 211°45	1°2/ 2.5 17		
3 2	13 19.35	-10 10.0	1.715	2.551	14.6	22.3	3 2	13 11.98	- 5 8.8	2.496	3.341	10.3	21.0
3 12	13 13.97	-10 2.6	1.623	2.536	11.1	22.1	3 12	13 7.79	- 4 6.2	2.416	3.339	7.4	20.8
3 22	13 6.19	- 9 40.7	1.553	2.521	6.8	21.8	3 22	13 2.19	- 2 54.7	2.361	3.336	4.2	20.6
4 1	12 56.71	- 9 6.7	1.510	2.506	2.3	21.5	4 1	12 55.71	- 1 38.9	2.336	3.333	1.3	20.3
4 11	12 46.63	- 8 25.2	1.494	2.491	3.2	21.5	4 11	12 49.02	- 0 24.5	2.340	3.330	3.2	20.5
4 21	12 37.13	- 7 42.7	1.506	2.475	7.9	21.7	4 21	12 42.78	+ 0 43.1	2.373	3.326	6.5	20.7
5 1	12 29.30	- 7 5.6	1.542	2.458	12.4	21.9	5 1	12 37.61	+ 1 39.4	2.433	3.323	9.6	20.9
5 11	12 23.91	- 6 39.5	1.600	2.442	16.2	22.1	5 11	12 33.94	+ 2 21.3	2.517	3.319	12.2	21.0
360585	2003 <i>UW</i> ₃₅₇		4 4.1 268°67	0°3/ 3.9 17			239666	2008 <i>XS</i> ₃₉		4 4.1 127°98	0°0/ 4.2 17		
3 2	13 17.56	- 7 40.3	1.648	2.496	14.5	21.6	3 2	13 15.73	- 7 59.4	2.154	2.991	12.0	21.3
3 12	13 12.73	- 7 5.2	1.555	2.478	10.8	21.3	3 12	13 10.68	- 7 34.3	2.080	2.996	8.8	21.1
3 22	13 5.49	- 6 15.1	1.485	2.458	6.4	21.0	3 22	13 3.94	- 6 58.7	2.030	3.001	5.2	20.9
4 1	12 56.55	- 5 14.1	1.441	2.439	1.5	20.6	4 1	12 56.14	- 6 16.1	2.008	3.006	1.3	20.6
4 11	12 46.98	- 4 9.3	1.424	2.419	3.7	20.7	4 11	12 48.12	- 5 31.4	2.015	3.011	2.7	20.7
4 21	12 37.99	- 3 8.5	1.434	2.398	8.7	21.0	4 21	12 40.69	- 4 49.5	2.051	3.015	6.5	21.0
5 1	12 30.65	- 2 19.1	1.468	2.378	13.3	21.2	5 1	12 34.58	- 4 15.1	2.112	3.020	10.0	21.2
5 11	12 25.76	- 1 46.2	1.523	2.357	17.3	21.4	5 11	12 30.29	- 3 51.6	2.197	3.024	12.9	21.4
133334	2003 <i>SK</i> ₉₈		4 4.1 313°36	5°0/ 8.5 18			269234	2008 <i>QP</i> ₆		4 4.1 231°69	1°2/ 2.8 18		
3 2	13 15.92	-19 59.3	1.818	2.618	15.4	19.5	3 2	13 14.35	- 5 45.2	2.148	2.993	11.7	20.5
3 12	13 11.40	-20 18.4	1.728	2.608	12.5	19.3	3 12	13 9.77	- 4 46.0	2.062	2.985	8.5	20.2
3 22	13 4.64	-20 17.3	1.659	2.599	9.1	19.1	3 22	13 3.46	- 3 35.7	2.002	2.976	4.9	20.0
4 1	12 56.33	-19 55.3	1.614	2.590	6.0	18.9	4 1	12 56.04	- 2 19.4	1.969	2.967	1.4	19.7
4 11	12 47.51	-19 15.0	1.596	2.581	5.1	18.8	4 11	12 48.31	- 1 3.6	1.966	2.958	3.5	19.9
4 21	12 39.25	-18 21.8	1.604	2.573	7.5	18.9	4 21	12 41.09	+ 0 5.3	1.992	2.948	7.4	20.1
5 1	12 32.58	-17 23.3	1.637	2.564	11.0	19.1	5 1	12 35.13	+ 1 1.9	2.044	2.938	10.9	20.3
5 11	12 28.22	-16 27.3	1.692	2.556	14.4	19.3	5 11	12 30.97	+ 1 42.6	2.118	2.927	13.9	20.5
431879	2008 <i>SZ</i> ₂₀₀		4 4.1 135°64	0°2/ 4.4 17			379675	2011 <i>FC</i> ₁₇		4 4.1 6°27	0°9/ 3.3 17		
3 2	13 16.78	- 8 1.2	2.094	2.931	12.3	21.6	3 2	13 15.35	- 5 52.8	1.774	2.627	13.4	21.2
3 12	13 11.50	- 7 43.3	2.019	2.935	9.1	21.4	3 12	13 10.74	- 5 12.8	1.701	2.627	9.8	21.0
3 22	13 4.43	- 7 14.9	1.969	2.939	5.4	21.2	3 22	13 4.12	- 4 21.5	1.652	2.627	5.7	20.7
4 1	12 56.24	- 6 39.3	1.946	2.943	1.4	20.9	4 1	12 56.21	- 3 23.7	1.629	2.627	1.4	20.4
4 11	12 47.81	- 6 1.1	1.952	2.947	2.7	21.0	4 11	12 48.00	- 2 26.4	1.634	2.627	3.7	20.6
4 21	12 40.00	- 5 25.1	1.986	2.951	6.6	21.2	4 21	12 40.47	- 1 35.9	1.666	2.628	8.0	20.9
5 1	12 33.56	- 4 56.0	2.046	2.955	10.2	21.5	5 1	12 34.50	- 0 57.8	1.723	2.628	11.9	21.1
5 11	12 29.02	- 4 37.2	2.130	2.958	13.2	21.7	5 11	12 30.66	- 0 35.5	1.801	2.629	15.3	21.3
290975	2005 <i>XH</i> ₁₇		4 4.1 209°49	2°4/ 1.9 18			174877	2004 <i>BU</i> ₅₂		4 4.1 165°45	1°5/ 2.7 18		
3 2	13 19.06	- 0 0.5	2.155	3.003	11.5	21.1	3 2	13 18.24	- 4 6.8	2.106	2.950	12.0	21.2
3 12	13 13.16	+ 0 30.5	2.074	2.998	8.4	20.8	3 12	13 12.52	- 3 18.4	2.034	2.956	8.7	21.0
3 22	13 5.42	+ 1 6.0	2.019	2.992	5.0	20.6	3 22	13 5.01	- 2 21.4	1.987	2.961	5.0	20.8
4 1	12 56.50	+ 1 41.5	1.992	2.986	2.4	20.4	4 1	12 56.41	- 1 20.9	1.968	2.965	1.6	20.5
4 11	12 47.27	+ 2 11.9	1.994	2.979	4.4	20.6	4 11	12 47.58	- 0 22.8	1.979	2.969	3.7	20.7
4 21	12 38.62	+ 2 32.9	2.025	2.972	7.9	20.8	4 21	12 39.40	+ 0 27.3	2.019	2.972	7.5	20.9
5 1	12 31.32	+ 2 41.4	2.082	2.964	11.3	20.9	5 1	12 32.62	+ 1 4.9	2.085	2.974	10.9	21.1
5 11	12 25.96	+ 2 36.0	2.161	2.956	14.2	21.1	5 11	12 27.77	+ 1 27.6	2.173	2.976	13.8	21.3
34119	2000 <i>PY</i> ₂₇		4 4.1 88°45	10°7/21.2 18			399349	2000 <i>SK</i> ₂₆₇		4 4.2 169°94	0°6/ 3.		

EPHEMERIDES

4 4.2

4 4.2

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
308222	2005 <i>EM</i> ₁₆₆		4 4.2 95°00	0°6/ 4.7 18			98495	2000 <i>VV</i> ₂		4 4.2 219°32	0°7/ 3.6 16		
3 2	13 19.92	- 9 55.8	1.634	2.472	15.1	21.0	3 2	13 20.24	- 5 51.5	1.874	2.715	13.3	19.8
3 12	13 14.03	- 9 23.4	1.578	2.494	11.2	20.8	3 12	13 14.37	- 5 24.4	1.787	2.707	9.8	19.6
3 22	13 5.97	- 8 36.0	1.546	2.515	6.7	20.6	3 22	13 6.32	- 4 46.6	1.725	2.698	5.7	19.3
4 1	12 56.64	- 7 38.3	1.539	2.536	1.9	20.3	4 1	12 56.82	- 4 2.2	1.690	2.688	1.4	19.0
4 11	12 47.20	- 6 37.1	1.561	2.557	3.1	20.4	4 11	12 46.87	- 3 16.8	1.684	2.677	3.5	19.1
4 21	12 38.74	- 5 39.8	1.610	2.577	7.7	20.7	4 21	12 37.53	- 2 36.3	1.706	2.666	7.9	19.3
5 1	12 32.13	- 4 52.7	1.684	2.597	11.7	21.0	5 1	12 29.75	- 2 6.1	1.753	2.655	12.0	19.6
5 11	12 27.90	- 4 19.9	1.780	2.616	15.1	21.3	5 11	12 24.21	- 1 49.7	1.823	2.642	15.5	19.8
349439	2008 <i>BF</i> ₁		4 4.2 106°42	9°7/ 21.7 18			117765	2005 <i>GO</i> ₇₄		4 4.2 352°65	1°6/ 5.5 18		
3 2	13 16.30	+26 45.3	2.377	3.205	11.3	20.2	3 2	13 14.80	-12 21.0	1.384	2.233	16.8	19.9
3 12	13 10.99	+28 10.3	2.344	3.211	10.1	20.1	3 12	13 10.91	-11 53.7	1.311	2.230	12.7	19.7
3 22	13 4.05	+29 19.8	2.336	3.218	9.7	20.1	3 22	13 4.49	-11 5.2	1.259	2.228	7.9	19.4
4 1	12 56.17	+30 7.2	2.352	3.223	10.2	20.2	4 1	12 56.39	- 9 59.5	1.231	2.227	2.9	19.1
4 11	12 48.20	+30 28.3	2.392	3.229	11.4	20.2	4 11	12 47.84	- 8 44.3	1.228	2.225	3.4	19.1
4 21	12 40.95	+30 22.1	2.454	3.235	12.9	20.4	4 21	12 40.12	- 7 29.2	1.251	2.225	8.5	19.4
5 1	12 35.07	+29 50.1	2.535	3.241	14.4	20.5	5 1	12 34.35	- 6 23.5	1.297	2.225	13.3	19.7
5 11	12 31.02	+28 56.0	2.633	3.247	15.8	20.6	5 11	12 31.23	- 5 34.1	1.363	2.225	17.4	19.9
469132	2015 <i>EQ</i> ₃₀		4 4.2 233°13	2°8/ 1.2 17			387045	2012 <i>TO</i> ₁₀		4 4.2 151°38	0°1/ 4.0 17		
3 2	13 15.21	+ 0 2.8	2.048	2.906	11.7	20.8	3 2	13 15.13	- 7 11.6	2.440	3.274	10.9	22.0
3 12	13 10.43	+ 0 56.8	1.973	2.902	8.5	20.6	3 12	13 10.10	- 6 44.7	2.363	3.279	7.9	21.8
3 22	13 3.87	+ 1 56.6	1.922	2.897	5.0	20.4	3 22	13 3.57	- 6 9.0	2.312	3.284	4.6	21.6
4 1	12 56.17	+ 2 56.4	1.899	2.892	2.8	20.2	4 1	12 56.11	- 5 27.6	2.290	3.288	1.1	21.3
4 11	12 48.20	+ 3 49.8	1.905	2.887	4.9	20.3	4 11	12 48.45	- 4 45.1	2.297	3.292	2.5	21.5
4 21	12 40.79	+ 4 31.5	1.938	2.881	8.4	20.5	4 21	12 41.31	- 4 5.6	2.333	3.296	6.0	21.7
5 1	12 34.74	+ 4 57.6	1.996	2.876	11.8	20.7	5 1	12 35.33	- 3 33.2	2.396	3.299	9.1	21.9
5 11	12 30.56	+ 5 6.6	2.076	2.870	14.7	20.9	5 11	12 30.96	- 3 10.7	2.483	3.302	11.8	22.1
360697	2004 <i>TP</i> ₉		4 4.2 142°45	3°8/ 1.7 18			502033	2015 <i>AR</i> ₁₂₅		4 4.2 30°34	0°5/ 4.6 17		
3 2	13 30.02	+ 4 53.2	1.871	2.711	13.4	21.3	3 2	13 15.54	- 9 12.9	1.593	2.442	14.9	21.2
3 12	13 21.18	+ 5 0.7	1.807	2.724	9.9	21.1	3 12	13 11.06	- 8 51.1	1.526	2.448	11.0	21.0
3 22	13 10.09	+ 5 7.0	1.768	2.736	6.1	20.9	3 22	13 4.39	- 8 14.7	1.483	2.454	6.6	20.7
4 1	12 57.66	+ 5 7.4	1.759	2.748	3.8	20.8	4 1	12 56.33	- 7 27.8	1.464	2.461	1.9	20.4
4 11	12 45.09	+ 4 57.7	1.780	2.759	5.6	20.9	4 11	12 48.00	- 6 36.8	1.472	2.469	3.2	20.5
4 21	12 33.52	+ 4 35.7	1.831	2.768	9.2	21.1	4 21	12 40.47	- 5 48.7	1.507	2.477	7.8	20.8
5 1	12 23.89	+ 4 0.6	1.908	2.777	12.7	21.4	5 1	12 34.68	- 5 9.7	1.566	2.485	12.0	21.1
5 11	12 16.77	+ 3 13.2	2.008	2.785	15.7	21.6	5 11	12 31.21	- 4 44.4	1.646	2.494	15.6	21.3
250338	2003 <i>SP</i> ₁₄₆		4 4.2 144°58	2°9/ 6.5 18			382393	2013 <i>VX</i> ₁₁		4 4.2 128°42	3°9/ 2.8 18		
3 2	13 20.42	-14 42.3	1.774	2.591	15.1	20.5	3 2	13 37.14	+ 4 12.8	1.170	2.024	18.8	20.2
3 12	13 14.53	-14 44.5	1.699	2.597	11.6	20.3	3 12	13 27.61	+ 3 46.3	1.108	2.033	14.0	20.0
3 22	13 6.39	-14 29.3	1.647	2.604	7.7	20.1	3 22	13 14.39	+ 3 16.9	1.069	2.041	8.5	19.7
4 1	12 56.80	-13 58.2	1.620	2.610	3.9	19.9	4 1	12 58.80	+ 2 39.6	1.055	2.048	4.0	19.4
4 11	12 46.87	-13 15.6	1.622	2.616	3.5	19.9	4 11	12 42.83	+ 1 50.9	1.068	2.056	6.5	19.6
4 21	12 37.71	-12 27.6	1.650	2.621	7.2	20.1	4 21	12 28.46	+ 0 50.0	1.108	2.063	11.9	19.9
5 1	12 30.29	-11 41.0	1.705	2.626	11.1	20.3	5 1	12 17.21	+ 0 22.2	1.172	2.069	16.9	20.2
5 11	12 25.24	-11 2.0	1.782	2.630	14.6	20.6	5 11	12 9.83	- 1 44.0	1.255	2.075	21.1	20.5
412711	2014 <i>OF</i> ₂₉₆		4 4.2 124°68	0°2/ 4.4 18			166243	2002 <i>GL</i> ₁₃		4 4.2 349°69	0°0/ 4.2 18		
3 2	13 20.55	- 8 12.0	1.889	2.724	13.6	21.7	3 2	13 13.13	- 8 45.8	1.147	2.018	17.8	18.9
3 12	13 14.33	- 7 51.9	1.824	2.739	10.0	21.5	3 12	13 10.08	- 8 17.2	1.078	2.011	13.3	18.6
3 22	13 6.12	- 7 20.1	1.783	2.753	5.9	21.3	3 22	13 4.19	- 7 28.6	1.029	2.005	7.9	18.2
4 1	12 56.71	- 6 40.5	1.770	2.767	1.5	21.1	4 1	12 56.34	- 6 25.5	1.003	2.001	2.0	17.8
4 11	12 47.11	- 5 58.3	1.785	2.781	2.9	21.2	4 11	12 47.95	- 5 17.4	1.000	1.997	4.1	18.0
4 21	12 38.32	- 5 19.1	1.829	2.794	7.1	21.5	4 21	12 40.49	- 4 14.6	1.020	1.994	10.0	18.3
5 1	12 31.16	- 4 47.8	1.899	2.806	10.9	21.7	5 1	12 35.22	- 3 26.4	1.062	1.993	15.3	18.6
5 11	12 26.18	- 4 27.9	1.991	2.817	14.1	21.9	5 11	12 32.92	- 2 58.9	1.122	1.992	19.7	18.8
371122	2005 <i>WS</i> ₂₄		4 4.2 183°01	0°2/ 4.4 17			386499	2009 <i>BB</i> ₄₆		4 4.2 123°98	2°0/ 1.6 17		
3 2	13 17.51	- 8 35.9	2.304	3.133	11.6	22.4	3 2	13 14.15	- 1 45.0	2.511	3.359	10.1	21.6
3 12	13 11.94	- 8 8.8	2.222	3.134	8.6	22.2	3 12	13 9.27	- 0 46.3	2.448	3.373	7.2	21.4
3 22	13 4.69	- 7 31.0	2.165	3.134	5.1	22.0	3 22	13 3.02	+ 0 17.7	2.412	3.387	4.2	21.2
4 1	12 56.38	- 6 45.8	2.136	3.133	1.3	21.7	4 1	12 55.97	+ 1 22.2	2.405	3.400	2.0	21.1
4 11	12 47.80	- 5 57.8	2.137	3.132	2.6	21.8	4 11	12 48.81	+ 2 22.0	2.428	3.412	3.8	21.2
4 21	12 39.76	- 5 11.8	2.167	3.131	6.3	22.0	4 21	12 42.19	+ 3 12.5	2.480	3.424	6.8	21.5
5 1	12 32.98	- 4 32.5	2.224	3.128	9.7	22.2	5 1	12 36.68	+ 3 50.6	2.559	3.436	9.6	21.7
5 11	12 27.99	- 4 3.5	2.305	3.125	12.6	22.4	5 11	12 32.71	+ 4 14.3	2.660	3.448	12.0	21.8
480188	2015 <i>FZ</i> ₃₃₃		4 4.2 286°44	0°7/ 5.0 17			346355	2008 <i>RH</i> ₁₃₀		4 4.2 190°43	0°5/ 4.7 17		
3 2	13 11.91	-11 52.5	2.251	3.079	11.9	21.2	3 2	13 15.73	- 9 48.7	2.296	3.124	11.7	21.8
3 12	13 8.02	-10 59.8	2.152	3.062	8.9	21.0	3 12	13 10.68	- 9 18.8	2.213	3.123	8.7	21.6
3 22	13 2.49	- 9 51.4	2.078	3.045	5.5	20.8	3 22	13 3.98	- 8 37.1	2.154	3.122	5.2	21.4
4 1	12 55.86	- 8 30.9	2.032	3.028	1.7	20.5	4 1	12 56.23	- 7 46.9	2.124	3.120	1.5	21.1
4 11	12 48.89	- 7 4.1	2.015	3.011	2.5	20.5	4 11	12 48.22	- 6 52.8	2.122	3.118	2.5	21.2
4 21	12 42.35	- 5 37.8	2.027	2.994	6.3	20.7	4 21	12 40.72	- 6 0.1	2.150	3.116	6.2	21.4
5 1	12 36.96	- 4 18.7	2.065	2.977	9.9	20.9	5 1	12 34.46	- 5 13.7	2.205	3.113	9.6	21.6
5 11	12 33.27	- 3 12.1	2.128	2.960	13.1	21.1	5 11	12 29.94	- 4 37.6	2.283	3.110	12.5	21.8
188484	2004 <i>PJ</i> ₆		4 4.2 321°33	3°5/ 6.8 17			289621	2005 <i>GC</i> ₄₆		4 4.2 154°84			

EPHEMERIDES

4 4.2

4 4.2

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
196536	2003 <i>OF</i> ₂₈		4 4.2 196°49	1.5/ 2.6	18		431958	2008 <i>UB</i> ₈₉		4 4.2 193°98	2.1/ 1.9	17	
3 2	13 16.15	- 3 22.5	2.180	3.028	11.5	20.3	3 2	13 16.46	- 1 15.8	2.149	3.001	11.5	21.8
3 12	13 11.03	- 2 43.9	2.102	3.026	8.3	20.1	3 12	13 11.27	- 0 35.3	2.074	2.999	8.3	21.5
3 22	13 4.20	- 1 57.9	2.049	3.024	4.8	19.9	3 22	13 4.35	+ 0 11.1	2.023	2.998	4.8	21.3
4 1	12 56.30	- 1 8.8	2.025	3.022	1.6	19.6	4 1	12 56.35	+ 0 58.5	2.001	2.996	2.2	21.1
4 11	12 48.13	- 0 22.1	2.029	3.019	3.6	19.8	4 11	12 48.09	+ 1 41.4	2.008	2.994	4.2	21.3
4 21	12 40.51	+ 0 17.4	2.062	3.016	7.3	20.0	4 21	12 40.40	+ 2 15.2	2.043	2.992	7.7	21.5
5 1	12 34.19	+ 0 45.5	2.121	3.013	10.6	20.2	5 1	12 34.03	+ 2 36.2	2.104	2.990	11.0	21.7
5 11	12 29.67	+ 0 59.9	2.202	3.010	13.5	20.4	5 11	12 29.49	+ 2 42.6	2.186	2.987	13.8	21.9
136691	1995 <i>SC</i> ₄₄		4 4.2 139°31	0°3/ 4.6	18		106033	2000 <i>SJ</i> ₃₀₃		4 4.2 143°37	1°3/ 5.8	18	
3 2	13 12.93	-10 5.2	2.577	3.404	10.6	20.6	3 2	13 12.98	-13 7.6	2.575	3.390	10.9	19.9
3 12	13 8.44	- 9 18.1	2.501	3.412	7.8	20.4	3 12	13 8.51	-12 33.1	2.494	3.395	8.2	19.7
3 22	13 2.58	- 8 20.0	2.450	3.419	4.6	20.2	3 22	13 2.64	-11 45.9	2.439	3.400	5.2	19.5
4 1	12 55.89	- 7 14.3	2.428	3.425	1.3	20.0	4 1	12 55.92	-10 48.7	2.411	3.405	2.1	19.3
4 11	12 49.04	- 6 6.0	2.436	3.432	2.2	20.1	4 11	12 49.01	- 9 45.9	2.413	3.409	2.2	19.3
4 21	12 42.67	- 5 0.2	2.473	3.438	5.5	20.3	4 21	12 42.57	- 8 42.5	2.445	3.413	5.3	19.5
5 1	12 37.37	- 4 1.7	2.538	3.444	8.6	20.5	5 1	12 37.22	- 7 43.5	2.504	3.417	8.3	19.7
5 11	12 33.57	- 3 13.9	2.627	3.449	11.2	20.7	5 11	12 33.37	- 6 53.0	2.587	3.421	11.0	19.9
276304	2002 <i>TK</i> ₁₃₁		4 4.2 146°51	1°8/ 6.3	18		110556	2001 <i>TU</i> ₁₀₆		4 4.2 192°72	1°1/ 5.4	18	
3 2	13 13.52	-15 0.2	2.238	3.051	12.4	20.4	3 2	13 16.97	-11 51.6	2.273	3.092	12.1	20.3
3 12	13 9.11	-14 20.6	2.156	3.055	9.5	20.2	3 12	13 11.63	-11 24.2	2.186	3.091	9.1	20.1
3 22	13 3.08	-13 24.7	2.099	3.058	6.1	20.0	3 22	13 4.57	-10 43.3	2.124	3.088	5.7	19.8
4 1	12 56.02	-12 15.4	2.068	3.060	2.8	19.8	4 1	12 56.41	- 9 51.8	2.090	3.085	2.1	19.6
4 11	12 48.74	-10 58.2	2.067	3.063	2.6	19.8	4 11	12 47.95	- 8 54.3	2.086	3.082	2.5	19.6
4 21	12 42.01	- 9 39.1	2.095	3.066	5.9	20.0	4 21	12 40.01	- 7 56.2	2.110	3.078	6.1	19.8
5 1	12 36.53	- 8 24.8	2.150	3.068	9.3	20.2	5 1	12 33.35	- 7 3.0	2.162	3.073	9.6	20.0
5 11	12 32.79	- 7 20.6	2.229	3.070	12.3	20.4	5 11	12 28.50	- 6 19.3	2.238	3.068	12.6	20.2
286342	2001 <i>XZ</i> ₇₀		4 4.2 136°09	3°8/ 30.7	18		380180	2000 <i>SQ</i> ₁₃₈		4 4.2 236°50	0°5/ 4.8	18	
3 2	13 15.65	+ 5 50.6	2.541	3.396	9.8	20.8	3 2	13 15.66	-11 3.2	2.431	3.252	11.3	21.7
3 12	13 10.36	+ 6 36.1	2.480	3.404	7.2	20.7	3 12	13 10.67	-10 12.6	2.328	3.235	8.5	21.5
3 22	13 3.67	+ 7 21.1	2.445	3.412	4.8	20.5	3 22	13 4.03	- 9 7.9	2.251	3.218	5.1	21.2
4 1	12 56.15	+ 8 1.1	2.438	3.419	3.8	20.5	4 1	12 56.29	- 7 52.5	2.202	3.199	1.5	20.9
4 11	12 48.50	+ 8 31.4	2.461	3.427	5.3	20.6	4 11	12 48.18	- 6 31.6	2.184	3.180	2.4	21.0
4 21	12 41.40	+ 8 49.2	2.512	3.434	7.8	20.7	4 21	12 40.47	- 5 11.4	2.196	3.160	6.2	21.2
5 1	12 35.43	+ 8 52.5	2.588	3.440	10.3	20.9	5 1	12 33.88	- 3 58.0	2.235	3.139	9.6	21.4
5 11	12 31.03	+ 8 41.4	2.686	3.447	12.5	21.1	5 11	12 28.97	- 2 56.3	2.299	3.117	12.7	21.5
457565	2008 <i>YV</i> ₁₁₂		4 4.2 140°31	0°9/ 3.3	18		81343	2000 <i>GB</i> ₄₁		4 4.2 56°89	0°3/ 4.5	18	
3 2	13 20.90	- 5 48.5	1.894	2.734	13.3	23.3	3 2	13 16.40	- 9 12.6	1.599	2.446	14.9	20.3
3 12	13 14.58	- 5 6.1	1.829	2.748	9.7	23.1	3 12	13 11.72	- 8 40.7	1.529	2.450	11.1	20.1
3 22	13 6.28	- 4 13.4	1.789	2.762	5.6	22.9	3 22	13 4.81	- 7 53.5	1.483	2.455	6.6	19.8
4 1	12 56.80	- 3 15.4	1.777	2.775	1.4	22.7	4 1	12 56.48	- 6 55.5	1.462	2.459	1.7	19.5
4 11	12 47.14	- 2 18.6	1.795	2.787	3.5	22.8	4 11	12 47.84	- 5 53.8	1.468	2.464	3.3	19.6
4 21	12 38.29	- 1 28.8	1.841	2.799	7.7	23.1	4 21	12 40.01	- 4 55.9	1.501	2.469	8.0	19.9
5 1	12 31.08	- 0 51.2	1.912	2.809	11.4	23.4	5 1	12 33.92	- 4 8.5	1.558	2.474	12.2	20.2
5 11	12 26.03	- 0 28.4	2.006	2.818	14.5	23.6	5 11	12 30.19	- 3 36.3	1.636	2.479	15.9	20.4
42849	Podjavorinska		4 4.2 84°37	0°1/ 4.0	18		130878	2000 <i>VM</i> ₁₃		4 4.2 203°13	4°0/ 31.7	18	
3 2	13 16.18	- 8 39.1	1.954	2.793	13.0	19.1	3 2	13 20.36	+ 2 45.3	1.784	2.642	13.1	20.0
3 12	13 11.04	- 7 50.6	1.898	2.815	9.5	19.0	3 12	13 14.45	+ 3 36.2	1.711	2.639	9.6	19.8
3 22	13 4.15	- 6 49.9	1.866	2.838	5.5	18.8	3 22	13 6.35	+ 4 30.8	1.663	2.635	6.0	19.6
4 1	12 56.27	- 5 42.2	1.862	2.860	1.3	18.5	4 1	12 56.86	+ 5 22.2	1.642	2.631	4.0	19.4
4 11	12 48.30	- 4 33.8	1.887	2.882	2.9	18.7	4 11	12 47.02	+ 6 3.4	1.649	2.625	6.2	19.6
4 21	12 41.11	- 3 31.1	1.940	2.904	6.9	19.0	4 21	12 37.91	+ 6 29.1	1.683	2.620	9.9	19.8
5 1	12 35.40	- 2 39.4	2.020	2.925	10.4	19.2	5 1	12 30.47	+ 6 36.1	1.741	2.614	13.5	20.0
5 11	12 31.62	- 2 2.1	2.121	2.946	13.4	19.5	5 11	12 25.31	+ 6 23.9	1.819	2.607	16.7	20.2
274637	2008 <i>TZ</i> ₁₀₆		4 4.2 311°09	1°8/ 2.6	17		292142	2006 <i>RB</i> ₈₇		4 4.2 146°21	0°3/ 3.9	16	
3 2	13 16.76	- 2 27.5	1.868	2.723	12.8	20.6	3 2	13 17.95	- 7 40.2	1.906	2.745	13.2	22.9
3 12	13 11.72	- 1 57.2	1.794	2.721	9.3	20.4	3 12	13 12.51	- 7 0.6	1.835	2.753	9.7	22.7
3 22	13 4.71	- 1 19.6	1.744	2.719	5.4	20.1	3 22	13 5.13	- 6 8.9	1.789	2.761	5.6	22.4
4 1	12 56.44	- 0 39.5	1.721	2.717	1.9	19.9	4 1	12 56.54	- 5 9.7	1.770	2.768	1.3	22.1
4 11	12 47.86	- 0 2.9	1.725	2.715	4.1	20.0	4 11	12 47.73	- 4 9.2	1.779	2.774	3.1	22.3
4 21	12 39.94	+ 0 25.2	1.758	2.714	8.1	20.3	4 21	12 39.63	- 3 13.8	1.817	2.780	7.3	22.6
5 1	12 33.52	+ 0 40.7	1.815	2.712	11.9	20.5	5 1	12 33.06	- 2 28.9	1.881	2.785	11.1	22.8
5 11	12 29.17	+ 0 41.5	1.893	2.710	15.1	20.7	5 11	12 28.57	- 1 58.3	1.967	2.790	14.3	23.0
505259	2012 <i>UY</i> ₁₅₅		4 4.2 73°79	3°3/ 8.3	17		400322	2007 <i>TH</i> ₃₈₅		4 4.2 179°17	2°9/ 1.4	18	
3 2	13 13.52	-19 39.0	2.251	3.043	13.1	21.3	3 2	13 19.05	- 0 32.0	1.888	2.742	12.7	21.5
3 12	13 9.07	-19 14.4	2.179	3.058	10.3	21.2	3 12	13 13.35	+ 0 27.3	1.817	2.744	9.2	21.3
3 22	13 3.02	-18 31.4	2.129	3.072	7.2	21.0	3 22	13 5.64	+ 1 33.3	1.771	2.745	5.4	21.1
4 1	12 56.00	-17 32.0	2.106	3.086	4.3	20.8	4 1	12 56.68	+ 2 39.6	1.753	2.746	2.9	20.9
4 11	12 48.82	-16 20.8	2.111	3.101	3.5	20.8	4 11	12 47.44	+ 3 39.0	1.763	2.746	5.2	21.1
4 21	12 42.26	-15 3.8	2.144	3.115	5.8	21.0	4 21	12 38.91	+ 4 25.5	1.802	2.745	8.9	21.3
5 1	12 36.98	-13 47.5	2.205	3.129	8.8	21.2	5 1	12 31.92	+ 4 55.1	1.865	2.743	12.5	21.5
5 11	12 33.45	-12 38.0	2.290	3.143	11.6	21.4	5 11	12 27.07	+ 5 6.1	1.949	2.741	15.6	21.7
28677	Laurakowski		4 4.2 87°77	1°0/ 4.9	18		282213	2001 <i>XT</i> ₇₃		4 4.2 149°55	0°4/ 4.7	18	
3 2													

EPHEMERIDES

4 4.2

4 4.2

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
523821	2011 <i>RF</i>		4 4.2 237°95	5°0/ 7.8 18			312071	2007 <i>TJ</i> ₂₂		4 4.2 136°42	2°9/ 1.7 18		
3 2	13 23.82	-20 27.5	1.388	2.192	19.1	23.9	3 2	13 20.82	+ 0 2.9	1.828	2.681	13.1	20.8
3 12	13 18.15	-20 9.3	1.287	2.173	15.4	23.6	3 12	13 14.59	+ 0 46.5	1.767	2.693	9.5	20.6
3 22	13 9.17	-19 19.3	1.205	2.153	11.0	23.3	3 22	13 6.34	+ 1 35.2	1.731	2.705	5.6	20.4
4 1	12 57.69	-17 56.2	1.147	2.131	6.5	22.9	4 1	12 56.88	+ 2 23.0	1.722	2.715	2.9	20.2
4 11	12 45.13	-16 4.7	1.115	2.107	5.3	22.8	4 11	12 47.24	+ 3 3.5	1.742	2.725	5.0	20.4
4 21	12 33.20	-13 56.0	1.110	2.082	9.6	22.9	4 21	12 38.42	+ 3 31.7	1.789	2.735	8.8	20.6
5 1	12 23.49	-11 45.3	1.129	2.055	15.0	23.2	5 1	12 31.28	+ 3 44.4	1.861	2.744	12.4	20.9
5 11	12 17.07	- 9 47.2	1.169	2.027	19.9	23.4	5 11	12 26.34	+ 3 40.6	1.955	2.752	15.4	21.1
7011	Worley		4 4.2 139°28	0°1/ 4.3 18			454119	2013 <i>CF</i> ₉₇		4 4.2 97°55	3°1/ 1.6 18		
3 2	13 22.11	- 7 51.0	1.693	2.532	14.7	18.3	3 2	13 17.65	- 2 40.9	1.382	2.250	15.6	21.4
3 12	13 15.75	- 7 33.6	1.626	2.542	10.8	18.1	3 12	13 12.82	- 1 26.0	1.324	2.258	11.3	21.2
3 22	13 7.11	- 7 3.7	1.581	2.552	6.4	17.8	3 22	13 5.53	+ 0 0.3	1.289	2.266	6.5	20.9
4 1	12 57.05	- 6 25.2	1.564	2.562	1.6	17.5	4 1	12 56.71	+ 1 28.9	1.280	2.275	3.1	20.7
4 11	12 46.72	- 5 43.9	1.575	2.571	3.2	17.7	4 11	12 47.64	+ 2 49.2	1.296	2.283	5.9	20.9
4 21	12 37.26	- 5 5.9	1.614	2.579	7.9	18.0	4 21	12 39.55	+ 3 52.6	1.338	2.291	10.5	21.2
5 1	12 29.64	- 4 36.7	1.678	2.586	12.0	18.2	5 1	12 33.47	+ 4 33.4	1.403	2.298	14.8	21.5
5 11	12 24.46	- 4 20.1	1.763	2.593	15.5	18.5	5 11	12 29.99	+ 4 49.8	1.487	2.306	18.4	21.7
104702	2000 <i>GZ</i> ₁₆₄		4 4.2 106°01	0°8/ 3.5 18			468837	2012 <i>UP</i> ₂₇		4 4.2 255°13	0°0/ 3.9 16 C		
3 2	13 16.66	- 6 40.7	1.695	2.546	14.1	20.1	3 2	13 23.04	-10 58.6	1.052	1.909	20.2	23.5
3 12	13 11.78	- 5 56.5	1.627	2.551	10.3	19.8	3 12	13 18.32	- 9 55.5	0.959	1.885	15.4	23.1
3 22	13 4.79	- 4 59.6	1.583	2.557	5.9	19.6	3 22	13 9.70	- 8 19.1	0.885	1.859	9.4	22.7
4 1	12 56.48	- 3 55.6	1.565	2.563	1.4	19.3	4 1	12 57.94	- 6 13.8	0.834	1.832	2.3	22.2
4 11	12 47.92	- 2 51.6	1.574	2.568	3.7	19.5	4 11	12 44.69	- 3 52.3	0.807	1.803	5.3	22.3
4 21	12 40.12	- 1 54.7	1.611	2.574	8.1	19.8	4 21	12 32.02	- 1 32.9	0.805	1.773	12.9	22.5
5 1	12 33.99	- 1 11.0	1.672	2.579	12.2	20.0	5 1	12 21.95	+ 0 26.2	0.823	1.742	19.9	22.8
5 11	12 30.08	- 0 43.9	1.755	2.584	15.6	20.2	5 11	12 15.80	+ 1 52.7	0.857	1.709	25.9	23.0
94830	2001 <i>XF</i> ₁₉₁		4 4.2 105°95	2°1/ 2.4 18			105326	2000 <i>QS</i> ₈₂		4 4.2 302°22	5°7/ 9.1 18		
3 2	13 20.44	- 3 28.2	1.596	2.450	14.6	20.8	3 2	13 21.37	-22 26.2	2.297	3.059	13.7	19.5
3 12	13 14.45	- 2 32.7	1.543	2.470	10.5	20.6	3 12	13 15.10	-23 22.1	2.206	3.057	11.3	19.3
3 22	13 6.27	- 1 27.8	1.514	2.490	6.0	20.4	3 22	13 6.79	-24 2.0	2.138	3.055	8.7	19.2
4 1	12 56.82	- 0 20.6	1.512	2.509	2.2	20.1	4 1	12 57.05	-24 23.9	2.096	3.053	6.5	19.0
4 11	12 47.27	+ 0 41.1	1.538	2.527	4.7	20.4	4 11	12 46.80	-24 27.9	2.082	3.052	5.8	19.0
4 21	12 38.71	+ 1 30.4	1.591	2.545	9.0	20.6	4 21	12 37.02	-24 16.7	2.096	3.050	7.2	19.1
5 1	12 32.03	+ 2 2.9	1.668	2.562	12.9	20.9	5 1	12 28.63	-23 55.0	2.138	3.048	9.7	19.2
5 11	12 27.75	+ 2 16.6	1.766	2.579	16.1	21.2	5 11	12 22.29	-23 28.9	2.202	3.046	12.3	19.4
262435	2006 <i>UW</i> ₈₆		4 4.2 214°39	0°2/ 4.4 17			393234	2013 <i>JS</i> ₆₂		4 4.2 283°62	1°7/ 2.9 17		
3 2	13 18.15	- 8 49.8	2.068	2.900	12.6	22.1	3 2	13 18.40	- 4 7.1	1.535	2.394	14.8	21.3
3 12	13 12.69	- 8 19.1	1.979	2.892	9.4	21.9	3 12	13 13.61	- 3 32.7	1.443	2.372	11.0	21.0
3 22	13 5.30	- 7 36.0	1.915	2.884	5.6	21.7	3 22	13 6.22	- 2 46.1	1.373	2.349	6.4	20.6
4 1	12 56.63	- 6 43.8	1.878	2.876	1.5	21.4	4 1	12 56.96	- 1 52.6	1.328	2.326	2.0	20.3
4 11	12 47.58	- 5 47.9	1.871	2.867	2.8	21.4	4 11	12 46.97	- 0 59.8	1.311	2.303	4.7	20.4
4 21	12 39.08	- 4 54.1	1.892	2.857	7.0	21.7	4 21	12 37.54	- 0 15.4	1.319	2.280	9.8	20.6
5 1	12 31.97	- 4 8.1	1.940	2.846	10.8	21.9	5 1	12 29.88	+ 0 14.1	1.351	2.256	14.5	20.8
5 11	12 26.84	- 3 34.1	2.011	2.835	14.0	22.1	5 11	12 24.83	+ 0 24.6	1.402	2.233	18.7	21.0
336248	2008 <i>SH</i> ₁₂₄		4 4.2 221°65	0°4/ 4.6 17			157544	2005 <i>UZ</i> ₁₈		4 4.2 134°92	0°2/ 3.9 18		
3 2	13 17.35	- 8 20.3	2.088	2.922	12.4	21.0	3 2	13 16.69	- 8 3.8	2.096	2.932	12.3	20.8
3 12	13 12.06	- 8 6.9	2.004	2.919	9.2	20.8	3 12	13 11.44	- 7 20.5	2.026	2.943	9.0	20.6
3 22	13 4.90	- 7 42.8	1.945	2.915	5.5	20.5	3 22	13 4.46	- 6 25.6	1.982	2.953	5.3	20.4
4 1	12 56.53	- 7 10.8	1.913	2.910	1.5	20.2	4 1	12 56.44	- 5 23.8	1.965	2.963	1.2	20.1
4 11	12 47.83	- 6 35.3	1.910	2.906	2.7	20.3	4 11	12 48.23	- 4 20.7	1.978	2.972	2.9	20.2
4 21	12 39.68	- 6 1.3	1.935	2.902	6.7	20.6	4 21	12 40.67	- 3 22.3	2.019	2.981	6.8	20.5
5 1	12 32.90	- 5 33.3	1.987	2.897	10.4	20.8	5 1	12 34.50	- 2 33.7	2.087	2.990	10.3	20.7
5 11	12 28.06	- 5 15.2	2.061	2.892	13.5	21.0	5 11	12 30.20	- 1 58.5	2.177	2.998	13.2	20.9
470134	2006 <i>UH</i> ₄₃		4 4.2 220°56	0°3/ 4.7 16			355817	2008 <i>TU</i> ₇₄		4 4.2 2°00	2°1/ 5.9 17		
3 2	13 13.85	- 9 27.7	2.872	3.695	9.7	23.5	3 2	13 16.63	-13 51.8	1.360	2.202	17.4	21.2
3 12	13 9.09	- 8 55.0	2.777	3.685	7.2	23.3	3 12	13 12.34	-13 20.8	1.287	2.202	13.3	20.9
3 22	13 3.00	- 8 12.8	2.708	3.675	4.3	23.1	3 22	13 5.41	-12 26.2	1.235	2.202	8.4	20.7
4 1	12 56.06	- 7 23.5	2.668	3.665	1.2	22.8	4 1	12 56.72	-11 11.9	1.207	2.202	3.4	20.4
4 11	12 48.87	- 6 31.1	2.658	3.654	2.1	22.9	4 11	12 47.58	- 9 45.9	1.205	2.202	3.5	20.4
4 21	12 42.04	- 5 39.7	2.678	3.642	5.2	23.1	4 21	12 39.33	- 8 18.8	1.228	2.202	8.6	20.6
5 1	12 36.15	- 4 53.4	2.727	3.630	8.1	23.2	5 1	12 33.12	- 7 0.7	1.274	2.202	13.5	20.9
5 11	12 31.64	- 4 15.5	2.800	3.618	10.7	23.4	5 11	12 29.67	- 5 59.8	1.341	2.203	17.6	21.2
322378	2011 <i>MV</i> ₉		4 4.2 261°46	3°4/11.4 18			117298	2004 <i>UX</i> ₉		4 4.2 134°05	0°6/ 3.7 18		
3 2	13 8.37	-26 38.7	4.754	5.475	7.6	20.2	3 2	13 20.74	- 6 52.0	1.869	2.707	13.5	20.9
3 12	13 4.76	-26 38.0	4.647	5.466	6.4	20.1	3 12	13 14.52	- 6 12.0	1.805	2.723	9.9	20.7
3 22	13 0.33	-26 26.4	4.564	5.457	5.1	20.0	3 22	13 6.30	- 5 20.7	1.766	2.738	5.7	20.5
4 1	12 55.39	-26 4.4	4.508	5.448	3.9	19.9	4 1	12 56.90	- 4 23.0	1.754	2.752	1.3	20.2
4 11	12 50.30	-25 33.0	4.480	5.439	3.4	19.9	4 11	12 47.32	- 3 25.3	1.772	2.766	3.3	20.4
4 21	12 45.43	-24 54.2	4.481	5.430	3.8	19.9	4 21	12 38.57	- 2 33.7	1.818	2.778	7.5	20.7
5 1	12 41.13	-24 10.6	4.510	5.421	5.0	20.0	5 1	12 31.46	- 1 53.4	1.890	2.790	11.3	20.9
5 11	12 37.67	-23 25.1	4.566	5.412	6.4	20.1	5 11	12 26.54	- 1 27.7	1.984	2.801	14.5	21.1
109287	2001 <i>QF</i> ₁₂₂		4 4.2 158°72	4°8/29.1 17			62364	2000 <i>SN</i> ₁₄₉		4 4.2 203°16	1°0/ 3.1 17		

EPHEMERIDES

4 4.2

4 4.2

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
19475	Mispagel		4 4.2 100°06	2°8/ 1.7 18			107160	2001 <i>BV</i> ₁₈		4 4.2 115°05	2°9/ 6.5 18		
3 2	13 19.32	- 1 40.1	1.647	2.505	14.0	18.1	3 2	13 20.88	-14 30.0	1.667	2.487	15.7	20.2
3 12	13 13.58	- 0 35.3	1.596	2.525	10.1	17.9	3 12	13 15.01	-14 33.8	1.597	2.498	12.1	20.0
3 22	13 5.77	+ 0 36.9	1.570	2.546	5.8	17.7	3 22	13 6.79	-14 19.6	1.550	2.508	8.0	19.8
4 1	12 56.76	+ 1 49.0	1.571	2.565	2.8	17.5	4 1	12 57.09	-13 49.1	1.528	2.518	3.9	19.6
4 11	12 47.66	+ 2 52.9	1.600	2.585	5.2	17.7	4 11	12 47.07	-13 6.9	1.533	2.528	3.6	19.6
4 21	12 39.51	+ 3 42.2	1.655	2.603	9.2	18.0	4 21	12 37.91	-12 19.4	1.566	2.537	7.4	19.8
5 1	12 33.16	+ 4 13.0	1.735	2.622	12.9	18.2	5 1	12 30.59	-11 33.8	1.624	2.546	11.4	20.1
5 11	12 29.09	+ 4 24.2	1.835	2.639	16.0	18.5	5 11	12 25.76	-10 56.3	1.704	2.555	15.0	20.3
225992	2002 <i>CL</i> ₂₈₉		4 4.2 44°26	8°2/28.4 18			460140	2014 <i>PW</i> ₅₄		4 4.2 103°60	4°1/31.6 18		
3 2	13 18.40	+13 5.9	1.539	2.409	14.1	19.7	3 2	13 17.91	+ 1 12.5	1.566	2.433	14.1	21.2
3 12	13 13.09	+14 16.0	1.497	2.420	11.1	19.6	3 12	13 12.76	+ 2 25.8	1.510	2.443	10.2	21.0
3 22	13 5.54	+15 17.6	1.478	2.432	8.7	19.5	3 22	13 5.42	+ 3 44.6	1.478	2.453	6.3	20.8
4 1	12 56.70	+16 1.6	1.485	2.444	8.4	19.5	4 1	12 56.74	+ 5 0.4	1.473	2.463	4.1	20.7
4 11	12 47.78	+16 21.2	1.516	2.457	10.2	19.6	4 11	12 47.86	+ 6 4.3	1.495	2.472	6.5	20.8
4 21	12 39.88	+16 13.7	1.571	2.470	13.1	19.8	4 21	12 39.89	+ 6 49.8	1.542	2.482	10.4	21.1
5 1	12 33.89	+15 40.1	1.646	2.483	16.0	20.0	5 1	12 33.73	+ 7 13.4	1.612	2.491	14.1	21.3
5 11	12 30.31	+14 43.7	1.740	2.497	18.5	20.2	5 11	12 29.93	+ 7 14.6	1.702	2.500	17.3	21.6
158460	2002 <i>CZ</i> ₁₈₆		4 4.2 173°90	1°5/ 2.7 17			415963	2001 <i>XN</i> ₁₄₂		4 4.2 60°36	6°3/10.8 18		
3 2	13 16.21	- 3 57.1	2.013	2.863	12.2	20.7	3 2	13 16.71	-25 40.9	1.629	2.407	17.9	20.9
3 12	13 11.21	- 3 10.8	1.939	2.864	8.9	20.5	3 12	13 11.98	-25 32.9	1.570	2.430	14.6	20.7
3 22	13 4.40	- 2 15.7	1.890	2.865	5.1	20.3	3 22	13 4.98	-24 56.0	1.529	2.453	11.1	20.6
4 1	12 56.45	- 1 16.9	1.869	2.866	1.7	20.1	4 1	12 56.63	-23 51.0	1.512	2.476	7.8	20.4
4 11	12 48.24	- 0 20.6	1.876	2.867	3.8	20.2	4 11	12 48.13	-22 23.3	1.521	2.500	6.3	20.4
4 21	12 40.65	+ 0 27.5	1.912	2.867	7.7	20.4	4 21	12 40.60	-20 42.1	1.556	2.523	7.9	20.5
5 1	12 34.45	+ 1 2.9	1.973	2.867	11.2	20.7	5 1	12 34.97	-18 57.9	1.616	2.547	10.9	20.8
5 11	12 30.18	+ 1 23.0	2.055	2.867	14.2	20.9	5 11	12 31.77	-17 20.8	1.699	2.570	14.0	21.0
358623	2007 <i>VD</i> ₁₄₃		4 4.2 186°10	1°2/ 2.8 17			344320	2001 <i>UC</i> ₂₁₅		4 4.2 111°25	0°7/ 3.4 17		
3 2	13 14.76	- 3 53.5	2.501	3.344	10.3	21.5	3 2	13 14.56	- 5 43.7	2.491	3.330	10.5	21.6
3 12	13 9.87	- 3 14.8	2.422	3.343	7.5	21.3	3 12	13 9.66	- 5 5.5	2.425	3.344	7.6	21.4
3 22	13 3.51	- 2 29.2	2.369	3.343	4.3	21.1	3 22	13 3.36	- 4 19.5	2.384	3.357	4.4	21.2
4 1	12 56.23	- 1 40.6	2.345	3.342	1.4	20.9	4 1	12 56.22	- 3 29.7	2.372	3.370	1.1	21.0
4 11	12 48.74	- 0 53.7	2.351	3.341	3.1	21.0	4 11	12 48.96	- 2 40.6	2.390	3.383	2.7	21.1
4 21	12 41.73	- 0 12.8	2.385	3.339	6.4	21.2	4 21	12 42.23	- 1 56.6	2.437	3.395	6.0	21.4
5 1	12 35.82	+ 0 18.4	2.447	3.338	9.4	21.4	5 1	12 36.64	- 1 21.4	2.511	3.408	9.0	21.6
5 11	12 31.47	+ 0 37.7	2.531	3.336	12.1	21.6	5 11	12 32.59	- 0 57.5	2.608	3.420	11.6	21.8
504206	2006 <i>UX</i> ₁₉		4 4.2 120°14	1°7/ 6.3 17			5368	Vitagliano		4 4.2 47°15	1°2/ 2.4 18		
3 2	13 13.39	-14 17.0	2.433	3.246	11.6	21.8	3 2	13 10.61	- 3 13.7	2.898	3.745	9.0	16.8
3 12	13 8.92	-13 46.1	2.354	3.252	8.8	21.6	3 12	13 6.67	- 2 31.2	2.827	3.750	6.4	16.6
3 22	13 2.97	-13 1.3	2.299	3.258	5.7	21.4	3 22	13 1.58	- 1 43.2	2.781	3.756	3.7	16.4
4 1	12 56.10	-12 5.1	2.272	3.264	2.5	21.2	4 1	12 55.79	- 0 53.4	2.765	3.762	1.3	16.3
4 11	12 49.03	-11 2.0	2.274	3.270	2.4	21.2	4 11	12 49.86	- 0 5.9	2.779	3.768	2.9	16.4
4 21	12 42.48	- 9 57.3	2.305	3.275	5.5	21.4	4 21	12 44.33	+ 0 35.7	2.821	3.774	5.6	16.6
5 1	12 37.07	- 8 56.3	2.364	3.281	8.6	21.6	5 1	12 39.70	+ 1 8.4	2.891	3.780	8.2	16.8
5 11	12 33.27	- 8 3.6	2.447	3.286	11.4	21.8	5 11	12 36.33	+ 1 30.1	2.984	3.786	10.5	16.9
192327	1994 <i>VS</i> ₃		4 4.2 297°35	0°0/ 3.9 17			522056	2015 <i>XO</i> ₄₁₅		4 4.2 345°66	3°8/ 7.3 17		
3 2	13 18.28	- 6 28.6	1.868	2.711	13.3	20.1	3 2	13 15.78	-16 52.9	1.439	2.268	17.3	20.9
3 12	13 12.99	- 6 25.2	1.784	2.703	9.8	19.9	3 12	13 11.73	-16 48.3	1.362	2.264	13.6	20.6
3 22	13 5.60	- 6 12.2	1.723	2.695	5.8	19.6	3 22	13 5.10	-16 19.9	1.305	2.262	9.3	20.4
4 1	12 56.79	- 5 52.6	1.689	2.687	1.4	19.3	4 1	12 56.73	-15 29.1	1.271	2.259	5.1	20.1
4 11	12 47.55	- 5 30.7	1.683	2.679	3.1	19.4	4 11	12 47.86	-14 21.5	1.263	2.257	4.3	20.1
4 21	12 38.90	- 5 11.2	1.705	2.671	7.4	19.6	4 21	12 39.78	-13 5.8	1.280	2.256	8.2	20.3
5 1	12 31.77	- 4 58.7	1.752	2.663	11.4	19.8	5 1	12 33.64	-11 52.0	1.321	2.254	12.6	20.5
5 11	12 26.80	- 4 56.5	1.821	2.655	14.9	20.1	5 11	12 30.18	-10 48.8	1.383	2.254	16.7	20.8
265018	2003 <i>GS</i> ₄₃		4 4.2 308°53	9°6/25.1 18			364179	2006 <i>KU</i> ₁₃₈		4 4.2 349°05	1°4/ 3.3 17		
3 2	13 15.29	+15 51.2	1.610	2.480	13.6	19.6	3 2	13 16.40	- 4 37.6	1.197	2.071	17.1	21.0
3 12	13 11.09	+17 36.2	1.547	2.465	11.2	19.4	3 12	13 12.44	- 4 12.2	1.129	2.065	12.6	20.7
3 22	13 4.58	+19 14.1	1.507	2.449	9.7	19.3	3 22	13 5.62	- 3 33.6	1.083	2.061	7.3	20.4
4 1	12 56.54	+20 33.4	1.493	2.434	10.1	19.3	4 1	12 56.86	- 2 47.9	1.059	2.057	2.0	20.0
4 11	12 48.09	+21 24.7	1.502	2.418	12.2	19.3	4 11	12 47.59	- 2 3.6	1.060	2.054	4.8	20.2
4 21	12 40.37	+21 43.3	1.533	2.404	15.0	19.5	4 21	12 39.25	- 1 29.0	1.084	2.052	10.4	20.5
5 1	12 34.38	+21 28.4	1.584	2.389	17.9	19.6	5 1	12 33.11	- 1 10.7	1.130	2.051	15.4	20.8
5 11	12 30.77	+20 43.3	1.650	2.375	20.5	19.8	5 11	12 29.93	- 1 12.0	1.194	2.050	19.7	21.0
389099	2008 <i>XW</i> ₅₂		4 4.2 155°46	3°1/ 7.7 17			469900	2005 <i>WE</i> ₇₉		4 4.2 43°26	7°1/11.3 18		
3 2	13 16.88	-17 37.3	2.515	3.305	11.9	21.9	3 2	13 15.54	-26 25.1	1.611	2.388	18.1	20.4
3 12	13 11.49	-17 40.9	2.431	3.310	9.4	21.7	3 12	13 11.31	-26 36.6	1.543	2.400	15.0	20.2
3 22	13 4.50	-17 30.1	2.371	3.315	6.5	21.6	3 22	13 4.71	-26 19.2	1.494	2.413	11.7	20.0
4 1	12 56.50	-17 5.8	2.338	3.319	3.9	21.4	4 1	12 56.60	-25 32.1	1.467	2.426	8.6	19.8
4 11	12 48.24	-16 30.8	2.334	3.324	3.3	21.4	4 11	12 48.19	-24 19.4	1.465	2.439	7.1	19.8
4 21	12 40.48	-15 49.1	2.360	3.327	5.6	21.5	4 21	12 40.65	-22 48.9	1.489	2.454	8.4	19.9
5 1	12 33.90	-15 5.6	2.413	3.331	8.4	21.7	5 1	12 35.00	-21 11.2	1.537	2.468	11.3	20.1
5 11	12 29.02	-14 25.2	2.490	3.334	11.1	21.9	5 11	12 31.85	-19 36.8	1.607	2.483	14.5	20.3
173811	2001 <i>SQ</i> ₂₇₀		4 4.2 151°90	0°4/ 3.6 18			56762	2000 <i>OB</i> ₂₃		4 4.2 253°14	2°5/ 1.8 18 R		

EPHEMERIDES

4 4.2

4 4.2

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
498718	2008 <i>TP</i> ₁₀₅		4 4.2 228°10	0°6/ 4.9 17			39879	1998 <i>EK</i> ₈		4 4.2 339°22	4°7/ 7.8 18		
3 2	13 16.37	- 9 41.4	2.141	2.971	12.3	22.3	3 2	13 16.74	-18 6.9	1.399	2.223	18.0	17.5
3 12	13 11.37	- 9 18.7	2.053	2.965	9.2	22.0	3 12	13 12.56	-18 15.7	1.321	2.219	14.3	17.2
3 22	13 4.56	- 8 43.9	1.990	2.958	5.6	21.8	3 22	13 5.67	-18 0.0	1.263	2.215	10.0	17.0
4 1	12 56.56	- 7 59.8	1.955	2.952	1.7	21.5	4 1	12 56.91	-17 19.9	1.228	2.212	6.0	16.7
4 11	12 48.22	- 7 11.2	1.948	2.944	2.6	21.6	4 11	12 47.59	-16 20.1	1.217	2.209	5.0	16.7
4 21	12 40.40	- 6 23.4	1.970	2.937	6.5	21.8	4 21	12 39.07	-15 8.9	1.232	2.207	8.5	16.9
5 1	12 33.88	- 5 41.7	2.018	2.929	10.2	22.0	5 1	12 32.58	-13 56.5	1.270	2.205	12.9	17.1
5 11	12 29.24	- 5 10.3	2.090	2.921	13.3	22.2	5 11	12 28.90	-12 52.6	1.329	2.203	17.0	17.3
365487	2010 <i>PG</i> ₇₆		4 4.2 231°61	1°5/ 2.9 16			298313	2003 <i>EV</i> ₂₆		4 4.2 0°61	4°2/ 7.4 17		
3 2	13 18.26	- 4 47.5	1.872	2.719	13.1	21.9	3 2	13 18.30	-16 2.8	1.812	2.626	14.9	19.8
3 12	13 13.00	- 3 58.6	1.784	2.708	9.6	21.6	3 12	13 13.17	-16 46.8	1.732	2.624	11.8	19.6
3 22	13 5.63	- 2 58.4	1.721	2.696	5.5	21.4	3 22	13 5.81	-17 15.5	1.674	2.623	8.3	19.4
4 1	12 56.85	- 1 52.2	1.686	2.683	1.7	21.1	4 1	12 56.92	-17 28.1	1.641	2.623	5.1	19.2
4 11	12 47.62	- 0 46.8	1.679	2.670	4.0	21.2	4 11	12 47.57	-17 26.4	1.635	2.624	4.5	19.2
4 21	12 38.96	+ 0 10.8	1.700	2.656	8.3	21.5	4 21	12 38.84	-17 14.2	1.656	2.625	7.3	19.3
5 1	12 31.80	+ 0 54.8	1.746	2.641	12.3	21.7	5 1	12 31.73	-16 57.0	1.702	2.627	10.8	19.5
5 11	12 26.80	+ 1 21.8	1.813	2.626	15.8	21.8	5 11	12 26.92	-16 40.6	1.770	2.630	14.1	19.7
22450	Nové Hradý		4 4.2 52°71	1°1/ 5.1 18			203881	2003 <i>AF</i> ₃₄		4 4.2 53°44	5°8/29.5 18		
3 2	13 19.59	- 9 44.2	1.520	2.363	15.8	18.0	3 2	13 15.89	+ 8 33.7	1.854	2.722	12.2	19.5
3 12	13 14.02	- 9 41.8	1.467	2.384	11.7	17.8	3 12	13 10.93	+ 9 42.1	1.814	2.742	9.2	19.4
3 22	13 6.16	- 9 25.0	1.436	2.406	7.1	17.6	3 22	13 4.19	+10 47.2	1.799	2.762	6.6	19.3
4 1	12 56.93	- 8 57.2	1.431	2.428	2.4	17.4	4 1	12 56.46	+11 41.5	1.810	2.783	5.9	19.3
4 11	12 47.57	- 8 23.9	1.453	2.450	3.1	17.5	4 11	12 48.69	+12 18.8	1.849	2.803	7.7	19.4
4 21	12 39.23	- 7 51.3	1.501	2.472	7.7	17.8	4 21	12 41.74	+12 35.9	1.912	2.824	10.4	19.6
5 1	12 32.82	- 7 25.3	1.574	2.495	11.8	18.1	5 1	12 36.32	+12 31.8	1.999	2.845	13.2	19.8
5 11	12 28.90	- 7 10.2	1.668	2.518	15.3	18.4	5 11	12 32.89	+12 8.0	2.105	2.866	15.5	20.1
360513	2003 <i>QE</i> ₃		4 4.2 284°55	0°4/ 4.6 17			291600	2006 <i>GH</i> ₃₀		4 4.2 287°69	2°4/ 2.4 17		
3 2	13 17.25	- 9 39.2	1.517	2.365	15.6	21.6	3 2	13 18.27	- 2 54.6	1.482	2.344	15.0	21.3
3 12	13 12.87	- 9 8.6	1.420	2.341	11.8	21.3	3 12	13 13.66	- 2 12.4	1.389	2.320	11.1	21.0
3 22	13 5.88	- 8 19.6	1.345	2.317	7.2	21.0	3 22	13 6.37	- 1 18.2	1.318	2.295	6.5	20.7
4 1	12 56.97	- 7 15.8	1.295	2.292	2.0	20.6	4 1	12 57.13	- 0 18.2	1.273	2.270	2.5	20.4
4 11	12 47.29	- 6 4.2	1.271	2.268	3.6	20.6	4 11	12 47.11	+ 0 39.4	1.255	2.245	5.3	20.5
4 21	12 38.13	- 4 53.6	1.274	2.243	9.0	20.9	4 21	12 37.64	+ 1 26.2	1.261	2.219	10.4	20.7
5 1	12 30.73	- 3 53.0	1.300	2.218	14.0	21.1	5 1	12 29.97	+ 1 55.5	1.291	2.194	15.3	20.9
5 11	12 25.97	- 3 9.2	1.346	2.194	18.4	21.3	5 11	12 24.99	+ 2 3.5	1.339	2.169	19.5	21.1
362617	2011 <i>SL</i> ₁₆		4 4.2 174°24	0°3/ 4.0 18			417677	2007 <i>AJ</i> ₂₀		4 4.2 132°99	4°4/ 8.9 16		
3 2	13 22.16	- 6 30.4	1.672	2.514	14.6	21.0	3 2	13 20.77	-21 17.0	2.265	3.035	13.7	21.9
3 12	13 15.96	- 6 14.7	1.597	2.516	10.8	20.8	3 12	13 14.47	-21 26.1	2.189	3.051	11.0	21.7
3 22	13 7.39	- 5 47.7	1.546	2.518	6.4	20.5	3 22	13 6.32	-21 16.9	2.137	3.067	8.0	21.5
4 1	12 57.28	- 5 13.3	1.522	2.519	1.5	20.2	4 1	12 57.02	-20 49.6	2.111	3.082	5.3	21.4
4 11	12 46.79	- 4 37.1	1.525	2.520	3.5	20.4	4 11	12 47.49	-20 7.1	2.114	3.096	4.5	21.4
4 21	12 37.10	- 4 5.0	1.556	2.520	8.2	20.6	4 21	12 38.63	-19 14.3	2.145	3.109	6.3	21.5
5 1	12 29.22	- 3 42.4	1.612	2.520	12.5	20.9	5 1	12 31.23	-18 17.5	2.205	3.122	9.1	21.7
5 11	12 23.83	- 3 33.0	1.690	2.519	16.1	21.1	5 11	12 25.82	-17 22.9	2.288	3.133	11.8	21.9
17560	1994 <i>AD</i> ₃		4 4.2 105°08	2°4/ 2.2 18			78069	2002 <i>LU</i> ₄		4 4.2 262°85	3°6/ 1.1 18		
3 2	13 20.59	- 2 30.5	1.674	2.527	14.1	19.4	3 2	13 18.96	+ 0 55.8	1.782	2.641	13.1	19.9
3 12	13 14.51	- 1 34.8	1.622	2.549	10.1	19.2	3 12	13 13.70	+ 1 50.9	1.691	2.620	9.6	19.7
3 22	13 6.34	- 0 31.1	1.595	2.570	5.8	19.0	3 22	13 6.17	+ 2 53.1	1.624	2.598	5.9	19.4
4 1	12 56.98	+ 0 33.6	1.595	2.591	2.4	18.8	4 1	12 57.05	+ 3 55.6	1.584	2.575	3.6	19.2
4 11	12 47.54	+ 1 31.8	1.623	2.611	4.8	19.0	4 11	12 47.34	+ 4 50.8	1.572	2.552	5.9	19.3
4 21	12 39.05	+ 2 17.3	1.679	2.630	8.8	19.3	4 21	12 38.17	+ 5 31.9	1.587	2.529	10.0	19.5
5 1	12 32.38	+ 2 46.2	1.759	2.649	12.6	19.6	5 1	12 30.54	+ 5 54.2	1.626	2.505	14.0	19.6
5 11	12 28.70	+ 2 56.8	1.860	2.667	15.7	19.8	5 11	12 25.20	+ 5 55.8	1.685	2.481	17.5	19.8
105728	2000 <i>SR</i> ₈₂		4 4.2 112°70	2°9/ 1.3 18			196766	2003 <i>SN</i> ₁₆₃		4 4.2 249°17	1°2/ 3.1 18		
3 2	13 18.12	+ 3 22.0	2.428	3.278	10.4	19.6	3 2	13 16.68	- 3 57.4	2.082	2.929	12.0	20.3
3 12	13 12.29	+ 3 42.7	2.361	3.285	7.5	19.4	3 12	13 11.63	- 3 28.1	1.998	2.921	8.7	20.1
3 22	13 4.93	+ 4 4.2	2.320	3.291	4.6	19.2	3 22	13 4.74	- 2 50.8	1.939	2.913	5.1	19.9
4 1	12 56.65	+ 4 22.5	2.308	3.298	2.9	19.1	4 1	12 56.65	- 2 9.6	1.908	2.905	1.5	19.6
4 11	12 48.21	+ 4 33.8	2.326	3.304	4.5	19.2	4 11	12 48.22	- 1 29.6	1.905	2.897	3.5	19.7
4 21	12 40.36	+ 4 35.4	2.372	3.311	7.4	19.4	4 21	12 40.33	- 0 55.9	1.931	2.888	7.4	20.0
5 1	12 33.73	+ 4 25.4	2.445	3.317	10.2	19.6	5 1	12 33.76	- 0 32.7	1.982	2.880	11.0	20.2
5 11	12 28.79	+ 4 3.5	2.540	3.323	12.6	19.8	5 11	12 29.10	- 0 22.7	2.055	2.871	14.1	20.4
93987	2000 <i>XB</i> ₁₆		4 4.2 223°28	6°6/10.3 18			170285	2003 <i>QO</i> ₁₁₄		4 4.2 189°93	1°6/ 2.7 18		
3 2	13 19.14	-25 13.8	2.021	2.781	15.4	19.5	3 2	13 19.66	- 3 34.9	2.021	2.865	12.4	21.5
3 12	13 13.75	-25 49.6	1.931	2.778	12.9	19.3	3 12	13 13.80	- 2 52.2	1.942	2.864	9.0	21.2
3 22	13 6.15	-26 4.1	1.863	2.775	10.1	19.1	3 22	13 6.01	- 2 1.0	1.889	2.862	5.2	21.0
4 1	12 57.01	-25 55.2	1.818	2.771	7.7	19.0	4 1	12 56.97	- 1 6.2	1.863	2.860	1.8	20.8
4 11	12 47.36	-25 24.3	1.800	2.768	6.7	18.9	4 11	12 47.62	- 0 13.8	1.867	2.857	3.9	20.9
4 21	12 38.28	-24 35.4	1.808	2.764	7.9	19.0	4 21	12 38.89	+ 0 30.5	1.899	2.853	7.8	21.1
5 1	12 30.76	-23 35.7	1.842	2.760	10.6	19.1	5 1	12 31.62	+ 1 2.3	1.958	2.848	11.5	21.3
5 11	12 25.51	-22 33.2	1.899	2.756	13.4	19.3	5 11	12 26.38	+ 1 18.9	2.038	2.843	14.6	21.5
197633	2004 <i>KD</i> ₁₀		4 4.2 248°45	1°1/ 5.1 17			192556	1998 <i>UP</i> ₅		4 4.2 65°72	4°2/31.8 18	</	

EPHEMERIDES

4 4.2

4 4.3

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
497864	2006 <i>US</i> ₁₆₀		4 4.2 79°73	1°1/ 3.0 17			365830	2011 <i>SU</i> ₂₆₁		4 4.2 83°98	2°4/ 2.3 18		
3 2	13 14.79	- 4 29.2	2.305	3.150	11.0	22.0	3 2	13 18.80	- 3 15.5	1.428	2.291	15.5	21.2
3 12	13 9.91	- 3 50.1	2.246	3.168	8.0	21.8	3 12	13 13.62	- 2 19.4	1.373	2.304	11.2	21.0
3 22	13 3.55	- 3 4.0	2.212	3.186	4.5	21.6	3 22	13 6.04	- 1 12.8	1.341	2.317	6.4	20.8
4 1	12 56.33	- 2 14.9	2.207	3.204	1.3	21.4	4 1	12 57.00	- 0 3.4	1.334	2.330	2.5	20.5
4 11	12 49.00	- 1 27.9	2.231	3.222	3.1	21.6	4 11	12 47.78	+ 0 59.8	1.354	2.343	5.1	20.7
4 21	12 42.29	- 0 47.5	2.283	3.240	6.5	21.8	4 21	12 39.56	+ 1 49.3	1.400	2.356	9.7	21.0
5 1	12 36.79	- 0 17.3	2.362	3.258	9.5	22.1	5 1	12 33.32	+ 2 20.0	1.469	2.369	13.9	21.3
5 11	12 32.95	+ 0 0.7	2.464	3.275	12.1	22.3	5 11	12 29.64	+ 2 30.1	1.557	2.382	17.4	21.6
477195	2009 <i>HS</i> ₁₈		4 4.2 308°70	6°8/28.1 17			344303	2001 <i>UN</i> ₁₁₁		4 4.2 145°04	1°6/ 6.3 18		
3 2	13 16.69	+13 33.6	2.092	2.951	11.4	20.8	3 2	13 13.25	-14 54.9	2.529	3.337	11.3	21.5
3 12	13 11.66	+14 27.2	2.018	2.935	9.0	20.6	3 12	13 8.82	-14 9.8	2.447	3.343	8.6	21.4
3 22	13 4.76	+15 15.2	1.969	2.918	7.2	20.4	3 22	13 2.97	-13 10.1	2.390	3.348	5.5	21.2
4 1	12 56.67	+15 50.6	1.946	2.902	7.0	20.4	4 1	12 56.24	-11 58.7	2.362	3.354	2.4	21.0
4 11	12 48.25	+16 7.8	1.950	2.886	8.6	20.4	4 11	12 49.32	-10 40.5	2.363	3.359	2.3	21.0
4 21	12 40.40	+16 3.5	1.979	2.871	11.2	20.6	4 21	12 42.90	- 9 21.2	2.394	3.364	5.3	21.2
5 1	12 33.92	+15 37.0	2.031	2.855	13.8	20.7	5 1	12 37.59	- 8 6.4	2.453	3.368	8.4	21.4
5 11	12 29.37	+14 49.9	2.102	2.840	16.2	20.9	5 11	12 33.81	- 7 1.0	2.536	3.372	11.1	21.6
409273	2004 <i>RH</i> ₉₆		4 4.2 262°02	2°2/ 6.0 17			251927	1999 <i>VE</i> ₂₀₆		4 4.3 270°33	3°7/ 1.4 17		
3 2	13 18.34	-13 58.9	1.596	2.425	15.9	21.9	3 2	13 20.27	+ 1 47.4	1.606	2.469	14.1	20.6
3 12	13 13.59	-13 35.4	1.499	2.406	12.3	21.6	3 12	13 14.78	+ 2 23.5	1.527	2.457	10.4	20.3
3 22	13 6.28	-12 50.7	1.424	2.387	8.0	21.3	3 22	13 6.85	+ 3 4.1	1.471	2.445	6.3	20.1
4 1	12 57.11	-11 46.6	1.373	2.367	3.4	21.0	4 1	12 57.26	+ 3 42.8	1.441	2.433	3.7	19.9
4 11	12 47.23	-10 29.2	1.350	2.347	3.4	20.9	4 11	12 47.16	+ 4 12.5	1.438	2.421	6.1	20.0
4 21	12 37.92	- 9 7.1	1.354	2.326	8.2	21.2	4 21	12 37.77	+ 4 27.5	1.461	2.408	10.3	20.2
5 1	12 30.35	- 7 49.8	1.382	2.305	13.0	21.4	5 1	12 30.15	+ 4 24.4	1.508	2.396	14.4	20.4
5 11	12 25.36	- 6 45.7	1.431	2.283	17.3	21.6	5 11	12 25.04	+ 4 2.2	1.574	2.383	18.0	20.6
13223	Cenaceneri		4 4.2 205°47	2°9/ 1.4 18			243680	1999 <i>XU</i> ₆₅		4 4.3 199°98	2°3/ 6.5 16		
3 2	13 18.47	- 1 43.6	1.827	2.681	13.0	19.3	3 2	13 18.16	-15 10.1	2.023	2.833	13.7	20.8
3 12	13 13.13	- 0 31.3	1.749	2.676	9.5	19.1	3 12	13 12.84	-14 46.1	1.934	2.830	10.5	20.6
3 22	13 5.70	+ 0 50.5	1.696	2.671	5.6	18.8	3 22	13 5.53	-14 4.5	1.869	2.826	6.9	20.3
4 1	12 56.91	+ 2 14.6	1.671	2.664	2.9	18.6	4 1	12 56.91	-13 7.5	1.831	2.822	3.3	20.1
4 11	12 47.76	+ 3 32.7	1.674	2.657	5.3	18.8	4 11	12 47.91	-12 0.0	1.821	2.817	3.0	20.1
4 21	12 39.26	+ 4 37.6	1.705	2.649	9.3	19.0	4 21	12 39.50	-10 48.5	1.840	2.811	6.6	20.3
5 1	12 32.31	+ 5 23.8	1.761	2.641	13.1	19.2	5 1	12 32.54	- 9 40.2	1.886	2.804	10.4	20.5
5 11	12 27.54	+ 5 49.2	1.837	2.632	16.3	19.4	5 11	12 27.64	- 8 41.2	1.955	2.797	13.7	20.7
436976	2012 <i>TH</i> ₁₈₉		4 4.2 92°52	0°3/ 3.8 17			332335	2007 <i>BP</i> ₄₆		4 4.3 78°03	5°7/29.6 18		
3 2	13 15.03	- 6 57.6	2.312	3.150	11.3	21.6	3 2	13 16.03	+ 6 0.3	1.687	2.558	13.1	21.3
3 12	13 10.11	- 6 22.3	2.248	3.166	8.2	21.4	3 12	13 11.32	+ 7 26.4	1.635	2.566	9.7	21.1
3 22	13 3.69	- 5 37.9	2.209	3.181	4.7	21.2	3 22	13 4.60	+ 8 53.1	1.606	2.574	6.7	21.0
4 1	12 56.38	- 4 48.4	2.199	3.197	1.1	21.0	4 1	12 56.65	+10 11.3	1.605	2.582	5.8	20.9
4 11	12 48.95	- 3 58.7	2.217	3.212	2.7	21.1	4 11	12 48.52	+11 12.6	1.630	2.591	7.9	21.1
4 21	12 42.10	- 3 13.4	2.265	3.227	6.2	21.4	4 21	12 41.20	+11 51.7	1.680	2.599	11.2	21.3
5 1	12 36.48	- 2 36.6	2.339	3.241	9.3	21.6	5 1	12 35.53	+12 6.3	1.753	2.607	14.4	21.5
5 11	12 32.52	- 2 11.3	2.436	3.256	12.0	21.8	5 11	12 32.02	+11 57.4	1.844	2.615	17.1	21.7
324951	2007 <i>YW</i> ₃₀		4 4.2 80°54	1°6/ 2.9 18			125591	2001 <i>XA</i> ₃₃		4 4.3 345°72	2°6/ 6.3 18		
3 2	13 19.33	- 4 21.2	1.516	2.374	15.1	21.7	3 2	13 12.70	-14 28.9	1.137	1.994	19.1	19.0
3 12	13 13.84	- 3 37.3	1.463	2.391	10.9	21.5	3 12	13 9.97	-14 5.8	1.065	1.987	14.7	18.8
3 22	13 6.08	- 2 43.1	1.433	2.409	6.2	21.3	3 22	13 4.33	-13 14.9	1.012	1.980	9.5	18.4
4 1	12 56.99	- 1 45.0	1.429	2.427	1.9	21.0	4 1	12 56.67	-11 59.7	0.980	1.974	4.2	18.1
4 11	12 47.75	- 0 50.7	1.453	2.444	4.4	21.2	4 11	12 48.40	-10 28.8	0.972	1.970	3.9	18.1
4 21	12 39.51	- 0 7.0	1.502	2.462	8.9	21.5	4 21	12 41.04	- 8 54.6	0.987	1.966	9.4	18.4
5 1	12 33.18	+ 0 21.2	1.575	2.479	13.0	21.8	5 1	12 35.91	- 7 29.8	1.024	1.964	14.8	18.6
5 11	12 29.30	+ 0 31.6	1.669	2.496	16.3	22.1	5 11	12 33.80	- 6 24.1	1.080	1.962	19.4	18.9
235978	2005 <i>ER</i> ₂₆₂		4 4.2 5°10	1°7/ 5.8 17			301828	2011 <i>QM</i> ₇		4 4.3 125°46	1°6/ 2.3 18		
3 2	13 15.03	-11 58.8	1.780	2.615	14.2	20.4	3 2	13 13.53	- 3 25.7	2.374	3.222	10.6	21.0
3 12	13 10.69	-11 48.5	1.704	2.615	10.8	20.2	3 12	13 9.05	- 2 29.6	2.304	3.228	7.7	20.8
3 22	13 4.30	-11 22.8	1.650	2.616	6.8	20.0	3 22	13 3.11	- 1 26.3	2.260	3.235	4.4	20.6
4 1	12 56.57	-10 44.4	1.622	2.617	2.7	19.7	4 1	12 56.28	- 0 20.6	2.245	3.241	1.7	20.4
4 11	12 48.51	- 9 58.2	1.622	2.618	2.9	19.7	4 11	12 49.27	+ 0 41.8	2.259	3.247	3.6	20.6
4 21	12 41.11	- 9 10.5	1.648	2.620	7.0	20.0	4 21	12 42.80	+ 1 36.1	2.302	3.253	6.8	20.8
5 1	12 35.25	- 8 27.4	1.699	2.622	11.0	20.2	5 1	12 37.46	+ 2 18.3	2.371	3.258	9.8	21.0
5 11	12 31.54	- 7 54.4	1.772	2.625	14.4	20.5	5 11	12 33.70	+ 2 46.0	2.462	3.264	12.5	21.2
456846	2007 <i>UM</i> ₅₃		4 4.2 259°66	2°2/ 6.1 16			430378	2014 <i>EG</i> ₆		4 4.3 114°82	2°1/ 1.6 17		
3 2	13 17.91	-14 7.7	1.685	2.510	15.3	21.8	3 2	13 12.39	- 2 21.0	2.398	3.250	10.4	21.0
3 12	13 13.14	-13 45.3	1.588	2.493	11.8	21.5	3 12	13 8.22	- 1 13.2	2.328	3.255	7.5	20.8
3 22	13 5.95	-13 2.5	1.514	2.476	7.7	21.2	3 22	13 2.62	+ 0 1.5	2.284	3.259	4.3	20.6
4 1	12 57.03	-12 1.6	1.465	2.458	3.4	20.9	4 1	12 56.16	+ 1 17.6	2.269	3.263	2.1	20.5
4 11	12 47.48	-10 48.1	1.443	2.439	3.3	20.9	4 11	12 49.52	+ 2 29.3	2.283	3.267	4.0	20.6
4 21	12 38.49	- 9 29.9	1.448	2.420	7.8	21.1	4 21	12 43.38	+ 3 31.2	2.326	3.271	7.1	20.8
5 1	12 31.15	- 8 16.0	1.479	2.401	12.4	21.3	5 1	12 38.34	+ 4 19.5	2.394	3.275	10.0	21.0
5 11	12 26.25	- 7 14.2	1.531	2.381	16.4	21.5	5 11	12 34.83	+ 4 51.9	2.486	3.279	12.6	21.2
205586	2001 <i>TQ</i> ₁₄₅		4 4.2 238°91	1°6/ 2.3 17			499180	2009 <i>SN</i> ₂₀₃		4 4.3 202°78	1°4/ 2.7 17		

EPHEMERIDES

4 4.3

4 4.3

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
250467	2004 BC ₁₃₃		4 4.3 153°82	0°0/ 4.1 16			203488	2002 AL ₇₃		4 4.3 150°52	3°6/ 1.1 18		
3 2	13 18.73	- 8 39.6	2.068	2.900	12.6	22.0	3 2	13 21.09	+ 1 26.9	1.758	2.614	13.4	20.8
3 12	13 13.04	- 8 0.1	1.995	2.909	9.3	21.8	3 12	13 14.98	+ 2 22.9	1.696	2.623	9.7	20.6
3 22	13 5.53	- 7 8.5	1.947	2.917	5.5	21.6	3 22	13 6.74	+ 3 23.4	1.659	2.631	5.9	20.4
4 1	12 56.90	- 6 8.9	1.927	2.924	1.4	21.3	4 1	12 57.21	+ 4 21.4	1.648	2.639	3.6	20.2
4 11	12 48.04	- 5 7.0	1.936	2.931	2.8	21.5	4 11	12 47.47	+ 5 9.7	1.667	2.646	5.8	20.4
4 21	12 39.85	- 4 9.0	1.974	2.938	6.8	21.7	4 21	12 38.56	+ 5 42.9	1.712	2.652	9.6	20.6
5 1	12 33.09	- 3 20.2	2.039	2.943	10.4	22.0	5 1	12 31.36	+ 5 57.7	1.782	2.657	13.1	20.8
5 11	12 28.30	- 2 44.2	2.127	2.948	13.5	22.2	5 11	12 26.45	+ 5 53.5	1.872	2.662	16.2	21.1
126027	2001 YW ₆₃		4 4.3 78°98	2°1/ 5.9 18			271836	2004 TM ₁₈₇		4 4.3 189°75	0°1/ 4.4 17		
3 2	13 18.93	-12 49.3	1.430	2.269	16.9	19.9	3 2	13 18.39	- 7 30.1	1.992	2.829	12.8	20.8
3 12	13 13.97	-12 38.4	1.360	2.273	12.8	19.6	3 12	13 12.95	- 7 16.9	1.912	2.828	9.5	20.6
3 22	13 6.42	-12 7.9	1.311	2.277	8.2	19.3	3 22	13 5.57	- 6 53.3	1.857	2.828	5.6	20.4
4 1	12 57.16	-11 20.5	1.286	2.280	3.4	19.1	4 1	12 56.94	- 6 22.4	1.830	2.827	1.5	20.1
4 11	12 47.49	-10 22.7	1.288	2.284	3.5	19.1	4 11	12 47.98	- 5 48.9	1.831	2.826	2.8	20.2
4 21	12 38.71	- 9 22.6	1.315	2.288	8.3	19.4	4 21	12 39.64	- 5 17.7	1.860	2.825	7.0	20.4
5 1	12 31.94	- 8 28.9	1.366	2.292	12.9	19.6	5 1	12 32.74	- 4 53.5	1.915	2.824	10.7	20.6
5 11	12 27.88	- 7 48.1	1.438	2.296	16.8	19.9	5 11	12 27.87	- 4 39.8	1.992	2.823	13.9	20.8
379545	2011 AC ₁₅		4 4.3 2°00	3°4/ 1.9 17			360740	2004 UE ₁₁		4 4.3 141°90	1°8/ 2.9 18		
3 2	13 18.08	+ 1 19.8	1.469	2.339	14.7	20.0	3 2	13 23.88	- 2 12.3	1.812	2.656	13.6	21.4
3 12	13 13.20	+ 1 41.8	1.404	2.338	10.8	19.8	3 12	13 16.97	- 1 51.2	1.746	2.668	9.9	21.2
3 22	13 5.89	+ 2 7.6	1.361	2.337	6.5	19.5	3 22	13 7.90	- 1 23.6	1.705	2.679	5.7	21.0
4 1	12 57.01	+ 2 31.3	1.344	2.337	3.4	19.3	4 1	12 57.51	- 0 54.2	1.692	2.689	2.0	20.7
4 11	12 47.80	+ 2 46.2	1.352	2.338	5.7	19.5	4 11	12 46.90	- 0 28.4	1.708	2.698	4.1	20.9
4 21	12 39.44	+ 2 47.7	1.386	2.340	10.0	19.7	4 21	12 37.14	- 0 10.8	1.752	2.707	8.2	21.2
5 1	12 32.98	+ 2 32.9	1.443	2.343	14.2	19.9	5 1	12 29.15	- 0 4.8	1.822	2.715	12.0	21.4
5 11	12 29.06	+ 2 1.3	1.519	2.346	17.7	20.2	5 11	12 23.48	- 0 12.3	1.914	2.723	15.2	21.6
173948	2001 WW ₇₇		4 4.3 204°20	0°1/ 4.5 18			54795	2001 MV ₁₀		4 4.3 179°15	2°7/ 1.7 18		
3 2	13 14.43	- 8 34.6	2.582	3.411	10.5	21.5	3 2	13 18.87	+ 0 3.1	1.999	2.851	12.2	20.0
3 12	13 9.69	- 8 4.7	2.496	3.408	7.8	21.3	3 12	13 13.23	+ 0 47.7	1.927	2.853	8.8	19.8
3 22	13 3.50	- 7 25.2	2.435	3.404	4.6	21.1	3 22	13 5.69	+ 1 37.5	1.880	2.853	5.2	19.6
4 1	12 56.40	- 6 38.9	2.403	3.401	1.2	20.8	4 1	12 56.97	+ 2 26.9	1.861	2.854	2.8	19.4
4 11	12 49.05	- 5 50.2	2.401	3.397	2.3	20.9	4 11	12 47.97	+ 3 10.0	1.871	2.854	4.8	19.5
4 21	12 42.13	- 5 3.3	2.428	3.392	5.7	21.1	4 21	12 39.63	+ 3 41.8	1.908	2.853	8.4	19.8
5 1	12 36.27	- 4 22.5	2.482	3.388	8.8	21.3	5 1	12 32.75	+ 3 58.8	1.971	2.852	11.8	20.0
5 11	12 31.94	- 3 51.2	2.561	3.383	11.4	21.5	5 11	12 27.88	+ 3 59.6	2.055	2.851	14.8	20.2
412061	2013 EV ₄₀		4 4.3 222°02	10°4/ 23.4 17			242952	2006 RE ₁₂₁		4 4.3 289°16	4°0/ 8.8 17		
3 2	13 16.61	+15 27.8	1.530	2.401	14.1	21.3	3 2	13 13.86	-20 45.6	2.189	2.976	13.5	20.1
3 12	13 12.15	+18 6.6	1.480	2.397	11.7	21.2	3 12	13 9.65	-20 33.9	2.096	2.970	10.9	19.9
3 22	13 5.28	+20 38.2	1.455	2.392	10.4	21.1	3 22	13 3.65	-20 2.6	2.026	2.964	7.9	19.6
4 1	12 56.87	+22 48.2	1.456	2.387	11.2	21.1	4 1	12 56.48	-19 12.4	1.981	2.957	5.0	19.5
4 11	12 48.09	+24 25.0	1.482	2.382	13.4	21.2	4 11	12 48.96	-18 7.0	1.964	2.951	4.1	19.4
4 21	12 40.14	+25 22.7	1.529	2.376	16.3	21.4	4 21	12 41.94	-16 52.1	1.975	2.945	6.2	19.5
5 1	12 34.05	+25 41.2	1.594	2.370	19.0	21.6	5 1	12 36.22	-15 34.8	2.013	2.939	9.3	19.7
5 11	12 30.44	+25 24.5	1.674	2.364	21.4	21.7	5 11	12 32.34	-14 21.9	2.074	2.933	12.4	19.9
402208	2004 XN ₉		4 4.3 159°96	2°8/ 1.9 18			66773	1999 TT ₂₁₉		4 4.3 253°63	2°9/ 6.8 18		
3 2	13 21.36	- 0 19.7	1.829	2.680	13.2	21.5	3 2	13 18.70	-14 46.3	2.064	2.874	13.5	19.7
3 12	13 15.14	+ 0 24.4	1.762	2.687	9.5	21.3	3 12	13 13.32	-14 57.1	1.970	2.864	10.5	19.5
3 22	13 6.83	+ 1 14.3	1.719	2.693	5.6	21.1	3 22	13 5.89	-14 53.3	1.899	2.853	7.1	19.3
4 1	12 57.23	+ 2 4.0	1.705	2.698	2.8	20.9	4 1	12 57.07	-14 35.5	1.855	2.843	3.7	19.1
4 11	12 47.39	+ 2 47.0	1.719	2.703	5.0	21.1	4 11	12 47.76	-14 6.6	1.839	2.832	3.4	19.0
4 21	12 38.32	+ 3 17.9	1.760	2.707	8.9	21.3	4 21	12 38.94	-13 31.3	1.851	2.821	6.6	19.2
5 1	12 30.92	+ 3 33.4	1.827	2.710	12.5	21.5	5 1	12 31.52	-12 55.0	1.889	2.810	10.2	19.4
5 11	12 25.75	+ 3 31.9	1.915	2.713	15.6	21.7	5 11	12 26.16	-12 23.3	1.951	2.798	13.5	19.6
95785	Csányivilmos		4 4.3 9°06	0°7/ 3.8 18			371031	2005 UF ₁₀₂		4 4.3 212°92	3°4/ 31.8 17		
3 2	13 20.06	- 4 33.1	1.636	2.488	14.4	19.5	3 2	13 19.23	+ 3 1.8	2.229	3.080	11.1	22.0
3 12	13 14.50	- 4 31.4	1.564	2.488	10.6	19.2	3 12	13 13.39	+ 3 45.7	2.148	3.072	8.2	21.8
3 22	13 6.61	- 4 21.2	1.515	2.489	6.2	19.0	3 22	13 5.77	+ 4 32.1	2.094	3.065	5.1	21.6
4 1	12 57.20	- 4 6.0	1.492	2.490	1.5	18.6	4 1	12 57.01	+ 5 15.8	2.068	3.056	3.4	21.4
4 11	12 47.42	- 3 50.8	1.496	2.491	3.6	18.8	4 11	12 47.93	+ 5 51.5	2.071	3.047	5.2	21.5
4 21	12 38.42	- 3 40.3	1.527	2.492	8.2	19.1	4 21	12 39.40	+ 6 14.8	2.103	3.037	8.4	21.7
5 1	12 31.19	- 3 38.8	1.583	2.494	12.4	19.3	5 1	12 32.17	+ 6 23.0	2.161	3.027	11.5	21.9
5 11	12 26.40	- 3 48.9	1.660	2.496	16.0	19.6	5 11	12 26.79	+ 6 15.3	2.240	3.016	14.3	22.1
456778	2007 TQ ₁₅₇		4 4.3 242°42	2°2/ 6.2 16			297597	2001 SK ₁₅₆		4 4.3 231°41	2°2/ 6.1 17		
3 2	13 18.10	-14 28.2	1.720	2.543	15.2	21.5	3 2	13 19.69	-13 54.3	1.686	2.509	15.4	21.4
3 12	13 13.19	-14 3.5	1.627	2.531	11.7	21.3	3 12	13 14.42	-13 35.8	1.595	2.499	11.9	21.1
3 22	13 5.94	-13 18.6	1.557	2.518	7.6	21.0	3 22	13 6.70	-12 57.8	1.527	2.488	7.7	20.8
4 1	12 57.07	-12 15.7	1.513	2.506	3.4	20.7	4 1	12 57.29	-12 2.6	1.484	2.477	3.4	20.6
4 11	12 47.64	-11 0.7	1.496	2.492	3.3	20.7	4 11	12 47.31	-10 55.5	1.468	2.464	3.3	20.5
4 21	12 38.81	- 9 41.5	1.507	2.478	7.6	20.9	4 21	12 37.95	- 9 44.3	1.480	2.452	7.8	20.8
5 1	12 31.63	- 8 26.7	1.543	2.464	12.0	21.1	5 1	12 30.31	- 8 37.5	1.518	2.438	12.2	21.0
5 11	12 26.84	- 7 24.0	1.600	2.449	15.9	21.3	5 11	12 25.15	- 7 42.2	1.577	2.424	16.1	21.2
222787	2002 CQ ₁₉₇		4 4.3 120°89	1°5/ 2.6 18 R			439136	2011 TA ₁₂		4 4.3 184°12	0°9/ 5.5 17		
3 2	13 17.61	- 3 37.9	2.121	2.966	1								

EPHEMERIDES

4 4.3

4 4.3

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
258931	2002 <i>RB</i> ₈₀		4 4.3 262°10	1.8/ 2.6	17		436640	2011 <i>QT</i> ₁₈		4 4.3 199°26	0°5/ 4.9	17	
3 2	13 16.35	- 4 54.1	1.728	2.582	13.7	21.1	3 2	13 13.37	-10 45.7	2.655	3.478	10.4	22.0
3 12	13 11.83	- 3 53.4	1.640	2.567	10.0	20.9	3 12	13 8.92	-10 3.5	2.568	3.475	7.8	21.8
3 22	13 5.11	- 2 39.4	1.576	2.552	5.8	20.6	3 22	13 3.08	- 9 9.9	2.506	3.472	4.7	21.6
4 1	12 56.89	- 1 18.1	1.539	2.536	1.9	20.3	4 1	12 56.37	- 8 7.9	2.473	3.469	1.5	21.4
4 11	12 48.18	+ 0 2.1	1.530	2.520	4.5	20.4	4 11	12 49.43	- 7 2.1	2.469	3.466	2.1	21.4
4 21	12 40.03	+ 1 13.1	1.547	2.504	9.0	20.6	4 21	12 42.92	- 5 57.5	2.496	3.462	5.4	21.6
5 1	12 33.44	+ 2 8.1	1.589	2.487	13.2	20.9	5 1	12 37.43	- 4 58.7	2.550	3.458	8.4	21.8
5 11	12 29.10	+ 2 43.0	1.652	2.471	16.8	21.1	5 11	12 33.39	- 4 9.8	2.628	3.453	11.1	22.0
96781	1999 <i>RM</i> ₈₆		4 4.3 297°22	3°2/ 1.7	17		143918	2003 <i>YP</i> ₇₉		4 4.3 196°22	3°9/ 31.4	16	
3 2	13 16.38	- 1 42.8	1.425	2.295	15.1	19.7	3 2	13 19.17	+ 3 5.8	1.994	2.850	12.0	20.4
3 12	13 12.33	- 0 44.5	1.338	2.272	11.1	19.4	3 12	13 13.50	+ 4 5.7	1.921	2.848	8.8	20.2
3 22	13 5.65	+ 0 26.2	1.272	2.249	6.6	19.1	3 22	13 5.91	+ 5 9.0	1.874	2.845	5.6	20.0
4 1	12 57.07	+ 1 41.5	1.232	2.226	3.2	18.8	4 1	12 57.10	+ 6 9.1	1.854	2.841	4.0	19.9
4 11	12 47.78	+ 2 51.8	1.217	2.204	6.1	18.9	4 11	12 47.98	+ 6 59.2	1.863	2.837	6.0	20.0
4 21	12 39.08	+ 3 47.8	1.227	2.181	11.1	19.1	4 21	12 39.50	+ 7 34.3	1.900	2.832	9.3	20.2
5 1	12 32.21	+ 4 22.5	1.259	2.158	15.8	19.3	5 1	12 32.48	+ 7 51.1	1.961	2.826	12.6	20.4
5 11	12 28.01	+ 4 32.7	1.310	2.136	20.0	19.5	5 11	12 27.49	+ 7 49.1	2.043	2.820	15.5	20.6
321868	2010 <i>RG</i> ₁₆₅		4 4.3 240°25	1°2/ 3.1	17		508774	1999 <i>JE</i> ₁		4 4.3 219°31	12°2/ 27.4	17	
3 2	13 18.19	- 5 29.4	1.885	2.730	13.1	21.4	3 2	13 50.54	+17 4.8	1.416	2.232	18.2	23.2
3 12	13 13.03	- 4 41.7	1.794	2.716	9.6	21.2	3 12	13 38.29	+19 22.0	1.332	2.218	15.0	23.0
3 22	13 5.76	- 3 42.0	1.728	2.702	5.6	20.9	3 22	13 21.47	+21 33.6	1.273	2.199	12.6	22.8
4 1	12 57.06	- 2 35.3	1.689	2.686	1.6	20.6	4 1	13 1.18	+23 20.0	1.243	2.176	12.6	22.7
4 11	12 47.87	- 1 28.4	1.678	2.671	3.8	20.7	4 11	12 39.53	+24 23.7	1.243	2.148	15.1	22.8
4 21	12 39.22	- 0 28.4	1.696	2.654	8.2	20.9	4 21	12 19.00	+24 37.2	1.271	2.116	19.1	22.9
5 1	12 32.05	+ 0 18.8	1.739	2.637	12.3	21.1	5 1	12 1.72	+24 3.3	1.320	2.080	23.0	23.1
5 11	12 27.01	+ 0 49.3	1.803	2.619	15.7	21.3	5 11	11 48.85	+22 51.8	1.386	2.039	26.5	23.3
29411	1996 <i>WQ</i> ₂		4 4.3 45°51	7°6/ 13.4	18		427362	2014 <i>WS</i> ₄₃₅		4 4.3 161°52	5°4/ 9.1	16	
3 2	13 14.95	-30 47.0	1.982	2.716	16.5	17.5	3 2	13 22.57	-22 2.7	2.048	2.818	14.9	21.8
3 12	13 10.61	-30 59.3	1.913	2.733	14.1	17.4	3 12	13 16.18	-22 32.6	1.965	2.824	12.2	21.7
3 22	13 4.25	-30 44.5	1.862	2.751	11.4	17.3	3 22	13 7.59	-22 43.1	1.903	2.829	9.1	21.5
4 1	12 56.64	-30 1.8	1.834	2.768	9.0	17.1	4 1	12 57.54	-22 33.0	1.868	2.834	6.4	21.3
4 11	12 48.80	-28 54.1	1.831	2.786	7.7	17.1	4 11	12 47.06	-22 4.1	1.860	2.838	5.5	21.3
4 21	12 41.72	-27 27.4	1.853	2.805	8.2	17.1	4 21	12 37.23	-21 20.9	1.880	2.841	7.3	21.4
5 1	12 36.26	-25 50.4	1.902	2.823	10.1	17.3	5 1	12 29.01	-20 30.3	1.927	2.844	10.2	21.5
5 11	12 32.94	-24 12.6	1.974	2.842	12.5	17.5	5 11	12 23.05	-19 39.4	1.997	2.846	13.2	21.7
56154	1999 <i>CU</i> ₁₁₉		4 4.3 293°33	5°0/ 31.7	18		430069	2013 <i>SF</i> ₃₇		4 4.3 78°77	2°6/ 1.6	18	
3 2	13 21.51	+ 5 55.2	1.650	2.513	13.8	17.6	3 2	13 16.02	- 1 50.3	1.872	2.730	12.6	21.3
3 12	13 15.68	+ 6 23.4	1.571	2.499	10.3	17.3	3 12	13 11.10	- 0 41.2	1.822	2.751	9.0	21.1
3 22	13 7.40	+ 6 51.1	1.515	2.485	6.8	17.1	3 22	13 4.40	+ 0 34.6	1.796	2.772	5.2	20.9
4 1	12 57.48	+ 7 11.7	1.486	2.471	5.0	16.9	4 1	12 56.69	+ 1 50.2	1.798	2.792	2.6	20.8
4 11	12 47.05	+ 7 18.8	1.483	2.457	7.0	17.0	4 11	12 48.89	+ 2 58.5	1.829	2.813	4.8	21.0
4 21	12 37.33	+ 7 8.3	1.506	2.444	10.8	17.2	4 21	12 41.87	+ 3 53.4	1.887	2.833	8.4	21.2
5 1	12 29.39	+ 6 38.6	1.553	2.430	14.7	17.4	5 1	12 36.35	+ 4 31.3	1.969	2.854	11.7	21.5
5 11	12 23.94	+ 5 50.2	1.620	2.417	18.0	17.6	5 11	12 32.79	+ 4 50.5	2.073	2.874	14.5	21.7
5893	Coltrane		4 4.3 356°93	3°5/ 31.7	18		156771	2003 <i>AP</i> ₄₇		4 4.3 214°97	0°6/ 4.7	18	
3 2	13 12.13	- 2 42.8	1.507	2.379	14.3	16.6	3 2	13 21.29	- 8 45.1	1.478	2.323	16.1	19.8
3 12	13 8.81	- 0 57.6	1.441	2.378	10.3	16.3	3 12	13 15.75	- 8 33.1	1.401	2.320	12.0	19.6
3 22	13 3.32	+ 1 0.8	1.398	2.376	6.0	16.3	3 22	13 7.55	- 8 6.0	1.346	2.317	7.3	19.3
4 1	12 56.44	+ 3 2.3	1.382	2.375	3.5	15.9	4 1	12 57.56	- 7 27.5	1.316	2.313	2.1	19.0
4 11	12 49.24	+ 4 55.1	1.393	2.375	6.3	16.1	4 11	12 47.04	- 6 43.5	1.313	2.309	3.5	19.0
4 21	12 42.79	+ 6 29.1	1.430	2.375	10.6	16.3	4 21	12 37.33	- 6 1.3	1.336	2.305	8.7	19.3
5 1	12 38.01	+ 7 37.6	1.489	2.376	14.6	16.6	5 1	12 29.60	- 5 27.9	1.383	2.301	13.4	19.6
5 11	12 35.49	+ 8 18.0	1.568	2.377	18.0	16.8	5 11	12 24.60	- 5 8.4	1.451	2.296	17.4	19.8
249485	2009 <i>UP</i> ₃₇		4 4.3 312°22	7°5/ 29.8	18		134603	1999 <i>TJ</i> ₁₇₁		4 4.3 231°66	0°2/ 4.5	17	
3 2	13 20.67	+10 53.8	1.507	2.376	14.5	19.5	3 2	13 18.79	- 8 56.0	1.929	2.763	13.3	21.0
3 12	13 15.35	+11 38.4	1.427	2.353	11.3	19.2	3 12	13 13.46	- 8 24.0	1.837	2.751	9.9	21.0
3 22	13 7.36	+12 18.3	1.370	2.331	8.4	19.0	3 22	13 6.03	- 7 38.2	1.769	2.739	6.0	20.7
4 1	12 57.50	+12 44.7	1.337	2.309	7.6	18.9	4 1	12 57.17	- 6 42.3	1.729	2.726	1.6	20.4
4 11	12 47.01	+12 49.4	1.330	2.288	9.7	18.9	4 11	12 47.84	- 5 42.0	1.717	2.713	3.0	20.4
4 21	12 37.23	+12 28.1	1.346	2.267	13.3	19.1	4 21	12 39.04	- 4 43.8	1.733	2.698	7.4	20.7
5 1	12 29.37	+11 40.1	1.384	2.246	17.0	19.3	5 1	12 31.71	- 3 54.1	1.775	2.683	11.5	20.9
5 11	12 24.21	+10 28.1	1.441	2.226	20.4	19.4	5 11	12 26.51	- 3 17.5	1.840	2.668	15.0	21.1
85321	1995 <i>FK</i> ₇		4 4.3 76°34	3°0/ 1.5	18		274904	2009 <i>SL</i> ₁₀₇		4 4.3 132°84	0°9/ 5.3	17	
3 2	13 16.30	- 1 17.0	1.662	2.525	13.6	19.1	3 2	13 18.03	-11 1.9	2.190	3.012	12.4	21.6
3 12	13 11.59	- 0 13.0	1.602	2.534	9.8	18.9	3 12	13 12.48	-10 36.7	2.119	3.025	9.2	21.4
3 22	13 4.83	+ 0 58.8	1.566	2.542	5.8	18.7	3 22	13 5.22	- 9 58.9	2.072	3.037	5.7	21.2
4 1	12 56.80	+ 2 11.0	1.557	2.550	3.0	18.5	4 1	12 56.92	- 9 11.6	2.053	3.049	1.9	21.0
4 11	12 48.55	+ 3 15.5	1.575	2.559	5.4	18.7	4 11	12 48.43	- 8 19.6	2.063	3.060	2.4	21.1
4 21	12 41.11	+ 4 5.6	1.619	2.567	9.3	18.9	4 21	12 40.57	- 7 28.2	2.103	3.070	6.1	21.3
5 1	12 35.32	+ 4 37.0	1.687	2.576	13.1	19.2	5 1	12 34.07	- 6 42.6	2.169	3.081	9.5	21.6
5 11	12 31.73	+ 4 48.1	1.775	2.584	16.2	19.4	5 11	12 29.43	- 6 6.8	2.259	3.090	12.5	21.8
175636	Zvyagal		4 4.3 128°80	3°2/ 7.5	18		146486	2001 <i>RY</i> ₁₅₀		4 4.3 76°94	3°8/ 31.9	18	

EPHEMERIDES

4 4.3

4 4.3

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
378727	2008 <i>QJ</i> ₃₆		4 4.3 207°86	1.5°/ 2.6	17		357044	2000 <i>SS</i> ₃₃		4 4.3 262°97	0.4°/ 4.0	16	
3 2	13 15.79	- 4 2.1	2.233	3.078	11.3	21.5	3 2	13 21.50	- 5 55.1	1.554	2.403	15.2	20.7
3 12	13 10.90	- 3 8.0	2.151	3.074	8.2	21.3	3 12	13 15.93	- 5 46.2	1.468	2.390	11.3	20.4
3 22	13 4.35	- 2 5.1	2.095	3.069	4.7	21.0	3 22	13 7.72	- 5 26.0	1.404	2.377	6.7	20.1
4 1	12 56.72	- 0 58.3	2.067	3.063	1.7	20.8	4 1	12 57.67	- 4 58.1	1.366	2.364	1.6	19.8
4 11	12 48.81	+ 0 6.4	2.068	3.057	3.7	21.0	4 11	12 46.97	- 4 28.2	1.356	2.351	3.7	19.9
4 21	12 41.41	+ 1 3.3	2.098	3.051	7.2	21.2	4 21	12 36.93	- 4 2.3	1.372	2.338	8.9	20.1
5 1	12 35.24	+ 1 48.0	2.154	3.044	10.6	21.4	5 1	12 28.75	- 3 46.3	1.412	2.324	13.6	20.4
5 11	12 30.82	+ 2 17.5	2.233	3.037	13.5	21.5	5 11	12 23.22	- 3 44.0	1.472	2.310	17.6	20.6
465648	2009 <i>QA</i> ₂₃		4 4.3 127°87	5°1/29.2	17		305753	2009 <i>DT</i> ₈		4 4.3 112°95	1°9/ 5.9	18	
3 2	13 14.10	+ 2 39.9	1.795	2.664	12.5	20.8	3 2	13 20.94	- 13 25.8	1.731	2.552	15.2	21.3
3 12	13 9.93	+ 4 49.5	1.735	2.668	9.1	20.6	3 12	13 14.95	- 13 2.7	1.668	2.572	11.5	21.1
3 22	13 3.85	+ 7 5.2	1.701	2.672	6.1	20.5	3 22	13 6.80	- 12 22.0	1.628	2.590	7.3	20.9
4 1	12 56.60	+ 9 16.2	1.696	2.676	5.3	20.4	4 1	12 57.36	- 11 27.0	1.614	2.608	3.0	20.6
4 11	12 49.11	+ 11 11.8	1.719	2.679	7.6	20.6	4 11	12 47.73	- 10 24.0	1.629	2.625	3.0	20.7
4 21	12 42.30	+ 12 44.2	1.769	2.683	11.0	20.8	4 21	12 39.00	- 9 20.1	1.671	2.642	7.1	20.9
5 1	12 36.98	+ 13 48.9	1.842	2.686	14.2	21.0	5 1	12 32.05	- 8 22.5	1.740	2.658	11.1	21.2
5 11	12 33.67	+ 14 25.6	1.934	2.689	16.9	21.2	5 11	12 27.45	- 7 36.6	1.831	2.673	14.5	21.5
258188	2001 <i>SD</i> ₂₀₈		4 4.3 136°93	0°6/ 3.8	18		94473	2001 <i>TP</i> ₁₈₈		4 4.3 90°07	1°4/ 5.4	18	
3 2	13 18.60	- 6 20.0	1.957	2.798	12.9	21.5	3 2	13 20.03	- 11 29.9	1.421	2.263	16.8	19.8
3 12	13 13.07	- 5 49.0	1.887	2.806	9.4	21.3	3 12	13 14.74	- 11 11.5	1.358	2.274	12.6	19.6
3 22	13 5.64	- 5 7.8	1.842	2.814	5.5	21.1	3 22	13 6.88	- 10 34.5	1.317	2.285	7.8	19.3
4 1	12 57.04	- 4 20.7	1.824	2.822	1.3	20.8	4 1	12 57.40	- 9 42.8	1.300	2.295	2.8	19.1
4 11	12 48.21	- 3 33.3	1.835	2.829	3.2	21.0	4 11	12 47.63	- 8 43.6	1.309	2.306	3.3	19.1
4 21	12 40.07	- 2 51.2	1.874	2.836	7.2	21.3	4 21	12 38.83	- 7 45.0	1.345	2.317	8.3	19.4
5 1	12 33.43	- 2 19.0	1.939	2.843	10.9	21.5	5 1	12 32.09	- 6 55.0	1.404	2.327	12.8	19.7
5 11	12 28.82	- 1 59.8	2.027	2.849	14.0	21.7	5 11	12 28.04	- 6 19.3	1.484	2.337	16.7	20.0
122678	2000 <i>RK</i> ₁₀₄		4 4.3 146°63	5°9/10.4	17 R		162588	2000 <i>ST</i> ₃₄		4 4.3 139°61	0°0/ 4.2	18	
3 2	13 19.50	- 25 3.2	2.210	2.964	14.4	19.9	3 2	13 21.22	- 8 4.7	1.770	2.607	14.2	20.7
3 12	13 13.81	- 25 25.2	2.127	2.971	12.0	19.7	3 12	13 15.17	- 7 39.7	1.702	2.617	10.5	20.5
3 22	13 6.14	- 25 26.6	2.066	2.978	9.3	19.6	3 22	13 6.96	- 7 2.3	1.657	2.627	6.2	20.3
4 1	12 57.19	- 25 6.6	2.029	2.984	6.9	19.4	4 1	12 57.41	- 6 16.3	1.639	2.637	1.6	20.0
4 11	12 47.88	- 24 27.1	2.020	2.990	5.9	19.4	4 11	12 47.61	- 5 27.9	1.650	2.646	3.1	20.1
4 21	12 39.19	- 23 32.7	2.039	2.996	7.1	19.5	4 21	12 38.61	- 4 43.1	1.689	2.654	7.6	20.4
5 1	12 31.96	- 22 29.9	2.084	3.001	9.6	19.6	5 1	12 31.33	- 4 7.5	1.753	2.662	11.6	20.7
5 11	12 26.79	- 21 26.3	2.153	3.006	12.2	19.8	5 11	12 26.35	- 3 45.0	1.839	2.669	14.9	20.9
47305	1999 <i>WL</i> ₂₄		4 4.3 337°29	2°1/ 2.7	18		248896	2006 <i>UE</i> ₂₇₀		4 4.3 330°75	0°5/ 4.8	17 R	
3 2	13 14.52	- 4 14.0	1.281	2.154	16.2	18.6	3 2	13 13.03	- 9 28.8	1.870	2.714	13.2	20.1
3 12	13 11.03	- 3 28.3	1.208	2.145	11.9	18.3	3 12	13 9.28	- 9 3.1	1.783	2.702	9.9	19.9
3 22	13 4.88	- 2 28.5	1.157	2.136	6.9	18.0	3 22	13 3.58	- 8 23.4	1.719	2.690	6.0	19.6
4 1	12 56.92	- 1 21.9	1.130	2.127	2.3	17.7	4 1	12 56.59	- 7 33.4	1.681	2.678	1.8	19.3
4 11	12 48.42	- 0 18.0	1.128	2.120	5.2	17.8	4 11	12 49.20	- 6 38.5	1.671	2.667	2.8	19.3
4 21	12 40.74	+ 0 34.1	1.149	2.114	10.4	18.1	4 21	12 42.32	- 5 45.1	1.687	2.657	7.1	19.6
5 1	12 35.05	+ 1 7.1	1.193	2.108	15.3	18.3	5 1	12 36.84	- 4 59.3	1.729	2.647	11.1	19.8
5 11	12 32.12	+ 1 17.7	1.254	2.103	19.4	18.6	5 11	12 33.35	- 4 25.9	1.792	2.638	14.6	20.0
468534	2006 <i>BS</i> ₁₈₀		4 4.3 314°39	3°4/31.9	17		250123	2002 <i>PP</i> ₄₃		4 4.3 151°61	8°3/26.8	18	
3 2	13 15.00	+ 0 22.0	1.785	2.650	12.8	21.0	3 2	13 17.99	+ 3 22.9	1.195	2.077	16.5	20.2
3 12	13 10.66	+ 1 24.5	1.713	2.645	9.3	20.8	3 12	13 13.54	+ 6 52.3	1.146	2.084	12.2	19.9
3 22	13 4.34	+ 2 33.5	1.665	2.641	5.6	20.6	3 22	13 6.30	+ 10 31.2	1.121	2.089	8.8	19.7
4 1	12 56.74	+ 3 42.2	1.645	2.636	3.4	20.4	4 1	12 57.27	+ 13 58.5	1.124	2.094	8.9	19.8
4 11	12 48.82	+ 4 42.8	1.651	2.632	5.7	20.5	4 11	12 47.91	+ 16 53.8	1.153	2.099	12.2	20.0
4 21	12 41.55	+ 5 29.0	1.684	2.628	9.4	20.8	4 21	12 39.64	+ 19 4.2	1.206	2.103	16.4	20.2
5 1	12 35.77	+ 5 56.5	1.741	2.624	13.0	21.0	5 1	12 33.62	+ 20 25.9	1.279	2.106	20.2	20.5
5 11	12 32.08	+ 6 4.0	1.818	2.621	16.1	21.2	5 11	12 30.48	+ 21 2.8	1.366	2.109	23.3	20.7
377857	2006 <i>BP</i> ₂₂₁		4 4.3 178°77	2°7/ 6.9	17		498452	2008 <i>BL</i> ₂₉		4 4.3 144°95	0°5/ 3.7	17	
3 2	13 17.53	- 15 25.3	2.050	2.860	13.6	21.1	3 2	13 14.60	- 6 16.5	2.789	3.622	9.7	22.9
3 12	13 12.39	- 15 21.9	1.967	2.861	10.5	20.9	3 12	13 9.69	- 5 41.7	2.715	3.631	7.1	22.7
3 22	13 5.32	- 15 2.4	1.907	2.861	7.0	20.7	3 22	13 3.50	- 4 59.6	2.668	3.639	4.1	22.5
4 1	12 56.99	- 14 28.3	1.873	2.861	3.7	20.5	4 1	12 56.53	- 4 13.4	2.649	3.647	1.0	22.3
4 11	12 48.32	- 13 43.4	1.868	2.861	3.2	20.5	4 11	12 49.41	- 3 27.0	2.661	3.655	2.4	22.4
4 21	12 40.23	- 12 53.1	1.890	2.861	6.4	20.7	4 21	12 42.75	- 2 44.5	2.703	3.662	5.4	22.6
5 1	12 33.56	- 12 3.6	1.939	2.861	9.9	20.9	5 1	12 37.08	- 2 9.2	2.772	3.669	8.2	22.8
5 11	12 28.90	- 11 20.4	2.012	2.860	13.1	21.1	5 11	12 32.81	- 1 43.7	2.865	3.676	10.7	23.0
170399	2003 <i>TL</i> ₁₄		4 4.3 103°42	2°0/ 2.6	18		82491	2001 <i>OW</i> ₃₈		4 4.3 182°77	4°1/31.6	17	
3 2	13 20.74	- 2 55.7	1.698	2.550	14.0	20.2	3 2	13 19.51	+ 3 40.9	1.843	2.702	12.7	20.1
3 12	13 14.72	- 2 11.2	1.644	2.570	10.1	20.0	3 12	13 13.87	+ 4 28.3	1.775	2.702	9.3	19.9
3 22	13 6.61	- 1 18.7	1.614	2.589	5.8	19.8	3 22	13 6.20	+ 5 18.0	1.731	2.702	5.9	19.7
4 1	12 57.29	- 0 24.3	1.611	2.607	2.1	19.6	4 1	12 57.24	+ 6 3.3	1.715	2.702	4.1	19.6
4 11	12 47.85	+ 0 25.1	1.636	2.625	4.4	19.8	4 11	12 48.00	+ 6 37.9	1.727	2.702	6.1	19.7
4 21	12 39.33	+ 1 3.7	1.688	2.643	8.5	20.0	4 21	12 39.48	+ 6 57.1	1.765	2.701	9.6	19.9
5 1	12 32.58	+ 1 27.4	1.766	2.660	12.3	20.3	5 1	12 32.55	+ 6 58.2	1.828	2.700	13.0	20.1
5 11	12 28.12	+ 1 34.6	1.864	2.677	15.4	20.5	5 11	12 27.77	+ 6 41.1	1.911	2.699	16.0	20.3
57151	2001 <i>QY</i> ₁		4 4.3 104°81	0°9/ 5.2	18		120342	2004 <i>RU</i> ₁					

EPHEMERIDES

4 4.3

4 4.3

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
324476	2006 <i>US</i> ₉₅		4 4.3 316°73	1°0/ 3.4 17			195160	2002 <i>CE</i> ₂₂₅		4 4.3 305°45	5°7/ 8.4 17		
3 2	13 14.38	- 7 2.0	1.433	2.295	15.5	20.3	3 2	13 19.76	-19 34.8	1.749	2.546	16.0	20.0
3 12	13 10.75	- 6 9.1	1.354	2.284	11.4	20.1	3 12	13 14.67	-20 21.1	1.653	2.532	13.0	19.8
3 22	13 4.67	- 4 59.1	1.296	2.273	6.7	19.7	3 22	13 7.04	-20 49.2	1.579	2.517	9.7	19.5
4 1	12 56.91	- 3 38.4	1.264	2.262	1.7	19.4	4 1	12 57.57	-20 56.9	1.529	2.503	6.6	19.3
4 11	12 48.63	- 2 16.2	1.257	2.251	4.3	19.5	4 11	12 47.35	-20 45.0	1.506	2.489	5.8	19.2
4 21	12 41.05	- 1 2.0	1.276	2.241	9.4	19.8	4 21	12 37.62	-20 17.6	1.508	2.475	8.2	19.3
5 1	12 35.27	- 0 4.3	1.317	2.232	14.2	20.0	5 1	12 29.56	-19 41.1	1.536	2.461	11.8	19.5
5 11	12 32.03	+ 0 32.0	1.378	2.223	18.2	20.3	5 11	12 24.02	-19 3.5	1.585	2.448	15.3	19.7
465392	2008 <i>GS</i> ₁₀		4 4.3 260°81	0°1/ 4.4 17			143395	2003 <i>BU</i> ₂₉		4 4.3 226°44	7°6/ 22.9 18		
3 2	13 17.18	- 9 11.4	2.095	2.927	12.5	22.0	3 2	13 15.17	+21 13.6	2.804	3.643	9.5	20.5
3 12	13 12.25	- 8 31.7	1.990	2.904	9.3	21.7	3 12	13 10.27	+22 47.3	2.745	3.632	8.2	20.4
3 22	13 5.35	- 7 37.9	1.910	2.880	5.6	21.5	3 22	13 3.94	+24 12.5	2.713	3.620	7.6	20.3
4 1	12 57.08	- 6 33.5	1.857	2.855	1.5	21.1	4 1	12 56.70	+25 22.7	2.708	3.607	8.0	20.3
4 11	12 48.27	- 5 24.0	1.834	2.829	2.9	21.2	4 11	12 49.22	+26 13.0	2.729	3.595	9.3	20.4
4 21	12 39.86	- 4 16.0	1.839	2.803	7.1	21.4	4 21	12 42.16	+26 40.7	2.775	3.581	10.9	20.5
5 1	12 32.73	- 3 16.0	1.870	2.777	11.1	21.6	5 1	12 36.15	+26 45.4	2.842	3.567	12.6	20.6
5 11	12 27.54	- 2 29.1	1.925	2.749	14.6	21.7	5 11	12 31.65	+26 28.7	2.926	3.553	14.1	20.7
237389	1996 <i>VE</i> ₂₀		4 4.3 221°74	5°4/ 28.7 18			53270	1999 <i>FR</i> ₂₂		4 4.3 29°41	0°6/ 4.8 18		
3 2	13 15.46	+10 15.8	2.418	3.275	10.1	20.3	3 2	13 16.90	- 9 45.9	1.719	2.560	14.4	18.2
3 12	13 10.55	+11 19.5	2.350	3.270	7.8	20.2	3 12	13 12.19	- 9 19.1	1.644	2.561	10.7	18.0
3 22	13 4.11	+12 20.7	2.309	3.265	5.8	20.0	3 22	13 5.34	- 8 37.4	1.591	2.561	6.5	17.7
4 1	12 56.71	+13 13.3	2.295	3.260	5.5	20.0	4 1	12 57.09	- 7 44.7	1.564	2.561	1.9	17.4
4 11	12 49.10	+13 52.0	2.310	3.254	7.0	20.1	4 11	12 48.48	- 6 47.2	1.565	2.562	3.0	17.5
4 21	12 41.99	+14 13.4	2.351	3.249	9.4	20.2	4 21	12 40.58	- 5 51.8	1.593	2.562	7.5	17.8
5 1	12 36.04	+14 15.9	2.417	3.243	11.8	20.4	5 1	12 34.29	- 5 5.0	1.645	2.562	11.7	18.0
5 11	12 31.73	+14 0.0	2.502	3.236	14.0	20.5	5 11	12 30.24	- 4 31.7	1.720	2.563	15.2	18.3
89012	2001 <i>TU</i> ₈₂		4 4.3 115°40	1°4/ 6.0 17			173102	2007 <i>TJ</i> ₃₇₉		4 4.3 13°65	1°3/ 3.3 17		
3 2	13 15.23	-12 56.8	2.459	3.273	11.4	20.6	3 2	13 20.01	- 2 9.4	1.908	2.757	12.8	19.6
3 12	13 10.33	-12 34.0	2.385	3.285	8.6	20.5	3 12	13 14.24	- 2 8.9	1.835	2.758	9.4	19.3
3 22	13 3.95	-11 58.8	2.336	3.296	5.5	20.3	3 22	13 6.44	- 2 3.1	1.786	2.759	5.4	19.1
4 1	12 56.67	-11 13.6	2.315	3.308	2.3	20.1	4 1	12 57.36	- 1 55.5	1.764	2.761	1.7	18.8
4 11	12 49.21	-10 22.6	2.323	3.319	2.3	20.1	4 11	12 47.98	- 1 50.3	1.771	2.763	3.6	19.0
4 21	12 42.28	- 9 30.6	2.360	3.329	5.4	20.3	4 21	12 39.27	- 1 51.0	1.805	2.765	7.6	19.2
5 1	12 36.52	- 8 42.2	2.425	3.340	8.5	20.5	5 1	12 32.09	- 2 0.5	1.865	2.768	11.3	19.5
5 11	12 32.37	- 8 1.6	2.514	3.350	11.2	20.7	5 11	12 27.05	- 2 20.5	1.948	2.770	14.5	19.7
74726	1999 <i>RW</i> ₁₆₉		4 4.3 223°53	1°0/ 5.2 16			386610	2009 <i>HW</i> ₉₅		4 4.3 42°58	2°2/ 2.5 17		
3 2	13 19.27	-11 2.8	1.990	2.815	13.3	21.2	3 2	13 18.60	- 0 18.1	1.823	2.680	13.0	20.7
3 12	13 13.79	-10 37.3	1.897	2.805	10.1	21.0	3 12	13 13.08	- 0 2.4	1.770	2.697	9.4	20.5
3 22	13 6.25	- 9 57.1	1.828	2.794	6.2	20.7	3 22	13 5.66	+ 0 17.4	1.740	2.715	5.5	20.3
4 1	12 57.30	- 9 5.0	1.786	2.782	2.1	20.4	4 1	12 57.13	+ 0 36.8	1.738	2.734	2.3	20.1
4 11	12 47.89	- 8 6.2	1.773	2.770	2.8	20.4	4 11	12 48.49	+ 0 50.8	1.764	2.752	4.3	20.3
4 21	12 39.01	- 7 6.9	1.789	2.757	7.0	20.7	4 21	12 40.68	+ 0 55.8	1.817	2.772	8.0	20.6
5 1	12 31.58	- 6 13.6	1.831	2.743	11.0	20.9	5 1	12 34.46	+ 0 49.4	1.895	2.791	11.5	20.8
5 11	12 26.24	- 5 31.5	1.896	2.729	14.4	21.1	5 11	12 30.33	+ 0 30.4	1.994	2.811	14.4	21.1
84035	2002 <i>PX</i> ₄₉		4 4.3 108°23	1°1/ 2.9 17			280644	2005 <i>AN</i> ₆₅		4 4.3 153°94	1°6/ 6.0 17		
3 2	13 14.23	- 6 8.5	2.386	3.226	10.9	19.3	3 2	13 16.48	-12 58.9	2.175	2.993	12.6	21.3
3 12	13 9.56	- 4 59.7	2.323	3.243	7.8	19.1	3 12	13 11.50	-12 40.8	2.095	2.997	9.6	21.1
3 22	13 3.47	- 3 41.8	2.286	3.260	4.5	19.0	3 22	13 4.77	-12 8.7	2.039	3.000	6.1	20.9
4 1	12 56.54	- 2 19.9	2.279	3.276	1.3	18.7	4 1	12 56.94	-11 24.9	2.010	3.003	2.6	20.7
4 11	12 49.51	- 1 0.1	2.301	3.292	3.1	18.9	4 11	12 48.83	-10 33.9	2.010	3.006	2.6	20.7
4 21	12 43.04	+ 0 12.0	2.353	3.307	6.5	19.1	4 21	12 41.29	- 9 41.1	2.038	3.009	6.1	20.9
5 1	12 37.41	+ 1 11.8	2.432	3.323	9.5	19.4	5 1	12 35.06	- 8 52.0	2.094	3.011	9.5	21.1
5 11	12 34.04	+ 1 56.7	2.534	3.337	12.1	19.6	5 11	12 30.67	- 8 11.3	2.172	3.013	12.6	21.3
32513	2001 <i>OL</i> ₃₁		4 4.3 186°72	4°8/ 15.6 18			332704	2009 <i>RV</i> ₅₅		4 4.3 121°97	1°4/ 2.9 17		
3 2	13 9.86	-36 4.2	4.868	5.509	8.4	19.2	3 2	13 16.90	- 4 37.0	1.867	2.718	13.0	21.4
3 12	13 6.02	-36 11.2	4.766	5.508	7.4	19.1	3 12	13 11.96	- 3 52.5	1.798	2.723	9.4	21.2
3 22	13 1.28	-36 5.1	4.686	5.508	6.4	19.0	3 22	13 5.09	- 2 58.4	1.754	2.728	5.4	20.9
4 1	12 55.99	-35 45.6	4.630	5.508	5.4	19.0	4 1	12 57.02	- 1 59.9	1.736	2.733	1.6	20.7
4 11	12 50.56	-35 13.6	4.600	5.507	4.8	18.9	4 11	12 48.69	- 1 3.5	1.747	2.738	3.8	20.9
4 21	12 45.39	-34 30.6	4.597	5.506	4.9	18.9	4 21	12 41.06	+ 0 15.3	1.785	2.743	7.8	21.1
5 1	12 40.84	-33 39.4	4.622	5.506	5.5	19.0	5 1	12 34.92	+ 0 19.9	1.848	2.748	11.6	21.3
5 11	12 37.24	-32 43.0	4.672	5.505	6.5	19.0	5 11	12 30.83	+ 0 39.3	1.933	2.752	14.7	21.6
106978	2000 <i>YO</i> ₉₄		4 4.3 24°12	3°6/ 1.6 18			430132	2013 <i>TA</i> ₃₇		4 4.3 131°31	1°7/ 2.4 17		
3 2	13 16.47	- 0 51.5	1.245	2.123	16.3	19.5	3 2	13 17.46	- 2 30.7	2.330	3.173	11.0	22.0
3 12	13 12.33	+ 0 4.7	1.190	2.128	11.8	19.2	3 12	13 11.96	- 1 46.8	2.265	3.187	7.9	21.9
3 22	13 5.55	+ 1 9.8	1.156	2.134	7.0	19.0	3 22	13 4.91	- 0 56.9	2.227	3.201	4.6	21.7
4 1	12 57.12	+ 2 15.0	1.146	2.140	3.6	18.8	4 1	12 56.95	- 0 5.7	2.218	3.214	1.8	21.5
4 11	12 48.39	+ 3 10.3	1.161	2.148	6.4	19.0	4 11	12 48.85	+ 0 41.9	2.238	3.226	3.6	21.6
4 21	12 40.68	+ 3 48.0	1.200	2.155	11.1	19.3	4 21	12 41.35	+ 1 21.3	2.288	3.238	6.9	21.9
5 1	12 35.08	+ 4 3.5	1.260	2.164	15.5	19.5	5 1	12 35.10	+ 1 49.2	2.363	3.249	9.9	22.1
5 11	12 32.21	+ 3 55.8	1.339	2.173	19.2	19.8	5 11	12 30.56	+ 2 3.7	2.462	3.260	12.5	22.3
16182	2000 <i>AH</i> ₁₃₇		4 4.3 205°70	3°4/ 1.1 18									

EPHEMERIDES

4 4.3

4 4.3

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
127535	2002 <i>XL</i> ₁₄		4 4.3 246°72	4°0/31.9	18		304812	2007 <i>PO</i> ₄₇		4 4.3 149°31	2°0/ 5.9	18	
3 2	13 21.94	+ 1 32.8	1.680	2.538	13.8	20.3	3 2	13 20.94	-12 47.4	1.690	2.515	15.3	21.6
3 12	13 16.14	+ 2 31.8	1.591	2.519	10.2	20.1	3 12	13 15.21	-12 38.6	1.616	2.521	11.6	21.4
3 22	13 7.84	+ 3 38.0	1.526	2.499	6.3	19.8	3 22	13 7.15	-12 12.8	1.565	2.527	7.4	21.1
4 1	12 57.78	+ 4 43.7	1.488	2.478	4.0	19.6	4 1	12 57.58	-11 32.5	1.539	2.532	3.1	20.9
4 11	12 47.08	+ 5 40.7	1.477	2.456	6.5	19.7	4 11	12 47.66	-10 42.9	1.541	2.537	3.2	20.9
4 21	12 36.95	+ 6 21.6	1.493	2.433	10.7	19.9	4 21	12 38.52	- 9 50.8	1.570	2.541	7.4	21.1
5 1	12 28.53	+ 6 41.8	1.533	2.410	14.9	20.1	5 1	12 31.16	- 9 3.1	1.625	2.545	11.6	21.4
5 11	12 22.59	+ 6 39.7	1.593	2.385	18.5	20.2	5 11	12 26.24	- 8 25.8	1.702	2.549	15.2	21.6
505247	2012 <i>UW</i> ₁₁₂		4 4.3 231°67	2°0/ 6.8	17		154725	2004 <i>NC</i> ₂		4 4.3 225°35	2°0/ 2.3	18	
3 2	13 14.04	-16 18.0	2.373	3.178	12.1	21.7	3 2	13 17.77	- 2 4.8	2.167	3.014	11.6	20.9
3 12	13 9.68	-15 31.6	2.277	3.169	9.4	21.5	3 12	13 12.49	- 1 22.4	2.081	3.005	8.4	20.7
3 22	13 3.70	-14 27.6	2.205	3.160	6.2	21.3	3 22	13 5.40	- 0 32.9	2.021	2.995	4.9	20.4
4 1	12 56.68	-13 8.9	2.161	3.151	2.9	21.1	4 1	12 57.14	+ 0 18.9	1.989	2.985	2.0	20.2
4 11	12 49.36	-11 40.4	2.146	3.142	2.5	21.0	4 11	12 48.52	+ 1 7.3	1.986	2.974	4.0	20.3
4 21	12 42.49	-10 8.7	2.161	3.132	5.7	21.2	4 21	12 40.41	+ 1 47.2	2.012	2.963	7.7	20.5
5 1	12 36.78	- 8 40.6	2.204	3.122	9.1	21.4	5 1	12 33.58	+ 2 14.6	2.064	2.951	11.1	20.7
5 11	12 32.74	- 7 22.2	2.271	3.112	12.1	21.6	5 11	12 28.61	+ 2 27.1	2.138	2.939	14.1	20.9
22093	2000 <i>AG</i> ₂₀₀		4 4.3 186°67	3°1/31.5	18		371747	2007 <i>EU</i> ₂₁₇		4 4.3 50°12	0°2/ 4.1	17	
3 2	13 15.54	+ 1 15.8	2.349	3.202	10.5	19.5	3 2	13 14.65	- 9 8.5	1.634	2.483	14.6	21.1
3 12	13 10.65	+ 2 24.1	2.276	3.202	7.6	19.3	3 12	13 10.54	- 8 11.6	1.569	2.492	10.7	20.8
3 22	13 4.21	+ 3 36.8	2.229	3.201	4.7	19.1	3 22	13 4.34	- 6 58.7	1.527	2.500	6.3	20.6
4 1	12 56.79	+ 4 48.3	2.211	3.200	3.1	19.0	4 1	12 56.86	- 5 35.8	1.511	2.509	1.5	20.3
4 11	12 49.16	+ 5 52.5	2.223	3.198	4.9	19.1	4 11	12 49.13	- 4 11.1	1.522	2.517	3.3	20.4
4 21	12 42.03	+ 6 44.3	2.263	3.196	8.0	19.3	4 21	12 42.18	- 2 53.2	1.560	2.526	7.9	20.7
5 1	12 36.07	+ 7 20.4	2.329	3.193	10.9	19.4	5 1	12 36.87	- 1 49.2	1.622	2.536	12.0	21.0
5 11	12 31.77	+ 7 39.2	2.416	3.190	13.4	19.6	5 11	12 33.75	- 1 3.5	1.706	2.545	15.5	21.2
370741	2004 <i>RP</i> ₁₅₇		4 4.3 113°65	5°5/ 9.3	17		522696	2016 <i>LF</i> ₅₉		4 4.3 252°25	5°7/29.3	17	
3 2	13 19.40	-21 47.4	1.939	2.720	15.3	21.0	3 2	13 17.19	+ 9 2.7	2.046	2.907	11.5	21.6
3 12	13 13.99	-22 14.3	1.859	2.724	12.4	20.8	3 12	13 12.12	+10 7.0	1.974	2.898	8.8	21.4
3 22	13 6.41	-22 21.0	1.799	2.729	9.3	20.6	3 22	13 5.20	+11 9.8	1.928	2.889	6.4	21.2
4 1	12 57.39	-22 6.7	1.765	2.733	6.5	20.4	4 1	12 57.08	+12 3.8	1.909	2.880	5.8	21.2
4 11	12 47.95	-21 33.5	1.757	2.737	5.5	20.4	4 11	12 48.67	+12 42.7	1.918	2.870	7.6	21.2
4 21	12 39.16	-20 46.4	1.776	2.741	7.3	20.5	4 21	12 40.83	+13 2.2	1.952	2.861	10.4	21.4
5 1	12 31.97	-19 52.5	1.822	2.745	10.4	20.7	5 1	12 34.38	+13 0.6	2.010	2.851	13.3	21.6
5 11	12 27.02	-18 59.1	1.890	2.748	13.4	20.9	5 11	12 29.86	+12 38.3	2.088	2.841	15.9	21.7
293043	2006 <i>WU</i> ₉₉		4 4.3 239°19	1°4/ 3.0	17		145707	1981 <i>EN</i> ₁₀		4 4.3 308°76	6°5/ 8.0	18	
3 2	13 18.85	- 4 11.7	1.949	2.794	12.7	21.7	3 2	13 21.74	-19 15.5	1.638	2.439	16.8	18.9
3 12	13 13.51	- 3 33.1	1.859	2.781	9.3	21.5	3 12	13 16.58	-20 22.0	1.529	2.409	13.8	18.6
3 22	13 6.12	- 2 44.9	1.794	2.768	5.4	21.2	3 22	13 8.49	-21 12.6	1.441	2.378	10.5	18.3
4 1	12 57.33	- 1 51.5	1.756	2.753	1.7	20.9	4 1	12 58.08	-21 43.3	1.376	2.348	7.4	18.1
4 11	12 48.08	- 0 59.2	1.747	2.739	3.8	21.1	4 11	12 46.48	-21 53.1	1.338	2.319	6.7	18.0
4 21	12 39.36	- 0 14.0	1.767	2.724	8.0	21.3	4 21	12 35.11	-21 43.9	1.325	2.289	9.3	18.0
5 1	12 32.07	+ 0 19.0	1.811	2.708	11.9	21.5	5 1	12 25.43	-21 21.8	1.336	2.260	13.3	18.2
5 11	12 26.87	+ 0 36.6	1.878	2.691	15.3	21.7	5 11	12 18.56	-20 55.3	1.368	2.232	17.3	18.3
419855	2011 <i>AW</i> ₁₁		4 4.3 57°79	3°3/ 7.1	17		377794	2006 <i>AM</i> ₂₅		4 4.3 193°85	2°3/ 6.6	17	
3 2	13 17.96	-15 53.1	1.613	2.434	16.1	21.3	3 2	13 17.70	-14 35.4	2.074	2.886	13.3	22.2
3 12	13 13.06	-15 52.1	1.547	2.446	12.5	21.1	3 12	13 12.55	-14 25.8	1.989	2.885	10.3	22.0
3 22	13 5.87	-15 31.3	1.502	2.459	8.4	20.9	3 22	13 5.49	-14 0.6	1.927	2.884	6.8	21.7
4 1	12 57.24	-14 52.4	1.483	2.471	4.4	20.7	4 1	12 57.18	-13 21.5	1.892	2.882	3.3	21.5
4 11	12 48.33	-14 0.5	1.490	2.484	3.8	20.7	4 11	12 48.52	-12 32.6	1.885	2.880	3.0	21.5
4 21	12 40.26	-13 2.9	1.523	2.497	7.3	20.9	4 21	12 40.42	-11 39.5	1.907	2.878	6.3	21.7
5 1	12 34.01	-12 7.4	1.582	2.510	11.3	21.2	5 1	12 33.72	-10 48.2	1.955	2.875	9.9	21.9
5 11	12 30.16	-11 20.6	1.662	2.523	14.8	21.4	5 11	12 28.99	-10 4.2	2.027	2.872	13.1	22.1
497553	2006 <i>DS</i> ₈₅		4 4.3 267°69	1°0/ 5.2	17		308575	2005 <i>UY</i> ₄₃₄		4 4.3 276°65	2°3/ 7.3	17	
3 2	13 17.70	- 9 58.4	1.936	2.768	13.3	21.2	3 2	13 12.88	-17 6.0	2.470	3.270	11.8	21.7
3 12	13 12.61	- 9 50.0	1.855	2.767	10.0	21.0	3 12	13 8.86	-16 28.7	2.364	3.253	9.2	21.4
3 22	13 5.54	- 9 29.1	1.799	2.766	6.2	20.8	3 22	13 3.26	-15 34.2	2.283	3.235	6.2	21.2
4 1	12 57.16	- 8 58.3	1.769	2.765	2.1	20.5	4 1	12 56.62	-14 24.6	2.229	3.217	3.2	21.0
4 11	12 48.44	- 8 22.1	1.767	2.763	2.7	20.5	4 11	12 49.63	-13 4.1	2.204	3.198	2.7	20.9
4 21	12 40.32	- 7 45.6	1.793	2.762	6.8	20.8	4 21	12 43.02	-11 38.6	2.208	3.180	5.5	21.1
5 1	12 33.66	- 7 14.2	1.844	2.761	10.6	21.0	5 1	12 37.49	-10 14.6	2.241	3.162	8.8	21.2
5 11	12 29.06	- 6 52.3	1.919	2.760	14.0	21.2	5 11	12 33.55	- 8 58.1	2.297	3.143	11.8	21.4
512849	2016 <i>VP</i> ₃		4 4.3 218°68	7°1/15.7	17		302450	2002 <i>EH</i> ₉₁		4 4.3 6°00	0°2/ 4.2	18	
3 2	13 17.00	-37 53.8	3.351	3.987	11.9	22.2	3 2	13 16.78	- 6 24.8	1.087	1.962	18.4	19.7
3 12	13 11.70	-38 12.7	3.241	3.977	10.7	22.0	3 12	13 13.03	- 6 20.5	1.027	1.962	13.6	19.4
3 22	13 4.85	-38 12.3	3.150	3.966	9.3	21.9	3 22	13 6.25	- 6 1.3	0.986	1.963	8.1	19.1
4 1	12 56.98	-37 50.7	3.083	3.955	8.0	21.8	4 1	12 57.42	- 5 32.1	0.967	1.965	2.0	18.7
4 11	12 48.78	-37 8.3	3.041	3.943	7.2	21.7	4 11	12 48.10	- 5 0.4	0.971	1.968	4.2	18.9
4 21	12 40.95	-36 7.4	3.025	3.931	7.2	21.7	4 21	12 39.84	- 4 34.4	0.998	1.973	10.1	19.2
5 1	12 34.16	-34 52.3	3.037	3.918	8.1	21.7	5 1	12 33.96	- 4 20.8	1.047	1.978	15.3	19.5
5 11	12 28.92	-33 28.8	3.073	3.905	9.5	21.8	5 11	12 31.21	- 4 23.9	1.113	1.985	19.7	19.8
438404	2006 <i>UW</i> ₂₁₂		4 4.3 208°70	2°3/ 1.7	17		98477	2000 <i>UR</i> ₉₉		4 4.3 159°00	2°2/ 6		

EPHEMERIDES

4 4.3

4 4.4

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
452660	2005 <i>UU</i> ₄₈₈		4 4.3 246°86	1°5/ 5.3 17			300220	2006 <i>WT</i> ₁₉₁		4 4.3 233°33	2°2/ 1.7 18		
3 2	13 22.87	-10 5.0	1.484	2.323	16.4	21.3	3 2	13 15.29	+0 6.7	2.674	3.521	9.6	21.2
3 12	13 17.15	-10 10.0	1.398	2.313	12.4	21.0	3 12	13 10.39	+0 46.0	2.588	3.511	7.0	21.0
3 22	13 8.60	-9 59.8	1.334	2.302	7.8	20.7	3 22	13 4.07	+1 29.3	2.527	3.500	4.2	20.8
4 1	12 58.05	-9 36.3	1.295	2.291	2.8	20.4	4 1	12 56.84	+2 12.7	2.496	3.489	2.2	20.7
4 11	12 46.78	-9 4.3	1.283	2.280	3.5	20.4	4 11	12 49.35	+2 51.8	2.495	3.478	3.8	20.7
4 21	12 36.20	-8 30.1	1.297	2.268	8.7	20.6	4 21	12 42.25	+3 22.8	2.523	3.466	6.7	20.9
5 1	12 27.61	-8 1.0	1.335	2.256	13.5	20.9	5 1	12 36.15	+3 42.8	2.577	3.454	9.5	21.1
5 11	12 21.86	-7 42.9	1.394	2.244	17.8	21.1	5 11	12 31.53	+3 50.1	2.654	3.441	12.0	21.2
277392	2005 <i>UM</i> ₁₄₁		4 4.3 328°62	10°0/27.7 18			214455	2005 <i>SL</i> ₈₀		4 4.3 255°23	0°7/ 3.5 17		
3 2	13 25.93	+20 43.2	1.734	2.577	14.2	20.2	3 2	13 14.79	-5 26.2	2.559	3.397	10.3	21.1
3 12	13 18.72	+21 29.3	1.680	2.575	11.9	20.0	3 12	13 10.13	-4 54.8	2.465	3.383	7.5	20.8
3 22	13 9.12	+22 0.3	1.648	2.574	10.3	19.9	3 22	13 3.98	-4 15.6	2.397	3.369	4.4	20.6
4 1	12 58.09	+22 7.8	1.642	2.573	10.1	19.9	4 1	12 56.83	-3 31.6	2.357	3.355	1.1	20.4
4 11	12 46.88	+21 46.6	1.661	2.571	11.6	20.0	4 11	12 49.38	-2 47.4	2.347	3.340	2.7	20.5
4 21	12 36.70	+20 55.9	1.704	2.570	14.0	20.1	4 21	12 42.31	-2 7.1	2.366	3.326	6.1	20.7
5 1	12 28.53	+19 38.7	1.768	2.569	16.5	20.3	5 1	12 36.27	-1 34.7	2.412	3.311	9.3	20.8
5 11	12 22.94	+18 0.2	1.851	2.568	18.8	20.4	5 11	12 31.75	-1 13.0	2.482	3.296	12.0	21.0
282873	2007 <i>ET</i> ₆₅		4 4.3 248°22	2°5/ 2.3 17			250367	2003 <i>SD</i> ₃₂₁		4 4.4 251°99	0°8/ 5.0 17		
3 2	13 20.78	-2 36.8	1.670	2.523	14.1	21.2	3 2	13 19.90	-9 58.2	1.755	2.589	14.4	22.2
3 12	13 15.33	-1 43.9	1.579	2.505	10.4	20.9	3 12	13 14.62	-9 39.6	1.661	2.573	10.9	21.9
3 22	13 7.41	-0 39.8	1.511	2.485	6.1	20.6	3 22	13 6.98	-9 5.9	1.589	2.557	6.7	21.6
4 1	12 57.74	+0 29.1	1.470	2.465	2.6	20.4	4 1	12 57.66	-8 20.0	1.543	2.540	2.1	21.3
4 11	12 47.43	+1 34.8	1.457	2.445	5.1	20.5	4 11	12 47.72	-7 27.2	1.526	2.522	3.1	21.3
4 21	12 37.68	+2 29.3	1.471	2.423	9.8	20.7	4 21	12 38.32	-6 34.4	1.536	2.504	7.8	21.6
5 1	12 29.61	+3 6.6	1.509	2.400	14.2	20.9	5 1	12 30.52	-5 48.3	1.571	2.486	12.3	21.8
5 11	12 24.00	+3 23.4	1.567	2.377	18.0	21.1	5 11	12 25.08	-5 14.6	1.628	2.467	16.1	22.0
70800	1999 <i>VE</i> ₅₆		4 4.3 26°01	3°5/ 1.8 18			147409	2003 <i>FL</i> ₆₅		4 4.4 250°62	2°7/31.9 18		
3 2	13 19.04	+2 6.3	1.523	2.390	14.4	17.8	3 2	13 13.15	+0 18.5	2.424	3.279	10.2	19.6
3 12	13 13.82	+2 28.5	1.466	2.398	10.5	17.6	3 12	13 8.95	+1 21.2	2.345	3.273	7.4	19.4
3 22	13 6.32	+2 53.4	1.432	2.407	6.4	17.4	3 22	13 3.27	+2 29.2	2.293	3.267	4.4	19.2
4 1	12 57.40	+3 14.8	1.424	2.416	3.6	17.2	4 1	12 56.65	+3 37.0	2.269	3.260	2.7	19.0
4 11	12 48.27	+3 26.9	1.442	2.426	5.7	17.4	4 11	12 49.80	+4 39.0	2.275	3.254	4.5	19.1
4 21	12 40.05	+3 25.4	1.485	2.437	9.7	17.6	4 21	12 43.39	+5 30.2	2.309	3.247	7.5	19.3
5 1	12 33.70	+3 8.1	1.552	2.448	13.6	17.9	5 1	12 38.05	+6 7.2	2.368	3.241	10.4	19.5
5 11	12 29.79	+2 35.0	1.639	2.460	16.9	18.1	5 11	12 34.26	+6 28.0	2.450	3.234	13.0	19.7
372011	2008 <i>KJ</i> ₁₂		4 4.3 148°05	7°1/12.8 17			97797	2000 <i>NG</i> ₁₇		4 4.4 220°35	0°3/ 4.6 18		
3 2	13 16.47	-30 36.2	1.948	2.682	16.7	20.6	3 2	13 21.36	-8 27.5	1.878	2.710	13.7	20.2
3 12	13 11.92	-30 20.6	1.861	2.686	14.2	20.4	3 12	13 15.48	-8 7.4	1.788	2.701	10.2	20.0
3 22	13 5.22	-29 35.3	1.793	2.689	11.4	20.2	3 22	13 7.37	-7 34.6	1.722	2.691	6.2	19.7
4 1	12 57.14	-28 19.4	1.748	2.692	8.7	20.1	4 1	12 57.75	-6 52.2	1.683	2.681	1.7	19.4
4 11	12 48.73	-26 36.5	1.730	2.695	7.2	20.0	4 11	12 47.62	-6 5.6	1.673	2.669	3.0	19.5
4 21	12 41.06	-24 34.2	1.738	2.697	7.9	20.0	4 21	12 38.07	-5 20.8	1.691	2.657	7.5	19.7
5 1	12 35.03	-22 22.9	1.773	2.700	10.4	20.2	5 1	12 30.07	-4 43.5	1.736	2.644	11.7	19.9
5 11	12 31.26	-20 13.9	1.833	2.702	13.3	20.3	5 11	12 24.32	-4 18.4	1.802	2.631	15.2	20.1
422701	2000 <i>QJ</i> ₈₇		4 4.3 195°87	4°2/ 8.7 17			250972	2006 <i>HA</i> ₆₀		4 4.4 251°15	9°8/26.6 16		
3 2	13 19.79	-20 42.3	2.406	3.177	12.9	21.6	3 2	13 27.66	+20 33.7	1.917	2.752	13.4	21.0
3 12	13 13.97	-20 54.6	2.311	3.175	10.4	21.4	3 12	13 20.14	+21 38.1	1.840	2.731	11.3	20.8
3 22	13 6.31	-20 50.2	2.240	3.171	7.6	21.2	3 22	13 10.13	+22 30.7	1.788	2.709	9.9	20.7
4 1	12 57.42	-20 28.9	2.196	3.167	5.1	21.0	4 1	12 58.44	+23 1.9	1.762	2.686	10.0	20.6
4 11	12 48.15	-19 52.9	2.180	3.163	4.3	21.0	4 11	12 46.27	+23 5.0	1.761	2.662	11.6	20.7
4 21	12 39.35	-19 6.3	2.194	3.158	6.2	21.1	4 21	12 34.82	+22 37.1	1.786	2.638	14.1	20.8
5 1	12 31.82	-18 14.7	2.234	3.152	9.0	21.2	5 1	12 25.19	+21 39.6	1.833	2.613	16.8	20.9
5 11	12 26.16	-17 24.1	2.300	3.146	11.8	21.4	5 11	12 18.10	+20 16.9	1.897	2.587	19.2	21.0
355258	2007 <i>LY</i> ₄		4 4.3 320°39	2°5/ 2.6 14 C			34742	2001 <i>QD</i> ₇₉		4 4.4 91°55	2°9/ 7.5 18		
3 2	13 15.66	-3 49.3	1.159	2.037	17.2	21.6	3 2	13 16.64	-17 48.3	1.849	2.656	14.9	18.9
3 12	13 12.25	-3 0.7	1.084	2.022	12.7	21.3	3 12	13 11.84	-17 12.9	1.781	2.672	11.6	18.7
3 22	13 5.88	-1 56.6	1.029	2.008	7.4	20.9	3 22	13 5.07	-16 16.6	1.736	2.688	7.8	18.5
4 1	12 57.39	-0 44.7	0.998	1.995	2.7	20.6	4 1	12 57.11	-15 2.4	1.717	2.704	4.1	18.3
4 11	12 48.19	+0 24.0	0.990	1.982	5.8	20.7	4 11	12 48.97	-13 36.5	1.725	2.720	3.3	18.3
4 21	12 39.81	+1 19.0	1.006	1.970	11.5	21.0	4 21	12 41.60	-12 7.0	1.762	2.735	6.6	18.5
5 1	12 33.62	+1 52.3	1.042	1.959	16.8	21.2	5 1	12 35.81	-10 42.1	1.825	2.750	10.2	18.8
5 11	12 30.48	+2 0.1	1.095	1.949	21.3	21.5	5 11	12 32.13	-9 28.6	1.912	2.765	13.5	19.0
8555	Mirimao		4 4.3 324°08	1°7/ 5.8 18			410183	2007 <i>RM</i> ₆₇		4 4.4 232°34	1°2/ 3.3 17		
3 2	13 15.29	-13 20.6	1.398	2.242	16.9	17.9	3 2	13 18.38	-6 12.3	1.694	2.543	14.2	22.3
3 12	13 11.54	-12 46.2	1.320	2.236	12.9	17.6	3 12	13 13.44	-5 17.9	1.610	2.533	10.4	22.0
3 22	13 5.24	-11 48.8	1.263	2.231	8.2	17.3	3 22	13 6.22	-4 9.5	1.549	2.523	6.1	21.7
4 1	12 57.19	-10 32.2	1.230	2.225	3.2	17.0	4 1	12 57.46	-2 52.6	1.515	2.513	1.7	21.4
4 11	12 48.63	-9 4.5	1.223	2.220	3.4	17.0	4 11	12 48.22	-1 35.3	1.509	2.502	4.0	21.6
4 21	12 40.85	-7 35.8	1.241	2.216	8.5	17.3	4 21	12 39.62	-0 25.9	1.531	2.491	8.7	21.8
5 1	12 34.97	-6 16.6	1.282	2.211	13.3	17.5	5 1	12 32.65	+0 28.9	1.577	2.479	13.0	22.0
5 11	12 31.73	-5 14.7	1.344	2.207	17.5	17.8	5 11	12 28.01	+1 4.6	1.643	2.467	16.7	22.2
97492	2000 <i>CG</i> ₈₁		4 4.3 193°20	0°5/ 3.9 18			521284	2015 <i>JU</i> ₁₄		4 4.4 35°43	4°1/ 9.0 17		
3 2	13 20.95	-7 13.6	1.635	2.479	14.8								

EPHEMERIDES

4 4.4

4 4.4

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
106927	2000 YV ₆₁		4 4.4 81°62	0°0/ 4.2 18			501450	2014 AM ₃₆		4 4.4 217°94	4°3/ 9.5 17		
3 2	13 19.52	- 8 40.5	1.499	2.346	15.8	20.1	3 2	13 17.32	-22 54.0	2.518	3.279	12.7	22.4
3 12	13 14.21	- 8 5.7	1.442	2.363	11.6	19.9	3 12	13 12.15	-22 46.4	2.415	3.270	10.3	22.2
3 22	13 6.56	- 7 15.9	1.407	2.379	6.9	19.6	3 22	13 5.26	-22 20.1	2.335	3.260	7.7	22.1
4 1	12 57.50	- 6 16.3	1.398	2.396	1.8	19.3	4 1	12 57.22	-21 35.4	2.282	3.249	5.3	21.9
4 11	12 48.25	- 5 14.6	1.416	2.412	3.4	19.5	4 11	12 48.80	-20 34.9	2.257	3.238	4.4	21.8
4 21	12 39.97	- 4 18.4	1.461	2.429	8.2	19.8	4 21	12 40.81	-19 23.2	2.261	3.226	6.0	21.9
5 1	12 33.62	- 3 34.4	1.529	2.445	12.5	20.1	5 1	12 34.01	-18 6.7	2.293	3.213	8.7	22.0
5 11	12 29.76	- 3 6.6	1.619	2.461	16.1	20.4	5 11	12 28.94	-16 51.9	2.351	3.200	11.4	22.2
473971	2016 EW ₁₉₁		4 4.4 152°10	6°5/10.3 16			64452	2001 VW ₃₀		4 4.4 64°11	0°2/ 4.1 18		
3 2	13 22.50	-25 11.1	1.945	2.702	16.0	22.6	3 2	13 16.07	- 7 9.9	2.111	2.951	12.1	18.9
3 12	13 16.35	-25 37.6	1.865	2.711	13.3	22.4	3 12	13 11.11	- 6 41.0	2.054	2.972	8.8	18.7
3 22	13 7.87	-25 41.1	1.805	2.719	10.3	22.2	3 22	13 4.52	- 6 2.6	2.021	2.992	5.2	18.5
4 1	12 57.87	-25 20.0	1.770	2.726	7.6	22.1	4 1	12 56.99	- 5 18.7	2.016	3.013	1.3	18.3
4 11	12 47.45	-24 36.4	1.761	2.732	6.5	22.0	4 11	12 49.35	- 4 34.2	2.039	3.034	2.7	18.4
4 21	12 37.75	-23 35.5	1.780	2.738	7.9	22.1	4 21	12 42.38	- 3 54.1	2.091	3.055	6.4	18.7
5 1	12 29.77	-22 25.4	1.825	2.743	10.6	22.3	5 1	12 36.75	- 3 22.5	2.169	3.076	9.7	19.0
5 11	12 24.19	-21 14.7	1.893	2.747	13.6	22.5	5 11	12 32.92	- 3 2.3	2.270	3.097	12.5	19.2
5242	Kenreimonin		4 4.4 267°14	0°8/ 5.2 18			386583	2009 FM ₂₂		4 4.4 7°12 10°2/25.4 17			
3 2	13 15.54	-10 41.5	2.010	2.842	12.9	17.3	3 2	13 15.58	+19 26.9	1.630	2.495	13.8	19.9
3 12	13 11.04	-10 13.5	1.924	2.835	9.7	17.1	3 12	13 11.27	+20 47.9	1.588	2.496	11.6	19.8
3 22	13 4.67	- 9 31.5	1.861	2.829	6.0	16.9	3 22	13 4.82	+21 55.3	1.568	2.499	10.3	19.7
4 1	12 57.05	- 8 38.6	1.826	2.822	2.0	16.6	4 1	12 57.08	+22 39.5	1.572	2.502	10.6	19.7
4 11	12 49.08	- 7 40.1	1.818	2.815	2.6	16.6	4 11	12 49.18	+22 54.3	1.600	2.506	12.2	19.8
4 21	12 41.63	- 6 42.1	1.839	2.808	6.7	16.9	4 21	12 42.16	+22 37.7	1.649	2.512	14.6	20.0
5 1	12 35.54	- 5 50.6	1.885	2.801	10.5	17.1	5 1	12 36.89	+21 51.4	1.718	2.518	16.9	20.2
5 11	12 31.38	- 5 10.5	1.955	2.794	13.8	17.3	5 11	12 33.88	+20 39.8	1.803	2.525	19.1	20.4
264557	2001 SU ₂₉₈		4 4.4 181°45	1°6/ 5.9 17			430772	2004 RE ₂₉₉		4 4.4 195°28	0°9/ 5.2 17		
3 2	13 18.87	-12 13.3	1.968	2.790	13.6	21.8	3 2	13 18.78	- 9 50.5	1.989	2.819	13.1	21.6
3 12	13 13.49	-12 0.8	1.887	2.791	10.3	21.6	3 12	13 13.41	- 9 41.9	1.907	2.818	9.9	21.4
3 22	13 6.11	-11 33.7	1.829	2.791	6.5	21.3	3 22	13 6.06	- 9 21.1	1.850	2.817	6.1	21.2
4 1	12 57.42	-10 54.5	1.797	2.791	2.6	21.1	4 1	12 57.43	- 8 50.6	1.819	2.815	2.0	20.9
4 11	12 48.38	-10 7.6	1.795	2.791	2.8	21.1	4 11	12 48.44	- 8 14.9	1.817	2.814	2.7	20.9
4 21	12 39.95	- 9 18.8	1.820	2.790	6.7	21.3	4 21	12 40.04	- 7 39.1	1.843	2.812	6.7	21.2
5 1	12 33.00	- 8 34.0	1.872	2.789	10.5	21.6	5 1	12 33.09	- 7 8.2	1.896	2.810	10.5	21.4
5 11	12 28.13	- 7 58.4	1.946	2.788	13.8	21.8	5 11	12 28.19	- 6 46.6	1.971	2.808	13.8	21.6
122528	2000 QP ₂₁₀		4 4.4 150°06	0°2/ 4.6 18			52649	Chrismith		4 4.4 83°02	3°6/ 8.5 18		
3 2	13 18.20	- 8 47.6	2.332	3.158	11.6	20.8	3 2	13 14.88	-19 42.1	2.220	3.010	13.3	18.8
3 12	13 12.62	- 8 19.4	2.257	3.167	8.6	20.7	3 12	13 10.41	-19 30.5	2.138	3.015	10.6	18.6
3 22	13 5.42	- 7 40.8	2.208	3.176	5.1	20.5	3 22	13 4.22	-19 0.5	2.080	3.021	7.5	18.4
4 1	12 57.22	- 6 55.0	2.187	3.184	1.4	20.2	4 1	12 56.94	-18 13.5	2.048	3.026	4.6	18.3
4 11	12 48.81	- 6 6.6	2.196	3.192	2.4	20.3	4 11	12 49.41	-17 13.4	2.043	3.032	3.8	18.2
4 21	12 40.98	- 5 20.4	2.234	3.199	6.0	20.5	4 21	12 42.43	-16 5.6	2.067	3.037	6.0	18.4
5 1	12 34.41	- 4 41.1	2.300	3.205	9.3	20.8	5 1	12 36.74	-14 56.6	2.117	3.043	9.0	18.6
5 11	12 29.58	- 4 11.9	2.389	3.211	12.2	21.0	5 11	12 32.87	-13 52.8	2.192	3.048	11.9	18.7
41604	2000 SO ₁₀₄		4 4.4 173°91	0°1/ 4.3 18			259440	2003 SM ₃₃		4 4.4 146°33	1°4/ 2.9 18		
3 2	13 19.45	- 8 35.1	1.859	2.694	13.7	20.0	3 2	13 19.70	- 4 43.3	1.936	2.779	12.9	21.6
3 12	13 13.95	- 7 53.0	1.782	2.697	10.1	19.8	3 12	13 13.96	- 3 53.3	1.869	2.790	9.4	21.4
3 22	13 6.38	- 6 57.2	1.729	2.700	6.0	19.5	3 22	13 6.30	- 2 53.7	1.826	2.800	5.4	21.2
4 1	12 57.49	- 5 52.1	1.704	2.702	1.5	19.2	4 1	12 57.47	- 1 49.9	1.812	2.809	1.7	20.9
4 11	12 48.28	- 4 44.5	1.707	2.703	3.1	19.3	4 11	12 48.43	- 0 48.6	1.827	2.818	3.8	21.1
4 21	12 39.75	- 3 41.2	1.739	2.703	7.5	19.6	4 21	12 40.11	+ 0 4.3	1.870	2.826	7.7	21.4
5 1	12 32.80	- 2 48.5	1.796	2.703	11.5	19.8	5 1	12 33.32	+ 0 43.9	1.939	2.833	11.4	21.6
5 11	12 28.00	- 2 10.6	1.876	2.702	14.8	20.1	5 11	12 28.58	+ 1 7.6	2.029	2.839	14.4	21.8
432474	2010 DR ₃₇		4 4.4 64°38	1°0/ 3.4 15			321920	2010 TY ₅₉		4 4.4 249°55	0°0/ 4.2 17		
3 2	13 16.71	- 5 57.4	1.809	2.658	13.4	22.1	3 2	13 20.12	- 7 57.1	1.813	2.651	13.9	21.4
3 12	13 11.76	- 5 12.7	1.756	2.679	9.7	21.9	3 12	13 14.72	- 7 33.5	1.718	2.635	10.4	21.1
3 22	13 4.96	- 4 17.9	1.727	2.701	5.6	21.7	3 22	13 7.03	- 6 56.7	1.647	2.618	6.2	20.9
4 1	12 57.09	- 3 18.2	1.725	2.723	1.4	21.5	4 1	12 57.72	- 6 10.3	1.603	2.600	1.6	20.5
4 11	12 49.12	- 2 20.4	1.751	2.745	3.4	21.6	4 11	12 47.83	- 5 19.8	1.586	2.582	3.2	20.6
4 21	12 41.94	- 1 30.5	1.805	2.767	7.5	21.9	4 21	12 38.45	- 4 31.6	1.598	2.564	7.9	20.8
5 1	12 36.33	- 0 53.2	1.884	2.788	11.1	22.2	5 1	12 30.62	- 3 52.1	1.635	2.544	12.2	21.0
5 11	12 32.75	- 0 31.2	1.984	2.810	14.1	22.4	5 11	12 25.08	- 3 26.0	1.693	2.525	15.9	21.2
122297	2000 PJ ₂₃		4 4.4 295°15	2°3/ 2.5 16			323457	2004 JH ₄		4 4.4 347°54	2°5/ 2.4 16		
3 2	13 16.17	- 4 25.2	1.363	2.230	15.8	19.1	3 2	13 18.46	- 1 23.9	1.584	2.446	14.3	20.2
3 12	13 12.30	- 3 23.4	1.282	2.215	11.6	18.8	3 12	13 13.51	- 0 50.2	1.514	2.445	10.4	20.0
3 22	13 5.78	- 2 5.9	1.223	2.200	6.8	18.5	3 22	13 6.26	- 0 9.1	1.467	2.443	6.1	19.7
4 1	12 57.39	- 0 40.3	1.189	2.185	2.5	18.1	4 1	12 57.50	+ 0 33.5	1.446	2.442	2.6	19.5
4 11	12 48.39	+ 0 43.2	1.180	2.171	5.4	18.3	4 11	12 48.37	+ 1 10.6	1.452	2.441	4.9	19.7
4 21	12 40.08	+ 1 54.3	1.196	2.156	10.6	18.5	4 21	12 40.01	+ 1 36.3	1.484	2.440	9.3	19.9
5 1	12 33.68	+ 2 44.8	1.235	2.142	15.5	18.8	5 1	12 33.41	+ 1 46.4	1.539	2.440	13.4	20.2
5 11	12 30.00	+ 3 10.6	1.292	2.128	19.7	19.0	5 11	12 29.21	+ 1 39.2	1.615	2.439	16.9	20.4
113053	2002 RW ₅₃		4 4.4 161°90	3°1/ 1.3 18			202087	2004 TU ₁		4 4.4 255°47	4°8/31.1 17		
3 2	13 18.19	- 0 13.7	1.918	2.773	12.5	21							

EPHEMERIDES

4 4.4

4 4.4

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
473103	2015 <i>HW</i> ₁₇₀		4 4.4 121°87	0°6/ 3.6 18			213000	1981 <i>ET</i> ₂		4 4.4 40°58	3°8/ 8.5 17		
3 2	13 13.57	- 7 0.4	2.371	3.210	11.0	20.9	3 2	13 14.29	-19 24.3	1.909	2.711	14.7	20.1
3 12	13 9.25	- 6 7.6	2.297	3.216	8.0	20.7	3 12	13 10.14	-19 11.5	1.841	2.725	11.6	19.9
3 22	13 3.46	- 5 4.9	2.248	3.221	4.6	20.5	3 22	13 4.12	-18 38.2	1.795	2.740	8.2	19.7
4 1	12 56.75	- 3 56.7	2.228	3.226	1.1	20.3	4 1	12 56.95	-17 46.3	1.774	2.755	4.9	19.6
4 11	12 49.86	- 2 48.4	2.238	3.231	2.8	20.4	4 11	12 49.56	-16 40.7	1.780	2.771	4.0	19.5
4 21	12 43.47	- 1 45.5	2.276	3.236	6.3	20.6	4 21	12 42.86	-15 27.9	1.813	2.786	6.4	19.7
5 1	12 38.21	- 0 52.7	2.341	3.241	9.4	20.8	5 1	12 37.65	-14 15.5	1.873	2.802	9.7	19.9
5 11	12 34.54	- 0 13.1	2.429	3.245	12.2	21.0	5 11	12 34.44	-13 10.3	1.955	2.819	12.8	20.2
65761	1994 <i>RA</i>		4 4.4 120°75	1°5/ 2.6 18			321235	2009 <i>BL</i> ₄₄		4 4.4 43°94	0°5/ 4.9 17		
3 2	13 15.61	- 4 47.0	2.228	3.072	11.4	20.1	3 2	13 15.44	- 9 20.6	2.018	2.854	12.7	21.0
3 12	13 10.75	- 3 43.0	2.164	3.086	8.2	19.9	3 12	13 10.87	- 8 58.0	1.945	2.859	9.4	20.8
3 22	13 4.32	- 2 30.3	2.125	3.099	4.7	19.7	3 22	13 4.52	- 8 23.5	1.896	2.865	5.7	20.5
4 1	12 56.97	- 1 14.2	2.116	3.112	1.6	19.5	4 1	12 57.05	- 7 40.2	1.874	2.871	1.7	20.3
4 11	12 49.47	- 0 1.2	2.135	3.125	3.5	19.7	4 11	12 49.34	- 6 53.4	1.880	2.877	2.6	20.3
4 21	12 42.57	+ 1 3.2	2.184	3.137	7.0	19.9	4 21	12 42.22	- 6 8.3	1.914	2.883	6.5	20.6
5 1	12 36.93	+ 1 54.4	2.259	3.149	10.2	20.1	5 1	12 36.47	- 5 30.2	1.974	2.889	10.1	20.8
5 11	12 32.99	+ 2 30.0	2.357	3.160	12.9	20.3	5 11	12 32.61	- 5 3.0	2.057	2.896	13.2	21.0
264526	2001 <i>RG</i> ₆₁		4 4.4 171°39	2°4/ 1.7 16			446595	2015 <i>LO</i> ₂₃		4 4.4 278°51	4°7/10.1 16		
3 2	13 18.08	- 0 46.5	2.320	3.166	10.9	21.9	3 2	13 13.88	-24 4.8	2.460	3.222	12.9	21.5
3 12	13 12.55	+ 0 7.4	2.247	3.170	7.9	21.7	3 12	13 9.73	-23 53.7	2.353	3.206	10.7	21.3
3 22	13 5.20	+ 1 6.8	2.201	3.174	4.7	21.5	3 22	13 3.90	-23 22.7	2.268	3.189	8.1	21.1
4 1	12 57.46	+ 2 6.5	2.183	3.177	2.4	21.4	4 1	12 56.93	-22 31.7	2.208	3.172	5.7	20.9
4 11	12 48.89	+ 3 1.0	2.196	3.179	4.2	21.5	4 11	12 49.57	-21 23.4	2.177	3.156	4.7	20.8
4 21	12 41.09	+ 3 45.4	2.237	3.180	7.5	21.7	4 21	12 42.60	-20 2.9	2.173	3.139	6.1	20.8
5 1	12 34.52	+ 4 16.3	2.305	3.181	10.5	21.9	5 1	12 36.78	-18 36.6	2.197	3.122	8.8	21.0
5 11	12 29.69	+ 4 31.9	2.395	3.181	13.2	22.1	5 11	12 32.66	-17 11.7	2.246	3.105	11.5	21.1
128394	2004 <i>LG</i> ₃		4 4.4 265°03	0°5/ 3.9 18			405496	2004 <i>XL</i> ₁₈₂		4 4.4 81°41	7°5/10.7 18		
3 2	13 15.61	- 8 15.7	1.883	2.726	13.2	19.8	3 2	13 21.65	-25 13.0	1.501	2.280	19.1	20.7
3 12	13 11.28	- 7 19.8	1.790	2.710	9.8	19.6	3 12	13 16.16	-25 44.5	1.437	2.296	15.8	20.6
3 22	13 4.92	- 6 8.5	1.721	2.693	5.8	19.3	3 22	13 7.94	-25 47.5	1.391	2.312	12.2	20.4
4 1	12 57.18	- 4 46.7	1.679	2.677	1.4	19.0	4 1	12 57.97	-25 20.1	1.368	2.328	8.9	20.2
4 11	12 48.97	- 3 21.7	1.665	2.660	3.3	19.1	4 11	12 47.63	-24 25.6	1.370	2.344	7.5	20.2
4 21	12 41.26	- 2 1.3	1.679	2.643	7.8	19.3	4 21	12 38.30	-23 11.6	1.397	2.360	9.0	20.3
5 1	12 34.96	- 0 52.9	1.719	2.625	11.9	19.5	5 1	12 31.14	-21 48.7	1.448	2.376	12.1	20.5
5 11	12 30.72	- 0 1.5	1.781	2.608	15.5	19.7	5 11	12 26.82	-20 27.8	1.521	2.392	15.4	20.8
6539	Nohavica		4 4.4 248°67	1°1/ 5.5 18 R			17740	1998 <i>BC</i> ₁₉		4 4.4 300°91	4°6/31.5 18		
3 2	13 17.58	-11 21.0	2.162	2.984	12.5	18.7	3 2	13 18.28	+ 4 9.4	1.669	2.535	13.4	18.0
3 12	13 12.53	-11 1.1	2.063	2.969	9.5	18.5	3 12	13 13.40	+ 4 55.4	1.591	2.522	10.0	17.8
3 22	13 5.59	-10 27.6	1.989	2.953	5.9	18.2	3 22	13 6.25	+ 5 44.0	1.536	2.508	6.4	17.5
4 1	12 57.35	- 9 42.9	1.942	2.937	2.2	17.9	4 1	12 57.55	+ 6 28.1	1.508	2.495	4.6	17.4
4 11	12 48.66	- 8 51.3	1.924	2.920	2.5	17.9	4 11	12 48.38	+ 7 0.3	1.506	2.482	6.8	17.5
4 21	12 40.40	- 7 58.4	1.934	2.903	6.5	18.1	4 21	12 39.87	+ 7 15.4	1.530	2.469	10.6	17.7
5 1	12 33.41	- 7 9.9	1.971	2.885	10.2	18.3	5 1	12 33.00	+ 7 10.2	1.577	2.456	14.4	17.9
5 11	12 28.31	- 6 30.7	2.032	2.867	13.5	18.5	5 11	12 28.46	+ 6 44.6	1.643	2.443	17.7	18.0
402151	2004 <i>RX</i> ₁₄₆		4 4.4 148°78	2°1/ 6.2 18			303941	2005 <i>WZ</i> ₆₄		4 4.4 62°86	6°5/ 9.5 18		
3 2	13 21.99	-13 19.5	1.749	2.569	15.1	22.0	3 2	13 19.36	-22 15.2	1.371	2.175	19.3	20.5
3 12	13 15.95	-13 10.7	1.675	2.577	11.5	21.8	3 12	13 14.72	-22 34.2	1.300	2.180	15.7	20.3
3 22	13 7.64	-12 45.0	1.625	2.585	7.4	21.6	3 22	13 7.22	-22 24.7	1.248	2.186	11.7	20.1
4 1	12 57.86	-12 4.6	1.600	2.592	3.3	21.3	4 1	12 57.81	-21 45.5	1.218	2.192	7.9	19.9
4 11	12 47.74	-11 14.6	1.603	2.599	3.1	21.3	4 11	12 47.90	-20 40.7	1.213	2.198	6.5	19.8
4 21	12 38.41	-10 21.6	1.634	2.605	7.2	21.6	4 21	12 38.92	-19 19.1	1.232	2.204	8.9	20.0
5 1	12 30.84	- 9 32.5	1.692	2.611	11.3	21.8	5 1	12 32.14	-17 52.0	1.275	2.210	12.9	20.2
5 11	12 25.66	- 8 53.1	1.771	2.615	14.8	22.1	5 11	12 28.30	-16 31.0	1.339	2.216	16.7	20.5
417730	2007 <i>CS</i> ₄₂		4 4.4 62°30	3°9/31.8 18			274500	2008 <i>SZ</i> ₁₃₃		4 4.4 115°23	1°9/ 6.2 18		
3 2	13 16.24	+ 0 9.9	1.561	2.430	14.1	20.6	3 2	13 17.90	-13 14.2	2.035	2.854	13.3	20.7
3 12	13 11.69	+ 1 30.2	1.512	2.446	10.1	20.4	3 12	13 12.68	-13 2.4	1.961	2.862	10.1	20.5
3 22	13 5.05	+ 2 56.7	1.487	2.462	6.1	20.2	3 22	13 5.60	-12 36.0	1.911	2.871	6.5	20.3
4 1	12 57.17	+ 4 20.7	1.488	2.478	3.9	20.1	4 1	12 57.34	-11 57.3	1.887	2.880	2.9	20.1
4 11	12 49.15	+ 5 33.0	1.515	2.495	6.2	20.3	4 11	12 48.83	-11 10.7	1.892	2.888	2.7	20.1
4 21	12 42.02	+ 6 26.9	1.569	2.512	10.1	20.5	4 21	12 40.96	-10 21.7	1.925	2.896	6.3	20.3
5 1	12 36.62	+ 6 58.6	1.646	2.528	13.7	20.8	5 1	12 34.53	- 9 36.0	1.984	2.904	9.9	20.5
5 11	12 33.47	+ 7 7.7	1.742	2.545	16.7	21.0	5 11	12 30.07	- 8 58.7	2.067	2.911	13.0	20.8
383914	2008 <i>SX</i> ₁₂₂		4 4.4 267°80	0°2/ 4.2 17			304004	2006 <i>BQ</i> ₂₆₉		4 4.4 21°35	4°1/ 1.9 18		
3 2	13 17.42	- 6 56.2	1.956	2.798	12.9	21.4	3 2	13 18.00	+ 0 30.3	1.036	1.923	18.1	19.7
3 12	13 12.47	- 6 36.3	1.872	2.791	9.5	21.2	3 12	13 13.90	+ 1 7.8	0.987	1.929	13.2	19.5
3 22	13 5.56	- 6 5.7	1.812	2.784	5.6	21.0	3 22	13 6.75	+ 1 52.1	0.958	1.937	7.9	19.2
4 1	12 57.34	- 5 28.1	1.779	2.777	1.4	20.7	4 1	12 57.67	+ 2 34.1	0.951	1.946	4.1	19.0
4 11	12 48.73	- 4 48.4	1.774	2.770	3.0	20.8	4 11	12 48.28	+ 3 4.1	0.968	1.956	7.0	19.2
4 21	12 40.68	- 4 12.0	1.797	2.763	7.2	21.0	4 21	12 40.14	+ 3 15.2	1.006	1.967	12.0	19.5
5 1	12 34.04	- 3 43.8	1.846	2.755	11.0	21.2	5 1	12 34.48	+ 3 4.1	1.065	1.979	16.8	19.8
5 11	12 29.43	- 3 27.5	1.916	2.748	14.3	21.4	5 11	12 31.94	+ 2 31.0	1.141	1.992	20.8	20.1
334991	2004 <i>FW</i> ₉₆		4 4.4 338°55	5°8/28.6 17			248046	2004 <i>HM</i> ₅₅		4 4.4 334°73	9°1/27.4 17		

EPHEMERIDES

4 4.4

4 4.4

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
109298	2001 <i>QQ</i> ₁₂₇		4 4.4 109°02	5°4/ 9.4 18			208993	2003 <i>AZ</i> ₆₉		4 4.4 44°96	0°1/ 4.3 18		
3 2	13 17.94	-22 10.4	1.767	2.555	16.3	19.5	3 2	13 16.33	- 7 42.8	1.760	2.607	13.8	20.4
3 12	13 13.13	-22 16.1	1.688	2.558	13.2	19.2	3 12	13 11.56	- 7 13.5	1.710	2.631	10.1	20.2
3 22	13 6.06	-21 58.1	1.629	2.562	9.8	19.0	3 22	13 4.90	- 6 32.8	1.683	2.655	5.9	20.0
4 1	12 57.49	-21 16.4	1.594	2.566	6.6	18.9	4 1	12 57.16	- 5 45.1	1.683	2.680	1.5	19.8
4 11	12 48.52	-20 14.5	1.586	2.570	5.4	18.8	4 11	12 49.33	- 4 56.7	1.710	2.706	3.0	19.9
4 21	12 40.26	-18 59.4	1.604	2.573	7.5	18.9	4 21	12 42.33	- 4 13.4	1.764	2.731	7.1	20.2
5 1	12 33.71	-17 39.8	1.648	2.577	10.9	19.1	5 1	12 36.91	- 3 40.1	1.844	2.757	10.8	20.5
5 11	12 29.51	-16 24.5	1.714	2.580	14.2	19.3	5 11	12 33.55	- 3 20.0	1.945	2.783	13.9	20.8
435373	2007 <i>VV</i> ₃₂₇		4 4.4 96°79	3°9/ 8.8 17			224216	2005 <i>SY</i> ₃₅		4 4.4 157°44	0°1/ 4.5 17		
3 2	13 16.56	-20 14.1	2.312	3.094	13.1	20.8	3 2	13 19.57	- 8 1.4	2.208	3.036	12.1	21.8
3 12	13 11.56	-20 14.6	2.236	3.107	10.4	20.7	3 12	13 13.76	- 7 41.0	2.132	3.043	8.9	21.6
3 22	13 4.89	-19 57.7	2.183	3.119	7.5	20.5	3 22	13 6.19	- 7 10.5	2.081	3.050	5.3	21.3
4 1	12 57.16	-19 24.3	2.155	3.130	4.8	20.4	4 1	12 57.51	- 6 33.0	2.058	3.055	1.4	21.1
4 11	12 49.20	-18 37.6	2.156	3.142	4.0	20.3	4 11	12 48.59	- 5 53.1	2.065	3.061	2.6	21.2
4 21	12 41.82	-17 42.5	2.186	3.154	5.9	20.5	4 21	12 40.27	- 5 15.4	2.101	3.065	6.4	21.4
5 1	12 35.74	-16 44.9	2.242	3.165	8.7	20.6	5 1	12 33.29	- 4 44.4	2.163	3.069	9.8	21.7
5 11	12 31.44	-15 50.5	2.323	3.176	11.4	20.8	5 11	12 28.17	- 4 23.5	2.250	3.073	12.8	21.9
430015	2013 <i>RT</i> ₃		4 4.4 125°39	1°2/ 3.2 17			291443	2006 <i>DQ</i> ₃₅		4 4.4 218°11	1°0/ 3.4 17		
3 2	13 16.48	- 5 25.7	2.025	2.871	12.3	21.9	3 2	13 18.62	- 6 51.6	1.817	2.660	13.6	21.2
3 12	13 11.58	- 4 35.1	1.957	2.879	8.9	21.7	3 12	13 13.51	- 5 53.7	1.732	2.652	10.0	21.0
3 22	13 4.91	- 3 34.7	1.914	2.888	5.2	21.4	3 22	13 6.25	- 4 41.7	1.671	2.644	5.8	20.7
4 1	12 57.17	- 2 29.6	1.898	2.896	1.5	21.2	4 1	12 57.57	- 3 21.2	1.637	2.635	1.5	20.4
4 11	12 49.22	- 1 26.1	1.911	2.903	3.5	21.4	4 11	12 48.45	- 1 59.7	1.632	2.625	3.7	20.5
4 21	12 41.90	- 0 30.2	1.953	2.911	7.3	21.6	4 21	12 39.93	- 0 45.1	1.655	2.614	8.2	20.8
5 1	12 35.97	+ 0 13.3	2.020	2.918	10.8	21.8	5 1	12 32.95	+ 0 15.6	1.703	2.603	12.3	21.0
5 11	12 31.93	+ 0 41.6	2.110	2.925	13.8	22.0	5 11	12 28.17	+ 0 58.2	1.773	2.592	15.9	21.2
173344	1999 <i>XB</i> ₆₈		4 4.4 82°50	0°9/ 3.6 18			153105	2000 <i>SZ</i> ₄₂		4 4.4 288°06	3°8/ 6.3 17		
3 2	13 19.22	- 6 32.6	1.572	2.423	15.0	20.3	3 2	13 29.51	-12 33.0	1.795	2.603	15.3	19.4
3 12	13 13.88	- 5 46.2	1.518	2.442	10.9	20.1	3 12	13 21.99	-13 44.0	1.693	2.585	12.0	19.1
3 22	13 6.35	- 4 47.4	1.487	2.461	6.3	19.9	3 22	13 11.60	-14 45.9	1.615	2.568	8.2	18.9
4 1	12 57.53	- 3 42.2	1.483	2.481	1.6	19.6	4 1	12 59.03	-15 36.1	1.564	2.550	4.6	18.6
4 11	12 48.57	- 2 38.5	1.506	2.500	3.8	19.8	4 11	12 45.47	-16 14.0	1.543	2.533	4.5	18.6
4 21	12 40.55	- 1 43.5	1.555	2.518	8.3	20.1	4 21	12 32.32	-16 40.7	1.550	2.515	8.1	18.7
5 1	12 34.36	- 1 2.8	1.629	2.537	12.4	20.4	5 1	12 20.92	-17 0.1	1.585	2.498	12.3	18.9
5 11	12 30.53	- 0 39.4	1.724	2.555	15.7	20.7	5 11	12 12.22	-17 17.4	1.643	2.481	16.1	19.1
346840	2009 <i>DM</i> ₅₇		4 4.4 137°25	1°5/ 6.0 17			125178	2001 <i>UG</i> ₁₁₃		4 4.4 171°74	0°4/ 4.7 18		
3 2	13 17.88	-11 58.0	2.462	3.276	11.5	21.3	3 2	13 19.47	- 9 34.1	1.522	2.366	15.7	20.2
3 12	13 12.40	-11 57.3	2.383	3.282	8.7	21.2	3 12	13 14.41	- 9 3.4	1.449	2.367	11.7	20.0
3 22	13 5.34	-11 45.5	2.329	3.289	5.5	21.0	3 22	13 6.88	- 8 16.0	1.397	2.368	7.1	19.7
4 1	12 57.28	-11 24.4	2.303	3.295	2.4	20.8	4 1	12 57.74	- 7 16.5	1.372	2.369	2.0	19.4
4 11	12 48.98	-10 57.2	2.306	3.301	2.4	20.8	4 11	12 48.17	- 6 11.9	1.373	2.369	3.3	19.5
4 21	12 41.19	-10 27.8	2.338	3.307	5.5	21.0	4 21	12 39.41	- 5 10.6	1.400	2.370	8.3	19.8
5 1	12 34.59	-10 0.2	2.398	3.313	8.6	21.2	5 1	12 32.53	- 4 19.9	1.452	2.370	12.9	20.0
5 11	12 29.66	- 9 38.2	2.482	3.318	11.3	21.4	5 11	12 28.19	- 3 45.2	1.525	2.370	16.7	20.3
134694	1999 <i>XX</i> ₇₂		4 4.4 167°80	3°1/ 1.9 18			267061	1998 <i>WD</i> ₄₄		4 4.4 123°50	1°2/ 3.3 18		
3 2	13 22.04	- 0 53.2	1.633	2.488	14.3	21.1	3 2	13 19.80	- 4 53.1	2.017	2.858	12.5	22.0
3 12	13 16.05	+ 0 1.7	1.566	2.492	10.4	20.8	3 12	13 13.94	- 4 11.7	1.955	2.875	9.1	21.9
3 22	13 7.72	+ 1 4.3	1.522	2.496	6.2	20.6	3 22	13 6.27	- 3 21.6	1.918	2.891	5.2	21.7
4 1	12 57.91	+ 2 7.6	1.506	2.500	3.1	20.4	4 1	12 57.53	- 2 27.6	1.909	2.907	1.5	21.4
4 11	12 47.79	+ 3 3.4	1.517	2.502	5.5	20.5	4 11	12 48.64	- 1 35.7	1.930	2.922	3.4	21.6
4 21	12 38.50	+ 3 45.3	1.556	2.504	9.7	20.8	4 21	12 40.48	- 0 51.1	1.979	2.936	7.3	21.9
5 1	12 31.04	+ 4 8.8	1.618	2.505	13.6	21.0	5 1	12 33.81	- 0 18.1	2.054	2.950	10.7	22.1
5 11	12 26.03	+ 4 12.6	1.701	2.505	17.0	21.2	5 11	12 29.11	+ 0 0.7	2.152	2.963	13.7	22.3
323754	2005 <i>OV</i> ₃		4 4.4 229°18	5°9/29.5 17			24268	Charconley		4 4.4 7°82	0°4/ 3.9 18		
3 2	13 19.56	+ 8 54.9	1.982	2.840	12.0	20.9	3 2	13 15.23	- 7 38.0	1.952	2.795	12.8	18.9
3 12	13 14.00	+10 0.9	1.908	2.831	9.1	20.7	3 12	13 10.82	- 6 55.5	1.875	2.795	9.4	18.7
3 22	13 6.44	+11 5.5	1.860	2.821	6.6	20.5	3 22	13 4.56	- 6 0.7	1.823	2.795	5.5	18.5
4 1	12 57.59	+12 1.3	1.840	2.810	6.0	20.4	4 1	12 57.12	- 4 58.2	1.797	2.795	1.3	18.2
4 11	12 48.39	+12 41.5	1.846	2.800	7.8	20.5	4 11	12 49.39	- 3 54.3	1.800	2.795	3.0	18.3
4 21	12 39.80	+13 1.4	1.880	2.788	10.8	20.7	4 21	12 42.26	- 2 55.3	1.831	2.795	7.2	18.6
5 1	12 32.68	+12 59.4	1.936	2.776	13.8	20.8	5 1	12 36.51	- 2 6.9	1.887	2.796	10.9	18.8
5 11	12 27.62	+12 36.0	2.012	2.764	16.4	21.0	5 11	12 32.69	- 1 32.9	1.966	2.796	14.1	19.0
141108	2001 <i>XC</i> ₅₈		4 4.4 164°85	0°5/ 3.8 18			214764	2006 <i>TN</i> ₁₂₀		4 4.4 71°99	4°2/30.5 17		
3 2	13 15.16	- 6 3.9	2.816	3.648	9.6	20.9	3 2	13 14.69	+ 5 11.3	2.216	3.077	10.8	20.2
3 12	13 10.22	- 5 32.6	2.737	3.652	7.0	20.7	3 12	13 10.10	+ 6 14.5	2.161	3.089	7.9	20.1
3 22	13 3.98	- 4 54.2	2.685	3.656	4.1	20.5	3 22	13 3.98	+ 7 18.3	2.132	3.100	5.3	19.9
4 1	12 56.93	- 4 11.6	2.662	3.659	1.0	20.3	4 1	12 56.95	+ 8 16.4	2.130	3.111	4.2	19.9
4 11	12 49.70	- 3 28.8	2.669	3.663	2.4	20.4	4 11	12 49.78	+ 9 3.2	2.157	3.123	5.9	20.0
4 21	12 42.90	- 2 49.6	2.706	3.665	5.4	20.6	4 21	12 43.21	+ 9 34.8	2.211	3.134	8.7	20.2
5 1	12 37.08	- 2 17.3	2.770	3.668	8.2	20.8	5 1	12 37.88	+ 9 49.0	2.289	3.145	11.4	20.4
5 11	12 32.65	- 1 54.5	2.859	3.670	10.7	21.0	5 11	12 34.23	+ 9 45.8	2.388	3.157	13.7	20.6
349870	2009 <i>DB</i> ₆₃		4 4.4 133°67	0°8/ 3.6 17			262818	2007 <i>AQ</i> ₁₆		4 4.4 73°07	2°6/ 6.7 18		

EPHEMERIDES

4 4.4

4 4.4

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
348819	2006 RQ ₂₇		4 4.4 121°63	4.2/29.2	18		508285	2015 JZ ₁₂		4 4.4 339°28	1.9/ 2.1	17	
3 2	13 14.05	+ 6 48.4	2.723	3.579	9.2	21.1	3 2	13 12.77	- 3 16.7	2.216	3.068	11.1	21.4
3 12	13 9.39	+ 8 11.2	2.671	3.594	6.8	20.9	3 12	13 8.83	- 2 14.8	2.140	3.066	8.0	21.1
3 22	13 3.46	+ 9 33.4	2.647	3.609	4.8	20.8	3 22	13 3.32	- 1 4.8	2.089	3.065	4.6	20.9
4 1	12 56.81	+10 49.4	2.652	3.624	4.3	20.8	4 1	12 56.83	+ 0 8.2	2.067	3.063	1.9	20.7
4 11	12 50.05	+11 53.9	2.687	3.639	5.8	20.9	4 11	12 50.09	+ 1 17.8	2.074	3.061	3.9	20.9
4 21	12 43.78	+12 43.2	2.750	3.652	8.0	21.1	4 21	12 43.85	+ 2 18.3	2.109	3.060	7.3	21.1
5 1	12 38.53	+13 15.3	2.838	3.666	10.2	21.2	5 1	12 38.78	+ 3 5.2	2.169	3.059	10.5	21.3
5 11	12 34.68	+13 30.2	2.947	3.679	12.1	21.4	5 11	12 35.36	+ 3 36.0	2.251	3.057	13.3	21.5
247792	2003 SM ₄₀		4 4.4 200°71	1.8/ 6.1	16		486708	2014 AZ ₄₁		4 4.4 238°91	14.2/13.9	18	
3 2	13 20.03	-13 9.2	1.955	2.772	13.8	21.2	3 2	13 25.53	-34 48.2	1.350	2.079	23.1	21.6
3 12	13 14.46	-12 51.7	1.868	2.769	10.6	20.9	3 12	13 20.29	-36 30.4	1.267	2.072	20.7	21.4
3 22	13 6.79	-12 18.2	1.804	2.765	6.8	20.7	3 22	13 11.19	-37 40.1	1.200	2.065	18.1	21.2
4 1	12 57.72	-11 30.9	1.767	2.760	2.9	20.4	4 1	12 59.05	-38 7.4	1.151	2.058	15.7	21.0
4 11	12 48.23	-10 34.7	1.759	2.755	2.8	20.4	4 11	12 45.57	-37 47.1	1.122	2.050	14.3	20.9
4 21	12 39.34	- 9 35.8	1.778	2.749	6.8	20.7	4 21	12 32.83	-36 41.6	1.114	2.042	14.7	20.9
5 1	12 31.94	- 8 40.9	1.825	2.742	10.7	20.9	5 1	12 22.81	-35 2.1	1.127	2.033	16.7	21.0
5 11	12 26.69	- 7 55.5	1.894	2.734	14.1	21.1	5 11	12 16.74	-33 5.3	1.158	2.025	19.5	21.1
103042	1999 XO ₁₂₂		4 4.4 157°96	1.9/ 6.1	18		297772	2001 XG ₁₈₅		4 4.4 57°30	1.1/ 5.3	18	
3 2	13 21.05	-12 37.2	1.855	2.675	14.3	19.6	3 2	13 19.15	-11 12.9	1.249	2.101	18.0	20.0
3 12	13 15.21	-12 32.7	1.778	2.680	10.9	19.4	3 12	13 14.36	-10 45.5	1.197	2.118	13.5	19.8
3 22	13 7.22	-12 13.0	1.724	2.685	7.0	19.1	3 22	13 6.88	- 9 57.9	1.166	2.136	8.2	19.6
4 1	12 57.83	-11 40.1	1.696	2.689	3.0	18.9	4 1	12 57.75	- 8 55.4	1.158	2.154	2.7	19.3
4 11	12 48.08	-10 58.6	1.697	2.693	3.0	18.9	4 11	12 48.41	- 7 46.8	1.175	2.172	3.5	19.4
4 21	12 39.03	-10 14.2	1.726	2.696	6.9	19.2	4 21	12 40.22	- 6 41.5	1.217	2.191	8.7	19.7
5 1	12 31.61	- 9 33.1	1.780	2.699	10.8	19.4	5 1	12 34.25	- 5 48.2	1.283	2.210	13.5	20.0
5 11	12 26.43	- 9 0.6	1.858	2.701	14.3	19.6	5 11	12 31.09	- 5 12.1	1.368	2.229	17.4	20.3
360364	2002 AE ₆₉		4 4.4 1°44	1.4/ 5.5	18		249108	2007 VQ ₃₀₀		4 4.4 138°59	4.2/30.2	17	
3 2	13 12.68	-11 48.2	1.076	1.944	19.0	20.2	3 2	13 15.83	+ 6 48.7	2.501	3.357	9.9	20.9
3 12	13 10.15	-11 22.2	1.012	1.941	14.4	19.9	3 12	13 10.81	+ 7 48.1	2.442	3.365	7.4	20.7
3 22	13 4.68	-10 31.4	0.967	1.940	9.0	19.6	3 22	13 4.37	+ 8 46.8	2.409	3.373	5.1	20.6
4 1	12 57.23	- 9 20.7	0.943	1.940	3.1	19.2	4 1	12 57.08	+ 9 39.5	2.404	3.381	4.3	20.5
4 11	12 49.25	- 7 59.9	0.943	1.941	3.8	19.3	4 11	12 49.64	+10 21.1	2.429	3.388	5.8	20.6
4 21	12 42.25	- 6 41.0	0.965	1.944	9.6	19.6	4 21	12 42.74	+10 48.3	2.481	3.395	8.3	20.8
5 1	12 37.52	- 5 35.2	1.009	1.948	15.0	19.9	5 1	12 36.97	+10 59.2	2.558	3.402	10.7	21.0
5 11	12 35.80	- 4 50.1	1.071	1.953	19.6	20.2	5 11	12 32.76	+10 53.9	2.656	3.408	12.9	21.1
236291	2006 AC ₅₆		4 4.4 171°65	1.8/ 2.4	17		63497	2001 OG ₆₅		4 4.4 137°88	2.4/ 1.7	18	
3 2	13 17.23	- 2 41.2	2.420	3.263	10.7	22.3	3 2	13 17.33	+ 1 0.3	2.576	3.422	10.0	20.0
3 12	13 11.91	- 1 50.7	2.345	3.267	7.7	22.1	3 12	13 11.85	+ 1 34.5	2.509	3.432	7.2	19.8
3 22	13 5.06	- 0 53.5	2.297	3.270	4.5	21.9	3 22	13 4.97	+ 2 11.4	2.470	3.442	4.3	19.6
4 1	12 57.25	+ 0 5.6	2.277	3.272	1.8	21.7	4 1	12 57.23	+ 2 47.0	2.459	3.451	2.4	19.5
4 11	12 49.23	+ 1 1.4	2.287	3.274	3.6	21.8	4 11	12 49.35	+ 3 17.2	2.478	3.460	3.9	19.6
4 21	12 41.73	+ 1 49.2	2.327	3.276	6.9	22.0	4 21	12 41.99	+ 3 38.6	2.526	3.468	6.8	19.8
5 1	12 35.40	+ 2 25.3	2.393	3.277	9.9	22.2	5 1	12 35.76	+ 3 48.9	2.600	3.476	9.5	20.0
5 11	12 30.71	+ 2 47.4	2.482	3.277	12.5	22.4	5 11	12 31.07	+ 3 46.9	2.698	3.484	11.9	20.2
385110	2012 VE ₉₉		4 4.4 99°58	1.4/ 2.7	17		295876	2008 WE ₄₀		4 4.4 317°26	1.3/ 5.4	15	
3 2	13 13.57	- 5 6.1	2.293	3.139	11.1	20.9	3 2	13 15.01	-11 36.4	1.196	2.055	18.1	20.5
3 12	13 9.29	- 3 59.6	2.226	3.149	8.0	20.7	3 12	13 11.88	-11 11.1	1.114	2.039	13.8	20.2
3 22	13 3.52	- 2 44.1	2.184	3.158	4.6	20.5	3 22	13 5.80	-10 22.1	1.052	2.024	8.7	19.8
4 1	12 56.85	- 1 25.0	2.171	3.168	1.5	20.3	4 1	12 57.58	- 9 12.8	1.013	2.009	3.0	19.4
4 11	12 50.02	- 0 8.4	2.187	3.177	3.4	20.4	4 11	12 48.57	- 7 51.8	0.997	1.995	3.7	19.4
4 21	12 43.72	+ 1 0.0	2.232	3.186	6.8	20.7	4 21	12 40.30	- 6 30.2	1.005	1.981	9.7	19.7
5 1	12 38.60	+ 1 55.4	2.304	3.195	9.9	20.9	5 1	12 34.16	- 5 19.5	1.034	1.968	15.2	20.0
5 11	12 35.08	+ 2 35.4	2.398	3.204	12.6	21.1	5 11	12 31.07	- 4 28.4	1.082	1.956	20.0	20.2
44972	1999 VB ₁₁₂		4 4.4 169°36	0.1/ 4.6	18		102961	1999 XZ ₆₅		4 4.4 169°75	0.0/ 4.4	18	
3 2	13 16.65	- 8 39.0	2.169	3.002	12.1	19.9	3 2	13 19.48	- 8 41.7	2.057	2.887	12.8	21.0
3 12	13 11.70	- 8 9.1	2.090	3.004	8.9	19.7	3 12	13 13.84	- 8 6.8	1.979	2.891	9.4	20.8
3 22	13 5.02	- 7 27.9	2.036	3.005	5.3	19.5	3 22	13 6.32	- 7 19.7	1.926	2.895	5.6	20.6
4 1	12 57.26	- 6 39.0	2.009	3.007	1.4	19.2	4 1	12 57.61	- 6 24.2	1.901	2.898	1.5	20.3
4 11	12 49.22	- 5 47.2	2.012	3.008	2.6	19.3	4 11	12 48.61	- 5 26.0	1.905	2.900	2.8	20.4
4 21	12 41.73	- 4 58.1	2.043	3.009	6.4	19.5	4 21	12 40.24	- 4 30.9	1.938	2.902	6.8	20.7
5 1	12 35.54	- 4 16.4	2.100	3.009	9.9	19.7	5 1	12 33.29	- 3 44.4	1.997	2.903	10.5	20.9
5 11	12 31.15	- 3 45.9	2.181	3.010	12.9	19.9	5 11	12 28.32	- 3 10.4	2.080	2.903	13.7	21.1
203759	2002 RL ₁₆₁		4 4.4 210°85	0.3/ 4.1	18		119573	2001 VP ₉₀		4 4.4 331°15	9.0/26.4	18	
3 2	13 16.56	- 6 55.2	2.256	3.092	11.6	20.9	3 2	13 17.86	+15 28.3	1.682	2.547	13.4	18.8
3 12	13 11.61	- 6 28.3	2.173	3.089	8.5	20.7	3 12	13 12.99	+17 0.8	1.630	2.546	10.9	18.7
3 22	13 4.97	- 5 52.0	2.115	3.086	5.0	20.5	3 22	13 5.93	+18 24.8	1.602	2.544	9.2	18.6
4 1	12 57.26	- 5 9.6	2.085	3.083	1.2	20.2	4 1	12 57.52	+19 30.3	1.598	2.543	9.3	18.6
4 11	12 49.24	- 4 25.7	2.084	3.079	2.7	20.3	4 11	12 48.84	+20 9.6	1.620	2.541	11.2	18.7
4 21	12 41.73	- 3 45.1	2.111	3.075	6.4	20.6	4 21	12 40.98	+20 19.1	1.665	2.540	13.8	18.8
5 1	12 35.44	- 3 12.3	2.166	3.071	9.8	20.8	5 1	12 34.84	+19 58.8	1.730	2.539	16.5	19.0
5 11	12 30.90	- 2 50.6	2.243	3.066	12.8	20.9	5 11	12 30.99	+19 12.2	1.812	2.538	18.8	19.2
437658	2014 CZ ₃		4 4.4 65°20	1.8/ 6.2	17		125062	2001 TG ₂₃₄		4 4.4 291°29	3.8/11.6	18	
3 2	13 17.70	-12 12.4	2.202	3.020									

EPHEMERIDES

4 4.4

4 4.4

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
418206	2008 CQ ₁₂₇	4 4.4 337°08	3°4/ 1.4 17				277626	2006 BZ ₃₇	4 4.4 137°86	1°4/ 5.7 17			
3 2	13 14.66	- 1 45.2	1.404	2.277	15.1	20.9	3 2	13 18.64	-11 16.4	1.984	2.809	13.3	21.3
3 12	13 11.02	- 0 32.9	1.335	2.271	11.0	20.6	3 12	13 13.35	-11 10.6	1.906	2.812	10.1	21.1
3 22	13 4.97	+ 0 50.8	1.288	2.265	6.5	20.3	3 22	13 6.11	-10 51.6	1.851	2.815	6.3	20.9
4 1	12 57.31	+ 2 17.2	1.266	2.260	3.4	20.1	4 1	12 57.61	-10 21.8	1.823	2.818	2.5	20.6
4 11	12 49.22	+ 3 36.0	1.270	2.255	6.2	20.3	4 11	12 48.78	- 9 45.3	1.824	2.821	2.7	20.6
4 21	12 41.90	+ 4 38.0	1.298	2.251	10.7	20.5	4 21	12 40.57	- 9 7.3	1.853	2.823	6.5	20.9
5 1	12 36.40	+ 5 17.2	1.349	2.247	15.1	20.7	5 1	12 33.81	- 8 33.2	1.908	2.826	10.3	21.1
5 11	12 33.40	+ 5 31.3	1.418	2.244	18.8	21.0	5 11	12 29.09	- 8 7.5	1.985	2.828	13.5	21.3
9219	1995 WO ₈	4 4.4 349°46	6°6/28.1 18				428744	2008 SL ₁	4 4.4 183°68	1°8/ 6.5 17			
3 2	13 10.44	+ 7 14.9	1.652	2.533	12.7	15.8	3 2	13 18.29	-13 44.9	2.677	3.478	11.0	22.0
3 12	13 7.61	+ 8 59.2	1.589	2.524	9.6	15.5	3 12	13 12.68	-13 34.2	2.587	3.478	8.4	21.9
3 22	13 2.81	+10 45.0	1.550	2.516	7.1	15.4	3 22	13 5.56	-13 11.7	2.523	3.478	5.5	21.7
4 1	12 56.74	+12 22.0	1.538	2.510	6.8	15.3	4 1	12 57.45	-12 38.9	2.487	3.477	2.6	21.5
4 11	12 50.34	+13 40.6	1.551	2.504	9.0	15.5	4 11	12 49.08	-11 59.0	2.481	3.476	2.3	21.4
4 21	12 44.58	+14 34.0	1.588	2.499	12.2	15.6	4 21	12 41.15	-11 16.1	2.505	3.474	5.2	21.6
5 1	12 40.30	+14 59.2	1.646	2.495	15.4	15.8	5 1	12 34.30	-10 34.5	2.558	3.471	8.2	21.8
5 11	12 38.06	+14 56.7	1.722	2.492	18.1	16.0	5 11	12 29.03	- 9 58.4	2.635	3.468	10.9	22.0
425708	2011 BO ₁₄	4 4.4 254°24	8°1/26.1 17				192851	1999 VL ₁₇₅	4 4.4 300°67	3°1/ 2.2 17			
3 2	13 16.72	+13 57.6	1.875	2.738	12.3	20.3	3 2	13 22.06	+ 1 53.5	1.736	2.592	13.5	19.5
3 12	13 12.07	+15 41.7	1.812	2.728	9.9	20.1	3 12	13 16.33	+ 2 3.4	1.641	2.567	10.0	19.3
3 22	13 5.39	+17 20.9	1.773	2.718	8.3	20.0	3 22	13 8.15	+ 2 16.0	1.570	2.543	6.2	19.0
4 1	12 57.40	+18 45.4	1.762	2.707	8.5	20.0	4 1	12 58.20	+ 2 26.2	1.526	2.519	3.2	18.7
4 11	12 49.06	+19 47.0	1.776	2.697	10.4	20.1	4 11	12 47.56	+ 2 28.9	1.509	2.495	5.3	18.8
4 21	12 41.36	+20 20.8	1.814	2.686	13.0	20.2	4 21	12 37.43	+ 2 19.7	1.519	2.471	9.6	19.0
5 1	12 35.15	+20 25.6	1.874	2.675	15.7	20.4	5 1	12 28.91	+ 1 55.9	1.554	2.447	13.7	19.2
5 11	12 31.04	+20 3.5	1.950	2.663	18.0	20.5	5 11	12 22.81	+ 1 16.7	1.609	2.424	17.4	19.4
387581	2001 TV ₂₁₃	4 4.4 204°36	3°4/ 8.3 17				161906	2007 DW ₅₉	4 4.4 81°45	1°3/ 5.3 18			
3 2	13 16.83	-19 0.1	2.622	3.403	11.7	21.7	3 2	13 23.13	- 9 54.4	1.279	2.127	17.9	20.2
3 12	13 11.72	-19 3.8	2.528	3.399	9.3	21.5	3 12	13 17.41	- 9 54.2	1.219	2.138	13.5	20.0
3 22	13 5.03	-18 52.9	2.457	3.395	6.7	21.3	3 22	13 8.79	- 9 37.0	1.179	2.149	8.3	19.7
4 1	12 57.30	-18 27.7	2.414	3.391	4.2	21.1	4 1	12 58.32	- 9 6.0	1.163	2.160	2.8	19.4
4 11	12 49.25	-17 50.9	2.400	3.387	3.5	21.1	4 11	12 47.48	- 8 27.6	1.173	2.171	3.6	19.5
4 21	12 41.62	-17 6.2	2.414	3.382	5.5	21.2	4 21	12 37.75	- 7 49.5	1.209	2.181	8.9	19.8
5 1	12 35.08	-16 18.6	2.457	3.377	8.2	21.4	5 1	12 30.33	- 7 19.1	1.267	2.192	13.8	20.1
5 11	12 30.16	-15 33.0	2.524	3.371	10.8	21.5	5 11	12 25.92	- 7 1.8	1.345	2.203	17.8	20.4
55083	2001 QV ₁₁₀	4 4.4 199°77	2°3/ 7.2 18				496939	2001 WO ₃₃	4 4.4 152°25	4°7/29.8 18			
3 2	13 15.06	-16 10.1	2.487	3.288	11.7	19.3	3 2	13 17.04	+ 9 28.4	2.570	3.422	9.8	21.2
3 12	13 10.44	-15 48.2	2.397	3.286	9.1	19.1	3 12	13 11.68	+10 17.1	2.508	3.427	7.4	21.0
3 22	13 4.27	-15 11.5	2.331	3.283	6.1	18.9	3 22	13 4.90	+11 3.2	2.474	3.432	5.4	20.9
4 1	12 57.11	-14 21.7	2.293	3.281	3.2	18.7	4 1	12 57.27	+11 41.4	2.467	3.437	4.8	20.9
4 11	12 49.66	-13 22.7	2.284	3.278	2.7	18.7	4 11	12 49.48	+12 7.5	2.490	3.441	6.2	20.9
4 21	12 42.67	-12 19.5	2.303	3.274	5.4	18.8	4 21	12 42.23	+12 18.6	2.540	3.445	8.5	21.1
5 1	12 36.80	-11 17.6	2.351	3.271	8.5	19.0	5 1	12 36.10	+12 13.7	2.615	3.449	10.8	21.3
5 11	12 32.54	-10 22.1	2.423	3.267	11.3	19.2	5 11	12 31.54	+11 53.2	2.711	3.452	12.9	21.4
60353	2000 AN ₈₈	4 4.4 162°88	0°1/ 4.3 18				311240	2005 CT ₃₀	4 4.4 179°63	1°7/ 2.7 17			
3 2	13 20.47	- 8 30.0	1.531	2.376	15.6	19.4	3 2	13 20.38	- 3 19.7	2.068	2.910	12.2	21.8
3 12	13 15.13	- 7 49.8	1.460	2.380	11.6	19.1	3 12	13 14.50	- 2 32.9	1.992	2.912	8.9	21.6
3 22	13 7.32	- 6 53.7	1.411	2.383	6.9	18.8	3 22	13 6.73	- 1 37.9	1.941	2.914	5.2	21.4
4 1	12 57.92	- 5 46.9	1.388	2.386	1.7	18.5	4 1	12 57.76	- 0 39.7	1.918	2.914	1.9	21.2
4 11	12 48.14	- 4 37.2	1.393	2.389	3.5	18.6	4 11	12 48.51	+ 0 15.5	1.925	2.914	3.9	21.3
4 21	12 39.20	- 3 33.0	1.424	2.391	8.5	18.9	4 21	12 39.88	+ 1 2.2	1.960	2.913	7.7	21.5
5 1	12 32.15	- 2 41.6	1.479	2.392	13.0	19.2	5 1	12 32.66	+ 1 36.0	2.022	2.911	11.2	21.7
5 11	12 27.65	- 2 7.6	1.556	2.393	16.8	19.5	5 11	12 27.43	+ 1 54.5	2.106	2.908	14.2	21.9
289986	2005 OG ₂₇	4 4.4 202°93	3°7/ 8.6 18				12097	1998 HG ₁₂₁	4 4.4 218°34	3°0/ 1.5 18 R			
3 2	13 16.51	-19 26.7	2.502	3.284	12.2	20.7	3 2	13 18.46	- 0 45.2	1.854	2.709	12.8	18.0
3 12	13 11.55	-19 35.7	2.412	3.283	9.8	20.5	3 12	13 13.34	+ 0 18.8	1.775	2.702	9.3	17.7
3 22	13 4.96	-19 29.4	2.345	3.281	7.0	20.4	3 22	13 6.17	+ 1 30.7	1.721	2.695	5.6	17.5
4 1	12 57.30	-19 8.2	2.304	3.280	4.5	20.2	4 1	12 57.64	+ 2 43.8	1.694	2.687	3.1	17.3
4 11	12 49.32	-18 34.5	2.292	3.278	3.8	20.1	4 11	12 48.73	+ 3 50.6	1.696	2.679	5.3	17.4
4 21	12 41.78	-17 52.2	2.309	3.276	5.7	20.2	4 21	12 40.42	+ 4 44.2	1.726	2.670	9.2	17.6
5 1	12 35.39	-17 6.3	2.353	3.274	8.4	20.4	5 1	12 33.62	+ 5 20.0	1.779	2.661	12.9	17.8
5 11	12 30.68	-16 22.1	2.421	3.272	11.1	20.6	5 11	12 28.94	+ 5 35.9	1.854	2.651	16.1	18.0
4600	Meadows	4 4.4 226°50	3°9/30.5 18				233738	2008 SN ₂₅₇	4 4.4 128°86	1°4/ 2.9 18			
3 2	13 14.42	+ 4 19.4	2.383	3.242	10.2	17.0	3 2	13 17.81	- 3 19.8	2.123	2.968	11.8	20.9
3 12	13 9.96	+ 5 29.3	2.309	3.236	7.5	16.8	3 12	13 12.53	- 2 47.2	2.053	2.975	8.6	20.7
3 22	13 3.99	+ 6 41.6	2.262	3.230	5.0	16.6	3 22	13 5.52	- 2 7.7	2.009	2.982	5.0	20.5
4 1	12 57.04	+ 7 50.2	2.243	3.224	4.0	16.6	4 1	12 57.44	- 1 25.5	1.992	2.989	1.6	20.3
4 11	12 49.85	+ 8 49.3	2.252	3.218	5.7	16.7	4 11	12 49.15	- 0 45.8	2.005	2.996	3.5	20.4
4 21	12 43.13	+ 9 34.2	2.290	3.212	8.4	16.8	4 21	12 41.47	- 0 13.3	2.046	3.002	7.1	20.7
5 1	12 37.52	+10 2.0	2.352	3.205	11.2	17.0	5 1	12 35.13	+ 0 8.3	2.112	3.008	10.5	20.9
5 11	12 33.51	+10 11.8	2.435	3.198	13.6	17.1	5 11	12 30.64	+ 0 16.9	2.202	3.014	13.4	21.1
208836	2002 RY ₁₃₁	4 4.4 160°13	3°7/ 9.2 17				302222	2001 VQ ₃₀	4 4.4 229°33	4°1/ 8.2 17			
3 2	13 17.11	-21 32.5	2.854	3.617	11.3								

EPHEMERIDES

4 4.4

4 4.4

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
243276	2008 <i>CB</i> ₃₄		4 4.4 288°29	0°1/ 4.6 17			397355	2006 <i>UT</i> ₉₇		4 4.4 243°66	3°2/ 1.0 17		
3 2	13 14.58	- 8 18.5	2.300	3.135	11.4	21.2	3 2	13 16.93	+ 3 9.7	2.376	3.229	10.5	21.0
3 12	13 10.23	- 7 52.5	2.206	3.121	8.5	21.0	3 12	13 11.80	+ 3 45.0	2.299	3.223	7.7	20.8
3 22	13 4.24	- 7 15.9	2.138	3.108	5.1	20.7	3 22	13 5.09	+ 4 22.1	2.247	3.217	4.8	20.6
4 1	12 57.14	- 6 31.8	2.097	3.094	1.4	20.4	4 1	12 57.36	+ 4 56.5	2.223	3.211	3.2	20.5
4 11	12 49.69	- 5 44.5	2.084	3.080	2.5	20.5	4 11	12 49.37	+ 5 23.6	2.228	3.205	4.8	20.6
4 21	12 42.65	- 4 59.0	2.100	3.067	6.2	20.7	4 21	12 41.87	+ 5 39.6	2.262	3.199	7.7	20.7
5 1	12 36.74	- 4 20.1	2.143	3.053	9.7	20.9	5 1	12 35.53	+ 5 42.3	2.321	3.192	10.7	20.9
5 11	12 32.52	- 3 51.6	2.209	3.040	12.7	21.1	5 11	12 30.86	+ 5 30.8	2.402	3.186	13.2	21.1
172030	2001 <i>VR</i> ₉₁		4 4.4 101°18	7°9/25.7 18			94851	2001 <i>XE</i> ₂₀₉		4 4.4 219°16	0°1/ 4.3 18		
3 2	13 17.27	+19 27.2	2.329	3.174	10.9	19.9	3 2	13 19.28	- 8 44.3	1.712	2.552	14.5	20.2
3 12	13 11.99	+20 39.2	2.286	3.183	9.1	19.8	3 12	13 14.17	- 7 59.5	1.628	2.545	10.7	20.0
3 22	13 5.12	+21 40.8	2.268	3.191	8.0	19.8	3 22	13 6.78	- 6 59.0	1.567	2.538	6.4	19.7
4 1	12 57.33	+22 25.4	2.277	3.199	8.2	19.8	4 1	12 57.84	- 5 47.4	1.532	2.530	1.6	19.4
4 11	12 49.43	+22 48.5	2.312	3.207	9.5	19.9	4 11	12 48.43	- 4 32.0	1.526	2.521	3.3	19.5
4 21	12 42.19	+22 48.2	2.371	3.214	11.4	20.0	4 21	12 39.66	- 3 21.0	1.547	2.512	8.1	19.7
5 1	12 36.26	+22 25.1	2.452	3.222	13.3	20.2	5 1	12 32.53	- 2 21.5	1.593	2.502	12.5	19.9
5 11	12 32.10	+21 41.7	2.551	3.230	15.0	20.3	5 11	12 27.74	- 1 38.8	1.660	2.492	16.2	20.2
201495	2003 <i>JO</i> ₃		4 4.4 290°44	1°1/ 3.2 16			408135	2013 <i>CM</i> ₆₉		4 4.4 340°44	0°7/ 3.9 14 C		
3 2	13 15.66	- 3 45.4	2.301	3.146	11.0	20.7	3 2	13 13.52	- 8 14.3	1.123	1.996	18.0	20.8
3 12	13 11.01	- 3 21.1	2.210	3.132	8.1	20.5	3 12	13 10.77	- 7 23.8	1.052	1.987	13.4	20.5
3 22	13 4.69	- 2 49.8	2.144	3.118	4.7	20.2	3 22	13 5.12	- 6 11.5	1.001	1.979	7.9	20.1
4 1	12 57.26	- 2 15.0	2.106	3.103	1.4	20.0	4 1	12 57.45	- 4 44.3	0.973	1.972	1.9	19.7
4 11	12 49.47	- 1 41.2	2.097	3.089	3.2	20.1	4 11	12 49.17	- 3 13.6	0.969	1.965	4.5	19.9
4 21	12 42.10	- 1 12.8	2.116	3.075	6.8	20.3	4 21	12 41.78	- 1 51.8	0.988	1.960	10.5	20.2
5 1	12 35.87	- 0 53.4	2.161	3.060	10.1	20.5	5 1	12 36.56	- 0 49.4	1.028	1.956	15.9	20.5
5 11	12 31.34	- 0 45.7	2.229	3.046	13.1	20.6	5 11	12 34.34	- 0 12.4	1.085	1.952	20.5	20.7
118622	2000 <i>HZ</i> ₁₉		4 4.4 248°82	7°8/27.8 17			387090	2012 <i>TZ</i> ₁₀₉		4 4.4 80°34	2°2/ 6.6 17		
3 2	13 21.01	+14 37.8	1.924	2.779	12.5	20.5	3 2	13 20.70	-13 28.4	2.317	3.122	12.3	20.8
3 12	13 15.19	+15 45.6	1.855	2.766	10.0	20.3	3 12	13 14.49	-13 42.9	2.253	3.146	9.4	20.7
3 22	13 7.25	+16 46.9	1.809	2.754	8.2	20.2	3 22	13 6.61	-13 45.2	2.214	3.168	6.2	20.5
4 1	12 57.92	+17 33.2	1.790	2.741	8.0	20.1	4 1	12 57.74	-13 36.6	2.202	3.191	3.1	20.3
4 11	12 48.23	+17 57.9	1.798	2.727	9.7	20.2	4 11	12 48.71	-13 19.9	2.220	3.214	2.8	20.4
4 21	12 39.20	+17 57.4	1.830	2.713	12.4	20.3	4 21	12 40.33	-12 58.9	2.267	3.236	5.6	20.6
5 1	12 31.75	+17 31.4	1.885	2.699	15.1	20.5	5 1	12 33.31	-12 37.7	2.342	3.258	8.7	20.8
5 11	12 26.48	+16 42.1	1.958	2.685	17.6	20.6	5 11	12 28.13	-12 20.4	2.441	3.280	11.4	21.0
285164	1995 <i>WS</i> ₃₆		4 4.4 210°04	0°7/ 3.8 17			489029	2005 <i>WE</i> ₁₀₉		4 4.4 199°50	0°3/ 4.2 17		
3 2	13 20.35	- 7 28.7	1.791	2.630	14.0	22.7	3 2	13 21.29	- 7 52.9	1.775	2.612	14.2	23.1
3 12	13 14.85	- 6 39.4	1.706	2.624	10.3	22.4	3 12	13 15.55	- 7 14.1	1.692	2.609	10.5	22.9
3 22	13 7.13	- 5 35.8	1.644	2.616	6.1	22.1	3 22	13 7.55	- 6 21.4	1.634	2.605	6.2	22.6
4 1	12 57.91	- 4 22.9	1.610	2.608	1.5	21.8	4 1	12 58.04	- 5 19.4	1.602	2.600	1.6	22.3
4 11	12 48.24	- 3 8.0	1.605	2.599	3.5	21.9	4 11	12 48.09	- 4 14.7	1.599	2.594	3.3	22.4
4 21	12 39.19	- 1 58.8	1.628	2.590	8.1	22.2	4 21	12 38.80	- 3 14.5	1.623	2.587	8.0	22.7
5 1	12 31.74	- 1 2.2	1.676	2.579	12.3	22.4	5 1	12 31.17	- 2 25.4	1.674	2.580	12.2	22.9
5 11	12 26.57	- 0 22.6	1.746	2.568	15.9	22.6	5 11	12 25.85	- 1 51.8	1.746	2.572	15.8	23.1
330888	2009 <i>RL</i> ₅₄		4 4.4 254°08	1°8/ 2.9 17			188263	2002 <i>YT</i> ₃₀		4 4.4 74°12	0°6/ 3.9 18		
3 2	13 18.65	- 2 56.0	1.816	2.668	13.2	21.2	3 2	13 18.41	- 6 24.9	1.667	2.517	14.3	20.1
3 12	13 13.52	- 2 25.3	1.738	2.663	9.7	21.0	3 12	13 13.43	- 5 56.4	1.597	2.520	10.5	19.9
3 22	13 6.30	- 1 46.5	1.683	2.657	5.6	20.7	3 22	13 6.26	- 5 16.2	1.550	2.524	6.2	19.6
4 1	12 57.69	- 1 4.5	1.655	2.652	2.0	20.4	4 1	12 57.69	- 4 28.9	1.530	2.527	1.5	19.3
4 11	12 48.69	- 0 25.2	1.655	2.646	4.1	20.6	4 11	12 48.78	- 3 40.9	1.536	2.531	3.5	19.5
4 21	12 40.31	+ 0 5.7	1.683	2.641	8.3	20.8	4 21	12 40.63	- 2 58.6	1.569	2.535	8.0	19.8
5 1	12 33.48	+ 0 23.9	1.735	2.635	12.2	21.0	5 1	12 34.16	- 2 27.6	1.627	2.539	12.1	20.0
5 11	12 28.81	+ 0 26.9	1.808	2.629	15.5	21.2	5 11	12 29.98	- 2 11.4	1.706	2.542	15.6	20.2
118057	4163 <i>T</i> ₋₂		4 4.4 230°42	2°1/ 1.6 18			160836	2000 <i>YS</i> ₆₈		4 4.4 2°28	5°3/30.5 18		
3 2	13 13.64	- 1 43.3	2.522	3.372	10.1	20.3	3 2	13 13.48	+ 3 45.6	1.493	2.371	14.0	18.7
3 12	13 9.35	- 0 40.2	2.440	3.364	7.3	20.1	3 12	13 9.98	+ 5 5.7	1.433	2.370	10.3	18.5
3 22	13 3.62	+ 0 29.4	2.383	3.357	4.3	19.9	3 22	13 4.28	+ 6 29.8	1.397	2.370	6.8	18.3
4 1	12 56.97	+ 1 40.7	2.355	3.349	2.2	19.7	4 1	12 57.18	+ 7 48.2	1.386	2.370	5.4	18.2
4 11	12 50.07	+ 2 48.2	2.358	3.341	3.9	19.8	4 11	12 49.77	+ 8 51.6	1.400	2.372	7.8	18.4
4 21	12 43.59	+ 3 46.6	2.389	3.333	7.0	20.0	4 21	12 43.14	+ 9 33.1	1.439	2.374	11.5	18.6
5 1	12 38.13	+ 4 32.2	2.446	3.324	9.9	20.2	5 1	12 38.21	+ 9 49.5	1.500	2.377	15.1	18.8
5 11	12 34.17	+ 5 2.6	2.526	3.316	12.5	20.4	5 11	12 35.56	+ 9 40.7	1.578	2.380	18.2	19.0
58307	1994 <i>PM</i> ₁₃		4 4.4 146°50	2°4/ 1.2 18			501218	2013 <i>UZ</i> ₂		4 4.4 143°48	5°8/12.0 17		
3 2	13 13.52	- 0 41.7	2.532	3.383	10.0	19.8	3 2	13 18.43	-28 48.7	2.620	3.340	13.2	21.7
3 12	13 9.19	+ 0 23.9	2.462	3.388	7.2	19.6	3 12	13 12.91	-28 49.8	2.535	3.352	11.1	21.5
3 22	13 3.48	+ 1 34.6	2.419	3.392	4.2	19.5	3 22	13 5.74	-28 30.3	2.473	3.364	8.9	21.4
4 1	12 56.92	+ 2 45.5	2.404	3.396	2.4	19.3	4 1	12 57.53	-27 49.8	2.435	3.375	6.8	21.3
4 11	12 50.20	+ 3 51.0	2.420	3.400	4.1	19.4	4 11	12 49.10	-26 50.5	2.425	3.385	5.8	21.2
4 21	12 43.93	+ 4 46.4	2.463	3.404	7.0	19.6	4 21	12 41.23	-25 37.0	2.443	3.395	6.5	21.3
5 1	12 38.72	+ 5 28.2	2.534	3.408	9.8	19.8	5 1	12 34.63	-24 15.6	2.490	3.404	8.4	21.4
5 11	12 34.98	+ 5 54.7	2.626	3.411	12.2	20.0	5 11	12 29.79	-22 53.0	2.561	3.412	10.6	21.6
117552	2005 <i>EC</i> ₁₁		4 4.4 0°26	2°0/ 5.8 18			305839	2009 <i>DN</i> ₁₃₈		4 4.4 70°52			

EPHEMERIDES

4 4.4

4 4.4

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
301123	2008 <i>WT</i> ₆₈		4 4.4 178°76	4°4/31.8	18		469199	2016 <i>GV</i> ₁₈₅		4 4.4 284°05	4°4/31.1	17	
3 2	13 21.74	+ 2 42.7	1.644	2.504	14.0	21.3	3 2	13 16.19	+ 2 29.1	1.773	2.639	12.8	21.3
3 12	13 15.89	+ 3 40.9	1.578	2.506	10.2	21.0	3 12	13 11.88	+ 3 42.1	1.688	2.620	9.4	21.1
3 22	13 7.72	+ 4 43.2	1.535	2.507	6.4	20.8	3 22	13 5.43	+ 5 1.6	1.628	2.601	6.0	20.8
4 1	12 58.08	+ 5 41.8	1.519	2.507	4.4	20.7	4 1	12 57.53	+ 6 19.7	1.595	2.582	4.4	20.7
4 11	12 48.10	+ 6 28.8	1.531	2.507	6.6	20.8	4 11	12 49.13	+ 7 27.9	1.589	2.562	6.7	20.8
4 21	12 38.93	+ 6 58.4	1.568	2.507	10.4	21.0	4 21	12 41.26	+ 8 19.0	1.608	2.543	10.5	20.9
5 1	12 31.56	+ 7 7.5	1.630	2.506	14.2	21.3	5 1	12 34.87	+ 8 48.4	1.651	2.524	14.2	21.1
5 11	12 26.61	+ 6 55.7	1.711	2.504	17.4	21.5	5 11	12 30.64	+ 8 54.7	1.714	2.504	17.5	21.3
267754	2003 <i>KG</i> ₉		4 4.4 320°80	3°2/ 1.4	17		150994	2001 <i>UL</i> ₂₃		4 4.4 118°94	2°9/ 6.7	18	
3 2	13 13.00	- 2 23.8	1.481	2.353	14.5	19.9	3 2	13 23.61	-13 54.7	1.937	2.746	14.3	19.8
3 12	13 9.85	- 1 9.2	1.399	2.335	10.6	19.6	3 12	13 17.06	-14 19.4	1.863	2.756	11.0	19.6
3 22	13 4.36	+ 0 18.9	1.340	2.317	6.3	19.3	3 22	13 8.35	-14 29.9	1.813	2.767	7.3	19.4
4 1	12 57.25	+ 1 52.1	1.306	2.300	3.2	19.1	4 1	12 58.26	-14 26.8	1.789	2.777	3.8	19.2
4 11	12 49.59	+ 3 20.2	1.297	2.283	6.0	19.2	4 11	12 47.82	-14 12.7	1.794	2.787	3.4	19.2
4 21	12 42.54	+ 4 33.4	1.314	2.267	10.6	19.4	4 21	12 38.10	-13 52.1	1.827	2.797	6.7	19.4
5 1	12 37.16	+ 5 24.5	1.353	2.252	15.0	19.7	5 1	12 30.02	-13 30.1	1.887	2.806	10.3	19.7
5 11	12 34.18	+ 5 50.0	1.411	2.237	18.8	19.9	5 11	12 24.20	-13 12.0	1.971	2.815	13.5	19.9
61630	2000 <i>QP</i> ₁₀₂		4 4.4 210°37	2°3/ 2.1	18	R	95514	2002 <i>EZ</i> ₅₄		4 4.4 160°18	1°8/ 6.1	18	
3 2	13 17.86	- 1 27.4	2.100	2.949	11.8	19.7	3 2	13 21.06	-12 14.3	2.270	3.080	12.4	20.3
3 12	13 12.69	- 0 41.7	2.020	2.945	8.6	19.5	3 12	13 14.94	-12 20.1	2.188	3.085	9.4	20.1
3 22	13 5.71	+ 0 10.6	1.966	2.940	5.0	19.2	3 22	13 7.01	-12 14.0	2.131	3.090	6.1	19.9
4 1	12 57.55	+ 1 4.4	1.940	2.935	2.3	19.0	4 1	12 57.91	-11 57.6	2.102	3.094	2.7	19.7
4 11	12 49.08	+ 1 53.8	1.943	2.929	4.3	19.2	4 11	12 48.50	-11 33.8	2.103	3.098	2.6	19.7
4 21	12 41.16	+ 2 33.6	1.974	2.923	7.9	19.4	4 21	12 39.66	-11 6.7	2.133	3.102	5.9	19.9
5 1	12 34.56	+ 2 59.9	2.030	2.916	11.3	19.6	5 1	12 32.15	-10 40.9	2.190	3.105	9.3	20.1
5 11	12 29.85	+ 3 10.5	2.108	2.910	14.3	19.7	5 11	12 26.52	-10 20.6	2.272	3.107	12.3	20.3
31564	1999 <i>FF</i> ₉		4 4.4 42°45	4°9/ 1.1	18		165177	2000 <i>QT</i> ₁₅₉		4 4.4 177°14	1°3/ 5.8	17	
3 2	13 19.97	+ 2 30.4	1.202	2.080	16.7	16.8	3 2	13 20.03	-12 44.1	1.968	2.786	13.7	21.4
3 12	13 15.06	+ 3 23.3	1.153	2.090	12.2	16.5	3 12	13 14.42	-12 11.1	1.886	2.789	10.4	21.2
3 22	13 7.37	+ 4 20.0	1.125	2.100	7.6	16.3	3 22	13 6.80	-11 21.7	1.829	2.791	6.5	20.9
4 1	12 57.99	+ 5 11.3	1.121	2.111	4.9	16.2	4 1	12 57.87	-10 19.2	1.798	2.792	2.5	20.7
4 11	12 48.37	+ 5 47.8	1.142	2.123	7.5	16.4	4 11	12 48.60	- 9 9.3	1.796	2.793	2.7	20.7
4 21	12 39.92	+ 6 3.3	1.186	2.135	11.9	16.6	4 21	12 39.98	- 7 58.7	1.823	2.792	6.7	20.9
5 1	12 33.74	+ 5 55.4	1.251	2.148	16.1	16.9	5 1	12 32.86	- 6 54.5	1.877	2.791	10.6	21.2
5 11	12 30.43	+ 5 25.0	1.335	2.160	19.7	17.2	5 11	12 27.84	- 6 2.0	1.954	2.789	14.0	21.4
221096	2005 <i>SD</i> ₉₇		4 4.4 155°98	1°1/ 3.2	16		146129	2000 <i>RO</i> ₉₂		4 4.4 203°52	3°0/ 8.7	18	
3 2	13 17.66	- 5 23.6	2.194	3.034	11.7	22.0	3 2	13 15.57	-19 51.8	3.114	3.883	10.3	21.2
3 12	13 12.39	- 4 32.4	2.122	3.041	8.5	21.8	3 12	13 10.62	-19 45.8	3.014	3.878	8.2	21.0
3 22	13 5.45	+ 3 32.0	2.075	3.048	4.9	21.6	3 22	13 4.35	-19 26.5	2.939	3.873	5.9	20.8
4 1	12 57.48	- 2 27.0	2.057	3.054	1.4	21.4	4 1	12 57.22	-18 54.6	2.892	3.866	3.8	20.7
4 11	12 49.28	- 1 23.4	2.068	3.060	3.3	21.5	4 11	12 49.83	-18 12.3	2.874	3.860	3.1	20.6
4 21	12 41.68	- 0 26.8	2.108	3.065	6.9	21.8	4 21	12 42.78	-17 23.0	2.886	3.853	4.7	20.7
5 1	12 35.37	+ 0 18.2	2.175	3.070	10.3	22.0	5 1	12 36.64	-16 31.1	2.927	3.845	7.1	20.9
5 11	12 30.86	+ 0 48.8	2.265	3.073	13.2	22.2	5 11	12 31.85	-15 40.8	2.994	3.837	9.4	21.0
299658	2006 <i>OV</i>		4 4.4 208°63	2°8/ 7.7	17		490886	2011 <i>BC</i> ₄₅		4 4.4 124°02	0°5/ 3.9	16	
3 2	13 14.82	-17 44.3	2.334	3.131	12.5	21.1	3 2	13 18.79	- 6 20.8	1.812	2.657	13.6	22.3
3 12	13 10.40	-17 20.6	2.244	3.129	9.8	20.9	3 12	13 13.59	- 5 55.3	1.740	2.660	10.0	22.1
3 22	13 4.33	-16 39.9	2.178	3.126	6.7	20.7	3 22	13 6.32	- 5 19.1	1.692	2.664	5.9	21.8
4 1	12 57.20	-15 43.9	2.139	3.124	3.8	20.5	4 1	12 57.75	- 4 36.3	1.670	2.668	1.5	21.5
4 11	12 49.77	-14 36.9	2.128	3.121	3.0	20.4	4 11	12 48.86	- 3 52.8	1.677	2.672	3.2	21.7
4 21	12 42.83	-13 24.3	2.146	3.118	5.7	20.6	4 21	12 40.67	- 3 14.2	1.710	2.675	7.6	21.9
5 1	12 37.09	-12 12.5	2.192	3.115	8.9	20.8	5 1	12 34.05	- 2 45.7	1.770	2.678	11.5	22.2
5 11	12 33.05	-11 7.3	2.262	3.112	11.8	21.0	5 11	12 29.58	- 2 30.5	1.851	2.682	14.8	22.4
160166	2001 <i>UH</i> ₈₈		4 4.4 8°54	2°4/ 2.7	17		65155	2002 <i>CP</i> ₁₄₀		4 4.4 351°31	4°3/ 8.9	18	R
3 2	13 18.73	- 1 33.0	1.494	2.358	14.9	20.0	3 2	13 15.24	-20 21.8	2.185	2.972	13.6	19.1
3 12	13 13.88	- 1 6.4	1.427	2.358	10.9	19.7	3 12	13 10.88	-20 31.7	2.097	2.970	10.9	19.0
3 22	13 6.63	- 0 32.5	1.383	2.359	6.4	19.5	3 22	13 4.71	-20 23.7	2.032	2.968	8.0	18.8
4 1	12 57.82	+ 0 3.0	1.364	2.361	2.5	19.2	4 1	12 57.34	-19 58.0	1.993	2.966	5.3	18.6
4 11	12 48.64	+ 0 33.2	1.372	2.362	4.9	19.4	4 11	12 49.61	-19 17.5	1.980	2.965	4.4	18.5
4 21	12 40.29	+ 0 52.4	1.405	2.365	9.4	19.6	4 21	12 42.37	-18 26.6	1.995	2.964	6.3	18.6
5 1	12 33.79	+ 0 56.4	1.462	2.367	13.6	19.9	5 1	12 36.44	-17 31.6	2.037	2.963	9.2	18.8
5 11	12 29.79	+ 0 43.5	1.538	2.371	17.2	20.1	5 11	12 32.37	-16 38.7	2.102	2.963	12.1	19.0
32936	1995 <i>SA</i> ₄₄		4 4.4 193°52	0°4/ 4.9	18		190273	2822 <i>P-L</i>		4 4.4 108°14	0°0/ 4.5	18	
3 2	13 13.88	-10 20.4	2.460	3.286	11.0	19.8	3 2	13 24.21	- 7 40.2	1.561	2.400	15.6	20.7
3 12	13 9.57	- 9 37.2	2.376	3.285	8.2	19.6	3 12	13 17.70	- 7 25.7	1.502	2.418	11.5	20.5
3 22	13 3.78	- 8 42.0	2.317	3.284	5.0	19.4	3 22	13 8.77	- 6 58.5	1.465	2.436	6.9	20.3
4 1	12 57.05	- 7 38.2	2.286	3.283	1.5	19.2	4 1	12 58.37	- 6 22.6	1.456	2.453	1.8	20.0
4 11	12 50.08	- 6 31.0	2.285	3.282	2.2	19.2	4 11	12 47.76	- 5 44.2	1.473	2.470	3.3	20.1
4 21	12 43.57	- 5 25.5	2.313	3.280	5.7	19.5	4 21	12 38.16	- 5 9.5	1.518	2.486	8.1	20.5
5 1	12 38.15	- 4 26.9	2.369	3.278	8.9	19.7	5 1	12 30.55	- 4 44.0	1.589	2.501	12.3	20.7
5 11	12 34.27	- 3 39.1	2.448	3.276	11.7	19.8	5 11	12 25.53	- 4 31.4	1.680	2.516	15.8	21.0
240789	2005 <i>UM</i> ₁₅₆		4 4.4 62°10	1°6/ 5.9	18		41583	2000 <i>SP</i> ₃₄		4 4.4 336°92	6°6/10.7	1	

EPHEMERIDES

4 4.4

4 4.5

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V	
1871	Astyanax	4 4.4	246°67	1°4/	1.5	18	362057	2009 BF₅₁	4 4.5	84°54	2°4/	2.5	18	
3 2	13 8.24	+ 0 26.7	4.478	5.323	6.1	18.6	3 2	13 21.60	- 3 20.6	1.483	2.339	15.4	20.8	
3 12	13 4.90	+ 1 2.4	4.398	5.321	4.4	18.4	3 12	13 15.69	- 2 18.9	1.438	2.366	11.1	20.6	
3 22	13 0.82	+ 1 40.3	4.346	5.319	2.6	18.3	3 22	13 7.51	- 1 7.8	1.417	2.392	6.4	20.4	
4 1	12 56.29	+ 2 17.8	4.325	5.317	1.4	18.2	4 1	12 58.05	+ 0 4.9	1.422	2.418	2.5	20.3	
4 11	12 51.66	+ 2 52.6	4.333	5.314	2.4	18.3	4 11	12 48.55	+ 1 10.3	1.455	2.444	4.9	20.5	
4 21	12 47.24	+ 3 22.6	4.371	5.312	4.2	18.4	4 21	12 40.15	+ 2 1.5	1.514	2.469	9.3	20.8	
5 1	12 43.36	+ 3 45.9	4.437	5.310	6.0	18.5	5 1	12 33.72	+ 2 34.1	1.597	2.493	13.2	21.1	
5 11	12 40.26	+ 4 1.4	4.528	5.307	7.5	18.6	5 11	12 29.78	+ 2 46.7	1.700	2.517	16.5	21.3	
5132	Maynard	4 4.4	258°24	3°2/31.9	18	R	346262	2008 FK₁₀	4 4.5	23°12	3°6/30.9	17		
3 2	13 15.12	- 0 41.5	1.942	2.801	12.2	16.9	3 2	13 12.37	+ 1 25.9	2.139	3.002	11.0	20.2	
3 12	13 10.87	+ 0 37.9	1.861	2.790	8.8	16.7	3 12	13 8.61	+ 2 50.4	2.074	3.004	8.0	20.0	
3 22	13 4.74	+ 2 5.9	1.805	2.779	5.3	16.4	3 22	13 3.28	+ 4 19.8	2.035	3.007	5.0	19.9	
4 1	12 57.36	+ 3 35.5	1.777	2.768	3.2	16.3	4 1	12 56.98	+ 5 47.2	2.024	3.011	3.6	19.8	
4 11	12 49.62	+ 4 58.4	1.777	2.757	5.4	16.4	4 11	12 50.47	+ 7 5.4	2.041	3.014	5.6	19.9	
4 21	12 42.40	+ 6 7.6	1.805	2.746	9.1	16.6	4 21	12 44.49	+ 8 8.6	2.086	3.018	8.6	20.1	
5 1	12 36.54	+ 6 58.0	1.857	2.734	12.6	16.8	5 1	12 39.72	+ 8 53.2	2.156	3.022	11.6	20.3	
5 11	12 32.61	+ 7 27.1	1.930	2.723	15.7	17.0	5 11	12 36.61	+ 9 17.8	2.246	3.026	14.1	20.5	
341793	2007 XL₁₀	4 4.4	80°00	1°0/	5.6	17	87536	2000 QZ₂₀₃	4 4.5	131°26	1°7/	2.8	18	
3 2	13 14.66	- 12 8.4	2.199	3.023	12.3	20.8	3 2	13 18.72	- 3 3.3	2.131	2.975	11.8	20.1	
3 12	13 10.23	- 11 30.7	2.129	3.035	9.2	20.7	3 12	13 13.19	- 2 22.2	2.065	2.987	8.6	19.9	
3 22	13 4.20	- 10 39.3	2.083	3.047	5.7	20.5	3 22	13 5.94	- 1 34.3	2.025	2.999	5.0	19.7	
4 1	12 57.19	- 9 37.6	2.064	3.059	2.1	20.2	4 1	12 57.66	- 0 44.2	2.013	3.010	1.8	19.5	
4 11	12 50.00	- 8 31.0	2.075	3.071	2.3	20.3	4 11	12 49.20	+ 0 2.6	2.031	3.020	3.7	19.7	
4 21	12 43.40	- 7 25.4	2.113	3.083	5.9	20.5	4 21	12 41.39	+ 0 41.2	2.077	3.030	7.2	19.9	
5 1	12 38.05	- 6 26.3	2.179	3.095	9.3	20.8	5 1	12 34.94	+ 1 7.8	2.149	3.040	10.5	20.1	
5 11	12 34.41	- 5 38.1	2.269	3.107	12.2	21.0	5 11	12 30.34	+ 1 20.6	2.243	3.049	13.4	20.4	
126719	2002 CC₂₄₉	4 4.4	358°82	0°0/	4.7	15	R	39629	1994 PG₂₆	4 4.5	248°84	1°8/	6.1	18
3 2	12 57.23	- 6 51.6	37.174	37.998	0.8	22.5	3 2	13 18.72	- 12 27.0	2.137	2.954	12.8	19.7	
3 12	12 56.55	- 6 47.4	37.088	37.998	0.6	22.5	3 12	13 13.49	- 12 24.5	2.042	2.943	9.8	19.4	
3 22	12 55.79	- 6 42.7	37.030	37.998	0.4	22.4	3 22	13 6.31	- 12 8.7	1.970	2.931	6.3	19.2	
4 1	12 54.99	- 6 37.7	37.000	37.997	0.1	22.4	4 1	12 57.81	- 11 41.2	1.926	2.918	2.8	18.9	
4 11	12 54.18	- 6 32.6	37.001	37.997	0.2	22.4	4 11	12 48.85	- 11 5.6	1.910	2.906	2.7	18.9	
4 21	12 53.39	- 6 27.6	37.032	37.997	0.4	22.4	4 21	12 40.34	- 10 26.6	1.923	2.893	6.3	19.1	
5 1	12 52.64	- 6 22.9	37.091	37.997	0.7	22.5	5 1	12 33.14	- 9 49.5	1.962	2.880	10.0	19.3	
5 11	12 51.98	- 6 18.6	37.176	37.997	0.9	22.5	5 11	12 27.88	- 9 19.3	2.025	2.867	13.3	19.5	
165434	2000 YC₇₅	4 4.4	167°19	5°5/30.1	18		497022	2003 KB₃₆	4 4.5	189°03	4°7/28.7	18		
3 2	13 21.24	+ 7 30.6	1.938	2.795	12.3	20.6	3 2	13 16.33	+ 9 16.7	2.798	3.649	9.1	22.2	
3 12	13 15.20	+ 8 40.6	1.877	2.800	9.2	20.4	3 12	13 11.18	+ 10 33.9	2.730	3.648	6.9	22.0	
3 22	13 7.20	+ 9 49.6	1.842	2.804	6.5	20.3	3 22	13 4.68	+ 11 49.8	2.690	3.646	5.2	21.9	
4 1	12 57.98	+ 10 50.2	1.834	2.808	5.6	20.2	4 1	12 57.34	+ 12 58.7	2.679	3.643	4.8	21.9	
4 11	12 48.54	+ 11 35.5	1.854	2.811	7.4	20.3	4 11	12 49.80	+ 13 55.4	2.698	3.640	6.3	21.9	
4 21	12 39.83	+ 12 0.9	1.900	2.814	10.4	20.5	4 21	12 42.69	+ 14 36.5	2.745	3.636	8.4	22.1	
5 1	12 32.68	+ 12 4.9	1.971	2.815	13.4	20.7	5 1	12 36.59	+ 15 0.1	2.816	3.631	10.6	22.2	
5 11	12 27.64	+ 11 48.2	2.062	2.816	16.0	20.9	5 11	12 31.92	+ 15 6.0	2.909	3.625	12.6	22.4	
431911	2008 TM₃₉	4 4.4	258°70	0°0/	4.3	17	152978	2000 GJ₁₄₇	4 4.5	268°22	44°0/	2.0	16	R
3 2	13 17.95	- 7 7.3	1.978	2.818	12.8	21.5	3 2	14 42.46	+ 60 38.4	0.586	1.325	44.0	20.7	
3 12	13 12.92	- 6 50.2	1.896	2.814	9.5	21.3	3 12	14 31.46	+ 64 15.4	0.552	1.297	45.7	20.6	
3 22	13 5.94	- 6 22.8	1.838	2.809	5.6	21.0	3 22	14 2.48	+ 67 4.0	0.519	1.266	48.0	20.5	
4 1	12 57.68	- 5 48.3	1.808	2.805	1.5	20.7	4 1	13 14.26	+ 68 9.9	0.486	1.233	50.8	20.4	
4 11	12 49.06	- 5 11.6	1.805	2.801	2.8	20.8	4 11	12 17.59	+ 66 36.5	0.453	1.197	54.2	20.3	
4 21	12 41.00	- 4 37.8	1.831	2.797	7.0	21.1	4 21	11 29.48	+ 62 3.3	0.422	1.160	58.3	20.1	
5 1	12 34.35	- 4 11.6	1.882	2.792	10.8	21.3	5 1	10 57.33	+ 54 46.5	0.391	1.122	63.1	20.1	
5 11	12 27.64	- 3 56.7	1.955	2.788	14.1	21.5	5 11	10 38.19	+ 45 11.4	0.364	1.083	68.8	20.0	
503147	2015 GG₂₃	4 4.5	49°65	8°3/27.1	18		458991	2011 WZ₁₁₂	4 4.5	116°55	5°2/30.6	18		
3 2	13 17.18	+ 15 19.2	1.790	2.653	12.8	20.6	3 2	13 21.97	+ 5 47.5	1.822	2.679	12.9	21.4	
3 12	13 12.19	+ 16 44.0	1.761	2.675	10.3	20.5	3 12	13 15.66	+ 7 2.9	1.776	2.701	9.5	21.2	
3 22	13 5.35	+ 17 58.7	1.756	2.698	8.5	20.5	3 22	13 7.41	+ 8 17.9	1.756	2.721	6.4	21.1	
4 1	12 57.48	+ 18 54.8	1.776	2.721	8.5	20.5	4 1	12 58.04	+ 9 24.6	1.763	2.742	5.2	21.1	
4 11	12 49.60	+ 19 26.6	1.822	2.744	10.1	20.6	4 11	12 48.60	+ 10 15.7	1.798	2.761	7.1	21.2	
4 21	12 42.61	+ 19 31.8	1.892	2.767	12.4	20.8	4 21	12 40.06	+ 10 46.9	1.860	2.780	10.2	21.4	
5 1	12 37.24	+ 19 11.5	1.982	2.791	14.7	21.0	5 1	12 33.22	+ 10 56.6	1.946	2.797	13.3	21.7	
5 11	12 33.92	+ 18 28.9	2.091	2.814	16.7	21.2	5 11	12 28.54	+ 10 45.8	2.052	2.814	15.8	21.9	
175974	2000 NC₁₃	4 4.5	165°52	5°5/26.4	18		147372	2003 DB₂₀	4 4.5	46°60	1°2/	5.4	18	
3 2	13 14.37	+ 14 15.0	3.042	3.891	8.5	20.6	3 2	13 17.75	- 10 56.7	1.459	2.304	16.2	20.2	
3 12	13 9.65	+ 15 40.6	2.988	3.896	6.8	20.4	3 12	13 13.15	- 10 36.4	1.401	2.319	12.1	20.0	
3 22	13 3.72	+ 17 1.6	2.963	3.901	5.7	20.4	3 22	13 6.18	- 9 58.9	1.365	2.334	7.5	19.8	
4 1	12 57.07	+ 18 12.5	2.966	3.905	5.7	20.4	4 1	12 57.76	- 9 8.3	1.353	2.349	2.6	19.5	
4 11	12 50.28	+ 19 8.9	2.998	3.909	7.0	20.5	4 11	12 49.10	- 8 11.7	1.368	2.365	3.1	19.6	
4 21	12 43.89	+ 19 47.8	3.056	3.912	8.7	20.6	4 21	12 41.37	- 7 16.8	1.408	2.381	7.9	19.9	
5 1	12 38.43	+ 20 8.3	3.139	3.915	10.5	20.7	5 1	12 35.54	- 6 30.9	1.472	2.398	12.2	20.2	
5 11	12 34.28	+ 20 10.8	3.241	3.917	12.1	20.8	5 11	12 32.19	- 5 59.0	1.558	2.414	15.9	20.4	
427021	2014 SA₂₁₉	4 4.5	217°24	6°3/29.2	16		425199	2009 UY₁₅₃						

EPHEMERIDES

4 4.5

4 4.5

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
195426	2002 <i>GU</i> ₅₁		4 4.5 274°54	1.4/ 3.1	17		271900	2004 <i>VS</i> ₇₁		4 4.5 230°19	1.1/ 5.6	17	
3 2	13 16.26	- 4 35.2	1.884	2.735	12.8	20.3	3 2	13 16.75	-11 42.5	2.147	2.970	12.6	21.4
3 12	13 11.73	- 3 50.5	1.807	2.732	9.4	20.1	3 12	13 11.99	-11 13.6	2.057	2.962	9.5	21.2
3 22	13 5.27	- 2 55.6	1.754	2.729	5.4	19.8	3 22	13 5.41	-10 30.5	1.990	2.954	5.9	20.9
4 1	12 57.54	- 1 55.9	1.729	2.726	1.7	19.6	4 1	12 57.62	- 9 36.0	1.951	2.946	2.2	20.6
4 11	12 49.49	- 0 57.9	1.731	2.723	3.8	19.7	4 11	12 49.47	- 8 35.1	1.940	2.937	2.5	20.6
4 21	12 42.03	- 0 7.7	1.760	2.720	7.9	20.0	4 21	12 41.80	- 7 33.6	1.959	2.928	6.3	20.9
5 1	12 36.00	+ 0 29.5	1.815	2.717	11.6	20.2	5 1	12 35.40	- 6 37.4	2.004	2.919	10.0	21.1
5 11	12 31.99	+ 0 50.6	1.891	2.713	14.9	20.4	5 11	12 30.87	- 5 51.7	2.072	2.909	13.2	21.3
12052	Aretaon		4 4.5 257°71	1.0/ 6.6	18		219721	2001 <i>XH</i> ₁₁₃		4 4.5 154°27	0.2/ 4.7	16	
3 2	13 8.28	-13 37.7	4.548	5.348	6.8	18.0	3 2	13 17.83	- 9 35.0	2.435	3.257	11.3	22.2
3 12	13 4.97	-13 14.5	4.453	5.344	5.2	17.9	3 12	13 12.43	- 8 50.6	2.359	3.267	8.3	22.0
3 22	13 0.90	-12 44.1	4.383	5.339	3.4	17.8	3 22	13 5.50	- 7 54.9	2.309	3.276	5.0	21.8
4 1	12 56.37	-12 7.8	4.343	5.334	1.6	17.6	4 1	12 57.62	- 6 51.6	2.287	3.284	1.4	21.6
4 11	12 51.71	-11 27.9	4.334	5.329	1.4	17.6	4 11	12 49.54	- 5 45.8	2.296	3.292	2.3	21.7
4 21	12 47.26	-10 46.5	4.354	5.324	3.1	17.7	4 21	12 42.01	- 4 42.8	2.335	3.299	5.9	21.9
5 1	12 43.34	-10 6.1	4.404	5.319	5.0	17.9	5 1	12 35.67	- 3 47.6	2.402	3.305	9.1	22.1
5 11	12 40.23	- 9 29.1	4.480	5.314	6.7	18.0	5 11	12 30.99	- 3 3.7	2.492	3.311	11.8	22.3
352485	2008 <i>BD</i> ₄₉		4 4.5 301°74	1.3/ 5.8	16		8081	Leopardi		4 4.5 20°56	10.2/ 26.8	18	
3 2	13 15.36	-11 20.5	2.205	3.031	12.2	21.0	3 2	13 13.44	+10 6.5	1.042	1.938	17.1	16.7
3 12	13 10.99	-11 11.0	2.106	3.013	9.3	20.7	3 12	13 10.61	+12 22.8	1.005	1.945	13.3	16.5
3 22	13 4.84	-10 49.0	2.031	2.995	5.9	20.5	3 22	13 4.93	+14 33.8	0.990	1.953	10.6	16.4
4 1	12 57.45	-10 16.5	1.983	2.978	2.3	20.2	4 1	12 57.50	+16 22.8	0.997	1.962	10.6	16.4
4 11	12 49.63	- 9 37.3	1.963	2.960	2.5	20.2	4 11	12 49.84	+17 36.2	1.025	1.972	13.3	16.6
4 21	12 42.19	- 8 56.1	1.972	2.943	6.2	20.4	4 21	12 43.35	+18 8.1	1.074	1.983	16.9	16.8
5 1	12 35.94	- 8 18.2	2.006	2.925	9.8	20.6	5 1	12 39.13	+17 59.0	1.139	1.995	20.3	17.1
5 11	12 31.48	- 7 48.0	2.064	2.908	13.0	20.8	5 11	12 37.75	+17 14.4	1.220	2.008	23.3	17.3
499829	2011 <i>DE</i> ₂₈		4 4.5 15°30	0.8/ 3.7	17		503008	2015 <i>FD</i> ₁₀₆		4 4.5 133°25	2.1/ 6.7	17	
3 2	13 16.04	- 6 32.8	1.615	2.470	14.4	21.5	3 2	13 17.33	-14 4.6	2.188	3.000	12.7	21.3
3 12	13 11.81	- 5 51.6	1.545	2.471	10.6	21.3	3 12	13 12.32	-13 56.9	2.108	3.004	9.8	21.1
3 22	13 5.40	- 4 57.3	1.498	2.473	6.2	21.0	3 22	13 5.55	-13 35.0	2.051	3.008	6.4	20.9
4 1	12 57.59	- 3 55.4	1.477	2.475	1.6	20.7	4 1	12 57.65	-13 0.8	2.022	3.012	3.1	20.7
4 11	12 49.44	- 2 53.4	1.483	2.477	3.7	20.9	4 11	12 49.46	-12 18.0	2.021	3.016	2.7	20.7
4 21	12 42.02	- 1 58.5	1.515	2.480	8.3	21.1	4 21	12 41.82	-11 31.7	2.048	3.020	5.9	20.9
5 1	12 36.26	- 1 17.0	1.571	2.483	12.4	21.4	5 1	12 35.49	-10 47.2	2.103	3.023	9.3	21.1
5 11	12 32.75	- 0 52.5	1.648	2.486	16.0	21.6	5 11	12 30.99	-10 9.5	2.181	3.027	12.3	21.3
336401	2008 <i>UJ</i> ₁₃₃		4 4.5 222°86	1.0/ 5.5	17		316289	2010 <i>RM</i> ₄		4 4.5 164°15	0.2/ 4.3	17	
3 2	13 16.46	-11 25.9	2.223	3.045	12.2	21.9	3 2	13 21.41	- 6 42.4	1.774	2.614	14.0	21.5
3 12	13 11.70	-10 57.5	2.133	3.039	9.2	21.7	3 12	13 15.62	- 6 24.8	1.700	2.618	10.4	21.3
3 22	13 5.19	-10 15.7	2.068	3.033	5.7	21.4	3 22	13 7.62	- 5 56.1	1.649	2.620	6.1	21.1
4 1	12 57.54	- 9 23.3	2.031	3.026	2.0	21.2	4 1	12 58.21	- 5 20.3	1.625	2.623	1.6	20.8
4 11	12 49.54	- 8 25.0	2.022	3.019	2.4	21.2	4 11	12 48.43	- 4 42.8	1.629	2.625	3.2	20.9
4 21	12 42.02	- 7 26.4	2.042	3.011	6.1	21.4	4 21	12 39.38	- 4 9.1	1.661	2.627	7.7	21.1
5 1	12 35.74	- 6 33.1	2.089	3.004	9.7	21.6	5 1	12 31.98	- 3 44.5	1.719	2.628	11.7	21.4
5 11	12 31.25	- 5 49.8	2.160	2.996	12.8	21.8	5 11	12 26.88	- 3 32.4	1.798	2.629	15.2	21.6
338785	2003 <i>UA</i> ₃₀₀		4 4.5 234°14	0.0/ 4.4	17		443657	2015 <i>FK</i> ₇₇		4 4.5 222°42	3.8/ 31.3	18	
3 2	13 15.84	- 8 29.4	2.212	3.046	11.8	21.7	3 2	13 16.81	+ 4 58.3	2.339	3.194	10.5	20.5
3 12	13 11.24	- 7 48.4	2.123	3.037	8.8	21.4	3 12	13 11.78	+ 5 42.5	2.267	3.191	7.8	20.3
3 22	13 4.92	- 6 55.4	2.059	3.029	5.2	21.2	3 22	13 5.16	+ 6 27.5	2.220	3.188	5.1	20.2
4 1	12 57.47	- 5 54.2	2.023	3.020	1.3	20.9	4 1	12 57.54	+ 7 8.0	2.202	3.185	3.8	20.1
4 11	12 49.69	- 4 50.1	2.016	3.011	2.7	21.0	4 11	12 49.69	+ 7 39.2	2.212	3.182	5.4	20.2
4 21	12 42.37	- 3 49.1	2.037	3.002	6.5	21.2	4 21	12 42.34	+ 7 57.4	2.250	3.178	8.2	20.3
5 1	12 36.27	- 2 56.6	2.085	2.992	10.1	21.4	5 1	12 36.18	+ 8 0.4	2.313	3.175	11.0	20.5
5 11	12 31.93	- 2 16.6	2.157	2.982	13.2	21.6	5 11	12 31.70	+ 7 47.8	2.397	3.171	13.5	20.7
259072	2002 <i>UO</i> ₆₈		4 4.5 265°09	3.1/ 1.6	17		339714	2005 <i>ST</i> ₁		4 4.5 63°34	8.1/ 5.2	13 C	
3 2	13 18.02	- 0 49.4	1.709	2.569	13.5	21.4	3 2	14 45.50	- 1 56.2	0.380	1.231	43.6	20.4
3 12	13 13.31	+ 0 8.9	1.625	2.554	9.9	21.1	3 12	14 18.35	- 7 29.8	0.371	1.288	32.1	20.2
3 22	13 6.37	+ 1 15.9	1.565	2.540	5.9	20.9	3 22	13 43.67	-12 34.2	0.378	1.344	19.7	19.9
4 1	12 57.88	+ 2 25.0	1.532	2.525	3.2	20.7	4 1	13 6.80	-16 25.3	0.408	1.400	9.5	19.8
4 11	12 48.89	+ 3 28.0	1.526	2.510	5.5	20.8	4 11	12 34.73	-18 47.2	0.462	1.453	10.3	20.2
4 21	12 40.49	+ 4 17.8	1.546	2.495	9.7	21.0	4 21	12 11.55	-19 59.6	0.537	1.505	17.2	20.8
5 1	12 33.66	+ 4 49.1	1.591	2.479	13.7	21.2	5 1	11 57.79	-20 34.4	0.629	1.555	23.2	21.5
5 11	12 29.10	+ 4 59.5	1.655	2.464	17.2	21.4	5 11	11 51.98	-20 56.3	0.734	1.602	27.5	22.0
106080	2000 <i>SN</i> ₃₄₈		4 4.5 166°61	6.0/ 28.2	18		104889	2000 <i>JQ</i> ₁		4 4.5 293°93	0.9/ 3.6	18	
3 2	13 16.95	+13 21.1	2.472	3.324	10.1	19.9	3 2	13 15.26	- 5 51.3	2.048	2.894	12.2	19.9
3 12	13 11.77	+14 18.9	2.413	3.326	8.0	19.8	3 12	13 10.91	- 5 11.6	1.967	2.889	8.9	19.7
3 22	13 5.08	+15 11.3	2.381	3.328	6.3	19.7	3 22	13 4.77	- 4 21.6	1.911	2.884	5.2	19.4
4 1	12 57.49	+15 52.7	2.376	3.329	6.1	19.7	4 1	12 57.47	- 3 25.9	1.881	2.879	1.4	19.2
4 11	12 49.74	+16 18.4	2.398	3.330	7.5	19.8	4 11	12 49.84	- 2 30.1	1.881	2.874	3.2	19.3
4 21	12 42.52	+16 25.8	2.447	3.331	9.6	19.9	4 21	12 42.74	- 1 40.0	1.907	2.869	7.1	19.5
5 1	12 36.49	+16 14.2	2.520	3.332	11.8	20.0	5 1	12 36.94	- 1 0.6	1.960	2.865	10.8	19.7
5 11	12 32.08	+15 44.8	2.612	3.332	13.8	20.2	5 11	12 32.99	- 0 35.2	2.035	2.860	13.9	19.9
499068	2009 <i>DV</i> ₁₃₉		4 4.5 134°91	3.4/ 8.2	17		172962	2005 <i>MZ</i> ₁₃		4 4.5 294°21	5.2/ 29.5	18	

EPHEMERIDES

4 4.5

4 4.5

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
3125	Hay		4 4.5	40°75	8°1/28.2	18 R	384918	2012 <i>TE</i> ₆₆		4 4.5	120°12	0°2/ 4.8	17
3 2	13 15.50	+ 8 43.2	1.322	2.205	15.1	15.9	3 2	13 16.43	- 8 36.0	2.324	3.154	11.5	21.4
3 12	13 11.54	+10 39.1	1.288	2.222	11.5	15.7	3 12	13 11.52	- 8 13.1	2.249	3.161	8.5	21.2
3 22	13 5.23	+12 30.7	1.277	2.240	8.7	15.6	3 22	13 5.02	- 7 40.1	2.199	3.167	5.1	21.0
4 1	12 57.56	+14 5.7	1.290	2.259	8.3	15.6	4 1	12 57.54	- 7 0.1	2.177	3.174	1.4	20.8
4 11	12 49.79	+15 13.6	1.328	2.278	10.6	15.8	4 11	12 49.83	- 6 17.5	2.184	3.180	2.3	20.9
4 21	12 43.07	+15 49.6	1.389	2.298	13.8	16.0	4 21	12 42.65	- 5 36.9	2.219	3.186	5.9	21.1
5 1	12 38.31	+15 53.3	1.469	2.318	16.9	16.3	5 1	12 36.68	- 5 2.6	2.282	3.192	9.2	21.3
5 11	12 35.98	+15 28.1	1.566	2.338	19.6	16.5	5 11	12 32.38	- 4 38.0	2.368	3.198	12.0	21.5
163372	2002 <i>PP</i> ₃₈		4 4.5	174°60	0°7/ 3.7	18	200640	2001 <i>SH</i> ₂₄₄		4 4.5	118°29	1°0/ 3.7	18
3 2	13 16.22	- 6 13.5	2.258	3.097	11.5	20.6	3 2	13 23.05	- 5 39.5	1.639	2.483	14.8	21.5
3 12	13 11.42	- 5 34.5	2.180	3.098	8.4	20.4	3 12	13 16.79	- 5 4.3	1.580	2.500	10.8	21.3
3 22	13 4.98	- 4 46.2	2.127	3.099	4.9	20.2	3 22	13 8.27	- 4 18.0	1.544	2.517	6.3	21.0
4 1	12 57.51	- 3 52.5	2.102	3.100	1.3	19.9	4 1	12 58.39	- 3 26.1	1.535	2.533	1.7	20.8
4 11	12 49.79	- 2 58.7	2.107	3.101	2.9	20.1	4 11	12 48.31	- 2 35.4	1.555	2.549	3.7	20.9
4 21	12 42.58	- 2 9.8	2.140	3.101	6.5	20.3	4 21	12 39.18	- 1 52.4	1.601	2.563	8.2	21.2
5 1	12 36.59	- 1 30.3	2.199	3.101	9.9	20.5	5 1	12 31.90	- 1 22.2	1.673	2.578	12.3	21.5
5 11	12 32.31	- 1 3.3	2.282	3.101	12.8	20.7	5 11	12 27.05	- 1 7.5	1.766	2.591	15.7	21.8
89415	2001 <i>WM</i> ₂₅		4 4.5	286°53	1°1/ 5.5	17	429989	2013 <i>PK</i> ₃₇		4 4.5	170°22	2°7/ 1.5	17
3 2	13 16.47	-11 35.2	1.709	2.545	14.7	19.7	3 2	13 19.01	+ 0 51.8	2.394	3.240	10.6	22.7
3 12	13 12.27	-11 6.8	1.618	2.531	11.1	19.5	3 12	13 13.33	+ 1 39.9	2.323	3.245	7.7	22.5
3 22	13 5.81	-10 20.8	1.549	2.516	7.0	19.2	3 22	13 6.06	+ 2 31.8	2.277	3.249	4.7	22.3
4 1	12 57.79	- 9 20.2	1.506	2.502	2.5	18.9	4 1	12 57.81	+ 3 22.7	2.261	3.252	2.7	22.2
4 11	12 49.22	- 8 11.2	1.490	2.487	2.9	18.8	4 11	12 49.35	+ 4 7.4	2.274	3.254	4.4	22.3
4 21	12 41.19	- 7 1.5	1.501	2.473	7.6	19.1	4 21	12 41.43	+ 4 41.6	2.317	3.256	7.4	22.5
5 1	12 34.73	- 5 59.0	1.537	2.458	12.0	19.3	5 1	12 34.72	+ 5 2.5	2.385	3.257	10.4	22.7
5 11	12 30.54	- 5 10.0	1.594	2.444	15.9	19.5	5 11	12 29.70	+ 5 8.8	2.476	3.258	12.9	22.9
282785	2006 <i>KC</i> ₅₃		4 4.5	204°46	4°8/30.3	18	215411	2002 <i>GB</i> ₂₃		4 4.5	12°98	1°9/ 6.4	18
3 2	13 17.35	+ 7 3.1	2.173	3.031	11.1	20.6	3 2	13 14.62	-14 35.3	1.721	2.549	14.9	19.9
3 12	13 12.28	+ 8 0.0	2.105	3.029	8.3	20.4	3 12	13 10.75	-13 58.0	1.644	2.550	11.4	19.7
3 22	13 5.50	+ 8 56.4	2.063	3.027	5.7	20.2	3 22	13 4.80	-13 0.5	1.589	2.551	7.4	19.5
4 1	12 57.65	+ 9 46.1	2.048	3.025	4.8	20.2	4 1	12 57.51	-11 46.5	1.560	2.553	3.2	19.2
4 11	12 49.56	+10 23.4	2.062	3.023	6.5	20.3	4 11	12 49.88	-10 22.6	1.558	2.555	2.9	19.2
4 21	12 42.04	+10 44.3	2.102	3.020	9.3	20.4	4 21	12 42.91	- 8 57.2	1.583	2.557	7.0	19.5
5 1	12 35.81	+10 46.8	2.167	3.018	12.1	20.6	5 1	12 37.51	- 7 38.7	1.633	2.559	11.1	19.7
5 11	12 31.38	+10 31.2	2.252	3.015	14.6	20.8	5 11	12 34.26	- 6 33.7	1.706	2.562	14.7	19.9
388996	2008 <i>UU</i> ₉₆		4 4.5	214°43	1°9/ 2.4	17	43949	1997 <i>AU</i> ₁₈		4 4.5	7°51	5°9/30.8	18
3 2	13 17.49	- 1 55.5	2.424	3.267	10.6	21.9	3 2	13 18.42	+ 5 9.7	1.397	2.272	15.0	18.3
3 12	13 12.29	- 1 12.7	2.338	3.260	7.7	21.7	3 12	13 13.82	+ 6 18.2	1.338	2.272	11.1	18.1
3 22	13 5.49	+ 0 23.8	2.279	3.252	4.5	21.4	3 22	13 6.72	+ 7 28.6	1.302	2.273	7.5	17.9
4 1	12 57.66	+ 0 26.9	2.248	3.243	1.9	21.2	4 1	12 58.02	+ 8 31.2	1.290	2.273	5.9	17.8
4 11	12 49.53	+ 1 14.5	2.247	3.234	3.7	21.4	4 11	12 48.97	+ 9 16.8	1.304	2.275	8.3	17.9
4 21	12 41.84	+ 1 54.3	2.275	3.224	7.0	21.5	4 21	12 40.83	+ 9 39.3	1.342	2.276	12.1	18.2
5 1	12 35.28	+ 2 22.8	2.330	3.214	10.1	21.7	5 1	12 34.64	+ 9 36.2	1.401	2.278	16.0	18.4
5 11	12 30.37	+ 2 37.7	2.407	3.204	12.8	21.9	5 11	12 31.03	+ 9 8.6	1.478	2.280	19.2	18.6
397055	2005 <i>UG</i> ₁₀₉		4 4.5	201°53	4°4/31.6	18	81493	2000 <i>GE</i> ₁₅₈		4 4.5	65°92	1°0/ 3.7	18
3 2	13 21.46	+ 2 13.2	1.677	2.536	13.8	21.6	3 2	13 20.81	- 4 47.3	1.533	2.386	15.2	19.6
3 12	13 15.79	+ 3 23.8	1.605	2.533	10.1	21.4	3 12	13 15.33	- 4 28.1	1.473	2.398	11.1	19.3
3 22	13 7.80	+ 4 40.1	1.557	2.528	6.4	21.2	3 22	13 7.49	- 3 58.8	1.436	2.410	6.5	19.1
4 1	12 58.29	+ 5 53.9	1.536	2.523	4.4	21.0	4 1	12 58.20	- 3 24.5	1.425	2.423	1.7	18.8
4 11	12 48.37	+ 6 56.5	1.542	2.518	6.7	21.1	4 11	12 48.66	- 2 51.2	1.441	2.435	3.8	19.0
4 21	12 39.18	+ 7 41.2	1.576	2.511	10.6	21.4	4 21	12 40.04	- 2 25.0	1.483	2.447	8.5	19.3
5 1	12 31.73	+ 8 3.9	1.632	2.504	14.4	21.6	5 1	12 33.30	- 2 10.4	1.549	2.460	12.7	19.6
5 11	12 26.66	+ 8 4.1	1.709	2.496	17.6	21.8	5 11	12 29.04	- 2 10.2	1.636	2.473	16.2	19.8
93738	2000 <i>VQ</i> ₅₀		4 4.5	168°73	4°9/30.3	18 R	18094	2000 <i>KN</i> ₅₆		4 4.5	188°29	2°4/ 7.5	18
3 2	13 19.56	+ 8 10.8	2.265	3.118	10.9	19.2	3 2	13 15.12	-17 4.8	2.533	3.328	11.7	18.5
3 12	13 13.79	+ 9 3.3	2.201	3.122	8.2	19.1	3 12	13 10.56	-16 39.7	2.443	3.327	9.1	18.4
3 22	13 6.34	+ 9 54.0	2.163	3.125	5.8	18.9	3 22	13 4.47	-15 59.3	2.378	3.327	6.2	18.2
4 1	12 57.87	+10 37.1	2.154	3.127	4.9	18.9	4 1	12 57.41	-15 5.4	2.340	3.325	3.3	18.0
4 11	12 49.21	+11 7.2	2.172	3.130	6.5	19.0	4 11	12 50.09	-14 1.8	2.331	3.324	2.7	17.9
4 21	12 41.14	+11 21.1	2.218	3.131	9.1	19.1	4 21	12 43.22	-12 53.6	2.351	3.322	5.3	18.1
5 1	12 34.39	+11 17.3	2.289	3.132	11.8	19.3	5 1	12 37.45	-11 46.5	2.399	3.320	8.3	18.3
5 11	12 29.44	+10 56.3	2.381	3.133	14.2	19.5	5 11	12 33.26	-10 45.7	2.472	3.318	11.1	18.5
349471	2008 <i>CP</i> ₁₈₈		4 4.5	71°41	9°0/23.6	18	459569	2013 <i>GW</i> ₁₀₄		4 4.5	20°10	0°6/ 4.9	16
3 2	13 16.42	+22 49.5	2.304	3.144	11.2	20.1	3 2	13 20.52	- 8 10.7	1.273	2.129	17.4	21.2
3 12	13 11.52	+24 14.4	2.267	3.151	9.7	20.0	3 12	13 15.68	- 8 8.9	1.207	2.132	13.0	20.9
3 22	13 4.99	+25 26.4	2.254	3.158	9.0	20.0	3 22	13 7.99	- 7 52.0	1.162	2.134	7.9	20.6
4 1	12 57.51	+26 18.6	2.267	3.165	9.4	20.0	4 1	12 58.39	- 7 23.5	1.140	2.138	2.3	20.3
4 11	12 49.90	+26 46.3	2.304	3.172	10.6	20.1	4 11	12 48.31	- 6 49.9	1.144	2.141	3.6	20.4
4 21	12 42.96	+26 47.9	2.364	3.179	12.3	20.2	4 21	12 39.19	- 6 18.6	1.172	2.146	9.1	20.7
5 1	12 37.34	+26 24.4	2.445	3.185	14.1	20.4	5 1	12 32.26	- 5 56.3	1.224	2.150	14.0	21.0
5 11	12 33.49	+25 38.7	2.542	3.192	15.6	20.5	5 11	12 28.26	- 5 48.0	1.294	2.155	18.2	21.3
193769	2001 <i>MH</i> ₂₃		4 4.5	269°85	4°3/ 1.0	17	43475	2001 <i>AY</i> ₄₀		4 4.5	59°96	2°4/ 6.8	18

EPHEMERIDES

4 4.5

4 4.5

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
462719	2009 <i>WK</i> ₂₆₁	4 4.5 206°07'9"	4.1/31.4 18				377199	2003 <i>WU</i> ₆₂	4 4.5 63°96'	1°5'/ 5.8 18			
3 2	13 21.34	+ 6 2.4	2.336	3.183	10.8	21.6	3 2	13 20.82	-10 50.8	1.866	2.692	14.0	20.8
3 12	13 15.14	+ 6 41.2	2.258	3.177	8.1	21.4	3 12	13 14.94	-10 53.9	1.809	2.716	10.5	20.6
3 22	13 7.19	+ 7 19.8	2.206	3.171	5.4	21.3	3 22	13 7.11	-10 44.2	1.776	2.740	6.6	20.4
4 1	12 58.14	+ 7 53.0	2.182	3.164	4.1	21.2	4 1	12 58.12	-10 24.0	1.769	2.763	2.6	20.2
4 11	12 48.79	+ 8 16.1	2.189	3.156	5.7	21.3	4 11	12 48.98	- 9 57.5	1.791	2.787	2.7	20.3
4 21	12 39.98	+ 8 25.6	2.223	3.148	8.5	21.4	4 21	12 40.66	- 9 29.8	1.840	2.811	6.5	20.6
5 1	12 32.44	+ 8 19.6	2.284	3.139	11.4	21.6	5 1	12 33.97	- 9 5.8	1.916	2.835	10.2	20.8
5 11	12 26.72	+ 7 58.0	2.366	3.130	13.9	21.7	5 11	12 29.42	- 8 49.5	2.014	2.858	13.3	21.1
402843	2007 <i>PX</i>	4 4.5 240°04'	0°0'/ 4.3 17				8127	Beuf	4 4.5 3°78'	7°4'/ 9.7 18			
3 2	13 21.13	- 8 31.9	1.872	2.705	13.7	22.0	3 2	13 22.79	-22 58.6	1.650	2.431	17.5	17.3
3 12	13 15.58	- 8 0.7	1.775	2.688	10.3	21.8	3 12	13 17.22	-24 2.6	1.569	2.431	14.6	17.1
3 22	13 7.76	- 7 15.4	1.701	2.670	6.2	21.5	3 22	13 8.92	-24 45.0	1.508	2.431	11.3	16.9
4 1	12 58.35	- 6 19.7	1.654	2.652	1.7	21.1	4 1	12 58.69	-25 2.4	1.471	2.431	8.4	16.7
4 11	12 48.33	- 5 19.4	1.637	2.632	3.1	21.2	4 11	12 47.78	-24 55.1	1.459	2.432	7.4	16.7
4 21	12 38.80	- 4 21.1	1.647	2.612	7.7	21.4	4 21	12 37.54	-24 26.9	1.473	2.432	9.1	16.8
5 1	12 30.77	- 3 31.7	1.683	2.591	12.0	21.6	5 1	12 29.21	-23 45.5	1.511	2.433	12.1	17.0
5 11	12 24.97	- 2 56.1	1.742	2.569	15.7	21.8	5 11	12 23.63	-22 59.9	1.570	2.434	15.4	17.2
7639	Offutt	4 4.5 9°01'	0°2'/ 4.3 18				320471	2007 <i>VO</i> ₂₉₂	4 4.5 97°55'	0°7'/ 3.9 18			
3 2	13 14.39	- 7 21.1	2.014	2.859	12.4	17.5	3 2	13 20.50	- 7 0.4	1.645	2.490	14.7	21.8
3 12	13 10.27	- 6 52.9	1.940	2.860	9.1	17.3	3 12	13 14.92	- 6 18.5	1.588	2.508	10.8	21.6
3 22	13 4.40	- 6 13.9	1.889	2.861	5.4	17.1	3 22	13 7.18	- 5 24.1	1.554	2.527	6.3	21.4
4 1	12 57.41	- 5 28.0	1.866	2.863	1.4	16.8	4 1	12 58.15	- 4 22.7	1.547	2.545	1.6	21.1
4 11	12 50.15	- 4 40.6	1.870	2.866	2.8	16.9	4 11	12 48.95	- 3 21.8	1.567	2.562	3.5	21.3
4 21	12 43.45	- 3 57.1	1.902	2.869	6.7	17.2	4 21	12 40.65	- 2 28.1	1.615	2.579	8.0	21.6
5 1	12 38.06	- 3 22.2	1.959	2.872	10.3	17.4	5 1	12 34.12	- 1 47.4	1.688	2.596	12.0	21.8
5 11	12 34.51	- 2 59.5	2.039	2.876	13.4	17.6	5 11	12 29.92	- 1 22.9	1.782	2.612	15.3	22.1
151989	2004 <i>HT</i> ₂₈	4 4.5 348°25'	4°1'/ 1.3 18				63768	2001 <i>QP</i> ₂₉₁	4 4.5 136°94'	0°0'/ 4.3 18			
3 2	13 15.41	+ 0 26.2	1.335	2.212	15.4	19.5	3 2	13 20.16	- 7 52.5	2.120	2.950	12.4	20.6
3 12	13 11.78	+ 1 24.0	1.268	2.206	11.3	19.2	3 12	13 14.35	- 7 28.6	2.049	2.961	9.2	20.4
3 22	13 5.62	+ 2 29.8	1.224	2.201	6.9	19.0	3 22	13 6.75	- 6 54.4	2.004	2.973	5.5	20.2
4 1	12 57.78	+ 3 35.0	1.204	2.196	4.1	18.8	4 1	12 58.04	- 6 13.3	1.986	2.983	1.4	20.0
4 11	12 49.49	+ 4 29.9	1.209	2.193	6.7	18.9	4 11	12 49.12	- 5 30.2	1.998	2.994	2.6	20.1
4 21	12 42.01	+ 5 6.7	1.237	2.190	11.2	19.2	4 21	12 40.84	- 4 50.0	2.038	3.003	6.5	20.3
5 1	12 36.44	+ 5 20.9	1.288	2.188	15.5	19.4	5 1	12 33.97	- 4 17.4	2.106	3.012	10.0	20.6
5 11	12 33.48	+ 5 11.1	1.356	2.187	19.2	19.6	5 11	12 29.02	- 3 55.6	2.196	3.021	13.0	20.8
97942	2000 <i>QC</i> ₁₁₈	4 4.5 247°35'	3°3'/ 7.1 16				396247	2014 <i>BJ</i> ₄₇	4 4.5 301°74'	0°4'/ 4.9 17			
3 2	13 20.99	-15 58.4	1.738	2.549	15.5	20.5	3 2	13 15.68	- 9 2.9	2.156	2.990	12.1	21.3
3 12	13 15.72	-15 59.3	1.641	2.535	12.2	20.2	3 12	13 11.19	- 8 41.7	2.071	2.985	9.0	21.1
3 22	13 7.96	-15 40.9	1.566	2.520	8.3	20.0	3 22	13 4.97	- 8 9.2	2.011	2.979	5.5	20.8
4 1	12 58.42	-15 3.8	1.516	2.504	4.5	19.7	4 1	12 57.61	- 7 28.3	1.977	2.974	1.6	20.6
4 11	12 48.20	-14 11.8	1.494	2.488	3.8	19.6	4 11	12 49.91	- 6 43.6	1.972	2.969	2.5	20.6
4 21	12 38.49	-13 11.2	1.499	2.471	7.6	19.8	4 21	12 42.70	- 6 0.3	1.996	2.964	6.3	20.8
5 1	12 30.44	-12 10.1	1.529	2.454	11.9	20.0	5 1	12 36.74	- 5 23.3	2.045	2.959	9.9	21.1
5 11	12 24.85	-11 16.4	1.582	2.436	15.8	20.2	5 11	12 32.56	- 4 56.4	2.118	2.954	13.0	21.2
54882	2001 <i>OK</i> ₅₇	4 4.5 91°89'	4°5'/30.4 17				211206	2002 <i>OM</i> ₂₄	4 4.5 91°31'	4°8'/ 8.6 17			
3 2	13 15.54	+ 5 20.7	2.130	2.992	11.1	19.3	3 2	13 25.99	-21 57.0	1.203	2.008	21.4	20.1
3 12	13 10.94	+ 6 29.9	2.072	2.999	8.2	19.1	3 12	13 19.51	-21 14.7	1.156	2.042	16.8	19.9
3 22	13 4.71	+ 7 39.9	2.039	3.006	5.5	19.0	3 22	13 10.04	-19 57.9	1.127	2.074	11.7	19.7
4 1	12 57.48	+ 8 44.0	2.033	3.013	4.5	18.9	4 1	12 58.89	-18 10.7	1.122	2.105	6.7	19.5
4 11	12 50.08	+ 9 36.1	2.056	3.020	6.3	19.0	4 11	12 47.75	-16 4.0	1.143	2.136	5.1	19.5
4 21	12 43.27	+10 11.8	2.105	3.027	9.1	19.2	4 21	12 38.15	-13 52.5	1.190	2.165	8.7	19.7
5 1	12 37.75	+10 28.8	2.179	3.034	11.9	19.4	5 1	12 31.20	-11 50.7	1.261	2.193	13.2	20.1
5 11	12 33.98	+10 26.9	2.273	3.041	14.3	19.6	5 11	12 27.40	-10 9.1	1.354	2.220	17.2	20.4
144841	2004 <i>JB</i> ₃₇	4 4.5 237°46'	2°6'/ 7.7 17				153131	2000 <i>SK</i> ₁₄₄	4 4.5 229°98'	0°9'/ 5.3 17			
3 2	13 14.61	-17 22.7	2.499	3.294	11.8	20.5	3 2	13 22.00	- 8 54.2	2.066	2.890	12.9	20.0
3 12	13 10.25	-17 2.2	2.404	3.288	9.3	20.3	3 12	13 15.98	- 9 0.9	1.975	2.883	9.7	19.8
3 22	13 4.34	-16 26.0	2.334	3.282	6.4	20.1	3 22	13 7.89	- 8 57.5	1.909	2.875	6.0	19.6
4 1	12 57.40	-15 35.8	2.290	3.275	3.5	19.9	4 1	12 58.40	- 8 45.7	1.871	2.866	2.0	19.3
4 11	12 50.17	-14 35.2	2.275	3.268	2.9	19.9	4 11	12 48.44	- 8 28.9	1.861	2.858	2.6	19.3
4 21	12 43.35	-13 29.1	2.289	3.261	5.4	20.0	4 21	12 38.99	- 8 11.2	1.881	2.849	6.7	19.5
5 1	12 37.63	-12 23.3	2.331	3.254	8.4	20.2	5 1	12 30.95	- 7 56.8	1.927	2.840	10.5	19.8
5 11	12 33.50	-11 23.2	2.398	3.247	11.3	20.4	5 11	12 24.98	- 7 49.8	1.997	2.830	13.8	20.0
251866	1999 <i>VY</i> ₁₃	4 4.5 259°24'	12°3'/15.2 18				434446	2005 <i>NC</i> ₈₄	4 4.5 212°63'	3°2'/30.5 16			
3 2	13 19.07	-35 12.7	1.291	2.031	23.5	19.8	3 2	13 14.51	+ 5 12.4	3.197	4.045	8.2	22.5
3 12	13 15.43	-35 45.3	1.203	2.021	20.8	19.6	3 12	13 9.80	+ 6 10.9	3.116	4.037	6.0	22.4
3 22	13 8.32	-35 36.2	1.129	2.011	17.7	19.3	3 22	13 3.93	+ 7 10.4	3.062	4.027	4.0	22.2
4 1	12 58.59	-34 37.3	1.073	2.000	14.6	19.1	4 1	12 57.31	+ 8 6.8	3.038	4.018	3.3	22.2
4 11	12 47.89	-32 46.9	1.037	1.989	12.5	18.9	4 11	12 50.49	+ 8 55.8	3.045	4.007	4.6	22.2
4 21	12 38.07	-30 12.8	1.023	1.977	12.7	18.9	4 21	12 43.99	+ 9 34.3	3.080	3.996	6.8	22.4
5 1	12 30.82	-27 11.5	1.032	1.966	15.3	19.0	5 1	12 38.32	+ 9 59.9	3.142	3.985	9.0	22.5
5 11	12 27.15	-24 4.1	1.063	1.954	18.9	19.2	5 11	12 33.86	+10 11.8	3.227	3.973	10.9	22.6
382437	1999 <i>TF</i> ₂₁₂	4 4.5 236°95'	0°5'/ 4.1 18				199646	2006 <i>GC</i> ₂₁	4 4.5 264°03'	1°2'/ 3.2 18			
3 2													

EPHEMERIDES

4 4.5

4 4.5

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
418028	2007 <i>UG</i> ₁₀₂		4 4.5 245°89	1°9/ 6.2 14	C		380146	1999 <i>UD</i> ₄₈		4 4.5 169°28	0°9/ 5.5 17		
3 2	13 19.37	-14 4.5	1.865	2.682	14.4	22.3	3 2	13 19.15	-10 31.2	2.585	3.399	11.0	22.0
3 12	13 14.35	-13 34.9	1.764	2.665	11.1	22.1	3 12	13 13.43	-10 18.2	2.502	3.403	8.2	21.8
3 22	13 7.08	-12 46.1	1.686	2.647	7.2	21.8	3 22	13 6.17	-9 55.0	2.444	3.407	5.1	21.6
4 1	12 58.22	-11 40.4	1.635	2.628	3.1	21.5	4 1	12 57.93	-9 23.8	2.415	3.410	1.8	21.4
4 11	12 48.76	-10 23.3	1.612	2.609	2.9	21.4	4 11	12 49.45	-8 48.2	2.417	3.413	2.1	21.4
4 21	12 39.77	-9 2.3	1.617	2.589	7.2	21.6	4 21	12 41.44	-8 12.0	2.448	3.415	5.4	21.7
5 1	12 32.28	-7 45.6	1.649	2.568	11.5	21.8	5 1	12 34.56	-7 39.3	2.507	3.417	8.5	21.8
5 11	12 27.01	-6 40.4	1.703	2.546	15.3	22.0	5 11	12 29.29	-7 13.7	2.591	3.418	11.2	22.0
469922	2005 <i>YN</i> ₁₇₇		4 4.5 1°47 17°6/17.6 16				509911	2009 <i>FW</i> ₇		4 4.5 87°65	1°5/ 3.1 17		
3 2	13 10.18	-34 19.4	1.007	1.789	26.2	19.9	3 2	13 18.69	-2 10.7	2.236	3.080	11.4	21.0
3 12	13 9.37	-37 4.1	0.948	1.783	23.9	19.7	3 12	13 13.21	-1 54.4	2.168	3.089	8.3	20.8
3 22	13 4.97	-39 11.8	0.903	1.781	21.5	19.5	3 22	13 6.06	-1 32.9	2.124	3.097	4.8	20.6
4 1	12 57.78	-40 30.8	0.874	1.781	19.3	19.3	4 1	12 57.90	-1 10.1	2.109	3.106	1.7	20.4
4 11	12 49.49	-40 54.8	0.860	1.785	17.9	19.3	4 11	12 49.54	-0 49.8	2.123	3.114	3.3	20.5
4 21	12 42.13	-40 25.9	0.863	1.792	17.7	19.3	4 21	12 41.76	-0 35.9	2.165	3.122	6.8	20.8
5 1	12 37.62	-39 14.4	0.882	1.802	18.7	19.4	5 1	12 35.27	-0 31.2	2.234	3.130	10.0	21.0
5 11	12 37.11	-37 37.0	0.917	1.816	20.6	19.5	5 11	12 30.56	-0 37.2	2.326	3.139	12.7	21.2
70823	1999 <i>VH</i> ₈₁		4 4.5 148°95	1°8/ 2.5 17			401862	2000 <i>SA</i> ₄₁		4 4.5 199°82	1°7/ 5.9 17		
3 2	13 16.76	-2 54.5	2.191	3.038	11.5	19.7	3 2	13 22.45	-12 13.6	1.975	2.790	13.8	22.2
3 12	13 11.84	-2 5.1	2.120	3.044	8.3	19.5	3 12	13 16.39	-12 5.6	1.886	2.786	10.5	22.0
3 22	13 5.27	-1 8.5	2.075	3.049	4.8	19.3	3 22	13 8.17	-11 43.1	1.821	2.782	6.7	21.7
4 1	12 57.68	-0 9.7	2.058	3.053	1.9	19.1	4 1	12 58.50	-11 8.0	1.783	2.777	2.8	21.5
4 11	12 49.86	+0 45.6	2.070	3.058	3.8	19.3	4 11	12 48.38	-10 24.6	1.775	2.771	2.8	21.5
4 21	12 42.61	+1 32.2	2.110	3.062	7.2	19.5	4 21	12 38.82	-9 38.4	1.794	2.764	6.8	21.7
5 1	12 36.62	+2 6.3	2.176	3.066	10.5	19.7	5 1	12 30.78	-8 55.5	1.841	2.756	10.7	21.9
5 11	12 32.39	+2 25.6	2.264	3.070	13.3	19.9	5 11	12 24.92	-8 21.2	1.911	2.748	14.2	22.1
430136	2013 <i>TB</i> ₄₀		4 4.5 132°55	0°5/ 5.1 17			99678	2002 <i>JH</i> ₁₅		4 4.5 211°16	4°5/ 30.5 18		
3 2	13 17.08	-10 16.2	2.127	2.955	12.5	21.6	3 2	13 18.08	+6 32.6	2.322	3.176	10.6	20.0
3 12	13 12.14	-9 40.1	2.054	2.963	9.3	21.4	3 12	13 12.79	+7 28.3	2.248	3.171	7.9	19.8
3 22	13 5.48	-8 51.1	2.004	2.972	5.6	21.2	3 22	13 5.85	+8 24.2	2.200	3.165	5.4	19.7
4 1	12 57.74	-7 52.9	1.983	2.980	1.7	21.0	4 1	12 57.86	+9 14.3	2.181	3.159	4.5	19.6
4 11	12 49.76	-6 51.0	1.990	2.987	2.4	21.0	4 11	12 49.60	+9 53.3	2.190	3.152	6.1	19.7
4 21	12 42.39	-5 51.2	2.027	2.994	6.3	21.3	4 21	12 41.85	+10 17.1	2.227	3.145	8.8	19.8
5 1	12 36.34	-4 59.0	2.089	3.001	9.8	21.5	5 1	12 35.32	+10 23.8	2.288	3.138	11.6	20.0
5 11	12 32.12	-4 18.4	2.175	3.008	12.8	21.7	5 11	12 30.50	+10 13.0	2.371	3.130	14.1	20.2
522776	2016 <i>NC</i> ₇₇		4 4.5 185°62	4°0/ 9.5 17			426315	2012 <i>TJ</i> ₂₅₉		4 4.5 278°72	0°4/ 4.1 17		
3 2	13 16.26	-21 54.2	2.711	3.475	11.8	22.1	3 2	13 15.89	-7 6.0	2.033	2.875	12.4	21.5
3 12	13 11.40	-21 59.7	2.618	3.475	9.6	21.9	3 12	13 11.41	-6 29.7	1.954	2.873	9.1	21.3
3 22	13 5.01	-21 49.3	2.550	3.475	7.1	21.8	3 22	13 5.13	-5 42.4	1.898	2.870	5.4	21.0
4 1	12 57.63	-21 23.4	2.507	3.474	4.9	21.6	4 1	12 57.68	-4 48.1	1.870	2.868	1.4	20.7
4 11	12 49.95	-20 44.2	2.493	3.473	4.1	21.6	4 11	12 49.92	-3 52.5	1.871	2.866	2.9	20.8
4 21	12 42.69	-19 55.5	2.508	3.472	5.5	21.6	4 21	12 42.70	-3 1.5	1.899	2.864	6.9	21.1
5 1	12 36.50	-19 2.1	2.550	3.471	7.9	21.8	5 1	12 36.80	-2 20.1	1.953	2.861	10.6	21.3
5 11	12 31.87	-18 9.3	2.618	3.469	10.3	22.0	5 11	12 32.78	-1 51.9	2.030	2.859	13.7	21.5
292955	2006 <i>VC</i> ₁₁₁		4 4.5 124°65	1°1/ 5.9 17			201609	2003 <i>SS</i> ₂₀₁		4 4.5 222°53	0°9/ 3.6 18		
3 2	13 15.96	-11 39.3	2.703	3.516	10.5	22.0	3 2	13 18.88	-4 20.0	2.386	3.222	11.0	20.8
3 12	13 11.01	-11 21.5	2.627	3.528	7.9	21.8	3 12	13 13.41	-3 57.7	2.297	3.214	8.1	20.6
3 22	13 4.68	-10 53.3	2.577	3.538	5.0	21.6	3 22	13 6.25	-3 28.4	2.233	3.205	4.7	20.4
4 1	12 57.52	-10 17.0	2.555	3.549	1.9	21.4	4 1	12 57.99	-2 55.3	2.198	3.195	1.3	20.1
4 11	12 50.18	-9 36.1	2.563	3.560	2.0	21.4	4 11	12 49.38	-2 22.6	2.193	3.185	2.9	20.2
4 21	12 43.31	-8 54.5	2.601	3.570	5.0	21.7	4 21	12 41.22	-1 54.6	2.216	3.175	6.5	20.4
5 1	12 37.48	-8 16.2	2.666	3.580	7.9	21.9	5 1	12 34.22	-1 34.9	2.267	3.165	9.8	20.6
5 11	12 33.12	-7 44.7	2.756	3.589	10.4	22.0	5 11	12 28.93	-1 26.0	2.341	3.153	12.7	20.8
129328	Loriharrison		4 4.5 203°59	5°5/ 9.5 18			305611	2008 <i>YW</i> ₁₅₉		4 4.5 114°61	3°7/ 1.4 18		
3 2	13 19.25	-22 4.6	1.872	2.654	15.7	19.6	3 2	13 21.11	+0 39.5	1.590	2.450	14.3	21.0
3 12	13 14.24	-22 24.3	1.787	2.653	12.8	19.4	3 12	13 15.47	+1 39.8	1.534	2.463	10.4	20.7
3 22	13 6.98	-22 22.5	1.722	2.652	9.6	19.2	3 22	13 7.58	+2 45.6	1.501	2.475	6.3	20.5
4 1	12 58.18	-21 58.5	1.683	2.652	6.6	19.0	4 1	12 58.32	+3 49.3	1.495	2.487	3.7	20.4
4 11	12 48.91	-21 14.6	1.669	2.651	5.5	19.0	4 11	12 48.86	+4 42.8	1.517	2.499	6.0	20.6
4 21	12 40.24	-20 16.4	1.683	2.650	7.4	19.1	4 21	12 40.31	+5 19.9	1.565	2.510	9.9	20.8
5 1	12 33.19	-19 11.5	1.722	2.648	10.6	19.3	5 1	12 33.58	+5 37.4	1.636	2.521	13.7	21.1
5 11	12 28.43	-18 8.1	1.784	2.647	13.8	19.5	5 11	12 29.25	+5 34.5	1.728	2.531	16.8	21.3
214536	2006 <i>ME</i> ₆		4 4.5 280°66	5°4/ 30.8 18			119614	2001 <i>WM</i> ₃₅		4 4.5 183°76	0°8/ 3.6 17		
3 2	13 18.40	+4 7.2	1.522	2.392	14.3	19.9	3 2	13 17.79	-6 23.5	2.222	3.058	11.7	21.0
3 12	13 13.83	+5 20.2	1.448	2.380	10.6	19.7	3 12	13 12.64	-5 35.9	2.142	3.059	8.6	20.8
3 22	13 6.82	+6 37.8	1.397	2.368	7.0	19.4	3 22	13 5.80	-4 38.1	2.087	3.059	5.0	20.5
4 1	12 58.15	+7 50.8	1.372	2.356	5.5	19.3	4 1	12 57.86	-3 34.4	2.060	3.058	1.3	20.3
4 11	12 48.98	+8 49.7	1.373	2.344	7.9	19.4	4 11	12 49.64	-2 30.6	2.063	3.057	3.0	20.4
4 21	12 40.50	+9 27.3	1.399	2.333	11.8	19.6	4 21	12 41.96	-1 32.4	2.095	3.055	6.8	20.6
5 1	12 33.80	+9 39.7	1.447	2.321	15.7	19.8	5 1	12 35.53	-0 44.6	2.154	3.053	10.2	20.8
5 11	12 29.60	+9 26.7	1.513	2.309	19.1	20.0	5 11	12 30.88	-0 10.6	2.236	3.050	13.2	21.0
234810	2002 <i>QX</i> ₁₀₀		4 4.5 214°83	3°4/ 7.8 18			138561	2000 <i>QY</i> ₆₆		4 4.5 192°01	1°8/ 2.7 18		
3 2	13 20.63	-17 9.5	2.440	3.226	1								

EPHEMERIDES

4 4.5

4 4.5

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
337416	2001 <i>QL</i> ₂₈₃		4 4.5 152°11	3°8/10.4	17		498793	2008 <i>UG</i> ₂₀₄		4 4.5 229°18	0°6/ 5.1	17	
3 2	13 16.90	-24 21.6	3.355	4.092	10.3	22.1	3 2	13 19.56	-9 4.0	2.389	3.210	11.5	22.1
3 12	13 11.55	-24 18.6	3.268	4.103	8.4	22.0	3 12	13 13.98	-8 53.6	2.292	3.199	8.6	21.9
3 22	13 4.97	-24 1.1	3.204	4.114	6.4	21.9	3 22	13 6.64	-8 33.2	2.221	3.187	5.3	21.7
4 1	12 57.62	-23 29.7	3.168	4.124	4.6	21.8	4 1	12 58.13	-8 5.0	2.178	3.175	1.7	21.4
4 11	12 50.10	-22 46.2	3.160	4.133	3.8	21.7	4 11	12 49.21	-7 32.6	2.165	3.162	2.3	21.4
4 21	12 42.97	-21 54.0	3.183	4.142	4.8	21.8	4 21	12 40.71	-7 0.2	2.181	3.148	6.0	21.7
5 1	12 36.76	-20 57.1	3.235	4.150	6.6	21.9	5 1	12 33.37	-6 32.1	2.225	3.134	9.4	21.8
5 11	12 31.87	-20 0.1	3.313	4.157	8.6	22.1	5 11	12 27.77	-6 12.0	2.293	3.120	12.4	22.0
288740	2004 <i>RR</i> ₅₅		4 4.5 253°21	1°9/ 2.4	17		5763	1982 <i>MA</i>		4 4.5 273°99	0°0/ 4.3	18	
3 2	13 15.18	-5 9.0	1.963	2.813	12.5	20.6	3 2	13 18.47	-8 9.2	1.703	2.547	14.4	18.7
3 12	13 11.01	-3 47.4	1.876	2.801	9.1	20.3	3 12	13 13.83	-7 39.7	1.611	2.530	10.7	18.4
3 22	13 4.97	-2 12.8	1.814	2.789	5.3	20.1	3 22	13 6.85	-6 55.8	1.541	2.512	6.5	18.1
4 1	12 57.67	-0 31.4	1.781	2.777	2.0	19.8	4 1	12 58.23	-6 1.2	1.497	2.494	1.7	17.8
4 11	12 49.99	+1 8.3	1.776	2.765	4.3	19.9	4 11	12 49.00	-5 2.2	1.480	2.477	3.3	17.8
4 21	12 42.81	+2 38.2	1.800	2.752	8.3	20.1	4 21	12 40.28	-4 6.1	1.491	2.458	8.1	18.1
5 1	12 36.95	+3 51.6	1.849	2.739	12.0	20.3	5 1	12 33.15	-3 19.9	1.526	2.440	12.6	18.3
5 11	12 33.02	+4 44.6	1.919	2.726	15.3	20.5	5 11	12 28.34	-2 48.7	1.582	2.422	16.5	18.5
329316	2000 <i>SL</i> ₂₅₃		4 4.5 249°99	2°6/ 1.9	18		261958	2006 <i>PG</i> ₁₅		4 4.5 161°91	0°5/ 5.0	18	
3 2	13 18.42	-0 47.8	2.125	2.974	11.7	21.3	3 2	13 19.80	-10 5.5	2.079	2.903	12.8	22.3
3 12	13 13.31	+0 1.3	2.033	2.957	8.5	21.1	3 12	13 14.22	-9 31.8	2.002	2.910	9.6	22.1
3 22	13 6.32	+0 57.3	1.966	2.939	5.1	20.8	3 22	13 6.77	-8 45.0	1.949	2.916	5.8	21.8
4 1	12 58.04	+1 55.0	1.927	2.921	2.6	20.6	4 1	12 58.14	-7 48.6	1.924	2.921	1.8	21.6
4 11	12 49.32	+2 48.3	1.918	2.902	4.6	20.7	4 11	12 49.24	-6 48.2	1.929	2.925	2.5	21.6
4 21	12 41.03	+3 31.5	1.936	2.882	8.2	20.9	4 21	12 40.96	-5 49.7	1.962	2.929	6.6	21.9
5 1	12 34.02	+4 0.4	1.980	2.863	11.7	21.1	5 1	12 34.09	-4 58.7	2.023	2.932	10.2	22.1
5 11	12 28.89	+4 12.7	2.045	2.842	14.8	21.2	5 11	12 29.18	-4 19.6	2.106	2.935	13.3	22.3
250520	2004 <i>OZ</i> ₈		4 4.5 288°01	2°4/ 2.3	16		64136	2001 <i>TV</i> ₃₂		4 4.5 51°28	5°0/ 9.1	18	
3 2	13 21.84	+1 29.3	2.462	3.302	10.6	20.5	3 2	13 17.85	-20 38.1	1.607	2.409	17.0	19.0
3 12	13 15.72	+1 40.3	2.351	3.269	7.8	20.3	3 12	13 13.33	-20 43.2	1.539	2.420	13.6	18.8
3 22	13 7.74	+1 53.7	2.265	3.236	4.8	20.0	3 22	13 6.46	-20 24.1	1.491	2.432	9.9	18.6
4 1	12 58.43	+2 5.8	2.209	3.202	2.4	19.8	4 1	12 58.08	-19 41.6	1.467	2.444	6.3	18.5
4 11	12 48.57	+2 12.9	2.183	3.168	4.1	19.9	4 11	12 49.37	-18 40.1	1.469	2.457	5.1	18.4
4 21	12 38.99	+2 11.7	2.187	3.133	7.4	20.0	4 21	12 41.49	-17 27.4	1.497	2.469	7.5	18.6
5 1	12 30.50	+1 59.8	2.218	3.098	10.7	20.2	5 1	12 35.42	-16 12.4	1.549	2.482	11.1	18.8
5 11	12 23.74	+1 36.0	2.272	3.063	13.7	20.3	5 11	12 31.79	-15 3.9	1.624	2.495	14.6	19.1
433194	2012 <i>UO</i> ₃₁		4 4.5 163°07	4°3/30.5	18		286269	2001 <i>VG</i> ₅₆		4 4.5 177°75	3°3/ 9.1	18	
3 2	13 19.09	+8 44.9	2.679	3.526	9.6	21.4	3 2	13 15.59	-20 57.0	2.845	3.613	11.2	21.6
3 12	13 13.26	+9 22.6	2.614	3.531	7.2	21.3	3 12	13 10.82	-20 41.8	2.753	3.615	9.0	21.4
3 22	13 6.01	+9 58.0	2.576	3.535	5.1	21.1	3 22	13 4.64	-20 11.2	2.685	3.616	6.5	21.2
4 1	12 57.91	+10 26.4	2.566	3.539	4.3	21.1	4 1	12 57.58	-19 26.0	2.644	3.617	4.2	21.1
4 11	12 49.65	+10 44.0	2.586	3.542	5.6	21.2	4 11	12 50.27	-18 29.1	2.632	3.617	3.4	21.0
4 21	12 41.90	+10 48.3	2.634	3.545	7.9	21.3	4 21	12 43.38	-17 24.9	2.649	3.617	5.0	21.1
5 1	12 35.27	+10 38.2	2.708	3.548	10.3	21.5	5 1	12 37.50	-16 18.4	2.695	3.617	7.5	21.3
5 11	12 30.18	+10 13.9	2.804	3.550	12.4	21.6	5 11	12 33.08	-15 14.8	2.767	3.616	9.9	21.4
285729	2000 <i>SR</i> ₃₂₈		4 4.5 50°67	1°4/ 6.2	18		198465	2004 <i>XL</i> ₂₂		4 4.5 65°23	2°7/ 2.6	18	
3 2	13 14.09	-13 21.1	2.297	3.115	12.0	20.1	3 2	13 20.71	-2 9.4	1.345	2.210	16.1	20.0
3 12	13 9.94	-12 46.9	2.214	3.116	9.1	19.9	3 12	13 15.50	-1 25.9	1.292	2.224	11.7	19.8
3 22	13 4.20	-11 58.3	2.155	3.117	5.8	19.7	3 22	13 7.74	-0 33.4	1.261	2.237	6.8	19.6
4 1	12 57.45	-10 58.1	2.124	3.117	2.4	19.5	4 1	12 58.41	+0 20.6	1.255	2.251	2.8	19.3
4 11	12 50.45	-9 51.3	2.121	3.118	2.3	19.5	4 11	12 48.85	+1 7.7	1.275	2.265	5.3	19.5
4 21	12 43.93	-8 43.5	2.147	3.119	5.7	19.7	4 21	12 40.35	+1 41.0	1.320	2.279	10.0	19.8
5 1	12 38.57	-7 40.5	2.201	3.120	9.0	19.9	5 1	12 33.93	+1 56.1	1.388	2.293	14.3	20.1
5 11	12 34.88	-6 47.1	2.278	3.121	12.0	20.1	5 11	12 30.19	+1 51.7	1.475	2.307	17.9	20.4
29794	1999 <i>CC</i> ₆₇		4 4.5 42°68	7°2/11.1	18		251683	1995 <i>UY</i> ₃₄		4 4.5 207°08	1°8/ 2.8	16	
3 2	13 17.95	-25 45.9	1.631	2.406	17.9	17.4	3 2	13 20.09	-3 10.0	2.158	2.998	11.8	22.0
3 12	13 13.55	-26 7.7	1.556	2.412	15.0	17.2	3 12	13 14.45	-2 24.1	2.072	2.992	8.7	21.8
3 22	13 6.68	-26 2.1	1.500	2.418	11.7	17.0	3 22	13 6.94	-1 30.1	2.012	2.985	5.1	21.5
4 1	12 58.16	-25 27.6	1.467	2.425	8.6	16.8	4 1	12 58.21	-0 32.7	1.981	2.977	1.9	21.3
4 11	12 49.18	-24 27.2	1.458	2.432	7.2	16.8	4 11	12 49.12	+0 22.2	1.979	2.968	3.8	21.4
4 21	12 40.99	-23 7.7	1.474	2.439	8.5	16.9	4 21	12 40.55	+1 9.1	2.006	2.959	7.6	21.6
5 1	12 34.66	-21 39.0	1.515	2.446	11.5	17.0	5 1	12 33.29	+1 43.6	2.060	2.948	11.1	21.8
5 11	12 30.87	-20 11.8	1.578	2.453	14.7	17.3	5 11	12 27.93	+2 3.2	2.136	2.937	14.1	22.0
128764	2004 <i>RJ</i> ₁₉₁		4 4.5 301°23	4°4/ 7.5	17		227912	2007 <i>EJ</i> ₁₉₇		4 4.5 112°13	0°4/ 4.9	18	
3 2	13 18.39	-16 25.1	1.313	2.146	18.4	19.6	3 2	13 17.17	-10 4.9	1.903	2.737	13.5	21.0
3 12	13 14.60	-16 41.0	1.218	2.123	14.7	19.3	3 12	13 12.41	-9 26.8	1.831	2.744	10.0	20.8
3 22	13 7.76	-16 33.6	1.142	2.099	10.3	19.0	3 22	13 5.75	-8 34.5	1.783	2.751	6.1	20.5
4 1	12 58.55	-16 1.8	1.089	2.076	5.8	18.6	4 1	12 57.89	-7 32.2	1.762	2.759	1.8	20.3
4 11	12 48.30	-15 8.9	1.060	2.054	4.9	18.5	4 11	12 49.76	-6 26.1	1.769	2.766	2.7	20.3
4 21	12 38.55	-14 2.8	1.054	2.031	9.2	18.7	4 21	12 42.29	-5 22.9	1.804	2.772	6.9	20.6
5 1	12 30.82	-12 54.0	1.072	2.009	14.4	18.9	5 1	12 36.29	-4 28.6	1.865	2.779	10.7	20.8
5 11	12 26.20	-11 53.5	1.108	1.988	19.3	19.1	5 11	12 32.30	-3 47.7	1.948	2.786	13.9	21.1
306136	2010 <i>JP</i> ₁₃₅		4 4.5 251°32	6°4/12.2	18		205593	2001 <i>TR</i> ₁₉₈		4 4.5 185°19	3°1/ 1.5	18	
3 2	13 16.50	-28 50.5	2.541	3.267	13.5								

EPHEMERIDES

4 4.5

4 4.6

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
377391	2004 <i>RH</i> ₃₂₆		4 4.5 196°62	3°0/ 7.4 17			478212	2011 <i>UU</i> ₂₉₈		4 4.5 269°63	4°7/10.4 16		
3 2	13 18.19	-16 9.5	1.964	2.772	14.1	20.9	3 2	13 15.28	-24 44.0	2.553	3.306	12.7	22.4
3 12	13 13.28	-16 5.4	1.880	2.772	11.0	20.7	3 12	13 10.94	-24 31.2	2.439	3.286	10.5	22.2
3 22	13 6.34	-15 44.0	1.819	2.771	7.5	20.5	3 22	13 4.92	-23 58.4	2.347	3.264	8.1	22.0
4 1	12 58.07	-15 6.6	1.783	2.770	4.0	20.2	4 1	12 57.74	-23 5.5	2.281	3.243	5.7	21.8
4 11	12 49.40	-14 17.1	1.775	2.769	3.4	20.2	4 11	12 50.13	-21 55.0	2.243	3.221	4.7	21.7
4 21	12 41.30	-13 21.4	1.795	2.768	6.5	20.4	4 21	12 42.88	-20 31.4	2.234	3.199	6.0	21.7
5 1	12 34.67	-12 26.1	1.841	2.766	10.2	20.6	5 1	12 36.72	-19 1.4	2.253	3.177	8.6	21.9
5 11	12 30.11	-11 37.4	1.911	2.765	13.5	20.8	5 11	12 32.23	-17 32.2	2.296	3.154	11.4	22.0
216627	2002 <i>YM</i> ₂₇		4 4.5 90°48	2°3/ 6.7 18			130540	2000 <i>QJ</i> ₂₁₃		4 4.5 153°91	0°2/ 4.4 18		
3 2	13 20.53	-14 28.3	1.788	2.605	15.0	20.2	3 2	13 22.26	- 7 25.2	1.861	2.695	13.7	21.0
3 12	13 14.91	-14 13.4	1.727	2.626	11.4	20.0	3 12	13 16.19	- 6 58.0	1.789	2.704	10.1	20.8
3 22	13 7.21	-13 41.1	1.689	2.647	7.4	19.8	3 22	13 8.04	- 6 19.3	1.741	2.711	6.0	20.5
4 1	12 58.27	-12 54.1	1.677	2.668	3.5	19.6	4 1	12 58.55	- 5 33.0	1.721	2.718	1.5	20.3
4 11	12 49.15	-11 57.8	1.692	2.688	3.0	19.6	4 11	12 48.77	- 4 44.8	1.729	2.724	3.0	20.4
4 21	12 40.87	-10 59.1	1.736	2.708	6.7	19.9	4 21	12 39.71	- 4 0.8	1.765	2.730	7.4	20.7
5 1	12 34.28	-10 4.6	1.805	2.728	10.5	20.1	5 1	12 32.28	- 3 26.1	1.828	2.735	11.3	20.9
5 11	12 29.91	- 9 20.0	1.897	2.747	13.7	20.4	5 11	12 27.04	- 3 4.5	1.913	2.739	14.6	21.1
260456	2005 <i>AT</i> ₄₁		4 4.5 96°97	1°0/ 5.4 18			278906	2008 <i>TB</i> ₁₄₄		4 4.5 147°97	0°2/ 4.3 17		
3 2	13 19.25	-11 22.0	1.524	2.363	16.0	20.7	3 2	13 17.61	- 7 30.0	2.119	2.955	12.2	21.6
3 12	13 14.37	-10 52.0	1.456	2.370	12.0	20.5	3 12	13 12.60	- 6 59.3	2.044	2.959	9.0	21.4
3 22	13 7.09	-10 3.9	1.410	2.378	7.4	20.3	3 22	13 5.84	- 6 18.1	1.993	2.963	5.3	21.2
4 1	12 58.28	- 9 1.9	1.390	2.386	2.5	20.0	4 1	12 57.97	- 5 30.2	1.970	2.967	1.4	20.9
4 11	12 49.12	- 7 53.3	1.396	2.393	3.1	20.0	4 11	12 49.83	- 4 40.7	1.975	2.971	2.7	21.0
4 21	12 40.82	- 6 46.3	1.429	2.401	7.9	20.3	4 21	12 42.26	- 3 54.9	2.009	2.974	6.6	21.3
5 1	12 34.37	- 5 48.9	1.486	2.408	12.3	20.6	5 1	12 36.01	- 3 17.5	2.070	2.978	10.1	21.5
5 11	12 30.41	- 5 6.7	1.564	2.415	16.1	20.9	5 11	12 31.60	- 2 52.1	2.153	2.980	13.1	21.7
370189	2002 <i>CO</i> ₁₈₂		4 4.5 147°95	4°1/ 8.7 17			240055	2001 <i>WK</i> ₃₇		4 4.5 145°20	8°9/ 24.3 18		
3 2	13 20.98	-20 4.3	2.285	3.061	13.4	21.6	3 2	13 22.99	+27 30.1	2.673	3.481	10.8	20.6
3 12	13 15.06	-20 16.6	2.203	3.070	10.7	21.4	3 12	13 16.13	+28 23.6	2.633	3.489	9.6	20.5
3 22	13 7.29	-20 11.8	2.145	3.078	7.8	21.3	3 22	13 7.71	+29 2.3	2.619	3.496	9.0	20.5
4 1	12 58.32	-19 50.2	2.113	3.086	5.1	21.1	4 1	12 58.42	+29 20.8	2.630	3.502	9.2	20.5
4 11	12 49.03	-19 14.2	2.109	3.094	4.2	21.1	4 11	12 49.08	+29 15.8	2.666	3.509	10.2	20.6
4 21	12 40.31	-18 28.4	2.134	3.101	6.2	21.2	4 21	12 40.47	+28 46.9	2.727	3.515	11.6	20.7
5 1	12 32.97	-17 38.5	2.187	3.107	9.0	21.4	5 1	12 33.23	+27 55.8	2.809	3.520	13.0	20.8
5 11	12 27.56	-16 50.5	2.264	3.113	11.8	21.6	5 11	12 27.78	+26 46.0	2.909	3.526	14.3	21.0
414401	2009 <i>BY</i> ₃₈		4 4.5 303°00	5°7/30.8 17			456862	2007 <i>VR</i> ₄		4 4.5 163°99	3°4/ 7.9 16		
3 2	13 16.92	+ 3 3.9	1.350	2.228	15.3	20.7	3 2	13 22.47	-18 2.7	2.180	2.966	13.6	22.3
3 12	13 13.08	+ 4 25.4	1.275	2.211	11.3	20.5	3 12	13 16.23	-18 0.7	2.097	2.974	10.8	22.2
3 22	13 6.57	+ 5 54.6	1.222	2.195	7.4	20.2	3 22	13 8.02	-17 41.5	2.037	2.980	7.5	22.0
4 1	12 58.20	+ 7 20.9	1.193	2.180	5.7	20.0	4 1	12 58.56	-17 6.0	2.005	2.986	4.4	21.8
4 11	12 49.21	+ 8 32.9	1.190	2.164	8.4	20.1	4 11	12 48.76	-16 17.6	2.001	2.991	3.6	21.7
4 21	12 40.92	+ 9 21.7	1.210	2.149	12.8	20.3	4 21	12 39.57	-15 21.5	2.026	2.995	6.2	21.9
5 1	12 34.55	+ 9 42.0	1.251	2.134	17.1	20.5	5 1	12 31.82	-14 24.1	2.079	2.998	9.5	22.1
5 11	12 30.88	+ 9 33.3	1.310	2.120	20.9	20.7	5 11	12 26.11	-13 31.6	2.156	3.000	12.5	22.3
517655	2015 <i>BR</i> ₅₄₃		4 4.5 190°90	2°8/ 7.3 17			423290	2005 <i>ER</i> ₁₈		4 4.5 84°60	1°9/ 6.2 17		
3 2	13 17.84	-15 56.6	1.981	2.790	14.0	21.9	3 2	13 20.34	-11 46.3	2.052	2.871	13.2	21.4
3 12	13 13.00	-15 49.8	1.897	2.790	10.9	21.7	3 12	13 14.69	-11 57.0	1.977	2.878	10.0	21.2
3 22	13 6.18	-15 25.7	1.836	2.789	7.4	21.5	3 22	13 7.12	-11 55.4	1.926	2.886	6.4	21.0
4 1	12 58.04	-14 46.0	1.801	2.789	3.9	21.3	4 1	12 58.32	-11 43.1	1.902	2.894	2.8	20.8
4 11	12 49.53	-13 54.7	1.794	2.788	3.3	21.2	4 11	12 49.20	-11 23.3	1.906	2.902	2.7	20.8
4 21	12 41.59	-12 57.6	1.815	2.787	6.4	21.4	4 21	12 40.71	-11 0.2	1.939	2.910	6.3	21.0
5 1	12 35.09	-12 1.5	1.862	2.787	10.1	21.6	5 1	12 33.66	-10 38.6	1.998	2.917	9.8	21.3
5 11	12 30.63	-11 12.3	1.932	2.786	13.4	21.8	5 11	12 28.62	-10 22.8	2.081	2.925	12.9	21.5
431913	2008 <i>TQ</i> ₄₇		4 4.5 174°05	0°8/ 3.6 17			61994	2000 <i>RT</i> ₃₃		4 4.5 111°07	0°0/ 4.5 18		
3 2	13 16.18	- 6 25.7	2.398	3.233	11.0	22.3	3 2	13 16.88	- 9 42.7	2.051	2.883	12.7	19.4
3 12	13 11.38	- 5 34.5	2.319	3.236	8.0	22.1	3 12	13 12.02	- 8 42.0	1.985	2.899	9.4	19.2
3 22	13 5.03	- 4 33.8	2.266	3.238	4.7	21.9	3 22	13 5.45	- 7 27.8	1.945	2.914	5.5	19.0
4 1	12 57.73	- 3 27.7	2.241	3.239	1.2	21.7	4 1	12 57.85	- 6 5.2	1.932	2.929	1.4	18.8
4 11	12 50.19	- 2 21.8	2.247	3.240	2.9	21.8	4 11	12 50.09	- 4 41.0	1.948	2.944	2.7	18.9
4 21	12 43.14	- 1 21.3	2.282	3.241	6.3	22.0	4 21	12 42.98	- 3 22.3	1.993	2.958	6.6	19.2
5 1	12 37.23	- 0 30.8	2.343	3.241	9.5	22.2	5 1	12 37.25	- 2 14.8	2.065	2.972	10.2	19.4
5 11	12 32.94	+ 0 6.5	2.429	3.241	12.3	22.4	5 11	12 33.37	- 1 22.6	2.160	2.985	13.2	19.6
380183	2000 <i>SH</i> ₂₈₄		4 4.5 237°16	2°5/ 7.5 18			143250	2002 <i>YU</i> ₃₀		4 4.6 238°73	4°2/ 9.1 18		
3 2	13 17.57	-17 17.3	2.389	3.182	12.4	22.3	3 2	13 16.84	-20 48.1	2.348	3.126	13.0	20.1
3 12	13 12.62	-16 47.4	2.282	3.166	9.7	22.1	3 12	13 12.10	-20 55.0	2.256	3.122	10.5	19.9
3 22	13 5.91	-16 0.0	2.200	3.149	6.6	21.9	3 22	13 5.60	-20 44.5	2.186	3.118	7.7	19.7
4 1	12 58.00	-14 56.7	2.144	3.131	3.5	21.7	4 1	12 57.93	-20 17.0	2.142	3.114	5.1	19.5
4 11	12 49.66	-13 41.6	2.119	3.113	2.9	21.6	4 11	12 49.88	-19 35.0	2.125	3.109	4.2	19.5
4 21	12 41.71	-12 20.4	2.122	3.094	5.8	21.7	4 21	12 42.28	-18 42.7	2.137	3.105	6.0	19.6
5 1	12 34.93	-11 0.0	2.154	3.074	9.2	21.9	5 1	12 35.91	-17 46.0	2.176	3.100	8.9	19.7
5 11	12 29.89	- 9 46.5	2.211	3.053	12.3	22.1	5 11	12 31.31	-16 51.0	2.239	3.096	11.7	19.9
72090	2000 <i>YL</i> ₄₅		4 4.5 213°53	3°6/31.9 17			465427	2008 <i>QT</i> ₂₁		4 4.6 238°19	4		

EPHEMERIDES

4 4.6

4 4.6

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
513031	2017 <i>VM</i> ₄		4 4.6 169°36	3°8/ 9.5 17			431813	2008 <i>RU</i> ₃₆		4 4.6 123°81	0°7/ 5.3 17		
3 2	13 17.82	-21 55.1	3.062	3.817	10.8	22.3	3 2	13 18.39	-10 11.3	2.232	3.055	12.1	22.1
3 12	13 12.41	-22 5.5	2.970	3.821	8.8	22.0	3 12	13 13.06	-9 48.3	2.161	3.068	9.0	21.9
3 22	13 5.61	-22 2.0	2.903	3.824	6.5	22.0	3 22	13 6.07	-9 13.7	2.114	3.080	5.5	21.7
4 1	12 57.91	-21 44.8	2.863	3.827	4.5	21.9	4 1	12 58.04	-8 30.6	2.095	3.091	1.8	21.5
4 11	12 49.95	-21 15.5	2.852	3.830	3.8	21.8	4 11	12 49.81	-7 43.5	2.106	3.103	2.3	21.5
4 21	12 42.37	-20 37.3	2.870	3.832	5.1	21.9	4 21	12 42.17	-6 57.4	2.145	3.114	6.0	21.8
5 1	12 35.77	-19 54.3	2.917	3.833	7.2	22.1	5 1	12 35.83	-6 17.1	2.212	3.124	9.3	22.0
5 11	12 30.59	-19 11.0	2.990	3.834	9.4	22.2	5 11	12 31.28	-5 46.4	2.302	3.134	12.2	22.2
221146	2005 <i>TE</i> ₂₆		4 4.6 198°05	0°0/ 4.3 17			271033	2003 <i>BO</i> ₄₉		4 4.6 2°96	5°7/31.4 17		
3 2	13 18.21	-8 23.8	2.083	2.916	12.5	21.8	3 2	13 13.58	+3 11.2	1.125	2.016	16.6	19.6
3 12	13 13.14	-7 48.1	2.000	2.914	9.3	21.5	3 12	13 10.77	+4 13.7	1.071	2.014	12.2	19.3
3 22	13 6.22	-7 0.3	1.942	2.911	5.5	21.3	3 22	13 5.22	+5 20.7	1.037	2.014	7.8	19.1
4 1	12 58.09	-6 4.3	1.911	2.908	1.5	21.0	4 1	12 57.87	+6 21.6	1.026	2.015	5.7	18.9
4 11	12 49.63	-5 5.6	1.909	2.904	2.7	21.1	4 11	12 50.13	+7 5.7	1.038	2.018	8.3	19.1
4 21	12 41.71	-4 10.0	1.935	2.900	6.8	21.4	4 21	12 43.37	+7 25.7	1.072	2.022	12.8	19.3
5 1	12 35.12	-3 23.0	1.988	2.896	10.4	21.6	5 1	12 38.74	+7 18.6	1.126	2.028	17.1	19.6
5 11	12 30.45	-2 48.7	2.064	2.891	13.6	21.8	5 11	12 36.89	+6 45.2	1.197	2.036	20.7	19.9
162672	2000 <i>SR</i> ₂₉₉		4 4.6 179°05	1°9/ 6.3 18			171770	2001 <i>AO</i> ₅₁		4 4.6 165°03	1°2/ 3.4 18		
3 2	13 20.15	-14 1.7	1.829	2.646	14.6	20.5	3 2	13 20.55	-5 13.7	1.934	2.775	13.0	21.2
3 12	13 14.82	-13 35.3	1.747	2.648	11.2	20.3	3 12	13 14.90	-4 29.0	1.861	2.780	9.5	21.0
3 22	13 7.32	-12 50.7	1.689	2.649	7.2	20.1	3 22	13 7.27	-3 34.1	1.812	2.785	5.5	20.8
4 1	12 58.40	-11 50.7	1.657	2.649	3.1	19.8	4 1	12 58.39	-2 34.1	1.792	2.789	1.6	20.5
4 11	12 49.09	-10 40.9	1.653	2.649	2.9	19.8	4 11	12 49.21	-1 35.4	1.800	2.792	3.6	20.6
4 21	12 40.44	-9 28.8	1.677	2.649	7.0	20.1	4 21	12 40.71	-0 44.0	1.837	2.795	7.6	20.9
5 1	12 33.39	-8 21.8	1.727	2.647	11.0	20.3	5 1	12 33.71	-0 5.0	1.899	2.797	11.4	21.1
5 11	12 28.57	-7 26.2	1.800	2.645	14.6	20.5	5 11	12 28.79	+0 18.6	1.984	2.799	14.5	21.3
30620	4126 <i>P-L</i>		4 4.6 218°27	0°0/ 4.4 18			506356	2017 <i>QX</i>		4 4.6 258°50	1°5/ 3.2 17		
3 2	13 18.65	-8 37.2	2.185	3.014	12.2	20.5	3 2	13 19.74	-4 4.9	1.889	2.735	13.0	21.1
3 12	13 13.44	-8 3.6	2.094	3.006	9.0	20.3	3 12	13 14.59	-3 27.9	1.794	2.716	9.6	20.9
3 22	13 6.41	-7 18.1	2.028	2.997	5.4	20.1	3 22	13 7.27	-2 40.8	1.724	2.697	5.7	20.6
4 1	12 58.15	-6 24.2	1.990	2.987	1.5	19.8	4 1	12 58.44	-1 48.2	1.680	2.677	1.8	20.3
4 11	12 49.51	-5 26.9	1.981	2.977	2.6	19.8	4 11	12 49.04	-0 56.5	1.665	2.657	3.9	20.4
4 21	12 41.35	-4 31.8	2.001	2.966	6.6	20.1	4 21	12 40.11	-0 11.9	1.678	2.636	8.2	20.6
5 1	12 34.45	-3 44.5	2.048	2.955	10.2	20.3	5 1	12 32.61	+0 20.3	1.716	2.615	12.3	20.8
5 11	12 29.41	-3 9.0	2.118	2.943	13.4	20.5	5 11	12 27.26	+0 36.6	1.776	2.594	15.9	21.0
52137	6080 <i>P-L</i>		4 4.6 228°16	0°2/ 4.7 18			395286	2011 <i>AH</i> ₆₉		4 4.6 186°88	5°4/ 9.6 17		
3 2	13 20.18	-8 33.7	2.000	2.830	13.0	20.5	3 2	13 21.39	-22 30.0	2.146	2.912	14.4	21.2
3 12	13 14.76	-8 8.6	1.908	2.820	9.8	20.3	3 12	13 15.65	-22 56.9	2.056	2.912	11.8	21.0
3 22	13 7.28	-7 31.1	1.840	2.809	5.9	20.0	3 22	13 7.82	-23 5.0	1.989	2.912	9.0	20.8
4 1	12 58.40	-6 44.5	1.800	2.797	1.6	19.7	4 1	12 58.56	-22 53.0	1.947	2.911	6.3	20.7
4 11	12 49.05	-5 53.8	1.788	2.784	2.8	19.8	4 11	12 48.84	-22 22.8	1.932	2.909	5.4	20.6
4 21	12 40.20	-5 5.0	1.805	2.771	7.1	20.0	4 21	12 39.64	-21 38.6	1.946	2.908	7.0	20.7
5 1	12 32.76	-4 23.7	1.848	2.758	11.0	20.2	5 1	12 31.89	-20 46.5	1.985	2.905	9.8	20.8
5 11	12 27.37	-3 54.4	1.914	2.744	14.4	20.4	5 11	12 26.25	-19 53.8	2.049	2.903	12.7	21.0
199630	2006 <i>GS</i>		4 4.6 169°36	1°7/ 2.6 18			30558	Jamesoconnor		4 4.6 202°81	2°6/ 6.7 18		
3 2	13 16.16	-3 44.9	2.109	2.957	11.8	20.8	3 2	13 23.48	-14 23.9	1.864	2.673	14.7	19.5
3 12	13 11.55	-2 49.0	2.035	2.958	8.6	20.6	3 12	13 17.36	-14 22.5	1.774	2.669	11.4	19.3
3 22	13 5.23	-1 44.4	1.986	2.960	5.0	20.4	3 22	13 8.92	-14 4.4	1.708	2.663	7.6	19.0
4 1	12 57.82	+0 36.4	1.965	2.961	1.9	20.2	4 1	12 58.87	-13 30.6	1.667	2.657	3.7	18.8
4 11	12 50.16	+0 28.6	1.973	2.962	3.8	20.3	4 11	12 48.28	-12 45.3	1.655	2.650	3.3	18.7
4 21	12 43.05	+1 24.8	2.009	2.963	7.4	20.5	4 21	12 38.29	-11 54.2	1.672	2.643	7.1	18.9
5 1	12 37.22	+2 7.7	2.071	2.963	10.8	20.7	5 1	12 29.93	-11 4.3	1.715	2.634	11.1	19.2
5 11	12 33.18	+2 34.5	2.154	2.964	13.7	20.9	5 11	12 23.91	-10 21.9	1.781	2.625	14.7	19.4
190381	1999 <i>RJ</i> ₁₃₂		4 4.6 192°36	2°9/ 7.8 17			402104	2003 <i>WT</i> ₁₅₈		4 4.6 142°75	1°8/ 2.8 18		
3 2	13 18.52	-17 20.6	2.435	3.225	12.3	20.7	3 2	13 21.12	-3 6.3	1.988	2.831	12.6	22.0
3 12	13 13.22	-17 13.5	2.343	3.223	9.6	20.5	3 12	13 15.19	-2 20.3	1.922	2.843	9.2	21.8
3 22	13 6.21	-16 51.2	2.275	3.221	6.7	20.3	3 22	13 7.37	-1 26.7	1.882	2.855	5.3	21.6
4 1	12 58.10	-16 14.7	2.235	3.218	3.8	20.1	4 1	12 58.40	-0 30.6	1.870	2.866	2.0	21.4
4 11	12 49.65	-15 27.2	2.223	3.215	3.1	20.1	4 11	12 49.22	+0 21.7	1.886	2.876	3.9	21.5
4 21	12 41.65	-14 33.3	2.241	3.211	5.6	20.2	4 21	12 40.75	+1 4.8	1.932	2.885	7.7	21.8
5 1	12 34.86	-13 38.5	2.286	3.207	8.7	20.4	5 1	12 33.78	+1 34.6	2.003	2.894	11.2	22.0
5 11	12 29.79	-12 48.2	2.356	3.202	11.6	20.6	5 11	12 28.83	+1 49.1	2.096	2.902	14.2	22.2
51969	2001 <i>QZ</i> ₂₉₂		4 4.6 274°16	3°4/10.8 18			297509	2000 <i>XW</i> ₂		4 4.6 153°47	6°2/13.8 18		
3 2	13 13.28	-24 50.9	4.499	5.226	8.0	19.4	3 2	13 17.04	-32 15.0	2.982	3.671	12.4	21.4
3 12	13 8.79	-25 12.4	4.400	5.224	6.6	19.3	3 12	13 11.99	-32 27.8	2.891	3.678	10.7	21.3
3 22	13 3.35	-25 23.9	4.324	5.222	5.2	19.2	3 22	13 5.43	-32 21.4	2.821	3.684	8.9	21.2
4 1	12 57.31	-25 25.2	4.277	5.221	4.0	19.1	4 1	12 57.90	-31 54.8	2.775	3.689	7.2	21.1
4 11	12 51.08	-25 17.1	4.258	5.219	3.4	19.1	4 11	12 50.10	-31 9.3	2.756	3.695	6.3	21.0
4 21	12 45.05	-25 1.2	4.268	5.217	4.0	19.1	4 21	12 42.76	-30 8.1	2.764	3.700	6.6	21.0
5 1	12 39.62	-24 39.9	4.307	5.216	5.3	19.2	5 1	12 36.50	-28 56.4	2.800	3.704	7.9	21.1
5 11	12 35.13	-24 15.8	4.373	5.214	6.7	19.3	5 11	12 31.83	-27 40.2	2.861	3.709	9.7	21.3
503397	2016 <i>CX</i> ₂₀₂		4 4.6 338°18	2°5/ 2.7 17			496681	2016 <i>CV</i> ₂₀₇		4 4.6 295°69	4°3/31.8 17		
3 2	13 16.94	-2 59.8	1.304	2.175	16.1	20.7	3 2	13 16.90					

EPHEMERIDES

4 4.6

4 4.6

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
51202	2000 <i>JR</i> ₆		4 4.6 124°78	5°7/28.5	18	R	55880	1997 <i>WS</i>		4 4.6 199°82	3°2/1.8	17	
3 2	13 16.41	+10 28.8	2.308	3.166	10.5	19.1	3 2	13 22.88	+2 35.3	2.080	2.927	12.0	19.5
3 12	13 11.54	+11 45.6	2.255	3.175	8.1	18.9	3 12	13 16.54	+3 1.6	2.003	2.924	8.8	19.3
3 22	13 5.14	+12 59.1	2.229	3.183	6.2	18.8	3 22	13 8.24	+3 30.0	1.950	2.921	5.4	19.1
4 1	12 57.81	+14 2.6	2.230	3.192	5.8	18.8	4 1	12 58.69	+3 55.7	1.926	2.917	3.2	19.0
4 11	12 50.32	+14 50.6	2.259	3.200	7.4	18.9	4 11	12 48.80	+4 13.8	1.932	2.913	5.0	19.1
4 21	12 43.42	+15 19.5	2.315	3.208	9.7	19.1	4 21	12 39.51	+4 20.5	1.965	2.908	8.4	19.3
5 1	12 37.74	+15 28.0	2.394	3.216	12.1	19.3	5 1	12 31.67	+4 13.4	2.025	2.902	11.7	19.5
5 11	12 33.73	+15 17.0	2.493	3.223	14.1	19.4	5 11	12 25.86	+3 52.0	2.106	2.896	14.6	19.6
96797	1999 <i>RT</i> ₁₂₄		4 4.6 304°96	4°1/31.1	17		299944	2006 <i>TD</i> ₅₂		4 4.6 124°42	1°5/6.5	18	
3 2	13 13.71	-0 14.2	1.718	2.586	13.0	19.1	3 2	13 14.45	-14 11.5	2.497	3.307	11.4	20.7
3 12	13 10.19	+1 27.8	1.641	2.575	9.5	18.9	3 12	13 10.12	-13 37.1	2.417	3.313	8.7	20.5
3 22	13 4.63	+3 20.1	1.590	2.564	5.9	18.6	3 22	13 4.32	-12 48.9	2.361	3.319	5.6	20.3
4 1	12 57.72	+5 13.8	1.565	2.554	4.1	18.5	4 1	12 57.62	-11 49.7	2.332	3.324	2.5	20.1
4 11	12 50.42	+6 58.3	1.568	2.544	6.5	18.6	4 11	12 50.71	-10 43.8	2.334	3.330	2.2	20.1
4 21	12 43.68	+8 24.8	1.597	2.534	10.4	18.8	4 21	12 44.27	-9 36.6	2.364	3.335	5.3	20.3
5 1	12 38.41	+9 27.3	1.650	2.524	14.1	19.0	5 1	12 38.92	-8 33.3	2.422	3.341	8.3	20.5
5 11	12 35.22	+10 3.5	1.722	2.514	17.3	19.2	5 11	12 35.12	-7 38.5	2.505	3.346	11.1	20.7
102503	1999 <i>TJ</i> ₂₈₈		4 4.6 261°91	1°5/3.2	17		425353	2010 <i>BM</i> ₅₂		4 4.6 144°57	5°4/29.5	18	
3 2	13 18.88	-5 5.8	1.723	2.573	13.9	20.2	3 2	13 19.36	+9 10.2	2.262	3.115	10.9	21.6
3 12	13 14.12	-4 17.7	1.632	2.556	10.3	20.0	3 12	13 13.71	+10 18.3	2.207	3.126	8.3	21.5
3 22	13 7.07	+3 16.8	1.564	2.538	6.0	19.7	3 22	13 6.42	+11 24.0	2.178	3.136	6.0	21.3
4 1	12 58.41	-2 8.4	1.522	2.520	1.9	19.3	4 1	12 58.17	+12 20.6	2.177	3.145	5.4	21.3
4 11	12 49.15	-1 0.0	1.509	2.501	4.1	19.5	4 11	12 49.77	+13 2.6	2.205	3.154	7.0	21.4
4 21	12 40.41	+0 0.7	1.522	2.482	8.8	19.7	4 21	12 41.99	+13 26.5	2.260	3.163	9.5	21.6
5 1	12 33.23	+0 47.0	1.560	2.462	13.1	19.9	5 1	12 35.53	+13 31.0	2.339	3.171	12.0	21.8
5 11	12 28.34	+1 14.9	1.618	2.443	16.9	20.1	5 11	12 30.85	+13 17.0	2.439	3.178	14.2	22.0
5120	<i>Bitias</i>		4 4.6 258°51	5°4/16.7	18		353427	2011 <i>QR</i> ₄₃		4 4.6 166°74	5°0/11.9	18	
3 2	13 12.27	-38 34.9	4.858	5.472	8.7	17.9	3 2	13 17.44	-28 10.9	3.258	3.970	11.0	22.0
3 12	13 8.14	-38 56.8	4.750	5.464	7.8	17.8	3 12	13 12.15	-28 24.8	3.164	3.975	9.3	21.9
3 22	13 3.02	-39 5.5	4.662	5.457	6.8	17.7	3 22	13 5.48	-28 22.7	3.094	3.979	7.5	21.8
4 1	12 57.25	-39 0.2	4.597	5.449	6.0	17.7	4 1	12 57.93	-28 4.3	3.049	3.983	5.8	21.7
4 11	12 51.27	-38 41.1	4.558	5.441	5.4	17.6	4 11	12 50.13	-27 30.8	3.032	3.987	5.0	21.6
4 21	12 45.50	-38 9.6	4.545	5.434	5.4	17.6	4 21	12 42.71	-26 45.0	3.044	3.989	5.6	21.7
5 1	12 40.37	-37 28.0	4.558	5.426	5.9	17.6	5 1	12 36.24	-25 51.1	3.084	3.992	7.1	21.8
5 11	12 36.23	-36 39.6	4.596	5.418	6.7	17.7	5 11	12 31.17	-24 54.1	3.149	3.994	9.0	21.9
217989	2001 <i>WU</i> ₄₆		4 4.6 215°18	1°8/3.0	18		471477	2011 <i>UO</i> ₃₄₅		4 4.6 214°87	3°8/9.4	17	
3 2	13 20.09	-2 33.1	1.912	2.759	12.8	20.1	3 2	13 15.78	-21 40.1	2.665	3.433	11.9	22.2
3 12	13 14.65	-2 5.2	1.833	2.756	9.4	19.8	3 12	13 11.15	-21 34.1	2.568	3.428	9.6	22.1
3 22	13 7.19	-1 30.1	1.779	2.753	5.5	19.6	3 22	13 4.99	-21 11.6	2.494	3.423	7.1	21.9
4 1	12 58.40	-0 52.5	1.753	2.749	2.0	19.4	4 1	12 57.82	-20 33.1	2.447	3.417	4.8	21.7
4 11	12 49.23	-0 17.8	1.754	2.745	3.9	19.5	4 11	12 50.34	-19 41.2	2.429	3.412	3.9	21.7
4 21	12 40.67	+0 8.8	1.784	2.741	8.0	19.7	4 21	12 43.26	-18 40.1	2.439	3.406	5.4	21.7
5 1	12 33.60	+0 23.4	1.838	2.736	11.7	19.9	5 1	12 37.24	-17 35.3	2.477	3.399	8.0	21.9
5 11	12 28.61	+0 23.8	1.915	2.732	14.9	20.1	5 11	12 32.79	-16 32.3	2.540	3.393	10.6	22.0
217907	2001 <i>SC</i> ₁₄₁		4 4.6 164°50	0°2/4.8	18		333656	2008 <i>SE</i> ₆₀		4 4.6 271°63	7°8/12.2	18	
3 2	13 20.57	-8 12.8	2.065	2.895	12.7	20.7	3 2	13 18.93	-29 21.4	2.075	2.808	15.9	20.7
3 12	13 14.85	-7 55.8	1.988	2.899	9.5	20.5	3 12	13 14.19	-29 54.1	1.969	2.791	13.7	20.5
3 22	13 7.23	-7 28.1	1.934	2.903	5.7	20.3	3 22	13 7.16	-30 3.4	1.884	2.774	11.2	20.3
4 1	12 58.40	-6 52.7	1.909	2.906	1.6	20.0	4 1	12 58.47	-29 46.1	1.821	2.756	9.0	20.1
4 11	12 49.25	-6 14.3	1.912	2.909	2.6	20.1	4 11	12 49.09	-29 2.5	1.783	2.739	7.8	20.0
4 21	12 40.70	-5 37.8	1.945	2.911	6.6	20.4	4 21	12 40.13	-27 56.2	1.771	2.721	8.6	20.0
5 1	12 33.58	-5 8.0	2.003	2.913	10.3	20.6	5 1	12 32.65	-26 34.7	1.785	2.703	10.9	20.1
5 11	12 28.43	-4 48.5	2.085	2.914	13.4	20.8	5 11	12 27.43	-25 7.1	1.822	2.684	13.7	20.2
191803	2004 <i>TJ</i> ₂₂₃		4 4.6 131°08	5°7/28.6	17		190090	2004 <i>TN</i> ₁₃₅		4 4.6 258°54	2°9/7.5	18	
3 2	13 16.66	+8 40.1	2.135	2.995	11.2	20.3	3 2	13 16.88	-17 7.4	2.039	2.843	13.8	20.2
3 12	13 11.84	+10 13.2	2.082	3.005	8.5	20.2	3 12	13 12.40	-16 47.1	1.940	2.829	10.9	20.0
3 22	13 5.36	+11 44.7	2.055	3.014	6.3	20.0	3 22	13 5.94	-16 7.9	1.864	2.815	7.4	19.7
4 1	12 57.87	+13 6.7	2.057	3.023	5.9	20.0	4 1	12 58.11	-15 11.0	1.814	2.801	4.0	19.5
4 11	12 50.22	+14 12.4	2.086	3.031	7.6	20.2	4 11	12 49.80	-14 0.8	1.792	2.786	3.3	19.4
4 21	12 43.19	+14 57.5	2.142	3.039	10.2	20.3	4 21	12 41.95	-12 43.8	1.798	2.771	6.5	19.6
5 1	12 37.46	+15 20.0	2.221	3.047	12.7	20.5	5 1	12 35.44	-11 27.3	1.831	2.756	10.2	19.8
5 11	12 33.52	+15 20.7	2.320	3.055	15.0	20.7	5 11	12 30.93	-10 18.6	1.887	2.741	13.6	20.0
419614	2010 <i>RA</i> ₁₅₂		4 4.6 277°84	1°3/3.4	17		47049	1998 <i>WT</i> ₁₉		4 4.6 70°56	8°5/12.5	18	
3 2	13 16.71	-6 40.1	1.561	2.416	14.8	21.7	3 2	13 20.71	-29 2.3	1.726	2.474	18.1	17.3
3 12	13 12.65	-5 38.7	1.478	2.404	11.0	21.4	3 12	13 15.59	-29 43.7	1.654	2.486	15.4	17.1
3 22	13 6.24	-4 20.9	1.417	2.392	6.4	21.1	3 22	13 7.96	-29 57.6	1.601	2.498	12.5	17.0
4 1	12 58.19	-2 53.0	1.382	2.379	1.8	20.8	4 1	12 58.65	-29 41.3	1.570	2.510	9.9	16.8
4 11	12 49.61	-1 24.2	1.373	2.367	4.2	20.9	4 11	12 48.89	-28 56.3	1.564	2.522	8.5	16.8
4 21	12 41.64	-0 4.0	1.392	2.354	9.1	21.2	4 21	12 39.95	-27 48.4	1.582	2.534	9.2	16.8
5 1	12 35.36	+0 59.7	1.434	2.342	13.7	21.4	5 1	12 32.91	-26 26.7	1.625	2.546	11.5	17.0
5 11	12 31.47	+1 42.0	1.496	2.329	17.6	21.6	5 11	12 28.46	-25 1.7	1.690	2.558	14.3	17.2
312204	2007 <i>VY</i> ₂₅₂		4 4.6 90°60	5°8/30.7	18		317485	2002 <i>RD</i> ₂₈₃		4 4.6 194°70	0°9/3.5	17	
3 2	13 20.70	+5 43.3	1.532	2.399									

EPHEMERIDES

4 4.6

4 4.6

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
155779	2000 SQ ₂₉₀		4 4.6 257°94	0°6/ 5.3 18			433850	2015 BJ ₂₇₄		4 4.6 142°36	4°8/29.9 16		
3 2	13 15.49	-11 55.9	1.880	2.712	13.7	20.1	3 2	13 17.98	+ 6 49.1	2.293	3.148	10.7	21.7
3 12	13 11.39	-11 1.1	1.793	2.704	10.3	19.9	3 12	13 12.71	+ 8 6.0	2.237	3.159	8.0	21.5
3 22	13 5.32	- 9 48.2	1.730	2.697	6.4	19.6	3 22	13 5.87	+ 9 22.5	2.207	3.169	5.6	21.4
4 1	12 57.94	- 8 21.7	1.693	2.689	2.0	19.3	4 1	12 58.09	+10 32.0	2.206	3.179	4.8	21.3
4 11	12 50.17	- 6 48.5	1.685	2.682	2.7	19.4	4 11	12 50.14	+11 28.5	2.233	3.189	6.5	21.5
4 21	12 42.95	- 5 17.0	1.704	2.674	7.1	19.6	4 21	12 42.80	+12 7.9	2.288	3.198	9.1	21.6
5 1	12 37.15	- 3 55.2	1.750	2.666	11.1	19.8	5 1	12 36.70	+12 28.1	2.368	3.206	11.6	21.8
5 11	12 33.36	- 2 48.9	1.819	2.659	14.6	20.0	5 11	12 32.31	+12 29.3	2.468	3.214	13.9	22.0
63774	2001 QX ₂₉₅		4 4.6 73°79	0°0/ 4.3 18			120096	2003 EG ₄₇		4 4.6 288°97	2°1/ 6.7 18		
3 2	13 17.58	-10 18.5	1.360	2.211	16.8	19.0	3 2	13 14.89	-16 4.3	1.739	2.560	15.1	19.3
3 12	13 13.39	- 9 17.9	1.295	2.217	12.5	18.7	3 12	13 11.17	-15 12.9	1.649	2.551	11.7	19.0
3 22	13 6.66	- 7 56.6	1.252	2.224	7.5	18.5	3 22	13 5.30	-13 58.1	1.582	2.542	7.7	18.8
4 1	12 58.30	- 6 21.4	1.233	2.231	2.0	18.1	4 1	12 58.00	-12 23.4	1.540	2.533	3.5	18.5
4 11	12 49.59	- 4 42.6	1.241	2.238	3.6	18.3	4 11	12 50.24	-10 36.0	1.526	2.524	2.9	18.4
4 21	12 41.79	- 3 11.1	1.275	2.245	8.9	18.6	4 21	12 43.07	- 8 45.5	1.540	2.515	7.1	18.7
5 1	12 35.96	- 1 56.3	1.332	2.251	13.7	18.9	5 1	12 37.43	- 7 2.0	1.580	2.506	11.4	18.9
5 11	12 32.75	- 1 3.5	1.409	2.258	17.6	19.1	5 11	12 33.98	- 5 33.6	1.642	2.497	15.2	19.1
290122	2005 QL ₁₃₅		4 4.6 69°36	0°4/ 4.9 18			464946	2005 VN ₁₆		4 4.6 174°03	2°1/ 2.3 16		
3 2	13 20.38	- 8 22.8	1.648	2.489	14.9	21.0	3 2	13 19.44	- 1 10.0	2.433	3.274	10.7	22.4
3 12	13 15.04	- 8 11.5	1.583	2.500	11.0	20.8	3 12	13 13.77	- 0 25.8	2.358	3.278	7.8	22.2
3 22	13 7.47	- 7 47.5	1.542	2.512	6.7	20.5	3 22	13 6.52	+ 0 23.7	2.309	3.281	4.6	22.0
4 1	12 58.50	- 7 14.4	1.526	2.523	1.9	20.3	4 1	12 58.28	+ 1 13.9	2.289	3.283	2.1	21.8
4 11	12 49.24	- 6 37.6	1.537	2.534	3.0	20.4	4 11	12 49.81	+ 1 59.9	2.299	3.285	3.8	21.9
4 21	12 40.80	- 6 3.2	1.575	2.545	7.5	20.7	4 21	12 41.85	+ 2 37.3	2.339	3.285	7.0	22.1
5 1	12 34.10	- 5 36.7	1.639	2.557	11.6	20.9	5 1	12 35.08	+ 3 2.9	2.405	3.285	10.0	22.3
5 11	12 29.76	- 5 21.9	1.724	2.568	15.1	21.2	5 11	12 29.97	+ 3 14.8	2.494	3.285	12.6	22.5
125225	2001 UG ₁₅₈		4 4.6 167°47	0°4/ 4.2 17			502588	2015 CN ₅		4 4.6 129°13	2°4/ 6.9 17		
3 2	13 18.62	- 7 26.4	2.135	2.969	12.2	20.9	3 2	13 18.62	-14 56.8	1.956	2.769	14.0	21.1
3 12	13 13.37	- 6 48.5	2.058	2.973	9.0	20.7	3 12	13 13.59	-14 45.5	1.879	2.774	10.8	20.9
3 22	13 6.35	- 5 59.8	2.006	2.976	5.3	20.5	3 22	13 6.59	-14 17.5	1.824	2.780	7.2	20.7
4 1	12 58.20	- 5 4.2	1.982	2.979	1.4	20.2	4 1	12 58.32	-13 34.8	1.796	2.785	3.5	20.4
4 11	12 49.78	- 4 7.3	1.987	2.982	2.8	20.4	4 11	12 49.72	-12 42.0	1.795	2.790	3.0	20.4
4 21	12 41.93	- 3 14.7	2.020	2.984	6.7	20.6	4 21	12 41.75	-11 45.0	1.823	2.795	6.4	20.6
5 1	12 35.40	- 2 31.3	2.080	2.985	10.2	20.8	5 1	12 35.26	-10 50.3	1.876	2.800	10.1	20.9
5 11	12 30.73	- 2 0.6	2.164	2.986	13.2	21.0	5 11	12 30.81	-10 3.8	1.953	2.804	13.3	21.1
331062	2009 WA ₁₆		4 4.6 213°08	2°3/ 2.3 18			217090	2001 VD ₄₄		4 4.6 126°66	5°5/ 10.8 18		
3 2	13 18.41	- 1 35.4	2.081	2.929	11.9	21.0	3 2	13 19.23	-25 23.7	2.122	2.877	14.9	20.4
3 12	13 13.30	- 0 49.6	2.001	2.925	8.7	20.8	3 12	13 13.99	-25 21.8	2.043	2.889	12.3	20.2
3 22	13 6.36	+ 0 3.0	1.946	2.919	5.1	20.6	3 22	13 6.79	-24 57.1	1.986	2.901	9.4	20.0
4 1	12 58.23	+ 0 57.4	1.919	2.914	2.3	20.4	4 1	12 58.37	-24 9.7	1.953	2.912	6.7	19.9
4 11	12 49.75	+ 1 47.4	1.921	2.908	4.2	20.5	4 11	12 49.66	-23 2.8	1.948	2.923	5.5	19.8
4 21	12 41.82	+ 2 27.9	1.951	2.902	7.9	20.7	4 21	12 41.61	-21 42.5	1.970	2.934	6.8	19.9
5 1	12 35.21	+ 2 54.7	2.007	2.895	11.3	20.9	5 1	12 35.06	-20 16.5	2.020	2.944	9.4	20.1
5 11	12 30.49	+ 3 5.8	2.084	2.888	14.3	21.1	5 11	12 30.55	-18 52.9	2.094	2.953	12.2	20.3
501063	2013 SG ₂₉		4 4.6 358°52	6°7/10.4 17			138556	2000 QC ₄₇		4 4.6 209°18	1°1/ 3.2 18		
3 2	13 11.18	-22 57.9	1.221	2.042	20.2	18.9	3 2	13 15.53	- 4 10.8	2.763	3.600	9.7	20.7
3 12	13 9.20	-23 6.9	1.148	2.037	16.7	18.6	3 12	13 10.82	- 3 31.4	2.677	3.594	7.0	20.5
3 22	13 4.46	-22 42.7	1.092	2.034	12.5	18.4	3 22	13 4.75	- 2 45.4	2.617	3.589	4.1	20.3
4 1	12 57.79	-21 44.5	1.057	2.032	8.6	18.1	4 1	12 57.81	- 1 56.2	2.586	3.582	1.3	20.1
4 11	12 50.55	-20 17.3	1.045	2.032	6.7	18.0	4 11	12 50.63	- 1 8.1	2.585	3.576	2.8	20.2
4 21	12 44.13	-18 31.7	1.055	2.034	9.0	18.2	4 21	12 43.82	- 0 25.1	2.613	3.569	5.8	20.4
5 1	12 39.80	-16 41.4	1.088	2.036	13.2	18.4	5 1	12 37.98	+ 0 9.2	2.669	3.562	8.7	20.6
5 11	12 38.33	-14 59.7	1.141	2.041	17.3	18.6	5 11	12 33.53	+ 0 32.5	2.749	3.554	11.2	20.7
57530	2001 SZ ₃₄₅		4 4.6 180°18	4°0/30.0 18			58303	1994 PY ₉		4 4.6 219°76	0°2/ 4.8 18		
3 2	13 14.99	+ 5 57.5	2.685	3.539	9.4	19.6	3 2	13 21.20	- 9 12.9	1.759	2.593	14.4	20.2
3 12	13 10.40	+ 7 8.9	2.617	3.540	6.9	19.4	3 12	13 15.79	- 8 40.1	1.671	2.585	10.8	20.0
3 22	13 4.47	+ 8 20.9	2.576	3.540	4.8	19.3	3 22	13 8.07	- 7 52.3	1.607	2.576	6.5	19.7
4 1	12 57.71	+ 9 28.2	2.564	3.541	4.1	19.3	4 1	12 58.76	- 6 53.2	1.569	2.566	1.9	19.4
4 11	12 50.75	+10 25.5	2.582	3.540	5.5	19.4	4 11	12 48.92	- 5 49.1	1.560	2.556	3.0	19.4
4 21	12 44.23	+11 8.9	2.627	3.540	7.9	19.5	4 21	12 39.68	- 4 47.4	1.578	2.545	7.8	19.7
5 1	12 38.70	+11 36.2	2.698	3.539	10.3	19.7	5 1	12 32.06	- 3 55.0	1.622	2.534	12.1	19.9
5 11	12 34.60	+11 46.6	2.791	3.537	12.4	19.8	5 11	12 26.77	- 3 17.2	1.687	2.521	15.9	20.1
372489	2009 SF ₂₃₃		4 4.6 190°32	2°1/ 2.0 17			36721	2000 RK ₄₂		4 4.6 249°47	3°5/ 8.7 18		
3 2	13 16.87	- 3 12.6	2.326	3.170	11.0	22.2	3 2	13 16.95	-19 38.0	2.643	3.420	11.7	19.1
3 12	13 11.99	- 1 57.9	2.247	3.169	8.0	22.0	3 12	13 12.11	-19 40.6	2.537	3.405	9.4	18.9
3 22	13 5.50	- 0 34.5	2.194	3.167	4.7	21.8	3 22	13 5.65	-19 28.2	2.456	3.391	6.8	18.7
4 1	12 58.00	+ 0 51.9	2.170	3.164	2.1	21.6	4 1	12 58.09	-19 1.1	2.401	3.376	4.4	18.5
4 11	12 50.23	+ 2 14.6	2.176	3.161	4.0	21.8	4 11	12 50.12	-18 21.5	2.375	3.361	3.6	18.5
4 21	12 42.95	+ 3 27.6	2.211	3.157	7.4	22.0	4 21	12 42.50	-17 33.1	2.377	3.345	5.5	18.5
5 1	12 36.83	+ 4 26.1	2.273	3.153	10.5	22.1	5 1	12 35.92	-16 41.0	2.408	3.330	8.3	18.7
5 11	12 32.39	+ 5 7.5	2.358	3.148	13.3	22.3	5 11	12 30.93	-15 50.4	2.463	3.313	11.0	18.8
198912	2005 UV ₇₃		4 4.6 54°18	1°3/ 5.6 18			124897	2001 TW ₅₀		4 4.6 140°12	2°2/ 2.8 18		
3 2	13 18.76	-11 58.1	1.275	2.124	17.9								

EPHEMERIDES

4 4.6

4 4.6

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
109078	2001 QA ₂₆	4 4.6 212°12	6°8/27.8 17				179838	2002 TC ₂₁₈	4 4.6 161°75	2°5/ 6.8 16			
3 2	13 17.40	+ 9 56.0	1.925	2.788	12.1	19.9	3 2	13 21.21	-14 30.0	1.925	2.736	14.3	21.1
3 12	13 12.70	+11 40.7	1.861	2.784	9.3	19.7	3 12	13 15.57	-14 28.0	1.846	2.740	11.0	20.9
3 22	13 6.07	+13 24.0	1.824	2.779	7.2	19.6	3 22	13 7.81	-14 10.0	1.789	2.744	7.3	20.7
4 1	12 58.19	+14 56.8	1.814	2.774	7.0	19.5	4 1	12 58.68	-13 37.3	1.758	2.748	3.6	20.5
4 11	12 50.00	+16 10.4	1.830	2.769	9.0	19.6	4 11	12 49.16	-12 54.2	1.756	2.751	3.1	20.4
4 21	12 42.41	+16 59.6	1.873	2.763	11.8	19.8	4 21	12 40.28	-12 6.1	1.782	2.753	6.6	20.7
5 1	12 36.26	+17 22.0	1.937	2.757	14.6	20.0	5 1	12 32.95	-11 19.5	1.834	2.755	10.4	20.9
5 11	12 32.12	+17 18.8	2.020	2.751	17.0	20.1	5 11	12 27.80	-10 40.1	1.909	2.757	13.7	21.1
233967	Vierkant	4 4.6 43°93	3°0/ 7.4 18				423504	2005 TS ₁₇₆	4 4.6 127°27	1°8/ 2.6 18			
3 2	13 17.72	-16 8.5	1.892	2.703	14.5	20.3	3 2	13 18.71	- 3 21.4	2.307	3.148	11.2	22.5
3 12	13 13.05	-16 4.6	1.812	2.705	11.3	20.0	3 12	13 13.21	- 2 21.8	2.246	3.166	8.1	22.3
3 22	13 6.34	-15 42.8	1.753	2.706	7.7	19.8	3 22	13 6.15	- 1 15.3	2.211	3.184	4.7	22.1
4 1	12 58.27	-15 4.7	1.721	2.708	4.1	19.6	4 1	12 58.19	- 0 6.9	2.206	3.201	1.9	22.0
4 11	12 49.83	-14 14.4	1.716	2.710	3.4	19.6	4 11	12 50.09	+ 0 57.4	2.230	3.217	3.6	22.1
4 21	12 42.00	-13 18.0	1.738	2.711	6.6	19.8	4 21	12 42.61	+ 1 52.7	2.283	3.233	6.9	22.4
5 1	12 35.65	-12 22.2	1.786	2.713	10.3	20.0	5 1	12 36.39	+ 2 35.0	2.363	3.248	10.0	22.6
5 11	12 31.42	-11 33.5	1.857	2.715	13.6	20.2	5 11	12 31.88	+ 3 2.3	2.466	3.262	12.6	22.8
153863	2001 XV ₇₁	4 4.6 39°95	0°2/ 4.8 18				207610	2006 QS ₁₅₅	4 4.6 223°00	0°3/ 4.9 18			
3 2	13 18.04	- 9 16.4	1.289	2.145	17.2	19.7	3 2	13 16.30	- 9 0.2	2.466	3.293	11.0	21.6
3 12	13 13.60	- 8 44.5	1.245	2.170	12.7	19.5	3 12	13 11.57	- 8 32.6	2.377	3.286	8.2	21.4
3 22	13 6.68	- 7 55.8	1.222	2.195	7.6	19.3	3 22	13 5.29	- 7 54.7	2.312	3.280	5.0	21.2
4 1	12 58.33	- 6 56.4	1.224	2.221	2.1	19.0	4 1	12 57.99	- 7 9.2	2.276	3.273	1.4	21.0
4 11	12 49.87	- 5 54.9	1.251	2.248	3.4	19.2	4 11	12 50.38	- 6 20.5	2.269	3.266	2.2	21.0
4 21	12 42.52	- 4 59.6	1.303	2.276	8.4	19.5	4 21	12 43.19	- 5 33.2	2.292	3.258	5.8	21.2
5 1	12 37.24	- 4 17.3	1.378	2.304	12.9	19.9	5 1	12 37.09	- 4 51.8	2.341	3.251	9.0	21.4
5 11	12 34.54	- 3 52.2	1.474	2.332	16.5	20.2	5 11	12 32.58	- 4 20.0	2.415	3.243	11.9	21.6
502701	2015 DO ₁₈	4 4.6 150°27	2°5/ 2.0 17				72079	2000 YR ₃₉	4 4.6 88°02	4°5/31.8 18			
3 2	13 18.08	- 0 34.1	2.165	3.015	11.5	21.7	3 2	13 19.12	+ 1 36.1	1.500	2.368	14.6	19.4
3 12	13 12.92	+ 0 12.2	2.096	3.020	8.3	21.5	3 12	13 14.27	+ 2 48.7	1.443	2.375	10.7	19.1
3 22	13 6.08	+ 1 3.8	2.052	3.025	5.0	21.3	3 22	13 7.10	+ 4 6.8	1.409	2.383	6.6	18.9
4 1	12 58.18	+ 1 55.5	2.036	3.030	2.5	21.1	4 1	12 58.48	+ 5 21.7	1.401	2.390	4.5	18.8
4 11	12 50.05	+ 2 41.7	2.050	3.034	4.3	21.3	4 11	12 49.59	+ 6 24.0	1.420	2.398	6.8	19.0
4 21	12 42.49	+ 3 17.7	2.091	3.038	7.6	21.5	4 21	12 41.58	+ 7 7.1	1.463	2.405	10.7	19.2
5 1	12 36.24	+ 3 40.1	2.158	3.042	10.8	21.7	5 1	12 35.40	+ 7 27.3	1.530	2.412	14.5	19.5
5 11	12 31.78	+ 3 47.3	2.247	3.046	13.6	21.9	5 11	12 31.65	+ 7 24.2	1.615	2.420	17.8	19.7
87926	2000 SZ ₃₁₉	4 4.6 198°87	6°5/15.1 18				522443	2016 CG ₃₁₉	4 4.6 106°02	5°7/30.0 17			
3 2	13 16.90	-35 23.4	3.214	3.874	12.0	19.6	3 2	13 17.91	+ 6 17.7	1.743	2.609	13.0	21.3
3 12	13 11.91	-35 29.3	3.110	3.870	10.6	19.5	3 12	13 13.15	+ 7 37.5	1.685	2.613	9.7	21.1
3 22	13 5.44	-35 15.5	3.026	3.866	9.0	19.3	3 22	13 6.35	+ 8 57.9	1.651	2.617	6.7	20.9
4 1	12 58.01	-34 40.8	2.966	3.862	7.5	19.2	4 1	12 58.28	+10 10.3	1.644	2.621	5.8	20.8
4 11	12 50.30	-33 46.3	2.932	3.857	6.6	19.2	4 11	12 49.95	+11 6.7	1.664	2.625	7.8	21.0
4 21	12 42.99	-32 34.8	2.926	3.851	6.7	19.2	4 21	12 42.36	+11 41.8	1.709	2.629	10.9	21.1
5 1	12 36.72	-31 11.3	2.947	3.845	7.8	19.2	5 1	12 36.35	+11 53.2	1.777	2.633	14.1	21.4
5 11	12 31.97	-29 41.9	2.995	3.839	9.4	19.3	5 11	12 32.48	+11 41.7	1.864	2.636	16.9	21.6
500981	2013 QN ₉₀	4 4.6 198°88	2°3/ 2.3 17				22504	1997 TD ₁₇	4 4.6 137°31	3°1/ 1.8 18			
3 2	13 17.16	- 3 11.2	1.808	2.663	13.1	21.8	3 2	13 21.22	- 0 49.8	1.727	2.580	13.7	18.9
3 12	13 12.60	- 2 8.9	1.735	2.662	9.6	21.6	3 12	13 15.54	+ 0 14.9	1.666	2.592	9.9	18.7
3 22	13 6.05	- 0 56.7	1.686	2.661	5.6	21.3	3 22	13 7.75	+ 1 26.7	1.630	2.603	5.9	18.5
4 1	12 58.19	+ 0 19.1	1.664	2.660	2.4	21.1	4 1	12 58.65	+ 2 38.4	1.621	2.614	3.2	18.4
4 11	12 50.01	+ 1 30.5	1.670	2.658	4.5	21.2	4 11	12 49.33	+ 3 42.0	1.640	2.623	5.3	18.5
4 21	12 42.45	+ 2 30.7	1.704	2.657	8.6	21.5	4 21	12 40.82	+ 4 31.1	1.686	2.633	9.2	18.8
5 1	12 36.39	+ 3 14.4	1.762	2.655	12.3	21.7	5 1	12 34.00	+ 5 1.6	1.757	2.641	12.9	19.0
5 11	12 32.40	+ 3 39.0	1.840	2.654	15.6	21.9	5 11	12 29.43	+ 5 12.3	1.849	2.649	16.0	19.2
410240	2007 TG ₃₉	4 4.6 167°62	2°3/ 2.7 16				247712	2003 EE ₃₉	4 4.6 359°95	11°8/18.6 17			
3 2	13 22.79	- 1 25.8	1.758	2.607	13.7	21.6	3 2	13 9.28	+19 15.2	1.519	2.397	13.9	18.2
3 12	13 16.76	- 0 54.5	1.687	2.610	10.0	21.4	3 12	13 7.22	+22 34.7	1.484	2.394	12.2	18.1
3 22	13 8.52	- 0 16.6	1.640	2.613	5.9	21.1	3 22	13 3.01	+25 41.0	1.475	2.392	11.9	18.1
4 1	12 58.86	+ 0 22.7	1.620	2.616	2.5	20.9	4 1	12 57.41	+28 18.6	1.490	2.391	13.2	18.1
4 11	12 48.85	+ 0 57.0	1.629	2.617	4.5	21.0	4 11	12 51.48	+30 16.2	1.529	2.392	15.3	18.3
4 21	12 39.59	+ 1 21.2	1.665	2.619	8.6	21.3	4 21	12 46.25	+31 29.3	1.587	2.394	17.7	18.4
5 1	12 32.01	+ 1 31.4	1.725	2.620	12.5	21.5	5 1	12 42.64	+31 58.8	1.662	2.397	19.9	18.6
5 11	12 26.74	+ 1 26.0	1.808	2.620	15.8	21.7	5 11	12 41.22	+31 49.7	1.749	2.401	21.7	18.8
64601	2001 XW ₂₀	4 4.6 209°98	0°6/ 3.9 18				13251	Viot	4 4.6 283°34	1°8/ 3.2 17			
3 2	13 20.13	- 5 43.6	2.514	3.342	10.8	20.5	3 2	13 18.60	- 5 39.3	1.354	2.215	16.3	17.9
3 12	13 14.35	- 5 16.4	2.422	3.334	7.9	20.3	3 12	13 14.55	- 4 44.9	1.265	2.195	12.1	17.5
3 22	13 6.93	- 4 41.0	2.355	3.325	4.7	20.1	3 22	13 7.69	- 3 33.1	1.198	2.174	7.2	17.2
4 1	12 58.42	- 4 0.8	2.318	3.315	1.2	19.8	4 1	12 58.75	- 2 10.1	1.155	2.153	2.2	16.8
4 11	12 49.58	- 3 19.9	2.311	3.305	2.7	19.9	4 11	12 49.00	- 0 46.0	1.138	2.131	4.9	16.9
4 21	12 41.15	- 2 42.6	2.334	3.294	6.2	20.1	4 21	12 39.83	+ 0 28.6	1.146	2.110	10.5	17.2
5 1	12 33.85	- 2 12.8	2.385	3.282	9.4	20.3	5 1	12 32.58	+ 1 24.4	1.177	2.089	15.7	17.4
5 11	12 28.19	- 1 53.5	2.459	3.269	12.2	20.5	5 11	12 28.15	+ 1 56.3	1.226	2.067	20.2	17.6
186074	2001 SO ₂₁₉	4 4.6 215°38	0°7/ 3.9 17				468262	2015 BH ₄₀₆	4 4.6 184°43	5°3/29.3 17			
3 2	13 17.73	- 7 5.7	1.979	2.819	12.8	2							

EPHEMERIDES

4 4.6

4 4.6

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
514540	2017 <i>BJ</i> ₉₁		4 4.6 310°15	7°2/18.7	18		363048	1999 <i>UO</i> ₁₇		4 4.6 232°31	0°2/ 4.4	16	
3 2	13 19.54	-45 1.0	4.466	5.011	10.0	20.6	3 2	13 21.10	-7 24.9	1.983	2.816	13.1	22.0
3 12	13 13.80	-45 58.5	4.364	5.007	9.3	20.5	3 12	13 15.54	-6 55.9	1.889	2.803	9.7	21.8
3 22	13 6.61	-46 40.9	4.281	5.004	8.5	20.4	3 22	13 7.89	-6 14.9	1.819	2.788	5.8	21.5
4 1	12 58.38	-47 5.9	4.220	5.000	7.8	20.4	4 1	12 58.77	-5 25.6	1.776	2.774	1.5	21.2
4 11	12 49.72	-47 13.0	4.181	4.996	7.3	20.3	4 11	12 49.14	-4 33.4	1.763	2.758	3.0	21.2
4 21	12 41.25	-47 2.8	4.167	4.993	7.2	20.3	4 21	12 39.98	-3 44.3	1.778	2.742	7.4	21.5
5 1	12 33.58	-46 37.5	4.177	4.989	7.5	20.3	5 1	12 32.24	-3 4.0	1.819	2.725	11.4	21.7
5 11	12 27.23	-46 0.8	4.211	4.985	8.1	20.4	5 11	12 26.59	-2 36.7	1.883	2.707	14.8	21.9
207388	2005 <i>TT</i> ₁₇₀		4 4.6 296°76	0°4/ 4.2	17		405520	2005 <i>EA</i> ₁		4 4.6 46°67	1°2/ 5.4	18	
3 2	13 15.19	-7 5.4	2.159	2.999	11.9	20.6	3 2	13 21.64	-9 40.0	1.247	2.099	18.0	20.7
3 12	13 11.03	-6 33.1	2.064	2.982	8.8	20.3	3 12	13 16.48	-9 40.5	1.196	2.117	13.5	20.5
3 22	13 5.11	-5 49.9	1.994	2.965	5.2	20.1	3 22	13 8.56	-9 24.1	1.164	2.135	8.3	20.3
4 1	12 57.99	-4 59.5	1.951	2.949	1.3	19.8	4 1	12 58.92	-8 54.6	1.157	2.153	2.8	20.0
4 11	12 50.46	-4 7.0	1.937	2.932	2.8	19.9	4 11	12 49.02	-8 18.7	1.175	2.172	3.4	20.1
4 21	12 43.33	-3 17.8	1.951	2.916	6.7	20.1	4 21	12 40.28	-7 43.7	1.217	2.192	8.6	20.4
5 1	12 37.39	-2 37.1	1.990	2.899	10.4	20.3	5 1	12 33.79	-7 16.7	1.283	2.212	13.3	20.7
5 11	12 33.22	-2 8.8	2.053	2.883	13.6	20.4	5 11	12 30.19	-7 2.7	1.368	2.232	17.2	21.0
405328	2003 <i>UH</i> ₂₄₅		4 4.6 173°99	1°8/ 2.8	14	2.4	464200	2015 <i>BN</i> ₆₇		4 4.6 141°10	3°7/31.7	17	
3 2	13 21.87	-2 29.7	2.159	2.998	11.9	22.4	3 2	13 19.63	+3 30.2	2.187	3.039	11.3	21.5
3 12	13 15.75	-1 50.6	2.084	3.002	8.7	22.2	3 12	13 14.01	+4 23.7	2.126	3.049	8.3	21.3
3 22	13 7.80	-1 4.7	2.034	3.006	5.1	22.0	3 22	13 6.71	+5 19.0	2.090	3.059	5.3	21.2
4 1	12 58.69	-0 16.6	2.012	3.008	2.0	21.7	4 1	12 58.39	+6 10.4	2.083	3.069	3.7	21.1
4 11	12 49.29	+0 28.1	2.021	3.009	3.8	21.9	4 11	12 49.90	+6 52.2	2.104	3.077	5.4	21.2
4 21	12 40.50	+1 4.6	2.058	3.010	7.4	22.1	4 21	12 42.04	+7 20.4	2.154	3.086	8.4	21.4
5 1	12 33.08	+1 29.2	2.122	3.010	10.8	22.3	5 1	12 35.50	+7 32.6	2.229	3.094	11.3	21.6
5 11	12 27.59	+1 39.7	2.208	3.009	13.7	22.5	5 11	12 30.79	+7 28.2	2.325	3.101	13.8	21.8
383623	2007 <i>PF</i> ₁₂		4 4.6 170°42	5°4/29.1	17		90855	1996 <i>GZ</i> ₈		4 4.6 141°63	2°2/ 2.8	18	
3 2	13 16.36	+8 35.5	2.241	3.100	10.8	20.8	3 2	13 22.86	-2 28.7	1.670	2.520	14.3	19.9
3 12	13 11.66	+9 53.3	2.179	3.101	8.2	20.6	3 12	13 16.87	-1 46.9	1.606	2.530	10.4	19.7
3 22	13 5.34	+11 9.8	2.144	3.103	6.0	20.5	3 22	13 8.61	-0 56.8	1.565	2.539	6.1	19.5
4 1	12 58.02	+12 18.1	2.136	3.104	5.5	20.5	4 1	12 58.94	-0 4.5	1.551	2.547	2.4	19.2
4 11	12 50.48	+13 12.0	2.156	3.105	7.1	20.6	4 11	12 48.98	+0 42.9	1.565	2.555	4.6	19.4
4 21	12 43.49	+13 47.5	2.203	3.106	9.7	20.7	4 21	12 39.86	+1 19.5	1.607	2.562	8.8	19.7
5 1	12 37.72	+14 2.5	2.273	3.106	12.2	20.9	5 1	12 32.52	+1 40.8	1.673	2.569	12.8	19.9
5 11	12 33.67	+13 57.4	2.364	3.107	14.5	21.0	5 11	12 27.56	+1 45.0	1.760	2.575	16.1	20.2
278929	2008 <i>UH</i> ₇		4 4.6 167°01	7°6/25.0	18		276584	2003 <i>SG</i> ₃₁₈		4 4.6 250°84	1°4/ 6.0	17	
3 2	13 20.26	+21 49.6	2.740	3.568	10.0	20.9	3 2	13 17.60	-12 5.5	2.060	2.883	13.0	21.2
3 12	13 14.23	+23 1.1	2.694	3.574	8.5	20.8	3 12	13 12.87	-11 48.7	1.971	2.875	9.9	21.0
3 22	13 6.74	+24 2.1	2.673	3.579	7.7	20.8	3 22	13 6.24	-11 17.5	1.905	2.867	6.3	20.8
4 1	12 58.38	+24 46.9	2.680	3.583	7.9	20.8	4 1	12 58.33	-10 34.5	1.865	2.859	2.5	20.5
4 11	12 49.88	+25 11.3	2.714	3.587	9.0	20.8	4 11	12 50.00	-9 44.0	1.854	2.851	2.5	20.5
4 21	12 41.96	+25 13.8	2.773	3.590	10.6	21.0	4 21	12 42.16	-8 51.8	1.871	2.843	6.4	20.7
5 1	12 35.22	+24 54.7	2.853	3.593	12.3	21.1	5 1	12 35.65	-8 3.7	1.915	2.834	10.1	20.9
5 11	12 30.11	+24 16.4	2.953	3.594	13.8	21.2	5 11	12 31.07	-7 24.7	1.981	2.826	13.4	21.1
87107	2000 <i>LD</i> ₂₀		4 4.6 302°94	1°5/ 5.9	18		426892	2013 <i>WL</i> ₅₇		4 4.6 204°82	3°4/31.9	17	
3 2	13 16.17	-12 37.6	1.595	2.432	15.5	18.7	3 2	13 18.40	+2 29.5	2.274	3.125	10.9	21.2
3 12	13 12.53	-12 11.4	1.490	2.403	11.9	18.4	3 12	13 13.18	+3 22.6	2.197	3.121	8.0	21.0
3 22	13 6.41	-11 24.6	1.407	2.373	7.7	18.1	3 22	13 6.29	+4 19.1	2.146	3.116	5.0	20.8
4 1	12 58.43	-10 19.5	1.349	2.344	3.0	17.7	4 1	12 58.32	+5 13.3	2.123	3.111	3.4	20.7
4 11	12 49.64	-9 2.0	1.317	2.315	3.1	17.6	4 11	12 50.06	+5 59.7	2.129	3.105	5.1	20.8
4 21	12 41.24	-7 40.7	1.311	2.285	8.2	17.9	4 21	12 42.30	+6 33.7	2.164	3.099	8.2	21.0
5 1	12 34.43	-6 25.0	1.329	2.256	13.1	18.1	5 1	12 35.76	+6 52.4	2.224	3.092	11.2	21.2
5 11	12 30.08	-5 23.4	1.368	2.228	17.5	18.2	5 11	12 30.96	+6 54.7	2.306	3.085	13.8	21.4
414168	2008 <i>AB</i> ₈₉		4 4.6 30°80	0°3/ 4.9	18		61616	2000 <i>QH</i> ₉₈		4 4.6 136°47	0°4/ 4.1	18	
3 2	13 17.98	-8 58.4	1.322	2.178	16.9	20.7	3 2	13 16.98	-6 2.1	2.660	3.491	10.2	19.8
3 12	13 13.78	-8 35.0	1.260	2.185	12.6	20.4	3 12	13 11.88	-5 39.1	2.586	3.499	7.5	19.6
3 22	13 6.98	-7 54.8	1.220	2.193	7.6	20.2	3 22	13 5.40	-5 9.0	2.538	3.508	4.4	19.4
4 1	12 58.51	-7 2.6	1.204	2.201	2.2	19.9	4 1	12 58.06	-4 34.7	2.518	3.516	1.1	19.2
4 11	12 49.68	-6 6.4	1.213	2.211	3.4	20.0	4 11	12 50.53	-4 0.0	2.529	3.523	2.3	19.3
4 21	12 41.78	-5 14.4	1.247	2.220	8.7	20.3	4 21	12 43.47	-3 28.6	2.569	3.531	5.5	19.5
5 1	12 35.91	-4 34.2	1.305	2.231	13.4	20.6	5 1	12 37.45	-3 3.8	2.636	3.538	8.4	19.7
5 11	12 32.71	-4 10.4	1.382	2.242	17.3	20.9	5 11	12 32.92	-2 48.2	2.728	3.545	11.0	19.9
151320	2002 <i>CQ</i> ₁₃₁		4 4.6 166°07	0°5/ 4.1	17		282179	2001 <i>TK</i> ₄₆		4 4.6 115°25	7°2/25.1	17	
3 2	13 16.48	-7 54.4	1.893	2.735	13.2	20.0	3 2	13 16.48	+18 27.5	2.601	3.446	9.9	20.3
3 12	13 12.06	-7 5.0	1.817	2.736	9.7	19.8	3 12	13 11.51	+19 58.2	2.565	3.462	8.3	20.2
3 22	13 5.72	-6 2.3	1.765	2.736	5.7	19.6	3 22	13 5.15	+21 20.0	2.556	3.477	7.3	20.2
4 1	12 58.15	-4 51.4	1.739	2.737	1.5	19.3	4 1	12 57.98	+22 26.5	2.574	3.493	7.5	20.2
4 11	12 50.27	-3 39.0	1.742	2.737	3.1	19.4	4 11	12 50.70	+23 12.9	2.619	3.507	8.8	20.3
4 21	12 42.99	-2 32.2	1.773	2.738	7.3	19.7	4 21	12 43.99	+23 37.3	2.689	3.522	10.5	20.4
5 1	12 37.12	-1 36.9	1.829	2.738	11.2	19.9	5 1	12 38.43	+23 39.5	2.780	3.536	12.2	20.6
5 11	12 33.25	-0 57.3	1.908	2.738	14.4	20.1	5 11	12 34.40	+23 21.4	2.890	3.550	13.7	20.7
210659	2000 <i>QG</i> ₁₁		4 4.6 211°78	1°6/ 3.0	17		4998	Kabashima		4 4.6 95°24	2°1/ 6.6	18	R
3 2	13 20.62	-4 30.2	2.001	2.842	12.6	22.1	3 2						

EPHEMERIDES

4 4.6

4 4.6

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
18364	1990 <i>WF</i> ₄		4 4.6 35°84	6°5/29.0	18		170028	2002 <i>VW</i> ₆		4 4.6 126°01	0°2/ 4.9	18	
3 2	13 16.70	+10 51.0	1.914	2.779	12.1	17.9	3 2	13 17.94	- 8 15.8	2.288	3.117	11.7	20.2
3 12	13 12.07	+11 56.9	1.866	2.788	9.3	17.7	3 12	13 12.84	- 7 58.3	2.212	3.123	8.7	20.0
3 22	13 5.64	+12 58.2	1.841	2.798	7.0	17.6	3 22	13 6.08	- 7 31.0	2.161	3.129	5.2	19.8
4 1	12 58.14	+13 47.6	1.843	2.808	6.6	17.6	4 1	12 58.30	- 6 57.0	2.138	3.135	1.5	19.5
4 11	12 50.48	+14 18.9	1.872	2.818	8.2	17.7	4 11	12 50.27	- 6 20.3	2.145	3.141	2.3	19.6
4 21	12 43.53	+14 29.0	1.925	2.829	10.8	17.9	4 21	12 42.77	- 5 45.4	2.180	3.147	6.0	19.9
5 1	12 38.03	+14 17.1	2.002	2.840	13.4	18.1	5 1	12 36.49	- 5 16.5	2.242	3.152	9.3	20.1
5 11	12 34.47	+13 44.9	2.097	2.852	15.8	18.2	5 11	12 31.94	- 4 56.9	2.327	3.158	12.2	20.3
363018	1996 <i>TA</i> ₆		4 4.6 201°49	1°1/ 3.6	17		244073	2001 <i>TN</i> ₁₈₀		4 4.6 127°24	2°7/ 7.9	18	
3 2	13 22.51	- 4 34.6	2.084	2.919	12.4	22.0	3 2	13 15.81	-17 44.0	2.446	3.239	12.1	20.7
3 12	13 16.40	- 4 5.4	1.998	2.914	9.2	21.7	3 12	13 11.25	-17 23.9	2.364	3.246	9.5	20.6
3 22	13 8.31	- 3 27.6	1.938	2.909	5.4	21.5	3 22	13 5.13	-16 48.0	2.306	3.252	6.5	20.4
4 1	12 58.90	- 2 45.1	1.905	2.903	1.6	21.2	4 1	12 58.04	-15 58.2	2.275	3.259	3.7	20.2
4 11	12 49.09	- 2 3.2	1.903	2.895	3.3	21.3	4 11	12 50.72	-14 58.1	2.273	3.265	2.9	20.2
4 21	12 39.82	- 1 27.1	1.929	2.888	7.3	21.6	4 21	12 43.88	-13 53.0	2.299	3.271	5.3	20.3
5 1	12 31.97	- 1 1.1	1.982	2.879	11.0	21.8	5 1	12 38.20	-12 48.5	2.354	3.277	8.3	20.5
5 11	12 26.12	- 0 48.1	2.058	2.869	14.2	22.0	5 11	12 34.15	-11 49.9	2.433	3.283	11.1	20.7
19174	1991 <i>NS</i> ₆		4 4.6 178°76	4°0/31.5	17 R		64313	2001 <i>UW</i> ₃₃		4 4.6 65°66	7°2/29.9	18	
3 2	13 17.72	+ 2 36.0	1.982	2.840	12.0	19.1	3 2	13 22.25	+11 20.9	1.629	2.491	13.9	19.0
3 12	13 12.87	+ 3 44.5	1.914	2.841	8.8	18.9	3 12	13 16.39	+12 15.6	1.581	2.502	10.7	18.9
3 22	13 6.17	+ 4 56.8	1.871	2.841	5.6	18.7	3 22	13 8.29	+13 4.0	1.557	2.514	8.1	18.7
4 1	12 58.31	+ 6 6.2	1.855	2.842	4.0	18.6	4 1	12 58.89	+13 38.0	1.558	2.525	7.3	18.7
4 11	12 50.17	+ 7 5.6	1.868	2.842	5.9	18.7	4 11	12 49.33	+13 51.3	1.585	2.536	9.0	18.8
4 21	12 42.63	+ 7 49.6	1.908	2.841	9.2	18.9	4 21	12 40.72	+13 41.1	1.637	2.548	11.9	19.0
5 1	12 36.49	+ 8 14.7	1.972	2.841	12.4	19.1	5 1	12 33.96	+13 7.6	1.711	2.559	14.9	19.2
5 11	12 32.26	+ 8 20.2	2.057	2.840	15.2	19.3	5 11	12 29.58	+12 13.7	1.804	2.571	17.6	19.5
504455	2008 <i>CS</i> ₁₆₂		4 4.6 144°10	3°2/ 8.6	18		465118	2006 <i>WU</i> ₁₀₇		4 4.6 103°36	1°2/ 5.8	18	
3 2	13 17.71	-19 12.6	2.803	3.578	11.2	22.3	3 2	13 21.60	-11 56.6	1.986	2.803	13.6	21.9
3 12	13 12.47	-19 17.2	2.719	3.586	8.9	22.1	3 12	13 15.57	-11 30.5	1.926	2.829	10.2	21.7
3 22	13 5.79	-19 8.0	2.658	3.593	6.4	22.0	3 22	13 7.69	-10 50.2	1.891	2.853	6.4	21.5
4 1	12 58.19	-18 45.7	2.626	3.601	4.1	21.8	4 1	12 58.72	- 9 59.2	1.883	2.877	2.4	21.3
4 11	12 50.35	-18 12.7	2.622	3.608	3.3	21.8	4 11	12 49.62	- 9 2.8	1.904	2.901	2.5	21.4
4 21	12 42.94	-17 32.4	2.648	3.615	5.1	21.9	4 21	12 41.30	- 8 7.1	1.954	2.924	6.3	21.7
5 1	12 36.58	-16 49.3	2.701	3.621	7.5	22.1	5 1	12 34.54	- 7 17.8	2.031	2.946	9.9	21.9
5 11	12 31.73	-16 8.0	2.780	3.627	9.9	22.3	5 11	12 29.81	- 6 39.2	2.131	2.967	12.9	22.2
490914	2011 <i>CX</i> ₅		4 4.6 60°74	1°3/ 5.7	16		83824	2001 <i>UL</i> ₁₅		4 4.6 283°81	2°1/ 7.1	18	
3 2	13 21.24	-10 42.9	1.571	2.407	15.7	21.5	3 2	13 14.75	-15 38.4	2.215	3.024	12.7	19.5
3 12	13 15.70	-10 34.9	1.518	2.430	11.8	21.4	3 12	13 10.67	-15 9.1	2.125	3.019	9.8	19.3
3 22	13 7.91	-10 11.7	1.487	2.453	7.3	21.1	3 22	13 4.90	-14 23.1	2.059	3.014	6.5	19.1
4 1	12 58.76	- 9 36.7	1.481	2.476	2.6	20.9	4 1	12 58.00	-13 22.7	2.020	3.009	3.2	18.8
4 11	12 49.46	- 8 55.8	1.503	2.500	2.9	21.0	4 11	12 50.78	-12 12.7	2.009	3.004	2.6	18.8
4 21	12 41.11	- 8 15.2	1.551	2.524	7.3	21.3	4 21	12 44.03	-10 59.1	2.026	2.999	5.8	19.0
5 1	12 34.63	- 7 41.2	1.625	2.547	11.4	21.6	5 1	12 38.48	- 9 48.2	2.070	2.994	9.3	19.2
5 11	12 30.57	- 7 18.4	1.720	2.571	14.9	21.9	5 11	12 34.68	- 8 46.0	2.139	2.990	12.4	19.4
53240	1999 <i>CT</i> ₁₂₆		4 4.6 24°91	7°2/30.2	18		297835	2002 <i>AL</i> ₂₀₂		4 4.6 67°27	2°3/ 2.8	18	
3 2	13 23.17	+11 33.2	1.623	2.483	14.1	18.1	3 2	13 19.98	- 4 14.4	1.313	2.177	16.5	20.9
3 12	13 17.18	+12 18.4	1.564	2.485	10.9	17.9	3 12	13 15.10	- 3 13.8	1.264	2.195	12.0	20.6
3 22	13 8.85	+12 57.3	1.529	2.486	8.2	17.8	3 22	13 7.68	- 2 1.1	1.236	2.212	6.9	20.4
4 1	12 59.04	+13 22.0	1.520	2.488	7.3	17.7	4 1	12 58.74	- 0 44.6	1.234	2.230	2.5	20.2
4 11	12 48.97	+13 26.0	1.537	2.490	9.0	17.8	4 11	12 49.62	+ 0 25.7	1.257	2.248	5.0	20.4
4 21	12 39.79	+13 6.6	1.578	2.492	12.1	18.0	4 21	12 41.57	+ 1 21.4	1.306	2.266	9.8	20.7
5 1	12 32.49	+12 24.1	1.642	2.495	15.3	18.2	5 1	12 35.61	+ 1 57.1	1.377	2.284	14.2	21.0
5 11	12 27.65	+11 21.2	1.726	2.497	18.1	18.4	5 11	12 32.28	+ 2 10.8	1.468	2.302	17.8	21.3
56967	2000 <i>SG</i> ₉₁		4 4.6 185°09	6°0/12.1	18		301571	2009 <i>HJ</i> ₈₂		4 4.6 344°18	1°2/ 6.1	17	
3 2	13 18.04	-28 26.1	2.700	3.422	12.8	19.2	3 2	13 11.64	-14 39.9	1.902	2.729	13.8	19.8
3 12	13 12.96	-28 47.3	2.606	3.422	10.9	19.0	3 12	13 8.61	-13 32.3	1.815	2.722	10.5	19.5
3 22	13 6.21	-28 49.8	2.533	3.421	8.8	18.9	3 22	13 3.76	-12 3.8	1.752	2.716	6.6	19.3
4 1	12 58.34	-28 32.6	2.485	3.421	6.9	18.8	4 1	12 57.71	-10 18.7	1.715	2.710	2.6	19.0
4 11	12 50.12	-27 56.9	2.464	3.420	6.0	18.7	4 11	12 51.33	- 8 24.8	1.707	2.705	2.5	19.0
4 21	12 42.32	-27 5.9	2.471	3.419	6.6	18.7	4 21	12 45.49	- 6 31.2	1.727	2.700	6.7	19.2
5 1	12 35.66	-26 4.9	2.505	3.417	8.4	18.8	5 1	12 40.96	- 4 46.9	1.773	2.696	10.6	19.5
5 11	12 30.70	-25 0.1	2.563	3.415	10.5	19.0	5 11	12 38.31	- 3 18.8	1.843	2.693	14.1	19.7
70300	1999 <i>RX</i> ₁₃₀		4 4.6 290°78	4°5/ 7.9	18		497685	2006 <i>SS</i> ₃₂		4 4.6 120°44	3°2/ 7.9	17	
3 2	13 19.02	-17 49.0	1.516	2.332	17.2	19.4	3 2	13 23.20	-17 8.7	2.722	3.498	11.5	21.8
3 12	13 14.83	-17 59.9	1.419	2.312	13.8	19.1	3 12	13 16.50	-17 38.7	2.643	3.513	9.0	21.6
3 22	13 7.89	-17 48.2	1.342	2.292	9.8	18.8	3 22	13 8.21	-17 56.6	2.589	3.527	6.4	21.5
4 1	12 58.90	-17 13.3	1.288	2.272	5.8	18.5	4 1	12 58.89	-18 2.2	2.563	3.541	3.9	21.4
4 11	12 49.05	-16 18.3	1.260	2.252	4.8	18.4	4 11	12 49.31	-17 57.3	2.568	3.554	3.4	21.3
4 21	12 39.69	-15 10.2	1.257	2.232	8.3	18.5	4 21	12 40.22	-17 44.5	2.603	3.567	5.3	21.5
5 1	12 32.13	-13 58.7	1.278	2.212	12.9	18.7	5 1	12 32.30	-17 27.5	2.666	3.580	7.9	21.7
5 11	12 27.30	-12 53.6	1.320	2.192	17.2	18.9	5 11	12 26.06	-17 10.6	2.755	3.592	10.3	21.8
496453	2014 <i>QR</i> ₁₃₀		4 4.6 123°07	3°3/ 7.5	18		206720	2004 <i>BW</i> ₅₆		4 4.6 19°06	6°4/10.1	1	

EPHEMERIDES

4 4.6

4 4.7

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
488966	2005 <i>UF</i> ₂₇₀		4 4.6 125°26'	2.4/ 2.4	16		374130	2004 <i>TP</i> ₁₁₄		4 4.6 171°37'	3.4/31.9	17	
3 2	13 21.42	- 0 25.1	2.013	2.860	12.3	22.3	3 2	13 19.88	+ 3 31.9	2.397	3.244	10.6	21.5
3 12	13 15.48	+ 0 7.5	1.949	2.872	9.0	22.1	3 12	13 14.16	+ 4 17.9	2.327	3.248	7.8	21.3
3 22	13 7.68	+ 0 44.8	1.911	2.883	5.3	21.9	3 22	13 6.85	+ 5 5.6	2.283	3.251	4.9	21.2
4 1	12 58.74	+ 1 21.7	1.900	2.894	2.5	21.8	4 1	12 58.55	+ 5 50.1	2.268	3.254	3.4	21.1
4 11	12 49.61	+ 1 53.2	1.919	2.905	4.3	21.9	4 11	12 50.03	+ 6 26.2	2.282	3.256	5.0	21.2
4 21	12 41.18	+ 2 14.7	1.965	2.916	7.8	22.1	4 21	12 42.05	+ 6 50.3	2.325	3.257	7.8	21.4
5 1	12 34.23	+ 2 23.5	2.038	2.926	11.2	22.4	5 1	12 35.28	+ 7 0.1	2.394	3.258	10.6	21.5
5 11	12 29.27	+ 2 18.1	2.132	2.935	14.1	22.6	5 11	12 30.19	+ 6 54.9	2.485	3.258	13.1	21.7
175979	2000 <i>PH</i> ₂₆		4 4.6 221°70'	7.8/14.8	18		23908	1998 <i>SL</i> ₈₀		4 4.6 310°64'	1.8/ 6.4	18	
3 2	13 20.39	-36 2.2	2.964	3.619	13.0	20.3	3 2	13 13.57	-15 35.6	1.446	2.283	16.8	17.6
3 12	13 14.80	-36 44.4	2.859	3.610	11.6	20.2	3 12	13 10.69	-14 35.3	1.355	2.266	13.0	17.3
3 22	13 7.40	-37 7.1	2.773	3.601	10.1	20.0	3 22	13 5.34	-13 6.4	1.285	2.249	8.4	17.0
4 1	12 58.72	-37 7.7	2.711	3.591	8.7	19.9	4 1	12 58.23	-11 12.7	1.239	2.233	3.5	16.6
4 11	12 49.54	-36 45.8	2.673	3.581	7.9	19.9	4 11	12 50.51	- 9 3.5	1.219	2.217	3.2	16.6
4 21	12 40.71	-36 3.4	2.662	3.571	8.0	19.9	4 21	12 43.39	- 6 51.4	1.226	2.202	8.3	16.8
5 1	12 33.01	-35 5.0	2.677	3.560	9.0	19.9	5 1	12 38.01	- 4 49.6	1.257	2.187	13.4	17.1
5 11	12 27.07	-33 56.7	2.717	3.549	10.6	20.0	5 11	12 35.16	- 3 8.5	1.309	2.173	17.8	17.3
182161	2000 <i>SL</i> ₁₈₄		4 4.6 274°83'	1.4/ 1.7	18		301989	2000 <i>OL</i> ₆₁		4 4.6 66°90'	3.9/ 1.7	18	
3 2	13 9.23	+ 0 16.4	4.509	5.352	6.1	20.0	3 2	13 20.47	+ 0 10.2	1.361	2.230	15.8	20.2
3 12	13 5.86	+ 0 50.3	4.418	5.339	4.4	19.9	3 12	13 15.54	+ 1 7.1	1.304	2.237	11.5	19.9
3 22	13 1.74	+ 1 26.4	4.355	5.326	2.6	19.7	3 22	13 8.04	+ 2 11.0	1.268	2.243	7.0	19.7
4 1	12 57.13	+ 2 2.4	4.321	5.313	1.4	19.6	4 1	12 58.91	+ 3 13.7	1.258	2.250	3.9	19.5
4 11	12 52.39	+ 2 36.1	4.318	5.300	2.4	19.7	4 11	12 49.46	+ 4 6.0	1.273	2.257	6.3	19.7
4 21	12 47.84	+ 3 5.1	4.345	5.287	4.2	19.8	4 21	12 40.97	+ 4 40.7	1.313	2.264	10.8	19.9
5 1	12 43.80	+ 3 27.8	4.399	5.274	6.0	19.9	5 1	12 34.50	+ 4 53.8	1.375	2.272	15.0	20.2
5 11	12 40.54	+ 3 42.8	4.478	5.260	7.5	20.0	5 11	12 30.69	+ 4 44.8	1.457	2.279	18.5	20.5
69541	1997 <i>HZ</i> ₉		4 4.6 290°65'	1°0/ 3.5	18		274241	2008 <i>NH</i> ₅		4 4.7 234°14'	4.2/31.2	18	
3 2	13 14.97	- 5 5.2	2.320	3.163	11.1	19.9	3 2	13 18.62	+ 4 30.4	2.166	3.021	11.3	20.4
3 12	13 10.76	- 4 28.8	2.228	3.149	8.1	19.7	3 12	13 13.51	+ 5 27.7	2.087	3.011	8.3	20.2
3 22	13 4.94	- 3 43.7	2.162	3.135	4.8	19.5	3 22	13 6.61	+ 6 27.1	2.033	3.000	5.5	20.0
4 1	12 58.04	- 2 53.7	2.123	3.121	1.4	19.2	4 1	12 58.52	+ 7 22.7	2.006	2.990	4.2	19.9
4 11	12 50.78	- 2 3.7	2.114	3.107	3.0	19.3	4 11	12 50.09	+ 8 8.3	2.009	2.978	5.9	20.0
4 21	12 43.93	- 1 18.8	2.132	3.093	6.6	19.5	4 21	12 42.15	+ 8 39.2	2.039	2.967	9.0	20.1
5 1	12 38.17	- 0 43.4	2.177	3.079	10.0	19.7	5 1	12 35.48	+ 8 52.5	2.093	2.955	12.1	20.3
5 11	12 34.04	- 0 20.5	2.245	3.065	12.9	19.8	5 11	12 30.63	+ 8 47.6	2.169	2.942	14.8	20.4
406857	2009 <i>BB</i> ₉₆		4 4.6 27°73'	2.5/ 2.9	18		142181	2002 <i>RP</i> ₄₅		4 4.7 281°52'	0°8/ 4.1	18	
3 2	13 17.57	- 3 38.3	1.141	2.018	17.6	20.4	3 2	13 20.07	- 6 5.9	1.633	2.481	14.6	20.1
3 12	13 13.74	- 2 51.1	1.089	2.026	12.8	20.2	3 12	13 15.32	- 5 39.9	1.537	2.459	10.9	19.8
3 22	13 7.08	- 1 51.3	1.057	2.035	7.5	19.9	3 22	13 8.07	- 5 1.2	1.464	2.437	6.5	19.5
4 1	12 58.63	- 0 47.1	1.048	2.045	2.7	19.6	4 1	12 59.00	- 4 13.7	1.417	2.415	1.7	19.1
4 11	12 49.85	+ 0 11.1	1.063	2.056	5.4	19.8	4 11	12 49.19	- 3 23.9	1.397	2.392	3.7	19.2
4 21	12 42.17	+ 0 54.5	1.102	2.067	10.6	20.2	4 21	12 39.86	- 2 39.0	1.403	2.369	8.7	19.4
5 1	12 36.70	+ 1 17.4	1.162	2.080	15.4	20.5	5 1	12 32.16	- 2 5.5	1.434	2.346	13.4	19.6
5 11	12 34.11	+ 1 17.8	1.240	2.093	19.4	20.8	5 11	12 26.91	- 1 48.0	1.485	2.323	17.4	19.8
473900	2016 <i>EP</i> ₁₄₇		4 4.6 146°21'	3.2/ 1.7	18		45002	1999 <i>VS</i> ₁₉₃		4 4.7 311°73'	3.9/ 7.9	18	
3 2	13 21.34	+ 1 30.5	1.945	2.796	12.5	21.1	3 2	13 17.70	-17 53.4	1.514	2.333	17.1	18.5
3 12	13 15.51	+ 2 11.3	1.879	2.804	9.1	20.9	3 12	13 13.65	-17 46.6	1.432	2.327	13.6	18.3
3 22	13 7.75	+ 2 55.7	1.839	2.810	5.6	20.7	3 22	13 7.06	-17 15.7	1.369	2.322	9.4	18.0
4 1	12 58.79	+ 3 38.0	1.825	2.816	3.2	20.6	4 1	12 58.71	-16 21.7	1.331	2.316	5.4	17.8
4 11	12 49.57	+ 4 12.3	1.841	2.822	5.1	20.7	4 11	12 49.78	-15 9.9	1.318	2.311	4.3	17.7
4 21	12 41.06	+ 4 34.2	1.884	2.828	8.6	20.9	4 21	12 41.54	-13 48.6	1.330	2.306	7.8	17.9
5 1	12 34.05	+ 4 40.9	1.952	2.833	11.9	21.1	5 1	12 35.12	-12 27.9	1.367	2.302	12.2	18.1
5 11	12 29.10	+ 4 31.5	2.041	2.837	14.8	21.3	5 11	12 31.29	-11 17.0	1.426	2.297	16.2	18.4
447778	2007 <i>RZ</i> ₁₁₇		4 4.6 276°87'	8.2/ 7.3	18		150942	2001 <i>TU</i> ₁₀₂		4 4.7 165°58'	4.5/ 8.5	18	
3 2	13 34.11	-16 53.8	1.158	1.974	21.4	20.5	3 2	13 23.06	-19 12.0	2.064	2.847	14.4	19.7
3 12	13 27.16	-18 52.6	1.076	1.965	17.5	20.2	3 12	13 17.00	-19 40.0	1.979	2.850	11.6	19.5
3 22	13 15.94	-20 36.9	1.013	1.956	13.1	19.9	3 22	13 8.80	-19 51.0	1.917	2.853	8.4	19.3
4 1	13 1.27	-21 58.7	0.972	1.947	9.2	19.7	4 1	12 59.15	-19 44.2	1.881	2.856	5.5	19.1
4 11	12 44.97	-22 52.4	0.957	1.938	8.5	19.6	4 11	12 49.04	-19 21.7	1.873	2.858	4.6	19.0
4 21	12 29.32	-23 18.1	0.966	1.929	12.0	19.8	4 21	12 39.51	-18 47.7	1.893	2.860	6.8	19.2
5 1	12 16.52	-23 23.0	0.997	1.920	16.7	20.0	5 1	12 31.48	-18 8.2	1.940	2.861	9.9	19.4
5 11	12 7.95	-23 18.6	1.047	1.912	21.2	20.2	5 11	12 25.62	-17 29.6	2.011	2.862	13.0	19.6
200572	2001 <i>PK</i> ₂₅		4 4.6 283°63'	4.9/ 1.0	17		64638	2001 <i>XT</i> ₅₁		4 4.7 154°51'	0°8/ 3.9	18	
3 2	13 21.43	+ 2 24.5	1.377	2.246	15.6	20.7	3 2	13 19.79	- 7 45.2	1.643	2.487	14.8	19.3
3 12	13 16.67	+ 3 20.5	1.292	2.224	11.6	20.4	3 12	13 14.77	- 6 47.3	1.572	2.492	10.9	19.0
3 22	13 9.02	+ 4 23.7	1.229	2.202	7.4	20.1	3 22	13 7.50	- 5 34.3	1.525	2.497	6.4	18.8
4 1	12 59.26	+ 5 25.4	1.190	2.180	4.9	19.9	4 1	12 58.79	- 4 12.2	1.504	2.502	1.7	18.5
4 11	12 48.67	+ 6 15.6	1.177	2.157	7.5	20.0	4 11	12 49.75	- 2 49.4	1.511	2.506	3.6	18.6
4 21	12 38.68	+ 6 46.0	1.189	2.135	12.2	20.2	4 21	12 41.46	- 1 34.4	1.545	2.509	8.3	18.9
5 1	12 30.65	+ 6 51.6	1.222	2.112	16.9	20.4	5 1	12 34.88	- 0 34.2	1.605	2.512	12.5	19.2
5 11	12 25.48	+ 6 31.5	1.273	2.090	21.0	20.6	5 11	12 30.63	+ 0 7.0	1.685	2.515	16.1	19.4
360515	2003 <i>QO</i> ₉		4 4.6 264°82'	1.8/ 3.1	17		282322	2002 <i>TG</i> ₁₉₃		4 4.7 189°75'	0°0/		

EPHEMERIDES

4 4.7

4 4.7

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
415351	2013 <i>JV</i> ₃₆		4 4.7 332°59	1.4°/ 5.7 17			314646	2006 <i>KP</i> ₂₇		4 4.7 160°72	3.4°/ 1.4 18		
3 2	13 15.87	-10 58.4	1.189	2.049	18.2	20.9	3 2	13 23.36	+ 2 28.9	2.122	2.967	11.9	21.2
3 12	13 12.82	-10 47.3	1.110	2.035	13.9	20.6	3 12	13 16.87	+ 3 15.0	2.055	2.975	8.7	21.0
3 22	13 6.83	-10 15.0	1.052	2.023	8.8	20.2	3 22	13 8.54	+ 4 3.8	2.014	2.983	5.4	20.8
4 1	12 58.70	- 9 24.7	1.015	2.011	3.2	19.9	4 1	12 59.07	+ 4 49.7	2.001	2.990	3.4	20.7
4 11	12 49.81	- 8 23.7	1.002	2.000	3.6	19.9	4 11	12 49.37	+ 5 27.0	2.018	2.996	5.2	20.8
4 21	12 41.66	- 7 21.8	1.013	1.991	9.4	20.1	4 21	12 40.34	+ 5 51.6	2.064	3.001	8.4	21.0
5 1	12 35.62	- 6 29.0	1.045	1.982	14.8	20.4	5 1	12 32.75	+ 6 0.9	2.135	3.005	11.5	21.2
5 11	12 32.60	- 5 53.2	1.096	1.974	19.5	20.7	5 11	12 27.14	+ 5 54.2	2.229	3.008	14.3	21.4
181649	2007 <i>TO</i> ₃₃₃		4 4.7 161°19	0°3/ 4.9 18			384854	2012 <i>SB</i> ₁₉		4 4.7 181°52	1°3/ 6.2 17		
3 2	13 21.48	- 9 23.2	1.950	2.777	13.5	21.4	3 2	13 16.93	-12 25.6	2.398	3.213	11.7	21.7
3 12	13 15.72	- 8 52.7	1.874	2.784	10.0	21.2	3 12	13 12.14	-12 5.1	2.313	3.213	8.9	21.6
3 22	13 7.96	- 8 9.2	1.822	2.790	6.1	21.0	3 22	13 5.74	-11 32.0	2.253	3.213	5.6	21.4
4 1	12 58.91	- 7 16.3	1.798	2.795	1.8	20.7	4 1	12 58.32	-10 48.6	2.220	3.213	2.3	21.1
4 11	12 49.55	- 6 19.6	1.803	2.799	2.7	20.8	4 11	12 50.61	- 9 59.1	2.216	3.213	2.2	21.1
4 21	12 40.85	- 5 25.3	1.836	2.803	6.9	21.1	4 21	12 43.36	- 9 8.2	2.241	3.212	5.5	21.3
5 1	12 33.67	- 4 39.2	1.896	2.806	10.7	21.3	5 1	12 37.27	- 8 20.8	2.294	3.211	8.8	21.5
5 11	12 28.57	- 4 5.5	1.979	2.809	14.0	21.5	5 11	12 32.82	- 7 41.4	2.371	3.210	11.7	21.7
385432	2003 <i>FF</i> ₁₃		4 4.7 19°91	3°6/ 7.5 17			411631	2011 <i>UD</i> ₁₅₆		4 4.7 216°45	3°5/ 1.9 16		
3 2	13 21.00	-15 13.2	1.912	2.720	14.4	20.2	3 2	13 20.78	- 0 9.4	1.541	2.402	14.6	21.9
3 12	13 15.54	-15 53.1	1.835	2.725	11.3	20.0	3 12	13 15.68	+ 0 44.2	1.470	2.400	10.7	21.6
3 22	13 7.95	-16 18.7	1.781	2.731	7.8	19.8	3 22	13 8.15	+ 1 45.4	1.423	2.397	6.5	21.4
4 1	12 58.93	-16 29.8	1.753	2.737	4.6	19.6	4 1	12 59.01	+ 2 46.7	1.401	2.394	3.5	21.2
4 11	12 49.49	-16 28.1	1.753	2.744	3.9	19.6	4 11	12 49.44	+ 3 39.9	1.406	2.391	5.8	21.3
4 21	12 40.67	-16 17.5	1.780	2.751	6.7	19.8	4 21	12 40.63	+ 4 18.0	1.438	2.388	10.1	21.5
5 1	12 33.39	-16 2.8	1.833	2.758	10.2	20.0	5 1	12 33.63	+ 4 36.5	1.492	2.384	14.3	21.8
5 11	12 28.29	-15 49.5	1.909	2.766	13.3	20.2	5 11	12 29.11	+ 4 34.0	1.566	2.381	17.8	22.0
407782	2011 <i>YW</i> ₂		4 4.7 83°30	2°2/ 6.3 18			255746	2006 <i>RC</i> ₆		4 4.7 233°24	0°6/ 5.2 17		
3 2	13 21.81	-12 41.3	1.528	2.358	16.4	21.1	3 2	13 21.51	- 9 28.8	2.068	2.892	12.9	21.6
3 12	13 16.42	-12 40.0	1.461	2.369	12.5	20.8	3 12	13 15.87	- 9 9.9	1.970	2.878	9.8	21.4
3 22	13 8.56	-12 21.0	1.417	2.379	8.0	20.6	3 22	13 8.17	- 8 38.4	1.897	2.863	6.0	21.1
4 1	12 59.09	-11 46.8	1.397	2.390	3.5	20.4	4 1	12 59.03	- 7 57.1	1.851	2.847	1.9	20.8
4 11	12 49.27	-11 2.7	1.404	2.401	3.2	20.4	4 11	12 49.36	- 7 10.5	1.834	2.831	2.6	20.9
4 21	12 40.32	-10 15.8	1.438	2.412	7.6	20.6	4 21	12 40.13	- 6 24.0	1.846	2.814	6.8	21.1
5 1	12 33.29	- 9 33.2	1.496	2.422	12.0	20.9	5 1	12 32.26	- 5 43.4	1.885	2.796	10.8	21.3
5 11	12 28.83	- 9 1.0	1.575	2.433	15.7	21.2	5 11	12 26.41	- 5 13.3	1.947	2.777	14.2	21.5
361720	2007 <i>VZ</i> ₃₃₄		4 4.7 279°89	2°1/ 2.9 17			120318	2004 <i>LQ</i> ₁₃		4 4.7 211°81	2°1/ 2.4 18		
3 2	13 19.31	- 3 38.2	1.538	2.396	14.9	21.0	3 2	13 18.79	- 2 4.7	2.250	3.093	11.3	20.6
3 12	13 14.79	- 2 54.2	1.452	2.380	11.0	20.7	3 12	13 13.59	- 1 14.8	2.165	3.086	8.3	20.4
3 22	13 7.75	- 1 58.3	1.388	2.364	6.5	20.4	3 22	13 6.65	- 0 17.9	2.106	3.079	4.9	20.2
4 1	12 58.93	- 0 56.4	1.351	2.347	2.3	20.1	4 1	12 58.58	+ 0 41.3	2.076	3.071	2.2	20.0
4 11	12 49.47	+ 0 3.4	1.339	2.331	4.7	20.2	4 11	12 50.17	+ 1 36.9	2.076	3.062	4.0	20.1
4 21	12 40.59	+ 0 53.1	1.354	2.314	9.6	20.4	4 21	12 42.24	+ 2 23.8	2.104	3.053	7.4	20.3
5 1	12 33.44	+ 1 26.3	1.392	2.298	14.2	20.6	5 1	12 35.52	+ 2 57.8	2.158	3.043	10.8	20.5
5 11	12 28.81	+ 1 39.5	1.450	2.281	18.1	20.8	5 11	12 30.57	+ 3 16.6	2.234	3.033	13.6	20.6
482273	2011 <i>SX</i> ₁₉		4 4.7 237°32	7°4/13.8 17			38336	1999 <i>RZ</i> ₁₃₄		4 4.7 309°28	3°9/ 7.1 18		
3 2	13 18.45	-32 51.1	2.639	3.330	13.8	21.3	3 2	13 19.46	-14 39.2	1.346	2.181	17.9	18.8
3 12	13 13.49	-33 20.4	2.536	3.321	12.0	21.0	3 12	13 15.51	-15 4.7	1.251	2.158	14.2	18.5
3 22	13 6.69	-33 29.0	2.453	3.312	10.1	21.0	3 22	13 8.53	-15 10.6	1.176	2.136	9.7	18.1
4 1	12 58.60	-33 14.4	2.393	3.303	8.4	20.9	4 1	12 59.24	-14 56.2	1.124	2.113	5.3	17.8
4 11	12 50.05	-32 37.2	2.359	3.293	7.4	20.8	4 11	12 48.89	-14 24.3	1.096	2.091	4.5	17.7
4 21	12 41.89	-31 40.1	2.351	3.283	7.7	20.8	4 21	12 39.01	-13 41.2	1.093	2.070	9.0	17.9
5 1	12 34.95	-30 28.7	2.370	3.273	9.2	20.9	5 1	12 31.10	-12 55.9	1.112	2.049	14.1	18.1
5 11	12 29.82	-29 10.1	2.413	3.263	11.2	21.0	5 11	12 26.21	-12 17.5	1.151	2.029	18.8	18.3
471137	2010 <i>ET</i> ₆₅		4 4.7 4°56	0°1/ 3.6 15			455213	2001 <i>OE</i> ₈₄		4 4.7 127°88	1°4/ 3.3 18 R		
3 2	12 57.84	- 3 23.5	38.974	39.808	0.8	21.2	3 2	13 25.93	- 3 37.4	2.247	3.074	11.9	22.8
3 12	12 57.21	- 3 17.7	38.893	39.810	0.6	21.2	3 12	13 18.53	- 3 0.0	2.188	3.100	8.7	22.6
3 22	12 56.51	- 3 11.5	38.840	39.811	0.3	21.1	3 22	13 9.40	- 2 16.1	2.155	3.125	5.0	22.5
4 1	12 55.77	- 3 5.2	38.816	39.813	0.1	21.1	4 1	12 59.28	- 1 29.8	2.152	3.149	1.7	22.3
4 11	12 55.02	- 2 58.9	38.822	39.814	0.2	21.1	4 11	12 49.07	- 0 46.3	2.180	3.171	3.3	22.4
4 21	12 54.29	- 2 53.0	38.857	39.816	0.4	21.1	4 21	12 39.63	- 0 10.2	2.239	3.192	6.8	22.7
5 1	12 53.60	- 2 47.4	38.921	39.818	0.7	21.2	5 1	12 31.66	+ 0 15.3	2.325	3.212	10.0	22.9
5 11	12 52.99	- 2 42.4	39.011	39.819	0.9	21.2	5 11	12 25.64	+ 0 28.1	2.435	3.230	12.7	23.1
367712	2010 <i>TO</i> ₃₂		4 4.7 281°57	0°8/ 4.0 17			246313	2007 <i>TJ</i> ₁₆₀		4 4.7 145°95	0°0/ 4.5 18		
3 2	13 18.83	- 6 52.3	1.567	2.418	15.0	21.5	3 2	13 19.48	- 7 3.2	2.444	3.271	11.1	20.4
3 12	13 14.45	- 6 14.8	1.475	2.399	11.2	21.2	3 12	13 13.91	- 6 54.2	2.366	3.277	8.2	20.2
3 22	13 7.57	- 5 22.2	1.406	2.380	6.7	20.9	3 22	13 6.75	- 6 37.3	2.314	3.282	4.9	20.0
4 1	12 58.90	- 4 19.3	1.363	2.360	1.8	20.6	4 1	12 58.59	- 6 14.9	2.290	3.288	1.3	19.8
4 11	12 49.53	- 3 13.5	1.346	2.341	3.8	20.6	4 11	12 50.19	- 5 50.7	2.297	3.293	2.3	19.9
4 21	12 40.69	- 2 13.0	1.355	2.322	8.9	20.9	4 21	12 42.28	- 5 28.2	2.332	3.298	5.8	20.1
5 1	12 33.54	- 1 25.5	1.388	2.302	13.6	21.1	5 1	12 35.55	- 5 11.1	2.395	3.302	8.9	20.3
5 11	12 28.87	- 0 56.1	1.442	2.283	17.7	21.3	5 11	12 30.48	- 5 2.0	2.482	3.306	11.7	20.5
310903	2003 <i>SP</i> ₂₈		4 4.7 143°04	1°7/ 6.2 18			385899	2006 <i>SZ</i> ₃₀₆		4			

EPHEMERIDES

4 4.7

4 4.7

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
284119	2005 <i>UX</i> ₁₃₁		4 4.7 196°82	4.6/31.6	18		170700	2004 <i>BY</i> ₂₃		4 4.7 24°85	1°1/	5.5 18	
3 2	13 20.72	+ 1 33.1	1.558	2.420	14.4	20.5	3 2	13 17.94	-10 30.3	1.297	2.150	17.4	20.1
3 12	13 15.60	+ 2 54.3	1.489	2.419	10.6	20.3	3 12	13 13.91	-10 16.8	1.235	2.156	13.1	19.9
3 22	13 8.09	+ 4 22.7	1.444	2.417	6.7	20.0	3 22	13 7.21	- 9 44.9	1.193	2.163	8.1	19.6
4 1	12 59.00	+ 5 49.0	1.426	2.414	4.6	19.9	4 1	12 58.79	- 8 58.6	1.175	2.171	2.8	19.3
4 11	12 49.50	+ 7 3.5	1.435	2.411	7.0	20.0	4 11	12 49.97	- 8 5.2	1.182	2.180	3.3	19.4
4 21	12 40.76	+ 7 58.3	1.469	2.407	11.0	20.2	4 21	12 42.07	- 7 13.3	1.214	2.190	8.5	19.7
5 1	12 33.82	+ 8 29.1	1.527	2.403	14.9	20.5	5 1	12 36.22	- 6 30.7	1.269	2.200	13.2	20.0
5 11	12 29.34	+ 8 34.9	1.603	2.399	18.3	20.7	5 11	12 33.10	- 6 3.0	1.343	2.210	17.3	20.3
56809	2000 <i>PE</i> ₁₆		4 4.7 147°16	0°2/	4.4 18		278866	2008 <i>TP</i> ₄₉		4 4.7 58°89	0°1/	4.5 17	
3 2	13 16.12	- 7 35.1	2.684	3.511	10.2	19.7	3 2	13 16.10	- 8 47.7	1.904	2.744	13.2	20.9
3 12	13 11.32	- 7 1.5	2.607	3.518	7.5	19.6	3 12	13 11.85	- 8 0.8	1.828	2.746	9.8	20.6
3 22	13 5.16	- 6 19.5	2.556	3.525	4.4	19.4	3 22	13 5.72	- 7 0.1	1.776	2.747	5.8	20.4
4 1	12 58.16	- 5 32.1	2.535	3.532	1.2	19.1	4 1	12 58.36	- 5 50.4	1.751	2.749	1.5	20.1
4 11	12 50.96	- 4 43.6	2.543	3.538	2.2	19.2	4 11	12 50.70	- 4 38.2	1.755	2.751	2.9	20.2
4 21	12 44.21	- 3 58.0	2.581	3.544	5.4	19.4	4 21	12 43.64	- 3 30.6	1.785	2.753	7.1	20.5
5 1	12 38.48	- 3 19.2	2.646	3.550	8.3	19.6	5 1	12 37.97	- 2 33.7	1.842	2.754	10.9	20.7
5 11	12 34.19	- 2 50.1	2.736	3.555	10.9	19.8	5 11	12 34.26	- 1 51.8	1.921	2.756	14.2	20.9
455691	2005 <i>EP</i> ₁₂₃		4 4.7 316°26	2°5/	6.7 17		119448	2001 <i>TX</i> ₁₆₉		4 4.7 265°51	2°9/	6.7 18	
3 2	13 16.25	-14 18.0	1.390	2.230	17.2	21.3	3 2	13 23.83	-13 4.4	1.825	2.640	14.8	19.6
3 12	13 12.81	-14 1.1	1.305	2.216	13.4	21.0	3 12	13 17.92	-13 34.7	1.733	2.629	11.5	19.4
3 22	13 6.70	-13 21.1	1.239	2.203	8.8	20.7	3 22	13 9.57	-13 51.6	1.662	2.619	7.7	19.1
4 1	12 58.69	-12 20.2	1.197	2.190	4.0	20.4	4 1	12 59.48	-13 55.3	1.619	2.608	3.9	18.9
4 11	12 49.99	-11 4.8	1.180	2.178	3.5	20.3	4 11	12 48.72	-13 47.7	1.603	2.597	3.5	18.8
4 21	12 41.92	- 9 44.4	1.189	2.166	8.4	20.5	4 21	12 38.46	-13 32.8	1.615	2.586	7.2	19.0
5 1	12 35.73	- 8 29.3	1.220	2.155	13.3	20.8	5 1	12 29.80	-13 16.1	1.653	2.575	11.3	19.2
5 11	12 32.24	- 7 28.4	1.272	2.144	17.7	21.0	5 11	12 23.53	-13 3.1	1.713	2.564	14.9	19.4
285664	2000 <i>SP</i> ₈₀		4 4.7 239°97	2°1/	2.7 17		271824	2004 <i>TL</i> ₁₄₆		4 4.7 100°39	1°5/	3.3 18	
3 2	13 19.86	- 4 6.1	1.819	2.666	13.4	21.4	3 2	13 19.53	- 3 38.4	1.933	2.779	12.8	20.3
3 12	13 14.85	- 3 3.2	1.728	2.651	9.9	21.1	3 12	13 14.25	- 3 7.4	1.867	2.789	9.3	20.1
3 22	13 7.64	- 1 48.0	1.662	2.636	5.8	20.9	3 22	13 7.07	- 2 28.7	1.825	2.798	5.4	19.9
4 1	12 58.91	- 0 26.7	1.623	2.619	2.2	20.6	4 1	12 58.72	- 1 46.8	1.811	2.808	1.8	19.7
4 11	12 49.63	+ 0 52.9	1.613	2.602	4.5	20.7	4 11	12 50.13	- 1 7.5	1.825	2.817	3.6	19.8
4 21	12 40.87	+ 2 2.8	1.630	2.584	8.8	20.9	4 21	12 42.22	- 0 35.7	1.867	2.826	7.5	20.1
5 1	12 33.60	+ 2 56.5	1.673	2.566	12.9	21.1	5 1	12 35.78	- 0 15.3	1.935	2.836	11.1	20.3
5 11	12 28.51	+ 3 30.5	1.736	2.547	16.5	21.3	5 11	12 31.33	- 0 8.7	2.024	2.845	14.1	20.5
130624	2000 <i>SC</i> ₄₃		4 4.7 164°47	1°8/	2.9 18		377468	2004 <i>XL</i> ₁₀₇		4 4.7 149°97	3°3/	8.9 17	
3 2	13 19.84	- 4 51.9	1.749	2.597	13.8	20.2	3 2	13 19.36	-20 20.7	2.758	3.525	11.6	22.0
3 12	13 14.70	- 3 50.0	1.678	2.601	10.1	20.0	3 12	13 13.75	-20 13.1	2.675	3.536	9.2	21.9
3 22	13 7.44	- 2 36.3	1.631	2.605	5.9	19.7	3 22	13 6.65	-19 50.2	2.616	3.547	6.6	21.7
4 1	12 58.81	- 1 17.4	1.611	2.608	2.0	19.5	4 1	12 58.62	-19 13.0	2.584	3.558	4.2	21.6
4 11	12 49.87	- 0 1.2	1.620	2.611	4.2	19.6	4 11	12 50.37	-18 24.2	2.582	3.567	3.4	21.6
4 21	12 41.63	+ 1 4.6	1.656	2.613	8.5	19.9	4 21	12 42.60	-17 28.1	2.609	3.576	5.1	21.7
5 1	12 35.00	+ 1 54.4	1.717	2.614	12.4	20.1	5 1	12 35.94	-16 29.7	2.665	3.584	7.7	21.8
5 11	12 30.57	+ 2 25.1	1.799	2.615	15.8	20.3	5 11	12 30.85	-15 34.1	2.747	3.592	10.1	22.0
383677	2007 <i>TS</i> ₂₂₅		4 4.7 188°93	0°8/	3.8 17		339006	2004 <i>GS</i> ₅₀		4 4.7 78°46	0°9/	3.7 18	
3 2	13 17.72	- 5 20.6	2.289	3.127	11.4	21.8	3 2	13 17.47	- 5 31.4	2.165	3.005	11.8	20.7
3 12	13 12.75	- 4 49.5	2.209	3.127	8.3	21.6	3 12	13 12.50	- 4 52.9	2.107	3.025	8.6	20.5
3 22	13 6.13	- 4 10.0	2.154	3.126	4.9	21.4	3 22	13 5.93	- 4 6.1	2.074	3.046	5.0	20.3
4 1	12 58.45	- 3 26.0	2.127	3.125	1.3	21.1	4 1	12 58.42	- 3 15.4	2.069	3.066	1.4	20.1
4 11	12 50.48	- 2 42.2	2.130	3.123	2.9	21.2	4 11	12 50.77	- 2 26.0	2.092	3.086	2.9	20.3
4 21	12 43.01	- 2 3.3	2.161	3.122	6.5	21.4	4 21	12 43.76	- 1 42.8	2.145	3.106	6.5	20.5
5 1	12 36.73	- 1 33.3	2.218	3.120	9.8	21.6	5 1	12 38.05	- 1 9.9	2.223	3.126	9.8	20.7
5 11	12 32.16	- 1 15.1	2.299	3.118	12.7	21.8	5 11	12 34.09	- 0 49.6	2.325	3.145	12.5	21.0
98944	2001 <i>CM</i> ₂₁		4 4.7 25°05	8°2/	27.6 18		8869	Olausgutho		4 4.7 327°83	1°0/	3.7 18	
3 2	13 17.78	+13 32.6	1.687	2.554	13.3	18.7	3 2	13 15.53	- 5 3.0	1.984	2.833	12.4	18.1
3 12	13 13.20	+14 57.6	1.638	2.557	10.6	18.6	3 12	13 11.44	- 4 31.5	1.901	2.824	9.1	17.9
3 22	13 6.52	+16 15.7	1.612	2.561	8.6	18.5	3 22	13 5.52	- 3 50.6	1.842	2.815	5.4	17.6
4 1	12 58.55	+17 17.2	1.612	2.565	8.5	18.5	4 1	12 58.36	- 3 4.5	1.809	2.807	1.5	17.3
4 11	12 50.36	+17 54.9	1.637	2.570	10.2	18.6	4 11	12 50.82	- 2 18.7	1.805	2.799	3.3	17.4
4 21	12 42.96	+18 5.2	1.686	2.575	12.9	18.7	4 21	12 43.78	- 1 38.6	1.828	2.791	7.3	17.7
5 1	12 37.21	+17 47.8	1.755	2.580	15.6	18.9	5 1	12 38.04	- 1 9.1	1.876	2.784	11.0	17.9
5 11	12 33.66	+17 5.7	1.842	2.585	18.0	19.1	5 11	12 34.18	- 0 53.3	1.946	2.777	14.2	18.1
88447	2001 <i>QW</i> ₈₁		4 4.7 243°59	2°1/	6.5 18		58189	1991 <i>VV</i> ₉		4 4.7 256°83	1°4/	3.4 17	
3 2	13 21.53	-14 6.6	1.757	2.574	15.2	19.9	3 2	13 19.72	- 4 54.3	1.803	2.649	13.5	20.7
3 12	13 16.31	-13 46.9	1.657	2.557	11.8	19.7	3 12	13 14.81	- 4 11.7	1.711	2.633	10.0	20.4
3 22	13 8.64	-13 7.9	1.580	2.540	7.7	19.4	3 22	13 7.68	- 3 17.4	1.643	2.616	5.9	20.1
4 1	12 59.22	-12 11.4	1.529	2.522	3.5	19.1	4 1	12 58.99	- 2 16.4	1.602	2.599	1.8	19.8
4 11	12 49.10	-11 2.4	1.506	2.503	3.1	19.0	4 11	12 49.73	- 1 15.6	1.588	2.581	3.9	19.9
4 21	12 39.46	- 9 48.4	1.511	2.483	7.5	19.2	4 21	12 40.97	- 0 22.0	1.602	2.563	8.4	20.1
5 1	12 31.42	- 8 38.0	1.541	2.462	12.0	19.4	5 1	12 33.70	+ 0 18.5	1.642	2.544	12.6	20.4
5 11	12 25.79	- 7 38.5	1.593	2.441	16.0	19.6	5 11	12 28.63	+ 0 42.0	1.702	2.525	16.2	20.5
19042	6104 <i>P-L</i>		4 4.7 151°16	0°1/	4.8 18		277801	2006 <i>FC</i> ₅		4 4.7 170°58	1°7/	6.4 17	
3													

EPHEMERIDES

4 4.7

4 4.7

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
425986	2011 <i>HR</i> ₈₁		4 4.7 339°46	5°1/ 7.8 16			303677	2005 <i>MH</i> ₅₃		4 4.7 237°75	0°7/ 5.6 17		
3 2	13 17.66	-16 4.1	1.376	2.208	17.8	20.4	3 2	13 16.31	-10 40.3	2.805	3.620	10.2	22.1
3 12	13 14.06	-16 54.0	1.289	2.191	14.2	20.2	3 12	13 11.58	-10 16.9	2.704	3.606	7.7	21.9
3 22	13 7.61	-17 25.7	1.222	2.175	10.2	19.9	3 22	13 5.44	-9 43.2	2.629	3.592	4.8	21.7
4 1	12 59.05	-17 37.3	1.177	2.161	6.3	19.6	4 1	12 58.35	-9 1.5	2.583	3.578	1.7	21.4
4 11	12 49.60	-17 30.2	1.156	2.147	5.4	19.5	4 11	12 50.94	-8 15.2	2.566	3.563	1.9	21.4
4 21	12 40.71	-17 9.1	1.159	2.135	8.8	19.7	4 21	12 43.85	-7 28.4	2.579	3.548	5.1	21.6
5 1	12 33.73	-16 41.3	1.185	2.124	13.2	19.9	5 1	12 37.70	-6 45.3	2.621	3.532	8.1	21.8
5 11	12 29.63	-16 15.4	1.231	2.115	17.4	20.1	5 11	12 32.95	-6 9.6	2.687	3.516	10.8	22.0
269472	2009 <i>TB</i> ₂₄		4 4.7 119°22	0°0/ 4.5 17			83474	2001 <i>SS</i> ₇₉		4 4.7 121°33	0°2/ 4.9 18		
3 2	13 23.28	-6 21.3	1.952	2.785	13.2	20.6	3 2	13 16.45	-9 25.9	2.435	3.260	11.2	20.0
3 12	13 17.05	-6 20.6	1.881	2.794	9.8	20.4	3 12	13 11.71	-8 48.9	2.362	3.271	8.3	19.8
3 22	13 8.79	-6 11.2	1.835	2.804	5.9	20.2	3 22	13 5.48	-8 1.3	2.315	3.282	5.0	19.6
4 1	12 59.25	-5 55.8	1.816	2.813	1.6	19.9	4 1	12 58.34	-7 6.5	2.296	3.293	1.5	19.4
4 11	12 49.42	-5 38.5	1.826	2.822	2.7	20.0	4 11	12 51.01	-6 9.2	2.307	3.304	2.2	19.5
4 21	12 40.28	-5 23.5	1.864	2.830	6.9	20.3	4 21	12 44.20	-5 14.3	2.347	3.314	5.6	19.7
5 1	12 32.69	-5 14.7	1.929	2.839	10.6	20.6	5 1	12 38.51	-4 26.5	2.414	3.324	8.8	19.9
5 11	12 27.23	-5 15.0	2.017	2.847	13.8	20.8	5 11	12 34.41	-3 49.1	2.505	3.333	11.5	20.1
51637	2001 <i>HP</i> ₄₉		4 4.7 294°84	6°1/10.1 18			387329	2012 <i>VS</i> ₈₄		4 4.7 80°75	2°9/ 8.1 17		
3 2	13 16.68	-23 44.3	1.614	2.403	17.5	18.9	3 2	13 15.57	-17 54.3	2.252	3.049	12.9	20.8
3 12	13 13.10	-23 43.4	1.510	2.380	14.6	18.6	3 12	13 11.30	-17 34.0	2.170	3.053	10.1	20.7
3 22	13 6.93	-23 14.1	1.425	2.357	11.1	18.3	3 22	13 5.35	-16 56.4	2.110	3.057	7.0	20.5
4 1	12 58.85	-22 14.6	1.363	2.334	7.7	18.1	4 1	12 58.33	-16 3.4	2.077	3.061	4.0	20.3
4 11	12 49.96	-20 47.6	1.326	2.311	6.1	17.9	4 11	12 51.03	-14 59.1	2.073	3.065	3.1	20.2
4 21	12 41.53	-19 0.6	1.315	2.288	8.3	18.0	4 21	12 44.25	-13 49.3	2.096	3.070	5.7	20.4
5 1	12 34.81	-17 5.1	1.329	2.265	12.3	18.1	5 1	12 38.69	-12 40.3	2.147	3.074	8.8	20.6
5 11	12 30.69	-15 13.5	1.364	2.243	16.4	18.3	5 11	12 34.87	-11 37.8	2.222	3.078	11.8	20.8
401369	2013 <i>BP</i> ₆₃		4 4.7 314°30	4°9/31.8 18			259766	2004 <i>BA</i> ₆		4 4.7 112°66	0°6/ 4.2 18		
3 2	13 18.72	+1 7.3	1.317	2.191	15.8	20.9	3 2	13 20.79	-7 7.4	1.785	2.625	14.0	21.4
3 12	13 14.51	+2 26.0	1.252	2.188	11.6	20.6	3 12	13 15.30	-6 26.3	1.723	2.640	10.3	21.1
3 22	13 7.64	+3 53.2	1.209	2.184	7.3	20.3	3 22	13 7.77	-5 33.3	1.684	2.655	6.0	20.9
4 1	12 58.98	+5 18.8	1.191	2.181	4.9	20.2	4 1	12 58.99	-4 33.4	1.672	2.670	1.6	20.7
4 11	12 49.85	+6 31.5	1.198	2.178	7.5	20.3	4 11	12 49.99	-3 33.3	1.689	2.684	3.2	20.8
4 21	12 41.58	+7 22.6	1.229	2.175	12.0	20.6	4 21	12 41.77	-2 39.6	1.734	2.698	7.5	21.1
5 1	12 35.30	+7 47.1	1.282	2.172	16.3	20.8	5 1	12 35.19	-1 57.7	1.804	2.711	11.4	21.3
5 11	12 31.73	+7 44.4	1.353	2.170	20.0	21.0	5 11	12 30.76	-1 30.9	1.896	2.724	14.6	21.6
55541	2001 <i>WV</i> ₄₇		4 4.7 311°26	4°3/31.7 18			192355	1995 <i>TL</i> ₃		4 4.7 170°44	0°7/ 3.9 17		
3 2	13 15.23	+0 18.0	1.512	2.384	14.3	18.8	3 2	13 20.75	-4 51.5	2.389	3.220	11.2	20.9
3 12	13 11.78	+1 38.8	1.432	2.367	10.5	18.5	3 12	13 14.92	-4 31.6	2.310	3.224	8.2	20.7
3 22	13 5.98	+3 10.0	1.374	2.350	6.5	18.2	3 22	13 7.43	-4 4.5	2.257	3.227	4.8	20.5
4 1	12 58.54	+4 42.6	1.342	2.333	4.3	18.1	4 1	12 58.90	-3 33.5	2.233	3.230	1.3	20.3
4 11	12 50.54	+6 6.2	1.337	2.316	6.9	18.2	4 11	12 50.10	-3 2.8	2.238	3.232	2.7	20.4
4 21	12 43.13	+7 11.7	1.356	2.300	11.1	18.4	4 21	12 41.81	-2 36.3	2.273	3.233	6.3	20.6
5 1	12 37.36	+7 52.8	1.397	2.285	15.3	18.6	5 1	12 34.74	-2 17.6	2.335	3.234	9.5	20.8
5 11	12 33.97	+8 7.5	1.457	2.270	19.0	18.8	5 11	12 29.38	-2 9.0	2.421	3.235	12.3	21.0
425731	2011 <i>BJ</i> ₈₀		4 4.7 104°00	12°1/16.6 17			300137	2006 <i>VG</i> ₅₆		4 4.7 174°19	0°5/ 4.1 17		
3 2	13 24.55	-39 1.7	1.963	2.624	18.7	20.6	3 2	13 15.88	-6 21.8	2.870	3.699	9.6	22.4
3 12	13 18.90	-40 26.4	1.881	2.628	17.0	20.5	3 12	13 11.13	-5 47.9	2.789	3.701	7.0	22.2
3 22	13 10.39	-41 23.2	1.816	2.631	15.1	20.3	3 22	13 5.09	-5 6.6	2.733	3.703	4.1	22.0
4 1	12 59.79	-41 46.2	1.770	2.634	13.3	20.2	4 1	12 58.25	-4 21.0	2.707	3.704	1.1	21.8
4 11	12 48.37	-41 32.9	1.746	2.637	12.2	20.1	4 11	12 51.20	-3 35.0	2.711	3.706	2.2	21.9
4 21	12 37.59	-40 45.7	1.744	2.640	12.2	20.1	4 21	12 44.54	-2 52.4	2.745	3.706	5.3	22.1
5 1	12 28.76	-39 31.7	1.766	2.644	13.1	20.2	5 1	12 38.81	-2 16.6	2.807	3.707	8.1	22.3
5 11	12 22.79	-38 1.8	1.808	2.647	14.8	20.3	5 11	12 34.43	-1 50.3	2.893	3.706	10.5	22.4
166929	2003 <i>GP</i> ₄₃		4 4.7 283°70	13°3/25.4 17			68262	2001 <i>EW</i> ₉		4 4.7 98°08	4°3/30.7 18		
3 2	13 33.22	+25 38.2	1.554	2.380	16.4	19.2	3 2	13 17.20	+3 56.5	2.092	2.950	11.5	19.0
3 12	13 25.44	+26 48.0	1.476	2.351	14.5	19.0	3 12	13 12.37	+5 19.6	2.041	2.968	8.4	18.8
3 22	13 14.34	+27 39.2	1.420	2.322	13.4	18.9	3 22	13 5.90	+6 44.5	2.017	2.985	5.5	18.6
4 1	13 0.88	+27 58.7	1.387	2.292	13.7	18.8	4 1	12 58.47	+8 3.8	2.021	3.002	4.4	18.6
4 11	12 46.60	+27 37.2	1.378	2.262	15.4	18.8	4 11	12 50.90	+9 10.7	2.053	3.019	6.1	18.7
4 21	12 33.22	+26 32.1	1.391	2.231	18.0	18.9	4 21	12 44.00	+10 0.5	2.113	3.036	9.0	18.9
5 1	12 22.19	+24 47.0	1.423	2.200	20.9	19.0	5 1	12 38.42	+10 30.5	2.197	3.053	11.8	19.2
5 11	12 14.44	+22 30.3	1.472	2.169	23.6	19.1	5 11	12 34.62	+10 40.6	2.302	3.069	14.2	19.4
255678	2006 <i>QQ</i> ₄₈		4 4.7 204°61	0°3/ 4.9 15			184116	2004 <i>HY</i> ₅₄		4 4.7 345°06	1°8/ 6.3 18		
3 2	13 21.21	-9 0.8	2.110	2.934	12.7	22.4	3 2	13 15.23	-13 27.0	1.431	2.273	16.7	19.4
3 12	13 15.56	-8 35.3	2.021	2.929	9.5	22.2	3 12	13 11.90	-12 58.3	1.353	2.268	12.8	19.1
3 22	13 7.96	-7 57.8	1.956	2.923	5.8	21.9	3 22	13 6.09	-12 7.7	1.297	2.263	8.2	18.8
4 1	12 59.06	-7 11.3	1.920	2.917	1.7	21.7	4 1	12 58.60	-10 58.5	1.264	2.258	3.4	18.5
4 11	12 49.74	-6 20.8	1.913	2.909	2.6	21.7	4 11	12 50.60	-9 38.1	1.256	2.254	3.1	18.5
4 21	12 40.94	-5 31.8	1.935	2.901	6.6	21.9	4 21	12 43.29	-8 16.2	1.274	2.251	8.0	18.8
5 1	12 33.49	-4 49.6	1.983	2.893	10.4	22.2	5 1	12 37.79	-7 2.3	1.316	2.249	12.7	19.0
5 11	12 28.00	-4 18.6	2.055	2.883	13.7	22.3	5 11	12 34.81	-6 4.2	1.378	2.247	16.9	19.3
342927	2008 <i>YA</i> ₁₇₁		4 4.7 8°20	6°8/28.6 17			214957	2007 <i>XT</i> ₂₉		4 4.7 95°44	0°5/ 5.1 18		
3 2	13 16.86	+11 18.0	1.915	2.779									

EPHEMERIDES

4 4.7

4 4.7

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
388307	2006 SX ₂₃₆		4 4.7 94°20	1.2/ 3.1	18		508632	2017 TC ₂		4 4.7 220°76	4.5/30.5	17	
3 2	13 16.45	- 4 27.2	2.558	3.395	10.3	21.8	3 2	13 20.88	+ 7 56.7	2.563	3.409	10.0	22.0
3 12	13 11.55	- 3 35.6	2.501	3.419	7.5	21.6	3 12	13 15.00	+ 8 46.8	2.481	3.397	7.6	21.8
3 22	13 5.31	- 2 37.4	2.471	3.443	4.3	21.4	3 22	13 7.52	+ 9 36.1	2.425	3.385	5.4	21.6
4 1	12 58.31	- 1 36.9	2.470	3.467	1.4	21.3	4 1	12 58.98	+10 19.2	2.398	3.372	4.5	21.5
4 11	12 51.21	- 0 39.1	2.499	3.490	2.9	21.4	4 11	12 50.13	+10 51.4	2.400	3.358	6.0	21.6
4 21	12 44.66	+ 0 11.7	2.558	3.513	6.0	21.6	4 21	12 41.70	+11 9.0	2.431	3.343	8.5	21.7
5 1	12 39.20	+ 0 52.0	2.643	3.535	8.8	21.8	5 1	12 34.39	+11 10.3	2.488	3.328	11.1	21.9
5 11	12 35.23	+ 1 19.7	2.752	3.557	11.2	22.0	5 11	12 28.71	+10 55.1	2.566	3.312	13.4	22.0
98926	2001 CH ₁		4 4.7 97°55	5.0/30.5	18		239470	2007 TS ₄₄₃		4 4.7 156°47	1.3/ 3.2	17	
3 2	13 17.89	+ 5 41.9	1.961	2.822	12.0	19.2	3 2	13 16.73	- 4 12.8	2.366	3.207	10.9	21.3
3 12	13 13.02	+ 6 55.3	1.907	2.833	8.9	19.1	3 12	13 11.99	- 3 29.8	2.291	3.211	8.0	21.1
3 22	13 6.36	+ 8 9.1	1.878	2.844	6.0	18.9	3 22	13 5.72	- 2 39.2	2.242	3.214	4.6	20.9
4 1	12 58.62	+ 9 15.9	1.876	2.855	5.0	18.9	4 1	12 58.48	- 1 45.4	2.221	3.218	1.5	20.7
4 11	12 50.70	+10 9.0	1.903	2.866	6.8	19.0	4 11	12 51.00	- 0 53.3	2.229	3.221	3.1	20.8
4 21	12 43.47	+10 43.9	1.955	2.877	9.7	19.2	4 21	12 44.01	- 0 7.8	2.267	3.224	6.5	21.0
5 1	12 37.65	+10 58.2	2.032	2.887	12.6	19.4	5 1	12 38.16	+ 0 27.3	2.330	3.226	9.7	21.2
5 11	12 33.74	+10 52.3	2.128	2.898	15.1	19.6	5 11	12 33.93	+ 0 49.4	2.417	3.228	12.4	21.4
79919	1999 CF ₂₈		4 4.7 54°73	6.8/28.9	18		72349	2001 BZ ₇₀		4 4.7 166°96	0.3/ 5.0	18	
3 2	13 18.04	+10 50.8	1.816	2.681	12.6	19.6	3 2	13 21.14	- 9 37.9	2.045	2.869	13.0	20.6
3 12	13 13.17	+12 6.9	1.777	2.699	9.7	19.4	3 12	13 15.48	- 9 2.3	1.967	2.875	9.7	20.4
3 22	13 6.44	+13 17.7	1.761	2.717	7.4	19.3	3 22	13 7.90	- 8 13.6	1.913	2.880	5.9	20.2
4 1	12 58.63	+14 15.1	1.773	2.736	6.9	19.3	4 1	12 59.09	- 7 15.6	1.887	2.884	1.7	19.9
4 11	12 50.73	+14 52.8	1.810	2.755	8.6	19.5	4 11	12 49.97	- 6 13.8	1.890	2.887	2.6	20.0
4 21	12 43.64	+15 7.5	1.872	2.774	11.2	19.7	4 21	12 41.46	- 5 14.4	1.923	2.890	6.7	20.2
5 1	12 38.10	+14 58.9	1.957	2.793	13.8	19.9	5 1	12 34.38	- 4 23.3	1.982	2.891	10.4	20.5
5 11	12 34.57	+14 29.1	2.060	2.812	16.1	20.1	5 11	12 29.30	- 3 44.5	2.064	2.893	13.6	20.7
314175	2005 GZ ₉₉		4 4.7 112°66	4.3/ 7.9	18		504544	2008 SQ ₁₂₅		4 4.7 223°00	0.3/ 5.0	17	
3 2	13 31.13	-17 32.9	1.928	2.708	15.4	21.1	3 2	13 19.38	- 8 29.5	2.311	3.136	11.7	22.1
3 12	13 22.92	-18 15.9	1.861	2.732	12.2	21.0	3 12	13 14.11	- 8 11.1	2.219	3.128	8.7	21.9
3 22	13 12.35	-18 42.0	1.818	2.756	8.6	20.8	3 22	13 7.08	- 7 42.3	2.152	3.119	5.3	21.7
4 1	13 0.29	-18 50.3	1.801	2.779	5.3	20.6	4 1	12 58.88	- 7 6.0	2.113	3.110	1.6	21.4
4 11	12 47.92	-18 42.5	1.815	2.801	4.5	20.6	4 11	12 50.30	- 6 26.3	2.104	3.100	2.3	21.4
4 21	12 36.43	-18 22.9	1.857	2.822	7.1	20.8	4 21	12 42.14	- 5 47.7	2.123	3.090	6.1	21.7
5 1	12 26.82	-17 57.5	1.927	2.842	10.4	21.1	5 1	12 35.18	- 5 14.9	2.170	3.080	9.6	21.9
5 11	12 19.72	-17 32.6	2.021	2.861	13.4	21.3	5 11	12 29.97	- 4 51.5	2.240	3.069	12.7	22.0
211479	2003 ET ₅₉		4 4.7 350°68	7.1/30.0	18		428786	2008 SV ₂₇₈		4 4.7 153°55	0.5/ 5.2	17	
3 2	13 22.10	+13 39.0	1.869	2.724	12.8	19.0	3 2	13 19.81	- 8 47.0	2.063	2.892	12.8	20.9
3 12	13 16.29	+14 8.5	1.805	2.720	10.1	18.8	3 12	13 14.52	- 8 36.4	1.984	2.894	9.5	20.7
3 22	13 8.40	+14 30.2	1.764	2.716	7.8	18.7	3 22	13 7.35	- 8 15.0	1.930	2.897	5.8	20.5
4 1	12 59.21	+14 37.4	1.750	2.712	7.1	18.6	4 1	12 58.95	- 7 45.4	1.902	2.899	1.8	20.2
4 11	12 49.73	+14 25.2	1.762	2.709	8.6	18.7	4 11	12 50.21	- 7 11.9	1.904	2.901	2.5	20.3
4 21	12 40.99	+13 51.7	1.800	2.707	11.2	18.8	4 21	12 42.05	- 6 39.4	1.933	2.903	6.4	20.5
5 1	12 33.87	+12 57.4	1.861	2.705	14.1	19.0	5 1	12 35.25	- 6 12.5	1.990	2.904	10.1	20.8
5 11	12 28.94	+11 45.1	1.942	2.704	16.6	19.2	5 11	12 30.40	- 5 54.9	2.069	2.906	13.2	21.0
348541	2005 UQ ₂₂₈		4 4.7 346°89	2.9/ 7.7	17		453241	2008 RZ ₆₂		4 4.7 139°77	2.7/ 2.3	18	
3 2	13 14.35	-17 55.0	1.576	2.396	16.4	20.2	3 2	13 20.69	- 3 20.2	1.516	2.373	15.1	21.7
3 12	13 11.08	-17 11.9	1.494	2.393	12.9	19.9	3 12	13 15.61	- 2 7.3	1.453	2.381	11.0	21.5
3 22	13 5.53	-16 2.8	1.434	2.389	8.7	19.7	3 22	13 8.14	- 0 42.8	1.413	2.388	6.4	21.2
4 1	12 58.46	-14 30.6	1.398	2.387	4.5	19.4	4 1	12 59.17	+ 0 45.1	1.399	2.395	2.8	21.0
4 11	12 50.96	-12 42.9	1.388	2.384	3.4	19.3	4 11	12 49.88	+ 2 6.7	1.413	2.401	5.2	21.2
4 21	12 44.12	-10 50.0	1.405	2.382	7.3	19.6	4 21	12 41.44	+ 3 13.5	1.453	2.407	9.7	21.5
5 1	12 38.95	- 9 3.0	1.447	2.381	11.7	19.8	5 1	12 34.84	+ 3 59.8	1.517	2.412	13.9	21.7
5 11	12 36.10	- 7 30.9	1.511	2.380	15.6	20.0	5 11	12 30.70	+ 4 23.2	1.601	2.417	17.4	22.0
171019	2005 EA ₄₆		4 4.7 16°74	0.9/ 5.4	18		421339	2013 TT ₈₉		4 4.7 70°24	1.3/ 5.9	18	
3 2	13 17.26	-10 17.1	1.223	2.081	17.9	19.7	3 2	13 18.44	-11 41.7	1.855	2.683	14.0	20.8
3 12	13 13.61	- 9 56.5	1.160	2.085	13.4	19.4	3 12	13 13.62	-11 23.1	1.787	2.694	10.6	20.6
3 22	13 7.18	- 9 16.3	1.117	2.089	8.3	19.1	3 22	13 6.82	-10 49.7	1.742	2.706	6.6	20.4
4 1	12 58.93	- 8 21.0	1.097	2.094	2.7	18.8	4 1	12 58.79	-10 4.8	1.723	2.718	2.5	20.1
4 11	12 50.21	- 7 19.0	1.102	2.100	3.4	18.9	4 11	12 50.50	- 9 13.5	1.733	2.730	2.6	20.2
4 21	12 42.43	- 6 19.7	1.131	2.107	8.9	19.2	4 21	12 42.90	- 8 22.1	1.769	2.742	6.6	20.4
5 1	12 36.76	- 5 31.7	1.182	2.114	13.9	19.5	5 1	12 36.81	- 7 36.6	1.832	2.754	10.4	20.7
5 11	12 33.91	- 5 1.0	1.252	2.123	18.1	19.8	5 11	12 32.79	- 7 1.7	1.917	2.766	13.7	20.9
170694	2004 BW ₁₄		4 4.7 127°11	0.7/ 5.4	18		467761	2009 UL ₁₄₆		4 4.7 202°68	2.4/ 2.6	17	
3 2	13 21.64	-10 21.5	1.937	2.761	13.7	20.7	3 2	13 21.26	- 0 26.0	2.089	2.934	12.0	21.9
3 12	13 15.84	- 9 54.5	1.869	2.776	10.2	20.5	3 12	13 15.55	+ 0 3.7	2.010	2.931	8.8	21.6
3 22	13 8.08	- 9 13.9	1.825	2.791	6.3	20.3	3 22	13 7.95	+ 0 38.3	1.956	2.928	5.3	21.4
4 1	12 59.12	- 8 23.4	1.809	2.805	2.0	20.1	4 1	12 59.12	+ 1 13.3	1.930	2.924	2.4	21.2
4 11	12 49.91	- 7 28.5	1.821	2.818	2.5	20.1	4 11	12 49.93	+ 1 43.4	1.933	2.920	4.2	21.3
4 21	12 41.44	- 6 35.3	1.862	2.831	6.7	20.4	4 21	12 41.30	+ 2 4.3	1.964	2.915	7.8	21.5
5 1	12 34.50	- 5 49.5	1.929	2.843	10.4	20.7	5 1	12 34.04	+ 2 12.8	2.021	2.910	11.2	21.7
5 11	12 29.65	- 5 15.3	2.020	2.854	13.6	20.9	5 11	12 28.73	+ 2 7.3	2.101	2.905	14.2	21.9
48203	2001 KQ ₆		4 4.7 178°70	4.2/ 9.2	18 R		259206	2003 AV ₅₅		4 4.7 132°32	0.2/ 4.5	18	
3 2	13 18.87	-21 44.2	1.987	2.767									

EPHEMERIDES

4 4.7

4 4.7

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
175379	2005 <i>UE</i> ₄₉₅		4 4.7 252°54	3°7/30.8	17		212775	2007 <i>TC</i> ₁₂₀		4 4.7 134°33	1°5/ 3.3	18	
3 2	13 15.27	+ 4 12.0	2.619	3.472	9.6	20.3	3 2	13 21.64	- 4 35.5	1.845	2.688	13.5	21.1
3 12	13 10.90	+ 5 17.2	2.533	3.457	7.1	20.1	3 12	13 15.91	- 3 46.5	1.781	2.701	9.8	20.8
3 22	13 5.08	+ 6 25.1	2.474	3.442	4.7	20.0	3 22	13 8.17	- 2 47.9	1.741	2.713	5.7	20.6
4 1	12 58.32	+ 7 30.3	2.444	3.426	3.7	19.9	4 1	12 59.19	- 1 45.2	1.729	2.725	1.9	20.4
4 11	12 51.26	+ 8 27.4	2.444	3.411	5.2	19.9	4 11	12 49.98	- 0 45.2	1.745	2.737	3.8	20.5
4 21	12 44.56	+ 9 12.0	2.471	3.395	7.9	20.1	4 21	12 41.52	+ 0 5.8	1.789	2.747	7.9	20.8
5 1	12 38.83	+ 9 41.2	2.524	3.378	10.5	20.2	5 1	12 34.64	+ 0 43.0	1.860	2.757	11.6	21.1
5 11	12 34.55	+ 9 53.8	2.599	3.362	12.9	20.4	5 11	12 29.91	+ 1 3.9	1.951	2.767	14.7	21.3
420810	2013 <i>HC</i> ₁₉		4 4.7 302°09	1°8/ 6.2	17		373428	1999 <i>TC</i> ₅		4 4.7 23°86	1°7/ 2.4	16	
3 2	13 16.91	-13 6.7	1.381	2.224	17.1	21.6	3 2	12 24.99	-77 0.7	0.262	1.046	70.8	18.1
3 12	13 13.54	-12 42.9	1.283	2.198	13.3	21.3	3 12	12 51.27	-57 5.0	0.218	1.111	52.6	17.3
3 22	13 7.37	-11 55.5	1.205	2.171	8.6	21.0	3 22	12 56.07	-30 10.7	0.213	1.183	26.4	16.6
4 1	12 59.09	-10 46.8	1.150	2.145	3.5	20.6	4 1	12 55.98	- 6 26.1	0.260	1.259	3.1	16.3
4 11	12 49.86	- 9 23.1	1.121	2.119	3.4	20.5	4 11	12 55.45	+ 7 58.9	0.346	1.337	12.9	17.5
4 21	12 41.09	- 7 54.6	1.116	2.093	8.9	20.7	4 21	12 56.02	+15 31.6	0.457	1.416	21.5	18.5
5 1	12 34.15	- 6 32.5	1.135	2.067	14.3	21.0	5 1	12 58.35	+19 9.9	0.583	1.495	26.5	19.3
5 11	12 30.01	- 5 26.6	1.173	2.042	19.1	21.2	5 11	13 2.58	+20 36.6	0.720	1.573	29.4	20.0
326682	2002 <i>VO</i> ₁₄₇		4 4.7 38°04	7°0/30.1	18		475236	2005 <i>WV</i> ₃		4 4.7 233°91	8°4/17.3	18	
3 2	13 17.76	+ 6 24.8	1.265	2.146	15.8	19.5	3 2	13 20.51	-41 25.2	3.232	3.834	12.8	21.5
3 12	13 13.60	+ 7 53.4	1.227	2.162	11.8	19.3	3 12	13 15.00	-42 3.8	3.119	3.820	11.7	21.4
3 22	13 6.95	+ 9 20.8	1.211	2.179	8.2	19.2	3 22	13 7.69	-42 22.3	3.025	3.805	10.5	21.3
4 1	12 58.82	+10 35.6	1.218	2.197	7.1	19.2	4 1	12 59.10	-42 17.8	2.952	3.790	9.3	21.2
4 11	12 50.56	+11 27.9	1.251	2.216	9.3	19.3	4 11	12 50.01	-41 49.6	2.903	3.775	8.6	21.1
4 21	12 43.39	+11 52.4	1.306	2.235	12.9	19.6	4 21	12 41.25	-40 59.2	2.879	3.759	8.5	21.1
5 1	12 38.26	+11 48.2	1.382	2.255	16.4	19.8	5 1	12 33.60	-39 50.6	2.880	3.742	9.1	21.1
5 11	12 35.68	+11 17.8	1.475	2.275	19.4	20.1	5 11	12 27.69	-38 29.9	2.906	3.725	10.3	21.1
102108	1999 <i>RZ</i> ₁₆₅		4 4.7 54°53	0°9/ 4.0	18		33899	2000 <i>KE</i> ₅₅		4 4.7 167°82	6°6/29.1	18	
3 2	13 19.45	- 6 49.0	1.357	2.214	16.5	18.6	3 2	13 22.23	+12 24.8	2.084	2.935	11.8	18.8
3 12	13 14.86	- 6 8.5	1.300	2.227	12.1	18.3	3 12	13 16.19	+13 26.6	2.025	2.938	9.2	18.6
3 22	13 7.75	- 5 13.5	1.266	2.240	7.1	18.1	3 22	13 8.28	+14 23.1	1.992	2.942	7.2	18.5
4 1	12 59.07	- 4 10.4	1.256	2.253	1.9	17.8	4 1	12 59.22	+15 7.2	1.986	2.944	6.7	18.4
4 11	12 50.11	- 3 7.7	1.272	2.267	3.9	18.0	4 11	12 49.94	+15 33.2	2.007	2.947	8.2	18.5
4 21	12 42.12	- 2 13.9	1.313	2.281	8.9	18.3	4 21	12 41.35	+15 38.1	2.055	2.948	10.7	18.7
5 1	12 36.13	- 1 35.3	1.377	2.295	13.4	18.6	5 1	12 34.22	+15 21.4	2.126	2.950	13.3	18.9
5 11	12 32.74	- 1 15.4	1.462	2.309	17.2	18.9	5 11	12 29.09	+14 44.7	2.217	2.951	15.6	19.0
441307	2008 <i>AA</i> ₄₁		4 4.7 351°18	6°7/27.8	17		115364	2003 <i>SC</i> ₂₅₁		4 4.7 137°00	0°9/ 3.9	17	
3 2	13 15.08	+11 47.5	2.083	2.946	11.3	21.0	3 2	13 18.33	- 5 21.0	2.076	2.917	12.2	19.9
3 12	13 11.00	+13 9.9	2.024	2.944	8.8	20.9	3 12	13 13.39	- 4 50.7	2.001	2.920	9.0	19.7
3 22	13 5.21	+14 28.4	1.991	2.942	7.0	20.8	3 22	13 6.66	- 4 11.6	1.951	2.923	5.3	19.5
4 1	12 58.36	+15 35.4	1.984	2.941	6.8	20.7	4 1	12 58.79	- 3 27.6	1.929	2.926	1.5	19.3
4 11	12 51.26	+16 24.3	2.004	2.939	8.5	20.8	4 11	12 50.63	- 2 44.1	1.935	2.929	3.0	19.4
4 21	12 44.72	+16 51.3	2.049	2.938	10.9	21.0	4 21	12 43.03	- 2 5.9	1.969	2.932	6.9	19.6
5 1	12 39.46	+16 54.9	2.116	2.938	13.4	21.1	5 1	12 36.76	- 1 37.6	2.029	2.934	10.4	19.8
5 11	12 35.97	+16 36.4	2.202	2.937	15.6	21.3	5 11	12 32.36	- 1 21.9	2.112	2.937	13.5	20.0
10054	Solomin		4 4.7 222°52	1°7/ 6.2	18		128634	2004 <i>RF</i> ₁₃		4 4.7 190°14	0°1/ 4.9	18	
3 2	13 23.40	-12 14.3	1.847	2.665	14.5	18.3	3 2	13 23.24	- 8 21.1	1.811	2.642	14.2	20.7
3 12	13 17.57	-12 7.3	1.754	2.655	11.1	18.0	3 12	13 17.34	- 7 59.8	1.729	2.641	10.6	20.5
3 22	13 9.40	-11 44.8	1.683	2.644	7.2	17.8	3 22	13 9.18	- 7 25.7	1.671	2.640	6.4	20.2
4 1	12 59.58	-11 8.6	1.639	2.633	3.0	17.5	4 1	12 59.51	- 6 42.4	1.641	2.638	1.8	19.9
4 11	12 49.15	-10 23.1	1.624	2.621	2.9	17.4	4 11	12 49.40	- 5 55.2	1.638	2.635	2.9	20.0
4 21	12 39.25	- 9 34.2	1.637	2.608	7.2	17.7	4 21	12 39.92	- 5 10.5	1.664	2.631	7.5	20.2
5 1	12 30.93	- 8 48.7	1.676	2.594	11.4	17.9	5 1	12 32.07	- 4 34.0	1.716	2.627	11.6	20.5
5 11	12 26.92	- 8 12.5	1.737	2.580	15.1	18.1	5 11	12 26.51	- 4 10.0	1.790	2.622	15.2	20.7
102667	1999 <i>VB</i> ₆₂		4 4.7 297°03	4°9/ 9.4	18		510078	2010 <i>JN</i> ₁₇₉		4 4.7 209°14	3°4/28.6	18	
3 2	13 15.47	-22 15.0	1.523	2.325	17.8	19.5	3 2	13 11.32	+12 56.9	4.561	5.405	6.0	20.8
3 12	13 12.23	-21 46.0	1.425	2.307	14.5	19.2	3 12	13 7.44	+13 30.2	4.495	5.404	4.7	20.7
3 22	13 6.44	-20 45.7	1.347	2.289	10.6	18.9	3 22	13 2.79	+14 0.5	4.457	5.402	3.7	20.7
4 1	12 58.80	-19 13.9	1.292	2.272	6.6	18.6	4 1	12 57.69	+14 25.1	4.448	5.401	3.5	20.6
4 11	12 50.46	-17 16.1	1.263	2.254	5.0	18.5	4 11	12 52.48	+14 41.8	4.467	5.399	4.3	20.7
4 21	12 42.70	-15 2.8	1.260	2.237	8.0	18.6	4 21	12 47.51	+14 49.3	4.515	5.397	5.6	20.8
5 1	12 36.70	-12 47.5	1.282	2.220	12.5	18.8	5 1	12 43.10	+14 46.8	4.589	5.395	7.0	20.9
5 11	12 33.30	-10 43.3	1.325	2.203	16.8	19.0	5 11	12 39.51	+14 34.0	4.685	5.394	8.2	21.0
489474	2007 <i>DL</i> ₁₁₅		4 4.7 22°37	0°6/ 4.3	18		173341	1999 <i>XL</i> ₄₈		4 4.7 134°05	0°6/ 4.2	18	
3 2	13 19.57	- 7 24.8	1.179	2.043	18.0	21.2	3 2	13 21.05	- 7 11.2	1.914	2.750	13.4	20.7
3 12	13 15.42	- 6 50.7	1.116	2.045	13.4	21.0	3 12	13 15.45	- 6 30.3	1.847	2.762	9.8	20.5
3 22	13 8.34	- 5 59.2	1.073	2.048	8.0	20.7	3 22	13 7.89	- 5 37.8	1.804	2.774	5.8	20.3
4 1	12 59.29	- 4 56.3	1.053	2.051	2.1	20.3	4 1	12 59.13	- 4 38.6	1.788	2.786	1.5	20.0
4 11	12 49.74	- 3 51.6	1.058	2.054	4.1	20.5	4 11	12 50.13	- 3 38.9	1.802	2.797	3.0	20.1
4 21	12 41.18	- 2 54.8	1.087	2.058	9.9	20.8	4 21	12 41.83	- 2 44.9	1.844	2.807	7.2	20.4
5 1	12 34.85	- 2 14.1	1.137	2.062	15.0	21.1	5 1	12 35.06	- 2 1.8	1.911	2.817	10.9	20.6
5 11	12 31.51	- 1 54.1	1.207	2.067	19.3	21.4	5 11	12 30.36	- 1 33.1	2.002	2.826	14.1	20.9
495013	2010 <i>RZ</i> ₆₄		4 4.7 249°89	0°6/ 5.3	17		154082	2002 <i>CA</i> ₂₂₇		4 4.7 276°39	5°3/29.8</		

EPHEMERIDES

4 4.7

4 4.8

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
265745	2005 VY ₄		4 4.7 52°10	0°3/ 4.4 17			435411	2008 AW ₈₃		4 4.7 86°41	7°6/26.4 17		
3 2	13 17.12	- 8 28.4	1.620	2.467	14.8	20.6	3 2	13 17.54	+17 16.0	2.283	3.133	10.9	21.0
3 12	13 12.89	- 7 40.8	1.554	2.475	10.9	20.4	3 12	13 12.63	+18 32.7	2.239	3.142	9.0	20.8
3 22	13 6.51	- 6 38.3	1.511	2.484	6.5	20.2	3 22	13 6.11	+19 40.5	2.221	3.151	7.7	20.8
4 1	12 58.77	- 5 26.4	1.494	2.492	1.7	19.9	4 1	12 58.66	+20 32.8	2.229	3.160	7.8	20.8
4 11	12 50.73	- 4 12.9	1.505	2.501	3.2	20.0	4 11	12 51.06	+21 4.5	2.263	3.169	9.1	20.9
4 21	12 43.44	- 3 5.7	1.542	2.510	7.8	20.3	4 21	12 44.08	+21 13.2	2.321	3.178	11.1	21.0
5 1	12 37.80	- 2 11.6	1.603	2.519	12.0	20.6	5 1	12 38.38	+20 59.2	2.402	3.187	13.1	21.2
5 11	12 34.39	- 1 34.7	1.686	2.528	15.5	20.8	5 11	12 34.41	+20 24.5	2.501	3.196	14.9	21.3
504084	2006 BJ ₁₇₈		4 4.7 234°30	5°4/10.2 18			317739	2003 SR ₁₂		4 4.7 251°27	1°0/ 5.6 17		
3 2	13 22.12	-24 22.9	2.472	3.218	13.3	22.4	3 2	13 22.13	-10 37.4	1.857	2.682	14.1	22.1
3 12	13 16.32	-24 48.1	2.363	3.203	11.1	22.2	3 12	13 16.73	-10 21.0	1.756	2.662	10.8	21.8
3 22	13 8.55	-24 55.7	2.276	3.187	8.6	22.0	3 22	13 8.99	- 9 49.7	1.678	2.642	6.8	21.5
4 1	12 59.37	-24 44.1	2.215	3.170	6.4	21.8	4 1	12 59.56	- 9 5.8	1.626	2.622	2.4	21.2
4 11	12 49.61	-24 14.3	2.182	3.153	5.4	21.7	4 11	12 49.44	- 8 14.3	1.603	2.600	2.8	21.2
4 21	12 40.17	-23 29.4	2.178	3.135	6.7	21.8	4 21	12 39.74	- 7 21.3	1.608	2.578	7.4	21.4
5 1	12 31.95	-22 35.1	2.201	3.117	9.2	21.9	5 1	12 31.52	- 6 33.7	1.639	2.555	11.8	21.6
5 11	12 25.60	-21 37.9	2.249	3.097	11.9	22.0	5 11	12 25.57	- 5 57.3	1.692	2.532	15.6	21.8
54600	2000 RU ₈		4 4.7 146°07	4°2/ 1.1 18			291663	2006 HL ₆₇		4 4.7 37°88	0°0/ 4.6 18		
3 2	13 22.15	+ 2 35.2	1.716	2.573	13.6	18.5	3 2	13 18.41	- 8 51.4	1.266	2.124	17.4	20.5
3 12	13 16.45	+ 3 32.0	1.654	2.580	10.0	18.3	3 12	13 14.36	- 8 12.6	1.206	2.131	12.9	20.2
3 22	13 8.57	+ 4 32.5	1.615	2.586	6.3	18.1	3 22	13 7.62	- 7 15.4	1.166	2.139	7.7	19.9
4 1	12 59.33	+ 5 29.2	1.604	2.592	4.2	18.0	4 1	12 59.14	- 6 6.0	1.149	2.147	2.1	19.6
4 11	12 49.81	+ 6 14.8	1.621	2.598	6.2	18.1	4 11	12 50.27	- 4 53.6	1.159	2.156	3.6	19.7
4 21	12 41.08	+ 6 44.0	1.664	2.603	9.8	18.3	4 21	12 42.36	- 3 47.9	1.192	2.165	9.1	20.1
5 1	12 34.04	+ 6 53.7	1.731	2.608	13.4	18.6	5 1	12 36.52	- 2 57.1	1.249	2.174	13.9	20.4
5 11	12 29.29	+ 6 43.8	1.818	2.613	16.5	18.8	5 11	12 33.43	- 2 26.1	1.325	2.184	18.0	20.6
62633	2000 SC ₃₅₆		4 4.7 230°45	4°8/30.4 18			333423	2003 KL ₁₁		4 4.7 268°27	4°9/ 9.9 17		
3 2	13 19.90	+ 9 50.3	2.533	3.381	10.1	19.4	3 2	13 17.79	-23 6.4	2.127	2.897	14.4	21.0
3 12	13 14.27	+10 27.7	2.459	3.374	7.7	19.2	3 12	13 13.37	-23 0.2	2.018	2.877	11.9	20.7
3 22	13 7.09	+11 2.2	2.410	3.367	5.6	19.1	3 22	13 6.89	-22 32.0	1.930	2.857	9.0	20.5
4 1	12 58.91	+11 28.8	2.390	3.360	4.9	19.0	4 1	12 58.96	-21 41.3	1.868	2.836	6.1	20.3
4 11	12 50.48	+11 43.3	2.399	3.352	6.2	19.1	4 11	12 50.45	-20 30.9	1.832	2.815	4.9	20.2
4 21	12 42.53	+11 42.9	2.435	3.345	8.6	19.2	4 21	12 42.34	-19 6.2	1.825	2.794	6.8	20.2
5 1	12 35.71	+11 26.6	2.497	3.337	11.1	19.4	5 1	12 35.53	-17 35.1	1.844	2.772	10.0	20.4
5 11	12 30.51	+10 54.8	2.580	3.329	13.3	19.5	5 11	12 30.73	-16 6.3	1.887	2.750	13.2	20.5
506641	2006 RH ₅₀		4 4.7 179°58	0°0/ 4.5 18			435391	2007 YO ₁₆		4 4.7 101°27	0°5/ 5.4 17		
3 2	13 16.35	- 7 55.7	2.884	3.706	9.7	22.8	3 2	13 16.93	- 9 45.1	2.254	3.081	11.9	21.5
3 12	13 11.53	- 7 25.1	2.799	3.708	7.2	22.6	3 12	13 12.28	- 9 22.3	2.177	3.086	8.9	21.3
3 22	13 5.40	- 6 46.3	2.741	3.708	4.3	22.4	3 22	13 5.99	- 8 48.2	2.124	3.090	5.4	21.1
4 1	12 58.44	- 6 2.0	2.712	3.709	1.2	22.2	4 1	12 58.65	- 8 5.8	2.099	3.095	1.8	20.9
4 11	12 51.27	- 5 16.0	2.713	3.709	2.0	22.3	4 11	12 51.05	- 7 19.7	2.102	3.099	2.2	20.9
4 21	12 44.48	- 4 32.1	2.744	3.708	5.1	22.5	4 21	12 43.96	- 6 34.7	2.134	3.104	5.9	21.2
5 1	12 38.62	- 3 54.1	2.803	3.707	7.9	22.6	5 1	12 38.07	- 5 55.5	2.193	3.108	9.3	21.4
5 11	12 34.11	- 3 24.7	2.887	3.706	10.4	22.8	5 11	12 33.90	- 5 25.9	2.275	3.112	12.2	21.6
38522	1999 TA ₂₇₁		4 4.7 251°67	2°1/ 6.6 18			68323	2001 FZ ₁₈₀		4 4.7 220°47	3°3/31.4 18		
3 2	13 21.83	-12 15.8	2.473	3.278	11.7	18.8	3 2	13 16.34	+ 1 13.2	2.449	3.299	10.3	20.3
3 12	13 15.84	-12 41.8	2.384	3.276	9.0	18.6	3 12	13 11.78	+ 2 34.6	2.366	3.290	7.5	20.1
3 22	13 8.11	-12 58.0	2.320	3.275	5.9	18.4	3 22	13 5.68	+ 4 1.5	2.310	3.280	4.7	19.9
4 1	12 59.22	-13 4.9	2.284	3.273	2.9	18.2	4 1	12 58.58	+ 5 28.0	2.283	3.270	3.3	19.8
4 11	12 49.95	-13 4.3	2.277	3.272	2.6	18.1	4 11	12 51.17	+ 6 47.4	2.287	3.260	5.0	19.9
4 21	12 41.11	-12 59.0	2.301	3.270	5.5	18.3	4 21	12 44.17	+ 7 54.4	2.319	3.249	8.0	20.0
5 1	12 33.44	-12 52.6	2.352	3.269	8.6	18.5	5 1	12 38.24	+ 8 44.8	2.377	3.237	10.8	20.2
5 11	12 27.50	-12 48.6	2.428	3.267	11.5	18.7	5 11	12 33.87	+ 9 16.9	2.457	3.225	13.4	20.4
456222	2006 KU ₄₆		4 4.7 299°35	2°3/ 3.1 17			247780	2003 RA ₁		4 4.7 174°70	3°6/ 1.3 18		
3 2	13 19.78	- 3 1.7	1.383	2.247	15.8	21.5	3 2	13 21.54	+ 1 32.0	1.947	2.798	12.5	20.8
3 12	13 15.58	- 2 27.0	1.293	2.224	11.8	21.2	3 12	13 15.85	+ 2 30.8	1.877	2.801	9.2	20.6
3 22	13 8.57	- 1 40.5	1.225	2.201	7.1	20.9	3 22	13 8.19	+ 3 34.1	1.832	2.803	5.7	20.4
4 1	12 59.46	- 0 47.9	1.181	2.178	2.6	20.5	4 1	12 59.27	+ 4 35.6	1.816	2.805	3.6	20.3
4 11	12 49.49	+ 0 2.3	1.163	2.155	5.1	20.6	4 11	12 50.06	+ 5 28.4	1.827	2.806	5.5	20.4
4 21	12 40.06	+ 0 41.8	1.170	2.133	10.4	20.8	4 21	12 41.49	+ 6 7.0	1.867	2.806	9.0	20.6
5 1	12 32.49	+ 1 3.9	1.198	2.110	15.5	21.1	5 1	12 34.41	+ 6 28.0	1.931	2.806	12.3	20.8
5 11	12 27.72	+ 1 4.8	1.246	2.089	19.9	21.3	5 11	12 29.37	+ 6 30.6	2.017	2.805	15.3	21.0
155271	2005 WJ ₁₁₄		4 4.7 233°93	1°5/ 6.2 17			454084	2013 AC ₆₈		4 4.8 319°45	3°9/ 1.9 18		
3 2	13 20.03	-12 20.4	2.155	2.970	12.8	20.9	3 2	13 20.64	- 0 16.8	1.288	2.159	16.3	20.9
3 12	13 14.80	-12 6.4	2.058	2.958	9.8	20.7	3 12	13 16.07	+ 0 40.4	1.223	2.156	12.0	20.6
3 22	13 7.63	-11 38.5	1.985	2.946	6.3	20.4	3 22	13 8.71	+ 1 46.7	1.178	2.154	7.3	20.4
4 1	12 59.12	-10 58.7	1.940	2.933	2.6	20.2	4 1	12 59.48	+ 2 53.4	1.159	2.152	4.0	20.1
4 11	12 50.14	-10 11.0	1.923	2.919	2.5	20.1	4 11	12 49.74	+ 3 50.3	1.164	2.150	6.5	20.3
4 21	12 41.58	- 9 20.7	1.934	2.905	6.3	20.3	4 21	12 40.88	+ 4 29.4	1.194	2.148	11.3	20.5
5 1	12 34.30	- 8 33.6	1.973	2.891	10.0	20.5	5 1	12 34.12	+ 4 45.5	1.245	2.146	15.9	20.8
5 11	12 28.95	- 7 54.7	2.036	2.876	13.3	20.7	5 11	12 30.18	+ 4 37.5	1.315	2.144	19.8	21.0
315005	2007 BE		4 4.7 300°86	22°6/10.7 18			476410	2008 DY ₁		4 4.8 263°03	3°4/ 8.3 17		
3 2	13 26.42	+38 27.9	1.026	1.852	22.9								

EPHEMERIDES

4 4.8

4 4.8

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
207949	1993 <i>FX</i> ₃₃		4 4.8 351°29	2°0/ 2.7 17			85031	2860 <i>P-L</i>		4 4.8 321°47	1°6/ 3.2 18		
3 2	13 15.20	- 3 4.0	1.970	2.824	12.2	20.0	3 2	13 13.92	- 7 47.6	1.509	2.368	15.1	18.9
3 12	13 11.23	- 2 14.5	1.895	2.822	8.9	19.7	3 12	13 10.86	- 6 20.7	1.429	2.357	11.1	18.6
3 22	13 5.46	- 1 16.6	1.845	2.820	5.2	19.5	3 22	13 5.51	- 4 33.9	1.372	2.347	6.5	18.3
4 1	12 58.54	- 0 15.7	1.822	2.818	2.1	19.3	4 1	12 58.62	- 2 35.1	1.340	2.338	1.9	18.0
4 11	12 51.31	+ 0 41.8	1.827	2.817	4.0	19.4	4 11	12 51.25	- 0 35.4	1.336	2.328	4.4	18.2
4 21	12 44.62	+ 1 30.1	1.859	2.815	7.7	19.6	4 21	12 44.49	+ 1 13.7	1.357	2.320	9.3	18.4
5 1	12 39.23	+ 2 4.6	1.916	2.815	11.3	19.9	5 1	12 39.37	+ 2 42.7	1.403	2.312	13.9	18.6
5 11	12 35.69	+ 2 22.7	1.995	2.814	14.3	20.1	5 11	12 36.57	+ 3 46.1	1.468	2.304	17.7	18.9
184204	2004 <i>PS</i> ₇₅		4 4.8 290°43	8°2/13.3 18			193606	2001 <i>BF</i> ₇₈		4 4.8 283°89	0°4/ 5.2 18		
3 2	13 20.89	-32 23.6	2.486	3.181	14.4	19.9	3 2	13 15.95	-10 56.8	1.934	2.767	13.4	19.2
3 12	13 15.60	-33 23.0	2.385	3.171	12.7	19.7	3 12	13 12.01	-10 9.8	1.837	2.749	10.1	19.0
3 22	13 8.23	-34 2.4	2.305	3.162	10.8	19.6	3 22	13 6.08	- 9 5.9	1.763	2.730	6.2	18.7
4 1	12 59.36	-34 18.8	2.249	3.153	9.1	19.5	4 1	12 58.78	- 7 49.0	1.715	2.712	1.9	18.4
4 11	12 49.86	-34 11.2	2.217	3.144	8.2	19.4	4 11	12 50.97	- 6 25.4	1.696	2.694	2.6	18.4
4 21	12 40.71	-33 41.8	2.211	3.136	8.6	19.4	4 21	12 43.60	- 5 2.7	1.705	2.675	7.1	18.6
5 1	12 32.83	-32 55.3	2.231	3.127	10.0	19.5	5 1	12 37.54	- 3 48.4	1.740	2.657	11.2	18.8
5 11	12 26.94	-31 58.7	2.274	3.118	12.0	19.6	5 11	12 33.47	- 2 48.7	1.797	2.638	14.8	19.0
401927	2002 <i>AH</i> ₁₇₈		4 4.8 109°43	6°0/ 9.6 18			413904	2006 <i>WU</i> ₂₃		4 4.8 108°74	8°9/27.4 16		
3 2	13 26.16	-22 7.0	1.687	2.465	17.3	21.4	3 2	13 23.28	+17 18.0	1.819	2.669	13.3	21.3
3 12	13 19.70	-22 39.3	1.619	2.483	14.1	21.2	3 12	13 17.12	+18 35.4	1.779	2.683	10.8	21.2
3 22	13 10.68	-22 48.4	1.573	2.501	10.5	21.0	3 22	13 8.90	+19 41.6	1.763	2.697	9.2	21.1
4 1	13 0.01	-22 33.1	1.550	2.518	7.2	20.9	4 1	12 59.49	+20 28.1	1.773	2.710	9.1	21.1
4 11	12 48.96	-21 56.1	1.555	2.535	6.0	20.8	4 11	12 49.97	+20 49.0	1.809	2.723	10.6	21.2
4 21	12 38.79	-21 3.5	1.586	2.551	8.0	21.0	4 21	12 41.37	+20 42.3	1.868	2.736	12.9	21.4
5 1	12 30.61	-20 3.7	1.642	2.566	11.2	21.2	5 1	12 34.50	+20 9.3	1.949	2.748	15.2	21.6
5 11	12 25.07	-19 5.6	1.721	2.581	14.4	21.5	5 11	12 29.88	+19 13.8	2.048	2.760	17.3	21.8
33041	1997 <i>TG</i> ₁₇		4 4.8 222°31	3°0/ 1.6 18			506830	2007 <i>TP</i> ₁₃₇		4 4.8 131°04	3°3/ 8.9 17		
3 2	13 20.17	+ 0 48.8	2.184	3.032	11.5	19.5	3 2	13 18.46	-19 46.7	2.681	3.453	11.7	21.8
3 12	13 14.79	+ 1 40.3	2.099	3.022	8.4	19.3	3 12	13 13.22	-19 42.6	2.601	3.466	9.3	21.7
3 22	13 7.58	+ 2 36.9	2.040	3.011	5.2	19.1	3 22	13 6.50	-19 23.5	2.545	3.479	6.7	21.5
4 1	12 59.15	+ 3 33.3	2.009	3.000	3.0	18.9	4 1	12 58.84	-18 50.2	2.516	3.492	4.2	21.4
4 11	12 50.34	+ 4 23.4	2.007	2.988	4.8	19.0	4 11	12 50.96	-18 5.7	2.517	3.503	3.4	21.4
4 21	12 42.00	+ 5 2.0	2.033	2.975	8.2	19.2	4 21	12 43.57	-17 14.1	2.546	3.515	5.1	21.5
5 1	12 34.92	+ 5 25.7	2.086	2.962	11.5	19.4	5 1	12 37.28	-16 20.4	2.604	3.526	7.7	21.7
5 11	12 29.68	+ 5 32.6	2.160	2.948	14.4	19.5	5 11	12 32.56	-15 29.4	2.687	3.536	10.2	21.8
501764	2014 <i>UX</i> ₁₇₃		4 4.8 219°47	3°3/ 1.5 17			71303	2000 <i>AZ</i> ₆₇		4 4.8 155°28	1°8/ 2.8 18		
3 2	13 21.42	+ 0 36.2	2.062	2.909	12.1	22.2	3 2	13 17.79	- 2 43.4	2.178	3.024	11.6	19.6
3 12	13 15.82	+ 1 37.3	1.976	2.898	8.9	22.0	3 12	13 12.95	- 2 0.1	2.105	3.027	8.4	19.4
3 22	13 8.25	+ 2 44.7	1.916	2.887	5.5	21.8	3 22	13 6.43	- 1 9.8	2.057	3.030	4.9	19.2
4 1	12 59.35	+ 3 52.3	1.884	2.874	3.3	21.6	4 1	12 58.83	- 0 17.4	2.036	3.032	2.0	19.0
4 11	12 50.01	+ 4 53.1	1.881	2.861	5.2	21.7	4 11	12 50.97	+ 0 31.8	2.045	3.035	3.7	19.1
4 21	12 41.17	+ 5 41.3	1.906	2.847	8.7	21.9	4 21	12 43.65	+ 1 12.7	2.082	3.037	7.2	19.3
5 1	12 33.69	+ 6 12.6	1.958	2.831	12.2	22.1	5 1	12 37.58	+ 1 41.5	2.145	3.039	10.5	19.5
5 11	12 28.18	+ 6 25.2	2.030	2.815	15.3	22.2	5 11	12 33.27	+ 1 56.0	2.231	3.041	13.3	19.7
281582	2008 <i>UY</i> ₁₃₆		4 4.8 170°46	0°8/ 5.7 17			162532	2000 <i>QC</i> ₁₄₆		4 4.8 201°48	1°4/ 3.6 18		
3 2	13 17.57	-11 8.8	2.224	3.045	12.2	21.5	3 2	13 23.23	- 4 8.7	1.854	2.695	13.5	20.6
3 12	13 12.81	-10 38.5	2.142	3.047	9.2	21.3	3 12	13 17.32	- 3 39.0	1.773	2.691	10.0	20.3
3 22	13 6.36	- 9 55.2	2.085	3.049	5.7	21.1	3 22	13 9.22	- 3 0.1	1.715	2.687	5.9	20.1
4 1	12 58.80	- 9 2.0	2.055	3.050	2.0	20.8	4 1	12 59.65	- 2 16.6	1.685	2.682	1.8	19.8
4 11	12 50.95	- 8 3.6	2.054	3.051	2.3	20.8	4 11	12 49.63	- 1 34.3	1.684	2.677	3.7	19.9
4 21	12 43.61	- 7 5.8	2.082	3.052	6.0	21.1	4 21	12 40.22	- 0 59.0	1.710	2.670	8.0	20.2
5 1	12 37.50	- 6 13.8	2.137	3.053	9.4	21.3	5 1	12 32.37	- 0 35.5	1.763	2.663	12.0	20.4
5 11	12 33.15	- 5 32.1	2.216	3.053	12.5	21.5	5 11	12 26.75	- 0 26.5	1.837	2.656	15.4	20.6
511071	2013 <i>TB</i> ₃₀		4 4.8 219°31	0°0/ 4.9 17			77085	2001 <i>DO</i> ₃₅		4 4.8 147°77	3°1/ 1.8 18		
3 2	13 18.74	- 9 13.9	2.435	3.257	11.3	22.9	3 2	13 20.26	- 1 6.2	1.795	2.648	13.3	20.3
3 12	13 13.62	- 8 33.9	2.339	3.246	8.4	22.7	3 12	13 15.03	+ 0 1.4	1.730	2.656	9.7	20.0
3 22	13 6.84	- 7 42.2	2.268	3.235	5.1	22.5	3 22	13 7.76	+ 1 16.6	1.690	2.663	5.8	19.8
4 1	12 58.95	- 6 42.0	2.226	3.223	1.5	22.2	4 1	12 59.21	+ 2 32.2	1.677	2.669	3.1	19.7
4 11	12 50.69	- 5 38.3	2.214	3.210	2.3	22.2	4 11	12 50.39	+ 3 40.5	1.692	2.676	5.2	19.8
4 21	12 42.83	- 4 36.3	2.231	3.196	6.0	22.4	4 21	12 42.28	+ 4 34.9	1.734	2.681	9.0	20.0
5 1	12 36.08	- 3 41.3	2.276	3.182	9.4	22.6	5 1	12 35.74	+ 5 10.9	1.801	2.686	12.6	20.3
5 11	12 30.98	- 2 57.4	2.346	3.167	12.4	22.8	5 11	12 31.33	+ 5 27.0	1.889	2.691	15.7	20.5
473581	2015 <i>XS</i> ₂₃₄		4 4.8 46°48	3°7/ 2.1 18			436029	2009 <i>HL</i> ₉₀		4 4.8 19°67	0°8/ 5.7 17		
3 2	13 20.84	- 0 46.7	1.263	2.133	16.6	21.2	3 2	13 13.61	-12 55.9	2.085	2.910	12.8	20.8
3 12	13 16.16	+ 0 6.8	1.204	2.138	12.2	21.0	3 12	13 10.00	-11 54.6	2.005	2.913	9.6	20.6
3 22	13 8.72	+ 1 9.1	1.167	2.143	7.3	20.7	3 22	13 4.72	-10 36.4	1.950	2.915	6.0	20.3
4 1	12 59.49	+ 2 11.8	1.154	2.148	3.7	20.5	4 1	12 58.37	- 9 5.8	1.922	2.918	2.1	20.1
4 11	12 49.87	+ 3 5.0	1.166	2.153	6.2	20.7	4 11	12 51.76	- 7 29.6	1.923	2.921	2.3	20.1
4 21	12 41.24	+ 3 41.0	1.202	2.159	11.0	21.0	4 21	12 45.68	- 5 55.3	1.953	2.924	6.2	20.4
5 1	12 34.74	+ 3 55.1	1.261	2.165	15.5	21.2	5 1	12 40.83	- 4 29.9	2.010	2.928	9.8	20.6
5 11	12 31.06	+ 3 46.3	1.337	2.171	19.3	21.5	5 11	12 37.72	- 3 19.0	2.090	2.932	12.9	20.8
42005	2000 <i>YW</i> ₄₉		4 4.8 249°74	3°5/ 1.3 17			106975	2000 <i>YW</i> ₉₁		4 4.8 192°08	0°5/ 5.3 18		

EPHEMERIDES

4 4.8

4 4.8

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
227603	2006 <i>AH</i> ₆₈		4 4.8	6 ^o .77	0 ^o .6/ 5.2	17	95170	2002 <i>AL</i> ₁₈₇		4 4.8	212 ^o .46	1 ^o .3/ 3.8	18
3 2	13 16.63	- 9 16.2	1.463	2.315	15.8	20.1	3 2	13 24.05	- 4 9.6	1.751	2.593	14.1	19.6
3 12	13 12.87	- 8 59.3	1.394	2.315	11.9	19.9	3 12	13 18.09	- 3 48.1	1.669	2.588	10.4	19.3
3 22	13 6.71	- 8 26.8	1.345	2.316	7.3	19.6	3 22	13 9.77	- 3 17.4	1.610	2.582	6.2	19.1
4 1	12 58.97	- 7 42.6	1.322	2.319	2.3	19.3	4 1	12 59.85	- 2 41.8	1.578	2.576	1.9	18.8
4 11	12 50.80	- 6 53.3	1.324	2.322	3.0	19.3	4 11	12 49.42	- 2 7.1	1.575	2.569	3.7	18.9
4 21	12 43.37	- 6 6.3	1.351	2.326	8.0	19.6	4 21	12 39.62	- 1 39.0	1.599	2.561	8.3	19.1
5 1	12 37.73	- 5 28.6	1.403	2.330	12.5	19.9	5 1	12 31.48	- 1 22.2	1.649	2.553	12.4	19.4
5 11	12 34.52	- 5 5.1	1.474	2.336	16.3	20.2	5 11	12 25.70	- 1 19.7	1.720	2.544	16.0	19.6
27869	1995 <i>SR</i> ₄₅		4 4.8	323 ^o .19	0 ^o .2/ 4.6	18	29930	1999 <i>JT</i> ₄₁		4 4.8	96 ^o .34	1 ^o .0/ 3.8	18
3 2	13 16.94	- 7 59.4	1.299	2.160	16.8	18.8	3 2	13 18.40	- 6 17.1	1.805	2.651	13.6	18.0
3 12	13 13.53	- 7 31.4	1.218	2.146	12.6	18.5	3 12	13 13.68	- 5 28.5	1.739	2.660	9.9	17.8
3 22	13 7.36	- 6 45.7	1.158	2.132	7.7	18.2	3 22	13 6.98	- 4 28.4	1.697	2.669	5.8	17.5
4 1	12 59.21	- 5 47.2	1.121	2.119	2.1	17.8	4 1	12 59.04	- 3 22.2	1.681	2.678	1.6	17.3
4 11	12 50.34	- 4 44.0	1.109	2.106	3.7	17.9	4 11	12 50.83	- 2 16.8	1.693	2.688	3.4	17.4
4 21	12 42.13	- 3 45.3	1.121	2.094	9.4	18.2	4 21	12 43.32	- 1 19.0	1.733	2.696	7.6	17.7
5 1	12 35.88	- 2 59.9	1.156	2.083	14.6	18.4	5 1	12 37.33	- 0 34.3	1.799	2.705	11.4	17.9
5 11	12 32.41	- 2 33.7	1.210	2.073	19.0	18.7	5 11	12 33.40	- 0 5.8	1.885	2.714	14.7	18.2
59701	1999 <i>JP</i> ₁₁₉		4 4.8	41 ^o .11	5 ^o .2/ 31.5	18	354719	2005 <i>SY</i> ₁₀₆		4 4.8	253 ^o .23	5 ^o .8/ 11.2	16
3 2	13 21.17	+ 5 59.8	1.675	2.538	13.6	18.8	3 2	13 19.83	- 26 44.5	2.717	3.446	12.6	21.5
3 12	13 15.84	+ 6 45.2	1.614	2.541	10.2	18.6	3 12	13 14.57	- 27 15.4	2.607	3.430	10.7	21.3
3 22	13 8.30	+ 7 30.1	1.576	2.544	6.8	18.4	3 22	13 7.53	- 27 29.3	2.519	3.414	8.6	21.2
4 1	12 59.38	+ 8 7.6	1.565	2.548	5.2	18.3	4 1	12 59.23	- 27 24.7	2.456	3.397	6.7	21.0
4 11	12 50.16	+ 8 31.0	1.580	2.551	7.1	18.4	4 11	12 50.41	- 27 2.1	2.421	3.381	5.8	20.9
4 21	12 41.73	+ 8 36.0	1.621	2.555	10.5	18.7	4 21	12 41.88	- 26 24.2	2.414	3.364	6.6	20.9
5 1	12 35.00	+ 8 21.0	1.685	2.559	13.9	18.9	5 1	12 34.42	- 25 35.5	2.434	3.346	8.6	21.0
5 11	12 30.56	+ 7 46.8	1.770	2.563	16.9	19.1	5 11	12 28.64	- 24 42.0	2.479	3.328	10.9	21.2
22697	Mánek		4 4.8	66 ^o .84	1 ^o .7/ 6.8	18	2907	Nekrasov		4 4.8	181 ^o .66	1 ^o .6/ 2.8	18
3 2	13 15.39	- 16 3.5	1.879	2.695	14.4	17.7	3 2	13 15.57	- 3 52.3	2.462	3.304	10.5	16.9
3 12	13 11.45	- 15 1.6	1.805	2.704	11.0	17.5	3 12	13 11.20	- 2 53.6	2.384	3.305	7.6	16.7
3 22	13 5.63	- 13 38.8	1.754	2.713	7.1	17.3	3 22	13 5.35	- 1 47.0	2.332	3.305	4.5	16.5
4 1	12 58.63	- 11 59.4	1.729	2.722	3.1	17.1	4 1	12 58.58	- 0 37.3	2.309	3.305	1.7	16.3
4 11	12 51.38	- 10 11.1	1.734	2.731	2.6	17.1	4 11	12 51.56	+ 0 30.0	2.315	3.304	3.3	16.4
4 21	12 44.78	- 8 22.7	1.766	2.740	6.4	17.3	4 21	12 44.99	+ 1 29.7	2.351	3.304	6.6	16.6
5 1	12 39.62	- 6 42.9	1.825	2.750	10.3	17.6	5 1	12 39.48	+ 2 17.7	2.413	3.303	9.6	16.8
5 11	12 36.42	- 5 18.4	1.908	2.759	13.6	17.8	5 11	12 35.50	+ 2 51.3	2.498	3.302	12.2	17.0
273741	2007 <i>EA</i> ₁₁₅		4 4.8	211 ^o .71	2 ^o .0/ 2.8	17	91300	1999 <i>FZ</i> ₃₄		4 4.8	356 ^o .11	2 ^o .3/ 6.3	18
3 2	13 17.29	- 3 47.9	1.917	2.767	12.7	21.3	3 2	13 22.33	- 11 42.5	1.363	2.202	17.5	18.1
3 12	13 12.84	- 2 49.6	1.841	2.766	9.3	21.1	3 12	13 17.39	- 11 56.5	1.289	2.201	13.4	17.8
3 22	13 6.48	- 1 41.5	1.790	2.764	5.4	20.8	3 22	13 9.61	- 11 53.2	1.236	2.201	8.7	17.6
4 1	12 58.88	- 0 29.3	1.766	2.762	2.1	20.6	4 1	12 59.85	- 11 34.1	1.206	2.200	3.8	17.3
4 11	12 50.95	+ 0 39.7	1.770	2.760	4.1	20.7	4 11	12 49.46	- 11 3.9	1.203	2.200	3.5	17.2
4 21	12 43.59	+ 1 39.1	1.802	2.758	8.0	20.9	4 21	12 39.89	- 10 29.3	1.224	2.200	8.4	17.5
5 1	12 37.62	+ 2 23.7	1.859	2.755	11.7	21.2	5 1	12 32.39	- 9 58.1	1.269	2.200	13.2	17.8
5 11	12 33.60	+ 2 50.5	1.937	2.753	14.8	21.4	5 11	12 27.77	- 9 36.7	1.334	2.201	17.4	18.1
498104	2007 <i>RV</i> ₂₉₆		4 4.8	188 ^o .08	0 ^o .0/ 4.7	17	521162	2015 <i>FC</i> ₄₀₈		4 4.8	104 ^o .38	3 ^o .2/ 1.3	17
3 2	13 17.10	- 7 56.4	2.742	3.566	10.1	22.7	3 2	13 17.54	+ 2 1.4	2.235	3.088	11.0	21.2
3 12	13 12.19	- 7 24.7	2.656	3.565	7.5	22.5	3 12	13 12.69	+ 2 52.0	2.172	3.097	8.0	21.0
3 22	13 5.89	- 6 44.3	2.596	3.564	4.5	22.3	3 22	13 6.24	+ 3 45.4	2.135	3.106	5.0	20.8
4 1	12 58.70	- 5 58.1	2.565	3.562	1.2	22.1	4 1	12 58.82	+ 4 36.4	2.126	3.115	3.2	20.7
4 11	12 51.26	- 5 10.0	2.564	3.560	2.1	22.1	4 11	12 51.20	+ 5 19.5	2.146	3.124	4.8	20.8
4 21	12 44.22	- 4 24.2	2.593	3.557	5.3	22.4	4 21	12 44.15	+ 5 50.6	2.193	3.132	7.8	21.0
5 1	12 38.16	- 3 44.6	2.649	3.554	8.3	22.5	5 1	12 38.33	+ 6 6.9	2.266	3.141	10.7	21.2
5 11	12 33.53	- 3 14.2	2.730	3.550	10.9	22.7	5 11	12 34.21	+ 6 7.6	2.360	3.149	13.3	21.4
363041	1999 <i>TL</i> ₁₆₆		4 4.8	207 ^o .62	2 ^o .5/ 7.4	16	165124	2000 <i>KW</i> ₈		4 4.8	301 ^o .44	1 ^o .7/ 5.9	17
3 2	13 20.11	- 16 44.7	2.124	2.922	13.6	21.5	3 2	13 18.05	- 12 9.1	1.306	2.153	17.6	20.9
3 12	13 14.90	- 16 14.1	2.029	2.916	10.6	21.3	3 12	13 14.63	- 11 51.7	1.209	2.127	13.6	20.5
3 22	13 7.73	- 15 24.8	1.958	2.909	7.1	21.1	3 22	13 8.23	- 11 11.7	1.133	2.101	8.8	20.2
4 1	12 59.25	- 14 18.8	1.913	2.901	3.7	20.9	4 1	12 59.55	- 10 11.1	1.079	2.074	3.4	19.8
4 11	12 50.34	- 13 0.9	1.897	2.893	2.9	20.8	4 11	12 49.82	- 8 56.4	1.050	2.048	3.5	19.7
4 21	12 41.92	- 11 37.6	1.911	2.883	6.2	21.0	4 21	12 40.55	- 7 37.5	1.045	2.022	9.3	19.9
5 1	12 34.86	- 10 16.6	1.952	2.873	9.9	21.2	5 1	12 33.20	- 6 25.6	1.063	1.997	15.0	20.2
5 11	12 29.75	- 9 4.5	2.017	2.862	13.2	21.4	5 11	12 28.83	- 5 30.2	1.100	1.972	19.9	20.4
472335	2015 <i>AU</i> ₂₂₉		4 4.8	292 ^o .54	7 ^o .8/ 11.7	17	77809	2001 <i>QE</i> ₁₂₈		4 4.8	60 ^o .97	4 ^o .6/ 9.6	18
3 2	13 19.35	- 27 19.7	1.855	2.608	16.8	21.1	3 2	13 17.69	- 21 34.4	2.140	2.918	14.1	19.1
3 12	13 14.94	- 27 58.1	1.756	2.594	14.4	20.9	3 12	13 13.12	- 21 40.9	2.055	2.921	11.4	18.9
3 22	13 8.08	- 28 12.5	1.676	2.579	11.6	20.7	3 22	13 6.67	- 21 28.1	1.993	2.924	8.5	18.7
4 1	12 59.41	- 27 59.8	1.619	2.565	9.1	20.5	4 1	12 58.97	- 20 56.1	1.956	2.927	5.7	18.5
4 11	12 50.00	- 27 20.3	1.587	2.551	7.8	20.4	4 11	12 50.91	- 20 8.0	1.946	2.930	4.6	18.5
4 21	12 41.05	- 26 18.1	1.580	2.537	8.8	20.4	4 21	12 43.38	- 19 8.8	1.964	2.933	6.4	18.6
5 1	12 33.69	- 25 1.1	1.598	2.523	11.4	20.5	5 1	12 37.19	- 18 5.1	2.008	2.936	9.3	18.8
5 11	12 28.76	- 23 39.3	1.638	2.509	14.5	20.7	5 11	12 32.93	- 17 3.6				

EPHEMERIDES

4 4.8

4 4.8

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
304010	2006 <i>CK</i> ₄₀		4 4.8 25°33	1.7/ 5.9	18		294388	2007 <i>VH</i> ₁₅₂		4 4.8 311°82	4.7/ 9.8	17	
3 2	13 23.68	-10 6.9	1.360	2.203	17.4	20.7	3 2	13 16.21	-21 58.2	2.054	2.836	14.5	20.3
3 12	13 18.35	-10 21.2	1.289	2.204	13.2	20.4	3 12	13 12.20	-21 57.8	1.961	2.828	11.8	20.1
3 22	13 10.16	-10 20.1	1.239	2.206	8.3	20.2	3 22	13 6.22	-21 36.6	1.889	2.820	8.8	19.9
4 1	13 0.00	-10 5.4	1.212	2.208	3.2	19.9	4 1	12 58.90	-20 54.6	1.842	2.813	5.9	19.7
4 11	12 49.25	-9 42.0	1.212	2.210	3.3	19.9	4 11	12 51.12	-19 54.8	1.821	2.805	4.7	19.6
4 21	12 39.37	-9 16.1	1.237	2.212	8.5	20.2	4 21	12 43.83	-18 42.8	1.828	2.798	6.6	19.7
5 1	12 31.60	-8 54.6	1.286	2.214	13.3	20.4	5 1	12 37.88	-17 26.1	1.861	2.791	9.7	19.9
5 11	12 26.74	-8 43.3	1.355	2.217	17.5	20.7	5 11	12 33.91	-16 12.3	1.917	2.785	12.8	20.1
56374	2000 <i>EM</i> ₂₄		4 4.8 294°84	1.3/ 5.6	16		362258	2009 <i>NT</i> ₁		4 4.8 206°55	2°1/ 7.3	17	
3 2	13 22.07	-9 32.5	1.341	2.189	17.3	19.7	3 2	13 19.17	-16 13.8	2.345	3.140	12.5	21.4
3 12	13 17.56	-9 38.6	1.248	2.166	13.2	19.4	3 12	13 14.05	-15 41.3	2.248	3.134	9.7	21.2
3 22	13 9.98	-9 28.9	1.175	2.144	8.4	19.1	3 22	13 7.18	-14 52.0	2.176	3.127	6.5	21.0
4 1	13 0.04	-9 5.1	1.125	2.121	3.0	18.7	4 1	12 59.15	-13 48.0	2.131	3.120	3.2	20.7
4 11	12 49.05	-8 32.1	1.101	2.099	3.5	18.7	4 11	12 50.74	-12 33.8	2.116	3.111	2.6	20.7
4 21	12 38.54	-7 56.9	1.101	2.076	9.3	18.9	4 21	12 42.77	-11 15.2	2.130	3.102	5.7	20.9
5 1	12 30.01	-7 27.7	1.125	2.054	14.7	19.1	5 1	12 36.01	-9 58.9	2.173	3.092	9.1	21.0
5 11	12 24.50	-7 11.1	1.168	2.032	19.5	19.4	5 11	12 31.02	-8 50.8	2.240	3.082	12.2	21.2
140001	2001 <i>SO</i> ₄₁		4 4.8 227°50	0°2/ 5.1	18		181057	2005 <i>PT</i> ₁₈		4 4.8 264°80	5°4/ 10.9	18	
3 2	13 15.61	-10 11.8	2.462	3.286	11.1	20.7	3 2	13 19.26	-25 46.2	2.726	3.462	12.4	20.5
3 12	13 11.30	-9 26.3	2.371	3.279	8.3	20.5	3 12	13 14.18	-26 8.9	2.609	3.439	10.5	20.3
3 22	13 5.47	-8 28.5	2.305	3.272	5.1	20.3	3 22	13 7.33	-26 14.6	2.514	3.416	8.3	20.1
4 1	12 58.63	-7 21.9	2.268	3.264	1.5	20.0	4 1	12 59.22	-26 2.2	2.445	3.393	6.3	20.0
4 11	12 51.50	-6 11.4	2.260	3.257	2.2	20.1	4 11	12 50.56	-25 32.4	2.404	3.369	5.4	19.9
4 21	12 44.76	-5 2.5	2.281	3.249	5.7	20.3	4 21	12 42.16	-24 48.0	2.390	3.345	6.4	19.9
5 1	12 39.08	-4 0.7	2.330	3.240	9.0	20.5	5 1	12 34.79	-23 53.7	2.405	3.320	8.5	20.0
5 11	12 34.96	-3 10.0	2.403	3.232	11.9	20.7	5 11	12 29.06	-22 55.5	2.444	3.295	11.0	20.1
328284	2008 <i>GR</i> ₉₈		4 4.8 265°76	1°0/ 3.7	17		118703	2000 <i>PJ</i> ₈		4 4.8 182°09	11°1/ 20.5	18	
3 2	13 19.03	-6 30.4	2.148	2.983	12.1	21.2	3 2	13 27.02	-47 9.5	2.742	3.295	15.7	20.2
3 12	13 14.20	-5 37.7	2.039	2.955	9.0	20.9	3 12	13 20.40	-48 11.3	2.648	3.296	14.6	20.1
3 22	13 7.41	-4 32.1	1.956	2.927	5.4	20.6	3 22	13 11.26	-48 48.0	2.569	3.297	13.4	20.0
4 1	12 59.23	-3 18.0	1.900	2.897	1.5	20.3	4 1	13 0.34	-48 55.1	2.509	3.297	12.3	19.9
4 11	12 50.46	-2 1.6	1.874	2.867	3.3	20.4	4 11	12 48.74	-48 30.3	2.470	3.296	11.4	19.9
4 21	12 42.00	-0 49.6	1.876	2.836	7.4	20.6	4 21	12 37.68	-47 35.2	2.454	3.294	11.1	19.8
5 1	12 34.72	+ 0 11.6	1.905	2.804	11.3	20.7	5 1	12 28.30	-46 14.9	2.461	3.292	11.5	19.8
5 11	12 29.32	+ 0 57.3	1.957	2.772	14.7	20.9	5 11	12 21.39	-44 37.4	2.491	3.288	12.4	19.9
377119	2002 <i>YO</i> ₂₄		4 4.8 67°16	7°9/ 14.9	18		129496	1995 <i>EK</i>		4 4.8 59°61	0°4/ 5.1	18	
3 2	13 21.10	-33 29.7	2.213	2.909	16.0	20.5	3 2	13 25.98	-7 11.5	1.284	2.133	17.7	18.8
3 12	13 15.55	-33 51.6	2.152	2.941	13.8	20.4	3 12	13 19.88	-7 22.8	1.230	2.151	13.2	18.6
3 22	13 8.03	-33 47.6	2.111	2.973	11.4	20.3	3 22	13 10.93	-7 21.1	1.198	2.169	8.0	18.3
4 1	12 59.33	-33 16.7	2.092	3.005	9.3	20.2	4 1	13 0.19	-7 9.7	1.190	2.187	2.4	18.0
4 11	12 50.45	-32 20.9	2.098	3.036	8.0	20.2	4 11	12 49.17	-6 54.1	1.207	2.205	3.4	18.2
4 21	12 42.36	-31 5.7	2.131	3.068	8.2	20.2	4 21	12 39.31	-6 40.2	1.251	2.223	8.7	18.5
5 1	12 35.88	-29 38.4	2.189	3.098	9.6	20.4	5 1	12 31.77	-6 33.6	1.318	2.242	13.4	18.8
5 11	12 31.50	-28 7.8	2.272	3.129	11.5	20.6	5 11	12 27.19	-6 38.1	1.405	2.260	17.3	19.1
159716	2002 <i>YP</i> ₃₁		4 4.8 71°18	3°4/ 1.8	18		146332	2001 <i>OL</i>		4 4.8 139°86	0°6/ 5.4	18	
3 2	13 21.59	-0 1.1	1.594	2.452	14.4	19.9	3 2	13 21.37	-9 54.8	2.186	3.006	12.5	20.2
3 12	13 15.97	+ 1 0.2	1.553	2.481	10.4	19.7	3 12	13 15.58	-9 30.2	2.113	3.018	9.3	20.0
3 22	13 8.26	+ 2 6.5	1.535	2.509	6.2	19.5	3 22	13 8.02	-8 53.9	2.066	3.031	5.7	19.8
4 1	12 59.37	+ 3 10.2	1.545	2.537	3.5	19.4	4 1	12 59.36	-8 9.0	2.046	3.042	1.8	19.6
4 11	12 50.43	+ 4 3.5	1.581	2.564	5.5	19.6	4 11	12 50.46	-7 20.3	2.056	3.053	2.3	19.6
4 21	12 42.48	+ 4 41.1	1.644	2.592	9.3	19.9	4 21	12 42.18	-6 32.9	2.096	3.064	6.1	19.9
5 1	12 36.33	+ 4 59.8	1.731	2.619	12.8	20.1	5 1	12 35.25	-5 51.7	2.162	3.073	9.6	20.1
5 11	12 32.46	+ 4 59.3	1.839	2.646	15.8	20.4	5 11	12 30.20	-5 20.7	2.252	3.082	12.5	20.4
497296	2005 <i>SS</i> ₁₈₁		4 4.8 219°47	1°1/ 5.8	17		87971	2000 <i>TW</i> ₃₈		4 4.8 286°49	5°3/ 28.9	18	
3 2	13 21.67	-10 42.7	2.242	3.057	12.4	22.9	3 2	13 14.70	+ 7 26.5	2.222	3.085	10.7	19.4
3 12	13 15.97	-10 33.0	2.146	3.048	9.4	22.7	3 12	13 10.73	+ 8 57.9	2.156	3.081	8.1	19.2
3 22	13 8.37	-10 11.5	2.075	3.038	5.9	22.5	3 22	13 5.16	+10 29.8	2.116	3.077	5.9	19.0
4 1	12 59.47	-9 40.1	2.032	3.027	2.2	22.2	4 1	12 58.57	+11 54.9	2.104	3.074	5.4	19.0
4 11	12 50.12	-9 2.7	2.019	3.016	2.4	22.2	4 11	12 51.72	+13 6.0	2.120	3.070	7.2	19.1
4 21	12 41.20	-8 23.9	2.035	3.004	6.1	22.4	4 21	12 45.34	+13 58.3	2.162	3.067	9.8	19.2
5 1	12 33.54	-7 48.6	2.078	2.991	9.8	22.6	5 1	12 40.12	+14 29.0	2.228	3.063	12.4	19.4
5 11	12 27.75	-7 21.3	2.145	2.978	13.0	22.8	5 11	12 36.56	+14 38.0	2.314	3.060	14.7	19.6
284752	2008 <i>VF</i> ₂		4 4.8 152°39	1°2/ 5.9	18		214532	2006 <i>KP</i> ₉₈		4 4.8 185°80	0°7/ 4.2	18	
3 2	13 24.07	-11 46.2	1.941	2.756	14.0	22.6	3 2	13 19.82	-7 50.5	1.798	2.637	13.9	21.6
3 12	13 17.79	-11 22.8	1.867	2.768	10.6	22.4	3 12	13 14.86	-6 56.7	1.720	2.637	10.3	21.3
3 22	13 9.43	-10 44.5	1.816	2.778	6.6	22.2	3 22	13 7.79	-5 48.6	1.665	2.636	6.1	21.1
4 1	12 59.75	-9 54.5	1.793	2.788	2.5	22.0	4 1	12 59.33	-4 31.6	1.638	2.636	1.6	20.8
4 11	12 49.76	-8 57.9	1.799	2.796	2.6	22.0	4 11	12 50.49	-3 13.0	1.639	2.634	3.3	20.9
4 21	12 40.48	-8 1.0	1.834	2.804	6.7	22.3	4 21	12 42.28	-2 0.7	1.668	2.632	7.8	21.2
5 1	12 32.78	-7 10.2	1.896	2.811	10.5	22.5	5 1	12 35.62	-1 1.2	1.723	2.630	11.8	21.4
5 11	12 27.26	-6 30.3	1.982	2.816	13.8	22.7	5 11	12 31.11	-0 18.9	1.799	2.627	15.3	21.6
181769	1997 <i>CR</i> ₂₅		4 4.8 121°76	0°2/ 4.5	17		226761	2004 <i>RL</i> ₇₄		4 4.8 218°94	0°0/ 4.6	17	
3 2	13 17.44	-6 54.4	2.473	3.									

EPHEMERIDES

4 4.8

4 4.8

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
510732	2012 VR ₁₀₂		4 4.8 120°30	4°0/31.3	17		57207	2001 QY ₅₆		4 4.8 145°40	4°9/31.6	18	
3 2	13 18.84	+ 6 28.3	2.450	3.300	10.3	21.7	3 2	13 22.33	+ 3 4.7	1.567	2.429	14.4	19.8
3 12	13 13.52	+ 7 9.1	2.388	3.308	7.6	21.5	3 12	13 16.83	+ 4 19.2	1.508	2.436	10.6	19.6
3 22	13 6.71	+ 7 49.1	2.352	3.316	5.2	21.4	3 22	13 8.99	+ 5 37.7	1.472	2.443	6.8	19.4
4 1	12 58.99	+ 8 23.4	2.344	3.324	4.0	21.3	4 1	12 59.67	+ 6 51.4	1.463	2.449	4.9	19.3
4 11	12 51.09	+ 8 47.5	2.366	3.332	5.5	21.4	4 11	12 50.05	+ 7 51.2	1.481	2.455	7.1	19.4
4 21	12 43.74	+ 8 58.5	2.415	3.339	8.0	21.6	4 21	12 41.28	+ 8 30.9	1.525	2.460	10.9	19.7
5 1	12 37.55	+ 8 54.8	2.490	3.346	10.5	21.8	5 1	12 34.34	+ 8 47.1	1.591	2.465	14.6	19.9
5 11	12 32.97	+ 8 36.4	2.586	3.353	12.8	21.9	5 11	12 29.84	+ 8 40.2	1.677	2.469	17.7	20.1
221132	2005 SG ₂₇₅		4 4.8 190°95	6°9/26.6	17		342800	2008 WO ₁₃₇		4 4.8 195°45	3°3/1.3	18	
3 2	13 19.40	+14 52.9	2.414	3.261	10.5	20.5	3 2	13 18.41	+ 2 22.1	2.181	3.033	11.3	20.7
3 12	13 14.07	+16 25.4	2.354	3.260	8.5	20.4	3 12	13 13.46	+ 3 7.6	2.108	3.033	8.3	20.5
3 22	13 7.11	+17 52.5	2.321	3.258	7.1	20.3	3 22	13 6.80	+ 3 56.1	2.061	3.032	5.2	20.3
4 1	12 59.12	+19 6.9	2.316	3.255	7.2	20.3	4 1	12 59.05	+ 4 42.3	2.042	3.031	3.3	20.2
4 11	12 50.87	+20 2.4	2.339	3.251	8.6	20.4	4 11	12 51.03	+ 5 20.6	2.051	3.030	5.0	20.3
4 21	12 43.13	+20 35.6	2.388	3.247	10.7	20.5	4 21	12 43.53	+ 5 46.8	2.088	3.028	8.1	20.5
5 1	12 36.60	+20 45.5	2.459	3.242	12.9	20.7	5 1	12 37.29	+ 5 58.0	2.151	3.027	11.2	20.7
5 11	12 31.77	+20 33.4	2.549	3.236	14.8	20.8	5 11	12 32.81	+ 5 53.4	2.235	3.025	13.9	20.8
418943	2009 DQ ₁₀₂		4 4.8 254°62	3°0/2.1	17		102678	1999 VL ₆₈		4 4.8 215°85	0°2/4.9	16	
3 2	13 21.15	- 0 57.4	1.774	2.626	13.5	21.4	3 2	13 20.57	- 9 22.8	2.014	2.841	13.1	20.2
3 12	13 16.04	- 0 4.7	1.683	2.608	9.9	21.2	3 12	13 15.32	- 8 47.3	1.924	2.833	9.8	19.9
3 22	13 8.63	+ 0 56.8	1.617	2.590	6.0	20.9	3 22	13 8.06	- 7 58.1	1.857	2.825	6.0	19.7
4 1	12 59.61	+ 2 0.7	1.577	2.571	3.0	20.6	4 1	12 59.44	- 6 58.9	1.819	2.816	1.8	19.4
4 11	12 49.99	+ 2 59.5	1.566	2.551	5.2	20.7	4 11	12 50.37	- 5 55.2	1.809	2.806	2.6	19.4
4 21	12 40.86	+ 3 46.1	1.581	2.531	9.4	20.9	4 21	12 41.79	- 4 53.6	1.828	2.795	6.9	19.7
5 1	12 33.24	+ 4 15.5	1.621	2.511	13.5	21.1	5 1	12 34.60	- 4 0.1	1.874	2.784	10.8	19.9
5 11	12 27.89	+ 4 24.9	1.682	2.489	17.0	21.3	5 11	12 29.42	- 3 19.5	1.942	2.773	14.2	20.1
165253	2000 ST ₁₉₃		4 4.8 279°94	0°8/4.1	17		32899	Knigge		4 4.8 282°45	6°5/11.7	18	
3 2	13 19.74	- 7 22.5	1.536	2.385	15.4	21.3	3 2	13 18.38	-27 19.9	2.346	3.083	14.1	18.1
3 12	13 15.44	- 6 37.5	1.437	2.360	11.5	21.0	3 12	13 13.78	-27 48.5	2.240	3.068	12.0	17.9
3 22	13 8.51	- 5 35.4	1.361	2.334	6.9	20.6	3 22	13 7.20	-27 57.1	2.155	3.052	9.7	17.7
4 1	12 59.63	- 4 20.7	1.311	2.308	1.9	20.2	4 1	12 59.22	-27 43.9	2.094	3.037	7.6	17.6
4 11	12 49.91	- 3 1.6	1.287	2.282	3.9	20.3	4 11	12 50.68	-27 9.6	2.060	3.021	6.5	17.5
4 21	12 40.63	- 1 47.4	1.289	2.255	9.3	20.5	4 21	12 42.49	-26 17.6	2.052	3.005	7.4	17.5
5 1	12 33.02	- 0 46.9	1.315	2.228	14.3	20.7	5 1	12 35.53	-25 13.6	2.071	2.989	9.5	17.6
5 11	12 27.98	- 0 6.2	1.361	2.201	18.6	20.9	5 11	12 30.49	-24 5.0	2.113	2.974	12.1	17.7
94522	2001 UH ₁₁₃		4 4.8 71°07	0°6/4.3	18		134005	2004 VQ ₁₅		4 4.8 232°32	0°0/4.6	17	
3 2	13 19.85	- 7 51.1	1.370	2.224	16.6	20.2	3 2	13 22.49	- 7 57.5	1.737	2.573	14.5	21.0
3 12	13 15.36	- 7 6.4	1.304	2.229	12.3	20.0	3 12	13 17.08	- 7 32.1	1.648	2.562	10.8	20.7
3 22	13 8.27	- 6 5.0	1.260	2.234	7.3	19.7	3 22	13 9.28	- 6 53.3	1.582	2.551	6.6	20.4
4 1	12 59.49	- 4 53.0	1.241	2.239	1.9	19.4	4 1	12 59.81	- 6 4.6	1.542	2.539	1.8	20.1
4 11	12 50.29	- 3 39.6	1.248	2.244	3.8	19.5	4 11	12 49.75	- 5 12.0	1.530	2.527	3.1	20.1
4 21	12 41.97	- 2 33.8	1.280	2.249	9.0	19.8	4 21	12 40.24	- 4 22.2	1.546	2.514	7.9	20.4
5 1	12 35.62	- 1 43.4	1.335	2.254	13.7	20.1	5 1	12 32.34	- 3 41.8	1.587	2.500	12.3	20.6
5 11	12 31.92	- 1 12.8	1.411	2.259	17.7	20.3	5 11	12 26.81	- 3 15.5	1.650	2.486	16.1	20.8
433769	2015 BH ₃₃		4 4.8 111°11	3°2/1.6	15		503263	2015 LT ₂		4 4.8 190°77	4°4/30.3	18	
3 2	13 19.88	+ 0 59.3	2.013	2.865	12.1	22.2	3 2	13 17.39	+ 7 36.9	2.560	3.412	9.8	21.2
3 12	13 14.52	+ 1 54.7	1.956	2.880	8.8	22.1	3 12	13 12.49	+ 8 33.0	2.491	3.411	7.4	21.1
3 22	13 7.39	+ 2 54.0	1.923	2.895	5.4	21.9	3 22	13 6.13	+ 9 28.3	2.449	3.410	5.2	20.9
4 1	12 59.19	+ 3 51.3	1.919	2.909	3.2	21.8	4 1	12 58.86	+10 17.5	2.435	3.408	4.5	20.9
4 11	12 50.82	+ 4 40.3	1.943	2.924	5.0	21.9	4 11	12 51.36	+10 55.6	2.449	3.406	5.9	21.0
4 21	12 43.13	+ 5 16.3	1.995	2.937	8.3	22.1	4 21	12 44.32	+11 19.3	2.491	3.404	8.3	21.1
5 1	12 36.86	+ 5 36.3	2.072	2.951	11.4	22.3	5 1	12 38.36	+11 26.8	2.559	3.402	10.7	21.3
5 11	12 32.50	+ 5 39.4	2.171	2.964	14.2	22.5	5 11	12 33.91	+11 17.9	2.647	3.399	12.9	21.4
240026	2001 UN ₆₂		4 4.8 207°16	1°4/6.7	17		177826	2005 NM ₁₈		4 4.8 134°06	1°5/6.7	17	
3 2	13 15.98	-14 8.1	2.868	3.668	10.3	21.9	3 2	13 16.88	-13 33.7	2.797	3.600	10.5	21.6
3 12	13 11.41	-13 33.2	2.771	3.663	7.9	21.7	3 12	13 12.01	-13 14.6	2.719	3.611	8.0	21.4
3 22	13 5.48	-12 45.7	2.700	3.656	5.1	21.5	3 22	13 5.80	-12 44.1	2.665	3.621	5.2	21.3
4 1	12 58.67	-11 47.9	2.658	3.649	2.3	21.3	4 1	12 58.76	-12 4.4	2.640	3.632	2.4	21.1
4 11	12 51.60	-10 43.6	2.646	3.642	2.0	21.3	4 11	12 51.53	-11 18.9	2.645	3.641	2.0	21.1
4 21	12 44.88	- 9 37.4	2.664	3.634	4.8	21.4	4 21	12 44.73	-10 31.4	2.680	3.651	4.7	21.3
5 1	12 39.08	- 8 33.9	2.710	3.626	7.7	21.6	5 1	12 38.92	- 9 46.3	2.742	3.660	7.5	21.5
5 11	12 34.67	- 7 37.6	2.782	3.617	10.3	21.8	5 11	12 34.54	- 9 7.3	2.830	3.669	10.0	21.6
95323	2002 CS ₁₀₈		4 4.8 38°93	4°2/31.3	18		437027	2012 TY ₂₉₄		4 4.8 148°94	1°9/7.2	18	
3 2	13 14.85	- 0 22.6	1.623	2.491	13.7	18.9	3 2	13 16.55	-15 21.9	2.532	3.332	11.5	21.3
3 12	13 11.25	+ 1 24.4	1.564	2.498	9.9	18.7	3 12	13 11.94	-14 56.5	2.449	3.338	8.9	21.2
3 22	13 5.62	+ 3 20.1	1.531	2.505	6.1	18.5	3 22	13 5.84	-14 17.1	2.390	3.343	5.9	21.0
4 1	12 58.72	+ 5 14.6	1.524	2.513	4.2	18.4	4 1	12 58.79	-13 25.8	2.359	3.348	2.9	20.8
4 11	12 51.56	+ 6 57.2	1.545	2.521	6.6	18.5	4 11	12 51.50	-12 26.7	2.357	3.353	2.3	20.8
4 21	12 45.12	+ 8 19.6	1.591	2.529	10.3	18.8	4 21	12 44.66	-11 24.5	2.385	3.357	5.1	20.9
5 1	12 40.23	+ 9 16.7	1.661	2.538	13.9	19.0	5 1	12 38.92	-10 24.6	2.440	3.361	8.2	21.1
5 11	12 37.43	+ 9 47.4	1.750	2.547	16.9	19.2	5 11	12 34.73	- 9 31.7	2.520	3.365	10.9	21.3
346127	2007 VM ₁₆₉		4 4.8 189°79	5°2/11.2	18		155794	2000 TZ ₅₂		4 4.8 191°17	0°2/5.0	17	
3 2	13 16.92	-25 49.0	2.460	3.207	13.3	20.9							

EPHEMERIDES

4 4.8

4 4.8

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
422194	2014 <i>RB</i> ₄₂		4 4.8 277°08	0°5/ 5.2	16		502081	2015 <i>AB</i> ₂₃₃		4 4.8 210°43	2°3/ 7.2	17	
3 2	13 18.76	-10 56.2	1.477	2.320	16.2	21.6	3 2	13 18.32	-15 12.3	2.037	2.847	13.6	21.3
3 12	13 14.75	-10 14.1	1.385	2.302	12.3	21.4	3 12	13 13.67	-14 54.1	1.950	2.844	10.6	21.1
3 22	13 8.10	-9 11.0	1.314	2.284	7.6	21.0	3 22	13 7.08	-14 18.9	1.886	2.842	7.0	20.9
4 1	12 59.53	-7 50.7	1.269	2.265	2.4	20.7	4 1	12 59.20	-13 28.8	1.849	2.839	3.5	20.6
4 11	12 50.22	-6 21.3	1.249	2.247	3.3	20.7	4 11	12 50.93	-12 28.3	1.840	2.836	2.8	20.6
4 21	12 41.45	-4 52.8	1.255	2.228	8.7	20.9	4 21	12 43.19	-11 23.6	1.859	2.832	6.2	20.8
5 1	12 34.45	-3 35.4	1.286	2.209	13.8	21.2	5 1	12 36.80	-10 21.2	1.904	2.829	9.9	21.0
5 11	12 30.06	-2 36.7	1.337	2.190	18.2	21.4	5 11	12 32.36	-9 27.3	1.973	2.825	13.2	21.2
470087	2006 <i>SN</i> ₃₈₈		4 4.8 37°83	5°8/29.3	17		230927	2004 <i>VJ</i> ₂₀		4 4.8 174°47	2°8/ 2.1	18	
3 2	13 16.90	+9 57.9	2.138	2.998	11.2	21.4	3 2	13 19.87	+0 29.8	2.054	2.905	12.0	20.6
3 12	13 12.35	+11 4.0	2.080	3.001	8.6	21.3	3 12	13 14.63	+1 10.5	1.982	2.906	8.8	20.4
3 22	13 6.13	+12 7.1	2.048	3.005	6.4	21.1	3 22	13 7.57	+1 55.6	1.935	2.907	5.3	20.2
4 1	12 58.88	+13 0.5	2.042	3.009	5.9	21.1	4 1	12 59.32	+2 40.0	1.915	2.907	2.9	20.0
4 11	12 51.42	+13 38.4	2.064	3.013	7.5	21.2	4 11	12 50.78	+3 18.1	1.924	2.908	4.6	20.1
4 21	12 44.54	+13 57.2	2.112	3.017	10.0	21.4	4 21	12 42.82	+3 45.2	1.961	2.908	8.1	20.3
5 1	12 38.94	+13 55.6	2.183	3.021	12.5	21.5	5 1	12 36.21	+3 58.0	2.023	2.908	11.4	20.5
5 11	12 35.09	+13 34.4	2.274	3.025	14.8	21.7	5 11	12 31.51	+3 55.4	2.107	2.908	14.3	20.7
456891	2007 <i>VN</i> ₁₄₄		4 4.8 60°77	1°4/ 3.7	16		386208	2007 <i>VA</i> ₃₂₆		4 4.8 204°75	3°7/ 9.3	18	
3 2	13 20.06	-5 38.2	1.389	2.247	16.1	21.8	3 2	13 19.07	-20 47.8	2.782	3.546	11.5	21.5
3 12	13 15.34	-4 51.8	1.334	2.261	11.8	21.6	3 12	13 13.83	-20 52.8	2.683	3.541	9.3	21.3
3 22	13 8.17	-3 52.3	1.302	2.276	6.9	21.4	3 22	13 7.03	-20 43.0	2.608	3.536	6.9	21.1
4 1	12 59.47	-2 46.7	1.294	2.292	2.0	21.1	4 1	12 59.18	-20 18.4	2.559	3.529	4.6	21.0
4 11	12 50.53	-1 43.7	1.313	2.307	4.2	21.3	4 11	12 50.98	-19 41.3	2.540	3.523	3.7	20.9
4 21	12 42.55	-0 51.3	1.357	2.323	9.0	21.6	4 21	12 43.14	-18 55.2	2.550	3.516	5.3	21.0
5 1	12 36.52	-0 15.3	1.425	2.338	13.4	21.9	5 1	12 36.32	-18 4.7	2.588	3.508	7.8	21.1
5 11	12 33.04	+0 1.4	1.512	2.354	17.0	22.2	5 11	12 31.06	-17 15.0	2.651	3.500	10.3	21.3
135222	2001 <i>RS</i> ₁₀₃		4 4.8 107°36	2°2/ 2.2	17 R		504905	2011 <i>AF</i> ₃₃		4 4.8 55°54	0°4/ 4.3	17	
3 2	13 17.74	-0 32.8	2.451	3.295	10.5	19.9	3 2	13 14.83	-6 0.8	2.789	3.622	9.7	21.5
3 12	13 12.70	+0 13.4	2.390	3.312	7.6	19.7	3 12	13 10.47	-5 37.3	2.723	3.637	7.1	21.3
3 22	13 6.23	+1 3.7	2.356	3.328	4.5	19.6	3 22	13 4.88	-5 7.3	2.683	3.653	4.2	21.1
4 1	12 58.90	+1 53.7	2.351	3.344	2.3	19.4	4 1	12 58.54	-4 33.6	2.671	3.669	1.1	20.9
4 11	12 51.43	+2 38.4	2.375	3.360	3.8	19.6	4 11	12 52.06	-3 59.9	2.689	3.685	2.1	21.0
4 21	12 44.50	+3 14.0	2.428	3.375	6.8	19.8	4 21	12 46.02	-3 29.4	2.737	3.701	5.1	21.3
5 1	12 38.71	+3 37.4	2.508	3.390	9.6	20.0	5 1	12 40.92	-3 5.4	2.811	3.717	7.8	21.5
5 11	12 34.48	+3 47.5	2.610	3.405	12.0	20.2	5 11	12 37.16	-2 49.9	2.910	3.733	10.2	21.6
382613	2002 <i>NW</i> ₆₁		4 4.8 237°44	15°9/17.5	18		1358	Gaika		4 4.8 263°36	0°1/ 4.7	18	
3 2	13 25.71	-40 14.8	1.368	2.060	24.4	20.6	3 2	13 20.53	-7 38.5	1.798	2.637	13.9	16.7
3 12	13 21.18	-41 47.1	1.283	2.052	22.4	20.4	3 12	13 15.61	-7 14.6	1.705	2.621	10.5	16.4
3 22	13 12.67	-42 42.6	1.210	2.043	20.1	20.2	3 22	13 8.42	-6 37.9	1.635	2.605	6.3	16.1
4 1	13 0.97	-42 50.2	1.154	2.033	17.8	20.0	4 1	12 59.63	-5 51.8	1.591	2.588	1.8	15.8
4 11	12 47.85	-42 3.8	1.116	2.023	16.3	19.8	4 11	12 50.23	-5 2.1	1.575	2.571	3.0	15.8
4 21	12 35.47	-40 25.2	1.098	2.013	16.0	19.8	4 21	12 41.31	-4 15.2	1.586	2.554	7.7	16.1
5 1	12 25.91	-38 5.7	1.099	2.002	17.4	19.8	5 1	12 33.88	-3 37.3	1.623	2.537	12.0	16.3
5 11	12 20.42	-35 23.9	1.121	1.991	19.8	19.9	5 11	12 28.69	-3 12.9	1.681	2.519	15.8	16.5
499168	2009 <i>SB</i> ₇₄		4 4.8 159°79	2°0/ 2.8	17		28615	2000 <i>FS</i> ₁₀		4 4.8 338°05	0°6/ 5.4	18	
3 2	13 19.08	-2 57.2	1.996	2.843	12.4	22.5	3 2	13 17.83	-9 12.2	1.904	2.740	13.4	18.5
3 12	13 14.10	-2 8.0	1.924	2.847	9.1	22.3	3 12	13 13.38	-8 59.6	1.822	2.735	10.1	18.2
3 22	13 7.25	-1 10.8	1.877	2.850	5.3	22.1	3 22	13 6.94	-8 34.8	1.764	2.732	6.2	18.0
4 1	12 59.22	-0 10.9	1.857	2.853	2.1	21.9	4 1	12 59.18	-8 0.6	1.732	2.728	2.0	17.7
4 11	12 50.90	+0 45.3	1.866	2.855	4.0	22.0	4 11	12 51.01	-7 21.9	1.727	2.725	2.5	17.7
4 21	12 43.18	+1 32.2	1.903	2.858	7.7	22.2	4 21	12 43.37	-6 43.9	1.750	2.722	6.8	18.0
5 1	12 36.84	+2 5.4	1.965	2.860	11.2	22.4	5 1	12 37.14	-6 12.0	1.799	2.719	10.6	18.2
5 11	12 32.41	+2 22.5	2.050	2.861	14.3	22.6	5 11	12 32.92	-5 50.6	1.869	2.716	14.0	18.4
215786	2004 <i>KM</i> ₁₄		4 4.8 261°73	9°9/20.7	18		425056	2009 <i>QM</i> ₅₀		4 4.8 116°77	1°1/ 3.7	17	
3 2	13 19.85	+28 42.0	2.552	3.364	11.1	20.3	3 2	13 17.95	-6 5.0	1.822	2.668	13.4	21.3
3 12	13 14.51	+30 5.6	2.498	3.349	10.2	20.2	3 12	13 13.45	-5 16.3	1.749	2.671	9.9	21.1
3 22	13 7.45	+31 14.9	2.467	3.332	9.9	20.1	3 22	13 6.95	-4 15.8	1.700	2.673	5.8	20.8
4 1	12 59.27	+32 2.9	2.462	3.316	10.4	20.1	4 1	12 59.18	-3 8.9	1.678	2.676	1.7	20.6
4 11	12 50.81	+32 24.8	2.479	3.300	11.6	20.2	4 11	12 51.07	-2 2.6	1.684	2.678	3.5	20.7
4 21	12 42.88	+32 19.2	2.519	3.283	13.0	20.3	4 21	12 43.59	-1 3.7	1.717	2.680	7.7	21.0
5 1	12 36.21	+31 46.7	2.578	3.266	14.6	20.3	5 1	12 37.58	-0 17.8	1.776	2.682	11.6	21.2
5 11	12 31.33	+30 50.6	2.652	3.249	16.0	20.4	5 11	12 33.62	+0 11.5	1.856	2.684	14.9	21.4
92580	2000 <i>PZ</i>		4 4.8 150°49	1°1/ 3.8	18		135365	2001 <i>TS</i> ₁₂₃		4 4.8 142°79	3°3/ 8.5	18 R	
3 2	13 21.25	-6 28.1	1.733	2.575	14.2	20.5	3 2	13 18.93	-18 11.9	2.468	3.252	12.3	20.0
3 12	13 15.92	-5 35.2	1.663	2.583	10.4	20.2	3 12	13 13.81	-18 18.2	2.383	3.257	9.7	19.8
3 22	13 8.43	-4 29.6	1.618	2.590	6.1	20.0	3 22	13 7.04	-18 9.7	2.322	3.262	6.9	19.6
4 1	12 59.56	-3 17.1	1.599	2.596	1.7	19.7	4 1	12 59.19	-17 47.1	2.288	3.267	4.2	19.4
4 11	12 50.38	-2 5.1	1.608	2.602	3.6	19.9	4 11	12 51.04	-17 13.1	2.283	3.271	3.4	19.4
4 21	12 41.93	-1 1.3	1.645	2.607	8.0	20.1	4 21	12 43.34	-16 31.7	2.306	3.276	5.5	19.5
5 1	12 35.12	-0 11.5	1.707	2.612	12.1	20.4	5 1	12 36.82	-15 47.8	2.357	3.280	8.3	19.7
5 11	12 30.55	+0 20.6	1.791	2.616	15.5	20.6	5 11	12 31.98	-15 6.5	2.432	3.284	11.0	19.9
433264	2012 <i>XU</i> ₉₄		4 4.8 205°69	6°1/28.3	17		29267	1993 <i>FD</i> ₂₂		4 4.8 71°65	0°1/ 4.9	18 R	
3 2	13 17.99	+13 15.3	2.466	3.316	10.2	21.							

EPHEMERIDES

4 4.8

4 4.8

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
401439	2013 <i>CP</i> ₁₂₆		4 4.8 178°08	3°8/ 1.3 18			473267	2015 <i>MN</i> ₃₇		4 4.8 261°59	0°5/ 4.2 16		
3 2	13 22.21	+ 0 28.6	1.746	2.599	13.6	22.0	3 2	13 15.34	- 7 22.6	2.630	3.460	10.3	22.1
3 12	13 16.65	+ 1 43.8	1.677	2.602	9.9	21.7	3 12	13 11.13	- 6 34.2	2.528	3.441	7.6	21.8
3 22	13 8.90	+ 3 6.0	1.632	2.604	6.1	21.5	3 22	13 5.45	- 5 35.4	2.453	3.422	4.5	21.6
4 1	12 59.73	+ 4 27.3	1.615	2.605	3.8	21.4	4 1	12 58.78	- 4 30.0	2.406	3.403	1.2	21.3
4 11	12 50.20	+ 5 39.3	1.626	2.605	6.0	21.5	4 11	12 51.77	- 3 22.6	2.389	3.384	2.5	21.4
4 21	12 41.39	+ 6 34.9	1.664	2.604	9.8	21.7	4 21	12 45.06	- 2 18.4	2.402	3.364	5.9	21.6
5 1	12 34.21	+ 7 9.8	1.726	2.602	13.5	21.9	5 1	12 39.31	- 1 22.2	2.442	3.344	9.0	21.8
5 11	12 29.29	+ 7 22.7	1.809	2.600	16.6	22.2	5 11	12 35.00	- 0 37.7	2.506	3.323	11.8	21.9
210021	2006 <i>KZ</i> ₅₀		4 4.8 186°42	1°5/ 3.2 17			498016	2007 <i>EX</i> ₁₉₇		4 4.8 89°77	0°5/ 5.5 17		
3 2	13 17.94	- 3 36.3	2.239	3.082	11.4	21.1	3 2	13 16.03	- 13 54.9	1.826	2.651	14.3	21.0
3 12	13 13.13	- 2 55.7	2.161	3.082	8.3	20.9	3 12	13 12.02	- 12 26.3	1.752	2.659	10.8	20.8
3 22	13 6.64	- 2 7.5	2.109	3.081	4.9	20.7	3 22	13 6.09	- 10 36.6	1.701	2.667	6.6	20.6
4 1	12 59.08	- 1 16.1	2.084	3.080	1.7	20.5	4 1	12 58.95	- 8 31.8	1.679	2.675	2.2	20.3
4 11	12 51.24	- 0 27.0	2.089	3.080	3.4	20.6	4 11	12 51.56	- 6 21.3	1.685	2.682	2.6	20.4
4 21	12 43.88	+ 0 15.1	2.122	3.078	6.9	20.8	4 21	12 44.82	- 4 15.6	1.720	2.690	7.0	20.6
5 1	12 37.74	+ 0 46.2	2.181	3.077	10.2	21.0	5 1	12 39.55	- 2 23.8	1.782	2.698	11.0	20.9
5 11	12 33.31	+ 1 3.6	2.263	3.075	13.0	21.2	5 11	12 36.28	- 0 52.2	1.868	2.705	14.4	21.1
499747	2011 <i>BR</i> ₉₁		4 4.8 355°52	1°6/ 3.5 17			201680	2003 <i>UJ</i> ₉₂		4 4.8 287°80	4°7/ 9.6 18		
3 2	13 15.02	- 5 37.0	1.388	2.254	15.7	20.9	3 2	13 17.92	- 22 20.3	2.045	2.822	14.7	19.4
3 12	13 11.84	- 4 46.5	1.319	2.250	11.5	20.7	3 12	13 13.74	- 22 9.7	1.925	2.790	12.1	19.2
3 22	13 6.24	- 3 41.4	1.271	2.247	6.8	20.4	3 22	13 7.38	- 21 36.2	1.827	2.758	9.1	18.9
4 1	12 59.02	- 2 28.4	1.247	2.245	2.1	20.1	4 1	12 59.41	- 20 39.0	1.753	2.726	6.0	18.7
4 11	12 51.34	- 1 16.8	1.250	2.244	4.4	20.2	4 11	12 50.71	- 19 20.6	1.707	2.693	4.8	18.5
4 21	12 44.39	- 0 15.6	1.276	2.243	9.3	20.5	4 21	12 42.30	- 17 46.8	1.688	2.660	7.0	18.6
5 1	12 39.23	+ 0 28.3	1.326	2.244	13.9	20.8	5 1	12 35.18	- 16 6.3	1.696	2.626	10.5	18.7
5 11	12 36.52	+ 0 51.0	1.395	2.245	17.7	21.0	5 11	12 30.15	- 14 28.5	1.728	2.592	14.2	18.9
469143	2015 <i>FA</i> ₁₆₅		4 4.8 39°49	2°6/ 2.7 17			255627	2006 <i>PL</i> ₃₂		4 4.8 195°98	4°1/ 31.8 18		
3 2	13 21.06	+ 0 41.3	1.926	2.777	12.6	20.8	3 2	13 20.92	+ 2 48.3	1.909	2.763	12.6	21.1
3 12	13 15.59	+ 0 58.1	1.858	2.782	9.2	20.6	3 12	13 15.59	+ 3 52.1	1.837	2.761	9.3	20.8
3 22	13 8.16	+ 1 18.3	1.815	2.788	5.6	20.4	3 22	13 8.24	+ 4 59.9	1.789	2.759	5.9	20.6
4 1	12 59.51	+ 1 37.2	1.799	2.793	2.7	20.2	4 1	12 59.58	+ 6 4.7	1.769	2.756	4.1	20.5
4 11	12 50.59	+ 1 50.3	1.812	2.799	4.4	20.3	4 11	12 50.77	+ 6 59.3	1.778	2.752	6.0	20.6
4 21	12 42.32	+ 1 53.7	1.851	2.805	8.0	20.5	4 21	12 42.17	+ 7 38.1	1.813	2.748	9.5	20.8
5 1	12 35.53	+ 1 45.1	1.917	2.811	11.5	20.8	5 1	12 35.24	+ 7 57.8	1.873	2.744	12.9	21.0
5 11	12 30.78	+ 1 23.3	2.003	2.817	14.5	21.0	5 11	12 30.37	+ 7 57.5	1.954	2.738	15.8	21.2
368209	2001 <i>RG</i> ₅		4 4.8 220°74	1°7/ 6.6 17			320577	2008 <i>AP</i> ₁₁₅		4 4.8 155°18	0°0/ 4.8 16		
3 2	13 19.59	- 14 3.5	2.227	3.034	12.7	22.0	3 2	13 21.31	- 8 52.7	2.022	2.849	13.1	22.4
3 12	13 14.51	- 13 36.6	2.130	3.024	9.8	21.8	3 12	13 15.75	- 8 18.1	1.947	2.857	9.7	22.2
3 22	13 7.57	- 12 54.1	2.057	3.014	6.4	21.6	3 22	13 8.27	- 7 31.1	1.896	2.864	5.9	21.9
4 1	12 59.38	- 11 58.1	2.011	3.003	2.8	21.3	4 1	12 59.58	- 6 35.7	1.874	2.871	1.7	21.7
4 11	12 50.75	- 10 53.2	1.995	2.991	2.5	21.2	4 11	12 50.59	- 5 37.4	1.880	2.877	2.6	21.7
4 21	12 42.56	- 9 45.1	2.007	2.979	6.0	21.5	4 21	12 42.23	- 4 42.2	1.915	2.882	6.7	22.0
5 1	12 35.61	- 8 40.2	2.047	2.966	9.6	21.6	5 1	12 35.30	- 3 55.7	1.977	2.887	10.4	22.2
5 11	12 30.50	- 7 44.2	2.112	2.952	12.9	21.8	5 11	12 30.35	- 3 21.7	2.062	2.891	13.6	22.5
93432	2000 <i>SN</i> ₃₁₈		4 4.8 94°64	10°9/ 17.7 18			271653	2004 <i>QL</i> ₁₈		4 4.8 193°82	0°8/ 4.0 18		
3 2	13 21.94	- 38 58.3	1.679	2.362	20.8	19.2	3 2	13 22.20	- 4 16.9	2.398	3.228	11.2	20.8
3 12	13 17.03	- 39 11.3	1.607	2.378	18.5	19.1	3 12	13 16.19	- 4 2.2	2.313	3.226	8.2	20.6
3 22	13 9.34	- 38 46.9	1.549	2.394	15.8	18.9	3 22	13 8.48	- 3 40.8	2.253	3.223	4.9	20.4
4 1	12 59.87	- 37 41.0	1.511	2.409	13.2	18.8	4 1	12 59.64	- 3 16.0	2.223	3.220	1.4	20.2
4 11	12 50.05	- 35 55.4	1.496	2.425	11.3	18.7	4 11	12 50.47	- 2 51.6	2.222	3.216	2.8	20.3
4 21	12 41.27	- 33 38.0	1.504	2.440	11.0	18.7	4 21	12 41.77	- 2 31.4	2.251	3.212	6.3	20.5
5 1	12 34.68	- 31 1.6	1.538	2.454	12.4	18.8	5 1	12 34.27	- 2 18.6	2.308	3.207	9.6	20.7
5 11	12 30.92	- 28 21.3	1.596	2.469	14.7	19.0	5 11	12 28.50	- 2 15.6	2.388	3.201	12.4	20.9
16697	1995 <i>CQ</i>		4 4.8 53°07	2°7/ 6.7 18			255749	2006 <i>RV</i> ₁₆		4 4.8 272°36	0°0/ 4.6 17		
3 2	13 23.10	- 13 7.1	1.224	2.065	19.0	18.0	3 2	13 22.38	- 7 7.7	1.658	2.499	14.8	21.1
3 12	13 17.94	- 13 15.0	1.172	2.084	14.5	17.8	3 12	13 17.22	- 6 57.5	1.565	2.482	11.1	20.8
3 22	13 9.89	- 13 1.8	1.139	2.103	9.4	17.5	3 22	13 9.54	- 6 35.2	1.494	2.464	6.8	20.5
4 1	13 0.02	- 12 30.3	1.130	2.122	4.3	17.3	4 1	13 0.03	- 6 3.8	1.449	2.446	1.9	20.2
4 11	12 49.85	- 11 46.6	1.145	2.142	3.7	17.3	4 11	12 49.79	- 5 28.8	1.431	2.428	3.2	20.2
4 21	12 40.84	- 10 59.3	1.185	2.162	8.4	17.6	4 21	12 40.05	- 4 56.1	1.440	2.410	8.2	20.5
5 1	12 34.16	- 10 16.8	1.249	2.183	13.1	17.9	5 1	12 31.94	- 4 31.8	1.474	2.391	12.8	20.7
5 11	12 30.45	- 9 46.1	1.332	2.203	17.1	18.2	5 11	12 26.30	- 4 20.4	1.530	2.372	16.8	20.9
294431	2007 <i>VG</i> ₂₅₂		4 4.8 70°67	0°9/ 3.9 17			222652	2001 <i>XP</i> ₁₈₂		4 4.8 150°38	6°3/ 28.5 16		
3 2	13 17.31	- 5 57.3	2.093	2.934	12.2	20.7	3 2	13 20.10	+ 11 38.3	2.228	3.079	11.1	21.2
3 12	13 12.64	- 5 17.0	2.032	2.951	8.9	20.5	3 12	13 14.64	+ 12 58.2	2.174	3.088	8.6	21.0
3 22	13 6.32	- 4 27.7	1.995	2.967	5.2	20.3	3 22	13 7.51	+ 14 13.9	2.147	3.096	6.7	20.9
4 1	12 58.99	- 3 33.7	1.986	2.984	1.4	20.1	4 1	12 59.35	+ 15 18.3	2.147	3.104	6.4	20.9
4 11	12 51.48	- 2 40.7	2.006	3.001	2.9	20.2	4 11	12 51.01	+ 16 5.3	2.176	3.111	7.9	21.0
4 21	12 44.60	- 1 53.9	2.054	3.017	6.6	20.5	4 21	12 43.28	+ 16 31.6	2.230	3.118	10.3	21.2
5 1	12 39.02	- 1 17.6	2.128	3.034	10.0	20.7	5 1	12 36.87	+ 16 36.0	2.309	3.124	12.7	21.3
5 11	12 35.22	- 0 54.6	2.225	3.050	12.8	20.9	5 11	12 32.26	+ 16 19.9	2.406	3.129	14.8	21.5
153712	2001 <i>UN</i> ₉₂		4 4.8 87°97	1°8/ 3.3 18			181594	2006 <i>VE</</i>					

EPHEMERIDES

4 4.8

4 4.9

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
88000	2000 <i>UB</i> ₃₆		4 4.8 228°81	3°0/ 2.2 18			35803	1999 <i>JT</i> ₄₀		4 4.8 310°49	0°9/ 4.1 18		
3 2	13 23.02	+ 1 58.5	2.164	3.008	11.7	19.6	3 2	13 17.12	- 7 38.6	1.328	2.188	16.6	18.8
3 12	13 17.00	+ 2 23.7	2.078	2.998	8.6	19.4	3 12	13 13.70	- 6 50.7	1.247	2.175	12.4	18.5
3 22	13 9.06	+ 2 51.7	2.018	2.988	5.3	19.1	3 22	13 7.57	- 5 44.1	1.186	2.161	7.4	18.2
4 1	12 59.84	+ 3 17.8	1.987	2.978	3.0	19.0	4 1	12 59.51	- 4 24.5	1.150	2.148	2.0	17.8
4 11	12 50.21	+ 3 37.3	1.984	2.967	4.6	19.1	4 11	12 50.75	- 3 1.6	1.139	2.135	4.1	17.9
4 21	12 41.07	+ 3 46.3	2.011	2.956	8.0	19.2	4 21	12 42.66	- 1 45.8	1.153	2.123	9.7	18.2
5 1	12 33.26	+ 3 42.2	2.063	2.944	11.4	19.4	5 1	12 36.46	- 0 46.4	1.189	2.111	14.8	18.4
5 11	12 27.37	+ 3 24.0	2.137	2.932	14.3	19.6	5 11	12 32.98	- 0 9.2	1.244	2.099	19.1	18.7
421840	2014 <i>QP</i> ₁₂₁		4 4.8 301°80	0°1/ 4.9 14 C			35184	1993 <i>UW</i> ₃		4 4.8 271°55	4°2/ 1.6 18		
3 2	13 20.89	- 8 8.7	1.350	2.203	16.9	21.6	3 2	13 22.29	+ 1 48.6	1.543	2.404	14.6	19.5
3 12	13 16.46	- 7 53.7	1.271	2.194	12.7	21.3	3 12	13 17.23	+ 2 36.9	1.459	2.387	10.9	19.2
3 22	13 9.21	- 7 22.8	1.213	2.185	7.8	21.0	3 22	13 9.57	+ 3 31.3	1.398	2.370	6.9	18.9
4 1	12 59.95	- 6 39.9	1.179	2.176	2.3	20.6	4 1	13 0.06	+ 4 24.5	1.363	2.353	4.2	18.7
4 11	12 50.00	- 5 52.0	1.170	2.167	3.5	20.7	4 11	12 49.88	+ 5 8.1	1.354	2.336	6.5	18.8
4 21	12 40.75	- 5 7.0	1.186	2.159	9.0	20.9	4 21	12 40.29	+ 5 35.2	1.371	2.318	10.8	19.0
5 1	12 33.50	- 4 32.6	1.226	2.151	14.1	21.2	5 1	12 32.47	+ 5 41.5	1.411	2.300	15.1	19.2
5 11	12 29.07	- 4 14.2	1.285	2.143	18.4	21.4	5 11	12 27.21	+ 5 25.7	1.470	2.282	18.8	19.4
349473	2008 <i>CF</i> ₂₁₄		4 4.8 47°12	1°1/ 6.1 17			425291	2009 <i>WK</i> ₂₁₃		4 4.8 128°04	2°4/ 7.3 17		
3 2	13 16.59	-11 31.1	2.148	2.972	12.5	21.0	3 2	13 23.27	-14 46.1	2.368	3.162	12.4	22.1
3 12	13 12.21	-11 12.3	2.076	2.981	9.4	20.8	3 12	13 16.95	-14 50.7	2.295	3.179	9.6	21.9
3 22	13 6.13	-10 40.7	2.026	2.990	5.9	20.6	3 22	13 8.91	-14 42.2	2.246	3.196	6.4	21.8
4 1	12 59.00	- 9 59.2	2.004	2.999	2.3	20.4	4 1	12 59.78	-14 21.6	2.224	3.212	3.3	21.6
4 11	12 51.60	- 9 12.2	2.010	3.008	2.2	20.4	4 11	12 50.42	-13 52.2	2.233	3.227	2.8	21.6
4 21	12 44.75	- 8 24.8	2.045	3.017	5.8	20.6	4 21	12 41.64	-13 18.0	2.271	3.241	5.5	21.8
5 1	12 39.16	- 7 42.3	2.105	3.027	9.3	20.8	5 1	12 34.18	-12 43.7	2.337	3.255	8.6	22.0
5 11	12 35.33	- 7 8.8	2.190	3.036	12.3	21.0	5 11	12 28.55	-12 13.9	2.428	3.268	11.4	22.2
358629	2007 <i>VN</i> ₁₆₆		4 4.8 274°97	4°0/ 1.6 17			369399	2009 <i>VQ</i> ₁₁₅		4 4.8 143°73	0°3/ 4.5 18		
3 2	13 22.94	+ 1 11.5	1.688	2.543	13.9	21.2	3 2	13 17.49	- 9 28.2	2.078	2.909	12.6	21.2
3 12	13 17.70	+ 2 5.6	1.588	2.513	10.4	20.9	3 12	13 12.90	- 8 20.9	2.004	2.917	9.3	21.0
3 22	13 9.89	+ 3 7.7	1.511	2.482	6.5	20.6	3 22	13 6.57	- 6 59.5	1.954	2.924	5.5	20.7
4 1	13 0.17	+ 4 10.7	1.460	2.451	4.0	20.3	4 1	12 59.14	- 5 29.3	1.933	2.930	1.5	20.5
4 11	12 49.59	+ 5 6.5	1.437	2.418	6.3	20.4	4 11	12 51.46	- 3 57.3	1.941	2.937	2.7	20.6
4 21	12 39.38	+ 5 47.4	1.441	2.386	10.6	20.6	4 21	12 44.36	- 2 30.9	1.978	2.942	6.7	20.8
5 1	12 30.72	+ 6 8.0	1.468	2.352	15.0	20.7	5 1	12 38.56	- 1 16.3	2.042	2.948	10.3	21.1
5 11	12 24.51	+ 6 6.1	1.515	2.318	18.8	20.9	5 11	12 34.59	- 0 17.9	2.129	2.953	13.4	21.3
162009	1993 <i>TE</i> ₁₉		4 4.8 255°02	0°0/ 4.6 17			81981	2000 <i>QY</i> ₁₁₂		4 4.9 253°89	0°1/ 4.7 17		
3 2	13 19.98	- 9 24.4	1.689	2.527	14.7	20.5	3 2	13 17.36	- 7 24.9	2.527	3.355	10.7	20.2
3 12	13 15.37	- 8 39.4	1.595	2.510	11.1	20.2	3 12	13 12.68	- 6 58.6	2.429	3.341	8.0	20.0
3 22	13 8.39	- 7 37.1	1.524	2.493	6.8	19.9	3 22	13 6.43	- 6 23.1	2.357	3.326	4.8	19.8
4 1	12 59.71	- 6 21.7	1.479	2.476	1.9	19.5	4 1	12 59.12	- 5 41.3	2.313	3.310	1.3	19.5
4 11	12 50.39	- 5 0.5	1.461	2.458	3.2	19.6	4 11	12 51.44	- 4 57.3	2.299	3.295	2.3	19.6
4 21	12 41.57	- 3 42.1	1.471	2.440	8.1	19.8	4 21	12 44.10	- 4 15.4	2.313	3.279	5.8	19.8
5 1	12 34.32	- 2 34.7	1.506	2.421	12.7	20.1	5 1	12 37.79	- 3 39.9	2.355	3.262	9.1	19.9
5 11	12 29.42	- 1 44.4	1.563	2.402	16.7	20.3	5 11	12 33.02	- 3 14.1	2.421	3.246	11.9	20.1
500988	2013 <i>RR</i> ₁₀		4 4.8 182°34	1°9/ 6.7 17			212058	2005 <i>EH</i> ₃₀		4 4.9 317°05	0°7/ 5.3 17		
3 2	13 21.79	-13 19.7	2.294	3.098	12.5	22.5	3 2	13 20.65	- 8 10.0	1.338	2.191	16.9	20.1
3 12	13 16.03	-13 16.1	2.207	3.099	9.6	22.3	3 12	13 16.44	- 8 16.2	1.252	2.174	12.9	19.8
3 22	13 8.45	-12 59.5	2.144	3.100	6.3	22.1	3 22	13 9.32	- 8 8.2	1.187	2.158	8.0	19.5
4 1	12 59.66	-12 31.4	2.109	3.099	2.9	21.9	4 1	13 0.04	- 7 48.7	1.146	2.142	2.6	19.1
4 11	12 50.51	-11 55.2	2.103	3.098	2.5	21.8	4 11	12 49.91	- 7 22.9	1.129	2.127	3.4	19.1
4 21	12 41.85	-11 15.5	2.126	3.097	5.8	22.1	4 21	12 40.37	- 6 57.3	1.138	2.113	9.0	19.4
5 1	12 34.46	-10 37.1	2.177	3.095	9.2	22.3	5 1	12 32.79	- 6 39.0	1.169	2.099	14.2	19.7
5 11	12 28.90	-10 4.8	2.252	3.092	12.2	22.4	5 11	12 28.12	- 6 33.5	1.219	2.086	18.7	19.9
204627	2005 <i>WK</i> ₅₄		4 4.8 271°11	2°4/ 6.6 17			268085	2004 <i>RS</i> ₁₅₀		4 4.9 126°97	1°3/ 3.6 17		
3 2	13 22.99	-13 58.5	1.598	2.419	16.2	20.8	3 2	13 16.73	- 6 32.0	1.840	2.686	13.3	20.3
3 12	13 18.04	-13 46.5	1.489	2.390	12.7	20.5	3 12	13 12.59	- 5 28.6	1.765	2.687	9.8	20.1
3 22	13 10.27	-13 14.0	1.400	2.360	8.5	20.2	3 22	13 6.50	- 4 12.3	1.714	2.687	5.7	19.9
4 1	13 0.32	-12 21.7	1.337	2.329	3.9	19.8	4 1	12 59.15	- 2 48.8	1.691	2.688	1.7	19.6
4 11	12 49.32	-11 14.1	1.301	2.298	3.4	19.7	4 11	12 51.46	- 1 26.1	1.695	2.688	3.6	19.7
4 21	12 38.62	- 9 59.0	1.291	2.265	8.3	19.9	4 21	12 44.38	- 0 11.5	1.727	2.689	7.8	20.0
5 1	12 29.58	- 8 46.1	1.307	2.232	13.4	20.1	5 1	12 38.71	+ 0 48.5	1.785	2.689	11.6	20.2
5 11	12 23.21	- 7 44.3	1.343	2.198	18.0	20.3	5 11	12 35.04	+ 1 30.2	1.864	2.690	14.9	20.4
41609	2000 <i>SR</i> ₁₁₇		4 4.8 112°81	1°9/ 3.3 18			334867	2003 <i>UH</i> ₁₅₀		4 4.9 195°67	1°7/ 3.1 17		
3 2	13 23.88	- 3 24.5	1.711	2.556	14.2	19.7	3 2	13 19.03	- 2 37.6	2.283	3.124	11.3	21.6
3 12	13 17.77	- 2 44.1	1.654	2.575	10.4	19.5	3 12	13 13.94	- 2 1.8	2.203	3.123	8.2	21.4
3 22	13 9.51	- 1 55.3	1.621	2.593	6.1	19.3	3 22	13 7.18	- 1 19.6	2.149	3.120	4.9	21.1
4 1	12 59.94	- 1 3.7	1.614	2.610	2.2	19.1	4 1	12 59.33	- 0 35.0	2.122	3.118	1.9	20.9
4 11	12 50.18	- 0 16.1	1.636	2.627	4.1	19.2	4 11	12 51.18	+ 0 6.8	2.126	3.115	3.5	21.0
4 21	12 41.29	+ 0 21.6	1.686	2.644	8.2	19.5	4 21	12 43.51	+ 0 41.4	2.157	3.112	6.9	21.2
5 1	12 34.15	+ 0 45.3	1.760	2.659	12.1	19.8	5 1	12 37.03	+ 1 5.0	2.215	3.109	10.2	21.4
5 11	12 29.31	+ 0 52.9	1.856	2.674	15.3	20.0	5 11	12 32.27	+ 1 15.5	2.296	3.105	13.0	21.6
412659	2014 <i>OD</i> ₁₉₄		4 4.8 159°52	1°2/ 3.7 18			423721	2006 <i>BH</i> ₈₉		4 4.9 104°31			

EPHEMERIDES

4 4.9

4 4.9

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
467631	2008 <i>PY</i> ₁₇		4 4.9 254°21	4.3/ 9.5	17		83321	2001 <i>RS</i> ₁₂₄		4 4.9 110°48	0.6/ 5.5	18	
3 2	13 20.06	-21 56.1	2.390	3.155	13.2	21.9	3 2	13 19.82	-9 16.7	2.392	3.212	11.5	20.0
3 12	13 14.99	-21 52.6	2.274	3.132	10.8	21.6	3 12	13 14.41	-9 8.6	2.319	3.224	8.6	19.9
3 22	13 7.99	-21 30.3	2.181	3.108	8.0	21.4	3 22	13 7.40	-8 50.8	2.272	3.236	5.3	19.7
4 1	12 59.61	-20 48.9	2.113	3.083	5.4	21.2	4 1	12 59.40	-8 25.9	2.252	3.248	1.8	19.4
4 11	12 50.66	-19 50.4	2.074	3.058	4.4	21.1	4 11	12 51.17	-7 57.3	2.262	3.259	2.1	19.5
4 21	12 42.01	-18 39.6	2.064	3.032	6.2	21.2	4 21	12 43.47	-7 29.0	2.301	3.270	5.5	19.7
5 1	12 34.52	-17 23.0	2.082	3.006	9.2	21.3	5 1	12 36.97	-7 5.0	2.367	3.281	8.7	19.9
5 11	12 28.86	-16 7.7	2.125	2.978	12.3	21.4	5 11	12 32.15	-6 48.3	2.458	3.292	11.5	20.1
64699	2001 <i>XY</i> ₈₅		4 4.9 198°75	1.5/ 3.5	18		336491	2008 <i>WQ</i> ₁₀		4 4.9 197°50	1.1/ 3.7	17	
3 2	13 21.85	-5 10.2	1.849	2.690	13.5	19.1	3 2	13 18.85	-4 45.1	2.281	3.118	11.4	21.6
3 12	13 16.41	-4 20.1	1.768	2.687	10.0	18.8	3 12	13 13.83	-4 11.1	2.199	3.116	8.4	21.4
3 22	13 8.83	-3 18.7	1.711	2.683	5.9	18.6	3 22	13 7.14	-3 29.1	2.142	3.114	4.9	21.1
4 1	12 59.83	-2 11.2	1.682	2.678	1.9	18.3	4 1	12 59.35	-2 42.8	2.114	3.111	1.5	20.9
4 11	12 50.39	-1 4.7	1.681	2.673	3.8	18.4	4 11	12 51.24	-1 57.3	2.115	3.108	3.0	21.0
4 21	12 41.55	0 6.1	1.708	2.667	8.1	18.7	4 21	12 43.61	-1 17.3	2.144	3.104	6.6	21.2
5 1	12 34.24	+0 38.8	1.761	2.661	12.0	18.9	5 1	12 37.17	-0 46.9	2.200	3.101	9.9	21.4
5 11	12 29.09	+1 6.7	1.836	2.653	15.4	19.1	5 11	12 32.45	-0 28.8	2.280	3.097	12.8	21.6
201895	2004 <i>BK</i> ₁₉		4 4.9 358°24	5.5/30.0	18		269807	1999 <i>VN</i> ₉₆		4 4.9 219°40	0.0/ 4.7	16	
3 2	13 17.88	+8 15.7	2.051	2.911	11.6	19.8	3 2	13 21.31	-8 54.9	2.115	2.940	12.7	22.1
3 12	13 13.22	+9 19.4	1.988	2.911	8.8	19.6	3 12	13 15.88	-8 19.8	2.021	2.929	9.5	21.9
3 22	13 6.78	+10 21.7	1.949	2.911	6.3	19.5	3 22	13 8.49	-7 32.0	1.951	2.918	5.8	21.6
4 1	12 59.22	+11 15.8	1.938	2.911	5.5	19.4	4 1	12 59.76	-6 34.8	1.910	2.906	1.7	21.3
4 11	12 51.40	+11 55.4	1.954	2.911	7.2	19.5	4 11	12 50.56	-5 33.6	1.897	2.894	2.6	21.4
4 21	12 44.16	+12 16.4	1.996	2.911	9.9	19.7	4 21	12 41.81	-4 34.4	1.914	2.880	6.7	21.6
5 1	12 38.24	+12 17.2	2.062	2.911	12.7	19.8	5 1	12 34.38	-3 43.2	1.958	2.866	10.6	21.8
5 11	12 34.17	+11 58.1	2.148	2.911	15.2	20.0	5 11	12 28.88	-3 4.3	2.025	2.851	13.9	22.0
284305	2006 <i>PK</i> ₃₄		4 4.9 259°99	3.2/ 8.0	18		457547	2008 <i>YX</i> ₁₈		4 4.9 95°21	1.1/ 5.8	16	
3 2	13 19.36	-16 51.6	2.224	3.019	13.1	21.0	3 2	13 22.79	-11 0.2	1.495	2.330	16.4	22.2
3 12	13 14.41	-17 2.7	2.131	3.014	10.4	20.8	3 12	13 17.39	-10 42.0	1.432	2.344	12.4	22.0
3 22	13 7.59	-16 58.7	2.062	3.008	7.2	20.6	3 22	13 9.50	-10 6.7	1.391	2.357	7.7	21.7
4 1	12 59.49	-16 40.1	2.020	3.002	4.3	20.4	4 1	13 0.03	-9 18.1	1.375	2.370	2.7	21.5
4 11	12 50.94	-16 9.6	2.005	2.996	3.5	20.3	4 11	12 50.22	-8 22.8	1.385	2.383	3.0	21.5
4 21	12 42.84	-15 31.4	2.019	2.990	6.0	20.5	4 21	12 41.32	-7 28.4	1.423	2.396	7.8	21.8
5 1	12 35.98	-14 50.8	2.059	2.984	9.2	20.7	5 1	12 34.36	-6 42.4	1.485	2.408	12.2	22.1
5 11	12 30.99	-14 13.3	2.123	2.978	12.3	20.8	5 11	12 29.98	-6 9.9	1.568	2.420	16.0	22.4
144690	2004 <i>FV</i> ₁₄₇		4 4.9 6°89	5.9/ 9.7	18		249531	2010 <i>GV</i> ₁₁₇		4 4.9 180°47	4.5/30.7	18	
3 2	13 24.71	-22 15.6	2.175	2.936	14.4	19.5	3 2	13 17.88	+6 34.7	2.342	3.196	10.5	21.3
3 12	13 18.54	-23 17.7	2.086	2.936	11.9	19.4	3 12	13 13.03	+7 31.5	2.275	3.196	7.9	21.2
3 22	13 10.17	-24 3.4	2.020	2.936	9.2	19.2	3 22	13 6.60	+8 28.1	2.233	3.197	5.4	21.0
4 1	13 0.24	-24 30.5	1.979	2.937	6.8	19.0	4 1	12 59.18	+9 18.9	2.219	3.197	4.5	20.9
4 11	12 49.73	-24 38.9	1.967	2.937	6.0	19.0	4 11	12 51.52	+9 58.5	2.234	3.197	6.0	21.0
4 21	12 39.66	-24 31.0	1.982	2.938	7.4	19.1	4 21	12 44.37	+10 23.1	2.276	3.196	8.6	21.2
5 1	12 31.03	-24 11.8	2.024	2.939	9.9	19.2	5 1	12 38.38	+10 30.6	2.344	3.196	11.3	21.4
5 11	12 24.53	-23 47.4	2.089	2.940	12.6	19.4	5 11	12 34.03	+10 21.1	2.432	3.195	13.6	21.5
501497	2014 <i>DW</i> ₂₃		4 4.9 101°10	4.2/ 9.6	17		362668	2011 <i>UT</i> ₂₃		4 4.9 88°44	2.7/ 7.2	18	
3 2	13 21.71	-21 28.8	2.634	3.392	12.3	21.7	3 2	13 19.73	-15 41.3	1.462	2.288	17.2	20.7
3 12	13 15.73	-21 48.9	2.561	3.414	9.9	21.6	3 12	13 15.33	-15 16.8	1.390	2.293	13.4	20.5
3 22	13 8.17	-21 53.5	2.513	3.435	7.3	21.4	3 22	13 8.38	-14 28.9	1.339	2.297	8.9	20.2
4 1	12 59.61	-21 42.8	2.491	3.457	5.0	21.3	4 1	12 59.74	-13 20.5	1.311	2.302	4.2	20.0
4 11	12 50.83	-21 18.6	2.499	3.477	4.2	21.3	4 11	12 50.64	-11 58.8	1.310	2.307	3.4	19.9
4 21	12 42.59	-20 44.6	2.535	3.498	5.5	21.4	4 21	12 42.36	-10 33.1	1.336	2.312	7.7	20.2
5 1	12 35.55	-20 5.4	2.599	3.518	7.9	21.6	5 1	12 35.98	-9 13.5	1.385	2.317	12.3	20.5
5 11	12 30.20	-19 26.2	2.689	3.537	10.2	21.7	5 11	12 32.20	-8 7.9	1.456	2.322	16.3	20.7
246485	2007 <i>XD</i> ₁₈		4 4.9 94°13	4.4/30.6	17		20850	Gaglani		4 4.9 122°87	1.6/ 6.4	18	
3 2	13 17.46	+6 19.2	2.345	3.200	10.5	20.7	3 2	13 22.59	-13 3.6	1.831	2.648	14.7	19.0
3 12	13 12.61	+7 21.8	2.293	3.215	7.8	20.6	3 12	13 16.86	-12 40.2	1.764	2.664	11.1	18.9
3 22	13 6.28	+8 23.9	2.267	3.231	5.3	20.5	3 22	13 9.02	-12 0.5	1.719	2.679	7.1	18.6
4 1	12 59.07	+9 19.5	2.269	3.246	4.4	20.4	4 1	12 59.88	-11 7.3	1.701	2.694	2.9	18.4
4 11	12 51.72	+10 3.5	2.299	3.261	5.9	20.5	4 11	12 50.47	-10 6.5	1.711	2.708	2.7	18.4
4 21	12 44.94	+10 32.3	2.357	3.276	8.4	20.7	4 21	12 41.83	-9 4.8	1.750	2.722	6.7	18.7
5 1	12 39.34	+10 44.0	2.439	3.290	10.9	20.9	5 1	12 34.81	-8 9.0	1.814	2.735	10.6	18.9
5 11	12 35.36	+10 38.9	2.543	3.304	13.1	21.1	5 11	12 30.01	-7 24.2	1.902	2.747	13.9	19.2
432100	2009 <i>AM</i> ₂₂		4 4.9 40°50	7.3/28.5	15		308447	2005 <i>SB</i> ₂₁₄		4 4.9 226°68	4.3/10.9	18	
3 2	13 17.14	+11 8.6	1.725	2.593	13.0	21.2	3 2	13 15.73	-25 5.3	2.731	3.477	12.1	20.8
3 12	13 12.82	+12 35.0	1.685	2.608	10.0	21.1	3 12	13 11.47	-24 41.3	2.629	3.471	10.0	20.6
3 22	13 6.56	+13 56.0	1.668	2.623	7.8	21.0	3 22	13 5.70	-23 58.0	2.549	3.464	7.6	20.5
4 1	12 59.16	+15 2.6	1.678	2.639	7.4	21.0	4 1	12 58.95	-22 56.1	2.496	3.457	5.4	20.3
4 11	12 51.60	+15 47.7	1.713	2.655	9.2	21.1	4 11	12 51.90	-21 38.5	2.471	3.449	4.3	20.2
4 21	12 44.84	+16 7.8	1.772	2.672	11.8	21.3	4 21	12 45.24	-20 10.1	2.475	3.442	5.4	20.3
5 1	12 39.65	+16 2.2	1.853	2.688	14.5	21.5	5 1	12 39.63	-18 37.1	2.508	3.434	7.8	20.4
5 11	12 36.50	+15 33.4	1.952	2.706	16.8	21.7	5 11	12 35.53	-17 6.1	2.567	3.426	10.3	20.6
428005	2006 <i>BT</i> ₆₈		4 4.9 7°99	0.5/ 5.2	17		430988	2005 <i>WV</i> ₁₆₀		4 4.9 206°54	4.8/10.1	17	
3 2	13 18.19	-8 47.6	1.549	2.396</									

EPHEMERIDES

4 4.9

4 4.9

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
15564	2000 <i>GU</i> ₄₈		4 4.9 260°80	0°5/ 5.4 18			219729	2001 <i>XU</i> ₁₃₈		4 4.9 147°02	0°7/ 4.2 18		
3 2	13 17.79	- 9 31.9	2.154	2.982	12.3	18.6	3 2	13 19.21	- 6 46.7	1.947	2.786	13.0	20.6
3 12	13 13.21	- 9 10.6	2.068	2.977	9.2	18.4	3 12	13 14.32	- 6 5.1	1.873	2.790	9.6	20.4
3 22	13 6.84	- 8 37.4	2.005	2.972	5.7	18.1	3 22	13 7.51	- 5 12.2	1.824	2.795	5.7	20.2
4 1	12 59.29	- 7 55.4	1.970	2.967	1.8	17.9	4 1	12 59.48	- 4 12.7	1.802	2.799	1.5	19.9
4 11	12 51.36	- 7 9.1	1.964	2.961	2.3	17.9	4 11	12 51.14	- 3 12.7	1.808	2.803	3.0	20.0
4 21	12 43.91	- 6 23.6	1.986	2.956	6.2	18.1	4 21	12 43.40	- 2 18.4	1.842	2.807	7.1	20.3
5 1	12 37.68	- 5 44.2	2.034	2.951	9.8	18.3	5 1	12 37.09	- 1 35.1	1.903	2.810	10.9	20.5
5 11	12 33.27	- 5 14.8	2.106	2.945	12.9	18.5	5 11	12 32.74	- 1 6.3	1.985	2.813	14.1	20.7
207760	2007 <i>TE</i> ₃		4 4.9 204°77	0°5/ 5.4 17			216643	2003 <i>KW</i> ₉		4 4.9 308°15	5°2/ 10.9 17		
3 2	13 17.87	- 9 42.5	2.419	3.241	11.3	21.4	3 2	13 14.73	-24 48.8	2.191	2.955	14.3	20.1
3 12	13 13.07	- 9 17.3	2.332	3.238	8.5	21.2	3 12	13 11.18	-24 37.4	2.083	2.935	11.9	19.9
3 22	13 6.68	- 8 41.2	2.269	3.234	5.2	21.0	3 22	13 5.75	-24 3.3	1.996	2.916	9.1	19.6
4 1	12 59.23	- 7 57.0	2.234	3.231	1.7	20.7	4 1	12 59.02	-23 6.0	1.934	2.898	6.5	19.4
4 11	12 51.47	- 7 8.9	2.229	3.226	2.1	20.7	4 11	12 51.80	-21 48.4	1.899	2.879	5.2	19.3
4 21	12 44.13	- 6 21.6	2.253	3.222	5.7	21.0	4 21	12 44.97	-20 16.1	1.891	2.861	6.6	19.4
5 1	12 37.91	- 5 39.8	2.304	3.217	9.0	21.2	5 1	12 39.37	-18 36.8	1.910	2.842	9.4	19.5
5 11	12 33.31	- 5 7.3	2.380	3.212	11.9	21.3	5 11	12 35.63	-16 59.2	1.954	2.825	12.5	19.7
227580	2005 <i>YT</i> ₂₇₃		4 4.9 130°12	3°7/ 8.6 18			115259	2003 <i>SK</i> ₁₆₄		4 4.9 203°55	1°1/ 6.0 18		
3 2	13 18.72	-19 4.4	1.968	2.762	14.6	20.6	3 2	13 19.09	-11 18.0	2.288	3.105	12.1	20.5
3 12	13 14.08	-18 55.7	1.886	2.766	11.6	20.4	3 12	13 14.08	-11 1.3	2.200	3.102	9.2	20.3
3 22	13 7.43	-18 27.2	1.827	2.770	8.2	20.2	3 22	13 7.34	-10 32.4	2.137	3.099	5.8	20.1
4 1	12 59.46	-17 40.0	1.792	2.773	4.9	20.0	4 1	12 59.44	- 9 53.7	2.101	3.095	2.2	19.8
4 11	12 51.11	-16 38.1	1.785	2.776	3.8	19.9	4 11	12 51.19	- 9 9.1	2.094	3.091	2.2	19.8
4 21	12 43.35	-15 28.0	1.806	2.779	6.4	20.1	4 21	12 43.40	- 8 23.5	2.116	3.087	5.8	20.0
5 1	12 37.04	-14 16.9	1.853	2.782	9.8	20.3	5 1	12 36.80	- 7 41.9	2.165	3.083	9.3	20.2
5 11	12 32.78	-13 12.0	1.924	2.785	13.1	20.5	5 11	12 31.96	- 7 8.6	2.239	3.078	12.3	20.4
285900	2001 <i>QH</i> ₈₆		4 4.9 204°02	5°9/ 29.2 17			48797	1997 <i>TV</i> ₁₂		4 4.9 335°48	0°4/ 5.3 18		
3 2	13 22.17	+11 26.1	2.325	3.171	10.9	21.5	3 2	13 17.62	- 9 17.6	2.039	2.871	12.8	19.3
3 12	13 16.24	+12 29.7	2.254	3.166	8.5	21.4	3 12	13 13.15	- 8 54.9	1.958	2.870	9.6	19.1
3 22	13 8.56	+13 29.9	2.209	3.159	6.5	21.2	3 22	13 6.83	- 8 20.1	1.901	2.869	5.9	18.8
4 1	12 59.76	+14 20.1	2.192	3.152	6.0	21.2	4 1	12 59.31	- 7 36.4	1.871	2.867	1.8	18.6
4 11	12 50.65	+14 54.8	2.204	3.145	7.5	21.2	4 11	12 51.43	- 6 48.7	1.869	2.866	2.4	18.6
4 21	12 42.07	+15 10.4	2.243	3.137	9.9	21.4	4 21	12 44.07	- 6 2.5	1.895	2.865	6.4	18.9
5 1	12 34.77	+15 5.6	2.306	3.127	12.5	21.5	5 1	12 38.02	- 5 23.1	1.947	2.864	10.1	19.1
5 11	12 29.26	+14 41.5	2.389	3.118	14.7	21.7	5 11	12 33.84	- 4 54.5	2.022	2.863	13.3	19.3
370737	2004 <i>RU</i> ₁₂₅		4 4.9 99°99	2°1/ 2.4 18			280384	2003 <i>UW</i> ₁₁₈		4 4.9 174°92	0°8/ 5.7 17		
3 2	13 18.44	- 3 35.1	2.074	2.919	12.1	21.6	3 2	13 19.23	-10 18.2	2.291	3.111	12.0	21.2
3 12	13 13.47	- 2 19.0	2.019	2.941	8.7	21.5	3 12	13 14.14	- 9 59.5	2.208	3.113	9.0	21.0
3 22	13 6.85	- 0 54.7	1.989	2.962	5.1	21.3	3 22	13 7.35	- 9 29.4	2.150	3.114	5.6	20.8
4 1	12 59.25	+ 0 31.1	1.988	2.983	2.2	21.1	4 1	12 59.45	- 8 50.4	2.119	3.115	2.0	20.5
4 11	12 51.52	+ 1 51.4	2.016	3.003	4.0	21.3	4 11	12 51.23	- 8 6.9	2.118	3.115	2.2	20.5
4 21	12 44.45	+ 3 0.1	2.073	3.023	7.5	21.5	4 21	12 43.51	- 7 23.4	2.146	3.116	5.8	20.8
5 1	12 38.73	+ 3 52.8	2.156	3.043	10.7	21.8	5 1	12 36.99	- 6 44.8	2.201	3.116	9.2	21.0
5 11	12 34.81	+ 4 27.5	2.261	3.062	13.4	22.0	5 11	12 32.21	- 6 15.1	2.279	3.115	12.2	21.2
154681	2004 <i>GX</i> ₃₇		4 4.9 5°21	4°7/ 1.6 18			200987	2002 <i>CQ</i> ₁₃₃		4 4.9 63°38	1°0/ 5.6 18		
3 2	13 21.19	+ 1 10.2	1.216	2.090	16.8	19.8	3 2	13 22.58	-10 21.1	1.321	2.166	17.6	19.9
3 12	13 16.71	+ 2 9.0	1.155	2.090	12.4	19.6	3 12	13 17.42	-10 5.3	1.267	2.184	13.2	19.7
3 22	13 9.34	+ 3 15.2	1.115	2.090	7.7	19.3	3 22	13 9.58	- 9 31.8	1.233	2.202	8.1	19.4
4 1	13 0.04	+ 4 19.1	1.099	2.090	4.7	19.1	4 1	13 0.09	- 8 44.9	1.224	2.220	2.8	19.2
4 11	12 50.24	+ 5 10.3	1.107	2.091	7.2	19.3	4 11	12 50.32	- 7 52.1	1.241	2.239	3.1	19.2
4 21	12 41.41	+ 5 41.0	1.140	2.092	11.9	19.5	4 21	12 41.61	- 7 1.5	1.283	2.257	8.3	19.6
5 1	12 34.76	+ 5 46.9	1.193	2.093	16.5	19.8	5 1	12 35.05	- 6 20.7	1.349	2.276	12.9	19.9
5 11	12 31.04	+ 5 27.8	1.264	2.095	20.3	20.0	5 11	12 31.23	- 5 54.5	1.435	2.294	16.8	20.2
366225	2012 <i>TA</i> ₂₈₇		4 4.9 147°80	1°5/ 2.9 18			493566	2015 <i>KW</i> ₄₀		4 4.9 232°81	4°8/ 30.2 17		
3 2	13 15.92	- 4 27.4	2.388	3.230	10.8	21.0	3 2	13 17.91	+ 8 48.5	2.496	3.348	10.1	21.6
3 12	13 11.57	- 3 27.0	2.314	3.234	7.9	20.8	3 12	13 13.01	+ 9 38.4	2.425	3.344	7.6	21.4
3 22	13 5.73	- 2 18.3	2.266	3.238	4.6	20.6	3 22	13 6.60	+10 26.5	2.380	3.339	5.5	21.2
4 1	12 58.95	- 1 6.1	2.246	3.243	1.7	20.4	4 1	12 59.23	+11 7.6	2.363	3.334	4.8	21.2
4 11	12 51.95	+ 0 3.8	2.256	3.246	3.3	20.5	4 11	12 51.61	+11 36.7	2.375	3.330	6.2	21.3
4 21	12 45.41	+ 1 6.0	2.295	3.250	6.6	20.8	4 21	12 44.45	+11 50.9	2.413	3.325	8.6	21.4
5 1	12 39.98	+ 1 56.3	2.361	3.253	9.7	21.0	5 1	12 38.38	+11 48.3	2.477	3.320	11.1	21.6
5 11	12 36.10	+ 2 31.8	2.449	3.257	12.3	21.1	5 11	12 33.88	+11 29.3	2.562	3.314	13.3	21.7
430246	2013 <i>WZ</i> ₁₁		4 4.9 182°48	3°7/ 31.9 17			324528	2006 <i>VA</i> ₁₂₈		4 4.9 262°11	0°6/ 4.5 18		
3 2	13 20.65	+ 4 34.2	2.432	3.278	10.5	21.7	3 2	13 23.01	- 5 36.0	1.760	2.601	14.1	20.5
3 12	13 15.01	+ 5 18.2	2.360	3.279	7.8	21.5	3 12	13 17.56	- 5 25.8	1.669	2.587	10.5	20.2
3 22	13 7.78	+ 6 3.2	2.313	3.279	5.1	21.3	3 22	13 9.72	- 5 5.7	1.601	2.572	6.4	20.0
4 1	12 59.53	+ 6 44.2	2.295	3.279	3.7	21.2	4 1	13 0.19	- 4 39.1	1.560	2.558	1.8	19.6
4 11	12 51.04	+ 7 16.4	2.307	3.278	5.1	21.3	4 11	12 50.03	- 4 11.0	1.547	2.543	3.2	19.7
4 21	12 43.04	+ 7 36.2	2.347	3.277	7.9	21.5	4 21	12 40.38	- 3 46.8	1.561	2.527	7.9	19.9
5 1	12 36.22	+ 7 41.5	2.413	3.275	10.7	21.7	5 1	12 32.29	- 3 31.5	1.600	2.512	12.3	20.2
5 11	12 31.06	+ 7 31.7	2.501	3.272	13.1	21.8	5 11	12 26.55	- 3 28.7	1.661	2.497	16.0	20.4
16424	Davaine		4 4.9 110°43	1°1/ 3.9 18			4428	Khotinok		4 4.9 282°12	3°3/ 2.2 18		
3 2													

EPHEMERIDES

4 4.9

4 4.9

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
296038	2008 YC ₁₇₂	4 4.9 336°79	5°4/30.2	17			274280	2008 PQ ₂₁	4 4.9 165°18	1°9/2.8	17		
3 2	13 16.26	+ 6 42.1	1.893	2.758	12.1	20.1	3 2	13 20.69	- 1 13.3	2.485	3.322	10.6	21.2
3 12	13 12.24	+ 7 50.8	1.824	2.752	9.1	19.9	3 12	13 15.01	- 0 41.1	2.410	3.327	7.7	21.0
3 22	13 6.32	+ 9 0.0	1.781	2.746	6.4	19.7	3 22	13 7.79	- 0 4.2	2.361	3.332	4.6	20.8
4 1	12 59.18	+10 2.3	1.764	2.740	5.5	19.7	4 1	12 59.58	+ 0 33.4	2.342	3.336	2.0	20.6
4 11	12 51.70	+10 50.5	1.773	2.735	7.3	19.8	4 11	12 51.14	+ 1 7.3	2.352	3.340	3.5	20.7
4 21	12 44.79	+11 19.6	1.808	2.730	10.3	19.9	4 21	12 43.19	+ 1 33.8	2.392	3.343	6.6	20.9
5 1	12 39.25	+11 27.1	1.867	2.726	13.4	20.1	5 1	12 36.40	+ 1 49.8	2.459	3.346	9.6	21.1
5 11	12 35.63	+11 13.1	1.944	2.722	16.1	20.3	5 11	12 31.23	+ 1 53.8	2.549	3.348	12.2	21.3
175421	2006 PB ₂₂	4 4.9 321°80	2°7/3.0	17			156783	2003 AB ₉₀	4 4.9 120°63	1°8/3.5	18		
3 2	13 18.18	- 2 36.7	1.258	2.130	16.5	19.6	3 2	13 26.76	- 3 17.3	1.642	2.484	14.9	20.3
3 12	13 14.67	- 2 0.4	1.178	2.113	12.3	19.3	3 12	13 20.01	- 2 44.0	1.584	2.504	10.9	20.1
3 22	13 8.30	- 1 12.2	1.119	2.095	7.4	19.0	3 22	13 10.95	- 2 2.4	1.550	2.522	6.4	19.9
4 1	12 59.84	- 0 18.7	1.083	2.079	2.9	18.7	4 1	13 0.48	- 1 17.9	1.544	2.540	2.2	19.6
4 11	12 50.59	+ 0 30.9	1.071	2.063	5.4	18.8	4 11	12 49.80	- 0 37.1	1.565	2.557	4.1	19.8
4 21	12 41.99	+ 1 7.8	1.083	2.048	10.8	19.0	4 21	12 40.07	- 0 5.9	1.614	2.573	8.5	20.1
5 1	12 35.38	+ 1 25.5	1.117	2.034	15.9	19.2	5 1	12 32.24	+ 0 11.6	1.689	2.589	12.5	20.3
5 11	12 31.66	+ 1 20.6	1.169	2.021	20.3	19.5	5 11	12 26.88	+ 0 13.6	1.784	2.603	15.8	20.6
342913	2008 YM ₁₅₃	4 4.9 228°08	0°5/5.4	17			363847	2005 QN ₈₃	4 4.9 199°73	0°9/3.6	18		
3 2	13 18.09	- 9 44.3	2.421	3.243	11.4	21.6	3 2	13 15.04	- 6 1.4	2.783	3.616	9.7	21.2
3 12	13 13.29	- 9 19.3	2.328	3.234	8.5	21.4	3 12	13 10.80	- 5 6.0	2.698	3.613	7.1	21.1
3 22	13 6.86	- 8 43.3	2.260	3.225	5.3	21.1	3 22	13 5.25	- 4 2.2	2.639	3.610	4.2	20.9
4 1	12 59.33	- 7 58.9	2.220	3.216	1.7	20.9	4 1	12 58.87	- 2 53.8	2.609	3.606	1.2	20.6
4 11	12 51.45	- 7 10.4	2.210	3.207	2.1	20.9	4 11	12 52.25	- 1 45.7	2.610	3.603	2.6	20.7
4 21	12 43.96	- 6 22.4	2.228	3.197	5.7	21.1	4 21	12 45.99	- 0 42.5	2.640	3.599	5.6	20.9
5 1	12 37.57	- 5 39.7	2.274	3.187	9.1	21.3	5 1	12 40.66	+ 0 11.6	2.698	3.594	8.5	21.1
5 11	12 32.81	- 5 6.3	2.344	3.176	12.0	21.5	5 11	12 36.67	+ 0 53.7	2.781	3.590	11.0	21.3
222752	2002 CA ₁₇	4 4.9 98°66	0°6/4.4	17			282787	2006 KL ₈₂	4 4.9 339°81	3°0/8.4	17		
3 2	13 20.41	- 6 16.2	1.826	2.667	13.6	20.5	3 2	13 14.82	-19 34.4	1.897	2.698	14.8	20.4
3 12	13 15.32	- 5 52.5	1.755	2.673	10.1	20.3	3 12	13 11.30	-18 44.4	1.810	2.695	11.7	20.2
3 22	13 8.17	- 5 18.3	1.707	2.678	6.0	20.1	3 22	13 5.82	-17 30.3	1.744	2.692	8.1	19.9
4 1	12 59.70	- 4 37.7	1.686	2.683	1.6	19.8	4 1	12 59.07	-15 54.9	1.704	2.690	4.5	19.7
4 11	12 50.90	- 3 56.5	1.693	2.689	3.0	19.9	4 11	12 51.94	-14 4.6	1.693	2.687	3.2	19.6
4 21	12 42.76	- 3 20.1	1.727	2.694	7.3	20.2	4 21	12 45.39	-12 8.2	1.709	2.685	6.4	19.8
5 1	12 36.15	- 2 53.4	1.787	2.699	11.2	20.4	5 1	12 40.23	-10 15.5	1.752	2.683	10.2	20.0
5 11	12 31.65	- 2 39.7	1.869	2.704	14.5	20.6	5 11	12 37.05	- 8 35.0	1.819	2.682	13.6	20.2
1507	Vaasa	4 4.9 234°05	5°3/9.6	18			27231	1999 JM ₅₇	4 4.9 82°67	2°8/8.4	18		
3 2	13 23.20	-22 20.2	2.017	2.785	15.2	18.2	3 2	13 17.52	-19 1.1	2.340	3.126	12.8	17.8
3 12	13 17.66	-22 33.9	1.912	2.771	12.5	18.0	3 12	13 12.74	-18 25.1	2.275	3.151	10.0	17.6
3 22	13 9.79	-22 26.7	1.829	2.756	9.4	17.7	3 22	13 6.42	-17 31.6	2.233	3.177	6.9	17.5
4 1	13 0.23	-21 57.5	1.772	2.740	6.5	17.5	4 1	12 59.19	-16 23.3	2.219	3.201	3.9	17.3
4 11	12 49.98	-21 8.0	1.741	2.723	5.3	17.4	4 11	12 51.83	-15 5.2	2.233	3.226	2.9	17.3
4 21	12 40.14	-20 3.2	1.739	2.705	7.3	17.5	4 21	12 45.08	-13 43.1	2.277	3.250	5.3	17.5
5 1	12 31.77	-18 50.6	1.763	2.687	10.6	17.6	5 1	12 39.58	-12 23.6	2.349	3.274	8.2	17.7
5 11	12 25.64	-17 38.8	1.811	2.668	14.0	17.8	5 11	12 35.76	-11 12.2	2.446	3.298	11.0	17.9
181322	2006 QZ ₆₇	4 4.9 145°40	1°4/3.6	16			278879	2008 TF ₇₁	4 4.9 256°83	2°5/2.5	17		
3 2	13 20.58	- 5 11.0	1.792	2.637	13.7	21.4	3 2	13 18.89	- 1 8.6	2.035	2.885	12.1	21.3
3 12	13 15.45	- 4 23.0	1.723	2.643	10.0	21.1	3 12	13 14.13	+ 0 25.0	1.951	2.875	8.9	21.0
3 22	13 8.25	- 3 24.2	1.677	2.649	5.9	20.9	3 22	13 7.48	+ 0 25.3	1.891	2.864	5.3	20.8
4 1	12 59.73	- 2 20.1	1.658	2.655	1.8	20.6	4 1	12 59.54	+ 1 17.2	1.859	2.853	2.5	20.6
4 11	12 50.88	- 1 17.7	1.667	2.660	3.7	20.8	4 11	12 51.20	+ 2 4.7	1.855	2.842	4.4	20.7
4 21	12 42.72	- 0 23.6	1.704	2.665	7.9	21.0	4 21	12 43.34	+ 2 42.3	1.879	2.831	8.0	20.9
5 1	12 36.12	+ 0 16.7	1.766	2.669	11.8	21.3	5 1	12 36.77	+ 3 5.9	1.929	2.820	11.6	21.1
5 11	12 31.66	+ 0 40.3	1.849	2.673	15.1	21.5	5 11	12 32.11	+ 3 13.4	1.999	2.808	14.7	21.3
439483	2013 YV ₁₁₁	4 4.9 217°77	9°6/13.6	18			124132	2001 KK ₅₇	4 4.9 274°49	5°1/31.7	17		
3 2	13 21.61	-32 1.6	1.333	2.086	22.3	21.1	3 2	13 20.85	+ 1 32.5	1.418	2.285	15.3	20.0
3 12	13 17.50	-31 58.9	1.246	2.081	19.3	20.8	3 12	13 16.46	+ 2 51.3	1.333	2.264	11.4	19.7
3 22	13 10.12	-31 14.2	1.174	2.076	15.7	20.6	3 22	13 9.32	+ 4 20.2	1.270	2.243	7.3	19.4
4 1	13 0.37	-29 42.6	1.123	2.070	12.0	20.4	4 1	13 0.15	+ 5 49.8	1.232	2.221	5.1	19.2
4 11	12 49.82	-27 26.3	1.094	2.063	9.7	20.2	4 11	12 50.18	+ 7 8.7	1.220	2.198	7.7	19.3
4 21	12 40.16	-24 36.5	1.089	2.056	10.5	20.2	4 21	12 40.78	+ 8 7.2	1.233	2.176	12.2	19.5
5 1	12 32.90	-21 31.3	1.110	2.048	13.9	20.4	5 1	12 33.21	+ 8 39.0	1.268	2.153	16.8	19.7
5 11	12 28.93	-18 30.6	1.152	2.040	18.0	20.6	5 11	12 28.36	+ 8 42.2	1.321	2.130	20.8	19.9
264492	2001 PZ ₄₈	4 4.9 185°74	0°2/4.7	17			351510	2005 RF ₄₁	4 4.9 209°59	2°3/7.5	17		
3 2	13 24.28	- 6 4.5	2.228	3.053	12.1	21.0	3 2	13 18.65	-15 2.1	2.632	3.428	11.3	21.5
3 12	13 17.91	- 5 57.2	2.144	3.053	9.0	20.8	3 12	13 13.62	-15 5.0	2.539	3.424	8.8	21.3
3 22	13 9.64	- 5 41.8	2.084	3.052	5.4	20.6	3 22	13 7.03	-14 55.7	2.471	3.421	5.9	21.1
4 1	13 0.13	- 5 21.1	2.054	3.051	1.5	20.3	4 1	12 59.41	-14 35.3	2.431	3.417	3.2	20.9
4 11	12 50.25	- 4 58.9	2.053	3.049	2.6	20.4	4 11	12 51.45	-14 6.5	2.420	3.413	2.6	20.9
4 21	12 40.88	- 4 39.2	2.082	3.047	6.4	20.6	4 21	12 43.87	-13 32.8	2.438	3.409	5.1	21.0
5 1	12 32.85	- 4 25.7	2.139	3.043	10.0	20.8	5 1	12 37.34	-12 58.4	2.484	3.405	8.1	21.2
5 11	12 26.74	- 4 21.3	2.219	3.040	13.0	21.0	5 11	12 32.36	-12 27.6	2.555	3.401	10.7	21.4
301092	2008 UG ₃₄₅	4 4.9 264°12	2°4/3.1	17			491032	2011 QH ₂	4 4.9 242°69	1°8/3.3	17		
3 2	13 24.12	- 2 23.6	1.548	2.399	15.1	21.5	3 2						

EPHEMERIDES

4 4.9

4 4.9

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
407892	2012 <i>BM</i> ₁₁₇		4 4.9 113°14	0°3/ 5.1 18			242215	2003 <i>RA</i> ₁₀		4 4.9 239°69	3°8/ 7.9 16		
3 2	13 22.17	- 9 28.9	1.743	2.575	14.6	22.8	3 2	13 24.58	-17 19.0	1.977	2.768	14.7	20.6
3 12	13 16.63	- 8 56.1	1.679	2.591	10.9	22.6	3 12	13 18.71	-17 35.9	1.873	2.753	11.7	20.4
3 22	13 8.95	- 8 9.3	1.639	2.606	6.6	22.4	3 22	13 10.48	-17 35.9	1.792	2.736	8.3	20.1
4 1	12 59.95	- 7 12.7	1.624	2.621	2.0	22.1	4 1	13 0.51	-17 18.5	1.737	2.719	4.9	19.9
4 11	12 50.69	- 6 12.7	1.638	2.635	2.8	22.2	4 11	12 49.81	-16 45.8	1.710	2.701	4.1	19.8
4 21	12 42.22	- 5 16.2	1.680	2.649	7.2	22.5	4 21	12 39.50	-16 2.5	1.712	2.682	7.0	19.9
5 1	12 35.43	- 4 29.4	1.747	2.663	11.2	22.7	5 1	12 30.64	-15 15.1	1.740	2.663	10.8	20.1
5 11	12 30.87	- 3 56.5	1.837	2.675	14.6	23.0	5 11	12 24.05	-14 30.7	1.791	2.643	14.4	20.3
193874	2001 <i>QA</i> ₁₆₁		4 4.9 147°53	0°7/ 5.5 18			178672	2000 <i>QS</i> ₁₇₈		4 4.9 115°10	4°7/ 28.8 18		
3 2	13 23.90	-10 20.1	1.682	2.511	15.2	21.1	3 2	13 15.94	+ 7 42.8	2.700	3.552	9.4	20.5
3 12	13 18.08	- 9 56.7	1.611	2.519	11.4	20.8	3 12	13 11.41	+ 9 22.8	2.650	3.569	7.0	20.4
3 22	13 9.92	- 9 18.0	1.562	2.528	7.1	20.6	3 22	13 5.60	+11 1.7	2.629	3.586	5.2	20.3
4 1	13 0.25	- 8 27.5	1.539	2.535	2.4	20.3	4 1	12 59.01	+12 33.3	2.637	3.602	4.8	20.3
4 11	12 50.20	- 7 31.4	1.545	2.542	2.8	20.4	4 11	12 52.29	+13 51.7	2.675	3.618	6.2	20.4
4 21	12 40.93	- 6 36.8	1.578	2.549	7.4	20.7	4 21	12 46.04	+14 53.0	2.741	3.634	8.4	20.6
5 1	12 33.42	- 5 50.2	1.637	2.554	11.7	20.9	5 1	12 40.79	+15 35.1	2.832	3.649	10.5	20.7
5 11	12 28.31	- 5 16.8	1.717	2.559	15.3	21.2	5 11	12 36.93	+15 58.1	2.944	3.664	12.4	20.9
377840	2006 <i>BU</i> ₁₄₈		4 4.9 204°54	6°3/ 28.1 17			436688	2011 <i>SU</i> ₁₈₅		4 4.9 268°96	1°0/ 6.2 17		
3 2	13 17.85	+10 10.0	2.144	3.002	11.2	20.3	3 2	13 15.61	-12 29.4	2.353	3.170	11.8	21.4
3 12	13 13.23	+11 46.8	2.080	2.999	8.7	20.2	3 12	13 11.56	-11 54.1	2.259	3.161	9.0	21.2
3 22	13 6.86	+13 22.1	2.042	2.996	6.7	20.0	3 22	13 5.89	-11 4.8	2.190	3.152	5.7	21.0
4 1	12 59.37	+14 47.5	2.032	2.992	6.5	20.0	4 1	12 59.14	-10 4.4	2.148	3.142	2.2	20.7
4 11	12 51.58	+15 55.9	2.050	2.987	8.2	20.1	4 11	12 52.05	- 8 57.5	2.135	3.133	2.1	20.7
4 21	12 44.32	+16 42.5	2.093	2.983	10.7	20.3	4 21	12 45.35	- 7 49.7	2.151	3.123	5.6	20.9
5 1	12 38.32	+17 5.0	2.160	2.978	13.3	20.4	5 1	12 39.74	- 6 46.8	2.194	3.113	9.1	21.1
5 11	12 34.12	+17 4.3	2.245	2.973	15.6	20.6	5 11	12 35.76	- 5 53.5	2.261	3.104	12.1	21.3
187277	2005 <i>TA</i> ₅₃		4 4.9 240°76	4°3/ 1.0 17			37421	2001 <i>XC</i> ₂₁₇		4 4.9 153°99	2°3/ 1.9 18		
3 2	13 23.49	+ 4 58.4	2.047	2.896	12.1	21.9	3 2	13 17.18	+ 0 29.3	2.785	3.627	9.4	20.2
3 12	13 17.55	+ 5 37.8	1.962	2.882	9.0	21.7	3 12	13 12.32	+ 1 13.0	2.714	3.634	6.8	20.1
3 22	13 9.57	+ 6 18.4	1.901	2.868	6.0	21.5	3 22	13 6.15	+ 2 0.1	2.670	3.640	4.2	19.9
4 1	13 0.18	+ 6 54.5	1.868	2.853	4.3	21.3	4 1	12 59.18	+ 2 46.4	2.654	3.646	2.3	19.8
4 11	12 50.32	+ 7 20.1	1.864	2.837	6.0	21.4	4 11	12 52.02	+ 3 27.9	2.669	3.651	3.7	19.9
4 21	12 40.97	+ 7 31.1	1.888	2.821	9.3	21.5	4 21	12 45.28	+ 4 0.8	2.713	3.656	6.3	20.1
5 1	12 33.00	+ 7 24.9	1.937	2.805	12.6	21.7	5 1	12 39.51	+ 4 22.7	2.784	3.661	8.9	20.2
5 11	12 27.08	+ 7 1.2	2.007	2.788	15.6	21.9	5 11	12 35.13	+ 4 32.2	2.878	3.665	11.2	20.4
338663	2003 <i>SZ</i> ₃₅₂		4 4.9 313°54	3°9/ 8.3 17			500919	2013 <i>PJ</i> ₂₅		4 4.9 261°47	0°6/ 5.5 17		
3 2	13 20.06	-17 29.4	1.881	2.683	14.9	21.1	3 2	13 20.03	-10 32.3	1.880	2.709	13.9	21.9
3 12	13 15.29	-17 46.3	1.794	2.679	11.9	20.9	3 12	13 15.31	-10 1.6	1.780	2.689	10.5	21.7
3 22	13 8.32	-17 45.6	1.729	2.674	8.4	20.7	3 22	13 8.40	- 9 15.1	1.703	2.669	6.6	21.4
4 1	12 59.84	-17 27.3	1.689	2.670	5.1	20.5	4 1	12 59.91	- 8 15.9	1.652	2.649	2.2	21.1
4 11	12 50.84	-16 54.3	1.676	2.666	4.1	20.4	4 11	12 50.80	- 7 9.5	1.630	2.628	2.7	21.0
4 21	12 42.36	-16 11.4	1.690	2.662	6.8	20.6	4 21	12 42.09	- 6 3.0	1.636	2.606	7.2	21.3
5 1	12 35.37	-15 25.5	1.729	2.659	10.4	20.8	5 1	12 34.79	- 5 3.5	1.667	2.584	11.5	21.5
5 11	12 30.58	-14 43.0	1.792	2.655	13.8	21.0	5 11	12 29.63	- 4 16.9	1.721	2.562	15.3	21.7
438214	2005 <i>UR</i> ₂₄₂		4 4.9 265°68	7°1/ 14.8 16			231334	2006 <i>DJ</i> ₁₈₄		4 4.9 123°89	0°7/ 4.3 17		
3 2	13 17.36	-34 30.2	2.764	3.442	13.5	21.5	3 2	13 20.94	- 5 20.1	2.042	2.879	12.6	20.6
3 12	13 12.92	-34 34.1	2.648	3.423	11.9	21.3	3 12	13 15.54	- 5 1.9	1.969	2.885	9.3	20.4
3 22	13 6.75	-34 15.6	2.552	3.405	10.0	21.1	3 22	13 8.27	- 4 35.3	1.921	2.891	5.5	20.2
4 1	12 59.37	-33 32.8	2.479	3.386	8.3	21.0	4 1	12 59.81	- 4 3.9	1.900	2.897	1.5	19.9
4 11	12 51.56	-32 26.5	2.431	3.367	7.2	20.9	4 11	12 51.05	- 3 32.4	1.907	2.903	2.9	20.0
4 21	12 44.12	-31 0.1	2.411	3.347	7.4	20.9	4 21	12 42.88	- 3 5.5	1.944	2.908	6.8	20.3
5 1	12 37.80	-29 19.4	2.418	3.328	8.8	20.9	5 1	12 36.11	- 2 47.1	2.006	2.913	10.4	20.5
5 11	12 33.20	-27 32.2	2.451	3.308	10.8	21.0	5 11	12 31.26	- 2 39.9	2.091	2.919	13.5	20.7
271678	2004 <i>RO</i> ₇₇		4 4.9 209°06	1°4/ 3.4 18			71002	1999 <i>XO</i> ₃₇		4 4.9 224°97	7°4/ 26.1 18		
3 2	13 20.70	- 3 15.3	2.325	3.161	11.3	21.2	3 2	13 19.61	+17 1.9	2.427	3.271	10.6	19.5
3 12	13 15.24	- 2 44.6	2.239	3.155	8.3	21.0	3 12	13 14.42	+18 26.5	2.362	3.261	8.7	19.3
3 22	13 8.06	- 2 7.0	2.178	3.149	4.9	20.8	3 22	13 7.56	+19 44.5	2.322	3.250	7.6	19.2
4 1	12 59.73	- 1 26.5	2.146	3.142	1.7	20.6	4 1	12 59.61	+20 48.7	2.309	3.239	7.7	19.2
4 11	12 51.05	- 0 47.7	2.143	3.135	3.2	20.7	4 11	12 51.35	+21 33.2	2.323	3.227	9.1	19.3
4 21	12 42.82	- 0 15.1	2.170	3.127	6.8	20.9	4 21	12 43.57	+21 54.8	2.363	3.214	11.1	19.4
5 1	12 35.77	+ 0 7.5	2.223	3.118	10.1	21.1	5 1	12 36.96	+21 52.7	2.425	3.201	13.2	19.5
5 11	12 30.46	+ 0 17.8	2.300	3.109	13.0	21.2	5 11	12 32.06	+21 28.5	2.505	3.187	15.1	19.7
399388	2001 <i>SL</i> ₁₆₉		4 4.9 267°92	3°5/ 7.5 17			502694	2015 <i>DN</i> ₉		4 4.9 117°01	0°6/ 5.5 18		
3 2	13 22.38	-15 59.4	1.565	2.381	16.8	21.5	3 2	13 21.02	- 9 57.6	2.075	2.898	12.9	22.1
3 12	13 17.62	-16 1.0	1.464	2.360	13.3	21.3	3 12	13 15.53	- 9 34.4	2.007	2.913	9.7	21.9
3 22	13 10.08	-15 41.4	1.384	2.338	9.1	21.0	3 22	13 8.22	- 8 59.2	1.962	2.928	5.9	21.7
4 1	13 0.43	-15 0.7	1.328	2.316	4.9	20.7	4 1	12 59.79	- 8 15.1	1.946	2.942	2.0	21.4
4 11	12 49.85	-14 2.6	1.298	2.293	4.0	20.5	4 11	12 51.12	- 7 27.0	1.958	2.956	2.3	21.5
4 21	12 39.69	-12 54.3	1.295	2.270	8.1	20.7	4 21	12 43.10	- 6 40.4	1.999	2.969	6.2	21.7
5 1	12 31.27	-11 45.1	1.316	2.246	12.9	20.9	5 1	12 36.47	- 6 0.3	2.067	2.982	9.8	22.0
5 11	12 25.55	-10 44.4	1.358	2.222	17.3	21.1	5 11	12 31.76	- 5 30.6	2.158	2.994	12.8	22.2
90761	1993 <i>SW</i> ₁₃		4 4.9 110°00	2°3/ 6.6 18			269297	2008 <i>SC</i> ₆₈		4 4.9 261°06	2°		

EPHEMERIDES

4 4.9

4 4.9

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
54506	2000 <i>OA</i> ₅₇		4 4.9 127°09	4.6/10.4	18		116093	2003 <i>WK</i> ₁₂₆		4 4.9 258°11	7.2/28.0	18	
3 2	13 20.46	-23 28.9	2.702	3.450	12.2	19.6	3 2	13 19.53	+14 15.1	2.123	2.976	11.5	19.2
3 12	13 14.95	-23 48.9	2.619	3.462	10.0	19.4	3 12	13 14.50	+15 23.0	2.061	2.972	9.2	19.0
3 22	13 7.83	-23 52.8	2.559	3.473	7.7	19.3	3 22	13 7.66	+16 24.8	2.023	2.967	7.5	18.9
4 1	12 59.69	-23 40.3	2.526	3.483	5.5	19.2	4 1	12 59.67	+17 13.3	2.012	2.962	7.3	18.9
4 11	12 51.25	-23 13.2	2.521	3.494	4.6	19.1	4 11	12 51.40	+17 42.5	2.028	2.957	8.8	19.0
4 21	12 43.26	-22 34.7	2.544	3.504	5.7	19.2	4 21	12 43.70	+17 49.4	2.069	2.952	11.1	19.1
5 1	12 36.41	-21 49.8	2.596	3.514	7.9	19.4	5 1	12 37.34	+17 33.3	2.132	2.947	13.6	19.3
5 11	12 31.19	-21 3.6	2.672	3.523	10.2	19.5	5 11	12 32.86	+16 55.8	2.215	2.942	15.8	19.4
406533	2007 <i>VL</i> ₃₁₅		4 4.9 164°28	0.9/5.7	18		288671	2004 <i>PQ</i> ₇₀		4 4.9 226°31	2.8/2.0	17	
3 2	13 22.48	-11 1.8	1.980	2.799	13.6	22.0	3 2	13 19.26	-0 31.1	2.053	2.903	12.0	21.0
3 12	13 16.78	-10 35.8	1.901	2.805	10.3	21.8	3 12	13 14.40	+0 23.7	1.972	2.896	8.8	20.8
3 22	13 9.07	-9 55.6	1.847	2.810	6.4	21.6	3 22	13 7.67	+1 25.1	1.916	2.888	5.3	20.6
4 1	13 0.06	-9 4.4	1.820	2.815	2.3	21.3	4 1	12 59.69	+2 27.3	1.887	2.880	2.9	20.4
4 11	12 50.69	-8 7.5	1.821	2.819	2.5	21.3	4 11	12 51.33	+3 24.0	1.888	2.871	4.7	20.5
4 21	12 41.94	-7 11.1	1.852	2.822	6.6	21.6	4 21	12 43.47	+4 9.4	1.916	2.863	8.2	20.7
5 1	12 34.67	-6 21.0	1.909	2.824	10.4	21.8	5 1	12 36.92	+4 39.5	1.969	2.854	11.7	20.9
5 11	12 29.47	-5 42.2	1.989	2.826	13.7	22.0	5 11	12 32.25	+4 52.1	2.044	2.844	14.7	21.0
202828	2008 <i>SS</i> ₁₅₅		4 4.9 178°66	2.8/2.3	18		74962	1999 <i>TW</i> ₂₀₀		4 4.9 246°34	2.4/7.0	18	
3 2	13 22.20	-2 16.6	1.710	2.560	14.0	21.0	3 2	13 22.46	-14 36.1	1.952	2.759	14.2	20.4
3 12	13 16.81	-1 8.8	1.639	2.563	10.2	20.8	3 12	13 17.12	-14 27.3	1.848	2.741	11.1	20.1
3 22	13 9.18	+0 8.9	1.591	2.564	6.1	20.5	3 22	13 9.52	-14 1.6	1.767	2.722	7.4	19.8
4 1	13 0.10	+1 29.1	1.571	2.565	2.9	20.3	4 1	13 0.28	-13 19.9	1.713	2.703	3.6	19.6
4 11	12 50.63	+2 43.4	1.578	2.565	5.1	20.5	4 11	12 50.36	-12 26.2	1.686	2.682	3.0	19.5
4 21	12 41.86	+3 44.3	1.613	2.564	9.2	20.7	4 21	12 40.83	-11 26.4	1.688	2.661	6.8	19.7
5 1	12 34.74	+4 26.5	1.673	2.562	13.1	20.9	5 1	12 32.71	-10 27.6	1.717	2.639	10.9	19.9
5 11	12 29.91	+4 47.7	1.753	2.560	16.5	21.1	5 11	12 26.77	-9 36.5	1.769	2.617	14.6	20.0
390420	2013 <i>YN</i> ₃₂		4 4.9 111°24	4.3/30.5	17		157814	1995 <i>WU</i> ₂₈		4 4.9 184°70	4.7/31.1	18	
3 2	13 16.99	+5 37.6	2.408	3.263	10.3	21.3	3 2	13 21.97	+7 30.7	2.275	3.123	11.0	20.3
3 12	13 12.32	+6 52.1	2.354	3.277	7.6	21.2	3 12	13 16.14	+8 15.9	2.205	3.123	8.3	20.2
3 22	13 6.20	+8 6.9	2.326	3.290	5.2	21.1	3 22	13 8.58	+8 59.9	2.161	3.123	5.8	20.0
4 1	12 59.21	+9 15.9	2.327	3.304	4.3	21.0	4 1	12 59.93	+9 37.1	2.146	3.122	4.7	19.9
4 11	12 52.06	+10 13.5	2.356	3.317	5.8	21.1	4 11	12 51.01	+10 2.2	2.159	3.121	6.2	20.0
4 21	12 45.45	+10 55.7	2.413	3.330	8.3	21.3	4 21	12 42.65	+10 12.1	2.199	3.119	8.9	20.2
5 1	12 39.97	+11 20.2	2.496	3.343	10.8	21.5	5 1	12 35.57	+10 5.1	2.265	3.117	11.6	20.4
5 11	12 36.04	+11 26.9	2.599	3.355	13.0	21.7	5 11	12 30.29	+9 41.6	2.353	3.115	14.1	20.5
110176	2001 <i>SS</i> ₁₇₃		4 4.9 54°56	3.1/2.9	18		279821	2000 <i>QQ</i> ₁₀₃		4 4.9 275°95	0.3/5.2	18	
3 2	13 26.57	+1 52.4	1.601	2.453	14.7	19.2	3 2	13 22.73	-7 46.5	1.901	2.732	13.6	20.5
3 12	13 20.08	+1 54.4	1.537	2.461	10.8	19.0	3 12	13 17.36	-7 44.3	1.799	2.710	10.3	20.2
3 22	13 11.14	+1 58.3	1.497	2.468	6.6	18.7	3 22	13 9.69	-7 31.5	1.719	2.687	6.4	19.9
4 1	13 0.66	+1 59.4	1.483	2.476	3.2	18.5	4 1	13 0.34	-7 10.1	1.667	2.664	2.0	19.6
4 11	12 49.84	+1 52.9	1.497	2.484	5.0	18.7	4 11	12 50.27	-6 44.4	1.643	2.640	2.7	19.6
4 21	12 39.91	+1 35.6	1.537	2.493	9.1	18.9	4 21	12 40.56	-6 19.3	1.647	2.616	7.3	19.8
5 1	12 31.88	+1 5.9	1.602	2.501	13.1	19.2	5 1	12 32.25	-5 59.8	1.677	2.592	11.6	20.0
5 11	12 26.38	+0 23.4	1.689	2.510	16.4	19.4	5 11	12 26.14	-5 50.2	1.729	2.568	15.3	20.2
214400	2005 <i>NW</i> ₄₇		4 4.9 118°59	5.7/28.6	18		16404	1985 <i>CM</i> ₁		4 4.9 351°00	3.9/1.9	18	
3 2	13 17.32	+11 31.7	2.458	3.311	10.1	20.3	3 2	13 17.89	-1 21.4	1.215	2.091	16.7	17.1
3 12	13 12.57	+12 42.2	2.405	3.319	7.9	20.2	3 12	13 14.36	-0 15.9	1.151	2.088	12.3	16.8
3 22	13 6.36	+13 48.7	2.377	3.328	6.1	20.1	3 22	13 8.05	+1 1.3	1.108	2.085	7.4	16.6
4 1	12 59.27	+14 45.2	2.378	3.336	5.8	20.1	4 1	12 59.85	+2 20.5	1.088	2.082	3.9	16.3
4 11	12 52.01	+15 26.6	2.407	3.344	7.2	20.2	4 11	12 51.12	+3 30.7	1.093	2.081	6.5	16.5
4 21	12 45.27	+15 49.9	2.462	3.352	9.3	20.3	4 21	12 43.26	+4 22.2	1.122	2.079	11.4	16.7
5 1	12 39.65	+15 53.8	2.540	3.359	11.5	20.5	5 1	12 37.46	+4 49.1	1.172	2.079	16.1	17.0
5 11	12 35.61	+15 39.3	2.639	3.367	13.5	20.6	5 11	12 34.46	+4 49.6	1.239	2.079	20.1	17.3
414081	2007 <i>TV</i> ₁₂₂		4 4.9 262°59	0.5/4.5	16		379292	2009 <i>VB</i> ₄₃		4 4.9 174°70	0.0/4.7	17	
3 2	13 19.89	-8 20.3	1.623	2.467	15.0	21.6	3 2	13 18.96	-9 6.5	2.329	3.153	11.7	22.6
3 12	13 15.47	-7 33.0	1.532	2.450	11.2	21.4	3 12	13 13.94	-8 21.6	2.248	3.156	8.7	22.4
3 22	13 8.61	-6 28.9	1.462	2.434	6.8	21.1	3 22	13 7.28	-7 25.1	2.191	3.158	5.2	22.2
4 1	13 0.02	-5 12.5	1.419	2.416	1.9	20.7	4 1	12 59.57	-6 20.6	2.163	3.160	1.5	22.0
4 11	12 50.76	-3 51.7	1.403	2.399	3.4	20.8	4 11	12 51.57	-5 13.5	2.164	3.161	2.3	22.0
4 21	12 42.01	-2 35.3	1.414	2.381	8.5	21.0	4 21	12 44.06	-4 9.5	2.195	3.161	6.0	22.3
5 1	12 34.88	-1 31.7	1.449	2.363	13.2	21.2	5 1	12 37.73	-3 13.6	2.254	3.161	9.4	22.5
5 11	12 30.16	-0 46.4	1.505	2.345	17.2	21.4	5 11	12 33.10	-2 29.9	2.336	3.160	12.3	22.7
90292	2003 <i>EN</i> ₂₁		4 4.9 301°63	0.5/4.4	18		300925	2008 <i>CO</i> ₆₈		4 4.9 98°60	5.3/29.1	17	
3 2	13 16.97	-8 11.8	1.675	2.521	14.4	19.3	3 2	13 16.31	+9 31.9	2.398	3.254	10.2	20.5
3 12	13 13.13	-7 23.0	1.590	2.511	10.7	19.1	3 12	13 11.89	+10 45.2	2.342	3.261	7.8	20.4
3 22	13 7.10	-6 18.4	1.529	2.501	6.4	18.8	3 22	13 5.99	+11 56.1	2.311	3.268	5.9	20.3
4 1	12 59.56	-5 3.2	1.494	2.491	1.8	18.5	4 1	12 59.18	+12 58.4	2.309	3.274	5.4	20.2
4 11	12 51.51	-3 44.9	1.486	2.482	3.3	18.6	4 11	12 52.19	+13 46.6	2.335	3.281	6.9	20.3
4 21	12 44.03	-2 31.8	1.504	2.472	8.0	18.8	4 21	12 45.70	+14 17.3	2.387	3.287	9.2	20.5
5 1	12 38.07	-1 31.4	1.547	2.463	12.4	19.0	5 1	12 40.34	+14 28.9	2.464	3.294	11.5	20.7
5 11	12 34.32	-0 48.8	1.612	2.454	16.1	19.3	5 11	12 36.54	+14 21.6	2.560	3.300	13.6	20.8
233667	2008 <i>RQ</i> ₂₅		4 4.9 187°91	0.7/5.6	17		317146	2001 <i>UG</i> ₁₉₀		4 4.9 296°08	2.8/6.7	18	
3 2	13 20.01	-9 51.3	2.217	3.039	1								

EPHEMERIDES

4 4.9

4 4.9

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
496196	2011 <i>HN</i> ₅₈		4 4.9 115°61	8°4/27.4	17		301514	2009 <i>FQ</i> ₈		4 4.9 269°09	1°7/ 3.1	17	
3 2	13 22.95	+18 37.4	2.087	2.929	12.1	20.6	3 2	13 17.75	- 2 32.8	2.290	3.134	11.1	21.1
3 12	13 16.92	+19 41.0	2.041	2.938	10.0	20.4	3 12	13 13.13	- 2 0.2	2.206	3.127	8.2	20.9
3 22	13 9.03	+20 33.8	2.020	2.947	8.6	20.4	3 22	13 6.86	- 1 21.3	2.148	3.120	4.8	20.6
4 1	13 0.05	+21 8.5	2.025	2.956	8.5	20.4	4 1	12 59.50	- 0 40.0	2.117	3.112	1.9	20.4
4 11	12 50.93	+21 20.3	2.056	2.964	9.9	20.5	4 11	12 51.80	- 0 1.2	2.115	3.105	3.4	20.5
4 21	12 42.56	+21 7.4	2.111	2.972	11.9	20.6	4 21	12 44.53	+ 0 30.6	2.141	3.098	6.9	20.7
5 1	12 35.71	+20 30.7	2.189	2.980	14.0	20.8	5 1	12 38.40	+ 0 51.8	2.193	3.090	10.1	20.9
5 11	12 30.87	+19 33.5	2.286	2.988	16.0	20.9	5 11	12 33.94	+ 1 0.2	2.268	3.083	13.0	21.1
367197	2007 <i>BC</i> ₃		4 4.9 106°29	2°5/ 2.6	18		37798	1997 <i>WU</i> ₂₄		4 4.9 109°58	0°5/ 4.5	18	
3 2	13 22.67	- 0 59.3	1.981	2.826	12.6	21.3	3 2	13 23.44	- 7 28.5	1.604	2.444	15.3	20.8
3 12	13 16.70	- 0 15.9	1.927	2.847	9.2	21.1	3 12	13 17.74	- 6 53.1	1.544	2.460	11.3	20.6
3 22	13 8.89	+ 0 32.8	1.897	2.868	5.4	20.9	3 22	13 9.74	- 6 4.5	1.506	2.476	6.7	20.4
4 1	13 0.01	+ 1 21.2	1.895	2.889	2.5	20.8	4 1	13 0.31	- 5 7.9	1.494	2.492	1.8	20.1
4 11	12 50.99	+ 2 3.6	1.922	2.909	4.3	20.9	4 11	12 50.62	- 4 10.4	1.510	2.507	3.2	20.2
4 21	12 42.73	+ 2 35.3	1.978	2.928	7.8	21.2	4 21	12 41.80	- 3 19.0	1.554	2.521	7.9	20.5
5 1	12 35.96	+ 2 53.2	2.059	2.947	11.1	21.4	5 1	12 34.81	- 2 39.7	1.622	2.535	12.1	20.8
5 11	12 31.18	+ 2 56.0	2.162	2.966	13.9	21.6	5 11	12 30.22	- 2 16.1	1.712	2.548	15.6	21.1
55967	1998 <i>KT</i> ₄₇		4 4.9 293°01	8°2/26.1	18		459670	2013 <i>LM</i> ₁₆		4 4.9 307°44	0°8/ 4.3	17	
3 2	13 19.35	+19 24.8	2.280	3.123	11.2	18.5	3 2	13 18.30	- 7 2.9	1.367	2.226	16.3	21.4
3 12	13 14.30	+20 32.1	2.221	3.116	9.4	18.3	3 12	13 14.68	- 6 27.2	1.281	2.208	12.2	21.1
3 22	13 7.52	+21 29.7	2.187	3.109	8.3	18.2	3 22	13 8.35	- 5 34.8	1.216	2.190	7.4	20.8
4 1	12 59.65	+22 10.8	2.178	3.102	8.4	18.2	4 1	13 0.03	- 4 30.7	1.175	2.173	2.1	20.4
4 11	12 51.52	+22 30.1	2.196	3.094	9.7	18.3	4 11	12 50.94	- 3 23.2	1.160	2.156	3.9	20.5
4 21	12 43.95	+22 25.4	2.237	3.087	11.7	18.4	4 21	12 42.42	- 2 21.7	1.169	2.140	9.5	20.7
5 1	12 37.67	+21 56.7	2.300	3.080	13.8	18.5	5 1	12 35.75	- 1 34.6	1.201	2.124	14.6	21.0
5 11	12 33.19	+21 6.6	2.382	3.074	15.6	18.7	5 11	12 31.80	- 1 7.6	1.253	2.108	19.0	21.2
294528	2007 <i>XN</i> ₃₂		4 4.9 18°80	3°7/ 8.7	17		471404	2011 <i>SO</i> ₁₈₈		4 4.9 177°92	1°3/ 6.7	17	
3 2	13 19.06	-18 37.0	2.268	3.055	13.1	20.4	3 2	13 16.57	-13 16.4	2.833	3.637	10.4	22.3
3 12	13 14.21	-18 51.1	2.181	3.056	10.5	20.2	3 12	13 11.98	-12 52.8	2.745	3.638	7.9	22.2
3 22	13 7.56	-18 49.5	2.117	3.056	7.5	20.0	3 22	13 6.05	-12 17.8	2.682	3.639	5.1	22.0
4 1	12 59.69	-18 32.3	2.079	3.057	4.7	19.8	4 1	12 59.26	-11 33.5	2.647	3.639	2.2	21.8
4 11	12 51.43	-18 2.0	2.069	3.057	3.8	19.8	4 11	12 52.22	-10 43.4	2.643	3.640	1.9	21.7
4 21	12 43.63	-17 22.8	2.087	3.058	5.9	19.9	4 21	12 45.55	- 9 51.6	2.668	3.639	4.7	21.9
5 1	12 37.07	-16 40.0	2.132	3.058	8.9	20.1	5 1	12 39.83	- 9 2.4	2.721	3.639	7.6	22.1
5 11	12 32.34	-15 59.3	2.201	3.059	11.8	20.3	5 11	12 35.48	- 8 19.6	2.800	3.638	10.1	22.3
213775	2003 <i>DK</i> ₁₇		4 4.9 14°11	5°3/29.7	17		236717	2007 <i>GL</i> ₈		4 4.9 89°72	0°0/ 4.8	18	
3 2	13 15.33	+ 6 35.8	2.035	2.899	11.5	20.1	3 2	13 22.87	- 9 11.6	1.341	2.188	17.3	21.5
3 12	13 11.44	+ 7 59.0	1.974	2.901	8.6	19.9	3 12	13 17.73	- 8 36.4	1.283	2.202	12.9	21.3
3 22	13 5.85	+ 9 22.8	1.939	2.903	6.1	19.7	3 22	13 9.91	- 7 43.9	1.245	2.216	7.8	21.1
4 1	12 59.18	+10 39.6	1.930	2.905	5.4	19.7	4 1	13 0.39	- 6 39.6	1.232	2.229	2.2	20.8
4 11	12 52.26	+11 42.3	1.949	2.907	7.1	19.8	4 11	12 50.54	- 5 31.9	1.246	2.243	3.4	20.9
4 21	12 45.89	+12 25.9	1.994	2.909	9.9	20.0	4 21	12 41.70	- 4 29.8	1.285	2.256	8.6	21.2
5 1	12 40.78	+12 47.9	2.063	2.912	12.7	20.1	5 1	12 34.95	- 3 41.1	1.347	2.269	13.4	21.5
5 11	12 37.43	+12 48.3	2.151	2.915	15.2	20.3	5 11	12 30.94	- 3 10.4	1.430	2.282	17.3	21.8
275984	2001 <i>XP</i> ₈₂		4 4.9 180°95	1°2/ 6.4	16		144067	2004 <i>BP</i> ₄₄		4 4.9 80°27	1°8/ 6.5	18	R
3 2	13 20.10	-13 0.4	2.662	3.463	11.0	22.4	3 2	13 19.43	-13 46.8	1.604	2.432	15.9	20.0
3 12	13 14.63	-12 29.7	2.572	3.465	8.4	22.2	3 12	13 14.93	-13 15.7	1.536	2.441	12.1	19.8
3 22	13 7.65	-11 46.6	2.508	3.466	5.4	22.0	3 22	13 8.14	-12 24.8	1.489	2.451	7.8	19.6
4 1	12 59.70	-10 53.4	2.473	3.466	2.2	21.8	4 1	12 59.89	-11 17.8	1.467	2.460	3.3	19.3
4 11	12 51.46	- 9 54.2	2.468	3.465	2.0	21.8	4 11	12 51.29	-10 1.7	1.472	2.469	2.8	19.3
4 21	12 43.65	- 8 53.7	2.493	3.463	5.1	22.0	4 21	12 43.45	- 8 44.9	1.504	2.479	7.2	19.6
5 1	12 36.90	- 7 56.8	2.548	3.461	8.2	22.2	5 1	12 37.34	- 7 35.6	1.561	2.488	11.5	19.9
5 11	12 31.71	- 7 7.7	2.627	3.458	10.9	22.4	5 11	12 33.57	- 6 40.3	1.640	2.498	15.1	20.1
70907	1999 <i>VB</i> ₁₈₆		4 4.9 217°84	2°4/ 2.5	18		67828	2000 <i>VX</i> ₄₆		4 4.9 172°59	2°1/ 6.7	18	
3 2	13 19.43	- 1 1.3	2.111	2.958	11.8	20.1	3 2	13 23.17	-13 25.0	1.783	2.599	15.0	19.6
3 12	13 14.47	- 0 20.4	2.032	2.954	8.7	19.9	3 12	13 17.61	-13 18.5	1.703	2.602	11.6	19.3
3 22	13 7.69	+ 0 26.4	1.978	2.950	5.2	19.7	3 22	13 9.76	-12 55.3	1.645	2.604	7.6	19.1
4 1	12 59.72	+ 1 14.3	1.952	2.946	2.5	19.5	4 1	13 0.37	-12 17.5	1.614	2.605	3.4	18.9
4 11	12 51.41	+ 1 57.6	1.954	2.941	4.2	19.6	4 11	12 50.51	-11 29.6	1.610	2.607	2.9	18.8
4 21	12 43.61	+ 2 31.4	1.985	2.936	7.7	19.8	4 21	12 41.31	-10 38.0	1.634	2.607	6.9	19.1
5 1	12 37.09	+ 2 52.0	2.041	2.931	11.1	20.0	5 1	12 33.74	- 9 49.5	1.684	2.607	11.0	19.3
5 11	12 32.40	+ 2 57.4	2.119	2.926	14.0	20.2	5 11	12 28.49	- 9 10.1	1.756	2.607	14.6	19.5
472919	2015 <i>GJ</i> ₅		4 4.9 218°33	2°7/ 1.9	17		161789	2006 <i>UW</i> ₂₅₅		4 4.9 178°62	0°3/ 5.4	17	
3 2	13 19.50	+ 1 59.5	2.496	3.341	10.3	21.4	3 2	13 16.69	- 9 39.0	3.373	4.183	8.7	22.3
3 12	13 14.25	+ 2 28.8	2.416	3.336	7.6	21.2	3 12	13 11.85	- 9 10.1	3.285	4.185	6.5	22.2
3 22	13 7.45	+ 3 0.4	2.362	3.332	4.7	21.0	3 22	13 5.88	- 8 33.2	3.223	4.186	4.0	22.0
4 1	12 59.64	+ 3 30.4	2.336	3.327	2.7	20.8	4 1	12 59.20	- 7 50.6	3.191	4.187	1.3	21.8
4 11	12 51.55	+ 3 54.5	2.340	3.322	4.2	20.9	4 11	12 52.32	- 7 5.4	3.190	4.187	1.6	21.8
4 21	12 43.89	+ 4 9.2	2.373	3.316	7.1	21.1	4 21	12 45.76	- 6 20.8	3.220	4.187	4.3	22.0
5 1	12 37.33	+ 4 12.3	2.432	3.311	10.0	21.3	5 1	12 39.99	- 5 40.3	3.279	4.186	6.8	22.2
5 11	12 32.35	+ 4 2.5	2.514	3.305	12.5	21.4	5 11	12 35.38	- 5 6.4	3.363	4.184	9.0	22.3
246048	2006 <i>UT</i> ₂₃₀		4 4.9 176°11	0°8/ 5.9	18		191265	2003 <i>BU</i> ₇₇		4 4.9 134°29	0°5/ 4.5	18	

EPHEMERIDES

4 4.9

4 4.9

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
366500	2002 <i>PO</i> ₂₄		4 4.9 237°56	1.3°/ 3.7 17			305822	2009 <i>DN</i> ₁₂₅		4 4.9 82°89	0.4°/ 4.6 18		
3 2	13 20.82	- 5 27.5	1.986	2.824	12.8	22.7	3 2	13 23.06	- 7 21.0	1.482	2.328	16.0	21.7
3 12	13 15.74	- 4 40.7	1.893	2.810	9.5	22.5	3 12	13 17.61	- 6 51.9	1.426	2.345	11.8	21.4
3 22	13 8.61	- 3 42.5	1.824	2.795	5.6	22.2	3 22	13 9.73	- 6 9.2	1.391	2.362	7.0	21.2
4 1	13 0.05	- 2 37.5	1.782	2.779	1.7	21.9	4 1	13 0.34	- 5 18.3	1.382	2.379	1.9	20.9
4 11	12 50.98	- 1 32.2	1.770	2.763	3.5	22.0	4 11	12 50.70	- 4 26.4	1.400	2.396	3.3	21.1
4 21	12 42.35	- 0 33.2	1.786	2.746	7.7	22.2	4 21	12 42.00	- 3 40.6	1.444	2.413	8.2	21.4
5 1	12 35.07	+ 0 13.7	1.828	2.728	11.6	22.4	5 1	12 35.24	- 3 7.0	1.513	2.429	12.5	21.7
5 11	12 29.80	+ 0 44.7	1.892	2.710	15.0	22.6	5 11	12 31.01	- 2 49.0	1.602	2.446	16.1	21.9
216724	2005 <i>GD</i> ₂₁		4 4.9 303°98	1.2°/ 5.9 17			71192	1999 <i>XC</i> ₂₃₀		4 4.9 102°31	2°3/ 3.0 18		
3 2	13 16.95	-12 15.2	1.447	2.290	16.5	20.9	3 2	13 23.66	+ 0 5.1	2.051	2.894	12.3	18.8
3 12	13 13.65	-11 41.5	1.352	2.268	12.7	20.6	3 12	13 17.48	+ 0 20.5	1.987	2.907	9.0	18.6
3 22	13 7.73	-10 45.5	1.278	2.245	8.1	20.3	3 22	13 9.43	+ 0 39.4	1.948	2.919	5.4	18.4
4 1	12 59.87	- 9 30.2	1.227	2.223	3.0	19.9	4 1	13 0.24	+ 0 57.8	1.937	2.932	2.4	18.2
4 11	12 51.20	- 8 2.9	1.202	2.201	3.1	19.8	4 11	12 50.83	+ 1 11.1	1.955	2.944	4.0	18.4
4 21	12 43.01	- 6 33.6	1.203	2.179	8.5	20.1	4 21	12 42.10	+ 1 15.9	2.002	2.956	7.5	18.6
5 1	12 36.54	- 5 12.9	1.228	2.158	13.7	20.3	5 1	12 34.84	+ 1 9.9	2.075	2.967	10.8	18.8
5 11	12 32.69	- 4 9.3	1.272	2.137	18.2	20.5	5 11	12 29.55	+ 0 52.0	2.170	2.979	13.7	19.0
409817	2006 <i>JJ</i> ₁₆		4 4.9 281°61	4.7°/ 1.5 17			402549	2006 <i>JV</i> ₄₄		4 4.9 223°61	1.4°/ 3.6 17		
3 2	13 22.74	+ 2 56.4	1.475	2.339	15.0	21.0	3 2	13 20.59	- 5 59.3	1.788	2.631	13.8	21.8
3 12	13 17.69	+ 3 41.6	1.399	2.328	11.2	20.8	3 12	13 15.71	- 5 0.9	1.703	2.623	10.2	21.5
3 22	13 10.01	+ 4 31.1	1.345	2.317	7.2	20.5	3 22	13 8.65	- 3 49.1	1.641	2.614	6.0	21.2
4 1	13 0.48	+ 5 17.2	1.316	2.306	4.7	20.3	4 1	13 0.08	- 2 29.4	1.607	2.604	1.9	20.9
4 11	12 50.34	+ 5 51.6	1.314	2.294	6.8	20.4	4 11	12 51.02	- 1 9.7	1.601	2.594	3.8	21.0
4 21	12 40.90	+ 6 8.1	1.337	2.283	11.1	20.6	4 21	12 42.51	+ 0 2.1	1.623	2.583	8.3	21.3
5 1	12 33.32	+ 6 3.1	1.382	2.272	15.3	20.8	5 1	12 35.51	+ 0 59.3	1.670	2.572	12.4	21.5
5 11	12 28.37	+ 5 36.3	1.446	2.261	19.0	21.0	5 11	12 30.70	+ 1 37.7	1.738	2.560	16.0	21.7
59811	1999 <i>RV</i> ₁₇		4 4.9 268°62	2°4/ 7.4 18			425683	2011 <i>AV</i> ₃₀		4 4.9 79°68	5°2/ 31.1 18		
3 2	13 18.39	-14 53.4	2.452	3.253	11.9	18.8	3 2	13 19.80	+ 4 45.6	1.699	2.563	13.4	21.1
3 12	13 13.65	-14 55.8	2.354	3.242	9.3	18.6	3 12	13 14.94	+ 5 58.6	1.646	2.574	9.9	20.9
3 22	13 7.22	-14 45.4	2.279	3.230	6.3	18.4	3 22	13 8.03	+ 7 13.0	1.618	2.586	6.6	20.7
4 1	12 59.64	-14 23.1	2.232	3.219	3.3	18.2	4 1	12 59.86	+ 8 20.5	1.615	2.597	5.2	20.6
4 11	12 51.63	-13 51.6	2.213	3.207	2.7	18.1	4 11	12 51.46	+ 9 13.4	1.640	2.608	7.1	20.8
4 21	12 43.98	-13 14.8	2.223	3.196	5.4	18.3	4 21	12 43.84	+ 9 46.5	1.690	2.620	10.4	21.0
5 1	12 37.42	-12 37.4	2.261	3.184	8.6	18.5	5 1	12 37.84	+ 9 57.4	1.763	2.631	13.7	21.2
5 11	12 32.50	-12 4.1	2.322	3.172	11.5	18.6	5 11	12 33.99	+ 9 46.5	1.856	2.642	16.5	21.4
231173	2005 <i>UX</i> ₁₅₂		4 4.9 118°96	1°8/ 3.3 18			232641	2003 <i>UK</i> ₂₉₆		4 4.9 120°09	0°3/ 4.7 17		
3 2	13 22.49	- 2 17.5	2.049	2.889	12.4	20.9	3 2	13 19.42	- 7 4.4	2.056	2.891	12.6	20.8
3 12	13 16.61	- 1 47.3	1.985	2.904	9.0	20.7	3 12	13 14.49	- 6 40.3	1.980	2.895	9.3	20.6
3 22	13 8.91	- 1 11.1	1.947	2.918	5.3	20.5	3 22	13 7.73	- 6 6.1	1.929	2.899	5.6	20.4
4 1	13 0.08	- 0 33.4	1.937	2.932	2.0	20.3	4 1	12 59.78	- 5 25.5	1.906	2.903	1.5	20.1
4 11	12 51.04	+ 0 0.7	1.955	2.946	3.7	20.4	4 11	12 51.53	- 4 43.3	1.911	2.907	2.6	20.2
4 21	12 42.68	+ 0 26.7	2.003	2.959	7.3	20.7	4 21	12 43.83	- 4 4.7	1.944	2.911	6.6	20.5
5 1	12 35.75	+ 0 41.3	2.076	2.971	10.7	20.9	5 1	12 37.47	- 3 34.2	2.003	2.914	10.2	20.7
5 11	12 30.77	+ 0 42.7	2.172	2.983	13.6	21.1	5 11	12 32.99	- 3 15.3	2.085	2.918	13.3	20.9
429982	2013 <i>NV</i> ₁₁		4 4.9 248°71	4°6/ 9.3 17			283088	2008 <i>TX</i> ₉₄		4 4.9 238°70	2°7/ 6.9 17		
3 2	13 21.57	-21 18.1	2.096	2.870	14.5	21.4	3 2	13 24.91	-14 7.0	1.695	2.508	15.8	21.1
3 12	13 16.45	-21 19.8	1.987	2.851	11.8	21.2	3 12	13 19.28	-14 11.4	1.598	2.494	12.3	20.8
3 22	13 9.14	-21 1.1	1.900	2.831	8.8	20.9	3 22	13 11.01	-13 58.2	1.524	2.480	8.3	20.6
4 1	13 0.24	-20 21.6	1.838	2.811	5.8	20.7	4 1	13 0.82	-13 28.2	1.475	2.465	4.1	20.3
4 11	12 50.67	-19 23.5	1.804	2.789	4.6	20.6	4 11	12 49.84	-12 45.0	1.453	2.449	3.4	20.2
4 21	12 41.47	-18 12.1	1.798	2.767	6.8	20.7	4 21	12 39.34	-11 54.7	1.459	2.432	7.6	20.4
5 1	12 33.61	-16 54.9	1.819	2.744	10.2	20.8	5 1	12 30.53	-11 5.1	1.490	2.415	12.1	20.6
5 11	12 27.84	-15 39.9	1.864	2.721	13.6	21.0	5 11	12 24.27	-10 23.3	1.544	2.397	16.1	20.8
217841	2001 <i>OX</i> ₂₃		4 4.9 275°36	5°3/ 9.0 17			211430	2002 <i>XN</i> ₅₅		4 4.9 80°50	0°1/ 5.1 18		
3 2	13 22.13	-20 14.0	1.815	2.603	15.9	20.5	3 2	13 17.96	- 9 26.8	2.204	3.031	12.1	21.1
3 12	13 17.22	-20 40.1	1.710	2.583	13.0	20.3	3 12	13 13.17	- 8 44.7	2.144	3.054	9.0	20.9
3 22	13 9.79	-20 46.4	1.626	2.561	9.6	20.0	3 22	13 6.80	- 7 51.3	2.109	3.076	5.4	20.7
4 1	13 0.46	-20 31.3	1.566	2.540	6.5	19.8	4 1	12 59.49	- 6 50.6	2.102	3.099	1.6	20.5
4 11	12 50.29	-19 56.1	1.533	2.518	5.3	19.7	4 11	12 52.03	- 5 48.1	2.124	3.121	2.3	20.6
4 21	12 40.46	-19 5.5	1.526	2.496	7.7	19.8	4 21	12 45.19	- 4 49.4	2.175	3.143	5.9	20.8
5 1	12 32.17	-18 7.0	1.545	2.474	11.5	19.9	5 1	12 39.61	- 3 59.2	2.252	3.164	9.2	21.1
5 11	12 26.28	-17 9.1	1.586	2.451	15.2	20.1	5 11	12 35.74	- 3 21.0	2.353	3.186	12.0	21.3
522476	2016 <i>DB</i> ₃₅		4 4.9 326°43	3°4/ 2.1 17			272872	2006 <i>BY</i> ₈₁		4 4.9 148°34	1°5/ 3.3 17 R		
3 2	13 16.02	- 2 30.2	1.327	2.199	15.8	21.3	3 2	13 19.80	- 3 29.8	2.291	3.129	11.3	21.3
3 12	13 12.92	- 1 21.7	1.251	2.186	11.6	21.0	3 12	13 14.55	- 2 48.3	2.220	3.137	8.3	21.1
3 22	13 7.22	+ 0 0.4	1.197	2.174	7.0	20.7	3 22	13 7.66	- 1 59.8	2.174	3.145	4.9	20.9
4 1	12 59.70	+ 1 27.7	1.167	2.162	3.4	20.4	4 1	12 59.75	- 1 8.7	2.157	3.153	1.8	20.7
4 11	12 51.55	+ 2 49.1	1.162	2.150	6.0	20.6	4 11	12 51.61	+ 0 20.0	2.169	3.159	3.3	20.8
4 21	12 44.08	+ 3 54.7	1.181	2.140	10.9	20.8	4 21	12 44.00	+ 0 21.4	2.210	3.166	6.7	21.0
5 1	12 38.44	+ 4 37.1	1.222	2.130	15.6	21.0	5 1	12 37.61	+ 0 51.7	2.278	3.172	9.9	21.2
5 11	12 35.42	+ 4 53.1	1.282	2.121	19.6	21.3	5 11	12 32.93	+ 1 8.9	2.368	3.177	12.7	21.4
434918	2006 <i>TG</i> ₈₈		4 4.9 234°72	1°6/ 6.9 17			217954	2001 <i>UP</i> ₇₃		4 4.9 169°23	2°0/ 3.		

EPHEMERIDES

4 4.9

4 4.9

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
416019	2002 <i>CH</i> ₁₇₇		4 4.9 88°75	7.7/28.0	18		459037	2011 <i>YY</i> ₆₄		4 4.9 140°00	2°8/	2.5	18
3 2	13 21.63	+13 39.3	1.881	2.736	12.7	21.1	3 2	13 22.28	- 1 28.9	1.762	2.612	13.7	21.6
3 12	13 16.01	+15 10.1	1.848	2.760	10.0	21.0	3 12	13 16.78	- 0 34.5	1.697	2.621	10.0	21.4
3 22	13 8.52	+16 32.8	1.840	2.784	8.1	20.9	3 22	13 9.17	+ 0 27.2	1.657	2.630	6.0	21.2
4 1	12 59.97	+17 38.9	1.859	2.808	7.9	20.9	4 1	13 0.22	+ 1 29.8	1.644	2.638	2.8	21.0
4 11	12 51.36	+18 22.2	1.904	2.831	9.4	21.1	4 11	12 50.99	+ 2 26.2	1.659	2.646	4.8	21.1
4 21	12 43.60	+18 40.0	1.974	2.853	11.7	21.3	4 21	12 42.49	+ 3 10.0	1.701	2.653	8.7	21.4
5 1	12 37.43	+18 32.5	2.065	2.875	14.1	21.5	5 1	12 35.61	+ 3 37.1	1.768	2.660	12.4	21.6
5 11	12 33.31	+18 2.5	2.176	2.897	16.2	21.7	5 11	12 30.93	+ 3 45.9	1.856	2.666	15.6	21.8
458922	2011 <i>UQ</i> ₂₈₀		4 4.9 101°37	2°7/	7.4	18	22181	2000 <i>YA</i> ₆		4 4.9 196°41	2°3/	2.2	18
3 2	13 23.23	-15 48.2	1.628	2.441	16.4	22.0	3 2	13 18.98	- 1 6.9	2.546	3.386	10.3	19.7
3 12	13 17.65	-15 31.0	1.565	2.460	12.6	21.8	3 12	13 13.88	- 0 10.1	2.464	3.383	7.5	19.5
3 22	13 9.74	-14 53.4	1.524	2.479	8.4	21.6	3 22	13 7.26	+ 0 52.5	2.408	3.379	4.5	19.3
4 1	13 0.36	-13 58.0	1.508	2.497	4.2	21.4	4 1	12 59.67	+ 1 56.3	2.382	3.374	2.3	19.2
4 11	12 50.72	-12 50.9	1.519	2.515	3.3	21.3	4 11	12 51.79	+ 2 55.7	2.385	3.369	3.9	19.3
4 21	12 41.96	-11 40.1	1.558	2.533	7.1	21.6	4 21	12 44.33	+ 3 46.3	2.418	3.363	6.9	19.5
5 1	12 35.04	-10 33.7	1.622	2.550	11.1	21.9	5 1	12 37.92	+ 4 24.2	2.478	3.356	9.8	19.6
5 11	12 30.56	- 9 38.4	1.709	2.566	14.7	22.1	5 11	12 33.06	+ 4 47.5	2.561	3.349	12.4	19.8
461788	2005 <i>VW</i> ₃₅		4 4.9 4°19	4°6/	9.4	17	371155	2005 <i>XQ</i> ₇₃		4 4.9 138°96	0°0/	4.9	16
3 2	13 14.85	-21 12.0	1.469	2.280	17.9	20.1	3 2	13 21.00	- 8 27.0	2.250	3.074	12.0	22.4
3 12	13 11.90	-20 46.7	1.392	2.279	14.4	19.8	3 12	13 15.47	- 7 59.4	2.178	3.085	8.9	22.2
3 22	13 6.52	-19 52.1	1.334	2.279	10.4	19.6	3 22	13 8.24	- 7 21.3	2.130	3.097	5.4	22.0
4 1	12 59.49	-18 29.7	1.299	2.280	6.3	19.3	4 1	12 59.95	- 6 36.2	2.111	3.108	1.6	21.8
4 11	12 51.99	-16 46.1	1.290	2.282	4.7	19.2	4 11	12 51.41	- 5 48.8	2.121	3.118	2.3	21.9
4 21	12 45.21	-14 51.7	1.306	2.284	7.6	19.4	4 21	12 43.45	- 5 4.0	2.161	3.127	6.0	22.1
5 1	12 40.21	-12 58.8	1.346	2.287	11.8	19.7	5 1	12 36.76	- 4 26.3	2.227	3.137	9.4	22.3
5 11	12 37.68	-11 18.0	1.408	2.291	15.7	19.9	5 11	12 31.86	- 3 59.2	2.318	3.145	12.3	22.5
17124	1999 <i>JC</i> ₆₅		4 4.9 271°52	0°0/	4.7	18	211466	2003 <i>CL</i> ₁₄		4 4.9 60°48	6°1/	28.9	17
3 2	13 19.09	- 8 28.5	1.788	2.626	14.0	18.3	3 2	13 16.92	+10 6.3	2.102	2.962	11.3	20.2
3 12	13 14.59	- 7 58.2	1.706	2.622	10.5	18.0	3 12	13 12.54	+11 25.8	2.050	2.971	8.7	20.0
3 22	13 7.95	- 7 14.3	1.648	2.618	6.3	17.8	3 22	13 6.50	+12 42.2	2.024	2.980	6.6	19.9
4 1	12 59.89	- 6 20.9	1.616	2.613	1.8	17.5	4 1	12 59.44	+13 48.1	2.026	2.989	6.2	19.9
4 11	12 51.38	- 5 23.9	1.612	2.609	2.8	17.5	4 11	12 52.19	+14 37.3	2.054	2.998	7.8	20.0
4 21	12 43.44	- 4 30.1	1.635	2.605	7.3	17.8	4 21	12 45.54	+15 6.0	2.108	3.007	10.2	20.2
5 1	12 37.00	- 3 45.7	1.683	2.600	11.5	18.0	5 1	12 40.18	+15 12.8	2.185	3.017	12.7	20.3
5 11	12 32.69	- 3 15.3	1.753	2.596	15.0	18.2	5 11	12 36.56	+14 58.8	2.281	3.026	14.9	20.5
523684	2014 <i>CQ</i> ₂₃		4 4.9 302°89	0°1/	3.9	18	43746	1981 <i>EH</i> ₃₁		4 4.9 112°39	2°0/	2.9	18
3 2	12 58.89	- 3 33.1	42.135	42.965	0.7	22.1	3 2	13 20.68	- 4 27.0	1.847	2.691	13.4	19.6
3 12	12 58.26	- 3 29.2	42.047	42.961	0.5	22.1	3 12	13 15.44	- 3 16.5	1.788	2.710	9.7	19.4
3 22	12 57.57	- 3 25.0	41.987	42.957	0.3	22.1	3 22	13 8.27	- 1 56.0	1.755	2.728	5.7	19.2
4 1	12 56.84	- 3 20.6	41.956	42.953	0.1	22.0	4 1	12 59.95	- 0 32.4	1.749	2.745	2.2	19.0
4 11	12 56.10	- 3 16.3	41.956	42.949	0.2	22.0	4 11	12 51.44	+ 0 46.6	1.772	2.762	4.1	19.1
4 21	12 55.37	- 3 12.3	41.985	42.945	0.4	22.1	4 21	12 43.68	+ 1 54.1	1.824	2.778	8.0	19.4
5 1	12 54.69	- 3 8.6	42.042	42.941	0.6	22.1	5 1	12 37.45	+ 2 45.0	1.900	2.794	11.6	19.6
5 11	12 54.07	- 3 5.4	42.126	42.937	0.8	22.1	5 11	12 33.26	+ 3 17.0	1.999	2.809	14.6	19.9
266932	2010 <i>JT</i> ₁₆₂		4 4.9 218°53	0°8/	4.1	18	61595	2000 <i>QT</i> ₈₉		4 4.9 138°38	0°3/	5.4	18
3 2	13 17.82	- 5 29.8	2.449	3.283	10.8	21.2	3 2	13 16.80	- 9 45.0	2.654	3.473	10.5	19.4
3 12	13 13.11	- 4 57.8	2.363	3.278	8.0	21.0	3 12	13 12.19	- 9 10.8	2.576	3.482	7.8	19.2
3 22	13 6.84	- 4 17.7	2.302	3.273	4.7	20.8	3 22	13 6.21	- 8 26.7	2.524	3.489	4.8	19.0
4 1	12 59.55	- 3 33.0	2.270	3.267	1.4	20.5	4 1	12 59.36	- 7 35.5	2.501	3.497	1.5	18.8
4 11	12 51.94	- 2 48.2	2.268	3.262	2.6	20.6	4 11	12 52.30	- 6 41.5	2.507	3.504	1.9	18.9
4 21	12 44.75	- 2 7.7	2.294	3.256	6.1	20.8	4 21	12 45.67	- 5 49.2	2.543	3.512	5.2	19.1
5 1	12 38.63	- 1 35.6	2.347	3.250	9.3	21.0	5 1	12 40.06	- 5 2.7	2.607	3.518	8.1	19.3
5 11	12 34.09	- 1 14.7	2.424	3.244	12.1	21.2	5 11	12 35.89	- 4 25.4	2.695	3.525	10.7	19.5
299339	2005 <i>RZ</i> ₄₃		4 4.9 211°17	3°0/	9.1	17	52745	1998 <i>HL</i> ₁₃₇		4 4.9 336°37	4°5/	1.1	18
3 2	13 16.01	-20 9.2	2.780	3.554	11.3	20.9	3 2	13 20.92	+ 6 15.8	1.951	2.807	12.3	18.3
3 12	13 11.70	-19 43.6	2.682	3.549	9.0	20.7	3 12	13 15.72	+ 6 41.7	1.877	2.800	9.2	18.1
3 22	13 5.96	-19 2.0	2.608	3.544	6.5	20.5	3 22	13 8.54	+ 7 6.6	1.827	2.793	6.1	17.9
4 1	12 59.29	-18 5.6	2.562	3.539	4.0	20.4	4 1	13 0.06	+ 7 25.1	1.804	2.787	4.5	17.8
4 11	12 52.34	-16 57.9	2.544	3.533	3.0	20.3	4 11	12 51.22	+ 7 31.9	1.809	2.782	6.1	17.9
4 21	12 45.76	-15 43.4	2.556	3.527	4.9	20.4	4 21	12 42.96	+ 7 23.9	1.840	2.776	9.3	18.1
5 1	12 40.15	-14 27.6	2.596	3.521	7.6	20.5	5 1	12 36.13	+ 6 59.4	1.896	2.771	12.5	18.2
5 11	12 35.98	-13 16.0	2.662	3.515	10.2	20.7	5 11	12 31.31	+ 6 18.9	1.973	2.767	15.3	18.4
198285	2004 <i>TT</i> ₂₉₇		4 4.9 57°76	6°8/	12.0	18	343597	2010 <i>GR</i> ₁₀₁		4 4.9 68°85	0°6/	4.4	17
3 2	13 18.84	-27 9.8	1.882	2.637	16.6	19.7	3 2	13 19.91	- 5 30.8	2.030	2.869	12.6	21.1
3 12	13 14.51	-27 21.4	1.799	2.640	14.0	19.5	3 12	13 14.88	- 5 13.4	1.956	2.873	9.3	20.9
3 22	13 7.96	-27 7.3	1.736	2.644	11.0	19.3	3 22	13 7.99	- 4 47.5	1.906	2.877	5.5	20.6
4 1	12 59.91	-26 26.3	1.695	2.647	8.2	19.1	4 1	12 59.90	- 4 16.6	1.883	2.881	1.5	20.4
4 11	12 51.40	-25 20.9	1.680	2.651	6.8	19.1	4 11	12 51.50	- 3 45.4	1.889	2.885	2.8	20.5
4 21	12 43.53	-23 57.2	1.691	2.654	7.8	19.1	4 21	12 43.66	- 3 18.5	1.923	2.889	6.8	20.7
5 1	12 37.24	-22 24.1	1.728	2.658	10.4	19.3	5 1	12 37.19	- 3 0.1	1.983	2.893	10.4	21.0
5 11	12 33.21	-20 51.2	1.788	2.662	13.4	19.5	5 11	12 32.62	- 2 52.8	2.066	2.897	13.5	21.2
503089	2015 <i>FP</i> ₂₉₄		4 4.9 172°41	5°7/	28.9	18	504220	2006 <i>UL</i> ₉₇		4 4.9 14			

EPHEMERIDES

4 4.9

4 4.9

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
264517	2001 <i>QL</i> ₂₆₈		4 4.9 94°60	11°6/17.9	18		34300	Brendafrost		4 4.9 109°29	1°1/6.4	18	
3 2	13 35.44	-41 43.8	2.238	2.847	17.8	21.3	3 2	13 17.13	-12 27.1	2.477	3.289	11.4	19.3
3 12	13 27.01	-43 21.2	2.175	2.877	16.2	21.2	3 12	13 12.54	-11 59.7	2.402	3.300	8.6	19.1
3 22	13 15.62	-44 30.8	2.130	2.907	14.4	21.1	3 22	13 6.47	-11 20.1	2.351	3.311	5.5	18.9
4 1	13 2.16	-45 6.6	2.106	2.936	12.9	21.0	4 1	12 59.47	-10 30.9	2.328	3.322	2.2	18.7
4 11	12 48.03	-45 6.5	2.105	2.964	11.8	21.0	4 11	12 52.26	-9 36.5	2.335	3.333	2.0	18.7
4 21	12 34.73	-44 33.3	2.128	2.992	11.7	21.0	4 21	12 45.52	-8 41.6	2.371	3.343	5.2	18.9
5 1	12 23.58	-43 34.0	2.174	3.019	12.3	21.1	5 1	12 39.89	-7 51.1	2.434	3.353	8.3	19.1
5 11	12 15.40	-42 18.8	2.243	3.045	13.5	21.3	5 11	12 35.81	-7 8.9	2.522	3.363	11.0	19.3
85973	1999 <i>GP</i> ₁₉		4 4.9 17°54	2°7/3.4	18		281175	2007 <i>EU</i> ₇₁		4 4.9 4°10	0°5/4.6	17	
3 2	13 26.05	+ 1 1.4	1.463	2.320	15.6	17.7	3 2	13 21.84	- 5 29.7	1.583	2.432	15.0	20.0
3 12	13 20.02	+ 0 54.0	1.397	2.323	11.5	17.5	3 12	13 16.83	- 5 27.2	1.510	2.431	11.2	19.7
3 22	13 11.32	+ 0 49.1	1.354	2.327	7.0	17.2	3 22	13 9.41	- 5 15.0	1.460	2.431	6.7	19.5
4 1	13 0.89	+ 0 42.2	1.336	2.331	3.0	17.0	4 1	13 0.38	- 4 56.5	1.435	2.432	1.9	19.1
4 11	12 50.03	+ 0 28.7	1.345	2.336	4.8	17.1	4 11	12 50.87	- 4 36.8	1.436	2.433	3.2	19.2
4 21	12 40.05	+ 0 5.3	1.380	2.341	9.4	17.4	4 21	12 42.06	- 4 21.3	1.464	2.434	8.0	19.5
5 1	12 32.09	- 0 29.8	1.439	2.347	13.6	17.6	5 1	12 35.00	- 4 14.4	1.517	2.436	12.3	19.8
5 11	12 26.84	- 1 17.0	1.519	2.353	17.3	17.9	5 11	12 30.38	- 4 19.6	1.591	2.438	16.0	20.0
33321	1998 <i>QL</i>		4 4.9 178°55	0°0/4.8	18		133066	2003 <i>FQ</i> ₁₂₄		4 4.9 234°42	0°7/5.6	18	
3 2	13 19.81	- 7 56.2	2.270	3.097	11.8	19.2	3 2	13 20.59	-11 31.7	1.688	2.518	15.1	19.5
3 12	13 14.68	- 7 33.9	2.188	3.098	8.8	19.0	3 12	13 15.94	-10 48.1	1.599	2.508	11.5	19.2
3 22	13 7.83	- 7 1.7	2.131	3.099	5.3	18.7	3 22	13 8.92	- 9 45.5	1.532	2.498	7.2	18.9
4 1	12 59.86	- 6 22.6	2.102	3.099	1.5	18.5	4 1	13 0.27	- 8 27.8	1.491	2.487	2.4	18.6
4 11	12 51.58	- 5 41.1	2.103	3.099	2.3	18.5	4 11	12 51.03	- 7 2.2	1.478	2.476	2.8	18.6
4 21	12 43.77	- 5 1.8	2.132	3.099	6.1	18.8	4 21	12 42.35	- 5 37.5	1.492	2.464	7.7	18.9
5 1	12 37.19	- 4 29.2	2.188	3.098	9.5	19.0	5 1	12 35.27	- 4 22.2	1.532	2.451	12.2	19.1
5 11	12 32.35	- 4 6.7	2.267	3.097	12.5	19.2	5 11	12 30.53	- 3 23.0	1.593	2.438	16.1	19.3
371076	2005 <i>UE</i> ₃₂₇		4 4.9 167°03	3°8/9.0	17		70999	1999 <i>XW</i> ₃₆		4 4.9 152°91	0°9/5.7	18	
3 2	13 19.62	-20 11.9	2.081	2.865	14.3	21.1	3 2	13 24.58	- 9 27.4	1.830	2.655	14.3	18.8
3 12	13 14.79	-19 59.4	1.995	2.867	11.4	20.9	3 12	13 18.58	- 9 25.5	1.754	2.661	10.8	18.6
3 22	13 8.00	-19 26.9	1.932	2.870	8.2	20.7	3 22	13 10.34	- 9 11.2	1.701	2.666	6.7	18.4
4 1	12 59.92	-18 35.4	1.894	2.872	5.1	20.5	4 1	13 0.64	- 8 47.1	1.675	2.671	2.3	18.1
4 11	12 51.47	-17 28.7	1.885	2.874	3.9	20.4	4 11	12 50.53	- 8 17.5	1.678	2.675	2.6	18.1
4 21	12 43.57	-16 13.1	1.903	2.875	6.2	20.6	4 21	12 41.08	- 7 47.6	1.708	2.679	7.0	18.4
5 1	12 37.06	-14 55.9	1.948	2.876	9.5	20.8	5 1	12 33.26	- 7 22.7	1.765	2.683	11.0	18.7
5 11	12 32.53	-13 44.3	2.018	2.877	12.6	21.0	5 11	12 27.70	- 7 7.1	1.844	2.686	14.4	18.9
311263	2005 <i>EK</i> ₁₀₀		4 4.9 18°60	0°1/5.1	16		377419	2004 <i>TX</i> ₁₂₇		4 4.9 187°88	2°4/2.2	17	
3 2	13 19.70	- 7 53.7	1.182	2.044	18.1	21.1	3 2	13 18.43	- 1 47.7	2.293	3.137	11.1	21.7
3 12	13 15.79	- 7 45.0	1.122	2.049	13.5	20.8	3 12	13 13.63	- 0 44.3	2.215	3.136	8.1	21.5
3 22	13 8.98	- 7 20.2	1.082	2.055	8.2	20.5	3 22	13 7.20	+ 0 26.2	2.164	3.135	4.8	21.3
4 1	13 0.25	- 6 43.9	1.064	2.062	2.4	20.2	4 1	12 59.71	+ 1 38.4	2.141	3.134	2.4	21.1
4 11	12 51.03	- 6 3.5	1.071	2.069	3.5	20.3	4 11	12 51.93	+ 2 46.0	2.147	3.132	4.1	21.2
4 21	12 42.78	- 5 27.2	1.102	2.078	9.1	20.6	4 21	12 44.63	+ 3 43.6	2.182	3.129	7.4	21.4
5 1	12 36.72	- 5 2.1	1.155	2.087	14.1	20.9	5 1	12 38.49	+ 4 27.0	2.244	3.126	10.5	21.6
5 11	12 33.58	- 4 52.9	1.227	2.098	18.4	21.2	5 11	12 34.03	+ 4 54.1	2.328	3.123	13.3	21.8
233358	2006 <i>DT</i> ₉₄		4 4.9 316°75	0°2/4.8	17		270290	2001 <i>VP</i> ₁₀₃		4 4.9 93°03	1°9/6.9	18	
3 2	13 19.23	- 7 15.6	1.876	2.716	13.4	20.7	3 2	13 22.03	-14 16.5	1.957	2.766	14.1	22.0
3 12	13 14.60	- 6 54.7	1.796	2.713	10.0	20.5	3 12	13 16.38	-13 53.8	1.897	2.792	10.8	21.8
3 22	13 7.94	- 6 22.6	1.739	2.709	6.0	20.2	3 22	13 8.84	-13 15.0	1.860	2.817	7.0	21.6
4 1	12 59.92	- 5 43.0	1.709	2.706	1.7	19.9	4 1	13 0.16	-12 23.1	1.850	2.842	3.2	21.4
4 11	12 51.49	- 5 1.0	1.707	2.703	2.8	20.0	4 11	12 51.32	-11 23.4	1.869	2.866	2.6	21.4
4 21	12 43.62	- 4 22.4	1.732	2.701	7.1	20.3	4 21	12 43.24	-10 22.1	1.917	2.890	6.1	21.7
5 1	12 37.17	- 3 52.3	1.782	2.698	11.0	20.5	5 1	12 36.70	- 9 25.6	1.991	2.913	9.7	22.0
5 11	12 32.76	- 3 34.4	1.855	2.695	14.4	20.7	5 11	12 32.19	- 8 39.0	2.088	2.935	12.8	22.2
247773	2003 <i>QM</i> ₁₀₀		4 4.9 230°57	0°8/4.3	16		313648	2003 <i>SW</i> ₁₂₄		4 4.9 181°48	3°9/8.9	18	
3 2	13 20.46	- 7 28.3	1.737	2.577	14.2	21.2	3 2	13 23.97	-19 48.3	2.232	3.005	13.7	21.2
3 12	13 15.71	- 6 39.1	1.651	2.569	10.6	20.9	3 12	13 17.94	-19 52.0	2.141	3.007	11.0	21.0
3 22	13 8.71	- 5 35.2	1.589	2.560	6.3	20.6	3 22	13 9.90	-19 37.9	2.073	3.008	7.9	20.8
4 1	13 0.17	- 4 21.7	1.554	2.551	1.8	20.3	4 1	13 0.52	-19 6.1	2.032	3.008	5.0	20.7
4 11	12 51.11	- 3 6.0	1.546	2.542	3.4	20.4	4 11	12 50.71	-18 19.6	2.020	3.007	4.0	20.6
4 21	12 42.61	- 1 56.1	1.566	2.531	8.1	20.7	4 21	12 41.40	-17 23.1	2.036	3.005	6.2	20.7
5 1	12 35.66	- 0 59.1	1.611	2.521	12.3	20.9	5 1	12 33.47	-16 23.1	2.081	3.002	9.3	20.9
5 11	12 30.96	- 0 19.5	1.678	2.510	16.0	21.1	5 11	12 27.54	-15 26.1	2.149	2.999	12.4	21.1
247837	2003 <i>SV</i> ₂₆₆		4 4.9 173°58	1°0/4.0	16		507447	2012 <i>TG</i> ₃₁		4 4.9 264°72	5°5/11.8	17	
3 2	13 20.89	- 6 36.1	1.801	2.641	13.8	21.3	3 2	13 17.86	-27 44.9	2.245	2.984	14.7	22.1
3 12	13 15.84	- 5 45.8	1.726	2.644	10.2	21.1	3 12	13 13.60	-27 12.5	2.131	2.965	12.3	21.8
3 22	13 8.67	- 4 42.8	1.674	2.646	6.0	20.8	3 22	13 7.38	-26 13.8	2.038	2.946	9.6	21.6
4 1	13 0.13	- 3 32.5	1.650	2.647	1.7	20.5	4 1	12 59.81	-24 48.1	1.971	2.927	6.9	21.4
4 11	12 51.22	- 2 22.1	1.654	2.648	3.4	20.6	4 11	12 51.76	-22 58.7	1.930	2.907	5.5	21.3
4 21	12 42.94	- 1 18.8	1.685	2.648	7.8	20.9	4 21	12 44.13	-20 52.2	1.919	2.887	6.6	21.3
5 1	12 36.20	- 0 28.6	1.742	2.648	11.8	21.1	5 1	12 37.79	-18 38.0	1.937	2.866	9.5	21.4
5 11	12 31.61	+ 0 4.6	1.821	2.648	15.2	21.4	5 11	12 33.38	-16 26.3	1.980	2.846	12.6	21.6
408212	2013 <i>EJ</i> ₆₄		4 4.9 259°08	0°2/4.8	16		72959	2002 <i>CK</i> ₁₀₅		4 4.9 297°00	0°3/5.2	18	
3 2													

EPHEMERIDES

4 4.9

4 4.9

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
497393	2005 <i>VH</i> ₉₅		4 4.9 204°36	3°2/ 1.4 17			502050	2015 <i>AH</i> ₁₅₈		4 4.9 174°21	7°3/12.0 17		
3 2	13 20.84	+ 2 8.9	2.361	3.206	10.8	22.7	3 2	13 23.12	-28 0.7	2.096	2.830	15.7	22.1
3 12	13 15.40	+ 3 1.3	2.280	3.200	8.0	22.5	3 12	13 17.63	-28 38.6	2.007	2.831	13.4	21.9
3 22	13 8.27	+ 3 57.3	2.225	3.194	5.0	22.3	3 22	13 9.89	-28 54.2	1.939	2.833	10.8	21.8
4 1	13 0.05	+ 4 51.6	2.199	3.187	3.2	22.1	4 1	13 0.58	-28 45.1	1.894	2.834	8.4	21.6
4 11	12 51.49	+ 5 38.7	2.203	3.180	4.8	22.2	4 11	12 50.72	-28 12.0	1.876	2.834	7.3	21.6
4 21	12 43.39	+ 6 14.2	2.235	3.172	7.8	22.4	4 21	12 41.39	-27 18.9	1.884	2.835	8.1	21.6
5 1	12 36.46	+ 6 34.9	2.293	3.163	10.8	22.6	5 1	12 33.58	-26 12.7	1.918	2.835	10.3	21.7
5 11	12 31.23	+ 6 39.7	2.374	3.153	13.5	22.8	5 11	12 28.00	-25 2.0	1.975	2.834	12.9	21.9
425447	2010 <i>EL</i> ₄₃		4 4.9 120°94	3°5/ 8.9 17			287534	2003 <i>DY</i> ₁₂		4 4.9 66°73	1°7/ 2.9 17		
3 2	13 22.62	-19 30.4	2.504	3.274	12.5	21.8	3 2	13 15.60	- 4 0.2	2.245	3.091	11.3	20.5
3 12	13 16.59	-19 35.2	2.431	3.294	10.0	21.7	3 12	13 11.57	- 3 0.3	2.172	3.094	8.2	20.3
3 22	13 8.91	-19 24.5	2.381	3.314	7.1	21.5	3 22	13 5.98	- 1 52.0	2.125	3.098	4.8	20.1
4 1	13 0.21	-18 58.9	2.358	3.333	4.5	21.4	4 1	12 59.39	- 0 40.5	2.106	3.101	1.9	19.9
4 11	12 51.28	-18 21.3	2.365	3.351	3.6	21.3	4 11	12 52.56	+ 0 28.2	2.115	3.105	3.5	20.0
4 21	12 42.91	-17 35.8	2.401	3.369	5.4	21.5	4 21	12 46.21	+ 1 28.6	2.153	3.109	6.9	20.2
5 1	12 35.80	-16 47.6	2.465	3.386	8.1	21.7	5 1	12 41.00	+ 2 16.0	2.217	3.113	10.1	20.4
5 11	12 30.43	-16 1.9	2.555	3.403	10.7	21.9	5 11	12 37.41	+ 2 48.0	2.304	3.116	12.9	20.6
215031	2009 <i>BA</i> ₁₇₉		4 4.9 294°38	1°8/ 3.4 17			66444	1999 <i>NS</i> ₅₉		4 4.9 290°24	5°5/10.2 18		
3 2	13 17.80	- 5 56.7	1.479	2.337	15.4	20.1	3 2	13 18.12	-23 7.5	1.858	2.637	15.9	18.9
3 12	13 14.09	- 4 52.7	1.398	2.325	11.4	19.9	3 12	13 14.19	-23 10.5	1.753	2.617	13.2	18.7
3 22	13 7.91	- 3 32.4	1.339	2.314	6.7	19.6	3 22	13 7.96	-22 49.6	1.669	2.597	10.0	18.4
4 1	13 0.01	- 2 2.7	1.306	2.303	2.2	19.2	4 1	13 0.06	-22 3.7	1.608	2.577	6.9	18.2
4 11	12 51.53	- 0 33.1	1.298	2.291	4.5	19.4	4 11	12 51.46	-20 55.2	1.574	2.557	5.5	18.1
4 21	12 43.66	+ 0 46.3	1.317	2.280	9.5	19.6	4 21	12 43.28	-19 30.2	1.566	2.537	7.4	18.1
5 1	12 37.50	+ 1 47.4	1.359	2.270	14.1	19.8	5 1	12 36.55	-17 57.5	1.583	2.517	10.9	18.3
5 11	12 33.80	+ 2 25.5	1.421	2.259	18.1	20.1	5 11	12 32.08	-16 26.9	1.624	2.497	14.5	18.5
359870	2011 <i>WC</i> ₆		4 4.9 120°06	0°0/ 4.8 18			65817	1996 <i>TC</i> ₃₃		4 4.9 290°96	2°7/ 7.0 18		
3 2	13 17.81	- 7 8.1	2.872	3.694	9.7	21.4	3 2	13 20.44	-14 43.4	1.521	2.347	16.7	19.7
3 12	13 12.84	- 6 51.6	2.797	3.705	7.2	21.2	3 12	13 16.42	-14 32.7	1.413	2.316	13.2	19.3
3 22	13 6.59	- 6 28.0	2.749	3.716	4.3	21.0	3 22	13 9.61	-13 59.9	1.325	2.284	8.9	19.0
4 1	12 59.54	- 5 59.9	2.730	3.727	1.2	20.8	4 1	13 0.61	-13 5.5	1.261	2.252	4.3	18.6
4 11	12 52.30	- 5 30.5	2.741	3.737	1.9	20.9	4 11	12 50.55	-11 54.0	1.223	2.220	3.5	18.5
4 21	12 45.48	- 5 3.0	2.781	3.747	4.9	21.1	4 21	12 40.76	-10 33.5	1.210	2.187	8.4	18.7
5 1	12 39.60	- 4 40.6	2.850	3.757	7.7	21.3	5 1	12 32.64	- 9 14.4	1.222	2.154	13.6	18.9
5 11	12 35.09	- 4 25.6	2.943	3.767	10.1	21.5	5 11	12 27.21	- 8 6.5	1.255	2.121	18.3	19.1
290059	2005 <i>QS</i> ₅₉		4 4.9 229°68	3°3/ 1.4 17			122047	2000 <i>GH</i> ₆₂		4 4.9 314°39	7°6/30.4 18		
3 2	13 16.86	- 2 28.9	1.729	2.587	13.5	20.1	3 2	13 21.46	+ 7 31.7	1.251	2.128	16.3	19.4
3 12	13 12.94	- 0 52.2	1.657	2.586	9.8	19.9	3 12	13 17.14	+ 8 45.4	1.186	2.118	12.5	19.1
3 22	13 6.98	+ 0 55.9	1.611	2.585	5.9	19.7	3 22	13 9.89	+ 9 59.5	1.142	2.109	8.9	18.9
4 1	12 59.70	+ 2 46.9	1.592	2.584	3.3	19.5	4 1	13 0.62	+11 2.7	1.121	2.099	7.7	18.8
4 11	12 52.05	+ 4 30.8	1.601	2.583	5.6	19.6	4 11	12 50.73	+11 44.1	1.125	2.090	10.0	18.9
4 21	12 45.02	+ 5 58.7	1.636	2.582	9.5	19.9	4 21	12 41.69	+11 56.7	1.150	2.082	14.0	19.1
5 1	12 39.46	+ 7 4.6	1.696	2.581	13.2	20.1	5 1	12 34.77	+11 38.4	1.197	2.074	18.1	19.3
5 11	12 35.98	+ 7 45.9	1.777	2.580	16.4	20.3	5 11	12 30.76	+10 51.5	1.259	2.066	21.7	19.5
181550	2006 <i>UF</i> ₂₅₁		4 4.9 176°41	0°5/ 5.6 18			165431	2000 <i>YQ</i> ₇₁		4 4.9 112°53	3°0/ 7.7 18		
3 2	13 17.13	-10 10.3	2.577	3.396	10.8	21.6	3 2	13 22.98	-16 27.1	1.705	2.513	16.0	20.2
3 12	13 12.55	- 9 42.7	2.493	3.397	8.1	21.4	3 12	13 17.50	-16 14.9	1.637	2.528	12.4	20.0
3 22	13 6.52	- 9 4.5	2.434	3.398	5.0	21.2	3 22	13 9.73	-15 42.7	1.591	2.543	8.4	19.8
4 1	12 59.54	- 8 18.5	2.403	3.399	1.7	21.0	4 1	13 0.51	-14 52.4	1.570	2.557	4.4	19.6
4 11	12 52.29	- 7 28.8	2.402	3.399	1.9	21.0	4 11	12 50.96	-13 49.4	1.576	2.571	3.4	19.6
4 21	12 45.45	- 6 39.8	2.430	3.399	5.3	21.2	4 21	12 42.21	-12 41.2	1.610	2.584	6.9	19.8
5 1	12 39.64	- 5 55.9	2.485	3.399	8.4	21.4	5 1	12 35.21	-11 35.6	1.669	2.597	10.8	20.1
5 11	12 35.33	- 5 20.6	2.565	3.399	11.1	21.6	5 11	12 30.57	-10 39.7	1.752	2.610	14.3	20.3
164543	2006 <i>JK</i> ₁₉		4 4.9 254°97	1°2/ 3.7 17			366957	2005 <i>WX</i> ₄₀		4 4.9 140°86	1°8/ 2.7 16		
3 2	13 18.03	- 5 0.5	2.047	2.890	12.3	20.9	3 2	13 18.91	- 4 10.1	2.286	3.124	11.4	21.6
3 12	13 13.57	- 4 19.8	1.966	2.886	9.1	20.7	3 12	13 13.92	- 2 56.5	2.218	3.136	8.2	21.4
3 22	13 7.28	- 3 29.5	1.910	2.882	5.4	20.4	3 22	13 7.34	- 1 34.3	2.177	3.148	4.8	21.2
4 1	12 59.78	- 2 34.2	1.881	2.878	1.7	20.2	4 1	12 59.79	- 0 9.2	2.164	3.160	2.0	21.0
4 11	12 51.92	- 1 39.7	1.880	2.873	3.3	20.3	4 11	12 52.04	+ 1 12.2	2.182	3.170	3.6	21.1
4 21	12 44.56	- 0 51.6	1.907	2.869	7.1	20.5	4 21	12 44.84	+ 2 24.0	2.229	3.180	7.0	21.4
5 1	12 38.48	- 0 14.9	1.960	2.865	10.8	20.7	5 1	12 38.84	+ 3 21.6	2.303	3.189	10.1	21.6
5 11	12 34.25	+ 0 7.5	2.036	2.860	13.9	20.9	5 11	12 34.52	+ 4 2.4	2.400	3.198	12.8	21.8
249497	2009 <i>XN</i> ₁₅		4 4.9 133°38	2°8/ 2.1 17			74423	1999 <i>AU</i> ₃₇		4 4.9 77°35	2°9/ 2.1 17		
3 2	13 19.45	- 0 7.1	2.087	2.936	11.8	20.7	3 2	13 18.54	+ 0 11.9	2.045	2.898	11.9	19.3
3 12	13 14.46	+ 0 44.2	2.020	2.943	8.6	20.5	3 12	13 13.85	+ 0 58.1	1.978	2.903	8.7	19.1
3 22	13 7.72	+ 1 40.7	1.979	2.950	5.2	20.3	3 22	13 7.39	+ 1 49.1	1.936	2.908	5.3	18.9
4 1	12 59.89	+ 2 36.7	1.965	2.957	2.8	20.1	4 1	12 59.82	+ 2 39.5	1.922	2.914	2.9	18.7
4 11	12 51.80	+ 3 26.3	1.980	2.963	4.5	20.2	4 11	12 51.99	+ 3 23.3	1.935	2.919	4.6	18.9
4 21	12 44.29	+ 4 4.6	2.022	2.969	7.9	20.4	4 21	12 44.73	+ 3 55.9	1.976	2.925	7.9	19.1
5 1	12 38.10	+ 4 28.2	2.090	2.975	11.1	20.7	5 1	12 38.79	+ 4 13.9	2.042	2.930	11.2	19.3
5 11	12 33.74	+ 4 35.5	2.180	2.981	13.9	20.9	5 11	12 34.68	+ 4 15.9	2.130	2.935	14.0	19.5
507023	2008 <i>UD</i> ₇₄		4 4.9 173°22	1°7/ 6.9 17			178064	2006 <i>SB</i> ₆₂		4 4.9 172°47	1°9/ 2.4 18		

EPHEMERIDES

4 4.9

4 5.0

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
5477 Holmes							4 4.9 209°90 14°0/29.1 18						
3 2	13 40.07	+23 25.9	1.219	2.055	19.4	17.0	3 2	13 23.50	- 2 54.8	1.873	2.715	13.3	21.8
3 12	13 31.11	+24 23.8	1.164	2.052	16.6	16.8	3 12	13 17.82	- 2 8.1	1.790	2.709	9.8	21.6
3 22	13 18.30	+24 59.0	1.130	2.049	14.5	16.6	3 22	13 9.97	- 1 12.3	1.730	2.702	5.9	21.3
4 1	13 3.02	+24 57.3	1.117	2.045	14.1	16.6	4 1	13 0.63	- 0 12.7	1.699	2.694	2.3	21.1
4 11	12 47.31	+24 10.4	1.128	2.041	15.7	16.7	4 11	12 50.80	+ 0 43.7	1.696	2.685	4.2	21.2
4 21	12 33.18	+22 39.2	1.161	2.036	18.5	16.8	4 21	12 41.54	+ 1 30.7	1.721	2.676	8.4	21.4
5 1	12 22.19	+20 31.3	1.213	2.030	21.7	17.0	5 1	12 33.78	+ 2 3.2	1.771	2.665	12.3	21.6
5 11	12 15.06	+17 57.7	1.283	2.025	24.5	17.2	5 11	12 28.20	+ 2 18.5	1.844	2.654	15.6	21.8
485702 2011 YH ₃₉							4 4.9 104°70 21°2/15.2 17						
3 2	13 29.17	+36 26.5	1.081	1.906	22.0	20.4	3 2	13 40.16	- 5 27.2	0.969	1.818	22.2	19.9
3 12	13 23.29	+39 26.5	1.077	1.918	21.3	20.4	3 12	13 32.90	- 7 33.0	0.885	1.803	17.3	19.5
3 22	13 13.57	+41 41.3	1.091	1.929	21.4	20.5	3 22	13 20.61	- 9 42.9	0.820	1.787	11.4	19.1
4 1	13 1.59	+42 56.5	1.121	1.940	22.4	20.6	4 1	13 4.07	-11 51.7	0.779	1.773	5.1	18.7
4 11	12 49.56	+43 6.9	1.165	1.950	23.8	20.7	4 11	12 45.32	-13 52.3	0.763	1.759	5.6	18.7
4 21	12 39.43	+42 17.3	1.221	1.960	25.4	20.9	4 21	12 27.13	-15 38.6	0.772	1.745	12.4	19.0
5 1	12 32.52	+40 37.8	1.289	1.970	26.9	21.0	5 1	12 12.18	-17 10.1	0.803	1.733	19.0	19.3
5 11	12 29.32	+38 21.0	1.365	1.979	28.2	21.2	5 11	12 2.14	-18 32.0	0.852	1.721	24.5	19.6
167157 2003 SA ₂₃₄							4 4.9 37°97 2°7/ 3.2 18						
3 2	13 23.19	- 1 11.1	1.373	2.235	16.1	19.5	3 2	13 16.69	- 2 3.0	1.879	2.735	12.7	18.6
3 12	13 18.05	- 0 46.6	1.311	2.240	11.8	19.3	3 12	13 12.58	- 0 55.7	1.820	2.747	9.2	18.4
3 22	13 10.24	- 0 15.0	1.271	2.245	7.1	19.0	3 22	13 6.66	+ 0 19.2	1.785	2.759	5.5	18.2
4 1	13 0.69	+ 0 17.7	1.255	2.251	3.0	18.8	4 1	12 59.63	+ 1 35.0	1.778	2.772	2.7	18.0
4 11	12 50.72	+ 0 44.2	1.266	2.257	5.0	18.9	4 11	12 52.38	+ 2 44.3	1.798	2.784	4.6	18.2
4 21	12 41.66	+ 0 58.7	1.301	2.263	9.8	19.2	4 21	12 45.77	+ 3 41.1	1.846	2.797	8.2	18.4
5 1	12 34.63	+ 0 57.2	1.360	2.270	14.2	19.5	5 1	12 40.54	+ 4 20.9	1.918	2.810	11.6	18.7
5 11	12 30.31	+ 0 38.3	1.438	2.276	17.9	19.7	5 11	12 37.19	+ 4 41.9	2.012	2.823	14.5	18.9
427811 2005 GT ₁₇₁							4 4.9 319°29 10°2/25.9 17						
3 2	13 20.80	+19 32.8	1.732	2.586	13.7	19.6	3 2	13 18.06	-22 8.4	2.369	3.137	13.2	20.4
3 12	13 16.07	+20 47.7	1.664	2.565	11.6	19.5	3 12	13 13.57	-22 15.8	2.274	3.132	10.8	20.2
3 22	13 9.00	+21 51.4	1.618	2.545	10.3	19.3	3 22	13 7.31	-22 5.4	2.202	3.127	8.1	20.1
4 1	13 0.34	+22 34.3	1.596	2.526	10.5	19.3	4 1	12 59.85	-21 37.0	2.155	3.122	5.6	19.9
4 11	12 51.19	+22 48.6	1.599	2.506	12.2	19.3	4 11	12 51.98	-20 53.0	2.136	3.118	4.5	19.8
4 21	12 42.68	+22 31.1	1.623	2.488	14.6	19.5	4 21	12 44.52	-19 57.6	2.145	3.113	6.0	19.9
5 1	12 35.83	+21 42.2	1.668	2.470	17.3	19.6	5 1	12 38.25	-18 56.8	2.181	3.108	8.7	20.0
5 11	12 31.32	+20 25.8	1.729	2.453	19.7	19.7	5 11	12 33.73	-17 56.8	2.241	3.103	11.5	20.2
521182 2015 FL ₄₁₁							4 4.9 256°80 4°6/29.9 17						
3 2	13 15.62	+ 5 43.3	2.404	3.261	10.2	21.2	3 2	13 24.28	- 6 59.7	2.053	2.880	12.9	21.5
3 12	13 11.58	+ 7 8.3	2.327	3.251	7.6	21.0	3 12	13 18.17	- 6 54.9	1.974	2.883	9.6	21.3
3 22	13 6.01	+ 8 35.6	2.277	3.241	5.3	20.9	3 22	13 10.06	- 6 41.0	1.919	2.886	5.8	21.1
4 1	12 59.44	+ 9 58.5	2.255	3.230	4.6	20.8	4 1	13 0.64	- 6 20.5	1.892	2.889	1.7	20.8
4 11	12 52.55	+11 10.5	2.262	3.219	6.3	20.9	4 11	12 50.83	- 5 57.6	1.894	2.891	2.5	20.9
4 21	12 46.06	+12 6.6	2.296	3.209	8.9	21.0	4 21	12 41.61	- 5 36.5	1.925	2.892	6.6	21.1
5 1	12 40.62	+12 43.5	2.354	3.198	11.5	21.2	5 1	12 33.82	- 5 21.4	1.983	2.893	10.3	21.4
5 11	12 36.72	+13 0.5	2.434	3.186	13.9	21.3	5 11	12 28.06	- 5 15.5	2.063	2.894	13.5	21.6
282767 2006 HT ₁₀₃							4 4.9 292°67 2°2/ 2.4 17						
3 2	13 15.35	- 4 33.3	1.936	2.788	12.5	20.6	3 2	13 19.81	- 9 30.3	1.973	2.802	13.3	21.0
3 12	13 11.74	- 3 10.5	1.851	2.776	9.2	20.4	3 12	13 15.02	- 9 15.8	1.888	2.798	10.0	20.8
3 22	13 6.27	- 1 35.0	1.790	2.764	5.4	20.1	3 22	13 8.25	- 8 48.9	1.827	2.793	6.2	20.5
4 1	12 59.54	+ 0 6.6	1.757	2.752	2.3	19.9	4 1	13 0.13	- 8 12.5	1.792	2.788	2.1	20.2
4 11	12 52.40	+ 1 45.8	1.752	2.740	4.4	20.0	4 11	12 51.58	- 7 31.2	1.786	2.784	2.4	20.3
4 21	12 45.72	+ 3 14.5	1.776	2.729	8.3	20.2	4 21	12 43.53	- 6 50.4	1.808	2.779	6.6	20.5
5 1	12 40.31	+ 4 26.1	1.824	2.717	12.0	20.4	5 1	12 36.86	- 6 15.5	1.855	2.774	10.4	20.7
5 11	12 36.78	+ 5 16.7	1.894	2.706	15.2	20.6	5 11	12 32.18	- 5 50.8	1.926	2.770	13.8	20.9
406506 2007 VM ₁₄₁							4 4.9 126°67 0°7/ 5.7 18						
3 2	13 23.06	-10 46.8	1.871	2.693	14.2	22.5	3 2	13 19.23	+18 37.7	1.822	2.676	13.0	19.3
3 12	13 17.31	-10 16.4	1.804	2.709	10.6	22.3	3 12	13 14.57	+20 1.4	1.777	2.680	10.9	19.2
3 22	13 9.51	- 9 31.5	1.760	2.724	6.6	22.1	3 22	13 7.89	+21 13.6	1.756	2.685	9.6	19.1
4 1	13 0.45	- 8 36.0	1.743	2.739	2.2	21.8	4 1	12 59.99	+22 5.5	1.760	2.689	9.7	19.1
4 11	12 51.12	- 7 35.6	1.755	2.753	2.5	21.9	4 11	12 51.86	+22 30.9	1.789	2.694	11.2	19.2
4 21	12 42.52	- 6 37.0	1.795	2.766	6.7	22.2	4 21	12 44.50	+22 27.4	1.840	2.700	13.4	19.4
5 1	12 35.50	- 5 46.3	1.862	2.778	10.6	22.4	5 1	12 38.70	+21 55.9	1.911	2.706	15.7	19.5
5 11	12 30.63	- 5 8.0	1.952	2.790	13.9	22.7	5 11	12 35.00	+20 59.9	2.000	2.712	17.7	19.7
153159 2000 SA ₃₁₁							4 4.9 126°20 5°9/12.3 17						
3 2	13 20.45	-28 2.2	2.691	3.411	12.9	20.2	3 2	13 16.79	- 1 14.7	1.960	2.815	12.3	20.1
3 12	13 15.15	-28 30.7	2.605	3.419	10.9	20.0	3 12	13 12.77	- 0 30.8	1.879	2.805	9.0	19.9
3 22	13 8.17	-28 41.0	2.541	3.428	8.8	19.9	3 22	13 6.87	+ 0 20.2	1.822	2.795	5.4	19.7
4 1	13 0.07	-28 32.0	2.501	3.436	6.9	19.8	4 1	12 59.73	+ 1 12.7	1.792	2.786	2.6	19.5
4 11	12 51.63	-28 4.9	2.489	3.444	5.9	19.7	4 11	12 52.19	+ 2 0.6	1.790	2.777	4.4	19.6
4 21	12 43.62	-27 22.7	2.504	3.452	6.5	19.8	4 21	12 45.13	+ 2 38.3	1.814	2.769	8.1	19.8
5 1	12 36.78	-26 30.6	2.547	3.460	8.2	19.9	5 1	12 39.36	+ 3 1.7	1.864	2.760	11.6	20.0
5 11	12 31.63	-25 34.4	2.615	3.467	10.3	20.0	5 11	12 35.47	+ 3 8.6	1.935	2.753	14.8	20.2
128539 2004 PD ₆₅							4 4.9 186°19 0°9/ 5.8 18						
3 2	13 23.13	-10 55.9	1.745	2.571	14.9	21.1	3 2	13 18.84	+ 0 11.5	1.732	2.592	13.4	19.9
3 12	13 17.69	-10 31.5	1.665	2.571	11.3	20.9	3 12	13 14.50	+ 1 3.8	1.655	2.583	9.9	19.7
3 22	13 9.93	- 9 51.3	1.606	2.571	7.0	20.6	3 22	13 8.02	+ 2 3.0	1.600	2.574	6.1	19.4
4 1	13 0.62	- 8 58.4	1.575	2.570	2.5	20.3	4 1	13 0.08	+ 3 2.4	1.573	2.565	3.4	19.3
4 11	12 50.82	- 7 58.9	1.571	2.568	2.7	20.3	4 11	12 51.67	+ 3 54.5	1.572	2.556	5.4	19.4
4 21	12 41.67	- 6 59.6	1.595	2.566	7.3	20.6	4 21	12 43.84	+ 4 33.1	1.597	2.547	9.3	19.6
5 1	12 34.16	- 6 7.6	1.644	2.563	11.6	20.8	5 1	12 37.51	+ 4 53.7	1.647	2.539	13.2	19.8
5 11	12 28.97	- 5 28.3	1.716	2.560	15.2	21.1	5 11	12 33.33	+ 4 54.6	1.716	2.530	16.5	20.0
205659 2001 XO ₁₅₀							4 4.9 209°04 2°1/ 3.1 17						
3 2	13 23.50	- 2 54.8	1.873	2.715	13.3	21.8	3 2	13 23.50	- 2 54.8	1.873	2.715	13.3	21.8
3 12	13 17.82	- 2 8.1	1.790	2.709	9.8	21.6	3 12	13 17.82	- 2 8.1	1.790	2.709	9.8	21.6
3 22	13 9.97	- 1 12.3	1.730	2.702									