

EPHEMERIDES

4 7.9

4 8.0

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
388332	2006 SW ₃₈₅		4 7.9 135°56	4.6/ 2.2 17			329614	2003 KU ₂		4 7.9 260°96	1.9/ 5.5 16		
3 2	13 29.54	+ 6 43.7	2.614	3.440	10.5	21.4	3 2	13 34.11	- 2 32.7	3.150	3.946	9.6	23.7
3 12	13 25.26	+ 7 44.4	2.547	3.448	8.1	21.3	3 12	13 28.76	- 1 46.1	3.021	3.911	7.4	23.5
3 22	13 19.47	+ 8 45.2	2.506	3.456	5.8	21.2	3 22	13 21.85	- 0 52.7	2.918	3.874	4.8	23.3
4 1	13 12.65	+ 9 40.7	2.492	3.464	4.6	21.1	4 1	13 13.74	+ 0 4.1	2.846	3.836	2.4	23.1
4 11	13 5.46	+10 25.9	2.508	3.471	5.4	21.1	4 11	13 4.99	+ 1 0.4	2.806	3.797	2.6	23.0
4 21	12 58.55	+10 57.2	2.551	3.478	7.5	21.3	4 21	12 56.21	+ 1 51.8	2.797	3.756	5.3	23.1
5 1	12 52.53	+11 12.3	2.621	3.484	9.9	21.4	5 1	12 48.05	+ 2 34.6	2.818	3.714	8.2	23.3
5 11	12 47.88	+11 10.9	2.712	3.491	12.0	21.6	5 11	12 41.06	+ 3 6.0	2.865	3.671	10.8	23.4
378344	2007 HS ₅₉		4 7.9 338°34	2.9/ 5.8 17			36737	2000 RP ₆₀		4 7.9 159°59	6.6/ 15.3 18		
3 2	13 34.88	- 0 19.6	1.717	2.547	14.9	20.8	3 2	13 33.08	-29 22.4	2.239	2.941	15.7	19.1
3 12	13 30.27	- 0 5.2	1.637	2.544	11.4	20.6	3 12	13 28.68	-29 44.2	2.145	2.945	13.5	19.0
3 22	13 23.20	+ 0 14.1	1.580	2.541	7.5	20.4	3 22	13 22.08	-29 44.0	2.071	2.948	11.0	18.8
4 1	13 14.34	+ 0 33.7	1.548	2.539	3.7	20.1	4 1	13 13.87	-29 19.7	2.020	2.952	8.5	18.7
4 11	13 4.70	+ 0 48.1	1.543	2.536	3.8	20.1	4 11	13 4.95	-28 32.2	1.995	2.955	6.8	18.6
4 21	12 55.41	+ 0 52.7	1.565	2.534	7.7	20.3	4 21	12 56.30	-27 25.2	1.997	2.957	7.0	18.6
5 1	12 47.50	+ 0 44.3	1.613	2.532	11.7	20.6	5 1	12 48.84	-26 5.3	2.025	2.960	8.8	18.7
5 11	12 41.76	+ 0 21.3	1.682	2.531	15.3	20.8	5 11	12 43.30	-24 40.8	2.079	2.962	11.3	18.8
355249	2007 GE ₅₈		4 7.9 313°74	3.7/ 5.5 17			353583	2011 ST ₂₇₄		4 7.9 74°33	0.2/ 8.2 18		
3 2	13 31.61	- 2 21.5	1.217	2.070	18.3	21.2	3 2	13 31.37	- 8 58.1	2.317	3.117	12.5	20.8
3 12	13 28.80	- 1 39.5	1.137	2.057	14.1	20.8	3 12	13 26.95	- 8 52.0	2.235	3.123	9.6	20.7
3 22	13 22.83	- 0 44.9	1.076	2.044	9.3	20.5	3 22	13 20.72	- 8 36.4	2.176	3.130	6.3	20.5
4 1	13 14.36	+ 0 15.2	1.039	2.031	4.6	20.2	4 1	13 13.24	- 8 13.7	2.145	3.136	2.7	20.2
4 11	13 4.66	+ 1 10.8	1.025	2.019	5.0	20.2	4 11	13 5.25	- 7 47.2	2.142	3.143	1.1	20.1
4 21	12 55.25	+ 1 52.5	1.035	2.007	10.0	20.4	4 21	12 57.53	- 7 20.8	2.168	3.150	4.7	20.4
5 1	12 47.61	+ 2 13.0	1.066	1.996	15.2	20.7	5 1	12 50.82	- 6 58.5	2.222	3.156	8.2	20.6
5 11	12 42.78	+ 2 8.9	1.116	1.986	19.8	20.9	5 11	12 45.69	- 6 43.7	2.300	3.163	11.2	20.8
12926	Brianmason		4 7.9 212°23	1.9/ 6.0 18			292272	2006 SQ ₁₁₄		4 7.9 48°09	0.3/ 7.6 17		
3 2	13 33.62	- 2 43.2	2.434	3.243	11.7	18.7	3 2	13 28.22	- 9 15.6	2.099	2.910	13.2	20.5
3 12	13 28.63	- 2 14.5	2.340	3.236	8.9	18.5	3 12	13 24.68	- 8 38.1	2.023	2.918	10.2	20.3
3 22	13 21.82	- 1 39.7	2.270	3.228	5.8	18.3	3 22	13 19.31	- 7 48.5	1.970	2.927	6.6	20.1
4 1	13 13.70	- 1 2.1	2.229	3.220	2.7	18.1	4 1	13 12.65	- 6 50.5	1.943	2.936	2.7	19.9
4 11	13 4.99	- 0 26.4	2.217	3.211	2.7	18.0	4 11	13 5.51	- 5 49.5	1.945	2.946	1.4	19.8
4 21	12 56.47	+ 0 3.3	2.234	3.201	5.8	18.2	4 21	12 58.68	- 4 51.3	1.975	2.955	5.3	20.1
5 1	12 48.90	+ 0 23.4	2.280	3.191	9.1	18.4	5 1	12 52.93	- 4 1.2	2.032	2.965	8.9	20.3
5 11	12 42.88	+ 0 31.5	2.349	3.181	12.0	18.6	5 11	12 48.82	- 3 23.3	2.113	2.975	12.1	20.5
370128	2001 VL ₁₀₉		4 7.9 215°67	0.8/ 7.2 17			92930	2000 RH ₂₆		4 7.9 200°89	0.0/ 7.8 18		
3 2	13 34.51	- 6 30.7	2.386	3.185	12.2	22.4	3 2	13 30.74	-11 16.4	2.459	3.249	12.1	20.4
3 12	13 29.40	- 6 7.9	2.286	3.176	9.4	22.2	3 12	13 26.43	-10 25.3	2.361	3.245	9.4	20.2
3 22	13 22.38	- 5 36.2	2.210	3.166	6.1	22.0	3 22	13 20.40	- 9 20.8	2.288	3.240	6.2	20.0
4 1	13 13.96	- 4 58.6	2.163	3.155	2.5	21.7	4 1	13 13.12	- 8 5.9	2.243	3.234	2.6	19.8
4 11	13 4.88	- 4 19.1	2.145	3.144	1.7	21.7	4 11	13 5.30	- 6 45.9	2.227	3.228	1.1	19.7
4 21	12 55.96	- 3 42.2	2.156	3.132	5.4	21.9	4 21	12 57.68	- 5 26.5	2.242	3.221	4.8	19.9
5 1	12 48.01	- 3 12.2	2.196	3.119	8.9	22.1	5 1	12 50.99	- 4 13.7	2.286	3.213	8.3	20.1
5 11	12 41.67	- 2 52.5	2.261	3.105	12.0	22.3	5 11	12 45.79	- 3 12.3	2.354	3.205	11.4	20.3
89905	2002 DN ₇		4 7.9 170°69	2.9/ 5.3 18			300944	2008 CC ₁₇₆		4 7.9 75°37	4.1/ 11.9 17		
3 2	13 35.80	+ 0 38.0	2.324	3.137	12.0	20.1	3 2	13 34.92	-19 50.3	2.365	3.113	13.8	20.6
3 12	13 30.25	+ 1 5.2	2.243	3.141	9.2	20.0	3 12	13 29.79	-20 29.7	2.278	3.122	11.3	20.5
3 22	13 22.83	+ 1 36.1	2.186	3.144	6.0	19.8	3 22	13 22.66	-20 55.0	2.214	3.131	8.5	20.3
4 1	13 14.10	+ 2 6.3	2.158	3.146	3.3	19.6	4 1	13 14.09	-21 5.1	2.175	3.140	5.7	20.1
4 11	13 4.84	+ 2 31.4	2.160	3.148	3.6	19.6	4 11	13 4.87	-21 0.9	2.164	3.149	4.2	20.0
4 21	12 55.89	+ 2 47.6	2.190	3.150	6.5	19.8	4 21	12 55.89	-20 45.1	2.182	3.158	5.3	20.1
5 1	12 48.01	+ 2 52.0	2.249	3.151	9.7	20.0	5 1	12 47.99	-20 21.9	2.228	3.166	7.9	20.3
5 11	12 41.81	+ 2 43.4	2.331	3.151	12.5	20.2	5 11	12 41.82	-19 56.5	2.299	3.175	10.7	20.5
462139	2007 SA ₂₁		4 7.9 243°18	3.2/ 10.7 16			87847	2000 SM ₂₁₀		4 7.9 208°35	3.3/ 3.8 18		
3 2	13 34.32	-17 44.8	1.833	2.610	16.2	21.7	3 2	13 30.56	+ 3 27.5	2.836	3.655	10.0	20.3
3 12	13 30.06	-17 43.4	1.728	2.595	13.2	21.4	3 12	13 26.01	+ 4 8.4	2.750	3.650	7.6	20.2
3 22	13 23.26	-17 22.5	1.645	2.580	9.5	21.2	3 22	13 19.98	+ 4 51.3	2.689	3.644	5.2	20.0
4 1	13 14.46	-16 42.0	1.585	2.565	5.6	20.9	4 1	13 12.91	+ 5 32.0	2.656	3.638	3.5	19.9
4 11	13 4.64	-15 44.7	1.553	2.549	3.2	20.7	4 11	13 5.41	+ 6 6.3	2.654	3.632	4.0	19.9
4 21	12 54.93	-14 36.5	1.548	2.532	5.9	20.8	4 21	12 58.09	+ 6 30.9	2.680	3.625	6.3	20.0
5 1	12 46.48	-13 25.2	1.570	2.515	10.1	21.0	5 1	12 51.57	+ 6 43.1	2.733	3.618	8.8	20.2
5 11	12 40.18	-12 19.3	1.615	2.497	14.1	21.2	5 11	12 46.32	+ 6 42.0	2.811	3.610	11.1	20.3
223211	2003 BE ₅₇		4 7.9 50°81	0.7/ 7.1 17			227594	2006 AB ₃₂		4 7.9 115°68	4.0/ 4.5 18		
3 2	13 26.37	- 6 56.7	2.786	3.593	10.4	20.6	3 2	13 34.82	+ 2 43.1	1.996	2.822	13.3	20.3
3 12	13 22.79	- 6 25.4	2.712	3.607	7.9	20.4	3 12	13 29.74	+ 3 20.1	1.928	2.832	10.1	20.1
3 22	13 17.84	- 5 46.6	2.662	3.620	5.1	20.2	3 22	13 22.59	+ 3 59.6	1.883	2.841	6.8	20.0
4 1	13 11.98	- 5 3.2	2.641	3.634	2.0	20.1	4 1	13 14.03	+ 4 36.1	1.866	2.851	4.2	19.8
4 11	13 5.78	- 4 19.2	2.649	3.648	1.4	20.0	4 11	13 4.96	+ 5 4.1	1.876	2.860	4.8	19.9
4 21	12 59.83	- 3 38.2	2.686	3.662	4.4	20.3	4 21	12 56.30	+ 5 19.4	1.915	2.868	7.8	20.1
5 1	12 54.67	- 3 3.9	2.751	3.676	7.2	20.5	5 1	12 48.90	+ 5 19.3	1.979	2.877	11.0	20.3
5 11	12 50.73	- 2 38.6	2.841	3.690	9.7	20.6	5 11	12 43.37	+ 5 3.2	2.066	2.885	13.9	20.5
208719	2002 JJ ₁₁₄		4 7.9 297°80	0.2/ 8.2 17			432032	2008 WS ₄₆		4 8.0 331°13	8.8/ 31.2 17		

EPHEMERIDES

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
502601	2015 <i>CY</i> ₁₁		4 8.0 87°02	2°6/ 5.3	17		68203	2001 <i>BC</i> ₈₀		4 8.0 160°79	1°0/ 7.1	18	
3 2	13 29.94	- 3 13.9	1.966	2.793	13.4	21.3	3 2	13 34.60	- 7 18.7	1.999	2.806	14.0	20.3
3 12	13 26.09	- 2 16.0	1.896	2.802	10.1	21.1	3 12	13 29.69	- 6 40.5	1.918	2.812	10.7	20.1
3 22	13 20.26	- 1 9.5	1.849	2.811	6.5	20.9	3 22	13 22.66	- 5 51.0	1.861	2.818	6.9	19.9
4 1	13 13.07	+ 0 0.1	1.828	2.820	3.2	20.7	4 1	13 14.12	- 4 54.0	1.831	2.824	2.8	19.7
4 11	13 5.38	+ 1 5.9	1.836	2.828	3.5	20.7	4 11	13 4.99	- 3 55.4	1.829	2.828	2.0	19.6
4 21	12 58.05	+ 2 1.7	1.872	2.837	6.9	20.9	4 21	12 56.19	- 3 1.1	1.857	2.832	6.0	19.9
5 1	12 51.88	+ 2 42.8	1.933	2.846	10.4	21.2	5 1	12 48.63	- 2 16.7	1.911	2.835	9.9	20.1
5 11	12 47.48	+ 3 6.5	2.017	2.854	13.5	21.4	5 11	12 42.96	- 1 46.1	1.989	2.838	13.2	20.3
405019	2001 <i>PY</i> ₆₄		4 8.0 316°97	5°9/10.6	17		201541	2003 <i>QH</i> ₉₅		4 8.0 219°30	4°4/ 2.9	18	
3 2	13 31.78	-15 56.2	1.123	1.948	21.4	21.0	3 2	13 31.85	+ 4 54.6	2.429	3.253	11.2	20.7
3 12	13 29.92	-17 2.2	1.021	1.916	17.8	20.7	3 12	13 27.29	+ 5 52.1	2.343	3.245	8.7	20.5
3 22	13 24.34	-17 52.0	0.937	1.884	13.4	20.3	3 22	13 20.97	+ 6 51.7	2.282	3.236	6.1	20.3
4 1	13 15.38	-18 21.1	0.872	1.854	8.6	19.9	4 1	13 13.40	+ 7 48.0	2.250	3.226	4.5	20.2
4 11	13 4.20	-18 27.7	0.829	1.823	5.9	19.7	4 11	13 5.29	+ 8 35.3	2.246	3.217	5.3	20.2
4 21	12 52.58	-18 13.8	0.808	1.794	9.2	19.7	4 21	12 57.38	+ 9 9.0	2.270	3.206	7.8	20.4
5 1	12 42.59	-17 46.8	0.808	1.767	14.9	19.9	5 1	12 50.40	+ 9 26.3	2.320	3.195	10.5	20.5
5 11	12 35.98	-17 17.9	0.825	1.740	20.5	20.1	5 11	12 44.94	+ 9 26.1	2.393	3.184	13.1	20.7
430444	2000 <i>QR</i> ₆₄		4 8.0 219°40	4°8/ 1.9	18		41775	2000 <i>VS</i> ₄₄		4 8.0 139°26	0°1/ 8.1	18	
3 2	13 31.21	+ 5 3.7	2.438	3.263	11.2	21.9	3 2	13 36.45	- 9 56.1	1.949	2.747	14.6	19.9
3 12	13 26.81	+ 6 26.2	2.350	3.252	8.6	21.7	3 12	13 31.12	- 9 33.6	1.873	2.760	11.3	19.7
3 22	13 20.67	+ 7 52.2	2.289	3.241	6.2	21.5	3 22	13 23.58	- 8 58.2	1.820	2.773	7.4	19.5
4 1	13 13.27	+ 9 15.1	2.257	3.230	4.8	21.4	4 1	13 14.50	- 8 13.0	1.793	2.785	3.2	19.2
4 11	13 5.29	+10 28.4	2.253	3.217	5.8	21.5	4 11	13 4.84	- 7 23.0	1.795	2.796	1.3	19.1
4 21	12 57.50	+11 26.5	2.278	3.204	8.3	21.6	4 21	12 55.58	- 6 34.1	1.826	2.806	5.6	19.4
5 1	12 50.63	+12 5.7	2.329	3.190	11.0	21.7	5 1	12 47.66	- 5 51.7	1.884	2.816	9.5	19.7
5 11	12 45.24	+12 24.8	2.402	3.175	13.5	21.9	5 11	12 41.73	- 5 20.4	1.966	2.825	13.0	19.9
168392	1997 <i>YU</i> ₁₇		4 8.0 164°89	1°0/ 6.9	18		366748	2004 <i>PO</i>		4 8.0 207°87	2°2/10.4	17	
3 2	13 30.39	- 6 1.7	2.463	3.270	11.6	20.9	3 2	13 32.04	-16 50.2	2.392	3.159	13.1	21.7
3 12	13 26.10	- 5 31.9	2.378	3.273	8.9	20.8	3 12	13 27.59	-16 34.0	2.290	3.154	10.5	21.5
3 22	13 20.15	- 4 53.9	2.317	3.275	5.7	20.6	3 22	13 21.26	-16 2.2	2.212	3.147	7.5	21.3
4 1	13 13.02	- 4 11.1	2.284	3.277	2.3	20.3	4 1	13 13.56	-15 16.0	2.159	3.140	4.2	21.0
4 11	13 5.42	- 3 27.7	2.281	3.279	1.8	20.3	4 11	13 5.22	-14 18.7	2.136	3.133	2.2	20.9
4 21	12 58.06	- 2 48.0	2.306	3.281	5.1	20.5	4 21	12 57.06	-13 15.0	2.141	3.125	4.6	21.0
5 1	12 51.62	- 2 16.0	2.360	3.282	8.3	20.7	5 1	12 49.88	-12 10.9	2.175	3.116	8.0	21.2
5 11	12 46.64	- 1 54.7	2.437	3.283	11.2	20.9	5 11	12 44.30	-11 12.0	2.235	3.107	11.1	21.4
245935	2006 <i>RY</i> ₅₃		4 8.0 264°97	1°1/ 6.8	18		122471	2000 <i>QR</i> ₁₅₅		4 8.0 227°63	2°2/ 5.5	17	
3 2	13 30.11	- 5 36.6	2.277	3.091	12.3	21.0	3 2	13 30.11	- 5 13.2	2.150	2.968	12.7	20.3
3 12	13 26.07	- 5 10.4	2.189	3.087	9.4	20.8	3 12	13 26.23	- 4 0.0	2.057	2.958	9.7	20.1
3 22	13 20.23	- 4 35.8	2.125	3.084	6.0	20.6	3 22	13 20.43	- 2 34.9	1.987	2.948	6.2	19.8
4 1	13 13.09	- 3 56.2	2.087	3.080	2.5	20.3	4 1	13 13.22	- 1 3.1	1.946	2.938	2.9	19.6
4 11	13 5.39	- 3 16.0	2.079	3.077	2.0	20.3	4 11	13 5.37	+ 0 28.2	1.933	2.927	3.2	19.6
4 21	12 57.91	- 2 39.9	2.098	3.073	5.5	20.5	4 21	12 57.72	+ 1 51.8	1.950	2.915	6.7	19.8
5 1	12 51.41	- 2 12.0	2.145	3.070	8.9	20.7	5 1	12 51.09	+ 3 1.2	1.994	2.903	10.3	20.0
5 11	12 46.47	- 1 55.4	2.216	3.067	12.0	20.9	5 11	12 46.10	+ 3 52.6	2.061	2.891	13.5	20.2
262297	2006 <i>SO</i> ₄₀₄		4 8.0 310°64	2°0/ 9.6	17		337511	2001 <i>SU</i> ₁₃₇		4 8.0 147°28	0°8/ 8.9	17	
3 2	13 29.77	-14 5.8	1.475	2.289	17.7	20.6	3 2	13 31.97	-11 12.8	2.520	3.307	12.0	21.0
3 12	13 27.06	-13 59.8	1.379	2.272	14.1	20.3	3 12	13 27.31	-11 6.8	2.433	3.313	9.3	20.9
3 22	13 21.56	-13 33.5	1.304	2.256	9.9	20.0	3 22	13 20.94	-10 50.5	2.370	3.318	6.3	20.7
4 1	13 13.86	-12 47.9	1.251	2.240	5.1	19.7	4 1	13 13.38	-10 25.8	2.334	3.323	2.9	20.4
4 11	13 5.02	-11 47.8	1.224	2.224	2.2	19.4	4 11	13 5.33	- 9 55.7	2.327	3.328	1.1	20.3
4 21	12 56.32	-10 40.5	1.222	2.209	6.6	19.7	4 21	12 57.51	- 9 23.9	2.350	3.332	4.3	20.6
5 1	12 49.06	- 9 35.5	1.244	2.194	11.6	19.9	5 1	12 50.63	- 8 54.4	2.401	3.336	7.6	20.8
5 11	12 44.24	- 8 41.3	1.287	2.180	16.2	20.1	5 11	12 45.23	- 8 30.9	2.477	3.340	10.5	21.0
212338	2005 <i>SH</i> ₂₇₈		4 8.0 291°83	1°7/ 6.1	17		342904	2008 <i>YL</i> ₁₂₅		4 8.0 127°49	3°6/11.6	17	
3 2	13 28.13	- 5 1.6	2.264	3.083	12.1	20.3	3 2	13 31.25	-19 29.9	2.190	2.952	14.3	21.1
3 12	13 24.71	- 4 15.8	2.159	3.061	9.3	20.1	3 12	13 27.17	-19 38.8	2.098	2.953	11.7	20.9
3 22	13 19.45	- 3 20.0	2.078	3.039	6.0	19.9	3 22	13 21.07	-19 30.9	2.028	2.954	8.6	20.7
4 1	13 12.81	- 2 18.1	2.024	3.017	2.6	19.6	4 1	13 13.50	-19 6.3	1.983	2.955	5.5	20.5
4 11	13 5.50	- 1 15.5	1.999	2.995	2.6	19.6	4 11	13 5.27	-18 27.4	1.965	2.956	3.6	20.4
4 21	12 58.29	- 0 18.1	2.002	2.973	6.1	19.7	4 21	12 57.27	-17 38.3	1.976	2.957	5.1	20.5
5 1	12 51.96	+ 0 28.8	2.032	2.950	9.7	19.9	5 1	12 50.36	-16 44.9	2.013	2.958	8.2	20.6
5 11	12 47.17	+ 1 1.5	2.085	2.928	12.9	20.1	5 11	12 45.20	-15 53.5	2.075	2.959	11.3	20.8
375261	2008 <i>GN</i> ₁₁₇		4 8.0 252°75	2°4/ 5.6	17		327340	2005 <i>UP</i> ₁₆₉		4 8.0 241°55	1°0/ 7.1	17	
3 2	13 31.90	- 3 44.8	2.067	2.886	13.1	21.6	3 2	13 34.62	- 5 58.8	2.172	2.978	13.0	22.1
3 12	13 27.77	- 2 52.9	1.966	2.868	10.1	21.4	3 12	13 29.77	- 5 37.2	2.068	2.962	10.1	21.9
3 22	13 21.54	- 1 50.6	1.889	2.849	6.5	21.2	3 22	13 22.82	- 5 6.2	1.989	2.946	6.6	21.6
4 1	13 13.72	- 0 42.8	1.839	2.830	3.1	20.9	4 1	13 14.27	- 4 29.0	1.936	2.929	2.7	21.4
4 11	13 5.12	+ 0 24.1	1.817	2.811	3.3	20.9	4 11	13 4.93	- 3 50.0	1.912	2.911	1.9	21.3
4 21	12 56.65	+ 1 23.6	1.824	2.790	7.0	21.1	4 21	12 55.70	- 3 14.2	1.917	2.893	5.9	21.5
5 1	12 49.21	+ 2 9.9	1.857	2.770	10.8	21.2	5 1	12 47.50	- 2 46.2	1.950	2.874	9.7	21.7
5 11	12 43.54	+ 2 39.3	1.914	2.749	14.2	21.4	5 11	12 41.05	- 2 29.8	2.007	2.855	13.2	21.9
134084	2004 <i>XH</i> ₁₀₀		4 8.0 118°11	1°4/ 6.6	17		40968	1999 <i>TO</i> ₂₅₄		4 8.0 273°74	7°8/30.5		

EPHEMERIDES

4 8.0

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
212911	2007 XG ₂₂		4 8.0 122°66	0°2/ 8.3 17			316699	1996 TR ₄₆		4 8.0 270°08	2°0/10.3 17		
3 2	13 31.01	-10 8.4	2.802	3.590	10.9	21.9	3 2	13 28.31	-16 44.8	2.283	3.061	13.3	20.9
3 12	13 26.30	-9 43.9	2.726	3.607	8.4	21.7	3 12	13 24.86	-16 17.8	2.181	3.051	10.7	20.7
3 22	13 20.14	-9 10.2	2.674	3.624	5.5	21.6	3 22	13 19.55	-15 34.0	2.101	3.040	7.5	20.5
4 1	13 13.00	-8 29.7	2.650	3.641	2.4	21.4	4 1	13 12.87	-14 34.8	2.046	3.030	4.1	20.2
4 11	13 5.51	-7 45.9	2.656	3.657	0.9	21.3	4 11	13 5.57	-13 24.1	2.021	3.019	2.0	20.1
4 21	12 58.30	-7 2.7	2.692	3.672	4.0	21.5	4 21	12 58.44	-12 7.6	2.023	3.008	4.6	20.2
5 1	12 51.96	-6 23.8	2.757	3.687	7.0	21.8	5 1	12 52.26	-10 51.8	2.054	2.998	8.2	20.4
5 11	12 46.94	-5 52.4	2.848	3.702	9.5	21.9	5 11	12 47.66	-9 42.9	2.110	2.987	11.5	20.6
461544	2003 UE ₂₅₈		4 8.0 155°42	0°7/ 8.7 16			190382	1999 RY ₁₃₄		4 8.0 180°40	2°0/ 5.7 18		
3 2	13 33.32	-12 44.5	1.885	2.681	15.1	22.0	3 2	13 30.43	-4 26.8	2.333	3.147	12.0	20.7
3 12	13 28.90	-12 9.5	1.802	2.687	11.8	21.7	3 12	13 26.24	-3 27.9	2.249	3.148	9.1	20.5
3 22	13 22.24	-11 18.0	1.742	2.693	7.9	21.5	3 22	13 20.31	-2 19.9	2.189	3.149	5.8	20.3
4 1	13 13.99	-10 12.9	1.708	2.698	3.6	21.3	4 1	13 13.14	-1 7.6	2.157	3.149	2.7	20.0
4 11	13 5.09	-8 59.9	1.702	2.703	1.3	21.1	4 11	13 5.47	+0 3.2	2.155	3.149	2.8	20.1
4 21	12 56.54	-7 46.2	1.724	2.707	5.6	21.4	4 21	12 58.05	+1 6.6	2.182	3.148	6.1	20.3
5 1	12 49.28	-6 38.9	1.774	2.711	9.7	21.6	5 1	12 51.60	+1 58.0	2.236	3.147	9.3	20.5
5 11	12 44.01	-5 44.0	1.847	2.714	13.3	21.9	5 11	12 46.68	+2 34.2	2.314	3.145	12.2	20.6
404533	2013 HB ₁₃₈		4 8.0 175°43	0°1/ 8.1 18			497203	2004 TF ₂₇₆		4 8.0 199°16	2°3/ 5.8 17		
3 2	13 37.47	-8 50.0	1.792	2.596	15.4	21.8	3 2	13 34.67	-1 18.9	2.386	3.197	11.8	22.6
3 12	13 32.24	-8 43.1	1.708	2.599	12.0	21.6	3 12	13 29.47	-0 53.8	2.297	3.194	9.0	22.4
3 22	13 24.53	-8 24.2	1.646	2.600	7.9	21.3	3 22	13 22.42	-0 23.7	2.232	3.190	5.9	22.2
4 1	13 15.00	-7 55.7	1.610	2.602	3.4	21.0	4 1	13 14.04	+0 7.7	2.195	3.186	2.9	22.0
4 11	13 4.66	-7 22.2	1.601	2.602	1.4	20.9	4 11	13 5.10	+0 36.0	2.188	3.181	3.0	22.0
4 21	12 54.65	-6 48.9	1.621	2.602	6.1	21.2	4 21	12 56.38	+0 57.2	2.211	3.175	6.1	22.2
5 1	12 46.03	-6 21.5	1.668	2.602	10.4	21.4	5 1	12 48.65	+1 8.2	2.260	3.170	9.3	22.4
5 11	12 39.61	-6 4.4	1.737	2.601	14.2	21.7	5 11	12 42.53	+1 7.0	2.334	3.163	12.2	22.6
67272	2000 FQ ₂₇		4 8.0 106°85	0°4/ 8.5 18			411628	2011 UW ₈₉		4 8.0 91°60	3°8/11.7 18		
3 2	13 30.72	-10 34.4	2.118	2.919	13.5	18.9	3 2	13 31.83	-21 20.2	1.569	2.347	18.4	21.0
3 12	13 26.70	-10 17.2	2.032	2.921	10.5	18.7	3 12	13 28.24	-20 52.1	1.494	2.359	15.0	20.8
3 22	13 20.72	-9 47.6	1.969	2.922	7.0	18.5	3 22	13 22.02	-19 57.0	1.438	2.370	11.0	20.5
4 1	13 13.35	-9 8.3	1.932	2.923	3.1	18.3	4 1	13 13.94	-18 36.1	1.406	2.382	6.7	20.3
4 11	13 5.37	-8 23.6	1.923	2.924	1.1	18.1	4 11	13 5.15	-16 55.4	1.399	2.394	3.9	20.2
4 21	12 57.65	-7 38.4	1.942	2.925	5.1	18.4	4 21	12 56.87	-15 4.5	1.419	2.405	6.1	20.3
5 1	12 51.01	-6 57.9	1.989	2.926	8.8	18.6	5 1	12 50.17	-13 14.6	1.466	2.416	10.2	20.6
5 11	12 46.08	-6 26.7	2.059	2.927	12.1	18.8	5 11	12 45.81	-11 36.0	1.536	2.427	14.1	20.9
21156	1993 QP ₇		4 8.0 120°49	3°6/ 4.9 18			102954	1999 XX ₅₈		4 8.0 200°88	1°4/ 6.8 18		
3 2	13 33.13	-2 23.4	1.554	2.390	15.9	18.9	3 2	13 34.60	-5 48.0	2.016	2.827	13.7	20.7
3 12	13 29.06	-1 16.3	1.486	2.397	12.1	18.7	3 12	13 29.79	-5 14.5	1.927	2.823	10.5	20.4
3 22	13 22.48	+0 1.3	1.440	2.404	7.8	18.5	3 22	13 22.82	-4 30.8	1.861	2.819	6.8	20.2
4 1	13 14.11	+1 21.8	1.420	2.411	4.1	18.2	4 1	13 14.26	-3 40.8	1.822	2.814	2.9	19.9
4 11	13 5.06	+2 36.0	1.427	2.417	4.7	18.3	4 11	13 5.00	-2 50.0	1.811	2.809	2.3	19.9
4 21	12 56.47	+3 36.0	1.460	2.423	8.7	18.5	4 21	12 55.99	-2 4.0	1.829	2.803	6.3	20.1
5 1	12 49.41	+4 15.9	1.517	2.429	12.8	18.8	5 1	12 48.15	-1 28.2	1.874	2.796	10.2	20.4
5 11	12 44.61	+4 33.3	1.595	2.435	16.4	19.0	5 11	12 42.18	-1 6.1	1.943	2.789	13.6	20.6
338969	2004 FR ₅₃		4 8.0 99°95	1°6/ 6.4 17			337577	2001 SL ₃₁₉		4 8.0 131°01	1°3/ 6.4 18		
3 2	13 30.02	-4 44.3	2.200	3.017	12.5	21.5	3 2	13 28.80	-6 18.2	2.478	3.288	11.5	21.2
3 12	13 26.03	-4 9.7	2.119	3.019	9.5	21.3	3 12	13 24.85	-5 26.1	2.399	3.296	8.7	21.0
3 22	13 20.21	-3 26.8	2.061	3.021	6.1	21.0	3 22	13 19.33	-4 24.8	2.345	3.304	5.6	20.8
4 1	13 13.11	-2 39.5	2.030	3.023	2.6	20.8	4 1	13 12.71	-3 18.5	2.319	3.312	2.3	20.6
4 11	13 5.48	-1 52.9	2.028	3.025	2.4	20.8	4 11	13 5.68	-2 12.4	2.322	3.319	2.1	20.6
4 21	12 58.11	-1 12.1	2.055	3.027	5.8	21.0	4 21	12 58.91	-1 11.6	2.355	3.327	5.3	20.8
5 1	12 51.77	-0 41.2	2.108	3.029	9.3	21.2	5 1	12 53.06	-0 20.5	2.415	3.334	8.4	21.0
5 11	12 47.04	-0 23.2	2.184	3.031	12.3	21.4	5 11	12 48.62	+0 17.7	2.500	3.340	11.1	21.2
132388	2002 GQ ₈₈		4 8.0 277°34	6°5/ 1.9 17			147957	1993 TM ₂₁		4 8.0 120°65	0°8/ 7.3 18		
3 2	13 32.81	+4 58.5	1.692	2.532	14.6	20.3	3 2	13 35.99	-6 44.6	2.166	2.967	13.2	20.7
3 12	13 29.05	+6 24.6	1.595	2.505	11.4	20.0	3 12	13 30.47	-6 21.5	2.095	2.986	10.1	20.5
3 22	13 22.71	+7 57.6	1.522	2.478	8.3	19.8	3 22	13 23.02	-5 49.4	2.049	3.005	6.5	20.3
4 1	13 14.34	+9 28.7	1.474	2.449	6.5	19.6	4 1	13 14.26	-5 11.6	2.030	3.023	2.6	20.1
4 11	13 4.90	+10 47.5	1.453	2.421	7.9	19.6	4 11	13 5.04	-4 32.8	2.040	3.040	1.7	20.1
4 21	12 55.52	+11 45.2	1.457	2.392	11.4	19.7	4 21	12 56.24	-3 57.5	2.080	3.057	5.4	20.4
5 1	12 47.39	+12 15.9	1.485	2.362	15.2	19.9	5 1	12 48.65	-3 29.9	2.148	3.073	8.9	20.6
5 11	12 41.42	+12 18.1	1.531	2.332	18.7	20.0	5 11	12 42.84	-3 13.1	2.240	3.088	12.0	20.8
466074	2011 YZ ₂₄		4 8.0 104°47	6°9/ 1.9 18			177061	2003 EA ₅₉		4 8.0 133°87	0°3/ 7.8 18		
3 2	13 35.83	+7 58.5	1.707	2.543	14.7	21.9	3 2	13 37.60	-5 47.8	2.655	3.444	11.4	20.1
3 12	13 30.73	+9 20.4	1.658	2.563	11.4	21.7	3 12	13 31.44	-6 0.4	2.570	3.453	8.8	19.9
3 22	13 23.32	+10 40.8	1.632	2.581	8.4	21.6	3 22	13 23.57	-6 7.5	2.510	3.462	5.7	19.8
4 1	13 14.38	+11 50.8	1.632	2.600	6.9	21.6	4 1	13 14.49	-6 10.6	2.478	3.470	2.4	19.5
4 11	13 4.98	+12 42.3	1.658	2.618	8.0	21.7	4 11	13 4.93	-6 12.1	2.478	3.478	1.2	19.4
4 21	12 56.18	+13 10.4	1.711	2.635	10.7	21.8	4 21	12 55.63	-6 14.4	2.509	3.486	4.5	19.7
5 1	12 48.91	+13 13.5	1.787	2.652	13.6	22.1	5 1	12 47.31	-6 20.0	2.569	3.494	7.6	19.9
5 11	12 43.79	+12 53.1	1.883	2.668	16.3	22.3	5 11	12 40.51	-6 30.8	2.655	3.501	10.4	20.1
170019	2002 UV ₂₃		4 8.0 202°74	2°0/10.2 18			505816	2015 BP ₄₃₂		4 8.0 186°60	3°2/11.2 17		
3 2	13 30.52	-15 52.4	2.455	3.228	12.7	20.4	3 2	13 35.58	-18 20.1	2.400	3.153	13.4	23.0</

EPHEMERIDES

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
33764	1999 <i>RM</i> ₉₂		4 8.0 343°25	0°0/ 7.8 18			422793	2001 <i>WW</i> ₅₉		4 8.0 209°79	3°0/11.4 17		
3 2	13 28.44	- 9 18.4	2.107	2.917	13.2	17.9	3 2	13 32.21	-19 49.2	2.311	3.066	13.8	22.7
3 12	13 25.00	- 8 57.2	2.019	2.913	10.2	17.7	3 12	13 27.86	-19 31.3	2.208	3.060	11.3	22.5
3 22	13 19.65	- 8 24.4	1.953	2.909	6.7	17.5	3 22	13 21.52	-18 55.1	2.126	3.053	8.3	22.3
4 1	13 12.92	- 7 42.8	1.913	2.906	2.8	17.2	4 1	13 13.73	-18 1.4	2.071	3.045	5.0	22.1
4 11	13 5.59	- 6 56.9	1.902	2.902	1.2	17.1	4 11	13 5.27	-16 53.1	2.044	3.037	3.0	22.0
4 21	12 58.48	- 6 11.9	1.918	2.900	5.2	17.4	4 21	12 57.00	-15 35.7	2.046	3.028	4.8	22.1
5 1	12 52.39	- 5 32.9	1.961	2.897	9.0	17.6	5 1	12 49.76	-14 15.7	2.076	3.019	8.1	22.3
5 11	12 47.96	- 5 4.2	2.027	2.895	12.3	17.8	5 11	12 44.20	-13 0.1	2.132	3.009	11.4	22.4
30816	1990 <i>QA</i> ₆		4 8.0 191°81	1°2/ 9.1 18			329325	2000 <i>UU</i> ₁₀₆		4 8.0 161°15	5°1/ 2.7 18		
3 2	13 36.66	-12 24.0	1.898	2.689	15.2	19.0	3 2	13 34.77	+ 7 26.2	2.307	3.129	11.8	21.0
3 12	13 31.58	-12 15.1	1.807	2.688	12.0	18.8	3 12	13 29.50	+ 8 17.0	2.236	3.134	9.2	20.8
3 22	13 24.11	-11 51.4	1.738	2.686	8.2	18.5	3 22	13 22.39	+ 9 7.1	2.191	3.140	6.7	20.7
4 1	13 14.85	-11 14.6	1.694	2.683	3.9	18.2	4 1	13 14.02	+ 9 50.7	2.173	3.144	5.2	20.6
4 11	13 4.77	-10 28.8	1.679	2.680	1.5	18.1	4 11	13 5.19	+10 22.5	2.184	3.148	5.9	20.7
4 21	12 54.96	- 9 39.7	1.692	2.676	5.6	18.3	4 21	12 56.69	+10 38.7	2.223	3.152	8.3	20.8
5 1	12 46.44	- 8 53.5	1.733	2.671	9.8	18.6	5 1	12 49.29	+10 37.5	2.287	3.155	10.9	21.0
5 11	12 40.00	- 8 16.1	1.797	2.665	13.6	18.8	5 11	12 43.55	+10 18.8	2.374	3.158	13.4	21.1
29758	1999 <i>CN</i> ₈		4 8.0 70°75	9°5/30.4 18			95922	2003 <i>HK</i> ₅₄		4 8.0 260°54	0°4/ 8.3 16		
3 2	13 34.04	+15 6.1	1.653	2.492	14.9	17.4	3 2	13 36.58	- 9 6.0	1.574	2.388	16.8	20.0
3 12	13 29.55	+16 35.4	1.607	2.503	12.3	17.3	3 12	13 32.15	- 9 7.4	1.479	2.375	13.2	19.7
3 22	13 22.66	+17 56.6	1.583	2.515	10.2	17.2	3 22	13 24.85	- 8 55.4	1.405	2.361	8.8	19.4
4 1	13 14.15	+18 59.5	1.584	2.526	9.6	17.1	4 1	13 15.30	- 8 32.1	1.356	2.348	3.9	19.1
4 11	13 5.13	+19 36.3	1.610	2.538	10.7	17.2	4 11	13 4.59	- 8 1.8	1.333	2.334	1.5	18.9
4 21	12 56.70	+19 43.4	1.659	2.549	13.0	17.4	4 21	12 54.02	- 7 30.3	1.337	2.320	6.8	19.2
5 1	12 49.83	+19 20.7	1.729	2.561	15.5	17.6	5 1	12 44.91	- 7 4.1	1.366	2.306	11.8	19.4
5 11	12 45.14	+18 31.8	1.817	2.573	17.8	17.8	5 11	12 38.26	- 6 48.9	1.417	2.291	16.1	19.6
333792	2011 <i>GS</i> ₈₂		4 8.0 298°28	3°3/ 5.1 17			446269	2013 <i>ST</i> ₂₀		4 8.0 32°61	14°6/22.1 18		
3 2	13 31.82	- 0 20.4	1.842	2.674	13.9	20.5	3 2	13 28.47	-39 50.1	1.032	1.759	29.0	20.3
3 12	13 27.84	+ 0 18.8	1.759	2.667	10.7	20.2	3 12	13 27.71	-40 42.2	0.965	1.763	26.2	20.0
3 22	13 21.63	+ 1 4.3	1.699	2.660	7.0	20.0	3 22	13 22.80	-40 44.6	0.909	1.768	22.9	19.8
4 1	13 13.80	+ 1 50.9	1.664	2.654	3.8	19.8	4 1	13 14.59	-39 46.6	0.865	1.774	19.3	19.6
4 11	13 5.24	+ 2 31.9	1.657	2.647	4.3	19.8	4 11	13 4.92	-37 44.3	0.838	1.780	16.1	19.4
4 21	12 56.95	+ 3 1.8	1.677	2.640	7.8	20.0	4 21	12 55.95	-34 45.0	0.830	1.787	14.6	19.4
5 1	12 49.88	+ 3 16.3	1.722	2.634	11.5	20.2	5 1	12 49.64	-31 8.5	0.843	1.794	15.6	19.5
5 11	12 44.75	+ 3 13.4	1.789	2.628	14.9	20.4	5 11	12 47.11	-27 21.8	0.877	1.801	18.6	19.6
463096	2011 <i>UH</i> ₂₂		4 8.0 97°94	2°7/10.4 18			374511	2005 <i>YG</i> ₂₀₅		4 8.0 147°71	3°7/ 4.4 17		
3 2	13 35.93	-17 8.5	1.646	2.430	17.4	21.9	3 2	13 32.37	+ 1 4.3	2.012	2.840	13.1	21.3
3 12	13 31.10	-16 53.4	1.579	2.452	13.9	21.7	3 12	13 27.96	+ 1 56.3	1.938	2.844	10.0	21.2
3 22	13 23.74	-16 17.4	1.533	2.473	9.7	21.5	3 22	13 21.54	+ 2 53.1	1.889	2.848	6.6	21.0
4 1	13 14.63	-15 22.4	1.511	2.494	5.4	21.3	4 1	13 13.71	+ 3 49.0	1.866	2.852	4.0	20.8
4 11	13 4.92	-14 13.7	1.516	2.514	2.7	21.2	4 11	13 5.33	+ 4 37.5	1.871	2.856	4.6	20.8
4 21	12 55.79	-12 59.0	1.549	2.534	5.8	21.4	4 21	12 57.28	+ 5 13.4	1.904	2.859	7.7	21.0
5 1	12 48.27	-11 46.9	1.608	2.553	9.9	21.7	5 1	12 50.41	+ 5 33.1	1.963	2.862	11.0	21.2
5 11	12 43.06	-10 44.7	1.691	2.572	13.6	22.0	5 11	12 45.32	+ 5 35.1	2.043	2.865	14.0	21.4
436643	2011 <i>QS</i> ₂₃		4 8.0 65°43	5°1/13.5 17			87940	2000 <i>SQ</i> ₃₅₄		4 8.0 173°66	5°3/ 1.9 17		
3 2	13 31.12	-24 11.2	2.232	2.969	14.8	20.7	3 2	13 30.40	+ 4 14.8	2.068	2.902	12.5	19.9
3 12	13 27.09	-24 30.9	2.145	2.975	12.4	20.6	3 12	13 26.43	+ 5 47.0	1.997	2.904	9.6	19.7
3 22	13 21.04	-24 31.7	2.077	2.982	9.6	20.4	3 22	13 20.54	+ 7 23.1	1.951	2.906	6.8	19.6
4 1	13 13.52	-24 12.7	2.034	2.989	6.9	20.2	4 1	13 13.29	+ 8 55.4	1.932	2.907	5.3	19.5
4 11	13 5.36	-23 35.6	2.018	2.995	5.2	20.1	4 11	13 5.50	+10 15.8	1.941	2.908	6.4	19.5
4 21	12 57.47	-22 44.2	2.029	3.002	5.8	20.2	4 21	12 58.02	+11 18.2	1.978	2.908	9.1	19.7
5 1	12 50.69	-21 44.5	2.066	3.009	8.2	20.3	5 1	12 51.64	+11 58.7	2.040	2.908	12.0	19.9
5 11	12 45.68	-20 43.2	2.129	3.015	11.0	20.5	5 11	12 46.97	+12 16.4	2.122	2.908	14.7	20.1
458928	2011 <i>UF</i> ₂₈₄		4 8.0 135°67	1°0/ 8.9 18			21181	1994 <i>EB</i> ₂		4 8.0 4°80	18°6/16.1 18		
3 2	13 36.37	-12 45.9	1.924	2.713	15.1	22.9	3 2	13 20.06	+24 51.0	0.974	1.850	19.9	16.2
3 12	13 31.12	-12 24.5	1.848	2.728	11.8	22.7	3 12	13 20.43	+28 40.9	0.953	1.848	18.7	16.1
3 22	13 23.64	-11 47.9	1.794	2.742	7.9	22.5	3 22	13 17.49	+32 2.1	0.952	1.849	18.8	16.1
4 1	13 14.59	-10 58.5	1.766	2.755	3.7	22.3	4 1	13 12.17	+34 33.7	0.969	1.852	20.2	16.2
4 11	13 4.94	-10 1.3	1.767	2.768	1.4	22.1	4 11	13 5.99	+36 3.0	1.003	1.856	22.2	16.3
4 21	12 55.72	- 9 2.4	1.796	2.779	5.4	22.4	4 21	13 0.49	+36 28.1	1.050	1.863	24.4	16.5
5 1	12 47.86	- 8 8.4	1.853	2.790	9.4	22.7	5 1	12 57.00	+35 54.2	1.109	1.871	26.5	16.7
5 11	12 42.02	- 7 24.5	1.935	2.800	12.8	22.9	5 11	12 56.26	+34 31.8	1.177	1.881	28.2	16.9
209014	2003 <i>BY</i> ₉₁		4 8.0 357°50	0°5/ 8.5 17			463263	2012 <i>GO</i> ₇		4 8.0 139°84	0°6/ 7.5 18		
3 2	13 33.51	- 8 39.9	1.997	2.802	14.0	19.9	3 2	13 37.67	- 6 7.5	2.144	2.944	13.4	21.5
3 12	13 29.01	- 8 54.1	1.910	2.801	10.9	19.7	3 12	13 31.88	- 6 1.0	2.066	2.956	10.3	21.3
3 22	13 22.34	- 8 59.0	1.846	2.800	7.3	19.5	3 22	13 24.03	- 5 46.5	2.011	2.966	6.7	21.1
4 1	13 14.09	- 8 56.1	1.808	2.799	3.2	19.2	4 1	13 14.75	- 5 26.6	1.984	2.977	2.7	20.8
4 11	13 5.13	- 8 48.4	1.798	2.799	1.2	19.1	4 11	13 4.90	- 5 5.3	1.986	2.986	1.6	20.8
4 21	12 56.41	- 8 39.5	1.816	2.799	5.3	19.4	4 21	12 55.41	- 4 46.5	2.018	2.995	5.5	21.1
5 1	12 48.86	- 8 33.3	1.860	2.799	9.2	19.6	5 1	12 47.14	- 4 33.9	2.078	3.004	9.1	21.3
5 11	12 43.19	- 8 33.4	1.929	2.800	12.6	19.8	5 11	12 40.72	- 4 30.4	2.162	3.012	12.3	21.5
175413	2006 <i>PH</i> ₉		4 8.0 199°31	0°8/ 8.8 16			244232	2002 <i>CX</i> ₆₀		4 8.0 174°67	3°9/ 4		

EPHEMERIDES

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
312182	2007 VA ₄₈		4 8.0 47°19'	0°1'	8.1 18		433499	2013 WF ₄₀		4 8.1 99°38'	5°6'	14.5 17	
3 2	13 36.45	- 8 2.9	1.449	2.271	17.6	20.5	3 2	13 31.18	-27 8.7	2.170	2.892	15.6	20.8
3 12	13 31.96	- 8 9.7	1.376	2.276	13.6	20.3	3 12	13 27.21	-27 11.2	2.084	2.902	13.2	20.7
3 22	13 24.60	- 8 3.9	1.323	2.281	9.0	20.0	3 22	13 21.15	-26 51.2	2.019	2.913	10.4	20.5
4 1	13 15.12	- 7 48.2	1.294	2.286	3.8	19.7	4 1	13 13.61	-26 8.1	1.976	2.923	7.6	20.4
4 11	13 4.74	- 7 27.4	1.291	2.292	1.6	19.6	4 11	13 5.48	-25 4.1	1.960	2.933	5.8	20.3
4 21	12 54.81	- 7 7.0	1.314	2.298	6.8	19.9	4 21	12 57.68	-23 44.1	1.972	2.943	6.1	20.3
5 1	12 46.59	- 6 52.8	1.363	2.304	11.6	20.2	5 1	12 51.09	-22 15.5	2.011	2.953	8.4	20.4
5 11	12 40.92	- 6 49.4	1.432	2.310	15.8	20.5	5 11	12 46.34	-20 46.5	2.075	2.963	11.1	20.6
128834	2004 RT ₃₂₃		4 8.0 271°79'	3°4'	11.2 18		140146	2001 SX ₁₆₀		4 8.1 251°55'	2°1'	10.1 17	
3 2	13 31.68	-18 27.3	1.918	2.694	15.6	20.0	3 2	13 32.10	-14 49.1	2.397	3.172	12.8	20.0
3 12	13 27.83	-18 31.8	1.827	2.691	12.7	19.8	3 12	13 27.72	-14 55.7	2.294	3.163	10.3	19.8
3 22	13 21.69	-18 18.0	1.756	2.689	9.3	19.6	3 22	13 21.44	-14 49.7	2.214	3.153	7.2	19.5
4 1	13 13.87	-17 45.8	1.709	2.686	5.6	19.4	4 1	13 13.76	-14 31.9	2.161	3.144	4.0	19.3
4 11	13 5.26	-16 58.2	1.690	2.684	3.4	19.2	4 11	13 5.40	-14 4.5	2.136	3.134	2.1	19.2
4 21	12 56.89	-16 0.5	1.697	2.681	5.5	19.3	4 21	12 57.17	-13 31.3	2.140	3.124	4.6	19.3
5 1	12 49.74	-14 59.6	1.732	2.679	9.2	19.5	5 1	12 49.86	-12 56.6	2.172	3.113	7.9	19.5
5 11	12 44.57	-14 2.7	1.790	2.676	12.7	19.8	5 11	12 44.14	-12 25.4	2.229	3.103	11.1	19.7
423686	2005 YQ ₂₆₉		4 8.0 115°67'	4°0'	3.7 18		375931	2009 WH ₆₈		4 8.1 168°03'	2°2'	10.4 17	
3 2	13 33.76	+ 2 50.3	2.267	3.089	12.0	22.8	3 2	13 30.02	-17 45.5	2.005	2.784	14.9	21.1
3 12	13 28.65	+ 3 49.8	2.208	3.110	9.1	22.6	3 12	13 26.37	-17 9.7	1.915	2.785	11.9	20.9
3 22	13 21.78	+ 4 51.8	2.174	3.130	6.2	22.4	3 22	13 20.64	-16 13.8	1.847	2.786	8.4	20.6
4 1	13 13.76	+ 5 50.5	2.168	3.150	4.1	22.3	4 1	13 13.42	-15 0.0	1.805	2.787	4.6	20.4
4 11	13 5.37	+ 6 40.2	2.191	3.169	4.8	22.4	4 11	13 5.56	-13 33.2	1.790	2.788	2.2	20.2
4 21	12 57.39	+ 7 16.6	2.243	3.187	7.4	22.6	4 21	12 58.00	-12 0.5	1.804	2.789	5.0	20.4
5 1	12 50.55	+ 7 36.9	2.321	3.205	10.2	22.8	5 1	12 51.60	-10 30.1	1.845	2.789	8.9	20.7
5 11	12 45.33	+ 7 40.4	2.422	3.222	12.7	23.0	5 11	12 47.03	- 9 9.4	1.911	2.790	12.4	20.9
394785	2008 HQ ₁₈		4 8.0 348°45'	4°3'	3.2 17		158111	2001 AM ₄₃		4 8.1 190°61'	1°8'	6.1 18	
3 2	13 27.82	+ 3 33.5	2.226	3.061	11.7	20.5	3 2	13 34.20	- 2 36.8	2.642	3.447	11.0	20.8
3 12	13 24.36	+ 4 31.1	2.149	3.058	9.0	20.3	3 12	13 28.95	- 2 9.5	2.551	3.445	8.4	20.6
3 22	13 19.15	+ 5 31.5	2.097	3.055	6.2	20.1	3 22	13 22.04	- 1 36.7	2.486	3.443	5.4	20.4
4 1	13 12.72	+ 6 29.2	2.072	3.053	4.4	20.0	4 1	13 13.95	- 1 1.8	2.449	3.440	2.5	20.2
4 11	13 5.78	+ 7 18.2	2.075	3.051	5.2	20.0	4 11	13 5.35	- 0 28.7	2.442	3.436	2.5	20.2
4 21	12 59.10	+ 7 53.6	2.105	3.050	7.8	20.2	4 21	12 56.96	- 0 1.1	2.465	3.432	5.4	20.4
5 1	12 53.39	+ 8 12.3	2.161	3.048	10.7	20.4	5 1	12 49.46	+ 0 17.6	2.517	3.427	8.4	20.6
5 11	12 49.21	+ 8 13.2	2.238	3.047	13.3	20.5	5 11	12 43.40	+ 0 25.5	2.593	3.421	11.1	20.7
241713	2000 TJ ₂₂		4 8.0 115°54'	3°0'	10.8 16		471371	2011 ST ₇₂		4 8.1 205°19'	0°2'	7.7 17	
3 2	13 36.31	-16 55.2	2.137	2.903	14.5	21.2	3 2	13 28.28	- 9 43.3	2.527	3.326	11.6	22.2
3 12	13 30.98	-17 12.6	2.058	2.917	11.7	21.0	3 12	13 24.56	- 9 0.4	2.435	3.324	8.9	22.0
3 22	13 23.53	-17 15.2	2.000	2.932	8.4	20.8	3 22	13 19.24	- 8 6.1	2.367	3.322	5.8	21.8
4 1	13 14.58	-17 3.0	1.968	2.945	5.0	20.6	4 1	13 12.79	- 7 3.7	2.327	3.319	2.4	21.6
4 11	13 5.02	-16 38.5	1.965	2.959	3.0	20.5	4 11	13 5.85	- 5 57.7	2.316	3.316	1.2	21.5
4 21	12 55.80	-16 5.6	1.990	2.972	5.1	20.7	4 21	12 59.11	- 4 53.3	2.334	3.313	4.7	21.7
5 1	12 47.82	-15 29.6	2.043	2.984	8.4	20.9	5 1	12 53.23	- 3 55.6	2.381	3.310	8.0	21.9
5 11	12 41.72	-14 55.9	2.121	2.997	11.5	21.1	5 11	12 48.74	- 3 8.4	2.452	3.306	10.9	22.1
11472	1981 SE ₉		4 8.0 249°65'	2°0'	6.3 18		435975	2009 DH ₈₂		4 8.1 52°76'	1°2'	6.9 17	
3 2	13 34.21	- 4 58.6	1.900	2.716	14.2	19.1	3 2	13 31.59	- 5 12.4	2.050	2.867	13.3	21.0
3 12	13 29.82	- 4 15.6	1.798	2.698	11.0	18.8	3 12	13 27.34	- 4 53.4	1.978	2.878	10.1	20.8
3 22	13 23.07	- 3 21.0	1.719	2.679	7.1	18.5	3 22	13 21.14	- 4 26.3	1.929	2.888	6.5	20.6
4 1	13 14.50	- 2 19.2	1.666	2.659	3.1	18.2	4 1	13 13.59	- 3 54.6	1.906	2.899	2.7	20.4
4 11	13 5.01	- 1 16.6	1.642	2.638	3.0	18.2	4 11	13 5.53	- 3 23.0	1.912	2.910	2.0	20.4
4 21	12 55.63	- 0 20.1	1.645	2.617	7.1	18.4	4 21	12 57.82	- 2 56.1	1.945	2.921	5.7	20.6
5 1	12 47.39	+ 0 23.9	1.675	2.595	11.4	18.6	5 1	12 51.26	- 2 37.8	2.005	2.933	9.3	20.9
5 11	12 41.12	+ 0 51.3	1.728	2.572	15.1	18.8	5 11	12 46.44	- 2 30.7	2.089	2.944	12.4	21.1
215061	2009 DM ₁₂₄		4 8.0 195°87'	1°1'	6.8 17		203331	2001 TV ₁₉₈		4 8.1 140°03'	3°8'	5.0 18	
3 2	13 29.61	- 5 58.4	2.479	3.288	11.5	21.6	3 2	13 37.10	- 0 9.4	1.631	2.460	15.6	21.1
3 12	13 25.57	- 5 23.8	2.391	3.287	8.8	21.4	3 12	13 32.03	+ 0 39.4	1.563	2.469	11.9	20.9
3 22	13 19.88	- 4 40.7	2.327	3.285	5.7	21.2	3 22	13 24.42	+ 1 34.9	1.517	2.478	7.8	20.6
4 1	13 13.02	- 3 52.6	2.291	3.284	2.3	20.9	4 1	13 15.02	+ 2 30.5	1.497	2.486	4.3	20.4
4 11	13 5.67	- 3 4.0	2.284	3.282	1.9	20.9	4 11	13 4.94	+ 3 18.4	1.504	2.493	4.8	20.5
4 21	12 58.53	- 2 19.3	2.306	3.280	5.2	21.1	4 21	12 55.36	+ 3 52.4	1.539	2.500	8.6	20.7
5 1	12 52.28	- 1 42.8	2.356	3.278	8.4	21.3	5 1	12 47.33	+ 4 8.2	1.598	2.506	12.5	21.0
5 11	12 47.47	- 1 17.4	2.430	3.275	11.2	21.5	5 11	12 41.58	+ 4 4.6	1.679	2.512	16.0	21.2
206724	2004 BY ₇₂		4 8.1 0°99'	2°7'	10.4 17		496658	2016 BF ₄		4 8.1 127°91'	5°9'	12.9 18	
3 2	13 29.28	-15 42.4	1.766	2.563	15.9	20.1	3 2	13 38.79	-23 26.7	1.744	2.490	18.0	21.6
3 12	13 26.11	-15 47.1	1.682	2.562	12.7	19.9	3 12	13 33.54	-23 58.9	1.665	2.503	15.0	21.4
3 22	13 20.64	-15 34.3	1.618	2.561	9.0	19.7	3 22	13 25.56	-24 8.9	1.606	2.516	11.6	21.2
4 1	13 13.46	-15 5.1	1.578	2.561	5.1	19.5	4 1	13 15.56	-23 54.3	1.570	2.528	8.1	21.1
4 11	13 5.52	-14 23.0	1.564	2.562	2.7	19.3	4 11	13 4.70	-23 16.7	1.559	2.540	6.0	21.0
4 21	12 57.85	-13 33.5	1.577	2.563	5.5	19.5	4 21	12 54.26	-22 21.1	1.576	2.551	7.0	21.0
5 1	12 51.45	-12 43.5	1.616	2.565	9.5	19.7	5 1	12 45.43	-21 15.5	1.619	2.561	10.1	21.2
5 11	12 47.08	-11 59.6	1.678	2.568	13.2	19.9	5 11	12 39.04	-20 9.1	1.686	2.571	13.4	21.5
124790	2001 SV ₂₅₇		4 8.1 131°36'	0°7'	7.4 18		341766	2007 VY ₃₂₉		4 8.1 132°67'	4°7'	14.5 17	
3 2	13 35.93	- 8 47.7	1.688	2.499	15.9	21.0	3 2						

EPHEMERIDES

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
468002	2012 <i>VH</i> ₂₆		4 8.1 257°32	4 ¹ / 3.5 18			237485	2000 <i>HL</i> ₆₃		4 8.1 269°18	2°0/ 6.7 16		
3 2	13 33.72	+ 3 41.8	2.432	3.251	11.4	21.9	3 2	13 36.45	- 4 18.4	1.558	2.384	16.3	20.8
3 12	13 28.94	+ 4 35.4	2.325	3.225	8.8	21.7	3 12	13 32.15	- 3 56.7	1.460	2.364	12.7	20.5
3 22	13 22.25	+ 5 32.8	2.244	3.199	6.1	21.5	3 22	13 24.96	- 3 23.9	1.383	2.344	8.4	20.2
4 1	13 14.13	+ 6 28.9	2.191	3.171	4.3	21.3	4 1	13 15.47	- 2 44.5	1.331	2.323	3.6	19.9
4 11	13 5.28	+ 7 17.6	2.168	3.143	5.0	21.3	4 11	13 4.75	- 2 4.7	1.305	2.303	3.1	19.8
4 21	12 56.49	+ 7 54.1	2.173	3.114	7.7	21.4	4 21	12 54.10	- 1 31.5	1.306	2.281	8.0	20.0
5 1	12 48.57	+ 8 14.7	2.204	3.085	10.8	21.5	5 1	12 44.87	- 1 11.3	1.331	2.260	13.0	20.3
5 11	12 42.19	+ 8 17.7	2.259	3.054	13.6	21.7	5 11	12 38.08	- 1 8.0	1.378	2.238	17.4	20.5
428707	2008 <i>QZ</i> ₄₅		4 8.1 233°61	5°9/13.9 18			352656	2008 <i>QR</i> ₂₉		4 8.1 202°75	2°3/ 6.1 18		
3 2	13 34.62	-26 30.5	2.379	3.091	14.6	21.5	3 2	13 35.37	- 4 55.0	1.641	2.465	15.8	21.9
3 12	13 29.94	-27 1.5	2.269	3.079	12.5	21.3	3 12	13 30.90	- 4 4.4	1.558	2.461	12.1	21.6
3 22	13 23.07	-27 14.3	2.179	3.067	10.0	21.1	3 22	13 23.85	- 3 1.0	1.496	2.458	7.8	21.4
4 1	13 14.53	-27 6.5	2.113	3.054	7.6	20.9	4 1	13 14.88	- 1 50.6	1.460	2.453	3.5	21.1
4 11	13 5.12	-26 38.3	2.074	3.041	6.0	20.8	4 11	13 5.04	- 0 41.0	1.452	2.448	3.4	21.1
4 21	12 55.78	-25 52.2	2.063	3.027	6.5	20.8	4 21	12 55.52	+ 0 19.7	1.471	2.442	7.8	21.3
5 1	12 47.46	-24 53.5	2.079	3.013	8.7	20.9	5 1	12 47.44	+ 1 4.9	1.515	2.436	12.2	21.6
5 11	12 40.93	-23 49.4	2.120	2.998	11.3	21.0	5 11	12 41.61	+ 1 30.6	1.581	2.429	16.1	21.8
170168	2003 <i>FF</i> ₈₆		4 8.1 38°52	2°0/10.0 17			213351	2001 <i>SC</i> ₃₃₃		4 8.1 255°92	0°3/ 7.4 18		
3 2	13 30.13	-14 43.2	2.077	2.866	14.1	20.2	3 2	13 22.21	- 7 43.2	4.569	5.364	6.9	21.0
3 12	13 26.33	-14 40.9	1.997	2.874	11.2	20.0	3 12	13 19.27	- 7 10.9	4.470	5.358	5.2	20.8
3 22	13 20.56	-14 24.0	1.939	2.882	7.8	19.8	3 22	13 15.50	- 6 33.4	4.398	5.352	3.4	20.7
4 1	13 13.39	-13 54.0	1.906	2.890	4.2	19.6	4 1	13 11.17	- 5 52.4	4.354	5.347	1.4	20.5
4 11	13 5.64	-13 14.3	1.900	2.899	2.0	19.4	4 11	13 6.61	- 5 10.2	4.341	5.341	0.8	20.5
4 21	12 58.19	-12 29.8	1.923	2.908	4.8	19.6	4 21	13 2.13	- 4 29.2	4.359	5.335	2.8	20.6
5 1	12 51.86	-11 46.0	1.972	2.917	8.4	19.9	5 1	12 58.07	- 3 51.7	4.406	5.330	4.8	20.8
5 11	12 47.27	-11 8.1	2.046	2.926	11.6	20.1	5 11	12 54.71	- 3 19.6	4.479	5.324	6.5	20.9
173631	2001 <i>FF</i> ₈₇		4 8.1 55°37	4°4/ 5.6 18			213579	2002 <i>NG</i> ₃₅		4 8.1 232°06	0°5/ 8.5 17		
3 2	13 41.28	+ 3 7.2	1.371	2.207	17.6	19.8	3 2	13 32.38	-12 3.6	1.911	2.711	14.8	21.0
3 12	13 35.50	+ 3 13.8	1.315	2.224	13.5	19.6	3 12	13 28.38	-11 27.4	1.814	2.701	11.6	20.8
3 22	13 26.77	+ 3 21.5	1.281	2.241	9.0	19.4	3 22	13 22.11	-10 34.3	1.738	2.690	7.8	20.5
4 1	13 16.00	+ 3 24.3	1.270	2.258	5.1	19.2	4 1	13 14.13	- 9 27.2	1.689	2.680	3.5	20.2
4 11	13 4.60	+ 3 16.6	1.286	2.276	5.3	19.3	4 11	13 5.35	- 8 11.7	1.667	2.668	1.2	20.0
4 21	12 53.97	+ 2 55.0	1.328	2.294	9.2	19.5	4 21	12 56.76	- 6 55.0	1.674	2.656	5.8	20.3
5 1	12 45.32	+ 2 18.0	1.395	2.312	13.3	19.8	5 1	12 49.34	- 5 44.5	1.708	2.644	10.0	20.5
5 11	12 39.39	+ 1 26.4	1.482	2.330	17.0	20.1	5 11	12 43.86	- 4 46.7	1.765	2.631	13.8	20.7
102292	1999 <i>TX</i> ₇₅		4 8.1 308°70	1°5/ 9.3 17			74217	1998 <i>RB</i> ₇₃		4 8.1 295°30	1°9/ 9.3 18		
3 2	13 29.41	-13 59.1	1.458	2.275	17.8	20.4	3 2	13 36.31	-12 5.4	1.644	2.446	16.7	18.6
3 12	13 26.81	-13 36.5	1.367	2.261	14.1	20.2	3 12	13 32.30	-12 21.8	1.522	2.409	13.5	18.3
3 22	13 21.45	-12 51.8	1.295	2.248	9.7	19.9	3 22	13 25.32	-12 24.3	1.421	2.371	9.4	18.0
4 1	13 13.96	-11 47.1	1.246	2.236	4.8	19.5	4 1	13 15.76	-12 12.5	1.344	2.332	4.8	17.6
4 11	13 5.39	-10 28.4	1.223	2.224	1.8	19.3	4 11	13 4.58	-11 48.5	1.293	2.293	2.2	17.3
4 21	12 57.02	- 9 4.6	1.225	2.212	6.6	19.6	4 21	12 53.07	-11 17.0	1.269	2.254	6.8	17.5
5 1	12 50.13	- 7 45.9	1.251	2.200	11.7	19.8	5 1	12 42.68	-10 44.5	1.271	2.215	12.1	17.7
5 11	12 45.64	- 6 41.3	1.299	2.189	16.3	20.0	5 11	12 34.68	-10 18.4	1.294	2.175	16.9	17.8
227638	2006 <i>BM</i> ₉₅		4 8.1 286°80	1°9/ 9.8 17			496844	1999 <i>TH</i> ₆₆		4 8.1 161°98	0°6/ 8.8 17		
3 2	13 31.84	-14 6.7	1.927	2.720	14.9	20.3	3 2	13 33.27	-11 5.4	2.417	3.204	12.4	22.4
3 12	13 27.95	-14 6.1	1.833	2.713	11.9	20.1	3 12	13 28.44	-10 52.0	2.329	3.209	9.7	22.2
3 22	13 21.82	-13 50.3	1.761	2.707	8.3	19.9	3 22	13 21.81	-10 27.7	2.265	3.214	6.5	22.0
4 1	13 14.00	-13 20.3	1.714	2.700	4.3	19.6	4 1	13 13.92	- 9 54.3	2.229	3.218	3.0	21.8
4 11	13 5.39	-12 39.6	1.694	2.694	2.0	19.4	4 11	13 5.49	- 9 15.5	2.221	3.222	1.1	21.6
4 21	12 56.98	-11 53.3	1.702	2.687	5.3	19.6	4 21	12 57.31	- 8 35.6	2.243	3.225	4.5	21.9
5 1	12 49.74	-11 7.6	1.736	2.681	9.3	19.9	5 1	12 50.12	- 7 58.9	2.294	3.228	7.9	22.1
5 11	12 44.43	-10 28.4	1.794	2.675	13.0	20.1	5 11	12 44.50	- 7 29.4	2.370	3.231	10.9	22.3
139161	2001 <i>FW</i> ₁₁₂		4 8.1 323°74	4°7/11.4 17			176034	2000 <i>SY</i> ₁₈₃		4 8.1 149°26	2°3/10.7 18		
3 2	13 32.87	-18 37.9	1.493	2.284	18.6	19.8	3 2	13 32.34	-16 24.2	2.697	3.459	11.9	20.8
3 12	13 29.52	-19 7.3	1.405	2.277	15.3	19.6	3 12	13 27.61	-16 32.0	2.606	3.464	9.6	20.6
3 22	13 23.27	-19 16.0	1.335	2.270	11.3	19.3	3 22	13 21.22	-16 27.8	2.538	3.470	6.8	20.4
4 1	13 14.74	-19 2.2	1.288	2.264	7.2	19.1	4 1	13 13.66	-16 12.1	2.497	3.475	4.0	20.3
4 11	13 5.07	-18 27.9	1.266	2.258	4.7	18.9	4 11	13 5.60	-15 47.1	2.485	3.480	2.3	20.1
4 21	12 55.61	-17 38.5	1.268	2.252	6.9	19.0	4 21	12 57.73	-15 16.0	2.502	3.484	4.1	20.3
5 1	12 47.70	-16 42.2	1.295	2.247	11.1	19.2	5 1	12 50.76	-14 42.6	2.548	3.489	7.0	20.5
5 11	12 42.34	-15 48.5	1.344	2.242	15.3	19.4	5 11	12 45.21	-14 11.4	2.621	3.493	9.7	20.6
463624	2013 <i>TY</i> ₂₇		4 8.1 320°35	0°3/ 7.7 17			227440	2005 <i>WN</i> ₃₀		4 8.1 184°53	0°6/ 7.4 17		
3 2	13 29.34	- 9 56.7	1.668	2.489	15.7	21.2	3 2	13 33.82	- 7 27.8	2.541	3.336	11.7	22.5
3 12	13 26.26	- 9 16.4	1.582	2.483	12.2	21.0	3 12	13 28.77	- 6 59.7	2.449	3.336	9.0	22.3
3 22	13 20.80	- 8 19.3	1.518	2.477	8.0	20.7	3 22	13 22.00	- 6 22.6	2.382	3.336	5.8	22.1
4 1	13 13.59	- 7 9.6	1.479	2.472	3.3	20.4	4 1	13 13.99	- 5 39.3	2.343	3.335	2.4	21.8
4 11	13 5.58	- 5 54.1	1.466	2.466	1.6	20.3	4 11	13 5.46	- 4 54.0	2.333	3.333	1.4	21.7
4 21	12 57.84	- 4 40.9	1.480	2.461	6.5	20.6	4 21	12 57.15	- 4 11.0	2.354	3.331	4.9	22.0
5 1	12 51.40	- 3 37.8	1.519	2.457	11.0	20.8	5 1	12 49.76	- 3 34.4	2.404	3.327	8.2	22.2
5 11	12 47.03	- 2 50.7	1.581	2.452	14.9	21.1	5 11	12 43.86	- 3 7.5	2.479	3.323	11.1	22.4
238142	2003 <i>RB</i> ₂₄		4 8.1 259°										

EPHEMERIDES

4 8.1

4 8.1

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
334754	2003 <i>RH</i> ₂		4 8.1 243°00	4.7/ 2.7 18			150838	2001 <i>SW</i> ₄₅		4 8.1 189°90	1.7/ 6.2 17		
3 2	13 32.59	+ 5 36.1	2.408	3.232	11.3	21.8	3 2	13 33.51	- 4 20.7	2.342	3.150	12.1	21.9
3 12	13 28.02	+ 6 35.8	2.314	3.215	8.8	21.6	3 12	13 28.68	- 3 39.9	2.253	3.149	9.3	21.7
3 22	13 21.62	+ 7 37.8	2.246	3.197	6.3	21.4	3 22	13 22.01	- 2 51.0	2.189	3.147	6.0	21.5
4 1	13 13.88	+ 8 36.4	2.205	3.179	4.8	21.2	4 1	13 14.02	- 1 57.9	2.153	3.145	2.6	21.2
4 11	13 5.50	+ 9 25.5	2.193	3.161	5.6	21.3	4 11	13 5.47	- 1 5.6	2.146	3.141	2.5	21.2
4 21	12 57.27	+10 0.4	2.209	3.142	8.1	21.4	4 21	12 57.15	- 0 19.3	2.168	3.137	5.9	21.4
5 1	12 49.94	+10 17.9	2.251	3.122	11.0	21.5	5 1	12 49.83	+ 0 16.7	2.219	3.133	9.2	21.6
5 11	12 44.15	+10 16.9	2.315	3.101	13.6	21.7	5 11	12 44.10	+ 0 39.7	2.293	3.128	12.2	21.8
243359	2008 <i>VL</i> ₄₃		4 8.1 31°81	7.4/15.8 17			381567	2008 <i>UY</i> ₇₈		4 8.1 280°81	1°8/ 9.7 17		
3 2	13 30.78	-29 24.4	1.900	2.620	17.6	20.1	3 2	13 31.44	-14 20.4	1.948	2.740	14.8	21.4
3 12	13 27.37	-29 54.3	1.815	2.626	15.1	19.9	3 12	13 27.78	-14 9.8	1.839	2.719	11.9	21.1
3 22	13 21.54	-29 59.3	1.748	2.631	12.4	19.8	3 22	13 21.83	-13 42.7	1.752	2.697	8.3	20.8
4 1	13 13.91	-29 36.9	1.703	2.637	9.6	19.6	4 1	13 14.09	-13 0.0	1.689	2.676	4.3	20.6
4 11	13 5.49	-28 47.9	1.682	2.643	7.7	19.5	4 11	13 5.41	-12 5.5	1.654	2.654	1.9	20.3
4 21	12 57.38	-27 36.8	1.686	2.650	7.8	19.5	4 21	12 56.78	-11 4.6	1.646	2.631	5.5	20.5
5 1	12 50.62	-26 11.2	1.716	2.656	9.7	19.6	5 1	12 49.23	-10 4.5	1.666	2.609	9.7	20.7
5 11	12 46.00	-24 40.9	1.770	2.663	12.4	19.8	5 11	12 43.58	- 9 11.8	1.708	2.587	13.6	20.9
380790	2005 <i>WJ</i> ₁₇		4 8.1 208°62	6.4/ 1.8 17			512958	2017 <i>SX</i> ₈		4 8.1 175°79	1.4/ 6.7 17		
3 2	13 35.83	+10 22.0	2.125	2.949	12.6	21.2	3 2	13 35.36	- 3 20.2	2.463	3.267	11.7	21.2
3 12	13 30.62	+11 17.5	2.049	2.945	10.0	21.1	3 12	13 29.98	- 3 9.6	2.376	3.269	9.0	21.1
3 22	13 23.34	+12 10.5	1.998	2.940	7.7	20.9	3 22	13 22.79	- 2 53.6	2.313	3.270	5.8	20.9
4 1	13 14.59	+12 54.3	1.973	2.935	6.4	20.8	4 1	13 14.34	- 2 35.1	2.279	3.271	2.5	20.6
4 11	13 5.23	+13 22.7	1.975	2.929	7.3	20.8	4 11	13 5.36	- 2 17.6	2.275	3.272	2.1	20.6
4 21	12 56.18	+13 31.6	2.005	2.923	9.7	21.0	4 21	12 56.61	- 2 4.5	2.300	3.272	5.3	20.8
5 1	12 48.31	+13 19.4	2.059	2.916	12.4	21.1	5 1	12 48.85	- 1 58.8	2.353	3.272	8.6	21.0
5 11	12 42.26	+12 46.8	2.135	2.909	15.0	21.3	5 11	12 42.65	- 2 2.4	2.432	3.271	11.4	21.2
135704	2002 <i>PH</i> ₃₉		4 8.1 203°77	0°8/ 7.3 16			102848	1999 <i>VR</i> ₂₀₃		4 8.1 120°09	5°2/ 3.6 18		
3 2	13 34.02	- 7 45.7	2.100	2.904	13.5	21.5	3 2	13 37.55	+ 5 6.5	1.860	2.687	14.1	19.7
3 12	13 29.35	- 7 9.7	2.007	2.900	10.4	21.3	3 12	13 31.97	+ 6 1.8	1.801	2.704	10.8	19.5
3 22	13 22.59	- 6 21.9	1.938	2.894	6.8	21.1	3 22	13 24.18	+ 6 58.0	1.766	2.720	7.5	19.4
4 1	13 14.31	- 5 25.9	1.896	2.888	2.8	20.8	4 1	13 14.91	+ 7 48.1	1.758	2.736	5.4	19.2
4 11	13 5.34	- 4 27.1	1.882	2.882	1.8	20.7	4 11	13 5.15	+ 8 25.5	1.778	2.751	6.1	19.3
4 21	12 56.59	- 3 31.4	1.898	2.874	5.8	20.9	4 21	12 55.93	+ 8 45.6	1.824	2.766	9.0	19.5
5 1	12 48.94	- 2 44.3	1.941	2.866	9.7	21.2	5 1	12 48.13	+ 8 46.2	1.896	2.780	12.1	19.7
5 11	12 43.08	- 2 10.1	2.008	2.858	13.1	21.4	5 11	12 42.39	+ 8 27.8	1.990	2.793	14.9	20.0
110229	2001 <i>SW</i> ₂₂₆		4 8.1 213°32	1°5/ 6.2 17			175375	2005 <i>TY</i> ₁₈		4 8.1 343°01	0°8/ 8.8 17		
3 2	13 29.36	- 4 56.4	2.606	3.415	11.0	20.9	3 2	13 28.37	-11 16.7	1.911	2.721	14.4	19.9
3 12	13 25.36	- 4 10.3	2.513	3.410	8.4	20.7	3 12	13 25.26	-11 5.1	1.821	2.713	11.3	19.7
3 22	13 19.77	- 3 16.2	2.445	3.404	5.4	20.5	3 22	13 20.05	-10 39.7	1.753	2.706	7.6	19.4
4 1	13 13.06	- 2 17.6	2.405	3.398	2.4	20.3	4 1	13 13.27	-10 2.7	1.709	2.700	3.5	19.2
4 11	13 5.86	- 1 19.3	2.395	3.391	2.3	20.3	4 11	13 5.78	- 9 18.5	1.693	2.694	1.2	19.0
4 21	12 58.84	- 0 26.1	2.415	3.384	5.3	20.5	4 21	12 58.51	- 8 32.6	1.704	2.689	5.4	19.2
5 1	12 52.64	+ 0 17.8	2.462	3.377	8.4	20.7	5 1	12 52.34	- 7 50.9	1.741	2.684	9.4	19.5
5 11	12 47.80	+ 0 49.5	2.534	3.369	11.1	20.8	5 11	12 48.00	- 7 18.6	1.802	2.680	13.0	19.7
456827	2007 <i>TA</i> ₄₂₅		4 8.1 270°96	0°9/ 8.8 17			202800	2008 <i>RZ</i> ₃₄		4 8.1 92°93	0°1/ 7.9 18		
3 2	13 32.29	-12 43.9	1.621	2.429	16.6	21.8	3 2	13 30.78	- 9 56.5	1.987	2.794	14.0	20.0
3 12	13 28.85	-12 16.8	1.519	2.410	13.2	21.5	3 12	13 26.84	- 9 18.5	1.911	2.804	10.8	19.8
3 22	13 22.75	-11 29.9	1.438	2.391	9.0	21.2	3 22	13 20.90	- 8 27.1	1.858	2.814	7.1	19.6
4 1	13 14.53	-10 25.3	1.381	2.372	4.2	20.9	4 1	13 13.57	- 7 26.2	1.832	2.824	2.9	19.4
4 11	13 5.21	- 9 8.8	1.351	2.352	1.5	20.6	4 11	13 5.69	- 6 21.3	1.833	2.834	1.3	19.3
4 21	12 55.97	- 7 48.3	1.347	2.332	6.5	20.9	4 21	12 58.17	- 5 18.9	1.863	2.844	5.5	19.6
5 1	12 48.06	- 6 33.3	1.369	2.311	11.5	21.1	5 1	12 51.83	- 4 24.9	1.920	2.854	9.3	19.8
5 11	12 42.42	- 5 31.9	1.413	2.291	16.0	21.3	5 11	12 47.26	- 3 43.6	2.001	2.863	12.6	20.0
314123	2005 <i>EZ</i> ₁₅₁		4 8.1 347°40	1.4/ 7.2 17			466220	2012 <i>TO</i> ₅		4 8.1 298°00	6°8/ 2.2 16		
3 2	13 34.58	- 4 39.3	1.331	2.170	17.9	20.5	3 2	13 37.48	+ 8 42.0	1.891	2.718	13.8	20.8
3 12	13 30.89	- 4 40.3	1.254	2.165	13.9	20.3	3 12	13 32.69	+ 9 37.3	1.775	2.674	11.1	20.6
3 22	13 24.16	- 4 31.3	1.197	2.160	9.1	20.0	3 22	13 25.25	+10 34.0	1.683	2.630	8.4	20.3
4 1	13 15.11	- 4 16.1	1.163	2.157	3.8	19.7	4 1	13 15.64	+11 24.6	1.616	2.585	6.9	20.1
4 11	13 5.00	- 4 0.5	1.154	2.154	2.5	19.6	4 11	13 4.74	+12 0.5	1.576	2.539	8.0	20.1
4 21	12 55.24	- 3 50.2	1.170	2.152	7.8	19.9	4 21	12 53.68	+12 15.1	1.563	2.492	11.1	20.1
5 1	12 47.21	- 3 50.6	1.210	2.150	12.9	20.1	5 1	12 43.66	+12 4.2	1.574	2.445	14.8	20.3
5 11	12 41.86	- 4 5.1	1.270	2.149	17.3	20.4	5 11	12 35.71	+11 27.5	1.606	2.398	18.4	20.4
362096	2009 <i>BG</i> ₁₈₄		4 8.1 151°51	4.7/ 3.9 18			369799	2012 <i>HK</i> ₂₇		4 8.1 57°38	5°6/ 2.5 18		
3 2	13 34.74	+ 1 19.4	1.684	2.517	15.0	21.3	3 2	13 29.36	+ 1 31.0	1.565	2.413	15.2	19.8
3 12	13 30.20	+ 2 27.3	1.615	2.523	11.4	21.1	3 12	13 26.17	+ 3 17.0	1.506	2.423	11.5	19.6
3 22	13 23.24	+ 3 41.4	1.569	2.529	7.7	20.8	3 22	13 20.64	+ 5 10.1	1.471	2.433	7.9	19.4
4 1	13 14.58	+ 4 54.0	1.549	2.534	4.9	20.7	4 1	13 13.49	+ 7 0.3	1.462	2.444	5.7	19.3
4 11	13 5.25	+ 5 56.7	1.556	2.538	5.7	20.7	4 11	13 5.75	+ 8 36.6	1.479	2.454	6.9	19.4
4 21	12 56.36	+ 6 42.6	1.590	2.542	9.1	20.9	4 21	12 58.48	+ 9 50.6	1.522	2.465	10.3	19.6
5 1	12 48.91	+ 7 7.5	1.648	2.546	12.8	21.2	5 1	12 52.64	+10 37.6	1.588	2.476	13.8	19.9
5 11	12 43.61	+ 7 10.2	1.728	2.549	16.1	21.4	5 11	12 48.88	+10 56.8	1.674	2.487	16.9	20.1
94340	2001 <i>QN</i> ₇₃		4 8.1 52°08	18°9/27.6 18			473116	2015 <i>HW</i> ₁₇₅		4 8.1 345°62	2°4/		

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
437229	2012 XQ ₅		4 8.1 161°85	2°2/10.8	17		276020	2002 AX ₁₃		4 8.1 89°23	5°9/14.0	18	
3 2	13 28.46	-18 13.2	2.396	3.164	13.1	21.0	3 2	13 36.75	-25 46.0	2.010	2.736	16.5	21.5
3 12	13 24.88	-17 42.8	2.302	3.165	10.5	20.8	3 12	13 31.56	-26 12.7	1.939	2.761	13.9	21.3
3 22	13 19.55	-16 55.4	2.232	3.166	7.5	20.6	3 22	13 24.04	-26 17.7	1.889	2.785	10.9	21.2
4 1	13 13.00	-15 52.7	2.187	3.167	4.3	20.4	4 1	13 14.91	-25 59.6	1.861	2.809	7.9	21.1
4 11	13 5.93	-14 38.8	2.171	3.168	2.2	20.2	4 11	13 5.19	-25 20.2	1.860	2.833	6.0	21.0
4 21	12 59.09	-13 19.0	2.184	3.169	4.4	20.4	4 21	12 55.93	-24 24.0	1.887	2.856	6.6	21.1
5 1	12 53.21	-11 59.7	2.225	3.169	7.6	20.6	5 1	12 48.09	-23 18.2	1.940	2.879	8.9	21.2
5 11	12 48.83	-10 46.9	2.292	3.170	10.6	20.8	5 11	12 42.37	-22 10.8	2.018	2.901	11.6	21.4
115721	2003 UT ₁₇₆		4 8.1 98°58	0°6/ 7.4	17		321811	2010 RJ ₉		4 8.1 132°33	0°2/ 8.3	18	
3 2	13 30.38	- 9 2.1	2.131	2.938	13.2	20.6	3 2	13 34.14	-11 8.5	1.952	2.750	14.6	21.3
3 12	13 26.35	- 8 13.9	2.058	2.952	10.1	20.4	3 12	13 29.44	-10 31.3	1.877	2.764	11.3	21.1
3 22	13 20.49	- 7 13.6	2.009	2.966	6.5	20.2	3 22	13 22.62	- 9 39.6	1.823	2.776	7.4	20.9
4 1	13 13.37	- 6 5.4	1.987	2.980	2.7	19.9	4 1	13 14.32	- 8 36.8	1.797	2.788	3.2	20.6
4 11	13 5.80	- 4 55.0	1.993	2.993	1.6	19.9	4 11	13 5.45	- 7 28.8	1.799	2.800	1.2	20.5
4 21	12 58.57	- 3 48.6	2.029	3.006	5.4	20.2	4 21	12 56.98	- 6 22.0	1.829	2.810	5.5	20.8
5 1	12 52.44	- 2 51.7	2.091	3.020	8.9	20.4	5 1	12 49.79	- 5 23.0	1.887	2.821	9.4	21.1
5 11	12 47.97	- 2 8.1	2.178	3.032	12.0	20.6	5 11	12 44.50	- 4 36.5	1.969	2.830	12.8	21.3
474866	2005 SB ₁₃₈		4 8.1 239°33	2°8/12.0	16		519004	2010 JP ₉₂		4 8.1 231°20	1°7/10.2	16	
3 2	13 29.49	-21 4.4	3.061	3.797	11.2	23.0	3 2	13 29.93	-15 18.2	2.962	3.729	10.9	22.3
3 12	13 25.40	-20 47.4	2.942	3.781	9.2	22.8	3 12	13 25.72	-15 8.8	2.854	3.717	8.7	22.1
3 22	13 19.80	-20 15.6	2.847	3.764	6.8	22.7	3 22	13 20.01	-14 47.9	2.769	3.706	6.1	21.9
4 1	13 13.10	-19 29.6	2.779	3.746	4.4	22.5	4 1	13 13.22	-14 16.7	2.712	3.694	3.3	21.7
4 11	13 5.88	-18 31.6	2.739	3.728	2.9	22.3	4 11	13 5.90	-13 37.6	2.684	3.682	1.7	21.6
4 21	12 58.75	-17 25.0	2.730	3.710	4.0	22.4	4 21	12 58.69	-12 53.8	2.686	3.669	3.8	21.7
5 1	12 52.34	-16 14.7	2.750	3.691	6.5	22.5	5 1	12 52.21	-12 9.5	2.717	3.656	6.6	21.9
5 11	12 47.15	-15 5.7	2.797	3.672	9.0	22.7	5 11	12 46.96	-11 28.7	2.774	3.643	9.3	22.0
468100	2013 VA ₁₈		4 8.1 133°52	7°2/30.6	16		502696	2015 DP ₁₁		4 8.1 34°41	4°0/11.4	17	
3 2	13 32.05	+13 1.0	2.242	3.070	11.9	21.2	3 2	13 33.87	-18 25.8	1.828	2.603	16.3	21.2
3 12	13 27.54	+14 26.3	2.187	3.080	9.6	21.1	3 12	13 29.69	-18 50.3	1.742	2.605	13.3	21.0
3 22	13 21.21	+15 47.2	2.156	3.089	7.8	21.0	3 22	13 23.06	-18 57.2	1.676	2.607	9.8	20.7
4 1	13 13.67	+16 56.3	2.153	3.098	7.2	20.9	4 1	13 14.61	-18 45.7	1.634	2.609	6.2	20.5
4 11	13 5.68	+17 47.2	2.176	3.106	8.2	21.0	4 11	13 5.33	-18 17.9	1.619	2.611	4.0	20.4
4 21	12 58.07	+18 16.1	2.225	3.115	10.2	21.2	4 21	12 56.31	-17 38.3	1.631	2.613	5.9	20.5
5 1	12 51.56	+18 21.7	2.298	3.122	12.4	21.3	5 1	12 48.61	-16 53.3	1.669	2.615	9.5	20.7
5 11	12 46.70	+18 5.2	2.391	3.130	14.5	21.5	5 11	12 43.04	-16 10.0	1.730	2.618	13.0	20.9
347895	2002 TP ₃₆₈		4 8.1 101°72	5°1/ 2.9	17		210892	2001 ST ₁₃₂		4 8.1 224°09	0°2/ 8.4	18	
3 2	13 32.11	+ 6 24.7	2.172	3.002	12.2	20.8	3 2	13 29.62	-10 48.1	2.431	3.226	12.1	21.1
3 12	13 27.63	+ 7 17.4	2.106	3.009	9.4	20.6	3 12	13 25.73	-10 18.0	2.335	3.221	9.4	20.9
3 22	13 21.31	+ 8 10.1	2.064	3.016	6.7	20.5	3 22	13 20.13	- 9 36.0	2.264	3.216	6.3	20.7
4 1	13 13.72	+ 8 56.8	2.048	3.023	5.1	20.4	4 1	13 13.29	- 8 44.7	2.219	3.210	2.7	20.5
4 11	13 5.66	+ 9 31.9	2.061	3.029	5.9	20.4	4 11	13 5.89	- 7 48.4	2.203	3.204	1.0	20.3
4 21	12 57.95	+ 9 51.4	2.101	3.036	8.4	20.6	4 21	12 58.68	- 6 51.9	2.217	3.198	4.6	20.6
5 1	12 51.34	+ 9 53.1	2.166	3.043	11.1	20.8	5 1	12 52.36	- 6 0.3	2.258	3.192	8.1	20.8
5 11	12 46.40	+ 9 36.9	2.253	3.049	13.6	21.0	5 11	12 47.51	- 5 17.8	2.324	3.185	11.1	20.9
522699	2016 LN ₅₉		4 8.1 183°44	4°6/ 2.8	18		329611	1996 PS		4 8.1 341°82	4°8/11.2	18	
3 2	13 32.30	+ 7 53.2	2.682	3.503	10.4	21.1	3 2	13 33.06	-17 42.5	1.325	2.129	19.9	18.1
3 12	13 27.47	+ 8 33.4	2.606	3.503	8.1	21.0	3 12	13 30.01	-18 17.8	1.243	2.124	16.3	17.9
3 22	13 21.08	+ 9 12.5	2.555	3.503	5.9	20.8	3 22	13 23.79	-18 31.6	1.179	2.119	12.0	17.6
4 1	13 13.60	+ 9 45.9	2.532	3.502	4.6	20.7	4 1	13 15.08	-18 22.1	1.136	2.115	7.5	17.3
4 11	13 5.70	+10 9.2	2.538	3.502	5.3	20.8	4 11	13 5.13	-17 51.2	1.117	2.111	4.8	17.2
4 21	12 58.05	+10 19.4	2.572	3.501	7.3	20.9	4 21	12 55.44	-17 4.8	1.123	2.108	7.3	17.3
5 1	12 51.29	+10 14.8	2.633	3.500	9.7	21.1	5 1	12 47.49	-16 11.8	1.151	2.106	11.9	17.5
5 11	12 45.92	+ 9 55.2	2.716	3.498	11.9	21.2	5 11	12 42.35	-15 22.4	1.201	2.104	16.4	17.8
418408	2008 KD ₂₉		4 8.1 80°62	15°3/25.9	17		235333	1993 PU ₅		4 8.1 265°47	0°7/ 7.4	18	
3 2	13 46.78	+35 31.2	1.778	2.541	17.1	20.6	3 2	13 30.00	- 8 22.3	2.060	2.871	13.4	18.9
3 12	13 39.34	+36 45.3	1.748	2.551	15.9	20.5	3 12	13 26.35	- 7 44.5	1.966	2.863	10.4	18.7
3 22	13 29.02	+37 33.3	1.738	2.561	15.3	20.5	3 22	13 20.70	- 6 54.1	1.896	2.854	6.8	18.5
4 1	13 16.90	+37 45.4	1.748	2.570	15.4	20.5	4 1	13 13.58	- 5 54.8	1.852	2.845	2.8	18.2
4 11	13 4.43	+37 16.6	1.779	2.580	16.1	20.6	4 11	13 5.78	- 4 52.0	1.836	2.836	1.7	18.1
4 21	12 53.02	+36 7.7	1.829	2.590	17.3	20.7	4 21	12 58.17	- 3 51.9	1.849	2.827	5.7	18.3
5 1	12 43.77	+34 23.8	1.897	2.599	18.7	20.8	5 1	12 51.61	- 3 0.4	1.888	2.819	9.6	18.6
5 11	12 37.30	+32 12.9	1.982	2.609	20.0	21.0	5 11	12 46.77	- 2 22.0	1.951	2.809	13.0	18.8
67422	2000 QZ ₈₃		4 8.1 222°39	1°9/ 6.3	18		455613	2004 TS ₂₀₇		4 8.1 100°30	0°5/ 8.5	18	
3 2	13 33.04	- 6 25.2	1.808	2.626	14.7	20.0	3 2	13 35.50	-12 9.7	1.640	2.444	16.7	21.5
3 12	13 28.96	- 5 24.7	1.717	2.618	11.3	19.8	3 12	13 30.77	-11 31.3	1.576	2.465	12.9	21.3
3 22	13 22.53	- 4 10.0	1.649	2.609	7.3	19.5	3 22	13 23.60	-10 35.4	1.533	2.486	8.6	21.1
4 1	13 14.36	- 2 46.4	1.607	2.600	3.2	19.2	4 1	13 14.75	- 9 26.2	1.515	2.506	3.8	20.8
4 11	13 5.37	- 1 21.6	1.593	2.590	3.0	19.2	4 11	13 5.34	- 8 10.5	1.525	2.526	1.3	20.7
4 21	12 56.62	- 0 3.7	1.607	2.579	7.2	19.4	4 21	12 56.49	- 6 56.5	1.563	2.545	6.0	21.1
5 1	12 49.11	+ 0 59.8	1.648	2.568	11.5	19.6	5 1	12 49.21	- 5 51.7	1.626	2.564	10.4	21.4
5 11	12 43.61	+ 1 44.2	1.711	2.556	15.2	19.8	5 11	12 44.16	- 5 1.8	1.713	2.582	14.1	21.6
468440	2002 AE ₁₉₄		4 8.1 132°44	6°9/14.7	17		503613	2016 GH ₁₂₄		4 8.1 50°05	4°6/ 3.5	18	
3 2	13 34.87	-27 29.0	2.032	2.750	16.6								

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
462554	2009 <i>CL</i> ₂₇		4 8.1 38°05	1.3°/ 7.2	18		393365	1999 <i>RK</i> ₂₁₃		4 8.1 255°06	0.8°/ 8.7	17	
3 2	13 33.78	- 6 16.0	1.224	2.066	18.9	20.9	3 2	13 36.45	-11 2.8	1.507	2.318	17.5	22.2
3 12	13 30.24	- 5 57.1	1.165	2.077	14.5	20.6	3 12	13 32.34	-10 54.2	1.409	2.302	13.9	21.9
3 22	13 23.66	- 5 24.3	1.125	2.089	9.4	20.4	3 22	13 25.23	-10 28.6	1.331	2.286	9.4	21.6
4 1	13 14.88	- 4 43.0	1.107	2.101	3.9	20.1	4 1	13 15.72	- 9 47.6	1.278	2.269	4.3	21.3
4 11	13 5.29	- 4 0.6	1.114	2.114	2.6	20.0	4 11	13 4.92	- 8 56.2	1.250	2.251	1.5	21.0
4 21	12 56.33	- 3 25.2	1.146	2.127	7.9	20.4	4 21	12 54.22	- 8 1.7	1.249	2.233	7.0	21.3
5 1	12 49.28	- 3 3.2	1.200	2.141	12.9	20.7	5 1	12 45.00	- 7 12.2	1.273	2.215	12.2	21.6
5 11	12 44.94	- 2 58.3	1.275	2.156	17.2	21.0	5 11	12 38.33	- 6 35.3	1.319	2.196	16.9	21.8
467553	2007 <i>TF</i> ₁₀₉		4 8.1 295°45	1.4°/ 9.6	17		506360	2017 <i>QB</i> ₁₀		4 8.1 266°26	0.3°/ 8.4	17	
3 2	13 28.75	-16 32.3	1.977	2.764	14.8	20.9	3 2	13 33.71	-10 33.7	1.748	2.555	15.6	22.2
3 12	13 25.78	-15 38.2	1.853	2.731	11.9	20.6	3 12	13 29.79	-10 14.0	1.644	2.536	12.3	21.9
3 22	13 20.60	-14 20.6	1.751	2.696	8.3	20.3	3 22	13 23.32	- 9 38.5	1.562	2.517	8.3	21.6
4 1	13 13.65	-12 41.0	1.675	2.662	4.2	20.0	4 1	13 14.84	- 8 49.7	1.505	2.497	3.7	21.3
4 11	13 5.73	-10 44.8	1.627	2.627	1.5	19.8	4 11	13 5.30	- 7 52.6	1.475	2.477	1.4	21.1
4 21	12 57.81	- 8 40.4	1.607	2.592	5.6	20.0	4 21	12 55.83	- 6 53.8	1.473	2.456	6.3	21.4
5 1	12 50.88	- 6 38.1	1.616	2.557	10.1	20.1	5 1	12 47.60	- 6 0.8	1.497	2.435	11.0	21.6
5 11	12 45.78	- 4 47.7	1.649	2.522	14.3	20.3	5 11	12 41.50	- 5 20.1	1.543	2.414	15.2	21.8
100278	1994 <i>YN</i>		4 8.1 143°91	6.2°/ 1.3	18		306295	2011 <i>SO</i> ₄₀		4 8.1 205°16	3.2°/ 11.9	18	
3 2	13 35.30	+10 5.2	2.276	3.098	12.0	19.4	3 2	13 30.67	-20 3.5	2.675	3.423	12.3	20.9
3 12	13 29.96	+11 19.2	2.217	3.111	9.5	19.2	3 12	13 26.49	-20 7.7	2.575	3.420	10.1	20.8
3 22	13 22.77	+12 30.8	2.183	3.124	7.2	19.1	3 22	13 20.62	-19 57.4	2.497	3.417	7.5	20.6
4 1	13 14.36	+13 33.0	2.177	3.136	6.2	19.1	4 1	13 13.52	-19 32.8	2.445	3.414	4.9	20.4
4 11	13 5.52	+14 19.9	2.199	3.147	7.1	19.1	4 11	13 5.87	-18 55.9	2.422	3.411	3.2	20.3
4 21	12 57.08	+14 47.5	2.248	3.157	9.3	19.3	4 21	12 58.38	-18 10.0	2.427	3.407	4.4	20.4
5 1	12 49.78	+14 54.2	2.323	3.166	11.7	19.4	5 1	12 51.74	-17 19.9	2.461	3.404	7.1	20.5
5 11	12 44.17	+14 40.8	2.419	3.175	13.9	19.6	5 11	12 46.53	-16 30.7	2.521	3.400	9.8	20.7
89529	2001 <i>XP</i> ₇₅		4 8.1 278°03	4.7°/ 4.7	17		150868	2001 <i>SK</i> ₁₇₆		4 8.1 75°17	2.1°/ 6.2	18	
3 2	13 34.97	+ 0 33.7	1.462	2.303	16.4	20.0	3 2	13 33.29	- 5 2.6	1.702	2.527	15.2	20.1
3 12	13 31.15	+ 1 23.5	1.371	2.284	12.8	19.7	3 12	13 28.91	- 4 8.8	1.645	2.550	11.5	19.9
3 22	13 24.40	+ 2 22.1	1.302	2.264	8.6	19.4	3 22	13 22.31	- 3 4.5	1.611	2.573	7.4	19.7
4 1	13 15.33	+ 3 22.4	1.256	2.244	5.1	19.2	4 1	13 14.21	- 1 55.9	1.603	2.595	3.2	19.5
4 11	13 5.05	+ 4 15.1	1.236	2.224	5.8	19.2	4 11	13 5.65	- 0 50.3	1.622	2.618	3.1	19.6
4 21	12 54.92	+ 4 51.9	1.242	2.204	10.1	19.3	4 21	12 57.64	+ 0 5.3	1.669	2.641	7.0	19.8
5 1	12 46.28	+ 5 6.8	1.271	2.184	14.7	19.5	5 1	12 51.06	+ 0 45.9	1.741	2.663	10.9	20.1
5 11	12 40.16	+ 4 57.6	1.319	2.163	18.9	19.7	5 11	12 46.53	+ 1 8.7	1.836	2.685	14.2	20.4
338511	2003 <i>QS</i> ₂₂		4 8.1 291°00	1.9°/ 6.2	16		69578	1998 <i>DC</i>		4 8.1 10°69	0.0°/ 8.0	18	
3 2	13 30.00	- 6 25.2	1.925	2.746	13.9	21.6	3 2	13 30.44	-11 5.5	1.374	2.201	18.0	19.2
3 12	13 26.73	- 5 25.3	1.811	2.713	10.8	21.3	3 12	13 27.58	-10 30.5	1.299	2.202	14.1	19.0
3 22	13 21.21	- 4 10.2	1.719	2.680	7.0	21.0	3 22	13 21.93	- 9 35.6	1.243	2.203	9.3	18.7
4 1	13 13.91	- 2 44.2	1.654	2.647	3.1	20.7	4 1	13 14.22	- 8 24.8	1.212	2.204	4.0	18.4
4 11	13 5.64	- 1 14.6	1.617	2.614	3.0	20.6	4 11	13 5.61	- 7 6.2	1.205	2.206	1.6	18.2
4 21	12 57.35	+ 0 10.5	1.608	2.580	7.2	20.8	4 21	12 57.40	- 5 49.3	1.224	2.208	7.0	18.6
5 1	12 50.06	+ 1 23.0	1.625	2.545	11.6	21.0	5 1	12 50.81	- 4 43.5	1.267	2.211	12.1	18.9
5 11	12 44.60	+ 2 17.1	1.664	2.511	15.5	21.2	5 11	12 46.69	- 3 55.7	1.330	2.214	16.4	19.1
503972	2004 <i>RT</i> ₂₇₁		4 8.1 249°45	1.7°/ 6.3	17		323075	2002 <i>TB</i> ₁₀₃		4 8.1 216°86	2.4°/ 10.0	17	
3 2	13 31.51	- 5 36.0	2.169	2.982	12.8	22.4	3 2	13 38.29	-14 19.2	2.067	2.841	14.7	21.6
3 12	13 27.47	- 4 45.7	2.067	2.965	9.8	22.2	3 12	13 32.89	-14 38.8	1.966	2.834	11.8	21.3
3 22	13 21.44	- 3 44.3	1.988	2.948	6.4	21.9	3 22	13 25.12	-14 45.3	1.887	2.826	8.3	21.1
4 1	13 13.92	- 2 36.0	1.937	2.930	2.8	21.7	4 1	13 15.54	-14 38.8	1.835	2.818	4.6	20.9
4 11	13 5.67	- 1 26.6	1.915	2.912	2.6	21.6	4 11	13 5.05	-14 21.1	1.811	2.808	2.5	20.7
4 21	12 57.53	- 0 22.6	1.922	2.893	6.3	21.8	4 21	12 54.69	-13 55.9	1.816	2.799	5.3	20.9
5 1	12 50.38	+ 0 30.4	1.956	2.873	10.1	22.0	5 1	12 45.49	-13 28.3	1.849	2.788	9.2	21.1
5 11	12 44.88	+ 1 8.2	2.013	2.854	13.4	22.2	5 11	12 38.27	-13 3.7	1.906	2.778	12.7	21.3
354718	2005 <i>SS</i> ₁₀₀		4 8.1 100°26	1.7°/ 9.6	18		498250	2007 <i>UW</i> ₉₈		4 8.1 100°76	2.0°/ 6.1	17	
3 2	13 34.88	-15 44.1	1.474	2.274	18.4	21.4	3 2	13 32.20	- 2 35.9	2.317	3.132	12.0	21.8
3 12	13 30.66	-15 6.2	1.407	2.291	14.5	21.2	3 12	13 27.61	- 2 6.6	2.244	3.144	9.1	21.7
3 22	13 23.71	-14 5.2	1.360	2.308	9.9	20.9	3 22	13 21.28	- 1 31.6	2.197	3.156	5.9	21.5
4 1	13 14.86	-12 44.5	1.337	2.325	4.9	20.7	4 1	13 13.77	- 0 54.7	2.176	3.168	2.7	21.3
4 11	13 5.33	-11 11.8	1.341	2.342	1.9	20.5	4 11	13 5.82	- 0 20.5	2.185	3.179	2.7	21.3
4 21	12 56.39	- 9 36.9	1.372	2.358	6.2	20.8	4 21	12 58.18	+ 0 7.0	2.222	3.191	5.8	21.5
5 1	12 49.17	- 8 9.9	1.428	2.373	10.9	21.1	5 1	12 51.58	+ 0 24.5	2.287	3.202	8.9	21.7
5 11	12 44.39	- 6 58.7	1.507	2.388	15.0	21.4	5 11	12 46.54	+ 0 29.9	2.376	3.213	11.7	21.9
59459	1999 <i>GV</i> ₄₂		4 8.1 89°17	2.7°/ 4.9	18		408189	2013 <i>EG</i> ₁₈		4 8.1 303°35	2.0°/ 9.5	17	
3 2	13 28.61	- 2 39.6	2.187	3.012	12.3	18.8	3 2	13 30.46	-14 8.4	1.328	2.149	18.9	20.9
3 12	13 25.01	- 1 32.7	2.113	3.019	9.3	18.6	3 12	13 28.04	-13 58.2	1.234	2.131	15.2	20.6
3 22	13 19.66	- 0 17.8	2.064	3.026	6.0	18.4	3 22	13 22.58	-13 25.2	1.159	2.113	10.6	20.3
4 1	13 13.09	+ 0 59.5	2.042	3.032	3.1	18.3	4 1	13 14.64	-12 30.3	1.106	2.095	5.4	20.0
4 11	13 6.05	+ 2 12.6	2.049	3.039	3.6	18.3	4 11	13 5.38	-11 18.7	1.077	2.078	2.1	19.7
4 21	12 59.30	+ 3 15.6	2.084	3.046	6.7	18.5	4 21	12 56.23	- 9 59.5	1.073	2.061	7.1	19.9
5 1	12 53.56	+ 4 4.0	2.146	3.052	9.9	18.7	5 1	12 48.66	- 8 43.6	1.092	2.045	12.7	20.2
5 11	12 49.38	+ 4 35.2	2.230	3.059	12.7	18.9	5 11	12 43.77	- 7 41.1	1.132	2.029	17.6	20.4
436890	2012 <i>TX</i> ₃₄		4 8.1 91°97	0.6°/ 8.7	18		494192	2016 <i>HG</i> ₁		4 8.1 327°28	0.		

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
426775	2013 <i>TF</i> ₁₁₂		4 8.1 100°78	1°5/ 6.8 17			27357	2000 <i>DG</i> ₉₉		4 8.1 273°45	2°1/ 6.3 18		
3 2	13 33.25	- 4 47.7	1.903	2.722	14.1	20.9	3 2	13 32.12	- 5 10.1	1.791	2.615	14.6	19.0
3 12	13 28.89	- 4 22.5	1.825	2.726	10.8	20.7	3 12	13 28.44	- 4 23.6	1.691	2.595	11.3	18.7
3 22	13 22.36	- 3 48.5	1.770	2.730	7.0	20.4	3 22	13 22.36	- 3 24.2	1.613	2.574	7.4	18.4
4 1	13 14.30	- 3 9.7	1.741	2.734	3.0	20.2	4 1	13 14.43	- 2 16.9	1.560	2.553	3.3	18.1
4 11	13 5.60	- 2 31.3	1.740	2.738	2.4	20.2	4 11	13 5.55	- 1 8.4	1.535	2.532	3.1	18.1
4 21	12 57.23	- 1 58.7	1.767	2.742	6.3	20.4	4 21	12 56.76	- 0 6.6	1.538	2.510	7.4	18.3
5 1	12 50.09	- 1 36.5	1.820	2.746	10.2	20.6	5 1	12 49.14	+ 0 41.9	1.566	2.488	11.8	18.5
5 11	12 44.86	- 1 27.5	1.896	2.750	13.6	20.9	5 11	12 43.53	+ 1 12.4	1.615	2.466	15.7	18.7
404434	2013 <i>GA</i> ₉₆		4 8.1 270°61	5°1/ 3.8 17			205106	1999 <i>TQ</i> ₂₆₀		4 8.1 310°84	2°0/ 9.3 17		
3 2	13 32.97	+ 1 32.6	1.584	2.425	15.4	20.6	3 2	13 33.91	- 11 20.4	1.370	2.191	18.4	20.2
3 12	13 29.28	+ 2 39.4	1.499	2.411	11.9	20.3	3 12	13 30.77	- 11 45.7	1.271	2.169	14.8	19.9
3 22	13 22.97	+ 3 54.3	1.436	2.397	8.1	20.1	3 22	13 24.46	- 11 56.4	1.192	2.146	10.3	19.6
4 1	13 14.67	+ 5 9.3	1.398	2.383	5.3	19.8	4 1	13 15.52	- 11 52.4	1.134	2.124	5.2	19.2
4 11	13 5.42	+ 6 15.1	1.386	2.369	6.3	19.9	4 11	13 5.06	- 11 36.7	1.102	2.102	2.2	19.0
4 21	12 56.39	+ 7 3.5	1.401	2.354	10.0	20.0	4 21	12 54.55	- 11 14.1	1.094	2.081	7.2	19.2
5 1	12 48.75	+ 7 29.0	1.438	2.340	14.1	20.2	5 1	12 45.56	- 10 51.7	1.110	2.060	12.7	19.4
5 11	12 43.37	+ 7 29.6	1.496	2.325	17.8	20.4	5 11	12 39.29	- 10 37.0	1.146	2.041	17.6	19.7
128599	2004 <i>QP</i> ₁₁		4 8.1 235°66	4°3/ 4.6 17			15392	Budějický		4 8.1 244°62	0°7/ 8.7 18		
3 2	13 34.90	- 0 4.3	1.608	2.442	15.5	20.6	3 2	13 33.44	- 12 29.9	1.715	2.518	16.1	19.0
3 12	13 30.69	+ 0 55.2	1.524	2.433	11.9	20.4	3 12	13 29.58	- 11 57.6	1.617	2.505	12.7	18.8
3 22	13 23.85	+ 2 3.5	1.462	2.424	8.0	20.1	3 22	13 23.17	- 11 6.5	1.539	2.492	8.6	18.5
4 1	13 15.03	+ 3 13.5	1.426	2.414	4.7	19.9	4 1	13 14.79	- 9 59.1	1.487	2.478	3.9	18.2
4 11	13 5.29	+ 4 16.3	1.417	2.404	5.4	19.9	4 11	13 5.42	- 8 41.3	1.462	2.463	1.3	18.0
4 21	12 55.82	+ 5 4.2	1.434	2.394	9.3	20.1	4 21	12 56.21	- 7 20.9	1.464	2.448	6.2	18.3
5 1	12 47.77	+ 5 31.6	1.475	2.383	13.4	20.3	5 1	12 48.29	- 6 6.8	1.493	2.432	11.0	18.5
5 11	12 42.00	+ 5 36.2	1.537	2.371	17.2	20.5	5 11	12 42.56	- 5 6.2	1.544	2.416	15.2	18.7
315396	2007 <i>VJ</i> ₁₂₅		4 8.1 146°81	4°4/ 4.0 18			44991	1999 <i>VJ</i> ₁₇₄		4 8.1 299°54	0°9/ 7.5 18		
3 2	13 34.37	+ 1 3.4	1.778	2.609	14.4	21.4	3 2	13 35.35	- 6 2.6	1.529	2.354	16.6	18.2
3 12	13 29.81	+ 2 12.1	1.709	2.617	11.0	21.2	3 12	13 31.26	- 5 58.7	1.442	2.345	12.9	17.9
3 22	13 22.99	+ 3 27.0	1.664	2.623	7.4	21.0	3 22	13 24.36	- 5 43.9	1.375	2.336	8.5	17.6
4 1	13 14.56	+ 4 40.6	1.645	2.630	4.6	20.9	4 1	13 15.31	- 5 21.5	1.333	2.327	3.6	17.3
4 11	13 5.52	+ 5 44.9	1.653	2.636	5.4	20.9	4 11	13 5.21	- 4 56.6	1.318	2.318	2.0	17.2
4 21	12 56.89	+ 6 33.5	1.689	2.641	8.7	21.1	4 21	12 55.34	- 4 35.2	1.328	2.309	7.1	17.5
5 1	12 49.62	+ 7 1.9	1.750	2.646	12.3	21.4	5 1	12 46.96	- 4 22.7	1.363	2.301	12.0	17.7
5 11	12 44.39	+ 7 9.0	1.832	2.651	15.4	21.6	5 11	12 41.00	- 4 23.4	1.420	2.292	16.2	17.9
258230	2001 <i>TL</i> ₈₈		4 8.1 125°45	1°4/ 9.8 18			82659	2001 <i>PD</i> ₁₆		4 8.1 230°38	2°4/ 6.2 18		
3 2	13 29.22	- 15 2.3	2.391	3.172	12.7	20.7	3 2	13 34.06	- 3 9.4	1.760	2.585	14.8	19.7
3 12	13 25.44	- 14 32.2	2.304	3.177	10.0	20.5	3 12	13 29.76	- 2 37.4	1.678	2.583	11.3	19.5
3 22	13 19.94	- 13 47.5	2.240	3.183	6.9	20.3	3 22	13 23.09	- 1 56.6	1.619	2.580	7.4	19.2
4 1	13 13.24	- 12 50.3	2.202	3.188	3.5	20.1	4 1	13 14.67	- 1 11.9	1.585	2.577	3.4	19.0
4 11	13 6.05	- 11 44.9	2.194	3.193	1.5	19.9	4 11	13 5.49	- 0 29.6	1.579	2.574	3.3	19.0
4 21	12 59.11	- 10 36.5	2.214	3.199	4.3	20.1	4 21	12 56.62	+ 0 4.3	1.599	2.571	7.3	19.2
5 1	12 53.13	- 9 30.9	2.263	3.204	7.7	20.4	5 1	12 49.05	+ 0 25.0	1.646	2.568	11.4	19.4
5 11	12 48.65	- 8 33.1	2.337	3.208	10.7	20.5	5 11	12 43.56	+ 0 29.7	1.714	2.564	14.9	19.6
7409	1990 <i>BS</i>		4 8.1 144°49	1°2/ 7.0 18			153620	2001 <i>TX</i> ₂₀		4 8.1 144°22	0°0/ 8.0 18		
3 2	13 36.39	- 6 20.1	1.985	2.791	14.1	18.0	3 2	13 37.57	- 7 39.7	2.166	2.962	13.4	19.7
3 12	13 31.14	- 5 46.7	1.909	2.803	10.8	17.8	3 12	13 31.94	- 7 37.8	2.085	2.971	10.4	19.5
3 22	13 23.75	- 5 3.2	1.857	2.814	7.0	17.6	3 22	13 24.24	- 7 27.1	2.027	2.980	6.8	19.3
4 1	13 14.86	- 4 13.4	1.831	2.824	2.9	17.4	4 1	13 15.10	- 7 9.7	1.997	2.988	2.9	19.1
4 11	13 5.40	- 3 23.1	1.835	2.834	2.1	17.3	4 11	13 5.36	- 6 49.2	1.995	2.996	1.2	19.0
4 21	12 56.32	- 2 37.8	1.867	2.842	6.1	17.6	4 21	12 55.94	- 6 29.5	2.024	3.004	5.2	19.2
5 1	12 48.53	- 2 2.4	1.927	2.851	9.9	17.8	5 1	12 47.70	- 6 14.4	2.080	3.010	8.9	19.5
5 11	12 42.65	- 1 40.5	2.010	2.858	13.2	18.1	5 11	12 41.28	- 6 7.4	2.161	3.017	12.1	19.7
60340	2000 <i>AF</i> ₆₃		4 8.1 125°58	2°4/ 6.3 18			504538	2008 <i>SR</i> ₆₁		4 8.1 223°86	0°0/ 7.9 17		
3 2	13 37.33	- 4 1.6	1.499	2.326	16.8	19.5	3 2	13 32.12	- 9 59.2	2.342	3.137	12.5	22.8
3 12	13 32.51	- 3 23.2	1.431	2.336	12.9	19.3	3 12	13 27.79	- 9 29.3	2.241	3.127	9.8	22.6
3 22	13 24.94	- 2 34.0	1.384	2.346	8.3	19.0	3 22	13 21.58	- 8 47.4	2.164	3.117	6.5	22.3
4 1	13 15.44	- 1 39.9	1.363	2.355	3.7	18.8	4 1	13 14.00	- 7 56.1	2.115	3.106	2.8	22.1
4 11	13 5.18	- 0 48.5	1.368	2.364	3.5	18.8	4 11	13 5.78	- 7 0.0	2.094	3.095	1.1	21.9
4 21	12 55.44	- 0 7.0	1.400	2.372	7.9	19.1	4 21	12 57.71	- 6 4.0	2.103	3.083	5.0	22.2
5 1	12 47.38	+ 0 19.0	1.456	2.380	12.4	19.3	5 1	12 50.58	- 5 13.5	2.140	3.071	8.6	22.4
5 11	12 41.76	+ 0 26.8	1.534	2.388	16.2	19.6	5 11	12 45.02	- 4 33.0	2.201	3.058	11.8	22.6
152872	2000 <i>AF</i> ₂₇		4 8.1 125°28	0°2/ 7.9 18			250442	2003 <i>YH</i> ₂₀		4 8.1 192°58	0°2/ 8.3 16		
3 2	13 37.11	- 8 59.9	1.483	2.299	17.5	20.1	3 2	13 35.38	- 10 1.4	2.122	2.916	13.7	21.8
3 12	13 32.44	- 8 38.8	1.411	2.309	13.6	19.8	3 12	13 30.43	- 9 40.2	2.029	2.914	10.7	21.6
3 22	13 24.97	- 8 2.5	1.360	2.317	8.9	19.6	3 22	13 23.37	- 9 6.7	1.960	2.912	7.1	21.4
4 1	13 15.48	- 7 14.7	1.333	2.326	3.7	19.3	4 1	13 14.77	- 8 23.5	1.918	2.909	3.1	21.1
4 11	13 5.16	- 6 22.1	1.333	2.334	1.7	19.2	4 11	13 5.48	- 7 34.9	1.904	2.905	1.2	21.0
4 21	12 55.33	- 5 32.0	1.360	2.342	6.9	19.5	4 21	12 56.41	- 6 46.2	1.920	2.900	5.3	21.3
5 1	12 47.19	- 4 51.6	1.412	2.349	11.6	19.8	5 1	12 48.47	- 6 3.0	1.963	2.895	9.2	21.5
5 11	12 41.56	- 4 25.9	1.485	2.356	15.7	20.1	5 11	12 42.34	- 5 29.7	2.031	2.889	12.6	21.7
134688	1999 <i>XS</i> ₅₈		4 8.1 126°86	0°8/ 8.9 18			255623	2006 <i>PV</i> ₂₅		4 8.1 217°66	2°4/ 10.1 17		

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
455427	2003 <i>OP</i> ₂₆		4 8.1 271°09	4.3/11.3	17		208717	2002 <i>JD</i> ₁₀₄		4 8.1 297°08	1.9/6.7	18	
3 2	13 34.19	-18 46.0	1.609	2.391	17.8	21.5	3 2	13 32.09	-5 41.1	1.469	2.303	16.7	20.3
3 12	13 30.52	-19 3.6	1.509	2.377	14.7	21.2	3 12	13 28.96	-5 8.5	1.374	2.283	13.0	20.0
3 22	13 24.01	-19 0.6	1.430	2.363	10.9	20.9	3 22	13 23.01	-4 21.7	1.300	2.264	8.5	19.7
4 1	13 15.23	-18 35.5	1.373	2.349	6.8	20.7	4 1	13 14.82	-3 25.3	1.250	2.244	3.7	19.4
4 11	13 5.25	-17 50.2	1.341	2.334	4.3	20.5	4 11	13 5.46	-2 26.7	1.226	2.224	3.0	19.3
4 21	12 55.36	-16 50.2	1.335	2.319	6.6	20.6	4 21	12 56.19	-1 34.4	1.227	2.205	8.1	19.5
5 1	12 46.87	-15 44.0	1.355	2.305	10.9	20.8	5 1	12 48.35	-0 56.0	1.252	2.185	13.1	19.8
5 11	12 40.83	-14 41.0	1.397	2.290	15.2	21.0	5 11	12 42.93	-0 36.9	1.297	2.166	17.6	20.0
348929	2006 <i>TS</i> ₄₂		4 8.1 78°75	5.5/3.2	18		480256	2015 <i>HB</i> ₆₁		4 8.1 275°26	3.0/4.1	16	
3 2	13 37.08	+10 18.4	2.324	3.141	11.9	20.4	3 2	13 28.28	-0 53.2	2.581	3.402	10.7	21.8
3 12	13 31.30	+10 42.3	2.258	3.150	9.4	20.3	3 12	13 24.73	+0 16.5	2.474	3.377	8.2	21.6
3 22	13 23.66	+11 2.2	2.216	3.159	7.0	20.1	3 22	13 19.55	+1 33.9	2.393	3.352	5.4	21.4
4 1	13 14.80	+11 13.3	2.202	3.168	5.5	20.1	4 1	13 13.16	+2 54.1	2.340	3.327	3.2	21.2
4 11	13 5.51	+11 11.3	2.216	3.178	6.1	20.1	4 11	13 6.17	+4 11.3	2.317	3.302	3.9	21.2
4 21	12 56.62	+10 54.0	2.259	3.187	8.3	20.3	4 21	12 59.25	+5 19.7	2.323	3.276	6.7	21.3
5 1	12 48.90	+10 20.7	2.328	3.196	10.8	20.4	5 1	12 53.09	+6 14.6	2.356	3.249	9.7	21.5
5 11	12 42.87	+9 32.6	2.420	3.205	13.1	20.6	5 11	12 48.25	+6 53.0	2.413	3.223	12.4	21.6
469289	1995 <i>VZ</i> ₁₇		4 8.1 188°52	0.2/7.9	17		473197	2015 <i>KM</i> ₈₂		4 8.1 199°09	6.3/30.1	18	
3 2	13 30.21	-8 40.2	2.862	3.654	10.6	22.6	3 2	13 30.33	+14 53.1	2.827	3.647	10.0	21.8
3 12	13 25.91	-8 15.4	2.768	3.654	8.1	22.4	3 12	13 26.00	+16 1.8	2.759	3.644	8.2	21.7
3 22	13 20.14	-7 42.0	2.699	3.652	5.3	22.2	3 22	13 20.20	+17 6.1	2.717	3.641	6.8	21.6
4 1	13 13.33	-7 2.5	2.659	3.651	2.2	22.0	4 1	13 13.36	+18 0.3	2.701	3.638	6.4	21.6
4 11	13 6.08	-6 20.3	2.648	3.649	1.0	21.9	4 11	13 6.12	+18 39.6	2.714	3.634	7.2	21.6
4 21	12 58.99	-5 39.1	2.667	3.646	4.2	22.1	4 21	12 59.10	+19 0.9	2.753	3.630	8.9	21.7
5 1	12 52.68	-5 2.6	2.715	3.643	7.1	22.3	5 1	12 52.91	+19 3.0	2.816	3.626	10.7	21.8
5 11	12 47.63	-4 33.9	2.789	3.640	9.8	22.5	5 11	12 48.03	+18 46.5	2.900	3.622	12.5	22.0
345680	2006 <i>UK</i> ₁₀₉		4 8.1 197°29	3.2/11.9	18		329275	1999 <i>VP</i> ₆		4 8.1 248°76	9.1/13.4	15	
3 2	13 30.31	-20 11.3	2.507	3.259	13.0	21.6	3 2	13 41.64	-27 38.4	0.918	1.703	28.0	22.1
3 12	13 26.33	-20 5.7	2.409	3.258	10.6	21.4	3 12	13 39.31	-27 49.5	0.816	1.679	24.4	21.7
3 22	13 20.59	-19 44.1	2.334	3.256	7.8	21.3	3 22	13 31.86	-27 13.1	0.727	1.652	19.6	21.3
4 1	13 13.57	-19 6.9	2.284	3.254	5.0	21.1	4 1	13 19.41	-25 33.7	0.654	1.622	13.8	20.8
4 11	13 5.99	-18 16.6	2.262	3.252	3.2	21.0	4 11	13 3.38	-22 42.0	0.600	1.590	9.3	20.4
4 21	12 58.59	-17 17.4	2.268	3.250	4.5	21.0	4 21	12 46.39	-18 44.3	0.568	1.555	11.6	20.3
5 1	12 52.12	-16 14.7	2.303	3.247	7.4	21.2	5 1	12 31.62	-14 9.1	0.558	1.518	19.1	20.5
5 11	12 47.15	-15 14.2	2.364	3.245	10.2	21.4	5 11	12 21.54	-9 36.5	0.566	1.479	27.3	20.7
518854	2010 <i>DE</i> ₅₁		4 8.1 348°28	2.6/10.7	17		200308	2000 <i>DN</i> ₅₇		4 8.1 40°04	1.8/9.7	18	
3 2	13 30.35	-16 39.4	2.061	2.842	14.5	21.1	3 2	13 31.74	-13 37.6	1.660	2.465	16.4	20.2
3 12	13 26.71	-16 39.5	1.970	2.840	11.6	20.9	3 12	13 28.01	-13 35.1	1.594	2.481	12.9	20.0
3 22	13 21.01	-16 23.5	1.901	2.839	8.3	20.6	3 22	13 21.92	-13 16.0	1.549	2.498	8.9	19.8
4 1	13 13.80	-15 52.2	1.857	2.837	4.8	20.4	4 1	13 14.18	-12 42.3	1.527	2.515	4.5	19.6
4 11	13 5.90	-15 8.7	1.840	2.836	2.7	20.3	4 11	13 5.82	-11 58.7	1.533	2.533	1.9	19.5
4 21	12 58.22	-14 17.7	1.850	2.835	5.0	20.4	4 21	12 57.92	-11 11.3	1.564	2.551	5.5	19.8
5 1	12 51.64	-13 25.5	1.888	2.834	8.6	20.6	5 1	12 51.46	-10 26.9	1.622	2.569	9.6	20.0
5 11	12 46.84	-12 37.9	1.950	2.834	11.9	20.8	5 11	12 47.11	-9 51.3	1.703	2.588	13.3	20.3
120303	2004 <i>JY</i> ₃₇		4 8.1 203°66	6.6/31.0	17		167119	2003 <i>SW</i> ₀₀		4 8.1 143°26	1.2/7.0	18	
3 2	13 32.96	+11 5.4	2.349	3.174	11.5	20.4	3 2	13 35.84	-6 29.0	1.910	2.719	14.4	20.9
3 12	13 28.34	+12 31.0	2.274	3.169	9.3	20.2	3 12	13 30.84	-5 53.0	1.834	2.730	11.0	20.7
3 22	13 21.87	+12 55.1	2.226	3.163	7.3	20.1	3 22	13 23.63	-5 6.2	1.782	2.740	7.1	20.5
4 1	13 14.11	+15 10.5	2.204	3.156	6.6	20.0	4 1	13 14.88	-4 12.7	1.756	2.749	3.0	20.2
4 11	13 5.79	+16 10.3	2.211	3.149	7.6	20.1	4 11	13 5.53	-3 18.6	1.759	2.758	2.2	20.2
4 21	12 57.71	+16 49.9	2.245	3.142	9.8	20.2	4 21	12 56.57	-2 29.9	1.791	2.766	6.2	20.5
5 1	12 50.64	+17 7.0	2.302	3.133	12.2	20.3	5 1	12 48.91	-1 51.8	1.849	2.773	10.1	20.7
5 11	12 45.16	+17 1.9	2.381	3.124	14.4	20.5	5 11	12 43.22	-1 27.8	1.930	2.780	13.5	20.9
285717	2000 <i>SJ</i> ₂₈₄		4 8.1 154°46	1.9/10.9	18		457359	2008 <i>SM</i> ₂₆₇		4 8.1 186°40	2.4/9.9	16	
3 2	13 29.25	-18 1.4	3.209	3.959	10.4	22.3	3 2	13 39.50	-14 5.6	1.748	2.533	16.5	22.1
3 12	13 25.02	-17 33.7	3.116	3.968	8.3	22.1	3 12	13 34.18	-14 18.8	1.658	2.533	13.2	21.9
3 22	13 19.47	-16 53.5	3.047	3.976	5.9	22.0	3 22	13 26.15	-14 16.3	1.590	2.532	9.3	21.6
4 1	13 13.03	-16 2.2	3.006	3.984	3.4	21.8	4 1	13 16.08	-13 58.6	1.547	2.531	4.9	21.4
4 11	13 6.23	-15 2.8	2.995	3.991	1.9	21.7	4 11	13 5.04	-13 28.4	1.531	2.529	2.4	21.2
4 21	12 59.63	-13 58.9	3.014	3.997	3.4	21.8	4 21	12 54.26	-12 50.9	1.543	2.527	5.9	21.4
5 1	12 53.77	-12 54.8	3.063	4.003	5.9	22.0	5 1	12 44.93	-12 12.5	1.582	2.524	10.3	21.7
5 11	12 49.05	-11 54.8	3.140	4.009	8.3	22.2	5 11	12 37.94	-11 39.9	1.644	2.520	14.2	21.9
403846	2011 <i>UD</i> ₂₉₇		4 8.1 216°21	1.1/7.2	17		159512	2000 <i>YR</i> ₁₀₆		4 8.1 152°91	1.7/6.3	18	
3 2	13 36.10	-7 8.9	1.815	2.625	15.0	22.7	3 2	13 33.63	-3 54.7	2.457	3.263	11.7	20.4
3 12	13 31.39	-6 35.8	1.722	2.618	11.6	22.5	3 12	13 28.67	-3 19.2	2.378	3.272	8.9	20.3
3 22	13 24.23	-5 50.0	1.652	2.610	7.6	22.2	3 22	13 22.00	-2 36.9	2.323	3.281	5.7	20.1
4 1	13 15.22	-4 55.2	1.608	2.601	3.2	21.9	4 1	13 14.15	-1 51.5	2.297	3.288	2.6	19.9
4 11	13 5.32	-3 57.6	1.592	2.591	2.1	21.8	4 11	13 5.85	-1 7.5	2.300	3.296	2.4	19.9
4 21	12 55.65	-3 3.8	1.603	2.580	6.6	22.1	4 21	12 57.82	-0 29.4	2.333	3.302	5.5	20.1
5 1	12 47.25	-2 20.3	1.642	2.569	11.0	22.3	5 1	12 50.78	-0 0.8	2.394	3.308	8.6	20.3
5 11	12 40.95	-1 51.6	1.703	2.557	14.8	22.5	5 11	12 45.25	+0 16.0	2.480	3.314	11.4	20.5
26274	1998 <i>RH</i> ₇₅		4 8.1 349°23	2.8/5.5	18 R		213750	2002 <i>XE</i> ₆₆		4 8.1 31°79	10.6/2.9	18	
3 2	13 25.38	-7 35.0	1										

EPHEMERIDES

4 8.1

4 8.2

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
61602	2000 <i>QB</i> ₉₂		4 8.1 211 ^o .75	0 ^o .7/ 7.2 18			172532	2003 <i>UN</i> ₈		4 8.2 99 ^o .59	2 ^o .4/ 6.3 18		
3 2	13 28.59	- 8 12.2	2.596	3.398	11.2	19.6	3 2	13 39.87	- 2 2.3	1.742	2.558	15.3	20.6
3 12	13 24.85	- 7 24.6	2.503	3.394	8.6	19.4	3 12	13 33.96	- 1 40.8	1.681	2.580	11.6	20.4
3 22	13 19.55	- 6 26.6	2.434	3.390	5.6	19.2	3 22	13 25.65	- 1 13.0	1.643	2.602	7.5	20.2
4 1	13 13.14	- 5 21.7	2.393	3.386	2.3	19.0	4 1	13 15.73	- 0 43.6	1.632	2.623	3.5	20.0
4 11	13 6.24	- 4 14.5	2.382	3.381	1.5	18.9	4 11	13 5.30	- 0 18.2	1.648	2.643	3.3	20.0
4 21	12 59.53	- 3 10.2	2.400	3.376	4.8	19.2	4 21	12 55.46	- 0 1.5	1.693	2.663	7.1	20.3
5 1	12 53.64	- 2 13.6	2.446	3.371	8.0	19.3	5 1	12 47.17	+ 0 3.1	1.764	2.683	10.9	20.6
5 11	12 49.09	- 1 28.2	2.518	3.365	10.8	19.5	5 11	12 41.10	- 0 6.0	1.858	2.702	14.2	20.8
410298	2007 <i>TG</i> ₃₂₈		4 8.1 211 ^o .26	2 ^o .1/10.0 16			381867	2010 <i>AP</i> ₈		4 8.2 164 ^o .77	2 ^o .4/10.9 17		
3 2	13 35.24	-15 34.4	1.960	2.739	15.2	22.7	3 2	13 33.57	-17 26.9	2.492	3.251	12.9	22.1
3 12	13 30.65	-15 21.8	1.861	2.733	12.2	22.5	3 12	13 28.77	-17 20.3	2.400	3.257	10.3	21.9
3 22	13 23.72	-14 51.8	1.785	2.725	8.5	22.2	3 22	13 22.17	-16 59.2	2.331	3.262	7.4	21.7
4 1	13 15.02	-14 5.6	1.734	2.718	4.6	22.0	4 1	13 14.28	-16 24.6	2.288	3.266	4.3	21.6
4 11	13 5.47	-13 6.8	1.710	2.709	2.1	21.8	4 11	13 5.84	-15 39.1	2.274	3.270	2.4	21.4
4 21	12 56.11	-12 1.4	1.716	2.700	5.4	22.0	4 21	12 57.64	-14 46.9	2.290	3.273	4.4	21.6
5 1	12 47.96	-10 56.6	1.748	2.690	9.5	22.2	5 1	12 50.41	-13 53.4	2.334	3.276	7.5	21.8
5 11	12 41.81	- 9 59.3	1.805	2.680	13.2	22.4	5 11	12 44.74	-13 3.5	2.405	3.277	10.4	21.9
468456	2003 <i>UQ</i> ₃₆₅		4 8.1 272 ^o .69	4 ^o .1/ 4.6 17			430350	2013 <i>YJ</i> ₁₂₆		4 8.2 173 ^o .24	3 ^o .5/ 4.6 17		
3 2	13 32.92	- 0 57.0	1.634	2.470	15.2	21.8	3 2	13 33.21	+ 1 32.5	2.257	3.078	12.1	21.5
3 12	13 29.29	+ 0 6.5	1.539	2.450	11.8	21.5	3 12	13 28.55	+ 2 15.0	2.178	3.080	9.2	21.3
3 22	13 23.07	+ 1 21.0	1.467	2.429	7.8	21.2	3 22	13 22.03	+ 3 1.2	2.124	3.082	6.2	21.2
4 1	13 14.82	+ 2 39.4	1.420	2.408	4.5	21.0	4 1	13 14.22	+ 3 46.2	2.097	3.083	3.7	21.0
4 11	13 5.54	+ 3 53.0	1.399	2.387	5.3	21.0	4 11	13 5.88	+ 4 24.7	2.100	3.084	4.2	21.0
4 21	12 56.37	+ 4 52.9	1.405	2.366	9.3	21.1	4 21	12 57.81	+ 4 52.2	2.130	3.085	7.0	21.2
5 1	12 48.50	+ 5 32.5	1.435	2.344	13.6	21.3	5 1	12 50.79	+ 5 5.6	2.187	3.085	10.1	21.4
5 11	12 42.82	+ 5 48.4	1.486	2.322	17.5	21.5	5 11	12 45.39	+ 5 3.7	2.267	3.085	12.9	21.6
276129	2002 <i>GM</i> ₁₁₉		4 8.1 353 ^o .44	6 ^o .4/ 3.9 17			113725	2002 <i>TV</i> ₁₃₉		4 8.2 171 ^o .07	3 ^o .0/10.6 18		
3 2	13 36.38	+ 7 46.7	1.528	2.369	15.8	19.6	3 2	13 37.81	-16 48.9	1.697	2.477	17.2	20.1
3 12	13 31.86	+ 8 12.1	1.457	2.365	12.5	19.3	3 12	13 32.92	-16 50.3	1.612	2.481	13.8	19.9
3 22	13 24.61	+ 8 34.9	1.407	2.362	9.0	19.1	3 22	13 25.34	-16 32.3	1.546	2.484	9.9	19.7
4 1	13 15.39	+ 8 48.0	1.382	2.360	6.6	19.0	4 1	13 15.75	-15 55.1	1.505	2.486	5.6	19.4
4 11	13 5.36	+ 8 44.8	1.382	2.358	7.3	19.0	4 11	13 5.25	-15 2.5	1.491	2.488	3.0	19.3
4 21	12 55.76	+ 8 21.4	1.408	2.357	10.4	19.2	4 21	12 55.08	-14 0.8	1.505	2.489	6.0	19.4
5 1	12 47.76	+ 7 36.8	1.457	2.356	14.1	19.4	5 1	12 46.42	-12 58.0	1.545	2.489	10.2	19.7
5 11	12 42.17	+ 6 32.7	1.526	2.357	17.4	19.6	5 11	12 40.10	-12 2.0	1.608	2.489	14.2	19.9
357976	2006 <i>BD</i> ₁₅₈		4 8.2 330 ^o .49	0 ^o .2/ 8.3 17			131609	2001 <i>XJ</i> ₂₁		4 8.2 177 ^o .65	2 ^o .3/ 6.4 18		
3 2	13 32.74	- 9 15.0	1.280	2.114	18.7	20.5	3 2	13 38.01	- 3 14.1	1.781	2.598	15.0	20.0
3 12	13 29.75	- 9 10.7	1.199	2.106	14.7	20.2	3 12	13 32.77	- 2 45.4	1.700	2.600	11.5	19.7
3 22	13 23.65	- 8 49.8	1.138	2.099	9.8	19.9	3 22	13 25.08	- 2 8.3	1.642	2.601	7.5	19.5
4 1	13 15.13	- 8 15.3	1.099	2.092	4.3	19.6	4 1	13 15.59	- 1 27.3	1.610	2.602	3.4	19.2
4 11	13 5.43	- 7 33.0	1.084	2.085	1.6	19.4	4 11	13 5.33	- 0 48.6	1.606	2.602	3.1	19.2
4 21	12 56.02	- 6 50.8	1.094	2.079	7.4	19.7	4 21	12 55.42	- 0 17.8	1.630	2.602	7.2	19.5
5 1	12 48.32	- 6 16.7	1.127	2.074	12.9	20.0	5 1	12 46.90	+ 0 0.3	1.681	2.601	11.3	19.7
5 11	12 43.36	- 5 57.3	1.180	2.070	17.6	20.3	5 11	12 40.55	+ 0 3.2	1.754	2.599	14.9	19.9
352051	2006 <i>VN</i> ₁₅₂		4 8.2 224 ^o .91	3 ^o .7/ 4.1 17			177007	2003 <i>BW</i> ₁		4 8.2 82 ^o .54	4 ^o .9/ 2.5 18		
3 2	13 31.95	+ 3 38.4	2.500	3.321	11.0	20.8	3 2	13 30.95	+ 5 47.8	2.248	3.078	11.8	20.2
3 12	13 27.44	+ 4 15.5	2.416	3.317	8.5	20.6	3 12	13 26.67	+ 6 57.6	2.194	3.098	9.1	20.1
3 22	13 21.25	+ 4 54.4	2.356	3.312	5.8	20.4	3 22	13 20.69	+ 8 7.8	2.166	3.118	6.5	19.9
4 1	13 13.87	+ 5 30.8	2.325	3.307	3.8	20.3	4 1	13 13.60	+ 9 11.9	2.164	3.138	5.0	19.9
4 11	13 5.99	+ 5 59.8	2.322	3.302	4.4	20.3	4 11	13 6.15	+10 4.1	2.192	3.157	5.8	20.0
4 21	12 58.32	+ 6 17.9	2.348	3.296	6.9	20.5	4 21	12 59.09	+10 40.2	2.246	3.177	8.1	20.1
5 1	12 51.55	+ 6 22.5	2.401	3.291	9.6	20.6	5 1	12 53.10	+10 57.9	2.326	3.196	10.7	20.3
5 11	12 46.24	+ 6 12.7	2.476	3.285	12.2	20.8	5 11	12 48.66	+10 57.1	2.427	3.215	13.0	20.5
472192	2014 <i>DW</i> ₁₂₉		4 8.2 267 ^o .80	1 ^o .1/ 9.2 17			35298	1996 <i>VH</i> ₅		4 8.2 155 ^o .41	1 ^o .4/ 9.8 18		
3 2	13 32.02	-11 30.4	2.397	3.185	12.5	21.4	3 2	13 32.78	-14 58.4	2.404	3.177	12.9	19.6
3 12	13 27.70	-11 32.2	2.299	3.178	9.8	21.2	3 12	13 28.17	-14 32.5	2.316	3.186	10.2	19.4
3 22	13 21.55	-11 23.4	2.224	3.172	6.7	20.9	3 22	13 21.76	-13 52.2	2.252	3.193	7.0	19.2
4 1	13 14.05	-11 5.5	2.176	3.165	3.2	20.7	4 1	13 14.10	-12 59.6	2.215	3.200	3.6	19.0
4 11	13 5.91	-10 41.1	2.157	3.158	1.3	20.5	4 11	13 5.93	-11 58.6	2.207	3.206	1.5	18.8
4 21	12 57.93	-10 14.0	2.167	3.151	4.5	20.8	4 21	12 58.03	-10 54.2	2.228	3.212	4.4	19.1
5 1	12 50.86	- 9 48.3	2.205	3.144	8.0	21.0	5 1	12 51.13	- 9 52.1	2.279	3.217	7.8	19.3
5 11	12 45.34	- 9 28.0	2.268	3.137	11.1	21.1	5 11	12 45.81	- 8 57.4	2.354	3.222	10.8	19.5
354858	2005 <i>YK</i> ₂₁₇		4 8.2 65 ^o .37	6 ^o .6/ 3.2 18			27540	2000 <i>HA</i> ₁₀₀		4 8.2 73 ^o .62	3 ^o .3/ 4.9 18		
3 2	13 34.62	+ 3 21.9	1.260	2.113	17.8	20.3	3 2	13 30.22	- 3 35.3	1.660	2.495	15.1	18.6
3 12	13 30.67	+ 4 47.9	1.213	2.130	13.6	20.0	3 12	13 26.86	- 2 15.5	1.590	2.500	11.4	18.4
3 22	13 23.82	+ 6 18.1	1.187	2.148	9.4	19.9	3 22	13 21.20	- 0 43.8	1.542	2.506	7.4	18.2
4 1	13 15.01	+ 7 41.2	1.184	2.166	6.7	19.8	4 1	13 13.92	+ 0 52.2	1.521	2.512	3.8	18.0
4 11	13 5.58	+ 8 46.1	1.207	2.184	7.9	19.9	4 11	13 6.00	+ 2 23.1	1.527	2.518	4.4	18.0
4 21	12 56.90	+ 9 25.4	1.253	2.202	11.5	20.1	4 21	12 58.48	+ 3 40.5	1.560	2.524	8.2	18.2
5 1	12 50.10	+ 9 36.0	1.322	2.220	15.3	20.4	5 1	12 52.30	+ 4 37.9	1.617	2.529	12.1	18.5
5 11	12 45.90	+ 9 19.3	1.408	2.238	18.7	20.7	5 11	12 48.14	+ 5 12.3	1.696			

EPHEMERIDES

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
285158	1995 VA ₁₃		4 8.2 168°93	0°8/ 7.1 18			342760	2008 WV ₈₈		4 8.2 259°86	0°3/ 7.9 17		
3 2	13 29.71	- 6 42.9	2.856	3.656	10.4	21.9	3 2	13 33.53	- 7 41.0	2.069	2.876	13.6	21.4
3 12	13 25.52	- 6 6.1	2.769	3.659	7.9	21.7	3 12	13 29.15	- 7 31.7	1.975	2.867	10.5	21.1
3 22	13 19.90	- 5 21.5	2.706	3.662	5.1	21.5	3 22	13 22.65	- 7 12.6	1.904	2.859	6.9	20.9
4 1	13 13.29	- 4 32.0	2.672	3.665	2.1	21.3	4 1	13 14.59	- 6 46.1	1.858	2.851	2.9	20.6
4 11	13 6.26	- 3 41.7	2.669	3.667	1.5	21.3	4 11	13 5.78	- 6 16.1	1.841	2.842	1.3	20.5
4 21	12 59.44	- 2 54.5	2.695	3.669	4.5	21.5	4 21	12 57.15	- 5 47.4	1.853	2.834	5.5	20.7
5 1	12 53.39	- 2 14.2	2.749	3.671	7.4	21.7	5 1	12 49.60	- 5 24.5	1.891	2.825	9.4	21.0
5 11	12 48.59	- 1 43.5	2.829	3.672	9.9	21.8	5 11	12 43.84	- 5 11.2	1.954	2.816	12.9	21.2
202440	2005 YG ₁₆		4 8.2 341°95	2°8/ 6.1 16			11425	Wearydunlop		4 8.2 180°03	0°3/ 7.8 18		
3 2	13 31.64	- 4 30.6	1.260	2.107	18.2	20.4	3 2	13 36.30	- 8 29.3	2.110	2.907	13.7	20.1
3 12	13 28.80	- 3 45.1	1.186	2.103	14.0	20.1	3 12	13 31.14	- 8 3.9	2.022	2.909	10.6	19.9
3 22	13 22.94	- 2 45.1	1.133	2.099	9.1	19.8	3 22	13 23.87	- 7 27.1	1.957	2.910	6.9	19.7
4 1	13 14.81	- 1 37.4	1.102	2.096	4.1	19.5	4 1	13 15.07	- 6 42.0	1.919	2.911	2.9	19.4
4 11	13 5.65	- 0 31.6	1.096	2.093	4.0	19.5	4 11	13 5.61	- 5 53.4	1.910	2.910	1.4	19.3
4 21	12 56.88	+ 0 22.6	1.115	2.090	9.0	19.7	4 21	12 56.41	- 5 6.5	1.930	2.909	5.5	19.6
5 1	12 49.85	+ 0 57.7	1.155	2.089	14.1	20.0	5 1	12 48.37	- 4 26.7	1.979	2.907	9.4	19.8
5 11	12 45.46	+ 1 9.8	1.216	2.087	18.4	20.3	5 11	12 42.16	- 3 58.1	2.051	2.904	12.7	20.0
230044	2000 RJ ₅₆		4 8.2 299°82	0°9/ 8.8 17			292820	2006 UF ₂₆₂		4 8.2 307°35	0°0/ 8.0 17		
3 2	13 33.74	-10 26.5	1.677	2.488	16.0	20.3	3 2	13 30.22	-10 16.5	1.472	2.298	17.1	20.7
3 12	13 30.13	-10 30.5	1.565	2.458	12.8	20.0	3 12	13 27.57	- 9 53.0	1.375	2.278	13.5	20.4
3 22	13 23.82	-10 20.8	1.474	2.428	8.7	19.7	3 22	13 22.15	- 9 11.2	1.299	2.259	9.0	20.0
4 1	13 15.26	- 9 58.5	1.408	2.398	4.1	19.3	4 1	13 14.54	- 8 14.1	1.247	2.240	3.9	19.7
4 11	13 5.41	- 9 27.1	1.368	2.369	1.5	19.0	4 11	13 5.77	- 7 7.8	1.220	2.221	1.5	19.5
4 21	12 55.46	- 8 52.1	1.354	2.339	6.4	19.3	4 21	12 57.10	- 6 0.8	1.218	2.202	7.1	19.8
5 1	12 46.68	- 8 19.9	1.366	2.309	11.4	19.5	5 1	12 49.83	- 5 2.2	1.240	2.184	12.3	20.0
5 11	12 40.13	- 7 56.9	1.399	2.280	15.9	19.7	5 11	12 44.94	- 4 19.3	1.283	2.167	16.9	20.2
94877	2001 XO ₂₃₄		4 8.2 236°64	0°3/ 8.4 16			86318	1999 VS ₁₉₂		4 8.2 267°55	3°1/ 12.4 17		
3 2	13 35.27	-10 8.5	1.574	2.387	16.8	20.1	3 2	13 29.09	-22 42.7	2.745	3.480	12.4	20.0
3 12	13 31.16	- 9 54.0	1.486	2.381	13.2	19.8	3 12	13 25.40	-22 8.4	2.621	3.458	10.2	19.8
3 22	13 24.32	- 9 23.9	1.419	2.375	8.8	19.5	3 22	13 20.04	-21 15.2	2.520	3.435	7.7	19.6
4 1	13 15.37	- 8 40.7	1.377	2.368	3.9	19.2	4 1	13 13.45	-20 3.7	2.445	3.412	5.0	19.4
4 11	13 5.42	- 7 49.9	1.360	2.361	1.4	19.0	4 11	13 6.25	-18 36.7	2.398	3.388	3.2	19.3
4 21	12 55.72	- 6 58.6	1.371	2.354	6.6	19.3	4 21	12 59.14	-16 59.0	2.382	3.364	4.3	19.3
5 1	12 47.49	- 6 14.2	1.407	2.347	11.4	19.6	5 1	12 52.82	-15 17.0	2.396	3.340	7.1	19.4
5 11	12 41.64	- 5 42.7	1.464	2.339	15.7	19.8	5 11	12 47.88	-13 37.7	2.437	3.316	10.0	19.6
430657	2003 SC ₃₃₈		4 8.2 189°12	0°1/ 8.3 18			306492	1999 TM ₂₄₄		4 8.2 260°15	2°3/ 10.2 18		
3 2	13 35.74	- 8 29.6	2.630	3.415	11.6	21.9	3 2	13 36.27	-14 13.4	2.575	3.340	12.3	20.6
3 12	13 30.31	- 8 26.9	2.534	3.414	9.0	21.7	3 12	13 30.96	-14 43.7	2.467	3.329	9.9	20.4
3 22	13 23.14	- 8 16.1	2.463	3.413	5.9	21.5	3 22	13 23.73	-15 4.3	2.382	3.317	7.0	20.2
4 1	13 14.71	- 7 59.1	2.420	3.411	2.6	21.3	4 1	13 15.04	-15 14.9	2.325	3.305	4.0	20.0
4 11	13 5.72	- 7 38.6	2.407	3.408	1.0	21.1	4 11	13 5.61	-15 16.8	2.297	3.293	2.3	19.9
4 21	12 56.90	- 7 17.9	2.425	3.405	4.4	21.4	4 21	12 56.24	-15 11.9	2.300	3.281	4.5	20.0
5 1	12 48.99	- 7 0.4	2.471	3.401	7.7	21.6	5 1	12 47.74	-15 3.7	2.331	3.269	7.6	20.2
5 11	12 42.55	- 6 49.2	2.544	3.396	10.6	21.8	5 11	12 40.78	-14 56.0	2.388	3.257	10.6	20.3
311602	2006 KA ₉₁		4 8.2 343°02	3°3/ 5.6 16			168148	2006 HP ₃₀		4 8.2 312°41	3°0/ 5.1 17		
3 2	13 32.55	- 2 58.7	1.424	2.265	16.8	21.1	3 2	13 28.26	- 3 31.0	1.820	2.653	14.0	20.0
3 12	13 29.13	- 2 6.4	1.350	2.263	12.9	20.9	3 12	13 25.33	- 2 22.9	1.733	2.643	10.7	19.8
3 22	13 22.97	- 1 2.5	1.297	2.262	8.4	20.6	3 22	13 20.25	- 1 3.2	1.670	2.633	6.9	19.5
4 1	13 14.77	+ 0 6.1	1.269	2.260	4.1	20.4	4 1	13 13.59	+ 0 21.9	1.633	2.624	3.5	19.3
4 11	13 5.70	+ 1 10.4	1.266	2.259	4.4	20.4	4 11	13 6.21	+ 1 44.3	1.623	2.615	4.0	19.3
4 21	12 57.01	+ 2 1.9	1.288	2.259	8.8	20.6	4 21	12 59.06	+ 2 56.2	1.640	2.606	7.7	19.5
5 1	12 49.90	+ 2 34.2	1.334	2.258	13.3	20.9	5 1	12 53.04	+ 3 51.1	1.682	2.597	11.6	19.7
5 11	12 45.19	+ 2 44.3	1.401	2.257	17.3	21.1	5 11	12 48.87	+ 4 25.4	1.746	2.588	15.1	19.9
106386	2000 VP ₁₇		4 8.2 107°70	0°2/ 7.9 18			44880	1999 UF ₅₁		4 8.2 98°93	3°7/ 4.9 18		
3 2	13 35.52	-10 14.5	1.732	2.538	15.8	20.2	3 2	13 32.74	- 1 49.9	1.614	2.449	15.4	19.3
3 12	13 30.74	- 9 32.3	1.666	2.558	12.2	20.0	3 12	13 28.85	- 0 42.5	1.547	2.457	11.7	19.1
3 22	13 23.63	- 8 34.9	1.622	2.577	8.0	19.8	3 22	13 22.55	+ 0 34.4	1.502	2.465	7.7	18.9
4 1	13 14.93	- 7 26.7	1.604	2.596	3.3	19.5	4 1	13 14.54	+ 1 53.3	1.483	2.473	4.2	18.7
4 11	13 5.67	- 6 14.6	1.613	2.614	1.5	19.4	4 11	13 5.88	+ 3 5.5	1.491	2.480	4.8	18.7
4 21	12 56.92	- 5 6.1	1.651	2.632	6.1	19.8	4 21	12 57.67	+ 4 3.3	1.525	2.488	8.5	19.0
5 1	12 49.65	- 4 8.0	1.715	2.649	10.2	20.0	5 1	12 50.89	+ 4 41.3	1.584	2.495	12.4	19.2
5 11	12 44.49	- 3 24.9	1.803	2.665	13.8	20.3	5 11	12 46.25	+ 4 57.4	1.664	2.502	15.9	19.5
100777	1998 FL ₅₂		4 8.2 44°58	1°4/ 7.1 18			220330	2003 FZ ₁₁₉		4 8.2 56°92	2°8/ 4.9 18		
3 2	13 32.34	- 7 33.1	1.235	2.076	18.8	19.8	3 2	13 28.11	- 4 7.5	2.022	2.849	13.1	20.2
3 12	13 29.10	- 6 52.5	1.180	2.092	14.4	19.6	3 12	13 24.75	- 2 40.9	1.961	2.868	9.8	20.0
3 22	13 22.93	- 5 55.5	1.144	2.108	9.3	19.3	3 22	13 19.58	- 1 4.8	1.925	2.887	6.3	19.8
4 1	13 14.71	- 4 48.6	1.130	2.124	3.8	19.1	4 1	13 13.21	+ 0 34.1	1.915	2.906	3.2	19.6
4 11	13 5.77	- 3 40.9	1.142	2.142	2.6	19.0	4 11	13 6.42	+ 2 7.8	1.935	2.925	3.7	19.7
4 21	12 57.48	- 2 41.9	1.178	2.159	7.9	19.4	4 21	13 0.02	+ 3 29.4	1.983	2.945	6.9	19.9
5 1	12 51.05	- 1 58.9	1.238	2.177	12.7	19.7	5 1	12 54.72	+ 4 33.8	2.057	2.964	10.2	20.2
5 11	12 47.22	- 1 36.2	1.318	2.196	16.9	20.0	5 11	12 51.05	+ 5 18.2	2.154	2.984	13.0	20.4
300877	2008 AO ₇₈		4 8.2 267°94	4°3/ 12.6 18			336219	2008 SK ₅₆		4 8.2 231°17	0°2/ 7.9 17		
3 2	13 32.07	-21 42.4	2.387	3.131	13.8								

EPHEMERIDES

4 8.2

4 8.2

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
17119	Alexisrodz		4 8.2 250°13	2°2/ 6.0	18	R	427659	2003 YY ₁₅₇		4 8.2 101°95	0°2/ 8.3	17	
3 2	13 30.82	- 4 51.7	1.890	2.714	14.0	18.7	3 2	13 33.23	- 9 4.1	2.071	2.874	13.7	21.1
3 12	13 27.19	- 3 57.1	1.804	2.709	10.7	18.5	3 12	13 28.84	- 8 56.3	1.987	2.877	10.6	20.9
3 22	13 21.42	- 2 51.1	1.742	2.703	6.9	18.3	3 22	13 22.40	- 8 37.7	1.926	2.880	7.0	20.6
4 1	13 14.09	- 1 39.0	1.705	2.698	3.1	18.0	4 1	13 14.49	- 8 10.9	1.891	2.882	3.1	20.4
4 11	13 6.05	- 0 27.9	1.697	2.692	3.1	18.0	4 11	13 5.94	- 7 39.6	1.884	2.885	1.1	20.2
4 21	12 58.27	+ 0 35.3	1.716	2.686	7.0	18.2	4 21	12 57.67	- 7 8.6	1.906	2.888	5.2	20.5
5 1	12 51.63	+ 1 24.6	1.761	2.680	10.9	18.5	5 1	12 50.52	- 6 42.3	1.954	2.891	9.0	20.8
5 11	12 46.85	+ 1 56.1	1.828	2.675	14.3	18.7	5 11	12 45.14	- 6 24.9	2.027	2.893	12.3	21.0
8814	Rosseven		4 8.2 193°79	0°3/ 8.6	18		290277	2005 SS ₁₄₈		4 8.2 336°48	0°8/ 7.5	17	
3 2	13 29.29	-11 1.0	2.910	3.696	10.6	18.5	3 2	13 26.58	- 9 40.8	1.384	2.222	17.4	19.6
3 12	13 25.26	-10 31.9	2.814	3.694	8.2	18.4	3 12	13 24.76	- 8 52.8	1.300	2.210	13.5	19.3
3 22	13 19.79	- 9 52.9	2.743	3.692	5.5	18.2	3 22	13 20.27	- 7 44.4	1.236	2.199	8.9	19.0
4 1	13 13.31	- 9 6.0	2.699	3.689	2.4	18.0	4 1	13 13.74	- 6 20.5	1.195	2.189	3.7	18.6
4 11	13 6.39	- 8 14.9	2.685	3.686	0.8	17.8	4 11	13 6.23	- 4 50.0	1.179	2.179	2.1	18.5
4 21	12 59.63	- 7 23.3	2.702	3.683	3.9	18.1	4 21	12 58.97	- 3 23.2	1.188	2.171	7.5	18.8
5 1	12 53.62	- 6 35.5	2.747	3.679	6.9	18.2	5 1	12 53.17	- 2 10.2	1.221	2.163	12.6	19.1
5 11	12 48.83	- 5 55.0	2.818	3.675	9.5	18.4	5 11	12 49.71	- 1 18.2	1.274	2.156	17.0	19.3
505012	2011 PR ₃		4 8.2 265°56	5°3/ 13.9	17		192521	1998 RK ₆₇		4 8.2 208°64	3°1/ 10.6	17	
3 2	13 31.49	-25 14.9	2.292	3.020	14.7	21.9	3 2	13 38.88	-16 19.1	1.797	2.573	16.5	20.8
3 12	13 27.58	-25 34.6	2.196	3.019	12.4	21.7	3 12	13 33.79	-16 34.1	1.701	2.567	13.4	20.6
3 22	13 21.63	-25 35.4	2.120	3.018	9.8	21.6	3 22	13 26.02	-16 32.0	1.625	2.561	9.6	20.3
4 1	13 14.18	-25 15.9	2.068	3.017	7.2	21.4	4 1	13 16.16	-16 12.5	1.574	2.555	5.6	20.1
4 11	13 6.03	-24 37.3	2.042	3.016	5.4	21.3	4 11	13 5.27	-15 38.0	1.551	2.547	3.2	19.9
4 21	12 58.07	-23 43.4	2.044	3.015	6.0	21.3	4 21	12 54.55	-14 53.3	1.555	2.539	6.0	20.1
5 1	12 51.16	-22 39.8	2.073	3.014	8.2	21.5	5 1	12 45.19	-14 5.2	1.586	2.530	10.1	20.3
5 11	12 45.98	-21 33.6	2.127	3.013	11.0	21.6	5 11	12 38.11	-13 21.2	1.641	2.520	14.1	20.5
242598	2005 JJ ₃₆		4 8.2 240°79	5°0/ 2.7	17		244146	2001 WD ₂₄		4 8.2 341°05	2°4/ 9.8	16	
3 2	13 31.54	+ 6 21.6	2.288	3.117	11.7	21.0	3 2	13 30.97	-14 21.3	1.228	2.053	19.9	20.3
3 12	13 27.32	+ 7 16.2	2.209	3.112	9.1	20.8	3 12	13 28.57	-14 21.5	1.149	2.047	16.0	20.0
3 22	13 21.30	+ 8 11.6	2.155	3.107	6.5	20.6	3 22	13 23.01	-13 58.8	1.088	2.041	11.1	19.7
4 1	13 13.98	+ 9 2.0	2.127	3.101	5.0	20.5	4 1	13 14.97	-13 14.4	1.048	2.036	5.8	19.4
4 11	13 6.13	+ 9 41.6	2.128	3.096	5.8	20.6	4 11	13 5.74	-12 13.5	1.032	2.032	2.5	19.2
4 21	12 58.51	+10 6.1	2.156	3.090	8.2	20.7	4 21	12 56.82	-11 5.3	1.040	2.029	7.1	19.4
5 1	12 51.88	+10 12.9	2.209	3.084	11.0	20.9	5 1	12 49.68	-10 0.2	1.071	2.026	12.5	19.7
5 11	12 46.81	+10 1.6	2.285	3.079	13.5	21.0	5 11	12 45.34	- 9 7.8	1.122	2.024	17.3	20.0
200813	2001 XE ₁₇₉		4 8.2 148°04	3°4/ 11.1	18		141070	2001 XN ₁₅		4 8.2 98°43	0°8/ 7.2	18	
3 2	13 35.89	-18 15.3	1.703	2.480	17.2	21.0	3 2	13 32.12	- 6 7.7	2.513	3.316	11.6	19.7
3 12	13 31.43	-18 14.5	1.621	2.487	13.9	20.8	3 12	13 27.48	- 5 44.0	2.442	3.333	8.8	19.6
3 22	13 24.37	-17 53.0	1.558	2.493	10.1	20.6	3 22	13 21.24	- 5 13.0	2.395	3.351	5.7	19.4
4 1	13 15.39	-17 11.2	1.520	2.498	6.0	20.4	4 1	13 13.92	- 4 37.7	2.376	3.368	2.3	19.2
4 11	13 5.57	-16 12.7	1.508	2.504	3.4	20.2	4 11	13 6.21	- 4 1.9	2.386	3.385	1.6	19.1
4 21	12 56.12	-15 4.2	1.524	2.508	5.9	20.4	4 21	12 58.82	- 3 29.6	2.426	3.402	4.8	19.4
5 1	12 48.15	-13 54.1	1.565	2.512	10.0	20.6	5 1	12 52.38	- 3 4.3	2.494	3.419	7.9	19.6
5 11	12 42.46	-12 50.5	1.631	2.516	13.8	20.9	5 11	12 47.39	- 2 48.5	2.587	3.435	10.6	19.8
319094	2005 WU ₁₄₉		4 8.2 279°09	7°3/ 2.2	17		503976	2004 SZ ₅₂		4 8.2 219°76	0°6/ 8.8	17	
3 2	13 36.82	+10 58.1	1.808	2.639	14.2	20.2	3 2	13 32.45	-12 6.7	2.491	3.275	12.2	22.9
3 12	13 31.92	+11 47.5	1.731	2.629	11.4	20.0	3 12	13 28.01	-11 36.3	2.387	3.264	9.6	22.7
3 22	13 24.58	+12 33.5	1.676	2.619	8.8	19.8	3 22	13 21.78	-10 53.0	2.306	3.253	6.4	22.5
4 1	13 15.45	+13 8.2	1.646	2.610	7.3	19.7	4 1	13 14.23	- 9 59.1	2.252	3.242	3.0	22.2
4 11	13 5.55	+13 24.6	1.643	2.600	8.3	19.7	4 11	13 6.06	- 8 58.5	2.228	3.229	1.0	22.0
4 21	12 55.97	+13 18.4	1.666	2.590	10.9	19.9	4 21	12 58.02	- 7 56.2	2.234	3.216	4.6	22.3
5 1	12 47.75	+12 48.3	1.712	2.580	14.0	20.0	5 1	12 50.87	- 6 57.6	2.269	3.202	8.1	22.5
5 11	12 41.66	+11 55.8	1.779	2.571	16.9	20.2	5 11	12 45.21	- 6 7.5	2.329	3.188	11.2	22.6
96080	7649 P-L		4 8.2 256°54	1°8/ 6.7	17		110499	2001 TN ₆₅		4 8.2 162°75	1°9/ 6.6	17	
3 2	13 35.68	- 6 3.2	1.817	2.631	14.9	20.8	3 2	13 36.51	- 3 6.6	2.010	2.823	13.7	20.2
3 12	13 31.32	- 5 19.2	1.709	2.607	11.6	20.6	3 12	13 31.36	- 2 48.0	1.929	2.826	10.5	19.9
3 22	13 24.41	- 4 21.5	1.624	2.583	7.6	20.3	3 22	13 24.05	- 2 22.6	1.871	2.830	6.8	19.7
4 1	13 15.50	- 3 14.3	1.564	2.557	3.3	19.9	4 1	13 15.20	- 1 54.2	1.841	2.832	3.0	19.5
4 11	13 5.49	- 2 4.4	1.533	2.531	2.8	19.8	4 11	13 5.70	- 1 27.6	1.838	2.835	2.7	19.5
4 21	12 55.49	- 0 59.3	1.530	2.504	7.3	20.0	4 21	12 56.51	- 1 7.4	1.865	2.837	6.3	19.7
5 1	12 46.65	- 0 6.3	1.553	2.475	11.9	20.2	5 1	12 48.54	- 0 57.2	1.918	2.839	10.1	19.9
5 11	12 39.89	+ 0 29.2	1.598	2.447	15.9	20.4	5 11	12 42.46	- 0 59.5	1.995	2.840	13.3	20.1
176808	2002 TD ₃₁		4 8.2 216°66	1°1/ 7.3	17		182458	2001 SF ₆₉		4 8.2 174°82	0°4/ 7.7	17	
3 2	13 36.38	- 5 36.6	1.917	2.727	14.3	20.8	3 2	13 31.62	-10 32.8	2.268	3.064	12.9	20.7
3 12	13 31.49	- 5 20.8	1.826	2.722	11.1	20.6	3 12	13 27.41	- 9 31.5	2.180	3.067	9.9	20.5
3 22	13 24.28	- 4 55.6	1.758	2.716	7.2	20.3	3 22	13 21.37	- 8 16.0	2.115	3.069	6.5	20.3
4 1	13 15.34	- 4 24.5	1.717	2.710	3.0	20.0	4 1	13 14.03	- 6 50.5	2.079	3.071	2.7	20.0
4 11	13 5.59	- 3 52.1	1.704	2.703	2.0	20.0	4 11	13 6.16	- 5 20.9	2.072	3.072	1.4	19.9
4 21	12 56.06	- 3 23.6	1.719	2.696	6.3	20.2	4 21	12 58.54	- 3 53.9	2.095	3.072	5.2	20.2
5 1	12 47.45	- 3 3.8	1.761	2.689	10.4	20.4	5 1	12 51.94	- 2 36.1	2.146	3.072	8.9	20.4
5 11	12 41.76	- 2 56.1	1.826	2.681	14.0	20.6	5 11	12 46.93	- 1 32.2	2.222	3.071	12.0	20.6
122396	2000 QS ₇₇		4 8.2 91°94	4°4/ 11.9	18		417603	2006 VM ₁₃₂		4 8.2 70°63	1°2/ 9.3	18	
3 2	13 37.30	-19 36.9	1.917	2.677	16.2	19.7	3 2						

EPHEMERIDES

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
375975	2009 <i>WN</i> ₂₂₉		4 8.2 205°66	1.8/ 6.4	17		313712	2003 <i>UW</i> ₈₈		4 8.2 130°16	5.7/ 2.9	18	
3 2	13 33.21	- 4 31.2	2.163	2.976	12.8	22.0	3 2	13 36.05	+ 5 41.8	1.853	2.683	13.9	20.7
3 12	13 28.76	- 3 52.3	2.074	2.972	9.8	21.8	3 12	13 31.03	+ 6 52.3	1.793	2.696	10.8	20.5
3 22	13 22.33	- 3 4.6	2.008	2.967	6.4	21.6	3 22	13 23.80	+ 8 4.0	1.756	2.709	7.7	20.3
4 1	13 14.48	- 2 12.1	1.970	2.962	2.8	21.3	4 1	13 15.07	+ 9 9.2	1.746	2.720	5.8	20.2
4 11	13 5.98	- 1 20.3	1.961	2.957	2.6	21.3	4 11	13 5.82	+10 0.3	1.763	2.732	6.7	20.3
4 21	12 57.71	- 0 34.5	1.980	2.951	6.1	21.5	4 21	12 57.03	+10 32.1	1.807	2.742	9.5	20.5
5 1	12 50.48	+ 0 0.5	2.026	2.945	9.7	21.7	5 1	12 49.61	+10 42.2	1.876	2.752	12.6	20.7
5 11	12 44.94	+ 0 21.7	2.096	2.938	12.9	21.9	5 11	12 44.18	+10 30.8	1.966	2.762	15.3	20.9
222534	2001 <i>UD</i> ₆₄		4 8.2 244°75	3.2/11.6	18		467580	2007 <i>UB</i> ₃₃		4 8.2 138°81	7.0/16.5	18	
3 2	13 32.08	-20 46.0	2.165	2.920	14.7	21.2	3 2	13 35.59	-32 41.4	2.012	2.697	17.7	21.1
3 12	13 28.17	-20 17.6	2.053	2.904	12.0	21.0	3 12	13 30.98	-32 25.7	1.923	2.710	15.3	20.9
3 22	13 22.12	-19 28.0	1.961	2.887	8.9	20.8	3 22	13 23.93	-31 40.6	1.853	2.721	12.5	20.8
4 1	13 14.45	-18 17.3	1.895	2.870	5.5	20.5	4 1	13 15.18	-30 24.4	1.804	2.732	9.6	20.6
4 11	13 5.98	-16 49.2	1.858	2.852	3.2	20.3	4 11	13 5.77	-28 39.4	1.782	2.743	7.4	20.5
4 21	12 57.62	-15 9.8	1.849	2.833	5.1	20.4	4 21	12 56.83	-26 32.5	1.787	2.752	7.2	20.5
5 1	12 50.31	-13 27.4	1.868	2.814	8.7	20.6	5 1	12 49.36	-24 13.8	1.821	2.761	9.2	20.6
5 11	12 44.77	-11 50.4	1.913	2.794	12.3	20.8	5 11	12 44.07	-21 55.2	1.881	2.770	12.1	20.8
214460	2005 <i>SM</i> ₁₂₈		4 8.2 280°89	1.6/10.1	18		33619	Dominickrowan		4 8.2 271°65	1.5/ 6.8	18	
3 2	13 28.00	-16 13.2	2.398	3.176	12.8	20.4	3 2	13 31.03	- 6 34.2	1.834	2.655	14.5	18.9
3 12	13 24.74	-15 36.0	2.289	3.160	10.2	20.2	3 12	13 27.51	- 5 48.6	1.743	2.645	11.1	18.6
3 22	13 19.71	-14 42.0	2.202	3.143	7.1	19.9	3 22	13 21.75	- 4 50.0	1.675	2.636	7.2	18.4
4 1	13 13.38	-13 33.1	2.142	3.127	3.8	19.7	4 1	13 14.31	- 3 43.0	1.633	2.626	3.1	18.1
4 11	13 6.42	-12 13.4	2.111	3.111	1.6	19.5	4 11	13 6.09	- 2 34.4	1.618	2.616	2.5	18.0
4 21	12 59.57	-10 48.7	2.109	3.094	4.4	19.7	4 21	12 58.08	- 1 31.3	1.631	2.606	6.7	18.2
5 1	12 53.60	- 9 25.4	2.135	3.078	8.0	19.9	5 1	12 51.24	- 0 40.2	1.669	2.596	10.9	18.5
5 11	12 49.11	- 8 9.8	2.187	3.061	11.2	20.0	5 11	12 46.32	- 0 5.7	1.730	2.586	14.5	18.7
3729	Yangzhou		4 8.2 261°73	2.1/ 9.8	18 R		41792	2000 <i>WH</i> ₆		4 8.2 157°61	10.4/29.1	18	
3 2	13 37.36	-13 1.0	2.058	2.839	14.5	16.4	3 2	13 43.07	+23 28.3	2.108	2.903	13.7	19.7
3 12	13 32.37	-13 23.0	1.949	2.822	11.6	16.2	3 12	13 36.22	+24 43.6	2.059	2.912	11.9	19.6
3 22	13 24.99	-13 33.2	1.862	2.804	8.1	16.0	3 22	13 27.08	+25 45.5	2.033	2.920	10.7	19.5
4 1	13 15.74	-13 31.8	1.802	2.786	4.4	15.7	4 1	13 16.44	+26 25.5	2.032	2.928	10.4	19.5
4 11	13 5.46	-13 20.4	1.769	2.768	2.2	15.5	4 11	13 5.33	+26 37.7	2.057	2.934	11.3	19.6
4 21	12 55.21	-13 2.5	1.766	2.749	5.4	15.7	4 21	12 54.80	+26 20.3	2.106	2.940	12.9	19.7
5 1	12 46.02	-12 42.7	1.789	2.730	9.4	15.9	5 1	12 45.79	+25 34.6	2.178	2.945	14.8	19.9
5 11	12 38.77	-12 26.1	1.838	2.711	13.1	16.1	5 11	12 38.92	+24 24.9	2.268	2.949	16.6	20.0
268493	2005 <i>YF</i> ₂₉		4 8.2 317°19	2.2/ 9.9	17		456715	2007 <i>RG</i> ₂₉₂		4 8.2 80°52	1.0/ 7.3	18	
3 2	13 31.01	-13 55.6	1.635	2.441	16.6	20.8	3 2	13 35.04	- 8 1.7	1.500	2.322	17.0	21.6
3 12	13 27.96	-14 1.3	1.538	2.425	13.3	20.5	3 12	13 30.72	- 7 20.5	1.440	2.341	13.1	21.4
3 22	13 22.31	-13 49.9	1.461	2.410	9.3	20.3	3 22	13 23.81	- 6 24.8	1.400	2.360	8.4	21.2
4 1	13 14.64	-13 22.1	1.408	2.395	5.0	20.0	4 1	13 15.13	- 5 19.9	1.386	2.379	3.5	20.9
4 11	13 5.91	-12 41.5	1.381	2.380	2.3	19.7	4 11	13 5.83	- 4 13.6	1.398	2.397	2.2	20.9
4 21	12 57.29	-11 53.7	1.380	2.366	6.0	19.9	4 21	12 57.11	- 3 13.9	1.436	2.416	6.9	21.2
5 1	12 49.97	-11 6.2	1.403	2.353	10.6	20.2	5 1	12 50.03	- 2 27.4	1.500	2.434	11.4	21.5
5 11	12 44.87	-10 26.2	1.449	2.340	14.8	20.4	5 11	12 45.29	- 1 58.3	1.586	2.452	15.2	21.8
465901	2010 <i>VL</i> ₂₂		4 8.2 18°12	2.7/ 6.7	18		352447	2008 <i>AB</i> ₄₅		4 8.2 43°55	4.5/13.1	18	
3 2	13 32.97	- 2 2.4	1.125	1.981	19.2	19.7	3 2	13 30.88	-22 46.7	2.279	3.022	14.3	20.5
3 12	13 29.91	- 2 0.0	1.070	1.990	14.7	19.5	3 12	13 27.05	-23 0.8	2.188	3.026	11.9	20.3
3 22	13 23.67	- 1 49.6	1.034	2.001	9.6	19.2	3 22	13 21.27	-22 57.1	2.119	3.030	9.1	20.1
4 1	13 15.14	- 1 36.8	1.020	2.013	4.3	18.9	4 1	13 14.06	-22 34.9	2.074	3.033	6.4	20.0
4 11	13 5.78	- 1 28.3	1.029	2.027	3.7	18.9	4 11	13 6.22	-21 56.3	2.055	3.037	4.6	19.9
4 21	12 57.08	- 1 29.9	1.062	2.042	8.7	19.3	4 21	12 58.60	-21 5.0	2.064	3.041	5.4	19.9
5 1	12 50.37	- 1 45.5	1.117	2.058	13.6	19.6	5 1	12 52.02	-20 6.7	2.101	3.045	7.9	20.1
5 11	12 46.47	- 2 16.8	1.191	2.076	17.8	19.9	5 11	12 47.13	-19 8.0	2.162	3.050	10.8	20.3
89963	2002 <i>QH</i> ₆		4 8.2 129°06	9.3/17.3	18		226874	2004 <i>TP</i> ₈₁		4 8.2 325°80	1.0/ 9.2	17	
3 2	13 35.78	-34 29.9	1.328	2.045	23.9	19.5	3 2	13 30.26	-13 24.0	1.826	2.628	15.3	20.4
3 12	13 32.38	-34 19.2	1.249	2.056	20.9	19.3	3 12	13 26.91	-12 54.0	1.739	2.626	12.0	20.2
3 22	13 25.47	-33 25.5	1.185	2.065	17.2	19.1	3 22	13 21.34	-12 6.3	1.673	2.624	8.2	20.0
4 1	13 15.97	-31 43.9	1.140	2.074	13.2	18.8	4 1	13 14.13	-11 3.8	1.633	2.622	3.9	19.7
4 11	13 5.44	-29 16.5	1.117	2.083	10.0	18.7	4 11	13 6.19	- 9 51.9	1.619	2.620	1.3	19.5
4 21	12 55.60	-26 14.8	1.119	2.091	9.6	18.7	4 21	12 58.52	- 8 37.8	1.633	2.619	5.5	19.8
5 1	12 47.94	-22 57.3	1.146	2.098	12.2	18.8	5 1	12 52.06	- 7 29.0	1.674	2.617	9.7	20.0
5 11	12 43.39	-19 44.9	1.198	2.105	16.1	19.1	5 11	12 47.54	- 6 32.0	1.738	2.616	13.4	20.3
375925	2009 <i>WV</i> ₄₆		4 8.2 223°03	3.2/ 4.9	17		402945	2007 <i>TB</i> ₃₃₃		4 8.2 182°70	0.7/ 8.8	16	
3 2	13 33.49	- 0 17.7	2.206	3.026	12.4	21.6	3 2	13 36.01	-11 42.5	2.042	2.831	14.3	22.3
3 12	13 28.97	+ 0 31.6	2.115	3.016	9.5	21.4	3 12	13 31.07	-11 20.5	1.951	2.832	11.2	22.1
3 22	13 22.48	+ 1 27.2	2.048	3.007	6.3	21.1	3 22	13 23.94	-10 44.3	1.884	2.833	7.5	21.9
4 1	13 14.56	+ 2 23.9	2.009	2.996	3.5	20.9	4 1	13 15.22	- 9 56.5	1.843	2.832	3.5	21.6
4 11	13 5.98	+ 3 15.9	1.998	2.986	4.0	20.9	4 11	13 5.78	- 9 1.5	1.830	2.831	1.2	21.4
4 21	12 57.59	+ 3 57.9	2.016	2.974	7.1	21.1	4 21	12 56.60	- 8 5.0	1.847	2.829	5.3	21.7
5 1	12 50.21	+ 4 25.6	2.060	2.962	10.4	21.3	5 1	12 48.60	- 7 13.2	1.891	2.827	9.3	22.0
5 11	12 44.48	+ 4 36.9	2.128	2.950	13.5	21.5	5 11	12 42.50	- 6 31.3	1.960	2.823	12.8	22.2
476335	2008 <i>AP</i> ₄₃		4 8.2 23°61	4.2/12.5	18		464400	2016 <i>BB</i> ₁₄		4 8.2 86°59	14.8/22.9	18	

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4 8.2

4 8.2

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
492166	2013 <i>PL</i> ₄₅		4 8.2 147°26	2°5/10.6	17		13956	Banks		4 8.2 31°96	3°2/ 5.3	18	R
3 2	13 33.09	-17 3.1	1.969	2.747	15.2	21.5	3 2	13 29.34	- 4 26.5	1.420	2.264	16.7	16.7
3 12	13 28.92	-16 47.9	1.884	2.752	12.2	21.3	3 12	13 26.57	- 3 12.2	1.356	2.271	12.7	16.5
3 22	13 22.56	-16 14.6	1.819	2.757	8.6	21.1	3 22	13 21.25	- 1 44.1	1.313	2.278	8.2	16.2
4 1	13 14.63	-15 24.4	1.780	2.762	4.8	20.9	4 1	13 14.10	- 0 10.4	1.294	2.286	4.0	16.0
4 11	13 6.02	-14 21.4	1.769	2.766	2.5	20.7	4 11	13 6.25	+ 1 18.7	1.301	2.295	4.4	16.1
4 21	12 57.70	-13 11.9	1.785	2.770	5.1	20.9	4 21	12 58.86	+ 2 33.4	1.334	2.304	8.7	16.3
5 1	12 50.62	-12 2.9	1.829	2.774	8.9	21.1	5 1	12 53.00	+ 3 26.8	1.391	2.313	13.0	16.6
5 11	12 45.44	-11 1.2	1.897	2.778	12.4	21.3	5 11	12 49.38	+ 3 55.8	1.467	2.323	16.7	16.9
431810	2008 <i>RF</i> ₂₄		4 8.2 239°16	1°4/ 9.8	18		353889	2012 <i>XJ</i> ₁₇		4 8.2 9°61	5°7/ 2.6	17	
3 2	13 31.67	-15 13.8	2.440	3.213	12.7	21.4	3 2	13 32.40	+ 8 24.6	2.087	2.919	12.5	20.0
3 12	13 27.54	-14 40.6	2.328	3.197	10.1	21.2	3 12	13 28.12	+ 9 11.3	2.017	2.920	9.8	19.8
3 22	13 21.56	-13 51.6	2.239	3.180	7.0	21.0	3 22	13 21.89	+ 9 56.4	1.972	2.921	7.2	19.6
4 1	13 14.20	-12 48.8	2.177	3.163	3.6	20.7	4 1	13 14.30	+10 33.7	1.952	2.922	5.8	19.5
4 11	13 6.16	-11 35.8	2.145	3.145	1.4	20.5	4 11	13 6.17	+10 57.6	1.960	2.923	6.6	19.6
4 21	12 58.22	-10 18.2	2.142	3.126	4.5	20.7	4 21	12 58.38	+11 4.3	1.994	2.925	9.0	19.7
5 1	12 51.17	- 9 2.2	2.168	3.107	8.1	20.9	5 1	12 51.71	+10 52.0	2.053	2.927	11.7	19.9
5 11	12 45.63	- 7 53.7	2.220	3.087	11.4	21.1	5 11	12 46.76	+10 21.2	2.133	2.929	14.3	20.1
96217	Gronchi		4 8.2 232°78	2°3/10.1	18		329297	2000 <i>QW</i> ₂₁₃		4 8.2 234°08	0°0/ 8.3	17	
3 2	13 36.27	-15 22.6	1.884	2.665	15.7	19.8	3 2	13 34.38	- 9 30.4	2.335	3.127	12.7	22.1
3 12	13 31.70	-15 20.3	1.781	2.653	12.6	19.5	3 12	13 29.67	- 9 12.0	2.229	3.113	9.9	21.8
3 22	13 24.63	-15 0.9	1.699	2.640	8.9	19.3	3 22	13 22.99	- 8 42.7	2.146	3.098	6.6	21.6
4 1	13 15.61	-14 25.0	1.643	2.626	4.9	19.0	4 1	13 14.83	- 8 4.5	2.091	3.082	2.9	21.3
4 11	13 5.60	-13 35.6	1.613	2.612	2.4	18.8	4 11	13 5.94	- 7 21.4	2.065	3.066	1.1	21.2
4 21	12 55.69	-12 38.4	1.612	2.597	5.6	19.0	4 21	12 57.14	- 6 37.9	2.069	3.049	5.0	21.4
5 1	12 46.99	-11 40.4	1.638	2.581	9.9	19.2	5 1	12 49.28	- 5 58.9	2.100	3.032	8.7	21.6
5 11	12 40.39	-10 48.8	1.688	2.565	13.8	19.4	5 11	12 43.03	- 5 28.8	2.157	3.014	12.0	21.8
488586	2002 <i>PH</i> ₁₀₃		4 8.2 176°71	0°1/ 8.4	18		213298	2001 <i>QG</i> ₂₇₃		4 8.2 182°26	2°1/10.5	18	
3 2	13 30.90	-10 44.8	3.114	3.894	10.1	23.0	3 2	13 33.89	-15 25.2	2.721	3.483	11.8	21.7
3 12	13 26.37	-10 10.6	3.019	3.896	7.8	22.8	3 12	13 28.96	-15 33.1	2.624	3.483	9.5	21.5
3 22	13 20.48	- 9 27.0	2.950	3.899	5.2	22.6	3 22	13 22.34	-15 29.6	2.550	3.484	6.7	21.3
4 1	13 13.64	- 8 36.2	2.910	3.900	2.3	22.4	4 1	13 14.49	-15 15.4	2.503	3.483	3.8	21.2
4 11	13 6.41	- 7 41.8	2.900	3.901	0.8	22.3	4 11	13 6.09	-14 52.4	2.486	3.483	2.1	21.0
4 21	12 59.35	- 6 47.4	2.921	3.901	3.8	22.5	4 21	12 57.85	-14 23.7	2.499	3.481	4.1	21.2
5 1	12 53.01	- 5 57.0	2.971	3.900	6.6	22.7	5 1	12 50.47	-13 53.2	2.540	3.480	7.0	21.4
5 11	12 47.85	- 5 14.0	3.049	3.899	9.1	22.9	5 11	12 44.51	-13 25.0	2.608	3.478	9.8	21.5
305381	2008 <i>CU</i> ₂₉		4 8.2 261°99	6°9/15.3	16		32261	2000 <i>OS</i> ₅₈		4 8.2 272°79	0°9/ 9.1	18	
3 2	13 34.76	-29 23.2	2.497	3.187	14.5	21.3	3 2	13 30.80	-11 56.1	2.286	3.078	12.9	19.9
3 12	13 30.16	-30 15.6	2.393	3.181	12.6	21.2	3 12	13 26.93	-11 44.0	2.187	3.069	10.1	19.7
3 22	13 23.43	-30 50.6	2.308	3.174	10.5	21.0	3 22	13 21.19	-11 19.7	2.111	3.060	6.9	19.5
4 1	13 15.06	-31 5.1	2.247	3.167	8.4	20.8	4 1	13 14.05	-10 44.8	2.062	3.051	3.3	19.2
4 11	13 5.82	-30 58.4	2.212	3.160	7.1	20.7	4 11	13 6.27	-10 3.1	2.041	3.042	1.2	19.0
4 21	12 56.63	-30 31.9	2.204	3.153	7.2	20.7	4 21	12 58.63	- 9 18.9	2.049	3.033	4.7	19.3
5 1	12 48.43	-29 50.1	2.222	3.146	8.7	20.8	5 1	12 51.93	- 8 37.4	2.084	3.024	8.3	19.5
5 11	12 41.98	-28 59.2	2.265	3.138	10.9	20.9	5 11	12 46.81	- 8 3.0	2.144	3.015	11.5	19.7
487539	2014 <i>UV</i> ₁₈₇		4 8.2 234°11	0°6/ 9.4	18		419940	2011 <i>BC</i> ₇₉		4 8.2 142°70	2°3/ 5.8	18	
3 2	13 23.43	-12 15.3	4.607	5.381	7.1	21.6	3 2	13 35.16	- 2 31.6	2.328	3.137	12.2	22.0
3 12	13 20.34	-11 57.7	4.506	5.378	5.6	21.5	3 12	13 29.95	- 1 47.3	2.255	3.151	9.2	21.9
3 22	13 16.39	-11 33.8	4.431	5.375	3.8	21.3	3 22	13 22.95	- 0 56.7	2.206	3.164	6.0	21.7
4 1	13 11.87	-11 4.7	4.384	5.371	1.8	21.2	4 1	13 14.72	- 0 4.2	2.186	3.176	2.9	21.5
4 11	13 7.10	-10 32.4	4.368	5.368	0.7	21.1	4 11	13 6.04	+ 0 45.0	2.195	3.188	3.0	21.5
4 21	13 2.42	- 9 58.9	4.381	5.365	2.5	21.2	4 21	12 57.70	+ 1 26.3	2.234	3.198	6.1	21.7
5 1	12 58.15	- 9 26.4	4.425	5.361	4.4	21.4	5 1	12 50.42	+ 1 55.9	2.300	3.208	9.2	22.0
5 11	12 54.60	- 8 57.1	4.495	5.358	6.1	21.5	5 11	12 44.76	+ 2 11.8	2.391	3.218	12.0	22.2
510555	2012 <i>LM</i> ₂₆		4 8.2 258°67	14°6/17.5	17		462333	2008 <i>KW</i> ₂₉		4 8.2 60°95	1°2/ 9.5	18	
3 2	13 44.71	+39 42.5	2.198	2.930	15.1	22.1	3 2	13 29.74	-15 53.8	1.627	2.428	16.9	20.9
3 12	13 38.09	+41 18.5	2.147	2.910	14.6	22.0	3 12	13 26.67	-14 57.3	1.552	2.438	13.3	20.7
3 22	13 28.67	+42 32.1	2.116	2.889	14.6	22.0	3 22	13 21.21	-13 37.8	1.499	2.448	9.1	20.4
4 1	13 17.24	+43 13.8	2.105	2.868	15.1	21.9	4 1	13 14.08	-11 59.3	1.470	2.459	4.4	20.2
4 11	13 5.02	+43 17.2	2.114	2.846	16.0	22.0	4 11	13 6.30	-10 9.9	1.468	2.469	1.5	20.0
4 21	12 53.34	+42 40.6	2.140	2.823	17.2	22.0	4 21	12 58.95	- 8 19.5	1.494	2.480	5.8	20.3
5 1	12 43.38	+41 26.6	2.182	2.800	18.5	22.1	5 1	12 53.00	- 6 38.1	1.546	2.491	10.2	20.6
5 11	12 35.95	+39 41.0	2.238	2.777	19.7	22.2	5 11	12 49.15	- 5 13.7	1.621	2.501	14.1	20.8
91576	1999 <i>SL</i> ₇		4 8.2 237°54	2°3/10.2	18		10144	1994 <i>AB</i> ₂		4 8.2 92°27	0°2/ 8.4	18	
3 2	13 37.20	-14 41.1	2.382	3.148	13.2	19.7	3 2	13 31.02	-10 15.6	2.128	2.929	13.4	17.8
3 12	13 31.90	-14 59.6	2.272	3.134	10.6	19.5	3 12	13 27.12	- 9 52.9	2.043	2.932	10.4	17.6
3 22	13 24.50	-15 6.5	2.184	3.120	7.5	19.3	3 22	13 21.29	- 9 17.9	1.981	2.934	6.9	17.3
4 1	13 15.50	-15 1.8	2.123	3.104	4.3	19.1	4 1	13 14.08	- 8 33.4	1.946	2.937	3.0	17.1
4 11	13 5.65	-14 46.9	2.092	3.088	2.3	18.9	4 11	13 6.29	- 7 44.0	1.938	2.939	1.1	16.9
4 21	12 55.85	-14 25.0	2.090	3.072	4.8	19.0	4 21	12 58.74	- 6 54.9	1.959	2.942	5.0	17.2
5 1	12 46.99	-14 0.2	2.116	3.055	8.3	19.2	5 1	12 52.26	- 6 11.4	2.008	2.945	8.7	17.5
5 11	12 39.80	-13 37.4	2.168	3.038	11.5	19.4	5 11	12 47.45	- 5 37.9	2.080	2.947	12.0	17.7
8278	1991 <i>JJ</i>		4 8.2 331°48	8°0/ 2.6	18		279299	2009 <i>WJ</i> ₁₆₁		4 8.2 62°93	0°2/ 8.0	17	
3 2	13 36.22												

EPHEMERIDES

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
391291	2006 <i>SB</i> ₂₆₉		4 8.2 204°54	1.5°/ 9.8 17			144441	2004 <i>EM</i> ₃₅		4 8.2 60°74	2.6°/ 5.6 18		
3 2	13 32.58	-13 13.9	2.447	3.227	12.5	21.7	3 2	13 31.46	-1 17.4	2.146	2.969	12.6	19.9
3 12	13 28.14	-13 17.0	2.353	3.225	9.9	21.5	3 12	13 27.37	-0 41.4	2.070	2.974	9.6	19.7
3 22	13 21.90	-13 8.7	2.281	3.224	6.8	21.3	3 22	13 21.42	+0 0.2	2.018	2.978	6.2	19.5
4 1	13 14.34	-12 50.1	2.237	3.222	3.5	21.1	4 1	13 14.15	+0 42.9	1.993	2.983	3.2	19.3
4 11	13 6.19	-12 23.9	2.221	3.220	1.6	21.0	4 11	13 6.36	+1 21.6	1.996	2.987	3.4	19.3
4 21	12 58.21	-11 53.6	2.234	3.218	4.4	21.2	4 21	12 58.86	+1 51.5	2.027	2.992	6.5	19.5
5 1	12 51.16	-11 23.5	2.275	3.216	7.7	21.4	5 1	12 52.41	+2 9.1	2.084	2.997	9.8	19.7
5 11	12 45.63	-10 57.8	2.342	3.213	10.7	21.6	5 11	12 47.60	+2 12.5	2.164	3.001	12.7	19.9
484830	2009 <i>HD</i> ₄		4 8.2 31°50	7.8°/ 6.2 18			340751	2006 <i>SB</i> ₂₇₆		4 8.2 133°67	2.4°/ 5.0 17		
3 2	13 54.88	+10 28.6	1.044	1.879	22.0	20.3	3 2	13 29.13	-2 56.3	2.506	3.323	11.2	21.2
3 12	13 47.52	+10 7.3	0.979	1.881	17.6	20.0	3 12	13 25.31	-1 46.5	2.430	3.331	8.4	21.0
3 22	13 35.68	+9 34.2	0.931	1.884	12.7	19.8	3 22	13 19.93	-0 29.3	2.379	3.339	5.4	20.8
4 1	13 20.46	+8 40.8	0.907	1.887	8.6	19.6	4 1	13 13.48	+0 50.2	2.357	3.347	2.8	20.7
4 11	13 3.86	+7 21.6	0.907	1.890	8.5	19.6	4 11	13 6.62	+2 6.2	2.365	3.354	3.2	20.7
4 21	12 48.21	+5 37.8	0.932	1.894	12.6	19.8	4 21	13 0.02	+3 13.3	2.402	3.362	6.0	20.9
5 1	12 35.47	+3 34.6	0.980	1.898	17.6	20.1	5 1	12 54.29	+4 7.3	2.466	3.369	8.9	21.1
5 11	12 26.80	+1 19.3	1.049	1.902	22.1	20.4	5 11	12 49.94	+4 45.6	2.554	3.375	11.5	21.3
238718	2005 <i>GB</i> ₅₅		4 8.2 337°90	0.3°/ 8.5 17			92724	2000 <i>QZ</i> ₉₆		4 8.2 104°06	1.7°/ 9.6 18		
3 2	13 31.22	-10 1.7	1.966	2.773	14.2	21.1	3 2	13 38.07	-12 22.4	1.981	2.766	14.9	18.9
3 12	13 27.50	-9 47.4	1.878	2.770	11.0	20.9	3 12	13 32.65	-12 38.4	1.904	2.780	11.7	18.7
3 22	13 21.67	-9 20.6	1.813	2.767	7.4	20.6	3 22	13 24.98	-12 42.0	1.849	2.793	8.0	18.5
4 1	13 14.30	-8 43.8	1.774	2.765	3.3	20.4	4 1	13 15.70	-12 34.1	1.820	2.807	4.1	18.3
4 11	13 6.23	-8 1.5	1.762	2.763	1.1	20.2	4 11	13 5.77	-12 17.5	1.820	2.820	1.8	18.2
4 21	12 58.39	-7 18.9	1.777	2.761	5.4	20.5	4 21	12 56.21	-11 56.3	1.849	2.833	5.1	18.4
5 1	12 51.69	-6 41.6	1.819	2.759	9.3	20.7	5 1	12 47.96	-11 35.2	1.905	2.845	8.9	18.7
5 11	12 46.79	-6 14.1	1.885	2.757	12.8	20.9	5 11	12 41.71	-11 18.8	1.985	2.858	12.3	18.9
261980	2006 <i>QJ</i> ₁₉		4 8.2 219°59	4.4°/ 3.9 16			7108	Nefedov		4 8.2 154°89	0.0°/ 7.9 18		
3 2	13 33.25	+0 53.0	1.894	2.723	13.7	21.7	3 2	13 31.04	-9 48.1	2.680	3.471	11.2	18.8
3 12	13 29.10	+2 6.7	1.810	2.716	10.5	21.4	3 12	13 26.70	-9 17.0	2.594	3.478	8.7	18.7
3 22	13 22.75	+3 27.8	1.750	2.709	7.1	21.2	3 22	13 20.82	-8 35.9	2.532	3.484	5.7	18.5
4 1	13 14.77	+4 49.3	1.717	2.701	4.6	21.0	4 1	13 13.87	-7 47.6	2.499	3.490	2.4	18.3
4 11	13 6.05	+6 3.1	1.711	2.693	5.4	21.1	4 11	13 6.48	-6 55.9	2.495	3.495	1.0	18.2
4 21	12 57.58	+7 2.0	1.733	2.684	8.7	21.2	4 21	12 59.31	-6 5.2	2.520	3.501	4.3	18.4
5 1	12 50.29	+7 41.1	1.781	2.674	12.2	21.4	5 1	12 52.99	-5 19.6	2.575	3.505	7.4	18.6
5 11	12 44.90	+7 58.2	1.849	2.664	15.4	21.6	5 11	12 48.03	-4 42.8	2.655	3.509	10.1	18.8
253500	2003 <i>SW</i> ₁₁₇		4 8.2 168°43	0.0°/ 7.9 18			225968	2002 <i>CF</i> ₁₁₆		4 8.2 92°27	1.4°/ 9.5 17		
3 2	13 35.46	-10 4.0	2.032	2.829	14.1	21.6	3 2	13 33.30	-13 8.5	1.878	2.673	15.2	20.3
3 12	13 30.61	-9 33.3	1.947	2.834	11.0	21.4	3 12	13 29.16	-13 0.0	1.797	2.679	12.0	20.1
3 22	13 23.63	-8 49.5	1.885	2.838	7.3	21.2	3 22	13 22.78	-12 36.3	1.738	2.685	8.2	19.9
4 1	13 15.11	-7 55.5	1.850	2.841	3.1	20.9	4 1	13 14.79	-11 59.4	1.704	2.692	4.1	19.7
4 11	13 5.94	-6 56.6	1.843	2.844	1.2	20.8	4 11	13 6.12	-11 13.5	1.698	2.698	1.6	19.5
4 21	12 57.06	-5 58.8	1.865	2.846	5.5	21.1	4 21	12 57.77	-10 24.3	1.719	2.704	5.3	19.8
5 1	12 49.38	-5 7.9	1.915	2.847	9.4	21.3	5 1	12 50.67	-9 37.9	1.767	2.710	9.3	20.0
5 11	12 43.57	-4 28.7	1.989	2.848	12.8	21.5	5 11	12 45.54	-8 59.9	1.839	2.717	12.8	20.2
468396	2016 <i>GJ</i> ₁₂₁		4 8.2 268°04	0.9°/ 7.4 18			282928	2007 <i>PD</i> ₂₄		4 8.2 291°07	7.0°/ 13.9 18		
3 2	13 33.27	-7 59.7	2.039	2.845	13.7	21.7	3 2	13 34.78	-25 51.4	2.009	2.738	16.5	19.9
3 12	13 29.22	-7 21.0	1.926	2.819	10.7	21.4	3 12	13 30.78	-26 44.6	1.898	2.718	14.2	19.7
3 22	13 22.95	-6 28.7	1.836	2.792	7.1	21.2	3 22	13 24.22	-27 19.2	1.806	2.699	11.5	19.4
4 1	13 14.94	-5 26.2	1.772	2.765	3.0	20.9	4 1	13 15.58	-27 31.7	1.737	2.679	8.8	19.2
4 11	13 5.97	-4 18.8	1.737	2.736	1.9	20.7	4 11	13 5.76	-27 20.8	1.693	2.660	7.1	19.1
4 21	12 57.02	-3 13.3	1.730	2.708	6.2	20.9	4 21	12 55.87	-26 48.3	1.676	2.640	7.7	19.1
5 1	12 49.05	-2 16.3	1.751	2.678	10.4	21.1	5 1	12 47.10	-25 59.4	1.684	2.621	10.1	19.2
5 11	12 42.88	-1 33.2	1.795	2.648	14.2	21.3	5 11	12 40.42	-25 2.3	1.715	2.602	13.2	19.3
490068	2008 <i>TE</i> ₁₁₃		4 8.2 232°87	1.4°/ 7.1 17			173847	2001 <i>TA</i> ₁₃₄		4 8.2 109°71	5.2°/ 2.1 17		
3 2	13 36.50	-6 30.7	1.640	2.457	16.0	22.5	3 2	13 31.52	+8 1.4	2.458	3.284	11.1	19.9
3 12	13 32.10	-5 58.1	1.548	2.447	12.5	22.2	3 12	13 27.10	+9 3.3	2.397	3.296	8.6	19.8
3 22	13 25.01	-5 12.1	1.477	2.436	8.2	22.0	3 22	13 21.07	+10 4.2	2.362	3.309	6.4	19.7
4 1	13 15.84	-4 17.0	1.432	2.425	3.5	21.6	4 1	13 13.96	+10 58.3	2.355	3.322	5.2	19.6
4 11	13 5.64	-3 19.3	1.414	2.413	2.5	21.5	4 11	13 6.47	+11 40.3	2.376	3.334	6.0	19.7
4 21	12 55.64	-2 26.6	1.423	2.400	7.3	21.8	4 21	12 59.31	+12 6.7	2.424	3.346	8.0	19.8
5 1	12 47.03	-1 45.7	1.457	2.386	12.0	22.0	5 1	12 53.11	+12 15.5	2.497	3.358	10.4	20.0
5 11	12 40.71	-1 21.5	1.514	2.373	16.1	22.2	5 11	12 48.38	+12 6.8	2.593	3.369	12.6	20.2
437453	2013 <i>YT</i> ₁₃		4 8.2 207°10	3.9°/ 12.3 17			229096	2004 <i>QQ</i> ₇		4 8.2 290°09	0.9°/ 8.9 17		
3 2	13 31.65	-20 49.1	2.290	3.042	14.0	21.0	3 2	13 32.72	-11 16.1	1.792	2.597	15.4	21.0
3 12	13 27.66	-20 59.0	2.196	3.042	11.6	20.8	3 12	13 29.00	-11 8.7	1.697	2.587	12.1	20.7
3 22	13 21.71	-20 52.2	2.122	3.041	8.7	20.6	3 22	13 22.88	-10 46.9	1.624	2.576	8.2	20.5
4 1	13 14.32	-20 28.3	2.074	3.041	5.8	20.5	4 1	13 14.92	-10 12.5	1.575	2.565	3.8	20.2
4 11	13 6.26	-19 49.4	2.052	3.040	3.9	20.3	4 11	13 6.06	-9 29.8	1.554	2.555	1.3	20.0
4 21	12 58.40	-18 59.5	2.059	3.039	5.1	20.4	4 21	12 57.36	-8 44.6	1.559	2.544	5.7	20.3
5 1	12 51.55	-18 4.1	2.093	3.039	7.9	20.6	5 1	12 49.89	-8 3.2	1.591	2.534	10.2	20.5
5 11	12 46.38	-17 9.4	2.153	3.038	10.9	20.8	5 11	12 44.45	-7 31.5	1.646	2.524	14.1	20.7
44140	1998 <i>HK</i> ₉₄		4 8.2 217°25	0.7°/ 8.9 18			236985	2008 <i>PA</i> ₂₂		4 8.2 172°28	3.3°/ 4.9 18		
3 2	13 34.73	-12 0.3	1.984										

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
152953	2000 <i>GT</i> ₂₁		4 8.2 33°01'	0°0'	7.9	18	181637	2006 <i>XC</i> ₂₆		4 8.2 149°09'	0°9'	7.1	17
3 2	13 32.86	- 8 57.5	1.361	2.191	18.0	19.4	3 2	13 29.73	- 6 38.7	2.853	3.653	10.4	21.5
3 12	13 29.47	- 8 44.8	1.296	2.200	14.0	19.2	3 12	13 25.60	- 6 1.0	2.770	3.661	7.9	21.3
3 22	13 23.27	- 8 16.7	1.251	2.211	9.2	18.9	3 22	13 20.06	- 5 15.6	2.712	3.668	5.1	21.1
4 1	13 15.06	- 7 37.1	1.229	2.222	3.9	18.6	4 1	13 13.55	- 4 25.6	2.682	3.674	2.1	20.9
4 11	13 6.05	- 6 52.3	1.232	2.234	1.5	18.5	4 11	13 6.65	- 3 34.9	2.682	3.680	1.5	20.9
4 21	12 57.55	- 6 9.9	1.261	2.246	6.8	18.9	4 21	12 59.96	- 2 47.6	2.712	3.686	4.4	21.1
5 1	12 50.74	- 5 36.8	1.314	2.259	11.7	19.2	5 1	12 54.05	- 2 7.3	2.770	3.692	7.3	21.3
5 11	12 46.41	- 5 18.1	1.388	2.272	15.8	19.5	5 11	12 49.37	- 1 36.8	2.854	3.697	9.8	21.5
354895	2006 <i>BD</i> ₂₄₁		4 8.2 344°53'	6°1'	11.3	17	36399	2000 <i>OV</i> ₄₆		4 8.2 202°88'	1°1'	7.2	18
3 2	13 32.45	-16 45.7	1.099	1.922	21.9	19.6	3 2	13 34.78	- 7 51.2	1.926	2.734	14.4	19.5
3 12	13 30.36	-17 57.2	1.019	1.911	18.1	19.3	3 12	13 30.30	- 7 4.4	1.836	2.730	11.1	19.3
3 22	13 24.67	-18 49.4	0.957	1.901	13.6	19.0	3 22	13 23.56	- 6 4.0	1.768	2.725	7.2	19.0
4 1	13 15.96	-19 18.2	0.914	1.893	8.8	18.7	4 1	13 15.17	- 4 54.4	1.726	2.719	3.0	18.8
4 11	13 5.62	-19 22.8	0.893	1.886	6.1	18.5	4 11	13 6.01	- 3 41.9	1.714	2.713	2.1	18.7
4 21	12 55.41	-19 7.0	0.894	1.880	8.6	18.6	4 21	12 57.09	- 2 33.5	1.730	2.706	6.3	18.9
5 1	12 47.17	-18 39.0	0.916	1.876	13.5	18.9	5 1	12 49.36	- 1 36.0	1.772	2.698	10.4	19.2
5 11	12 42.21	-18 9.5	0.957	1.873	18.3	19.1	5 11	12 43.56	- 0 54.0	1.838	2.689	14.0	19.4
258935	2002 <i>RL</i> ₉₅		4 8.2 215°34'	0°6'	7.6	17	181061	2005 <i>QF</i> ₂		4 8.2 211°03'	0°8'	7.2	17
3 2	13 34.12	- 8 40.6	2.180	2.979	13.2	21.8	3 2	13 29.22	- 7 34.8	2.634	3.436	11.1	21.0
3 12	13 29.57	- 8 2.3	2.082	2.971	10.2	21.6	3 12	13 25.42	- 6 52.3	2.541	3.432	8.5	20.8
3 22	13 22.99	- 7 11.6	2.007	2.961	6.7	21.4	3 22	13 20.05	- 6 0.1	2.472	3.428	5.5	20.6
4 1	13 14.90	- 6 11.8	1.959	2.951	2.8	21.1	4 1	13 13.59	- 5 1.8	2.431	3.423	2.3	20.4
4 11	13 6.09	- 5 8.1	1.941	2.941	1.5	21.0	4 11	13 6.64	- 4 1.6	2.419	3.419	1.5	20.3
4 21	12 57.46	- 4 6.4	1.951	2.929	5.5	21.2	4 21	12 59.86	- 3 4.3	2.438	3.414	4.8	20.5
5 1	12 49.85	- 3 12.6	1.990	2.917	9.4	21.4	5 1	12 53.88	- 2 14.5	2.484	3.408	7.9	20.7
5 11	12 43.95	- 2 31.1	2.052	2.904	12.8	21.6	5 11	12 49.23	- 1 35.5	2.555	3.403	10.7	20.9
299864	2006 <i>ST</i> ₂₇₃		4 8.2 148°60'	1°2'	9.7	18	200306	2000 <i>CO</i> ₁₃₇		4 8.2 69°22'	1°4'	6.8	17
3 2	13 29.37	-14 20.8	2.600	3.379	11.9	21.5	3 2	13 31.03	- 5 54.6	2.036	2.853	13.4	20.6
3 12	13 25.54	-13 51.9	2.510	3.383	9.4	21.4	3 12	13 27.22	- 5 17.4	1.955	2.854	10.2	20.4
3 22	13 20.12	-13 10.0	2.444	3.387	6.4	21.2	3 22	13 21.43	- 4 30.2	1.896	2.855	6.6	20.2
4 1	13 13.60	-12 17.1	2.404	3.391	3.2	21.0	4 1	13 14.22	- 3 36.9	1.863	2.856	2.8	19.9
4 11	13 6.61	-11 17.1	2.394	3.394	1.2	20.8	4 11	13 6.40	- 2 43.4	1.859	2.857	2.2	19.9
4 21	12 59.83	-10 14.6	2.414	3.398	4.0	21.0	4 21	12 58.86	- 1 55.2	1.883	2.858	6.0	20.1
5 1	12 53.92	- 9 14.5	2.461	3.401	7.2	21.2	5 1	12 52.40	- 1 17.3	1.933	2.860	9.7	20.3
5 11	12 49.38	- 8 21.6	2.535	3.404	10.0	21.4	5 11	12 47.67	- 0 53.2	2.007	2.861	12.9	20.6
33928	2000 <i>LJ</i> ₂₇		4 8.2 242°77'	5°8'	1.7	18	278744	2008 <i>SX</i> ₉₅		4 8.2 184°66'	1°1'	9.4	17
3 2	13 33.00	+ 7 1.4	2.147	2.976	12.3	19.4	3 2	13 33.25	-12 40.9	2.317	3.101	13.0	21.8
3 12	13 28.73	+ 8 18.7	2.060	2.961	9.7	19.2	3 12	13 28.76	-12 29.9	2.224	3.101	10.2	21.6
3 22	13 22.44	+ 9 38.2	1.997	2.946	7.2	19.0	3 22	13 22.37	-12 6.4	2.155	3.100	7.0	21.4
4 1	13 14.66	+10 52.8	1.961	2.930	5.9	18.9	4 1	13 14.62	-11 32.2	2.112	3.100	3.4	21.2
4 11	13 6.18	+11 54.9	1.954	2.914	6.9	18.9	4 11	13 6.25	-10 50.6	2.098	3.099	1.3	21.0
4 21	12 57.87	+12 38.9	1.973	2.897	9.5	19.0	4 21	12 58.09	-10 6.1	2.114	3.097	4.6	21.3
5 1	12 50.59	+13 1.1	2.017	2.880	12.4	19.2	5 1	12 50.92	- 9 23.8	2.157	3.096	8.1	21.5
5 11	12 45.00	+13 0.9	2.083	2.862	15.1	19.3	5 11	12 45.37	- 8 48.1	2.225	3.094	11.3	21.7
300900	2008 <i>BX</i> ₃₂		4 8.2 94°08'	2°1'	10.5	17	258037	2001 <i>KX</i> ₃₉		4 8.2 329°59'	0°9'	8.9	17
3 2	13 32.03	-15 37.4	2.479	3.250	12.6	21.8	3 2	13 29.07	-11 36.7	1.325	2.156	18.4	20.4
3 12	13 27.64	-15 38.4	2.397	3.262	10.0	21.6	3 12	13 26.98	-11 24.9	1.238	2.142	14.6	20.1
3 22	13 21.52	-15 26.6	2.338	3.274	7.1	21.4	3 22	13 21.98	-10 53.2	1.169	2.128	9.9	19.8
4 1	13 14.20	-15 3.1	2.305	3.286	4.0	21.3	4 1	13 14.68	-10 4.0	1.123	2.115	4.6	19.5
4 11	13 6.39	-14 30.6	2.300	3.297	2.1	21.1	4 11	13 6.19	- 9 3.2	1.101	2.102	1.5	19.2
4 21	12 58.83	-13 52.9	2.325	3.309	4.2	21.3	4 21	12 57.89	- 7 59.6	1.103	2.091	7.0	19.5
5 1	12 52.24	-13 14.4	2.378	3.320	7.3	21.5	5 1	12 51.12	- 7 2.6	1.129	2.080	12.4	19.8
5 11	12 47.16	-12 39.7	2.456	3.332	10.1	21.7	5 11	12 46.92	- 6 20.3	1.175	2.071	17.2	20.0
327841	2006 <i>WH</i> ₁₀₆		4 8.2 8°65'	5°9'	4.4	16	108080	2001 <i>FJ</i> ₁₇₁		4 8.2 325°61'	9°6'	31.5	18
3 2	13 33.15	+ 3 56.5	1.288	2.143	17.4	20.2	3 2	13 29.69	+ 9 23.3	1.244	2.109	17.2	18.3
3 12	13 29.83	+ 4 36.7	1.226	2.144	13.5	20.0	3 12	13 27.58	+10 54.0	1.168	2.087	13.9	18.0
3 22	13 23.58	+ 5 19.5	1.184	2.146	9.3	19.7	3 22	13 22.43	+12 26.4	1.113	2.067	10.9	17.8
4 1	13 15.22	+ 5 56.5	1.165	2.149	6.2	19.6	4 1	13 14.88	+13 48.0	1.080	2.047	9.6	17.7
4 11	13 6.00	+ 6 19.2	1.170	2.153	6.9	19.6	4 11	13 6.14	+14 45.5	1.069	2.029	11.3	17.7
4 21	12 57.30	+ 6 21.7	1.198	2.158	10.6	19.8	4 21	12 57.63	+15 9.8	1.080	2.011	14.7	17.8
5 1	12 50.35	+ 6 1.2	1.249	2.164	14.7	20.1	5 1	12 50.78	+14 56.8	1.110	1.995	18.7	18.0
5 11	12 45.99	+ 5 18.5	1.319	2.171	18.5	20.3	5 11	12 46.59	+14 8.3	1.157	1.980	22.3	18.2
504223	2006 <i>UX</i> ₁₁₇		4 8.2 273°49'	1°8'	6.6	17	39169	2000 <i>WK</i> ₁₃₅		4 8.2 161°24'	4°3'	4.4	18
3 2	13 33.79	- 2 24.6	2.285	3.098	12.2	21.6	3 2	13 35.60	+ 4 0.1	2.049	2.873	13.0	18.8
3 12	13 29.11	- 2 12.1	2.198	3.096	9.4	21.4	3 12	13 30.65	+ 4 36.5	1.974	2.876	10.0	18.6
3 22	13 22.56	- 1 54.4	2.136	3.094	6.1	21.2	3 22	13 23.63	+ 5 14.6	1.922	2.878	6.9	18.4
4 1	13 14.67	- 1 34.8	2.101	3.093	2.8	21.0	4 1	13 15.15	+ 5 48.9	1.898	2.879	4.6	18.3
4 11	13 6.20	- 1 17.2	2.095	3.091	2.5	20.9	4 11	13 6.08	+ 6 13.9	1.901	2.881	5.1	18.3
4 21	12 57.96	- 1 5.1	2.118	3.090	5.7	21.1	4 21	12 57.33	+ 6 25.4	1.932	2.882	7.9	18.5
5 1	12 50.72	- 1 1.8	2.168	3.088	9.1	21.3	5 1	12 49.78	+ 6 20.9	1.989	2.884	11.1	18.7
5 11	12 45.09	- 1 9.2	2.242	3.086	12.1	21.5	5 11	12 44.04	+ 5 59.9	2.069	2.885	14.0	18.9
213416	2001 <i>XL</i> ₁₀		4 8.2 185°27'	0°1'	8.1	18	64289	Shihwingching		4 8.2 165°07'	1°4'	6.8	17
3 2</													

EPHEMERIDES

4 8.2

4 8.3

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
279113	2009 <i>HE</i> ₆₅		4 8.2 292°25	1.8°/ 5.9	17		32900	1994 <i>PG</i> ₅		4 8.3 274°84	3.2°/11.5	18	
3 2	13 27.37	- 6 11.9	2.300	3.117	12.0	20.9	3 2	13 31.96	-18 17.7	2.381	3.142	13.3	19.3
3 12	13 24.23	- 4 59.6	2.210	3.111	9.2	20.7	3 12	13 27.92	-18 30.4	2.275	3.130	10.9	19.1
3 22	13 19.40	- 3 35.8	2.145	3.105	5.9	20.5	3 22	13 21.94	-18 28.7	2.192	3.119	8.0	18.9
4 1	13 13.34	- 2 5.4	2.107	3.099	2.6	20.3	4 1	13 14.50	-18 12.5	2.134	3.107	5.0	18.7
4 11	13 6.76	- 0 35.0	2.099	3.094	2.7	20.2	4 11	13 6.34	-17 43.6	2.103	3.095	3.2	18.6
4 21	13 0.36	+ 0 48.8	2.119	3.088	6.0	20.4	4 21	12 58.26	-17 5.4	2.101	3.084	4.8	18.7
5 1	12 54.87	+ 2 0.1	2.167	3.083	9.3	20.6	5 1	12 51.11	-16 22.7	2.127	3.072	7.9	18.8
5 11	12 50.82	+ 2 54.9	2.239	3.077	12.3	20.8	5 11	12 45.54	-15 41.0	2.178	3.060	10.9	19.0
364696	2007 <i>UY</i> ₄₈		4 8.2 144°90	4.1°/ 4.5	18		500941	2013 <i>PB</i> ₇₄		4 8.3 197°80	3.9°/12.3	17	
3 2	13 38.39	+ 2 43.5	2.041	2.859	13.3	21.7	3 2	13 36.90	-21 9.3	2.605	3.336	13.0	22.4
3 12	13 32.69	+ 3 30.8	1.973	2.871	10.2	21.5	3 12	13 31.53	-21 28.1	2.500	3.332	10.8	22.2
3 22	13 24.90	+ 4 21.0	1.928	2.883	6.9	21.3	3 22	13 24.21	-21 32.1	2.417	3.328	8.2	22.0
4 1	13 15.67	+ 5 8.3	1.911	2.894	4.4	21.2	4 1	13 15.45	-21 20.7	2.360	3.323	5.5	21.8
4 11	13 5.90	+ 5 46.6	1.923	2.904	4.9	21.3	4 11	13 5.99	-20 55.0	2.332	3.317	3.9	21.7
4 21	12 56.56	+ 6 11.4	1.964	2.914	7.8	21.4	4 21	12 56.63	-20 17.8	2.334	3.310	5.0	21.8
5 1	12 48.49	+ 6 19.9	2.030	2.923	11.0	21.7	5 1	12 48.21	-19 33.8	2.364	3.302	7.6	21.9
5 11	12 42.33	+ 6 11.3	2.120	2.930	13.9	21.9	5 11	12 41.39	-18 48.5	2.421	3.294	10.3	22.1
370510	2003 <i>SL</i> ₁₆₃		4 8.2 201°38	1.6°/ 8.9	18		202630	2006 <i>HW</i> ₁₀₀		4 8.3 111°96	6.5°/ 1.9	18	
3 2	13 50.85	- 8 10.3	1.258	2.065	20.6	20.8	3 2	13 35.89	+11 38.7	2.180	3.003	12.4	20.0
3 12	13 44.30	- 9 4.4	1.173	2.062	16.4	20.5	3 12	13 30.65	+12 30.4	2.121	3.014	9.9	19.9
3 22	13 33.72	- 9 49.6	1.108	2.059	11.2	20.2	3 22	13 23.50	+13 17.7	2.086	3.025	7.6	19.7
4 1	13 19.84	-10 24.9	1.066	2.055	5.3	19.8	4 1	13 15.06	+13 54.3	2.078	3.035	6.5	19.7
4 11	13 4.23	-10 51.2	1.050	2.051	2.1	19.6	4 11	13 6.18	+14 14.8	2.097	3.046	7.3	19.8
4 21	12 48.85	-11 10.8	1.061	2.045	8.0	19.9	4 21	12 57.72	+14 16.3	2.143	3.056	9.4	19.9
5 1	12 35.66	-11 28.6	1.098	2.039	13.8	20.2	5 1	12 50.45	+13 57.7	2.213	3.066	11.8	20.1
5 11	12 25.99	-11 50.1	1.156	2.032	18.8	20.5	5 11	12 44.93	+13 20.5	2.306	3.075	14.1	20.3
408735	2014 <i>OX</i> ₆₅		4 8.2 302°97	1.5°/ 9.2	14 C		1475	Yalta		4 8.3 146°39	0.0°/ 8.2	18	
3 2	13 33.89	-11 23.8	1.258	2.086	19.4	21.4	3 2	13 35.12	-11 1.2	1.870	2.669	15.1	17.1
3 12	13 31.09	-11 34.3	1.165	2.066	15.5	21.1	3 12	13 30.52	-10 22.1	1.791	2.678	11.7	16.9
3 22	13 24.97	-11 26.9	1.091	2.047	10.7	20.7	3 22	13 23.66	- 9 27.7	1.735	2.687	7.7	16.7
4 1	13 16.09	-11 2.3	1.038	2.028	5.2	20.3	4 1	13 15.21	- 8 21.5	1.704	2.696	3.3	16.4
4 11	13 5.65	-10 24.8	1.009	2.010	1.9	20.1	4 11	13 6.11	- 7 9.7	1.702	2.703	1.2	16.3
4 21	12 55.22	- 9 41.5	1.004	1.991	7.5	20.3	4 21	12 57.38	- 5 59.4	1.729	2.710	5.7	16.6
5 1	12 46.44	- 9 1.3	1.021	1.973	13.3	20.6	5 1	12 49.96	- 4 57.4	1.782	2.717	9.8	16.9
5 11	12 40.57	- 8 32.7	1.059	1.956	18.5	20.8	5 11	12 44.53	- 4 9.0	1.860	2.723	13.4	17.1
110731	2001 <i>TY</i> ₂₃₇		4 8.2 172°64	5.6°/ 3.1	17		291866	2006 <i>PF</i> ₅		4 8.3 264°12	1.2°/ 7.2	17	
3 2	13 37.80	+ 8 6.4	2.119	2.940	12.8	20.3	3 2	13 33.94	- 7 27.2	1.781	2.596	15.1	21.7
3 12	13 32.26	+ 8 51.7	2.046	2.942	10.0	20.1	3 12	13 30.05	- 6 48.8	1.677	2.576	11.7	21.4
3 22	13 24.64	+ 9 35.7	1.998	2.945	7.3	20.0	3 22	13 23.68	- 5 56.0	1.596	2.554	7.7	21.1
4 1	13 15.58	+10 12.2	1.976	2.947	5.7	19.9	4 1	13 15.36	- 4 52.5	1.540	2.533	3.3	20.8
4 11	13 5.94	+10 35.4	1.983	2.948	6.4	19.9	4 11	13 6.00	- 3 44.9	1.511	2.510	2.2	20.6
4 21	12 56.66	+10 41.6	2.017	2.949	8.9	20.1	4 21	12 56.71	- 2 40.4	1.510	2.488	6.9	20.9
5 1	12 48.58	+10 29.2	2.077	2.949	11.7	20.2	5 1	12 48.59	- 1 46.6	1.535	2.465	11.5	21.1
5 11	12 42.35	+ 9 58.5	2.159	2.949	14.3	20.4	5 11	12 42.53	- 1 8.8	1.582	2.441	15.5	21.3
508672	2017 <i>UW</i> ₁₁		4 8.2 303°42	6.0°/15.2	18		291432	2006 <i>DV</i> ₂₈		4 8.3 197°49	3.2°/ 5.3	18	
3 2	13 30.41	-28 18.0	2.297	3.009	15.1	20.4	3 2	13 34.16	- 3 7.5	1.731	2.557	15.0	21.0
3 12	13 26.88	-28 31.7	2.198	3.006	12.9	20.3	3 12	13 30.01	- 1 59.7	1.650	2.555	11.4	20.7
3 22	13 21.30	-28 24.2	2.118	3.003	10.5	20.1	3 22	13 23.48	- 0 40.6	1.591	2.553	7.5	20.5
4 1	13 14.22	-27 53.8	2.062	2.999	8.0	19.9	4 1	13 15.18	+ 0 43.3	1.559	2.550	3.8	20.3
4 11	13 6.43	-27 1.8	2.031	2.996	6.2	19.8	4 11	13 6.11	+ 2 3.4	1.555	2.546	4.2	20.3
4 21	12 58.83	-25 52.0	2.027	2.993	6.4	19.8	4 21	12 57.34	+ 3 11.6	1.578	2.542	8.1	20.5
5 1	12 52.28	-24 30.6	2.049	2.990	8.4	19.9	5 1	12 49.90	+ 4 1.7	1.626	2.537	12.1	20.7
5 11	12 47.48	-23 5.5	2.097	2.987	11.0	20.1	5 11	12 44.53	+ 4 30.3	1.696	2.532	15.7	20.9
153989	2002 <i>AB</i> ₁₅₇		4 8.2 298°37	0.0°/ 7.9	17		286065	2001 <i>SJ</i> ₃₀₉		4 8.3 253°15	3.2°/10.7	17	
3 2	13 31.29	-10 10.1	1.828	2.638	14.9	20.1	3 2	13 35.96	-16 42.0	1.613	2.400	17.6	21.5
3 12	13 27.74	- 9 39.5	1.741	2.635	11.6	19.9	3 12	13 31.99	-16 49.2	1.513	2.386	14.3	21.2
3 22	13 21.94	- 8 54.1	1.677	2.633	7.7	19.7	3 22	13 25.17	-16 36.5	1.432	2.372	10.3	20.9
4 1	13 14.50	- 7 57.3	1.638	2.630	3.3	19.4	4 1	13 16.07	-16 3.4	1.375	2.357	6.0	20.6
4 11	13 6.33	- 6 54.8	1.627	2.628	1.3	19.2	4 11	13 5.73	-15 12.8	1.344	2.341	3.2	20.4
4 21	12 58.41	- 5 53.3	1.643	2.625	5.8	19.5	4 21	12 55.48	-14 10.8	1.340	2.326	6.4	20.6
5 1	12 51.70	- 4 59.7	1.685	2.623	10.0	19.8	5 1	12 46.62	-13 5.8	1.361	2.310	11.0	20.8
5 11	12 46.92	- 4 19.0	1.750	2.620	13.7	20.0	5 11	12 40.20	-12 6.9	1.405	2.293	15.4	21.0
94781	2001 <i>XO</i> ₁₁₇		4 8.3 142°42	3.5°/ 5.4	18		468191	2015 <i>AP</i> ₂₄₁		4 8.3 216°82	2.9°/ 5.3	17	
3 2	13 37.80	- 0 33.0	1.711	2.535	15.2	20.1	3 2	13 32.10	- 1 39.3	2.072	2.895	12.9	21.0
3 12	13 32.69	+ 0 11.7	1.641	2.544	11.6	19.9	3 12	13 28.04	- 0 48.6	1.988	2.891	9.9	20.7
3 22	13 25.12	+ 1 3.0	1.593	2.553	7.6	19.7	3 22	13 21.99	+ 0 9.5	1.927	2.887	6.5	20.5
4 1	13 15.83	+ 1 54.9	1.572	2.561	4.1	19.5	4 1	13 14.50	+ 1 9.9	1.894	2.883	3.4	20.3
4 11	13 5.86	+ 2 40.2	1.578	2.568	4.4	19.5	4 11	13 6.38	+ 2 6.2	1.888	2.879	3.8	20.3
4 21	12 56.34	+ 3 12.9	1.612	2.575	8.1	19.8	4 21	12 58.50	+ 2 52.9	1.911	2.874	7.0	20.5
5 1	12 48.29	+ 3 28.9	1.671	2.582	11.9	20.0	5 1	12 51.68	+ 3 25.2	1.960	2.869	10.5	20.7
5 11	12 42.42	+ 3 26.7	1.752	2.587	15.3	20.2	5 11	12 46.58	+ 3 40.8	2.031	2.864	13.6	20.9
429139	2009 <i>TA</i> ₄₀		4 8.3 130°20	2.4°/ 5.4	18		505270	2012 <i>VZ</i> ₁₇		4 8.3 91°71			

EPHEMERIDES

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
169993	2002 <i>TG</i> ₂₄₈		4 8.3 203°18	1°1/ 7.0 18			137645	1999 <i>WZ</i> ₁₅		4 8.3 289°73	3°7/ 5.6 18		
3 2	13 31.11	- 6 22.4	2.351	3.159	12.1	21.1	3 2	13 35.57	- 0 44.8	1.562	2.396	15.9	19.8
3 12	13 27.06	- 5 46.0	2.262	3.156	9.3	20.9	3 12	13 31.73	- 0 11.1	1.462	2.370	12.4	19.5
3 22	13 21.24	- 5 0.3	2.196	3.154	6.0	20.7	3 22	13 25.04	+ 0 31.2	1.382	2.344	8.3	19.2
4 1	13 14.16	- 4 8.8	2.158	3.151	2.5	20.4	4 1	13 16.06	+ 1 16.5	1.327	2.317	4.4	18.9
4 11	13 6.52	- 3 16.3	2.149	3.148	1.9	20.4	4 11	13 5.80	+ 1 57.2	1.299	2.291	4.7	18.9
4 21	12 59.09	- 2 27.8	2.169	3.144	5.3	20.6	4 21	12 55.54	+ 2 26.0	1.296	2.264	9.0	19.0
5 1	12 52.59	- 1 47.8	2.217	3.141	8.7	20.8	5 1	12 46.60	+ 2 37.1	1.318	2.238	13.7	19.2
5 11	12 47.60	- 1 19.7	2.288	3.137	11.7	21.0	5 11	12 40.02	+ 2 27.4	1.359	2.211	18.0	19.4
426536	2013 <i>RW</i> ₇₀		4 8.3 222°14	3°5/ 4.3 17			475140	2005 <i>UU</i> ₃₄₇		4 8.3 290°17	0°4/ 8.7 17		
3 2	13 31.76	- 0 46.4	2.123	2.947	12.6	21.7	3 2	13 28.46	- 11 30.5	2.364	3.161	12.4	21.2
3 12	13 27.77	+ 0 25.6	2.035	2.939	9.7	21.5	3 12	13 25.13	- 10 57.9	2.263	3.149	9.7	21.0
3 22	13 21.82	+ 1 45.8	1.971	2.931	6.4	21.3	3 22	13 20.06	- 10 12.2	2.186	3.137	6.5	20.8
4 1	13 14.44	+ 3 8.0	1.935	2.922	3.8	21.1	4 1	13 13.70	- 9 16.1	2.135	3.125	2.9	20.5
4 11	13 6.41	+ 4 25.1	1.928	2.913	4.5	21.1	4 11	13 6.74	- 8 13.8	2.112	3.113	1.0	20.3
4 21	12 58.58	+ 5 30.4	1.949	2.903	7.6	21.3	4 21	12 59.92	- 7 10.7	2.119	3.102	4.7	20.6
5 1	12 51.78	+ 6 18.9	1.996	2.893	11.0	21.5	5 1	12 53.96	- 6 12.2	2.153	3.090	8.2	20.8
5 11	12 46.64	+ 6 48.0	2.065	2.882	14.0	21.7	5 11	12 49.48	- 5 23.2	2.211	3.078	11.4	21.0
284682	2008 <i>RJ</i> ₁₃₄		4 8.3 135°72	5°7/ 3.4 18			11015	Romanenko		4 8.3 252°05	1°2/ 6.9 18		
3 2	13 36.93	+ 3 25.2	1.618	2.453	15.4	20.7	3 2	13 32.23	- 7 6.1	2.313	3.117	12.4	18.8
3 12	13 32.10	+ 4 43.0	1.556	2.464	11.9	20.5	3 12	13 28.12	- 6 18.9	2.204	3.097	9.6	18.6
3 22	13 24.77	+ 6 4.9	1.517	2.474	8.2	20.3	3 22	13 22.09	- 5 20.0	2.119	3.075	6.3	18.4
4 1	13 15.69	+ 7 22.3	1.504	2.484	5.8	20.2	4 1	13 14.61	- 4 12.9	2.061	3.053	2.6	18.1
4 11	13 5.97	+ 8 25.9	1.518	2.493	6.8	20.3	4 11	13 6.39	- 3 3.1	2.033	3.031	2.0	18.0
4 21	12 56.75	+ 9 9.2	1.558	2.502	10.0	20.5	4 21	12 58.24	- 1 56.4	2.034	3.008	5.7	18.2
5 1	12 49.08	+ 9 28.5	1.622	2.510	13.5	20.7	5 1	12 50.98	- 0 58.7	2.062	2.984	9.4	18.4
5 11	12 43.65	+ 9 23.8	1.706	2.518	16.7	21.0	5 11	12 45.27	- 0 14.4	2.116	2.960	12.7	18.5
88557	2001 <i>QW</i> ₂₁₄		4 8.3 121°89	1°0/ 9.1 18			214433	2005 <i>QF</i> ₆₇		4 8.3 234°60	0°4/ 7.8 17		
3 2	13 35.18	- 11 20.0	1.814	2.614	15.4	19.6	3 2	13 30.88	- 7 39.3	2.606	3.405	11.3	20.9
3 12	13 30.72	- 11 15.4	1.733	2.619	12.1	19.4	3 12	13 26.77	- 7 16.9	2.508	3.397	8.7	20.7
3 22	13 23.90	- 10 57.0	1.673	2.624	8.2	19.2	3 22	13 21.02	- 6 45.7	2.435	3.389	5.7	20.5
4 1	13 15.37	- 10 26.8	1.639	2.629	3.8	18.9	4 1	13 14.08	- 6 8.5	2.389	3.381	2.4	20.3
4 11	13 6.08	- 9 49.0	1.632	2.633	1.3	18.7	4 11	13 6.61	- 5 28.8	2.372	3.373	1.2	20.2
4 21	12 57.11	- 9 3.1	1.653	2.638	5.5	19.0	4 21	12 59.27	- 4 50.8	2.385	3.364	4.6	20.4
5 1	12 49.47	- 8 32.9	1.700	2.642	9.7	19.3	5 1	12 52.76	- 4 18.3	2.426	3.355	7.8	20.6
5 11	12 43.88	- 8 5.6	1.771	2.646	13.4	19.5	5 11	12 47.61	- 3 54.7	2.492	3.346	10.7	20.8
162531	2000 <i>QW</i> ₁₄₂		4 8.3 200°07	0°4/ 7.9 18			63890	2001 <i>SU</i> ₃		4 8.3 171°71	1°9/ 6.4 18		
3 2	13 38.05	- 7 46.8	1.835	2.639	15.1	20.0	3 2	13 33.63	- 4 45.4	1.967	2.784	13.8	20.6
3 12	13 32.98	- 7 34.9	1.745	2.636	11.8	19.7	3 12	13 29.30	- 4 1.0	1.886	2.786	10.6	20.4
3 22	13 25.44	- 7 11.6	1.678	2.633	7.8	19.5	3 22	13 22.86	- 3 6.7	1.828	2.788	6.8	20.1
4 1	13 16.06	- 6 39.9	1.637	2.629	3.3	19.2	4 1	13 14.91	- 2 7.2	1.797	2.789	3.0	19.9
4 11	13 5.81	- 6 4.2	1.624	2.624	1.5	19.0	4 11	13 6.31	- 1 8.9	1.794	2.790	2.8	19.9
4 21	12 55.80	- 5 30.2	1.639	2.619	6.1	19.3	4 21	12 58.01	- 0 17.7	1.819	2.791	6.5	20.1
5 1	12 47.10	- 5 3.1	1.680	2.613	10.4	19.6	5 1	12 50.88	+ 0 21.2	1.871	2.791	10.3	20.3
5 11	12 40.52	- 4 47.3	1.746	2.607	14.2	19.8	5 11	12 45.59	+ 0 44.5	1.946	2.791	13.6	20.6
336328	2008 <i>TC</i> ₈₁		4 8.3 286°54	0°8/ 7.4 17			313056	2000 <i>SZ</i> ₂₈		4 8.3 177°04	1°2/ 9.5 18		
3 2	13 29.92	- 9 52.9	1.898	2.710	14.4	21.7	3 2	13 35.54	- 14 40.9	2.281	3.054	13.5	22.8
3 12	13 26.83	- 8 52.8	1.786	2.683	11.2	21.4	3 12	13 30.55	- 14 4.0	2.188	3.057	10.7	22.6
3 22	13 21.51	- 7 34.4	1.697	2.655	7.4	21.1	3 22	13 23.58	- 13 11.3	2.118	3.060	7.3	22.4
4 1	13 14.43	- 6 1.5	1.635	2.628	3.1	20.8	4 1	13 15.20	- 12 5.0	2.075	3.061	3.6	22.2
4 11	13 6.41	- 4 21.1	1.600	2.600	1.9	20.6	4 11	13 6.21	- 10 49.8	2.061	3.062	1.3	22.0
4 21	12 58.41	- 2 41.8	1.593	2.571	6.5	20.9	4 21	12 57.48	- 9 31.7	2.078	3.062	4.7	22.2
5 1	12 51.45	- 1 12.6	1.613	2.543	11.0	21.1	5 1	12 49.82	- 8 17.2	2.124	3.060	8.4	22.4
5 11	12 46.34	- 0 0.5	1.656	2.514	15.0	21.2	5 11	12 43.87	- 7 12.2	2.195	3.058	11.6	22.6
390954	2005 <i>MK</i> ₂₆		4 8.3 172°15	4°5/ 1.4 18			424620	2008 <i>JO</i> ₂₆		4 8.3 317°97	24°8/ 8.4 18		
3 2	13 29.99	+ 8 58.4	3.195	4.013	9.0	22.3	3 2	13 34.01	+ 36 43.6	0.883	1.718	25.0	19.5
3 12	13 25.67	+ 10 1.9	3.123	4.016	7.0	22.2	3 12	13 32.60	+ 40 24.0	0.863	1.707	24.9	19.4
3 22	13 20.07	+ 11 4.5	3.077	4.019	5.3	22.1	3 22	13 26.49	+ 43 21.5	0.857	1.697	25.7	19.4
4 1	13 13.60	+ 12 1.5	3.061	4.022	4.5	22.0	4 1	13 16.77	+ 45 14.9	0.864	1.687	27.1	19.4
4 11	13 6.79	+ 12 48.8	3.074	4.024	5.2	22.1	4 11	13 5.63	+ 45 52.4	0.883	1.678	29.0	19.5
4 21	13 0.16	+ 13 23.2	3.115	4.025	6.9	22.2	4 21	12 55.50	+ 45 14.0	0.910	1.670	30.9	19.6
5 1	12 54.24	+ 13 42.7	3.183	4.026	8.8	22.3	5 1	12 48.36	+ 43 27.6	0.945	1.662	32.8	19.8
5 11	12 49.43	+ 13 47.1	3.273	4.027	10.6	22.5	5 11	12 45.22	+ 40 46.6	0.985	1.656	34.4	19.9
211516	2003 <i>QQ</i> ₅₁		4 8.3 216°20	1°4/ 9.4 16			127125	2002 <i>GP</i> ₁₀₂		4 8.3 337°69	4°1/ 4.2 17		
3 2	13 37.52	- 12 12.7	1.859	2.650	15.5	21.1	3 2	13 29.04	- 0 46.4	1.705	2.546	14.5	19.0
3 12	13 32.66	- 12 13.8	1.764	2.644	12.3	20.9	3 12	13 26.11	+ 0 28.6	1.628	2.541	11.1	18.8
3 22	13 25.30	- 12 0.7	1.690	2.637	8.4	20.6	3 22	13 20.94	+ 1 52.9	1.574	2.537	7.3	18.5
4 1	13 16.04	- 11 34.7	1.642	2.630	4.1	20.4	4 1	13 14.13	+ 3 19.1	1.545	2.533	4.4	18.4
4 11	13 5.84	- 10 59.3	1.621	2.622	1.6	20.1	4 11	13 6.61	+ 4 38.3	1.543	2.529	5.2	18.4
4 21	12 55.81	- 10 19.5	1.629	2.613	5.6	20.4	4 21	12 59.37	+ 5 42.6	1.568	2.526	8.7	18.6
5 1	12 47.05	- 9 41.6	1.663	2.604	10.0	20.6	5 1	12 53.37	+ 6 26.3	1.616	2.523	12.5	18.8
5 11	12 40.39	- 9 11.2	1.721	2.594	13.8	20.8	5 11	12 49.31	+ 6 47.0	1.686	2.520	15.9	19.0
428860	2008 <i>UT</i> ₁₂₁		4 8.3 240°70	2°8/ 10.9 17			128010	2003 <i>JY</i> ₇	</				

EPHEMERIDES

4 8.3

4 8.3

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
76661	2000 <i>HP</i> ₃₉		4 8.3 262°22	4.9/ 3.2	18		235206	2003 <i>SV</i> ₁₇₄		4 8.3 200°24	0.7/ 7.5	17	
3 2	13 32.42	+ 5 45.6	2.192	3.021	12.1	19.0	3 2	13 31.63	- 8 7.8	2.286	3.089	12.5	21.4
3 12	13 28.18	+ 6 35.5	2.112	3.015	9.4	18.8	3 12	13 27.55	- 7 30.2	2.195	3.087	9.7	21.2
3 22	13 22.05	+ 7 26.5	2.056	3.009	6.7	18.7	3 22	13 21.63	- 6 41.6	2.128	3.084	6.3	21.0
4 1	13 14.55	+ 8 12.8	2.027	3.003	5.0	18.5	4 1	13 14.40	- 5 45.5	2.089	3.081	2.6	20.7
4 11	13 6.46	+ 8 48.6	2.026	2.997	5.7	18.6	4 11	13 6.58	- 4 46.6	2.078	3.078	1.5	20.6
4 21	12 58.62	+ 9 9.5	2.051	2.991	8.3	18.7	4 21	12 58.97	- 3 50.5	2.096	3.074	5.2	20.9
5 1	12 51.80	+ 9 12.8	2.103	2.985	11.2	18.9	5 1	12 52.32	- 3 2.2	2.142	3.070	8.8	21.1
5 11	12 46.61	+ 8 58.0	2.176	2.978	13.8	19.1	5 11	12 47.24	- 2 25.7	2.212	3.065	11.9	21.3
191856	Almáriván		4 8.3 186°13	0.4/ 7.8	18		371669	2007 <i>CC</i> ₅₆		4 8.3 57°77	5.5/12.4	18	
3 2	13 34.18	- 7 40.0	2.411	3.207	12.2	21.3	3 2	13 37.76	-20 34.9	1.621	2.389	18.3	20.5
3 12	13 29.38	- 7 19.9	2.320	3.207	9.4	21.1	3 12	13 33.09	-21 21.4	1.551	2.405	15.1	20.3
3 22	13 22.77	- 6 50.7	2.253	3.207	6.2	20.9	3 22	13 25.65	-21 47.6	1.501	2.423	11.4	20.1
4 1	13 14.86	- 6 15.1	2.213	3.205	2.6	20.6	4 1	13 16.20	-21 51.4	1.474	2.440	7.7	19.9
4 11	13 6.37	- 5 36.9	2.203	3.204	1.3	20.5	4 11	13 5.92	-21 34.3	1.473	2.458	5.5	19.8
4 21	12 58.08	- 5 0.5	2.223	3.202	4.9	20.8	4 21	12 56.08	-21 0.9	1.497	2.476	6.8	20.0
5 1	12 50.75	- 4 30.0	2.271	3.199	8.3	21.0	5 1	12 47.89	-20 18.2	1.547	2.494	10.1	20.2
5 11	12 44.97	- 4 8.8	2.343	3.196	11.4	21.2	5 11	12 42.14	-19 34.7	1.620	2.512	13.5	20.4
178465	1999 <i>RX</i> ₈₄		4 8.3 269°79	1.9/10.2	16		428760	2008 <i>SN</i> ₁₀₈		4 8.3 320°10	2.7/10.4	17	
3 2	13 31.82	-14 37.9	2.528	3.302	12.3	20.7	3 2	13 33.23	-15 7.5	1.770	2.562	16.1	21.5
3 12	13 27.69	-14 40.1	2.418	3.286	9.8	20.5	3 12	13 29.49	-15 20.2	1.679	2.556	12.9	21.2
3 22	13 21.76	-14 30.1	2.331	3.270	6.9	20.3	3 22	13 23.30	-15 16.6	1.608	2.550	9.2	21.0
4 1	13 14.47	-14 8.9	2.270	3.253	3.8	20.1	4 1	13 15.23	-14 57.2	1.562	2.545	5.2	20.7
4 11	13 6.49	-13 38.6	2.239	3.237	1.9	19.9	4 11	13 6.25	-14 24.7	1.542	2.540	2.7	20.5
4 21	12 58.58	-13 2.9	2.236	3.220	4.3	20.1	4 21	12 57.46	-13 44.1	1.548	2.534	5.6	20.7
5 1	12 51.49	-12 26.0	2.261	3.203	7.6	20.2	5 1	12 49.93	-13 2.0	1.581	2.530	9.8	20.9
5 11	12 45.87	-11 52.6	2.312	3.186	10.7	20.4	5 11	12 44.51	-12 25.0	1.637	2.525	13.6	21.2
68306	2001 <i>FU</i> ₁₀₃		4 8.3 222°92	2.5/10.8	18		212340	2005 <i>TN</i> ₅		4 8.3 309°06	3.7/12.4	17	
3 2	13 32.13	-16 56.1	2.181	2.954	14.0	19.1	3 2	13 27.83	-21 42.6	2.120	2.880	14.8	19.5
3 12	13 28.14	-16 48.9	2.085	2.950	11.3	18.9	3 12	13 25.07	-21 25.4	2.009	2.861	12.3	19.2
3 22	13 22.14	-16 25.6	2.010	2.945	8.1	18.7	3 22	13 20.26	-20 47.0	1.919	2.842	9.2	19.0
4 1	13 14.64	-15 47.1	1.961	2.941	4.7	18.5	4 1	13 13.89	-19 47.3	1.853	2.824	6.0	18.8
4 11	13 6.45	-14 56.4	1.939	2.936	2.5	18.3	4 11	13 6.75	-18 29.4	1.814	2.806	3.8	18.6
4 21	12 58.44	-13 58.5	1.946	2.931	4.8	18.5	4 21	12 59.71	-16 58.8	1.803	2.788	5.2	18.6
5 1	12 51.46	-12 59.5	1.980	2.926	8.3	18.7	5 1	12 53.67	-15 23.4	1.819	2.770	8.5	18.8
5 11	12 46.20	-12 5.4	2.040	2.920	11.6	18.9	5 11	12 49.34	-13 51.5	1.860	2.753	12.0	19.0
203373	2001 <i>WD</i> ₁₀₁		4 8.3 60°51	1.3/ 7.4	18		382195	2012 <i>LY</i> ₂₂		4 8.3 251°88	8.1/30.6	17	
3 2	13 36.32	- 6 25.8	1.298	2.132	18.5	21.0	3 2	13 34.97	+13 59.2	2.065	2.891	12.9	21.1
3 12	13 32.23	- 6 3.6	1.238	2.145	14.3	20.7	3 12	13 30.40	+15 18.1	1.986	2.876	10.6	21.0
3 22	13 25.16	- 5 27.8	1.197	2.159	9.3	20.5	3 22	13 23.66	+16 33.3	1.930	2.860	8.7	20.8
4 1	13 15.97	- 4 43.6	1.180	2.173	3.9	20.2	4 1	13 15.32	+17 36.5	1.900	2.844	8.1	20.7
4 11	13 5.99	- 3 58.5	1.188	2.187	2.5	20.1	4 11	13 6.24	+18 20.2	1.897	2.828	9.2	20.8
4 21	12 56.62	- 3 20.0	1.221	2.202	7.6	20.5	4 21	12 57.38	+18 39.4	1.919	2.811	11.5	20.9
5 1	12 49.11	- 2 54.7	1.278	2.216	12.5	20.8	5 1	12 49.65	+18 32.2	1.964	2.793	14.0	21.0
5 11	12 44.25	- 2 46.2	1.356	2.231	16.7	21.1	5 11	12 43.78	+18 0.0	2.029	2.776	16.5	21.1
140397	2001 <i>TK</i> ₆₅		4 8.3 148°96	0.4/ 7.7	18		215974	2005 <i>QQ</i> ₁₀₆		4 8.3 182°97	1.1/ 6.9	17	
3 2	13 30.90	- 8 11.6	2.695	3.491	11.1	20.9	3 2	13 30.95	- 4 50.5	3.047	3.846	9.8	21.9
3 12	13 26.63	- 7 40.7	2.611	3.498	8.5	20.7	3 12	13 26.52	- 4 23.7	2.956	3.846	7.5	21.7
3 22	13 20.84	- 7 1.0	2.551	3.505	5.5	20.5	3 22	13 20.72	- 3 51.0	2.891	3.846	4.8	21.5
4 1	13 14.00	- 6 15.3	2.519	3.511	2.3	20.3	4 1	13 13.95	- 3 14.9	2.854	3.846	2.1	21.3
4 11	13 6.72	- 5 27.5	2.517	3.517	1.2	20.2	4 11	13 6.77	- 2 39.1	2.847	3.845	1.7	21.3
4 21	12 59.67	- 4 41.8	2.545	3.523	4.4	20.5	4 21	12 59.76	- 2 6.6	2.871	3.844	4.4	21.5
5 1	12 53.45	- 4 2.0	2.601	3.528	7.4	20.7	5 1	12 53.46	- 1 40.6	2.924	3.842	7.1	21.7
5 11	12 48.56	- 3 31.5	2.682	3.533	10.1	20.8	5 11	12 48.34	- 1 23.4	3.001	3.840	9.5	21.8
109788	2001 <i>RT</i> ₈₉		4 8.3 297°91	3.4/ 5.3	17		361075	2006 <i>BQ</i> ₁₂		4 8.3 103°30	3.6/10.9	18	
3 2	13 30.70	- 2 53.7	1.619	2.456	15.3	19.6	3 2	13 38.40	-17 6.3	1.545	2.330	18.4	21.2
3 12	13 27.63	- 1 52.3	1.533	2.444	11.8	19.4	3 12	13 33.65	-17 22.0	1.472	2.343	14.8	21.0
3 22	13 22.10	- 0 38.9	1.468	2.432	7.7	19.1	3 22	13 26.05	-17 17.7	1.419	2.356	10.6	20.8
4 1	13 14.71	+ 0 40.0	1.429	2.420	4.0	18.9	4 1	13 16.39	-16 53.2	1.390	2.369	6.2	20.6
4 11	13 6.42	+ 1 55.6	1.416	2.408	4.4	18.9	4 11	13 5.86	-16 12.1	1.386	2.382	3.6	20.4
4 21	12 58.35	+ 2 59.4	1.429	2.396	8.5	19.1	4 21	12 55.81	-15 20.6	1.409	2.394	6.2	20.6
5 1	12 51.57	+ 3 44.7	1.466	2.384	12.8	19.3	5 1	12 47.44	-14 26.9	1.458	2.406	10.4	20.9
5 11	12 46.90	+ 4 7.8	1.525	2.373	16.6	19.5	5 11	12 41.59	-13 38.8	1.529	2.418	14.4	21.2
177638	2004 <i>LB</i> ₂₂		4 8.3 228°67	3.8/ 3.4	18		374354	Pesquet		4 8.3 154°93	0.2/ 8.5	17	
3 2	13 29.49	+ 2 49.4	2.556	3.380	10.7	20.4	3 2	13 34.29	-10 23.1	2.371	3.160	12.6	22.7
3 12	13 25.69	+ 3 51.1	2.471	3.374	8.2	20.2	3 12	13 29.45	- 9 56.4	2.287	3.168	9.8	22.5
3 22	13 20.31	+ 4 56.5	2.412	3.368	5.7	20.0	3 22	13 22.80	- 9 18.3	2.226	3.176	6.5	22.3
4 1	13 13.79	+ 6 0.3	2.381	3.362	3.9	19.9	4 1	13 14.88	- 8 31.5	2.193	3.184	2.8	22.1
4 11	13 6.79	+ 6 57.0	2.379	3.355	4.6	19.9	4 11	13 6.44	- 7 40.3	2.189	3.190	1.0	22.0
4 21	12 59.97	+ 7 42.1	2.405	3.349	7.0	20.0	4 21	12 58.26	- 6 49.5	2.215	3.196	4.7	22.3
5 1	12 53.98	+ 8 12.3	2.458	3.342	9.7	20.2	5 1	12 51.10	- 6 3.9	2.269	3.202	8.1	22.5
5 11	12 49.34	+ 8 25.9	2.533	3.335	12.1	20.4	5 11	12 45.53	- 5 27.5	2.349	3.206	11.2	22.7
30847	Lampert		4 8.3 119°99	1.7/ 9.9	18		177305	2003 <i>YW</i>					

EPHEMERIDES

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
292001	2006 QG ₁₁₇		4 8.3 216°42	1°6/ 6.2 17			2944	Peyo		4 8.3 218°88	0°3/ 7.9 18		
3 2	13 29.79	- 4 55.6	2.686	3.493	10.8	22.2	3 2	13 31.47	-10 17.4	2.242	3.039	12.9	17.8
3 12	13 25.87	- 4 2.5	2.591	3.486	8.2	22.1	3 12	13 27.53	- 9 27.3	2.144	3.032	10.0	17.6
3 22	13 20.42	- 3 1.1	2.521	3.479	5.3	21.9	3 22	13 21.70	- 8 23.2	2.071	3.024	6.6	17.4
4 1	13 13.86	- 1 55.2	2.479	3.471	2.4	21.6	4 1	13 14.48	- 7 8.6	2.024	3.016	2.8	17.1
4 11	13 6.81	- 0 49.7	2.467	3.463	2.3	21.6	4 11	13 6.63	- 5 49.1	2.007	3.007	1.3	17.0
4 21	12 59.91	+ 0 10.6	2.486	3.454	5.3	21.8	4 21	12 58.95	- 4 31.0	2.018	2.998	5.3	17.2
5 1	12 53.80	+ 1 1.3	2.532	3.445	8.3	22.0	5 1	12 52.24	- 3 20.7	2.058	2.988	9.0	17.4
5 11	12 48.98	+ 1 39.3	2.602	3.435	11.0	22.1	5 11	12 47.13	- 2 23.2	2.123	2.978	12.3	17.6
69756	1998 OY ₃		4 8.3 196°59	1°3/ 9.7 18			57529	2001 SX ₃₄₄		4 8.3 134°24	5°9/ 30.8 18		
3 2	13 32.16	-13 47.3	2.237	3.021	13.4	20.7	3 2	13 29.72	+ 9 50.2	2.568	3.396	10.6	19.8
3 12	13 28.06	-13 29.6	2.143	3.019	10.6	20.5	3 12	13 25.80	+11 28.1	2.508	3.405	8.4	19.6
3 22	13 22.03	-12 57.8	2.073	3.017	7.3	20.3	3 22	13 20.34	+13 4.7	2.475	3.414	6.6	19.5
4 1	13 14.60	-12 13.6	2.029	3.015	3.7	20.1	4 1	13 13.82	+14 33.2	2.470	3.423	5.9	19.5
4 11	13 6.54	-11 20.9	2.013	3.013	1.4	19.9	4 11	13 6.90	+15 47.4	2.493	3.432	6.9	19.6
4 21	12 58.68	-10 24.8	2.026	3.010	4.7	20.1	4 21	13 0.24	+16 43.0	2.544	3.440	8.8	19.7
5 1	12 51.83	- 9 30.9	2.066	3.007	8.3	20.3	5 1	12 54.47	+17 17.5	2.619	3.448	11.0	19.9
5 11	12 46.62	- 8 44.5	2.132	3.004	11.5	20.5	5 11	12 50.05	+17 31.2	2.715	3.455	12.9	20.0
19316	1996 WB		4 8.3 147°15	4°7/ 3.7 18			413819	2006 QU ₁₇		4 8.3 185°57	1°0/ 7.3 16		
3 2	13 36.70	+ 5 59.7	2.244	3.063	12.2	18.5	3 2	13 34.58	- 7 43.9	2.096	2.899	13.5	22.5
3 12	13 31.29	+ 6 42.8	2.175	3.072	9.5	18.3	3 12	13 29.98	- 7 1.3	2.008	2.899	10.4	22.3
3 22	13 23.99	+ 7 26.0	2.130	3.080	6.7	18.2	3 22	13 23.33	- 6 6.9	1.943	2.899	6.8	22.1
4 1	13 15.38	+ 8 3.8	2.112	3.088	4.8	18.1	4 1	13 15.18	- 5 4.5	1.905	2.898	2.8	21.8
4 11	13 6.28	+ 8 30.9	2.123	3.095	5.5	18.1	4 11	13 6.38	- 3 59.8	1.897	2.896	1.8	21.7
4 21	12 57.54	+ 8 43.6	2.163	3.102	7.9	18.3	4 21	12 57.83	- 2 58.8	1.917	2.894	5.8	22.0
5 1	12 49.93	+ 8 39.9	2.229	3.108	10.7	18.5	5 1	12 50.39	- 2 7.4	1.965	2.890	9.6	22.2
5 11	12 44.02	+ 8 19.9	2.317	3.114	13.3	18.7	5 11	12 44.72	- 1 29.7	2.037	2.886	12.9	22.4
296087	2009 BL ₁₆		4 8.3 218°80	4°3/ 4.3 17			194977	2002 AT ₂₀₂		4 8.3 312°65	9°2/ 15.5 18		
3 2	13 34.74	- 0 5.4	1.741	2.571	14.7	20.9	3 2	13 33.20	-29 24.8	1.738	2.462	18.8	19.8
3 12	13 30.54	+ 1 6.6	1.658	2.564	11.3	20.6	3 12	13 30.09	-30 30.4	1.635	2.445	16.5	19.6
3 22	13 23.91	+ 2 27.7	1.597	2.557	7.6	20.4	3 22	13 24.12	-31 13.2	1.550	2.429	13.9	19.4
4 1	13 15.48	+ 3 50.4	1.562	2.549	4.6	20.2	4 1	13 15.78	-31 27.8	1.485	2.413	11.2	19.2
4 11	13 6.22	+ 5 6.0	1.556	2.540	5.4	20.2	4 11	13 6.10	-31 12.0	1.443	2.398	9.4	19.0
4 21	12 57.21	+ 6 6.7	1.576	2.531	9.0	20.4	4 21	12 56.38	-30 27.1	1.425	2.382	9.5	19.0
5 1	12 49.50	+ 6 46.7	1.621	2.521	12.8	20.6	5 1	12 48.01	-29 19.8	1.431	2.368	11.6	19.1
5 11	12 43.87	+ 7 3.6	1.687	2.511	16.3	20.8	5 11	12 42.09	-28 0.3	1.460	2.354	14.6	19.2
162526	2000 QV ₁₃₁		4 8.3 190°83	2°5/ 10.4 18			500056	2011 UZ ₁₅₄		4 8.3 236°45	2°2/ 5.5 18		
3 2	13 37.97	-15 50.9	2.014	2.785	15.1	21.0	3 2	13 29.13	- 3 23.4	2.532	3.347	11.1	21.3
3 12	13 32.83	-15 54.1	1.919	2.784	12.1	20.8	3 12	13 25.48	- 2 25.2	2.439	3.339	8.5	21.1
3 22	13 25.34	-15 41.4	1.846	2.782	8.6	20.5	3 22	13 20.23	- 1 19.0	2.371	3.331	5.5	20.9
4 1	13 16.09	-15 13.4	1.798	2.780	4.8	20.3	4 1	13 13.82	- 0 9.2	2.332	3.322	2.7	20.7
4 11	13 5.99	-14 32.8	1.779	2.776	2.5	20.1	4 11	13 6.89	+ 0 58.8	2.321	3.313	2.9	20.7
4 21	12 56.10	-13 44.5	1.788	2.772	5.3	20.3	4 21	13 0.12	+ 1 59.8	2.340	3.304	5.8	20.9
5 1	12 47.43	-12 54.8	1.825	2.767	9.1	20.5	5 1	12 54.17	+ 2 49.3	2.386	3.295	8.9	21.1
5 11	12 40.76	-12 10.0	1.887	2.762	12.7	20.7	5 11	12 49.57	+ 3 24.4	2.457	3.286	11.7	21.2
245942	2006 RS ₁₀₄		4 8.3 253°10	4°1/ 3.5 17			135399	2001 TQ ₂₁₁		4 8.3 325°60	5°0/ 13.2 17		
3 2	13 30.57	+ 3 20.8	2.383	3.209	11.4	21.0	3 2	13 30.04	-22 58.9	1.974	2.729	15.9	18.8
3 12	13 26.67	+ 4 17.9	2.296	3.200	8.8	20.8	3 12	13 26.93	-23 13.6	1.875	2.720	13.3	18.6
3 22	13 21.04	+ 5 18.4	2.234	3.190	6.1	20.6	3 22	13 21.58	-23 7.9	1.797	2.711	10.3	18.4
4 1	13 14.17	+ 6 16.9	2.200	3.180	4.2	20.5	4 1	13 14.52	-22 40.5	1.741	2.702	7.2	18.2
4 11	13 6.73	+ 7 7.7	2.194	3.170	4.9	20.5	4 11	13 6.61	-21 53.1	1.711	2.694	5.1	18.0
4 21	12 59.46	+ 7 46.0	2.216	3.160	7.5	20.7	4 21	12 58.85	-20 50.2	1.707	2.687	6.0	18.1
5 1	12 53.10	+ 8 8.5	2.264	3.149	10.3	20.8	5 1	12 52.23	-19 38.8	1.730	2.679	9.0	18.2
5 11	12 48.20	+ 8 13.7	2.334	3.139	12.9	21.0	5 11	12 47.51	-18 27.0	1.777	2.672	12.3	18.4
8712	Suzuko		4 8.3 275°07	1°2/ 6.9 18			471834	2012 XQ ₆₉		4 8.3 201°58	3°8/ 3.5 17		
3 2	13 30.31	- 5 47.8	2.383	3.193	11.9	17.7	3 2	13 30.06	+ 2 39.8	2.553	3.376	10.8	21.9
3 12	13 26.55	- 5 16.5	2.284	3.180	9.1	17.5	3 12	13 26.13	+ 3 43.1	2.471	3.373	8.3	21.7
3 22	13 21.02	- 4 36.3	2.208	3.166	5.9	17.3	3 22	13 20.61	+ 4 50.1	2.415	3.370	5.7	21.5
4 1	13 14.18	- 3 50.5	2.160	3.152	2.5	17.0	4 1	13 13.97	+ 5 55.4	2.386	3.367	3.9	21.4
4 11	13 6.72	- 3 3.8	2.140	3.138	1.9	17.0	4 11	13 6.85	+ 6 53.6	2.387	3.364	4.6	21.4
4 21	12 59.38	- 2 20.6	2.149	3.124	5.4	17.2	4 21	12 59.93	+ 7 40.1	2.417	3.360	7.0	21.6
5 1	12 52.91	- 1 45.7	2.185	3.110	8.8	17.4	5 1	12 53.85	+ 8 11.6	2.472	3.356	9.6	21.7
5 11	12 47.90	- 1 22.2	2.246	3.096	11.9	17.5	5 11	12 49.14	+ 8 26.6	2.551	3.351	12.1	21.9
102511	1999 TQ ₂₉₈		4 8.3 21°10	0°6/ 8.8 18			34935	6780 P-L		4 8.3 55°61	3°1/ 4.5 18		
3 2	13 31.17	-11 29.2	1.281	2.111	18.9	19.8	3 2	13 28.26	- 1 47.5	2.158	2.986	12.3	18.7
3 12	13 28.50	-11 10.1	1.212	2.115	14.8	19.6	3 12	13 24.96	- 0 31.7	2.088	2.995	9.3	18.5
3 22	13 22.88	-10 31.1	1.162	2.120	10.0	19.3	3 22	13 19.91	+ 0 51.5	2.044	3.005	6.1	18.3
4 1	13 15.10	- 9 35.8	1.135	2.126	4.5	19.0	4 1	13 13.67	+ 2 16.0	2.027	3.015	3.4	18.2
4 11	13 6.39	- 8 31.3	1.132	2.133	1.4	18.8	4 11	13 6.97	+ 3 34.9	2.038	3.025	4.0	18.2
4 21	12 58.14	- 7 26.8	1.153	2.140	6.9	19.2	4 21	13 0.57	+ 4 42.1	2.078	3.035	7.0	18.4
5 1	12 51.62	- 6 31.6	1.199	2.148	12.0	19.5	5 1	12 55.17	+ 5 33.1	2.144	3.046	10.1	18.6
5 11	12 47.67	- 5 52.3	1.264	2.157	16.5	19.8	5 11	12 51.30	+ 6 5.5	2.232	3.056	12.8	18.8
20251	1998 EA ₁₂		4 8.3 344°59	3°2/ 6.2 18			175911	2000 AT ₂₅₀		4 8.3 153°15	0°0/ 8.1 16		
3 2	13 30.42	- 3 5.1	1.177	2.033	18.6	17.9	3 2	13					

EPHEMERIDES

4 8.3

4 8.3

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
318951	2005 <i>UP</i> ₂₁₅		4 8.3 199°36	1.3°/ 9.7 18			308555	2005 <i>UW</i> ₃₀₈		4 8.3 202°72	0°1/ 8.4 18		
3 2	13 32.31	-14 42.9	2.161	2.943	13.9	20.3	3 2	13 28.46	-11 15.0	2.660	3.451	11.3	21.0
3 12	13 28.26	-14 10.7	2.066	2.940	11.0	20.1	3 12	13 24.90	-10 31.9	2.566	3.449	8.8	20.8
3 22	13 22.22	-13 22.1	1.993	2.937	7.6	19.9	3 22	13 19.81	-9 37.0	2.496	3.447	5.8	20.6
4 1	13 14.72	-12 19.3	1.947	2.934	3.8	19.6	4 1	13 13.64	-8 33.2	2.454	3.445	2.5	20.4
4 11	13 6.56	-11 6.8	1.930	2.930	1.4	19.5	4 11	13 7.00	-7 24.8	2.442	3.443	0.9	20.3
4 21	12 58.62	-9 50.9	1.941	2.926	4.8	19.7	4 21	13 0.54	-6 16.8	2.459	3.440	4.3	20.5
5 1	12 51.72	-8 38.1	1.980	2.921	8.6	19.9	5 1	12 54.88	-5 14.2	2.505	3.438	7.4	20.7
5 11	12 46.53	-7 34.7	2.044	2.915	12.0	20.1	5 11	12 50.52	-4 21.1	2.576	3.435	10.2	20.9
418404	2008 <i>KX</i> ₁₆		4 8.3 358°32	11°2/28.9 17			70866	1999 <i>VM</i> ₁₄₉		4 8.3 171°73	0°0/ 8.1 17		
3 2	13 33.67	+17 47.7	1.538	2.379	15.8	20.2	3 2	13 31.74	-10 10.3	2.207	3.006	13.1	20.1
3 12	13 29.94	+19 27.2	1.485	2.377	13.4	20.0	3 12	13 27.71	-9 36.5	2.120	3.007	10.2	19.9
3 22	13 23.57	+20 56.8	1.454	2.377	11.6	19.9	3 22	13 21.79	-8 50.2	2.056	3.009	6.7	19.7
4 1	13 15.33	+22 4.9	1.446	2.376	11.3	19.9	4 1	13 14.53	-7 54.4	2.018	3.010	2.9	19.4
4 11	13 6.37	+22 42.2	1.461	2.376	12.6	20.0	4 11	13 6.68	-6 54.2	2.010	3.011	1.1	19.3
4 21	12 57.90	+22 44.6	1.498	2.376	14.9	20.1	4 21	12 59.07	-5 55.0	2.030	3.012	5.0	19.6
5 1	12 51.03	+22 12.3	1.555	2.377	17.4	20.3	5 1	12 52.48	-5 2.3	2.078	3.012	8.7	19.8
5 11	12 46.48	+21 9.4	1.628	2.378	19.8	20.4	5 11	12 47.52	-4 20.6	2.150	3.012	11.9	20.0
382221	2012 <i>QD</i> ₄₄		4 8.3 226°90	0°7/ 7.6 17			379409	2010 <i>AD</i> ₄₃		4 8.3 143°96	3°5/ 4.6 17		
3 2	13 32.18	-7 36.1	2.126	2.934	13.2	21.5	3 2	13 34.25	+1 46.4	2.327	3.145	11.9	21.5
3 12	13 28.16	-7 5.5	2.035	2.929	10.2	21.3	3 12	13 29.39	+2 33.8	2.255	3.154	9.1	21.4
3 22	13 22.15	-6 23.9	1.967	2.924	6.7	21.1	3 22	13 22.75	+3 24.6	2.207	3.164	6.1	21.2
4 1	13 14.70	-5 34.8	1.926	2.919	2.8	20.8	4 1	13 14.89	+4 13.7	2.188	3.172	3.8	21.1
4 11	13 6.58	-4 43.1	1.914	2.913	1.6	20.7	4 11	13 6.57	+4 55.8	2.198	3.181	4.2	21.1
4 21	12 58.67	-3 54.2	1.929	2.908	5.5	21.0	4 21	12 58.55	+5 26.7	2.236	3.188	6.9	21.3
5 1	12 51.79	-3 13.4	1.972	2.902	9.3	21.2	5 1	12 51.57	+5 43.5	2.301	3.195	9.8	21.5
5 11	12 46.60	-2 44.6	2.039	2.896	12.6	21.4	5 11	12 46.17	+5 44.9	2.389	3.202	12.4	21.7
471859	2013 <i>AY</i> ₈		4 8.3 151°11	5°7/14.9 18			461725	2005 <i>TM</i> ₃₅		4 8.3 35°03	0°4/ 8.0 16		
3 2	13 33.37	-27 38.2	2.652	3.352	13.5	21.3	3 2	13 37.63	-6 14.7	1.627	2.444	16.2	21.0
3 12	13 28.92	-28 11.4	2.556	3.354	11.6	21.2	3 12	13 32.90	-6 23.7	1.549	2.447	12.6	20.7
3 22	13 22.59	-28 27.5	2.479	3.357	9.4	21.0	3 22	13 25.53	-6 23.4	1.493	2.451	8.3	20.5
4 1	13 14.87	-28 24.9	2.427	3.359	7.3	20.9	4 1	13 16.22	-6 16.4	1.462	2.455	3.5	20.2
4 11	13 6.51	-28 4.0	2.402	3.361	5.8	20.8	4 11	13 6.06	-6 6.7	1.458	2.459	1.6	20.1
4 21	12 58.30	-27 27.3	2.404	3.363	6.0	20.8	4 21	12 56.26	-5 58.9	1.482	2.464	6.4	20.4
5 1	12 51.02	-26 39.1	2.434	3.365	7.7	20.9	5 1	12 47.96	-5 57.2	1.530	2.468	10.9	20.7
5 11	12 45.31	-25 45.3	2.489	3.367	9.9	21.1	5 11	12 41.96	-6 5.3	1.602	2.473	14.7	20.9
272401	2005 <i>TD</i> ₁₄		4 8.3 181°85	2°4/10.6 17			287535	2003 <i>DM</i> ₁₄		4 8.3 48°94	2°0/ 9.8 17		
3 2	13 35.23	-16 0.9	2.102	2.875	14.5	21.9	3 2	13 38.12	-12 2.2	2.159	2.939	13.9	19.8
3 12	13 30.60	-16 1.9	2.010	2.876	11.6	21.7	3 12	13 32.69	-12 38.0	2.074	2.946	11.0	19.6
3 22	13 23.81	-15 47.4	1.940	2.876	8.3	21.5	3 22	13 25.12	-13 3.8	2.012	2.953	7.7	19.4
4 1	13 15.43	-15 18.3	1.895	2.876	4.7	21.3	4 1	13 15.98	-13 19.8	1.977	2.961	4.1	19.2
4 11	13 6.31	-14 37.5	1.878	2.876	2.4	21.1	4 11	13 6.15	-13 27.3	1.970	2.969	2.0	19.1
4 21	12 57.42	-13 49.5	1.890	2.875	5.0	21.3	4 21	12 56.57	-13 29.1	1.993	2.976	4.9	19.3
5 1	12 49.65	-13 0.5	1.930	2.873	8.6	21.5	5 1	12 48.14	-13 28.5	2.044	2.984	8.4	19.5
5 11	12 43.73	-12 16.1	1.994	2.871	12.0	21.7	5 11	12 41.55	-13 29.5	2.119	2.992	11.6	19.7
471419	2011 <i>TJ</i> ₁₇		4 8.3 169°74	3°7/ 4.8 17			192014	2005 <i>YV</i> ₆₆		4 8.3 257°62	5°8/ 2.2 18		
3 2	13 36.54	+4 58.2	2.477	3.290	11.4	20.5	3 2	13 33.31	+6 47.4	2.064	2.894	12.7	20.3
3 12	13 31.07	+5 14.1	2.396	3.291	8.8	20.3	3 12	13 29.14	+7 56.8	1.975	2.878	10.0	20.1
3 22	13 23.83	+5 29.9	2.340	3.292	6.1	20.1	3 22	13 22.88	+9 8.3	1.911	2.861	7.4	19.9
4 1	13 15.35	+5 41.6	2.312	3.293	4.0	20.0	4 1	13 15.06	+10 14.8	1.874	2.845	5.9	19.8
4 11	13 6.36	+5 45.3	2.313	3.293	4.3	20.0	4 11	13 6.49	+11 9.0	1.864	2.827	6.9	19.8
4 21	12 57.64	+5 38.3	2.343	3.293	6.8	20.1	4 21	12 58.08	+11 45.0	1.880	2.810	9.5	19.9
5 1	12 49.91	+5 19.1	2.401	3.294	9.5	20.3	5 1	12 50.73	+11 59.5	1.922	2.792	12.6	20.1
5 11	12 43.74	+4 47.3	2.483	3.294	12.1	20.5	5 11	12 45.14	+11 51.7	1.984	2.774	15.4	20.3
341080	2007 <i>HT</i> ₈₃		4 8.3 288°87	2°0/ 6.1 18			321238	2009 <i>BY</i> ₈₁		4 8.3 156°01	18°4/25.4 18		
3 2	13 29.85	-6 48.7	1.906	2.726	14.0	21.0	3 2	13 50.91	+32 50.9	1.309	2.100	20.8	20.1
3 12	13 26.80	-5 38.3	1.796	2.698	10.8	20.7	3 12	13 43.85	+34 51.8	1.279	2.107	19.3	20.0
3 22	13 21.54	-4 11.3	1.708	2.669	7.1	20.4	3 22	13 32.91	+36 23.5	1.266	2.113	18.5	20.0
4 1	13 14.54	-2 32.9	1.648	2.641	3.1	20.1	4 1	13 19.32	+37 10.5	1.272	2.119	18.6	20.0
4 11	13 6.61	-0 50.9	1.615	2.611	3.1	20.0	4 11	13 5.01	+37 4.2	1.297	2.123	19.7	20.1
4 21	12 58.71	+0 46.0	1.611	2.582	7.3	20.2	4 21	12 51.92	+36 4.6	1.339	2.127	21.3	20.2
5 1	12 51.81	+2 9.1	1.633	2.553	11.6	20.4	5 1	12 41.59	+34 18.7	1.397	2.130	23.1	20.4
5 11	12 46.74	+3 12.5	1.677	2.523	15.4	20.6	5 11	12 34.79	+31 57.6	1.469	2.133	24.8	20.5
314635	2006 <i>HL</i> ₁₀₁		4 8.3 161°86	0°2/ 8.1 18			308495	2005 <i>TP</i> ₁₁₁		4 8.3 256°59	0°7/ 9.1 17		
3 2	13 34.53	-10 44.1	1.914	2.713	14.8	21.3	3 2	13 28.88	-12 50.9	2.498	3.285	12.1	21.1
3 12	13 30.10	-9 55.9	1.831	2.719	11.5	21.1	3 12	13 25.39	-12 16.9	2.398	3.278	9.5	20.9
3 22	13 23.47	-8 52.0	1.771	2.725	7.5	20.9	3 22	13 20.22	-11 29.6	2.322	3.270	6.4	20.7
4 1	13 15.26	-7 36.5	1.738	2.729	3.2	20.6	4 1	13 13.86	-10 31.5	2.273	3.262	3.0	20.5
4 11	13 6.39	-6 15.9	1.733	2.734	1.3	20.5	4 11	13 6.94	-9 26.6	2.253	3.254	1.0	20.3
4 21	12 57.85	-4 57.5	1.756	2.737	5.8	20.8	4 21	13 0.17	-8 20.0	2.262	3.245	4.3	20.5
5 1	12 50.56	-3 48.4	1.807	2.740	9.9	21.0	5 1	12 54.25	-7 17.1	2.299	3.237	7.7	20.7
5 11	12 45.19	-2 54.0	1.882	2.742	13.4	21.2	5 11	12 49.72	-6 22.7	2.361	3.229	10.7	20.9
279833	2000 <i>SY</i> ₁₆₄		4 8.3 186°53	0°8/ 9.3 18			331789	2003 <i>KO</i> ₁₄					

EPHEMERIDES

4 8.3

4 8.3

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
343423	2010 <i>DF</i> ₁₆		4 8.3 346°37	16°6/29.1	17		68427	2001 <i>RK</i> ₆		4 8.3 195°14	0°4/ 8.7	18	
3 2	13 28.92	-49 27.9	1.638	2.232	24.0	19.1	3 2	13 31.20	-10 47.8	2.532	3.322	11.8	20.5
3 12	13 27.81	-50 54.3	1.551	2.222	22.8	19.0	3 12	13 27.09	-10 25.4	2.439	3.321	9.2	20.4
3 22	13 23.13	-51 45.2	1.473	2.214	21.3	18.8	3 22	13 21.31	-9 52.1	2.369	3.319	6.2	20.2
4 1	13 15.48	-51 51.3	1.408	2.207	19.6	18.6	4 1	13 14.32	-9 10.2	2.327	3.317	2.8	19.9
4 11	13 6.28	-51 6.2	1.358	2.201	18.0	18.5	4 11	13 6.80	-8 23.4	2.313	3.314	0.9	19.8
4 21	13 57.36	-49 28.9	1.325	2.196	16.9	18.4	4 21	12 59.46	-7 36.0	2.329	3.312	4.4	20.0
5 1	12 50.50	-47 5.1	1.311	2.192	16.6	18.4	5 1	12 52.99	-6 52.6	2.374	3.309	7.7	20.2
5 11	12 46.95	-44 8.2	1.318	2.189	17.3	18.4	5 11	12 47.94	-6 17.2	2.443	3.306	10.6	20.4
364189	2006 <i>PP</i> ₂₇		4 8.3 232°76	11°5/23.9	16		122285	2000 <i>PM</i> ₁₆		4 8.3 163°80	0°1/ 8.2	17	
3 2	13 38.23	+26 15.5	2.148	2.944	13.5	21.7	3 2	13 34.30	-9 21.9	2.588	3.375	11.7	21.9
3 12	13 33.01	+28 8.3	2.086	2.929	12.2	21.6	3 12	13 29.34	-8 53.7	2.501	3.382	9.0	21.7
3 22	13 25.45	+29 48.6	2.047	2.913	11.6	21.5	3 22	13 22.71	-8 15.5	2.438	3.388	6.0	21.6
4 1	13 16.16	+31 6.5	2.032	2.896	11.9	21.5	4 1	13 14.90	-7 30.1	2.403	3.394	2.5	21.3
4 11	13 6.10	+31 54.3	2.041	2.879	13.0	21.5	4 11	13 6.60	-6 41.3	2.398	3.399	1.0	21.2
4 21	12 56.31	+32 8.3	2.072	2.860	14.7	21.6	4 21	12 58.54	-5 53.5	2.423	3.403	4.5	21.5
5 1	12 47.79	+31 48.6	2.122	2.841	16.5	21.7	5 1	12 51.39	-5 11.1	2.478	3.406	7.7	21.7
5 11	12 41.29	+30 58.7	2.187	2.821	18.2	21.8	5 11	12 45.71	-4 37.6	2.557	3.409	10.6	21.9
63636	2001 <i>QJ</i> ₉₀		4 8.3 148°30	5°3/ 3.9	18		2697	Albina		4 8.3 152°99	1°2/ 9.9	18	
3 2	13 37.18	+3 3.2	1.625	2.458	15.4	19.7	3 2	13 28.96	-14 0.4	3.031	3.804	10.5	16.6
3 12	13 32.42	+4 6.8	1.558	2.464	11.9	19.4	3 12	13 25.10	-13 45.4	2.938	3.807	8.3	16.4
3 22	13 25.11	+5 14.8	1.513	2.470	8.2	19.2	3 22	13 19.86	-13 19.9	2.869	3.810	5.7	16.2
4 1	13 16.00	+6 19.1	1.494	2.476	5.5	19.1	4 1	13 13.67	-12 45.6	2.828	3.813	3.0	16.1
4 11	13 6.18	+7 11.4	1.502	2.481	6.3	19.1	4 11	13 7.06	-12 5.0	2.816	3.816	1.2	15.9
4 21	12 56.81	+7 45.1	1.536	2.485	9.6	19.3	4 21	13 0.62	-11 21.6	2.834	3.818	3.5	16.1
5 1	12 48.95	+7 56.8	1.594	2.490	13.3	19.6	5 1	12 54.89	-10 39.2	2.881	3.821	6.3	16.3
5 11	12 43.34	+7 46.0	1.673	2.493	16.6	19.8	5 11	12 50.33	-10 1.3	2.954	3.823	8.8	16.5
40114	1998 <i>QB</i> ₁₅		4 8.3 238°25	3°5/ 4.3	18		62480	2000 <i>SU</i> ₂₂₀		4 8.3 201°46	2°3/ 4.9	18	
3 2	13 31.14	-0 3.3	2.271	3.094	12.0	19.3	3 2	13 29.41	-1 18.7	3.047	3.857	9.5	20.8
3 12	13 27.24	+1 2.6	2.180	3.083	9.2	19.0	3 12	13 25.40	-0 23.6	2.956	3.853	7.2	20.6
3 22	13 21.51	+2 15.5	2.113	3.072	6.1	18.8	3 22	13 20.05	+0 36.7	2.891	3.848	4.7	20.4
4 1	13 14.44	+3 29.7	2.074	3.060	3.7	18.7	4 1	13 13.75	+1 38.4	2.855	3.843	2.6	20.3
4 11	13 6.74	+4 38.8	2.064	3.048	4.3	18.7	4 11	13 7.04	+2 37.1	2.849	3.837	2.9	20.3
4 21	12 59.20	+5 37.0	2.082	3.035	7.3	18.8	4 21	13 0.48	+3 28.8	2.873	3.830	5.3	20.4
5 1	12 52.59	+6 19.5	2.126	3.022	10.4	19.0	5 1	12 54.60	+4 10.2	2.926	3.824	7.8	20.6
5 11	12 47.53	+6 44.0	2.193	3.009	13.3	19.2	5 11	12 49.85	+4 39.0	3.003	3.816	10.1	20.7
283516	2001 <i>TA</i> ₂₉		4 8.3 134°14	1°4/10.0	18		464319	2016 <i>AS</i> ₁₀₇		4 8.3 91°45	1°4/ 7.3	16	
3 2	13 31.14	-14 42.7	2.669	3.441	11.8	21.3	3 2	13 36.41	-5 55.2	1.505	2.330	16.9	21.4
3 12	13 26.90	-14 23.4	2.583	3.451	9.3	21.2	3 12	13 32.10	-5 33.2	1.433	2.336	13.0	21.2
3 22	13 21.09	-13 51.9	2.521	3.460	6.4	21.0	3 22	13 25.07	-4 59.4	1.381	2.341	8.5	20.9
4 1	13 14.19	-13 9.7	2.485	3.470	3.4	20.8	4 1	13 16.05	-4 18.2	1.354	2.347	3.6	20.7
4 11	13 6.85	-12 20.2	2.479	3.479	1.4	20.7	4 11	13 6.20	-3 36.2	1.354	2.353	2.4	20.6
4 21	12 59.73	-11 27.5	2.503	3.487	3.9	20.9	4 21	12 56.77	-3 0.0	1.379	2.359	7.2	20.9
5 1	12 53.48	-10 36.3	2.555	3.495	6.9	21.1	5 1	12 48.94	-2 35.6	1.430	2.364	11.8	21.2
5 11	12 48.61	-9 50.8	2.633	3.503	9.7	21.3	5 11	12 43.50	-2 26.6	1.502	2.370	15.8	21.4
138645	2000 <i>RQ</i> ₃₁		4 8.3 213°92	1°1/ 9.8	18		177644	2004 <i>PN</i> ₈₈		4 8.3 321°54	11°5/15.1	18	
3 2	13 30.28	-14 6.8	2.895	3.667	11.0	20.5	3 2	13 39.66	-33 23.0	2.016	2.690	18.0	19.4
3 12	13 26.22	-13 43.9	2.792	3.660	8.7	20.3	3 12	13 35.30	-35 23.0	1.900	2.663	16.3	19.2
3 22	13 20.66	-13 9.4	2.712	3.653	6.0	20.1	3 22	13 27.83	-37 6.9	1.803	2.637	14.4	19.0
4 1	13 14.03	-12 24.8	2.660	3.645	3.0	19.9	4 1	13 17.60	-38 27.3	1.727	2.611	12.6	18.8
4 11	13 6.90	-11 33.2	2.637	3.637	1.2	19.8	4 11	13 5.49	-39 18.2	1.675	2.585	11.6	18.7
4 21	12 59.90	-10 38.6	2.644	3.628	3.8	20.0	4 21	12 52.85	-39 36.9	1.646	2.560	11.7	18.6
5 1	12 53.63	-9 45.2	2.681	3.619	6.7	20.1	5 1	12 41.25	-39 25.6	1.641	2.536	13.0	18.7
5 11	12 48.62	-8 57.4	2.744	3.610	9.5	20.3	5 11	12 32.06	-38 51.8	1.658	2.512	15.1	18.7
135529	2002 <i>AO</i> ₂₀₂		4 8.3 196°39	1°4/ 6.6	18		387500	1996 <i>XY</i> ₃		4 8.3 132°15	0°5/ 7.6	18	
3 2	13 29.20	-5 40.0	2.421	3.233	11.7	20.2	3 2	13 32.12	-7 21.2	2.786	3.580	10.8	21.8
3 12	13 25.59	-4 55.5	2.335	3.233	8.9	20.0	3 12	13 27.51	-6 54.3	2.707	3.594	8.2	21.6
3 22	13 20.32	-4 2.1	2.274	3.233	5.7	19.8	3 22	13 21.42	-6 19.6	2.653	3.607	5.4	21.4
4 1	13 13.89	-3 3.8	2.240	3.232	2.5	19.6	4 1	13 14.33	-5 40.0	2.628	3.620	2.2	21.2
4 11	13 6.96	-2 5.5	2.235	3.232	2.1	19.5	4 11	13 6.86	-4 59.1	2.632	3.632	1.2	21.2
4 21	13 0.23	-1 12.2	2.258	3.231	5.3	19.8	4 21	12 59.62	-4 20.5	2.666	3.643	4.3	21.4
5 1	12 54.39	-0 28.4	2.310	3.231	8.6	20.0	5 1	12 53.23	-3 47.9	2.729	3.655	7.2	21.6
5 11	12 49.96	+0 2.8	2.385	3.230	11.4	20.1	5 11	12 48.14	-3 23.9	2.818	3.666	9.8	21.8
505237	2012 <i>US</i> ₅₈		4 8.3 137°62	2°0/10.7	17		504730	2009 <i>VO</i> ₃₂		4 8.3 199°66	1°8/10.3	17	
3 2	13 30.57	-16 52.5	2.441	3.210	12.8	21.7	3 2	13 34.42	-15 28.3	2.535	3.300	12.5	23.5
3 12	13 26.67	-16 32.0	2.352	3.215	10.3	21.6	3 12	13 29.63	-15 15.1	2.433	3.296	10.0	23.3
3 22	13 21.05	-15 56.5	2.285	3.220	7.3	21.4	3 22	13 23.04	-14 48.3	2.354	3.291	7.0	23.1
4 1	13 14.20	-15 7.5	2.244	3.225	4.1	21.2	4 1	13 15.11	-14 9.2	2.302	3.285	3.8	22.8
4 11	13 6.84	-14 8.6	2.232	3.230	2.0	21.0	4 11	13 6.56	-13 20.6	2.280	3.278	1.8	22.7
4 21	12 59.71	-13 4.5	2.250	3.235	4.2	21.2	4 21	12 58.16	-12 26.8	2.287	3.271	4.3	22.9
5 1	12 53.52	-12 0.9	2.295	3.239	7.4	21.4	5 1	12 50.66	-11 33.0	2.324	3.263	7.6	23.0
5 11	12 48.82	-11 3.1	2.366	3.243	10.4	21.6	5 11	12 44.69	-10 44.2	2.386	3.255	10.6	23.2
380115	1994 <i>UJ</i> ₈		4 8.3 144°97	0°3/ 8.6	17		309438	2007 <i>UK</i> ₂₅		4 8.3 59°02	2°8/ 6.4	18	
3 2	13 34.13	-9 24.1	2.038	2.839	13.9								

EPHEMERIDES

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
139706	2001 <i>QT</i> ₂₂₈		4 8.3 97°29	3°9/12.6	17		390990	2005 <i>SP</i> ₆₈		4 8.3 230°04	1°4/ 9.8	16	
3 2	13 31.19	-21 36.6	2.251	3.001	14.3	20.2	3 2	13 34.86	-12 27.9	2.851	3.621	11.2	21.8
3 12	13 27.41	-21 36.7	2.160	3.004	11.8	20.0	3 12	13 29.81	-12 39.4	2.744	3.611	8.8	21.6
3 22	13 21.69	-21 18.6	2.090	3.007	8.9	19.8	3 22	13 23.10	-12 42.0	2.661	3.601	6.1	21.4
4 1	13 14.55	-20 42.4	2.044	3.011	5.9	19.6	4 1	13 15.16	-12 36.3	2.605	3.590	3.2	21.2
4 11	13 6.78	-19 50.7	2.026	3.014	3.9	19.5	4 11	13 6.60	-12 24.2	2.580	3.579	1.4	21.0
4 21	12 59.24	-18 47.9	2.036	3.017	5.0	19.6	4 21	12 58.13	-12 8.2	2.585	3.568	3.9	21.2
5 1	12 52.75	-17 40.3	2.073	3.020	7.9	19.7	5 1	12 50.42	-11 51.6	2.619	3.557	6.9	21.4
5 11	12 47.93	-16 34.6	2.136	3.023	10.9	19.9	5 11	12 44.05	-11 37.8	2.680	3.545	9.7	21.5
65312	2002 <i>JP</i> ₇₆		4 8.3 29°74	1°2/ 9.4	18 R		236105	2005 <i>QJ</i> ₇₅		4 8.3 171°18	1°5/ 9.4	18	
3 2	13 30.79	-13 24.2	1.682	2.489	16.2	19.1	3 2	13 38.61	-12 38.0	1.580	2.379	17.4	21.7
3 12	13 27.58	-13 2.6	1.605	2.493	12.8	18.9	3 12	13 33.88	-12 35.4	1.497	2.381	13.8	21.5
3 22	13 22.01	-12 23.1	1.548	2.499	8.7	18.6	3 22	13 26.34	-12 15.9	1.435	2.384	9.5	21.2
4 1	13 14.73	-11 28.4	1.516	2.505	4.2	18.4	4 1	13 16.68	-11 41.1	1.397	2.386	4.6	20.9
4 11	13 6.73	-10 24.2	1.510	2.511	1.4	18.2	4 11	13 6.05	-10 55.4	1.386	2.387	1.7	20.7
4 21	12 59.06	-9 17.6	1.531	2.517	5.6	18.5	4 21	12 55.75	-10 5.5	1.402	2.387	6.2	21.0
5 1	12 52.73	-8 16.2	1.577	2.524	9.9	18.7	5 1	12 47.01	-9 18.9	1.444	2.388	10.9	21.3
5 11	12 48.46	-7 26.5	1.647	2.531	13.7	19.0	5 11	12 40.72	-8 42.3	1.508	2.387	15.1	21.5
146616	2001 <i>TS</i> ₂₁₃		4 8.3 47°68	5°3/13.2	18		504569	2008 <i>TL</i> ₃₄		4 8.3 197°86	1°1/ 7.1	17	
3 2	13 32.54	-23 4.3	1.686	2.448	17.9	19.6	3 2	13 32.53	-6 30.1	2.396	3.200	12.0	22.4
3 12	13 29.13	-23 16.6	1.604	2.453	14.9	19.4	3 12	13 28.20	-5 53.0	2.305	3.197	9.2	22.3
3 22	13 23.15	-23 4.9	1.541	2.459	11.4	19.2	3 22	13 22.10	-5 6.5	2.238	3.194	6.0	22.0
4 1	13 15.26	-22 28.3	1.501	2.465	7.8	19.0	4 1	13 14.72	-4 14.2	2.198	3.190	2.5	21.8
4 11	13 6.53	-21 29.3	1.486	2.471	5.4	18.9	4 11	13 6.78	-3 20.7	2.188	3.186	1.8	21.7
4 21	12 58.12	-20 14.2	1.497	2.478	6.5	18.9	4 21	12 59.03	-2 31.0	2.207	3.182	5.3	22.0
5 1	12 51.16	-18 51.8	1.533	2.484	9.8	19.1	5 1	12 52.20	-1 49.6	2.253	3.177	8.6	22.2
5 11	12 46.45	-17 31.7	1.593	2.491	13.3	19.4	5 11	12 46.88	-1 19.9	2.325	3.171	11.6	22.3
199680	2006 <i>HT</i> ₈		4 8.3 338°94	1°2/ 9.4	17		159874	2004 <i>RS</i> ₅₃		4 8.3 79°07	1°5/ 6.9	18	
3 2	13 31.54	-12 47.8	1.856	2.656	15.1	20.2	3 2	13 34.82	-5 34.9	1.861	2.676	14.5	20.1
3 12	13 28.02	-12 34.7	1.768	2.654	11.9	20.0	3 12	13 30.20	-5 1.7	1.799	2.698	11.1	19.9
3 22	13 22.26	-12 6.0	1.702	2.652	8.2	19.7	3 22	13 23.46	-4 18.9	1.760	2.719	7.1	19.7
4 1	13 14.85	-11 23.8	1.661	2.649	4.0	19.5	4 1	13 15.28	-3 31.3	1.747	2.739	3.0	19.5
4 11	13 6.68	-10 32.7	1.647	2.648	1.4	19.3	4 11	13 6.61	-2 44.4	1.762	2.760	2.3	19.5
4 21	12 58.74	-9 38.5	1.660	2.646	5.3	19.6	4 21	12 58.41	-2 4.0	1.805	2.781	6.2	19.8
5 1	12 52.00	-8 47.8	1.700	2.644	9.5	19.8	5 1	12 51.53	-1 34.6	1.874	2.801	9.9	20.0
5 11	12 47.18	-8 6.4	1.762	2.643	13.2	20.0	5 11	12 46.57	-1 19.0	1.967	2.821	13.1	20.3
328929	2010 <i>VN</i>		4 8.3 266°89	14°7/ 1.7	18		371100	2005 <i>UC</i> ₅₂₀		4 8.3 332°97	2°8/ 5.9	17	
3 2	13 52.80	+22 24.2	1.165	1.986	21.0	20.0	3 2	13 31.53	-3 30.4	1.567	2.403	15.8	20.9
3 12	13 45.87	+23 20.5	1.103	1.979	18.3	19.7	3 12	13 28.35	-2 44.1	1.487	2.398	12.1	20.7
3 22	13 34.69	+23 57.4	1.060	1.973	15.8	19.6	3 22	13 22.64	-1 46.7	1.430	2.393	7.9	20.4
4 1	13 20.33	+23 59.4	1.036	1.966	14.7	19.5	4 1	13 15.07	-0 44.1	1.396	2.388	3.8	20.2
4 11	13 4.71	+23 15.5	1.035	1.960	15.6	19.5	4 11	13 6.65	+0 15.8	1.389	2.384	3.8	20.2
4 21	12 49.97	+21 43.9	1.056	1.953	18.1	19.6	4 21	12 58.52	+1 5.4	1.408	2.380	8.0	20.4
5 1	12 37.97	+19 30.8	1.097	1.946	21.4	19.8	5 1	12 51.77	+1 38.5	1.451	2.377	12.3	20.6
5 11	12 29.76	+16 47.8	1.155	1.940	24.5	20.0	5 11	12 47.19	+1 51.7	1.515	2.373	16.1	20.9
204204	2004 <i>CP</i> ₈		4 8.3 222°91	4°4/ 3.2	18		225510	2000 <i>QS</i> ₁₀₇		4 8.3 320°19	0°7/ 7.9	17	
3 2	13 30.94	+3 50.3	2.287	3.115	11.7	20.7	3 2	13 32.29	-6 27.9	1.371	2.208	17.6	19.6
3 12	13 27.03	+4 53.6	2.207	3.111	9.0	20.5	3 12	13 29.76	-6 30.2	1.266	2.176	13.9	19.3
3 22	13 21.34	+6 0.0	2.152	3.107	6.3	20.3	3 22	13 24.17	-6 20.6	1.181	2.144	9.3	18.9
4 1	13 14.38	+7 3.6	2.124	3.103	4.5	20.2	4 1	13 15.99	-6 1.5	1.119	2.112	4.0	18.5
4 11	13 6.87	+7 58.3	2.125	3.099	5.3	20.2	4 11	13 6.25	-5 38.1	1.080	2.081	2.0	18.3
4 21	12 59.59	+8 39.2	2.153	3.094	7.8	20.4	4 21	12 56.33	-5 16.8	1.067	2.051	7.8	18.6
5 1	12 53.26	+9 2.9	2.207	3.090	10.7	20.5	5 1	12 47.76	-5 4.5	1.076	2.022	13.5	18.8
5 11	12 48.46	+9 8.2	2.283	3.085	13.3	20.7	5 11	12 41.79	-5 6.9	1.105	1.995	18.5	19.0
364672	2007 <i>TQ</i> ₃₅₄		4 8.3 189°42	1°6/ 7.1	16		384210	2009 <i>CS</i> ₆		4 8.3 349°36	3°6/ 11.6	17	
3 2	13 37.94	-4 50.1	1.834	2.646	14.8	21.5	3 2	13 33.64	-18 11.0	2.091	2.858	14.8	20.7
3 12	13 32.90	-4 28.3	1.749	2.646	11.4	21.2	3 12	13 29.50	-18 36.1	1.998	2.856	12.0	20.5
3 22	13 25.45	-3 57.2	1.687	2.645	7.5	21.0	3 22	13 23.20	-18 45.9	1.927	2.855	8.9	20.3
4 1	13 16.22	-3 20.6	1.651	2.643	3.2	20.7	4 1	13 15.28	-18 39.9	1.881	2.854	5.6	20.1
4 11	13 6.19	-2 44.1	1.643	2.641	2.4	20.7	4 11	13 6.59	-18 19.8	1.862	2.853	3.7	20.0
4 21	12 56.44	-2 13.0	1.663	2.638	6.6	20.9	4 21	12 58.06	-17 49.2	1.870	2.852	5.3	20.1
5 1	12 47.99	-1 52.3	1.709	2.635	10.7	21.1	5 1	12 50.65	-17 13.2	1.905	2.851	8.5	20.3
5 11	12 41.64	-1 45.2	1.779	2.631	14.4	21.4	5 11	12 45.06	-16 37.8	1.965	2.851	11.8	20.5
299935	2006 <i>TH</i> ₃₈		4 8.3 189°34	0°4/ 7.8	17		94679	2001 <i>XO</i> ₂₃		4 8.3 230°89	1°5/ 7.2	18	
3 2	13 31.10	-7 51.8	2.885	3.678	10.5	22.2	3 2	13 37.90	-5 7.5	1.665	2.482	15.9	19.6
3 12	13 26.79	-7 25.4	2.792	3.677	8.1	22.0	3 12	13 33.24	-4 48.7	1.576	2.475	12.3	19.4
3 22	13 21.02	-6 50.9	2.723	3.676	5.3	21.8	3 22	13 25.90	-4 19.6	1.508	2.467	8.1	19.1
4 1	13 14.21	-6 10.9	2.682	3.674	2.2	21.6	4 1	13 16.51	-3 43.9	1.466	2.458	3.5	18.8
4 11	13 6.94	-5 28.7	2.671	3.671	1.1	21.5	4 11	13 6.13	-3 7.4	1.451	2.450	2.5	18.7
4 21	12 59.84	-4 48.1	2.691	3.669	4.2	21.7	4 21	12 55.97	-2 36.2	1.463	2.440	7.1	19.0
5 1	12 53.48	-4 12.8	2.739	3.666	7.1	21.9	5 1	12 47.20	-2 15.9	1.501	2.431	11.7	19.2
5 11	12 48.37	-3 45.7	2.812	3.662	9.8	22.1	5 11	12 40.71	-2 10.2	1.561	2.421	15.7	19.4
434075	2001 <i>XY</i> ₂₂₃		4 8.3 130°11	3°2/12.3	17		417828	2007 <i>FA</i> ₄₇		4 8.3 88°53	3°8/ 5.5	18	
3 2	13 31.06	-20 56.8	2.589										

EPHEMERIDES

4 8.3

4 8.4

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
58702	1998 BX ₄₃		4 8.3 64°57'	2.5/ 6.4	18		267338	2001 VF ₄₅		4 8.4 107°59'	6.3/ 2.8	18	
3 2	13 35.47	- 3 8.2	1.633	2.460	15.7	18.7	3 2	13 37.60	+ 9 5.8	1.932	2.758	13.6	19.8
3 12	13 30.98	- 2 35.1	1.574	2.479	11.9	18.5	3 12	13 32.28	+ 9 58.5	1.874	2.772	10.7	19.7
3 22	13 24.10	- 1 53.7	1.537	2.498	7.7	18.3	3 22	13 24.81	+10 48.6	1.840	2.785	8.0	19.5
4 1	13 15.59	- 1 9.5	1.526	2.518	3.6	18.1	4 1	13 15.89	+11 29.1	1.831	2.798	6.4	19.4
4 11	13 6.53	- 0 29.1	1.541	2.537	3.3	18.1	4 11	13 6.48	+11 53.9	1.850	2.811	7.1	19.5
4 21	12 58.00	+ 0 1.8	1.584	2.556	7.2	18.4	4 21	12 57.54	+11 59.3	1.896	2.824	9.6	19.7
5 1	12 50.97	+ 0 18.9	1.651	2.576	11.2	18.6	5 1	12 49.96	+11 44.1	1.966	2.836	12.4	19.9
5 11	12 46.08	+ 0 20.1	1.741	2.595	14.6	18.9	5 11	12 44.33	+11 9.4	2.058	2.848	14.9	20.1
379715	2011 GR ₂₅		4 8.3 73°49'	2.3/10.4	17		57018	2000 TA ₄₆		4 8.4 314°35'	1.5/ 9.8	17	
3 2	13 34.19	-15 4.8	1.870	2.656	15.6	21.2	3 2	13 30.73	-13 27.1	2.111	2.902	13.8	19.2
3 12	13 30.00	-15 9.1	1.790	2.664	12.4	21.0	3 12	13 27.21	-13 21.6	2.014	2.893	11.0	19.0
3 22	13 23.53	-14 57.4	1.731	2.673	8.7	20.8	3 22	13 21.68	-13 2.2	1.939	2.884	7.6	18.8
4 1	13 15.41	-14 30.9	1.698	2.681	4.8	20.6	4 1	13 14.65	-12 30.3	1.889	2.876	3.9	18.5
4 11	13 6.58	-13 52.9	1.691	2.689	2.4	20.5	4 11	13 6.88	-11 49.4	1.867	2.867	1.6	18.3
4 21	12 58.06	-13 8.6	1.712	2.698	5.2	20.7	4 21	12 59.26	-11 4.1	1.873	2.859	4.8	18.6
5 1	12 50.83	-12 24.3	1.760	2.706	9.1	20.9	5 1	12 52.65	-10 20.1	1.906	2.851	8.6	18.8
5 11	12 45.59	-11 45.8	1.831	2.715	12.6	21.1	5 11	12 47.73	- 9 42.6	1.963	2.843	12.0	19.0
191851	2004 VE ₅₇		4 8.3 193°12'	4.9/ 2.2	17		403886	2011 WW ₁₁₄		4 8.4 159°71'	2.9/ 5.7	18	
3 2	13 32.16	+ 5 22.9	2.447	3.270	11.2	21.0	3 2	13 36.99	- 2 22.6	1.924	2.740	14.1	21.8
3 12	13 27.85	+ 6 43.8	2.368	3.268	8.7	20.8	3 12	13 31.95	- 1 30.9	1.849	2.748	10.8	21.6
3 22	13 21.84	+ 8 7.2	2.315	3.266	6.2	20.7	3 22	13 24.71	- 0 31.0	1.796	2.755	7.0	21.4
4 1	13 14.61	+ 9 26.8	2.291	3.262	4.9	20.6	4 1	13 15.90	+ 0 31.5	1.771	2.761	3.5	21.2
4 11	13 6.87	+10 36.2	2.295	3.259	5.8	20.6	4 11	13 6.46	+ 1 29.9	1.774	2.766	3.7	21.2
4 21	12 59.35	+11 30.1	2.328	3.254	8.1	20.8	4 21	12 57.37	+ 2 17.9	1.806	2.770	7.2	21.4
5 1	12 52.73	+12 5.4	2.387	3.249	10.7	20.9	5 1	12 49.55	+ 2 51.1	1.864	2.774	10.9	21.6
5 11	12 47.58	+12 21.0	2.467	3.244	13.1	21.1	5 11	12 43.68	+ 3 6.8	1.944	2.777	14.1	21.9
78928	2003 SR ₁₂₈		4 8.3 130°57'	5.1/ 1.5	18		490065	2008 TO ₁₀₂		4 8.4 256°19'	0.5/ 7.9	17	
3 2	13 33.04	+ 9 17.2	2.756	3.574	10.2	19.6	3 2	13 37.66	- 7 51.8	1.529	2.345	17.1	22.2
3 12	13 28.18	+10 27.1	2.699	3.591	8.0	19.5	3 12	13 33.45	- 7 38.8	1.433	2.331	13.4	21.9
3 22	13 21.85	+11 35.2	2.668	3.608	6.1	19.4	3 22	13 26.31	- 7 11.9	1.358	2.316	8.9	21.6
4 1	13 14.55	+12 36.0	2.665	3.625	5.1	19.4	4 1	13 16.81	- 6 34.0	1.308	2.300	3.8	21.2
4 11	13 6.92	+13 24.7	2.692	3.641	5.9	19.4	4 11	13 6.08	- 5 50.7	1.284	2.284	1.7	21.1
4 21	12 59.59	+13 57.9	2.746	3.656	7.7	19.6	4 21	12 55.44	- 5 8.9	1.286	2.268	7.2	21.4
5 1	12 53.15	+14 13.8	2.827	3.670	9.8	19.7	5 1	12 46.25	- 4 35.9	1.313	2.251	12.3	21.6
5 11	12 48.05	+14 12.6	2.930	3.684	11.7	19.9	5 11	12 39.55	- 4 17.1	1.362	2.234	16.8	21.8
21055	1990 YR		4 8.3 146°15'	0.6/ 7.7	18		221598	2006 WB ₈₉		4 8.4 358°81'	2.0/ 9.8	17	
3 2	13 34.90	- 6 48.7	2.412	3.209	12.1	18.0	3 2	13 32.34	-13 2.8	1.424	2.240	18.1	20.2
3 12	13 29.93	- 6 29.6	2.330	3.218	9.3	17.8	3 12	13 29.35	-13 12.0	1.344	2.238	14.4	19.9
3 22	13 23.18	- 6 2.2	2.272	3.227	6.1	17.6	3 22	13 23.52	-13 3.4	1.285	2.236	10.0	19.6
4 1	13 15.19	- 5 29.5	2.243	3.235	2.6	17.4	4 1	13 15.55	-12 38.2	1.248	2.236	5.1	19.4
4 11	13 6.69	- 4 55.2	2.242	3.242	1.4	17.3	4 11	13 6.57	-12 0.7	1.235	2.236	2.1	19.2
4 21	12 58.46	- 4 23.5	2.272	3.249	4.9	17.6	4 21	12 57.89	-11 17.4	1.248	2.236	6.3	19.4
5 1	12 51.22	- 3 58.2	2.329	3.256	8.2	17.8	5 1	12 50.76	-10 36.0	1.286	2.238	11.1	19.7
5 11	12 45.54	- 3 42.2	2.411	3.262	11.1	18.0	5 11	12 46.10	-10 3.8	1.344	2.240	15.5	19.9
1731	Smuts		4 8.3 205°73'	1.6/ 6.2	18		204400	2004 TX ₂₉₆		4 8.4 186°62'	1.2/ 7.4	17	
3 2	13 29.83	- 4 9.1	2.742	3.550	10.5	16.1	3 2	13 36.58	- 7 1.5	1.800	2.611	15.1	21.2
3 12	13 25.91	- 3 25.7	2.650	3.546	8.0	15.9	3 12	13 31.93	- 6 27.3	1.716	2.611	11.7	21.0
3 22	13 20.50	- 2 35.4	2.585	3.542	5.2	15.7	3 22	13 24.87	- 5 40.7	1.653	2.610	7.6	20.7
4 1	13 14.04	- 1 41.6	2.547	3.538	2.4	15.5	4 1	13 16.04	- 4 45.8	1.617	2.609	3.2	20.4
4 11	13 7.11	- 0 48.7	2.539	3.534	2.3	15.5	4 11	13 6.41	- 3 48.8	1.608	2.607	2.1	20.4
4 21	13 0.34	- 0 1.0	2.560	3.529	5.1	15.7	4 21	12 57.07	- 2 56.4	1.628	2.605	6.5	20.6
5 1	12 54.34	+ 0 37.6	2.610	3.524	8.0	15.9	5 1	12 49.04	- 2 14.6	1.673	2.602	10.7	20.9
5 11	12 49.60	+ 1 4.6	2.684	3.519	10.6	16.0	5 11	12 43.08	- 1 47.6	1.742	2.599	14.5	21.1
257274	2009 HF ₁		4 8.3 322°36'	2.2/ 6.9	17		413969	2007 DN ₇		4 8.4 54°54'	3.4/ 6.0	18	
3 2	13 32.67	- 4 28.9	1.324	2.166	17.7	20.2	3 2	13 38.16	- 0 7.8	1.487	2.319	16.6	20.2
3 12	13 29.85	- 4 8.0	1.239	2.152	13.8	19.9	3 12	13 33.20	+ 0 14.2	1.433	2.341	12.7	20.0
3 22	13 24.03	- 3 34.7	1.174	2.138	9.1	19.6	3 22	13 25.63	+ 0 41.1	1.402	2.363	8.3	19.8
4 1	13 15.83	- 2 54.2	1.132	2.125	4.0	19.3	4 1	13 16.28	+ 1 7.3	1.395	2.385	4.3	19.6
4 11	13 6.42	- 2 13.6	1.114	2.112	3.2	19.2	4 11	13 6.37	+ 1 26.5	1.414	2.407	4.2	19.6
4 21	12 57.19	- 1 40.9	1.121	2.100	8.4	19.4	4 21	12 57.12	+ 1 34.0	1.460	2.430	8.1	19.9
5 1	12 49.54	- 1 22.9	1.150	2.089	13.6	19.7	5 1	12 49.58	+ 1 26.6	1.530	2.452	12.1	20.2
5 11	12 44.50	- 1 23.7	1.200	2.079	18.1	19.9	5 11	12 44.42	+ 1 3.7	1.622	2.475	15.5	20.5
210454	4307 T- ₃		4 8.3 266°70'	3.4/ 5.3	17		231706	1998 SH ₁₃₂		4 8.4 178°42'	1.5/ 9.8	18	
3 2	13 33.59	- 2 30.4	1.716	2.545	14.9	20.8	3 2	13 36.79	-12 37.1	2.471	3.243	12.6	20.7
3 12	13 29.91	- 1 30.8	1.619	2.526	11.5	20.6	3 12	13 31.49	-12 49.2	2.376	3.245	10.0	20.5
3 22	13 23.74	- 0 19.4	1.545	2.507	7.6	20.3	3 22	13 24.30	-12 51.0	2.305	3.246	6.9	20.3
4 1	13 15.62	+ 0 57.5	1.497	2.487	4.0	20.0	4 1	13 15.73	-12 43.2	2.261	3.246	3.6	20.1
4 11	13 6.50	+ 2 11.8	1.475	2.466	4.4	20.0	4 11	13 6.53	-12 27.9	2.247	3.246	1.6	19.9
4 21	12 57.49	+ 3 15.1	1.481	2.446	8.4	20.2	4 21	12 57.49	-12 8.4	2.263	3.246	4.4	20.1
5 1	12 49.69	+ 4 0.7	1.511	2.425	12.7	20.4	5 1	12 49.43	-11 48.4	2.307	3.245	7.7	20.3
5 11	12 43.98	+ 4 24.6	1.563	2.404	16.6	20.6	5 11	12 42.95	-11 31.9	2.377	3.244	10.7	20.5
376552	2013 NV ₁₅		4 8.3 122°08'	5.3/13.7	17		86391	2000 AE ₈₇		4 8.4 122°41'	3.8/11.3	18	
3 2	13 34.86	-24 30.6	2.014	2.750	16.2	21.3	3 2	13 3					

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
371682	2007 <i>DE</i> ₃₀		4 8.4 200°88	1°3/10.9	18		388311	2006 <i>SQ</i> ₂₉₇		4 8.4 122°63	0°8/ 7.3	17	
3 2	13 25.56	-15 36.6	4.676	5.430	7.3	21.1	3 2	13 29.38	- 8 20.1	2.358	3.163	12.1	21.5
3 12	13 22.10	-15 35.4	4.574	5.429	5.8	20.9	3 12	13 25.80	- 7 28.6	2.274	3.167	9.3	21.3
3 22	13 17.76	-15 27.2	4.497	5.427	4.1	20.8	3 22	13 20.53	- 6 25.9	2.215	3.172	6.0	21.1
4 1	13 12.81	-15 12.8	4.448	5.426	2.4	20.7	4 1	13 14.09	- 5 15.9	2.183	3.176	2.5	20.9
4 11	13 7.59	-14 53.6	4.429	5.425	1.3	20.6	4 11	13 7.16	- 4 4.1	2.181	3.180	1.6	20.8
4 21	13 2.46	-14 31.4	4.440	5.423	2.4	20.7	4 21	13 0.46	- 2 56.1	2.207	3.184	5.1	21.1
5 1	12 57.74	-14 8.1	4.481	5.422	4.2	20.8	5 1	12 54.69	- 1 57.1	2.261	3.188	8.4	21.3
5 11	12 53.75	-13 46.0	4.549	5.420	5.9	20.9	5 11	12 50.37	- 1 11.0	2.339	3.192	11.4	21.5
141194	2001 <i>XE</i> ₁₈₆		4 8.4 136°44	0°1/ 8.2	18		150701	2001 <i>PT</i> ₂₁		4 8.4 220°93	1°3/ 7.1	18	
3 2	13 30.94	- 9 24.2	2.892	3.681	10.6	21.3	3 2	13 34.06	- 6 29.6	2.097	2.905	13.4	21.4
3 12	13 26.62	- 8 53.7	2.810	3.692	8.1	21.1	3 12	13 29.73	- 5 50.5	2.002	2.897	10.3	21.2
3 22	13 20.88	- 8 14.5	2.753	3.704	5.3	21.0	3 22	13 23.32	- 5 0.4	1.931	2.888	6.7	20.9
4 1	13 14.18	- 7 29.0	2.724	3.715	2.3	20.8	4 1	13 15.36	- 4 3.0	1.886	2.879	2.9	20.7
4 11	13 7.11	- 6 40.8	2.725	3.726	0.9	20.7	4 11	13 6.68	- 3 4.1	1.870	2.869	2.1	20.6
4 21	13 0.25	- 5 53.8	2.756	3.736	4.0	20.9	4 21	12 58.18	- 2 9.4	1.883	2.858	6.0	20.8
5 1	12 54.18	- 5 11.8	2.816	3.746	6.9	21.1	5 1	12 50.72	- 1 24.5	1.923	2.848	9.8	21.0
5 11	12 49.35	- 4 37.8	2.902	3.755	9.4	21.3	5 11	12 45.01	- 0 53.5	1.987	2.836	13.2	21.2
425133	2009 <i>SY</i> ₂₃₄		4 8.4 196°25	3°2/ 5.6	17		299242	2005 <i>ME</i> ₂₂		4 8.4 216°00	4°5/ 2.6	18	
3 2	13 38.57	+ 1 25.8	2.170	2.982	12.8	20.9	3 2	13 30.29	+ 5 36.4	2.569	3.394	10.7	21.1
3 12	13 33.00	+ 1 47.0	2.084	2.980	9.9	20.7	3 12	13 26.37	+ 6 41.3	2.489	3.390	8.3	20.9
3 22	13 25.35	+ 2 11.2	2.022	2.978	6.6	20.5	3 22	13 20.86	+ 7 47.8	2.434	3.385	5.9	20.7
4 1	13 16.19	+ 2 34.1	1.988	2.975	3.7	20.3	4 1	13 14.23	+ 8 50.6	2.407	3.380	4.6	20.6
4 11	13 6.37	+ 2 51.1	1.982	2.971	3.9	20.3	4 11	13 7.11	+ 9 44.0	2.409	3.375	5.3	20.7
4 21	12 56.80	+ 2 58.3	2.006	2.967	6.9	20.5	4 21	13 0.19	+10 23.8	2.438	3.370	7.6	20.8
5 1	12 48.35	+ 2 53.1	2.057	2.963	10.3	20.7	5 1	12 54.10	+10 47.0	2.494	3.364	10.1	21.0
5 11	12 41.70	+ 2 34.3	2.132	2.958	13.3	20.9	5 11	12 49.37	+10 52.9	2.572	3.358	12.4	21.1
425062	2009 <i>RZ</i> ₈		4 8.4 201°73	1°1/ 9.3	17		33872	<i>Kristichung</i>		4 8.4 231°98	1°7/10.1	18	
3 2	13 35.17	-11 57.0	2.021	2.812	14.4	22.1	3 2	13 33.53	-15 11.6	2.128	2.906	14.2	19.7
3 12	13 30.67	-11 50.5	1.929	2.809	11.3	21.9	3 12	13 29.40	-14 52.9	2.025	2.896	11.3	19.4
3 22	13 23.98	-11 30.6	1.859	2.807	7.7	21.6	3 22	13 23.17	-14 17.9	1.943	2.885	7.9	19.2
4 1	13 15.65	-10 59.2	1.815	2.804	3.7	21.4	4 1	13 15.33	-13 27.9	1.888	2.873	4.2	18.9
4 11	13 6.56	-10 19.9	1.800	2.801	1.3	21.2	4 11	13 6.70	-12 26.8	1.861	2.861	1.8	18.8
4 21	12 57.68	- 9 37.7	1.812	2.797	5.1	21.5	4 21	12 58.21	-11 20.0	1.863	2.848	4.9	18.9
5 1	12 49.94	- 8 58.2	1.852	2.793	9.1	21.7	5 1	12 50.75	-10 14.3	1.892	2.835	8.8	19.1
5 11	12 44.06	- 8 26.5	1.917	2.789	12.6	21.9	5 11	12 45.05	- 9 15.9	1.946	2.821	12.4	19.3
351591	2005 <i>UH</i> ₄₉₆		4 8.4 187°31	2°9/ 5.7	18		313767	2003 <i>WZ</i> ₁₆₈		4 8.4 136°94	3°0/ 5.3	18	
3 2	13 36.16	- 3 59.8	1.739	2.559	15.1	21.7	3 2	13 36.71	- 1 15.1	2.140	2.953	13.0	22.1
3 12	13 31.66	- 2 53.2	1.657	2.559	11.6	21.4	3 12	13 31.43	- 0 17.7	2.072	2.970	9.9	21.9
3 22	13 24.71	- 1 34.5	1.599	2.559	7.6	21.2	3 22	13 24.20	+ 0 45.9	2.028	2.986	6.5	21.7
4 1	13 15.98	- 0 10.0	1.566	2.557	3.7	21.0	4 1	13 15.66	+ 1 50.3	2.012	3.000	3.5	21.5
4 11	13 6.45	+ 1 11.6	1.562	2.555	3.9	21.0	4 11	13 6.63	+ 2 49.1	2.026	3.015	3.8	21.6
4 21	12 57.24	+ 2 22.4	1.586	2.552	7.9	21.2	4 21	12 57.99	+ 3 37.2	2.068	3.028	6.9	21.8
5 1	12 49.37	+ 3 15.7	1.635	2.548	12.0	21.4	5 1	12 50.53	+ 4 10.4	2.138	3.040	10.1	22.0
5 11	12 43.61	+ 3 48.1	1.706	2.543	15.6	21.6	5 11	12 44.83	+ 4 27.1	2.231	3.051	13.0	22.2
191106	2002 <i>ED</i> ₅₆		4 8.4 214°26	3°3/11.3	17		272533	2005 <i>UC</i> ₃₀₀		4 8.4 252°88	2°6/ 5.7	18	
3 2	13 34.20	-17 46.5	1.955	2.727	15.5	20.6	3 2	13 33.54	- 3 6.6	2.116	2.932	13.0	21.7
3 12	13 30.08	-17 58.1	1.864	2.726	12.6	20.4	3 12	13 29.40	- 2 12.4	2.013	2.912	10.0	21.5
3 22	13 23.67	-17 52.6	1.793	2.725	9.2	20.2	3 22	13 23.17	- 1 8.2	1.933	2.892	6.6	21.2
4 1	13 15.54	-17 30.0	1.747	2.724	5.6	19.9	4 1	13 15.35	+ 0 0.9	1.881	2.871	3.3	21.0
4 11	13 6.60	-16 52.9	1.728	2.723	3.3	19.8	4 11	13 6.71	+ 1 8.7	1.857	2.849	3.5	21.0
4 21	12 57.86	-16 6.0	1.737	2.721	5.4	19.9	4 21	12 58.15	+ 2 8.6	1.862	2.827	7.0	21.1
5 1	12 50.32	-15 15.5	1.773	2.720	9.0	20.1	5 1	12 50.56	+ 2 55.1	1.893	2.804	10.7	21.3
5 11	12 44.74	-14 28.1	1.832	2.718	12.5	20.3	5 11	12 44.69	+ 3 24.4	1.948	2.781	14.1	21.5
171980	2001 <i>TO</i> ₁₄₅		4 8.4 164°09	3°0/ 4.9	18		434422	2005 <i>MG</i> ₂₅		4 8.4 273°47	0°1/ 8.5	16	
3 2	13 34.49	+ 2 37.8	2.840	3.650	10.2	20.7	3 2	13 31.28	-10 7.8	2.435	3.229	12.1	22.2
3 12	13 29.33	+ 3 5.7	2.760	3.655	7.8	20.6	3 12	13 27.43	- 9 44.4	2.322	3.207	9.5	22.0
3 22	13 22.66	+ 3 35.3	2.705	3.659	5.3	20.4	3 22	13 21.76	- 9 9.5	2.233	3.185	6.4	21.7
4 1	13 14.96	+ 4 2.9	2.680	3.663	3.2	20.3	4 1	13 14.71	- 8 25.4	2.171	3.162	2.8	21.5
4 11	13 6.84	+ 4 24.9	2.684	3.667	3.5	20.3	4 11	13 6.94	- 7 35.7	2.138	3.139	1.0	21.3
4 21	12 58.95	+ 4 38.4	2.718	3.670	5.8	20.5	4 21	12 59.22	- 6 45.2	2.134	3.116	4.7	21.5
5 1	12 51.89	+ 4 41.1	2.779	3.673	8.4	20.6	5 1	12 52.31	- 5 58.9	2.158	3.093	8.3	21.7
5 11	12 46.15	+ 4 32.2	2.866	3.675	10.7	20.8	5 11	12 46.86	- 5 21.3	2.206	3.069	11.6	21.9
150063	2006 <i>RA</i> ₄₀		4 8.4 227°87	1°0/ 7.4	17		9090	<i>Chirotenmondai</i>		4 8.4 102°17	5°9/ 3.1	18	
3 2	13 36.02	- 6 44.0	2.076	2.880	13.6	21.8	3 2	13 36.59	+ 8 16.8	1.971	2.798	13.4	17.2
3 12	13 31.31	- 6 14.4	1.976	2.868	10.6	21.5	3 12	13 31.53	+ 9 4.3	1.909	2.808	10.5	17.0
3 22	13 24.41	- 5 34.0	1.900	2.855	6.9	21.3	3 22	13 24.36	+ 9 50.0	1.869	2.817	7.7	16.9
4 1	13 15.86	- 4 46.0	1.850	2.842	2.9	21.0	4 1	13 15.75	+10 27.3	1.857	2.827	6.0	16.8
4 11	13 6.48	- 3 55.7	1.829	2.828	1.9	20.9	4 11	13 6.61	+10 50.3	1.871	2.836	6.7	16.8
4 21	12 57.24	- 3 8.6	1.837	2.813	6.0	21.1	4 21	12 57.90	+10 55.1	1.913	2.845	9.2	17.0
5 1	12 49.06	- 2 30.1	1.872	2.798	9.9	21.3	5 1	12 50.48	+10 40.4	1.979	2.854	12.0	17.2
5 11	12 42.70	- 2 4.4	1.931	2.782	13.5	21.5	5 11	12 44.95	+10 7.0	2.067	2.863	14.7	17.4
269498	2009 <i>US</i> ₅₁		4 8.4 98°98	0°2/ 8.5	17		267335	2001 <i>UB</i> ₂₁₅		4 8.4 87°28	0°3/ 8.0	18	

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
442607	2012 KZ ₈		4 8.4 291°41'	20°0'/16.4	18		58687	1998 BJ ₃		4 8.4 300°41'	2°4'/9.9	18	
3 2	13 35.41	+30 44.4	1.113	1.945	21.0	20.6	3 2	13 33.10	-13 57.5	1.437	2.248	18.2	19.3
3 12	13 32.70	+34 9.1	1.086	1.941	20.1	20.5	3 12	13 30.33	-14 4.1	1.331	2.221	14.8	19.0
3 22	13 26.16	+37 4.0	1.078	1.937	20.2	20.5	3 22	13 24.54	-13 51.5	1.245	2.195	10.5	18.6
4 1	13 16.76	+39 9.9	1.088	1.932	21.2	20.6	4 1	13 16.20	-13 19.6	1.182	2.169	5.6	18.3
4 11	13 6.24	+40 14.7	1.113	1.928	23.0	20.7	4 11	13 6.37	-12 31.5	1.143	2.142	2.4	18.0
4 21	12 56.48	+40 16.5	1.152	1.924	25.0	20.8	4 21	12 56.42	-11 33.8	1.129	2.116	6.8	18.2
5 1	12 49.11	+39 20.7	1.202	1.920	26.9	20.9	5 1	12 47.85	-10 35.7	1.139	2.091	12.3	18.4
5 11	12 45.07	+37 37.7	1.261	1.916	28.6	21.1	5 11	12 41.84	-9 46.4	1.169	2.066	17.2	18.6
463763	2014 SG ₉₈		4 8.4 33°35'	0°3'/8.6	18		496510	2014 UB ₁₃₃		4 8.4 263°17'	3°5'/5.7	16	
3 2	13 32.10	-10 58.6	1.310	2.139	18.7	21.1	3 2	13 37.17	-1 4.5	1.686	2.512	15.3	21.6
3 12	13 29.18	-10 33.4	1.243	2.146	14.6	20.8	3 12	13 32.80	-0 25.0	1.588	2.492	11.9	21.3
3 22	13 23.38	-9 48.8	1.196	2.154	9.7	20.6	3 22	13 25.75	+0 23.2	1.511	2.471	7.9	21.0
4 1	13 15.47	-8 49.1	1.171	2.163	4.3	20.3	4 1	13 16.58	+1 14.6	1.460	2.450	4.2	20.7
4 11	13 6.70	-7 41.7	1.171	2.172	1.4	20.1	4 11	13 6.28	+2 1.8	1.436	2.428	4.4	20.7
4 21	12 58.41	-6 36.0	1.196	2.182	6.9	20.5	4 21	12 56.03	+2 37.8	1.439	2.405	8.5	20.9
5 1	12 51.83	-5 40.6	1.245	2.193	11.9	20.8	5 1	12 47.07	+2 57.0	1.467	2.382	12.9	21.1
5 11	12 47.77	-5 2.0	1.315	2.204	16.2	21.1	5 11	12 40.33	+2 56.5	1.516	2.359	16.9	21.3
391675	2008 AZ ₁₄		4 8.4 56°03'	2°3'/5.8	17		18052	1999 RV ₁₉₉		4 8.4 144°65'	3°1'/12.4	18	
3 2	13 30.00	-3 5.2	2.180	3.001	12.4	21.2	3 2	13 29.50	-21 16.5	2.604	3.349	12.7	17.5
3 12	13 26.36	-2 17.4	2.106	3.009	9.5	21.0	3 12	13 25.87	-20 57.2	2.509	3.352	10.4	17.3
3 22	13 20.94	-1 22.3	2.057	3.017	6.1	20.8	3 22	13 20.59	-20 21.1	2.436	3.355	7.7	17.1
4 1	13 14.28	-0 24.5	2.034	3.025	3.0	20.7	4 1	13 14.14	-19 29.0	2.388	3.357	5.0	16.9
4 11	13 7.13	+0 30.3	2.040	3.034	3.0	20.7	4 11	13 7.19	-18 23.9	2.369	3.360	3.1	16.8
4 21	13 0.27	+1 16.8	2.074	3.042	6.2	20.9	4 21	13 0.45	-17 10.4	2.379	3.362	4.3	16.9
5 1	12 54.41	+1 51.0	2.135	3.050	9.4	21.1	5 1	12 54.58	-15 54.2	2.418	3.364	7.0	17.1
5 11	12 50.12	+2 10.3	2.218	3.059	12.3	21.3	5 11	12 50.13	-14 41.2	2.483	3.366	9.7	17.2
263764	2008 KE ₁₂		4 8.4 281°33'	2°5'/6.3	17		97883	2000 QT ₅₀		4 8.4 218°04'	1°2'/9.4	18	
3 2	13 34.16	-2 57.7	1.744	2.570	14.9	20.9	3 2	13 37.30	-12 25.3	1.842	2.633	15.6	20.1
3 12	13 30.25	-2 26.3	1.653	2.558	11.5	20.6	3 12	13 32.63	-12 18.0	1.745	2.626	12.4	19.8
3 22	13 23.91	-1 45.8	1.585	2.546	7.5	20.4	3 22	13 25.47	-11 55.5	1.671	2.618	8.5	19.6
4 1	13 15.70	-1 1.0	1.542	2.534	3.6	20.1	4 1	13 16.39	-11 19.4	1.621	2.609	4.1	19.3
4 11	13 6.59	-0 18.4	1.526	2.522	3.4	20.1	4 11	13 6.36	-10 33.7	1.599	2.600	1.5	19.1
4 21	12 57.66	+0 15.9	1.537	2.509	7.4	20.3	4 21	12 56.50	-9 43.9	1.606	2.590	5.7	19.3
5 1	12 49.97	+0 36.6	1.573	2.497	11.6	20.5	5 1	12 47.89	-8 56.9	1.639	2.580	10.0	19.6
5 11	12 44.35	+0 40.6	1.632	2.485	15.4	20.7	5 11	12 41.38	-8 18.6	1.696	2.569	14.0	19.8
498027	2007 GP ₁₈		4 8.4 294°27'	2°1'/6.8	17		281622	2008 UQ ₂₆₆		4 8.4 278°01'	1°8'/10.0	17	
3 2	13 37.01	-2 9.1	1.834	2.654	14.5	21.4	3 2	13 32.24	-14 25.0	1.999	2.788	14.6	20.7
3 12	13 32.25	-2 1.6	1.748	2.649	11.2	21.1	3 12	13 28.48	-14 16.6	1.907	2.784	11.6	20.4
3 22	13 25.11	-1 48.2	1.685	2.644	7.4	20.9	3 22	13 22.58	-13 52.6	1.837	2.781	8.1	20.2
4 1	13 16.18	-1 32.6	1.647	2.639	3.4	20.6	4 1	13 15.08	-13 14.6	1.792	2.778	4.3	20.0
4 11	13 6.44	-1 19.7	1.638	2.634	2.9	20.6	4 11	13 6.85	-12 26.2	1.775	2.774	1.8	19.8
4 21	12 56.93	-1 13.5	1.656	2.630	6.8	20.8	4 21	12 58.82	-11 32.8	1.785	2.771	5.0	20.0
5 1	12 48.70	-1 17.9	1.700	2.625	10.8	21.0	5 1	12 51.90	-10 40.6	1.823	2.768	8.9	20.2
5 11	12 42.52	-1 34.7	1.767	2.621	14.4	21.2	5 11	12 46.81	-9 55.6	1.884	2.765	12.4	20.4
382379	2013 TA ₁₁₅		4 8.4 252°58'	3°1'/5.9	18		459947	2014 NQ ₃₇		4 8.4 190°90'	3°3'/11.3	17	
3 2	13 40.19	+0 57.3	2.181	2.989	12.9	21.5	3 2	13 36.51	-18 26.3	1.852	2.621	16.3	21.6
3 12	13 34.49	+1 14.2	2.075	2.968	10.0	21.3	3 12	13 32.02	-18 23.8	1.760	2.620	13.3	21.4
3 22	13 26.53	+1 34.6	1.992	2.947	6.7	21.0	3 22	13 25.05	-18 1.6	1.687	2.619	9.6	21.2
4 1	13 16.82	+1 54.5	1.937	2.925	3.7	20.8	4 1	13 16.20	-17 19.9	1.640	2.617	5.8	20.9
4 11	13 6.19	+2 9.3	1.912	2.902	3.7	20.8	4 11	13 6.46	-16 21.9	1.619	2.614	3.3	20.8
4 21	12 55.62	+2 14.8	1.916	2.878	7.0	20.9	4 21	12 56.95	-15 13.5	1.626	2.611	5.6	20.9
5 1	12 46.07	+2 8.0	1.947	2.854	10.7	21.1	5 1	12 48.76	-14 2.7	1.661	2.607	9.5	21.1
5 11	12 38.34	+1 47.4	2.003	2.829	14.0	21.3	5 11	12 42.69	-12 57.3	1.719	2.603	13.3	21.3
80152	1999 TF ₁₉₅		4 8.4 107°38'	0°3'/8.6	18		123851	2001 CB ₃₇		4 8.4 309°48'	1°8'/6.8	17	
3 2	13 39.27	-9 16.1	1.380	2.197	18.5	19.5	3 2	13 31.35	-5 6.7	1.773	2.599	14.7	19.5
3 12	13 34.66	-9 15.4	1.308	2.204	14.5	19.2	3 12	13 28.04	-4 32.5	1.682	2.586	11.3	19.3
3 22	13 27.00	-8 59.9	1.256	2.212	9.7	19.0	3 22	13 22.43	-3 47.3	1.613	2.574	7.4	19.0
4 1	13 17.05	-8 32.1	1.227	2.219	4.3	18.7	4 1	13 15.07	-2 55.4	1.569	2.562	3.3	18.7
4 11	13 6.14	-7 57.5	1.225	2.226	1.4	18.5	4 11	13 6.86	-2 3.1	1.553	2.550	2.7	18.7
4 21	12 55.68	-7 22.8	1.248	2.233	6.9	18.8	4 21	12 58.83	-1 17.0	1.563	2.539	6.9	18.9
5 1	12 47.03	-6 55.1	1.296	2.239	11.9	19.1	5 1	12 51.97	-0 42.9	1.598	2.528	11.1	19.1
5 11	12 41.08	-6 39.7	1.365	2.246	16.3	19.4	5 11	12 47.07	-0 24.9	1.656	2.517	14.9	19.3
258981	2002 TP ₅		4 8.4 228°49'	0°9'/7.5	17		466885	2015 DJ ₇₉		4 8.4 185°20'	1°7'/6.5	17	
3 2	13 34.53	-7 56.2	2.062	2.866	13.7	21.7	3 2	13 34.21	-4 6.4	2.482	3.287	11.6	22.3
3 12	13 30.18	-7 18.1	1.963	2.855	10.6	21.5	3 12	13 29.43	-3 30.1	2.394	3.287	8.9	22.1
3 22	13 23.68	-6 27.4	1.887	2.843	7.0	21.3	3 22	13 22.92	-2 46.6	2.330	3.286	5.8	21.9
4 1	13 15.56	-5 27.7	1.838	2.830	3.0	21.0	4 1	13 15.16	-1 59.4	2.294	3.285	2.6	21.7
4 11	13 6.65	-4 24.5	1.817	2.817	1.7	20.9	4 11	13 6.86	-1 13.2	2.287	3.283	2.3	21.6
4 21	12 57.88	-3 24.0	1.825	2.803	5.9	21.1	4 21	12 58.77	-0 32.4	2.311	3.281	5.5	21.8
5 1	12 50.17	-2 32.4	1.861	2.789	9.9	21.3	5 1	12 51.60	-0 1.0	2.362	3.278	8.7	22.0
5 11	12 44.25	-1 54.1	1.920	2.773	13.4	21.5	5 11	12 45.91	+0 18.4	2.438	3.274	11.5	22.2
510323	2011 SU ₈		4 8.4 231°55'	1°4'/10.0	17		497347	2005 UX ₁₃₃		4 8.4 201°55'	1°2'/9.6	17	
3 2	13 31.51	-14 18.3	2.708	3.480	11.6	22.6	3 2	13 35.11	-13 25.3	2.499	3.272	12.5	24.2

EPHEMERIDES

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
112351	2002 <i>NO</i> ₁₁		4 8.4 334°05	0°3/ 8.6 17			175525	2006 <i>SP</i> ₇₂		4 8.4 93°22	1°2/ 7.1 18		
3 2	13 30.60	-10 21.3	1.297	2.131	18.6	19.7	3 2	13 32.28	-5 10.9	2.359	3.167	12.0	20.2
3 12	13 28.32	-10 7.8	1.214	2.120	14.6	19.4	3 12	13 27.99	-4 46.9	2.282	3.176	9.2	20.0
3 22	13 23.06	-9 35.5	1.150	2.110	9.8	19.1	3 22	13 21.97	-4 15.5	2.229	3.186	6.0	19.8
4 1	13 15.47	-8 47.6	1.109	2.101	4.4	18.7	4 1	13 14.75	-3 40.0	2.203	3.195	2.6	19.6
4 11	13 6.72	-7 50.3	1.091	2.093	1.4	18.5	4 11	13 7.06	-3 4.7	2.206	3.204	1.9	19.6
4 21	12 58.18	-6 52.5	1.098	2.085	7.2	18.8	4 21	12 59.63	-2 33.7	2.238	3.213	5.2	19.8
5 1	12 51.25	-6 3.2	1.128	2.078	12.6	19.1	5 1	12 53.18	-2 10.7	2.297	3.222	8.4	20.0
5 11	12 46.91	-5 29.7	1.178	2.072	17.3	19.3	5 11	12 48.23	-1 58.3	2.381	3.231	11.3	20.2
470525	2008 <i>CQ</i> ₁₉₈		4 8.4 121°26	4°7/ 13.4 18			289262	2004 <i>XO</i> ₁₁₁		4 8.4 145°02	0°3/ 8.1 18		
3 2	13 35.45	-23 36.2	2.634	3.354	13.2	21.8	3 2	13 38.66	-8 32.0	1.974	2.770	14.5	21.7
3 12	13 30.50	-24 11.3	2.543	3.362	11.0	21.6	3 12	13 33.23	-8 9.3	1.896	2.782	11.2	21.5
3 22	13 23.69	-24 31.5	2.473	3.370	8.6	21.5	3 22	13 25.57	-7 34.9	1.841	2.794	7.4	21.3
4 1	13 15.52	-24 35.5	2.428	3.377	6.3	21.4	4 1	13 16.35	-6 52.3	1.813	2.805	3.1	21.0
4 11	13 6.73	-24 23.9	2.412	3.385	4.8	21.3	4 11	13 6.50	-6 6.2	1.814	2.815	1.3	20.9
4 21	12 58.11	-23 59.2	2.423	3.392	5.3	21.3	4 21	12 57.01	-5 22.2	1.844	2.824	5.6	21.2
5 1	12 50.44	-23 25.5	2.463	3.399	7.4	21.5	5 1	12 48.82	-4 45.6	1.902	2.833	9.5	21.5
5 11	12 44.33	-22 48.1	2.529	3.406	9.8	21.6	5 11	12 42.59	-4 20.4	1.983	2.840	12.9	21.7
286187	2001 <i>UT</i> ₅₆		4 8.4 162°84	0°4/ 8.8 17			172374	2002 <i>XB</i> ₁₀₇		4 8.4 173°92	0°8/ 7.3 18		
3 2	13 31.68	-10 51.3	2.542	3.330	11.8	21.5	3 2	13 31.72	-6 41.2	2.905	3.700	10.4	21.3
3 12	13 27.49	-10 31.1	2.452	3.333	9.2	21.3	3 12	13 27.28	-6 7.7	2.815	3.703	7.9	21.2
3 22	13 21.63	-10 0.2	2.387	3.336	6.2	21.1	3 22	13 21.39	-5 26.6	2.751	3.705	5.1	21.0
4 1	13 14.61	-9 20.9	2.349	3.339	2.8	20.9	4 1	13 14.48	-4 40.8	2.715	3.707	2.2	20.8
4 11	13 7.07	-8 36.9	2.340	3.341	0.9	20.7	4 11	13 7.16	-3 54.0	2.710	3.709	1.4	20.7
4 21	12 59.74	-7 52.2	2.360	3.343	4.3	21.0	4 21	13 0.01	-3 10.0	2.734	3.709	4.4	20.9
5 1	12 53.28	-7 11.4	2.409	3.345	7.5	21.2	5 1	12 53.62	-2 32.5	2.788	3.710	7.2	21.1
5 11	12 48.24	-6 38.2	2.483	3.346	10.4	21.4	5 11	12 48.47	-2 4.2	2.867	3.710	9.8	21.3
275387	2011 <i>AD</i> ₇₇		4 8.4 106°49	3°0/ 10.6 16			76889	2000 <i>YK</i> ₉₇		4 8.4 140°67	2°0/ 6.6 18		
3 2	13 39.66	-14 54.9	1.883	2.659	15.8	21.3	3 2	13 36.02	-4 53.1	1.782	2.599	15.0	20.3
3 12	13 34.29	-15 28.7	1.801	2.668	12.7	21.1	3 12	13 31.42	-4 10.2	1.707	2.607	11.5	20.0
3 22	13 26.46	-15 48.6	1.740	2.677	9.1	20.8	3 22	13 24.49	-3 16.8	1.656	2.615	7.4	19.8
4 1	13 16.79	-15 54.2	1.705	2.685	5.2	20.6	4 1	13 15.91	-2 18.1	1.630	2.622	3.3	19.6
4 11	13 6.29	-15 47.2	1.697	2.693	3.0	20.5	4 11	13 6.65	-1 20.6	1.633	2.629	2.9	19.6
4 21	12 56.10	-15 31.2	1.718	2.701	5.5	20.7	4 21	12 57.78	-0 31.1	1.663	2.636	6.9	19.8
5 1	12 47.26	-15 11.2	1.766	2.709	9.3	20.9	5 1	12 50.25	+0 5.1	1.719	2.642	10.9	20.1
5 11	12 40.57	-14 53.0	1.837	2.717	12.8	21.1	5 11	12 44.76	+0 24.9	1.798	2.648	14.4	20.3
93956	2000 <i>WM</i> ₁₈₄		4 8.4 63°54	7°7/ 1.5 18			3932	Edshay		4 8.4 288°13	8°5/ 14.3 18		
3 2	13 35.25	+11 32.7	1.792	2.626	14.2	19.2	3 2	13 37.61	-27 12.9	1.830	2.555	18.0	16.1
3 12	13 30.77	+12 38.9	1.733	2.632	11.4	19.0	3 12	13 33.52	-28 25.7	1.723	2.537	15.7	15.9
3 22	13 24.00	+13 40.9	1.697	2.638	8.9	18.9	3 22	13 26.51	-29 19.3	1.634	2.519	13.0	15.6
4 1	13 15.65	+14 30.4	1.686	2.644	7.7	18.8	4 1	13 17.06	-29 48.6	1.567	2.501	10.3	15.4
4 11	13 6.73	+15 0.2	1.701	2.650	8.7	18.9	4 11	13 6.16	-29 50.7	1.524	2.483	8.6	15.3
4 21	12 58.24	+15 6.2	1.741	2.657	11.1	19.0	4 21	12 55.11	-29 26.5	1.506	2.465	9.0	15.3
5 1	12 51.14	+14 47.4	1.805	2.663	13.8	19.2	5 1	12 45.32	-28 41.3	1.514	2.447	11.3	15.3
5 11	12 46.06	+14 5.7	1.888	2.669	16.4	19.4	5 11	12 37.92	-27 44.1	1.543	2.429	14.4	15.5
231892	2000 <i>WG</i> ₇₀		4 8.4 100°87	5°5/ 14.6 17			63604	2001 <i>QC</i> ₆₈		4 8.4 151°79	5°2/ 3.6 18		
3 2	13 34.26	-26 46.3	2.102	2.823	16.0	20.7	3 2	13 37.91	+6 46.1	2.133	2.952	12.8	18.4
3 12	13 29.94	-26 49.8	2.022	2.840	13.5	20.6	3 12	13 32.44	+7 29.7	2.063	2.959	9.9	18.3
3 22	13 23.45	-26 30.7	1.962	2.857	10.6	20.4	3 22	13 24.95	+8 12.9	2.017	2.966	7.1	18.1
4 1	13 15.43	-25 48.2	1.926	2.873	7.7	20.3	4 1	13 16.05	+8 49.6	1.998	2.972	5.3	18.0
4 11	13 6.80	-24 44.7	1.915	2.889	5.7	20.2	4 11	13 6.62	+9 14.5	2.008	2.978	5.9	18.1
4 21	12 58.55	-23 25.5	1.932	2.905	6.1	20.2	4 21	12 57.55	+9 23.7	2.046	2.983	8.4	18.2
5 1	12 51.56	-21 58.1	1.977	2.921	8.4	20.4	5 1	12 49.67	+9 15.3	2.109	2.988	11.3	18.4
5 11	12 46.49	-20 31.0	2.047	2.936	11.2	20.6	5 11	12 43.60	+8 49.6	2.195	2.992	13.9	18.6
469125	2015 <i>EG</i> ₂		4 8.4 204°25	3°1/ 5.1 18			88672	2001 <i>RO</i> ₈₅		4 8.4 235°58	0°3/ 8.1 17		
3 2	13 31.91	-1 6.5	2.126	2.949	12.7	21.0	3 2	13 34.25	-10 7.3	1.526	2.343	17.1	20.6
3 12	13 27.96	-0 11.1	2.044	2.947	9.7	20.8	3 12	13 30.68	-9 29.1	1.439	2.337	13.3	20.3
3 22	13 22.10	+0 51.3	1.985	2.945	6.4	20.6	3 22	13 24.37	-8 32.6	1.374	2.331	8.9	20.0
4 1	13 14.85	+1 55.3	1.954	2.942	3.5	20.4	4 1	13 15.99	-7 21.8	1.332	2.325	3.8	19.7
4 11	13 7.00	+2 54.6	1.951	2.940	3.9	20.5	4 11	13 6.61	-6 4.0	1.318	2.318	1.6	19.5
4 21	12 59.39	+3 43.5	1.976	2.937	7.0	20.6	4 21	12 57.48	-4 48.1	1.329	2.312	6.9	19.9
5 1	12 52.81	+4 17.8	2.028	2.934	10.4	20.8	5 1	12 49.82	-3 42.9	1.366	2.305	11.8	20.1
5 11	12 47.88	+4 34.9	2.102	2.931	13.4	21.0	5 11	12 44.50	-2 55.1	1.424	2.298	16.1	20.3
160901	2001 <i>SJ</i> ₃₃₉		4 8.4 120°47	2°1/ 6.3 18			505194	2012 <i>TZ</i> ₁₄₁		4 8.4 190°14	0°8/ 7.5 17		
3 2	13 34.89	-4 10.5	1.973	2.788	13.8	21.0	3 2	13 31.81	-7 9.1	2.278	3.084	12.5	22.2
3 12	13 30.27	-3 25.1	1.903	2.802	10.5	20.8	3 12	13 27.79	-6 38.9	2.191	3.083	9.6	22.0
3 22	13 23.58	-2 31.0	1.856	2.815	6.8	20.6	3 22	13 21.94	-5 58.9	2.127	3.083	6.3	21.8
4 1	13 15.46	-1 33.0	1.836	2.828	3.1	20.4	4 1	13 14.79	-5 12.6	2.090	3.082	2.6	21.5
4 11	13 6.81	-0 37.3	1.845	2.840	2.9	20.4	4 11	13 7.06	-4 24.4	2.082	3.081	1.6	21.4
4 21	12 58.53	+0 10.2	1.882	2.852	6.5	20.6	4 21	12 59.55	-3 39.4	2.102	3.080	5.2	21.7
5 1	12 51.47	+0 45.0	1.945	2.864	10.1	20.9	5 1	12 52.99	-3 2.1	2.150	3.079	8.7	21.9
5 11	12 46.25	+1 4.4	2.032	2.875	13.2	21.1	5 11	12 48.00	-2 36.0	2.222	3.078	11.8	22.1
288699	2004 <i>QY</i> ₁₉		4 8.4 263°73	1°6/ 9.5 16			213228	2000 <i>WM</i> ₄₄		4 8.4 253°93	3°0/ 12.3 17		
3 2	13 37.05	-12 23.3	1.582	2.385	17.2								

EPHEMERIDES

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
215096	3259 <i>T</i> ₋₃		4 8.4 156°40	0°4/ 7.9 18			381514	2008 <i>SL</i> ₁₇₃		4 8.4 178°15	3°5/12.3 17		
3 2	13 35.96	- 9 10.5	2.017	2.815	14.2	21.8	3 2	13 34.15	-20 48.2	2.502	3.243	13.3	21.6
3 12	13 31.16	- 8 34.6	1.935	2.823	11.0	21.6	3 12	13 29.57	-20 49.9	2.404	3.245	10.9	21.4
3 22	13 24.23	- 7 45.8	1.877	2.830	7.2	21.4	3 22	13 23.12	-20 35.7	2.329	3.246	8.2	21.3
4 1	13 15.79	- 6 48.0	1.845	2.837	3.0	21.1	4 1	13 15.32	-20 5.4	2.280	3.246	5.3	21.1
4 11	13 6.72	- 5 46.4	1.842	2.843	1.4	21.0	4 11	13 6.91	-19 21.2	2.258	3.247	3.5	21.0
4 21	12 57.97	- 4 47.4	1.868	2.848	5.6	21.3	4 21	12 58.67	-18 27.1	2.266	3.246	4.7	21.0
5 1	12 50.41	- 3 56.7	1.922	2.853	9.5	21.5	5 1	12 51.39	-17 28.3	2.302	3.245	7.4	21.2
5 11	12 44.71	- 3 18.8	1.999	2.856	12.8	21.7	5 11	12 45.69	-16 30.7	2.364	3.244	10.3	21.4
328760	2009 <i>UE</i> ₉₀		4 8.4 207°89	5°3/ 2.9 17			343063	2009 <i>CN</i> ₂₆		4 8.4 124°39	4°3/12.7 17		
3 2	13 36.14	+ 7 19.9	2.293	3.113	12.0	21.0	3 2	13 35.95	-21 19.9	2.423	3.160	13.8	21.2
3 12	13 31.09	+ 8 13.7	2.211	3.107	9.4	20.8	3 12	13 31.01	-21 50.1	2.334	3.168	11.4	21.0
3 22	13 24.10	+ 9 7.8	2.153	3.101	6.9	20.6	3 22	13 24.10	-22 5.2	2.266	3.176	8.7	20.9
4 1	13 15.73	+ 9 56.0	2.123	3.094	5.3	20.5	4 1	13 15.76	-22 4.3	2.224	3.184	6.0	20.7
4 11	13 6.74	+10 32.5	2.122	3.086	6.1	20.6	4 11	13 6.75	-21 48.4	2.209	3.191	4.3	20.6
4 21	12 57.99	+10 53.1	2.148	3.078	8.5	20.7	4 21	12 57.95	-21 20.4	2.223	3.198	5.2	20.7
5 1	12 50.26	+10 55.4	2.200	3.069	11.3	20.8	5 1	12 50.16	-20 44.9	2.265	3.205	7.7	20.9
5 11	12 44.19	+10 39.1	2.274	3.060	13.8	21.0	5 11	12 44.06	-20 7.5	2.332	3.212	10.4	21.0
299272	2005 <i>NE</i> ₉₉		4 8.4 313°46	0°8/ 7.6 17			422459	2014 <i>SL</i> ₃₁₃		4 8.4 172°70	1°4/ 7.2 16		
3 2	13 29.13	- 8 9.7	1.986	2.802	13.7	21.1	3 2	13 36.24	- 6 5.5	1.893	2.703	14.5	22.3
3 12	13 26.12	- 7 32.3	1.890	2.788	10.6	20.9	3 12	13 31.55	- 5 32.1	1.810	2.706	11.2	22.0
3 22	13 21.07	- 6 42.0	1.816	2.774	7.0	20.6	3 22	13 24.59	- 4 48.0	1.751	2.708	7.3	21.8
4 1	13 14.49	- 5 42.5	1.767	2.760	2.9	20.3	4 1	13 15.99	- 3 57.2	1.717	2.710	3.1	21.6
4 11	13 7.17	- 4 39.2	1.747	2.747	1.7	20.2	4 11	13 6.68	- 3 5.6	1.712	2.711	2.2	21.5
4 21	12 59.98	- 3 38.6	1.754	2.734	5.8	20.5	4 21	12 57.65	- 2 19.2	1.735	2.712	6.3	21.7
5 1	12 53.81	- 2 46.9	1.788	2.721	9.8	20.7	5 1	12 49.88	- 1 43.4	1.785	2.712	10.3	22.0
5 11	12 49.36	- 2 8.9	1.844	2.709	13.4	20.9	5 11	12 44.07	- 1 21.8	1.858	2.711	13.8	22.2
450447	2005 <i>UP</i> ₄₃₈		4 8.4 115°96	0°5/ 8.9 18			500560	2012 <i>US</i> ₅₅		4 8.4 57°56	1°1/ 9.4 17		
3 2	13 36.40	-12 38.1	1.544	2.348	17.5	21.7	3 2	13 32.95	-11 52.2	2.102	2.895	13.8	21.4
3 12	13 32.06	-11 59.3	1.473	2.362	13.7	21.5	3 12	13 28.77	-11 49.2	2.025	2.907	10.8	21.2
3 22	13 25.07	-11 1.2	1.424	2.376	9.2	21.3	3 22	13 22.63	-11 33.9	1.971	2.919	7.4	21.0
4 1	13 16.20	- 9 47.6	1.399	2.390	4.1	21.0	4 1	13 15.10	-11 8.3	1.943	2.931	3.6	20.8
4 11	13 6.60	- 8 26.0	1.401	2.402	1.2	20.8	4 11	13 7.00	-10 35.9	1.943	2.943	1.3	20.7
4 21	12 57.49	- 7 5.1	1.430	2.415	6.2	21.2	4 21	12 59.22	-10 1.3	1.971	2.956	4.7	20.9
5 1	12 49.98	- 5 53.7	1.486	2.427	10.9	21.5	5 1	12 52.54	- 9 29.2	2.026	2.969	8.3	21.2
5 11	12 44.82	- 4 58.2	1.563	2.438	14.9	21.7	5 11	12 47.59	- 9 4.1	2.106	2.981	11.5	21.4
32974	1996 <i>TX</i> ₁₆		4 8.4 228°78	1°2/ 9.8 18			43023	1999 <i>VS</i> ₁₂		4 8.4 208°85	3°5/ 5.0 18		
3 2	13 30.37	-14 34.4	2.392	3.172	12.7	19.0	3 2	13 37.48	+ 0 57.9	2.234	3.046	12.5	19.5
3 12	13 26.69	-14 5.1	2.294	3.167	10.1	18.8	3 12	13 32.21	+ 1 42.8	2.142	3.039	9.6	19.3
3 22	13 21.25	-13 21.1	2.218	3.161	7.0	18.5	3 22	13 24.92	+ 2 32.7	2.075	3.031	6.5	19.1
4 1	13 14.51	-12 24.5	2.170	3.156	3.5	18.3	4 1	13 16.12	+ 3 22.4	2.036	3.021	3.8	18.9
4 11	13 7.18	-11 19.2	2.149	3.150	1.3	18.1	4 11	13 6.63	+ 4 6.4	2.026	3.011	4.2	18.9
4 21	13 0.02	-10 10.6	2.158	3.143	4.4	18.3	4 21	12 57.33	+ 4 39.6	2.045	3.001	7.2	19.1
5 1	12 53.76	- 9 4.3	2.195	3.137	7.8	18.5	5 1	12 49.07	+ 4 58.3	2.091	2.989	10.5	19.2
5 11	12 48.99	- 8 5.9	2.258	3.131	11.0	18.7	5 11	12 42.52	+ 5 0.8	2.161	2.976	13.5	19.4
392539	2011 <i>RO</i> ₁		4 8.4 268°07	5°1/13.0 18			48800	1997 <i>TS</i> ₂₂		4 8.4 109°51	0°4/ 8.8 18		
3 2	13 35.91	-22 30.8	2.326	3.060	14.3	21.2	3 2	13 32.62	-10 29.5	2.183	2.979	13.3	19.2
3 12	13 31.22	-23 14.2	2.227	3.057	12.0	21.0	3 12	13 28.48	-10 11.8	2.100	2.985	10.3	19.0
3 22	13 24.39	-23 42.2	2.150	3.054	9.4	20.8	3 22	13 22.43	- 9 42.4	2.040	2.991	6.9	18.8
4 1	13 15.93	-23 53.1	2.097	3.051	6.7	20.6	4 1	13 15.02	- 9 3.7	2.007	2.997	3.1	18.6
4 11	13 6.66	-23 47.0	2.071	3.048	5.1	20.5	4 11	13 7.04	- 8 20.0	2.002	3.003	1.0	18.4
4 21	12 57.48	-23 26.3	2.074	3.045	5.9	20.6	4 21	12 59.32	- 7 36.1	2.025	3.009	4.8	18.7
5 1	12 49.32	-22 55.3	2.103	3.042	8.3	20.7	5 1	12 52.64	- 6 56.9	2.076	3.014	8.4	19.0
5 11	12 42.92	-22 20.0	2.158	3.039	11.1	20.9	5 11	12 47.61	- 6 26.6	2.152	3.020	11.6	19.2
508290	2015 <i>KU</i> ₁₆		4 8.4 242°13	4°4/ 2.6 17			78826	2003 <i>QE</i> ₁₇		4 8.4 188°44	1°0/ 9.4 18		
3 2	13 29.51	+ 4 30.4	2.563	3.390	10.7	21.9	3 2	13 35.87	-13 25.3	2.173	2.952	13.9	20.6
3 12	13 25.85	+ 5 41.4	2.478	3.381	8.2	21.7	3 12	13 31.08	-12 55.8	2.078	2.952	11.0	20.4
3 22	13 20.59	+ 6 55.4	2.419	3.372	5.8	21.5	3 22	13 24.21	-12 11.2	2.006	2.951	7.5	20.2
4 1	13 14.20	+ 8 6.7	2.387	3.363	4.4	21.4	4 1	13 15.83	-11 13.5	1.961	2.948	3.6	20.0
4 11	13 7.30	+ 9 9.6	2.385	3.353	5.2	21.4	4 11	13 6.75	-10 7.4	1.944	2.945	1.2	19.8
4 21	13 0.55	+ 9 59.2	2.410	3.344	7.5	21.6	4 21	12 57.89	- 8 58.7	1.958	2.941	4.9	20.0
5 1	12 54.62	+10 32.3	2.461	3.334	10.1	21.7	5 1	12 50.12	- 7 53.7	1.999	2.936	8.7	20.2
5 11	12 50.03	+10 47.4	2.535	3.324	12.5	21.9	5 11	12 44.11	- 6 58.2	2.066	2.931	12.2	20.4
395774	2012 <i>VZ</i> ₇₄		4 8.4 315°78	3°2/ 5.2 17			380910	2006 <i>DO</i> ₂₁₃		4 8.4 212°70	0°7/ 9.1 17		
3 2	13 30.97	- 0 13.3	2.086	2.914	12.7	20.5	3 2	13 33.46	-11 23.7	2.056	2.851	14.0	21.1
3 12	13 27.33	+ 0 30.0	2.002	2.907	9.7	20.3	3 12	13 29.34	-11 10.2	1.965	2.849	11.0	20.9
3 22	13 21.74	+ 1 19.2	1.941	2.901	6.5	20.0	3 22	13 23.13	-10 43.6	1.897	2.847	7.4	20.7
4 1	13 14.74	+ 2 9.1	1.906	2.895	3.6	19.9	4 1	13 15.38	-10 6.1	1.855	2.844	3.5	20.4
4 11	13 7.11	+ 2 53.9	1.900	2.889	4.0	19.9	4 11	13 6.91	- 9 21.7	1.840	2.842	1.1	20.3
4 21	12 59.68	+ 3 28.5	1.921	2.883	7.1	20.0	4 21	12 58.66	- 8 35.6	1.854	2.839	5.1	20.5
5 1	12 53.28	+ 3 48.9	1.968	2.877	10.4	20.2	5 1	12 51.49	- 7 53.3	1.896	2.836	9.0	20.8
5 11	12 48.53	+ 3 53.0	2.037	2.872	13.5	20.4	5 11	12 46.11	- 7 19.7	1.961	2.833	12.4	21.0
119430	2001 <i>TK</i> ₁₂₄		4 8.4 249°41	3°7/11.9 17			229132	2004 <i>RH</i> ₂₁₈		4 8.4 242°66	4°9/13.4 18		

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
504380	2007 VE ₁₂₄		4 8.4 220°38'	2°0'	6.1	17	286464	2002 AE ₁₃₆		4 8.4 92°53'	1°5'	7.0	18
3 2	13 32.98	- 2 14.6	2.719	3.525	10.7	22.1	3 2	13 34.04	- 6 21.7	1.876	2.691	14.4	21.3
3 12	13 28.42	- 1 41.2	2.621	3.516	8.2	21.9	3 12	13 29.73	- 5 38.0	1.809	2.707	11.0	21.1
3 22	13 22.27	- 1 2.3	2.549	3.506	5.3	21.7	3 22	13 23.30	- 4 43.5	1.765	2.724	7.1	20.9
4 1	13 14.95	- 0 21.1	2.505	3.495	2.6	21.5	4 1	13 15.41	- 3 43.0	1.748	2.740	3.0	20.7
4 11	13 7.09	+ 0 18.0	2.491	3.484	2.6	21.5	4 11	13 7.00	- 2 42.8	1.758	2.756	2.3	20.7
4 21	12 59.35	+ 0 51.3	2.507	3.473	5.4	21.6	4 21	12 58.99	- 1 49.3	1.796	2.772	6.2	21.0
5 1	12 52.41	+ 1 15.3	2.550	3.461	8.3	21.8	5 1	12 52.26	- 1 7.6	1.861	2.788	10.0	21.2
5 11	12 46.80	+ 1 27.8	2.619	3.448	11.0	22.0	5 11	12 47.41	- 0 41.0	1.949	2.803	13.2	21.5
271112	2003 RK ₁₈		4 8.4 226°26'	2°2'	5.8	18	196686	2003 SC ₆₅		4 8.4 263°31'	0°8'	9.1	18
3 2	13 31.72	- 3 48.3	2.407	3.218	11.7	21.4	3 2	13 34.33	- 10 54.4	2.118	2.912	13.7	20.2
3 12	13 27.69	- 2 49.3	2.310	3.208	9.0	21.2	3 12	13 30.09	- 10 49.9	2.014	2.897	10.8	20.0
3 22	13 21.90	- 1 41.2	2.238	3.197	5.8	20.9	3 22	13 23.71	- 10 33.4	1.933	2.882	7.4	19.8
4 1	13 14.82	- 0 28.6	2.195	3.185	2.8	20.7	4 1	13 15.70	- 10 6.6	1.878	2.867	3.5	19.5
4 11	13 7.13	+ 0 42.6	2.180	3.173	3.0	20.7	4 11	13 6.85	- 9 32.8	1.851	2.852	1.1	19.3
4 21	12 59.59	+ 1 46.9	2.196	3.161	6.1	20.9	4 21	12 58.08	- 8 56.5	1.853	2.837	5.1	19.5
5 1	12 52.92	+ 2 39.2	2.238	3.148	9.4	21.1	5 1	12 50.32	- 8 23.0	1.882	2.821	9.0	19.7
5 11	12 47.72	+ 3 16.3	2.305	3.134	12.3	21.2	5 11	12 44.31	- 7 56.9	1.935	2.806	12.6	19.9
289141	2004 VJ ₈		4 8.4 88°09'	2°0'	6.7	18	103767	2000 CK ₁₄₇		4 8.4 169°20'	2°5'	5.6	18
3 2	13 37.09	- 5 50.8	1.527	2.349	16.8	20.7	3 2	13 31.51	- 2 42.4	2.259	3.077	12.2	21.0
3 12	13 32.41	- 5 0.2	1.470	2.372	12.8	20.5	3 12	13 27.55	- 1 48.7	2.178	3.079	9.3	20.9
3 22	13 25.19	- 3 57.4	1.434	2.394	8.2	20.3	3 22	13 21.80	- 0 47.5	2.121	3.080	6.1	20.6
4 1	13 16.22	- 2 48.5	1.424	2.416	3.6	20.0	4 1	13 14.77	+ 0 16.5	2.092	3.082	3.1	20.5
4 11	13 6.68	- 1 41.7	1.440	2.438	3.0	20.0	4 11	13 7.22	+ 1 17.3	2.091	3.083	3.2	20.5
4 21	12 57.75	- 0 44.8	1.484	2.459	7.3	20.3	4 21	12 59.90	+ 2 9.7	2.119	3.084	6.3	20.7
5 1	12 50.45	- 0 3.5	1.553	2.480	11.6	20.6	5 1	12 53.55	+ 2 49.2	2.174	3.085	9.6	20.9
5 11	12 45.46	+ 0 19.0	1.644	2.500	15.2	20.9	5 11	12 48.75	+ 3 13.2	2.252	3.085	12.4	21.1
100440	1996 PJ ₆		4 8.4 191°00'	0°1'	8.3	17	91128	1998 HV ₁₃₃		4 8.4 7°20'	3°4'	5.5	18
3 2	13 36.22	- 10 0.2	2.100	2.893	13.9	21.0	3 2	13 33.05	- 1 3.3	1.732	2.564	14.7	19.6
3 12	13 31.40	- 9 26.6	2.007	2.892	10.8	20.8	3 12	13 29.29	- 0 19.7	1.656	2.564	11.3	19.3
3 22	13 24.46	- 8 39.7	1.938	2.890	7.2	20.6	3 22	13 23.22	+ 0 31.2	1.603	2.564	7.4	19.1
4 1	13 15.95	- 7 42.5	1.895	2.887	3.1	20.3	4 1	13 15.46	+ 1 23.5	1.575	2.565	4.0	18.9
4 11	13 6.74	- 6 40.3	1.882	2.883	1.2	20.1	4 11	13 6.99	+ 2 10.4	1.574	2.565	4.2	18.9
4 21	12 57.74	- 5 38.9	1.898	2.878	5.4	20.4	4 21	12 58.83	+ 2 45.6	1.600	2.566	7.8	19.1
5 1	12 49.86	- 4 44.4	1.941	2.873	9.3	20.7	5 1	12 51.96	+ 3 4.7	1.651	2.567	11.7	19.3
5 11	12 43.78	- 4 1.7	2.009	2.867	12.8	20.9	5 11	12 47.10	+ 3 5.6	1.723	2.569	15.1	19.6
308441	2005 SL ₁₈₃		4 8.4 290°69'	0°8'	9.1	16	431932	2008 TO ₁₄₄		4 8.4 166°14'	0°4'	7.9	17
3 2	13 34.77	- 9 46.6	2.299	3.090	12.9	20.9	3 2	13 33.30	- 8 18.1	2.171	2.973	13.2	22.2
3 12	13 30.26	- 9 58.5	2.193	3.075	10.1	20.7	3 12	13 29.05	- 7 51.5	2.085	2.975	10.2	22.0
3 22	13 23.73	- 10 1.3	2.111	3.060	6.9	20.5	3 22	13 22.85	- 7 14.1	2.023	2.978	6.7	21.8
4 1	13 15.67	- 9 56.3	2.055	3.044	3.2	20.2	4 1	13 15.26	- 6 29.1	1.987	2.979	2.8	21.6
4 11	13 6.82	- 9 45.9	2.028	3.029	1.1	20.0	4 11	13 7.06	- 5 41.1	1.980	2.981	1.3	21.4
4 21	12 58.03	- 9 33.3	2.030	3.014	4.7	20.2	4 21	12 59.11	- 4 55.2	2.002	2.982	5.2	21.7
5 1	12 50.16	- 9 22.2	2.060	2.999	8.4	20.4	5 1	12 52.19	- 4 16.3	2.051	2.983	8.9	21.9
5 11	12 43.91	- 9 16.3	2.114	2.984	11.7	20.6	5 11	12 46.95	- 3 48.4	2.125	2.984	12.1	22.1
349463	2008 CB ₁₃₇		4 8.4 183°70'	4°8'	15.1	18	213845	2003 SC ₅₀		4 8.4 160°91'	0°6'	9.1	18
3 2	13 34.36	- 28 22.1	3.369	4.045	11.3	22.2	3 2	13 35.72	- 12 43.2	2.068	2.854	14.3	21.4
3 12	13 29.37	- 28 42.6	3.263	4.045	9.7	22.0	3 12	13 30.99	- 12 7.8	1.983	2.861	11.2	21.2
3 22	13 22.84	- 28 48.7	3.178	4.045	7.9	21.9	3 22	13 24.17	- 11 17.0	1.921	2.868	7.5	20.9
4 1	13 15.19	- 28 39.2	3.119	4.044	6.1	21.8	4 1	13 15.84	- 10 13.7	1.885	2.874	3.5	20.7
4 11	13 7.02	- 28 14.5	3.087	4.043	4.9	21.7	4 11	13 6.88	- 9 3.1	1.878	2.879	1.0	20.5
4 21	12 58.95	- 27 36.9	3.085	4.041	5.0	21.7	4 21	12 58.21	- 7 51.6	1.900	2.883	5.1	20.8
5 1	12 51.62	- 26 49.6	3.111	4.038	6.4	21.8	5 1	12 50.72	- 6 45.8	1.950	2.887	9.0	21.1
5 11	12 45.53	- 25 57.4	3.164	4.035	8.2	21.9	5 11	12 45.06	- 5 51.2	2.025	2.890	12.4	21.3
405447	2004 TV ₉₀		4 8.4 211°35'	0°9'	9.2	16	354820	2005 WR ₉₇		4 8.4 267°24'	3°1'	6.1	17
3 2	13 37.58	- 11 51.0	1.852	2.644	15.5	22.4	3 2	13 38.11	- 2 45.9	1.576	2.401	16.2	21.2
3 12	13 32.85	- 11 38.4	1.756	2.638	12.2	22.2	3 12	13 33.89	- 2 6.8	1.473	2.377	12.7	20.9
3 22	13 25.64	- 11 10.7	1.683	2.631	8.3	21.9	3 22	13 26.74	- 1 16.3	1.391	2.351	8.4	20.6
4 1	13 16.55	- 10 29.9	1.635	2.624	3.9	21.6	4 1	13 17.21	- 0 19.6	1.333	2.325	4.2	20.2
4 11	13 6.53	- 9 40.3	1.614	2.615	1.3	21.4	4 11	13 6.33	+ 0 35.7	1.303	2.297	4.1	20.2
4 21	12 56.68	- 8 47.8	1.622	2.607	5.7	21.7	4 21	12 55.39	+ 1 21.3	1.299	2.270	8.7	20.3
5 1	12 48.09	- 7 59.1	1.657	2.597	10.1	21.9	5 1	12 45.77	+ 1 50.4	1.320	2.241	13.6	20.5
5 11	12 41.60	- 7 20.2	1.716	2.587	14.0	22.1	5 11	12 38.55	+ 1 58.8	1.362	2.212	18.0	20.7
454223	2013 JG ₁₈		4 8.4 327°43'	18°5'	23.1	17	282765	2006 HT ₇₉		4 8.4 264°24'	1°6'	10.1	17
3 2	13 40.25	+ 31 15.5	1.240	2.056	20.3	19.8	3 2	13 30.49	- 15 33.8	2.089	2.873	14.2	21.0
3 12	13 36.26	+ 33 3.0	1.189	2.039	19.0	19.7	3 12	13 27.10	- 15 4.4	1.993	2.867	11.3	20.8
3 22	13 28.48	+ 34 24.9	1.155	2.022	18.5	19.6	3 22	13 21.69	- 14 17.5	1.919	2.862	7.9	20.6
4 1	13 17.87	+ 35 5.2	1.139	2.007	18.9	19.6	4 1	13 14.80	- 13 15.2	1.871	2.856	4.1	20.3
4 11	13 6.10	+ 34 52.7	1.140	1.992	20.2	19.6	4 11	13 7.23	- 12 2.0	1.850	2.850	1.6	20.1
4 21	12 55.02	+ 33 44.7	1.158	1.978	22.1	19.7	4 21	12 59.84	- 10 44.2	1.858	2.844	4.8	20.3
5 1	12 46.25	+ 31 45.5	1.191	1.966	24.3	19.8	5 1	12 53.49	- 9 28.9	1.893	2.838	8.6	20.5
5 11	12 40.78	+ 29 5.2	1.237	1.954	26.4	19.9	5 11	12 48.84	- 8 22.4	1.953	2.833	12.1	20.7
501021	2013 RW ₅₅		4 8.4 167°44'	4°9'	13.5	17	502488	2015 BM ₃₅₆	</				

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
273847	2007 <i>GZ</i> ₄₂		4 8.4 248°52	0°5/ 7.9	17		88767	2001 <i>SR</i> ₆₉		4 8.4 170°80	2°2/ 6.1	17	
3 2	13 34.85	- 7 22.3	2.143	2.946	13.3	21.5	3 2	13 34.18	- 3 37.7	2.271	3.081	12.4	20.7
3 12	13 30.42	- 7 6.0	2.042	2.933	10.3	21.2	3 12	13 29.59	- 2 48.5	2.188	3.085	9.5	20.5
3 22	13 23.90	- 6 39.7	1.965	2.919	6.8	21.0	3 22	13 23.15	- 1 51.3	2.130	3.088	6.2	20.3
4 1	13 15.78	- 6 6.1	1.914	2.906	2.9	20.7	4 1	13 15.40	- 0 50.6	2.100	3.090	2.9	20.1
4 11	13 6.88	- 5 29.5	1.891	2.891	1.4	20.6	4 11	13 7.10	+ 0 8.0	2.099	3.093	2.9	20.1
4 21	12 58.08	- 4 54.4	1.897	2.877	5.5	20.8	4 21	12 59.04	+ 0 59.1	2.127	3.094	6.1	20.3
5 1	12 50.29	- 4 25.9	1.931	2.862	9.4	21.0	5 1	12 52.00	+ 1 38.4	2.182	3.095	9.4	20.5
5 11	12 44.22	- 4 7.7	1.988	2.847	12.8	21.2	5 11	12 46.56	+ 2 3.1	2.261	3.095	12.4	20.7
466619	2014 <i>VY</i> ₁₉		4 8.4 36°55	0°0/ 8.3	17		373842	2003 <i>FT</i>		4 8.4 308°43	1°5/ 7.4	17	
3 2	13 32.97	- 9 44.5	1.403	2.229	17.8	20.8	3 2	13 37.81	- 3 45.8	1.695	2.514	15.5	20.4
3 12	13 29.66	- 9 27.2	1.339	2.241	13.8	20.6	3 12	13 33.20	- 3 48.7	1.607	2.507	12.1	20.2
3 22	13 23.63	- 8 53.9	1.296	2.254	9.2	20.3	3 22	13 25.98	- 3 44.5	1.541	2.499	7.9	19.9
4 1	13 15.67	- 8 8.4	1.276	2.268	4.0	20.1	4 1	13 16.77	- 3 36.4	1.500	2.492	3.5	19.6
4 11	13 6.96	- 7 17.4	1.281	2.282	1.4	19.9	4 11	13 6.60	- 3 28.8	1.486	2.485	2.3	19.5
4 21	12 58.74	- 6 28.4	1.312	2.297	6.5	20.3	4 21	12 56.63	- 3 26.0	1.499	2.478	6.8	19.8
5 1	12 52.15	- 5 48.6	1.367	2.312	11.2	20.6	5 1	12 48.02	- 3 32.0	1.538	2.472	11.2	20.0
5 11	12 47.95	- 5 23.2	1.444	2.328	15.3	20.9	5 11	12 41.63	- 3 49.4	1.600	2.465	15.1	20.2
285967	2001 <i>RL</i> ₉₉		4 8.4 228°36	2°0/ 9.9	17		127862	2003 <i>FT</i> ₁₁₆		4 8.4 346°25	2°6/ 6.6	18	
3 2	13 38.49	-13 43.0	1.687	2.478	16.8	21.1	3 2	13 29.97	- 5 41.0	1.152	2.006	19.1	19.8
3 12	13 33.92	-13 48.2	1.591	2.469	13.5	20.9	3 12	13 28.08	- 4 55.6	1.080	1.999	14.8	19.5
3 22	13 26.58	-13 37.0	1.515	2.460	9.4	20.6	3 22	13 23.05	- 3 52.9	1.026	1.993	9.7	19.2
4 1	13 17.07	-13 9.8	1.464	2.450	4.9	20.3	4 1	13 15.60	- 2 39.7	0.994	1.988	4.3	18.9
4 11	13 6.44	-12 30.1	1.439	2.439	2.1	20.1	4 11	13 7.01	- 1 26.5	0.986	1.984	3.8	18.8
4 21	12 55.93	-11 43.4	1.442	2.428	6.0	20.3	4 21	12 58.77	- 0 24.1	1.001	1.981	9.1	19.1
5 1	12 46.99	-10 57.0	1.471	2.416	10.7	20.5	5 1	12 52.29	+ 0 18.6	1.038	1.979	14.5	19.4
5 11	12 39.79	-10 18.0	1.524	2.404	14.9	20.7	5 11	12 48.56	+ 0 36.5	1.093	1.978	19.1	19.6
126492	2002 <i>CQ</i> ₅₆		4 8.4 322°15	4°3/10.9	17		506434	2000 <i>UR</i> ₅₉		4 8.4 176°17	2°1/11.1	18	
3 2	13 33.35	-15 37.9	1.493	2.295	18.1	18.1	3 2	13 33.64	-16 52.8	3.280	4.026	10.3	22.5
3 12	13 30.61	-16 26.0	1.384	2.265	14.9	17.8	3 12	13 28.71	-16 58.2	3.180	4.028	8.3	22.3
3 22	13 24.85	-16 59.4	1.293	2.234	11.0	17.5	3 22	13 22.37	-16 53.3	3.104	4.030	6.0	22.2
4 1	13 16.52	-17 16.0	1.225	2.205	6.9	17.2	4 1	13 15.03	-16 38.6	3.056	4.031	3.6	22.0
4 11	13 6.58	-17 15.6	1.181	2.176	4.3	16.9	4 11	13 7.23	-16 15.7	3.038	4.032	2.1	21.9
4 21	12 56.39	-17 1.1	1.162	2.148	7.1	17.0	4 21	12 59.56	-15 47.3	3.051	4.033	3.5	22.0
5 1	12 47.46	-16 38.4	1.167	2.121	11.8	17.2	5 1	12 52.58	-15 16.4	3.093	4.032	5.9	22.1
5 11	12 41.04	-16 15.5	1.193	2.095	16.5	17.4	5 11	12 46.77	-14 46.7	3.162	4.032	8.3	22.3
33032	1997 <i>RQ</i> ₈		4 8.4 208°24	0°8/ 9.2	18		31345	1998 <i>PG</i>		4 8.4 179°08	1°4/ 9.8	18	
3 2	13 34.70	-12 15.1	2.225	3.010	13.4	20.5	3 2	13 40.61	-15 7.3	2.028	2.796	15.1	22.0
3 12	13 30.20	-11 53.3	2.127	3.004	10.6	20.3	3 12	13 34.90	-14 33.9	1.934	2.800	12.0	21.8
3 22	13 23.69	-11 18.0	2.051	2.998	7.2	20.1	3 22	13 26.85	-13 42.4	1.863	2.803	8.3	21.6
4 1	13 15.68	-10 31.1	2.002	2.991	3.4	19.8	4 1	13 17.07	-12 35.0	1.818	2.804	4.2	21.3
4 11	13 6.96	- 9 36.8	1.982	2.984	1.1	19.6	4 11	13 6.52	-11 16.5	1.803	2.804	1.5	21.1
4 21	12 58.41	- 8 40.2	1.992	2.975	4.8	19.9	4 21	12 56.24	- 9 53.9	1.818	2.802	5.2	21.4
5 1	12 50.86	- 7 47.2	2.029	2.967	8.6	20.1	5 1	12 47.24	- 8 34.9	1.862	2.798	9.3	21.6
5 11	12 45.00	- 7 2.7	2.091	2.957	12.0	20.3	5 11	12 40.27	- 7 26.3	1.931	2.794	13.0	21.8
363036	1999 <i>RL</i> ₁₇₂		4 8.4 249°46	1°2/ 7.4	17		370043	2000 <i>SX</i> ₈₁		4 8.4 109°97	1°8/ 6.4	18	
3 2	13 36.54	- 6 30.3	1.927	2.734	14.4	21.8	3 2	13 33.36	- 6 6.7	2.235	3.042	12.7	21.5
3 12	13 32.05	- 6 0.2	1.822	2.716	11.2	21.6	3 12	13 28.84	- 4 58.8	2.169	3.064	9.6	21.3
3 22	13 25.17	- 5 18.2	1.739	2.696	7.4	21.3	3 22	13 22.55	- 3 41.1	2.128	3.085	6.2	21.2
4 1	13 16.42	- 4 28.0	1.683	2.676	3.2	21.0	4 1	13 15.09	- 2 18.7	2.115	3.106	2.7	21.0
4 11	13 6.68	- 3 35.0	1.656	2.655	2.1	20.9	4 11	13 7.23	- 0 58.2	2.131	3.127	2.5	21.0
4 21	12 56.99	- 2 45.4	1.656	2.633	6.5	21.1	4 21	12 59.74	+ 0 14.3	2.177	3.147	5.8	21.2
5 1	12 48.41	- 2 5.4	1.683	2.611	10.8	21.3	5 1	12 53.33	+ 1 14.0	2.251	3.166	9.1	21.5
5 11	12 41.77	- 1 39.4	1.734	2.588	14.6	21.5	5 11	12 48.51	+ 1 57.7	2.349	3.185	11.9	21.7
251349	2007 <i>TM</i> ₃₉		4 8.4 312°79	1°9/ 7.1	17		210384	2007 <i>VL</i> ₉₈		4 8.4 155°53	1°3/ 9.9	17	
3 2	13 33.74	- 5 1.0	1.333	2.172	17.8	20.5	3 2	13 32.78	-13 45.3	2.652	3.425	11.8	21.5
3 12	13 30.80	- 4 41.6	1.245	2.156	13.9	20.2	3 12	13 28.33	-13 32.4	2.562	3.431	9.3	21.3
3 22	13 24.81	- 4 9.4	1.177	2.141	9.2	19.9	3 22	13 22.23	-13 7.8	2.496	3.437	6.4	21.2
4 1	13 16.39	- 3 28.9	1.133	2.126	4.0	19.6	4 1	13 14.99	-12 33.2	2.457	3.442	3.3	21.0
4 11	13 6.69	- 2 47.4	1.112	2.111	3.0	19.5	4 11	13 7.26	-11 51.7	2.447	3.447	1.3	20.8
4 21	12 57.13	- 2 12.7	1.117	2.097	8.3	19.7	4 21	12 59.72	-11 7.0	2.467	3.452	4.0	21.0
5 1	12 49.13	- 1 52.0	1.144	2.084	13.5	20.0	5 1	12 53.06	-10 23.6	2.516	3.456	7.1	21.2
5 11	12 43.76	- 1 49.7	1.192	2.071	18.2	20.2	5 11	12 47.78	- 9 45.6	2.591	3.460	9.9	21.4
406713	2008 <i>FB</i> ₁₀₃		4 8.4 121°06	1°8/ 6.6	18		283584	2001 <i>XP</i> ₁₈₃		4 8.4 148°22	5°4/14.4	18	
3 2	13 32.04	- 7 2.4	1.802	2.621	14.8	20.8	3 2	13 35.32	-26 20.1	2.267	2.982	15.2	20.8
3 12	13 28.40	- 5 57.0	1.726	2.627	11.3	20.6	3 12	13 30.76	-26 31.9	2.176	2.990	12.8	20.6
3 22	13 22.58	- 4 37.7	1.673	2.633	7.3	20.4	3 22	13 24.08	-26 23.2	2.106	2.998	10.1	20.5
4 1	13 15.19	- 3 10.4	1.646	2.639	3.2	20.1	4 1	13 15.86	-25 52.9	2.059	3.005	7.4	20.3
4 11	13 7.16	- 1 43.0	1.647	2.644	2.7	20.1	4 11	13 6.96	-25 2.5	2.039	3.012	5.6	20.2
4 21	12 59.47	- 0 23.5	1.676	2.650	6.8	20.3	4 21	12 58.31	-23 56.2	2.047	3.018	6.0	20.2
5 1	12 53.01	+ 0 41.2	1.731	2.655	10.7	20.6	5 1	12 50.82	-22 40.5	2.083	3.024	8.2	20.4
5 11	12 48.47	+ 1 27.0	1.808	2.660	14.2	20.8	5 11	12 45.14	-21 23.0	2.144	3.029	11.0	20.5
408162	2013 <i>CQ</i> ₁₆₁		4 8.4 334°09	4°3/ 5.0	14 C		139662	2001 <i>QL</i> ₁₈₇		4 8.4 97°66	3°3/ 5.2	18</	

EPHEMERIDES

4 8.4

4 8.4

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
198188	2004 <i>TC</i> ₁₂₅		4 8.4 275°73	2°2/ 6.7	18		501871	2014 <i>WS</i> ₃₂₂		4 8.4 277°53	6°0/ 3.5	17	
3 2	13 37.28	- 2 6.6	1.893	2.710	14.2	20.4	3 2	13 34.85	+ 4 2.6	1.569	2.409	15.5	21.2
3 12	13 32.61	- 1 55.0	1.795	2.694	11.0	20.1	3 12	13 31.09	+ 5 7.2	1.488	2.398	12.1	21.0
3 22	13 25.52	- 1 37.2	1.719	2.678	7.3	19.8	3 22	13 24.68	+ 6 16.8	1.429	2.386	8.6	20.8
4 1	13 16.58	- 1 17.0	1.670	2.661	3.4	19.6	4 1	13 16.25	+ 7 22.9	1.394	2.375	6.1	20.6
4 11	13 6.69	- 0 59.2	1.649	2.645	3.0	19.5	4 11	13 6.86	+ 8 16.4	1.386	2.363	7.1	20.6
4 21	12 56.90	- 0 48.4	1.656	2.629	6.9	19.7	4 21	12 57.72	+ 8 49.9	1.403	2.352	10.5	20.8
5 1	12 48.27	- 0 48.5	1.689	2.612	11.0	19.9	5 1	12 49.98	+ 8 59.0	1.443	2.340	14.4	21.0
5 11	12 41.64	- 1 2.0	1.744	2.596	14.7	20.1	5 11	12 44.51	+ 8 43.0	1.503	2.328	17.9	21.2
64980	2002 <i>AP</i> ₂₃		4 8.4 319°76	4°9/ 13.5	18		363795	2005 <i>JC</i> ₁₃₅		4 8.4 286°45	2°4/ 6.5	17	
3 2	13 30.37	-23 33.4	2.167	2.911	15.0	18.9	3 2	13 33.13	- 4 41.0	1.619	2.448	15.7	21.2
3 12	13 27.15	-23 48.4	2.065	2.901	12.6	18.7	3 12	13 29.82	- 3 58.0	1.523	2.429	12.2	21.0
3 22	13 21.84	-23 44.2	1.983	2.891	9.8	18.5	3 22	13 23.91	- 3 2.1	1.449	2.411	8.0	20.7
4 1	13 14.95	-23 19.8	1.924	2.882	6.9	18.3	4 1	13 15.96	- 1 58.3	1.400	2.392	3.7	20.4
4 11	13 7.26	-22 36.6	1.892	2.873	5.0	18.2	4 11	13 6.95	- 0 54.2	1.377	2.373	3.4	20.3
4 21	12 59.69	-21 38.5	1.886	2.864	5.8	18.2	4 21	12 58.04	+ 0 2.2	1.380	2.355	7.8	20.5
5 1	12 53.14	-20 31.7	1.907	2.855	8.4	18.4	5 1	12 50.40	+ 0 43.9	1.409	2.336	12.5	20.7
5 11	12 48.33	-19 23.4	1.953	2.847	11.5	18.5	5 11	12 44.93	+ 1 6.1	1.458	2.318	16.6	20.9
225541	2000 <i>SV</i> ₁₀₅		4 8.4 257°73	0°8/ 9.2	17		170775	2004 <i>CY</i> ₈₃		4 8.4 144°74	1°2/ 7.1	18	
3 2	13 35.09	-11 19.1	2.068	2.860	14.1	21.2	3 2	13 31.09	- 6 25.1	2.225	3.035	12.6	20.7
3 12	13 30.80	-11 11.4	1.961	2.843	11.1	20.9	3 12	13 27.32	- 5 45.5	2.141	3.037	9.7	20.5
3 22	13 24.28	-10 50.8	1.877	2.826	7.6	20.7	3 22	13 21.72	- 4 56.1	2.080	3.038	6.3	20.3
4 1	13 16.03	-10 18.8	1.819	2.808	3.6	20.4	4 1	13 14.83	- 4 0.7	2.047	3.039	2.7	20.1
4 11	13 6.88	- 9 39.1	1.789	2.790	1.2	20.2	4 11	13 7.39	- 3 4.6	2.042	3.041	2.0	20.0
4 21	12 57.78	- 8 56.5	1.787	2.771	5.2	20.4	4 21	13 0.17	- 2 13.0	2.066	3.042	5.5	20.2
5 1	12 49.71	- 8 16.6	1.812	2.752	9.3	20.6	5 1	12 53.93	- 1 30.9	2.117	3.043	9.0	20.4
5 11	12 43.44	- 7 44.7	1.862	2.733	13.0	20.8	5 11	12 49.25	- 1 1.6	2.192	3.044	12.0	20.6
185508	2007 <i>TO</i> ₃₃₅		4 8.4 239°28	0°2/ 8.2	17		365064	2008 <i>YS</i> ₁₀₀		4 8.4 11°91	3°7/ 6.0	16	
3 2	13 32.44	- 8 47.5	2.353	3.151	12.4	21.1	3 2	13 30.52	- 2 53.4	1.065	1.928	19.6	21.0
3 12	13 28.35	- 8 26.5	2.256	3.143	9.6	20.9	3 12	13 28.55	- 2 12.1	1.006	1.930	15.1	20.7
3 22	13 22.42	- 7 55.1	2.182	3.135	6.4	20.7	3 22	13 23.34	- 1 18.1	0.965	1.934	9.9	20.4
4 1	13 15.14	- 7 16.0	2.135	3.126	2.8	20.4	4 1	13 15.72	- 0 19.5	0.946	1.939	4.8	20.1
4 11	13 7.22	- 6 33.1	2.116	3.117	1.1	20.3	4 11	13 7.09	+ 0 33.1	0.950	1.945	4.8	20.1
4 21	12 59.45	- 5 50.9	2.127	3.108	4.8	20.5	4 21	12 59.01	+ 1 10.5	0.976	1.953	9.7	20.4
5 1	12 52.58	- 5 14.2	2.166	3.099	8.4	20.7	5 1	12 52.86	+ 1 26.1	1.023	1.962	14.8	20.7
5 11	12 47.24	- 4 46.7	2.229	3.090	11.5	20.9	5 11	12 49.54	+ 1 17.6	1.088	1.972	19.2	21.0
154523	2003 <i>FF</i> ₉₂		4 8.4 29°86	2°9/ 5.5	18		303857	2005 <i>SC</i> ₂₂₆		4 8.4 100°57	2°0/ 10.2	18	
3 2	13 29.59	- 5 17.4	1.615	2.449	15.5	19.7	3 2	13 37.73	-13 8.5	2.458	3.227	12.7	20.4
3 12	13 26.78	- 5 54.9	1.543	2.453	11.8	19.5	3 12	13 32.35	-13 39.8	2.364	3.229	10.2	20.3
3 22	13 21.64	- 5 21.0	1.493	2.457	7.6	19.3	3 22	13 25.04	-14 1.5	2.294	3.231	7.1	20.1
4 1	13 14.84	- 4 34.4	1.469	2.461	3.7	19.0	4 1	13 16.30	-14 13.6	2.250	3.232	3.9	19.9
4 11	13 7.34	+ 1 6.2	1.472	2.465	4.0	19.1	4 11	13 6.89	-14 17.5	2.237	3.234	2.1	19.7
4 21	13 0.20	+ 2 34.4	1.502	2.470	8.0	19.3	4 21	12 57.63	-14 15.4	2.253	3.236	4.4	19.9
5 1	12 54.38	+ 3 42.7	1.556	2.475	12.1	19.6	5 1	12 49.34	-14 10.7	2.298	3.238	7.6	20.1
5 11	12 50.57	+ 4 27.4	1.632	2.481	15.6	19.8	5 11	12 42.66	-14 7.1	2.368	3.240	10.6	20.3
88560	2001 <i>QY</i> ₂₂₃		4 8.4 205°28	0°4/ 8.0	17		423799	2006 <i>HH</i> ₆₀		4 8.4 327°87	5°8/ 2.7	17	
3 2	13 33.59	- 9 44.2	2.135	2.933	13.5	20.6	3 2	13 29.26	+ 3 34.9	1.664	2.511	14.5	20.3
3 12	13 29.40	- 9 2.5	2.041	2.929	10.5	20.3	3 12	13 26.59	+ 4 55.4	1.585	2.500	11.2	20.1
3 22	13 23.18	- 8 7.2	1.971	2.924	6.9	20.1	3 22	13 21.60	+ 6 22.0	1.529	2.488	7.9	19.9
4 1	13 15.49	- 7 1.9	1.927	2.919	3.0	19.9	4 1	13 14.89	+ 7 46.0	1.498	2.478	5.9	19.7
4 11	13 7.11	- 5 52.0	1.912	2.912	1.3	19.7	4 11	13 7.37	+ 8 58.0	1.493	2.468	7.0	19.8
4 21	12 58.92	- 4 43.7	1.926	2.906	5.4	20.0	4 21	13 0.09	+ 9 50.4	1.513	2.458	10.2	19.9
5 1	12 51.77	- 3 43.2	1.967	2.899	9.2	20.2	5 1	12 54.03	+10 18.2	1.557	2.449	13.8	20.1
5 11	12 46.33	- 2 55.3	2.033	2.891	12.6	20.4	5 11	12 49.95	+10 20.2	1.620	2.440	17.0	20.3
229860	2009 <i>TA</i> ₁₂		4 8.4 182°58	4°5/ 3.9	17		299415	2005 <i>YC</i> ₈₈		4 8.4 241°61	5°5/ 3.9	17	
3 2	13 37.08	+ 5 11.1	2.296	3.112	12.1	21.4	3 2	13 35.78	+ 2 13.5	1.560	2.397	15.8	21.2
3 12	13 31.80	+ 5 54.0	2.217	3.113	9.4	21.2	3 12	13 31.82	+ 3 24.6	1.479	2.388	12.2	21.0
3 22	13 24.60	+ 6 37.9	2.162	3.113	6.6	21.0	3 22	13 25.17	+ 4 43.2	1.420	2.379	8.5	20.7
4 1	13 16.05	+ 7 17.5	2.135	3.113	4.6	20.9	4 1	13 16.48	+ 6 0.7	1.386	2.369	5.7	20.5
4 11	13 6.94	+ 7 47.5	2.137	3.112	5.2	20.9	4 11	13 6.82	+ 7 7.4	1.378	2.359	6.6	20.6
4 21	12 58.09	+ 8 3.9	2.168	3.110	7.7	21.1	4 21	12 57.42	+ 7 55.3	1.396	2.348	10.2	20.7
5 1	12 50.30	+ 8 4.4	2.225	3.108	10.6	21.3	5 1	12 49.45	+ 8 19.0	1.438	2.337	14.2	20.9
5 11	12 44.17	+ 7 48.5	2.305	3.106	13.2	21.4	5 11	12 43.78	+ 8 17.1	1.500	2.326	17.9	21.1
231517	2008 <i>SH</i> ₂₉		4 8.4 160°08	0°8/ 9.3	17		67063	1999 <i>XM</i> ₂₄₄		4 8.4 178°82	2°1/ 6.2	17	
3 2	13 32.97	-12 21.6	2.180	2.969	13.5	20.7	3 2	13 32.99	- 3 22.4	2.251	3.064	12.4	19.9
3 12	13 28.84	-12 0.0	2.093	2.973	10.6	20.5	3 12	13 28.74	- 2 39.1	2.167	3.065	9.5	19.7
3 22	13 22.76	-11 24.9	2.028	2.975	7.2	20.3	3 22	13 22.65	- 1 48.2	2.107	3.066	6.2	19.5
4 1	13 15.29	-10 38.6	1.989	2.978	3.4	20.1	4 1	13 15.25	- 0 54.1	2.075	3.066	2.9	19.3
4 11	13 7.20	- 9 45.4	1.979	2.980	1.1	19.9	4 11	13 7.27	- 0 1.9	2.072	3.066	2.8	19.3
4 21	12 59.34	- 8 50.4	1.998	2.982	4.7	20.2	4 21	12 59.53	+ 0 43.0	2.097	3.066	6.1	19.5
5 1	12 52.53	- 7 59.3	2.044	2.984	8.4	20.4	5 1	12 52.77	+ 1 16.5	2.150	3.065	9.4	19.7
5 11	12 47.39	- 7 17.0	2.115	2.986	11.7	20.6	5 11	12 47.60	+ 1 35.8	2.226	3.064	12.4	19.9
27213	1999 <i>CA</i> ₁₁₀		4 8.4 114°57	0°8/ 9.3	18		255612	2006 <i>PW</i> ₁₆		4 8.4 237°17	0		

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
125663	2001 XR ₇₃	4 8.4 216°97	0°7/ 9.1 18				115666	2003 UK ₁₄₃	4 8.5 180°83	0°7/ 9.1 18			
3 2	13 33.43	-12 17.8	2.052	2.844	14.2	20.1	3 2	13 37.34	-11 24.4	2.026	2.815	14.4	21.0
3 12	13 29.41	-11 51.2	1.957	2.839	11.1	19.9	3 12	13 32.41	-11 10.1	1.937	2.816	11.4	20.8
3 22	13 23.28	-11 9.7	1.884	2.833	7.6	19.7	3 22	13 25.25	-10 42.5	1.869	2.817	7.7	20.6
4 1	13 15.58	-10 15.6	1.838	2.827	3.5	19.4	4 1	13 16.45	-10 3.6	1.828	2.817	3.6	20.3
4 11	13 7.14	-9 13.6	1.820	2.821	1.1	19.2	4 11	13 6.90	-9 17.6	1.815	2.817	1.1	20.1
4 21	12 58.89	-8 9.8	1.830	2.814	5.1	19.5	4 21	12 57.59	-8 29.8	1.832	2.815	5.2	20.4
5 1	12 51.71	-7 10.6	1.868	2.807	9.1	19.7	5 1	12 49.46	-7 46.1	1.876	2.814	9.2	20.6
5 11	12 46.32	-6 21.6	1.929	2.800	12.7	19.9	5 11	12 43.22	-7 11.3	1.944	2.811	12.7	20.8
28392	1999 NQ ₁₁	4 8.4 258°94	0°9/ 7.6 18				151127	2001 XO ₂	4 8.5 147°60	3°8/ 10.8 18			
3 2	13 32.29	-7 50.8	1.922	2.734	14.2	18.4	3 2	13 44.15	-15 16.0	1.899	2.664	16.1	19.4
3 12	13 28.61	-7 15.4	1.834	2.730	11.0	18.2	3 12	13 38.03	-16 16.7	1.808	2.666	13.1	19.2
3 22	13 22.78	-6 27.5	1.768	2.726	7.2	17.9	3 22	13 29.19	-17 5.6	1.738	2.668	9.5	19.0
4 1	13 15.37	-5 30.9	1.729	2.721	3.1	17.7	4 1	13 18.26	-17 40.7	1.695	2.670	5.9	18.7
4 11	13 7.23	-4 31.4	1.717	2.717	1.7	17.6	4 11	13 6.26	-18 1.7	1.679	2.672	3.8	18.6
4 21	12 59.30	-3 35.3	1.733	2.712	5.9	17.8	4 21	12 54.43	-18 10.5	1.693	2.673	6.0	18.7
5 1	12 52.50	-2 48.6	1.775	2.708	10.0	18.1	5 1	12 43.95	-18 11.1	1.734	2.675	9.6	19.0
5 11	12 47.54	-2 15.8	1.841	2.703	13.5	18.3	5 11	12 35.75	-18 9.0	1.800	2.676	13.2	19.2
216442	2009 FG ₄	4 8.4 335°07	17°7/ 1.4 18				336409	2008 UK ₁₇₆	4 8.5 135°79	1°4/ 9.9 17			
3 2	13 54.68	+27 25.8	1.062	1.878	23.0	19.4	3 2	13 32.13	-14 33.7	2.119	2.903	14.0	21.5
3 12	13 47.78	+28 26.1	1.010	1.874	20.5	19.2	3 12	13 28.29	-14 11.2	2.032	2.907	11.1	21.3
3 22	13 36.25	+28 59.0	0.973	1.870	18.6	19.1	3 22	13 22.46	-13 33.2	1.967	2.911	7.7	21.1
4 1	13 21.34	+28 47.2	0.956	1.866	17.7	19.0	4 1	13 15.21	-12 41.7	1.928	2.914	3.9	20.9
4 11	13 5.24	+27 39.7	0.957	1.863	18.5	19.0	4 11	13 7.33	-11 41.0	1.918	2.918	1.5	20.7
4 21	12 50.33	+25 36.6	0.979	1.860	20.6	19.1	4 21	12 59.71	-10 36.8	1.935	2.921	4.7	21.0
5 1	12 38.54	+22 47.4	1.020	1.858	23.4	19.3	5 1	12 53.15	-9 35.3	1.980	2.924	8.4	21.2
5 11	12 30.87	+19 27.0	1.077	1.856	26.3	19.5	5 11	12 48.29	-8 42.1	2.050	2.927	11.7	21.4
292407	2006 SF ₂₈₆	4 8.5 169°68	3°1/ 5.4 16				433535	2013 WL ₉₁	4 8.5 224°19	4°9/ 14.1 17			
3 2	13 35.72	-1 9.0	2.057	2.874	13.3	21.8	3 2	13 34.69	-25 53.6	2.520	3.231	13.9	22.1
3 12	13 30.98	-0 16.3	1.978	2.878	10.1	21.6	3 12	13 30.23	-25 56.5	2.406	3.219	11.8	22.0
3 22	13 24.19	+0 43.4	1.923	2.881	6.7	21.4	3 22	13 23.78	-25 40.5	2.313	3.207	9.3	21.8
4 1	13 15.94	+1 44.4	1.896	2.884	3.6	21.2	4 1	13 15.82	-25 4.2	2.245	3.194	6.8	21.6
4 11	13 7.07	+2 40.5	1.897	2.886	3.9	21.3	4 11	13 7.11	-24 8.8	2.205	3.180	5.0	21.4
4 21	12 58.49	+3 25.9	1.926	2.888	7.1	21.5	4 21	12 58.48	-22 58.2	2.193	3.165	5.5	21.5
5 1	12 51.05	+3 56.5	1.983	2.889	10.6	21.7	5 1	12 50.79	-21 38.0	2.209	3.150	7.8	21.6
5 11	12 45.40	+4 10.0	2.062	2.889	13.6	21.9	5 11	12 44.73	-20 15.6	2.252	3.134	10.6	21.7
407279	2010 GR ₁₀₀	4 8.5 305°39	2°1/ 9.7 14 C				135492	2001 XL ₃₅	4 8.5 112°41	2°5/ 11.0 18			
3 2	13 34.46	-12 35.4	1.304	2.124	19.2	21.4	3 2	13 34.18	-16 23.1	2.458	3.221	12.9	20.0
3 12	13 31.66	-12 50.5	1.210	2.106	15.5	21.1	3 12	13 29.59	-16 33.9	2.371	3.230	10.4	19.8
3 22	13 25.62	-12 47.4	1.136	2.088	10.9	20.8	3 22	13 23.19	-16 31.8	2.307	3.238	7.4	19.6
4 1	13 16.89	-12 26.4	1.083	2.071	5.6	20.4	4 1	13 15.50	-16 17.3	2.269	3.246	4.4	19.4
4 11	13 6.66	-11 51.0	1.054	2.054	2.3	20.1	4 11	13 7.24	-15 52.6	2.259	3.254	2.5	19.3
4 21	12 56.44	-11 7.8	1.049	2.038	7.1	20.4	4 21	12 59.20	-15 21.3	2.279	3.262	4.3	19.4
5 1	12 47.81	-10 25.6	1.068	2.022	12.7	20.6	5 1	12 52.11	-14 47.6	2.326	3.270	7.3	19.6
5 11	12 41.98	-9 52.9	1.107	2.006	17.7	20.9	5 11	12 46.58	-14 16.3	2.400	3.278	10.2	19.8
114408	2002 YS ₂₀	4 8.5 243°03	5°2/ 2.5 18				64732	2001 XJ ₁₂₁	4 8.5 67°82	0°0/ 8.2 18			
3 2	13 31.94	+6 55.4	2.322	3.149	11.6	19.4	3 2	13 33.16	-9 54.2	1.761	2.571	15.4	20.1
3 12	13 27.92	+7 57.4	2.242	3.142	9.1	19.2	3 12	13 29.45	-9 27.4	1.680	2.574	12.0	19.9
3 22	13 22.11	+9 0.1	2.187	3.136	6.6	19.1	3 22	13 23.41	-8 46.2	1.621	2.576	8.0	19.7
4 1	13 15.03	+9 57.5	2.159	3.129	5.2	19.0	4 1	13 15.67	-7 53.9	1.587	2.578	3.5	19.4
4 11	13 7.38	+10 43.7	2.159	3.122	6.1	19.0	4 11	13 7.18	-6 56.2	1.579	2.581	1.2	19.2
4 21	12 59.94	+11 14.2	2.186	3.115	8.4	19.1	4 21	12 58.99	-5 59.8	1.600	2.583	5.8	19.5
5 1	12 53.43	+11 26.2	2.238	3.108	11.1	19.3	5 1	12 52.07	-5 11.4	1.646	2.585	10.1	19.8
5 11	12 48.46	+11 19.2	2.313	3.101	13.5	19.5	5 11	12 47.16	-4 35.9	1.715	2.588	13.9	20.0
246456	2007 VF ₂₄₃	4 8.5 241°68	4°5/ 2.5 18				326438	2001 UT ₁₇₉	4 8.5 174°76	11°2/ 30.3 16			
3 2	13 29.75	+4 57.5	2.573	3.398	10.6	20.5	3 2	13 47.28	+25 25.5	1.987	2.773	14.8	20.4
3 12	13 26.09	+6 8.6	2.488	3.390	8.2	20.3	3 12	13 39.94	+26 18.2	1.930	2.775	13.0	20.3
3 22	13 20.84	+7 22.2	2.429	3.381	5.9	20.1	3 22	13 30.06	+26 55.1	1.894	2.776	11.6	20.2
4 1	13 14.46	+8 32.9	2.399	3.373	4.5	20.0	4 1	13 18.45	+27 7.3	1.884	2.776	11.3	20.2
4 11	13 7.57	+9 34.8	2.397	3.364	5.3	20.1	4 11	13 6.29	+26 49.3	1.898	2.777	12.0	20.2
4 21	13 0.84	+10 23.2	2.422	3.354	7.6	20.2	4 21	12 54.76	+25 59.6	1.936	2.777	13.6	20.3
5 1	12 54.91	+10 54.8	2.474	3.345	10.1	20.3	5 1	12 44.91	+24 40.8	1.998	2.777	15.6	20.5
5 11	12 50.32	+11 8.4	2.548	3.335	12.5	20.5	5 11	12 37.42	+22 58.3	2.079	2.777	17.5	20.6
40632	1999 RJ ₁₇₅	4 8.5 306°02	0°5/ 8.1 17				187622	2007 BL ₉	4 8.5 162°42	0°4/ 8.1 18			
3 2	13 32.61	-8 25.0	1.386	2.217	17.7	19.5	3 2	13 35.86	-8 10.1	2.010	2.811	14.1	21.0
3 12	13 29.97	-8 7.7	1.289	2.194	14.0	19.2	3 12	13 31.22	-7 48.8	1.926	2.815	10.9	20.8
3 22	13 24.36	-7 33.9	1.211	2.172	9.4	18.8	3 22	13 24.43	-7 16.4	1.865	2.819	7.2	20.5
4 1	13 16.31	-6 46.6	1.156	2.149	4.1	18.4	4 1	13 16.08	-6 36.0	1.830	2.822	3.1	20.3
4 11	13 6.88	-5 52.2	1.126	2.127	1.8	18.2	4 11	13 7.06	-5 52.3	1.824	2.825	1.3	20.1
4 21	12 57.46	-4 58.9	1.121	2.105	7.5	18.5	4 21	12 58.31	-5 10.6	1.847	2.827	5.5	20.4
5 1	12 49.45	-4 15.3	1.139	2.084	13.0	18.7	5 1	12 50.73	-4 36.2	1.896	2.829	9.4	20.7
5 11	12 43.99	-3 48.3	1.178	2.063	17.9	19.0	5 11	12 45.00	-4 12.9	1.970	2.831	12.8	20.9
82018	2000 SD ₁₃	4 8.5 233°56	2°8/ 4.9 18				188897	2006 YD ₈	4 8.5 87°42	4°4/ 4.6 17			
3 2	13 29.97	-1 10.1	2.509	3.327	11.1	20.2	3 2	1					

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
209591	2004 <i>XB</i> ₁₂₈		4 8.5 110°41	1.7°/ 6.9	18		521086	2015 <i>DR</i> ₂₄₁		4 8.5 302°53	8°8/30.6	17	
3 2	13 38.05	- 5 56.9	1.748	2.560	15.4	21.5	3 2	13 34.63	+15 47.2	1.947	2.775	13.5	21.2
3 12	13 32.96	- 5 10.8	1.685	2.581	11.8	21.3	3 12	13 30.48	+16 56.9	1.870	2.758	11.2	21.1
3 22	13 25.54	- 4 13.5	1.644	2.602	7.6	21.1	3 22	13 24.07	+18 0.6	1.816	2.742	9.4	20.9
4 1	13 16.53	- 3 10.4	1.630	2.622	3.3	20.9	4 1	13 15.99	+18 49.8	1.786	2.726	8.8	20.8
4 11	13 6.96	- 2 8.5	1.643	2.641	2.6	20.9	4 11	13 7.16	+19 17.1	1.782	2.710	9.9	20.9
4 21	12 57.90	- 1 14.4	1.685	2.660	6.6	21.2	4 21	12 58.55	+19 18.1	1.803	2.694	12.1	21.0
5 1	12 50.30	- 0 33.7	1.753	2.677	10.6	21.4	5 1	12 51.14	+18 51.5	1.846	2.678	14.7	21.1
5 11	12 44.80	- 0 9.3	1.844	2.695	14.0	21.7	5 11	12 45.65	+17 59.4	1.908	2.663	17.1	21.2
70130	1999 <i>NO</i> ₆		4 8.5 248°12	0°6/ 8.9	17		491828	2013 <i>AD</i> ₂₅		4 8.5 151°76	3°4/12.7	17	
3 2	13 35.26	-11 41.9	1.813	2.612	15.5	20.5	3 2	13 31.50	-21 28.2	2.581	3.322	12.9	21.6
3 12	13 31.26	-11 19.6	1.712	2.597	12.3	20.3	3 12	13 27.54	-21 23.9	2.487	3.326	10.6	21.5
3 22	13 24.78	-10 41.0	1.632	2.583	8.3	20.0	3 22	13 21.87	-21 3.5	2.414	3.329	8.0	21.3
4 1	13 16.37	- 9 48.3	1.577	2.567	3.9	19.7	4 1	13 14.97	-20 27.2	2.367	3.332	5.3	21.1
4 11	13 6.96	- 8 46.5	1.550	2.551	1.2	19.5	4 11	13 7.51	-19 37.5	2.348	3.335	3.5	21.0
4 21	12 57.64	- 7 42.2	1.550	2.535	5.9	19.7	4 21	13 0.25	-18 38.2	2.358	3.338	4.5	21.1
5 1	12 49.50	- 6 42.8	1.577	2.518	10.4	20.0	5 1	12 53.89	-17 34.7	2.396	3.341	7.1	21.2
5 11	12 43.43	- 5 55.0	1.627	2.500	14.5	20.2	5 11	12 48.98	-16 32.7	2.460	3.344	9.8	21.4
42000	2000 <i>YT</i> ₄₆		4 8.5 195°92	4°9/ 3.3	18		130797	2000 <i>TW</i> ₃₉		4 8.5 130°60	4°6/ 4.5	18	
3 2	13 34.05	+ 5 4.3	2.208	3.032	12.2	19.9	3 2	13 37.00	+ 1 13.6	1.715	2.543	15.0	19.8
3 12	13 29.61	+ 6 3.7	2.130	3.031	9.5	19.7	3 12	13 32.28	+ 2 19.6	1.650	2.554	11.5	19.6
3 22	13 23.26	+ 7 5.1	2.076	3.029	6.7	19.5	3 22	13 25.19	+ 3 31.3	1.607	2.565	7.7	19.4
4 1	13 15.56	+ 8 2.5	2.050	3.026	4.9	19.4	4 1	13 16.43	+ 4 41.3	1.592	2.576	4.8	19.3
4 11	13 7.27	+ 8 49.5	2.052	3.023	5.7	19.4	4 11	13 7.04	+ 5 41.5	1.603	2.586	5.5	19.3
4 21	12 59.23	+ 9 21.5	2.081	3.020	8.2	19.6	4 21	12 58.09	+ 6 25.3	1.642	2.596	8.8	19.5
5 1	12 52.21	+ 9 35.5	2.136	3.016	11.1	19.7	5 1	12 50.57	+ 6 48.8	1.705	2.605	12.4	19.8
5 11	12 46.84	+ 9 30.7	2.213	3.012	13.7	19.9	5 11	12 45.16	+ 6 51.0	1.790	2.613	15.5	20.0
91502	1999 <i>RP</i> ₁₅₀		4 8.5 243°30	4°2/12.1	18		172063	2001 <i>XP</i> ₂₃₇		4 8.5 86°01	1°5/ 6.9	17	
3 2	13 37.77	-19 51.0	2.264	3.010	14.4	19.2	3 2	13 32.10	- 4 34.7	2.292	3.103	12.2	20.8
3 12	13 32.85	-20 23.5	2.155	2.997	11.9	19.0	3 12	13 28.02	- 4 5.3	2.213	3.110	9.4	20.6
3 22	13 25.67	-20 41.4	2.067	2.983	9.0	18.8	3 22	13 22.17	- 3 28.4	2.159	3.117	6.1	20.4
4 1	13 16.73	-20 43.3	2.004	2.969	6.0	18.5	4 1	13 15.09	- 2 47.8	2.131	3.123	2.7	20.2
4 11	13 6.83	-20 29.7	1.969	2.955	4.2	18.4	4 11	13 7.49	- 2 8.0	2.132	3.130	2.2	20.2
4 21	12 56.94	-20 3.3	1.962	2.940	5.5	18.5	4 21	13 0.15	- 1 33.4	2.162	3.136	5.4	20.4
5 1	12 48.05	-19 28.7	1.983	2.925	8.5	18.6	5 1	12 53.79	- 1 8.0	2.219	3.143	8.7	20.6
5 11	12 40.94	-18 52.0	2.030	2.909	11.7	18.8	5 11	12 48.96	- 0 54.2	2.300	3.150	11.7	20.8
293056	2006 <i>WZ</i> ₁₃₀		4 8.5 43°46	0°9/ 7.4	18		356453	2011 <i>LT</i> ₂₆		4 8.5 265°35	3°5/11.3	17	
3 2	13 28.96	-16 26.2	1.393	2.204	18.7	19.5	3 2	13 37.23	-18 42.1	1.758	2.528	17.0	21.1
3 12	13 26.57	-13 56.8	1.326	2.221	14.4	19.3	3 12	13 33.24	-18 38.4	1.638	2.500	14.0	20.9
3 22	13 21.60	-10 54.8	1.281	2.238	9.4	19.0	3 22	13 26.42	-18 12.9	1.538	2.470	10.4	20.6
4 1	13 14.87	- 7 30.7	1.263	2.256	3.8	18.7	4 1	13 17.25	-17 24.5	1.462	2.440	6.3	20.2
4 11	13 7.54	- 4 1.7	1.275	2.275	2.2	18.7	4 11	13 6.68	-16 15.3	1.413	2.408	3.5	20.0
4 21	13 0.77	- 0 45.8	1.315	2.294	7.6	19.0	4 21	12 55.93	-14 51.1	1.391	2.376	6.2	20.1
5 1	12 55.57	+ 2 1.9	1.383	2.313	12.5	19.4	5 1	12 46.35	-13 21.2	1.395	2.343	10.9	20.3
5 11	12 52.60	+ 4 13.4	1.473	2.333	16.5	19.7	5 11	12 39.03	-11 55.9	1.423	2.309	15.4	20.4
52062	2002 <i>QL</i> ₁₂		4 8.5 167°77	1°2/ 6.9	18		37613	1993 <i>FE</i> ₄₀		4 8.5 63°04	0°6/ 7.9	18	
3 2	13 31.63	- 6 15.8	2.612	3.413	11.2	20.3	3 2	13 34.66	- 7 53.7	1.728	2.543	15.5	18.8
3 12	13 27.45	- 5 27.6	2.526	3.417	8.6	20.2	3 12	13 30.49	- 7 32.6	1.661	2.557	11.9	18.6
3 22	13 21.70	- 4 30.6	2.465	3.421	5.5	20.0	3 22	13 24.02	- 6 59.5	1.616	2.573	7.8	18.3
4 1	13 14.85	- 3 28.6	2.432	3.424	2.4	19.8	4 1	13 15.93	- 6 18.4	1.595	2.588	3.3	18.1
4 11	13 7.53	- 2 26.3	2.429	3.427	1.9	19.7	4 11	13 7.22	- 5 34.6	1.603	2.603	1.5	18.0
4 21	13 0.42	- 1 28.5	2.456	3.429	5.0	19.9	4 21	12 58.94	- 4 54.3	1.637	2.619	5.9	18.3
5 1	12 54.15	- 0 39.6	2.511	3.431	8.0	20.1	5 1	12 52.03	- 4 22.8	1.697	2.634	10.1	18.6
5 11	12 49.23	- 0 2.6	2.591	3.432	10.8	20.3	5 11	12 47.16	- 4 3.9	1.781	2.650	13.6	18.9
196727	2003 <i>SB</i> ₁₁₉		4 8.5 216°20	2°8/11.3	18		382832	2003 <i>YD</i> ₁₈₁		4 8.5 108°76	3°4/ 4.6	17	
3 2	13 33.37	-17 36.6	2.162	2.930	14.3	20.3	3 2	13 33.00	+ 1 16.5	2.386	3.204	11.6	21.4
3 12	13 29.34	-17 37.2	2.067	2.927	11.6	20.1	3 12	13 28.53	+ 2 11.0	2.321	3.222	8.8	21.3
3 22	13 23.25	-17 21.6	1.993	2.924	8.4	19.9	3 22	13 22.39	+ 3 9.1	2.282	3.238	5.9	21.1
4 1	13 15.62	-16 50.4	1.944	2.921	5.0	19.7	4 1	13 15.14	+ 4 5.6	2.270	3.255	3.6	21.0
4 11	13 7.27	-16 6.2	1.923	2.918	2.8	19.5	4 11	13 7.49	+ 4 55.2	2.288	3.271	4.1	21.0
4 21	12 59.08	-15 13.7	1.930	2.915	4.8	19.7	4 21	13 0.16	+ 5 33.5	2.334	3.286	6.6	21.2
5 1	12 51.94	-14 18.8	1.964	2.911	8.3	19.9	5 1	12 53.82	+ 5 57.7	2.407	3.302	9.4	21.4
5 11	12 46.54	-13 27.6	2.024	2.907	11.6	20.1	5 11	12 48.97	+ 6 6.4	2.503	3.317	11.9	21.6
275953	2001 <i>VX</i> ₅₄		4 8.5 189°89	1°3/ 9.9	17		246425	2007 <i>VR</i> ₅₃		4 8.5 160°05	0°8/ 7.6	17	
3 2	13 35.68	-14 7.3	2.581	3.348	12.3	22.6	3 2	13 31.27	- 7 41.1	2.290	3.095	12.5	21.3
3 12	13 30.70	-13 52.4	2.482	3.347	9.7	22.4	3 12	13 27.45	- 7 5.4	2.204	3.097	9.6	21.1
3 22	13 23.93	-13 25.0	2.406	3.344	6.7	22.2	3 22	13 21.85	- 6 19.3	2.142	3.098	6.3	20.9
4 1	13 15.86	-12 46.5	2.357	3.342	3.5	22.0	4 1	13 14.97	- 5 26.5	2.107	3.099	2.6	20.7
4 11	13 7.19	-11 59.9	2.338	3.338	1.4	21.9	4 11	13 7.54	- 4 31.6	2.101	3.100	1.5	20.6
4 21	12 58.68	-11 9.5	2.349	3.333	4.2	22.0	4 21	13 0.32	- 3 39.9	2.123	3.101	5.1	20.8
5 1	12 51.07	-10 20.1	2.390	3.328	7.5	22.2	5 1	12 54.05	- 2 56.1	2.173	3.102	8.6	21.0
5 11	12 44.95	- 9 36.3	2.456	3.322	10.5	22.4	5 11	12 49.31	- 2 23.9	2.247	3.103	11.6	21.2
347688	2001 <i>VA</i> ₁₁		4 8.5 117°58	6°4/17.7	17		382457	2000 <i>QO</i> ₁₂₂		4 8.5 225°18	2°5/11.2		

EPHEMERIDES

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
360283	2000 <i>WG</i> ₂₅		4 8.5 159°24	4.6/ 4.4	18		59885	1999 <i>RO</i> ₁₂₄		4 8.5 175°76	0.7/ 9.3	18	
3 2	13 36.45	+ 1 29.8	1.767	2.595	14.6	20.8	3 2	13 32.17	-13 28.4	2.370	3.151	12.8	20.3
3 12	13 31.88	+ 2 33.9	1.696	2.600	11.2	20.6	3 12	13 28.12	-12 47.5	2.278	3.153	10.1	20.1
3 22	13 24.96	+ 3 43.8	1.647	2.605	7.6	20.4	3 22	13 22.28	-11 52.0	2.209	3.155	6.8	19.9
4 1	13 16.36	+ 4 52.2	1.625	2.609	4.8	20.2	4 1	13 15.17	-10 44.7	2.168	3.156	3.2	19.7
4 11	13 7.07	+ 5 51.3	1.630	2.613	5.5	20.3	4 11	13 7.50	- 9 30.3	2.156	3.157	1.0	19.5
4 21	12 58.15	+ 6 34.6	1.662	2.616	8.8	20.5	4 21	13 0.05	- 8 14.5	2.173	3.157	4.5	19.8
5 1	12 50.57	+ 6 57.8	1.720	2.618	12.3	20.7	5 1	12 53.54	- 7 3.3	2.219	3.157	8.0	20.0
5 11	12 45.05	+ 6 59.9	1.798	2.620	15.5	20.9	5 11	12 48.56	- 6 1.9	2.290	3.156	11.1	20.2
39742	1997 <i>AQ</i> ₇		4 8.5 169°38	1.0/ 9.3	18		119864	2002 <i>CA</i> ₁₃₂		4 8.5 334°38	0.9/ 9.5	17	
3 2	13 37.09	-12 24.8	1.964	2.752	14.9	20.0	3 2	13 29.80	-12 39.0	2.230	3.023	13.1	19.6
3 12	13 32.28	-12 8.0	1.877	2.756	11.7	19.8	3 12	13 26.47	-12 19.6	2.137	3.019	10.4	19.4
3 22	13 25.21	-11 36.5	1.813	2.759	8.0	19.6	3 22	13 21.30	-11 46.8	2.067	3.014	7.1	19.2
4 1	13 16.49	-10 52.4	1.774	2.762	3.8	19.3	4 1	13 14.77	-11 2.7	2.022	3.011	3.4	19.0
4 11	13 7.02	-10 0.2	1.764	2.765	1.2	19.1	4 11	13 7.63	-10 11.4	2.006	3.007	1.1	18.8
4 21	12 57.82	- 9 5.6	1.782	2.766	5.2	19.4	4 21	13 0.66	- 9 17.7	2.018	3.003	4.6	19.0
5 1	12 49.85	- 8 14.9	1.827	2.767	9.3	19.6	5 1	12 54.63	- 8 27.2	2.057	3.000	8.2	19.2
5 11	12 43.83	- 7 33.6	1.897	2.767	12.8	19.9	5 11	12 50.16	- 7 44.8	2.121	2.997	11.4	19.4
260897	2005 <i>QK</i> ₁₈₁		4 8.5 232°86	1.5/ 6.5	18		409217	2003 <i>WH</i> ₁₂₉		4 8.5 131°18	1.5/ 7.1	18	
3 2	13 29.46	- 5 39.1	2.581	3.389	11.1	21.0	3 2	13 38.02	- 5 23.3	1.995	2.800	14.0	22.3
3 12	13 25.90	- 4 46.5	2.487	3.383	8.5	20.8	3 12	13 32.75	- 4 48.0	1.924	2.816	10.8	22.1
3 22	13 20.76	- 3 44.9	2.419	3.376	5.5	20.6	3 22	13 25.36	- 4 3.5	1.875	2.832	7.0	21.9
4 1	13 14.49	- 2 38.1	2.378	3.370	2.5	20.4	4 1	13 16.50	- 3 14.1	1.854	2.846	3.0	21.7
4 11	13 7.71	- 1 31.2	2.367	3.363	2.2	20.4	4 11	13 7.07	- 2 25.2	1.862	2.860	2.3	21.7
4 21	13 1.08	- 0 29.2	2.385	3.356	5.2	20.5	4 21	12 58.05	- 1 42.4	1.899	2.873	6.1	22.0
5 1	12 55.25	+ 0 23.3	2.431	3.349	8.3	20.7	5 1	12 50.28	- 1 10.3	1.962	2.885	9.8	22.2
5 11	12 50.73	+ 1 2.9	2.501	3.342	11.1	20.9	5 11	12 44.41	- 0 51.9	2.050	2.897	13.0	22.4
275061	2009 <i>UA</i> ₁₁₈		4 8.5 86°74	2.2/ 10.4	18		214989	2008 <i>BP</i> ₁₈		4 8.5 42°76	1.8/ 6.6	17	
3 2	13 36.59	-14 46.8	1.919	2.700	15.4	21.1	3 2	13 30.43	- 4 45.3	2.165	2.982	12.7	20.4
3 12	13 31.84	-14 50.8	1.846	2.718	12.2	20.9	3 12	13 26.88	- 4 2.9	2.086	2.987	9.7	20.2
3 22	13 24.85	-14 39.6	1.795	2.735	8.5	20.7	3 22	13 21.50	- 3 11.7	2.032	2.991	6.3	20.0
4 1	13 16.30	-14 14.3	1.770	2.753	4.6	20.5	4 1	13 14.83	- 2 16.2	2.004	2.996	2.8	19.8
4 11	13 7.12	-13 38.4	1.772	2.770	2.2	20.4	4 11	13 7.63	- 1 21.8	2.004	3.001	2.5	19.8
4 21	12 58.33	-12 56.9	1.802	2.787	5.0	20.6	4 21	13 0.68	- 0 33.9	2.033	3.006	5.8	20.0
5 1	12 50.85	-12 15.8	1.859	2.804	8.8	20.9	5 1	12 54.73	+ 0 3.1	2.088	3.011	9.3	20.2
5 11	12 45.34	-11 40.6	1.941	2.821	12.1	21.1	5 11	12 50.35	+ 0 26.2	2.167	3.016	12.3	20.4
319842	2006 <i>WY</i> ₄		4 8.5 320°70	0.0/ 8.4	17		274319	2008 <i>RG</i> ₄		4 8.5 236°72	1.0/ 9.5	18	
3 2	13 36.32	- 8 0.6	1.491	2.312	17.2	21.0	3 2	13 34.08	-12 26.2	2.199	2.985	13.5	21.3
3 12	13 32.51	- 8 8.3	1.405	2.303	13.5	20.7	3 12	13 29.87	-12 13.4	2.098	2.975	10.7	21.1
3 22	13 25.83	- 8 4.0	1.338	2.296	9.1	20.4	3 22	13 23.61	-11 47.4	2.019	2.965	7.3	20.8
4 1	13 16.91	- 7 49.9	1.296	2.288	4.0	20.1	4 1	13 15.82	-11 9.8	1.966	2.954	3.6	20.6
4 11	13 6.87	- 7 30.4	1.280	2.281	1.3	19.9	4 11	13 7.27	-10 24.2	1.942	2.943	1.2	20.4
4 21	12 57.02	- 7 10.8	1.289	2.274	6.7	20.2	4 21	12 58.84	- 9 35.4	1.946	2.931	4.8	20.6
5 1	12 48.66	- 6 57.1	1.323	2.268	11.6	20.5	5 1	12 51.38	- 8 49.0	1.978	2.919	8.6	20.8
5 11	12 42.77	- 6 54.1	1.379	2.262	16.0	20.7	5 11	12 45.62	- 8 10.1	2.035	2.907	12.0	21.0
19124	1986 <i>TH</i> ₃		4 8.5 119°44	0.6/ 7.7	18		387981	2005 <i>NQ</i> ₃₀		4 8.5 93°85	5.7/ 1.8	17	
3 2	13 33.40	- 9 35.5	2.473	3.263	12.1	18.8	3 2	13 31.20	+ 8 14.2	2.305	3.134	11.6	20.6
3 12	13 28.78	- 8 34.1	2.400	3.285	9.3	18.6	3 12	13 27.30	+ 9 25.7	2.241	3.141	9.1	20.4
3 22	13 22.54	- 7 21.5	2.353	3.306	6.0	18.4	3 22	13 21.68	+10 36.6	2.202	3.148	6.8	20.3
4 1	13 15.21	- 6 1.6	2.334	3.326	2.5	18.2	4 1	13 14.88	+11 40.3	2.190	3.155	5.7	20.3
4 11	13 7.50	- 4 40.0	2.346	3.345	1.4	18.2	4 11	13 7.62	+12 30.8	2.206	3.162	6.5	20.3
4 21	13 0.11	- 3 22.6	2.387	3.364	4.8	18.4	4 21	13 0.65	+13 3.9	2.248	3.169	8.7	20.5
5 1	12 53.71	- 2 14.4	2.458	3.382	8.0	18.7	5 1	12 54.65	+13 17.5	2.316	3.175	11.1	20.6
5 11	12 48.77	- 1 19.3	2.554	3.400	10.8	18.9	5 11	12 50.16	+13 11.4	2.404	3.182	13.4	20.8
156550	2002 <i>ES</i> ₁₂		4 8.5 181°55	0.2/ 8.7	17		94693	2001 <i>XY</i> ₃₁		4 8.5 143°74	3.9/ 5.6	18	
3 2	13 34.40	-10 9.5	2.096	2.893	13.8	21.3	3 2	13 37.80	- 0 24.1	1.535	2.366	16.3	19.7
3 12	13 30.08	- 9 49.6	2.008	2.893	10.7	21.1	3 12	13 33.30	+ 0 18.6	1.463	2.370	12.5	19.4
3 22	13 23.70	- 9 17.4	1.942	2.893	7.2	20.9	3 22	13 26.10	+ 1 8.7	1.413	2.373	8.3	19.2
4 1	13 15.82	- 8 35.5	1.903	2.893	3.2	20.6	4 1	13 16.93	+ 1 59.5	1.388	2.376	4.5	19.0
4 11	13 7.27	- 7 48.3	1.892	2.893	1.0	20.4	4 11	13 6.92	+ 2 43.2	1.389	2.379	4.8	19.0
4 21	12 58.94	- 7 1.0	1.909	2.892	5.1	20.7	4 21	12 57.32	+ 3 13.1	1.416	2.382	8.7	19.2
5 1	12 51.70	- 6 19.1	1.954	2.891	8.9	21.0	5 1	12 49.28	+ 3 24.9	1.468	2.385	12.8	19.5
5 11	12 46.21	- 5 47.1	2.023	2.890	12.3	21.2	5 11	12 43.59	+ 3 16.7	1.541	2.387	16.5	19.7
37628	1993 <i>TK</i> ₁₇		4 8.5 222°57	1.2/ 7.3	18		34404	2000 <i>RZ</i> ₈₅		4 8.5 7°30	1.6/ 7.4	18	
3 2	13 36.80	- 3 10.6	2.632	3.430	11.2	19.2	3 2	13 34.56	- 5 44.5	1.277	2.116	18.5	18.3
3 12	13 31.46	- 3 13.0	2.538	3.426	8.7	19.0	3 12	13 31.37	- 5 26.3	1.206	2.117	14.3	18.0
3 22	13 24.40	- 3 11.1	2.468	3.422	5.7	18.8	3 22	13 25.14	- 4 54.9	1.154	2.117	9.4	17.8
4 1	13 16.08	- 3 7.2	2.427	3.418	2.5	18.6	4 1	13 16.60	- 4 15.1	1.125	2.119	4.0	17.5
4 11	13 7.19	- 3 4.0	2.416	3.414	1.7	18.5	4 11	13 7.03	- 3 34.3	1.121	2.120	2.6	17.4
4 21	12 58.46	- 3 4.2	2.435	3.410	4.9	18.7	4 21	12 57.86	- 3 0.2	1.141	2.123	7.9	17.7
5 1	12 50.60	- 3 10.2	2.483	3.405	8.0	18.9	5 1	12 50.42	- 2 39.4	1.184	2.126	13.0	18.0
5 11	12 44.18	- 3 23.8	2.556	3.401	10.8	19.1	5 11	12 45.64	- 2 36.1	1.248	2.129	17.4	18.2
428767	2008 <i>SO</i> ₁₆₇		4 8.5 259°63	1.2/ 7.5	17	</							

EPHEMERIDES

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
211486	2003 <i>GK</i> ₃₉		4 8.5 94°69	0°9/ 7.7 17			194413	2001 <i>VS</i> ₄₆		4 8.5 135°30	2°0/10.3 18		
3 2	13 40.68	- 3 39.2	2.468	3.259	12.1	20.6	3 2	13 37.50	-15 50.0	1.794	2.575	16.3	20.3
3 12	13 34.36	- 3 50.7	2.392	3.277	9.3	20.4	3 12	13 32.77	-15 30.7	1.716	2.587	13.0	20.1
3 22	13 26.22	- 3 57.6	2.342	3.295	6.0	20.2	3 22	13 25.61	-14 52.6	1.659	2.599	9.1	19.9
4 1	13 16.84	- 4 2.0	2.321	3.312	2.6	20.0	4 1	13 16.70	-13 57.4	1.627	2.611	4.8	19.7
4 11	13 6.99	- 4 6.5	2.330	3.329	1.5	19.9	4 11	13 7.08	-12 50.3	1.622	2.622	2.0	19.5
4 21	12 57.47	- 4 13.4	2.369	3.346	4.8	20.2	4 21	12 57.84	-11 38.1	1.646	2.632	5.4	19.7
5 1	12 49.03	- 4 25.1	2.438	3.362	8.0	20.4	5 1	12 50.01	-10 28.7	1.697	2.641	9.5	20.0
5 11	12 42.23	- 4 43.1	2.533	3.379	10.8	20.6	5 11	12 44.32	- 9 28.9	1.772	2.650	13.2	20.2
246978	1999 <i>TB</i> ₂₂₁		4 8.5 129°89	4°8/13.2 18			244776	2003 <i>SM</i> ₁₅₂		4 8.5 195°13	1°3/ 7.2 18		
3 2	13 37.72	-23 25.4	2.016	2.752	16.2	21.2	3 2	13 35.69	- 4 42.3	2.431	3.232	12.0	20.6
3 12	13 32.79	-23 31.4	1.934	2.767	13.4	21.0	3 12	13 30.77	- 4 22.9	2.339	3.229	9.2	20.4
3 22	13 25.55	-23 16.2	1.873	2.782	10.3	20.8	3 22	13 24.03	- 3 56.5	2.272	3.227	6.0	20.2
4 1	13 16.64	-22 39.4	1.835	2.796	7.0	20.7	4 1	13 15.97	- 3 26.2	2.232	3.224	2.6	20.0
4 11	13 7.05	-21 43.3	1.825	2.809	4.9	20.6	4 11	13 7.31	- 2 55.8	2.222	3.220	1.9	19.9
4 21	12 57.81	-20 33.4	1.843	2.821	5.8	20.6	4 21	12 58.83	- 2 29.4	2.241	3.216	5.2	20.1
5 1	12 49.90	-19 17.0	1.888	2.833	8.7	20.8	5 1	12 51.29	- 2 10.5	2.289	3.211	8.6	20.3
5 11	12 44.02	-18 2.3	1.959	2.844	11.8	21.0	5 11	12 45.28	- 2 1.9	2.361	3.206	11.5	20.5
397578	2007 <i>UB</i> ₁₂₃		4 8.5 169°62	0°5/ 7.9 17			215549	2002 <i>XQ</i> ₈₅		4 8.5 79°82	0°7/ 7.9 18		
3 2	13 36.63	- 9 25.2	2.050	2.846	14.1	22.3	3 2	13 38.26	- 6 58.7	1.683	2.494	16.0	19.8
3 12	13 31.78	- 8 42.9	1.965	2.851	10.9	22.1	3 12	13 33.28	- 6 45.0	1.619	2.514	12.3	19.6
3 22	13 24.81	- 7 47.2	1.902	2.855	7.2	21.9	3 22	13 25.87	- 6 20.5	1.578	2.534	8.0	19.4
4 1	13 16.31	- 6 41.9	1.867	2.859	3.1	21.6	4 1	13 16.77	- 5 48.8	1.562	2.554	3.4	19.1
4 11	13 7.16	- 5 32.7	1.861	2.862	1.4	21.5	4 11	13 7.07	- 5 15.1	1.574	2.574	1.6	19.0
4 21	12 58.28	- 4 26.0	1.884	2.864	5.6	21.8	4 21	12 57.88	- 4 45.2	1.613	2.594	6.1	19.4
5 1	12 50.57	- 3 28.0	1.935	2.865	9.5	22.0	5 1	12 50.19	- 4 23.7	1.678	2.613	10.3	19.7
5 11	12 44.70	- 2 43.4	2.010	2.865	12.9	22.3	5 11	12 44.68	- 4 14.3	1.766	2.632	13.8	19.9
204971	1993 <i>FG</i> ₉		4 8.5 345°10	2°8/ 5.2 18			250414	2003 <i>UB</i> ₂₇₆		4 8.5 217°22	0°3/ 8.2 16		
3 2	13 29.51	- 2 36.9	2.194	3.017	12.3	20.2	3 2	13 37.02	- 8 44.8	1.984	2.783	14.3	21.3
3 12	13 26.18	- 1 32.3	2.113	3.017	9.4	20.0	3 12	13 32.33	- 8 22.4	1.888	2.775	11.2	21.1
3 22	13 21.05	- 0 19.4	2.056	3.016	6.1	19.8	3 22	13 25.35	- 7 47.6	1.813	2.766	7.5	20.8
4 1	13 14.66	+ 0 56.5	2.026	3.016	3.2	19.7	4 1	13 16.64	- 7 3.4	1.766	2.757	3.2	20.6
4 11	13 7.71	+ 2 8.8	2.025	3.015	3.6	19.7	4 11	13 7.07	- 6 14.5	1.746	2.747	1.3	20.4
4 21	13 0.99	+ 3 11.5	2.052	3.015	6.6	19.9	4 21	12 57.66	- 5 26.6	1.756	2.737	5.7	20.7
5 1	12 55.22	+ 3 59.8	2.106	3.015	9.9	20.1	5 1	12 49.38	- 4 45.5	1.792	2.725	9.9	20.9
5 11	12 50.98	+ 4 31.0	2.182	3.014	12.8	20.2	5 11	12 43.01	- 4 15.9	1.853	2.713	13.5	21.1
517688	2015 <i>DM</i> ₂₃₂		4 8.5 61°84	1°5/ 9.9 17			415982	2001 <i>YN</i> ₉₉		4 8.5 97°43	0°9/ 9.4 18		
3 2	13 32.37	-14 5.0	1.938	2.729	14.9	21.6	3 2	13 36.00	-12 56.3	2.030	2.815	14.5	22.1
3 12	13 28.69	-13 49.7	1.855	2.734	11.8	21.4	3 12	13 31.17	-12 30.4	1.962	2.839	11.3	21.9
3 22	13 22.86	-13 18.4	1.794	2.739	8.2	21.2	3 22	13 24.30	-11 50.0	1.917	2.863	7.7	21.7
4 1	13 15.49	-12 33.2	1.758	2.744	4.2	21.0	4 1	13 16.05	-10 58.1	1.898	2.887	3.6	21.5
4 11	13 7.44	-11 38.5	1.749	2.749	1.6	20.8	4 11	13 7.32	- 9 59.4	1.908	2.909	1.1	21.4
4 21	12 59.66	-10 40.2	1.768	2.754	5.0	21.1	4 21	12 59.01	- 8 59.9	1.947	2.932	4.8	21.7
5 1	12 53.06	- 9 44.6	1.814	2.760	8.9	21.3	5 1	12 51.95	- 8 5.6	2.014	2.953	8.5	22.0
5 11	12 48.29	- 8 57.7	1.884	2.765	12.4	21.5	5 11	12 46.73	- 7 21.1	2.105	2.975	11.8	22.2
329293	2000 <i>NF</i> ₁₉		4 8.5 248°71	1°6/10.1 18			29217	1991 <i>VV</i> ₁₂		4 8.5 228°78	1°5/10.2 18		
3 2	13 35.61	-14 21.6	2.320	3.092	13.3	21.4	3 2	13 32.08	-14 40.2	2.582	3.354	12.1	19.4
3 12	13 31.07	-14 13.1	2.204	3.072	10.7	21.1	3 12	13 28.02	-14 25.7	2.478	3.346	9.7	19.2
3 22	13 24.46	-13 50.6	2.111	3.051	7.5	20.9	3 22	13 22.25	-13 58.3	2.397	3.337	6.7	19.0
4 1	13 16.25	-13 15.1	2.045	3.029	4.0	20.6	4 1	13 15.21	-13 19.3	2.343	3.327	3.6	18.8
4 11	13 7.17	-12 29.4	2.007	3.007	1.7	20.4	4 11	13 7.57	-12 31.9	2.318	3.317	1.5	18.6
4 21	12 58.09	-11 37.9	1.999	2.983	4.7	20.6	4 21	13 0.03	-11 40.1	2.322	3.307	4.1	18.8
5 1	12 49.91	-10 46.2	2.019	2.959	8.5	20.8	5 1	12 53.32	-10 48.8	2.355	3.297	7.4	19.0
5 11	12 43.38	- 9 59.8	2.064	2.935	11.9	20.9	5 11	12 48.03	-10 2.7	2.413	3.286	10.4	19.2
169408	2001 <i>XP</i> ₁₀₆		4 8.5 61°92	6°7/16.7 17			317139	2001 <i>UO</i> ₁₂₃		4 8.5 164°79	3°6/ 3.2 18		
3 2	13 31.96	-30 52.8	2.294	2.986	15.6	19.8	3 2	13 30.79	+ 3 45.8	2.995	3.812	9.5	21.5
3 12	13 28.32	-31 11.6	2.205	2.994	13.5	19.7	3 12	13 26.61	+ 4 53.5	2.920	3.817	7.3	21.4
3 22	13 22.60	-31 8.1	2.135	3.002	11.1	19.5	3 22	13 21.08	+ 6 3.6	2.870	3.822	5.1	21.2
4 1	13 15.37	-30 40.4	2.087	3.010	8.8	19.4	4 1	13 14.62	+ 7 11.2	2.850	3.827	3.7	21.1
4 11	13 7.49	-29 49.6	2.064	3.018	7.0	19.3	4 11	13 7.79	+ 8 11.6	2.860	3.831	4.3	21.2
4 21	12 59.85	-28 39.3	2.068	3.026	6.9	19.3	4 21	13 1.14	+ 9 0.9	2.899	3.834	6.3	21.3
5 1	12 53.34	-27 16.0	2.098	3.034	8.5	19.4	5 1	12 55.22	+ 9 36.4	2.966	3.837	8.6	21.5
5 11	12 48.60	-25 47.7	2.153	3.043	10.7	19.6	5 11	12 50.47	+ 9 56.7	3.056	3.840	10.7	21.6
50868	2000 <i>GC</i> ₆		4 8.5 178°92	0°5/ 8.9 18			108760	2001 <i>OJ</i> ₄₆		4 8.5 146°23	1°5/10.1 18		
3 2	13 32.94	-10 49.4	2.270	3.063	13.0	18.9	3 2	13 35.79	-14 37.6	2.221	2.994	13.8	20.3
3 12	13 28.81	-10 32.7	2.181	3.063	10.1	18.7	3 12	13 31.00	-14 19.6	2.136	3.005	10.9	20.1
3 22	13 22.81	-10 4.4	2.114	3.063	6.8	18.5	3 22	13 24.23	-13 46.9	2.075	3.015	7.6	19.9
4 1	13 15.44	- 9 26.6	2.074	3.064	3.1	18.2	4 1	13 16.06	-13 1.5	2.040	3.024	3.9	19.7
4 11	13 7.47	- 8 43.4	2.062	3.064	0.9	18.0	4 11	13 7.31	-12 7.1	2.033	3.033	1.6	19.6
4 21	12 59.70	- 7 59.3	2.080	3.063	4.7	18.3	4 21	12 58.84	-11 9.0	2.056	3.041	4.6	19.8
5 1	12 52.90	- 7 19.2	2.125	3.063	8.2	18.5	5 1	12 51.47	-10 13.0	2.107	3.049	8.1	20.0
5 11	12 47.70	- 6 47.5	2.194	3.063	11.4	18.7	5 11	12 45.81	- 9 24.3	2.184	3.056	11.3	20.2
297703	2001 <i>VD</i> ₇₉		4 8.5 165°47	1°4/ 9.7 18			85987	1999 <i>JT</i> ₅		4 8.5 205°70	13°7/ 2.6		

EPHEMERIDES

4 8.5

4 8.5

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
166604	2002 <i>RJ</i> ₂₁₇		4 8.5 216°77	0°4/ 8.9 17			243583	1997 <i>TU</i> ₁₉		4 8.5 229°85	1°0/ 9.4 17		
3 2	13 32.83	-11 4.8	2.383	3.172	12.5	21.2	3 2	13 34.79	-13 41.9	1.728	2.524	16.3	21.5
3 12	13 28.69	-10 44.4	2.286	3.167	9.8	21.0	3 12	13 31.00	-13 9.4	1.632	2.515	12.9	21.2
3 22	13 22.73	-10 12.3	2.212	3.161	6.6	20.8	3 22	13 24.69	-12 17.2	1.558	2.506	8.9	21.0
4 1	13 15.43	-9 30.6	2.165	3.155	3.0	20.6	4 1	13 16.44	-11 7.9	1.508	2.497	4.3	20.7
4 11	13 7.51	-8 43.3	2.147	3.149	0.9	20.4	4 11	13 7.23	-9 47.1	1.486	2.487	1.3	20.4
4 21	12 59.74	-7 54.8	2.159	3.142	4.5	20.7	4 21	12 58.19	-8 22.8	1.491	2.476	5.9	20.7
5 1	12 52.88	-7 10.1	2.198	3.135	8.1	20.9	5 1	12 50.44	-7 3.7	1.522	2.465	10.5	20.9
5 11	12 47.54	-6 33.6	2.262	3.128	11.2	21.0	5 11	12 44.82	-5 57.7	1.577	2.454	14.6	21.2
181307	2006 <i>QX</i> ₂₉		4 8.5 163°68	0°4/ 8.1 18			189249	2004 <i>RG</i> ₃₀₇		4 8.5 214°97	3°4/ 4.9 18		
3 2	13 37.10	-8 30.0	2.145	2.939	13.5	21.7	3 2	13 36.28	+2 14.0	2.557	3.366	11.2	20.6
3 12	13 32.06	-8 3.6	2.060	2.946	10.5	21.5	3 12	13 31.18	+2 52.6	2.463	3.357	8.6	20.4
3 22	13 24.97	-7 26.2	1.999	2.952	6.9	21.3	3 22	13 24.30	+3 34.3	2.394	3.347	5.9	20.2
4 1	13 16.41	-6 40.9	1.965	2.957	3.0	21.0	4 1	13 16.13	+4 14.8	2.353	3.337	3.6	20.0
4 11	13 7.23	-5 52.2	1.960	2.961	1.3	20.9	4 11	13 7.36	+4 49.4	2.343	3.325	4.0	20.0
4 21	12 58.31	-5 5.6	1.984	2.964	5.3	21.2	4 21	12 58.74	+5 14.1	2.361	3.314	6.6	20.2
5 1	12 50.51	-4 26.0	2.037	2.967	9.0	21.4	5 1	12 51.00	+5 25.9	2.407	3.301	9.5	20.3
5 11	12 44.49	-3 57.3	2.113	2.969	12.3	21.6	5 11	12 44.72	+5 23.4	2.478	3.288	12.1	20.5
504398	2007 <i>VL</i> ₃₁₆		4 8.5 153°32	4°5/ 3.2 18			79021	1160 <i>T</i> ₋₂		4 8.5 251°39	2°5/ 10.3 18		
3 2	13 32.40	+5 51.4	2.525	3.347	10.9	21.6	3 2	13 37.93	-14 0.0	1.715	2.505	16.6	19.6
3 12	13 28.11	+6 45.2	2.453	3.351	8.5	21.5	3 12	13 33.56	-14 17.8	1.620	2.496	13.4	19.3
3 22	13 22.19	+7 39.7	2.405	3.355	6.1	21.3	3 22	13 26.48	-14 20.4	1.545	2.487	9.5	19.0
4 1	13 15.15	+8 29.6	2.385	3.359	4.5	21.2	4 1	13 17.28	-14 7.8	1.494	2.478	5.2	18.8
4 11	13 7.67	+9 10.0	2.394	3.362	5.2	21.3	4 11	13 6.97	-13 42.5	1.470	2.469	2.5	18.6
4 21	13 0.42	+9 37.0	2.431	3.366	7.4	21.4	4 21	12 56.78	-13 9.3	1.473	2.459	5.9	18.8
5 1	12 54.07	+9 48.3	2.493	3.369	9.9	21.6	5 1	12 47.91	-12 34.4	1.503	2.450	10.3	19.0
5 11	12 49.12	+9 43.2	2.579	3.371	12.2	21.7	5 11	12 41.31	-12 4.6	1.555	2.440	14.4	19.2
156325	2001 <i>XC</i> ₉₈		4 8.5 111°37	6°8/ 2.2 18			313797	2004 <i>AA</i>		4 8.5 83°91	0°5/ 8.1 18		
3 2	13 37.58	+10 32.3	1.969	2.794	13.5	19.8	3 2	13 36.93	-8 31.3	1.606	2.419	16.5	21.4
3 12	13 32.41	+11 34.1	1.913	2.808	10.7	19.6	3 12	13 32.44	-8 7.3	1.541	2.436	12.8	21.2
3 22	13 25.14	+12 32.3	1.881	2.822	8.2	19.5	3 22	13 25.44	-7 29.7	1.497	2.453	8.4	21.0
4 1	13 16.44	+13 19.7	1.874	2.835	6.9	19.4	4 1	13 16.67	-6 42.8	1.478	2.470	3.6	20.8
4 11	13 7.25	+13 49.9	1.895	2.848	7.7	19.5	4 11	13 7.23	-5 52.5	1.486	2.487	1.5	20.6
4 21	12 58.52	+13 59.1	1.942	2.860	10.0	19.7	4 21	12 58.29	-5 5.8	1.521	2.504	6.2	21.0
5 1	12 51.09	+13 46.4	2.013	2.872	12.6	19.9	5 1	12 50.87	-4 28.6	1.582	2.520	10.6	21.3
5 11	12 45.58	+13 13.1	2.106	2.884	15.0	20.1	5 11	12 45.69	-4 5.2	1.666	2.536	14.3	21.5
246878	1995 <i>OY</i> ₅		4 8.5 246°20	1°3/ 7.0 18			370731	2004 <i>RJ</i> ₈₂		4 8.5 237°07	0°0/ 8.4 17		
3 2	13 31.70	-5 38.2	2.597	3.401	11.2	21.6	3 2	13 33.50	-10 20.0	2.081	2.879	13.8	21.7
3 12	13 27.69	-5 2.2	2.494	3.387	8.6	21.4	3 12	13 29.54	-9 51.5	1.983	2.870	10.8	21.5
3 22	13 22.03	-4 17.8	2.416	3.372	5.6	21.2	3 22	13 23.48	-9 9.6	1.908	2.860	7.2	21.2
4 1	13 15.14	-3 28.2	2.365	3.357	2.5	21.0	4 1	13 15.85	-8 16.9	1.859	2.850	3.2	20.9
4 11	13 7.66	-2 37.7	2.344	3.342	1.9	20.9	4 11	13 7.47	-7 18.4	1.838	2.840	1.0	20.7
4 21	13 0.27	-1 50.9	2.352	3.326	5.1	21.1	4 21	12 59.22	-6 19.7	1.846	2.829	5.3	21.0
5 1	12 53.67	-1 12.0	2.388	3.310	8.3	21.3	5 1	12 52.01	-5 27.0	1.881	2.818	9.3	21.2
5 11	12 48.41	-0 44.2	2.449	3.293	11.2	21.4	5 11	12 46.54	-4 45.3	1.941	2.807	12.8	21.4
191315	2003 <i>HT</i> ₄₆		4 8.5 343°68	1°5/ 9.9 17			4440	Tchantchès		4 8.5 48°63	20°7/ 29.2 18		
3 2	13 27.47	-15 36.9	1.483	2.295	17.7	19.5	3 2	13 39.03	-47 39.2	1.163	1.808	30.1	16.6
3 12	13 25.66	-14 58.1	1.396	2.287	14.1	19.2	3 12	13 37.41	-50 6.7	1.103	1.815	28.3	16.5
3 22	13 21.29	-13 54.8	1.329	2.280	9.8	18.9	3 22	13 30.77	-51 53.3	1.051	1.822	26.4	16.3
4 1	13 14.96	-12 29.6	1.286	2.274	5.0	18.6	4 1	13 19.68	-52 45.3	1.011	1.830	24.3	16.2
4 11	13 7.71	-10 49.7	1.267	2.268	1.6	18.4	4 11	13 6.13	-52 32.3	0.983	1.838	22.4	16.1
4 21	13 0.71	-9 5.1	1.275	2.263	6.1	18.7	4 21	12 52.96	-51 12.1	0.969	1.847	21.1	16.0
5 1	12 55.07	-7 26.9	1.307	2.259	11.0	18.9	5 1	12 42.95	-48 53.8	0.971	1.855	20.7	16.0
5 11	12 51.65	-6 4.5	1.361	2.256	15.3	19.2	5 11	12 37.80	-45 56.6	0.990	1.864	21.5	16.1
302061	2000 <i>UW</i> ₁₁₁		4 8.5 266°69	4°2/ 3.8 17			209372	2004 <i>ED</i> ₁₆		4 8.5 104°31	2°8/ 11.3 17		
3 2	13 34.79	+5 39.4	2.621	3.436	10.8	21.0	3 2	13 35.00	-17 0.1	2.293	3.056	13.7	20.6
3 12	13 30.08	+6 17.5	2.518	3.413	8.4	20.8	3 12	13 30.45	-17 14.9	2.206	3.064	11.1	20.4
3 22	13 23.62	+6 56.6	2.440	3.390	6.0	20.6	3 22	13 23.94	-17 15.7	2.142	3.072	8.0	20.3
4 1	13 15.85	+7 32.3	2.390	3.366	4.3	20.4	4 1	13 16.01	-17 2.9	2.103	3.079	4.8	20.1
4 11	13 7.43	+7 59.8	2.368	3.341	4.9	20.4	4 11	13 7.45	-16 38.6	2.092	3.087	2.8	19.9
4 21	12 59.07	+8 15.2	2.376	3.317	7.2	20.5	4 21	12 59.10	-16 6.3	2.110	3.094	4.6	20.1
5 1	12 51.51	+8 16.0	2.411	3.291	10.0	20.6	5 1	12 51.80	-15 31.0	2.156	3.101	7.8	20.3
5 11	12 45.34	+8 1.3	2.468	3.266	12.5	20.8	5 11	12 46.17	-14 57.6	2.227	3.108	10.8	20.5
458903	2011 <i>US</i> ₂₀₄		4 8.5 55°31	0°0/ 8.3 16			411686	2011 <i>YW</i> ₂₅		4 8.5 354°26	2°9/ 6.3 17		
3 2	13 34.62	-10 37.5	1.328	2.153	18.7	21.5	3 2	13 33.76	-3 41.1	1.468	2.304	16.7	20.7
3 12	13 31.13	-10 7.6	1.268	2.169	14.5	21.3	3 12	13 30.40	-2 56.6	1.393	2.303	12.8	20.5
3 22	13 24.78	-9 19.1	1.228	2.186	9.6	21.1	3 22	13 24.35	-2 0.5	1.339	2.302	8.4	20.2
4 1	13 16.41	-8 16.8	1.211	2.203	4.2	20.8	4 1	13 16.30	-0 59.0	1.309	2.301	4.0	20.0
4 11	13 7.28	-7 8.6	1.219	2.220	1.4	20.6	4 11	13 7.35	-0 0.4	1.305	2.301	3.8	19.9
4 21	12 58.73	-6 3.5	1.252	2.237	6.8	21.0	4 21	12 58.73	+0 47.4	1.327	2.300	8.2	20.2
5 1	12 51.93	-5 9.7	1.310	2.255	11.6	21.4	5 1	12 51.62	+1 18.3	1.372	2.301	12.7	20.4
5 11	12 47.64	-4 33.0	1.389	2.273	15.8	21.7	5 11	12 46.83	+1 28.8	1.439	2.301	16.6	20.7
457529	2008 <i>WE</i> ₅₅		4 8.5 142°09	3°7/ 5.8 18			180832	2005 <i>GP</i> ₄₆		4 8.5 249°30	0°4/ 8.9 18		
3 2	13 38.67	-0 51.4	1.564	2.392	16.2	21.5	3 2	13 35.92					

EPHEMERIDES

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
292996	2006 WR ₁₁		4 8.5 46°57'	0°0/ 8.5 18			261995	2006 QQ ₄₀		4 8.5 236°71'	0°6/ 8.0 17		
3 2	13 34.26	- 8 56.5	1.967	2.771	14.3	20.1	3 2	13 36.89	- 8 3.7	1.992	2.793	14.2	21.9
3 12	13 29.86	- 8 47.5	1.908	2.797	11.0	19.9	3 12	13 32.32	- 7 39.6	1.890	2.779	11.1	21.7
3 22	13 23.47	- 8 27.8	1.871	2.825	7.2	19.7	3 22	13 25.44	- 7 3.5	1.811	2.764	7.4	21.4
4 1	13 15.75	- 8 0.3	1.861	2.852	3.2	19.5	4 1	13 16.79	- 6 18.3	1.757	2.749	3.2	21.1
4 11	13 7.58	- 7 29.4	1.878	2.880	1.0	19.4	4 11	13 7.22	- 5 28.9	1.732	2.733	1.5	21.0
4 21	12 59.85	- 6 59.6	1.924	2.908	5.0	19.8	4 21	12 57.73	- 4 41.0	1.736	2.716	5.9	21.2
5 1	12 53.35	- 6 35.5	1.997	2.936	8.7	20.0	5 1	12 49.34	- 4 0.4	1.767	2.699	10.1	21.4
5 11	12 48.65	- 6 20.3	2.093	2.964	11.8	20.3	5 11	12 42.83	- 3 31.9	1.822	2.681	13.8	21.6
20098	Shibatagenji		4 8.5 227°86'	4°6/ 3.5 18			150782	2001 QH ₂₉₁		4 8.5 112°79'	3°6/ 11.3 18		
3 2	13 34.17	+ 4 58.8	2.343	3.164	11.7	17.8	3 2	13 40.93	- 16 49.9	1.936	2.700	15.9	19.8
3 12	13 29.72	+ 5 53.5	2.256	3.155	9.1	17.6	3 12	13 35.40	- 17 27.5	1.854	2.711	12.9	19.6
3 22	13 23.43	+ 6 50.4	2.193	3.145	6.5	17.4	3 22	13 27.42	- 17 50.2	1.794	2.722	9.4	19.4
4 1	13 15.79	+ 7 43.9	2.158	3.135	4.7	17.3	4 1	13 17.61	- 17 57.3	1.758	2.733	5.8	19.2
4 11	13 7.54	+ 8 28.1	2.152	3.124	5.4	17.3	4 11	13 6.98	- 17 49.9	1.751	2.743	3.6	19.1
4 21	12 59.45	+ 8 58.5	2.174	3.113	7.9	17.4	4 21	12 56.64	- 17 31.5	1.772	2.754	5.6	19.2
5 1	12 52.31	+ 9 12.1	2.221	3.102	10.7	17.6	5 1	12 47.64	- 17 7.4	1.820	2.764	9.0	19.4
5 11	12 46.71	+ 9 7.8	2.291	3.090	13.3	17.7	5 11	12 40.77	- 16 43.4	1.893	2.773	12.4	19.6
419682	2010 TF ₁₈₇		4 8.5 247°29'	2°9/ 5.9 17			379144	2009 HV ₁₁		4 8.5 73°93'	9°0/ 6.1 17		
3 2	13 35.27	- 2 51.9	1.785	2.608	14.7	21.7	3 2	13 58.17	+ 12 43.9	1.073	1.900	22.1	20.1
3 12	13 31.24	- 2 2.6	1.692	2.595	11.4	21.4	3 12	13 50.09	+ 12 35.3	1.016	1.911	17.8	19.9
3 22	13 24.80	- 1 3.0	1.622	2.582	7.5	21.2	3 22	13 37.67	+ 12 13.5	0.977	1.922	13.2	19.6
4 1	13 16.50	+ 0 1.5	1.578	2.569	3.8	20.9	4 1	13 22.14	+ 11 29.0	0.961	1.933	9.6	19.5
4 11	13 7.29	+ 1 3.5	1.562	2.555	3.8	20.9	4 11	13 5.55	+ 10 16.0	0.969	1.945	9.6	19.5
4 21	12 58.22	+ 1 56.0	1.572	2.541	7.7	21.1	4 21	12 50.13	+ 8 35.7	1.004	1.956	13.1	19.7
5 1	12 50.36	+ 2 32.8	1.609	2.526	11.9	21.3	5 1	12 37.71	+ 6 34.2	1.061	1.968	17.5	20.0
5 11	12 44.52	+ 2 50.6	1.667	2.511	15.6	21.5	5 11	12 29.24	+ 4 19.3	1.139	1.979	21.5	20.3
263226	2008 AZ ₅₂		4 8.5 206°75'	0°8/ 9.3 16			217113	2001 YZ ₁₀₄		4 8.5 325°85'	9°2/ 30.4 17		
3 2	13 36.42	- 12 18.1	2.048	2.834	14.4	22.6	3 2	13 31.08	+ 11 32.7	1.571	2.420	15.1	19.3
3 12	13 31.83	- 11 58.1	1.951	2.829	11.4	22.4	3 12	13 28.24	+ 13 15.4	1.503	2.410	12.3	19.1
3 22	13 25.02	- 11 23.5	1.876	2.823	7.7	22.2	3 22	13 22.88	+ 14 56.6	1.458	2.400	10.0	19.0
4 1	13 16.55	- 10 36.4	1.828	2.817	3.7	21.9	4 1	13 15.67	+ 16 25.1	1.436	2.390	9.2	18.9
4 11	13 7.28	- 9 41.1	1.808	2.809	1.1	21.7	4 11	13 7.62	+ 17 30.4	1.440	2.381	10.6	18.9
4 21	12 58.17	- 8 43.1	1.817	2.801	5.2	22.0	4 21	12 59.86	+ 18 5.6	1.466	2.373	13.3	19.1
5 1	12 50.17	- 7 49.0	1.853	2.792	9.2	22.2	5 1	12 53.46	+ 18 8.0	1.513	2.365	16.3	19.2
5 11	12 44.03	- 7 4.1	1.914	2.783	12.8	22.4	5 11	12 49.22	+ 17 39.3	1.578	2.357	19.2	19.4
428747	2008 SW ₅		4 8.5 160°51'	2°1/ 6.2 17			162545	2000 QR ₂₀₅		4 8.5 210°26'	1°9/ 6.8 17		
3 2	13 35.34	- 1 46.7	2.570	3.375	11.3	21.6	3 2	13 35.29	- 6 12.3	1.762	2.578	15.2	20.7
3 12	13 30.34	- 1 14.8	2.489	3.382	8.6	21.4	3 12	13 31.23	- 5 19.9	1.675	2.574	11.7	20.5
3 22	13 23.67	- 0 37.9	2.433	3.388	5.6	21.2	3 22	13 24.75	- 4 14.1	1.610	2.569	7.6	20.2
4 1	13 15.85	+ 0 0.3	2.404	3.394	2.8	21.1	4 1	13 16.48	- 3 0.0	1.571	2.563	3.4	20.0
4 11	13 7.54	+ 0 35.7	2.406	3.399	2.7	21.1	4 11	13 7.36	- 1 45.1	1.560	2.557	2.8	19.9
4 21	12 59.47	+ 1 4.4	2.437	3.403	5.5	21.2	4 21	12 58.47	- 0 37.0	1.576	2.551	7.0	20.1
5 1	12 52.31	+ 1 23.2	2.497	3.407	8.5	21.4	5 1	12 50.85	+ 0 17.3	1.619	2.544	11.3	20.4
5 11	12 46.60	+ 1 30.2	2.581	3.410	11.1	21.6	5 11	12 45.27	+ 0 53.3	1.684	2.536	15.1	20.6
380903	2006 DN ₁₄₅		4 8.5 207°60'	0°6/ 9.1 17			345994	2007 TL ₁₈₂		4 8.5 99°64'	5°5/ 2.9 17		
3 2	13 34.99	- 10 52.8	2.277	3.064	13.1	22.0	3 2	13 37.43	+ 10 9.9	2.435	3.249	11.5	21.1
3 12	13 30.47	- 10 42.9	2.181	3.061	10.3	21.8	3 12	13 31.87	+ 10 50.8	2.379	3.269	9.1	21.0
3 22	13 23.99	- 10 21.7	2.108	3.056	6.9	21.6	3 22	13 24.60	+ 11 28.4	2.348	3.288	6.8	20.8
4 1	13 16.06	- 9 50.9	2.062	3.051	3.2	21.3	4 1	13 16.22	+ 11 57.4	2.345	3.308	5.5	20.8
4 11	13 7.45	- 9 14.2	2.045	3.046	1.0	21.1	4 11	13 7.49	+ 12 13.3	2.371	3.327	6.1	20.9
4 21	12 59.00	- 8 35.8	2.057	3.041	4.7	21.4	4 21	12 59.15	+ 12 13.6	2.424	3.345	8.1	21.0
5 1	12 51.52	- 8 0.5	2.097	3.035	8.4	21.6	5 1	12 51.91	+ 11 57.4	2.503	3.364	10.4	21.2
5 11	12 45.68	- 7 32.6	2.161	3.029	11.6	21.8	5 11	12 46.25	+ 11 25.5	2.606	3.382	12.5	21.4
38719	2000 QQ ₁₂₇		4 8.5 203°44'	1°1/ 9.4 18			404222	2013 CJ ₂₀₀		4 8.5 325°92'	4°0/ 5.9 14 C		
3 2	13 40.05	- 11 9.7	1.881	2.669	15.4	19.7	3 2	13 35.51	- 1 0.3	1.258	2.105	18.2	21.3
3 12	13 34.86	- 11 14.7	1.787	2.666	12.2	19.4	3 12	13 32.31	- 0 25.6	1.182	2.097	14.1	21.0
3 22	13 27.15	- 11 7.0	1.714	2.661	8.3	19.2	3 22	13 25.95	+ 0 18.6	1.126	2.090	9.4	20.7
4 1	13 17.53	- 10 47.8	1.668	2.656	4.0	18.9	4 1	13 17.15	+ 1 5.0	1.092	2.083	5.0	20.4
4 11	13 6.96	- 10 20.5	1.650	2.651	1.3	18.7	4 11	13 7.17	+ 1 45.0	1.083	2.077	5.0	20.4
4 21	12 56.56	- 9 49.7	1.660	2.644	5.5	19.0	4 21	12 57.50	+ 2 10.3	1.098	2.071	9.6	20.6
5 1	12 47.43	- 9 20.9	1.697	2.637	9.8	19.2	5 1	12 49.55	+ 2 15.5	1.136	2.066	14.6	20.9
5 11	12 40.40	- 8 59.4	1.759	2.630	13.6	19.4	5 11	12 44.34	+ 1 58.2	1.193	2.061	18.9	21.1
346158	2007 VH ₂₈₂		4 8.5 326°98'	3°0/ 11.8 17			354886	2006 BG ₁₄₃		4 8.5 31°55'	1°7/ 7.4 16		
3 2	13 30.52	- 19 17.7	2.152	2.917	14.4	20.8	3 2	13 33.65	- 6 39.2	1.132	1.979	19.8	21.3
3 12	13 27.21	- 19 2.4	2.057	2.915	11.7	20.6	3 12	13 30.89	- 6 9.6	1.074	1.988	15.3	21.1
3 22	13 21.92	- 18 28.7	1.984	2.913	8.6	20.4	3 22	13 24.93	- 5 24.1	1.034	1.998	10.0	20.8
4 1	13 15.17	- 17 37.4	1.936	2.912	5.2	20.2	4 1	13 16.62	- 4 28.5	1.015	2.009	4.3	20.5
4 11	13 7.76	- 16 31.9	1.915	2.910	3.0	20.0	4 11	13 7.38	- 3 32.2	1.021	2.021	2.7	20.5
4 21	13 0.55	- 15 17.9	1.922	2.908	4.7	20.1	4 21	12 58.72	- 2 44.4	1.050	2.033	8.2	20.8
5 1	12 54.35	- 14 2.0	1.957	2.906	8.1	20.3	5 1	12 52.00	- 2 12.7	1.102	2.046	13.4	21.1
5 11	12 49.84	- 12 51.1	2.017	2.905	11.4	20.5	5 11	12 48.07	- 2 1.3	1.173	2.060	17.9	21.4
16406	Oszkiewicz		4 8.5 177°89'	4°6/ 13.9 18			464905	2005 SR ₁₈₅		4 8.5 258°64'	0°7/ 7.8 17		
3 2	13 36												

EPHEMERIDES

4 8.5

4 8.6

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
10298	Jiangchuanhuang	4 8.5 352°30	1.7°/ 7.1 18				33421	Byronxu	4 8.5 209°73	0.7°/ 9.2 18			
3 2	13 33.44	- 5 47.0	1.725	2.547	15.2	18.1	3 2	13 37.12	-11 53.2	1.773	2.569	15.9	18.9
3 12	13 29.80	- 5 9.9	1.645	2.547	11.7	17.8	3 12	13 32.75	-11 34.2	1.680	2.564	12.6	18.6
3 22	13 23.80	- 4 21.2	1.586	2.546	7.6	17.6	3 22	13 25.85	-10 59.0	1.609	2.559	8.6	18.4
4 1	13 16.07	- 3 25.5	1.553	2.546	3.3	17.3	4 1	13 17.03	-10 10.0	1.563	2.553	4.0	18.1
4 11	13 7.56	- 2 29.4	1.547	2.546	2.5	17.3	4 11	13 7.28	- 9 12.1	1.545	2.546	1.2	17.8
4 21	12 59.34	- 1 39.8	1.568	2.545	6.7	17.5	4 21	12 57.71	- 8 11.8	1.554	2.539	5.8	18.1
5 1	12 52.39	- 1 2.5	1.615	2.545	10.9	17.8	5 1	12 49.44	- 7 16.6	1.590	2.531	10.3	18.4
5 11	12 47.46	- 0 41.3	1.684	2.545	14.6	18.0	5 11	12 43.29	- 6 32.6	1.649	2.523	14.3	18.6
506379	2017 QE ₃₄	4 8.5 219°89	6°6/16.3 17				285746	2000 TH ₃₈	4 8.5 192°28	1°2/ 6.9 18			
3 2	13 32.94	-30 50.7	2.160	2.856	16.3	21.0	3 2	13 32.57	- 4 1.2	3.222	4.018	9.4	22.0
3 12	13 29.32	-30 47.9	2.058	2.852	14.1	20.8	3 12	13 27.98	- 3 34.6	3.128	4.016	7.2	21.8
3 22	13 23.46	-30 19.6	1.973	2.848	11.6	20.7	3 22	13 22.05	- 3 2.8	3.058	4.013	4.7	21.6
4 1	13 15.93	-29 23.9	1.912	2.843	8.9	20.5	4 1	13 15.19	- 2 28.3	3.018	4.009	2.1	21.5
4 11	13 7.61	-28 2.0	1.876	2.838	6.9	20.3	4 11	13 7.90	- 1 54.4	3.009	4.005	1.7	21.4
4 21	12 59.51	-26 18.8	1.867	2.833	6.8	20.3	4 21	13 0.75	- 1 24.1	3.030	4.001	4.3	21.6
5 1	12 52.58	-24 22.5	1.885	2.828	8.8	20.4	5 1	12 54.25	- 1 0.2	3.080	3.996	6.9	21.8
5 11	12 47.57	-22 23.1	1.930	2.823	11.6	20.6	5 11	12 48.87	- 0 45.0	3.156	3.990	9.2	21.9
231309	2006 BK ₁₉₀	4 8.5 175°80	2°9/ 5.5 18				366607	2003 CO ₁₆	4 8.6 102°39	0°0/ 8.3 18			
3 2	13 33.11	- 1 46.2	2.091	2.911	12.9	20.5	3 2	13 36.33	- 9 41.0	1.887	2.687	14.9	21.6
3 12	13 29.08	- 0 54.3	2.011	2.912	9.9	20.3	3 12	13 31.68	- 9 16.6	1.817	2.704	11.6	21.4
3 22	13 23.10	+ 0 4.9	1.954	2.913	6.5	20.1	3 22	13 24.83	- 8 39.3	1.768	2.721	7.6	21.2
4 1	13 15.70	+ 1 6.1	1.925	2.914	3.4	19.9	4 1	13 16.46	- 7 52.6	1.746	2.737	3.3	20.9
4 11	13 7.70	+ 2 3.3	1.924	2.914	3.7	19.9	4 11	13 7.50	- 7 1.8	1.752	2.753	1.1	20.8
4 21	12 59.95	+ 2 50.6	1.950	2.914	6.8	20.1	4 21	12 58.94	- 6 12.6	1.786	2.769	5.4	21.1
5 1	12 53.26	+ 3 23.8	2.003	2.914	10.2	20.3	5 1	12 51.68	- 5 30.8	1.847	2.784	9.4	21.4
5 11	12 48.24	+ 3 40.4	2.080	2.914	13.3	20.5	5 11	12 46.36	- 5 0.6	1.932	2.799	12.8	21.6
212758	2007 TR ₂₇	4 8.5 103°16	0°2/ 8.3 16				463953	2014 VQ ₅	4 8.6 57°51	4°0/ 5.3 18			
3 2	13 34.60	- 9 57.6	1.535	2.351	17.0	21.4	3 2	13 34.21	- 1 21.5	1.469	2.308	16.5	20.7
3 12	13 31.00	- 9 26.0	1.457	2.354	13.3	21.1	3 12	13 30.51	- 0 18.4	1.413	2.324	12.5	20.5
3 22	13 24.75	- 8 37.6	1.399	2.356	8.8	20.9	3 22	13 24.25	+ 0 53.2	1.379	2.341	8.2	20.3
4 1	13 16.53	- 7 36.4	1.366	2.358	3.8	20.6	4 1	13 16.23	+ 2 5.3	1.370	2.359	4.5	20.1
4 11	13 7.43	- 6 29.2	1.359	2.360	1.4	20.4	4 11	13 7.59	+ 3 9.0	1.386	2.376	4.9	20.2
4 21	12 58.67	- 5 24.1	1.379	2.363	6.5	20.8	4 21	12 59.50	+ 3 56.9	1.429	2.394	8.7	20.5
5 1	12 51.38	- 4 29.1	1.424	2.365	11.3	21.0	5 1	12 52.97	+ 4 24.3	1.495	2.412	12.7	20.7
5 11	12 46.38	- 3 49.9	1.491	2.367	15.3	21.3	5 11	12 48.68	+ 4 29.7	1.582	2.430	16.1	21.0
253946	2004 DE ₃	4 8.5 104°02	2°6/10.8 18				327450	2005 WH ₁₃₇	4 8.6 279°06	2°6/ 6.4 17			
3 2	13 39.31	-15 54.2	1.856	2.630	16.1	21.8	3 2	13 35.50	- 2 29.1	1.810	2.632	14.6	21.3
3 12	13 34.09	-16 2.0	1.783	2.649	12.9	21.6	3 12	13 31.50	- 1 59.2	1.712	2.614	11.3	21.1
3 22	13 26.49	-15 53.3	1.732	2.668	9.1	21.4	3 22	13 25.05	- 1 20.8	1.636	2.595	7.5	20.8
4 1	13 17.19	-15 28.8	1.706	2.687	5.1	21.2	4 1	13 16.71	- 0 38.5	1.585	2.576	3.7	20.5
4 11	13 7.24	-14 52.0	1.708	2.705	2.6	21.1	4 11	13 7.39	+ 0 1.6	1.562	2.557	3.4	20.4
4 21	12 57.70	-14 7.9	1.738	2.723	5.2	21.3	4 21	12 58.13	+ 0 33.4	1.567	2.538	7.4	20.6
5 1	12 49.58	-13 23.1	1.795	2.740	9.0	21.6	5 1	12 50.03	+ 0 51.9	1.596	2.519	11.6	20.8
5 11	12 43.57	-12 43.6	1.877	2.757	12.5	21.8	5 11	12 43.94	+ 0 53.9	1.648	2.500	15.4	21.0
306297	2011 SU ₄₉	4 8.5 194°27	1°5/ 6.3 18				31935	Midgley	4 8.6 280°09	4°8/ 4.9 17			
3 2	13 29.76	- 5 26.2	3.038	3.839	9.8	21.5	3 2	13 35.42	+ 0 5.6	1.443	2.283	16.7	18.8
3 12	13 25.93	- 4 25.8	2.945	3.836	7.5	21.3	3 12	13 32.03	+ 1 3.4	1.353	2.265	13.0	18.5
3 22	13 20.74	- 3 17.6	2.877	3.833	4.8	21.1	3 22	13 25.72	+ 2 11.4	1.285	2.247	8.8	18.2
4 1	13 14.62	- 2 5.1	2.839	3.830	2.2	20.9	4 1	13 17.09	+ 3 22.0	1.241	2.229	5.3	17.9
4 11	13 8.07	- 0 53.0	2.831	3.826	2.1	20.9	4 11	13 7.26	+ 4 25.4	1.223	2.211	5.9	17.9
4 21	13 1.67	+ 0 14.4	2.854	3.822	4.7	21.1	4 21	12 57.54	+ 5 12.6	1.229	2.192	10.0	18.1
5 1	12 55.95	+ 1 13.0	2.905	3.817	7.4	21.3	5 1	12 49.27	+ 5 37.0	1.259	2.174	14.7	18.3
5 11	12 51.35	+ 1 59.8	2.982	3.812	9.8	21.4	5 11	12 43.46	+ 5 35.9	1.308	2.156	18.8	18.5
432769	2011 FM ₂₃	4 8.5 311°48	3°0/ 6.2 17				309807	2009 BP ₈₅	4 8.6 193°13	1°4/ 7.3 17			
3 2	13 35.75	- 0 29.1	1.812	2.637	14.4	21.3	3 2	13 36.82	- 6 55.7	1.872	2.680	14.7	21.8
3 12	13 31.52	- 0 8.2	1.726	2.630	11.1	21.1	3 12	13 32.28	- 6 11.8	1.785	2.678	11.4	21.6
3 22	13 24.94	+ 0 18.0	1.663	2.622	7.4	20.8	3 22	13 25.40	- 5 15.2	1.720	2.676	7.5	21.4
4 1	13 16.59	+ 0 44.9	1.626	2.615	3.8	20.6	4 1	13 16.80	- 4 10.3	1.681	2.673	3.2	21.1
4 11	13 7.42	+ 1 7.0	1.616	2.609	3.8	20.6	4 11	13 7.40	- 3 3.7	1.671	2.670	2.2	21.0
4 21	12 58.46	+ 1 19.5	1.633	2.602	7.4	20.8	4 21	12 58.25	- 2 2.1	1.689	2.665	6.4	21.3
5 1	12 50.74	+ 1 18.6	1.675	2.596	11.3	21.0	5 1	12 50.32	- 1 12.1	1.734	2.660	10.6	21.5
5 11	12 45.01	+ 1 2.4	1.740	2.590	14.8	21.2	5 11	12 44.37	- 0 37.8	1.802	2.654	14.2	21.7
200152	1998 QF ₆₄	4 8.5 193°57	3°4/12.9 18				248351	2005 QR ₁₂₉	4 8.6 307°05	3°7/ 4.1 17			
3 2	13 33.87	-22 11.4	2.822	3.549	12.2	20.9	3 2	13 29.96	+ 1 14.7	2.293	3.119	11.7	20.7
3 12	13 29.34	-22 5.6	2.717	3.546	10.1	20.8	3 12	13 26.52	+ 2 18.3	2.213	3.117	9.0	20.5
3 22	13 23.14	-21 44.4	2.634	3.543	7.7	20.6	3 22	13 21.35	+ 3 26.9	2.157	3.115	6.1	20.3
4 1	13 15.71	-21 7.7	2.577	3.539	5.1	20.4	4 1	13 14.95	+ 4 34.9	2.129	3.112	3.9	20.2
4 11	13 7.72	-20 17.5	2.549	3.535	3.5	20.3	4 11	13 8.01	+ 5 36.3	2.129	3.110	4.5	20.2
4 21	12 59.86	-19 17.4	2.551	3.530	4.3	20.4	4 21	13 1.28	+ 6 25.8	2.157	3.108	7.2	20.4
5 1	12 52.82	-18 12.3	2.581	3.524	6.8	20.5	5 1	12 55.45	+ 6 59.5	2.210	3.106	10.1	20.5
5 11	12 47.17	-17 7.8	2.639	3.518	9.4	20.7	5 11	12 51.09	+ 7 15.6	2.287	3.103	12.8	20.7
356325	2010 JK ₆₄	4 8.5 208°56	5°5/ 1.2 18				393908	2005 UH ₃	4 8.6 144°48	19°5/24.1 18			
3 2	13 30.61	+ 9 22.8	2.605	3.430	10.5	21.2	3 2	14 27.40					

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
159330	2006 CZ ₅₀		4 8.6 215°06	1°5/10.0	17		463759	2014 SD ₂₄		4 8.6 37°52	2°0/ 7.1	18	
3 2	13 34.36	-13 55.9	2.178	2.959	13.8	21.1	3 2	13 33.45	- 6 18.4	1.333	2.170	18.0	20.9
3 12	13 30.16	-13 45.2	2.081	2.954	11.0	20.9	3 12	13 30.36	- 5 35.6	1.268	2.177	13.8	20.7
3 22	13 23.91	-13 20.4	2.006	2.949	7.6	20.7	3 22	13 24.43	- 4 37.9	1.222	2.185	9.0	20.4
4 1	13 16.13	-12 42.7	1.958	2.943	4.0	20.5	4 1	13 16.44	- 3 31.5	1.200	2.193	3.9	20.2
4 11	13 7.63	-11 55.7	1.937	2.937	1.5	20.3	4 11	13 7.60	- 2 25.4	1.203	2.201	3.0	20.1
4 21	12 59.27	-11 4.4	1.945	2.931	4.7	20.5	4 21	12 59.22	- 1 28.2	1.231	2.210	7.8	20.4
5 1	12 51.94	-10 14.3	1.981	2.924	8.4	20.7	5 1	12 52.50	- 0 47.3	1.283	2.220	12.6	20.7
5 11	12 46.31	- 9 30.9	2.042	2.918	11.8	20.9	5 11	12 48.24	- 0 26.8	1.355	2.229	16.7	21.0
36358	2000 OY ₂		4 8.6 242°95	4°4/12.5	18		460183	2014 QQ ₇₇		4 8.6 150°64	1°0/ 9.5	18	
3 2	13 36.84	-21 13.3	2.218	2.960	14.7	19.6	3 2	13 36.57	-13 33.2	1.867	2.654	15.5	22.4
3 12	13 32.30	-21 33.9	2.106	2.945	12.3	19.4	3 12	13 32.06	-13 1.7	1.785	2.663	12.2	22.2
3 22	13 25.49	-21 37.8	2.016	2.930	9.4	19.2	3 22	13 25.23	-12 13.0	1.725	2.671	8.3	22.0
4 1	13 16.90	-21 23.6	1.950	2.914	6.4	19.0	4 1	13 16.73	-11 9.9	1.690	2.678	4.0	21.7
4 11	13 7.36	-20 52.2	1.911	2.897	4.4	18.8	4 11	13 7.52	- 9 57.8	1.684	2.685	1.2	21.5
4 21	12 57.81	-20 6.9	1.901	2.880	5.6	18.8	4 21	12 58.65	- 8 43.8	1.706	2.691	5.3	21.8
5 1	12 49.27	-19 13.3	1.918	2.862	8.6	19.0	5 1	12 51.06	- 7 35.4	1.755	2.696	9.5	22.1
5 11	12 42.55	-18 18.3	1.961	2.844	11.9	19.2	5 11	12 45.48	- 6 38.6	1.829	2.701	13.1	22.3
423445	2005 ST ₃₉		4 8.6 204°59	0°2/ 8.3	17		47856	2000 EO ₁₅₄		4 8.6 178°34	0°4/ 8.9	18	
3 2	13 34.44	- 9 30.1	2.067	2.866	13.8	22.2	3 2	13 33.33	-10 40.9	2.352	3.142	12.6	19.1
3 12	13 30.26	- 8 58.9	1.975	2.863	10.8	21.9	3 12	13 29.13	-10 23.8	2.261	3.142	9.9	18.9
3 22	13 23.98	- 8 14.8	1.906	2.859	7.2	21.7	3 22	13 23.11	- 9 55.6	2.194	3.143	6.6	18.7
4 1	13 16.16	- 7 21.0	1.864	2.855	3.1	21.4	4 1	13 15.77	- 9 18.3	2.154	3.143	3.0	18.5
4 11	13 7.62	- 6 22.5	1.849	2.850	1.2	21.3	4 11	13 7.84	- 8 35.9	2.142	3.143	0.9	18.3
4 21	12 59.28	- 5 25.2	1.864	2.845	5.4	21.6	4 21	13 0.09	- 7 52.8	2.159	3.143	4.5	18.6
5 1	12 52.00	- 4 35.0	1.905	2.840	9.3	21.8	5 1	12 53.29	- 7 13.6	2.205	3.143	8.0	18.8
5 11	12 46.49	- 3 56.6	1.971	2.834	12.8	22.0	5 11	12 48.02	- 6 42.4	2.275	3.142	11.1	19.0
57508	2001 SN ₂₇₀		4 8.6 199°41	6°4/ 1.5	18		88073	2000 WB ₄		4 8.6 74°64	9°9/20.2	18	
3 2	13 37.32	+11 5.1	2.327	3.144	11.9	19.8	3 2	13 34.36	-38 3.7	1.999	2.650	18.7	18.9
3 12	13 32.15	+12 10.5	2.251	3.140	9.6	19.7	3 12	13 30.87	-38 39.7	1.909	2.654	16.8	18.7
3 22	13 25.05	+13 13.6	2.199	3.135	7.4	19.5	3 22	13 24.73	-38 47.3	1.835	2.659	14.6	18.6
4 1	13 16.58	+14 7.7	2.175	3.130	6.4	19.5	4 1	13 16.60	-38 22.0	1.781	2.663	12.3	18.4
4 11	13 7.51	+14 46.8	2.178	3.124	7.3	19.5	4 11	13 7.55	-37 22.8	1.748	2.668	10.6	18.3
4 21	12 58.69	+15 6.7	2.209	3.117	9.4	19.6	4 21	12 58.80	-35 53.0	1.739	2.673	9.9	18.3
5 1	12 50.90	+15 5.6	2.265	3.110	11.9	19.8	5 1	12 51.49	-34 0.3	1.756	2.677	10.8	18.3
5 11	12 44.77	+14 44.1	2.342	3.102	14.2	19.9	5 11	12 46.46	-31 55.8	1.796	2.682	12.7	18.5
504411	2007 XO ₅₂		4 8.6 186°83	5°7/31.7	17		388402	2006 VP ₇₁		4 8.6 87°00	0°9/ 7.5	17	
3 2	13 34.08	+13 10.5	2.937	3.748	9.8	22.3	3 2	13 32.08	- 6 31.3	2.408	3.212	12.0	21.9
3 12	13 29.25	+14 9.7	2.865	3.748	8.0	22.2	3 12	13 28.00	- 6 2.4	2.333	3.225	9.2	21.7
3 22	13 22.94	+15 5.5	2.818	3.747	6.4	22.1	3 22	13 22.25	- 5 25.2	2.281	3.237	6.0	21.5
4 1	13 15.61	+15 52.6	2.800	3.745	5.7	22.1	4 1	13 15.35	- 4 43.0	2.257	3.249	2.5	21.3
4 11	13 7.85	+16 26.6	2.810	3.743	6.5	22.1	4 11	13 7.99	- 4 0.0	2.262	3.262	1.6	21.2
4 21	13 0.30	+16 44.4	2.847	3.740	8.1	22.2	4 21	13 0.90	- 3 20.8	2.296	3.274	4.9	21.5
5 1	12 53.55	+16 44.8	2.911	3.737	10.0	22.3	5 1	12 54.74	- 2 49.2	2.358	3.286	8.1	21.7
5 11	12 48.07	+16 28.1	2.996	3.733	11.9	22.5	5 11	12 50.03	- 2 28.0	2.444	3.298	10.9	21.9
152739	1998 WC ₃₂		4 8.6 217°76	1°1/ 7.7	18		187984	2001 RO ₈		4 8.6 159°98	0°5/ 8.0	17	
3 2	13 40.13	- 6 22.2	1.920	2.721	14.7	21.0	3 2	13 34.85	- 8 59.8	2.203	2.999	13.2	21.6
3 12	13 34.92	- 5 59.6	1.822	2.711	11.4	20.8	3 12	13 30.35	- 8 20.8	2.119	3.005	10.2	21.4
3 22	13 27.24	- 5 26.2	1.746	2.700	7.6	20.5	3 22	13 23.92	- 7 30.0	2.058	3.011	6.7	21.2
4 1	13 17.68	- 4 45.3	1.697	2.689	3.3	20.2	4 1	13 16.12	- 6 30.9	2.025	3.016	2.9	20.9
4 11	13 7.16	- 4 2.1	1.677	2.676	1.9	20.1	4 11	13 7.74	- 5 28.6	2.020	3.021	1.3	20.8
4 21	12 56.76	- 3 22.3	1.685	2.663	6.3	20.3	4 21	12 59.61	- 4 28.8	2.045	3.025	5.2	21.1
5 1	12 47.56	- 2 51.3	1.721	2.648	10.6	20.6	5 1	12 52.53	- 3 36.9	2.098	3.028	8.8	21.3
5 11	12 40.39	- 2 33.3	1.780	2.633	14.3	20.8	5 11	12 47.11	- 2 57.1	2.175	3.031	12.0	21.5
429856	2012 RH ₁₈		4 8.6 318°82	1°8/10.2	17		28072	Lindbowerman		4 8.6 194°74	1°6/ 7.0	18	
3 2	13 32.82	-14 1.8	1.944	2.734	14.9	20.9	3 2	13 36.33	- 5 17.2	2.135	2.940	13.2	19.5
3 12	13 29.23	-13 59.9	1.851	2.729	11.9	20.6	3 12	13 31.61	- 4 39.7	2.045	2.938	10.2	19.2
3 22	13 23.43	-13 42.8	1.780	2.724	8.3	20.4	3 22	13 24.84	- 3 52.6	1.979	2.935	6.7	19.0
4 1	13 15.97	-13 11.9	1.734	2.719	4.4	20.2	4 1	13 16.56	- 2 59.9	1.940	2.931	3.0	18.8
4 11	13 7.72	-12 30.6	1.715	2.714	1.8	20.0	4 11	13 7.59	- 2 7.1	1.930	2.927	2.3	18.7
4 21	12 59.62	-11 44.0	1.723	2.710	5.1	20.2	4 21	12 58.82	- 1 19.6	1.949	2.922	6.0	18.9
5 1	12 52.65	-10 58.2	1.758	2.706	9.0	20.4	5 1	12 51.12	- 0 42.5	1.995	2.917	9.7	19.2
5 11	12 47.53	-10 19.0	1.817	2.701	12.6	20.6	5 11	12 45.15	- 0 19.0	2.065	2.911	12.9	19.4
90218	2003 BC		4 8.6 2°27	9°4/14.8	18		89282	2001 VD ₁₇		4 8.6 237°75	2°1/ 6.5	18	
3 2	13 36.84	-26 38.3	1.650	2.388	19.2	17.7	3 2	13 34.08	- 4 35.4	2.060	2.873	13.4	20.9
3 12	13 33.22	-28 23.2	1.566	2.387	16.7	17.5	3 12	13 30.04	- 3 46.9	1.964	2.862	10.3	20.7
3 22	13 26.60	-29 48.6	1.501	2.387	13.8	17.3	3 22	13 23.90	- 2 48.0	1.891	2.849	6.8	20.5
4 1	13 17.55	-30 48.9	1.457	2.388	11.2	17.1	4 1	13 16.19	- 1 43.3	1.846	2.837	3.1	20.2
4 11	13 7.17	-31 20.4	1.436	2.390	9.5	17.0	4 11	13 7.71	- 0 38.9	1.828	2.824	2.9	20.2
4 21	12 56.85	-31 23.9	1.439	2.393	9.8	17.0	4 21	12 59.36	+ 0 18.9	1.839	2.810	6.5	20.4
5 1	12 47.99	-31 4.3	1.466	2.398	11.7	17.1	5 1	12 52.04	+ 1 4.3	1.877	2.796	10.3	20.6
5 11	12 41.69	-30 30.5	1.515	2.404	14.4	17.3	5 11	12 46.45	+ 1 33.8	1.938	2.782	13.7	20.7
142173	2002 RN ₃₉		4 8.6 135°71	1°8/10.2	18		494920	2008 WC ₆₂		4 8.6 173°64	3°1/ 6.0	18	
3 2	13 38.47	-14 1.8	1.971	2.749	15.1	20.4	3 2	1					

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
469219	2016 HO_3		4 8.6 177°16'	45°5'	3.5	18 R	495863	2003 XV_4		4 8.6 220°49'	2°9'	11.6	16
3 2	14 53.90	+37 26.2	0.188	1.091	53.5	22.8	3 2	13 36.71	-19 29.6	2.288	3.036	14.2	22.7
3 12	14 43.90	+41 18.0	0.177	1.098	49.9	22.6	3 12	13 32.03	-19 14.1	2.177	3.024	11.6	22.5
3 22	14 20.23	+44 27.8	0.167	1.103	47.0	22.4	3 22	13 25.23	-18 40.4	2.087	3.011	8.5	22.3
4 1	13 42.86	+45 45.9	0.160	1.105	45.5	22.3	4 1	13 16.80	-17 48.8	2.024	2.998	5.2	22.0
4 11	12 59.23	+44 6.2	0.156	1.104	46.1	22.2	4 11	13 7.54	-16 41.9	1.988	2.983	3.0	21.9
4 21	12 20.34	+39 21.6	0.157	1.101	49.0	22.3	4 21	12 58.37	-15 25.0	1.983	2.967	4.8	22.0
5 1	11 53.22	+32 24.0	0.162	1.095	53.6	22.5	5 1	12 50.19	-14 4.8	2.006	2.950	8.3	22.1
5 11	11 38.02	+24 26.7	0.171	1.088	58.9	22.8	5 11	12 43.74	-12 48.6	2.055	2.932	11.7	22.3
37510	3235 T_2		4 8.6 273°81'	1°4'	7.1	18	188117	2002 AO_{171}		4 8.6 186°49'	2°2'	6.1	17
3 2	13 32.98	- 4 33.3	2.297	3.107	12.3	19.8	3 2	13 35.18	- 2 38.1	2.546	3.350	11.4	21.3
3 12	13 28.93	- 4 11.4	2.204	3.100	9.5	19.6	3 12	13 30.36	- 1 54.3	2.457	3.350	8.7	21.1
3 22	13 23.03	- 3 41.9	2.135	3.092	6.2	19.4	3 22	13 23.83	- 1 4.0	2.393	3.349	5.7	20.9
4 1	13 15.76	- 3 8.4	2.093	3.085	2.7	19.1	4 1	13 16.08	- 0 11.2	2.357	3.347	2.8	20.7
4 11	13 7.86	- 2 34.9	2.079	3.077	2.1	19.1	4 11	13 7.80	+ 0 39.3	2.352	3.345	2.8	20.7
4 21	13 0.11	- 2 5.9	2.094	3.070	5.5	19.3	4 21	12 59.70	+ 1 23.0	2.376	3.341	5.7	20.9
5 1	12 53.28	- 1 45.2	2.136	3.062	8.9	19.5	5 1	12 52.48	+ 1 56.0	2.428	3.337	8.7	21.0
5 11	12 47.99	- 1 35.8	2.203	3.055	12.0	19.7	5 11	12 46.71	+ 2 16.0	2.505	3.333	11.5	21.2
294515	2007 XD_{14}		4 8.6 232°54'	3°4'	12.4	18	227474	2005 WZ_{167}		4 8.6 300°57'	0°6'	9.1	17
3 2	13 32.06	-20 24.0	2.361	3.112	13.7	20.7	3 2	13 33.11	-11 23.6	1.788	2.593	15.4	20.7
3 12	13 28.31	-20 22.3	2.262	3.109	11.3	20.5	3 12	13 29.61	-11 3.8	1.700	2.589	12.1	20.4
3 22	13 22.66	-20 3.9	2.185	3.105	8.4	20.3	3 22	13 23.77	-10 28.6	1.632	2.584	8.2	20.2
4 1	13 15.62	-19 28.8	2.133	3.102	5.4	20.1	4 1	13 16.18	- 9 40.6	1.590	2.580	3.8	19.9
4 11	13 7.91	-18 39.5	2.108	3.098	3.4	20.0	4 11	13 7.75	- 8 44.9	1.575	2.576	1.1	19.7
4 21	13 0.35	-17 40.3	2.111	3.094	4.7	20.1	4 21	12 59.53	- 7 47.9	1.587	2.572	5.6	20.0
5 1	12 53.74	-16 36.8	2.143	3.090	7.6	20.3	5 1	12 52.53	- 6 56.4	1.625	2.568	9.9	20.2
5 11	12 48.70	-15 35.3	2.199	3.086	10.7	20.4	5 11	12 47.51	- 6 16.3	1.686	2.565	13.8	20.5
406589	2008 BJ_{17}		4 8.6 116°03'	1°9'	6.9	18	236014	2005 GC_{82}		4 8.6 173°88'	0°0'	8.4	17
3 2	13 37.41	- 5 8.0	1.849	2.661	14.7	21.8	3 2	13 33.64	- 9 12.9	2.221	3.018	13.1	21.1
3 12	13 32.54	- 4 25.8	1.782	2.678	11.3	21.6	3 12	13 29.48	- 8 53.4	2.133	3.019	10.2	20.9
3 22	13 25.43	- 3 33.7	1.737	2.695	7.3	21.4	3 22	13 23.40	- 8 23.2	2.068	3.020	6.7	20.7
4 1	13 16.79	- 2 36.7	1.719	2.711	3.3	21.2	4 1	13 15.93	- 7 44.7	2.029	3.021	3.0	20.4
4 11	13 7.57	- 1 41.1	1.729	2.726	2.6	21.1	4 11	13 7.85	- 7 2.2	2.020	3.021	1.0	20.3
4 21	12 58.77	- 0 53.1	1.767	2.741	6.5	21.4	4 21	12 59.96	- 6 20.4	2.039	3.021	4.9	20.6
5 1	12 51.31	- 0 17.7	1.832	2.755	10.3	21.7	5 1	12 53.08	- 5 44.1	2.085	3.021	8.5	20.8
5 11	12 45.83	+ 0 2.3	1.920	2.769	13.6	21.9	5 11	12 47.82	- 5 17.2	2.156	3.021	11.7	21.0
137207	1999 LW_{31}		4 8.6 123°40'	4°0'	4.3	18	423633	2005 WU_{201}		4 8.6 131°04'	1°3'	7.4	17
3 2	13 34.52	+ 4 33.6	2.454	3.272	11.3	19.8	3 2	13 35.37	- 5 46.5	1.956	2.766	14.1	22.1
3 12	13 29.81	+ 5 12.4	2.383	3.281	8.7	19.7	3 12	13 30.99	- 5 18.5	1.877	2.772	10.8	21.9
3 22	13 23.42	+ 5 52.2	2.337	3.289	6.1	19.5	3 22	13 24.47	- 4 40.9	1.821	2.778	7.1	21.6
4 1	13 15.87	+ 6 28.1	2.318	3.297	4.2	19.4	4 1	13 16.41	- 3 57.6	1.791	2.783	3.1	21.4
4 11	13 7.86	+ 6 55.7	2.329	3.305	4.6	19.4	4 11	13 7.70	- 3 13.8	1.790	2.789	2.1	21.3
4 21	13 0.14	+ 7 11.3	2.367	3.313	7.0	19.6	4 21	12 59.28	- 2 35.0	1.816	2.794	6.0	21.6
5 1	12 53.37	+ 7 13.0	2.432	3.320	9.6	19.8	5 1	12 52.05	- 2 6.0	1.870	2.799	9.8	21.8
5 11	12 48.08	+ 7 0.0	2.521	3.328	12.0	19.9	5 11	12 46.66	- 1 50.0	1.946	2.803	13.1	22.1
269788	1999 TE_{258}		4 8.6 263°34'	3°1'	6.0	17	299859	2006 SX_{262}		4 8.6 259°84'	0°4'	9.0	17
3 2	13 37.94	+ 0 31.1	2.053	2.868	13.3	19.9	3 2	13 30.52	-11 58.4	2.407	3.196	12.4	21.7
3 12	13 33.05	+ 0 49.6	1.956	2.854	10.3	19.7	3 12	13 27.04	-11 22.8	2.304	3.185	9.7	21.5
3 22	13 25.92	+ 1 12.1	1.883	2.839	6.9	19.5	3 22	13 21.79	-10 33.9	2.225	3.174	6.6	21.2
4 1	13 17.10	+ 1 34.4	1.837	2.825	3.8	19.2	4 1	13 15.24	- 9 34.1	2.172	3.162	3.0	21.0
4 11	13 7.44	+ 1 51.6	1.819	2.810	3.7	19.2	4 11	13 8.07	- 8 27.7	2.149	3.150	0.8	20.8
4 21	12 57.89	+ 1 59.4	1.829	2.795	7.0	19.4	4 21	13 1.01	- 7 20.2	2.154	3.138	4.5	21.0
5 1	12 49.43	+ 1 54.7	1.866	2.780	10.7	19.5	5 1	12 54.80	- 6 17.1	2.188	3.126	8.1	21.2
5 11	12 42.79	+ 1 35.7	1.926	2.764	14.0	19.7	5 11	12 50.04	- 5 23.5	2.246	3.114	11.2	21.4
271921	2004 XY_{64}		4 8.6 198°34'	0°9'	7.6	18	113057	2002 RM_{55}		4 8.6 194°17'	0°5'	9.2	16
3 2	13 35.86	- 5 56.0	2.536	3.331	11.7	21.4	3 2	13 35.11	-12 36.5	2.227	3.010	13.5	21.5
3 12	13 30.94	- 5 34.5	2.441	3.328	9.0	21.3	3 12	13 30.66	-11 59.6	2.131	3.008	10.6	21.3
3 22	13 24.25	- 5 5.4	2.370	3.323	5.9	21.0	3 22	13 24.21	-11 8.0	2.058	3.005	7.2	21.1
4 1	13 16.28	- 4 31.4	2.327	3.319	2.6	20.8	4 1	13 16.31	-10 4.2	2.012	3.001	3.4	20.8
4 11	13 7.72	- 3 56.3	2.314	3.313	1.6	20.7	4 11	13 7.73	- 8 53.1	1.995	2.996	0.9	20.6
4 21	12 59.30	- 3 24.1	2.331	3.307	4.9	21.0	4 21	12 59.34	- 7 40.5	2.008	2.991	4.8	20.9
5 1	12 51.77	- 2 58.6	2.376	3.301	8.2	21.1	5 1	12 51.97	- 6 32.9	2.049	2.985	8.6	21.1
5 11	12 45.71	- 2 42.6	2.447	3.294	11.1	21.3	5 11	12 46.26	- 5 35.7	2.115	2.979	12.0	21.3
59405	1999 FA_{35}		4 8.6 48°26'	1°3'	9.9	18	267284	2001 SP_{54}		4 8.6 120°20'	2°5'	5.9	18
3 2	13 30.59	-16 23.0	1.702	2.496	16.5	18.7	3 2	13 35.81	- 2 53.3	2.257	3.065	12.5	21.6
3 12	13 27.70	-15 28.4	1.620	2.501	13.1	18.5	3 12	13 30.88	- 1 57.0	2.191	3.086	9.5	21.5
3 22	13 22.48	-14 10.8	1.559	2.505	9.1	18.3	3 22	13 24.14	- 0 53.7	2.150	3.106	6.2	21.3
4 1	13 15.58	-12 33.6	1.523	2.510	4.6	18.0	4 1	13 16.19	+ 0 11.5	2.136	3.126	3.1	21.1
4 11	13 7.95	-10 44.3	1.514	2.515	1.4	17.8	4 11	13 7.81	+ 1 12.7	2.153	3.144	3.1	21.2
4 21	13 0.66	- 8 52.3	1.533	2.520	5.5	18.1	4 21	12 59.80	+ 2 4.9	2.198	3.163	6.1	21.4
5 1	12 54.66	- 7 7.8	1.578	2.525	9.9	18.3	5 1	12 52.87	+ 2 43.9	2.271	3.180	9.3	21.6
5 11	12 50.66	- 5 38.9	1.647	2.531	13.8	18.6	5 11	12 47.56	+ 3 7.6	2.368	3.196	12.1	21.8
67755	2000 US_{49}		4 8.6 245°71'	1°6'	7.3	18	287769	2003 SE_{72}		4 8.6 173°19'	1°0'	9.5	16
3 2	13 37.71	- 5 36.3	1.801	2.613	15.1</								

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
463617	2013 <i>TD</i> ₉		4 8.6 241°94	0°1/ 8.5 17			271794	2004 <i>TX</i> ₅₄		4 8.6 169°85	1°5/ 7.3 17		
3 2	13 39.94	- 7 2.4	2.055	2.851	14.0	21.3	3 2	13 35.64	- 4 44.6	2.004	2.815	13.8	20.5
3 12	13 34.67	- 7 10.1	1.954	2.839	11.0	21.1	3 12	13 31.21	- 4 23.6	1.920	2.816	10.6	20.3
3 22	13 27.06	- 7 9.5	1.876	2.828	7.4	20.9	3 22	13 24.66	- 3 54.3	1.860	2.817	6.9	20.1
4 1	13 17.65	- 7 2.6	1.824	2.815	3.2	20.6	4 1	13 16.56	- 3 20.4	1.826	2.818	3.1	19.9
4 11	13 7.31	- 6 52.3	1.802	2.803	1.1	20.4	4 11	13 7.77	- 2 46.6	1.820	2.818	2.2	19.8
4 21	12 57.05	- 6 42.5	1.808	2.790	5.5	20.7	4 21	12 59.22	- 2 17.8	1.842	2.818	6.0	20.0
5 1	12 47.89	- 6 36.9	1.843	2.777	9.6	20.9	5 1	12 51.80	- 1 58.5	1.891	2.819	9.8	20.3
5 11	12 40.63	- 6 39.2	1.901	2.763	13.2	21.1	5 11	12 46.20	- 1 51.4	1.963	2.819	13.1	20.5
84095	Davidjohn		4 8.6 49°00	2°9/ 6.3 18			386234	2008 <i>AO</i> ₆		4 8.6 91°54	4°4/ 13.8 17		
3 2	13 34.22	- 3 48.5	1.414	2.251	17.1	19.4	3 2	13 31.84	- 24 2.0	2.291	3.026	14.5	21.0
3 12	13 30.75	- 3 0.1	1.352	2.262	13.1	19.2	3 12	13 28.21	- 24 0.4	2.200	3.030	12.1	20.8
3 22	13 24.59	- 2 0.5	1.311	2.274	8.5	19.0	3 22	13 22.64	- 23 39.3	2.129	3.035	9.3	20.7
4 1	13 16.52	- 0 56.4	1.295	2.286	4.1	18.7	4 1	13 15.66	- 22 58.4	2.082	3.040	6.5	20.5
4 11	13 7.72	+ 0 3.5	1.304	2.299	3.8	18.7	4 11	13 8.06	- 22 0.1	2.062	3.045	4.5	20.4
4 21	12 59.41	+ 0 51.5	1.338	2.312	8.1	19.0	4 21	13 0.67	- 20 49.1	2.070	3.049	5.2	20.4
5 1	12 52.70	+ 1 21.8	1.397	2.325	12.5	19.3	5 1	12 54.31	- 19 31.8	2.106	3.054	7.7	20.6
5 11	12 48.33	+ 1 31.6	1.476	2.339	16.2	19.6	5 11	12 49.61	- 18 15.3	2.167	3.058	10.6	20.8
56862	2000 <i>QS</i> ₉₀		4 8.6 169°64	2°3/ 5.1 18			297114	2010 <i>RU</i> ₄₃		4 8.6 285°77	1°0/ 7.9 17		
3 2	13 30.09	- 2 40.1	2.912	3.721	10.0	19.5	3 2	13 36.30	- 7 8.6	1.574	2.394	16.5	21.4
3 12	13 26.24	- 1 28.6	2.828	3.724	7.6	19.4	3 12	13 32.74	- 6 49.4	1.468	2.367	13.0	21.1
3 22	13 21.02	- 0 10.3	2.770	3.727	5.0	19.2	3 22	13 26.33	- 6 16.3	1.382	2.340	8.7	20.7
4 1	13 14.84	+ 1 10.1	2.742	3.730	2.7	19.0	4 1	13 17.55	- 5 32.4	1.320	2.313	3.8	20.4
4 11	13 8.25	+ 2 27.6	2.744	3.732	3.0	19.1	4 11	13 7.40	- 4 43.5	1.285	2.285	2.0	20.2
4 21	13 1.84	+ 3 37.4	2.776	3.734	5.4	19.2	4 21	12 57.14	- 3 56.8	1.276	2.257	7.3	20.4
5 1	12 56.15	+ 4 35.6	2.836	3.735	8.0	19.4	5 1	12 48.13	- 3 19.8	1.291	2.229	12.5	20.6
5 11	12 51.64	+ 5 19.7	2.922	3.736	10.4	19.6	5 11	12 41.45	- 2 58.4	1.328	2.201	17.1	20.8
453785	2011 <i>OO</i> ₃₃		4 8.6 271°96	0°6/ 8.1 17			208439	2001 <i>TY</i> ₁₁₁		4 8.6 194°01	1°9/ 10.9 18		
3 2	13 36.39	- 8 24.1	1.373	2.198	18.2	21.9	3 2	13 31.35	- 16 53.8	2.602	3.366	12.3	20.0
3 12	13 32.96	- 8 3.7	1.285	2.187	14.3	21.7	3 12	13 27.53	- 16 30.5	2.504	3.364	9.8	19.9
3 22	13 26.47	- 7 26.9	1.218	2.177	9.6	21.3	3 22	13 22.05	- 15 52.7	2.429	3.363	7.0	19.7
4 1	13 17.54	- 6 37.2	1.173	2.166	4.2	21.0	4 1	13 15.37	- 15 1.8	2.380	3.361	3.9	19.5
4 11	13 7.35	- 5 41.3	1.154	2.155	1.8	20.8	4 11	13 8.15	- 14 1.2	2.360	3.358	1.9	19.3
4 21	12 57.33	- 4 47.7	1.160	2.144	7.5	21.1	4 21	13 1.09	- 12 55.4	2.370	3.356	4.0	19.5
5 1	12 48.88	- 4 4.7	1.191	2.133	12.8	21.4	5 1	12 54.87	- 11 49.7	2.408	3.353	7.1	19.7
5 11	12 43.06	- 3 38.6	1.241	2.123	17.5	21.6	5 11	12 50.04	- 10 49.4	2.473	3.350	10.0	19.8
418152	2008 <i>AS</i> ₈₆		4 8.6 5°99	6°4/ 3.3 17			253976	2004 <i>EU</i> ₂₃		4 8.6 220°56	7°6/ 5.6 18		
3 2	13 31.69	+ 3 6.4	1.344	2.198	16.8	20.9	3 2	13 54.08	+ 9 13.0	1.253	2.075	19.8	19.9
3 12	13 29.03	+ 4 27.4	1.280	2.198	13.0	20.7	3 12	13 47.03	+ 9 22.1	1.175	2.070	15.9	19.6
3 22	13 23.60	+ 5 54.6	1.238	2.199	9.1	20.5	3 22	13 35.98	+ 9 25.2	1.116	2.065	11.6	19.3
4 1	13 16.15	+ 7 17.8	1.218	2.200	6.6	20.3	4 1	13 21.80	+ 9 13.2	1.082	2.059	8.1	19.1
4 11	13 7.84	+ 8 26.0	1.224	2.202	7.6	20.4	4 11	13 6.12	+ 8 38.6	1.073	2.052	8.3	19.1
4 21	12 59.94	+ 9 10.8	1.253	2.204	11.2	20.6	4 21	12 50.92	+ 7 38.3	1.091	2.045	12.1	19.3
5 1	12 53.61	+ 9 27.6	1.304	2.207	15.1	20.8	5 1	12 38.02	+ 6 13.8	1.132	2.037	16.8	19.5
5 11	12 49.67	+ 9 16.3	1.374	2.211	18.7	21.1	5 11	12 28.63	+ 4 29.9	1.194	2.030	21.0	19.8
108233	2001 <i>HT</i> ₃₉		4 8.6 40°23	0°3/ 8.4 18			20344	1998 <i>HF</i> ₁₀₃		4 8.6 27°55	1°1/ 7.9 18		
3 2	13 33.22	- 9 52.5	1.333	2.162	18.4	19.8	3 2	13 34.42	- 6 49.7	1.179	2.021	19.5	18.1
3 12	13 30.19	- 9 21.9	1.270	2.173	14.3	19.6	3 12	13 31.47	- 6 37.1	1.119	2.031	15.1	17.8
3 22	13 24.34	- 8 33.4	1.226	2.185	9.5	19.4	3 22	13 25.38	- 6 9.9	1.078	2.041	9.9	17.6
4 1	13 16.45	- 7 31.9	1.205	2.198	4.1	19.1	4 1	13 16.99	- 5 32.9	1.059	2.052	4.2	17.3
4 11	13 7.75	- 6 25.1	1.210	2.211	1.5	18.9	4 11	13 7.67	- 4 53.7	1.064	2.065	2.1	17.2
4 21	12 59.55	- 5 22.0	1.239	2.225	6.9	19.3	4 21	12 58.91	- 4 20.1	1.093	2.078	7.6	17.5
5 1	12 53.02	- 4 30.8	1.293	2.239	11.7	19.6	5 1	12 52.03	- 3 58.8	1.145	2.092	12.8	17.9
5 11	12 48.95	- 3 57.0	1.368	2.253	15.9	19.9	5 11	12 47.88	- 3 54.2	1.217	2.107	17.2	18.2
153031	2000 <i>PM</i> ₉		4 8.6 279°42	7°7/ 1.5 18			501298	2013 <i>WV</i> ₆₃		4 8.6 221°29	5°8/ 2.5 17		
3 2	13 38.74	+ 11 34.1	1.933	2.756	13.7	19.4	3 2	13 33.84	+ 6 19.2	2.060	2.889	12.8	21.7
3 12	13 34.00	+ 12 37.3	1.835	2.727	11.2	19.2	3 12	13 29.79	+ 7 33.7	1.982	2.884	10.0	21.5
3 22	13 26.77	+ 13 39.1	1.760	2.698	8.9	19.0	3 22	13 23.71	+ 8 50.3	1.928	2.878	7.3	21.4
4 1	13 17.60	+ 14 31.1	1.711	2.668	7.7	18.8	4 1	13 16.15	+ 10 1.6	1.901	2.872	5.8	21.2
4 11	13 7.38	+ 15 5.3	1.688	2.638	8.7	18.8	4 11	13 7.93	+ 11 0.4	1.902	2.866	6.7	21.3
4 21	12 57.19	+ 15 15.9	1.692	2.607	11.4	18.9	4 21	12 59.93	+ 11 41.1	1.929	2.860	9.3	21.4
5 1	12 48.13	+ 15 0.1	1.719	2.575	14.5	19.0	5 1	12 53.01	+ 12 0.3	1.981	2.853	12.2	21.6
5 11	12 41.06	+ 14 18.6	1.766	2.544	17.5	19.2	5 11	12 47.81	+ 11 57.5	2.055	2.846	14.9	21.8
351565	2005 <i>UD</i> ₁₅₇		4 8.6 277°60	2°1/ 10.2 17			498384	2007 <i>WC</i> ₆₃		4 8.6 86°04	4°4/ 4.2 17		
3 2	13 33.87	- 15 38.8	1.424	2.229	18.7	21.4	3 2	13 35.71	+ 5 29.4	2.284	3.103	12.0	21.5
3 12	13 31.12	- 15 19.5	1.324	2.210	15.1	21.1	3 12	13 30.80	+ 6 7.9	2.222	3.120	9.3	21.3
3 22	13 25.35	- 14 35.9	1.243	2.191	10.7	20.8	3 22	13 24.11	+ 6 46.3	2.185	3.136	6.5	21.2
4 1	13 17.12	- 13 28.5	1.185	2.171	5.7	20.4	4 1	13 16.23	+ 7 19.7	2.176	3.153	4.6	21.1
4 11	13 7.52	- 12 2.4	1.151	2.152	2.2	20.1	4 11	13 7.93	+ 7 43.2	2.195	3.169	5.1	21.1
4 21	12 57.92	- 10 26.6	1.143	2.132	6.7	20.3	4 21	12 59.99	+ 7 53.4	2.242	3.186	7.4	21.3
5 1	12 49.77	- 8 53.0	1.160	2.112	12.1	20.6	5 1	12 53.13	+ 7 48.6	2.315	3.202	10.1	21.5
5 11	12 44.18	- 7 32.3	1.198	2.092	17.1	20.8	5 11	12 47.87	+ 7 28.7	2.411	3.217	12.5	21.7
330705	2008 <i>LR</i> ₁₅		4 8.6 246°57	2°3/ 6.5 17			215020	2009 <i>BE</i> ₁₄		4			

EPHEMERIDES

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
397334	2006 <i>TK</i> ₆₇		4 8.6 143°08	2°8/12.3	17		306991	2001 <i>WF</i> ₁₈		4 8.6 148°95	2°7/11.6	17	
3 2	13 32.63	-20 13.8	2.868	3.607	11.8	21.6	3 2	13 34.07	-19 30.5	2.157	2.915	14.6	21.4
3 12	13 28.33	-20 7.5	2.777	3.616	9.6	21.4	3 12	13 29.95	-19 1.4	2.068	2.922	11.9	21.2
3 22	13 22.48	-19 47.2	2.708	3.625	7.1	21.3	3 22	13 23.80	-18 12.9	2.001	2.930	8.6	21.0
4 1	13 15.55	-19 13.6	2.665	3.633	4.6	21.1	4 1	13 16.21	-17 6.4	1.960	2.936	5.1	20.8
4 11	13 8.15	-18 28.8	2.652	3.642	2.9	21.0	4 11	13 8.00	-15 46.2	1.947	2.943	2.7	20.7
4 21	13 0.94	-17 36.4	2.667	3.649	3.9	21.1	4 21	13 0.06	-14 18.5	1.963	2.948	4.7	20.8
5 1	12 54.54	-16 41.0	2.712	3.657	6.4	21.3	5 1	12 53.23	-12 50.8	2.007	2.954	8.1	21.0
5 11	12 49.46	-15 47.2	2.784	3.664	8.9	21.4	5 11	12 48.14	-11 30.3	2.076	2.958	11.4	21.2
198606	2005 <i>AF</i> ₂₂		4 8.6 35°39	6°0/12.5	18		322273	2011 <i>EH</i> ₅₄		4 8.6 241°77	2°4/ 6.2	17	
3 2	13 37.48	-19 13.3	1.013	1.827	24.0	19.3	3 2	13 33.01	- 3 36.0	2.060	2.877	13.2	21.3
3 12	13 34.24	-20 5.5	0.970	1.853	19.5	19.1	3 12	13 29.22	- 2 47.1	1.970	2.870	10.2	21.1
3 22	13 27.35	-20 29.0	0.943	1.881	14.5	18.9	3 22	13 23.39	- 1 48.9	1.904	2.862	6.7	20.9
4 1	13 17.85	-20 22.2	0.935	1.911	9.3	18.7	4 1	13 16.07	- 0 46.2	1.864	2.855	3.2	20.7
4 11	13 7.48	-19 48.8	0.949	1.941	6.1	18.6	4 11	13 8.04	+ 0 14.7	1.852	2.847	3.1	20.6
4 21	12 58.01	-18 57.5	0.986	1.972	7.9	18.8	4 21	13 0.18	+ 1 7.8	1.869	2.838	6.6	20.8
5 1	12 50.92	-17 59.9	1.044	2.004	12.1	19.1	5 1	12 53.35	+ 1 48.0	1.912	2.830	10.2	21.0
5 11	12 47.04	-17 7.3	1.123	2.037	16.3	19.5	5 11	12 48.22	+ 2 11.9	1.978	2.821	13.5	21.2
405456	2004 <i>TG</i> ₂₄₄		4 8.6 231°69	1°0/ 9.5	17		387306	2012 <i>VX</i> ₄₀		4 8.6 66°38	0°8/ 7.9	17	
3 2	13 38.58	-12 27.5	1.941	2.726	15.1	22.6	3 2	13 33.72	- 6 55.2	2.136	2.943	13.2	21.3
3 12	13 33.87	-12 13.0	1.835	2.712	12.0	22.3	3 12	13 29.49	- 6 33.0	2.067	2.960	10.1	21.1
3 22	13 26.70	-11 43.3	1.751	2.697	8.3	22.0	3 22	13 23.38	- 6 1.8	2.022	2.977	6.6	20.9
4 1	13 17.61	-10 59.7	1.693	2.681	4.0	21.8	4 1	13 15.98	- 5 24.8	2.003	2.995	2.8	20.7
4 11	13 7.48	-10 6.3	1.662	2.663	1.2	21.5	4 11	13 8.10	- 4 46.6	2.012	3.012	1.5	20.6
4 21	12 57.41	- 9 8.9	1.661	2.646	5.5	21.8	4 21	13 0.55	- 4 11.9	2.050	3.030	5.1	20.9
5 1	12 48.46	- 8 14.2	1.687	2.627	9.9	22.0	5 1	12 54.09	- 3 44.7	2.115	3.047	8.6	21.1
5 11	12 41.51	- 7 28.7	1.737	2.607	13.8	22.2	5 11	12 49.27	- 3 28.3	2.204	3.065	11.7	21.4
333650	2008 <i>SG</i> ₅		4 8.6 157°09	2°3/ 6.2	18		261367	2005 <i>UN</i> ₃₃₇		4 8.6 272°41	0°4/ 8.1	17	
3 2	13 34.00	- 2 57.5	2.164	2.978	12.8	20.6	3 2	13 31.43	- 7 58.7	2.451	3.251	11.9	21.1
3 12	13 29.76	- 2 15.6	2.084	2.982	9.8	20.4	3 12	13 27.68	- 7 35.3	2.357	3.245	9.2	20.9
3 22	13 23.61	- 1 26.4	2.027	2.985	6.4	20.2	3 22	13 22.22	- 7 2.6	2.286	3.240	6.1	20.7
4 1	13 16.10	- 0 34.3	1.998	2.988	3.1	20.0	4 1	13 15.51	- 6 23.2	2.243	3.234	2.6	20.5
4 11	13 8.00	+ 0 15.2	1.997	2.991	3.0	20.0	4 11	13 8.23	- 5 41.0	2.228	3.229	1.1	20.4
4 21	13 0.15	+ 0 56.9	2.025	2.994	6.2	20.2	4 21	13 1.09	- 5 0.5	2.242	3.223	4.7	20.6
5 1	12 53.33	+ 1 26.6	2.079	2.996	9.6	20.4	5 1	12 54.79	- 4 25.9	2.284	3.217	8.0	20.8
5 11	12 48.16	+ 1 41.9	2.157	2.998	12.6	20.6	5 11	12 49.92	- 4 0.7	2.351	3.212	11.0	21.0
466659	2014 <i>WA</i> ₁₀₄		4 8.6 38°22	13°8/ 2.3	16		1212	Francette		4 8.6 40°78	2°2/ 5.7	18	
3 2	13 54.39	+27 14.6	1.472	2.263	18.9	21.4	3 2	13 28.48	- 2 11.7	2.597	3.415	10.8	15.0
3 12	13 46.15	+27 46.9	1.426	2.273	16.6	21.2	3 12	13 25.17	- 1 24.1	2.528	3.428	8.2	14.8
3 22	13 34.57	+27 55.9	1.400	2.285	14.7	21.1	3 22	13 20.40	- 0 31.1	2.483	3.442	5.3	14.6
4 1	13 20.83	+27 30.8	1.395	2.297	13.8	21.1	4 1	13 14.65	+ 0 23.1	2.467	3.456	2.7	14.5
4 11	13 6.61	+26 26.1	1.415	2.309	14.4	21.2	4 11	13 8.52	+ 1 14.0	2.479	3.471	2.8	14.5
4 21	12 53.56	+24 43.4	1.458	2.322	16.0	21.3	4 21	13 2.62	+ 1 57.3	2.520	3.485	5.4	14.7
5 1	12 42.95	+22 29.3	1.523	2.335	18.2	21.5	5 1	12 57.53	+ 2 29.7	2.588	3.500	8.2	14.9
5 11	12 35.49	+19 53.4	1.608	2.349	20.3	21.7	5 11	12 53.71	+ 2 49.2	2.680	3.515	10.6	15.1
287540	2003 <i>EK</i> ₁₈		4 8.6 29°93	1°5/ 7.1	17		46692	Taormina		4 8.6 40°12	6°0/ 3.8	18	
3 2	13 31.47	- 5 21.8	1.950	2.769	13.8	20.3	3 2	13 34.30	+ 3 9.2	1.415	2.262	16.6	18.5
3 12	13 28.01	- 4 49.0	1.876	2.776	10.6	20.1	3 12	13 30.89	+ 4 21.9	1.354	2.267	12.8	18.3
3 22	13 22.54	- 4 6.9	1.825	2.784	6.9	19.8	3 22	13 24.77	+ 5 39.6	1.314	2.273	8.9	18.1
4 1	13 15.64	- 3 19.6	1.799	2.792	3.0	19.6	4 1	13 16.71	+ 6 52.9	1.298	2.280	6.2	17.9
4 11	13 8.16	- 2 32.8	1.802	2.800	2.3	19.6	4 11	13 7.88	+ 7 51.9	1.308	2.287	7.1	18.0
4 21	13 0.97	- 1 51.9	1.832	2.809	6.0	19.8	4 21	12 59.50	+ 8 29.2	1.342	2.294	10.5	18.2
5 1	12 54.90	- 1 21.6	1.888	2.818	9.6	20.1	5 1	12 52.71	+ 8 41.0	1.399	2.301	14.4	18.4
5 11	12 50.55	- 1 5.0	1.967	2.827	12.9	20.3	5 11	12 48.26	+ 8 27.2	1.475	2.309	17.8	18.7
293029	2006 <i>WV</i> ₆₉		4 8.6 230°25	1°6/10.5	17		473100	2015 <i>HN</i> ₁₆₇		4 8.6 335°24	2°6/ 6.2	17	
3 2	13 32.31	-15 8.6	2.641	3.409	12.0	21.9	3 2	13 30.37	- 3 25.4	1.819	2.649	14.2	21.0
3 12	13 28.30	-14 55.4	2.536	3.400	9.6	21.7	3 12	13 27.45	- 2 41.8	1.733	2.640	10.9	20.8
3 22	13 22.61	-14 29.3	2.454	3.391	6.7	21.5	3 22	13 22.36	- 1 48.4	1.670	2.631	7.2	20.5
4 1	13 15.68	-13 51.7	2.399	3.381	3.7	21.3	4 1	13 15.66	- 0 50.5	1.632	2.623	3.5	20.3
4 11	13 8.14	-13 5.3	2.372	3.371	1.6	21.1	4 11	13 8.19	+ 0 5.3	1.621	2.616	3.4	20.3
4 21	13 0.70	-12 14.3	2.376	3.361	4.0	21.3	4 21	13 0.91	+ 0 52.5	1.636	2.608	7.1	20.5
5 1	12 54.06	-11 23.2	2.407	3.351	7.2	21.5	5 1	12 54.74	+ 1 25.6	1.677	2.602	11.0	20.7
5 11	12 48.79	-10 36.8	2.465	3.340	10.1	21.6	5 11	12 50.41	+ 1 41.4	1.740	2.596	14.5	20.9
287445	2002 <i>XU</i> ₅₇		4 8.6 51°18	3°7/11.3	18		283474	2001 <i>QJ</i> ₂₅₉		4 8.6 169°31	3°6/12.9	18	
3 2	13 37.28	-16 50.6	1.462	2.255	18.9	20.0	3 2	13 33.53	-21 41.0	2.683	3.416	12.6	21.3
3 12	13 33.23	-17 13.8	1.398	2.272	15.2	19.8	3 12	13 29.23	-21 45.3	2.586	3.419	10.5	21.1
3 22	13 26.33	-17 16.9	1.353	2.291	11.0	19.5	3 22	13 23.21	-21 34.4	2.511	3.421	7.9	20.9
4 1	13 17.39	-16 59.8	1.330	2.309	6.5	19.3	4 1	13 15.95	-21 8.3	2.461	3.424	5.3	20.8
4 11	13 7.62	-16 26.1	1.333	2.328	3.7	19.2	4 11	13 8.11	-20 28.7	2.440	3.425	3.6	20.7
4 21	12 58.35	-15 42.0	1.361	2.348	6.1	19.4	4 21	13 0.42	-19 39.1	2.448	3.427	4.5	20.7
5 1	12 50.78	-14 55.2	1.415	2.367	10.3	19.7	5 1	12 53.61	-18 44.2	2.484	3.428	6.9	20.9
5 11	12 45.71	-14 13.7	1.490	2.387	14.2	20.0	5 11	12 48.22	-17 49.5	2.546	3.429	9.5	21.0
14679	Susanreed		4 8.6 265°61	1°2/ 9.6	18		301572	2009 <i>HF</i> ₉					

EPHEMERIDES

4 8.6

4 8.6

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
472918	2015 <i>GX</i> ₄		4 8.6	0°18'	0°5'	8.2 17	19500	Hillaryfultz		4 8.6	357°03'	4°7'	4.5 18
3 2	13 32.77	- 7 56.5	2.087	2.894	13.5	21.4	3 2	13 32.36	+ 1 18.8	1.666	2.505	14.8	18.2
3 12	13 28.98	- 7 36.1	2.001	2.893	10.4	21.2	3 12	13 29.10	+ 2 19.5	1.593	2.504	11.4	18.0
3 22	13 23.20	- 7 5.3	1.938	2.893	6.9	21.0	3 22	13 23.49	+ 3 26.4	1.543	2.503	7.8	17.8
4 1	13 15.98	- 6 26.9	1.901	2.893	3.0	20.7	4 1	13 16.16	+ 4 32.4	1.517	2.502	4.9	17.6
4 11	13 8.11	- 5 45.7	1.892	2.893	1.3	20.6	4 11	13 8.09	+ 5 29.3	1.518	2.502	5.6	17.6
4 21	13 0.44	- 5 6.4	1.912	2.893	5.2	20.8	4 21	13 0.32	+ 6 10.2	1.544	2.502	8.9	17.8
5 1	12 53.81	- 4 34.0	1.958	2.894	9.0	21.1	5 1	12 53.83	+ 6 30.8	1.595	2.502	12.6	18.1
5 11	12 48.87	- 4 12.4	2.028	2.894	12.3	21.3	5 11	12 49.36	+ 6 29.5	1.666	2.503	15.9	18.3
292691	2006 <i>UB</i> ₉₉		4 8.6	151°29'	0°2'	8.3 18	235243	2003 <i>SS</i> ₃₀₂		4 8.6	153°19'	1°2'	9.9 17
3 2	13 30.72	- 9 57.5	2.603	3.395	11.5	21.0	3 2	13 33.82	-13 44.4	2.284	3.064	13.3	21.3
3 12	13 26.97	- 9 15.9	2.515	3.399	8.9	20.9	3 12	13 29.63	-13 26.6	2.196	3.068	10.5	21.1
3 22	13 21.65	- 8 23.5	2.452	3.403	5.9	20.7	3 22	13 23.56	-12 55.2	2.130	3.073	7.2	20.9
4 1	13 15.24	- 7 23.3	2.416	3.407	2.5	20.5	4 1	13 16.13	-12 11.9	2.091	3.077	3.7	20.7
4 11	13 8.35	- 6 19.7	2.410	3.411	1.0	20.3	4 11	13 8.11	-11 20.8	2.081	3.081	1.3	20.5
4 21	13 1.66	- 5 17.6	2.433	3.414	4.3	20.6	4 21	13 0.30	-10 26.5	2.099	3.085	4.4	20.7
5 1	12 55.79	- 4 21.8	2.485	3.418	7.5	20.8	5 1	12 53.49	- 9 34.6	2.145	3.088	7.9	21.0
5 11	12 51.25	- 3 36.0	2.562	3.421	10.3	21.0	5 11	12 48.28	- 8 49.9	2.217	3.091	11.1	21.2
182666	2001 <i>UG</i> ₂₀₆		4 8.6	259°81'	0°0'	8.5 18	416209	2002 <i>TM</i> ₃₇₅		4 8.6	180°50'	1°4'	7.2 16
3 2	13 24.39	-10 38.5	4.469	5.248	7.2	20.3	3 2	13 36.46	- 5 54.0	2.375	3.172	12.3	22.7
3 12	13 21.52	- 9 56.1	4.369	5.246	5.6	20.2	3 12	13 31.53	- 5 13.4	2.286	3.174	9.5	22.5
3 22	13 17.79	- 9 7.0	4.295	5.243	3.7	20.0	3 22	13 24.76	- 4 23.7	2.221	3.175	6.2	22.3
4 1	13 13.48	- 8 13.0	4.250	5.240	1.6	19.8	4 1	13 16.65	- 3 28.6	2.184	3.175	2.7	22.1
4 11	13 8.91	- 7 16.5	4.236	5.238	0.5	19.7	4 11	13 7.95	- 2 33.0	2.177	3.175	2.0	22.0
4 21	13 4.43	- 6 20.4	4.254	5.235	2.6	19.9	4 21	12 59.46	- 1 42.0	2.200	3.173	5.4	22.3
5 1	13 0.36	- 5 27.2	4.301	5.232	4.6	20.1	5 1	12 51.94	- 1 0.1	2.250	3.171	8.8	22.5
5 11	12 57.01	- 4 39.4	4.375	5.230	6.5	20.2	5 11	12 45.98	- 0 30.8	2.326	3.168	11.8	22.7
212331	2005 <i>SK</i> ₁₂₂		4 8.6	304°52'	2°9'	10.7 17	202529	2006 <i>DP</i> ₁₀		4 8.6	57°80'	0°0'	8.6 18
3 2	13 38.30	-14 14.8	2.136	2.909	14.3	19.8	3 2	13 37.10	-10 20.8	1.233	2.059	19.8	21.1
3 12	13 33.59	-14 57.0	2.023	2.888	11.6	19.5	3 12	13 33.35	- 9 59.8	1.177	2.079	15.4	20.9
3 22	13 26.54	-15 29.1	1.932	2.867	8.4	19.3	3 22	13 26.52	- 9 20.2	1.141	2.098	10.2	20.7
4 1	13 17.59	-15 50.0	1.867	2.846	5.0	19.0	4 1	13 17.51	- 8 26.6	1.126	2.118	4.5	20.4
4 11	13 7.58	-16 0.3	1.830	2.826	2.9	18.9	4 11	13 7.71	- 7 26.8	1.137	2.139	1.3	20.2
4 21	12 57.46	-16 20.0	1.822	2.805	5.2	19.0	4 21	12 58.58	- 6 29.7	1.173	2.159	7.0	20.6
5 1	12 48.30	-15 58.7	1.841	2.785	8.9	19.2	5 1	12 51.36	- 5 43.6	1.232	2.180	12.0	21.0
5 11	12 40.96	-15 55.0	1.885	2.765	12.4	19.3	5 11	12 46.85	- 5 14.1	1.313	2.200	16.3	21.3
473094	2015 <i>HA</i> ₁₆₂		4 8.6	274°11'	0°9'	9.6 17	60679	2000 <i>GE</i> ₂₄		4 8.6	174°12'	0°2'	8.9 18 R
3 2	13 31.78	-12 36.8	2.254	3.042	13.2	21.3	3 2	13 33.56	-10 20.0	2.477	3.265	12.1	20.0
3 12	13 28.20	-12 17.8	2.153	3.032	10.4	21.1	3 12	13 29.27	- 9 59.7	2.386	3.267	9.5	19.8
3 22	13 22.71	-11 45.4	2.075	3.022	7.1	20.9	3 22	13 23.25	- 9 28.7	2.319	3.268	6.3	19.6
4 1	13 15.79	-11 1.5	2.023	3.011	3.5	20.7	4 1	13 15.99	- 8 49.4	2.279	3.269	2.9	19.4
4 11	13 8.18	-10 9.9	1.999	3.001	1.1	20.5	4 11	13 8.17	- 8 5.5	2.269	3.270	0.8	19.2
4 21	13 0.67	- 9 15.6	2.004	2.990	4.6	20.7	4 21	13 0.52	- 7 21.4	2.287	3.271	4.4	19.5
5 1	12 54.09	- 8 24.1	2.037	2.979	8.3	20.9	5 1	12 53.78	- 6 41.4	2.334	3.271	7.7	19.7
5 11	12 49.07	- 7 40.4	2.094	2.969	11.6	21.1	5 11	12 48.49	- 6 9.6	2.407	3.271	10.7	19.9
23226	2000 <i>WC</i> ₄₉		4 8.6	157°93'	0°7'	7.9 18	401781	2014 <i>EM</i> ₂₃		4 8.6	117°42'	3°0'	5.4 17
3 2	13 37.16	- 8 37.6	2.007	2.805	14.2	19.6	3 2	13 34.00	+ 1 21.5	2.476	3.291	11.3	21.1
3 12	13 32.37	- 7 59.6	1.925	2.813	11.0	19.4	3 12	13 29.50	+ 1 51.3	2.398	3.296	8.7	20.9
3 22	13 25.44	- 7 9.2	1.867	2.820	7.2	19.1	3 22	13 23.33	+ 2 24.1	2.346	3.301	5.8	20.7
4 1	13 16.96	- 6 10.0	1.835	2.826	3.1	18.9	4 1	13 15.99	+ 2 55.6	2.321	3.307	3.4	20.6
4 11	13 7.83	- 5 7.8	1.832	2.832	1.5	18.8	4 11	13 8.17	+ 3 21.8	2.325	3.312	3.6	20.6
4 21	12 58.99	- 4 8.7	1.857	2.837	5.6	19.1	4 21	13 0.59	+ 3 38.9	2.358	3.317	6.1	20.7
5 1	12 51.34	- 3 18.5	1.911	2.841	9.5	19.3	5 1	12 53.92	+ 3 44.4	2.417	3.322	9.0	20.9
5 11	12 45.55	- 2 41.6	1.988	2.845	12.9	19.5	5 11	12 48.70	+ 3 37.2	2.501	3.327	11.6	21.1
391261	2006 <i>RA</i> ₆₃		4 8.6	170°86'	3°2'	11.9 18	285264	1998 <i>QF</i> ₅		4 8.6	247°84'	1°9'	10.4 17
3 2	13 37.76	-18 26.2	2.659	3.401	12.6	21.7	3 2	13 34.78	-15 31.2	1.886	2.669	15.6	21.8
3 12	13 32.51	-18 55.0	2.561	3.403	10.3	21.6	3 12	13 31.01	-15 14.3	1.783	2.656	12.5	21.5
3 22	13 25.41	-19 11.5	2.487	3.405	7.6	21.4	3 22	13 24.85	-14 39.0	1.701	2.643	8.8	21.3
4 1	13 16.95	-19 15.4	2.438	3.407	4.9	21.2	4 1	13 16.84	-13 46.4	1.645	2.629	4.8	21.0
4 11	13 7.82	-19 7.6	2.419	3.408	3.3	21.1	4 11	13 7.88	-12 40.6	1.615	2.615	2.0	20.8
4 21	12 58.81	-18 50.4	2.430	3.409	4.5	21.2	4 21	12 59.00	-11 27.8	1.614	2.600	5.3	21.0
5 1	12 50.69	-18 27.7	2.469	3.410	7.1	21.4	5 1	12 51.26	-10 15.9	1.639	2.586	9.6	21.2
5 11	12 44.08	-18 3.8	2.535	3.410	9.8	21.5	5 11	12 45.50	- 9 12.4	1.688	2.570	13.6	21.4
70215	1999 <i>RV</i> ₄₀		4 8.6	357°02'	12°8'	11.2 18	500463	2012 <i>TZ</i> ₂₁₈		4 8.6	144°17'	2°9'	12.5 17
3 2	13 51.13	-20 50.5	1.130	1.906	24.2	17.1	3 2	13 31.47	-21 34.9	2.587	3.328	12.9	21.6
3 12	13 46.30	-24 15.6	1.050	1.900	21.0	16.8	3 12	13 27.64	-21 2.1	2.494	3.334	10.5	21.5
3 22	13 36.72	-27 33.5	0.989	1.896	17.4	16.6	3 22	13 22.15	-20 11.6	2.422	3.341	7.8	21.3
4 1	13 22.74	-30 29.7	0.950	1.893	14.2	16.4	4 1	13 15.49	-19 4.4	2.377	3.347	4.9	21.1
4 11	13 5.86	-32 49.5	0.934	1.892	12.8	16.3	4 11	13 8.33	-17 44.2	2.361	3.352	2.9	21.0
4 21	12 48.46	-34 23.8	0.942	1.892	14.1	16.4	4 21	13 1.40	-16 16.2	2.374	3.358	4.1	21.1
5 1	12 33.29	-35 14.6	0.972	1.895	17.1	16.5	5 1	12 55.37	-14 46.6	2.416	3.363	6.9	21.3
5 11	12 22.40	-35 34.2	1.020	1.899	20.6	16.8	5 11	12 50.77	-13 21.6	2.485	3.368	9.7	21.4
56117	1999 <i>CC</i> ₉		4 8.6	269°68'	1°2'	9.8 18	255796	2006 <i>SY</i> ₁₀		4 8.6	130°85'	0°3'	8.3 18
3 2	13												

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
427759	2004 <i>TC</i> ₅₈		4 8.6 167°12	1°0/ 9.5 17			72952	2002 <i>CE</i> ₅₇		4 8.6 331°72	2°6/ 6.5 18		
3 2	13 38.55	-11 3.3	2.327	3.106	13.1	21.9	3 2	13 30.31	- 6 29.1	1.292	2.136	18.0	19.0
3 12	13 33.25	-11 9.2	2.237	3.110	10.3	21.7	3 12	13 28.30	- 5 26.7	1.214	2.128	13.9	18.8
3 22	13 25.95	-11 4.9	2.169	3.113	7.0	21.5	3 22	13 23.40	- 4 5.7	1.155	2.120	9.1	18.5
4 1	13 17.21	-10 51.6	2.129	3.116	3.4	21.2	4 1	13 16.28	- 2 32.9	1.119	2.112	4.1	18.1
4 11	13 7.80	-10 31.9	2.118	3.119	1.1	21.1	4 11	13 8.09	- 0 59.1	1.108	2.106	3.7	18.1
4 21	12 58.58	-10 9.6	2.137	3.121	4.5	21.3	4 21	13 0.16	+ 0 24.5	1.122	2.099	8.7	18.4
5 1	12 50.39	- 9 48.6	2.184	3.122	8.0	21.5	5 1	12 53.77	+ 1 28.1	1.158	2.094	13.8	18.6
5 11	12 43.87	- 9 32.8	2.256	3.123	11.2	21.7	5 11	12 49.87	+ 2 6.0	1.214	2.089	18.2	18.9
7725	Sel'vinskij		4 8.6 147°67	0°7/ 7.9 18			299322	2005 <i>QB</i> ₁₁₂		4 8.6 188°75	2°6/ 4.8 18		
3 2	13 36.17	- 8 38.7	2.006	2.806	14.2	18.8	3 2	13 30.06	- 0 50.1	3.072	3.882	9.5	21.3
3 12	13 31.60	- 7 56.2	1.927	2.815	10.9	18.6	3 12	13 26.23	+ 0 15.3	2.985	3.881	7.2	21.1
3 22	13 24.92	- 7 1.1	1.870	2.824	7.2	18.3	3 22	13 21.07	+ 1 25.8	2.924	3.880	4.8	21.0
4 1	13 16.75	- 5 57.3	1.841	2.833	3.1	18.1	4 1	13 15.00	+ 2 37.4	2.892	3.878	2.8	20.8
4 11	13 7.95	- 4 50.9	1.840	2.840	1.5	18.0	4 11	13 8.51	+ 3 45.4	2.890	3.875	3.2	20.9
4 21	12 59.46	- 3 48.0	1.868	2.847	5.6	18.3	4 21	13 2.17	+ 4 45.5	2.919	3.872	5.4	21.0
5 1	12 52.15	- 2 54.7	1.923	2.854	9.5	18.5	5 1	12 56.50	+ 5 34.2	2.975	3.869	7.9	21.2
5 11	12 46.67	- 2 15.2	2.003	2.860	12.8	18.7	5 11	12 51.93	+ 6 9.6	3.057	3.866	10.1	21.3
413987	2007 <i>EZ</i> ₇₅		4 8.6 55°73	1°4/ 7.3 18			315430	2007 <i>VQ</i> ₂₉₂		4 8.6 309°33	5°2/ 4.8 17		
3 2	13 32.12	- 9 24.7	1.538	2.360	16.7	21.1	3 2	13 35.66	+ 2 7.2	1.432	2.274	16.6	20.2
3 12	13 28.88	- 8 8.4	1.481	2.382	12.8	20.9	3 12	13 32.20	+ 2 54.9	1.352	2.264	13.0	19.9
3 22	13 23.26	- 6 35.2	1.445	2.405	8.2	20.7	3 22	13 25.88	+ 3 48.8	1.293	2.254	8.9	19.6
4 1	13 16.01	- 4 52.1	1.435	2.428	3.5	20.4	4 1	13 17.36	+ 4 41.0	1.258	2.244	5.6	19.4
4 11	13 8.20	- 3 9.0	1.452	2.451	2.4	20.4	4 11	13 7.77	+ 5 22.8	1.249	2.234	6.2	19.4
4 21	13 0.92	+ 1 35.4	1.496	2.474	6.8	20.8	4 21	12 58.42	+ 5 46.7	1.264	2.225	10.0	19.6
5 1	12 55.10	- 0 19.3	1.565	2.497	11.1	21.0	5 1	12 50.59	+ 5 48.2	1.302	2.216	14.3	19.8
5 11	12 51.37	+ 0 35.1	1.656	2.521	14.7	21.3	5 11	12 45.20	+ 5 26.1	1.360	2.208	18.2	20.0
333957	2000 <i>CU</i> ₇₁		4 8.6 154°49	5°7/ 1.4 17			425108	2009 <i>SM</i> ₁₂₁		4 8.7 158°63	0°1/ 8.8 16		
3 2	13 32.90	+ 8 34.3	2.433	3.257	11.2	21.4	3 2	13 34.74	-11 1.9	2.442	3.226	12.4	22.7
3 12	13 28.71	+ 9 57.3	2.367	3.263	8.9	21.2	3 12	13 30.16	-10 24.1	2.356	3.234	9.7	22.5
3 22	13 22.83	+11 19.8	2.327	3.269	6.7	21.1	3 22	13 23.82	- 9 34.2	2.293	3.241	6.4	22.3
4 1	13 15.78	+12 35.3	2.314	3.275	5.7	21.1	4 1	13 16.25	- 8 35.2	2.258	3.248	2.9	22.1
4 11	13 8.26	+13 37.5	2.330	3.280	6.6	21.1	4 11	13 8.15	- 7 31.5	2.252	3.254	0.8	22.0
4 21	13 1.00	+14 22.0	2.373	3.285	8.7	21.3	4 21	13 0.29	- 6 28.4	2.277	3.259	4.5	22.2
5 1	12 54.67	+14 46.4	2.441	3.289	11.0	21.4	5 1	12 53.37	- 5 31.0	2.330	3.264	7.9	22.5
5 11	12 49.80	+14 50.5	2.530	3.293	13.2	21.6	5 11	12 47.96	- 4 43.6	2.409	3.268	10.9	22.7
499726	2011 <i>BA</i> ₁₇		4 8.6 56°30	5°0/12.7 17			119044	2001 <i>HV</i> ₇		4 8.7 271°33	0°8/ 8.1 17		
3 2	13 36.78	-20 46.0	1.687	2.452	17.8	21.3	3 2	13 38.21	- 8 5.7	1.540	2.355	17.0	20.5
3 12	13 32.70	-21 18.9	1.611	2.464	14.7	21.1	3 12	13 34.39	- 7 42.8	1.433	2.329	13.5	20.2
3 22	13 25.98	-21 31.4	1.555	2.476	11.1	20.9	3 22	13 27.58	- 7 4.1	1.346	2.302	9.1	19.9
4 1	13 17.32	-21 22.1	1.521	2.488	7.5	20.7	4 1	13 18.25	- 6 12.7	1.283	2.275	4.0	19.5
4 11	13 7.78	-20 52.9	1.513	2.500	5.1	20.6	4 11	13 7.46	- 5 14.4	1.246	2.247	1.8	19.3
4 21	12 58.58	-20 8.5	1.532	2.513	6.3	20.7	4 21	12 56.51	- 4 17.1	1.236	2.218	7.4	19.5
5 1	12 50.85	-19 16.4	1.576	2.526	9.7	20.9	5 1	12 46.86	- 3 29.3	1.251	2.189	12.8	19.7
5 11	12 45.41	-18 24.6	1.643	2.539	13.1	21.2	5 11	12 39.64	- 2 57.7	1.287	2.159	17.6	19.9
207552	2006 <i>LL</i> ₄		4 8.6 260°46	0°3/ 8.3 17			106836	2000 <i>YG</i> ₈		4 8.7 109°24	0°3/ 8.9 18	R	
3 2	13 34.27	- 8 34.9	2.590	3.380	11.6	21.0	3 2	13 38.07	-10 54.8	1.710	2.510	16.2	20.4
3 12	13 29.94	- 8 12.8	2.473	3.356	9.1	20.8	3 12	13 33.39	-10 33.1	1.639	2.525	12.7	20.2
3 22	13 23.81	- 7 40.9	2.380	3.331	6.1	20.6	3 22	13 26.25	- 9 56.3	1.590	2.541	8.5	20.0
4 1	13 16.31	- 7 1.3	2.315	3.306	2.7	20.3	4 1	13 17.38	- 9 7.6	1.566	2.556	3.8	19.8
4 11	13 8.07	- 6 17.7	2.279	3.280	1.0	20.1	4 11	13 7.81	- 8 12.8	1.569	2.571	1.0	19.6
4 21	12 59.84	- 5 34.3	2.273	3.253	4.6	20.3	4 21	12 58.68	- 7 18.4	1.600	2.585	5.7	19.9
5 1	12 52.35	- 4 55.6	2.295	3.226	8.1	20.5	5 1	12 50.98	- 6 31.0	1.658	2.598	10.0	20.2
5 11	12 46.24	- 4 25.4	2.343	3.198	11.2	20.7	5 11	12 45.45	- 5 55.8	1.739	2.612	13.7	20.5
289633	2005 <i>GX</i> ₇₆		4 8.6 337°01	0°7/ 8.2 17			297465	2000 <i>SZ</i> ₃₂₇		4 8.7 212°59	2°3/11.7 18		
3 2	13 32.78	- 7 50.5	1.312	2.148	18.3	20.8	3 2	13 31.47	-18 36.3	2.897	3.646	11.5	21.1
3 12	13 30.26	- 7 37.6	1.231	2.138	14.3	20.5	3 12	13 27.54	-18 18.7	2.791	3.640	9.3	21.0
3 22	13 24.75	- 7 9.4	1.168	2.130	9.5	20.2	3 22	13 22.07	-17 47.2	2.708	3.633	6.8	20.8
4 1	13 16.91	- 6 29.5	1.129	2.122	4.2	19.9	4 1	13 15.49	-17 2.8	2.651	3.626	4.1	20.6
4 11	13 7.89	- 5 44.5	1.113	2.114	1.8	19.7	4 11	13 8.39	-16 8.1	2.624	3.619	2.3	20.4
4 21	12 59.08	- 5 2.2	1.123	2.108	7.4	20.0	4 21	13 1.39	-15 6.8	2.626	3.611	3.8	20.5
5 1	12 51.84	- 4 30.5	1.155	2.102	12.6	20.3	5 1	12 55.14	-14 3.7	2.658	3.603	6.5	20.7
5 11	12 47.18	- 4 14.9	1.207	2.098	17.2	20.5	5 11	12 50.15	-13 3.7	2.716	3.594	9.2	20.9
2152	Hannibal		4 8.6 162°65	3°7/13.9 18			426218	2012 <i>KL</i> ₅₀		4 8.7 268°68	8°4/29.7 18		
3 2	13 32.32	-24 25.1	3.065	3.777	11.6	16.8	3 2	13 35.07	+13 48.3	2.079	2.905	12.8	21.3
3 12	13 28.09	-24 18.1	2.967	3.782	9.7	16.7	3 12	13 31.01	+15 25.9	1.991	2.880	10.6	21.1
3 22	13 22.37	-23 55.8	2.890	3.787	7.5	16.5	3 22	13 24.75	+17 1.9	1.926	2.854	8.9	20.9
4 1	13 15.58	-23 18.2	2.839	3.792	5.3	16.4	4 1	13 16.79	+18 27.4	1.888	2.828	8.4	20.8
4 11	13 8.33	-22 27.3	2.817	3.796	3.8	16.3	4 11	13 7.97	+19 33.7	1.876	2.801	9.7	20.8
4 21	13 1.24	-21 26.3	2.824	3.800	4.2	16.3	4 21	12 59.22	+20 14.6	1.890	2.774	12.0	20.9
5 1	12 54.93	-20 19.8	2.860	3.803	6.2	16.5	5 1	12 51.48	+20 27.1	1.926	2.746	14.6	21.0
5 11	12 49.88	-19 12.9	2.924	3.806	8.5	16.6	5 11	12 45.53	+20 11.7	1.980	2.717	17.1	21.2
471240	2011 <i>BT</i> ₁₅		4 8.6 114°32	3°0/ 7.4 17	R		86911	2000 <i>HE</i> ₅₀		4 8.7 213°19	1°4/ 7.5 18		
3 2	14 9												

EPHEMERIDES

4 8.7

4 8.7

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
100212	1994 <i>PV</i> ₃		4 8.7 206°99		4.2/13.9 17		502931	2015 <i>ET</i> ₃₃		4 8.7 152°68		3.2/ 5.4 17	
3 2	13 34.97	-24 31.8	3.070	3.776	11.7	21.0	3 2	13 33.71	- 0 45.5	2.131	2.951	12.8	21.7
3 12	13 30.26	-24 53.3	2.961	3.770	9.9	20.9	3 12	13 29.60	+ 0 6.0	2.053	2.954	9.8	21.6
3 22	13 23.90	-25 1.0	2.874	3.764	7.8	20.7	3 22	13 23.58	+ 1 3.7	2.000	2.958	6.5	21.4
4 1	13 16.32	-24 53.9	2.812	3.757	5.7	20.6	4 1	13 16.19	+ 2 2.4	1.973	2.961	3.6	21.2
4 11	13 8.13	-24 32.7	2.778	3.750	4.3	20.5	4 11	13 8.21	+ 2 55.9	1.975	2.964	3.9	21.2
4 21	13 0.00	-23 59.6	2.774	3.743	4.7	20.5	4 21	13 0.50	+ 3 39.0	2.005	2.966	6.9	21.4
5 1	12 52.61	-23 18.2	2.799	3.735	6.6	20.6	5 1	12 53.83	+ 4 7.6	2.061	2.969	10.1	21.6
5 11	12 46.52	-22 33.2	2.850	3.727	8.8	20.7	5 11	12 48.80	+ 4 19.8	2.141	2.971	13.1	21.8
73071	2002 <i>FB</i> ₃₇		4 8.7 291°78		2°6/10.7 17		421712	2014 <i>PD</i> ₂₅		4 8.7 180°50		3°8/ 5.1 17	
3 2	13 33.05	-16 16.7	1.506	2.305	18.1	19.6	3 2	13 36.65	- 1 1.1	1.817	2.639	14.5	21.6
3 12	13 30.31	-16 6.8	1.410	2.291	14.7	19.4	3 12	13 32.24	+ 0 4.3	1.739	2.641	11.2	21.4
3 22	13 24.74	-15 34.4	1.332	2.277	10.5	19.1	3 22	13 25.51	+ 1 18.2	1.683	2.642	7.4	21.2
4 1	13 16.93	-14 40.0	1.278	2.262	5.8	18.8	4 1	13 17.09	+ 2 33.9	1.655	2.642	4.2	21.0
4 11	13 7.92	-13 28.0	1.249	2.248	2.6	18.5	4 11	13 7.93	+ 3 43.5	1.654	2.641	4.6	21.0
4 21	12 58.99	-12 6.2	1.245	2.234	6.2	18.7	4 21	12 59.06	+ 4 39.9	1.680	2.640	8.1	21.2
5 1	12 51.44	-10 44.7	1.266	2.220	11.2	18.9	5 1	12 51.45	+ 5 18.0	1.733	2.639	11.8	21.4
5 11	12 46.29	- 9 33.3	1.310	2.206	15.7	19.2	5 11	12 45.83	+ 5 35.4	1.807	2.637	15.2	21.6
72737	2001 <i>FF</i> ₁₀₄		4 8.7 358°34		4.2/11.9 18		150187	1998 <i>MH</i> ₇		4 8.7 240°83		1°3/10.2 18	
3 2	13 33.30	-17 55.2	1.605	2.393	17.7	18.8	3 2	13 31.62	-14 2.4	2.672	3.445	11.7	20.9
3 12	13 30.24	-18 26.6	1.520	2.390	14.5	18.6	3 12	13 27.78	-13 50.3	2.570	3.438	9.3	20.8
3 22	13 24.52	-18 39.3	1.455	2.388	10.7	18.4	3 22	13 22.30	-13 26.5	2.491	3.431	6.5	20.6
4 1	13 16.76	-18 32.5	1.412	2.387	6.8	18.1	4 1	13 15.62	-12 52.1	2.439	3.423	3.4	20.3
4 11	13 7.99	-18 8.0	1.394	2.387	4.2	18.0	4 11	13 8.38	-12 10.2	2.415	3.415	1.4	20.2
4 21	12 59.42	-17 30.4	1.402	2.388	6.2	18.1	4 21	13 1.24	-11 24.6	2.422	3.407	3.9	20.3
5 1	12 52.22	-16 46.9	1.435	2.389	10.0	18.3	5 1	12 54.88	-10 39.6	2.456	3.399	7.0	20.5
5 11	12 47.29	-16 5.1	1.490	2.391	13.9	18.6	5 11	12 49.85	- 9 59.6	2.517	3.391	9.9	20.7
310503	2000 <i>WZ</i> ₁₅		4 8.7 150°81		1°0/ 7.8 18		45887	2000 <i>WS</i> ₁₁₇		4 8.7 217°07		2°9/ 6.1 18	
3 2	13 38.98	- 7 3.2	1.944	2.745	14.5	21.7	3 2	13 38.53	- 1 49.9	1.961	2.774	14.0	19.7
3 12	13 33.85	- 6 35.1	1.866	2.755	11.2	21.4	3 12	13 33.66	- 1 11.0	1.869	2.765	10.8	19.4
3 22	13 26.46	- 5 56.3	1.810	2.764	7.4	21.2	3 22	13 26.47	- 0 24.3	1.800	2.757	7.2	19.2
4 1	13 17.47	- 5 10.3	1.780	2.772	3.2	21.0	4 1	13 17.55	+ 0 25.1	1.758	2.747	3.7	19.0
4 11	13 7.81	- 4 22.5	1.779	2.779	1.7	20.9	4 11	13 7.78	+ 1 11.3	1.744	2.737	3.6	18.9
4 21	12 58.47	- 3 38.6	1.807	2.786	5.8	21.2	4 21	12 58.18	+ 1 48.3	1.758	2.725	7.2	19.1
5 1	12 50.38	- 3 3.8	1.863	2.792	9.8	21.4	5 1	12 49.73	+ 2 11.6	1.800	2.714	11.0	19.3
5 11	12 44.25	- 2 41.7	1.942	2.797	13.2	21.6	5 11	12 43.20	+ 2 18.4	1.864	2.701	14.5	19.5
391365	2006 <i>VL</i> ₅₇		4 8.7 26°37		1°5/10.3 17		499149	2009 <i>RG</i> ₅₁		4 8.7 122°04		0°2/ 8.5 17	
3 2	13 30.50	-14 53.2	2.226	3.009	13.5	21.1	3 2	13 37.16	- 8 30.5	2.101	2.897	13.8	22.3
3 12	13 27.17	-14 31.3	2.138	3.011	10.7	20.9	3 12	13 32.27	- 8 14.8	2.024	2.909	10.7	22.1
3 22	13 22.00	-13 54.4	2.072	3.014	7.4	20.7	3 22	13 25.33	- 7 48.7	1.970	2.922	7.1	21.9
4 1	13 15.50	-13 4.4	2.032	3.017	3.9	20.5	4 1	13 16.96	- 7 15.0	1.943	2.934	3.1	21.7
4 11	13 8.41	-12 5.4	2.020	3.020	1.5	20.3	4 11	13 8.01	- 6 38.0	1.945	2.946	1.1	21.6
4 21	13 1.52	-11 2.8	2.036	3.023	4.4	20.5	4 21	12 59.36	- 6 2.4	1.976	2.957	5.1	21.9
5 1	12 55.60	-10 2.3	2.080	3.026	7.9	20.8	5 1	12 51.87	- 5 32.9	2.034	2.968	8.8	22.1
5 11	12 51.25	- 9 9.3	2.149	3.030	11.1	21.0	5 11	12 46.15	- 5 13.0	2.116	2.979	12.0	22.3
294520	2007 <i>XX</i> ₁₈		4 8.7 146°76		1°9/ 6.7 18		323463	2004 <i>JA</i> ₄₄		4 8.7 340°22		2°8/ 6.5 17	
3 2	13 35.47	- 2 22.5	2.430	3.237	11.8	20.6	3 2	13 34.99	- 2 35.1	1.577	2.408	15.9	20.4
3 12	13 30.71	- 2 2.5	2.348	3.242	9.0	20.4	3 12	13 31.36	- 2 3.8	1.498	2.405	12.3	20.1
3 22	13 24.19	- 1 37.3	2.291	3.246	5.9	20.2	3 22	13 25.15	- 1 23.5	1.441	2.402	8.1	19.9
4 1	13 16.42	- 1 10.3	2.261	3.251	2.8	20.0	4 1	13 17.01	- 0 39.6	1.408	2.399	4.0	19.6
4 11	13 8.13	- 0 45.5	2.260	3.255	2.5	20.0	4 11	13 7.98	+ 0 0.9	1.402	2.397	3.6	19.6
4 21	13 0.07	- 0 26.5	2.288	3.259	5.4	20.2	4 21	12 59.22	+ 0 31.5	1.421	2.395	7.7	19.8
5 1	12 52.95	- 0 16.3	2.345	3.263	8.6	20.4	5 1	12 51.85	+ 0 47.2	1.465	2.393	12.0	20.1
5 11	12 47.33	- 0 17.1	2.425	3.267	11.4	20.6	5 11	12 46.69	+ 0 45.3	1.531	2.392	15.9	20.3
388333	2006 <i>SZ</i> ₃₈₇		4 8.7 262°03		3°9/ 3.9 18		508306	2015 <i>KK</i> ₈₃		4 8.7 104°29		1°0/10.0 17	
3 2	13 30.69	+ 1 38.2	2.306	3.132	11.7	21.4	3 2	13 30.75	-16 19.0	2.558	3.326	12.3	21.5
3 12	13 27.21	+ 2 44.9	2.222	3.125	9.0	21.2	3 12	13 27.02	-15 16.1	2.474	3.340	9.7	21.3
3 22	13 21.97	+ 3 56.7	2.163	3.119	6.1	21.0	3 22	13 21.71	-13 57.2	2.414	3.354	6.7	21.1
4 1	13 15.48	+ 5 7.9	2.131	3.113	4.1	20.9	4 1	13 15.32	-12 25.7	2.382	3.368	3.4	20.9
4 11	13 8.42	+ 6 12.3	2.127	3.107	4.7	20.9	4 11	13 8.52	-10 46.6	2.380	3.381	1.0	20.8
4 21	13 1.52	+ 7 4.5	2.152	3.101	7.3	21.1	4 21	13 1.99	- 9 6.3	2.409	3.394	4.0	21.0
5 1	12 55.52	+ 7 40.3	2.202	3.094	10.3	21.2	5 1	12 56.34	- 7 31.3	2.467	3.407	7.2	21.2
5 11	12 50.99	+ 7 58.1	2.275	3.088	13.0	21.4	5 11	12 52.08	- 6 6.8	2.551	3.419	10.0	21.5
326674	2002 <i>VL</i> ₁₂		4 8.7 60°35		3°2/11.3 18		15409	1997 <i>WQ</i> ₃₁		4 8.7 184°56		1°2/ 7.3 18	
3 2	13 36.47	-17 45.5	1.503	2.291	18.6	20.3	3 2	13 33.34	- 5 37.6	2.502	3.304	11.6	19.0
3 12	13 32.45	-17 40.9	1.444	2.316	14.9	20.2	3 12	13 29.09	- 5 6.3	2.413	3.304	8.9	18.8
3 22	13 25.74	-17 14.1	1.403	2.341	10.7	20.0	3 22	13 23.15	- 4 27.0	2.348	3.303	5.8	18.6
4 1	13 17.17	-16 26.7	1.386	2.366	6.1	19.8	4 1	13 15.99	- 3 43.1	2.311	3.303	2.6	18.4
4 11	13 7.93	-15 24.0	1.395	2.392	3.2	19.6	4 11	13 8.30	- 2 58.8	2.303	3.302	1.8	18.3
4 21	12 59.26	-14 13.7	1.429	2.417	5.8	19.9	4 21	13 0.79	- 2 18.4	2.325	3.301	5.0	18.5
5 1	12 52.26	-13 4.9	1.490	2.442	9.9	20.1	5 1	12 54.14	- 1 45.9	2.375	3.299	8.2	18.7
5 11	12 47.62	-12 5.2	1.573	2.467	13.7	20.4	5 11	12 48.91	- 1 24.3	2.449	3.297	11.1	18.9
115146	2003 <i>SK</i> ₆₆		4 8.7 88°29		3°6/12.2 17		43						

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
109628	2001 <i>QP</i> ₃₂₃		4 8.7 79°06'	4.6/ 4.2	18		8088	Australia		4 8.7 176°19'	1°0/ 7.7	18	
3 2	13 35.44	+ 0 39.2	1.760	2.589	14.6	19.0	3 2	13 37.04	- 8 7.8	1.825	2.631	15.1	18.3
3 12	13 31.05	+ 2 5.8	1.711	2.617	11.1	18.8	3 12	13 32.59	- 7 24.4	1.741	2.633	11.7	18.1
3 22	13 24.52	+ 3 37.6	1.687	2.644	7.5	18.7	3 22	13 25.80	- 6 27.1	1.680	2.635	7.7	17.9
4 1	13 16.57	+ 5 6.4	1.688	2.672	4.8	18.6	4 1	13 17.27	- 5 20.5	1.644	2.636	3.3	17.6
4 11	13 8.18	+ 6 23.9	1.718	2.698	5.5	18.7	4 11	13 7.96	- 4 10.9	1.637	2.637	1.9	17.5
4 21	13 0.31	+ 7 23.5	1.774	2.725	8.5	18.9	4 21	12 58.93	- 3 5.6	1.658	2.637	6.2	17.8
5 1	12 53.82	+ 8 1.5	1.856	2.751	11.8	19.2	5 1	12 51.16	- 2 11.1	1.706	2.636	10.5	18.0
5 11	12 49.27	+ 8 17.2	1.959	2.777	14.6	19.4	5 11	12 45.41	- 1 32.3	1.776	2.635	14.1	18.3
389251	2009 <i>FP</i> ₄₂		4 8.7 249°43'	2°2/ 6.4	17		133939	2004 <i>TR</i> ₃₉		4 8.7 331°52'	0°6/ 9.0	17	
3 2	13 34.58	- 1 22.5	2.514	3.323	11.4	21.3	3 2	13 32.23	- 10 10.9	1.169	2.007	19.9	20.5
3 12	13 30.10	- 1 0.8	2.418	3.312	8.8	21.1	3 12	13 30.31	- 10 10.3	1.086	1.994	15.8	20.2
3 22	13 23.86	- 0 34.4	2.346	3.302	5.8	20.9	3 22	13 25.10	- 9 51.0	1.022	1.982	10.8	19.9
4 1	13 16.34	- 0 6.6	2.302	3.291	2.9	20.7	4 1	13 17.23	- 9 15.2	0.978	1.970	5.0	19.5
4 11	13 8.21	+ 0 18.6	2.287	3.280	2.7	20.7	4 11	13 7.95	- 8 28.9	0.958	1.960	1.4	19.3
4 21	13 0.20	+ 0 37.4	2.301	3.269	5.6	20.8	4 21	12 58.81	- 7 40.7	0.961	1.950	7.5	19.6
5 1	12 53.03	+ 0 46.7	2.343	3.258	8.8	21.0	5 1	12 51.37	- 6 59.9	0.986	1.942	13.3	19.9
5 11	12 47.28	+ 0 44.6	2.409	3.246	11.6	21.2	5 11	12 46.81	- 6 34.4	1.031	1.934	18.4	20.1
410328	2007 <i>UQ</i> ₂₁		4 8.7 127°43'	1°7/10.3	18		290135	2005 <i>QH</i> ₁₅₄		4 8.7 189°69'	3°0/ 5.1	17	
3 2	13 36.40	- 15 32.1	1.802	2.586	16.2	22.2	3 2	13 33.63	+ 2 1.9	2.778	3.589	10.3	21.1
3 12	13 32.10	- 15 5.9	1.724	2.597	12.9	22.0	3 12	13 29.12	+ 2 34.8	2.693	3.588	7.9	20.9
3 22	13 25.44	- 14 20.9	1.667	2.609	8.9	21.8	3 22	13 23.08	+ 3 10.2	2.633	3.587	5.4	20.7
4 1	13 17.08	- 13 19.2	1.635	2.620	4.7	21.6	4 1	13 15.97	+ 3 44.3	2.602	3.586	3.3	20.6
4 11	13 8.01	- 12 6.3	1.630	2.630	1.8	21.4	4 11	13 8.39	+ 4 13.1	2.600	3.584	3.5	20.6
4 21	12 59.29	- 10 49.2	1.654	2.640	5.2	21.6	4 21	13 0.98	+ 4 33.2	2.627	3.582	5.9	20.7
5 1	12 51.93	- 9 36.0	1.704	2.650	9.4	21.9	5 1	12 54.36	+ 4 42.2	2.682	3.580	8.5	20.9
5 11	12 46.62	- 8 33.5	1.778	2.659	13.1	22.1	5 11	12 49.02	+ 4 38.8	2.761	3.577	10.9	21.1
381165	2007 <i>HH</i> ₆₅		4 8.7 285°20'	6°9/ 2.3	18		209904	2005 <i>NK</i>		4 8.7 297°69'	7°9/29.4	18	
3 2	13 35.41	+ 8 50.6	1.863	2.695	13.8	20.4	3 2	13 30.60	+ 12 9.9	2.104	2.939	12.3	19.8
3 12	13 31.41	+ 9 53.9	1.777	2.678	11.0	20.2	3 12	13 27.54	+ 13 57.1	2.016	2.912	10.1	19.6
3 22	13 25.07	+ 10 57.2	1.715	2.662	8.4	20.0	3 22	13 22.45	+ 15 44.7	1.952	2.886	8.4	19.4
4 1	13 16.97	+ 11 52.7	1.679	2.645	6.9	19.9	4 1	13 15.83	+ 17 23.8	1.914	2.859	8.0	19.4
4 11	13 8.02	+ 12 32.6	1.668	2.628	7.9	19.9	4 11	13 8.40	+ 18 45.4	1.903	2.832	9.3	19.4
4 21	12 59.22	+ 12 51.2	1.684	2.612	10.5	20.0	4 21	13 1.04	+ 19 43.1	1.917	2.805	11.7	19.5
5 1	12 51.59	+ 12 45.6	1.723	2.595	13.7	20.1	5 1	12 54.61	+ 20 13.0	1.954	2.779	14.3	19.6
5 11	12 45.91	+ 12 16.2	1.782	2.578	16.7	20.3	5 11	12 49.82	+ 20 14.9	2.009	2.752	16.7	19.7
130396	2000 <i>LD</i> ₃₁		4 8.7 226°75'	0°1/ 8.5	17		473800	2016 <i>EM</i> ₉₅		4 8.7 305°81'	4°9/ 4.9	17	
3 2	13 36.07	- 10 47.0	1.773	2.575	15.7	20.4	3 2	13 35.07	+ 1 27.1	1.480	2.321	16.3	21.2
3 12	13 32.09	- 10 6.4	1.677	2.565	12.3	20.1	3 12	13 31.71	+ 2 15.7	1.397	2.309	12.7	20.9
3 22	13 25.63	- 9 8.6	1.602	2.555	8.3	19.8	3 22	13 25.58	+ 3 11.2	1.336	2.296	8.7	20.6
4 1	13 17.26	- 7 56.9	1.553	2.544	3.7	19.5	4 1	13 17.30	+ 4 6.3	1.298	2.284	5.4	20.4
4 11	13 7.92	- 6 37.7	1.532	2.533	1.2	19.3	4 11	13 7.96	+ 4 52.2	1.286	2.272	5.9	20.4
4 21	12 58.73	- 5 18.8	1.538	2.521	6.1	19.6	4 21	12 58.81	+ 5 21.5	1.299	2.261	9.7	20.6
5 1	12 50.78	- 4 8.4	1.571	2.508	10.7	19.9	5 1	12 51.10	+ 5 29.2	1.335	2.250	14.0	20.8
5 11	12 44.89	- 3 13.1	1.627	2.495	14.7	20.1	5 11	12 45.74	+ 5 13.7	1.391	2.239	17.9	21.0
260750	2005 <i>MX</i> ₁₆		4 8.7 163°17'	0°6/ 9.3	17		348903	2006 <i>SZ</i> ₃₇₂		4 8.7 133°59'	1°6/10.6	17	
3 2	13 35.94	- 11 57.3	2.225	3.008	13.5	21.7	3 2	13 33.24	- 15 4.5	2.718	3.482	11.8	21.8
3 12	13 31.32	- 11 31.2	2.138	3.014	10.6	21.5	3 12	13 28.90	- 14 53.4	2.631	3.493	9.3	21.6
3 22	13 24.74	- 10 51.9	2.073	3.020	7.1	21.3	3 22	13 22.97	- 14 30.3	2.567	3.503	6.5	21.5
4 1	13 16.74	- 10 1.8	2.036	3.024	3.4	21.1	4 1	13 15.92	- 13 56.7	2.531	3.513	3.6	21.3
4 11	13 8.12	- 9 5.3	2.027	3.028	0.9	20.9	4 11	13 8.41	- 13 15.4	2.523	3.522	1.6	21.1
4 21	12 59.74	- 8 7.7	2.048	3.032	4.7	21.2	4 21	13 1.10	- 12 30.2	2.546	3.531	3.8	21.3
5 1	12 52.40	- 7 14.7	2.096	3.034	8.4	21.4	5 1	12 54.63	- 11 45.3	2.597	3.540	6.7	21.5
5 11	12 46.74	- 6 30.9	2.170	3.037	11.6	21.6	5 11	12 49.51	- 11 5.0	2.674	3.548	9.4	21.7
372342	2009 <i>DF</i> ₉₇		4 8.7 327°76'	4°5/10.1	17		48934	Kočanová		4 8.7 265°16'	0°6/ 8.1	18	
3 2	13 33.98	- 11 3.4	1.061	1.902	21.3	19.9	3 2	13 34.84	- 8 54.4	1.797	2.606	15.2	20.2
3 12	13 32.76	- 12 23.6	0.953	1.859	17.6	19.5	3 12	13 31.19	- 8 20.7	1.695	2.588	11.9	19.9
3 22	13 27.69	- 13 37.9	0.861	1.817	12.9	19.0	3 22	13 25.10	- 7 32.1	1.614	2.570	8.0	19.7
4 1	13 18.87	- 14 43.8	0.789	1.776	7.6	18.6	4 1	13 17.08	- 6 31.8	1.559	2.551	3.5	19.3
4 11	13 7.26	- 15 39.4	0.739	1.737	4.5	18.2	4 11	13 8.04	- 5 25.6	1.531	2.532	1.5	19.1
4 21	12 54.61	- 16 23.8	0.709	1.699	9.1	18.3	4 21	12 59.05	- 4 20.8	1.531	2.512	6.3	19.4
5 1	12 43.22	- 17 0.0	0.700	1.664	15.7	18.5	5 1	12 51.20	- 3 24.6	1.557	2.493	10.9	19.6
5 11	12 35.18	- 17 34.4	0.708	1.630	22.1	18.7	5 11	12 45.35	- 2 43.1	1.605	2.473	14.9	19.8
322513	2011 <i>WZ</i> ₁₀₄		4 8.7 228°52'	1°9/ 6.2	18		271122	2003 <i>SB</i> ₃₀		4 8.7 224°53'	1°2/ 7.5	17	
3 2	13 31.24	- 2 53.7	2.830	3.637	10.3	21.3	3 2	13 32.28	- 7 34.5	2.073	2.882	13.5	20.9
3 12	13 27.33	- 2 12.7	2.734	3.628	7.9	21.1	3 12	13 28.69	- 6 47.5	1.985	2.879	10.4	20.6
3 22	13 21.93	- 1 25.5	2.663	3.619	5.2	20.9	3 22	13 23.11	- 5 48.4	1.919	2.876	6.8	20.4
4 1	13 15.47	- 0 35.7	2.620	3.610	2.5	20.8	4 1	13 16.07	- 4 41.3	1.880	2.872	2.9	20.2
4 11	13 8.51	+ 0 12.5	2.606	3.600	2.5	20.7	4 11	13 8.38	- 3 32.0	1.870	2.869	1.9	20.1
4 21	13 1.66	+ 0 55.2	2.623	3.590	5.1	20.9	4 21	13 0.87	- 2 27.0	1.887	2.865	5.7	20.3
5 1	12 55.52	+ 1 28.7	2.667	3.579	7.9	21.1	5 1	12 54.39	- 1 32.2	1.932	2.861	9.5	20.5
5 11	12 50.60	+ 1 50.6	2.736	3.569	10.5	21.2	5 11	12 49.58	- 0 51.7	2.000	2.857	12.8	20.7
89908	2002 <i>DK</i> ₁₇		4 8.7 254°37'	0°9/ 9.8	18		297717	2001 <i>VO</i> ₁₂₆		4 8.7 185°52'			

EPHEMERIDES

4 8.7

4 8.7

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
153177	2000 <i>UM</i> ₃₅		4 8.7 153°44	0°0/ 8.6 17			281097	2006 <i>UR</i> ₃₂₈		4 8.7 147°04	3°7/13.3 18		
3 2	13 34.27	-10 5.3	2.118	2.914	13.6	20.8	3 2	13 32.25	-22 45.2	2.603	3.335	13.0	20.9
3 12	13 30.14	-9 33.0	2.034	2.919	10.6	20.6	3 12	13 28.37	-22 42.6	2.508	3.339	10.8	20.7
3 22	13 24.02	-8 48.1	1.972	2.924	7.1	20.4	3 22	13 22.75	-22 23.2	2.434	3.343	8.2	20.5
4 1	13 16.47	-7 53.6	1.937	2.928	3.1	20.2	4 1	13 15.90	-21 47.4	2.386	3.346	5.6	20.4
4 11	13 8.29	-6 54.5	1.931	2.932	1.0	20.0	4 11	13 8.49	-20 57.1	2.366	3.350	3.8	20.3
4 21	13 0.36	-5 56.6	1.953	2.935	5.0	20.3	4 21	13 1.25	-19 56.3	2.374	3.353	4.6	20.3
5 1	12 53.49	-5 5.4	2.003	2.939	8.8	20.5	5 1	12 54.90	-18 50.3	2.410	3.356	7.0	20.5
5 11	12 48.32	-4 25.6	2.077	2.942	12.1	20.8	5 11	12 49.99	-17 44.9	2.473	3.359	9.6	20.6
468265	2015 <i>BO</i> ₄₇₁		4 8.7 207°98	2°8/ 5.8 17			129368	4823 <i>P-L</i>		4 8.7 245°13	0°4/ 8.2 18		
3 2	13 33.64	-2 50.6	2.015	2.834	13.4	21.9	3 2	13 31.94	-8 27.3	2.693	3.486	11.1	21.5
3 12	13 29.77	-1 54.6	1.930	2.831	10.3	21.6	3 12	13 28.03	-8 0.2	2.589	3.474	8.7	21.3
3 22	13 23.85	-0 49.6	1.869	2.828	6.8	21.4	3 22	13 22.51	-7 23.8	2.509	3.461	5.7	21.1
4 1	13 16.42	+0 19.0	1.835	2.825	3.5	21.2	4 1	13 15.81	-6 40.6	2.457	3.448	2.5	20.8
4 11	13 8.31	+1 24.6	1.829	2.821	3.6	21.2	4 11	13 8.53	-5 54.2	2.434	3.435	1.0	20.7
4 21	13 0.41	+2 20.7	1.851	2.817	6.9	21.4	4 21	13 1.33	-5 8.8	2.441	3.421	4.4	20.9
5 1	12 53.58	+3 2.4	1.899	2.813	10.5	21.6	5 1	12 54.88	-4 28.7	2.476	3.408	7.6	21.1
5 11	12 48.48	+3 26.5	1.970	2.809	13.7	21.8	5 11	12 49.73	-3 57.2	2.536	3.393	10.4	21.2
102612	1999 <i>VY</i> ₁₉		4 8.7 234°76	1°3/ 7.6 17			27813	1993 <i>PS</i> ₃		4 8.7 159°82	0°9/ 9.6 18		
3 2	13 37.33	-6 24.4	1.978	2.782	14.2	20.6	3 2	13 35.79	-13 4.4	2.205	2.986	13.7	19.8
3 12	13 32.83	-5 54.5	1.878	2.769	11.0	20.4	3 12	13 31.25	-12 37.2	2.118	2.992	10.8	19.6
3 22	13 26.02	-5 13.4	1.801	2.756	7.3	20.1	3 22	13 24.74	-11 55.8	2.054	2.998	7.3	19.4
4 1	13 17.45	-4 24.7	1.750	2.742	3.2	19.8	4 1	13 16.80	-11 2.5	2.016	3.004	3.6	19.2
4 11	13 7.97	-3 33.8	1.727	2.727	2.0	19.7	4 11	13 8.25	-10 1.7	2.007	3.009	1.0	19.0
4 21	12 58.59	-2 46.5	1.733	2.711	6.2	19.9	4 21	12 59.93	-8 59.0	2.028	3.013	4.6	19.2
5 1	12 50.29	-2 8.7	1.766	2.695	10.3	20.1	5 1	12 52.68	-8 0.4	2.076	3.016	8.3	19.5
5 11	12 43.87	-1 44.4	1.823	2.678	14.0	20.3	5 11	12 47.11	-7 10.8	2.150	3.019	11.6	19.7
282223	2001 <i>YK</i> ₇₈		4 8.7 154°35	3°0/11.3 18			310191	2011 <i>SR</i> ₁₁₄		4 8.7 272°56	1°9/10.5 17		
3 2	13 39.16	-17 29.4	1.843	2.611	16.4	21.0	3 2	13 34.92	-14 2.9	2.386	3.159	13.0	20.3
3 12	13 34.33	-17 29.2	1.758	2.619	13.3	20.8	3 12	13 30.63	-14 15.2	2.282	3.148	10.4	20.1
3 22	13 27.02	-17 10.4	1.694	2.626	9.6	20.6	3 22	13 24.41	-14 16.0	2.200	3.138	7.4	19.9
4 1	13 17.86	-16 33.5	1.654	2.633	5.6	20.3	4 1	13 16.71	-14 5.7	2.144	3.127	4.1	19.7
4 11	13 7.87	-15 41.8	1.642	2.638	3.0	20.2	4 11	13 8.26	-13 46.5	2.117	3.116	1.9	19.5
4 21	12 58.17	-14 41.1	1.658	2.643	5.4	20.3	4 21	12 59.87	-13 21.6	2.119	3.105	4.4	19.7
5 1	12 49.82	-13 38.9	1.701	2.648	9.3	20.6	5 1	12 52.36	-12 55.1	2.149	3.093	7.8	19.9
5 11	12 43.61	-12 42.4	1.768	2.652	13.0	20.8	5 11	12 46.41	-12 31.7	2.204	3.082	11.0	20.0
137003	1998 <i>SU</i> ₉₀		4 8.7 198°02	0°5/ 9.1 17			182086	2000 <i>HW</i> ₆₈		4 8.7 21°39	0°5/ 9.1 18		
3 2	13 37.27	-10 35.9	1.947	2.740	14.8	21.2	3 2	13 30.38	-12 4.6	1.267	2.098	19.1	20.0
3 12	13 32.74	-10 24.1	1.855	2.738	11.6	20.9	3 12	13 28.31	-11 35.4	1.202	2.105	15.0	19.7
3 22	13 25.92	-9 59.2	1.786	2.736	7.9	20.7	3 22	13 23.37	-10 44.9	1.156	2.114	10.1	19.5
4 1	13 17.37	-9 23.5	1.743	2.733	3.6	20.4	4 1	13 16.33	-9 37.3	1.132	2.123	4.6	19.2
4 11	13 8.01	-8 41.2	1.728	2.730	1.0	20.2	4 11	13 8.40	-8 20.7	1.132	2.134	1.2	19.0
4 21	12 58.83	-7 57.6	1.741	2.726	5.3	20.5	4 21	13 0.92	-7 5.2	1.157	2.145	6.7	19.4
5 1	12 50.83	-7 18.5	1.782	2.722	9.5	20.8	5 1	12 55.08	-6 0.3	1.205	2.157	11.7	19.7
5 11	12 44.75	-6 48.8	1.846	2.717	13.1	21.0	5 11	12 51.72	-5 13.1	1.274	2.170	16.1	20.0
231350	2006 <i>FC</i> ₂₆		4 8.7 119°97	0°2/ 8.4 17			334339	2001 <i>XA</i> ₁₉₉		4 8.7 80°62	6°6/16.9 18		
3 2	13 34.97	-8 35.5	2.081	2.881	13.7	21.2	3 2	13 34.60	-31 10.4	2.472	3.151	14.9	21.0
3 12	13 30.70	-8 16.9	1.999	2.887	10.6	21.0	3 12	13 30.37	-31 35.7	2.390	3.169	12.9	20.9
3 22	13 24.40	-7 47.5	1.940	2.893	7.1	20.8	3 22	13 24.16	-31 40.5	2.327	3.186	10.6	20.7
4 1	13 16.64	-7 10.2	1.908	2.899	3.1	20.5	4 1	13 16.55	-31 22.9	2.287	3.204	8.4	20.6
4 11	13 8.25	-6 29.4	1.903	2.904	1.1	20.4	4 11	13 8.34	-30 43.8	2.273	3.221	6.9	20.5
4 21	13 0.11	-5 50.1	1.928	2.910	5.1	20.7	4 21	13 0.39	-29 46.4	2.285	3.239	6.7	20.6
5 1	12 53.07	-5 17.1	1.979	2.915	8.9	20.9	5 1	12 53.53	-28 36.3	2.324	3.256	8.0	20.7
5 11	12 47.76	-4 54.3	2.054	2.920	12.2	21.1	5 11	12 48.37	-27 20.7	2.389	3.273	10.0	20.8
129945	1999 <i>TS</i> ₁₈₄		4 8.7 168°05	6°9/14.8 18			30406	Middleman		4 8.7 125°24	1°7/ 7.3 18		
3 2	13 43.69	-27 58.6	2.429	3.112	15.0	20.1	3 2	13 37.40	-6 48.7	1.573	2.391	16.6	18.6
3 12	13 37.65	-29 7.8	2.330	3.116	13.0	20.0	3 12	13 33.13	-6 0.3	1.503	2.402	12.8	18.3
3 22	13 29.20	-30 0.6	2.253	3.119	10.7	19.8	3 22	13 26.27	-4 57.9	1.453	2.412	8.4	18.1
4 1	13 18.87	-30 33.3	2.200	3.121	8.5	19.7	4 1	13 17.54	-3 47.2	1.429	2.421	3.6	17.8
4 11	13 7.54	-30 44.2	2.174	3.123	7.1	19.6	4 11	13 8.05	-2 36.1	1.432	2.431	2.6	17.8
4 21	12 56.25	-30 34.4	2.176	3.125	7.3	19.6	4 21	12 58.96	-1 32.7	1.462	2.439	7.1	18.1
5 1	12 46.04	-30 8.0	2.206	3.126	9.0	19.7	5 1	12 51.39	-0 43.7	1.517	2.448	11.5	18.4
5 11	12 37.75	-29 31.4	2.261	3.127	11.2	19.8	5 11	12 46.07	-0 13.4	1.595	2.456	15.3	18.6
151184	2001 <i>XW</i> ₂₁₂		4 8.7 148°25	0°6/ 7.9 16			120187	2004 <i>CO</i> ₃		4 8.7 31°58	2°3/ 6.2 17		
3 2	13 35.32	-8 35.5	2.503	3.292	12.0	21.3	3 2	13 29.92	-5 24.2	1.892	2.716	13.9	19.8
3 12	13 30.55	-7 53.0	2.421	3.304	9.2	21.1	3 12	13 26.97	-4 16.4	1.817	2.721	10.6	19.5
3 22	13 24.09	-7 0.2	2.364	3.316	6.1	20.9	3 22	13 22.01	-2 56.9	1.766	2.727	6.9	19.3
4 1	13 16.45	-6 0.6	2.335	3.327	2.6	20.7	4 1	13 15.61	-1 31.6	1.742	2.733	3.2	19.1
4 11	13 8.33	-4 58.9	2.336	3.337	1.3	20.6	4 11	13 8.62	-0 8.2	1.745	2.740	3.1	19.1
4 21	13 0.46	-4 0.1	2.368	3.346	4.7	20.9	4 21	13 1.92	+1 6.0	1.775	2.747	6.7	19.3
5 1	12 53.54	-3 8.8	2.427	3.354	7.9	21.1	5 1	12 56.32	+2 4.9	1.832	2.754	10.4	19.6
5 11	12 48.09	-2 28.5	2.513	3.362	10.8	21.3	5 11	12 52.44	+2 45.1	1.911	2.761	13.6	19.8
306376	1983 <i>TA</i>		4 8.7 93°72	4°1/12.5 18			362624	2011 <i>SO</i> ₉₇		4 8.7 82°14	1°2/ 7.7 18		
3 2	13 48.16	-20 32.3	2.437	3.152	14.2	21.9	3 2	13 37.					

EPHEMERIDES

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
288487	2004 <i>FQ</i> ₃₀		4 8.7 25°04'	15°9'	31.4	18	435946	2009 <i>CT</i> ₅₆		4 8.7 354°84'	6°5'	1.1	16
3 2	13 48.19	+32 41.7	1.447	2.234	19.3	19.5	3 2	13 28.14	+5 18.6	1.793	2.639	13.6	20.7
3 12	13 41.36	+33 29.1	1.424	2.254	17.5	19.5	3 12	13 25.78	+7 8.0	1.724	2.636	10.6	20.5
3 22	13 31.41	+33 48.0	1.418	2.274	16.3	19.4	3 22	13 21.33	+9 1.8	1.680	2.634	7.9	20.3
4 1	13 19.59	+33 28.8	1.432	2.296	15.9	19.5	4 1	13 15.38	+10 50.3	1.661	2.632	6.5	20.2
4 11	13 7.55	+32 27.2	1.467	2.320	16.4	19.5	4 11	13 8.77	+12 23.9	1.670	2.630	7.8	20.3
4 21	12 56.76	+30 45.8	1.522	2.344	17.6	19.7	4 21	13 2.41	+13 34.8	1.703	2.630	10.6	20.4
5 1	12 48.34	+28 31.7	1.597	2.369	19.1	19.9	5 1	12 57.16	+14 18.8	1.760	2.629	13.6	20.6
5 11	12 42.84	+25 54.5	1.689	2.395	20.7	20.1	5 11	12 53.68	+14 35.1	1.836	2.630	16.3	20.8
29782	1999 <i>CN</i> ₅₀		4 8.7 117°88'	5°4'	2.8	18	219814	2002 <i>BA</i> ₃		4 8.7 57°19'	3°1'	10.8	18
3 2	13 34.59	+3 58.3	1.965	2.794	13.3	18.9	3 2	13 41.84	-14 20.3	1.616	2.401	17.7	20.1
3 12	13 30.38	+5 32.6	1.906	2.809	10.3	18.7	3 12	13 36.56	-15 1.7	1.551	2.423	14.1	19.9
3 22	13 24.14	+7 10.1	1.870	2.823	7.3	18.5	3 22	13 28.55	-15 27.7	1.506	2.445	10.0	19.7
4 1	13 16.53	+8 42.8	1.863	2.837	5.5	18.5	4 1	13 18.58	-15 38.1	1.486	2.467	5.7	19.5
4 11	13 8.39	+10 2.5	1.883	2.851	6.4	18.5	4 11	13 7.83	-15 34.8	1.492	2.489	3.1	19.4
4 21	13 0.63	+11 3.0	1.930	2.864	9.1	18.7	4 21	12 57.57	-15 21.9	1.526	2.511	5.8	19.6
5 1	12 54.05	+11 40.9	2.003	2.877	12.0	18.9	5 1	12 48.94	-15 5.1	1.586	2.534	9.8	19.9
5 11	12 49.25	+11 55.6	2.096	2.889	14.6	19.1	5 11	12 42.73	-14 50.4	1.669	2.556	13.4	20.1
65822	1996 <i>VO</i> ₅		4 8.7 128°48'	0°4'	8.3	18	6032	Nobel		4 8.7 264°65'	0°8'	7.9	18
3 2	13 37.50	-9 39.2	1.854	2.653	15.2	20.1	3 2	13 34.62	-9 21.7	1.900	2.704	14.7	18.0
3 12	13 32.82	-9 1.4	1.780	2.667	11.8	19.9	3 12	13 30.98	-8 33.0	1.790	2.681	11.5	17.7
3 22	13 25.88	-8 9.6	1.728	2.681	7.8	19.7	3 22	13 24.98	-7 27.9	1.702	2.656	7.7	17.4
4 1	13 17.34	-7 7.9	1.703	2.694	3.4	19.4	4 1	13 17.11	-6 9.6	1.640	2.632	3.4	17.1
4 11	13 8.15	-6 2.3	1.705	2.706	1.3	19.3	4 11	13 8.22	-4 44.7	1.606	2.606	1.7	16.9
4 21	12 59.34	-4 59.6	1.737	2.718	5.7	19.6	4 21	12 59.32	-3 20.8	1.600	2.580	6.3	17.2
5 1	12 51.84	-4 6.1	1.795	2.729	9.8	19.9	5 1	12 51.45	-2 6.2	1.621	2.553	10.8	17.4
5 11	12 46.32	-3 26.4	1.877	2.740	13.3	20.1	5 11	12 45.48	-1 7.3	1.666	2.526	14.8	17.5
297720	2001 <i>WS</i> ₁₅		4 8.7 106°97'	1°2'	7.8	18	100706	1998 <i>BQ</i> ₇		4 8.7 153°84'	4°4'	3.4	17
3 2	13 40.88	-5 45.5	1.528	2.344	17.1	20.5	3 2	13 35.23	+4 3.7	2.440	3.256	11.4	20.0
3 12	13 35.92	-5 33.4	1.459	2.356	13.2	20.3	3 12	13 30.52	+5 16.0	2.370	3.266	8.8	19.8
3 22	13 28.18	-5 10.6	1.410	2.367	8.7	20.0	3 22	13 24.11	+6 30.8	2.325	3.275	6.2	19.7
4 1	13 18.42	-4 41.0	1.385	2.377	3.8	19.7	4 1	13 16.51	+7 42.1	2.308	3.284	4.5	19.6
4 11	13 7.83	-4 10.4	1.388	2.388	2.1	19.6	4 11	13 8.45	+8 44.1	2.321	3.292	5.2	19.6
4 21	12 57.68	-3 44.6	1.418	2.398	6.8	20.0	4 21	13 0.65	+9 31.8	2.363	3.299	7.5	19.8
5 1	12 49.16	-3 29.0	1.473	2.408	11.4	20.3	5 1	12 53.80	+10 2.4	2.430	3.305	10.1	20.0
5 11	12 43.08	-3 26.9	1.550	2.418	15.3	20.5	5 11	12 48.44	+10 14.9	2.521	3.311	12.5	20.2
239721	2009 <i>BP</i> ₅₀		4 8.7 247°70'	1°2'	7.4	17	246443	2007 <i>VH</i> ₁₈₅		4 8.7 119°92'	5°7'	2.9	18
3 2	13 32.96	-5 54.0	2.260	3.067	12.5	21.2	3 2	13 36.97	+10 7.3	2.352	3.169	11.8	20.5
3 12	13 29.08	-5 23.3	2.168	3.061	9.7	21.0	3 12	13 31.91	+10 48.8	2.285	3.176	9.4	20.3
3 22	13 23.34	-4 43.4	2.099	3.055	6.3	20.8	3 22	13 25.04	+11 27.3	2.242	3.183	7.1	20.2
4 1	13 16.23	-4 57.9	2.057	3.049	2.8	20.6	4 1	13 16.93	+11 57.4	2.226	3.189	5.7	20.1
4 11	13 8.47	-3 11.5	2.044	3.043	1.9	20.5	4 11	13 8.33	+12 14.1	2.239	3.196	6.4	20.2
4 21	13 0.86	-2 29.1	2.059	3.036	5.4	20.7	4 21	13 0.05	+12 14.5	2.278	3.202	8.4	20.3
5 1	12 54.18	-1 55.2	2.102	3.029	8.9	20.9	5 1	12 52.81	+11 57.4	2.344	3.208	10.8	20.5
5 11	12 49.05	-1 33.3	2.168	3.023	12.1	21.1	5 11	12 47.17	+11 23.4	2.432	3.214	13.1	20.6
179477	2002 <i>BL</i> ₃₀		4 8.7 75°23'	8°9'	17.7	18	425720	2011 <i>BV</i> ₃₂		4 8.7 129°74'	1°3'	9.9	17
3 2	13 43.57	-34 32.5	2.443	3.083	15.8	20.2	3 2	13 35.96	-13 25.3	2.006	2.791	14.7	22.3
3 12	13 37.68	-36 0.1	2.361	3.100	14.1	20.1	3 12	13 31.59	-13 9.8	1.925	2.800	11.6	22.1
3 22	13 29.28	-37 8.2	2.298	3.117	12.2	20.0	3 22	13 25.08	-12 39.5	1.865	2.809	8.0	21.9
4 1	13 18.95	-37 52.2	2.258	3.134	10.4	19.9	4 1	13 17.02	-11 56.4	1.831	2.817	4.0	21.6
4 11	13 7.64	-38 9.7	2.242	3.151	9.1	19.9	4 11	13 8.30	-11 4.7	1.825	2.826	1.3	21.4
4 21	12 56.45	-38 1.7	2.253	3.168	8.9	19.9	4 21	12 59.86	-10 10.0	1.847	2.834	4.9	21.7
5 1	12 46.47	-37 32.3	2.289	3.184	9.8	20.0	5 1	12 52.60	-9 18.5	1.897	2.841	8.7	22.0
5 11	12 38.55	-36 48.6	2.349	3.201	11.4	20.1	5 11	12 47.17	-8 35.4	1.972	2.848	12.2	22.2
175301	2005 <i>LC</i> ₄₇		4 8.7 196°12'	8°5'	19.7	18	428951	2008 <i>YJ</i> ₂₂		4 8.7 50°68'	5°4'	3.4	17
3 2	13 37.30	-38 37.3	2.825	3.433	14.4	20.6	3 2	13 32.78	+4 38.1	1.860	2.695	13.7	20.5
3 12	13 32.64	-39 31.0	2.722	3.431	13.1	20.5	3 12	13 29.08	+5 47.5	1.805	2.712	10.6	20.3
3 22	13 25.85	-40 5.1	2.636	3.429	11.5	20.4	3 22	13 23.34	+6 58.6	1.773	2.728	7.5	20.2
4 1	13 17.41	-40 16.0	2.572	3.426	10.0	20.3	4 1	13 16.20	+8 4.0	1.768	2.745	5.5	20.1
4 11	13 8.11	-40 2.2	2.531	3.424	8.9	20.2	4 11	13 8.57	+8 56.5	1.789	2.762	6.2	20.2
4 21	12 58.88	-39 24.8	2.516	3.421	8.5	20.2	4 21	13 1.34	+9 31.1	1.837	2.779	8.9	20.3
5 1	12 50.61	-38 27.5	2.526	3.418	9.1	20.2	5 1	12 55.33	+9 45.0	1.909	2.796	11.9	20.6
5 11	12 44.08	-37 16.7	2.560	3.415	10.4	20.3	5 11	12 51.11	+9 38.2	2.002	2.814	14.5	20.8
365066	2008 <i>YC</i> ₁₀₉		4 8.7 81°19'	1°2'	9.6	18	215250	2001 <i>KS</i> ₆₂		4 8.7 277°88'	6°3'	2.3	18
3 2	13 37.64	-12 13.8	1.463	2.271	18.1	21.7	3 2	13 35.89	+5 24.8	1.890	2.719	13.8	19.8
3 12	13 33.63	-12 7.3	1.392	2.281	14.3	21.5	3 12	13 32.01	+6 49.4	1.785	2.687	10.9	19.6
3 22	13 26.78	-11 43.3	1.340	2.290	9.8	21.3	3 22	13 25.72	+8 20.6	1.704	2.654	8.0	19.3
4 1	13 17.85	-11 3.9	1.311	2.300	4.8	21.0	4 1	13 17.47	+9 50.2	1.648	2.621	6.3	19.2
4 11	13 8.02	-10 14.7	1.309	2.310	1.4	20.8	4 11	13 8.13	+11 8.9	1.621	2.586	7.5	19.2
4 21	12 58.60	-9 22.8	1.333	2.320	6.1	21.1	4 21	12 58.72	+12 8.5	1.619	2.551	10.6	19.3
5 1	12 50.80	-8 36.0	1.381	2.330	10.9	21.4	5 1	12 50.32	+12 43.1	1.642	2.516	14.2	19.4
5 11	12 45.47	-8 0.8	1.452	2.339	15.1	21.7	5 11	12 43.84	+12 50.9	1.685	2.479	17.6	19.5
330043	2005 <i>UD</i> ₃₀₈		4 8.7 191°58'	0°1'	8.8	17	486008	2012 <i>PK</i> ₄₄		4 8.7 268°67'	3°1'	2.2	17
3 2	13 35.71	-10 11.5	2.163	2.954	13.5	2							

EPHEMERIDES

4 8.7

4 8.7

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
333270	2146 <i>P-L</i>		4 8.7 253°01	0°0/ 8.5 16			258792	2002 <i>JS₁₄₆</i>		4 8.7 21°14	20°5/16.2 16		
3 2	13 34.87	-10 49.6	2.623	3.403	11.7	21.6	3 2	13 27.67	+30 16.6	0.994	1.846	21.5	19.0
3 12	13 30.48	-10 10.3	2.501	3.377	9.2	21.3	3 12	13 27.05	+33 49.4	0.989	1.857	20.6	18.9
3 22	13 24.29	-9 18.3	2.402	3.350	6.2	21.1	3 22	13 22.84	+36 42.6	1.001	1.869	20.6	19.0
4 1	13 16.71	-8 16.0	2.332	3.322	2.8	20.8	4 1	13 16.15	+38 39.6	1.031	1.883	21.6	19.1
4 11	13 8.38	-7 7.3	2.291	3.293	0.9	20.6	4 11	13 8.67	+39 32.4	1.075	1.898	23.1	19.2
4 21	13 0.04	-5 57.5	2.282	3.263	4.6	20.9	4 21	13 2.06	+39 22.7	1.132	1.915	24.7	19.4
5 1	12 52.42	-4 51.9	2.301	3.232	8.1	21.0	5 1	12 57.62	+38 18.4	1.200	1.934	26.2	19.6
5 11	12 46.19	-3 55.6	2.346	3.200	11.3	21.2	5 11	12 56.03	+36 30.6	1.277	1.953	27.5	19.8
31937	Kangsunwoo		4 8.7 322°30	4°4/11.4 18			98108	2000 <i>RP₉₁</i>		4 8.7 125°63	0°7/ 9.4 18		
3 2	13 33.76	-16 47.8	1.227	2.039	20.7	18.7	3 2	13 38.77	-12 25.6	1.872	2.659	15.5	20.3
3 12	13 31.62	-17 20.9	1.138	2.025	17.0	18.4	3 12	13 33.82	-11 59.0	1.798	2.676	12.2	20.1
3 22	13 26.13	-17 32.2	1.068	2.011	12.6	18.1	3 22	13 26.57	-11 16.9	1.746	2.692	8.2	19.9
4 1	13 17.85	-17 19.6	1.017	1.998	7.7	17.8	4 1	13 17.70	-10 22.2	1.720	2.708	3.9	19.7
4 11	13 8.01	-16 45.1	0.990	1.986	4.4	17.6	4 11	13 8.19	-9 20.2	1.722	2.723	1.0	19.5
4 21	12 58.20	-15 54.5	0.986	1.975	7.3	17.7	4 21	12 59.08	-8 17.4	1.752	2.737	5.2	19.8
5 1	12 50.06	-14 57.7	1.004	1.964	12.5	17.9	5 1	12 51.30	-7 20.6	1.810	2.751	9.3	20.1
5 11	12 44.85	-14 5.6	1.042	1.954	17.5	18.2	5 11	12 45.54	-6 35.0	1.893	2.763	12.8	20.3
17410	1988 <i>CQ₄</i>		4 8.7 247°75	3°1/11.3 18			464982	2006 <i>AB₁₄</i>		4 8.7 77°00	7°4/ 1.5 18		
3 2	13 36.09	-17 51.9	1.731	2.509	17.0	18.0	3 2	13 34.60	+9 27.5	1.799	2.634	14.1	20.9
3 12	13 32.40	-17 47.2	1.630	2.497	13.9	17.7	3 12	13 30.60	+10 55.1	1.746	2.647	11.2	20.7
3 22	13 26.07	-17 21.7	1.549	2.484	10.1	17.5	3 22	13 24.41	+12 20.6	1.716	2.660	8.6	20.6
4 1	13 17.64	-16 35.4	1.492	2.471	6.0	17.2	4 1	13 16.73	+13 35.0	1.713	2.674	7.4	20.5
4 11	13 8.12	-15 31.6	1.460	2.457	3.1	17.0	4 11	13 8.49	+14 30.6	1.735	2.687	8.4	20.6
4 21	12 58.66	-14 16.5	1.456	2.443	5.8	17.1	4 21	13 0.69	+15 2.2	1.783	2.700	10.8	20.8
5 1	12 50.47	-12 58.8	1.479	2.429	10.1	17.3	5 1	12 54.19	+15 8.1	1.854	2.713	13.5	21.0
5 11	12 44.47	-11 47.5	1.524	2.414	14.3	17.5	5 11	12 49.61	+14 49.6	1.945	2.726	16.0	21.2
437685	2014 <i>DL₈</i>		4 8.7 81°37	5°2/ 2.6 17			48767	Skamander		4 8.7 237°07	2°8/14.9 18		
3 2	13 31.63	+5 13.5	2.168	2.998	12.2	21.0	3 2	13 25.74	-26 10.0	4.745	5.435	8.0	19.5
3 12	13 27.58	+6 34.8	2.106	3.009	9.4	20.8	3 12	13 22.67	-25 52.0	4.634	5.432	6.8	19.4
3 22	13 22.94	+7 57.8	2.068	3.020	6.8	20.7	3 22	13 18.70	-25 23.1	4.545	5.428	5.3	19.3
4 1	13 15.86	+9 15.8	2.058	3.031	5.3	20.6	4 1	13 14.11	-24 43.7	4.482	5.424	3.9	19.2
4 11	13 8.70	+10 21.7	2.076	3.042	6.1	20.7	4 11	13 9.25	-23 55.1	4.449	5.420	2.9	19.1
4 21	13 1.84	+11 10.5	2.121	3.053	8.5	20.8	4 21	13 4.48	-22 59.6	4.445	5.416	3.0	19.1
5 1	12 55.99	+11 39.1	2.191	3.063	11.2	21.0	5 1	13 0.14	-21 59.6	4.471	5.412	4.2	19.2
5 11	12 51.70	+11 47.1	2.282	3.074	13.6	21.2	5 11	12 56.55	-20 58.5	4.525	5.408	5.7	19.3
326960	2004 <i>HL₂₀</i>		4 8.7 185°16	0°6/ 8.2 17			204416	2004 <i>VC₅₃</i>		4 8.7 53°62	1°3/ 7.7 18		
3 2	13 40.24	-6 17.2	2.042	2.839	14.0	20.9	3 2	13 36.65	-7 58.8	1.231	2.064	19.4	20.3
3 12	13 34.91	-6 14.7	1.953	2.840	10.9	20.7	3 12	13 32.98	-7 17.7	1.181	2.088	14.9	20.1
3 22	13 27.33	-6 3.8	1.887	2.839	7.3	20.5	3 22	13 26.32	-6 20.3	1.151	2.112	9.7	19.9
4 1	13 18.07	-5 47.1	1.847	2.839	3.2	20.2	4 1	13 17.62	-5 13.1	1.144	2.137	4.1	19.6
4 11	13 8.03	-5 28.3	1.837	2.837	1.4	20.1	4 11	13 8.25	-4 5.2	1.162	2.162	2.3	19.6
4 21	12 58.19	-5 11.5	1.855	2.836	5.5	20.4	4 21	12 59.58	-3 6.0	1.205	2.188	7.5	19.9
5 1	12 49.51	-5 0.7	1.901	2.834	9.4	20.6	5 1	12 52.81	-2 22.5	1.272	2.213	12.3	20.3
5 11	12 42.73	-4 59.1	1.972	2.831	12.9	20.8	5 11	12 48.64	-1 58.9	1.359	2.239	16.4	20.6
203922	2003 <i>OH₁₇</i>		4 8.7 314°41	2°7/ 6.8 17			472875	2015 <i>FT₃₀₂</i>		4 8.7 247°70	3°7/ 4.2 18		
3 2	13 30.91	-5 29.6	1.232	2.080	18.4	20.2	3 2	13 30.73	+1 6.7	2.351	3.175	11.6	21.2
3 12	13 29.29	-4 48.3	1.136	2.052	14.5	19.9	3 12	13 27.27	+2 13.7	2.269	3.172	8.9	21.0
3 22	13 24.55	-3 49.0	1.060	2.025	9.7	19.5	3 22	13 22.10	+3 26.0	2.212	3.168	6.0	20.8
4 1	13 17.16	-2 37.0	1.005	1.999	4.5	19.1	4 1	13 15.71	+4 38.0	2.182	3.165	3.9	20.7
4 11	13 8.24	-1 21.8	0.975	1.973	3.8	19.0	4 11	13 8.78	+5 43.7	2.181	3.161	4.5	20.7
4 21	12 59.23	-0 14.3	0.967	1.947	9.3	19.2	4 21	13 2.02	+6 37.6	2.207	3.158	7.1	20.8
5 1	12 51.69	+0 35.0	0.981	1.923	15.0	19.4	5 1	12 56.14	+7 15.8	2.260	3.154	10.0	21.0
5 11	12 46.85	+0 59.2	1.014	1.899	20.2	19.6	5 11	12 51.68	+7 36.3	2.336	3.151	12.6	21.2
337453	2001 <i>RE₈₈</i>		4 8.7 147°81	0°4/ 8.2 18			175304	2005 <i>MC₃</i>		4 8.7 233°65	5°8/31.3 18		
3 2	13 33.51	-7 49.8	2.940	3.727	10.4	21.9	3 2	13 32.10	+11 32.5	2.809	3.628	10.0	20.9
3 12	13 28.97	-7 24.1	2.856	3.737	8.0	21.7	3 12	13 28.09	+12 49.3	2.727	3.615	8.1	20.7
3 22	13 23.00	-6 50.6	2.796	3.747	5.3	21.5	3 22	13 22.55	+14 4.6	2.670	3.603	6.5	20.6
4 1	13 16.03	-6 12.0	2.765	3.756	2.3	21.3	4 1	13 15.89	+15 12.7	2.641	3.589	5.8	20.5
4 11	13 8.66	-5 31.6	2.764	3.765	1.0	21.2	4 11	13 8.72	+16 8.2	2.640	3.576	6.7	20.6
4 21	13 1.48	-4 53.0	2.794	3.773	4.0	21.5	4 21	13 1.67	+16 46.9	2.666	3.562	8.5	20.7
5 1	12 55.05	-4 19.6	2.852	3.781	6.8	21.7	5 1	12 55.36	+17 6.7	2.718	3.547	10.6	20.8
5 11	12 49.86	-3 54.1	2.936	3.788	9.3	21.9	5 11	12 50.31	+17 7.3	2.791	3.532	12.5	20.9
200861	2001 <i>YW₇₀</i>		4 8.7 138°53	3°0/11.2 18			401029	2011 <i>SB₁₂₆</i>		4 8.7 239°36	1°2/ 7.8 17		
3 2	13 39.15	-17 10.7	1.737	2.512	17.0	20.7	3 2	13 39.59	-6 26.6	1.719	2.528	15.8	22.6
3 12	13 34.49	-17 11.7	1.657	2.521	13.8	20.5	3 12	13 35.03	-6 5.6	1.621	2.515	12.4	22.3
3 22	13 27.24	-16 53.6	1.596	2.531	9.9	20.3	3 22	13 27.78	-5 32.8	1.545	2.501	8.2	22.0
4 1	13 18.07	-16 16.9	1.560	2.539	5.7	20.0	4 1	13 18.42	-4 51.5	1.494	2.486	3.6	21.7
4 11	13 8.05	-15 25.2	1.551	2.548	3.0	19.9	4 11	13 7.95	-4 7.3	1.471	2.471	2.0	21.5
4 21	12 58.36	-14 24.6	1.569	2.555	5.5	20.1	4 21	12 57.54	-3 26.7	1.475	2.455	6.7	21.8
5 1	12 50.11	-13 23.0	1.614	2.562	9.6	20.3	5 1	12 48.41	-2 55.8	1.506	2.439	11.4	22.0
5 11	12 44.09	-12 27.8	1.683	2.569	13.4	20.6	5 11	12 41.49	-2 39.3	1.559	2.422	15.5	22.2
160402	2004 <i>RU₁₉₂</i>		4 8.7 259°17	0°9/ 9.5 17			314698	2006 <i>RZ₇₂</i>		4 8.7 5°29	0°3/ 8.9 18		
3 2	13 36.16	-13 13.3	1.702	2.498	16.5	20.3							

EPHEMERIDES

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
494080	2016 <i>BY</i> ₇₆		4 8.7 203°37'	3°6'	5.4	17	421978	2014 <i>QK</i> ₂₉₇		4 8.7 224°25'	3°9'	5.3	16
3 2	13 38.31	- 0 57.8	1.940	2.756	14.0	22.5	3 2	13 39.14	+ 0 16.5	1.926	2.742	14.1	21.7
3 12	13 33.55	+ 0 0.7	1.853	2.751	10.8	22.3	3 12	13 34.29	+ 1 8.9	1.833	2.731	10.9	21.5
3 22	13 26.50	+ 1 7.5	1.788	2.745	7.2	22.1	3 22	13 27.08	+ 2 8.4	1.762	2.718	7.4	21.2
4 1	13 17.74	+ 2 16.4	1.751	2.738	4.1	21.9	4 1	13 18.05	+ 3 9.1	1.719	2.705	4.3	21.0
4 11	13 8.18	+ 3 20.3	1.743	2.731	4.4	21.9	4 11	13 8.12	+ 4 4.0	1.704	2.691	4.7	21.0
4 21	12 58.82	+ 4 12.5	1.762	2.723	7.7	22.1	4 21	12 58.32	+ 4 46.6	1.717	2.676	8.1	21.2
5 1	12 50.63	+ 4 48.0	1.808	2.714	11.5	22.3	5 1	12 49.68	+ 5 12.1	1.756	2.660	11.8	21.4
5 11	12 44.35	+ 5 4.2	1.876	2.704	14.8	22.5	5 11	12 42.98	+ 5 18.2	1.818	2.643	15.2	21.6
375677	2009 <i>HF</i> ₂₀		4 8.7 29°48'	13°4'	5.0	18	141306	2001 <i>YJ</i> ₁₁₁		4 8.7 97°51'	2°0'	6.7	18
3 2	13 57.34	+19 45.9	1.014	1.842	23.0	20.0	3 2	13 34.22	- 2 22.3	2.403	3.213	11.8	20.3
3 12	13 50.10	+20 5.0	0.959	1.845	19.5	19.7	3 12	13 29.84	- 1 58.4	2.325	3.220	9.0	20.1
3 22	13 38.27	+20 3.0	0.921	1.849	16.0	19.5	3 22	13 23.74	- 1 29.0	2.271	3.227	5.9	19.9
4 1	13 23.07	+19 25.7	0.903	1.854	13.7	19.4	4 1	13 16.44	- 0 58.0	2.244	3.235	2.9	19.7
4 11	13 6.68	+18 4.8	0.908	1.859	13.9	19.4	4 11	13 8.63	- 0 29.3	2.247	3.242	2.5	19.7
4 21	12 51.45	+16 1.5	0.935	1.864	16.6	19.6	4 21	13 1.05	- 0 6.8	2.278	3.249	5.5	19.9
5 1	12 39.31	+13 25.1	0.983	1.870	20.3	19.8	5 1	12 54.41	+ 0 6.3	2.337	3.256	8.6	20.1
5 11	12 31.29	+10 28.4	1.050	1.876	23.9	20.1	5 11	12 49.25	+ 0 8.2	2.420	3.263	11.3	20.3
88839	2001 <i>SJ</i> ₁₇₆		4 8.7 191°13'	1°6'	7.2	18	409226	2003 <i>YR</i> ₈₂		4 8.7 113°98'	0°5'	8.3	18
3 2	13 36.57	- 5 3.1	2.134	2.939	13.3	20.2	3 2	13 38.58	- 8 18.6	1.810	2.613	15.4	21.9
3 12	13 31.98	- 4 31.5	2.046	2.938	10.2	20.0	3 12	13 33.74	- 7 55.6	1.738	2.628	11.9	21.7
3 22	13 25.33	- 3 51.1	1.981	2.936	6.7	19.7	3 22	13 26.56	- 7 20.6	1.689	2.643	7.9	21.5
4 1	13 17.19	- 3 5.5	1.943	2.934	3.0	19.5	4 1	13 17.74	- 6 37.1	1.665	2.657	3.4	21.3
4 11	13 8.36	- 2 19.9	1.934	2.932	2.2	19.4	4 11	13 8.25	- 5 50.5	1.670	2.671	1.3	21.1
4 21	12 59.72	- 1 39.5	1.953	2.929	5.8	19.7	4 21	12 59.16	- 5 6.7	1.702	2.684	5.3	21.5
5 1	12 52.14	- 1 8.9	2.000	2.925	9.5	19.9	5 1	12 51.42	- 4 31.3	1.761	2.697	9.8	21.7
5 11	12 46.28	- 0 51.3	2.071	2.921	12.8	20.1	5 11	12 45.72	- 4 8.2	1.844	2.709	13.4	22.0
500237	2012 <i>JS</i> ₂₃		4 8.7 303°88'	7°3'	1.2	17	362421	2010 <i>PM</i> ₇₅		4 8.7 184°92'	3°4'	5.2	18
3 2	13 30.61	+ 5 9.0	1.590	2.438	15.0	20.7	3 2	13 35.47	- 1 58.0	1.971	2.789	13.7	21.1
3 12	13 28.20	+ 6 56.8	1.503	2.416	11.8	20.4	3 12	13 31.26	- 0 45.6	1.889	2.789	10.5	20.9
3 22	13 23.29	+ 8 52.6	1.439	2.394	8.8	20.2	3 22	13 24.92	+ 0 36.1	1.831	2.789	7.0	20.7
4 1	13 16.43	+10 46.1	1.400	2.372	7.3	20.0	4 1	13 17.03	+ 2 0.7	1.801	2.788	3.9	20.5
4 11	13 8.55	+12 25.2	1.387	2.351	8.7	20.1	4 11	13 8.45	+ 3 20.5	1.799	2.787	4.3	20.5
4 21	13 0.78	+13 40.2	1.399	2.330	12.0	20.2	4 21	13 0.11	+ 4 28.4	1.825	2.785	7.6	20.7
5 1	12 54.21	+14 24.6	1.433	2.309	15.7	20.4	5 1	12 52.91	+ 5 18.9	1.877	2.782	11.1	20.9
5 11	12 49.74	+14 37.0	1.485	2.289	19.1	20.5	5 11	12 47.51	+ 5 49.3	1.952	2.779	14.3	21.1
235224	2003 <i>SM</i> ₂₃₈		4 8.7 191°81'	1°1'	9.9	17	186557	2002 <i>XK</i> ₅₅		4 8.7 54°09'	5°3'	4.6	18
3 2	13 33.84	-13 31.3	2.251	3.032	13.4	21.0	3 2	13 36.13	+ 1 57.3	1.433	2.274	16.7	19.8
3 12	13 29.83	-13 11.7	2.158	3.031	10.6	20.8	3 12	13 32.19	+ 3 1.2	1.384	2.295	12.8	19.6
3 22	13 23.89	-12 38.0	2.087	3.030	7.3	20.6	3 22	13 25.64	+ 4 9.5	1.356	2.316	8.7	19.4
4 1	13 16.55	-11 52.4	2.042	3.029	3.7	20.4	4 1	13 17.32	+ 5 13.6	1.353	2.337	5.6	19.2
4 11	13 8.55	-10 58.6	2.026	3.027	1.2	20.2	4 11	13 8.40	+ 6 4.9	1.375	2.359	6.2	19.3
4 21	13 0.71	-10 1.6	2.039	3.025	4.5	20.4	4 21	13 0.09	+ 6 37.0	1.423	2.380	9.5	19.6
5 1	12 53.86	- 9 7.2	2.079	3.022	8.1	20.7	5 1	12 53.41	+ 6 46.6	1.494	2.402	13.2	19.8
5 11	12 48.61	- 8 20.5	2.145	3.020	11.4	20.9	5 11	12 49.03	+ 6 33.8	1.585	2.424	16.5	20.1
325277	2008 <i>GE</i> ₁₃₁		4 8.7 245°05'	2°1'	6.5	17	140196	2001 <i>SM</i> ₂₁₉		4 8.7 247°44'	0°4'	8.3	18
3 2	13 35.43	- 4 2.5	2.209	3.016	12.8	21.6	3 2	13 32.49	- 8 46.6	2.279	3.078	12.7	20.7
3 12	13 31.17	- 3 17.3	2.105	2.999	9.9	21.3	3 12	13 28.76	- 8 19.1	2.186	3.074	9.9	20.5
3 22	13 24.88	- 2 22.6	2.024	2.981	6.5	21.1	3 22	13 23.18	- 7 40.7	2.117	3.070	6.5	20.3
4 1	13 17.04	- 1 22.6	1.971	2.962	3.1	20.8	4 1	13 16.25	- 6 54.3	2.074	3.065	2.9	20.0
4 11	13 8.39	- 0 23.0	1.947	2.942	2.8	20.8	4 11	13 8.69	- 6 4.4	2.060	3.061	1.1	19.9
4 21	12 59.80	+ 0 30.5	1.952	2.922	6.3	21.0	4 21	13 1.28	- 5 15.9	2.074	3.056	4.9	20.1
5 1	12 52.14	+ 1 12.5	1.984	2.902	10.0	21.1	5 1	12 54.79	- 4 33.7	2.116	3.052	8.5	20.3
5 11	12 46.10	+ 1 39.6	2.040	2.880	13.3	21.3	5 11	12 49.83	- 4 1.9	2.183	3.047	11.6	20.5
282550	2004 <i>TX</i> ₁₉₉		4 8.7 100°75'	0°0'	8.7	17	377905	2006 <i>DL</i> ₁₅₀		4 8.7 127°01'	0°4'	9.1	17
3 2	13 32.10	-12 14.1	1.948	2.747	14.6	20.8	3 2	13 34.04	-11 24.6	2.098	2.891	13.9	21.4
3 12	13 28.68	-11 21.7	1.867	2.753	11.4	20.6	3 12	13 30.04	-10 57.0	2.015	2.898	10.9	21.2
3 22	13 23.21	-10 12.7	1.808	2.759	7.6	20.3	3 22	13 24.05	-10 15.9	1.955	2.904	7.3	21.0
4 1	13 16.25	- 8 50.9	1.774	2.765	3.4	20.1	4 1	13 16.62	- 9 24.1	1.921	2.911	3.4	20.8
4 11	13 8.66	- 7 23.0	1.769	2.771	1.0	19.9	4 11	13 8.59	- 8 26.5	1.916	2.917	0.9	20.6
4 21	13 1.35	- 5 56.2	1.793	2.777	5.3	20.2	4 21	13 0.80	- 7 28.7	1.939	2.923	4.8	20.9
5 1	12 55.17	- 4 38.2	1.844	2.783	9.2	20.5	5 1	12 54.08	- 6 36.4	1.989	2.929	8.6	21.1
5 11	12 50.75	- 3 34.5	1.918	2.788	12.7	20.7	5 11	12 49.06	- 5 54.3	2.064	2.935	11.9	21.3
43799	1991 <i>PZ</i> ₁₀		4 8.7 269°80'	4°3'	11.9	18	83740	2001 <i>TQ</i> ₁₃₀		4 8.7 110°02'	3°9'	4.1	17
3 2	13 38.60	-19 14.9	1.887	2.647	16.4	19.3	3 2	13 31.72	+ 1 49.1	2.308	3.132	11.8	19.5
3 12	13 34.42	-19 38.5	1.769	2.621	13.6	19.0	3 12	13 28.00	+ 2 56.8	2.237	3.139	9.0	19.3
3 22	13 27.54	-19 44.7	1.671	2.595	10.3	18.7	3 22	13 22.56	+ 4 8.6	2.190	3.146	6.2	19.2
4 1	13 18.42	-19 31.5	1.597	2.568	6.7	18.5	4 1	13 15.92	+ 5 18.8	2.171	3.153	4.1	19.0
4 11	13 7.96	-18 59.6	1.549	2.540	4.3	18.3	4 11	13 8.80	+ 6 21.4	2.181	3.160	4.7	19.1
4 21	12 57.31	-18 12.4	1.529	2.512	6.1	18.3	4 21	13 1.93	+ 7 11.2	2.218	3.167	7.2	19.3
5 1	12 47.73	-17 16.6	1.536	2.483	10.1	18.5	5 1	12 55.99	+ 7 44.6	2.282	3.173	10.0	19.4
5 11	12 40.26	-16 20.4	1.566	2.454	14.1	18.6	5 11	12 51.53	+ 8 0.3	2.368	3.180	12.6	19.6
363449	2003 <i>SY</i> ₁₆₂		4 8.7 205°22'	0°8'	7.9	16	471103	2010 <i>BR</i> ₁₄		4 8.7 314°61'	5°0'	3.3	17

EPHEMERIDES

4 8.7

4 8.8

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
392123	2009 <i>FO</i> ₄₀		4 8.7 354 ^o .24	9 ^o .8/26.3	16		272787	2005 <i>YO</i> ₂₅₁		4 8.8 163 ^o .90	2 ^o .3/6.4	17	
3 2	13 26.99	+12 40.7	1.728	2.578	13.8	20.1	3 2	13 33.59	- 4 10.1	1.969	2.787	13.7	21.3
3 12	13 25.08	+15 31.6	1.671	2.574	11.5	20.0	3 12	13 29.82	- 3 19.1	1.888	2.788	10.5	21.1
3 22	13 21.00	+18 21.0	1.640	2.571	10.0	19.9	3 22	13 23.97	- 2 18.5	1.831	2.790	6.9	20.9
4 1	13 15.34	+20 55.5	1.636	2.568	10.1	19.9	4 1	13 16.63	- 1 13.2	1.800	2.791	3.3	20.6
4 11	13 8.96	+23 2.9	1.657	2.566	11.8	20.0	4 11	13 8.62	- 0 9.7	1.797	2.792	3.0	20.6
4 21	13 2.83	+24 35.5	1.702	2.564	14.2	20.1	4 21	13 0.85	+ 0 45.6	1.821	2.792	6.6	20.8
5 1	12 57.85	+25 30.4	1.767	2.564	16.6	20.3	5 1	12 54.19	+ 1 27.4	1.872	2.793	10.3	21.1
5 11	12 54.70	+25 49.3	1.848	2.564	18.8	20.4	5 11	12 49.28	+ 1 52.6	1.946	2.794	13.5	21.3
303858	2005 <i>SJ</i> ₂₂₈		4 8.7 169 ^o .97	0 ^o .9/7.6	17		459946	2014 <i>NM</i> ₃₇		4 8.8 210 ^o .93	3 ^o .6/11.8	17	
3 2	13 30.71	- 7 34.2	2.642	3.441	11.2	21.6	3 2	13 37.74	-19 6.0	1.779	2.545	17.0	22.1
3 12	13 27.07	- 6 48.7	2.553	3.442	8.6	21.4	3 12	13 33.59	-19 8.2	1.683	2.541	13.9	21.9
3 22	13 21.89	- 5 53.9	2.489	3.444	5.6	21.2	3 22	13 26.82	-18 49.8	1.607	2.535	10.3	21.6
4 1	13 15.63	- 4 53.0	2.453	3.445	2.4	21.0	4 1	13 18.02	-18 10.4	1.555	2.530	6.3	21.4
4 11	13 8.89	- 3 50.6	2.447	3.446	1.5	20.9	4 11	13 8.19	-17 12.9	1.529	2.523	3.7	21.2
4 21	13 2.31	- 2 51.6	2.470	3.447	4.6	21.1	4 21	12 58.51	-16 3.2	1.531	2.516	5.7	21.3
5 1	12 56.53	- 2 0.2	2.521	3.447	7.7	21.3	5 1	12 50.13	-14 49.4	1.559	2.509	9.8	21.5
5 11	12 52.03	- 1 20.0	2.597	3.448	10.4	21.5	5 11	12 43.94	-13 40.3	1.611	2.501	13.7	21.7
425846	2011 <i>EM</i> ₅₄		4 8.7 281 ^o .41	3 ^o .1/5.7	17		498676	2008 <i>SP</i> ₁₈₇		4 8.8 162 ^o .93	1 ^o .1/9.9	17	
3 2	13 33.62	- 1 49.9	1.980	2.802	13.5	21.0	3 2	13 35.01	-12 54.6	2.273	3.054	13.3	22.7
3 12	13 30.04	- 1 0.2	1.878	2.781	10.5	20.8	3 12	13 30.70	-12 41.6	2.184	3.057	10.5	22.5
3 22	13 24.29	- 0 1.4	1.800	2.759	7.0	20.5	3 22	13 24.46	-12 15.7	2.117	3.060	7.2	22.3
4 1	13 16.84	+ 1 1.3	1.747	2.736	3.7	20.2	4 1	13 16.83	-11 38.8	2.077	3.063	3.6	22.1
4 11	13 8.50	+ 2 1.2	1.723	2.714	3.9	20.2	4 11	13 8.57	-10 54.4	2.065	3.066	1.2	21.9
4 21	13 0.21	+ 2 51.8	1.726	2.692	7.4	20.4	4 21	13 0.50	-10 7.1	2.082	3.068	4.4	22.1
5 1	12 52.90	+ 3 27.6	1.755	2.669	11.2	20.5	5 1	12 53.42	- 9 22.1	2.127	3.070	8.0	22.3
5 11	12 47.36	+ 3 45.2	1.806	2.646	14.7	20.7	5 11	12 47.97	- 8 44.2	2.198	3.071	11.2	22.5
66358	1999 <i>JW</i> ₃₇		4 8.7 277 ^o .08	3 ^o .5/5.6	18		499762	2011 <i>BK</i> ₁₅₇		4 8.8 171 ^o .79	5 ^o .0/3.4	17	
3 2	13 35.73	- 3 12.9	1.720	2.543	15.2	19.6	3 2	13 34.42	+ 3 36.0	2.036	2.862	13.0	22.0
3 12	13 32.20	- 2 5.4	1.609	2.512	11.8	19.4	3 12	13 30.35	+ 4 53.3	1.962	2.864	10.1	21.8
3 22	13 26.05	- 0 43.5	1.521	2.481	7.9	19.0	3 22	13 24.27	+ 6 14.7	1.913	2.866	7.1	21.6
4 1	13 17.75	+ 0 47.2	1.458	2.448	4.2	18.7	4 1	13 16.74	+ 7 32.9	1.890	2.868	5.1	21.5
4 11	13 8.21	+ 2 17.8	1.423	2.415	4.5	18.7	4 11	13 8.60	+ 8 40.6	1.896	2.869	5.9	21.5
4 21	12 58.54	+ 3 38.8	1.415	2.381	8.7	18.8	4 21	13 0.71	+ 9 31.8	1.929	2.870	8.6	21.7
5 1	12 49.96	+ 4 41.7	1.432	2.346	13.3	19.0	5 1	12 53.93	+10 2.6	1.987	2.870	11.7	21.9
5 11	12 43.46	+ 5 21.2	1.471	2.311	17.5	19.2	5 11	12 48.86	+10 12.0	2.067	2.870	14.5	22.1
313809	2004 <i>BH</i> ₄₁		4 8.7 274 ^o .68	31 ^o .1/2.0	17		386375	2008 <i>TN</i> ₁₇₃		4 8.8 145 ^o .94	0 ^o .5/9.2	17	
3 2	14 2.84	+43 57.1	0.789	1.579	31.1	21.1	3 2	13 35.58	-10 38.0	2.148	2.939	13.7	21.7
3 12	14 2.64	+51 17.5	0.748	1.530	33.3	21.0	3 12	13 31.22	-10 26.9	2.062	2.943	10.7	21.5
3 22	13 54.24	+58 16.8	0.725	1.477	36.8	20.9	3 22	13 24.85	-10 4.2	1.998	2.947	7.2	21.3
4 1	13 34.59	+64 13.7	0.715	1.418	41.3	20.9	4 1	13 17.01	- 9 31.9	1.961	2.951	3.4	21.0
4 11	13 1.91	+68 35.1	0.711	1.354	46.2	21.0	4 11	13 8.52	- 8 54.0	1.953	2.954	0.9	20.8
4 21	12 18.81	+71 4.1	0.709	1.284	51.2	21.0	4 21	13 0.24	- 8 15.1	1.973	2.957	4.8	21.1
5 1	11 34.14	+71 46.6	0.702	1.209	56.4	21.0	5 1	12 53.02	- 7 40.0	2.020	2.961	8.5	21.4
5 11	10 56.31	+71 10.9	0.685	1.128	62.1	21.0	5 11	12 47.50	- 7 13.2	2.092	2.964	11.8	21.6
437260	2012 <i>XB</i> ₁₀₈		4 8.7 151 ^o .84	4 ^o .2/3.9	17		259707	2003 <i>YN</i> ₄₃		4 8.8 79 ^o .91	2 ^o .4/6.8	18	
3 2	13 34.07	+ 5 22.1	2.598	3.415	10.8	21.5	3 2	13 37.11	- 4 24.9	1.585	2.408	16.2	20.6
3 12	13 29.60	+ 6 6.7	2.524	3.419	8.4	21.4	3 12	13 32.82	- 3 40.1	1.524	2.426	12.4	20.4
3 22	13 23.53	+ 6 52.0	2.474	3.424	5.9	21.2	3 22	13 26.05	- 2 44.9	1.484	2.444	8.1	20.2
4 1	13 16.34	+ 7 33.3	2.452	3.428	4.3	21.1	4 1	13 17.54	- 1 45.2	1.470	2.462	3.7	19.9
4 11	13 8.70	+ 8 5.9	2.460	3.432	4.8	21.1	4 11	13 8.39	- 0 48.5	1.483	2.480	3.2	19.9
4 21	13 1.28	+ 8 26.4	2.495	3.436	6.9	21.3	4 21	12 59.74	- 0 1.7	1.523	2.497	7.2	20.2
5 1	12 54.74	+ 8 32.4	2.558	3.439	9.4	21.4	5 1	12 52.59	+ 0 29.9	1.588	2.515	11.3	20.5
5 11	12 49.56	+ 8 23.5	2.643	3.443	11.7	21.6	5 11	12 47.63	+ 0 43.7	1.674	2.532	14.9	20.8
174658	2003 <i>SH</i> ₂₀₄		4 8.7 150 ^o .84	1 ^o .0/7.8	18		139567	2001 <i>QM</i> ₈₀		4 8.8 140 ^o .71	2 ^o .4/6.1	18	
3 2	13 39.90	- 6 22.5	2.141	2.936	13.6	20.9	3 2	13 36.85	+ 0 39.7	2.802	3.604	10.5	20.4
3 12	13 34.44	- 5 58.7	2.061	2.947	10.5	20.7	3 12	13 31.57	+ 0 59.3	2.723	3.614	8.1	20.2
3 22	13 26.90	- 5 25.7	2.004	2.957	6.9	20.5	3 22	13 24.75	+ 1 21.4	2.671	3.624	5.4	20.1
4 1	13 17.89	- 4 46.8	1.975	2.966	3.0	20.2	4 1	13 16.88	+ 1 42.9	2.646	3.633	2.9	19.9
4 11	13 8.25	- 4 6.9	1.975	2.975	1.7	20.2	4 11	13 8.58	+ 2 0.2	2.652	3.642	2.9	19.9
4 21	12 58.92	- 3 30.6	2.005	2.983	5.4	20.4	4 21	13 0.50	+ 2 10.7	2.688	3.651	5.3	20.1
5 1	12 50.74	- 3 2.4	2.063	2.990	9.1	20.7	5 1	12 53.28	+ 2 11.9	2.753	3.659	8.0	20.3
5 11	12 44.37	- 2 45.5	2.145	2.996	12.3	20.9	5 11	12 47.40	+ 2 2.9	2.843	3.667	10.4	20.5
37597	1992 <i>EH</i> ₁₀		4 8.8 13 ^o .42	0 ^o .1/8.6	18		170706	2004 <i>BA</i> ₃₁		4 8.8 96 ^o .16	5 ^o .1/2.9	18	
3 2	13 31.73	- 9 21.9	2.035	2.841	13.8	19.0	3 2	13 32.17	+ 4 50.4	2.161	2.990	12.3	20.1
3 12	13 28.36	- 8 59.5	1.952	2.843	10.7	18.8	3 12	13 28.47	+ 6 5.3	2.093	2.996	9.5	19.9
3 22	13 22.99	- 8 25.1	1.891	2.845	7.1	18.6	3 22	13 22.94	+ 7 22.4	2.050	3.002	6.8	19.8
4 1	13 16.19	- 7 41.8	1.856	2.847	3.2	18.3	4 1	13 16.13	+ 8 35.2	2.034	3.008	5.1	19.7
4 11	13 8.74	- 6 54.3	1.848	2.850	1.0	18.2	4 11	13 8.80	+ 9 36.7	2.046	3.014	5.9	19.7
4 21	13 1.51	- 6 7.9	1.869	2.853	5.1	18.5	4 21	13 1.73	+10 22.0	2.084	3.020	8.4	19.9
5 1	12 55.32	- 5 28.0	1.916	2.856	8.9	18.7	5 1	12 55.68	+10 47.7	2.148	3.026	11.1	20.1
5 11	12 50.81	- 4 58.8	1.987	2.860	12.2	18.9	5 11	12 51.20	+10 53.3	2.234	3.032	13.7	

EPHEMERIDES

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
93970	2000 <i>XR</i> ₆		4 8.8 199 ^o .70	2 ^o .9/ 5.9 18			172992	2006 <i>KW</i> ₁₁₆		4 8.8 168 ^o .15	2 ^o .6/ 6.3 18		
3 2	13 38.15	+ 0 37.8	2.380	3.187	12.0	20.2	3 2	13 37.61	- 3 18.7	1.918	2.731	14.2	21.1
3 12	13 32.98	+ 1 6.0	2.290	3.183	9.3	20.0	3 12	13 32.96	- 2 28.2	1.838	2.735	10.9	20.9
3 22	13 25.92	+ 1 38.1	2.226	3.179	6.2	19.8	3 22	13 26.09	- 1 28.6	1.782	2.739	7.2	20.7
4 1	13 17.48	+ 2 9.9	2.188	3.175	3.5	19.6	4 1	13 17.60	- 0 25.2	1.752	2.742	3.5	20.4
4 11	13 8.41	+ 2 36.9	2.181	3.170	3.5	19.6	4 11	13 8.40	+ 0 35.4	1.751	2.745	3.4	20.4
4 21	12 59.51	+ 2 55.0	2.202	3.164	6.3	19.8	4 21	12 59.49	+ 1 26.8	1.778	2.747	6.9	20.7
5 1	12 51.57	+ 3 1.5	2.252	3.158	9.5	20.0	5 1	12 51.79	+ 2 3.8	1.831	2.748	10.7	20.9
5 11	12 45.22	+ 2 54.7	2.325	3.151	12.3	20.2	5 11	12 46.00	+ 2 23.7	1.908	2.748	14.0	21.1
504311	2007 <i>HU</i> ₇₉		4 8.8 218 ^o .21	2 ^o .7/ 6.2 17			371726	2007 <i>EU</i> ₉₉		4 8.8 99 ^o .06	0 ^o .2/ 8.9 17		
3 2	13 36.13	- 1 19.8	2.108	2.922	13.1	21.5	3 2	13 35.80	- 9 58.8	1.830	2.632	15.2	21.5
3 12	13 31.69	- 0 46.3	2.020	2.918	10.1	21.3	3 12	13 31.76	- 9 46.2	1.747	2.635	11.9	21.2
3 22	13 25.20	- 0 6.6	1.956	2.913	6.7	21.1	3 22	13 25.40	- 9 20.5	1.686	2.638	8.0	21.0
4 1	13 17.19	+ 0 34.8	1.918	2.907	3.5	20.9	4 1	13 17.33	- 8 44.4	1.650	2.641	3.7	20.7
4 11	13 8.48	+ 1 12.6	1.910	2.902	3.4	20.8	4 11	13 8.48	- 8 2.4	1.642	2.643	1.0	20.5
4 21	12 59.96	+ 1 41.8	1.929	2.896	6.6	21.0	4 21	12 59.87	- 7 20.3	1.661	2.646	5.5	20.9
5 1	12 52.48	+ 1 58.5	1.975	2.890	10.1	21.2	5 1	12 52.51	- 6 43.8	1.707	2.649	9.6	21.1
5 11	12 46.71	+ 2 0.6	2.044	2.884	13.3	21.4	5 11	12 47.11	- 6 17.7	1.776	2.652	13.3	21.3
336834	2011 <i>FC</i> ₁		4 8.8 38 ^o .64	1 ^o .0/ 9.8 18			386950	2011 <i>SO</i> ₆₅		4 8.8 161 ^o .42	1 ^o .9/ 10.9 18		
3 2	13 30.12	-15 45.6	1.689	2.487	16.5	19.6	3 2	13 34.92	-15 1.6	2.684	3.447	12.0	21.2
3 12	13 27.50	-14 44.5	1.612	2.496	13.0	19.4	3 12	13 30.37	-15 7.9	2.590	3.450	9.6	21.0
3 22	13 22.59	-13 20.9	1.556	2.504	8.9	19.2	3 22	13 24.13	-15 3.0	2.520	3.453	6.8	20.8
4 1	13 16.05	-11 38.8	1.525	2.513	4.4	18.9	4 1	13 16.68	-14 47.6	2.476	3.456	3.8	20.6
4 11	13 8.83	- 9 46.2	1.521	2.523	1.1	18.7	4 11	13 8.67	-14 23.8	2.461	3.458	1.9	20.5
4 21	13 1.95	- 7 53.0	1.545	2.533	5.4	19.0	4 21	13 0.79	-13 54.7	2.475	3.460	3.9	20.6
5 1	12 56.36	- 6 9.0	1.596	2.543	9.8	19.3	5 1	12 53.75	-13 24.4	2.519	3.462	6.9	20.8
5 11	12 52.71	- 4 41.9	1.670	2.553	13.6	19.5	5 11	12 48.10	-12 56.7	2.588	3.464	9.6	21.0
32862	1993 <i>FD</i> ₁₀		4 8.8 174 ^o .54	1 ^o .4/ 7.6 18			236996	2008 <i>RB</i> ₂₃		4 8.8 174 ^o .53	3 ^o .2/ 12.1 17		
3 2	13 40.47	- 5 51.9	1.859	2.662	15.0	20.3	3 2	13 36.57	-19 14.2	2.495	3.239	13.2	21.5
3 12	13 35.29	- 5 24.1	1.775	2.666	11.6	20.1	3 12	13 31.83	-19 22.4	2.399	3.242	10.8	21.3
3 22	13 27.70	- 4 45.9	1.714	2.668	7.7	19.8	3 22	13 25.21	-19 16.1	2.324	3.244	8.0	21.2
4 1	13 18.33	- 4 1.1	1.679	2.670	3.4	19.6	4 1	13 17.19	-18 55.1	2.276	3.245	5.1	21.0
4 11	13 8.16	- 3 15.4	1.672	2.671	2.1	19.5	4 11	13 8.52	-18 21.4	2.256	3.246	3.2	20.8
4 21	12 58.25	- 2 34.7	1.694	2.671	6.3	19.8	4 21	12 59.99	-17 38.5	2.265	3.247	4.5	20.9
5 1	12 49.64	- 2 4.2	1.743	2.671	10.4	20.0	5 1	12 52.40	-16 51.3	2.302	3.247	7.4	21.1
5 11	12 43.09	- 1 47.7	1.816	2.670	14.1	20.2	5 11	12 46.38	-16 5.2	2.366	3.247	10.2	21.3
46826	1998 <i>OC</i> ₇		4 8.8 271 ^o .24	3 ^o .1/ 5.9 18			181729	1995 <i>SP</i> ₁₆		4 8.8 158 ^o .89	2 ^o .3/ 10.9 17		
3 2	13 33.15	- 4 8.7	1.673	2.501	15.3	19.0	3 2	13 35.55	-15 14.0	2.359	3.127	13.2	20.2
3 12	13 30.01	- 3 1.1	1.583	2.489	11.8	18.7	3 12	13 31.13	-15 27.6	2.266	3.128	10.6	20.0
3 22	13 24.42	- 1 39.8	1.515	2.476	7.8	18.4	3 22	13 24.78	-15 28.8	2.195	3.129	7.6	19.8
4 1	13 16.96	- 0 11.2	1.473	2.464	3.9	18.2	4 1	13 17.01	-15 18.0	2.150	3.130	4.4	19.6
4 11	13 8.55	+ 1 15.9	1.458	2.451	4.0	18.1	4 11	13 8.57	-14 57.4	2.134	3.131	2.3	19.5
4 21	13 0.29	+ 2 32.5	1.469	2.438	8.1	18.3	4 21	13 0.27	-14 30.4	2.146	3.131	4.4	19.6
5 1	12 53.26	+ 3 31.2	1.506	2.425	12.4	18.6	5 1	12 52.92	-14 1.2	2.186	3.132	7.6	19.8
5 11	12 48.27	+ 4 7.6	1.563	2.412	16.2	18.8	5 11	12 47.16	-13 34.6	2.252	3.132	10.7	20.0
206667	2003 <i>YJ</i> ₈₂		4 8.8 7 ^o .67	8 ^o .6/ 31.5 18			191838	2004 <i>VR</i> ₁₄		4 8.8 148 ^o .15	0 ^o .3/ 8.5 18		
3 2	13 33.91	+13 45.6	1.805	2.640	14.0	19.5	3 2	13 35.59	- 8 26.2	2.072	2.872	13.8	20.3
3 12	13 30.23	+15 0.8	1.745	2.641	11.5	19.3	3 12	13 31.30	- 8 8.5	1.988	2.875	10.7	20.1
3 22	13 24.30	+16 10.5	1.708	2.642	9.4	19.2	3 22	13 24.94	- 7 39.9	1.926	2.879	7.1	19.8
4 1	13 16.79	+17 5.8	1.696	2.644	8.6	19.1	4 1	13 17.08	- 7 3.5	1.890	2.882	3.1	19.6
4 11	13 8.63	+17 39.3	1.709	2.646	9.6	19.2	4 11	13 8.55	- 6 23.5	1.883	2.884	1.1	19.4
4 21	13 0.84	+17 46.9	1.745	2.648	11.8	19.3	4 21	13 0.25	- 5 44.9	1.905	2.887	5.2	19.7
5 1	12 54.32	+17 27.5	1.804	2.651	14.3	19.5	5 1	12 53.03	- 5 12.7	1.953	2.889	9.0	20.0
5 11	12 49.74	+16 43.2	1.883	2.654	16.8	19.7	5 11	12 47.56	- 4 50.8	2.026	2.892	12.3	20.2
238515	2004 <i>TN</i> ₁₀₈		4 8.8 243 ^o .12	2 ^o .6/ 6.7 17			415864	2001 <i>SH</i> ₁₇₂		4 8.8 190 ^o .51	0 ^o .4/ 9.1 17		
3 2	13 37.84	- 3 49.6	1.616	2.438	16.0	21.2	3 2	13 37.12	-10 26.9	2.164	2.952	13.7	22.0
3 12	13 33.77	- 3 10.9	1.526	2.428	12.5	21.0	3 12	13 32.46	-10 12.2	2.072	2.951	10.7	21.8
3 22	13 27.00	- 2 21.0	1.458	2.417	8.3	20.7	3 22	13 25.72	- 9 45.6	2.002	2.950	7.2	21.6
4 1	13 18.13	- 1 25.0	1.415	2.406	3.9	20.4	4 1	13 17.45	- 9 9.2	1.958	2.948	3.3	21.3
4 11	13 8.21	- 0 30.3	1.399	2.395	3.4	20.4	4 11	13 8.44	- 8 27.1	1.944	2.945	0.9	21.1
4 21	12 58.44	+ 0 15.8	1.409	2.383	7.8	20.6	4 21	12 59.61	- 7 44.1	1.958	2.942	4.9	21.4
5 1	12 50.01	+ 0 46.9	1.444	2.371	12.3	20.8	5 1	12 51.83	- 7 5.4	2.000	2.938	8.7	21.6
5 11	12 43.84	+ 0 59.3	1.501	2.358	16.3	21.0	5 11	12 45.78	- 6 35.3	2.067	2.934	12.1	21.8
462882	2010 <i>VW</i> ₁₉₈		4 8.8 83 ^o .44	1 ^o .7/ 7.4 18			20118	1995 <i>WX</i>		4 8.8 93 ^o .70	1 ^o .5/ 7.3 18		
3 2	13 38.60	- 4 57.8	1.714	2.528	15.6	21.5	3 2	13 34.66	- 5 50.2	1.948	2.760	14.1	19.1
3 12	13 33.80	- 4 31.7	1.651	2.548	12.0	21.3	3 12	13 30.62	- 5 14.8	1.873	2.769	10.8	18.9
3 22	13 26.61	- 3 56.1	1.610	2.568	7.8	21.1	3 22	13 24.49	- 4 29.4	1.821	2.778	7.1	18.6
4 1	13 17.79	- 3 15.6	1.595	2.587	3.5	20.9	4 1	13 16.87	- 3 38.3	1.795	2.787	3.1	18.4
4 11	13 8.36	- 2 36.3	1.608	2.606	2.4	20.9	4 11	13 8.63	- 2 47.2	1.797	2.795	2.2	18.4
4 21	12 59.40	- 2 3.6	1.648	2.625	6.4	21.2	4 21	13 0.70	- 2 1.9	1.827	2.804	5.9	18.6
5 1	12 51.88	- 1 42.2	1.714	2.644	10.4	21.4	5 1	12 53.92	- 1 27.2	1.884	2.813	9.7	18.9
5 11	12 46.47	- 1 34.9	1.803	2.663	13.9	21.7	5 11	12 48.95	- 1 6.5	1.964	2.821	13.0	19.1</

EPHEMERIDES

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
364294	2006 <i>TH</i> ₁₀₈		4 8.8 242°22	11.1°/27.5	17		78877	2003 <i>RO</i> ₁₀		4 8.8 182°41	0°3/ 9.1	18	
3 2	13 42.28	+23 35.4	2.067	2.864	13.9	20.5	3 2	13 36.02	-12 41.1	2.082	2.867	14.2	20.5
3 12	13 36.71	+25 3.9	1.995	2.847	12.3	20.3	3 12	13 31.68	-11 53.1	1.990	2.868	11.2	20.3
3 22	13 28.67	+26 21.2	1.945	2.830	11.2	20.2	3 22	13 25.23	-10 48.8	1.921	2.869	7.6	20.0
4 1	13 18.80	+27 17.7	1.920	2.811	11.2	20.2	4 1	13 17.25	-9 31.2	1.879	2.868	3.5	19.8
4 11	13 8.07	+27 45.7	1.920	2.792	12.2	20.2	4 11	13 8.56	-8 6.3	1.866	2.867	0.9	19.6
4 21	12 57.60	+27 41.3	1.943	2.773	14.0	20.3	4 21	13 0.10	-6 40.9	1.882	2.865	5.1	19.9
5 1	12 48.42	+27 4.4	1.987	2.752	16.1	20.4	5 1	12 52.73	-5 22.4	1.926	2.863	9.1	20.1
5 11	12 41.33	+25 58.7	2.048	2.731	18.1	20.5	5 11	12 47.13	-4 16.6	1.995	2.860	12.6	20.3
383701	2007 <i>TT</i> ₄₂₆		4 8.8 76°00	1°9/10.7	17		104769	2000 <i>HV</i> ₂₆		4 8.8 265°79	0°1/ 8.6	18	
3 2	13 34.26	-14 58.9	2.178	2.955	13.9	21.3	3 2	13 32.68	-9 38.8	2.200	2.999	13.1	20.0
3 12	13 30.14	-14 53.3	2.101	2.970	11.1	21.2	3 12	13 29.04	-9 12.6	2.104	2.991	10.3	19.8
3 22	13 24.09	-14 33.6	2.046	2.984	7.8	21.0	3 22	13 23.47	-8 34.5	2.031	2.983	6.9	19.5
4 1	13 16.68	-14 1.1	2.016	2.999	4.2	20.8	4 1	13 16.47	-7 47.2	1.984	2.975	3.1	19.3
4 11	13 8.70	-13 19.4	2.014	3.013	1.9	20.6	4 11	13 8.78	-6 55.1	1.966	2.967	1.0	19.1
4 21	13 1.00	-12 33.2	2.041	3.028	4.4	20.8	4 21	13 1.22	-6 3.6	1.976	2.959	4.9	19.4
5 1	12 54.37	-11 47.7	2.096	3.042	7.8	21.1	5 1	12 54.59	-5 17.8	2.013	2.951	8.7	19.6
5 11	12 49.41	-11 8.0	2.175	3.057	11.0	21.3	5 11	12 49.56	-4 42.3	2.075	2.943	12.0	19.8
410471	2008 <i>CZ</i> ₂₀₇		4 8.8 133°55	1°0/ 7.8	16		502748	2015 <i>DH</i> ₄₆		4 8.8 205°15	3°6/ 4.9	17	
3 2	13 36.35	-8 0.5	1.898	2.703	14.7	22.2	3 2	13 33.67	+0 27.9	2.166	2.987	12.5	21.9
3 12	13 31.97	-7 16.0	1.822	2.714	11.3	22.0	3 12	13 29.72	+1 23.5	2.083	2.984	9.6	21.7
3 22	13 25.41	-6 18.9	1.769	2.724	7.4	21.8	3 22	13 23.86	+2 24.8	2.025	2.982	6.5	21.5
4 1	13 17.29	-5 13.5	1.742	2.734	3.2	21.5	4 1	13 16.61	+3 26.3	1.994	2.979	3.9	21.3
4 11	13 8.52	-4 6.1	1.744	2.743	1.8	21.4	4 11	13 8.75	+4 21.7	1.991	2.977	4.3	21.3
4 21	13 0.09	-3 3.6	1.773	2.752	5.9	21.7	4 21	13 1.09	+5 5.7	2.017	2.974	7.2	21.5
5 1	12 52.88	-2 11.8	1.830	2.761	9.9	22.0	5 1	12 54.42	+5 34.3	2.068	2.970	10.4	21.7
5 11	12 47.57	-1 35.0	1.910	2.769	13.3	22.2	5 11	12 49.36	+5 45.6	2.142	2.967	13.3	21.9
243048	2006 <i>YO</i> ₅₀		4 8.8 318°03	3°1/12.0	17		31068	1996 <i>TT</i> ₅₄		4 8.8 169°73	7°9/30.2	18	R
3 2	13 29.88	-19 15.2	2.073	2.843	14.8	19.8	3 2	13 32.18	+8 57.5	1.854	2.692	13.6	17.7
3 12	13 27.17	-19 3.5	1.968	2.828	12.1	19.6	3 12	13 28.88	+11 10.8	1.791	2.693	10.9	17.5
3 22	13 22.38	-18 32.7	1.884	2.814	8.9	19.3	3 22	13 23.45	+13 25.4	1.752	2.694	8.6	17.4
4 1	13 16.02	-17 43.2	1.824	2.800	5.5	19.1	4 1	13 16.46	+15 30.5	1.741	2.695	7.9	17.3
4 11	13 8.86	-16 38.1	1.791	2.786	3.1	18.9	4 11	13 8.80	+17 15.6	1.757	2.695	9.3	17.4
4 21	13 1.78	-15 22.8	1.786	2.773	4.9	19.0	4 21	13 1.41	+18 33.5	1.798	2.696	11.8	17.5
5 1	12 55.68	-14 4.6	1.808	2.760	8.4	19.2	5 1	12 55.19	+19 20.6	1.862	2.696	14.5	17.7
5 11	12 51.28	-12 50.9	1.854	2.748	12.0	19.4	5 11	12 50.79	+19 37.5	1.945	2.696	16.9	17.9
330997	2009 <i>UJ</i> ₃₅		4 8.8 218°77	0°0/ 8.6	17		457506	2008 <i>VM</i> ₃₆		4 8.8 187°38	3°4/ 5.9	17	
3 2	13 35.27	-9 55.7	2.239	3.031	13.2	22.0	3 2	13 39.81	-1 24.6	1.806	2.622	14.9	22.1
3 12	13 31.01	-9 27.2	2.140	3.023	10.3	21.8	3 12	13 34.87	-0 36.6	1.723	2.622	11.5	21.9
3 22	13 24.77	-8 46.4	2.064	3.014	6.9	21.6	3 22	13 27.49	+0 19.5	1.664	2.621	7.6	21.6
4 1	13 17.03	-7 56.1	2.015	3.005	3.1	21.3	4 1	13 18.29	+1 17.8	1.631	2.619	4.1	21.4
4 11	13 8.58	-7 0.6	1.995	2.996	0.9	21.1	4 11	13 8.27	+2 11.3	1.626	2.617	4.1	21.4
4 21	13 0.24	-6 5.3	2.003	2.986	5.0	21.4	4 21	12 58.51	+2 53.5	1.649	2.614	7.7	21.6
5 1	12 52.86	-5 15.7	2.040	2.975	8.7	21.6	5 1	12 50.06	+3 19.6	1.698	2.610	11.7	21.8
5 11	12 47.11	-4 36.4	2.101	2.964	12.1	21.8	5 11	12 43.68	+3 27.1	1.769	2.605	15.1	22.1
165490	2001 <i>BQ</i> ₂₈		4 8.8 88°18	2°2/10.6	18		280869	2005 <i>UP</i> ₅₁₁		4 8.8 249°53	3°0/ 6.3	17	
3 2	13 38.53	-15 9.1	1.605	2.395	17.6	20.3	3 2	13 37.76	-4 3.4	1.647	2.468	15.8	21.3
3 12	13 34.09	-15 5.2	1.537	2.412	14.0	20.1	3 12	13 33.79	-3 7.2	1.549	2.450	12.3	21.0
3 22	13 27.01	-14 42.7	1.488	2.430	9.8	19.9	3 22	13 27.10	-1 57.4	1.472	2.431	8.2	20.7
4 1	13 18.04	-14 3.1	1.464	2.448	5.3	19.7	4 1	13 18.26	-0 39.6	1.421	2.411	4.1	20.4
4 11	13 8.32	-13 11.1	1.465	2.465	2.2	19.5	4 11	13 8.26	+0 37.7	1.397	2.391	3.9	20.4
4 21	12 59.06	-12 13.4	1.494	2.482	5.6	19.8	4 21	12 58.29	+1 45.8	1.400	2.370	8.2	20.6
5 1	12 51.34	-11 17.9	1.550	2.499	9.9	20.1	5 1	12 49.59	+2 37.1	1.428	2.348	12.8	20.8
5 11	12 45.94	-10 31.4	1.628	2.515	13.7	20.3	5 11	12 43.10	+3 6.7	1.478	2.326	17.0	21.0
41490	2000 <i>QX</i> ₇₅		4 8.8 168°75	0°1/ 8.9	18		69673	1998 <i>GX</i> ₁₀		4 8.8 99°93	2°8/ 6.6	18	
3 2	13 35.19	-10 28.9	2.026	2.822	14.2	20.1	3 2	13 38.99	-2 50.2	1.578	2.402	16.3	19.3
3 12	13 31.07	-10 5.0	1.939	2.824	11.1	19.9	3 12	13 34.39	-2 14.3	1.512	2.414	12.5	19.1
3 22	13 24.84	-9 28.1	1.875	2.826	7.5	19.7	3 22	13 27.19	-1 29.7	1.467	2.426	8.2	18.8
4 1	13 17.07	-8 40.8	1.837	2.827	3.4	19.4	4 1	13 18.14	-0 42.0	1.447	2.438	4.0	18.6
4 11	13 8.60	-7 47.9	1.827	2.828	0.9	19.2	4 11	13 8.35	+0 1.7	1.454	2.450	3.6	18.6
4 21	13 0.34	-6 55.0	1.845	2.829	5.1	19.5	4 21	12 59.01	+0 35.1	1.488	2.461	7.6	18.9
5 1	12 53.19	-6 8.0	1.891	2.830	9.0	19.7	5 1	12 51.19	+0 53.5	1.548	2.473	11.7	19.1
5 11	12 47.82	-5 31.6	1.960	2.830	12.5	20.0	5 11	12 45.65	+0 54.5	1.628	2.483	15.4	19.4
183626	2003 <i>UQ</i> ₂₆₇		4 8.8 206°58	0°5/ 8.3	16		67511	2000 <i>RR</i> ₅₅		4 8.8 197°89	4°7/ 4.9	18	
3 2	13 37.97	-8 28.7	2.049	2.844	14.1	21.7	3 2	13 38.27	+2 3.9	1.703	2.530	15.1	18.4
3 12	13 33.27	-8 1.7	1.953	2.839	11.0	21.5	3 12	13 33.81	+2 56.3	1.626	2.529	11.7	18.2
3 22	13 26.36	-7 22.7	1.881	2.833	7.3	21.3	3 22	13 26.85	+3 54.0	1.571	2.527	8.0	18.0
4 1	13 17.78	-6 34.7	1.835	2.826	3.2	21.0	4 1	13 18.02	+4 49.9	1.541	2.525	5.1	17.8
4 11	13 8.39	-5 42.7	1.817	2.818	1.3	20.8	4 11	13 8.37	+5 36.4	1.539	2.522	5.6	17.8
4 21	12 59.15	-4 52.3	1.829	2.810	5.5	21.1	4 21	12 58.99	+6 7.2	1.563	2.520	8.9	18.0
5 1	12 50.99	-4 9.3	1.868	2.801	9.6	21.3	5 1	12 50.97	+6 18.3	1.612	2.516	12.7	18.2
5 11	12 44.67	-3 37.9	1.931	2.791	13.1	21.5	5 11	12 45.09	+6 8.5	1.682	2.513	16.1	18.4
337215	2000 <i>BE</i> ₁₂		4 8.8 104°19	3°4/ 5.2	17		303797	2005 <i>SL</i> ₂₉		4 8.8 188°96	1°1/10.1	17	
3 2	13 32.78	-0 44.4	2.056	2.879	1								

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
426900	2013 WZ ₆₆		4 8.8 235°54'		2°9'/11.6 17		236642	2006 KQ ₄₂		4 8.8 166°57'		0°2'/ 8.5 18	
3 2	13 35.17	-17 48.9	2.101	2.867	14.7	21.0	3 2	13 33.73	- 9 24.4	2.288	3.082	12.8	21.2
3 12	13 31.20	-17 50.1	2.001	2.859	12.0	20.8	3 12	13 29.70	- 8 54.9	2.200	3.085	10.0	21.0
3 22	13 25.05	-17 34.5	1.922	2.852	8.8	20.6	3 22	13 23.82	- 8 14.3	2.135	3.087	6.6	20.8
4 1	13 17.24	-17 2.5	1.868	2.844	5.3	20.4	4 1	13 16.62	- 7 25.3	2.098	3.089	2.9	20.6
4 11	13 8.59	-16 16.6	1.841	2.836	2.9	20.2	4 11	13 8.82	- 6 32.5	2.089	3.090	1.0	20.4
4 21	13 0.05	-15 21.5	1.842	2.828	4.9	20.3	4 21	13 1.22	- 5 41.0	2.109	3.092	4.8	20.7
5 1	12 52.55	-14 23.4	1.871	2.819	8.5	20.5	5 1	12 54.57	- 4 55.6	2.157	3.093	8.3	20.9
5 11	12 46.85	-13 28.8	1.924	2.811	12.0	20.7	5 11	12 49.47	- 4 20.6	2.230	3.093	11.4	21.1
247897	2003 UD ₂₄₄		4 8.8 250°09'		1°9'/ 6.9 17		22565	1998 HF ₃₀		4 8.8 255°12'		2°1'/ 6.9 18	
3 2	13 35.95	- 3 17.3	2.325	3.131	12.3	20.6	3 2	13 36.44	- 5 16.7	1.835	2.649	14.7	19.8
3 12	13 31.50	- 2 51.5	2.223	3.116	9.5	20.4	3 12	13 32.47	- 4 33.4	1.734	2.631	11.5	19.5
3 22	13 25.09	- 2 18.7	2.144	3.100	6.3	20.2	3 22	13 26.08	- 3 37.9	1.655	2.612	7.6	19.2
4 1	13 17.22	- 1 42.5	2.093	3.084	3.0	20.0	4 1	13 17.77	- 2 34.6	1.602	2.593	3.5	18.9
4 11	13 8.60	- 1 7.2	2.071	3.067	2.5	19.9	4 11	13 8.46	- 1 30.1	1.576	2.573	2.8	18.8
4 21	13 0.05	- 0 37.4	2.077	3.050	5.8	20.1	4 21	12 59.19	- 0 31.5	1.579	2.553	7.0	19.0
5 1	12 52.39	- 0 17.0	2.112	3.032	9.3	20.2	5 1	12 51.03	+ 0 14.4	1.607	2.533	11.3	19.2
5 11	12 46.28	- 0 8.9	2.170	3.015	12.4	20.4	5 11	12 44.84	+ 0 43.2	1.658	2.511	15.2	19.4
140694	2001 UD ₆₆		4 8.8 106°06'		4°0'/ 4.8 18		468469	2004 NS ₂₁		4 8.8 260°69'		7°1'/15.1 18	
3 2	13 36.00	+ 4 23.2	2.341	3.158	11.8	19.7	3 2	13 38.63	-28 18.0	2.220	2.919	15.9	21.5
3 12	13 31.29	+ 4 54.0	2.266	3.163	9.2	19.5	3 12	13 34.23	-29 2.6	2.100	2.897	13.8	21.3
3 22	13 24.77	+ 5 25.8	2.215	3.167	6.4	19.3	3 22	13 27.33	-29 28.3	2.000	2.875	11.4	21.1
4 1	13 16.99	+ 5 53.8	2.192	3.172	4.2	19.2	4 1	13 18.40	-29 31.4	1.923	2.853	9.0	20.9
4 11	13 8.69	+ 6 13.5	2.197	3.177	4.6	19.2	4 11	13 8.26	-29 10.4	1.871	2.830	7.3	20.8
4 21	13 0.65	+ 6 21.4	2.231	3.181	7.0	19.4	4 21	12 57.98	-28 27.1	1.846	2.806	7.5	20.7
5 1	12 53.60	+ 6 15.5	2.291	3.186	9.8	19.6	5 1	12 48.68	-27 26.4	1.848	2.782	9.6	20.8
5 11	12 48.11	+ 5 55.1	2.375	3.190	12.4	19.7	5 11	12 41.33	-26 16.2	1.874	2.757	12.4	20.9
498447	2008 AY ₁₁₆		4 8.8 103°50'		4°8'/14.9 17		217914	2001 SR ₂₁₃		4 8.8 223°38'		1°5'/ 7.3 17	
3 2	13 37.55	-26 32.6	2.867	3.559	12.7	22.3	3 2	13 35.29	- 6 11.7	1.974	2.783	14.0	21.5
3 12	13 32.32	-26 56.6	2.787	3.584	10.8	22.2	3 12	13 31.27	- 5 32.4	1.882	2.777	10.9	21.3
3 22	13 25.37	-27 4.7	2.729	3.608	8.6	22.1	3 22	13 25.07	- 4 41.9	1.814	2.770	7.1	21.0
4 1	13 17.25	-26 55.8	2.695	3.631	6.4	21.9	4 1	13 17.24	- 3 44.2	1.772	2.764	3.2	20.8
4 11	13 8.63	-26 31.1	2.690	3.654	5.0	21.9	4 11	13 8.63	- 2 45.2	1.758	2.756	2.2	20.7
4 21	13 0.26	-25 53.4	2.713	3.677	5.2	21.9	4 21	13 0.19	- 1 51.2	1.772	2.749	6.1	20.9
5 1	12 52.82	-25 6.8	2.765	3.699	6.8	22.1	5 1	12 52.83	- 1 7.9	1.813	2.741	10.1	21.1
5 11	12 46.86	-24 16.6	2.843	3.721	8.8	22.2	5 11	12 47.28	- 0 39.4	1.877	2.732	13.6	21.3
412521	2014 ML ₂₂		4 8.8 226°92'		3°3'/11.5 16		264590	2001 TR ₂₁₂		4 8.8 164°20'		2°5'/11.1 17	
3 2	13 39.01	-17 50.3	1.825	2.593	16.6	22.1	3 2	13 37.62	-16 24.4	2.154	2.919	14.4	21.0
3 12	13 34.61	-17 57.6	1.723	2.583	13.6	21.8	3 12	13 32.92	-16 28.1	2.064	2.924	11.6	20.8
3 22	13 27.58	-17 46.2	1.642	2.573	9.9	21.6	3 22	13 26.08	-16 16.6	1.995	2.927	8.3	20.6
4 1	13 18.46	-17 15.7	1.584	2.561	6.0	21.3	4 1	13 17.67	-15 50.6	1.952	2.931	4.8	20.4
4 11	13 8.24	-16 28.5	1.554	2.549	3.4	21.1	4 11	13 8.52	-15 12.9	1.937	2.934	2.5	20.2
4 21	12 58.07	-15 29.7	1.551	2.537	5.7	21.2	4 21	12 59.57	-14 27.7	1.951	2.936	4.7	20.4
5 1	12 49.14	-14 26.7	1.575	2.523	9.8	21.4	5 1	12 51.71	-13 40.9	1.992	2.938	8.2	20.6
5 11	12 42.37	-13 27.7	1.623	2.509	13.8	21.6	5 11	12 45.65	-12 58.0	2.059	2.940	11.5	20.8
433913	2015 BL ₄₉₇		4 8.8 234°79'		1°5'/ 7.3 17		497850	2006 UE ₈₆		4 8.8 113°87'		1°9'/11.4 17	
3 2	13 34.38	- 6 0.3	2.061	2.871	13.5	21.7	3 2	13 32.34	-17 57.6	2.769	3.521	11.9	21.8
3 12	13 30.47	- 5 21.7	1.969	2.863	10.5	21.5	3 12	13 28.26	-17 27.7	2.686	3.538	9.5	21.6
3 22	13 24.49	- 4 42.6	1.899	2.856	6.9	21.3	3 22	13 22.67	-16 43.7	2.626	3.555	6.8	21.5
4 1	13 16.96	- 3 36.8	1.856	2.848	3.1	21.0	4 1	13 16.04	-15 47.2	2.594	3.572	3.9	21.3
4 11	13 8.70	- 2 39.9	1.841	2.840	2.2	20.9	4 11	13 9.01	-14 41.9	2.590	3.587	1.9	21.2
4 21	13 0.58	- 1 47.9	1.855	2.831	5.9	21.2	4 21	13 2.21	-13 32.1	2.617	3.603	3.6	21.3
5 1	12 53.49	- 1 6.0	1.895	2.823	9.8	21.4	5 1	12 56.25	-12 23.0	2.673	3.618	6.4	21.5
5 11	12 48.11	- 0 38.3	1.959	2.814	13.2	21.6	5 11	12 51.61	-11 19.4	2.756	3.633	9.1	21.7
259555	2003 UL ₁₄₇		4 8.8 223°19'		1°9'/ 6.9 15		159476	2000 RH ₇₉		4 8.8 197°41'		10°9'/20.3 18	
3 2	13 38.70	- 4 16.2	2.192	2.993	13.1	22.2	3 2	13 44.40	-41 2.3	2.330	2.924	17.5	19.6
3 12	13 33.74	- 3 38.8	2.090	2.980	10.1	22.0	3 12	13 38.96	-42 11.5	2.226	2.921	16.0	19.4
3 22	13 26.65	- 2 52.4	2.012	2.967	6.7	21.8	3 22	13 30.60	-42 57.4	2.139	2.917	14.3	19.3
4 1	13 17.94	- 2 0.9	1.962	2.952	3.1	21.5	4 1	13 19.88	-43 13.7	2.071	2.912	12.6	19.2
4 11	13 8.41	- 1 9.6	1.940	2.937	2.6	21.5	4 11	13 7.85	-42 56.9	2.025	2.906	11.3	19.0
4 21	12 58.96	- 0 24.0	1.949	2.920	6.2	21.7	4 21	12 55.83	-42 7.4	2.003	2.899	10.9	19.0
5 1	12 50.50	+ 0 11.1	1.984	2.903	9.9	21.8	5 1	12 45.16	-40 49.8	2.006	2.891	11.5	19.0
5 11	12 43.75	+ 0 32.1	2.044	2.885	13.2	22.0	5 11	12 36.89	-39 13.4	2.033	2.882	13.0	19.1
70381	1999 RZ ₂₁₃		4 8.8 319°05'		2°1'/ 7.2 17		181536	2006 UE ₁₇₄		4 8.8 66°59'		0°4'/ 9.2 18	
3 2	13 31.55	- 6 28.3	1.302	2.143	18.0	19.1	3 2	13 35.47	- 9 35.1	2.266	3.057	13.0	20.5
3 12	13 29.53	- 5 45.9	1.215	2.127	14.1	18.8	3 12	13 31.01	- 9 36.3	2.186	3.067	10.2	20.3
3 22	13 24.55	- 4 46.1	1.148	2.112	9.3	18.4	3 22	13 24.67	- 9 27.8	2.129	3.077	6.8	20.1
4 1	13 17.20	- 3 34.3	1.104	2.097	4.2	18.1	4 1	13 16.99	- 9 11.7	2.098	3.088	3.2	19.9
4 11	13 8.61	- 2 19.5	1.084	2.082	3.1	18.0	4 11	13 8.73	- 8 50.9	2.097	3.098	0.8	19.7
4 21	13 0.13	- 1 12.0	1.088	2.069	8.4	18.2	4 21	13 0.72	- 8 29.3	2.124	3.108	4.5	20.0
5 1	12 53.14	- 0 21.1	1.115	2.056	13.7	18.5	5 1	12 53.72	- 8 10.7	2.179	3.119	8.0	20.2
5 11	12 48.69	+ 0 7.2	1.161	2.044	18.4	18.7	5 11	12 48.32	- 7 58.7	2.258	3.129	11.0	20.4
377333	2004 PP ₁₂		4 8.8 261°22'		5°2'/ 3.3 17		75359	1999 XA ₇₂		4 8.8 100°23'			

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
405009	2000 VO ₅₃		4 8.8 138°77	0°8/ 8.1 18			119955	2002 OB ₂		4 8.8 349°09	14°4/24.4 18		
3 2	13 40.98	- 7 13.9	2.018	2.811	14.3	22.3	3 2	13 28.59	+ 9 51.7	0.948	1.829	19.8	18.5
3 12	13 35.41	- 6 52.0	1.942	2.826	11.1	22.1	3 12	13 27.91	+14 13.9	0.903	1.827	16.4	18.3
3 22	13 27.64	- 6 20.1	1.889	2.841	7.3	21.9	3 22	13 23.74	+18 40.6	0.881	1.825	14.5	18.1
4 1	13 18.32	- 5 41.3	1.863	2.854	3.2	21.6	4 1	13 16.88	+22 42.8	0.882	1.823	15.2	18.2
4 11	13 8.37	- 5 0.6	1.866	2.867	1.5	21.5	4 11	13 8.83	+25 54.5	0.905	1.822	18.1	18.3
4 21	12 58.78	- 4 22.9	1.899	2.878	5.5	21.8	4 21	13 1.26	+28 1.9	0.946	1.822	21.7	18.5
5 1	12 50.44	- 3 53.2	1.959	2.889	9.3	22.1	5 1	12 55.69	+29 3.1	1.003	1.822	25.1	18.8
5 11	12 44.02	- 3 34.7	2.043	2.899	12.7	22.3	5 11	12 53.10	+29 6.1	1.070	1.822	28.0	19.0
293495	2007 FN ₄₉		4 8.8 306°34	4°5/ 5.2 17			335589	2006 DF ₈₈		4 8.8 301°37	2°8/11.0 17		
3 2	13 33.25	- 2 19.9	1.279	2.126	17.9	20.2	3 2	13 37.00	-15 7.6	1.902	2.682	15.6	20.8
3 12	13 30.81	- 1 8.3	1.200	2.116	13.9	19.9	3 12	13 32.89	-15 32.9	1.805	2.674	12.6	20.6
3 22	13 25.36	+ 0 17.9	1.142	2.106	9.3	19.6	3 22	13 26.35	-15 44.1	1.730	2.666	9.1	20.3
4 1	13 17.55	+ 1 50.2	1.107	2.097	5.2	19.4	4 1	13 17.93	-15 41.0	1.679	2.659	5.3	20.1
4 11	13 8.58	+ 3 16.9	1.097	2.088	5.7	19.4	4 11	13 8.52	-15 25.4	1.654	2.651	2.8	19.9
4 21	12 59.84	+ 4 26.9	1.110	2.079	10.2	19.6	4 21	12 59.20	-15 0.9	1.658	2.644	5.3	20.0
5 1	12 52.68	+ 5 11.9	1.146	2.070	15.0	19.8	5 1	12 51.02	-14 33.0	1.688	2.637	9.2	20.3
5 11	12 48.10	+ 5 28.3	1.201	2.062	19.3	20.0	5 11	12 44.83	-14 7.4	1.742	2.630	12.9	20.5
103043	1999 XP ₁₂₂		4 8.8 213°32	0°8/ 9.4 17			223960	2004 XO ₇₉		4 8.8 101°51	3°4/ 5.6 17		
3 2	13 39.15	-10 55.7	1.896	2.687	15.2	20.1	3 2	13 34.56	- 0 28.2	1.966	2.789	13.5	20.0
3 12	13 34.45	-10 54.3	1.802	2.682	12.0	19.8	3 12	13 30.58	+ 0 18.8	1.891	2.793	10.4	19.8
3 22	13 27.32	-10 39.9	1.729	2.676	8.2	19.6	3 22	13 24.53	+ 1 11.8	1.839	2.797	6.9	19.6
4 1	13 18.31	-10 14.3	1.682	2.670	4.0	19.3	4 1	13 16.99	+ 2 5.5	1.813	2.800	3.9	19.4
4 11	13 8.37	- 9 41.1	1.662	2.664	1.1	19.1	4 11	13 8.82	+ 2 53.6	1.814	2.804	4.1	19.4
4 21	12 58.57	- 9 5.1	1.671	2.657	5.4	19.4	4 21	13 0.92	+ 3 30.5	1.844	2.807	7.2	19.6
5 1	12 49.96	- 8 32.2	1.707	2.649	9.7	19.6	5 1	12 54.14	+ 3 52.3	1.899	2.811	10.7	19.8
5 11	12 43.37	- 8 7.4	1.767	2.641	13.4	19.8	5 11	12 49.13	+ 3 57.1	1.977	2.814	13.8	20.0
343745	2011 FB ₃₀		4 8.8 307°12	2°1/ 7.2 17			42155	2001 BA ₆₃		4 8.8 172°95	0°9/ 7.9 18		
3 2	13 35.20	- 3 36.7	1.693	2.517	15.3	20.8	3 2	13 37.07	- 8 19.7	2.128	2.923	13.6	20.0
3 12	13 31.77	- 3 18.6	1.591	2.494	12.0	20.5	3 12	13 32.41	- 7 33.5	2.041	2.927	10.5	19.8
3 22	13 25.78	- 2 51.3	1.511	2.471	8.0	20.2	3 22	13 25.71	- 6 35.0	1.978	2.931	6.9	19.5
4 1	13 17.72	- 2 18.9	1.456	2.447	3.7	19.9	4 1	13 17.52	- 5 28.1	1.942	2.933	3.0	19.3
4 11	13 8.52	- 1 47.1	1.427	2.425	2.9	19.8	4 11	13 8.67	- 4 18.6	1.935	2.935	1.6	19.2
4 21	12 59.31	- 1 21.8	1.425	2.402	7.2	20.0	4 21	13 0.06	- 3 12.7	1.958	2.936	5.5	19.4
5 1	12 51.25	- 1 8.5	1.447	2.380	11.8	20.2	5 1	12 52.53	- 2 16.2	2.008	2.936	9.3	19.7
5 11	12 45.29	- 1 10.9	1.491	2.358	15.9	20.4	5 11	12 46.74	- 1 33.4	2.083	2.935	12.6	19.9
333440	2003 SD ₂₉₉		4 8.8 233°71	4°7/14.1 18			490910	2011 BB ₁₂₉		4 8.8 173°71	1°0/ 9.7 17		
3 2	13 36.39	-25 6.6	2.703	3.411	13.1	21.5	3 2	13 34.57	-12 58.4	1.881	2.674	15.2	21.9
3 12	13 31.82	-25 20.4	2.585	3.395	11.1	21.3	3 12	13 30.84	-12 36.1	1.794	2.675	12.0	21.7
3 22	13 25.34	-25 17.7	2.488	3.379	8.8	21.1	3 22	13 24.85	-11 57.6	1.728	2.675	8.3	21.5
4 1	13 17.38	-24 57.2	2.415	3.362	6.4	20.9	4 1	13 17.19	-11 5.5	1.688	2.675	4.0	21.2
4 11	13 8.64	-24 19.6	2.371	3.345	4.8	20.8	4 11	13 8.76	-10 4.5	1.675	2.676	1.1	21.0
4 21	12 59.91	-23 27.6	2.355	3.327	5.3	20.8	4 21	13 0.55	- 9 1.0	1.689	2.676	5.2	21.3
5 1	12 51.98	-22 26.0	2.368	3.308	7.4	20.9	5 1	12 53.51	- 8 1.9	1.731	2.676	9.3	21.5
5 11	12 45.56	-21 20.8	2.407	3.289	10.1	21.0	5 11	12 48.37	- 7 13.2	1.796	2.676	13.0	21.8
110960	2001 UC ₁₆₈		4 8.8 137°26	1°8/10.2 18			257278	2009 HJ ₅		4 8.8 327°64	2°9/ 6.9 17		
3 2	13 40.16	-12 22.5	1.936	2.718	15.2	18.9	3 2	13 34.02	- 3 8.8	1.260	2.106	18.3	20.2
3 12	13 35.11	-12 42.8	1.850	2.723	12.1	18.7	3 12	13 31.58	- 2 47.4	1.176	2.090	14.3	19.9
3 22	13 27.66	-12 50.8	1.785	2.727	8.4	18.5	3 22	13 26.01	- 2 14.8	1.111	2.075	9.5	19.5
4 1	13 18.43	-12 47.2	1.746	2.731	4.4	18.3	4 1	13 17.93	- 1 36.6	1.069	2.062	4.5	19.2
4 11	13 8.36	-12 34.4	1.735	2.735	1.8	18.1	4 11	13 8.52	- 1 0.5	1.051	2.049	3.8	19.1
4 21	12 58.51	-12 16.1	1.753	2.739	5.1	18.3	4 21	12 59.24	- 0 34.5	1.057	2.036	8.8	19.4
5 1	12 49.90	-11 57.3	1.798	2.743	9.1	18.6	5 1	12 51.54	- 0 25.1	1.085	2.025	14.0	19.6
5 11	12 43.30	-11 42.7	1.867	2.746	12.6	18.8	5 11	12 46.51	- 0 36.1	1.132	2.015	18.7	19.8
504344	2007 TP ₂₃₃		4 8.8 147°68	3°0/ 5.6 17			241296	2007 UO ₅₂		4 8.8 163°70	1°4/ 7.2 18		
3 2	13 36.03	+ 1 21.4	2.467	3.278	11.5	21.9	3 2	13 33.31	- 5 15.0	2.524	3.327	11.5	21.3
3 12	13 31.25	+ 1 51.1	2.389	3.283	8.8	21.8	3 12	13 29.18	- 4 39.2	2.439	3.330	8.8	21.1
3 22	13 24.73	+ 2 23.8	2.335	3.289	5.9	21.6	3 22	13 23.40	- 3 55.8	2.378	3.333	5.8	21.0
4 1	13 17.01	+ 2 55.3	2.309	3.294	3.5	21.4	4 1	13 16.45	- 3 8.0	2.345	3.336	2.6	20.7
4 11	13 8.79	+ 3 21.4	2.312	3.299	3.6	21.5	4 11	13 8.99	- 2 20.5	2.341	3.338	1.9	20.7
4 21	13 0.79	+ 3 38.4	2.344	3.303	6.2	21.6	4 21	13 1.71	- 1 37.4	2.366	3.340	5.0	20.9
5 1	12 53.73	+ 3 43.7	2.403	3.308	9.0	21.8	5 1	12 55.29	- 1 2.9	2.419	3.342	8.1	21.1
5 11	12 48.14	+ 3 36.2	2.487	3.312	11.7	22.0	5 11	12 50.25	- 0 39.7	2.497	3.344	10.9	21.3
460364	2014 RT ₆₁		4 8.8 201°86	2°0/ 6.8 17			413729	2006 BX ₁₂₇		4 8.8 328°35	2°8/10.6 17		
3 2	13 37.07	- 5 50.0	2.006	2.812	14.0	22.7	3 2	13 31.39	-14 11.9	1.175	2.002	20.5	20.7
3 12	13 32.61	- 4 51.8	1.914	2.807	10.8	22.4	3 12	13 29.92	-14 27.0	1.087	1.985	16.6	20.4
3 22	13 25.95	- 3 41.4	1.846	2.802	7.1	22.2	3 22	13 25.15	-14 20.2	1.017	1.969	11.9	20.0
4 1	13 17.66	- 2 23.7	1.805	2.796	3.2	21.9	4 1	13 17.64	-13 51.4	0.967	1.954	6.5	19.7
4 11	13 8.60	- 1 5.7	1.792	2.789	2.7	21.9	4 11	13 8.60	-13 4.3	0.940	1.940	2.8	19.4
4 21	12 59.71	+ 0 5.7	1.809	2.781	6.5	22.1	4 21	12 59.58	-12 6.7	0.935	1.926	7.1	19.6
5 1	12 51.92	+ 1 4.0	1.853	2.772	10.4	22.3	5 1	12 52.20	-11 9.0	0.953	1.914	12.8	19.9
5 11	12 45.96	+ 1 45.2	1.920	2.763	13.9	22.5	5 11	12 47.70	-10 21.7	0.990	1.903	18.1	20.1
96143	3434 T- ₃		4 8.8 92°36	0°3/ 9.1 18			463179	2012 BG ₁₀₅		4 8.8 45°72	0°1/ 8.9 16		
3 2	13 35.17	-11 19.4	1.979	2.774	14.5								

EPHEMERIDES

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
503866	1999 <i>VH</i> ₈₃		4 8.8 199°33	0°4/ 8.3 17			6618	Jimsimons		4 8.8 117°76	19°6/17.6 18		
3 2	13 34.73	— 8 45.0	2.635	3.422	11.5	23.5	3 2	13 57.59	—38 5.1	1.229	1.902	27.5	16.5
3 12	13 30.28	— 8 13.5	2.537	3.418	8.9	23.3	3 12	13 52.56	—41 39.1	1.159	1.907	25.4	16.3
3 22	13 24.15	— 7 32.3	2.463	3.414	5.9	23.1	3 22	13 41.97	—44 48.8	1.104	1.912	23.2	16.1
4 1	13 16.81	— 6 43.9	2.418	3.408	2.6	22.9	4 1	13 25.94	—47 16.5	1.066	1.917	21.1	16.0
4 11	13 8.90	— 5 52.4	2.402	3.402	1.0	22.7	4 11	13 6.16	—48 46.1	1.046	1.921	19.8	15.9
4 21	13 1.11	— 5 2.1	2.416	3.396	4.4	23.0	4 21	12 45.63	—49 10.5	1.044	1.926	19.6	15.9
5 1	12 54.14	— 4 17.5	2.458	3.389	7.7	23.2	5 1	12 27.90	—48 35.9	1.061	1.930	20.6	16.0
5 11	12 48.54	— 3 42.1	2.527	3.381	10.6	23.3	5 11	12 15.47	—47 20.7	1.094	1.934	22.3	16.1
414113	2007 <i>UQ</i> ₂₉		4 8.8 253°89	0°7/ 8.2 16			21113	1992 <i>RG</i> ₄		4 8.8 198°32	2°1/ 6.7 17		
3 2	13 36.99	— 8 56.2	1.769	2.574	15.6	22.3	3 2	13 36.44	— 5 29.1	2.010	2.817	13.9	20.2
3 12	13 33.08	— 8 22.0	1.665	2.556	12.2	22.1	3 12	13 32.11	— 4 32.0	1.920	2.814	10.7	19.9
3 22	13 26.61	— 7 32.3	1.583	2.537	8.2	21.8	3 22	13 25.63	— 3 23.4	1.854	2.811	7.0	19.7
4 1	13 18.11	— 6 30.4	1.526	2.518	3.6	21.5	4 1	13 17.55	— 2 8.0	1.815	2.806	3.3	19.5
4 11	13 8.51	— 5 22.4	1.496	2.497	1.6	21.3	4 11	13 8.73	— 0 52.8	1.805	2.801	2.8	19.4
4 21	12 58.92	— 4 15.5	1.495	2.476	6.4	21.5	4 21	13 0.09	+ 0 15.4	1.823	2.795	6.5	19.6
5 1	12 50.49	— 3 17.5	1.519	2.455	11.1	21.7	5 1	12 52.55	+ 1 10.5	1.869	2.788	10.3	19.8
5 11	12 44.13	— 2 34.4	1.566	2.433	15.3	21.9	5 11	12 46.82	+ 1 48.6	1.937	2.781	13.7	20.0
32644	2723 <i>P-L</i>		4 8.8 20°28	1°2/ 7.9 18			392928	2012 <i>VR</i> ₁₀₄		4 8.8 338°94	1°2/10.2 17		
3 2	13 33.62	— 8 46.5	1.285	2.118	18.7	18.9	3 2	13 31.45	—14 30.1	2.163	2.947	13.8	20.6
3 12	13 30.99	— 8 1.6	1.214	2.120	14.6	18.7	3 12	13 28.16	—14 1.0	2.071	2.946	10.9	20.4
3 22	13 25.39	— 6 57.7	1.162	2.123	9.6	18.4	3 22	13 22.95	—13 16.1	2.002	2.946	7.6	20.2
4 1	13 17.55	— 5 40.4	1.132	2.125	4.2	18.1	4 1	13 16.33	—12 17.6	1.959	2.945	3.9	20.0
4 11	13 8.70	— 4 19.0	1.128	2.128	2.2	18.0	4 11	13 9.07	—11 10.2	1.943	2.944	1.3	19.8
4 21	13 0.23	— 3 3.7	1.149	2.132	7.6	18.3	4 21	13 2.00	— 9 59.5	1.956	2.943	4.5	20.0
5 1	12 53.40	— 2 3.9	1.193	2.136	12.8	18.6	5 1	12 55.90	— 8 51.9	1.997	2.943	8.2	20.2
5 11	12 49.13	— 1 25.5	1.257	2.140	17.2	18.9	5 11	12 51.40	— 7 53.3	2.062	2.942	11.5	20.4
295471	2008 <i>QM</i> ₁₁		4 8.8 206°63	0°4/ 8.3 18			357094	2001 <i>TM</i>		4 8.8 149°64	0°5/ 8.3 18		
3 2	13 34.98	— 8 41.6	2.556	3.344	11.8	22.1	3 2	13 42.30	— 7 53.2	2.111	2.897	14.0	22.0
3 12	13 30.55	— 8 10.1	2.456	3.338	9.2	21.9	3 12	13 36.39	— 7 31.2	2.031	2.911	10.9	21.8
3 22	13 24.38	— 7 28.5	2.381	3.331	6.1	21.7	3 22	13 28.31	— 6 58.8	1.975	2.924	7.2	21.6
4 1	13 16.93	— 6 39.5	2.333	3.324	2.7	21.4	4 1	13 18.69	— 6 19.1	1.946	2.936	3.1	21.4
4 11	13 8.88	— 5 47.2	2.315	3.316	1.1	21.3	4 11	13 8.43	— 5 36.7	1.946	2.947	1.3	21.3
4 21	13 0.95	— 4 56.1	2.327	3.307	4.6	21.5	4 21	12 58.50	— 4 56.6	1.977	2.957	5.3	21.6
5 1	12 53.84	— 4 10.9	2.368	3.298	7.9	21.7	5 1	12 49.79	— 4 23.6	2.036	2.965	9.1	21.8
5 11	12 48.16	— 3 35.3	2.433	3.288	10.9	21.9	5 11	12 42.96	— 4 1.3	2.119	2.973	12.4	22.0
361157	2006 <i>JF</i> ₄₄		4 8.8 191°45	3°9/ 5.5 18			370111	2001 <i>TZ</i> ₂₄₀		4 8.8 213°72	0°2/ 8.9 17		
3 2	13 39.55	+ 0 48.1	1.831	2.650	14.6	21.0	3 2	13 37.78	— 9 58.3	2.536	3.315	12.1	23.1
3 12	13 34.67	+ 1 31.9	1.750	2.649	11.3	20.8	3 12	13 32.78	— 9 41.0	2.431	3.305	9.5	22.9
3 22	13 27.40	+ 2 21.3	1.691	2.647	7.6	20.6	3 22	13 25.92	— 9 13.4	2.349	3.295	6.4	22.6
4 1	13 18.35	+ 3 10.3	1.659	2.645	4.5	20.4	4 1	13 17.66	— 8 37.4	2.295	3.284	2.9	22.4
4 11	13 8.50	+ 3 52.3	1.655	2.643	4.7	20.4	4 11	13 8.70	— 7 56.5	2.270	3.272	0.8	22.2
4 21	12 58.90	+ 4 21.4	1.679	2.639	8.0	20.6	4 21	12 59.82	— 7 14.7	2.276	3.259	4.4	22.4
5 1	12 50.57	+ 4 33.7	1.728	2.636	11.7	20.8	5 1	12 51.79	— 6 36.6	2.311	3.245	7.9	22.6
5 11	12 44.29	+ 4 27.7	1.799	2.632	15.1	21.0	5 11	12 45.24	— 6 6.2	2.372	3.230	11.0	22.8
267209	2000 <i>SV</i> ₃₀₄		4 8.8 181°03	2°3/11.0 17			497890	2006 <i>UC</i> ₂₇₈		4 8.8 86°84	0°0/ 8.7 17		
3 2	13 39.39	—15 35.1	2.457	3.213	13.1	21.2	3 2	13 33.56	— 9 42.7	2.416	3.207	12.3	22.2
3 12	13 34.08	—15 48.5	2.359	3.214	10.6	21.0	3 12	13 29.40	— 9 21.0	2.341	3.223	9.5	22.0
3 22	13 26.79	—15 49.7	2.284	3.214	7.6	20.8	3 22	13 23.55	— 8 49.3	2.289	3.239	6.3	21.8
4 1	13 18.04	—15 38.8	2.236	3.214	4.4	20.6	4 1	13 16.53	— 8 10.2	2.265	3.255	2.8	21.6
4 11	13 8.58	—15 17.8	2.218	3.214	2.3	20.4	4 11	13 9.04	— 7 27.6	2.269	3.270	0.8	21.5
4 21	12 59.25	—14 49.9	2.229	3.213	4.4	20.6	4 21	13 1.82	— 6 45.9	2.302	3.286	4.3	21.8
5 1	12 50.87	—14 19.4	2.268	3.211	7.6	20.8	5 1	12 55.53	— 6 9.2	2.364	3.301	7.6	22.0
5 11	12 44.11	—13 51.0	2.334	3.208	10.6	20.9	5 11	12 50.70	— 5 41.1	2.451	3.316	10.5	22.2
230859	2004 <i>RG</i> ₁₆₂		4 8.8 200°76	5°6/14.4 17			173832	2001 <i>TO</i> ₈₁		4 8.8 121°56	2°0/11.3 18		
3 2	13 37.13	—25 38.7	2.266	2.982	15.1	20.7	3 2	13 33.05	—17 26.4	2.624	3.380	12.3	20.7
3 12	13 32.73	—26 4.5	2.165	2.979	12.9	20.5	3 12	13 28.96	—17 5.2	2.538	3.393	9.9	20.5
3 22	13 26.11	—26 11.5	2.084	2.976	10.2	20.3	3 22	13 23.25	—16 29.9	2.476	3.406	7.1	20.4
4 1	13 17.80	—25 57.6	2.027	2.973	7.6	20.1	4 1	13 16.40	—15 41.8	2.440	3.419	4.1	20.2
4 11	13 8.64	—25 23.6	1.997	2.969	5.7	20.0	4 11	13 9.08	—14 44.3	2.434	3.431	2.0	20.0
4 21	12 59.58	—24 32.5	1.994	2.964	6.1	20.0	4 21	13 1.98	—13 41.9	2.457	3.442	3.8	20.2
5 1	12 51.57	—23 30.2	2.018	2.960	8.4	20.2	5 1	12 55.77	—12 39.6	2.508	3.454	6.8	20.4
5 11	12 45.38	—22 23.9	2.068	2.955	11.2	20.3	5 11	12 50.94	—11 42.3	2.586	3.465	9.5	20.6
367506	2009 <i>KN</i> ₁₅		4 8.8 323°95	1°9/ 7.4 17			49640	1999 <i>JH</i> ₁₉		4 8.8 47°34	0°2/ 9.0 18		
3 2	13 32.80	— 5 55.3	1.336	2.175	17.8	21.2	3 2	13 34.62	— 9 35.1	1.974	2.775	14.3	18.0
3 12	13 30.45	— 5 25.2	1.251	2.161	13.9	21.0	3 12	13 30.66	— 9 27.1	1.898	2.785	11.2	17.8
3 22	13 25.16	— 4 40.3	1.185	2.148	9.2	20.6	3 22	13 24.61	— 9 7.6	1.844	2.795	7.5	17.6
4 1	13 17.54	— 3 45.5	1.142	2.135	4.1	20.3	4 1	13 17.07	— 8 39.3	1.816	2.806	3.4	17.4
4 11	13 8.70	— 2 48.6	1.124	2.123	2.8	20.2	4 11	13 8.89	— 8 6.2	1.815	2.817	0.9	17.2
4 21	13 0.00	— 1 58.4	1.130	2.112	8.0	20.5	4 21	13 1.00	— 7 33.1	1.843	2.828	5.0	17.5
5 1	12 52.79	— 1 23.0	1.159	2.101	13.2	20.7	5 1	12 54.26	— 7 5.0	1.897	2.839	8.8	17.8
5 11	12 48.07	— 1 7.4	1.208	2.091	17.8	20.9	5 11	12 49.30	— 6 45.8	1.975	2.850	12.2	18.0
37014	2000 <i>TW</i> ₅₅		4 8.8 198°25	4°2/ 3.6									

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
200576	2001 QY ₁₇		4 8.8 199°01	1°3/ 7.7	18		353486	2011 SO ₆₃		4 8.8 174°31	1°3/10.6	18	
3 2	13 39.25	- 6 50.7	1.851	2.655	15.0	20.7	3 2	13 33.95	-14 25.6	3.279	4.035	10.1	22.5
3 12	13 34.53	- 6 14.5	1.761	2.652	11.7	20.5	3 12	13 29.36	-14 19.7	3.181	4.038	8.0	22.3
3 22	13 27.38	- 5 26.1	1.693	2.648	7.7	20.2	3 22	13 23.41	-14 4.2	3.107	4.040	5.6	22.1
4 1	13 18.39	- 4 29.4	1.652	2.643	3.4	19.9	4 1	13 16.49	-13 40.2	3.061	4.042	3.1	22.0
4 11	13 8.53	- 3 30.6	1.638	2.638	2.1	19.8	4 11	13 9.12	-13 9.9	3.045	4.044	1.3	21.8
4 21	12 58.85	- 2 36.1	1.653	2.631	6.4	20.1	4 21	13 1.87	-12 36.0	3.060	4.044	3.3	22.0
5 1	12 50.41	- 1 52.3	1.695	2.624	10.6	20.3	5 1	12 55.28	-12 1.8	3.104	4.045	5.8	22.2
5 11	12 43.99	- 1 23.5	1.760	2.616	14.3	20.5	5 11	12 49.81	-11 30.6	3.175	4.045	8.2	22.3
4377	Koremori		4 8.8 355°21	1°0/ 9.6	18		390480	2013 YW ₁₄₉		4 8.8 213°43	5°8/ 1.5	18	
3 2	13 33.54	-12 37.0	1.389	2.206	18.4	16.9	3 2	13 34.51	+ 8 40.9	2.432	3.252	11.4	20.6
3 12	13 30.85	-12 19.6	1.310	2.204	14.6	16.6	3 12	13 30.26	+10 1.2	2.351	3.245	9.0	20.4
3 22	13 25.30	-11 42.2	1.250	2.203	10.0	16.3	3 22	13 24.23	+11 21.9	2.296	3.237	6.9	20.3
4 1	13 17.56	-10 47.2	1.212	2.202	4.9	16.0	4 1	13 16.91	+12 36.4	2.268	3.228	5.8	20.2
4 11	13 8.76	- 9 41.0	1.200	2.201	1.3	15.8	4 11	13 9.00	+13 38.3	2.268	3.219	6.7	20.2
4 21	13 0.23	- 8 32.2	1.213	2.201	6.4	16.1	4 21	13 1.24	+14 22.6	2.297	3.210	8.9	20.3
5 1	12 53.24	- 7 30.0	1.250	2.201	11.5	16.4	5 1	12 54.37	+14 46.5	2.350	3.199	11.3	20.5
5 11	12 48.69	- 6 42.1	1.308	2.202	15.9	16.7	5 11	12 48.98	+14 49.5	2.425	3.189	13.6	20.6
401861	2000 RB ₃₆		4 8.8 209°64	1°6/ 7.2	17		94363	2001 RK ₄₇		4 8.8 0°74	6°7/10.7	18	
3 2	13 37.23	- 6 41.2	2.056	2.857	13.8	22.5	3 2	13 52.70	-13 39.2	1.102	1.901	23.3	19.4
3 12	13 32.74	- 5 48.8	1.960	2.850	10.7	22.3	3 12	13 47.24	-15 46.4	1.023	1.901	19.3	19.1
3 22	13 26.08	- 4 43.9	1.887	2.842	7.0	22.1	3 22	13 37.25	-17 45.2	0.963	1.900	14.4	18.8
4 1	13 17.79	- 3 31.0	1.842	2.834	3.1	21.8	4 1	13 23.33	-19 28.1	0.924	1.900	9.4	18.5
4 11	13 8.70	- 2 16.4	1.826	2.824	2.3	21.7	4 11	13 7.13	-20 48.3	0.910	1.900	6.7	18.4
4 21	12 59.75	- 1 6.9	1.839	2.813	6.2	21.9	4 21	12 50.94	-21 42.8	0.921	1.901	9.6	18.5
5 1	12 51.87	- 0 8.7	1.879	2.802	10.1	22.2	5 1	12 37.11	-22 15.6	0.954	1.902	14.6	18.8
5 11	12 45.77	+ 0 33.6	1.943	2.789	13.6	22.4	5 11	12 27.29	-22 35.9	1.008	1.903	19.4	19.1
391314	2006 TY ₅₃		4 8.8 172°43	0°9/10.1	18		505137	2012 JO ₃₂		4 8.8 309°26	2°2/ 6.7	17	
3 2	13 31.74	-14 9.1	2.837	3.607	11.2	22.0	3 2	13 29.21	- 8 22.2	1.542	2.372	16.3	21.1
3 12	13 27.87	-13 36.6	2.742	3.609	8.8	21.9	3 12	13 27.37	- 7 5.3	1.440	2.347	12.7	20.8
3 22	13 22.51	-12 51.9	2.671	3.611	6.1	21.7	3 22	13 23.00	- 5 26.4	1.360	2.322	8.4	20.5
4 1	13 16.09	-11 57.0	2.628	3.613	3.1	21.5	4 1	13 16.59	- 3 31.2	1.304	2.297	3.8	20.1
4 11	13 9.20	-10 55.6	2.614	3.614	1.0	21.3	4 11	13 9.06	- 1 29.6	1.275	2.273	3.2	20.0
4 21	13 2.46	- 9 51.9	2.630	3.615	3.6	21.5	4 21	13 1.55	+ 0 26.6	1.272	2.249	8.0	20.2
5 1	12 56.48	- 8 50.7	2.675	3.616	6.6	21.7	5 1	12 55.22	+ 2 6.2	1.293	2.225	13.0	20.5
5 11	12 51.74	- 7 56.1	2.747	3.616	9.3	21.9	5 11	12 51.02	+ 3 21.0	1.336	2.202	17.4	20.7
206949	2004 RD ₁₈₉		4 8.8 123°20	2°4/10.9	18		235611	2004 PU ₉₉		4 8.8 254°54	2°9/ 6.4	17	
3 2	13 38.46	-16 35.5	1.702	2.481	17.1	21.1	3 2	13 38.34	- 3 21.7	1.731	2.549	15.3	21.3
3 12	13 34.04	-16 20.0	1.625	2.494	13.7	20.9	3 12	13 34.19	- 2 34.2	1.630	2.529	12.0	21.0
3 22	13 27.06	-15 44.6	1.569	2.507	9.7	20.7	3 22	13 27.42	- 1 35.0	1.550	2.508	8.0	20.7
4 1	13 18.22	-14 50.7	1.537	2.520	5.4	20.5	4 1	13 18.54	- 0 29.4	1.496	2.486	4.0	20.4
4 11	13 8.61	-13 43.2	1.533	2.531	2.4	20.3	4 11	13 8.52	+ 0 35.1	1.470	2.464	3.7	20.3
4 21	12 59.37	-12 29.5	1.555	2.543	5.4	20.5	4 21	12 58.50	+ 1 31.0	1.471	2.441	7.9	20.5
5 1	12 51.59	-11 17.7	1.605	2.554	9.6	20.8	5 1	12 49.66	+ 2 11.2	1.497	2.417	12.4	20.7
5 11	12 46.01	-10 15.5	1.678	2.564	13.5	21.0	5 11	12 42.94	+ 3 31.8	1.545	2.393	16.4	20.9
292388	2006 SA ₂₆₇		4 8.8 74°35	1°6/10.4	17		251685	1995 UC ₄₀		4 8.8 166°84	1°1/ 9.8	16	
3 2	13 35.54	-13 15.9	2.303	3.081	13.3	21.2	3 2	13 39.37	-12 17.7	2.020	2.802	14.7	22.1
3 12	13 31.19	-13 25.5	2.214	3.084	10.5	21.0	3 12	13 34.41	-12 12.2	1.933	2.806	11.7	21.9
3 22	13 24.91	-13 23.5	2.148	3.088	7.4	20.8	3 22	13 27.18	-11 53.2	1.867	2.810	8.0	21.7
4 1	13 17.22	-13 10.8	2.108	3.092	3.9	20.6	4 1	13 18.29	-11 22.4	1.827	2.814	4.0	21.4
4 11	13 8.88	-12 50.0	2.096	3.095	1.7	20.5	4 11	13 8.63	-10 43.5	1.816	2.817	1.2	21.2
4 21	13 0.72	-12 24.7	2.113	3.099	4.3	20.7	4 21	12 59.18	-10 1.4	1.833	2.819	4.9	21.5
5 1	12 53.52	-11 59.0	2.158	3.103	7.7	20.9	5 1	12 50.92	- 9 21.7	1.878	2.820	8.9	21.7
5 11	12 47.93	-11 37.4	2.228	3.107	10.8	21.1	5 11	12 44.56	- 8 49.4	1.948	2.821	12.4	21.9
214822	2006 VN ₁₉		4 8.8 321°74	2°5/ 6.7	17		284379	2006 SN ₃₁₅		4 8.8 165°44	0°8/ 7.7	18	
3 2	13 34.83	- 1 23.7	2.055	2.873	13.2	20.1	3 2	13 32.58	- 6 55.0	2.860	3.653	10.5	21.9
3 12	13 30.87	- 1 6.5	1.964	2.864	10.2	19.9	3 12	13 28.46	- 6 19.1	2.772	3.658	8.1	21.7
3 22	13 24.83	- 0 43.8	1.897	2.854	6.8	19.7	3 22	13 22.87	- 5 35.4	2.709	3.662	5.3	21.5
4 1	13 17.23	- 0 19.7	1.855	2.845	3.4	19.4	4 1	13 16.26	- 4 46.7	2.674	3.665	2.3	21.3
4 11	13 8.88	+ 0 1.2	1.842	2.836	3.1	19.4	4 11	13 9.21	- 3 57.0	2.669	3.668	1.4	21.2
4 21	13 0.68	+ 0 14.6	1.856	2.828	6.4	19.6	4 21	13 2.32	- 3 10.1	2.694	3.671	4.3	21.5
5 1	12 53.49	+ 0 17.1	1.896	2.820	10.0	19.8	5 1	12 56.17	- 2 29.9	2.747	3.673	7.2	21.6
5 11	12 48.02	+ 0 6.4	1.960	2.812	13.3	20.0	5 11	12 51.24	- 1 59.2	2.827	3.675	9.8	21.8
310886	2003 QK ₂₄		4 8.8 199°67	3°6/12.0	16		501937	2014 XZ ₁₄		4 8.8 30°16	7°2/15.8	17	
3 2	13 38.15	-19 18.9	1.918	2.678	16.2	21.5	3 2	13 32.32	-27 53.2	1.527	2.273	20.2	19.7
3 12	13 33.78	-19 22.6	1.822	2.675	13.3	21.3	3 12	13 29.88	-28 10.1	1.450	2.281	17.2	19.5
3 22	13 26.96	-19 7.2	1.746	2.672	9.8	21.1	3 22	13 24.62	-27 57.2	1.389	2.289	13.8	19.3
4 1	13 18.24	-18 32.3	1.695	2.668	6.1	20.9	4 1	13 17.25	-27 12.0	1.349	2.298	10.3	19.1
4 11	13 8.59	-17 40.4	1.670	2.663	3.6	20.7	4 11	13 8.93	-25 56.8	1.332	2.307	7.6	19.0
4 21	12 59.09	-16 36.8	1.673	2.658	5.4	20.8	4 21	13 0.95	-24 18.3	1.340	2.317	7.7	19.0
5 1	12 50.79	-15 28.8	1.704	2.653	9.2	21.0	5 1	12 54.54	-22 27.6	1.373	2.327	10.4	19.2
5 11	12 44.55	-14 24.3	1.759	2.646	12.8	21.2	5 11	12 50.54	-20 37.2	1.428	2.338	13.8	19.4
139744	2001 QQ ₂₆₈		4 8.8 141°55	3°4/ 5.1	18		266286	2007 BQ ₁₉		4 8.8 165°45	1°5/10.4		

EPHEMERIDES

4 8.8

4 8.9

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
156737	2002 <i>XD</i> ₅₄		4 8.8 158°85	2°9/11.2	18		6878	Isamu		4 8.8 255°16	2°4/ 6.7	18	
3 2	13 35.86	-17 57.8	1.456	2.247	19.0	20.0	3 2	13 36.55	-3 52.2	1.882	2.697	14.4	18.1
3 12	13 32.61	-17 39.3	1.374	2.249	15.4	19.8	3 12	13 32.53	-3 11.9	1.783	2.681	11.2	17.9
3 22	13 26.46	-16 55.8	1.311	2.250	11.1	19.5	3 22	13 26.15	-2 21.3	1.707	2.665	7.4	17.6
4 1	13 18.10	-15 48.2	1.270	2.252	6.3	19.3	4 1	13 17.95	-1 25.0	1.657	2.648	3.6	17.4
4 11	13 8.69	-14 22.1	1.254	2.253	2.9	19.1	4 11	13 8.79	-0 29.4	1.635	2.631	3.1	17.3
4 21	12 59.58	-12 46.6	1.265	2.254	6.1	19.2	4 21	12 59.70	+0 19.0	1.640	2.613	7.0	17.5
5 1	12 52.03	-11 12.8	1.301	2.255	10.9	19.5	5 1	12 51.70	+0 54.4	1.672	2.595	11.1	17.7
5 11	12 46.97	-9 50.8	1.359	2.255	15.3	19.8	5 11	12 45.62	+1 12.9	1.726	2.577	14.8	17.9
389816	2011 <i>WJ</i> ₄		4 8.8 247°24	2°3/ 6.4	17		84726	2002 <i>WJ</i> ₆		4 8.9 110°15	4°0/13.1	18	
3 2	13 34.50	-1 4.2	2.489	3.298	11.4	21.2	3 2	13 33.95	-21 41.7	2.244	2.989	14.5	19.5
3 12	13 30.21	-0 39.5	2.397	3.292	8.8	21.0	3 12	13 30.16	-21 49.3	2.152	2.991	12.0	19.4
3 22	13 24.19	-0 10.2	2.330	3.286	5.8	20.8	3 22	13 24.36	-21 39.3	2.080	2.994	9.1	19.2
4 1	13 16.91	+0 20.2	2.291	3.279	3.0	20.6	4 1	13 17.06	-21 11.2	2.032	2.996	6.1	19.0
4 11	13 9.04	+0 47.5	2.280	3.273	2.9	20.6	4 11	13 9.06	-20 27.1	2.012	2.998	4.1	18.9
4 21	13 1.31	+1 8.0	2.299	3.266	5.7	20.7	4 21	13 1.24	-19 31.3	2.019	3.001	5.0	18.9
5 1	12 54.43	+1 18.5	2.345	3.260	8.7	20.9	5 1	12 54.43	-18 29.7	2.054	3.003	7.8	19.1
5 11	12 48.98	+1 17.2	2.415	3.253	11.5	21.1	5 11	12 49.29	-17 28.7	2.115	3.005	10.8	19.3
196346	2003 <i>FU</i> ₈₈		4 8.8 290°77	2°6/11.4	18		148520	2001 <i>PT</i> ₄₁		4 8.9 140°97	5°8/14.6	17	
3 2	13 31.92	-18 21.6	1.842	2.621	16.1	19.9	3 2	13 39.24	-25 57.3	2.178	2.891	15.8	21.0
3 12	13 29.17	-17 55.8	1.731	2.598	13.1	19.6	3 12	13 34.38	-26 26.0	2.089	2.901	13.4	20.8
3 22	13 24.04	-17 7.6	1.640	2.576	9.5	19.4	3 22	13 27.23	-26 34.9	2.021	2.911	10.6	20.6
4 1	13 17.02	-15 57.4	1.574	2.554	5.5	19.1	4 1	13 18.37	-26 22.2	1.976	2.919	7.8	20.5
4 11	13 8.98	-14 29.3	1.534	2.532	2.6	18.8	4 11	13 8.71	-25 48.5	1.957	2.928	6.0	20.4
4 21	13 0.94	-12 50.3	1.521	2.509	5.3	18.9	4 21	12 59.27	-24 57.6	1.966	2.936	6.3	20.4
5 1	12 53.97	-11 9.8	1.535	2.487	9.7	19.1	5 1	12 51.02	-23 55.4	2.003	2.943	8.5	20.5
5 11	12 48.95	-9 37.4	1.573	2.465	13.8	19.3	5 11	12 44.70	-22 49.7	2.064	2.950	11.3	20.7
306990	2001 <i>WJ</i> ₁₇		4 8.8 211°03	0°8/ 9.7	17		255672	2006 <i>QK</i> ₄₂		4 8.9 203°46	1°6/ 7.3	16	
3 2	13 36.36	-12 41.2	2.427	3.201	12.7	22.5	3 2	13 37.62	-5 40.0	2.179	2.979	13.2	21.6
3 12	13 31.81	-12 17.5	2.323	3.194	10.1	22.3	3 12	13 32.92	-5 0.8	2.084	2.974	10.2	21.4
3 22	13 25.35	-11 40.7	2.242	3.185	6.9	22.1	3 22	13 26.16	-4 11.8	2.014	2.968	6.7	21.2
4 1	13 17.47	-10 52.8	2.189	3.176	3.4	21.8	4 1	13 17.87	-3 16.7	1.970	2.962	3.0	20.9
4 11	13 8.90	-9 57.4	2.164	3.165	0.9	21.6	4 11	13 8.85	-2 20.9	1.956	2.954	2.2	20.9
4 21	13 0.42	-8 59.4	2.170	3.155	4.4	21.9	4 21	12 59.97	-1 29.9	1.971	2.946	5.8	21.1
5 1	12 52.84	-8 4.2	2.204	3.143	8.0	22.1	5 1	12 52.11	-0 48.9	2.014	2.937	9.5	21.3
5 11	12 46.78	-7 16.7	2.264	3.131	11.2	22.2	5 11	12 45.94	-0 21.5	2.081	2.927	12.8	21.5
497775	2006 <i>SB</i> ₃₃₂		4 8.8 253°54	1°2/ 9.9	17		259396	2003 <i>QH</i>		4 8.9 240°16	3°8/11.8	16	
3 2	13 36.36	-13 38.9	1.964	2.748	15.0	22.1	3 2	13 38.65	-18 11.6	1.769	2.538	17.0	21.2
3 12	13 32.42	-13 16.9	1.853	2.729	12.0	21.8	3 12	13 34.52	-18 28.5	1.669	2.528	13.9	20.9
3 22	13 26.12	-12 38.1	1.765	2.709	8.4	21.6	3 22	13 27.69	-18 27.0	1.588	2.518	10.3	20.7
4 1	13 17.95	-11 43.7	1.702	2.688	4.2	21.3	4 1	13 18.72	-18 6.0	1.532	2.507	6.4	20.4
4 11	13 8.76	-10 38.2	1.666	2.667	1.3	21.0	4 11	13 8.59	-17 27.5	1.502	2.496	3.8	20.2
4 21	12 59.57	-9 27.5	1.659	2.646	5.3	21.2	4 21	12 58.51	-16 36.2	1.499	2.484	5.9	20.3
5 1	12 51.41	-8 19.2	1.679	2.623	9.7	21.5	5 1	12 49.68	-15 39.2	1.522	2.472	9.9	20.5
5 11	12 45.14	-7 20.3	1.724	2.600	13.6	21.6	5 11	12 43.06	-14 44.9	1.569	2.459	13.9	20.7
120286	2004 <i>HX</i> ₅₆		4 8.8 251°76	8°8/24.2	18		93060	2000 <i>SW</i> ₂₀		4 8.9 248°39	2°1/ 7.2	18	
3 2	13 36.97	+28 7.2	3.126	3.899	10.2	20.8	3 2	13 40.10	-2 3.9	2.044	2.851	13.7	20.0
3 12	13 31.96	+29 27.0	3.054	3.876	9.3	20.7	3 12	13 35.05	-1 54.9	1.947	2.840	10.7	19.8
3 22	13 25.29	+30 36.6	3.005	3.852	8.9	20.6	3 22	13 27.71	-1 40.5	1.873	2.828	7.1	19.5
4 1	13 17.40	+31 29.8	2.982	3.827	9.0	20.6	4 1	13 18.62	-1 24.0	1.826	2.816	3.4	19.3
4 11	13 8.95	+32 2.0	2.983	3.802	9.8	20.6	4 11	13 8.64	-1 9.7	1.807	2.804	2.7	19.2
4 21	13 0.61	+32 10.6	3.008	3.776	11.0	20.7	4 21	12 58.77	-1 1.8	1.817	2.791	6.3	19.4
5 1	12 53.06	+31 55.1	3.054	3.750	12.4	20.7	5 1	12 49.97	-1 3.8	1.854	2.778	10.2	19.6
5 11	12 46.86	+31 17.4	3.117	3.723	13.6	20.8	5 11	12 43.04	-1 17.7	1.916	2.765	13.6	19.8
296516	2009 <i>LJ</i>		4 8.8 322°20	2°6/12.1	17		382448	2000 <i>KU</i> ₁		4 8.9 296°89	6°4/14.6	17	
3 2	13 28.31	-22 8.8	1.999	2.760	15.5	20.3	3 2	13 33.32	-26 32.6	1.780	2.518	18.0	21.4
3 12	13 26.12	-21 1.0	1.886	2.741	12.8	20.0	3 12	13 30.73	-26 40.2	1.655	2.484	15.5	21.1
3 22	13 21.84	-19 25.2	1.794	2.722	9.4	19.8	3 22	13 25.43	-26 21.3	1.547	2.449	12.5	20.8
4 1	13 15.98	-17 22.9	1.727	2.704	5.6	19.5	4 1	13 17.83	-25 32.0	1.461	2.414	9.2	20.6
4 11	13 9.33	-14 59.6	1.689	2.686	2.6	19.3	4 11	13 8.82	-24 11.9	1.399	2.379	6.7	20.3
4 21	13 2.80	-12 25.0	1.680	2.669	4.8	19.4	4 21	12 59.60	-22 25.1	1.364	2.343	7.2	20.3
5 1	12 57.29	-9 50.6	1.700	2.652	8.9	19.6	5 1	12 51.48	-20 21.2	1.354	2.307	10.6	20.3
5 11	12 53.51	-7 27.6	1.746	2.636	12.8	19.8	5 11	12 45.56	-18 12.7	1.368	2.272	14.7	20.5
56726	2000 <i>NA</i> ₁₃		4 8.8 145°13	3°6/13.1	18		162074	1997 <i>VX</i> ₂		4 8.9 116°51	3°5/13.3	18	
3 2	13 34.02	-21 31.8	2.560	3.296	13.1	19.4	3 2	13 35.45	-22 28.3	2.721	3.445	12.7	20.5
3 12	13 29.92	-21 37.3	2.466	3.301	10.8	19.2	3 12	13 30.81	-22 25.6	2.638	3.465	10.5	20.4
3 22	13 24.05	-21 27.1	2.394	3.305	8.2	19.1	3 22	13 24.50	-22 7.1	2.577	3.484	7.9	20.2
4 1	13 16.88	-21 1.2	2.347	3.310	5.5	18.9	4 1	13 17.04	-21 33.3	2.542	3.502	5.3	20.1
4 11	13 9.11	-20 21.5	2.328	3.314	3.7	18.8	4 11	13 9.12	-20 46.3	2.536	3.520	3.6	20.0
4 21	13 1.50	-19 31.6	2.337	3.318	4.5	18.8	4 21	13 1.44	-19 50.0	2.558	3.538	4.3	20.1
5 1	12 54.78	-18 36.4	2.375	3.321	7.1	19.0	5 1	12 54.68	-18 49.3	2.610	3.555	6.6	20.2
5 11	12 49.55	-17 41.6	2.439	3.325	9.8	19.2	5 11	12 49.35	-17 49.5	2.688	3.571	9.1	20.4
451669	2013 <i>AR</i> ₈₀		4 8.8 87°00	4°4/ 5.7	18		297671	2001 <i>UA</i> ₈₈		4 8.9 170°86	1°5/ 7.8	18	
3 2	13 38.77	-0 52.4	1.347	2.184									

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
32079	Hughsavoldelli 4 8.9 298°75 5°9/ 4.1 18						336283	2008 SK ₂₅₀ 4 8.9 284°70 1°0/ 7.9 17					
3 2	13 33.49	+ 0 50.8	1.330	2.179	17.3	18.4	3 2	13 34.04	- 7 10.6	1.957	2.767	14.1	21.6
3 12	13 31.06	+ 2 10.7	1.245	2.161	13.5	18.1	3 12	13 30.37	- 6 40.5	1.870	2.764	10.9	21.4
3 22	13 25.66	+ 3 42.6	1.181	2.143	9.3	17.8	3 22	13 24.58	- 5 59.1	1.805	2.761	7.2	21.1
4 1	13 17.88	+ 5 17.2	1.140	2.125	6.2	17.6	4 1	13 17.21	- 5 10.1	1.767	2.758	3.2	20.9
4 11	13 8.85	+ 6 42.2	1.124	2.107	7.2	17.6	4 11	13 9.09	- 4 18.8	1.756	2.756	1.7	20.7
4 21	12 59.91	+ 7 46.8	1.131	2.090	11.3	17.8	4 21	13 1.17	- 3 31.2	1.772	2.753	5.7	21.0
5 1	12 52.45	+ 8 23.1	1.161	2.073	15.9	18.0	5 1	12 54.33	- 2 52.6	1.816	2.750	9.7	21.2
5 11	12 47.50	+ 8 28.6	1.209	2.056	20.1	18.2	5 11	12 49.27	- 2 27.0	1.882	2.747	13.2	21.4
518766	2009 UP ₁₆₀ 4 8.9 213°64 1°7/ 7.3 17						502918	2015 EH ₂₀ 4 8.9 227°64 1°4/ 7.4 17					
3 2	13 36.23	- 4 57.5	1.984	2.794	13.9	21.8	3 2	13 33.44	- 6 48.6	2.024	2.834	13.7	21.5
3 12	13 32.03	- 4 27.7	1.896	2.791	10.8	21.6	3 12	13 29.83	- 6 3.0	1.935	2.830	10.6	21.3
3 22	13 25.66	- 3 48.5	1.831	2.787	7.1	21.4	3 22	13 24.18	- 5 5.7	1.870	2.827	7.0	21.0
4 1	13 17.68	- 3 4.0	1.792	2.784	3.2	21.1	4 1	13 17.01	- 4 1.0	1.831	2.823	3.1	20.8
4 11	13 8.94	- 2 19.5	1.782	2.780	2.3	21.0	4 11	13 9.15	- 2 54.9	1.821	2.820	2.1	20.7
4 21	13 0.39	- 1 40.5	1.799	2.776	6.1	21.3	4 21	13 1.46	- 1 53.6	1.838	2.816	5.9	20.9
5 1	12 52.94	- 1 11.8	1.843	2.771	10.0	21.5	5 1	12 54.82	- 1 3.2	1.883	2.812	9.7	21.2
5 11	12 47.29	- 0 56.9	1.911	2.766	13.4	21.7	5 11	12 49.88	- 0 27.5	1.950	2.808	13.1	21.4
374363	2005 UB ₂₃₆ 4 8.9 230°32 2°0/ 6.8 17						16905	1998 DT ₂₁ 4 8.9 223°33 0°4/ 8.3 18					
3 2	13 36.54	- 4 1.1	2.280	3.084	12.5	22.3	3 2	13 33.62	- 8 4.5	2.817	3.605	10.8	19.5
3 12	13 32.07	- 3 20.4	2.179	3.071	9.7	22.1	3 12	13 29.41	- 7 39.4	2.713	3.595	8.4	19.3
3 22	13 25.61	- 2 31.0	2.102	3.057	6.4	21.8	3 22	13 23.63	- 7 5.7	2.634	3.585	5.6	19.1
4 1	13 17.66	- 1 37.0	2.052	3.043	3.1	21.6	4 1	13 16.71	- 6 25.9	2.584	3.574	2.5	18.9
4 11	13 8.95	- 0 43.4	2.032	3.027	2.6	21.5	4 11	13 9.24	- 5 43.3	2.562	3.563	1.0	18.8
4 21	13 0.32	+ 0 4.3	2.040	3.011	6.0	21.7	4 21	13 1.84	- 5 1.9	2.571	3.552	4.2	19.0
5 1	12 52.61	+ 0 41.3	2.077	2.995	9.5	21.9	5 1	12 55.17	- 4 25.5	2.609	3.540	7.3	19.2
5 11	12 46.48	+ 1 4.5	2.137	2.977	12.7	22.1	5 11	12 49.74	- 3 57.4	2.672	3.527	10.0	19.3
237720	2001 VH ₁₃₃ 4 8.9 353°66 4°8/ 4.9 18						183526	2003 FV ₁₁₄ 4 8.9 288°32 3°3/ 4.9 18					
3 2	13 33.44	- 1 50.7	1.297	2.144	17.7	20.2	3 2	13 30.66	- 0 38.9	2.303	3.125	11.8	20.0
3 12	13 30.85	- 0 31.1	1.227	2.143	13.7	20.0	3 12	13 27.42	+ 0 27.1	2.217	3.120	9.1	19.8
3 22	13 25.34	+ 1 1.7	1.178	2.141	9.1	19.7	3 22	13 22.44	+ 1 39.9	2.156	3.114	6.1	19.6
4 1	13 17.65	+ 2 38.4	1.152	2.141	5.3	19.5	4 1	13 16.20	+ 2 54.3	2.122	3.108	3.6	19.4
4 11	13 8.96	+ 4 7.2	1.151	2.140	5.9	19.5	4 11	13 9.38	+ 4 3.9	2.116	3.102	4.0	19.5
4 21	13 0.61	+ 5 17.4	1.175	2.140	10.1	19.8	4 21	13 2.72	+ 5 3.0	2.139	3.096	6.8	19.6
5 1	12 53.87	+ 6 1.7	1.220	2.140	14.6	20.0	5 1	12 56.92	+ 5 47.1	2.188	3.091	9.9	19.8
5 11	12 49.61	+ 6 17.6	1.285	2.140	18.7	20.3	5 11	12 52.56	+ 6 13.8	2.260	3.085	12.7	20.0
428066	2006 FE ₄₃ 4 8.9 297°58 0°5/ 9.2 17						263712	2008 HC ₃₆ 4 8.9 293°43 3°7/ 5.9 18					
3 2	13 38.63	- 8 34.1	1.880	2.679	15.0	20.7	3 2	13 36.21	- 0 19.5	1.670	2.500	15.3	20.6
3 12	13 34.31	- 8 51.2	1.774	2.659	11.9	20.5	3 12	13 32.48	+ 0 18.5	1.584	2.489	11.9	20.4
3 22	13 27.48	- 8 59.1	1.689	2.640	8.1	20.2	3 22	13 26.22	+ 1 3.6	1.520	2.479	8.0	20.1
4 1	13 18.63	- 8 58.9	1.631	2.620	3.8	19.9	4 1	13 18.03	+ 1 50.1	1.481	2.469	4.4	19.9
4 11	13 8.66	- 8 53.3	1.599	2.601	1.0	19.6	4 11	13 8.88	+ 2 30.9	1.468	2.459	4.5	19.9
4 21	12 58.65	- 8 45.9	1.596	2.582	5.5	19.9	4 21	12 59.89	+ 2 59.5	1.482	2.449	8.2	20.1
5 1	12 49.71	- 8 41.1	1.619	2.563	10.0	20.1	5 1	12 52.18	+ 3 11.3	1.520	2.439	12.3	20.3
5 11	12 42.77	- 8 43.1	1.666	2.544	14.0	20.3	5 11	12 46.58	+ 3 4.0	1.580	2.430	16.0	20.5
272652	2005 WV ₁₅₆ 4 8.9 148°84 2°5/ 6.3 18						944	Hidalgo 4 8.9 37°48 0°9/ 7.6 18 R					
3 2	13 37.18	- 1 52.2	2.353	3.159	12.2	21.5	3 2	13 38.83	- 3 18.4	3.736	4.512	8.6	17.5
3 12	13 32.26	- 1 11.6	2.276	3.169	9.3	21.3	3 12	13 32.54	- 3 17.4	3.693	4.569	6.5	17.4
3 22	13 25.53	- 0 25.2	2.224	3.179	6.1	21.1	3 22	13 25.21	- 3 13.2	3.677	4.626	4.2	17.3
4 1	13 17.54	+ 0 22.7	2.199	3.188	3.2	20.9	4 1	13 17.25	- 3 7.6	3.692	4.682	1.9	17.2
4 11	13 9.01	+ 1 7.2	2.204	3.196	3.0	20.9	4 11	13 9.15	- 3 2.6	3.739	4.738	1.2	17.2
4 21	13 0.75	+ 1 43.6	2.238	3.204	5.9	21.1	4 21	13 1.40	- 2 59.9	3.819	4.793	3.3	17.4
5 1	12 53.49	+ 2 8.6	2.299	3.211	9.1	21.3	5 1	12 54.40	- 3 1.1	3.930	4.847	5.5	17.6
5 11	12 47.78	+ 2 19.9	2.385	3.217	11.9	21.5	5 11	12 48.50	- 3 7.3	4.068	4.902	7.3	17.8
179647	Stuartrobins 4 8.9 188°20 0°6/ 9.4 16						425082	2009 RH ₇₄ 4 8.9 246°34 0°0/ 8.7 17					
3 2	13 37.64	-11 43.2	2.110	2.894	14.1	21.9	3 2	13 36.07	- 9 29.0	1.845	2.648	15.1	22.0
3 12	13 33.03	-11 22.5	2.017	2.894	11.1	21.7	3 12	13 32.14	- 9 14.1	1.756	2.645	11.8	21.8
3 22	13 26.29	-10 48.2	1.947	2.893	7.6	21.5	3 22	13 25.87	- 8 46.2	1.689	2.641	8.0	21.5
4 1	13 17.96	-10 2.5	1.903	2.891	3.6	21.2	4 1	13 17.83	- 8 8.1	1.647	2.637	3.6	21.2
4 11	13 8.88	- 9 9.7	1.887	2.889	0.9	21.0	4 11	13 8.95	- 7 24.5	1.632	2.633	1.0	21.0
4 21	12 59.98	- 8 15.3	1.901	2.886	4.9	21.3	4 21	13 0.23	- 6 41.0	1.645	2.629	5.5	21.3
5 1	12 52.14	- 7 25.0	1.942	2.882	8.8	21.5	5 1	12 52.70	- 6 3.6	1.684	2.625	9.8	21.6
5 11	12 46.09	- 6 44.0	2.008	2.878	12.3	21.7	5 11	12 47.11	- 5 37.2	1.746	2.621	13.6	21.8
87578	2000 RU ₁₅ 4 8.9 236°94 4°3/13.7 18						292447	2006 SL ₃₅₇ 4 8.9 216°48 0°1/ 8.7 18					
3 2	13 34.46	-23 24.1	2.638	3.361	13.1	20.0	3 2	13 31.97	-10 27.4	2.929	3.711	10.6	21.8
3 12	13 30.38	-23 39.2	2.529	3.352	11.0	19.8	3 12	13 28.08	- 9 44.8	2.825	3.702	8.3	21.6
3 22	13 24.45	-23 38.5	2.442	3.343	8.5	19.6	3 22	13 22.73	- 8 51.6	2.745	3.693	5.5	21.4
4 1	13 17.13	-23 21.2	2.379	3.333	6.1	19.5	4 1	13 16.31	- 7 50.5	2.694	3.684	2.5	21.2
4 11	13 9.10	-22 48.4	2.344	3.323	4.4	19.3	4 11	13 9.39	- 6 45.2	2.672	3.674	0.8	21.0
4 21	13 1.12	-22 3.0	2.338	3.313	5.0	19.4	4 21	13 2.56	- 5 40.3	2.682	3.663	3.9	21.2
5 1	12 53.97	-21 9.6	2.359	3.303	7.2	19.5	5 1	12 56.41	- 4 40.2	2.720	3.652	7.0	21.4
5 11	12 48.28	-20 13.9	2.406	3.292	9.9	19.6	5 11	12 51.46	- 3 48.8	2.785	3.641	9.7	21.6
433645	2014 AD ₃₇ 4 8.9 219°51 3°3/ 5.5 17						344334	2001 VV ₉₂ 4 8.9 157°24 6°2/31.1 18					
3 2	13 34.46	- 0 21.7	2.150	2.969	12.7	21.8	3 2	13 34.54	+15 3.4	2.936	3.745	9.9	21.2
3 12	13 30.47	+ 0 26.7	2.065	2.965	9.8	21.6	3 12	13 29.91	+16 9.0	2.875	3.752	8.1	21.1
3 22	13 24.52	+ 1 21.2	2.004	2.961	6.5	21.4	3 22	13 23.83	+17 9.9	2.839	3.759	6.7	21.0
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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
166678	2002 TY ₁₀₇		4 8.9 137°87	3°6/ 4.8 18			51360	2000 SZ ₂₅		4 8.9 261°72	1°6/11.9 18		
3 2	13 34.46	+ 1 59.5	2.460	3.276	11.4	20.4	3 2	13 26.65	-17 43.0	4.498	5.240	7.8	19.5
3 12	13 30.10	+ 2 51.0	2.388	3.285	8.8	20.3	3 12	13 23.53	-17 35.2	4.392	5.236	6.3	19.4
3 22	13 24.08	+ 3 45.8	2.340	3.293	6.0	20.1	3 22	13 19.49	-17 19.3	4.310	5.232	4.6	19.3
4 1	13 16.90	+ 4 38.8	2.319	3.302	3.8	20.0	4 1	13 14.81	-16 55.9	4.256	5.228	2.8	19.1
4 11	13 9.24	+ 5 25.1	2.328	3.310	4.2	20.0	4 11	13 9.83	-16 26.7	4.231	5.224	1.6	19.0
4 21	13 1.83	+ 6 0.4	2.366	3.318	6.6	20.2	4 21	13 4.91	-15 53.5	4.236	5.220	2.5	19.1
5 1	12 55.33	+ 6 21.6	2.430	3.325	9.4	20.4	5 1	13 0.42	-15 18.8	4.271	5.216	4.2	19.2
5 11	12 50.26	+ 6 27.5	2.518	3.332	11.9	20.5	5 11	12 56.65	-14 45.0	4.333	5.212	6.0	19.3
432537	2010 GK ₁₃₀		4 8.9 24°52	3°8/ 5.8 17			154672	2004 GR ₅		4 8.9 307°77	1°1/ 8.2 17		
3 2	13 37.13	+ 2 20.2	1.907	2.731	13.9	20.9	3 2	13 34.38	- 7 42.4	1.215	2.054	19.3	20.5
3 12	13 32.69	+ 2 42.4	1.833	2.734	10.7	20.7	3 12	13 32.20	- 7 23.4	1.125	2.034	15.2	20.1
3 22	13 26.06	+ 3 7.0	1.782	2.738	7.3	20.5	3 22	13 26.73	- 6 47.0	1.054	2.015	10.3	19.8
4 1	13 17.85	+ 3 29.1	1.757	2.743	4.3	20.3	4 1	13 18.52	- 5 56.6	1.004	1.997	4.6	19.4
4 11	13 8.98	+ 3 43.5	1.760	2.747	4.4	20.3	4 11	13 8.76	- 4 59.8	0.977	1.978	2.1	19.2
4 21	13 0.40	+ 3 46.3	1.789	2.752	7.5	20.5	4 21	12 58.99	- 4 5.9	0.975	1.961	8.1	19.5
5 1	12 53.03	+ 3 34.7	1.845	2.757	10.9	20.7	5 1	12 50.79	- 3 24.5	0.995	1.943	14.0	19.7
5 11	12 47.54	+ 3 8.3	1.923	2.762	14.0	20.9	5 11	12 45.42	- 3 2.6	1.033	1.927	19.2	20.0
142056	2002 QA ₂₄		4 8.9 182°45	0°5/ 9.3 18			462117	2007 RR ₁₃₁		4 8.9 94°69	0°9/ 8.1 18		
3 2	13 37.24	-11 8.9	1.801	2.599	15.6	20.5	3 2	13 39.34	- 7 37.4	1.601	2.412	16.7	22.2
3 12	13 33.09	-10 53.5	1.715	2.599	12.3	20.3	3 12	13 34.72	- 7 9.7	1.535	2.429	12.9	22.0
3 22	13 26.52	-10 23.5	1.650	2.599	8.4	20.0	3 22	13 27.54	- 6 29.1	1.491	2.447	8.5	21.8
4 1	13 18.13	- 9 41.2	1.610	2.599	3.9	19.8	4 1	13 18.54	- 5 40.1	1.472	2.464	3.7	21.5
4 11	13 8.89	- 8 51.5	1.597	2.599	1.0	19.5	4 11	13 8.84	- 4 49.0	1.480	2.480	1.7	21.4
4 21	12 59.87	- 8 0.5	1.612	2.598	5.5	19.9	4 21	12 59.60	- 4 2.6	1.515	2.497	6.3	21.8
5 1	12 52.09	- 7 14.6	1.654	2.597	9.8	20.1	5 1	12 51.89	- 3 27.0	1.576	2.513	10.7	22.1
5 11	12 46.35	- 6 39.3	1.719	2.596	13.6	20.3	5 11	12 46.42	- 3 6.0	1.660	2.528	14.4	22.3
87985	2000 TJ ₅₈		4 8.9 230°56	1°6/ 7.2 18			83293	2001 RL ₉₄		4 8.9 119°70	0°7/ 9.6 18		
3 2	13 34.91	- 5 56.5	2.226	3.030	12.8	20.5	3 2	13 32.19	-12 59.2	2.359	3.142	12.8	20.0
3 12	13 30.85	- 5 12.4	2.127	3.019	9.9	20.3	3 12	13 28.56	-12 25.1	2.272	3.148	10.1	19.8
3 22	13 24.83	- 4 17.8	2.053	3.008	6.5	20.0	3 22	13 23.17	-11 37.5	2.209	3.154	6.8	19.6
4 1	13 17.33	- 3 16.7	2.005	2.996	2.9	19.8	4 1	13 16.54	-10 38.9	2.172	3.160	3.3	19.4
4 11	13 9.11	- 2 14.5	1.986	2.984	2.2	19.7	4 11	13 9.37	- 9 33.9	2.164	3.165	0.8	19.2
4 21	13 0.99	- 1 16.9	1.996	2.971	5.7	19.9	4 21	13 2.40	- 8 27.7	2.185	3.170	4.3	19.5
5 1	12 53.79	- 0 29.3	2.034	2.958	9.4	20.1	5 1	12 56.35	- 7 25.9	2.234	3.176	7.7	19.7
5 11	12 48.20	+ 0 4.4	2.095	2.944	12.7	20.3	5 11	12 51.77	- 6 33.3	2.308	3.181	10.8	19.9
281271	2007 RC ₆		4 8.9 304°16	0°0/ 8.6 17			132336	2002 GM ₃₉		4 8.9 274°28	2°5/ 10.9 17		
3 2	13 31.15	-11 29.0	1.793	2.601	15.3	20.8	3 2	13 35.67	-16 3.3	1.627	2.417	17.4	20.2
3 12	13 28.63	-10 48.3	1.681	2.573	12.1	20.5	3 12	13 32.45	-15 58.1	1.524	2.400	14.1	19.9
3 22	13 23.76	- 9 49.0	1.591	2.544	8.2	20.2	3 22	13 26.48	-15 32.5	1.442	2.383	10.1	19.6
4 1	13 16.99	- 8 33.7	1.526	2.516	3.8	19.9	4 1	13 18.28	-14 46.8	1.382	2.365	5.7	19.3
4 11	13 9.17	- 7 8.3	1.487	2.488	1.1	19.6	4 11	13 8.86	-13 44.5	1.348	2.347	2.5	19.1
4 21	13 1.30	- 5 40.7	1.476	2.461	6.0	19.9	4 21	12 59.42	-12 32.3	1.341	2.329	5.9	19.2
5 1	12 54.45	- 4 19.8	1.490	2.433	10.7	20.1	5 1	12 51.25	-11 19.1	1.359	2.311	10.7	19.5
5 11	12 49.51	- 3 13.4	1.528	2.406	14.9	20.3	5 11	12 45.35	-10 14.1	1.400	2.293	15.1	19.7
141326	2001 YM ₁₃₆		4 8.9 70°47	4°3/ 4.9 18			275154	2009 VW ₉₅		4 8.9 269°80	0°5/ 9.4 17		
3 2	13 37.54	+ 5 9.1	2.239	3.055	12.3	19.5	3 2	13 34.35	-11 34.5	1.862	2.661	15.1	21.2
3 12	13 32.64	+ 5 34.7	2.166	3.061	9.6	19.3	3 12	13 30.83	-11 12.8	1.769	2.655	11.9	21.0
3 22	13 25.84	+ 6 0.4	2.117	3.067	6.7	19.2	3 22	13 25.03	-10 35.9	1.698	2.648	8.1	20.7
4 1	13 17.71	+ 6 21.4	2.095	3.074	4.5	19.0	4 1	13 17.49	- 9 46.3	1.653	2.642	3.8	20.5
4 11	13 9.03	+ 6 33.3	2.101	3.080	4.8	19.1	4 11	13 9.10	- 8 48.8	1.634	2.636	0.9	20.2
4 21	13 0.64	+ 6 32.8	2.136	3.086	7.3	19.2	4 21	13 0.86	- 7 49.7	1.643	2.629	5.3	20.5
5 1	12 53.31	+ 6 18.0	2.197	3.092	10.2	19.4	5 1	12 53.76	- 6 55.9	1.679	2.623	9.6	20.8
5 11	12 47.62	+ 5 48.9	2.281	3.099	12.8	19.6	5 11	12 48.55	- 6 13.0	1.738	2.617	13.4	21.0
150933	2001 TU ₇₄		4 8.9 188°47	1°5/ 7.4 17			210690	2000 SV ₃₈		4 8.9 195°74	2°0/ 7.0 17		
3 2	13 36.87	- 5 23.5	2.263	3.064	12.7	21.8	3 2	13 38.40	- 5 1.1	1.990	2.796	14.1	21.5
3 12	13 32.24	- 4 49.1	2.173	3.063	9.8	21.6	3 12	13 33.73	- 4 16.3	1.901	2.793	10.9	21.3
3 22	13 25.67	- 4 5.8	2.108	3.062	6.5	21.3	3 22	13 26.82	- 3 21.1	1.835	2.790	7.2	21.1
4 1	13 17.68	- 3 17.3	2.069	3.060	2.9	21.1	4 1	13 18.25	- 2 19.9	1.795	2.786	3.3	20.8
4 11	13 9.04	- 2 28.6	2.059	3.057	2.1	21.0	4 11	13 8.91	- 1 18.9	1.784	2.781	2.7	20.8
4 21	13 0.57	- 1 44.6	2.079	3.054	5.5	21.3	4 21	12 59.74	- 0 24.5	1.802	2.776	6.4	21.0
5 1	12 53.08	- 1 9.9	2.127	3.051	9.0	21.5	5 1	12 51.71	+ 0 17.8	1.847	2.769	10.3	21.2
5 11	12 47.21	- 0 47.7	2.199	3.047	12.2	21.7	5 11	12 45.54	+ 0 44.4	1.916	2.762	13.8	21.4
332191	2006 CG ₃₈		4 8.9 145°78	3°3/ 5.1 17			104487	2000 GO ₂₆		4 8.9 234°88	0°4/ 8.5 18		
3 2	13 33.71	- 1 29.1	2.203	3.020	12.5	21.3	3 2	13 34.31	- 8 15.9	2.239	3.037	12.9	19.7
3 12	13 29.76	- 0 17.1	2.128	3.027	9.5	21.1	3 12	13 30.35	- 7 55.0	2.146	3.033	10.1	19.5
3 22	13 23.97	+ 1 2.2	2.077	3.034	6.3	20.9	3 22	13 24.46	- 7 23.7	2.076	3.029	6.7	19.3
4 1	13 16.89	+ 2 23.0	2.054	3.040	3.6	20.7	4 1	13 17.17	- 6 45.0	2.033	3.024	3.0	19.0
4 11	13 9.26	+ 3 38.7	2.059	3.046	4.0	20.8	4 11	13 9.20	- 6 2.9	2.019	3.020	1.1	18.9
4 21	13 1.88	+ 4 43.0	2.094	3.052	6.9	20.9	4 21	13 1.37	- 5 22.2	2.033	3.015	4.9	19.2
5 1	12 55.50	+ 5 31.5	2.155	3.057	10.0	21.1	5 1	12 54.49	- 4 47.7	2.074	3.010	8.6	19.4
5 11	12 50.68	+ 6 1.9	2.239	3.062	12.8	21.3	5 11	12 49.18	- 4 23.0	2.140	3.005	11.8	19.6
341800	2007 XP ₂₅		4 8.9 133°26	0°1/ 8.7 17			161552	2004 XT ₈₀		4 8.9 178°07	1°8/ 7.2 18		
3 2	13 33.92	- 9											

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
365492	2010 <i>QC</i>		4 8.9 228°28	0°6/ 9.5 16			290417	2005 <i>TU</i> ₆₂		4 8.9 228°86	0°9/ 8.0 17		
3 2	13 38.24	-11 42.9	2.093	2.877	14.2	22.2	3 2	13 35.92	- 7 28.6	1.972	2.777	14.2	21.6
3 12	13 33.68	-11 24.6	1.988	2.864	11.3	22.0	3 12	13 31.90	- 6 58.9	1.879	2.770	11.1	21.4
3 22	13 26.88	-10 52.4	1.905	2.851	7.7	21.7	3 22	13 25.67	- 6 17.5	1.809	2.763	7.3	21.1
4 1	13 18.33	-10 8.1	1.848	2.836	3.7	21.4	4 1	13 17.78	- 5 28.0	1.765	2.756	3.2	20.9
4 11	13 8.88	- 9 15.7	1.820	2.821	0.9	21.2	4 11	13 9.08	- 4 35.5	1.749	2.749	1.6	20.7
4 21	12 59.47	- 8 20.7	1.821	2.806	5.1	21.5	4 21	13 0.52	- 3 46.0	1.761	2.741	5.8	21.0
5 1	12 51.09	- 7 29.3	1.849	2.789	9.2	21.7	5 1	12 53.05	- 3 5.2	1.799	2.733	9.8	21.2
5 11	12 44.51	- 6 46.8	1.903	2.772	12.9	21.9	5 11	12 47.40	- 2 37.3	1.862	2.725	13.4	21.4
336476	2008 <i>VA</i> ₂₇		4 8.9 253°55	1°8/10.6 17			31114	1997 <i>QB</i> ₁		4 8.9 42°89	3°1/ 6.9 18		
3 2	13 34.65	-14 40.2	2.071	2.852	14.4	20.9	3 2	13 38.00	- 2 59.4	1.230	2.071	18.9	18.8
3 12	13 30.87	-14 34.1	1.975	2.846	11.6	20.7	3 12	13 34.44	- 2 30.4	1.170	2.081	14.6	18.6
3 22	13 24.96	-14 13.0	1.901	2.841	8.2	20.4	3 22	13 27.75	- 1 50.9	1.128	2.091	9.6	18.3
4 1	13 17.45	-13 38.0	1.851	2.835	4.4	20.2	4 1	13 18.76	- 1 7.4	1.110	2.101	4.6	18.0
4 11	13 9.14	-12 52.5	1.830	2.829	1.8	20.0	4 11	13 8.84	- 0 28.3	1.115	2.112	3.9	18.0
4 21	13 0.95	-12 1.4	1.836	2.823	4.7	20.2	4 21	12 59.44	- 0 1.1	1.146	2.124	8.6	18.3
5 1	12 53.79	-11 10.8	1.870	2.817	8.6	20.4	5 1	12 51.88	+ 0 9.0	1.199	2.135	13.4	18.6
5 11	12 48.39	-10 26.3	1.928	2.811	12.1	20.6	5 11	12 47.04	- 0 0.5	1.273	2.147	17.6	18.9
245521	2005 <i>SG</i> ₁₁₃		4 8.9 218°65	6°0/16.4 18			174043	2002 <i>AZ</i> ₁₆₉		4 8.9 196°91	6°3/ 1.0 18		
3 2	13 34.47	-30 10.9	2.743	3.421	13.6	20.6	3 2	13 33.28	+11 41.2	2.474	3.296	11.1	20.2
3 12	13 30.43	-30 34.9	2.636	3.416	11.8	20.5	3 12	13 29.29	+12 49.7	2.404	3.295	9.0	20.1
3 22	13 24.52	-30 40.8	2.550	3.411	9.7	20.3	3 22	13 23.61	+13 55.4	2.359	3.294	7.1	20.0
4 1	13 17.21	-30 26.7	2.486	3.406	7.7	20.2	4 1	13 16.75	+14 52.3	2.341	3.293	6.3	19.9
4 11	13 9.20	-29 53.0	2.449	3.400	6.3	20.1	4 11	13 9.38	+15 34.7	2.351	3.292	7.1	20.0
4 21	13 1.27	-29 2.0	2.439	3.395	6.2	20.1	4 21	13 2.21	+15 58.7	2.387	3.290	9.0	20.1
5 1	12 54.19	-27 58.3	2.456	3.389	7.6	20.1	5 1	12 55.94	+16 2.7	2.447	3.289	11.2	20.2
5 11	12 48.62	-26 48.0	2.500	3.383	9.7	20.3	5 11	12 51.10	+15 47.1	2.529	3.288	13.3	20.4
264514	2001 <i>QL</i> ₂₄₉		4 8.9 144°30	0°9/ 7.9 18			350163	2011 <i>SV</i> ₂₆₁		4 8.9 120°99	7°4/20.2 18		
3 2	13 38.01	- 6 42.6	2.184	2.980	13.3	21.1	3 2	13 34.84	-38 3.7	2.772	3.390	14.5	20.8
3 12	13 33.11	- 6 17.2	2.104	2.991	10.3	21.0	3 12	13 30.70	-38 13.3	2.678	3.401	13.0	20.7
3 22	13 26.22	- 5 42.5	2.047	3.000	6.8	20.7	3 22	13 24.65	-38 0.5	2.601	3.411	11.2	20.5
4 1	13 17.93	- 5 1.9	2.018	3.009	3.0	20.5	4 1	13 17.23	-37 23.0	2.545	3.421	9.4	20.4
4 11	13 9.03	- 4 19.9	2.018	3.018	1.5	20.4	4 11	13 9.24	-36 21.3	2.515	3.431	7.9	20.3
4 21	13 0.40	- 3 41.4	2.047	3.025	5.2	20.7	4 21	13 1.51	-34 58.4	2.510	3.440	7.4	20.3
5 1	12 52.85	- 3 10.8	2.103	3.033	8.8	20.9	5 1	12 54.81	-33 19.8	2.533	3.450	8.1	20.4
5 11	12 47.00	- 2 51.3	2.184	3.040	12.0	21.1	5 11	12 49.76	-31 32.9	2.582	3.459	9.6	20.5
341823	2007 <i>YB</i> ₆₉		4 8.9 87°24	0°1/ 8.8 17			273545	2007 <i>BK</i> ₅₂		4 8.9 169°96	0°8/ 9.7 17		
3 2	13 34.03	- 9 17.7	2.331	3.125	12.6	21.5	3 2	13 37.92	-12 1.0	2.304	3.081	13.3	21.9
3 12	13 29.91	- 8 55.6	2.255	3.139	9.8	21.3	3 12	13 33.05	-11 45.9	2.213	3.085	10.5	21.7
3 22	13 24.03	- 8 23.3	2.202	3.153	6.5	21.1	3 22	13 26.22	-11 18.5	2.146	3.089	7.1	21.5
4 1	13 16.92	- 7 43.7	2.176	3.167	2.9	20.9	4 1	13 17.96	-10 40.8	2.105	3.092	3.5	21.3
4 11	13 9.31	- 7 0.7	2.179	3.180	0.8	20.7	4 11	13 9.05	- 9 56.4	2.094	3.095	0.9	21.1
4 21	13 1.95	- 6 19.0	2.211	3.194	4.5	21.0	4 21	13 0.32	- 9 9.9	2.112	3.097	4.5	21.4
5 1	12 55.56	- 5 42.8	2.271	3.208	7.9	21.3	5 1	12 52.61	- 8 26.4	2.158	3.098	8.1	21.6
5 11	12 50.69	- 5 15.8	2.355	3.221	10.8	21.5	5 11	12 46.53	- 7 50.5	2.230	3.098	11.3	21.8
505160	2012 <i>RE</i> ₁₂		4 8.9 287°14	5°0/13.3 17			356932	2012 <i>SE</i> ₃₀		4 8.9 98°94	0°3/ 9.2 17		
3 2	13 34.72	-22 9.9	1.948	2.699	16.2	20.8	3 2	13 34.13	-10 45.3	2.164	2.957	13.5	21.4
3 12	13 31.35	-22 29.9	1.840	2.683	13.6	20.6	3 12	13 30.20	-10 23.1	2.082	2.964	10.6	21.2
3 22	13 25.55	-22 30.5	1.752	2.666	10.5	20.3	3 22	13 24.35	- 9 48.7	2.023	2.972	7.1	21.0
4 1	13 17.82	-22 9.8	1.687	2.649	7.3	20.1	4 1	13 17.11	- 9 4.7	1.990	2.979	3.3	20.8
4 11	13 9.02	-21 28.8	1.647	2.632	5.1	19.9	4 11	13 9.28	- 8 15.6	1.985	2.987	0.8	20.6
4 21	13 0.21	-20 31.4	1.634	2.616	6.0	19.9	4 21	13 1.69	- 7 26.4	2.009	2.994	4.7	20.9
5 1	12 52.47	-19 24.4	1.648	2.599	9.3	20.1	5 1	12 55.11	- 6 42.3	2.060	3.001	8.3	21.1
5 11	12 46.70	-18 16.1	1.686	2.582	12.8	20.2	5 11	12 50.17	- 6 7.7	2.136	3.008	11.5	21.3
372071	2008 <i>SP</i> ₁		4 8.9 249°53	14°8/15.4 18			499734	2011 <i>BM</i> ₂₉		4 8.9 141°28	5°9/ 3.2 18		
3 2	13 47.93	-30 57.8	1.213	1.941	25.3	20.9	3 2	13 36.91	+ 6 32.0	1.952	2.778	13.5	21.9
3 12	13 44.15	-33 24.4	1.127	1.933	22.7	20.7	3 12	13 32.47	+ 7 39.9	1.885	2.785	10.6	21.7
3 22	13 35.76	-35 29.3	1.055	1.924	19.7	20.4	3 22	13 25.89	+ 8 48.5	1.842	2.791	7.7	21.5
4 1	13 23.06	-36 59.4	1.002	1.915	16.9	20.2	4 1	13 17.81	+ 9 50.7	1.825	2.797	6.0	21.4
4 11	13 7.49	-37 43.7	0.968	1.905	15.0	20.1	4 11	13 9.11	+10 39.2	1.836	2.802	6.7	21.5
4 21	12 51.36	-37 37.8	0.955	1.895	15.2	20.0	4 21	13 0.73	+11 9.0	1.873	2.807	9.3	21.6
5 1	12 37.33	-36 47.6	0.962	1.885	17.3	20.1	5 1	12 53.55	+11 17.4	1.935	2.812	12.2	21.8
5 11	12 27.45	-35 29.4	0.987	1.874	20.4	20.3	5 11	12 48.21	+11 4.6	2.018	2.817	14.9	22.0
499268	2009 <i>VM</i> ₄₇		4 8.9 190°35	0°0/ 8.9 17			413892	2006 <i>VC</i> ₁₂₄		4 8.9 7°67	2°8/ 7.3 17		
3 2	13 33.90	-11 9.4	1.941	2.739	14.6	21.9	3 2	13 32.96	- 2 24.6	1.081	1.940	19.7	19.3
3 12	13 30.32	-10 33.7	1.853	2.739	11.5	21.7	3 12	13 30.96	- 2 21.3	1.020	1.941	15.3	19.0
3 22	13 24.59	- 9 43.0	1.788	2.739	7.7	21.5	3 22	13 25.68	- 2 9.2	0.978	1.944	10.1	18.7
4 1	13 17.27	- 8 40.4	1.748	2.738	3.5	21.2	4 1	13 17.92	- 1 53.7	0.956	1.949	4.8	18.5
4 11	13 9.22	- 7 31.5	1.736	2.738	0.9	21.0	4 11	13 9.07	- 1 42.2	0.958	1.956	3.6	18.4
4 21	13 1.37	- 6 23.0	1.752	2.737	5.3	21.3	4 21	13 0.68	- 1 41.0	0.982	1.965	8.6	18.7
5 1	12 54.63	- 5 21.5	1.795	2.736	9.3	21.6	5 1	12 54.17	- 1 54.7	1.027	1.975	13.8	19.0
5 11	12 49.69	- 4 32.6	1.862	2.735	12.9	21.8	5 11	12 50.47	- 2 25.4	1.091	1.987	18.2	19.3
18341	1989 <i>SJ</i> ₅		4 8.9 327°21	3°0/ 6.9 18			410380	2007 <i>VO</i> ₂₃₇		4 8.9 25°58	2°7/ 7.2 18		

EPHEMERIDES

4 8.9

4 8.9

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
312947	1995 SC ₄₆		4 8.9 89°04	0°2/ 9.0 18			33039	1997 SA ₂₅		4 8.9 196°24	0°6/ 9.6 18		
3 2	13 38.59	-10 25.8	1.624	2.428	16.8	20.8	3 2	13 34.87	-13 47.7	2.272	3.050	13.4	19.7
3 12	13 34.17	-10 5.7	1.557	2.445	13.1	20.6	3 12	13 30.79	-13 2.5	2.175	3.047	10.6	19.5
3 22	13 27.21	-9 30.7	1.511	2.463	8.8	20.3	3 22	13 24.79	-12 1.5	2.100	3.044	7.3	19.3
4 1	13 18.44	-8 44.0	1.489	2.479	4.0	20.1	4 1	13 17.36	-10 47.2	2.052	3.040	3.5	19.0
4 11	13 8.95	-7 51.6	1.494	2.496	1.0	19.9	4 11	13 9.28	-9 24.6	2.034	3.035	0.9	18.8
4 21	12 59.91	-7 0.1	1.527	2.512	5.8	20.3	4 21	13 1.35	-8 0.2	2.045	3.030	4.6	19.1
5 1	12 52.35	-6 16.3	1.586	2.529	10.2	20.6	5 1	12 54.39	-6 40.5	2.085	3.025	8.3	19.3
5 11	12 47.01	-5 45.1	1.667	2.544	14.0	20.8	5 11	12 49.02	-5 31.6	2.150	3.018	11.6	19.5
986	Amelia		4 8.9 200°12	5°2/ 1.7 18 R			401388	2013 CH ₃₃		4 8.9 327°29	3°6/ 11.6 18		
3 2	13 33.84	+10 37.8	2.940	3.753	9.8	15.3	3 2	13 31.67	-18 11.3	1.250	2.059	20.6	20.3
3 12	13 29.46	+11 35.6	2.862	3.749	7.8	15.1	3 12	13 29.99	-18 6.5	1.164	2.049	16.8	20.0
3 22	13 23.62	+12 31.6	2.809	3.745	6.1	15.0	3 22	13 25.17	-17 34.1	1.096	2.040	12.3	19.7
4 1	13 16.74	+13 20.8	2.785	3.740	5.2	14.9	4 1	13 17.81	-16 33.6	1.049	2.031	7.3	19.4
4 11	13 9.41	+13 58.7	2.789	3.735	5.9	15.0	4 11	13 9.13	-15 9.9	1.025	2.023	3.6	19.1
4 21	13 2.24	+14 22.1	2.821	3.730	7.6	15.1	4 21	13 0.59	-13 32.7	1.025	2.016	6.7	19.3
5 1	12 55.80	+14 29.1	2.880	3.724	9.6	15.2	5 1	12 53.69	-11 54.7	1.048	2.009	12.0	19.5
5 11	12 50.59	+14 19.7	2.960	3.718	11.6	15.3	5 11	12 49.51	-10 28.3	1.092	2.003	16.9	19.8
94391	2001 SE ₁₁₃		4 8.9 107°99	1°1/ 8.1 18			164439	2006 DM ₆		4 8.9 179°30	9°9/ 13.5 18		
3 2	13 39.84	-7 23.4	1.552	2.365	17.0	20.3	3 2	13 51.92	-24 16.9	1.369	2.110	22.3	20.7
3 12	13 35.26	-6 55.2	1.483	2.378	13.2	20.1	3 12	13 46.25	-26 13.8	1.284	2.111	19.2	20.4
3 22	13 28.01	-6 13.8	1.436	2.392	8.7	19.9	3 22	13 36.46	-27 52.1	1.216	2.112	15.6	20.2
4 1	13 18.83	-5 23.8	1.413	2.405	3.8	19.6	4 1	13 23.11	-29 3.1	1.170	2.112	12.1	20.0
4 11	13 8.86	-4 31.6	1.417	2.418	1.9	19.5	4 11	13 7.67	-29 40.2	1.148	2.112	10.0	19.9
4 21	12 59.33	-3 44.5	1.449	2.430	6.6	19.8	4 21	12 52.13	-29 42.5	1.150	2.112	10.8	19.9
5 1	12 51.36	-3 8.7	1.505	2.442	11.1	20.1	5 1	12 38.59	-29 16.8	1.177	2.110	13.8	20.1
5 11	12 45.72	-2 48.2	1.584	2.454	15.0	20.4	5 11	12 28.60	-28 35.4	1.225	2.109	17.5	20.3
173906	2001 UD ₂₂₅		4 8.9 107°51	0°9/ 7.9 18			260075	2004 HJ ₇₂		4 8.9 354°70	12°0/ 27.1 17		
3 2	13 37.21	-5 17.8	2.788	3.577	10.9	20.8	3 2	13 32.54	+21 40.4	1.657	2.489	15.2	19.5
3 12	13 31.97	-5 5.2	2.716	3.599	8.4	20.6	3 12	13 29.66	+23 20.7	1.606	2.484	13.4	19.4
3 22	13 25.21	-4 46.8	2.669	3.620	5.5	20.5	3 22	13 24.30	+24 48.1	1.576	2.479	12.2	19.3
4 1	13 17.42	-4 25.0	2.650	3.641	2.4	20.3	4 1	13 17.18	+25 51.9	1.569	2.476	12.2	19.3
4 11	13 9.25	-4 2.9	2.661	3.661	1.3	20.2	4 11	13 9.34	+26 23.8	1.584	2.474	13.4	19.3
4 21	13 1.33	-3 43.7	2.703	3.681	4.2	20.5	4 21	13 1.87	+26 20.3	1.619	2.472	15.3	19.5
5 1	12 54.29	-3 30.2	2.774	3.700	7.1	20.7	5 1	12 55.79	+25 41.7	1.674	2.472	17.4	19.6
5 11	12 48.60	-3 24.3	2.871	3.719	9.6	20.9	5 11	12 51.81	+24 32.4	1.745	2.472	19.4	19.8
6251	Setsuboko		4 8.9 22°93	3°5/ 6.3 18			391390	2006 WR ₁₇₃		4 8.9 117°69	3°5/ 5.0 17		
3 2	13 34.81	-3 21.0	1.281	2.124	18.2	16.7	3 2	13 34.55	+2 40.8	2.464	3.279	11.4	21.4
3 12	13 31.95	-2 27.8	1.214	2.127	14.0	16.5	3 12	13 30.23	+3 18.0	2.388	3.285	8.8	21.3
3 22	13 26.12	-1 21.8	1.167	2.130	9.3	16.2	3 22	13 24.23	+3 57.4	2.337	3.290	6.0	21.1
4 1	13 18.07	-0 10.6	1.143	2.134	4.7	15.9	4 1	13 17.05	+4 34.7	2.313	3.295	3.8	21.0
4 11	13 9.05	+0 55.9	1.143	2.138	4.5	15.9	4 11	13 9.38	+5 5.3	2.318	3.300	4.1	21.0
4 21	13 0.43	+1 48.5	1.168	2.143	9.0	16.2	4 21	13 1.93	+5 25.4	2.351	3.305	6.5	21.1
5 1	12 53.48	+2 20.4	1.217	2.148	13.7	16.5	5 1	12 55.38	+5 32.5	2.411	3.310	9.3	21.3
5 11	12 49.07	+2 28.6	1.284	2.153	17.8	16.7	5 11	12 50.26	+5 25.6	2.495	3.315	11.8	21.5
131612	2001 XU ₂₄		4 8.9 111°13	2°2/ 7.2 18			342923	2008 YN ₁₆₈		4 8.9 135°50	4°9/ 3.7 18		
3 2	13 41.63	-4 4.0	1.651	2.464	16.2	19.9	3 2	13 35.60	+6 6.3	2.289	3.110	12.0	20.6
3 12	13 36.41	-3 32.5	1.586	2.482	12.4	19.7	3 12	13 31.16	+6 56.8	2.218	3.115	9.3	20.4
3 22	13 28.64	-2 51.8	1.543	2.499	8.2	19.5	3 22	13 24.90	+7 47.7	2.172	3.120	6.7	20.3
4 1	13 19.07	-2 6.8	1.525	2.516	3.8	19.3	4 1	13 17.36	+8 33.5	2.152	3.125	5.0	20.2
4 11	13 8.82	-1 24.2	1.536	2.533	2.9	19.2	4 11	13 9.30	+9 8.6	2.160	3.130	5.6	20.2
4 21	12 59.05	-0 49.8	1.573	2.549	6.9	19.5	4 21	13 1.49	+9 29.1	2.196	3.135	7.9	20.3
5 1	12 50.81	-0 28.6	1.637	2.564	11.1	19.8	5 1	12 54.68	+9 32.7	2.258	3.139	10.5	20.5
5 11	12 44.81	-0 23.0	1.723	2.578	14.6	20.1	5 11	12 49.44	+9 19.0	2.343	3.144	13.0	20.7
6696	Eubanks		4 8.9 277°88	0°3/ 9.1 18			131767	2002 AZ ₁₂		4 8.9 282°42	5°3/ 4.3 17		
3 2	13 35.37	-10 14.9	1.966	2.764	14.5	18.2	3 2	13 34.57	+0 32.6	1.484	2.324	16.3	19.9
3 12	13 31.66	-10 0.3	1.859	2.744	11.5	17.9	3 12	13 31.60	+1 50.0	1.399	2.310	12.7	19.6
3 22	13 25.67	-9 32.5	1.774	2.725	7.8	17.7	3 22	13 25.89	+3 18.2	1.335	2.295	8.7	19.3
4 1	13 17.87	-8 53.5	1.715	2.705	3.6	17.4	4 1	13 18.03	+4 48.5	1.296	2.281	5.6	19.1
4 11	13 9.09	-8 7.5	1.683	2.685	0.9	17.1	4 11	13 9.08	+6 10.3	1.283	2.267	6.4	19.1
4 21	13 0.31	-7 20.0	1.679	2.664	5.4	17.4	4 21	13 0.27	+7 14.0	1.295	2.252	10.3	19.3
5 1	12 52.54	-6 37.0	1.702	2.644	9.7	17.6	5 1	12 52.82	+7 52.5	1.330	2.238	14.5	19.5
5 11	12 46.59	-6 3.9	1.749	2.623	13.5	17.8	5 11	12 47.66	+8 3.5	1.384	2.223	18.4	19.7
243988	2001 RF ₇₆		4 8.9 168°78	2°1/ 7.1 18			436690	2011 SL ₁₉₆		4 8.9 292°24	0°5/ 8.4 17		
3 2	13 41.29	-3 53.3	1.977	2.780	14.2	21.1	3 2	13 32.22	-8 52.9	2.156	2.959	13.2	21.6
3 12	13 35.90	-3 18.9	1.895	2.785	11.0	20.9	3 12	13 28.89	-8 22.1	2.058	2.947	10.3	21.4
3 22	13 28.23	-2 35.9	1.836	2.790	7.3	20.7	3 22	13 23.62	-7 39.2	1.983	2.936	6.9	21.1
4 1	13 18.91	-1 48.8	1.804	2.794	3.4	20.4	4 1	13 16.88	-6 47.3	1.934	2.925	3.0	20.9
4 11	13 8.85	-1 3.2	1.801	2.797	2.7	20.4	4 11	13 9.41	-5 51.3	1.913	2.914	1.2	20.7
4 21	12 59.07	-0 24.6	1.827	2.799	6.4	20.6	4 21	13 2.05	-4 56.7	1.920	2.903	5.1	21.0
5 1	12 50.51	+0 2.3	1.880	2.801	10.2	20.9	5 1	12 55.61	-4 9.0	1.955	2.892	8.9	21.2
5 11	12 43.89	+0 14.6	1.957	2.801	13.6	21.1	5 11	12 50.75	-3 32.6	2.013	2.881	12.3	21.4
70090	1999 JN ₇₆		4 8.9 317°70	6°7/ 3.9 18			474056	2016 HJ ₆		4 8.9 260°61	5°8/ 3.7 18		
3 2	13 33.07	+2 49.2	1.256	2.112	17.7	18.4	3 2	13 38.49	+6 52.3	2.001	2.822	13.4	20.9
3 12	13 30.93												

EPHEMERIDES

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
361138	2006 <i>HP</i> ₄₄		4 8.9 129°84	5°1/ 5.2 18			74005	1998 <i>FH</i> ₇₀		4 8.9 298°18	3°0/ 6.7 17		
3 2	13 42.04	+ 3 46.1	1.644	2.468	15.7	20.8	3 2	13 35.13	- 3 43.6	1.473	2.306	16.8	19.4
3 12	13 36.83	+ 4 24.4	1.576	2.476	12.2	20.6	3 12	13 32.26	- 3 4.5	1.374	2.282	13.1	19.1
3 22	13 29.01	+ 5 5.0	1.529	2.483	8.5	20.4	3 22	13 26.53	- 2 12.3	1.296	2.258	8.8	18.8
4 1	13 19.29	+ 5 41.1	1.508	2.490	5.5	20.2	4 1	13 18.44	- 1 12.5	1.242	2.233	4.3	18.5
4 11	13 8.80	+ 6 5.7	1.515	2.497	5.8	20.3	4 11	13 9.03	- 0 13.1	1.213	2.210	3.8	18.4
4 21	12 58.73	+ 6 13.9	1.548	2.504	9.0	20.4	4 21	12 59.56	+ 0 37.4	1.210	2.186	8.5	18.6
5 1	12 50.18	+ 6 3.1	1.605	2.510	12.7	20.7	5 1	12 51.39	+ 1 11.3	1.230	2.162	13.5	18.8
5 11	12 43.90	+ 5 33.2	1.685	2.516	16.0	20.9	5 11	12 45.58	+ 1 23.8	1.271	2.139	18.0	19.0
497402	2005 <i>WJ</i> ₄		4 8.9 230°41	11°3/23.2 18			67001	1999 <i>XN</i> ₁₁₇		4 8.9 170°30	1°8/10.7 18		
3 2	13 43.48	-47 18.9	2.715	3.242	16.3	21.6	3 2	13 36.37	-14 31.6	2.237	3.009	13.7	19.9
3 12	13 38.33	-48 22.7	2.600	3.228	15.3	21.5	3 12	13 32.01	-14 30.0	2.145	3.011	11.0	19.7
3 22	13 30.36	-49 4.0	2.498	3.212	14.1	21.3	3 22	13 25.64	-14 14.9	2.076	3.013	7.7	19.5
4 1	13 20.10	-49 16.8	2.415	3.196	12.9	21.2	4 1	13 17.79	-13 47.4	2.032	3.015	4.2	19.3
4 11	13 8.53	-48 57.4	2.351	3.179	11.9	21.1	4 11	13 9.25	-13 10.4	2.017	3.016	1.8	19.1
4 21	12 56.90	-48 5.1	2.310	3.161	11.4	21.0	4 21	13 0.87	-12 28.2	2.030	3.017	4.4	19.3
5 1	12 46.50	-46 43.3	2.292	3.142	11.6	21.0	5 1	12 53.49	-11 46.1	2.072	3.017	8.0	19.5
5 11	12 38.35	-44 59.4	2.298	3.123	12.5	21.0	5 11	12 47.77	-11 9.0	2.138	3.018	11.2	19.7
16724	Ulliloztman		4 8.9 121°54	9°4/25.2 18			520990	2015 <i>AY</i> ₂₈₆		4 8.9 53°94	0°8/ 8.3 17		
3 2	13 38.88	+28 5.4	2.861	3.634	11.0	19.8	3 2	13 38.73	- 5 59.5	1.750	2.560	15.5	21.4
3 12	13 33.33	+29 46.4	2.838	3.659	10.0	19.7	3 12	13 34.19	- 5 59.1	1.676	2.570	12.0	21.2
3 22	13 26.13	+31 13.9	2.839	3.683	9.4	19.7	3 22	13 27.24	- 5 49.6	1.625	2.580	8.0	21.0
4 1	13 17.85	+32 21.4	2.866	3.706	9.5	19.8	4 1	13 18.53	- 5 34.1	1.599	2.590	3.5	20.7
4 11	13 9.21	+33 4.6	2.918	3.728	10.2	19.8	4 11	13 9.08	- 5 16.9	1.600	2.601	1.5	20.6
4 21	13 0.95	+33 22.2	2.992	3.750	11.3	19.9	4 21	12 59.96	- 5 2.5	1.628	2.611	5.9	20.9
5 1	12 53.72	+33 14.8	3.087	3.770	12.5	20.1	5 1	12 52.19	- 4 55.2	1.683	2.622	10.0	21.2
5 11	12 47.99	+32 45.3	3.199	3.790	13.5	20.2	5 11	12 46.49	- 4 58.2	1.761	2.633	13.6	21.4
189255	2004 <i>TP</i> ₂₄₇		4 8.9 227°47	5°4/ 2.6 18			399159	2014 <i>FH</i> ₁₇		4 8.9 125°11	2°8/ 4.7 17		
3 2	13 34.72	+ 5 54.3	2.271	3.093	12.0	20.8	3 2	13 31.73	- 1 46.1	2.815	3.623	10.3	21.6
3 12	13 30.66	+ 7 12.0	2.185	3.083	9.4	20.6	3 12	13 27.84	- 0 18.0	2.742	3.638	7.8	21.4
3 22	13 24.71	+ 8 32.5	2.125	3.073	6.9	20.4	3 22	13 22.55	+ 1 16.3	2.696	3.651	5.2	21.3
4 1	13 17.35	+ 9 49.2	2.091	3.062	5.4	20.3	4 1	13 16.31	+ 2 51.7	2.680	3.665	3.1	21.2
4 11	13 9.33	+10 55.0	2.086	3.050	6.3	20.3	4 11	13 9.68	+ 4 22.1	2.694	3.678	3.5	21.2
4 21	13 1.44	+11 44.3	2.109	3.038	8.7	20.4	4 21	13 3.26	+ 5 42.5	2.739	3.691	5.8	21.4
5 1	12 54.48	+12 13.6	2.157	3.025	11.5	20.6	5 1	12 57.61	+ 6 48.9	2.812	3.703	8.4	21.6
5 11	12 49.07	+12 21.7	2.226	3.012	14.1	20.7	5 11	12 53.16	+ 7 38.9	2.910	3.715	10.6	21.7
211932	2004 <i>VR</i> ₈₀		4 8.9 172°22	1°7/10.4 18			201514	2003 <i>OV</i> ₁₉		4 8.9 256°83	6°0/14.9 18		
3 2	13 41.03	-13 50.3	1.949	2.724	15.4	21.3	3 2	13 35.95	-26 53.0	2.221	2.934	15.5	20.3
3 12	13 35.92	-13 49.7	1.859	2.728	12.3	21.1	3 12	13 32.11	-27 16.8	2.110	2.919	13.3	20.1
3 22	13 28.39	-13 34.3	1.791	2.731	8.6	20.8	3 22	13 25.99	-27 20.6	2.017	2.904	10.8	19.9
4 1	13 19.06	-13 5.1	1.749	2.733	4.5	20.6	4 1	13 18.07	-27 2.0	1.948	2.889	8.1	19.7
4 11	13 8.88	-12 25.5	1.735	2.735	1.7	20.4	4 11	13 9.17	-26 21.2	1.905	2.874	6.2	19.6
4 21	12 58.90	-11 40.6	1.750	2.736	5.1	20.6	4 21	13 0.27	-25 21.1	1.888	2.858	6.5	19.6
5 1	12 50.16	-10 56.4	1.792	2.736	9.1	20.9	5 1	12 52.37	-24 7.7	1.899	2.842	8.8	19.7
5 11	12 43.44	-10 18.7	1.859	2.735	12.8	21.1	5 11	12 46.30	-22 49.1	1.934	2.825	11.7	19.8
390180	2012 <i>WP</i> ₁₁		4 8.9 112°79	0°2/ 8.7 17			386975	2012 <i>LQ</i> ₁₈		4 8.9 50°32	21°6/27.9 18		
3 2	13 33.60	- 9 15.2	2.548	3.338	11.8	22.3	3 2	13 53.64	+35 18.4	1.060	1.858	24.2	20.1
3 12	13 29.47	- 8 47.5	2.469	3.351	9.1	22.1	3 12	13 47.39	+37 3.0	1.035	1.865	22.6	20.0
3 22	13 23.71	- 8 10.2	2.413	3.363	6.1	21.9	3 22	13 36.58	+38 10.9	1.024	1.873	21.7	20.0
4 1	13 16.84	- 7 25.9	2.385	3.375	2.7	21.7	4 1	13 22.70	+38 25.3	1.029	1.881	21.6	20.0
4 11	13 9.49	- 6 38.8	2.386	3.388	0.8	21.6	4 11	13 8.07	+37 37.5	1.050	1.889	22.4	20.1
4 21	13 2.37	- 5 53.0	2.417	3.399	4.2	21.9	4 21	12 54.97	+35 49.8	1.086	1.897	23.9	20.2
5 1	12 56.13	- 5 12.8	2.476	3.411	7.4	22.1	5 1	12 45.07	+33 12.2	1.138	1.906	25.6	20.4
5 11	12 51.26	- 4 41.5	2.560	3.422	10.2	22.3	5 11	12 39.11	+29 59.3	1.203	1.915	27.3	20.5
410396	2007 <i>WL</i> ₄₁		4 8.9 186°35	0°3/ 8.6 18			297271	1995 <i>WH</i> ₁₈		4 8.9 113°83	2°7/ 6.4 18		
3 2	13 36.42	-10 47.8	1.875	2.672	15.1	22.0	3 2	13 37.67	+ 0 30.1	2.368	3.177	12.0	20.7
3 12	13 32.38	-10 2.5	1.787	2.673	11.8	21.8	3 12	13 32.74	+ 0 44.2	2.287	3.180	9.3	20.5
3 22	13 26.05	- 9 1.2	1.721	2.672	7.9	21.6	3 22	13 25.97	+ 1 1.3	2.230	3.184	6.2	20.3
4 1	13 18.01	- 7 47.4	1.680	2.671	3.5	21.3	4 1	13 17.90	+ 1 17.8	2.200	3.188	3.3	20.2
4 11	13 9.17	- 6 27.6	1.668	2.669	1.1	21.1	4 11	13 9.26	+ 1 29.8	2.200	3.191	3.1	20.1
4 21	13 0.56	- 5 9.1	1.684	2.667	5.7	21.4	4 21	13 0.84	+ 1 34.1	2.228	3.195	5.9	20.3
5 1	12 53.12	- 3 59.6	1.728	2.665	9.9	21.7	5 1	12 53.39	+ 1 28.2	2.284	3.198	9.0	20.5
5 11	12 47.62	- 3 4.7	1.795	2.661	13.6	21.9	5 11	12 47.49	+ 1 11.1	2.364	3.201	11.8	20.7
159857	2004 <i>LJ</i> ₁		4 8.9 198°79	4°7/15.1 17 A			63932	2001 <i>SZ</i> ₄₈		4 8.9 263°53	1°8/ 6.9 18		
3 2	13 41.42	-28 35.5	2.928	3.598	12.9	21.3	3 2	13 31.53	- 5 48.2	2.237	3.048	12.5	19.5
3 12	13 35.58	-28 24.2	2.810	3.592	11.1	21.1	3 12	13 28.21	- 4 53.3	2.149	3.045	9.6	19.3
3 22	13 27.87	-27 53.9	2.713	3.585	8.9	20.9	3 22	13 23.08	- 3 48.0	2.084	3.041	6.3	19.1
4 1	13 18.76	-27 3.4	2.642	3.577	6.6	20.8	4 1	13 16.63	- 2 36.7	2.047	3.038	2.9	18.9
4 11	13 8.98	-25 53.8	2.600	3.568	4.9	20.7	4 11	13 9.58	- 1 25.4	2.038	3.035	2.4	18.8
4 21	12 59.32	-24 28.9	2.589	3.557	5.1	20.6	4 21	13 2.70	- 0 20.0	2.058	3.032	5.7	19.0
5 1	12 50.58	-22 54.4	2.609	3.545	7.0	20.8	5 1	12 56.72	+ 0 34.1	2.105	3.028	9.2	19.2
5 11	12 43.36	-21 17.2	2.657	3.531	9.5	20.9	5 11	12 52.24	+ 1 13.4	2.176	3.025	12.2	19.4
499340	2009 <i>WK</i> ₂₁₄		4 8.9 152°76	1°3/10.2 17			428015	2006 <i>BL</i> ₁₄₃		4 8.9 176°58	2°2/ 6.6 17</		

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
380608	2004 TA ₇₀		4 8.9 217°21	2°3/ 6.3 18			185301	2006 UY ₂₆₆		4 8.9 141°26	1°1/ 7.8 18		
3 2	13 35.74	- 2 41.5	2.496	3.299	11.6	21.8	3 2	13 37.35	- 4 9.8	2.497	3.294	11.8	20.1
3 12	13 31.29	- 1 56.1	2.398	3.290	8.9	21.6	3 12	13 32.45	- 4 4.9	2.410	3.298	9.1	19.9
3 22	13 25.07	- 1 3.6	2.325	3.280	5.9	21.4	3 22	13 25.77	- 3 54.4	2.348	3.301	6.0	19.7
4 1	13 17.54	- 0 8.0	2.280	3.269	3.0	21.2	4 1	13 17.83	- 3 41.0	2.314	3.305	2.7	19.5
4 11	13 9.37	+ 0 45.7	2.265	3.258	2.9	21.1	4 11	13 9.33	- 3 27.7	2.309	3.308	1.6	19.4
4 21	13 1.30	+ 1 32.6	2.279	3.246	5.8	21.3	4 21	13 1.00	- 3 17.8	2.333	3.311	4.8	19.7
5 1	12 54.06	+ 2 8.7	2.321	3.233	9.0	21.5	5 1	12 53.59	- 3 14.1	2.386	3.314	8.0	19.9
5 11	12 48.26	+ 2 31.0	2.387	3.220	11.9	21.6	5 11	12 47.64	- 3 18.8	2.464	3.317	10.9	20.0
219627	2001 TU ₂₁₀		4 8.9 261°61	3°9/12.4 17			11823	Christen		4 8.9 217°73	0°6/ 8.4 18		
3 2	13 35.30	-20 2.5	1.849	2.613	16.5	20.5	3 2	13 39.50	- 7 52.5	2.116	2.908	13.8	18.8
3 12	13 31.83	-20 7.4	1.751	2.605	13.6	20.3	3 12	13 34.62	- 7 30.3	2.015	2.898	10.8	18.6
3 22	13 25.89	-19 52.1	1.672	2.597	10.2	20.0	3 22	13 27.52	- 6 57.2	1.937	2.888	7.2	18.4
4 1	13 18.05	-19 15.9	1.617	2.589	6.5	19.8	4 1	13 18.73	- 6 15.9	1.886	2.877	3.2	18.1
4 11	13 9.22	-18 21.3	1.588	2.581	4.0	19.6	4 11	13 9.08	- 5 30.9	1.864	2.865	1.3	17.9
4 21	13 0.48	-17 13.7	1.587	2.572	5.6	19.7	4 21	12 59.50	- 4 47.5	1.871	2.852	5.4	18.2
5 1	12 52.92	-16 0.7	1.611	2.564	9.3	19.9	5 1	12 50.96	- 4 10.8	1.906	2.838	9.4	18.4
5 11	12 47.40	-14 50.8	1.660	2.555	13.0	20.1	5 11	12 44.21	- 3 45.3	1.965	2.824	13.0	18.6
344247	2001 SL ₁₇₉		4 8.9 161°67	7°8/30.5 18			336254	2008 SC ₁₄₃		4 8.9 186°80	0°3/ 8.6 17		
3 2	13 40.78	+21 43.1	2.819	3.607	10.8	20.7	3 2	13 33.61	- 9 59.5	2.148	2.945	13.5	21.7
3 12	13 34.79	+22 31.9	2.760	3.611	9.3	20.6	3 12	13 29.91	- 9 22.0	2.059	2.945	10.5	21.5
3 22	13 27.14	+23 11.3	2.725	3.616	8.2	20.5	3 22	13 24.27	- 8 31.4	1.993	2.945	7.0	21.3
4 1	13 18.36	+23 35.7	2.717	3.620	7.8	20.5	4 1	13 17.21	- 7 31.2	1.954	2.944	3.1	21.0
4 11	13 9.18	+23 41.0	2.736	3.624	8.4	20.6	4 11	13 9.49	- 6 26.5	1.942	2.944	1.0	20.8
4 21	13 0.32	+23 25.6	2.781	3.627	9.8	20.7	4 21	13 1.95	- 5 23.1	1.960	2.943	5.0	21.1
5 1	12 52.45	+22 49.5	2.850	3.630	11.4	20.8	5 1	12 55.41	- 4 26.9	2.005	2.942	8.8	21.3
5 11	12 46.08	+21 55.0	2.940	3.633	12.9	20.9	5 11	12 50.48	- 3 42.6	2.074	2.941	12.1	21.6
241849	2001 TB ₈₆		4 8.9 144°80	1°2/10.4 18			189501	2000 AU ₁₇₉		4 8.9 157°15	3°5/13.5 18		
3 2	13 33.72	-14 11.5	2.709	3.477	11.7	21.5	3 2	13 35.83	-23 9.1	2.894	3.609	12.2	20.5
3 12	13 29.55	-13 51.9	2.620	3.485	9.3	21.3	3 12	13 31.16	-23 1.4	2.798	3.619	10.1	20.4
3 22	13 23.79	-13 20.4	2.554	3.493	6.4	21.1	3 22	13 24.86	-22 38.2	2.725	3.627	7.7	20.2
4 1	13 16.91	-12 38.7	2.516	3.500	3.4	21.0	4 1	13 17.41	-21 59.5	2.677	3.635	5.3	20.1
4 11	13 9.55	-11 50.1	2.507	3.507	1.2	20.8	4 11	13 9.45	-21 7.5	2.659	3.642	3.6	20.0
4 21	13 2.36	-10 58.6	2.528	3.514	3.7	21.0	4 21	13 1.67	-20 5.7	2.670	3.648	4.2	20.0
5 1	12 55.99	- 9 8.8	2.578	3.521	6.8	21.2	5 1	12 54.72	-18 59.1	2.710	3.654	6.4	20.2
5 11	12 50.95	- 9 24.6	2.654	3.527	9.5	21.4	5 11	12 49.14	-17 52.9	2.778	3.659	8.9	20.3
166128	2002 CP ₂₃₆		4 8.9 25°68	4°6/ 6.1 18			170675	2003 YS ₁₇₄		4 8.9 337°25	4°1/11.6 18		
3 2	13 36.39	- 0 2.7	1.140	1.993	19.3	18.6	3 2	13 34.72	-16 44.6	1.375	2.177	19.4	19.4
3 12	13 33.41	+ 0 32.1	1.083	2.001	14.9	18.3	3 12	13 32.17	-17 15.0	1.289	2.168	15.9	19.1
3 22	13 27.20	+ 1 14.3	1.046	2.010	10.0	18.1	3 22	13 26.57	-17 25.4	1.220	2.160	11.7	18.8
4 1	13 18.63	+ 1 56.0	1.031	2.020	5.5	17.8	4 1	13 18.51	-17 14.5	1.173	2.153	7.1	18.5
4 11	13 9.11	+ 2 28.0	1.039	2.031	5.4	17.9	4 11	13 9.12	-16 44.4	1.150	2.146	4.1	18.3
4 21	13 0.14	+ 2 43.2	1.070	2.043	9.7	18.1	4 21	12 59.84	-16 0.5	1.151	2.140	6.6	18.5
5 1	12 53.09	+ 2 37.4	1.124	2.056	14.4	18.4	5 1	12 52.08	-15 11.3	1.176	2.134	11.3	18.7
5 11	12 48.82	+ 2 9.9	1.196	2.070	18.5	18.7	5 11	12 46.92	-14 26.1	1.222	2.130	15.8	18.9
33005	1997 EZ ₃		4 8.9 311°67	0°8/ 9.7 18			107317	2001 CU ₁₁		4 8.9 144°12	3°0/11.8 18		
3 2	13 33.48	-11 16.5	2.219	3.010	13.3	19.1	3 2	13 38.05	-17 36.8	2.259	3.014	14.1	20.5
3 12	13 29.86	-11 11.7	2.121	3.001	10.5	18.9	3 12	13 33.32	-17 50.0	2.169	3.021	11.5	20.3
3 22	13 24.28	-10 55.4	2.046	2.992	7.2	18.7	3 22	13 26.54	-17 48.6	2.102	3.028	8.4	20.1
4 1	13 17.23	-10 29.2	1.996	2.984	3.5	18.4	4 1	13 18.24	-17 32.7	2.060	3.034	5.1	19.9
4 11	13 9.45	- 9 56.4	1.974	2.976	0.9	18.2	4 11	13 9.23	-17 4.4	2.046	3.040	3.0	19.8
4 21	13 1.77	- 9 21.3	1.981	2.968	4.5	18.4	4 21	13 0.41	-16 27.4	2.061	3.045	4.6	19.9
5 1	12 55.00	- 8 48.6	2.015	2.960	8.2	18.7	5 1	12 52.64	-15 46.9	2.104	3.051	7.8	20.1
5 11	12 49.81	- 8 22.8	2.074	2.952	11.6	18.8	5 11	12 46.58	-15 8.3	2.173	3.056	10.9	20.3
15248	Hidekazu		4 8.9 169°89	0°2/ 8.7 18			286078	2001 SZ ₃₅₅		4 8.9 201°15	1°9/ 6.7 18		
3 2	13 37.29	- 9 25.4	2.295	3.083	13.0	19.1	3 2	13 34.03	- 3 3.3	2.638	3.442	11.0	21.3
3 12	13 32.59	- 8 59.2	2.207	3.087	10.1	18.9	3 12	13 29.84	- 2 27.9	2.546	3.438	8.5	21.1
3 22	13 25.96	- 8 22.0	2.142	3.091	6.8	18.7	3 22	13 24.03	- 1 46.3	2.480	3.435	5.6	20.9
4 1	13 17.94	- 7 36.4	2.104	3.094	3.0	18.5	4 1	13 17.06	- 1 2.1	2.441	3.431	2.7	20.7
4 11	13 9.29	- 6 46.9	2.095	3.096	0.9	18.3	4 11	13 9.55	- 0 19.5	2.432	3.427	2.4	20.7
4 21	13 0.83	- 5 58.2	2.115	3.098	4.7	18.6	4 21	13 2.18	+ 0 17.5	2.453	3.422	5.2	20.9
5 1	12 53.37	- 5 15.4	2.164	3.099	8.3	18.8	5 1	12 55.59	+ 0 45.1	2.501	3.418	8.2	21.0
5 11	12 47.52	- 4 42.5	2.238	3.099	11.5	19.0	5 11	12 50.34	+ 1 1.1	2.574	3.412	10.9	21.2
474160	1999 RH ₅		4 8.9 211°27	2°7/12.0 16			356520	2011 SV ₈₇		4 8.9 281°39	2°2/10.5 17		
3 2	13 35.03	-18 10.5	2.855	3.600	11.7	22.0	3 2	13 37.31	-14 43.0	1.481	2.280	18.4	21.2
3 12	13 30.63	-18 20.7	2.751	3.595	9.6	21.8	3 12	13 34.25	-14 41.4	1.371	2.253	15.0	20.9
3 22	13 24.59	-18 18.7	2.669	3.590	7.0	21.6	3 22	13 28.09	-14 19.2	1.281	2.226	10.7	20.6
4 1	13 17.32	-18 4.7	2.613	3.584	4.4	21.4	4 1	13 19.30	-13 36.1	1.213	2.198	5.8	20.2
4 11	13 9.45	-17 40.4	2.587	3.578	2.7	21.3	4 11	13 8.89	-12 35.3	1.170	2.170	2.3	19.9
4 21	13 1.64	-17 8.5	2.589	3.572	3.9	21.4	4 21	12 58.25	-11 23.9	1.152	2.141	6.6	20.1
5 1	12 54.59	-16 32.7	2.621	3.566	6.6	21.6	5 1	12 48.87	-10 11.5	1.160	2.112	12.1	20.3
5 11	12 48.83	-15 57.5	2.679	3.560	9.2	21.7	5 11	12 42.02	- 9 8.5	1.188	2.083	17.2	20.5
189614	2000 YV ₁₄₃		4 8.9 153°85	4°6/ 3.3 17			205640	2001 XQ ₄		4 8.9 243°87	3°3/ 6.1 17		
3 2	13 34.71	+ 4 12.0	2.387	3.206	11.6	20.5	3 2	13 41					

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
241880	2001 <i>UZ</i> ₂₀₁		4 8.9 264°09	1.4/10.6	17		162638	2000 <i>ST</i> ₁₇₅		4 8.9 207°28	3.7/12.0	18	
3 2	13 31.72	-15 38.9	2.302	3.077	13.3	20.3	3 2	13 39.04	-19 0.2	1.856	2.618	16.5	20.7
3 12	13 28.44	-15 7.7	2.201	3.070	10.7	20.1	3 12	13 34.72	-19 9.0	1.759	2.613	13.6	20.5
3 22	13 23.30	-14 20.5	2.124	3.063	7.5	19.9	3 22	13 27.83	-18 58.8	1.683	2.609	10.1	20.3
4 1	13 16.79	-13 19.0	2.072	3.056	4.0	19.7	4 1	13 18.96	-18 28.9	1.630	2.604	6.3	20.0
4 11	13 9.62	-12 7.4	2.048	3.048	1.5	19.5	4 11	13 9.07	-17 41.8	1.604	2.598	3.7	19.8
4 21	13 2.57	-10 51.3	2.054	3.041	4.3	19.7	4 21	12 59.29	-16 42.4	1.606	2.591	5.6	19.9
5 1	12 56.42	-9 37.1	2.087	3.034	7.9	19.9	5 1	12 50.74	-15 38.1	1.635	2.584	9.4	20.2
5 11	12 51.78	-8 30.7	2.146	3.026	11.1	20.1	5 11	12 44.32	-14 37.0	1.688	2.577	13.2	20.4
83153	2001 <i>QF</i> ₂₆₉		4 8.9 229°43	2.6/11.9	18		195234	2002 <i>EG</i> ₁₁		4 8.9 339°02	3.0/11.1	17	
3 2	13 33.09	-18 49.7	2.489	3.242	13.0	19.4	3 2	13 37.05	-14 46.8	1.687	2.477	16.9	19.2
3 12	13 29.39	-18 35.5	2.385	3.235	10.6	19.2	3 12	13 33.36	-15 17.4	1.597	2.471	13.7	19.0
3 22	13 23.89	-18 5.3	2.303	3.228	7.8	19.0	3 22	13 27.03	-15 33.2	1.526	2.466	9.8	18.7
4 1	13 17.04	-17 20.0	2.247	3.221	4.7	18.8	4 1	13 18.63	-15 33.5	1.480	2.461	5.7	18.5
4 11	13 9.55	-16 22.3	2.219	3.213	2.6	18.6	4 11	13 9.15	-15 20.4	1.459	2.456	3.0	18.3
4 21	13 2.16	-15 16.8	2.220	3.206	4.2	18.7	4 21	12 59.78	-14 57.8	1.465	2.452	5.7	18.4
5 1	12 55.62	-14 9.0	2.249	3.198	7.3	18.9	5 1	12 51.69	-14 31.4	1.497	2.449	9.9	18.7
5 11	12 50.54	-13 4.8	2.305	3.189	10.3	19.1	5 11	12 45.80	-14 7.9	1.551	2.446	13.8	18.9
357552	2004 <i>SR</i> ₄₆		4 8.9 254°48	2.6/11.0	16		227541	2005 <i>YR</i> ₁₁₃		4 8.9 48°69	3.3/ 6.3	17	
3 2	13 37.28	-16 24.4	1.642	2.427	17.4	21.6	3 2	13 36.14	-1 14.6	1.681	2.509	15.3	20.2
3 12	13 33.73	-16 18.7	1.541	2.413	14.2	21.4	3 12	13 32.25	-0 37.4	1.613	2.518	11.7	20.0
3 22	13 27.40	-15 52.5	1.459	2.398	10.2	21.1	3 22	13 25.98	+0 6.6	1.568	2.527	7.8	19.7
4 1	13 18.84	-15 5.9	1.401	2.383	5.8	20.8	4 1	13 18.02	+0 51.8	1.547	2.536	4.1	19.5
4 11	13 9.05	-14 2.6	1.369	2.368	2.6	20.5	4 11	13 9.35	+1 31.5	1.553	2.546	4.0	19.5
4 21	12 59.28	-12 49.1	1.364	2.352	5.9	20.7	4 21	13 1.04	+1 59.9	1.586	2.556	7.5	19.8
5 1	12 50.80	-11 34.5	1.384	2.336	10.6	20.9	5 1	12 54.08	+2 13.0	1.644	2.566	11.3	20.0
5 11	12 44.60	-10 27.8	1.428	2.319	15.0	21.1	5 11	12 49.15	+2 8.9	1.724	2.577	14.8	20.3
69265	1988 <i>RF</i> ₆		4 8.9 200°24	1.3/ 7.7	18		200605	2001 <i>RQ</i> ₁₃₉		4 8.9 137°17	1.3/ 7.9	18	
3 2	13 38.04	-6 50.2	2.049	2.849	13.9	20.6	3 2	13 39.94	-6 52.5	1.574	2.387	16.8	20.7
3 12	13 33.47	-6 12.6	1.956	2.845	10.8	20.4	3 12	13 35.46	-6 24.9	1.499	2.394	13.1	20.4
3 22	13 26.73	-5 23.7	1.887	2.841	7.1	20.2	3 22	13 28.28	-5 44.5	1.445	2.401	8.6	20.2
4 1	13 18.36	-4 27.3	1.844	2.835	3.2	19.9	4 1	13 19.11	-4 55.6	1.416	2.408	3.8	19.9
4 11	13 9.21	-3 29.0	1.830	2.830	1.9	19.8	4 11	13 9.06	-4 4.8	1.414	2.414	2.0	19.8
4 21	13 0.22	-2 34.7	1.845	2.823	5.8	20.0	4 21	12 59.36	-3 19.2	1.439	2.420	6.7	20.1
5 1	12 52.31	-1 50.1	1.888	2.816	9.8	20.3	5 1	12 51.16	-2 44.9	1.490	2.425	11.3	20.4
5 11	12 46.19	-1 19.2	1.954	2.808	13.2	20.5	5 11	12 45.27	-2 26.2	1.562	2.430	15.2	20.6
334207	2001 <i>SJ</i> ₃₀₅		4 8.9 186°13	2.2/10.9	13 C		388776	2007 <i>YX</i> ₅₅		4 8.9 53°56	4.2/12.9	17	
3 2	13 40.44	-15 6.3	2.307	3.067	13.7	22.9	3 2	13 36.52	-20 38.6	2.258	3.003	14.4	20.9
3 12	13 35.18	-15 19.4	2.209	3.067	11.1	22.7	3 12	13 32.23	-21 10.2	2.170	3.009	12.0	20.7
3 22	13 27.80	-15 19.9	2.134	3.066	7.9	22.5	3 22	13 25.87	-21 26.4	2.103	3.016	9.1	20.5
4 1	13 18.84	-15 7.9	2.085	3.065	4.5	22.3	4 1	13 17.97	-21 26.3	2.060	3.022	6.2	20.4
4 11	13 9.10	-14 45.5	2.065	3.063	2.2	22.2	4 11	13 9.35	-21 10.9	2.045	3.029	4.3	20.2
4 21	12 59.47	-14 16.2	2.075	3.060	4.5	22.3	4 21	13 0.88	-20 43.4	2.057	3.036	5.2	20.3
5 1	12 50.85	-13 44.6	2.114	3.057	8.0	22.5	5 1	12 53.44	-20 8.4	2.097	3.043	7.8	20.5
5 11	12 43.94	-13 15.7	2.178	3.053	11.2	22.7	5 11	12 47.71	-19 31.8	2.162	3.051	10.7	20.7
349898	2009 <i>FA</i> ₂₈		4 8.9 8°72	5.6/ 4.4	17		83815	2001 <i>TS</i> ₂₃₈		4 8.9 97°54	5.0/ 3.6	17	
3 2	13 34.31	+5 21.7	1.679	2.518	14.8	19.9	3 2	13 34.53	+5 53.8	2.253	3.076	12.0	19.6
3 12	13 30.86	+6 2.4	1.612	2.520	11.5	19.7	3 12	13 30.40	+6 49.9	2.186	3.084	9.4	19.5
3 22	13 25.08	+6 43.9	1.568	2.523	8.2	19.5	3 22	13 24.46	+7 46.7	2.142	3.092	6.7	19.3
4 1	13 17.61	+7 19.4	1.547	2.526	5.8	19.3	4 1	13 17.26	+8 38.2	2.126	3.099	5.0	19.2
4 11	13 9.43	+7 42.0	1.553	2.531	3.3	19.4	4 11	13 9.56	+9 18.9	2.138	3.107	5.6	19.3
4 21	13 1.59	+7 47.2	1.584	2.536	9.2	19.5	4 21	13 2.13	+9 44.6	2.177	3.115	7.9	19.4
5 1	12 55.04	+7 32.6	1.639	2.543	12.6	19.7	5 1	12 55.69	+9 52.8	2.241	3.122	10.6	19.6
5 11	12 50.49	+6 58.4	1.715	2.550	15.6	20.0	5 11	12 50.80	+9 43.1	2.328	3.130	13.1	19.8
317994	2004 <i>BS</i> ₁₁₆		4 8.9 333°93	5.7/ 9.9	18		471837	2012 <i>XM</i> ₈₀		4 8.9 253°50	2.0/ 6.6	17	
3 2	13 55.78	-9 27.3	0.985	1.800	24.4	19.7	3 2	13 32.55	-4 14.3	2.315	3.126	12.2	21.6
3 12	13 50.40	-11 45.3	0.905	1.794	20.0	19.4	3 12	13 28.99	-3 26.5	2.222	3.118	9.4	21.4
3 22	13 40.01	-14 3.0	0.843	1.789	14.6	19.0	3 22	13 23.63	-2 29.9	2.153	3.110	6.2	21.2
4 1	13 25.08	-16 13.2	0.802	1.784	8.7	18.7	4 1	13 16.95	-1 28.8	2.111	3.101	3.0	21.0
4 11	13 7.36	-18 7.2	0.785	1.780	5.7	18.5	4 11	13 9.63	-0 28.5	2.097	3.092	2.6	20.9
4 21	12 49.43	-19 38.5	0.793	1.777	9.9	18.7	4 21	13 2.43	+0 25.5	2.112	3.084	5.8	21.1
5 1	12 34.05	-20 47.5	0.824	1.774	16.0	19.0	5 1	12 56.10	+1 8.5	2.155	3.075	9.2	21.3
5 11	12 23.15	-21 41.6	0.874	1.772	21.4	19.3	5 11	12 51.24	+1 37.2	2.221	3.066	12.2	21.5
87320	2000 <i>QX</i> ₉		4 8.9 202°86	0.2/ 9.3	18		368777	2005 <i>WJ</i> ₁₀₅		4 8.9 152°98	4.0/ 4.3	15	
3 2	13 33.55	-10 41.6	3.225	3.998	9.9	20.9	3 2	13 35.38	+1 30.8	2.288	3.104	12.1	22.1
3 12	13 29.21	-10 19.1	3.121	3.992	7.8	20.7	3 12	13 31.03	+2 44.9	2.215	3.113	9.3	21.9
3 22	13 23.51	-9 47.9	3.042	3.986	5.2	20.6	3 22	13 24.88	+4 4.0	2.167	3.120	6.4	21.7
4 1	13 16.81	-9 9.9	2.991	3.979	2.4	20.3	4 1	13 17.46	+5 21.8	2.147	3.128	4.2	21.6
4 11	13 9.65	-8 27.8	2.970	3.972	0.6	20.2	4 11	13 9.52	+6 31.7	2.156	3.135	4.7	21.7
4 21	13 2.56	-7 44.9	2.980	3.964	3.4	20.4	4 21	13 1.82	+7 28.4	2.193	3.141	7.3	21.8
5 1	12 56.11	-7 4.8	3.020	3.955	6.2	20.6	5 1	12 55.10	+8 8.0	2.258	3.146	10.2	22.0
5 11	12 50.76	-6 30.6	3.086	3.946	8.7	20.7	5 11	12 49.93	+8 29.0	2.345	3.151	12.8	22.2
499745	2011 <i>BX</i> ₈₀		4 8.9 114°89	8.6/17.5	17		381196	2007 <i>RM</i> ₂₆		4 8.9 313°26	0.9/ 9.7	17	
3 2	13 40.06	-32 27.8	2.021										

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
409912	2006 <i>TP</i> ₅₂		4 8.9 83°13	0°3/ 8.6 18			422780	2001 <i>VQ</i> ₇₀		4 8.9 115°46	4°6/14.2 18		
3 2	13 38.08	-10 14.1	1.757	2.557	15.9	21.9	3 2	13 36.43	-24 58.5	2.119	2.845	15.8	21.6
3 12	13 33.51	-9 33.1	1.697	2.584	12.3	21.7	3 12	13 32.22	-24 47.3	2.036	2.861	13.2	21.4
3 22	13 26.66	-8 37.8	1.659	2.611	8.1	21.6	3 22	13 25.85	-24 14.1	1.973	2.876	10.1	21.2
4 1	13 18.26	-7 32.4	1.646	2.637	3.6	21.3	4 1	13 17.96	-23 18.8	1.934	2.891	7.0	21.1
4 11	13 9.33	-6 23.8	1.662	2.663	1.1	21.2	4 11	13 9.44	-22 4.3	1.922	2.905	4.8	20.9
4 21	13 0.89	-5 18.8	1.706	2.689	5.6	21.6	4 21	13 1.23	-20 36.5	1.939	2.919	5.4	21.0
5 1	12 53.85	-4 23.8	1.776	2.714	9.6	21.8	5 1	12 54.22	-19 3.2	1.984	2.933	8.0	21.2
5 11	12 48.83	-3 43.3	1.870	2.739	13.1	22.1	5 11	12 49.05	-17 32.6	2.054	2.945	11.1	21.4
208241	2000 <i>TO</i> ₂₀		4 8.9 194°26	4°8/ 4.5 18			498781	2008 <i>UH</i> ₁₄₃		4 8.9 183°39	0°8/ 9.9 17		
3 2	13 38.20	+ 1 51.7	1.832	2.655	14.4	20.4	3 2	13 34.58	-13 29.0	2.657	3.427	11.9	22.5
3 12	13 33.79	+ 2 59.1	1.752	2.653	11.2	20.2	3 12	13 30.32	-12 58.8	2.560	3.428	9.4	22.3
3 22	13 27.03	+ 4 12.6	1.696	2.651	7.7	20.0	3 22	13 24.39	-12 16.1	2.487	3.428	6.4	22.1
4 1	13 18.53	+ 5 25.0	1.666	2.648	5.0	19.8	4 1	13 17.28	-11 22.8	2.441	3.427	3.2	21.9
4 11	13 9.23	+ 6 28.3	1.664	2.645	5.6	19.9	4 11	13 9.61	-10 22.8	2.425	3.426	0.9	21.7
4 21	13 0.18	+ 7 15.8	1.689	2.641	8.8	20.0	4 21	13 2.09	- 9 20.6	2.438	3.424	3.9	22.0
5 1	12 52.35	+ 7 43.0	1.739	2.636	12.3	20.2	5 1	12 55.39	- 8 21.1	2.481	3.422	7.1	22.2
5 11	12 46.50	+ 7 48.4	1.811	2.631	15.5	20.4	5 11	12 50.04	- 7 28.9	2.550	3.419	10.0	22.4
241118	2007 <i>PY</i> ₁₄		4 8.9 262°62	4°4/ 5.3 16			283895	2004 <i>CD</i> ₂₀		4 8.9 214°14	5°9/ 2.2 17		
3 2	13 36.80	- 0 47.1	1.582	2.413	15.9	20.5	3 2	13 33.20	+ 7 25.2	2.154	2.983	12.3	20.9
3 12	13 33.27	+ 0 15.9	1.491	2.397	12.4	20.2	3 12	13 29.55	+ 8 40.8	2.083	2.983	9.7	20.7
3 22	13 27.03	+ 1 29.6	1.422	2.382	8.4	19.9	3 22	13 24.02	+ 9 57.2	2.036	2.982	7.2	20.5
4 1	13 18.66	+ 2 46.9	1.378	2.366	4.9	19.7	4 1	13 17.13	+11 7.2	2.015	2.982	5.9	20.5
4 11	13 9.18	+ 3 58.6	1.361	2.349	5.3	19.7	4 11	13 9.66	+12 4.1	2.022	2.981	6.8	20.5
4 21	12 59.79	+ 4 56.0	1.369	2.332	9.2	19.8	4 21	13 2.41	+12 42.7	2.055	2.981	9.1	20.6
5 1	12 51.70	+ 5 32.4	1.402	2.315	13.6	20.0	5 1	12 56.15	+13 0.3	2.113	2.980	11.7	20.8
5 11	12 45.84	+ 5 44.7	1.455	2.298	17.5	20.2	5 11	12 51.48	+12 56.6	2.192	2.980	14.2	21.0
67413	2000 <i>QK</i> ₅₀		4 8.9 292°46	3°0/ 5.5 18 R			417476	2006 <i>RD</i> ₃₇		4 8.9 175°23	1°7/ 7.2 15		
3 2	13 31.35	- 2 4.2	2.174	2.995	12.5	19.4	3 2	13 37.81	- 5 19.4	2.134	2.936	13.4	22.5
3 12	13 28.20	- 1 2.9	2.083	2.985	9.6	19.2	3 12	13 33.15	- 4 37.6	2.049	2.939	10.3	22.3
3 22	13 23.17	+ 0 6.9	2.016	2.975	6.4	19.0	3 22	13 26.44	- 3 46.2	1.987	2.942	6.8	22.0
4 1	13 16.76	+ 1 19.8	1.976	2.965	3.5	18.8	4 1	13 18.24	- 2 49.4	1.953	2.943	3.1	21.8
4 11	13 9.70	+ 2 29.5	1.965	2.955	3.7	18.8	4 11	13 9.37	- 1 52.7	1.947	2.944	2.3	21.8
4 21	13 2.75	+ 3 29.7	1.981	2.945	6.8	18.9	4 21	13 0.72	- 1 1.9	1.970	2.945	5.9	22.0
5 1	12 56.71	+ 4 15.5	2.023	2.935	10.1	19.1	5 1	12 53.13	- 0 21.8	2.021	2.944	9.5	22.2
5 11	12 52.19	+ 4 43.8	2.089	2.925	13.2	19.3	5 11	12 47.25	+ 0 4.2	2.096	2.943	12.7	22.4
499181	2009 <i>SK</i> ₂₀₄		4 8.9 219°23	0°5/ 9.5 17			86957	2000 <i>HB</i> ₁₀₁		4 8.9 287°03	2°2/ 7.1 17		
3 2	13 35.54	-12 29.3	2.257	3.038	13.4	23.2	3 2	13 35.58	- 4 45.5	1.734	2.554	15.2	20.4
3 12	13 31.43	-11 56.0	2.155	3.030	10.6	22.9	3 12	13 32.19	- 4 10.0	1.631	2.532	11.9	20.1
3 22	13 25.34	-11 8.2	2.075	3.020	7.2	22.7	3 22	13 26.28	- 3 22.7	1.551	2.509	7.9	19.8
4 1	13 17.76	-10 8.2	2.022	3.010	3.5	22.5	4 1	13 18.36	- 2 27.9	1.495	2.486	3.7	19.5
4 11	13 9.44	- 9 0.6	1.998	3.000	0.8	22.2	4 11	13 9.32	- 1 32.2	1.466	2.463	2.9	19.4
4 21	13 1.21	- 7 51.0	2.004	2.989	4.7	22.5	4 21	13 0.26	- 0 42.6	1.464	2.440	7.2	19.6
5 1	12 53.93	- 6 45.7	2.037	2.977	8.5	22.7	5 1	12 52.32	- 0 5.9	1.487	2.417	11.7	19.8
5 11	12 48.24	- 5 50.1	2.096	2.965	11.9	22.9	5 11	12 46.41	+ 0 13.5	1.532	2.394	15.8	20.0
21110	Karlvalentin		4 8.9 228°57	0°5/ 9.4 18			171549	1999 <i>RE</i> ₂₀₉		4 8.9 206°24	3°0/ 11.6 18		
3 2	13 38.91	-11 12.8	2.009	2.796	14.6	20.1	3 2	13 38.80	-17 31.5	1.978	2.742	15.6	20.9
3 12	13 34.37	-10 56.6	1.906	2.784	11.6	19.8	3 12	13 34.36	-17 35.1	1.880	2.737	12.7	20.7
3 22	13 27.50	-10 26.6	1.824	2.771	7.9	19.6	3 22	13 27.52	-17 21.4	1.802	2.732	9.3	20.5
4 1	13 18.81	- 9 44.7	1.769	2.757	3.8	19.3	4 1	13 18.84	-16 50.5	1.750	2.727	5.5	20.2
4 11	13 9.16	- 8 55.0	1.742	2.743	0.9	19.0	4 11	13 9.22	-16 5.0	1.725	2.721	3.0	20.1
4 21	12 59.56	- 8 3.0	1.743	2.728	5.2	19.3	4 21	12 59.71	-15 9.7	1.728	2.714	5.1	20.2
5 1	12 51.03	- 7 14.9	1.773	2.713	9.5	19.5	5 1	12 51.35	-14 11.4	1.759	2.707	9.0	20.4
5 11	12 44.37	- 6 36.3	1.826	2.696	13.3	19.7	5 11	12 44.95	-13 17.2	1.814	2.699	12.6	20.6
227905	2007 <i>EN</i> ₁₇₁		4 8.9 107°28	0°8/ 8.3 17			437680	2014 <i>DE</i> ₁		4 8.9 148°48	3°9/ 3.9 17		
3 2	13 39.91	- 5 46.7	1.905	2.709	14.7	20.3	3 2	13 32.42	+ 2 10.3	2.511	3.330	11.1	21.5
3 12	13 35.02	- 5 46.9	1.824	2.713	11.4	20.1	3 12	13 28.65	+ 3 21.3	2.437	3.335	8.5	21.3
3 22	13 27.80	- 5 38.9	1.765	2.718	7.6	19.8	3 22	13 23.27	+ 4 36.1	2.387	3.341	5.9	21.2
4 1	13 18.87	- 5 25.4	1.732	2.723	3.4	19.6	4 1	13 16.77	+ 5 49.5	2.366	3.345	4.0	21.1
4 11	13 9.17	- 5 10.3	1.727	2.728	1.4	19.5	4 11	13 9.79	+ 6 55.4	2.373	3.350	4.6	21.1
4 21	12 59.72	- 4 57.9	1.751	2.732	5.6	19.8	4 21	13 3.01	+ 7 49.2	2.410	3.354	6.9	21.3
5 1	12 51.51	- 4 51.9	1.801	2.737	9.6	20.0	5 1	12 57.07	+ 8 27.2	2.472	3.359	9.5	21.4
5 11	12 45.26	- 4 55.5	1.875	2.742	13.2	20.2	5 11	12 52.48	+ 8 48.1	2.558	3.362	12.0	21.6
425191	2009 <i>UT</i> ₁₀₇		4 8.9 346°80	1°9/ 7.4 17			276392	2002 <i>XH</i> ₄		4 8.9 272°46	18°3/25.7 18		
3 2	13 36.95	- 4 5.9	1.829	2.645	14.7	21.2	3 2	13 46.50	+19 24.5	0.949	1.799	22.5	21.6
3 12	13 32.84	- 3 44.2	1.747	2.645	11.4	21.0	3 12	13 43.44	+22 10.6	0.874	1.769	20.1	21.3
3 22	13 26.42	- 3 14.0	1.687	2.644	7.5	20.8	3 22	13 35.53	+24 56.0	0.817	1.737	18.5	21.1
4 1	13 18.27	- 2 39.3	1.653	2.644	3.5	20.5	4 1	13 23.19	+27 16.6	0.778	1.704	18.8	21.0
4 11	13 9.33	- 2 5.6	1.646	2.644	2.5	20.5	4 11	13 7.99	+28 47.1	0.757	1.669	21.3	20.9
4 21	13 0.62	- 1 38.1	1.666	2.644	6.4	20.7	4 21	12 52.35	+29 11.0	0.753	1.634	25.2	21.0
5 1	12 53.11	- 1 21.4	1.713	2.643	10.4	20.9	5 1	12 38.91	+28 24.0	0.762	1.597	29.6	21.1
5 11	12 47.54	- 1 18.4	1.782	2.643	14.0	21.2	5 11	12 29.60	+26 34.7	0.781	1.560	33.9	21.2
237596	2001 <i>KH</i> ₃₃		4 8.9 166°06	5°5/ 2.7 17			470404	2007 <i>UD</i> ₇₉		4 8.9 228°76	0°0/ 9.0 17		

EPHEMERIDES

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
278814	2008 SC ₂₅₅		4 8.9 267°36	2°8/ 6.1 17			331041	2009 VE ₆₀		4 8.9 134°90	4°6/ 3.8 18		
3 2	13 33.23	- 3 9.0	1.963	2.784	13.7	20.7	3 2	13 37.47	+ 5 22.7	2.444	3.257	11.5	21.4
3 12	13 29.84	- 2 11.0	1.877	2.778	10.5	20.5	3 12	13 32.48	+ 6 21.7	2.379	3.272	9.0	21.3
3 22	13 24.37	- 1 3.4	1.815	2.773	6.9	20.2	3 22	13 25.77	+ 7 21.6	2.339	3.287	6.4	21.1
4 1	13 17.36	+ 0 8.5	1.778	2.768	3.6	20.0	4 1	13 17.88	+ 8 16.8	2.327	3.301	4.7	21.0
4 11	13 9.63	+ 1 17.6	1.770	2.763	3.6	20.0	4 11	13 9.55	+ 9 1.9	2.345	3.314	5.2	21.1
4 21	13 2.07	+ 2 17.3	1.790	2.758	7.0	20.2	4 21	13 1.52	+ 9 33.0	2.391	3.327	7.4	21.2
5 1	12 55.56	+ 3 2.1	1.835	2.752	10.6	20.4	5 1	12 54.47	+ 9 47.7	2.463	3.339	10.0	21.4
5 11	12 50.78	+ 3 28.8	1.903	2.747	13.9	20.6	5 11	12 48.92	+ 9 45.6	2.558	3.351	12.3	21.6
512007	2015 LO ₁		4 8.9 252°66	6°0/31.4 18			297051	2010 HA ₅₄		4 8.9 163°01	1°8/ 7.1 18		
3 2	13 32.16	+10 8.7	2.632	3.453	10.6	21.3	3 2	13 37.77	- 5 50.7	2.139	2.940	13.4	21.9
3 12	13 28.53	+11 36.0	2.546	3.438	8.5	21.1	3 12	13 33.08	- 4 58.0	2.057	2.947	10.3	21.7
3 22	13 23.27	+13 3.5	2.485	3.422	6.7	21.0	3 22	13 26.38	- 3 54.9	1.999	2.954	6.8	21.5
4 1	13 16.82	+14 24.7	2.453	3.406	6.0	20.9	4 1	13 18.23	- 2 46.0	1.968	2.959	3.1	21.2
4 11	13 9.78	+15 33.4	2.449	3.389	6.9	20.9	4 11	13 9.46	- 1 37.4	1.967	2.964	2.4	21.2
4 21	13 2.82	+16 24.6	2.472	3.372	8.9	21.0	4 21	13 0.93	- 0 35.1	1.994	2.968	5.9	21.4
5 1	12 56.62	+ 2 17.5	2.520	3.355	11.1	21.1	5 1	12 53.48	+ 0 15.5	2.050	2.971	9.5	21.6
5 11	12 51.73	+17 5.5	2.589	3.338	13.2	21.3	5 11	12 47.74	+ 0 50.9	2.129	2.973	12.7	21.9
200247	1999 VJ ₁₃₀		4 8.9 197°88	2°3/ 6.6 18			67533	2000 RD ₉₅		4 8.9 296°40	3°7/ 5.9 18		
3 2	13 37.60	- 1 38.8	2.462	3.265	11.8	20.8	3 2	13 33.84	- 3 43.3	1.425	2.262	17.0	18.8
3 12	13 32.74	- 1 10.7	2.371	3.262	9.1	20.7	3 12	13 31.17	- 2 35.7	1.342	2.253	13.2	18.6
3 22	13 26.07	- 0 37.3	2.304	3.258	6.0	20.4	3 22	13 25.73	- 1 13.3	1.281	2.243	8.7	18.3
4 1	13 18.07	- 0 2.3	2.265	3.254	3.1	20.2	4 1	13 18.13	+ 0 16.5	1.243	2.233	4.5	18.0
4 11	13 9.46	+ 0 30.0	2.256	3.249	2.8	20.2	4 11	13 9.46	+ 1 43.6	1.231	2.224	4.6	18.0
4 21	13 1.00	+ 0 55.6	2.276	3.244	5.7	20.4	4 21	13 0.96	+ 2 57.6	1.244	2.215	9.0	18.2
5 1	12 53.43	+ 1 11.0	2.324	3.238	8.8	20.6	5 1	12 53.88	+ 3 50.5	1.280	2.206	13.6	18.4
5 11	12 47.35	+ 1 14.4	2.396	3.232	11.7	20.8	5 11	12 49.14	+ 4 18.0	1.337	2.197	17.8	18.7
213796	2003 FH ₉₀		4 8.9 331°88	3°0/12.1 17			361667	2007 TX ₄₂₂		4 8.9 261°42	2°8/ 6.8 17		
3 2	13 30.16	-19 10.1	1.994	2.767	15.2	19.7	3 2	13 38.77	- 2 55.4	1.665	2.485	15.7	21.6
3 12	13 27.65	-18 57.3	1.894	2.756	12.4	19.5	3 12	13 34.74	- 2 21.8	1.569	2.469	12.3	21.4
3 22	13 23.03	-18 24.9	1.815	2.745	9.2	19.3	3 22	13 28.02	- 1 38.3	1.495	2.453	8.2	21.1
4 1	13 16.80	-17 33.3	1.760	2.735	5.6	19.1	4 1	13 19.17	- 0 49.9	1.446	2.436	4.1	20.8
4 11	13 9.77	-16 26.1	1.731	2.726	3.1	18.9	4 11	13 9.19	- 0 3.3	1.424	2.419	3.5	20.7
4 21	13 2.85	-15 8.9	1.729	2.717	4.9	19.0	4 21	12 59.26	+ 0 34.4	1.429	2.402	7.7	20.9
5 1	12 56.93	-13 49.3	1.754	2.709	8.5	19.2	5 1	12 50.57	+ 0 57.6	1.459	2.385	12.2	21.1
5 11	12 52.75	-12 34.9	1.804	2.701	12.1	19.4	5 11	12 44.08	+ 1 2.5	1.510	2.367	16.3	21.3
63868	2001 RC ₁₁₉		4 8.9 88°87	3°3/ 6.4 18			383855	2008 PO ₅		4 8.9 263°44	1°0/ 9.9 17		
3 2	13 38.17	- 3 40.3	1.406	2.237	17.5	20.0	3 2	13 34.87	-13 1.9	1.964	2.754	14.8	21.5
3 12	13 34.24	- 2 41.3	1.345	2.251	13.5	19.8	3 12	13 31.31	-12 43.6	1.863	2.741	11.8	21.3
3 22	13 27.52	- 1 30.5	1.304	2.264	8.9	19.6	3 22	13 25.50	-12 9.6	1.784	2.729	8.2	21.0
4 1	13 18.81	- 0 15.3	1.288	2.278	4.4	19.3	4 1	13 17.96	-11 21.8	1.729	2.717	4.1	20.7
4 11	13 9.30	+ 0 54.8	1.297	2.292	4.1	19.3	4 11	13 9.52	-10 24.3	1.703	2.704	1.1	20.5
4 21	13 0.29	+ 1 51.5	1.333	2.305	8.3	19.6	4 21	13 1.16	- 9 23.0	1.704	2.691	5.1	20.7
5 1	12 52.92	+ 2 28.5	1.392	2.318	12.7	19.9	5 1	12 53.84	- 8 24.7	1.732	2.678	9.2	20.9
5 11	12 47.97	+ 2 43.2	1.473	2.331	16.5	20.2	5 11	12 48.34	- 7 35.5	1.784	2.665	13.0	21.1
353533	2011 SU ₁₅₇		4 8.9 211°22	0°2/ 9.2 17			338715	2003 UH ₇₆		4 8.9 245°16	4°7/13.5 18		
3 2	13 32.73	-10 55.0	2.829	3.609	11.0	22.1	3 2	13 37.91	-22 55.3	2.401	3.126	14.2	21.2
3 12	13 28.82	-10 26.8	2.728	3.604	8.6	22.0	3 12	13 33.45	-23 21.6	2.287	3.111	11.9	21.0
3 22	13 23.39	- 9 48.4	2.652	3.598	5.8	21.8	3 22	13 26.85	-23 31.9	2.194	3.096	9.3	20.8
4 1	13 16.85	- 9 1.9	2.603	3.592	2.7	21.5	4 1	13 18.57	-23 24.6	2.126	3.081	6.6	20.6
4 11	13 9.79	- 8 10.8	2.583	3.585	0.6	21.3	4 11	13 9.36	-23 0.1	2.085	3.065	4.8	20.4
4 21	13 2.82	- 7 19.1	2.594	3.578	3.8	21.6	4 21	13 0.12	-22 21.0	2.072	3.048	5.5	20.4
5 1	12 56.57	- 6 31.0	2.633	3.570	6.9	21.8	5 1	12 51.76	-21 32.1	2.088	3.031	8.1	20.6
5 11	12 51.55	- 5 50.4	2.699	3.563	9.7	21.9	5 11	12 45.07	-20 39.8	2.128	3.014	11.0	20.7
349894	2009 EV ₁₂		4 8.9 47°50	3°4/ 5.9 17			241937	2002 CG ₈₆		4 8.9 141°08	3°6/ 5.8 18		
3 2	13 35.98	+ 1 7.6	2.050	2.870	13.2	20.5	3 2	13 39.15	- 1 27.5	1.772	2.590	15.0	21.4
3 12	13 31.74	+ 1 37.0	1.978	2.877	10.1	20.3	3 12	13 34.49	- 0 27.9	1.702	2.601	11.5	21.2
3 22	13 25.49	+ 2 9.9	1.928	2.884	6.8	20.1	3 22	13 27.47	+ 0 39.9	1.654	2.611	7.7	21.0
4 1	13 17.82	+ 2 41.6	1.906	2.892	3.9	20.0	4 1	13 18.76	+ 1 49.3	1.633	2.621	4.2	20.8
4 11	13 9.55	+ 3 7.0	1.911	2.899	4.0	20.0	4 11	13 9.35	+ 2 52.6	1.640	2.629	4.3	20.9
4 21	13 1.57	+ 3 21.8	1.943	2.907	6.9	20.2	4 21	13 0.31	+ 3 43.1	1.674	2.638	7.8	21.1
5 1	12 54.68	+ 3 23.2	2.002	2.915	10.2	20.4	5 1	12 52.59	+ 4 16.0	1.734	2.645	11.5	21.3
5 11	12 49.51	+ 3 10.0	2.084	2.923	13.1	20.6	5 11	12 46.92	+ 4 29.1	1.816	2.652	14.8	21.5
64587	2001 XA		4 8.9 102°39	7°6/ 1.9 18			118815	2000 SM ₁₀₈		4 8.9 282°35	0°0/ 8.8 18		
3 2	13 41.94	+14 10.6	2.092	2.903	13.3	18.7	3 2	13 26.97	- 9 4.3	4.485	5.265	7.2	19.6
3 12	13 36.07	+15 12.3	2.046	2.927	10.8	18.6	3 12	13 23.87	- 8 48.0	4.375	5.251	5.6	19.5
3 22	13 28.17	+16 7.2	2.024	2.950	8.6	18.5	3 22	13 19.86	- 8 26.3	4.291	5.238	3.7	19.3
4 1	13 18.94	+16 48.2	2.028	2.972	7.6	18.4	4 1	13 15.21	- 8 0.7	4.235	5.225	1.7	19.1
4 11	13 9.29	+17 9.8	2.059	2.994	8.3	18.5	4 11	13 10.25	- 7 32.9	4.210	5.211	0.4	19.0
4 21	13 0.16	+17 9.2	2.116	3.016	10.2	18.7	4 21	13 5.34	- 7 5.0	4.215	5.198	2.6	19.2
5 1	12 52.34	+16 46.3	2.198	3.036	12.4	18.9	5 1	13 0.82	- 6 39.3	4.249	5.184	4.6	19.3
5 11	12 46.40	+16 3.5	2.302	3.057	14.5	19.1	5 11	12 56.99	- 6 17.6	4.311	5.171	6.4	19.4
246374	2007 TB ₄₁₉		4 8.9 138°35	5°5/ 2.3 17			212311	2005 QM ₂₀		4 8.9 261°66	1°4/ 7.4 18		
3 2	13 33.95	+ 7 54.6	2.415	3.236	11.4	20.7	3 2						

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
390212	2012 XS ₁₈		4 8.9 210°24	0°6/ 8.3 17			311252	2005 EO ₂₇		4 8.9 128°05	2°4/10.9 18		
3 2	13 34.39	- 7 41.9	2.630	3.421	11.4	22.1	3 2	13 40.59	-14 54.1	1.753	2.533	16.7	21.0
3 12	13 30.22	- 7 15.8	2.533	3.416	8.9	21.9	3 12	13 35.87	-15 4.1	1.673	2.542	13.4	20.8
3 22	13 24.38	- 6 40.8	2.459	3.410	5.9	21.7	3 22	13 28.57	-14 57.9	1.613	2.551	9.5	20.6
4 1	13 17.34	- 5 59.7	2.413	3.404	2.6	21.5	4 1	13 19.35	-14 35.9	1.577	2.559	5.3	20.4
4 11	13 9.72	- 5 16.2	2.397	3.398	1.1	21.3	4 11	13 9.24	-14 1.4	1.569	2.567	2.4	20.2
4 21	13 2.20	- 4 34.5	2.411	3.391	4.4	21.6	4 21	12 59.42	-13 19.6	1.588	2.575	5.4	20.4
5 1	12 55.48	- 3 58.5	2.453	3.384	7.7	21.7	5 1	12 50.99	-12 37.2	1.634	2.582	9.5	20.7
5 11	12 50.09	- 3 31.7	2.520	3.376	10.5	21.9	5 11	12 44.75	-12 0.5	1.704	2.589	13.3	20.9
377365	2004 RJ ₁₁₃		4 8.9 148°41	0°2/ 8.8 17			240486	2004 BU ₁₅₆		4 8.9 290°01	3°5/ 5.4 18		
3 2	13 36.13	- 9 44.7	2.326	3.114	12.8	22.5	3 2	13 33.30	- 0 5.7	2.095	2.918	12.8	20.6
3 12	13 31.68	- 9 14.0	2.242	3.122	10.0	22.3	3 12	13 29.78	+ 0 45.7	2.009	2.911	9.9	20.4
3 22	13 25.39	- 8 32.1	2.182	3.131	6.7	22.1	3 22	13 24.30	+ 1 43.4	1.947	2.904	6.7	20.2
4 1	13 17.78	- 7 41.8	2.148	3.139	3.0	21.8	4 1	13 17.36	+ 2 41.9	1.911	2.897	3.9	20.0
4 11	13 9.61	- 6 47.7	2.144	3.146	0.9	21.7	4 11	13 9.75	+ 3 35.2	1.903	2.891	4.2	20.0
4 21	13 1.67	- 5 54.9	2.170	3.152	4.6	22.0	4 21	13 2.29	+ 4 17.6	1.923	2.884	7.1	20.1
5 1	12 54.69	- 5 8.1	2.223	3.159	8.1	22.2	5 1	12 55.80	+ 4 44.9	1.968	2.877	10.5	20.3
5 11	12 49.27	- 4 31.5	2.302	3.164	11.2	22.4	5 11	12 50.94	+ 4 54.9	2.036	2.871	13.5	20.5
382803	2003 US ₁₃₆		4 8.9 123°22	1°5/ 7.7 17			290980	2005 XH ₄₁		4 8.9 349°46	1°0/ 8.3 17		
3 2	13 39.96	- 3 29.6	2.255	3.054	12.8	20.7	3 2	13 35.66	- 6 27.8	1.584	2.406	16.3	20.6
3 12	13 34.64	- 3 22.8	2.176	3.064	9.9	20.6	3 12	13 32.30	- 6 18.2	1.502	2.402	12.7	20.3
3 22	13 27.35	- 3 10.3	2.121	3.074	6.5	20.4	3 22	13 26.34	- 5 57.4	1.441	2.399	8.5	20.1
4 1	13 18.67	- 2 55.1	2.093	3.084	3.0	20.2	4 1	13 18.39	- 5 28.9	1.404	2.396	3.8	19.8
4 11	13 9.40	- 2 40.9	2.095	3.093	2.0	20.1	4 11	13 9.49	- 4 57.9	1.393	2.393	1.7	19.6
4 21	13 0.39	- 2 31.1	2.126	3.102	5.3	20.3	4 21	13 0.79	- 4 30.5	1.408	2.392	6.4	19.9
5 1	12 52.44	- 2 28.7	2.185	3.111	8.7	20.6	5 1	12 53.43	- 4 12.0	1.448	2.391	11.0	20.2
5 11	12 46.18	- 2 35.8	2.268	3.119	11.7	20.8	5 11	12 48.25	- 4 6.7	1.510	2.390	15.0	20.4
462833	2010 TR ₈₄		4 8.9 206°21	1°1/ 7.9 16			407773	2011 WV ₁₁₄		4 8.9 116°14	3°0/ 6.4 18		
3 2	13 36.51	- 7 58.1	1.867	2.673	14.8	22.6	3 2	13 40.94	- 2 12.5	1.790	2.603	15.1	22.0
3 12	13 32.55	- 7 14.9	1.778	2.670	11.6	22.4	3 12	13 35.75	- 1 26.5	1.726	2.622	11.6	21.8
3 22	13 26.29	- 6 18.1	1.711	2.666	7.7	22.1	3 22	13 28.24	- 0 33.0	1.684	2.640	7.6	21.6
4 1	13 18.29	- 5 11.8	1.670	2.661	3.4	21.9	4 1	13 19.10	+ 0 22.4	1.670	2.658	3.9	21.4
4 11	13 9.47	- 4 2.4	1.656	2.656	1.8	21.7	4 11	13 9.35	+ 1 12.8	1.683	2.676	3.7	21.4
4 21	13 0.83	- 2 56.9	1.671	2.651	6.1	22.0	4 21	13 0.04	+ 1 52.4	1.724	2.692	7.2	21.7
5 1	12 53.34	- 2 1.9	1.713	2.645	10.3	22.2	5 1	12 52.13	+ 2 16.8	1.791	2.708	10.9	21.9
5 11	12 47.77	- 1 22.4	1.777	2.639	14.0	22.5	5 11	12 46.28	+ 2 24.3	1.882	2.724	14.2	22.2
469165	2015 KW ₃₉		4 8.9 331°23	3°2/12.7 17			161282	2003 GE ₁₈		4 8.9 111°38	0°4/ 8.5 18		
3 2	13 31.85	-20 46.6	2.285	3.037	14.1	20.9	3 2	13 31.95	- 9 44.8	2.465	3.258	12.0	20.7
3 12	13 28.63	-20 30.7	2.188	3.036	11.6	20.7	3 12	13 28.38	- 9 1.0	2.381	3.265	9.3	20.6
3 22	13 23.51	-19 56.4	2.113	3.034	8.6	20.5	3 22	13 23.16	- 8 6.0	2.321	3.273	6.2	20.4
4 1	13 16.99	-19 4.4	2.063	3.033	5.5	20.3	4 1	13 16.79	- 7 3.1	2.289	3.280	2.7	20.2
4 11	13 9.82	-17 57.6	2.039	3.032	3.3	20.2	4 11	13 9.92	- 5 57.0	2.286	3.287	1.0	20.0
4 21	13 2.80	-16 41.3	2.045	3.030	4.5	20.3	4 21	13 3.24	- 4 53.0	2.312	3.294	4.4	20.3
5 1	12 56.73	-15 22.0	2.078	3.029	7.6	20.4	5 1	12 57.43	- 3 56.1	2.366	3.300	7.7	20.5
5 11	12 52.22	-14 6.5	2.136	3.028	10.7	20.6	5 11	12 52.99	- 3 10.1	2.445	3.307	10.6	20.7
518801	2010 BM ₉₄		4 8.9 218°02	8°7/31.4 17			362749	2011 UP ₃₃₉		4 8.9 85°80	3°1/ 6.6 18		
3 2	13 38.49	+15 14.5	1.950	2.772	13.7	21.4	3 2	13 38.25	- 3 49.4	1.445	2.273	17.3	21.2
3 12	13 33.91	+16 30.0	1.884	2.768	11.4	21.2	3 12	13 34.25	- 2 55.5	1.383	2.288	13.3	21.0
3 22	13 27.07	+17 39.5	1.841	2.765	9.5	21.1	3 22	13 27.52	- 1 50.2	1.342	2.302	8.7	20.7
4 1	13 18.60	+18 34.5	1.822	2.761	8.7	21.0	4 1	13 18.85	- 0 40.5	1.326	2.316	4.3	20.5
4 11	13 9.43	+19 7.7	1.830	2.758	9.7	21.0	4 11	13 9.42	+ 0 24.8	1.336	2.331	3.9	20.5
4 21	13 0.55	+19 14.8	1.862	2.754	11.8	21.2	4 21	13 0.46	+ 1 17.6	1.371	2.345	8.0	20.8
5 1	12 52.91	+18 55.0	1.917	2.750	14.2	21.3	5 1	12 53.11	+ 1 52.2	1.432	2.358	12.4	21.1
5 11	12 47.20	+18 10.2	1.992	2.745	16.5	21.5	5 11	12 48.12	+ 2 5.8	1.513	2.372	16.1	21.3
141967	2002 PD ₁₂₄		4 8.9 275°03	1°6/ 7.8 17			468804	2012 HF ₅₂		4 8.9 278°37	0°6/ 8.3 16		
3 2	13 38.46	- 5 27.7	1.705	2.519	15.7	20.3	3 2	13 34.83	-11 25.3	2.065	2.857	14.1	22.0
3 12	13 34.53	- 5 8.1	1.602	2.498	12.3	20.0	3 12	13 31.35	-10 19.4	1.940	2.823	11.2	21.7
3 22	13 27.94	- 4 37.5	1.521	2.478	8.3	19.8	3 22	13 25.63	- 8 53.9	1.837	2.788	7.5	21.4
4 1	13 19.19	- 3 59.3	1.465	2.456	3.8	19.4	4 1	13 18.11	- 7 11.7	1.762	2.753	3.4	21.1
4 11	13 9.24	- 3 19.3	1.436	2.435	2.3	19.3	4 11	13 9.55	- 5 19.2	1.716	2.716	1.4	20.8
4 21	12 59.25	- 2 43.6	1.433	2.413	6.9	19.5	4 21	13 0.86	- 3 25.0	1.699	2.679	5.9	21.1
5 1	12 50.43	- 2 18.3	1.457	2.391	11.6	19.7	5 1	12 53.03	- 1 38.4	1.710	2.642	10.4	21.2
5 11	12 43.76	- 2 8.0	1.502	2.369	15.8	19.9	5 11	12 46.92	- 0 7.4	1.746	2.603	14.4	21.4
246444	2007 VJ ₁₈₅		4 8.9 107°10	2°2/11.5 17			502199	2015 BW ₇₁		4 8.9 27°49	7°4/31.9 17		
3 2	13 33.49	-17 27.0	2.371	3.133	13.3	20.5	3 2	13 31.99	+ 7 26.4	1.722	2.565	14.3	21.0
3 12	13 29.70	-17 10.9	2.284	3.142	10.7	20.4	3 12	13 29.09	+ 9 16.1	1.661	2.568	11.3	20.8
3 22	13 24.11	-16 39.4	2.220	3.151	7.7	20.2	3 22	13 23.96	+11 7.5	1.624	2.572	8.6	20.7
4 1	13 17.23	-15 53.8	2.181	3.159	4.5	20.0	4 1	13 17.23	+12 50.4	1.612	2.576	7.4	20.6
4 11	13 9.78	-14 57.6	2.171	3.168	2.2	19.8	4 11	13 9.82	+14 14.9	1.626	2.580	8.6	20.7
4 21	13 2.54	-13 55.5	2.189	3.176	4.1	20.0	4 21	13 2.71	+15 14.1	1.666	2.585	11.2	20.9
5 1	12 56.24	-12 53.2	2.236	3.184	7.3	20.2	5 1	12 56.83	+15 44.6	1.727	2.589	14.2	21.1
5 11	12 51.46	-11 56.1	2.308	3.192	10.3	20.4	5 11	12 52.83	+15 46.7	1.808	2.595	16.8	21.3
414137	2007 VC ₁₆₆		4 8.9 256°50	1°9/ 7.4 17			105686	2000 SG ₅₂		4 8.9 96°50	2°2/11.5 18		
3 2	13 38.62	- 5 19.2	1.792	2.603	15								

EPHEMERIDES

4 8.9

4 9.0

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
248376	2005 <i>RV</i> ₂₀		4 8.9 208°26	4.9/14.9 18			497405	2005 <i>WF</i> ₁₇		4 9.0 21°22	3.9/12.4 17		
3 2	13 34.73	-26 7.5	2.734	3.438	13.1	20.6	3 2	13 30.56	-19 49.2	1.363	2.160	19.7	20.0
3 12	13 30.66	-26 27.5	2.630	3.435	11.1	20.5	3 12	13 28.73	-19 42.3	1.294	2.169	16.1	19.8
3 22	13 24.80	-26 31.2	2.547	3.432	8.9	20.3	3 22	13 24.12	-19 8.7	1.243	2.179	11.9	19.6
4 1	13 17.60	-26 17.5	2.488	3.429	6.6	20.2	4 1	13 17.42	-18 9.2	1.213	2.190	7.3	19.4
4 11	13 9.73	-25 47.0	2.457	3.425	5.1	20.0	4 11	13 9.83	-16 49.4	1.207	2.202	4.0	19.2
4 21	13 1.93	-25 2.4	2.453	3.422	5.3	20.1	4 21	13 2.61	-15 18.4	1.226	2.216	6.0	19.3
5 1	12 54.96	-24 8.2	2.477	3.418	7.1	20.2	5 1	12 56.95	-13 47.2	1.269	2.230	10.3	19.6
5 11	12 49.43	-23 10.1	2.528	3.414	9.5	20.3	5 11	12 53.67	-12 26.2	1.334	2.245	14.5	19.9
403793	2011 <i>SG</i> ₂₃₁		4 8.9 162°16	0.7/ 9.7 17			466563	2014 <i>TJ</i> ₂₃		4 9.0 123°58	0.4/ 8.7 16		
3 2	13 39.17	-12 34.6	1.853	2.640	15.7	22.8	3 2	13 39.46	- 8 20.2	1.764	2.567	15.7	21.9
3 12	13 34.61	-12 9.0	1.768	2.646	12.4	22.6	3 12	13 34.87	- 8 5.2	1.687	2.576	12.2	21.7
3 22	13 27.65	-11 27.4	1.705	2.651	8.5	22.4	3 22	13 27.85	- 7 38.1	1.632	2.584	8.2	21.5
4 1	13 18.94	-10 32.1	1.668	2.656	4.1	22.1	4 1	13 19.03	- 7 2.2	1.602	2.593	3.7	21.2
4 11	13 9.41	- 9 28.4	1.658	2.660	1.0	21.9	4 11	13 9.43	- 6 22.3	1.599	2.601	1.2	21.1
4 21	13 0.15	- 8 22.9	1.677	2.663	5.3	22.2	4 21	13 0.14	- 5 44.3	1.625	2.608	5.7	21.4
5 1	12 52.15	- 7 22.7	1.723	2.666	9.5	22.4	5 1	12 52.18	- 5 13.8	1.676	2.616	10.0	21.7
5 11	12 46.17	- 6 33.8	1.793	2.668	13.3	22.7	5 11	12 46.31	- 4 54.9	1.751	2.623	13.7	21.9
109466	2001 <i>QW</i> ₂₁₅		4 8.9 200°14	0.5/ 8.3 18			86251	1999 <i>TE</i> ₁₈₃		4 9.0 247°81	1.2/ 7.6 18		
3 2	13 34.49	- 7 43.4	2.694	3.483	11.2	20.9	3 2	13 32.15	- 6 18.3	2.681	3.480	11.0	20.0
3 12	13 30.25	- 7 18.1	2.598	3.480	8.7	20.7	3 12	13 28.51	- 5 39.3	2.580	3.469	8.5	19.8
3 22	13 24.40	- 6 44.3	2.526	3.476	5.8	20.5	3 22	13 23.29	- 4 51.7	2.504	3.458	5.6	19.6
4 1	13 17.38	- 6 4.5	2.482	3.472	2.6	20.3	4 1	13 16.91	- 3 58.6	2.455	3.446	2.5	19.4
4 11	13 9.81	- 5 22.4	2.467	3.468	1.1	20.1	4 11	13 9.96	- 3 4.3	2.435	3.434	1.7	19.3
4 21	13 2.35	- 4 42.0	2.482	3.463	4.3	20.4	4 21	13 3.09	- 2 13.2	2.445	3.422	4.7	19.5
5 1	12 55.66	- 4 7.1	2.526	3.458	7.5	20.5	5 1	12 56.95	- 1 29.7	2.484	3.410	7.8	19.7
5 11	12 50.28	- 3 41.0	2.596	3.452	10.3	20.7	5 11	12 52.07	- 0 56.9	2.547	3.397	10.6	19.9
95441	2002 <i>CW</i> ₂₄₄		4 8.9 304°33	1.7/10.8 18			374451	2005 <i>XF</i> ₄		4 9.0 171°65	1.9/ 7.0 17		
3 2	13 33.71	-14 23.2	2.396	3.170	12.9	19.6	3 2	13 37.04	- 4 13.3	2.291	3.093	12.6	22.3
3 12	13 29.96	-14 23.9	2.298	3.166	10.3	19.4	3 12	13 32.45	- 3 34.5	2.206	3.097	9.7	22.1
3 22	13 24.37	-14 12.2	2.223	3.161	7.3	19.2	3 22	13 25.97	- 2 47.8	2.145	3.100	6.4	21.9
4 1	13 17.42	-13 49.0	2.174	3.156	4.0	18.9	4 1	13 18.12	- 1 57.1	2.112	3.102	3.0	21.7
4 11	13 9.79	-13 17.1	2.152	3.151	1.7	18.8	4 11	13 9.67	- 1 7.5	2.107	3.104	2.4	21.6
4 21	13 2.26	-12 40.2	2.160	3.147	4.1	18.9	4 21	13 1.42	+ 0 24.0	2.132	3.105	5.6	21.9
5 1	12 55.60	-12 2.8	2.195	3.142	7.5	19.1	5 1	12 54.14	+ 0 9.1	2.185	3.106	9.0	22.1
5 11	12 50.42	-11 29.7	2.255	3.138	10.6	19.3	5 11	12 48.44	+ 0 29.2	2.262	3.106	12.0	22.3
191944	2005 <i>UG</i> ₄₈		4 8.9 264°43	3.6/ 6.5 18			22116	2000 <i>RK</i> ₇₁		4 9.0 253°21	1.9/ 6.3 18		
3 2	13 39.76	- 1 59.7	1.469	2.297	17.1	20.3	3 2	13 30.17	- 2 4.7	3.155	3.962	9.4	19.0
3 12	13 35.92	- 1 21.5	1.377	2.281	13.4	20.1	3 12	13 26.68	- 1 29.0	3.065	3.958	7.2	18.8
3 22	13 29.06	+ 0 32.8	1.305	2.264	9.0	19.8	3 22	13 21.91	- 0 48.6	2.999	3.954	4.7	18.7
4 1	13 19.78	+ 0 20.5	1.257	2.247	4.7	19.5	4 1	13 16.24	- 0 6.7	2.962	3.951	2.4	18.5
4 11	13 9.17	+ 1 10.4	1.235	2.229	4.4	19.4	4 11	13 10.15	+ 0 33.1	2.954	3.947	2.3	18.5
4 21	12 58.59	+ 1 48.6	1.239	2.211	8.8	19.6	4 21	13 4.16	+ 1 7.7	2.976	3.943	4.6	18.6
5 1	12 49.43	+ 2 8.9	1.267	2.193	13.7	19.8	5 1	12 58.79	+ 1 34.1	3.026	3.939	7.1	18.8
5 11	12 42.76	+ 2 7.7	1.316	2.175	18.1	20.0	5 11	12 54.46	+ 1 50.3	3.101	3.935	9.3	19.0
85647	1998 <i>PZ</i>		4 9.0 156°85	1.6/ 7.9 18			61247	2000 <i>OF</i> ₂₃		4 9.0 248°08	6.4/ 2.5 18		
3 2	13 43.35	- 5 8.7	1.715	2.519	16.0	19.8	3 2	13 36.93	+ 7 51.6	2.018	2.843	13.2	19.1
3 12	13 37.97	- 4 50.4	1.636	2.527	12.4	19.6	3 12	13 32.76	+ 9 2.5	1.933	2.830	10.5	18.9
3 22	13 29.95	- 4 22.3	1.579	2.533	8.2	19.4	3 22	13 26.40	+10 14.6	1.871	2.816	7.9	18.7
4 1	13 20.00	- 3 48.4	1.548	2.539	3.7	19.1	4 1	13 18.40	+11 20.5	1.835	2.802	6.4	18.5
4 11	13 9.17	- 3 14.2	1.545	2.544	2.2	19.0	4 11	13 9.59	+12 12.6	1.827	2.787	7.3	18.6
4 21	12 58.66	- 2 45.3	1.570	2.549	6.5	19.3	4 21	13 0.92	+12 45.2	1.845	2.772	9.8	18.7
5 1	12 49.59	- 2 26.8	1.622	2.553	10.9	19.6	5 1	12 53.31	+12 55.0	1.888	2.757	12.8	18.8
5 11	12 42.77	- 2 21.8	1.697	2.556	14.6	19.8	5 11	12 47.48	+12 41.7	1.952	2.742	15.6	19.0
362961	2013 <i>BT</i> ₂₄		4 9.0 183°53	5.5/ 1.2 18			150862	2001 <i>SW</i> ₁₄₀		4 9.0 158°76	0.0/ 8.8 18		
3 2	13 32.24	+ 9 55.2	2.729	3.549	10.3	20.6	3 2	13 36.40	-10 26.4	2.038	2.832	14.2	21.0
3 12	13 28.46	+11 11.5	2.658	3.549	8.2	20.4	3 12	13 32.24	- 9 55.5	1.953	2.836	11.1	20.8
3 22	13 23.16	+12 26.8	2.612	3.549	6.4	20.3	3 22	13 25.97	- 9 11.3	1.891	2.840	7.5	20.6
4 1	13 16.80	+13 35.3	2.593	3.549	5.5	20.3	4 1	13 18.17	- 8 16.7	1.854	2.844	3.4	20.3
4 11	13 9.98	+14 31.5	2.604	3.548	6.3	20.3	4 11	13 9.68	- 7 16.9	1.846	2.848	0.9	20.1
4 21	13 3.32	+15 11.6	2.641	3.547	8.1	20.4	4 21	13 1.41	- 6 17.8	1.866	2.851	5.1	20.5
5 1	12 57.44	+15 33.2	2.704	3.546	10.2	20.6	5 1	12 54.23	- 5 25.4	1.914	2.853	9.0	20.7
5 11	12 52.81	+15 36.1	2.788	3.545	12.2	20.7	5 11	12 48.82	- 4 44.4	1.986	2.855	12.4	20.9
176672	2002 <i>PR</i> ₃₉		4 9.0 173°14	0.7/ 8.3 16			60981	2000 <i>KP</i> ₁₂		4 9.0 141°15	1.6/ 7.8 18		
3 2	13 37.91	- 8 26.8	2.117	2.911	13.7	21.7	3 2	13 39.00	- 6 26.3	1.501	2.320	17.2	19.5
3 12	13 33.31	- 7 51.8	2.030	2.914	10.7	21.5	3 12	13 34.99	- 5 56.4	1.424	2.323	13.4	19.3
3 22	13 26.63	- 7 5.1	1.966	2.917	7.1	21.3	3 22	13 28.18	- 5 13.2	1.369	2.326	8.9	19.0
4 1	13 18.45	- 6 10.1	1.929	2.919	3.1	21.1	4 1	13 19.28	- 4 21.6	1.338	2.329	4.0	18.7
4 11	13 9.57	- 5 11.9	1.920	2.921	1.3	20.9	4 11	13 9.41	- 3 28.5	1.333	2.332	2.3	18.6
4 21	13 0.90	- 4 16.3	1.941	2.922	5.3	21.2	4 21	12 59.86	- 2 41.4	1.354	2.335	7.1	18.9
5 1	12 53.30	- 3 28.8	1.989	2.922	9.1	21.4	5 1	12 51.82	- 2 6.9	1.400	2.337	11.8	19.2
5 11	12 47.43	- 2 53.6	2.062	2.921	12.4	21.6	5 11	12 46.15	- 1 49.3	1.468	2.339	15.9	19.4
248961	2006 <i>YW</i> ₃		4 9.0 293°82	3.4/ 5.4 17			310894	2003					