

EPHEMERIDES

2 4.0

2 4.0

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
16659	1993 <i>UH</i> ₁		2 4.0 206°60	9°5/12.0	18		187298	2005 <i>TV</i> ₁₄₂		2 4.0 266°75	2°6/ 2.2	18	
1 2	9 31.77	-14 3.6	2.173	2.855	16.3	18.8	1 2	9 32.73	+21 4.6	1.918	2.757	12.8	20.3
1 12	9 26.36	-14 24.4	2.077	2.849	14.4	18.7	1 12	9 27.41	+21 54.0	1.829	2.741	9.4	20.0
1 22	9 18.91	-14 18.0	2.000	2.842	12.3	18.5	1 22	9 19.69	+22 49.2	1.764	2.725	5.6	19.8
2 1	9 10.05	-13 41.6	1.946	2.835	10.4	18.4	2 1	9 10.27	+23 43.8	1.728	2.708	2.6	19.5
2 11	9 0.65	-12 35.4	1.918	2.826	9.5	18.3	2 11	9 0.22	+24 31.1	1.720	2.691	4.8	19.6
2 21	8 51.72	-11 3.7	1.917	2.817	10.1	18.3	2 21	8 50.76	+25 6.0	1.741	2.673	8.8	19.8
3 2	8 44.20	-9 13.6	1.943	2.807	11.9	18.4	3 2	8 43.00	+25 25.7	1.788	2.656	12.6	20.0
3 12	8 38.79	-7 14.6	1.993	2.796	14.2	18.5	3 12	8 37.78	+25 30.1	1.856	2.638	15.9	20.2
275069	2009 <i>UR</i> ₁₃₄		2 4.0 66°52	2°2/ 5.6	18		199082	2005 <i>XM</i> ₈₂		2 4.0 307°25	5°8/31.6	18	
1 2	9 30.22	+ 8 33.7	1.890	2.704	14.0	21.2	1 2	9 35.28	+26 12.3	1.373	2.230	15.8	20.2
1 12	9 25.27	+ 8 46.1	1.815	2.709	10.6	21.0	1 12	9 30.00	+27 32.4	1.309	2.227	11.8	19.9
1 22	9 18.25	+ 9 12.7	1.764	2.714	6.8	20.8	1 22	9 21.48	+28 54.7	1.267	2.224	7.8	19.7
2 1	9 9.87	+ 9 50.9	1.740	2.718	3.0	20.6	2 1	9 10.70	+30 7.6	1.251	2.221	5.8	19.6
2 11	9 1.14	+10 36.2	1.745	2.723	3.3	20.6	2 11	8 59.28	+31 0.7	1.261	2.219	8.1	19.7
2 21	8 53.08	+11 23.5	1.778	2.728	7.1	20.9	2 21	8 48.95	+31 28.1	1.296	2.216	12.3	19.9
3 2	8 46.64	+12 8.0	1.837	2.733	10.9	21.1	3 2	8 41.23	+31 29.2	1.354	2.214	16.4	20.2
3 12	8 42.47	+12 45.9	1.920	2.738	14.1	21.3	3 12	8 37.01	+31 7.5	1.430	2.212	19.9	20.4
298316	2003 <i>ET</i> ₃₈		2 4.0 312°87	1°4/ 4.8	17		59207	1999 <i>BD</i> ₁₁		2 4.0 256°91	0°5/ 3.7	18	
1 2	9 31.64	+12 59.6	2.139	2.958	12.4	19.8	1 2	9 34.78	+15 50.5	1.715	2.547	14.4	20.2
1 12	9 26.23	+12 40.4	2.045	2.943	9.3	19.6	1 12	9 29.13	+16 18.1	1.621	2.529	10.7	19.9
1 22	9 18.81	+12 28.4	1.975	2.929	5.8	19.4	1 22	9 20.81	+16 55.9	1.552	2.511	6.3	19.6
2 1	9 10.01	+12 21.9	1.933	2.914	2.1	19.1	2 1	9 10.55	+17 39.1	1.509	2.493	1.5	19.3
2 11	9 0.77	+12 18.8	1.920	2.900	2.9	19.1	2 11	8 59.54	+18 21.4	1.495	2.474	3.8	19.4
2 21	8 52.05	+12 16.5	1.937	2.886	6.8	19.3	2 21	8 49.13	+18 57.2	1.510	2.455	8.7	19.6
3 2	8 44.78	+12 13.0	1.981	2.872	10.5	19.5	3 2	8 40.59	+19 22.6	1.550	2.435	13.2	19.9
3 12	8 39.65	+12 6.4	2.049	2.858	13.7	19.7	3 12	8 34.85	+19 35.9	1.612	2.415	17.1	20.1
498279	2007 <i>VH</i> ₄₆		2 4.0 142°29	0°4/ 4.3	17		423037	2003 <i>UK</i> ₇₄		2 4.0 125°39	4°1/ 7.0	18	
1 2	9 30.25	+13 51.9	2.769	3.581	10.1	22.4	1 2	9 31.17	+ 2 56.3	2.332	3.110	12.8	20.9
1 12	9 24.68	+14 8.5	2.693	3.591	7.4	22.3	1 12	9 25.57	+ 2 38.0	2.255	3.120	10.1	20.7
1 22	9 17.65	+14 31.6	2.645	3.600	4.4	22.1	1 22	9 18.27	+ 2 33.9	2.202	3.130	7.2	20.5
2 1	9 9.71	+14 58.3	2.626	3.609	1.2	21.9	2 1	9 9.88	+ 2 43.4	2.177	3.139	4.7	20.4
2 11	9 1.55	+15 25.8	2.639	3.618	2.2	22.0	2 11	9 1.22	+ 3 4.6	2.181	3.148	4.4	20.4
2 21	8 53.90	+15 51.0	2.682	3.627	5.4	22.2	2 21	8 53.14	+ 3 34.1	2.215	3.156	6.6	20.5
3 2	8 47.41	+16 11.7	2.754	3.634	8.3	22.4	3 2	8 46.39	+ 4 8.0	2.277	3.165	9.4	20.7
3 12	8 42.55	+16 26.5	2.851	3.642	10.7	22.6	3 12	8 41.52	+ 4 42.3	2.362	3.173	12.1	20.9
158517	2002 <i>EN</i> ₁₅₂		2 4.0 295°58	4°6/ 6.9	18		260781	2005 <i>NH</i> ₃₄		2 4.0 211°28	0°3/ 4.2	18	
1 2	9 29.81	+ 3 18.9	1.893	2.688	14.7	20.3	1 2	9 33.59	+14 21.7	2.032	2.854	12.9	21.1
1 12	9 25.11	+ 3 2.4	1.801	2.676	11.7	20.0	1 12	9 27.72	+14 35.5	1.947	2.849	9.5	20.8
1 22	9 18.26	+ 3 3.1	1.731	2.665	8.3	19.8	1 22	9 19.70	+14 57.8	1.887	2.844	5.7	20.6
2 1	9 9.90	+ 3 20.8	1.688	2.653	5.3	19.6	2 1	9 10.24	+15 25.2	1.855	2.839	1.4	20.3
2 11	9 1.01	+ 3 53.3	1.672	2.642	5.0	19.5	2 11	9 0.34	+15 53.3	1.853	2.833	3.0	20.4
2 21	8 52.64	+ 4 36.2	1.684	2.631	7.8	19.7	2 21	8 51.07	+16 18.2	1.881	2.827	7.2	20.7
3 2	8 45.80	+ 5 24.1	1.722	2.620	11.4	19.9	3 2	8 43.40	+16 37.0	1.935	2.820	11.0	20.9
3 12	8 41.25	+ 6 11.7	1.783	2.609	14.7	20.1	3 12	8 38.03	+16 47.9	2.013	2.813	14.2	21.1
354069	2001 <i>TS</i> ₂₅₂		2 4.0 57°62	0°4/ 3.8	18		368814	2006 <i>AZ</i> ₆₅		2 4.0 42°97	4°4/ 7.7	18	
1 2	9 34.17	+14 20.1	1.229	2.078	17.9	21.3	1 2	9 27.66	+ 0 47.7	1.771	2.563	15.7	20.6
1 12	9 28.84	+15 6.5	1.182	2.098	13.0	21.0	1 12	9 23.49	+ 1 21.6	1.699	2.573	12.4	20.4
1 22	9 20.55	+16 7.1	1.156	2.118	7.5	20.8	1 22	9 17.25	+ 2 18.9	1.650	2.583	8.7	20.2
2 1	9 10.42	+17 13.9	1.155	2.139	1.7	20.5	2 1	9 9.66	+ 3 37.2	1.627	2.593	5.4	20.1
2 11	9 0.03	+18 17.6	1.181	2.160	4.2	20.7	2 11	9 1.73	+ 5 10.5	1.632	2.604	4.6	20.0
2 21	8 50.98	+19 10.6	1.232	2.182	9.6	21.1	2 21	8 54.49	+ 6 50.8	1.665	2.616	7.5	20.2
3 2	8 44.51	+19 48.5	1.307	2.203	14.3	21.4	3 2	8 48.87	+ 8 30.0	1.725	2.627	11.0	20.5
3 12	8 41.29	+20 10.1	1.402	2.225	18.1	21.7	3 12	8 45.52	+10 0.9	1.808	2.639	14.3	20.7
125165	2001 <i>UU</i> ₉₆		2 4.0 11°28	1°3/ 4.7	18		336514	2008 <i>XS</i> ₂₇		2 4.0 158°14	1°9/ 5.3	18	
1 2	9 29.80	+11 49.9	1.101	1.957	19.0	19.6	1 2	9 31.35	+10 12.8	2.235	3.044	12.3	20.7
1 12	9 26.10	+12 7.4	1.041	1.959	14.2	19.4	1 12	9 25.82	+10 6.0	2.154	3.045	9.3	20.5
1 22	9 19.21	+12 43.9	1.000	1.962	8.6	19.1	1 22	9 18.48	+10 9.0	2.097	3.047	5.9	20.3
2 1	9 10.15	+13 34.1	0.983	1.966	2.6	18.7	2 1	9 9.94	+10 20.1	2.069	3.048	2.6	20.1
2 11	9 0.55	+14 29.6	0.989	1.971	4.2	18.8	2 11	9 1.08	+10 36.4	2.071	3.049	2.9	20.1
2 21	8 52.11	+15 21.9	1.020	1.977	10.1	19.2	2 21	8 52.81	+10 54.8	2.102	3.050	6.4	20.3
3 2	8 46.29	+16 4.2	1.073	1.984	15.3	19.5	3 2	8 45.94	+11 12.3	2.161	3.051	9.7	20.5
3 12	8 43.93	+16 32.5	1.145	1.993	19.7	19.8	3 12	8 41.08	+11 26.5	2.243	3.052	12.7	20.7
210992	2001 <i>WY</i> ₉₂		2 4.0 77°52	3°9/31.9	18		465685	2009 <i>SR</i> ₂₁₅		2 4.0 69°41	1°9/ 5.3	18	
1 2	9 32.22	+27 27.2	2.292	3.130	11.0	20.2	1 2	9 30.90	+ 9 17.5	1.796	2.615	14.4	21.5
1 12	9 26.47	+28 13.2	2.234	3.143	8.2	20.0	1 12	9 25.79	+ 9 36.1	1.730	2.627	10.9	21.3
1 22	9 18.82	+28 57.2	2.203	3.156	5.3	19.8	1 22	9 18.55	+10 8.9	1.688	2.640	6.8	21.1
2 1	9 10.00	+29 33.6	2.200	3.169	3.9	19.8	2 1	9 9.96	+10 52.7	1.673	2.653	2.8	20.8
2 11	9 0.97	+29 57.8	2.227	3.182	5.3	19.9	2 11	9 1.08	+11 42.2	1.686	2.666	3.2	20.9
2 21	8 52.71	+30 7.4	2.282	3.194	8.1	20.1	2 21	8 52.98	+12 32.1	1.728	2.679	7.2	21.2
3 2	8 46.04	+30 2.2	2.362	3.207	10.8	20.3	3 2	8 46.62	+13 17.3	1.796	2.692	11.1	21.4
3 12	8 41.52	+29 43.7	2.466	3.220	13.2	20.5	3 12	8 42.61	+13 54.6	1.887	2.705	14.3	21.7
496685	2016 <i>CF</i> ₂₅₇		2 4.0 59°30	4°3/31.3	17		3665	Fitzgerald		2 4.0 86°74	3°1/ 1.7	18	
1 2	9 31.26	+20 50.6	1.620	2.470	14.2	20.0	1 2	9 32.36	+18 41.2	1.548			

EPHEMERIDES

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
449100	2012 <i>UH</i> ₁₄₇		2 4.0 157°22	1°8/ 5.1 18			252690	2002 <i>BR</i> ₂₂		2 4.0 79°13	1°8/ 3.2 18		
1 2	9 36.51	+10 3.6	1.652	2.468	15.6	22.6	1 2	9 41.14	+21 50.1	1.833	2.661	13.8	19.1
1 12	9 30.14	+10 18.1	1.579	2.475	11.8	22.4	1 12	9 33.00	+21 47.4	1.782	2.688	10.0	18.9
1 22	9 21.22	+10 47.3	1.530	2.482	7.3	22.1	1 22	9 22.59	+21 45.4	1.757	2.716	5.8	18.8
2 1	9 10.62	+11 27.6	1.507	2.488	2.8	21.9	2 1	9 10.90	+21 39.6	1.760	2.742	2.0	18.6
2 11	8 59.57	+12 13.4	1.514	2.493	3.5	21.9	2 11	8 59.24	+21 26.9	1.794	2.769	3.9	18.7
2 21	8 49.40	+12 59.1	1.548	2.497	8.1	22.2	2 21	8 48.80	+21 5.7	1.857	2.795	7.9	19.0
3 2	8 41.25	+13 39.6	1.610	2.501	12.4	22.5	3 2	8 40.53	+20 36.7	1.948	2.821	11.5	19.3
3 12	8 35.88	+14 11.7	1.693	2.504	16.0	22.7	3 12	8 34.97	+20 1.1	2.061	2.846	14.4	19.6
354081	2001 <i>VX</i> ₇₆		2 4.0 113°22	8°5/28.0 17			167948	2005 <i>ER</i> ₂₁₀		2 4.0 274°66	3°7/ 7.1 17		
1 2	9 40.82	+34 57.0	1.765	2.600	13.9	20.4	1 2	9 27.93	+ 3 0.8	2.211	2.999	13.1	20.5
1 12	9 33.61	+37 19.2	1.729	2.623	11.0	20.3	1 12	9 23.44	+ 3 10.8	2.122	2.994	10.3	20.3
1 22	9 23.37	+39 31.8	1.720	2.646	8.9	20.2	1 22	9 17.17	+ 3 37.4	2.056	2.989	7.2	20.1
2 1	9 11.13	+41 22.1	1.739	2.668	8.7	20.2	2 1	9 9.69	+ 4 19.4	2.018	2.984	4.4	19.9
2 11	8 58.43	+42 40.7	1.785	2.689	10.4	20.4	2 11	9 1.82	+ 5 13.5	2.008	2.980	4.0	19.9
2 21	8 46.90	+43 25.0	1.857	2.709	12.9	20.6	2 21	8 54.43	+ 6 14.8	2.027	2.975	6.6	20.0
3 2	8 37.89	+43 37.3	1.952	2.728	15.3	20.8	3 2	8 48.32	+ 7 18.2	2.074	2.970	9.8	20.2
3 12	8 32.19	+43 23.8	2.064	2.747	17.4	21.0	3 12	8 44.13	+ 8 18.5	2.145	2.965	12.8	20.4
241976	2002 <i>JK</i> ₄₁		2 4.0 268°14	1°8/ 5.1 18			489805	2008 <i>CS</i> ₁₉₁		2 4.0 205°58	0°3/ 3.8 17		
1 2	9 32.84	+10 16.0	1.723	2.544	14.9	20.5	1 2	9 30.02	+16 59.6	2.703	3.524	10.0	21.7
1 12	9 27.67	+10 28.4	1.627	2.525	11.3	20.3	1 12	9 24.65	+17 9.6	2.619	3.522	7.3	21.6
1 22	9 19.95	+10 55.5	1.553	2.506	7.1	20.0	1 22	9 17.73	+17 23.9	2.562	3.521	4.3	21.4
2 1	9 10.37	+11 34.6	1.505	2.486	2.7	19.7	2 1	9 9.81	+17 40.0	2.535	3.519	1.0	21.1
2 11	9 0.03	+12 20.7	1.486	2.466	3.5	19.7	2 11	9 1.63	+17 54.7	2.539	3.517	2.5	21.2
2 21	8 50.22	+13 8.3	1.496	2.446	8.2	19.9	2 21	8 53.94	+18 5.7	2.573	3.515	5.7	21.4
3 2	8 42.17	+13 51.8	1.531	2.425	12.7	20.1	3 2	8 47.43	+18 11.3	2.635	3.513	8.7	21.6
3 12	8 36.77	+14 27.3	1.588	2.404	16.7	20.3	3 12	8 42.61	+18 10.5	2.721	3.511	11.2	21.8
448128	2008 <i>SR</i> ₁₆		2 4.0 111°95	0°8/ 3.6 18			367619	2009 <i>UB</i> ₈₅		2 4.0 145°98	3°3/ 1.5 18		
1 2	9 38.54	+17 6.0	1.553	2.386	15.6	21.5	1 2	9 32.12	+23 25.2	2.004	2.845	12.2	20.8
1 12	9 31.64	+17 24.9	1.493	2.402	11.4	21.3	1 12	9 26.74	+24 25.2	1.935	2.847	9.0	20.6
1 22	9 22.06	+17 51.5	1.457	2.417	6.6	21.0	1 22	9 19.18	+25 27.9	1.891	2.849	5.5	20.4
2 1	9 10.80	+18 20.0	1.448	2.432	1.6	20.7	2 1	9 10.18	+26 26.5	1.875	2.851	3.3	20.3
2 11	8 59.27	+18 44.7	1.468	2.446	3.9	20.9	2 11	9 0.79	+27 14.6	1.889	2.853	5.2	20.4
2 21	8 48.89	+19 1.3	1.516	2.460	8.7	21.3	2 21	8 52.11	+27 47.9	1.931	2.855	8.6	20.6
3 2	8 40.82	+19 7.8	1.589	2.473	13.0	21.5	3 2	8 45.14	+28 4.7	1.998	2.856	11.9	20.8
3 12	8 35.74	+19 3.8	1.684	2.486	16.5	21.8	3 12	8 40.56	+28 5.9	2.088	2.858	14.8	21.0
417650	2006 <i>XK</i> ₇₁		2 4.0 55°78	1°8/ 4.7 18			370714	2004 <i>QS</i> ₂₁		2 4.0 188°70	1°3/ 4.9 18		
1 2	9 40.03	+14 8.1	1.740	2.558	14.9	20.4	1 2	9 32.66	+11 42.0	2.213	3.025	12.3	21.2
1 12	9 32.54	+13 18.7	1.664	2.562	11.1	20.1	1 12	9 26.86	+11 45.6	2.130	3.024	9.2	21.0
1 22	9 22.54	+12 35.0	1.612	2.566	6.8	19.9	1 22	9 19.14	+11 58.5	2.071	3.023	5.7	20.7
2 1	9 10.92	+11 56.1	1.589	2.570	2.6	19.6	2 1	9 10.16	+12 18.3	2.041	3.022	2.0	20.5
2 11	8 58.98	+11 20.8	1.596	2.574	3.6	19.7	2 11	9 0.82	+12 41.6	2.041	3.020	2.8	20.5
2 21	8 48.01	+10 48.2	1.632	2.579	8.0	20.0	2 21	8 52.07	+13 4.9	2.071	3.018	6.5	20.8
3 2	8 39.13	+10 17.2	1.695	2.583	12.1	20.2	3 2	8 44.76	+13 25.3	2.129	3.016	10.0	21.0
3 12	8 33.04	+ 9 46.8	1.781	2.588	15.5	20.5	3 12	8 39.52	+13 40.5	2.210	3.013	13.0	21.2
522262	2016 <i>AV</i> ₂₇₅		2 4.0 266°16	2°6/ 6.1 16			152691	1998 <i>QJ</i> ₁₀₃		2 4.0 83°72	6°4/ 1.0 17		
1 2	9 29.34	+ 5 32.7	1.843	2.649	14.6	22.1	1 2	9 43.10	+29 41.5	1.394	2.240	16.3	19.9
1 12	9 24.87	+ 6 14.5	1.751	2.639	11.3	21.8	1 12	9 35.25	+30 39.2	1.355	2.265	12.2	19.7
1 22	9 18.19	+ 7 16.5	1.682	2.628	7.4	21.6	1 22	9 24.21	+31 30.6	1.338	2.289	8.3	19.5
2 1	9 9.95	+ 8 35.8	1.640	2.617	3.6	21.3	2 1	9 11.32	+32 5.3	1.348	2.313	6.4	19.5
2 11	9 1.12	+10 6.3	1.628	2.606	3.5	21.3	2 11	8 58.40	+32 16.3	1.384	2.337	8.2	19.6
2 21	8 52.80	+11 40.4	1.644	2.595	7.5	21.5	2 21	8 47.17	+32 2.5	1.447	2.360	11.8	19.9
3 2	8 46.04	+13 10.4	1.687	2.584	11.6	21.7	3 2	8 38.90	+31 27.0	1.533	2.383	15.3	20.2
3 12	8 41.62	+14 30.4	1.753	2.573	15.2	21.9	3 12	8 34.19	+30 35.4	1.638	2.405	18.3	20.4
3464	Owensby		2 4.0 282°14	1°0/ 3.6 18			58442	1996 <i>HR</i> ₉		2 4.0 279°67	4°7/ 6.6 18		
1 2	9 37.16	+18 13.2	1.394	2.239	16.4	16.9	1 2	9 32.07	+ 4 3.8	1.583	2.389	16.7	20.3
1 12	9 31.18	+18 19.9	1.319	2.234	12.1	16.6	1 12	9 27.35	+ 3 57.2	1.483	2.366	13.3	20.0
1 22	9 22.10	+18 33.6	1.267	2.229	7.1	16.3	1 22	9 19.92	+ 4 11.3	1.403	2.343	9.3	19.7
2 1	9 10.88	+18 49.0	1.240	2.224	1.8	15.9	2 1	9 10.44	+ 4 46.2	1.349	2.319	5.6	19.4
2 11	8 59.05	+19 0.2	1.240	2.219	4.4	16.1	2 11	9 0.05	+ 5 38.7	1.322	2.295	5.2	19.3
2 21	8 48.25	+19 2.7	1.267	2.214	9.7	16.4	2 21	8 50.11	+ 6 42.7	1.321	2.271	9.1	19.5
3 2	8 39.91	+18 54.9	1.318	2.209	14.6	16.6	3 2	8 41.99	+ 7 50.7	1.346	2.247	13.6	19.7
3 12	8 34.91	+18 36.5	1.389	2.204	18.7	16.9	3 12	8 36.69	+ 8 55.5	1.392	2.223	17.8	19.9
257312	2009 <i>HT</i> ₈₈		2 4.0 259°77	0°7/ 4.4 18			222829	2002 <i>EG</i> ₇		2 4.0 46°95	2°6/ 2.4 18		
1 2	9 33.17	+13 12.3	1.787	2.614	14.2	21.6	1 2	9 33.50	+22 17.7	1.894	2.734	12.9	19.8
1 12	9 27.79	+13 28.8	1.696	2.600	10.6	21.3	1 12	9 27.79	+22 48.9	1.823	2.736	9.4	19.6
1 22	9 19.95	+13 56.7	1.628	2.586	6.4	21.0	1 22	9 19.80	+23 22.6	1.777	2.737	5.6	19.4
2 1	9 10.37	+14 32.4	1.588	2.571	1.8	20.7	2 1	9 10.33	+23 53.1	1.759	2.739	2.7	19.2
2 11	9 0.16	+15 10.8	1.576	2.556	3.3	20.7	2 11	9 0.50	+24 15.2	1.770	2.740	4.6	19.3
2 21	8 50.55	+15 46.8	1.593	2.541	8.0	21.0	2 21	8 51.48	+24 25.3	1.808	2.742	8.4	19.6
3 2	8 42.68	+16 16.3	1.636	2.526	12.3	21.2	3 2	8 44.29	+24 22.4	1.873	2.744	12.0	19.8
3 12	8 37.40	+16 36.5	1.700	2.510	16.0	21.4	3 12	8 39.61	+24 7.1	1.959	2.746	15.0	20.0
206203	2002 <i>UR</i> ₃₆		2 4.0 40°13	0°5/ 4.4 18			130186	2000 <i>AE</i> ₇₀		2 4.0 39°81	4°1/ 6.7 18		
1 2	9 29.68	+13 21.8	1.875	2.705	13.4	20.2	1 2	9 30.08	+ 4 49.1</				

EPHEMERIDES

2 4.0

2 4.0

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
304838	2007 <i>RM</i> ₃₂		2 4.0 80°58	1.4°/ 3.1	18		381204	2007 <i>RR</i> ₇₀		2 4.0 61°83	0.9°/ 3.3	18	
1 2	9 35.09	+16 25.9	1.535	2.373	15.4	20.4	1 2	9 30.73	+17 8.1	2.017	2.850	12.5	21.7
1 12	9 29.10	+17 27.5	1.486	2.398	11.2	20.2	1 12	9 25.51	+17 44.7	1.958	2.867	9.0	21.6
1 22	9 20.58	+18 38.7	1.461	2.422	6.4	19.9	1 22	9 18.35	+18 27.9	1.924	2.885	5.2	21.4
2 1	9 10.49	+19 51.6	1.463	2.446	1.8	19.7	2 1	9 10.00	+19 12.7	1.919	2.902	1.4	21.1
2 11	9 0.21	+20 58.0	1.494	2.470	4.2	19.9	2 11	9 1.44	+19 53.9	1.943	2.920	3.3	21.3
2 21	8 51.04	+21 51.5	1.552	2.494	8.8	20.2	2 21	8 53.64	+20 27.6	1.995	2.938	7.1	21.6
3 2	8 44.07	+22 29.2	1.636	2.517	12.8	20.5	3 2	8 47.46	+20 51.1	2.075	2.955	10.5	21.8
3 12	8 39.94	+22 50.6	1.741	2.540	16.2	20.8	3 12	8 43.45	+21 3.7	2.177	2.973	13.4	22.0
282892	2007 <i>GB</i> ₁₁		2 4.0 289°12	1°5/ 4.9	18		432124	2009 <i>BX</i> ₃₄		2 4.0 47°82	1°3/ 3.2	18	
1 2	9 32.04	+ 9 57.3	1.384	2.218	17.1	20.8	1 2	9 32.64	+19 55.4	2.088	2.921	12.1	20.9
1 12	9 27.41	+10 32.9	1.309	2.215	12.9	20.6	1 12	9 26.89	+20 6.6	2.019	2.929	8.8	20.7
1 22	9 19.92	+11 28.1	1.256	2.212	7.9	20.3	1 22	9 19.17	+20 21.0	1.975	2.936	5.1	20.4
2 1	9 10.42	+12 38.2	1.227	2.209	2.7	20.0	2 1	9 10.20	+20 34.7	1.960	2.943	1.6	20.2
2 11	9 0.28	+13 55.1	1.226	2.206	3.8	20.0	2 11	9 0.99	+20 43.7	1.975	2.951	3.4	20.4
2 21	8 50.97	+15 9.9	1.251	2.204	9.1	20.3	2 21	8 52.54	+20 45.5	2.018	2.959	7.2	20.6
3 2	8 43.86	+16 15.2	1.300	2.201	14.0	20.6	3 2	8 45.71	+20 38.8	2.088	2.967	10.6	20.8
3 12	8 39.83	+17 6.3	1.370	2.198	18.2	20.8	3 12	8 41.11	+20 23.7	2.181	2.975	13.5	21.0
35913	1999 <i>JC</i> ₉₇		2 4.0 179°49	1°8/ 2.2	18		37615	1993 <i>FX</i> ₅₀		2 4.0 238°09	2°2/ 5.7	18	
1 2	9 28.83	+20 3.9	2.873	3.700	9.3	19.5	1 2	9 30.22	+ 8 7.0	2.199	3.003	12.6	19.4
1 12	9 23.80	+21 4.1	2.794	3.701	6.8	19.3	1 12	9 25.18	+ 8 21.2	2.106	2.995	9.6	19.2
1 22	9 17.26	+22 8.4	2.743	3.702	4.0	19.1	1 22	9 18.25	+ 8 48.4	2.038	2.985	6.2	19.0
2 1	9 9.74	+23 12.3	2.722	3.702	1.8	18.9	2 1	9 10.01	+ 9 26.6	1.998	2.976	2.9	18.8
2 11	9 1.91	+24 11.2	2.733	3.702	3.3	19.1	2 11	9 1.33	+10 11.9	1.988	2.966	3.1	18.8
2 21	8 54.49	+25 1.5	2.774	3.702	6.1	19.2	2 21	8 53.12	+11 0.0	2.007	2.956	6.5	19.0
3 2	8 48.16	+25 40.8	2.844	3.701	8.8	19.4	3 2	8 46.25	+11 46.4	2.054	2.946	10.1	19.2
3 12	8 43.44	+26 8.4	2.938	3.700	11.1	19.6	3 12	8 41.40	+12 27.4	2.125	2.935	13.2	19.3
197906	2004 <i>RB</i> ₄₂		2 4.0 186°13	3°8/ 7.4	18		208060	1999 <i>TS</i> ₃₁₇		2 4.0 244°60	1°8/ 5.2	18	
1 2	9 29.81	+ 1 47.3	2.468	3.241	12.4	21.6	1 2	9 32.96	+ 9 57.2	1.814	2.630	14.4	20.9
1 12	9 24.63	+ 1 55.6	2.379	3.240	9.8	21.4	1 12	9 27.60	+10 11.7	1.722	2.618	10.9	20.7
1 22	9 17.80	+ 2 19.6	2.314	3.240	7.0	21.2	1 22	9 19.86	+10 40.4	1.654	2.606	6.9	20.4
2 1	9 9.87	+ 2 58.0	2.276	3.239	4.5	21.0	2 1	9 10.43	+11 20.4	1.613	2.594	2.7	20.1
2 11	9 1.60	+ 3 48.2	2.269	3.237	4.1	21.0	2 11	9 0.38	+12 7.0	1.601	2.581	3.3	20.1
2 21	8 53.78	+ 4 45.8	2.291	3.235	6.2	21.1	2 21	8 50.91	+12 54.8	1.618	2.567	7.7	20.3
3 2	8 47.15	+ 5 46.3	2.342	3.232	9.1	21.3	3 2	8 43.12	+13 38.6	1.661	2.554	12.0	20.6
3 12	8 42.28	+ 6 44.9	2.418	3.229	11.8	21.5	3 12	8 37.85	+14 14.7	1.726	2.540	15.7	20.8
377190	2003 <i>UR</i> ₃₄₆		2 4.0 74°45	2°2/ 5.7	18		215520	2002 <i>VG</i> ₂₉		2 4.0 16°33	18°8/ 21.6	18	
1 2	9 29.44	+ 7 57.9	2.034	2.844	13.3	21.7	1 2	9 26.00	-25 28.5	1.345	2.005	25.6	19.5
1 12	9 24.63	+ 8 14.3	1.957	2.848	10.1	21.5	1 12	9 23.10	-27 22.2	1.292	2.013	24.0	19.4
1 22	9 17.89	+ 8 44.8	1.904	2.852	6.5	21.3	1 22	9 17.44	-28 31.9	1.251	2.022	22.2	19.3
2 1	9 9.90	+ 9 26.6	1.879	2.856	3.0	21.1	2 1	9 9.86	-28 48.7	1.223	2.032	20.5	19.2
2 11	9 1.56	+10 15.6	1.882	2.861	3.2	21.1	2 11	9 1.72	-28 9.3	1.210	2.044	19.3	19.1
2 21	8 53.84	+11 6.7	1.915	2.865	6.7	21.3	2 21	8 54.48	-26 37.0	1.215	2.057	18.9	19.2
3 2	8 47.58	+11 55.4	1.974	2.869	10.3	21.5	3 2	8 49.45	-24 22.1	1.237	2.072	19.2	19.2
3 12	8 43.43	+12 37.7	2.057	2.873	13.4	21.7	3 12	8 47.47	-21 40.0	1.278	2.088	20.3	19.3
237320	2009 <i>BX</i> ₃₆		2 4.0 260°93	0°2/ 3.9	17		262917	2007 <i>CC</i> ₆₁		2 4.0 269°40	3°1/ 2.3	18	
1 2	9 29.33	+15 6.1	2.464	3.286	10.9	20.9	1 2	9 36.76	+24 34.4	1.904	2.741	13.0	20.3
1 12	9 24.41	+15 35.7	2.368	3.272	8.0	20.7	1 12	9 30.28	+24 50.8	1.823	2.733	9.6	20.1
1 22	9 17.74	+16 12.9	2.299	3.257	4.7	20.5	1 22	9 21.35	+25 6.9	1.766	2.724	5.9	19.9
2 1	9 9.87	+16 54.4	2.258	3.242	1.1	20.2	2 1	9 10.76	+25 17.2	1.737	2.715	3.1	19.7
2 11	9 1.58	+17 36.1	2.248	3.227	2.7	20.3	2 11	8 59.72	+25 16.7	1.738	2.707	5.0	19.8
2 21	8 53.71	+18 13.9	2.268	3.212	6.3	20.5	2 21	8 49.50	+25 3.1	1.767	2.698	8.8	20.0
3 2	8 47.04	+18 44.9	2.316	3.196	9.6	20.7	3 2	8 41.20	+24 36.4	1.822	2.689	12.4	20.2
3 12	8 42.21	+19 7.2	2.387	3.181	12.5	20.8	3 12	8 35.58	+23 58.2	1.899	2.680	15.6	20.4
501277	2013 <i>WJ</i> ₄₁		2 4.0 244°93	4°6/ 7.3	18		10982	Poerink		2 4.0 165°70	3°6/ 8.1	18	
1 2	9 29.99	+ 1 57.7	2.270	3.048	13.1	20.8	1 2	9 27.30	- 0 29.1	3.320	4.069	9.9	20.2
1 12	9 24.89	+ 1 33.9	2.182	3.045	10.5	20.6	1 12	9 22.42	- 0 23.3	3.231	4.075	8.0	20.1
1 22	9 18.01	+ 1 25.1	2.118	3.042	7.7	20.4	1 22	9 16.36	- 0 4.9	3.168	4.080	5.9	19.9
2 1	9 9.93	+ 1 31.2	2.081	3.039	5.2	20.2	2 1	9 9.54	+ 0 25.3	3.133	4.084	4.1	19.8
2 11	9 1.48	+ 1 50.7	2.072	3.036	4.8	20.2	2 11	9 2.51	+ 1 5.5	3.129	4.088	3.7	19.8
2 21	8 53.53	+ 2 20.3	2.093	3.033	6.9	20.3	2 21	8 55.82	+ 1 52.8	3.155	4.092	5.1	19.9
3 2	8 46.88	+ 2 56.0	2.140	3.030	9.8	20.5	3 2	8 50.00	+ 2 43.9	3.211	4.095	7.1	20.0
3 12	8 42.13	+ 3 33.3	2.212	3.027	12.6	20.7	3 12	8 45.45	+ 3 35.4	3.293	4.097	9.1	20.2
217117	2001 <i>YG</i> ₁₃₉		2 4.0 95°98	6°9/ 8.7	18		274022	2007 <i>RZ</i> ₁₈		2 4.0 169°42	0°4/ 3.7	17	
1 2	9 33.32	- 3 24.8	2.024	2.775	15.4	19.8	1 2	9 30.30	+16 13.5	2.836	3.653	9.7	22.0
1 12	9 27.34	- 4 8.3	1.957	2.793	12.7	19.6	1 12	9 24.80	+16 43.1	2.756	3.657	7.1	21.8
1 22	9 19.41	- 4 31.7	1.912	2.811	9.9	19.5	1 22	9 17.82	+17 18.0	2.703	3.660	4.1	21.6
2 1	9 10.25	- 4 33.6	1.893	2.829	7.6	19.4	2 1	9 9.89	+17 55.0	2.680	3.664	1.0	21.4
2 11	9 0.83	- 4 15.5	1.901	2.846	7.0	19.4	2 11	9 1.71	+18 30.7	2.688	3.666	2.4	21.5
2 21	8 52.12	- 3 41.1	1.937	2.863	8.4	19.5	2 21	8 53.98	+19 1.9	2.728	3.668	5.5	21.7
3 2	8 45.01	- 2 55.6	2.000	2.880	10.9	19.7	3 2	8 47.38	+19 26.4	2.796	3.670	8.4	21.9
3 12	8 40.07	- 2 5.3	2.086	2.896	13.4	19.9	3 12	8 42.40	+19 43.1	2.889	3.671	10.8	22.1
81848	2000 <i>KX</i> ₅₈		2 4.0 156°12	5°2/ 8.4	18		299477	2006 <i>BU</i> ₁₄₇		2 4.0 333°69	4°2/ 6.1	18	
1 2	9 30.71	- 1 47.3	2.288	3.045	13.7	19.7	1 2	9 31.67	+ 7 0.3	1.297	2.127</		

EPHEMERIDES

2 4.0

2 4.1

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
456873	2007 <i>VJ</i> ₆₁		2 4.0 65°49	0°9/ 4.5 16			354948	2006 <i>EJ</i> ₆₂		2 4.0 327°65	0°9/ 3.7 18		
1 2	9 35.41	+12 43.1	1.443	2.277	16.5	21.7	1 2	9 33.52	+17 56.5	1.221	2.078	17.4	20.0
1 12	9 29.38	+13 0.2	1.394	2.301	12.2	21.5	1 12	9 28.99	+17 59.0	1.143	2.063	13.0	19.7
1 22	9 20.76	+13 30.2	1.367	2.325	7.2	21.2	1 22	9 21.12	+18 10.1	1.085	2.049	7.6	19.4
2 1	9 10.59	+14 8.1	1.367	2.350	2.1	21.0	2 1	9 10.82	+18 24.2	1.052	2.036	1.9	19.0
2 11	9 0.25	+14 47.6	1.394	2.374	3.5	21.1	2 11	8 59.70	+18 35.1	1.044	2.024	4.6	19.1
2 21	8 51.11	+15 23.0	1.448	2.398	8.4	21.5	2 21	8 49.55	+18 37.6	1.060	2.012	10.5	19.4
3 2	8 44.25	+15 50.6	1.527	2.423	12.7	21.8	3 2	8 41.99	+18 29.1	1.099	2.002	15.9	19.7
3 12	8 40.30	+16 8.1	1.628	2.447	16.2	22.1	3 12	8 38.03	+18 9.2	1.157	1.992	20.4	19.9
346000	2007 <i>TD</i> ₂₀₂		2 4.0 356°17	4°8/ 7.8 17			310436	2000 <i>AB</i> ₁₆₉		2 4.1 78°13	0°8/ 4.6 18		
1 2	9 27.55	+ 0 56.0	2.091	2.873	14.0	21.1	1 2	9 34.05	+10 25.4	1.611	2.434	15.6	19.3
1 12	9 23.25	+ 0 50.4	2.007	2.872	11.2	20.9	1 12	9 28.21	+11 22.6	1.562	2.463	11.5	19.1
1 22	9 17.12	+ 1 2.9	1.946	2.871	8.2	20.7	1 22	9 20.04	+12 35.1	1.536	2.492	6.8	18.9
2 1	9 9.76	+ 1 33.0	1.911	2.870	5.5	20.5	2 1	9 10.46	+13 56.3	1.537	2.520	2.0	18.7
2 11	9 2.03	+ 2 18.1	1.904	2.870	5.0	20.5	2 11	9 0.70	+15 18.2	1.568	2.548	3.2	18.8
2 21	8 54.82	+ 3 13.5	1.925	2.869	7.1	20.6	2 21	8 51.96	+16 33.4	1.627	2.576	7.8	19.2
3 2	8 48.98	+ 4 13.8	1.973	2.870	10.2	20.8	3 2	8 45.25	+17 36.6	1.713	2.603	11.8	19.5
3 12	8 45.12	+ 5 13.5	2.044	2.870	13.1	21.0	3 12	8 41.16	+18 25.3	1.821	2.630	15.1	19.7
303939	2005 <i>WO</i> ₂₃		2 4.0 151°20	3°4/31.5 17			265808	2005 <i>XL</i> ₃₂		2 4.1 351°79	1°9/ 5.3 18		
1 2	9 29.92	+28 23.7	3.028	3.859	8.8	21.8	1 2	9 31.34	+10 12.6	1.850	2.669	14.1	20.8
1 12	9 24.54	+29 12.1	2.961	3.865	6.6	21.7	1 12	9 26.24	+10 16.8	1.771	2.668	10.6	20.5
1 22	9 17.68	+29 58.5	2.921	3.870	4.4	21.6	1 22	9 18.97	+10 33.6	1.716	2.668	6.7	20.3
2 1	9 9.87	+30 38.8	2.911	3.875	3.4	21.5	2 1	9 10.24	+11 0.6	1.688	2.668	2.7	20.1
2 11	9 1.84	+31 9.0	2.931	3.880	4.6	21.6	2 11	9 1.10	+11 33.5	1.688	2.667	3.2	20.1
2 21	8 54.30	+31 27.1	2.981	3.884	6.8	21.7	2 21	8 52.63	+12 7.8	1.716	2.667	7.3	20.3
3 2	8 47.92	+31 32.3	3.058	3.888	9.0	21.9	3 2	8 45.83	+12 39.3	1.771	2.667	11.2	20.6
3 12	8 43.18	+31 25.5	3.157	3.892	10.9	22.0	3 12	8 41.39	+13 4.8	1.849	2.667	14.6	20.8
416922	2005 <i>SY</i> ₅₁		2 4.0 198°58	3°5/ 1.3 18			159671	2002 <i>GU</i> ₉₄		2 4.1 245°73	2°1/ 2.6 18		
1 2	9 34.78	+25 37.9	2.301	3.133	11.2	21.6	1 2	9 32.57	+20 42.6	1.980	2.818	12.5	20.1
1 12	9 28.53	+26 27.7	2.223	3.130	8.3	21.4	1 12	9 27.09	+21 16.8	1.905	2.817	9.1	19.9
1 22	9 20.21	+27 17.7	2.172	3.126	5.3	21.2	1 22	9 19.44	+21 55.0	1.855	2.815	5.4	19.6
2 1	9 10.50	+28 2.0	2.150	3.122	3.5	21.1	2 1	9 10.35	+22 32.1	1.833	2.814	2.2	19.4
2 11	9 0.40	+28 35.2	2.158	3.117	5.1	21.2	2 11	9 0.87	+23 2.5	1.840	2.813	4.1	19.5
2 21	8 50.93	+28 54.2	2.195	3.111	8.1	21.3	2 21	8 52.10	+23 22.6	1.875	2.811	8.0	19.8
3 2	8 43.03	+28 57.8	2.259	3.105	11.2	21.5	3 2	8 45.02	+23 30.4	1.937	2.810	11.5	20.0
3 12	8 37.37	+28 47.4	2.345	3.098	13.8	21.7	3 12	8 40.31	+23 26.0	2.020	2.808	14.6	20.2
263472	2008 <i>ES</i> ₆₇		2 4.0 315°64	2°2/ 5.3 18			152090	2004 <i>RR</i> ₄₉		2 4.1 159°72	1°1/ 3.1 18		
1 2	9 30.77	+ 9 40.9	1.580	2.407	15.7	20.9	1 2	9 33.05	+18 37.8	2.467	3.290	10.8	20.7
1 12	9 26.24	+ 9 45.7	1.496	2.397	11.9	20.6	1 12	9 27.00	+19 8.9	2.393	3.297	7.9	20.5
1 22	9 19.16	+10 6.1	1.434	2.387	7.6	20.3	1 22	9 19.19	+19 44.4	2.345	3.303	4.6	20.3
2 1	9 10.30	+10 39.6	1.398	2.378	3.2	20.0	2 1	9 10.27	+20 20.1	2.326	3.309	1.4	20.1
2 11	9 0.83	+11 21.3	1.389	2.369	3.7	20.0	2 11	9 1.07	+20 51.9	2.339	3.314	3.1	20.3
2 21	8 52.04	+12 5.5	1.407	2.360	8.3	20.3	2 21	8 52.47	+21 16.6	2.382	3.319	6.5	20.5
3 2	8 45.13	+12 46.5	1.450	2.352	12.8	20.5	3 2	8 45.23	+21 32.3	2.453	3.323	9.5	20.7
3 12	8 40.95	+13 20.1	1.515	2.344	16.7	20.7	3 12	8 39.94	+21 38.5	2.548	3.326	12.2	20.9
339	<i>Dorothea</i>		2 4.0 152°83	2°6/ 6.4 18			499007	2009 <i>CK</i> ₃₇		2 4.1 159°92	0°9/ 4.8 17		
1 2	9 28.48	+ 5 29.1	2.477	3.268	11.8	14.5	1 2	9 30.36	+12 30.0	2.649	3.459	10.6	21.7
1 12	9 23.65	+ 5 50.5	2.395	3.273	9.1	14.3	1 12	9 24.92	+12 37.3	2.568	3.462	7.9	21.5
1 22	9 17.24	+ 6 25.4	2.337	3.277	6.0	14.1	1 22	9 17.95	+12 51.8	2.513	3.466	4.8	21.3
2 1	9 9.80	+ 7 11.8	2.308	3.281	3.2	14.0	2 1	9 9.98	+13 11.5	2.487	3.469	1.6	21.1
2 11	9 2.05	+ 8 6.1	2.309	3.284	3.1	13.9	2 11	9 1.76	+13 33.3	2.493	3.472	2.3	21.1
2 21	8 54.79	+ 9 4.0	2.339	3.288	5.8	14.1	2 21	8 54.04	+13 54.5	2.528	3.475	5.5	21.4
3 2	8 48.70	+10 1.0	2.399	3.291	8.8	14.3	3 2	8 47.50	+14 12.7	2.593	3.477	8.5	21.6
3 12	8 44.35	+10 53.3	2.483	3.294	11.5	14.5	3 12	8 42.65	+14 26.1	2.682	3.480	11.1	21.7
44024	1997 <i>WP</i> ₄₇		2 4.0 188°34	0°9/ 4.8 18			459353	2012 <i>HH</i> ₆₂		2 4.1 242°94	4°4/ 7.6 17		
1 2	9 32.89	+11 55.4	2.576	3.381	11.0	20.0	1 2	9 30.15	+ 0 29.3	2.352	3.120	13.0	22.1
1 12	9 26.84	+12 11.6	2.488	3.380	8.2	19.8	1 12	9 25.12	+ 0 36.8	2.247	3.104	10.5	21.9
1 22	9 19.10	+12 36.2	2.426	3.378	5.0	19.6	1 22	9 18.25	+ 1 2.0	2.165	3.087	7.6	21.7
2 1	9 10.24	+13 6.7	2.394	3.376	1.6	19.3	2 1	9 10.10	+ 1 44.3	2.110	3.069	5.1	21.5
2 11	9 1.04	+13 39.5	2.393	3.373	2.4	19.4	2 11	9 1.42	+ 2 41.2	2.085	3.051	4.6	21.4
2 21	8 52.33	+14 11.4	2.424	3.369	5.8	19.6	2 21	8 53.10	+ 3 48.2	2.089	3.032	6.8	21.5
3 2	8 44.85	+14 39.4	2.483	3.364	9.0	19.8	3 2	8 45.98	+ 4 59.8	2.122	3.013	9.9	21.7
3 12	8 39.19	+15 1.6	2.567	3.359	11.7	20.0	3 12	8 40.73	+ 6 10.6	2.180	2.993	12.8	21.8
337463	2001 <i>RJ</i> ₁₂₄		2 4.0 144°86	1°9/ 5.8 17			109630	2001 <i>QT</i> ₃₂₃		2 4.1 76°38	1°0/ 4.9 18		
1 2	9 28.37	+ 7 34.3	2.619	3.417	11.0	21.6	1 2	9 30.99	+ 9 17.7	1.741	2.561	14.8	19.4
1 12	9 23.49	+ 8 0.3	2.539	3.423	8.4	21.5	1 12	9 25.97	+10 20.8	1.681	2.580	11.0	19.2
1 22	9 17.11	+ 8 37.8	2.485	3.430	5.4	21.3	1 22	9 18.77	+11 40.3	1.645	2.599	6.6	19.0
2 1	9 9.76	+ 9 24.5	2.459	3.436	2.5	21.1	2 1	9 10.19	+13 10.4	1.636	2.618	2.1	18.7
2 11	9 2.15	+10 16.7	2.464	3.442	2.6	21.1	2 11	9 1.32	+14 43.1	1.657	2.637	3.1	18.8
2 21	8 55.01	+11 10.4	2.499	3.447	5.5	21.3	2 21	8 53.27	+16 10.6	1.707	2.656	7.4	19.1
3 2	8 48.99	+12 1.8	2.563	3.453	8.4	21.5	3 2	8 46.99	+17 27.0	1.783	2.675	11.4	19.4
3 12	8 44.61	+12 47.7	2.652	3.457	11.0	21.7	3 12	8 43.12	+18 28.7	1.883	2.693	14.7	19.6
286565	2002 <i>CL</i> ₁₉₈		2 4.0 25°20	0°4/ 3.8 18			360535	2003 <i>SN</i> ₁₂₄		2 4.1 148°77	4°2/ 1.5 18		
1 2	9 31.45	+14 44.6	1.180	2.036	18.0	20.3	1 2	9 37.54	+25 49.6	1.770			

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
177461	2004 <i>DV</i> ₄₁		2 4.1 313°18	0°1/ 4.1 18			427010	2014 <i>SH</i> ₂₀₇		2 4.1 140°64	1°1/ 3.2 18		
1 2	9 32.73	+15 20.6	1.520	2.361	15.5	20.1	1 2	9 33.70	+17 36.8	2.251	3.075	11.7	22.2
1 12	9 27.86	+15 25.3	1.434	2.346	11.5	19.8	1 12	9 27.60	+18 21.5	2.183	3.088	8.5	22.0
1 22	9 20.23	+15 39.8	1.370	2.331	6.9	19.5	1 22	9 19.62	+19 12.1	2.141	3.100	4.9	21.8
2 1	9 10.61	+16 0.4	1.333	2.317	1.7	19.2	2 1	9 10.43	+20 3.7	2.129	3.112	1.4	21.6
2 11	9 0.30	+16 21.6	1.322	2.303	3.7	19.3	2 11	9 0.97	+20 51.2	2.147	3.123	3.3	21.8
2 21	8 50.72	+16 38.8	1.339	2.289	8.9	19.5	2 21	8 52.17	+21 30.4	2.196	3.133	6.9	22.0
3 2	8 43.20	+16 48.4	1.379	2.276	13.7	19.8	3 2	8 44.89	+21 58.9	2.272	3.143	10.2	22.2
3 12	8 38.64	+16 48.6	1.440	2.263	17.7	20.0	3 12	8 39.71	+22 16.0	2.372	3.152	12.9	22.4
189015	1998 <i>QH</i> ₈₃		2 4.1 121°83	3°4/ 6.2 17			69502	1997 <i>CK</i> ₁₂		2 4.1 41°16	0°7/ 3.7 18		
1 2	9 36.77	+ 5 37.7	1.796	2.591	15.4	21.4	1 2	9 34.11	+16 30.3	1.267	2.118	17.3	19.4
1 12	9 30.06	+ 5 43.0	1.732	2.612	11.9	21.2	1 12	9 28.87	+16 51.6	1.216	2.133	12.6	19.1
1 22	9 21.10	+ 6 5.2	1.692	2.632	7.9	21.0	1 22	9 20.71	+17 23.2	1.186	2.149	7.3	18.9
2 1	9 10.75	+ 6 41.8	1.678	2.651	4.2	20.8	2 1	9 10.71	+17 58.6	1.182	2.166	1.7	18.6
2 11	9 0.14	+ 7 28.4	1.695	2.670	4.1	20.8	2 11	9 0.45	+18 30.8	1.203	2.183	4.2	18.8
2 21	8 50.42	+ 8 19.4	1.740	2.687	7.5	21.1	2 21	8 51.47	+18 54.2	1.251	2.201	9.5	19.1
3 2	8 42.59	+ 9 9.4	1.813	2.704	11.2	21.3	3 2	8 45.01	+19 6.0	1.322	2.219	14.1	19.4
3 12	8 37.27	+ 9 54.0	1.908	2.720	14.5	21.6	3 12	8 41.75	+19 5.4	1.412	2.238	17.9	19.7
51200	2000 <i>JT</i> ₅		2 4.1 173°90	4°3/31.3 18			206213	2002 <i>VX</i> ₃₄		2 4.1 16°64	5°4/ 7.6 18		
1 2	9 31.81	+28 3.0	2.313	3.151	10.9	19.3	1 2	9 28.26	+ 1 53.1	1.744	2.541	15.7	19.2
1 12	9 26.39	+29 5.3	2.244	3.152	8.2	19.1	1 12	9 24.03	+ 1 27.4	1.673	2.547	12.6	19.0
1 22	9 18.98	+30 6.4	2.201	3.152	5.5	19.0	1 22	9 17.70	+ 1 21.0	1.625	2.554	9.1	18.8
2 1	9 10.26	+30 59.8	2.188	3.153	4.3	18.9	2 1	9 10.00	+ 1 34.0	1.601	2.561	6.2	18.6
2 11	9 1.19	+31 40.1	2.203	3.153	5.8	19.0	2 11	9 1.95	+ 2 3.8	1.604	2.570	5.6	18.6
2 21	8 52.76	+32 4.0	2.247	3.153	8.5	19.1	2 21	8 54.61	+ 2 45.7	1.633	2.579	8.0	18.8
3 2	8 45.86	+32 10.8	2.317	3.153	11.3	19.3	3 2	8 48.92	+ 3 33.8	1.688	2.589	11.3	19.0
3 12	8 41.13	+32 1.9	2.408	3.153	13.7	19.5	3 12	8 45.54	+ 4 22.1	1.766	2.600	14.5	19.2
58208	1992 <i>EX</i> ₁₆		2 4.1 187°41	2°6/ 5.9 18			465897	2010 <i>UK</i> ₅₈		2 4.1 81°60	6°6/ 8.7 18		
1 2	9 33.21	+ 6 44.6	1.903	2.705	14.4	19.9	1 2	9 34.45	- 2 33.9	1.864	2.624	16.2	21.3
1 12	9 27.61	+ 7 9.0	1.819	2.705	11.0	19.6	1 12	9 28.23	- 3 4.3	1.808	2.653	13.2	21.2
1 22	9 19.80	+ 7 50.2	1.759	2.704	7.2	19.4	1 22	9 19.99	- 3 13.0	1.774	2.682	10.0	21.0
2 1	9 10.48	+ 8 45.3	1.726	2.703	3.4	19.2	2 1	9 10.52	- 2 59.4	1.766	2.710	7.4	20.9
2 11	9 0.68	+ 9 49.3	1.723	2.701	3.5	19.2	2 11	9 0.88	- 2 26.3	1.785	2.737	6.7	20.9
2 21	8 51.49	+10 56.2	1.749	2.698	7.3	19.4	2 21	8 52.12	- 1 38.5	1.832	2.765	8.4	21.1
3 2	8 43.93	+11 59.9	1.802	2.694	11.2	19.6	3 2	8 45.11	- 0 42.3	1.905	2.791	11.0	21.3
3 12	8 38.73	+12 55.9	1.878	2.690	14.6	19.8	3 12	8 40.42	+ 0 15.8	2.002	2.817	13.7	21.5
503678	2016 <i>HR</i> ₇		2 4.1 123°12	6°2/28.9 18			19638	Johngeneid		2 4.1 207°04	0°1/ 4.2 18		
1 2	9 33.56	+36 30.6	2.639	3.465	10.1	21.4	1 2	9 30.45	+13 28.3	2.021	2.846	12.8	19.2
1 12	9 27.54	+37 47.3	2.588	3.476	8.1	21.2	1 12	9 25.52	+14 7.6	1.941	2.845	9.4	18.9
1 22	9 19.59	+38 56.6	2.564	3.487	6.5	21.2	1 22	9 18.55	+14 57.6	1.886	2.844	5.6	18.7
2 1	9 10.40	+39 52.0	2.569	3.498	6.2	21.2	2 1	9 10.21	+15 54.2	1.859	2.842	1.4	18.4
2 11	9 0.93	+40 28.8	2.602	3.509	7.4	21.2	2 11	9 1.46	+16 51.6	1.861	2.841	2.9	18.5
2 21	8 52.15	+40 45.2	2.662	3.519	9.2	21.4	2 21	8 53.30	+17 44.6	1.893	2.839	7.1	18.8
3 2	8 44.93	+40 41.7	2.747	3.529	11.2	21.5	3 2	8 46.66	+18 29.0	1.951	2.837	10.8	19.0
3 12	8 39.86	+40 21.2	2.852	3.539	13.0	21.7	3 12	8 42.21	+19 2.5	2.032	2.835	14.0	19.2
178647	2000 <i>KD</i> ₄₄		2 4.1 307°54	0°2/ 3.9 18			79861	1998 <i>XX</i> ₈₇		2 4.1 42°80	2°2/ 5.4 18		
1 2	9 31.53	+15 1.9	1.610	2.449	14.8	20.6	1 2	9 31.68	+ 9 13.6	1.348	2.182	17.5	18.7
1 12	9 26.83	+15 26.5	1.526	2.438	11.0	20.3	1 12	9 26.88	+ 9 31.1	1.297	2.202	13.1	18.4
1 22	9 19.56	+16 2.3	1.465	2.426	6.5	20.0	1 22	9 19.47	+10 6.7	1.268	2.222	8.2	18.2
2 1	9 10.46	+16 44.7	1.431	2.415	1.5	19.7	2 1	9 10.43	+10 56.0	1.263	2.243	3.3	18.0
2 11	9 0.73	+17 27.5	1.424	2.403	3.6	19.8	2 11	9 1.15	+11 51.9	1.284	2.265	3.8	18.1
2 21	8 51.69	+18 4.9	1.444	2.393	8.6	20.1	2 21	8 52.98	+12 47.3	1.332	2.287	8.5	18.4
3 2	8 44.57	+18 32.6	1.489	2.382	13.1	20.3	3 2	8 47.05	+13 35.9	1.405	2.309	12.9	18.7
3 12	8 40.22	+18 48.4	1.555	2.372	16.9	20.5	3 12	8 44.00	+14 14.0	1.498	2.332	16.6	19.0
169317	2001 <i>TZ</i> ₁₂₄		2 4.1 65°95	1°3/ 3.2 18			50936	2000 <i>GD</i> ₆₉		2 4.1 268°72	0°0/ 4.1 18		
1 2	9 32.82	+19 54.4	2.211	3.042	11.6	19.6	1 2	9 29.84	+14 23.0	2.202	3.026	11.9	20.0
1 12	9 26.96	+20 4.7	2.142	3.050	8.5	19.5	1 12	9 24.93	+14 49.0	2.119	3.023	8.8	19.8
1 22	9 19.22	+20 17.9	2.098	3.058	4.9	19.3	1 22	9 18.15	+15 23.5	2.062	3.020	5.2	19.6
2 1	9 10.31	+20 30.3	2.083	3.066	1.5	19.0	2 1	9 10.13	+16 3.0	2.033	3.017	1.3	19.3
2 11	9 1.17	+20 38.4	2.098	3.074	3.3	19.2	2 11	9 1.74	+16 43.0	2.035	3.014	2.7	19.4
2 21	8 52.75	+20 39.6	2.142	3.082	6.9	19.4	2 21	8 53.90	+17 19.4	2.065	3.011	6.6	19.7
3 2	8 45.88	+20 32.9	2.214	3.090	10.1	19.6	3 2	8 47.44	+17 49.0	2.122	3.008	10.1	19.9
3 12	8 41.12	+20 18.2	2.309	3.099	12.9	19.8	3 12	8 43.00	+18 9.7	2.203	3.005	13.1	20.1
18651	1998 <i>FP</i> ₁₁		2 4.1 309°64	2°5/ 5.6 18			432209	2009 <i>EW</i> ₉		2 4.1 354°14	0°7/ 3.6 18		
1 2	9 30.06	+ 8 6.6	1.455	2.283	16.7	17.4	1 2	9 31.67	+18 9.5	2.180	3.010	11.8	20.6
1 12	9 25.96	+ 8 28.4	1.370	2.272	12.8	17.1	1 12	9 26.24	+18 18.4	2.102	3.009	8.6	20.4
1 22	9 19.15	+ 9 10.6	1.308	2.260	8.2	16.8	1 22	9 18.89	+18 31.8	2.049	3.008	5.0	20.2
2 1	9 10.39	+10 10.1	1.270	2.249	3.5	16.5	2 1	9 10.30	+18 46.3	2.024	3.008	1.3	19.9
2 11	9 0.91	+11 20.6	1.258	2.238	3.9	16.5	2 11	9 1.39	+18 58.2	2.029	3.007	3.0	20.0
2 21	8 52.10	+12 33.9	1.273	2.228	8.8	16.8	2 21	8 53.12	+19 4.6	2.064	3.007	6.8	20.3
3 2	8 45.29	+13 42.2	1.313	2.218	13.6	17.0	3 2	8 46.35	+19 3.9	2.125	3.007	10.3	20.5
3 12	8 41.39	+14 39.7	1.374	2.208	17.8	17.2	3 12	8 41.68	+18 55.5	2.210	3.007	13.2	20.7
355030	2006 <i>RR</i> ₂		2 4.1 233°36	5°0/31.6 17			292873	2006 <i>VV</i> ₁₄		2 4.1 149°61	0°4/ 3.8 18		
1 2	9 39.43	+29 50.4	2.157	2.986	12.0	20.6	1 2	9 38.16	+15 35.3	1.526	2.35		

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
341183	2007 <i>RU</i> ₂₁		2 4.1 133°05	0°3/ 3.8 18			415755	2000 <i>QB</i> ₁₄₄		2 4.1 161°04	2°8/ 1.9 18		
1 2	9 31.55	+16 7.0	2.512	3.332	10.8	21.5	1 2	9 35.08	+24 25.5	2.524	3.351	10.5	21.8
1 12	9 25.87	+16 28.1	2.440	3.342	7.9	21.3	1 12	9 28.53	+25 4.6	2.454	3.358	7.7	21.6
1 22	9 18.56	+16 54.8	2.394	3.352	4.6	21.1	1 22	9 20.16	+25 44.0	2.410	3.365	4.7	21.5
2 1	9 10.21	+17 23.9	2.378	3.362	1.1	20.9	2 1	9 10.63	+26 18.7	2.396	3.371	2.8	21.3
2 11	9 1.64	+17 51.6	2.393	3.371	2.6	21.0	2 11	9 0.84	+26 44.3	2.413	3.377	4.3	21.4
2 21	8 53.65	+18 14.9	2.437	3.380	6.0	21.2	2 21	8 51.69	+26 58.3	2.460	3.381	7.1	21.6
3 2	8 46.96	+18 31.8	2.510	3.389	9.0	21.5	3 2	8 43.99	+26 59.9	2.535	3.385	10.0	21.8
3 12	8 42.09	+18 41.0	2.608	3.397	11.6	21.6	3 12	8 38.32	+26 49.9	2.633	3.389	12.4	22.0
72185	2000 <i>YK</i> ₁₁₇		2 4.1 292°63	2°3/ 2.6 18			192526	1998 <i>SP</i> ₁₅		2 4.1 11°20	0°7/ 4.6 18		
1 2	9 32.05	+18 30.0	1.543	2.391	14.9	18.8	1 2	9 30.60	+12 44.9	2.023	2.846	12.9	20.9
1 12	9 27.51	+19 28.5	1.456	2.372	11.0	18.5	1 12	9 25.60	+13 4.7	1.944	2.846	9.6	20.6
1 22	9 20.16	+20 38.2	1.391	2.354	6.5	18.2	1 22	9 18.61	+13 34.7	1.890	2.846	5.7	20.4
2 1	9 10.71	+21 51.8	1.353	2.335	2.4	17.9	2 1	9 10.29	+14 11.7	1.863	2.846	1.7	20.1
2 11	9 0.43	+23 0.2	1.342	2.316	5.1	18.0	2 11	9 1.59	+14 50.9	1.866	2.846	2.8	20.2
2 21	8 50.78	+23 55.7	1.358	2.298	10.0	18.2	2 21	8 53.51	+15 28.0	1.898	2.847	6.9	20.5
3 2	8 43.15	+24 33.5	1.398	2.280	14.6	18.4	3 2	8 46.95	+15 59.3	1.957	2.847	10.6	20.7
3 12	8 38.54	+24 52.6	1.458	2.262	18.5	18.6	3 12	8 42.56	+16 22.5	2.038	2.847	13.8	20.9
490063	2008 <i>TX</i> ₉₉		2 4.1 245°50	3°6/ 6.4 17			408195	2013 <i>EM</i> ₂₇		2 4.1 307°22	1°4/ 3.3 18		
1 2	9 34.62	+ 4 50.3	1.858	2.652	15.0	23.3	1 2	9 32.54	+17 4.0	1.434	2.282	15.8	21.0
1 12	9 28.96	+ 5 2.9	1.752	2.631	11.8	23.0	1 12	9 27.90	+17 47.0	1.356	2.273	11.7	20.8
1 22	9 20.84	+ 5 34.3	1.670	2.610	8.0	22.8	1 22	9 20.36	+18 41.6	1.301	2.264	6.8	20.5
2 1	9 10.86	+ 6 23.3	1.615	2.587	4.4	22.5	2 1	9 10.77	+19 40.8	1.272	2.255	1.9	20.1
2 11	9 0.07	+ 7 26.0	1.588	2.564	4.2	22.4	2 11	9 0.48	+20 36.4	1.269	2.247	4.5	20.3
2 21	8 49.67	+ 8 36.1	1.591	2.539	8.0	22.6	2 21	8 51.01	+21 21.4	1.293	2.239	9.7	20.5
3 2	8 40.86	+ 9 47.0	1.621	2.514	12.2	22.8	3 2	8 43.74	+21 51.2	1.341	2.231	14.5	20.8
3 12	8 34.55	+10 52.7	1.674	2.487	16.1	23.0	3 12	8 39.58	+22 4.7	1.408	2.223	18.5	21.0
91456	1999 <i>RK</i> ₅₈		2 4.1 34°17	0°8/ 3.7 18			278686	2008 <i>RM</i> ₁₁₅		2 4.1 100°20	0°6/ 4.5 18 R		
1 2	9 34.07	+18 10.1	1.635	2.475	14.6	17.6	1 2	9 31.34	+13 1.9	2.071	2.893	12.7	21.3
1 12	9 28.42	+18 14.9	1.571	2.483	10.7	17.3	1 12	9 26.03	+13 23.0	2.000	2.901	9.4	21.1
1 22	9 20.31	+18 25.5	1.531	2.492	6.2	17.1	1 22	9 18.80	+13 53.8	1.953	2.910	5.6	20.9
2 1	9 10.66	+18 37.3	1.518	2.502	1.5	16.8	2 1	9 10.33	+14 30.6	1.935	2.918	1.6	20.7
2 11	9 0.73	+18 45.9	1.533	2.512	3.7	17.0	2 11	9 1.56	+15 8.9	1.946	2.926	2.8	20.8
2 21	8 51.77	+18 47.8	1.576	2.522	8.2	17.3	2 21	8 53.46	+15 44.6	1.986	2.934	6.7	21.0
3 2	8 44.86	+18 41.5	1.643	2.533	12.3	17.5	3 2	8 46.88	+16 14.2	2.054	2.942	10.3	21.3
3 12	8 40.66	+18 26.7	1.733	2.544	15.7	17.8	3 12	8 42.43	+16 35.7	2.144	2.950	13.3	21.5
246191	2007 <i>RY</i> ₈₃		2 4.1 62°40	1°0/ 3.3 18			93270	2000 <i>SQ</i> ₁₇₅		2 4.1 27°21	3°3/ 5.9 18 R		
1 2	9 30.37	+17 26.5	2.084	2.917	12.2	20.4	1 2	9 32.30	+ 8 7.6	1.679	2.496	15.4	18.7
1 12	9 25.34	+18 3.5	2.017	2.926	8.8	20.3	1 12	9 27.09	+ 7 46.3	1.607	2.500	11.8	18.4
1 22	9 18.38	+18 47.0	1.975	2.936	5.1	20.0	1 22	9 19.57	+ 7 39.2	1.558	2.505	7.8	18.2
2 1	9 10.20	+19 32.2	1.962	2.945	1.4	19.8	2 1	9 10.53	+ 7 45.2	1.535	2.510	4.0	18.0
2 11	9 1.74	+20 14.0	1.978	2.955	3.3	20.0	2 11	9 1.11	+ 8 1.2	1.539	2.516	4.1	18.0
2 21	8 53.96	+20 48.3	2.023	2.965	7.1	20.2	2 21	8 52.48	+ 8 23.0	1.571	2.522	7.8	18.2
3 2	8 47.72	+21 12.4	2.095	2.975	10.5	20.4	3 2	8 45.70	+ 8 46.4	1.629	2.529	11.8	18.5
3 12	8 43.60	+21 25.5	2.189	2.984	13.4	20.7	3 12	8 41.45	+ 9 7.2	1.709	2.535	15.2	18.7
267755	2003 <i>KY</i> ₁₂		2 4.1 46°35	1°3/ 5.0 18			126374	2002 <i>AV</i> ₁₉₀		2 4.1 306°70	7°7/30.1 18		
1 2	9 30.20	+10 19.4	1.819	2.641	14.1	20.4	1 2	9 36.79	+35 1.8	1.769	2.609	13.6	18.7
1 12	9 25.48	+10 50.6	1.743	2.644	10.6	20.2	1 12	9 30.89	+36 4.2	1.695	2.595	10.8	18.5
1 22	9 18.60	+11 36.2	1.692	2.646	6.5	19.9	1 22	9 22.04	+36 59.1	1.644	2.580	8.5	18.3
2 1	9 10.28	+12 32.2	1.667	2.649	2.3	19.7	2 1	9 11.16	+37 37.0	1.620	2.566	7.7	18.2
2 11	9 1.54	+13 32.9	1.671	2.651	3.0	19.7	2 11	8 59.68	+37 50.4	1.622	2.552	9.3	18.3
2 21	8 53.47	+14 32.3	1.703	2.654	7.3	20.0	2 21	8 49.14	+37 36.5	1.650	2.538	12.2	18.4
3 2	8 47.06	+15 25.1	1.762	2.657	11.3	20.2	3 2	8 40.91	+36 57.1	1.701	2.525	15.3	18.6
3 12	8 43.01	+16 7.9	1.843	2.660	14.7	20.5	3 12	8 35.85	+35 57.0	1.770	2.512	18.0	18.8
127288	2002 <i>JV</i> ₇₄		2 4.1 274°15	0°9/ 3.5 17			187737	2153 <i>P-L</i>		2 4.1 144°43	0°2/ 4.2 15		
1 2	9 31.77	+17 7.4	2.105	2.935	12.2	20.4	1 2	9 38.06	+13 43.4	1.831	2.648	14.2	22.0
1 12	9 26.59	+17 36.8	2.008	2.916	9.0	20.1	1 12	9 31.13	+14 12.3	1.763	2.663	10.5	21.8
1 22	9 19.28	+18 13.7	1.936	2.896	5.3	19.9	1 22	9 21.86	+14 51.4	1.719	2.676	6.2	21.6
2 1	9 10.46	+18 53.7	1.893	2.876	1.4	19.6	2 1	9 11.07	+15 36.0	1.704	2.688	1.6	21.3
2 11	9 1.07	+19 31.9	1.879	2.856	3.3	19.7	2 11	8 59.96	+16 20.3	1.720	2.699	3.2	21.5
2 21	8 52.14	+20 3.8	1.894	2.836	7.4	19.9	2 21	8 49.72	+16 59.5	1.765	2.709	7.6	21.7
3 2	8 44.68	+20 26.3	1.936	2.816	11.2	20.1	3 2	8 41.40	+17 29.9	1.836	2.719	11.6	22.0
3 12	8 39.45	+20 37.9	2.001	2.795	14.5	20.3	3 12	8 35.68	+17 50.2	1.931	2.727	14.9	22.2
82500	2001 <i>OC</i> ₄₅		2 4.1 107°93	4°6/ 6.7 18			405315	2003 <i>UM</i> ₉₅		2 4.1 134°49	8°5/29.7 18		
1 2	9 34.42	+ 4 17.4	1.851	2.643	15.1	19.3	1 2	9 41.41	+37 12.0	1.736	2.569	14.2	20.9
1 12	9 28.43	+ 3 44.1	1.778	2.652	11.9	19.1	1 12	9 34.17	+38 27.3	1.684	2.576	11.4	20.7
1 22	9 20.25	+ 3 26.5	1.727	2.660	8.4	18.9	1 22	9 23.85	+39 31.4	1.655	2.582	9.2	20.6
2 1	9 10.66	+ 3 24.5	1.703	2.668	5.3	18.7	2 1	9 11.56	+40 14.2	1.653	2.588	8.6	20.5
2 11	9 0.72	+ 3 36.1	1.707	2.676	5.0	18.7	2 11	8 58.93	+40 28.6	1.677	2.594	10.0	20.6
2 21	8 51.52	+ 3 57.8	1.740	2.684	7.8	18.9	2 21	8 47.58	+40 13.3	1.726	2.599	12.6	20.8
3 2	8 44.06	+ 4 25.0	1.799	2.692	11.2	19.1	3 2	8 38.86	+39 31.5	1.799	2.604	15.3	21.0
3 12	8 38.99	+ 4 53.0	1.881	2.699	14.4	19.3	3 12	8 33.49	+38 29.5	1.890	2.609	17.8	21.2
25814	Preesinghal		2 4.1 150°18	0°4/ 3.8 18			102639	1999 <i>VV</i> ₃₈		2 4.1 176°54	3°6/ 1.5 18		
1 2	9 31.20	+15 59.2	2.394	3.216	11.2	19.5	1 2	9 35.71	+24 16.3</				

EPHEMERIDES

2 4.1

2 4.1

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
289153	2004 VR ₂₄		2 4.1 81°77	2°6/ 2.8 18			82952	2001 QC ₁₂₆		2 4.1 36°92	0°7/ 4.5 18		
1 2	9 38.73	+21 38.3	1.465	2.309	15.8	20.6	1 2	9 32.35	+14 18.6	2.123	2.944	12.4	18.9
1 12	9 32.06	+22 3.6	1.409	2.323	11.5	20.4	1 12	9 26.75	+14 11.8	2.047	2.948	9.2	18.7
1 22	9 22.54	+22 32.0	1.377	2.338	6.8	20.1	1 22	9 19.22	+14 12.0	1.996	2.952	5.5	18.5
2 1	9 11.25	+22 56.6	1.371	2.352	2.8	19.9	2 1	9 10.47	+14 16.7	1.973	2.956	1.6	18.2
2 11	8 59.70	+23 11.2	1.393	2.366	5.1	20.1	2 11	9 1.43	+14 23.0	1.981	2.961	2.7	18.3
2 21	8 49.42	+23 12.3	1.442	2.381	9.6	20.4	2 21	8 53.05	+14 28.1	2.017	2.965	6.6	18.6
3 2	8 41.62	+22 59.7	1.515	2.395	13.8	20.7	3 2	8 46.20	+14 29.8	2.081	2.970	10.1	18.8
3 12	8 36.98	+22 34.8	1.609	2.409	17.2	21.0	3 12	8 41.48	+14 26.7	2.168	2.975	13.1	19.0
346145	2007 VQ ₂₃₇		2 4.1 227°35	6°9/28.5 15			237087	2008 TJ ₁		2 4.1 312°16	4°9/ 1.6 18		
1 2	9 34.02	+37 29.3	2.435	3.262	10.8	20.8	1 2	9 36.76	+25 12.3	1.341	2.196	16.3	20.4
1 12	9 28.20	+38 47.5	2.371	3.258	8.8	20.6	1 12	9 31.26	+26 4.7	1.273	2.191	12.1	20.2
1 22	9 20.19	+39 58.0	2.333	3.254	7.2	20.5	1 22	9 22.44	+26 59.0	1.227	2.186	7.7	19.9
2 1	9 10.70	+40 53.5	2.323	3.250	7.0	20.5	2 1	9 11.31	+27 45.5	1.207	2.182	5.0	19.7
2 11	9 0.79	+41 28.4	2.341	3.245	8.2	20.6	2 11	8 59.54	+28 14.8	1.212	2.177	7.3	19.8
2 21	8 51.57	+41 40.6	2.386	3.241	10.3	20.7	2 21	8 48.89	+28 22.2	1.243	2.173	11.7	20.1
3 2	8 44.02	+41 30.6	2.454	3.236	12.4	20.8	3 2	8 40.90	+28 7.3	1.296	2.169	16.1	20.3
3 12	8 38.86	+41 1.6	2.542	3.231	14.3	21.0	3 12	8 36.48	+27 33.5	1.368	2.165	19.9	20.6
136488	2005 GS ₁₁₉		2 4.1 219°92	3°3/ 7.7 18			373018	2011 DE ₃₀		2 4.1 140°71	0°5/ 3.8 18		
1 2	9 28.02	+ 0 33.3	2.670	3.435	11.7	20.2	1 2	9 32.45	+16 12.7	2.173	2.998	12.0	21.4
1 12	9 23.37	+ 1 18.7	2.571	3.429	9.3	20.0	1 12	9 26.82	+16 39.8	2.100	3.004	8.8	21.2
1 22	9 17.20	+ 2 21.5	2.497	3.422	6.6	19.9	1 22	9 19.27	+17 13.8	2.052	3.011	5.1	21.0
2 1	9 9.99	+ 3 40.1	2.451	3.415	4.1	19.7	2 1	9 10.49	+17 50.6	2.033	3.017	1.2	20.7
2 11	9 2.41	+ 5 10.2	2.437	3.408	3.5	19.6	2 11	9 1.40	+18 25.5	2.044	3.022	3.0	20.9
2 21	8 55.17	+ 6 46.5	2.454	3.400	5.7	19.8	2 21	8 52.96	+18 54.9	2.085	3.028	6.8	21.1
3 2	8 48.98	+ 8 23.3	2.501	3.392	8.5	19.9	3 2	8 46.02	+19 16.1	2.152	3.033	10.2	21.3
3 12	8 44.39	+ 9 55.3	2.574	3.384	11.2	20.1	3 12	8 41.19	+19 27.9	2.244	3.038	13.1	21.5
143133	2002 XB ₃₆		2 4.1 34°49	0°7/ 3.7 18			340856	2007 AS ₂₃		2 4.1 72°00	2°3/ 5.3 17		
1 2	9 31.65	+15 33.0	1.474	2.319	15.6	19.8	1 2	9 36.57	+10 0.2	1.243	2.077	18.7	20.8
1 12	9 26.94	+16 11.0	1.412	2.327	11.5	19.6	1 12	9 30.72	+10 3.7	1.189	2.094	14.0	20.6
1 22	9 19.61	+17 0.4	1.373	2.335	6.7	19.3	1 22	9 21.88	+10 25.1	1.156	2.111	8.7	20.3
2 1	9 10.58	+17 54.9	1.359	2.343	1.6	19.0	2 1	9 11.13	+11 0.4	1.148	2.129	3.5	20.1
2 11	9 1.16	+18 47.0	1.373	2.352	3.9	19.2	2 11	9 0.07	+11 42.9	1.166	2.146	4.1	20.2
2 21	8 52.69	+19 30.6	1.414	2.362	8.8	19.5	2 21	8 50.29	+12 25.6	1.210	2.164	9.2	20.5
3 2	8 46.35	+20 1.7	1.479	2.372	13.2	19.8	3 2	8 43.09	+13 2.7	1.278	2.181	14.0	20.8
3 12	8 42.85	+20 18.6	1.564	2.382	16.8	20.1	3 12	8 39.19	+13 30.6	1.366	2.198	18.0	21.1
464296	2016 AR ₀₅		2 4.1 97°07	0°1/ 4.2 18			86851	2000 HK		2 4.1 237°85	0°5/ 4.4 18		
1 2	9 36.41	+14 8.0	1.821	2.643	14.1	21.6	1 2	9 35.08	+13 3.1	1.714	2.538	14.7	21.0
1 12	9 29.79	+14 33.9	1.767	2.669	10.3	21.4	1 12	9 29.41	+13 27.9	1.623	2.526	11.0	20.8
1 22	9 20.99	+15 9.0	1.737	2.694	6.1	21.2	1 22	9 21.14	+14 5.3	1.557	2.514	6.6	20.5
2 1	9 10.87	+15 48.7	1.735	2.718	1.5	21.0	2 1	9 11.00	+14 51.2	1.517	2.501	1.8	20.1
2 11	9 0.59	+16 27.6	1.763	2.742	3.1	21.1	2 11	9 0.16	+15 39.8	1.507	2.487	3.4	20.2
2 21	8 51.27	+17 1.2	1.820	2.766	7.4	21.4	2 21	8 49.94	+16 25.0	1.525	2.473	8.3	20.5
3 2	8 43.86	+17 26.6	1.904	2.788	11.1	21.7	3 2	8 41.57	+17 2.1	1.568	2.458	12.8	20.7
3 12	8 38.95	+17 42.3	2.010	2.810	14.2	22.0	3 12	8 35.94	+17 28.5	1.634	2.442	16.6	20.9
111594	Ráktanya		2 4.1 323°70	1°8/ 3.2 18			403065	2008 BN ₃₄		2 4.1 34°67	3°4/ 2.7 18		
1 2	9 32.72	+18 27.4	1.305	2.160	16.6	19.8	1 2	9 39.33	+24 44.5	1.491	2.336	15.5	20.3
1 12	9 28.31	+18 55.6	1.227	2.147	12.3	19.5	1 12	9 32.57	+24 48.9	1.428	2.342	11.4	20.0
1 22	9 20.75	+19 33.4	1.171	2.135	7.2	19.2	1 22	9 22.88	+24 51.9	1.389	2.348	7.0	19.8
2 1	9 10.92	+20 14.1	1.140	2.123	2.2	18.9	2 1	9 11.36	+24 47.4	1.376	2.355	3.5	19.6
2 11	9 0.32	+20 49.8	1.134	2.112	4.9	19.0	2 11	8 59.56	+24 30.5	1.391	2.363	5.5	19.7
2 21	8 50.61	+21 14.0	1.154	2.102	10.4	19.3	2 21	8 49.03	+23 59.8	1.433	2.370	9.8	20.0
3 2	8 43.33	+21 23.3	1.197	2.092	15.4	19.5	3 2	8 41.01	+23 16.5	1.500	2.378	13.9	20.3
3 12	8 39.43	+21 17.3	1.258	2.083	19.7	19.8	3 12	8 36.21	+22 23.5	1.587	2.387	17.4	20.5
458264	2010 UR ₉		2 4.1 84°08	1°4/ 3.2 18			498219	2007 TS ₄₄₅		2 4.1 184°76	1°6/ 5.5 17		
1 2	9 35.43	+18 7.8	1.757	2.591	14.0	21.8	1 2	9 29.47	+ 9 14.0	2.703	3.503	10.7	22.7
1 12	9 29.20	+18 46.7	1.705	2.615	10.1	21.6	1 12	9 24.36	+ 9 29.2	2.617	3.503	8.1	22.5
1 22	9 20.69	+19 31.7	1.677	2.637	5.8	21.4	1 22	9 17.74	+ 9 54.1	2.555	3.503	5.1	22.3
2 1	9 10.80	+20 17.0	1.677	2.660	1.7	21.2	2 1	9 10.13	+10 26.8	2.524	3.502	2.2	22.1
2 11	9 0.74	+20 56.5	1.706	2.682	3.9	21.4	2 11	9 2.22	+11 4.0	2.522	3.501	2.4	22.1
2 21	8 51.67	+21 25.8	1.764	2.704	8.0	21.7	2 21	8 54.75	+11 42.5	2.552	3.499	5.4	22.3
3 2	8 44.58	+21 43.0	1.847	2.726	11.7	21.9	3 2	8 48.37	+12 19.0	2.610	3.498	8.4	22.5
3 12	8 40.06	+21 48.0	1.953	2.747	14.8	22.2	3 12	8 43.62	+12 50.9	2.693	3.495	11.0	22.7
65483	2003 BD ₈₄		2 4.1 24°78	1°6/ 5.0 18			123344	2000 VA ₅₈		2 4.1 65°50	1°8/ 3.0 18		
1 2	9 31.60	+10 6.0	1.272	2.112	17.9	19.5	1 2	9 34.07	+19 58.3	1.795	2.633	13.6	19.8
1 12	9 27.26	+10 37.1	1.206	2.115	13.5	19.2	1 12	9 28.30	+20 24.2	1.732	2.644	9.9	19.5
1 22	9 19.99	+11 28.1	1.161	2.119	8.3	18.9	1 22	9 20.25	+20 54.5	1.694	2.654	5.8	19.3
2 1	9 10.71	+12 34.0	1.140	2.123	2.8	18.6	2 1	9 10.74	+21 23.7	1.683	2.665	2.0	19.1
2 11	9 0.87	+13 46.5	1.146	2.127	3.9	18.7	2 11	9 0.96	+21 46.8	1.701	2.676	4.0	19.3
2 21	8 52.02	+14 56.3	1.177	2.132	9.3	19.0	2 21	8 52.07	+21 59.9	1.747	2.687	8.1	19.5
3 2	8 45.51	+15 56.4	1.232	2.137	14.3	19.3	3 2	8 45.09	+22 1.7	1.819	2.698	11.9	19.8
3 12	8 42.20	+16 42.1	1.306	2.142	18.5	19.6	3 12	8 40.66	+21 52.3	1.912	2.709	15.0	20.0
318058	2004 FE ₈₄		2 4.1 54°69	0°5/ 4.5 18			387482	2013 YF ₁₈		2 4.1 71°38	1°7/ 5.3 18		
1 2	9 28.75	+11 24.6	2.002	2.825	13.0	19.8	1 2	9 30.93	+10 29.7	2.194			

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
82029	2000 SK ₉₁		2 4.1 186°75	0°0/ 4.1 17			105698	2000 SX ₆₄		2 4.1 195°95	3°3/ 1.1 17		
1 2	9 33.59	+16 47.8	2.839	3.651	9.9	19.9	1 2	9 32.33	+27 33.8	2.885	3.714	9.3	20.4
1 12	9 27.26	+16 43.1	2.753	3.651	7.3	19.7	1 12	9 26.47	+28 11.3	2.808	3.711	6.9	20.2
1 22	9 19.39	+16 42.0	2.694	3.650	4.3	19.5	1 22	9 19.00	+28 47.2	2.758	3.709	4.5	20.0
2 1	9 10.53	+16 42.2	2.665	3.649	1.0	19.3	2 1	9 10.47	+29 17.2	2.737	3.706	3.3	20.0
2 11	9 1.43	+16 41.3	2.669	3.648	2.3	19.4	2 11	9 1.68	+29 37.5	2.748	3.702	4.5	20.0
2 21	8 52.83	+16 37.7	2.703	3.646	5.5	19.6	2 21	8 53.39	+29 45.9	2.788	3.698	6.9	20.2
3 2	8 45.41	+16 30.0	2.767	3.643	8.4	19.8	3 2	8 46.33	+29 42.0	2.855	3.694	9.3	20.3
3 12	8 39.69	+16 17.8	2.856	3.641	10.8	20.0	3 12	8 41.05	+29 26.5	2.946	3.689	11.5	20.5
463560	2013 RZ ₆₀		2 4.1 204°43	0°2/ 3.9 17			95290	2002 CJ ₈₈		2 4.1 103°24	1°0/ 3.5 18		
1 2	9 35.56	+17 1.9	2.290	3.109	11.7	21.5	1 2	9 33.88	+18 8.9	1.934	2.766	13.0	20.3
1 12	9 29.07	+17 3.4	2.204	3.105	8.6	21.3	1 12	9 28.08	+18 29.2	1.864	2.772	9.5	20.1
1 22	9 20.61	+17 9.5	2.143	3.100	5.1	21.0	1 22	9 20.12	+18 55.2	1.818	2.778	5.5	19.9
2 1	9 10.85	+17 17.1	2.112	3.096	1.2	20.7	2 1	9 10.76	+19 22.2	1.801	2.784	1.5	19.6
2 11	9 0.72	+17 23.2	2.112	3.090	2.8	20.9	2 11	9 1.08	+19 45.6	1.813	2.790	3.4	19.8
2 21	8 51.20	+17 25.0	2.142	3.085	6.6	21.1	2 21	8 52.18	+20 1.6	1.854	2.796	7.5	20.0
3 2	8 43.16	+17 21.1	2.200	3.079	10.1	21.3	3 2	8 45.02	+20 8.4	1.921	2.802	11.2	20.2
3 12	8 37.26	+17 10.8	2.282	3.072	13.1	21.5	3 12	8 40.24	+20 5.4	2.011	2.808	14.3	20.5
285579	2000 QN ₃₉		2 4.1 128°65	0°7/ 4.6 18			201060	2002 EZ ₈₄		2 4.1 29°17	3°2/ 2.6 18		
1 2	9 35.54	+12 1.9	1.866	2.683	14.1	21.5	1 2	9 32.69	+20 15.8	0.982	1.855	19.3	18.9
1 12	9 29.26	+12 33.9	1.800	2.699	10.4	21.3	1 12	9 28.48	+21 3.2	0.943	1.872	14.0	18.6
1 22	9 20.78	+13 17.7	1.759	2.714	6.2	21.1	1 22	9 20.78	+21 58.1	0.925	1.891	8.2	18.4
2 1	9 10.89	+14 8.7	1.746	2.729	1.8	20.8	2 1	9 10.92	+22 50.2	0.929	1.911	3.4	18.2
2 11	9 0.70	+15 1.3	1.763	2.743	3.0	20.9	2 11	9 0.86	+23 29.2	0.956	1.932	6.2	18.4
2 21	8 51.34	+15 50.0	1.809	2.756	7.3	21.2	2 21	8 52.44	+23 49.5	1.007	1.955	11.6	18.8
3 2	8 43.77	+16 30.9	1.882	2.769	11.1	21.5	3 2	8 47.05	+23 49.8	1.079	1.978	16.4	19.1
3 12	8 38.66	+17 1.6	1.979	2.781	14.4	21.7	3 12	8 45.32	+23 32.1	1.168	2.003	20.3	19.5
130677	2000 ST ₁₁₇		2 4.1 131°57	3°2/ 2.0 18			331278	2011 CY ₉₃		2 4.1 193°01	1°5/ 5.4 17		
1 2	9 37.05	+22 35.3	1.769	2.607	13.8	20.3	1 2	9 30.47	+ 9 4.4	2.542	3.342	11.3	22.1
1 12	9 30.60	+23 30.6	1.708	2.619	10.0	20.1	1 12	9 25.22	+ 9 33.4	2.453	3.340	8.5	22.0
1 22	9 21.66	+24 29.0	1.672	2.630	6.1	19.9	1 22	9 18.33	+10 13.7	2.389	3.338	5.3	21.7
2 1	9 11.11	+25 22.8	1.663	2.641	3.3	19.7	2 1	9 10.34	+11 2.6	2.355	3.335	2.2	21.5
2 11	9 0.22	+26 5.1	1.684	2.651	5.3	19.9	2 11	9 1.99	+11 56.3	2.352	3.331	2.5	21.5
2 21	8 50.29	+26 31.7	1.733	2.661	9.1	20.1	2 21	8 54.07	+12 50.4	2.379	3.327	5.7	21.8
3 2	8 42.40	+26 41.5	1.807	2.670	12.7	20.4	3 2	8 47.33	+13 41.2	2.435	3.322	8.9	21.9
3 12	8 37.28	+26 35.6	1.903	2.679	15.8	20.6	3 12	8 42.34	+14 25.4	2.516	3.317	11.7	22.1
353825	2012 UU ₃₉		2 4.1 108°23	2°2/ 5.3 18			206777	2004 CM ₈₉		2 4.1 168°57	1°6/ 2.6 18		
1 2	9 36.98	+ 9 36.1	1.458	2.280	17.0	21.5	1 2	9 29.84	+19 9.9	2.603	3.431	10.2	21.1
1 12	9 30.77	+ 9 45.8	1.397	2.295	12.8	21.3	1 12	9 24.77	+20 6.0	2.526	3.434	7.4	20.9
1 22	9 21.84	+10 12.0	1.358	2.310	8.0	21.0	1 22	9 18.06	+21 6.9	2.477	3.436	4.3	20.7
2 1	9 11.16	+10 50.7	1.344	2.324	3.2	20.8	2 1	9 10.27	+22 8.1	2.457	3.438	1.7	20.5
2 11	9 0.14	+11 36.1	1.359	2.339	3.8	20.9	2 11	9 2.16	+23 4.7	2.468	3.440	3.3	20.7
2 21	8 50.19	+12 21.7	1.401	2.352	8.5	21.2	2 21	8 54.53	+23 52.6	2.509	3.441	6.4	20.9
3 2	8 42.50	+13 2.3	1.468	2.365	13.0	21.5	3 2	8 48.11	+24 29.5	2.578	3.443	9.3	21.1
3 12	8 37.80	+13 34.0	1.557	2.378	16.7	21.7	3 12	8 43.45	+24 54.3	2.671	3.443	11.8	21.2
282985	2007 TO ₁₂₂		2 4.1 214°17	0°6/ 3.6 17			210939	Bödök		2 4.1 48°30	2°2/ 2.5 18		
1 2	9 30.35	+16 40.5	2.720	3.540	10.0	21.4	1 2	9 30.41	+20 2.4	1.959	2.800	12.5	19.9
1 12	9 25.08	+17 13.2	2.630	3.533	7.3	21.2	1 12	9 25.49	+20 55.3	1.903	2.817	9.0	19.8
1 22	9 18.22	+17 51.8	2.567	3.525	4.3	21.0	1 22	9 18.57	+21 52.9	1.873	2.834	5.3	19.6
2 1	9 10.28	+18 32.6	2.534	3.518	1.1	20.7	2 1	9 10.39	+22 49.2	1.870	2.851	2.2	19.4
2 11	9 2.01	+19 11.9	2.532	3.509	2.6	20.8	2 11	9 1.98	+23 38.1	1.896	2.869	4.2	19.6
2 21	8 54.14	+19 46.3	2.560	3.500	5.9	21.0	2 21	8 54.34	+24 15.5	1.951	2.886	7.8	19.8
3 2	8 47.41	+20 13.3	2.617	3.491	8.9	21.2	3 2	8 48.36	+24 39.2	2.032	2.904	11.1	20.0
3 12	8 42.36	+20 31.6	2.698	3.482	11.4	21.4	3 12	8 44.63	+24 49.0	2.134	2.923	13.9	20.3
122808	2000 SW ₉₉		2 4.1 146°57	2°3/ 2.8 18			328990	2010 WD ₅₆		2 4.1 42°02	0°4/ 4.4 18		
1 2	9 37.93	+21 7.0	1.794	2.627	13.8	20.4	1 2	9 30.79	+12 23.8	1.585	2.420	15.2	21.0
1 12	9 31.20	+21 40.4	1.727	2.636	10.1	20.1	1 12	9 26.19	+13 5.1	1.519	2.427	11.3	20.7
1 22	9 22.00	+22 17.3	1.684	2.644	5.9	19.9	1 22	9 19.18	+14 0.6	1.476	2.435	6.7	20.5
2 1	9 11.20	+22 51.7	1.670	2.651	2.5	19.7	2 1	9 10.57	+15 5.0	1.460	2.443	1.8	20.2
2 11	9 0.05	+23 17.6	1.685	2.658	4.5	19.8	2 11	9 1.56	+16 11.1	1.471	2.451	3.3	20.3
2 21	8 49.84	+23 31.4	1.729	2.664	8.6	20.1	2 21	8 53.38	+17 11.8	1.510	2.460	8.1	20.6
3 2	8 41.65	+23 31.8	1.798	2.669	12.4	20.3	3 2	8 47.12	+18 2.0	1.574	2.469	12.4	20.9
3 12	8 36.20	+23 19.8	1.890	2.674	15.6	20.6	3 12	8 43.51	+18 38.8	1.659	2.478	16.0	21.1
170207	2003 PV ₅		2 4.1 171°30	1°9/ 5.6 18			489558	2007 SW ₂₁		2 4.1 167°45	4°0/ 1.6 18		
1 2	9 33.89	+ 8 23.1	2.152	2.952	13.0	21.7	1 2	9 39.96	+26 56.2	2.079	2.908	12.4	22.0
1 12	9 27.91	+ 8 46.0	2.070	2.957	9.9	21.5	1 12	9 32.51	+27 36.9	2.010	2.913	9.2	21.9
1 22	9 19.97	+ 9 22.1	2.014	2.961	6.3	21.3	1 22	9 22.72	+28 15.8	1.966	2.918	5.9	21.7
2 1	9 10.72	+10 8.6	1.985	2.964	2.7	21.0	2 1	9 11.41	+28 46.3	1.952	2.922	4.0	21.5
2 11	9 1.08	+11 1.2	1.987	2.966	3.0	21.1	2 11	8 59.77	+29 3.1	1.967	2.926	5.6	21.7
2 21	8 52.03	+11 54.8	2.020	2.967	6.6	21.3	2 21	8 49.01	+29 3.7	2.012	2.928	8.8	21.8
3 2	8 44.45	+12 44.9	2.080	2.968	10.2	21.5	3 2	8 40.17	+28 48.2	2.084	2.930	12.0	22.1
3 12	8 39.00	+13 28.1	2.164	2.968	13.2	21.7	3 12	8 33.94	+28 19.1	2.177	2.931	14.7	22.2
123353	2000 WV ₄		2 4.1 179°13	4°7/ 1.1 18			437770	2015 AP ₁₉₁		2 4.1 68°26	1°4/ 3.1 18		
1 2	9 40.06	+28 42.3	2.056	2.886	12.4	20.0	1 2	9 31.60	+18 28.2	1.971</			

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
459493	2013 <i>CH</i> ₁₄₃		2 4.1 333°84	1°9/ 5.2 18			114434	2003 <i>AM</i> ₁₀		2 4.1 121°58	1°3/ 3.1 18		
1 2	9 31.22	+10 14.4	1.313	2.152	17.5	21.4	1 2	9 33.29	+16 25.0	2.048	2.875	12.6	19.5
1 12	9 27.07	+10 28.7	1.237	2.145	13.3	21.1	1 12	9 27.57	+17 34.3	1.985	2.891	9.1	19.3
1 22	9 20.00	+11 1.7	1.182	2.139	8.3	20.8	1 22	9 19.81	+18 51.9	1.947	2.907	5.3	19.1
2 1	9 10.83	+11 49.6	1.151	2.133	3.1	20.5	2 1	9 10.74	+20 11.6	1.939	2.922	1.6	18.9
2 11	9 0.97	+12 45.7	1.146	2.127	3.9	20.5	2 11	9 1.36	+21 26.4	1.961	2.937	3.6	19.0
2 21	8 51.95	+13 42.3	1.167	2.122	9.3	20.8	2 21	8 52.69	+22 30.8	2.014	2.951	7.4	19.3
3 2	8 45.18	+14 32.4	1.211	2.118	14.3	21.1	3 2	8 45.64	+23 21.2	2.093	2.964	10.9	19.5
3 12	8 41.58	+15 11.1	1.276	2.114	18.7	21.3	3 12	8 40.82	+23 56.7	2.195	2.977	13.8	19.8
257011	2008 <i>ES</i> ₁₆₇		2 4.1 257°59	2°5/ 5.6 18			98032	2000 <i>RV</i> ₇		2 4.1 99°34	6°9/ 9.5 18		
1 2	9 32.79	+ 8 54.0	1.852	2.664	14.3	20.7	1 2	9 32.46	- 4 37.2	1.702	2.462	17.5	19.1
1 12	9 27.49	+ 8 49.6	1.764	2.656	11.0	20.4	1 12	9 27.19	- 4 33.9	1.636	2.480	14.4	19.0
1 22	9 19.92	+ 8 58.6	1.699	2.648	7.1	20.2	1 22	9 19.68	- 4 3.3	1.590	2.497	11.0	18.8
2 1	9 10.78	+ 9 19.1	1.662	2.639	3.3	19.9	2 1	9 10.72	- 3 5.7	1.568	2.514	8.0	18.6
2 11	9 1.10	+ 9 47.7	1.653	2.631	3.6	19.9	2 11	9 1.44	- 1 45.5	1.574	2.530	7.0	18.6
2 21	8 52.02	+10 20.0	1.672	2.622	7.5	20.1	2 21	8 52.96	- 0 10.1	1.607	2.547	8.7	18.8
3 2	8 44.59	+10 51.5	1.718	2.613	11.5	20.4	3 2	8 46.28	+ 1 31.3	1.667	2.562	11.8	19.0
3 12	8 39.57	+11 18.6	1.786	2.605	15.0	20.6	3 12	8 42.08	+ 3 10.1	1.750	2.578	14.9	19.2
381213	2007 <i>RV</i> ₁₇₃		2 4.1 54°65	3°4/ 1.7 18			200426	2000 <i>SC</i> ₂₉₉		2 4.1 42°84	0°0/ 4.1 18		
1 2	9 32.60	+24 26.7	1.964	2.806	12.4	20.5	1 2	9 36.42	+15 40.3	1.173	2.024	18.4	19.3
1 12	9 27.10	+25 15.2	1.912	2.824	9.1	20.4	1 12	9 30.73	+15 40.9	1.127	2.043	13.5	19.1
1 22	9 19.51	+26 4.0	1.884	2.842	5.6	20.2	1 22	9 21.94	+15 52.4	1.102	2.063	7.9	18.8
2 1	9 10.63	+26 47.0	1.885	2.861	3.5	20.1	2 1	9 11.26	+16 9.6	1.100	2.084	1.9	18.5
2 11	9 1.56	+27 18.7	1.915	2.879	5.1	20.2	2 11	9 0.40	+16 26.2	1.125	2.106	4.0	18.7
2 21	8 53.36	+27 35.9	1.973	2.898	8.4	20.5	2 21	8 51.01	+16 37.3	1.175	2.128	9.6	19.1
3 2	8 46.93	+27 38.0	2.056	2.917	11.5	20.7	3 2	8 44.34	+16 40.2	1.248	2.150	14.4	19.5
3 12	8 42.86	+27 26.2	2.161	2.936	14.2	20.9	3 12	8 41.06	+16 33.8	1.341	2.173	18.3	19.8
393842	2005 <i>SG</i> ₁₂₈		2 4.1 110°71	3°9/ 6.5 18			285259	1998 <i>HL</i> ₁₁₀		2 4.1 296°70	6°7/ 9.9 18		
1 2	9 36.41	+ 4 55.1	1.600	2.401	16.7	21.7	1 2	9 26.89	- 6 31.7	2.337	3.073	14.0	20.3
1 12	9 30.13	+ 4 57.3	1.538	2.420	13.0	21.5	1 12	9 22.87	- 6 38.8	2.232	3.054	11.8	20.1
1 22	9 21.40	+ 5 18.9	1.498	2.438	8.7	21.3	1 22	9 17.11	- 6 24.5	2.148	3.036	9.5	19.9
2 1	9 11.11	+ 5 57.7	1.484	2.456	4.8	21.1	2 1	9 10.12	- 5 47.6	2.089	3.018	7.5	19.7
2 11	9 0.52	+ 6 48.6	1.499	2.474	4.5	21.1	2 11	9 2.65	- 4 49.4	2.057	3.000	6.7	19.7
2 21	8 50.90	+ 7 45.3	1.541	2.491	8.1	21.4	2 21	8 55.52	- 3 33.9	2.053	2.982	7.9	19.7
3 2	8 43.32	+ 8 41.3	1.610	2.507	12.1	21.7	3 2	8 49.53	- 2 7.0	2.077	2.964	10.2	19.8
3 12	8 38.47	+ 9 31.5	1.701	2.522	15.5	21.9	3 12	8 45.34	- 0 35.6	2.124	2.946	12.8	19.9
144986	2005 <i>ET</i> ₁₅₄		2 4.1 277°60	1°8/ 3.1 18			223653	2004 <i>PF</i>		2 4.1 140°06	2°8/ 6.6 18		
1 2	9 34.01	+18 48.3	1.670	2.511	14.3	20.9	1 2	9 30.79	+ 4 53.7	2.320	3.108	12.6	20.8
1 12	9 28.79	+19 24.9	1.582	2.495	10.6	20.7	1 12	9 25.52	+ 5 16.1	2.243	3.118	9.7	20.7
1 22	9 20.89	+20 9.5	1.517	2.479	6.2	20.4	1 22	9 18.53	+ 5 53.1	2.190	3.128	6.5	20.5
2 1	9 11.06	+20 56.1	1.480	2.462	2.1	20.1	2 1	9 10.44	+ 6 42.7	2.166	3.138	3.5	20.3
2 11	9 0.50	+21 37.8	1.470	2.446	4.4	20.2	2 11	9 2.05	+ 7 40.9	2.171	3.146	3.3	20.3
2 21	8 50.60	+22 8.9	1.488	2.430	9.1	20.4	2 21	8 54.21	+ 8 42.8	2.207	3.155	6.1	20.5
3 2	8 42.63	+22 26.3	1.531	2.413	13.5	20.6	3 2	8 47.68	+ 9 43.6	2.271	3.163	9.2	20.7
3 12	8 37.50	+22 29.2	1.595	2.397	17.3	20.8	3 12	8 43.01	+10 39.2	2.360	3.170	12.1	20.9
369321	2009 <i>SH</i> ₁₃₈		2 4.1 180°08	1°6/ 2.8 17			322127	2010 <i>VQ</i> ₁₇₈		2 4.1 265°31	0°1/ 4.2 18		
1 2	9 33.67	+20 0.7	2.527	3.350	10.6	22.5	1 2	9 32.60	+14 13.5	1.786	2.616	14.0	21.2
1 12	9 27.60	+20 38.7	2.447	3.352	7.7	22.3	1 12	9 27.47	+14 37.4	1.703	2.609	10.4	21.0
1 22	9 19.74	+21 20.3	2.394	3.353	4.5	22.1	1 22	9 19.97	+15 12.1	1.643	2.601	6.2	20.7
2 1	9 10.71	+22 1.2	2.371	3.353	1.7	21.9	2 1	9 10.83	+15 53.2	1.610	2.594	1.5	20.4
2 11	9 1.36	+22 37.0	2.380	3.353	3.4	22.0	2 11	9 1.15	+16 35.4	1.606	2.586	3.2	20.5
2 21	8 52.55	+23 4.4	2.419	3.352	6.6	22.2	2 21	8 52.12	+17 13.4	1.631	2.579	7.8	20.8
3 2	8 45.07	+23 21.4	2.486	3.350	9.6	22.4	3 2	8 44.84	+17 43.1	1.681	2.571	12.0	21.0
3 12	8 39.53	+23 27.9	2.576	3.347	12.2	22.6	3 12	8 40.09	+18 2.5	1.753	2.563	15.6	21.2
193045	2000 <i>FE</i> ₆		2 4.1 155°00	3°0/ 2.2 18			160462	2006 <i>BR</i> ₇₃		2 4.1 222°77	2°1/ 2.9 18		
1 2	9 38.70	+22 36.4	1.913	2.744	13.2	21.2	1 2	9 37.28	+20 16.9	1.806	2.640	13.7	20.8
1 12	9 31.71	+23 23.7	1.846	2.754	9.6	21.0	1 12	9 30.97	+20 50.8	1.722	2.631	10.1	20.5
1 22	9 22.31	+24 13.4	1.805	2.762	5.8	20.8	1 22	9 22.07	+21 29.9	1.663	2.622	6.0	20.3
2 1	9 11.35	+24 58.8	1.792	2.770	3.0	20.6	2 1	9 11.35	+22 8.2	1.631	2.613	2.3	20.0
2 11	9 0.04	+25 33.7	1.809	2.777	4.9	20.7	2 11	9 0.04	+22 39.5	1.629	2.602	4.4	20.1
2 21	8 49.60	+25 54.3	1.855	2.783	8.6	21.0	2 21	8 49.45	+22 59.3	1.655	2.592	8.8	20.4
3 2	8 41.13	+25 59.6	1.928	2.789	12.2	21.2	3 2	8 40.80	+23 5.6	1.707	2.580	12.8	20.6
3 12	8 35.31	+25 50.8	2.023	2.793	15.2	21.4	3 12	8 34.89	+22 58.6	1.781	2.568	16.3	20.8
430298	2013 <i>WX</i> ₈₄		2 4.1 60°58	4°0/31.8 18			271837	2004 <i>TH</i> ₁₉₇		2 4.1 48°43	2°9/ 2.3 18		
1 2	9 30.92	+25 12.5	2.082	2.925	11.8	20.5	1 2	9 33.38	+22 23.0	1.777	2.621	13.4	20.4
1 12	9 25.94	+26 26.7	2.023	2.935	8.6	20.4	1 12	9 27.93	+23 2.6	1.715	2.629	9.8	20.2
1 22	9 18.90	+27 41.9	1.989	2.945	5.6	20.2	1 22	9 20.14	+23 44.9	1.677	2.637	5.9	20.0
2 1	9 10.52	+28 50.9	1.984	2.955	4.0	20.1	2 1	9 10.85	+24 23.6	1.667	2.646	2.9	19.8
2 11	9 1.82	+29 47.3	2.008	2.965	5.7	20.2	2 11	9 1.24	+24 52.8	1.684	2.655	4.9	20.0
2 21	8 53.83	+30 27.0	2.061	2.976	8.7	20.4	2 21	8 52.52	+25 8.8	1.730	2.664	8.7	20.2
3 2	8 47.47	+30 48.7	2.138	2.986	11.7	20.6	3 2	8 45.72	+25 10.2	1.800	2.673	12.3	20.4
3 12	8 43.37	+30 53.3	2.237	2.996	14.2	20.8	3 12	8 41.51	+24 58.0	1.892	2.682	15.4	20.7
12026	1997 <i>AV</i> ₁		2 4.1 92°93	0°2/ 4.0 18			428843	2008 <i>UZ</i> ₃₅		2 4.1 102°45	5°9/30.7 18		
1 2	9												

EPHEMERIDES

2 4.1

2 4.2

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
8748	1998 <i>FV</i> ₁₁₃		2 4.1 185°04	2°3/ 5.6	18		126325	2002 <i>AG</i> ₁₄₆		2 4.2 164°40	0°9/ 3.5	18	
1 2	9 34.47	+ 8 59.0	1.895	2.703	14.2	17.8	1 2	9 34.74	+15 42.1	1.787	2.616	14.0	20.7
1 12	9 28.63	+ 9 1.2	1.813	2.703	10.8	17.5	1 12	9 28.99	+16 34.2	1.713	2.621	10.3	20.5
1 22	9 20.56	+ 9 16.8	1.755	2.703	6.9	17.3	1 22	9 20.85	+17 36.7	1.665	2.625	6.0	20.3
2 1	9 10.98	+ 9 43.4	1.724	2.702	3.1	17.1	2 1	9 11.08	+18 43.5	1.644	2.628	1.5	20.0
2 11	9 0.94	+10 17.1	1.723	2.701	3.4	17.1	2 11	9 0.85	+19 47.4	1.653	2.631	3.7	20.1
2 21	8 51.57	+10 53.4	1.750	2.700	7.3	17.3	2 21	8 51.37	+20 42.2	1.691	2.633	8.1	20.4
3 2	8 43.87	+11 27.9	1.805	2.698	11.2	17.5	3 2	8 43.74	+21 24.1	1.755	2.635	12.2	20.7
3 12	8 38.56	+11 57.2	1.882	2.695	14.6	17.7	3 12	8 38.69	+21 51.6	1.841	2.636	15.5	20.9
212946	2008 <i>YU</i> ₁₄₅		2 4.1 29°22	0°1/ 4.3	18		325311	2008 <i>HK</i> ₆₆		2 4.2 316°00	2°3/ 5.4	17	
1 2	9 29.59	+14 3.3	1.798	2.632	13.7	20.4	1 2	9 30.60	+ 9 52.6	1.531	2.361	15.9	20.5
1 12	9 25.06	+14 30.1	1.734	2.642	10.1	20.2	1 12	9 26.42	+ 9 52.9	1.440	2.343	12.2	20.2
1 22	9 18.43	+15 7.2	1.693	2.653	5.9	19.9	1 22	9 19.59	+10 8.9	1.371	2.325	7.8	19.9
2 1	9 10.45	+15 50.1	1.680	2.664	1.5	19.7	2 1	9 10.83	+10 38.4	1.328	2.308	3.3	19.6
2 11	9 2.17	+16 33.4	1.695	2.675	3.0	19.8	2 11	9 1.32	+11 16.9	1.311	2.291	3.8	19.5
2 21	8 54.65	+17 12.2	1.738	2.687	7.3	20.1	2 21	8 52.40	+11 58.6	1.320	2.274	8.6	19.8
3 2	8 48.83	+17 42.7	1.807	2.700	11.2	20.3	3 2	8 45.37	+12 37.8	1.354	2.259	13.3	20.0
3 12	8 45.33	+18 3.1	1.898	2.713	14.4	20.6	3 12	8 41.16	+13 9.9	1.409	2.244	17.5	20.2
352797	2008 <i>UR</i> ₂₀₄		2 4.1 66°87	3°5/ 2.6	18		329020	2011 <i>AY</i> ₈		2 4.2 54°53	1°4/ 3.2	18	
1 2	9 39.30	+23 13.4	1.339	2.189	16.6	20.4	1 2	9 32.10	+17 32.0	1.761	2.600	13.8	21.0
1 12	9 32.83	+23 41.1	1.284	2.200	12.2	20.2	1 12	9 27.06	+18 15.9	1.692	2.604	10.1	20.8
1 22	9 23.22	+24 10.6	1.251	2.211	7.4	19.9	1 22	9 19.70	+19 8.1	1.647	2.608	5.8	20.5
2 1	9 11.63	+24 34.0	1.243	2.223	3.6	19.8	2 1	9 10.80	+20 2.4	1.629	2.612	1.7	20.3
2 11	8 59.72	+24 44.3	1.263	2.235	5.8	19.9	2 11	9 1.50	+20 52.5	1.640	2.617	3.9	20.4
2 21	8 49.20	+24 38.3	1.308	2.246	10.5	20.2	2 21	8 52.97	+21 33.0	1.679	2.621	8.2	20.7
3 2	8 41.37	+24 16.4	1.378	2.258	14.8	20.5	3 2	8 46.26	+22 0.7	1.743	2.626	12.1	20.9
3 12	8 36.97	+23 41.1	1.467	2.270	18.4	20.8	3 12	8 42.07	+22 14.6	1.829	2.630	15.4	21.2
223654	2004 <i>PF</i> ₁₃		2 4.1 170°56	1°7/ 5.4	18		47993	2000 <i>YM</i> ₁₀₅		2 4.2 262°50	1°8/ 3.0	18	
1 2	9 31.37	+ 9 22.6	2.153	2.961	12.7	20.7	1 2	9 35.13	+19 12.1	1.855	2.689	13.4	19.3
1 12	9 26.13	+ 9 42.8	2.072	2.963	9.6	20.5	1 12	9 29.47	+19 47.9	1.760	2.669	9.9	19.0
1 22	9 19.00	+10 15.4	2.015	2.965	6.1	20.3	1 22	9 21.28	+20 30.7	1.689	2.649	5.8	18.7
2 1	9 10.60	+10 57.6	1.987	2.966	2.5	20.0	2 1	9 11.23	+21 14.8	1.646	2.629	2.0	18.4
2 11	9 1.84	+11 45.1	1.988	2.968	2.8	20.0	2 11	9 0.46	+21 53.9	1.633	2.608	4.2	18.5
2 21	8 53.63	+12 33.3	2.019	2.968	6.5	20.3	2 21	8 50.24	+22 23.0	1.647	2.586	8.6	18.7
3 2	8 46.85	+13 18.0	2.078	2.969	10.0	20.5	3 2	8 41.76	+22 39.0	1.688	2.564	12.8	18.9
3 12	8 42.11	+13 55.9	2.160	2.969	13.1	20.7	3 12	8 35.93	+22 41.4	1.750	2.542	16.4	19.1
456446	2006 <i>VW</i> ₈₄		2 4.1 117°25	6°6/ 8.5	18		304803	2007 <i>PN</i> ₁₅		2 4.2 136°10	1°7/ 3.0	18	
1 2	9 34.88	- 2 36.7	2.040	2.792	15.2	21.5	1 2	9 36.79	+18 47.7	1.919	2.747	13.2	21.8
1 12	9 28.65	- 3 19.0	1.969	2.808	12.5	21.4	1 12	9 30.25	+19 31.6	1.854	2.761	9.6	21.6
1 22	9 20.43	- 3 41.9	1.921	2.824	9.7	21.2	1 22	9 21.45	+20 21.1	1.815	2.774	5.6	21.4
2 1	9 10.94	- 3 44.3	1.899	2.838	7.3	21.1	2 1	9 11.22	+21 10.4	1.805	2.787	1.9	21.1
2 11	9 1.15	- 3 27.4	1.905	2.853	6.7	21.1	2 11	9 0.67	+21 53.6	1.824	2.799	3.9	21.3
2 21	8 52.05	- 2 54.8	1.939	2.867	8.3	21.2	2 21	8 50.97	+22 26.1	1.873	2.810	7.9	21.6
3 2	8 44.53	- 2 11.6	1.999	2.880	10.9	21.4	3 2	8 43.11	+22 45.9	1.948	2.820	11.5	21.8
3 12	8 39.22	- 1 24.0	2.084	2.893	13.5	21.6	3 12	8 37.76	+22 52.9	2.046	2.830	14.6	22.0
462283	2008 <i>FW</i> ₂₁		2 4.1 244°67	0°3/ 3.9	17		72963	2002 <i>CC</i> ₁₁₃		2 4.2 241°24	1°1/ 3.4	18	
1 2	9 31.89	+14 30.1	2.050	2.875	12.7	22.3	1 2	9 35.59	+17 26.0	1.848	2.678	13.6	20.2
1 12	9 26.78	+15 14.4	1.958	2.862	9.4	22.1	1 12	9 29.75	+17 59.3	1.757	2.664	10.1	19.9
1 22	9 19.53	+16 9.4	1.891	2.850	5.5	21.8	1 22	9 21.40	+18 40.8	1.690	2.650	5.9	19.6
2 1	9 10.76	+17 10.6	1.853	2.836	1.3	21.5	2 1	9 11.26	+19 25.3	1.651	2.635	1.6	19.3
2 11	9 1.44	+18 12.0	1.844	2.823	3.1	21.6	2 11	9 0.46	+20 6.7	1.642	2.619	3.8	19.4
2 21	8 52.60	+19 8.0	1.865	2.809	7.4	21.8	2 21	8 50.25	+20 39.8	1.662	2.603	8.3	19.7
3 2	8 45.25	+19 54.4	1.913	2.795	11.2	22.0	3 2	8 41.81	+21 1.4	1.707	2.586	12.5	19.9
3 12	8 40.14	+20 28.7	1.983	2.780	14.5	22.2	3 12	8 35.99	+21 10.5	1.775	2.569	16.1	20.1
47700	2000 <i>CQ</i> ₁₂₁		2 4.2 218°37	0°3/ 3.9	18		272922	2006 <i>BB</i> ₁₉₆		2 4.2 290°39	1°6/ 5.4	17	
1 2	9 30.56	+15 9.8	2.192	3.017	11.9	19.5	1 2	9 30.14	+ 9 43.1	1.971	2.787	13.4	20.8
1 12	9 25.57	+15 43.4	2.110	3.015	8.8	19.3	1 12	9 25.45	+10 3.4	1.886	2.782	10.2	20.6
1 22	9 18.69	+16 25.3	2.054	3.013	5.1	19.1	1 22	9 18.71	+10 37.1	1.826	2.778	6.4	20.3
2 1	9 10.54	+17 11.5	2.027	3.011	1.2	18.8	2 1	9 10.58	+11 21.3	1.793	2.773	2.5	20.1
2 11	9 2.00	+17 57.2	2.029	3.008	2.9	18.9	2 11	9 2.00	+12 11.5	1.789	2.769	3.0	20.1
2 21	8 54.02	+18 37.9	2.061	3.006	6.7	19.2	2 21	8 53.98	+13 2.3	1.814	2.765	6.9	20.3
3 2	8 47.43	+19 10.5	2.120	3.003	10.2	19.4	3 2	8 47.46	+13 49.1	1.865	2.761	10.8	20.5
3 12	8 42.89	+19 33.0	2.202	3.000	13.2	19.6	3 12	8 43.13	+14 28.3	1.940	2.756	14.1	20.7
489213	2006 <i>KX</i> ₁₅		2 4.2 172°10	3°2/ 1.5	18		176755	2002 <i>RB</i> ₁₃₉		2 4.2 57°60	6°0/ 31.2	18	
1 2	9 35.11	+22 18.5	2.134	2.966	12.0	21.5	1 2	9 34.85	+27 34.5	1.512	2.365	14.9	19.8
1 12	9 29.04	+23 37.7	2.062	2.970	8.7	21.3	1 12	9 29.50	+29 2.1	1.462	2.377	11.1	19.6
1 22	9 20.79	+25 1.2	2.016	2.973	5.4	21.1	1 22	9 21.28	+30 28.6	1.435	2.389	7.6	19.4
2 1	9 11.06	+26 21.5	2.000	2.976	3.2	21.0	2 1	9 11.20	+31 43.2	1.435	2.401	6.0	19.4
2 11	9 0.88	+27 31.5	2.015	2.978	5.1	21.1	2 11	9 0.74	+32 37.0	1.462	2.413	8.0	19.5
2 21	8 51.32	+28 26.1	2.059	2.979	8.4	21.3	2 21	8 51.40	+33 5.5	1.514	2.426	11.5	19.7
3 2	8 43.40	+29 2.9	2.130	2.980	11.6	21.5	3 2	8 44.44	+33 8.9	1.589	2.438	14.9	20.0
3 12	8 37.81	+29 22.5	2.223	2.979	14.4	21.7	3 12	8 40.59	+32 50.7	1.683	2.451	17.9	20.2
310080	2010 <i>LC</i> ₁		2 4.2 221°96	0°1/ 4.1	18		146308	2001 <i>KJ</i> ₂₈		2 4.2 136°47	1°8/ 2.6	18	
1 2	9 33.85	+13 50.7	1.797	2.624	14.1	21.0	1 2	9 34.					

EPHEMERIDES

2 4.2

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
33772	1999 <i>RF</i> ₁₄₅		2 4.2 260°56	2°2/ 5.9 18			503501	2016 <i>EX</i> ₂₀₀		2 4.2 257°70	0°9/ 4.7 17		
1 2	9 29.42	+ 8 7.6	2.551	3.350	11.3	19.0	1 2	9 32.36	+12 30.3	1.990	2.810	13.2	21.9
1 12	9 24.51	+ 8 5.5	2.457	3.341	8.6	18.8	1 12	9 27.15	+12 46.1	1.898	2.798	9.9	21.7
1 22	9 17.99	+ 8 13.7	2.388	3.332	5.7	18.6	1 22	9 19.77	+13 12.6	1.830	2.786	6.0	21.4
2 1	9 10.39	+ 8 30.9	2.348	3.323	2.8	18.4	2 1	9 10.87	+13 46.7	1.791	2.773	1.9	21.1
2 11	9 2.43	+ 8 54.6	2.337	3.314	2.9	18.3	2 11	9 1.44	+14 24.1	1.780	2.760	2.9	21.2
2 21	8 54.87	+ 9 21.8	2.357	3.305	5.8	18.5	2 21	8 52.53	+15 0.1	1.799	2.747	7.2	21.4
3 2	8 48.46	+ 9 49.2	2.404	3.296	8.8	18.7	3 2	8 45.15	+15 30.8	1.844	2.734	11.1	21.6
3 12	8 43.74	+10 14.1	2.477	3.287	11.6	18.9	3 12	8 40.05	+15 53.6	1.912	2.721	14.5	21.8
246119	2007 <i>JC</i> ₁		2 4.2 39°15	3°3/ 6.2 18			38629	2000 <i>ER</i> ₁₇₃		2 4.2 235°10	5°5/ 30.3 18		
1 2	9 32.23	+ 6 13.2	1.364	2.187	17.9	20.7	1 2	9 35.48	+29 47.4	2.173	3.008	11.7	19.2
1 12	9 27.66	+ 6 32.2	1.293	2.189	13.8	20.5	1 12	9 29.58	+31 14.2	2.091	2.994	8.9	19.0
1 22	9 20.30	+ 7 14.0	1.243	2.191	9.1	20.2	1 22	9 21.28	+32 40.4	2.035	2.980	6.4	18.8
2 1	9 11.00	+ 8 15.4	1.217	2.194	4.4	19.9	2 1	9 11.26	+33 57.6	2.009	2.965	5.6	18.7
2 11	9 1.11	+ 9 29.7	1.217	2.196	4.3	19.9	2 11	9 0.58	+34 58.2	2.012	2.950	7.2	18.8
2 21	8 52.10	+10 48.0	1.244	2.198	8.9	20.2	2 21	8 50.43	+35 37.6	2.042	2.933	10.0	18.9
3 2	8 45.27	+12 1.9	1.295	2.201	13.6	20.5	3 2	8 41.97	+35 54.5	2.098	2.917	13.0	19.1
3 12	8 41.46	+13 5.1	1.367	2.204	17.8	20.7	3 12	8 36.01	+35 51.1	2.174	2.899	15.5	19.3
147785	2005 <i>QE</i> ₁₄₆		2 4.2 93°36	1°7/ 2.8 18			289899	2005 <i>MX</i> ₄₆		2 4.2 208°16	3°3/ 6.9 17		
1 2	9 32.84	+16 51.4	1.861	2.694	13.4	19.5	1 2	9 30.41	+ 3 51.0	2.956	3.727	10.5	21.2
1 12	9 27.42	+18 10.0	1.803	2.713	9.7	19.3	1 12	9 25.01	+ 3 33.9	2.860	3.722	8.3	21.0
1 22	9 19.83	+19 37.4	1.771	2.731	5.6	19.1	1 22	9 18.21	+ 3 27.5	2.789	3.716	5.9	20.8
2 1	9 10.84	+21 6.2	1.767	2.749	1.9	18.9	2 1	9 10.46	+ 3 31.3	2.747	3.710	3.8	20.7
2 11	9 1.53	+22 28.5	1.793	2.767	4.0	19.0	2 11	9 2.40	+ 3 43.9	2.736	3.703	3.5	20.7
2 21	8 53.03	+23 38.0	1.848	2.785	8.0	19.3	2 21	8 54.71	+ 4 3.0	2.756	3.697	5.5	20.8
3 2	8 46.28	+24 31.2	1.930	2.802	11.6	19.6	3 2	8 48.00	+ 4 26.0	2.804	3.689	7.9	20.9
3 12	8 41.93	+25 7.2	2.034	2.819	14.6	19.8	3 12	8 42.78	+ 4 49.9	2.878	3.682	10.3	21.1
89274	2001 <i>VZ</i> ₁₂		2 4.2 5°70	4°0/ 5.8 18			187891	2000 <i>ST</i> ₄₆		2 4.2 121°16	6°6/ 9.5 18		
1 2	9 34.87	+ 8 58.8	1.497	2.318	16.7	18.5	1 2	9 31.14	- 4 45.9	2.138	2.882	14.9	20.2
1 12	9 29.35	+ 8 5.4	1.423	2.318	12.9	18.2	1 12	9 25.93	- 5 2.2	2.062	2.894	12.3	20.0
1 22	9 21.16	+ 7 24.7	1.372	2.319	8.6	18.0	1 22	9 18.88	- 4 57.2	2.008	2.905	9.6	19.9
2 1	9 11.19	+ 6 56.9	1.346	2.320	4.7	17.8	2 1	9 10.64	- 4 30.4	1.980	2.916	7.3	19.7
2 11	9 0.75	+ 6 40.7	1.347	2.323	4.8	17.8	2 11	9 2.07	- 3 43.9	1.979	2.926	6.6	19.7
2 21	8 51.21	+ 6 33.6	1.375	2.326	8.7	18.0	2 21	8 54.10	- 2 42.3	2.006	2.936	7.9	19.8
3 2	8 43.78	+ 6 32.0	1.428	2.329	13.0	18.3	3 2	8 47.53	- 1 31.6	2.060	2.946	10.3	20.0
3 12	8 39.23	+ 6 32.0	1.502	2.334	16.7	18.5	3 12	8 42.98	- 0 18.4	2.138	2.955	12.9	20.2
173217	1998 <i>TS</i> ₉		2 4.2 316°06	4°2/ 1.7 18			204136	2003 <i>YA</i> ₃₅		2 4.2 310°03	0°7/ 3.6 18		
1 2	9 33.79	+24 1.7	1.512	2.364	14.9	20.0	1 2	9 27.93	+13 36.8	2.047	2.877	12.5	18.9
1 12	9 28.90	+24 51.9	1.435	2.353	11.0	19.7	1 12	9 23.93	+14 52.2	1.955	2.862	9.2	18.7
1 22	9 21.09	+25 45.7	1.381	2.341	6.9	19.5	1 22	9 17.91	+16 21.5	1.889	2.848	5.4	18.4
2 1	9 11.21	+26 34.6	1.354	2.330	4.2	19.3	2 1	9 10.45	+17 58.9	1.851	2.835	1.3	18.1
2 11	9 0.66	+27 10.4	1.353	2.320	6.4	19.4	2 11	9 2.42	+19 37.0	1.843	2.821	3.3	18.2
2 21	8 50.96	+27 27.7	1.378	2.310	10.7	19.6	2 21	8 54.81	+21 8.4	1.865	2.808	7.4	18.4
3 2	8 43.50	+27 25.2	1.427	2.300	14.9	19.8	3 2	8 48.59	+22 27.3	1.914	2.795	11.3	18.6
3 12	8 39.17	+27 4.3	1.495	2.291	18.5	20.0	3 12	8 44.50	+23 30.3	1.986	2.782	14.5	18.8
406484	2007 <i>UT</i> ₁₀₆		2 4.2 48°31	2°4/ 5.5 16			451738	2013 <i>EP</i> ₂₆		2 4.2 18°16	2°5/ 2.9 18		
1 2	9 33.57	+ 9 38.5	1.356	2.188	17.5	21.5	1 2	9 32.23	+18 47.6	1.177	2.039	17.6	20.7
1 12	9 28.44	+ 9 41.2	1.299	2.203	13.2	21.3	1 12	9 28.04	+19 35.7	1.120	2.043	12.8	20.5
1 22	9 20.60	+10 1.0	1.264	2.218	8.3	21.0	1 22	9 20.66	+20 34.0	1.083	2.048	7.5	20.2
2 1	9 11.04	+10 34.2	1.254	2.234	3.5	20.8	2 1	9 11.12	+21 33.6	1.071	2.054	2.7	19.9
2 11	9 1.17	+11 15.1	1.271	2.251	3.9	20.8	2 11	9 1.09	+22 24.8	1.084	2.061	5.4	20.1
2 21	8 52.39	+11 57.2	1.313	2.268	8.6	21.2	2 21	8 52.25	+23 0.4	1.122	2.069	10.8	20.4
3 2	8 45.88	+12 34.9	1.381	2.285	13.1	21.5	3 2	8 46.04	+23 17.4	1.182	2.077	15.6	20.7
3 12	8 42.34	+13 4.2	1.468	2.302	16.9	21.7	3 12	8 43.26	+23 15.9	1.260	2.087	19.6	21.0
347368	2012 <i>RD</i> ₆		2 4.2 120°10	3°6/ 1.0 18			236080	2005 <i>JZ</i> ₁₅₈		2 4.2 28°62	4°3/ 31.7 18		
1 2	9 33.53	+28 15.1	2.746	3.574	9.7	21.5	1 2	9 32.14	+27 2.6	2.091	2.933	11.8	20.2
1 12	9 27.36	+28 56.4	2.687	3.589	7.2	21.3	1 12	9 26.93	+28 3.1	2.024	2.934	8.8	20.0
1 22	9 19.55	+29 35.2	2.655	3.604	4.8	21.2	1 22	9 19.59	+29 3.1	1.983	2.936	5.8	19.8
2 1	9 10.75	+30 6.7	2.653	3.619	3.6	21.2	2 1	9 10.83	+29 55.7	1.970	2.938	4.3	19.7
2 11	9 1.77	+30 27.3	2.681	3.633	4.8	21.3	2 11	9 1.71	+30 35.1	1.985	2.939	5.9	19.8
2 21	8 53.44	+30 35.1	2.739	3.647	7.1	21.4	2 21	8 53.29	+30 57.6	2.028	2.941	8.9	20.0
3 2	8 46.47	+30 29.7	2.824	3.661	9.5	21.6	3 2	8 46.53	+31 2.4	2.097	2.943	11.9	20.2
3 12	8 41.36	+30 12.6	2.932	3.674	11.6	21.8	3 12	8 42.11	+30 51.0	2.186	2.945	14.5	20.4
30887	1992 <i>WL</i> ₂		2 4.2 318°10	8°7/ 28.7 18			468295	2015 <i>EV</i> ₂		2 4.2 95°28	1°2/ 3.4 18		
1 2	9 34.64	+35 10.7	1.635	2.483	14.2	17.1	1 2	9 34.28	+19 34.8	2.236	3.063	11.7	21.2
1 12	9 29.68	+36 47.8	1.569	2.471	11.4	16.9	1 12	9 28.13	+19 46.2	2.169	3.075	8.5	21.0
1 22	9 21.62	+38 18.6	1.526	2.460	9.2	16.8	1 22	9 20.11	+20 0.8	2.128	3.087	4.9	20.8
2 1	9 11.36	+39 31.4	1.509	2.449	8.8	16.7	2 1	9 10.94	+20 14.7	2.116	3.099	1.5	20.6
2 11	9 0.38	+40 16.8	1.518	2.438	10.6	16.8	2 11	9 1.55	+20 24.4	2.135	3.111	3.2	20.7
2 21	8 50.33	+40 30.5	1.550	2.428	13.5	17.0	2 21	8 52.90	+20 27.4	2.183	3.123	6.7	21.0
3 2	8 42.67	+40 13.7	1.604	2.418	16.5	17.1	3 2	8 45.80	+20 22.6	2.258	3.134	10.0	21.2
3 12	8 38.34	+39 31.4	1.676	2.409	19.2	17.3	3 12	8 40.82	+20 9.8	2.357	3.146	12.7	21.4
313795	2003 <i>YH</i> ₁₅₉		2 4.2 94°77	2°0/ 5.3 18			453334	2008 <i>YZ</i> ₃₅		2 4.2 64°14	1°8/ 3.1 16		
1 2	9 37.11												

EPHEMERIDES

2 4.2

2 4.2

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
426027	2011 <i>MJ</i> ₅		2 4.2 309°68	2.1/ 2.4	17		209412	2004 <i>FM</i> ₂₂		2 4.2 311°88	5.2/ 7.3	17	
1 2	9 29.26	+18 59.5	2.057	2.896	12.1	20.7	1 2	9 30.39	+ 2 6.1	2.076	2.859	14.0	20.3
1 12	9 24.88	+20 3.6	1.974	2.887	8.8	20.5	1 12	9 25.65	+ 1 27.8	1.978	2.843	11.3	20.0
1 22	9 18.45	+21 15.3	1.917	2.878	5.2	20.2	1 22	9 18.90	+ 1 4.3	1.903	2.827	8.4	19.8
2 1	9 10.58	+22 28.6	1.889	2.870	2.1	20.0	2 1	9 10.72	+ 0 56.7	1.853	2.811	5.8	19.6
2 11	9 2.23	+23 36.8	1.889	2.862	4.1	20.1	2 11	9 2.01	+ 1 4.3	1.832	2.795	5.5	19.6
2 21	8 54.39	+24 34.2	1.919	2.853	7.9	20.4	2 21	8 53.72	+ 1 24.2	1.839	2.780	7.7	19.7
3 2	8 48.04	+25 17.2	1.974	2.846	11.4	20.6	3 2	8 46.80	+ 1 52.5	1.872	2.764	10.8	19.8
3 12	8 43.87	+25 44.7	2.052	2.838	14.5	20.7	3 12	8 41.96	+ 2 24.4	1.928	2.750	13.9	20.0
207965	1995 <i>UY</i> ₂₁		2 4.2 240°07	0.3/ 3.9	18		345586	2006 <i>SC</i> ₅₁		2 4.2 163°64	4.6/ 8.2	17	
1 2	9 34.45	+15 17.9	1.886	2.712	13.5	21.2	1 2	9 28.47	- 0 20.6	2.525	3.288	12.4	21.0
1 12	9 28.84	+15 45.6	1.796	2.701	10.0	21.0	1 12	9 23.82	- 0 26.4	2.439	3.290	10.0	20.9
1 22	9 20.86	+16 23.0	1.730	2.688	5.9	20.7	1 22	9 17.61	- 0 16.5	2.376	3.291	7.4	20.7
2 1	9 11.19	+17 5.6	1.692	2.676	1.4	20.4	2 1	9 10.37	+ 0 9.0	2.340	3.292	5.2	20.6
2 11	9 0.92	+17 47.8	1.683	2.662	3.3	20.5	2 11	9 2.83	+ 0 47.8	2.332	3.293	4.7	20.5
2 21	8 51.21	+18 24.6	1.704	2.649	7.8	20.7	2 21	8 55.71	+ 1 36.4	2.354	3.294	6.3	20.6
3 2	8 43.20	+18 52.3	1.750	2.635	12.0	20.9	3 2	8 49.72	+ 2 30.5	2.404	3.295	8.9	20.8
3 12	8 37.69	+19 9.1	1.819	2.620	15.5	21.1	3 12	8 45.41	+ 3 25.2	2.479	3.295	11.4	21.0
268615	2006 <i>CG</i> ₅₁		2 4.2 40°76	0.2/ 4.3	18		144825	2004 <i>JB</i> ₁₅		2 4.2 239°44	1.5/ 5.6	17	
1 2	9 32.12	+14 23.5	1.822	2.652	13.8	21.2	1 2	9 28.56	+ 9 8.5	2.726	3.526	10.6	20.7
1 12	9 26.99	+14 40.5	1.750	2.656	10.2	21.0	1 12	9 23.85	+ 9 26.6	2.630	3.517	8.0	20.5
1 22	9 19.65	+15 6.9	1.702	2.660	6.0	20.8	1 22	9 17.63	+ 9 54.9	2.559	3.507	5.1	20.3
2 1	9 10.87	+15 38.9	1.681	2.665	1.5	20.5	2 1	9 10.39	+10 31.3	2.518	3.497	2.2	20.1
2 11	9 1.73	+16 11.6	1.689	2.670	3.1	20.6	2 11	9 2.80	+11 12.7	2.508	3.486	2.4	20.1
2 21	8 53.32	+16 40.4	1.726	2.675	7.4	20.9	2 21	8 55.56	+11 55.5	2.527	3.476	5.4	20.3
3 2	8 46.65	+17 2.1	1.788	2.680	11.3	21.1	3 2	8 49.37	+12 36.4	2.576	3.465	8.4	20.4
3 12	8 42.38	+17 14.8	1.873	2.685	14.7	21.3	3 12	8 44.76	+13 12.6	2.649	3.454	11.0	20.6
46068	2001 <i>DM</i> ₁₀₀		2 4.2 197°26	0.5/ 4.5	18		423056	2003 <i>UZ</i> ₃₂₅		2 4.2 129°90	4.7/ 8.0	18	
1 2	9 36.23	+13 1.4	1.535	2.365	15.9	20.2	1 2	9 30.50	+ 0 4.1	2.311	3.077	13.3	22.1
1 12	9 30.48	+13 29.1	1.458	2.363	11.9	19.9	1 12	9 25.37	- 0 2.4	2.232	3.086	10.7	22.0
1 22	9 21.95	+14 10.7	1.403	2.361	7.1	19.6	1 22	9 18.54	+ 0 8.1	2.177	3.095	7.8	21.8
2 1	9 11.48	+15 1.2	1.375	2.358	1.9	19.3	2 1	9 10.61	+ 0 35.0	2.148	3.103	5.4	21.7
2 11	9 0.39	+15 53.6	1.375	2.355	3.6	19.4	2 11	9 2.37	+ 1 15.9	2.149	3.111	4.8	21.6
2 21	8 50.12	+16 41.5	1.403	2.352	8.7	19.7	2 21	8 54.67	+ 2 6.5	2.178	3.119	6.7	21.8
3 2	8 41.96	+17 19.9	1.456	2.348	13.4	19.9	3 2	8 48.25	+ 3 2.1	2.235	3.126	9.4	21.9
3 12	8 36.79	+17 46.1	1.530	2.343	17.3	20.2	3 12	8 43.69	+ 3 57.7	2.317	3.133	12.1	22.1
192513	1998 <i>QZ</i> ₁₀₃		2 4.2 169°58	2.4/ 2.6	18		296337	2009 <i>EQ</i> ₂₈		2 4.2 337°35	0.0/ 4.2	17	
1 2	9 37.71	+20 16.6	1.848	2.680	13.5	21.4	1 2	9 27.51	+11 30.1	2.128	2.951	12.3	20.4
1 12	9 31.18	+21 11.6	1.777	2.685	9.9	21.1	1 12	9 23.49	+12 42.5	2.043	2.946	9.1	20.2
1 22	9 22.17	+22 12.1	1.730	2.689	5.9	20.9	1 22	9 17.60	+14 9.1	1.984	2.941	5.4	20.0
2 1	9 11.51	+23 11.3	1.712	2.692	2.5	20.7	2 1	9 10.41	+15 44.7	1.954	2.937	1.4	19.7
2 11	9 0.38	+24 2.1	1.724	2.695	4.6	20.8	2 11	9 2.77	+17 22.3	1.954	2.933	2.8	19.8
2 21	8 50.06	+24 39.4	1.764	2.697	8.7	21.1	2 21	8 55.59	+18 54.9	1.983	2.930	6.8	20.0
3 2	8 41.66	+25 1.1	1.831	2.698	12.4	21.3	3 2	8 49.75	+20 16.8	2.041	2.926	10.4	20.2
3 12	8 35.94	+25 7.6	1.920	2.698	15.6	21.5	3 12	8 45.90	+21 24.5	2.122	2.923	13.5	20.4
325995	2010 <i>VO</i> ₂₀₀		2 4.2 348°55	1.7/ 4.9	18		55569	2002 <i>CZ</i> ₆₁		2 4.2 169°25	3.3/ 1.2	18	
1 2	9 34.73	+13 11.5	1.516	2.349	15.9	19.7	1 2	9 34.04	+25 51.9	2.683	3.510	9.9	20.0
1 12	9 29.33	+12 46.7	1.439	2.345	12.0	19.5	1 12	9 27.90	+26 46.7	2.611	3.515	7.3	19.8
1 22	9 21.23	+12 31.7	1.385	2.341	7.4	19.2	1 22	9 20.00	+27 41.2	2.567	3.519	4.7	19.7
2 1	9 11.29	+12 24.5	1.357	2.338	2.7	18.9	2 1	9 10.97	+28 30.4	2.553	3.523	3.3	19.6
2 11	9 0.83	+12 21.9	1.356	2.336	3.6	18.9	2 11	9 1.63	+29 9.5	2.570	3.526	4.6	19.7
2 21	8 51.24	+12 20.6	1.381	2.334	8.5	19.2	2 21	8 52.84	+29 35.7	2.617	3.529	7.2	19.9
3 2	8 43.75	+12 17.6	1.432	2.333	13.0	19.5	3 2	8 45.37	+29 48.0	2.691	3.530	9.8	20.0
3 12	8 39.17	+12 10.8	1.504	2.332	16.9	19.7	3 12	8 39.81	+29 47.1	2.788	3.531	12.1	20.2
115168	2003 <i>SV</i> ₈₀		2 4.2 307°18	2.9/ 5.6	18		198887	2005 <i>TE</i> ₆₃		2 4.2 30°59	0.0/ 4.1	18	
1 2	9 35.72	+ 9 41.9	1.575	2.394	16.1	19.7	1 2	9 32.70	+13 49.0	1.098	1.955	19.0	19.9
1 12	9 29.95	+ 9 18.4	1.498	2.393	12.3	19.4	1 12	9 28.44	+14 18.4	1.045	1.964	14.0	19.7
1 22	9 21.56	+ 9 8.2	1.443	2.392	8.0	19.2	1 22	9 20.92	+15 4.3	1.011	1.973	8.3	19.4
2 1	9 11.37	+ 9 9.8	1.414	2.391	3.7	18.9	2 1	9 11.24	+15 59.7	1.000	1.984	2.0	19.0
2 11	9 0.66	+ 9 20.2	1.412	2.391	4.0	18.9	2 11	9 1.11	+16 55.5	1.015	1.996	4.2	19.2
2 21	8 50.77	+ 9 35.3	1.439	2.390	8.4	19.2	2 21	8 52.27	+17 43.2	1.053	2.008	10.1	19.6
3 2	8 42.92	+ 9 51.0	1.490	2.389	12.7	19.4	3 2	8 46.12	+18 17.5	1.114	2.021	15.3	19.9
3 12	8 37.90	+10 3.8	1.563	2.388	16.5	19.6	3 12	8 43.47	+18 36.1	1.194	2.035	19.6	20.2
129819	1999 <i>NN</i> ₃₀		2 4.2 165°86	1.2/ 3.3	18		63036	2000 <i>WL</i> ₆₉		2 4.2 232°95	4.6/31.7	18	
1 2	9 35.40	+17 30.6	2.013	2.839	12.8	20.9	1 2	9 37.36	+30 0.0	2.381	3.209	11.0	20.0
1 12	9 29.27	+18 14.4	1.939	2.844	9.4	20.7	1 12	9 30.69	+30 45.2	2.296	3.196	8.4	19.8
1 22	9 20.96	+19 5.4	1.890	2.849	5.4	20.5	1 22	9 21.82	+31 27.4	2.236	3.182	5.8	19.6
2 1	9 11.20	+19 58.1	1.870	2.853	1.6	20.2	2 1	9 11.45	+32 0.3	2.206	3.167	4.6	19.5
2 11	9 1.04	+20 46.5	1.880	2.856	3.6	20.4	2 11	9 0.60	+32 18.8	2.205	3.152	6.0	19.6
2 21	8 51.58	+21 26.0	1.920	2.859	7.6	20.6	2 21	8 50.37	+32 20.1	2.234	3.136	8.7	19.7
3 2	8 43.80	+21 53.8	1.987	2.861	11.2	20.9	3 2	8 41.74	+32 4.2	2.288	3.120	11.6	19.9
3 12	8 38.39	+22 9.2	2.076	2.862	14.3	21.1	3 12	8 35.44	+31 33.4	2.365	3.103	14.1	20.0
120840	1998 <i>KH</i> ₄₃		2 4.2 8°44	10.1/11.7	18		107246	2001 <i>BY</i> ₅₈		2 4.2 327°25	0.2/ 4.1	18	
1 2	9 24.02	- 7 55.9	1.270	2.051	21.3	19.4	1 2	9 30.50	+14 8.5	1			

EPHEMERIDES

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
59362	1999 <i>DO</i> ₅		2 4.2 353°99	8°8/10.4	18		104784	2000 <i>HX</i> ₃₂		2 4.2 98°20	7°9/11.3	18	
1 2	9 29.73	- 7 11.5	1.735	2.484	17.6	18.7	1 2	9 29.67	- 9 20.1	1.878	2.608	17.1	18.9
1 12	9 25.42	- 7 45.4	1.654	2.483	15.0	18.5	1 12	9 25.19	- 9 8.5	1.798	2.614	14.5	18.7
1 22	9 18.86	- 7 52.7	1.593	2.482	12.2	18.3	1 22	9 18.64	- 8 27.3	1.737	2.621	11.7	18.5
2 1	9 10.75	- 7 30.7	1.554	2.481	9.7	18.2	2 1	9 10.70	- 7 15.8	1.700	2.627	9.1	18.4
2 11	9 2.12	- 6 40.6	1.541	2.481	8.8	18.1	2 11	9 2.35	- 5 37.4	1.690	2.633	7.9	18.3
2 21	8 54.09	- 5 27.5	1.553	2.481	10.0	18.2	2 21	8 54.60	- 3 39.3	1.707	2.639	9.0	18.4
3 2	8 47.72	- 3 59.3	1.590	2.481	12.6	18.3	3 2	8 48.42	- 1 31.1	1.752	2.645	11.5	18.5
3 12	8 43.76	- 2 25.4	1.650	2.481	15.5	18.5	3 12	8 44.46	+ 0 37.0	1.821	2.650	14.3	18.7
408139	2013 <i>CF</i> ₈₀		2 4.2 309°74	1°5/ 4.8	18		203437	2001 <i>YF</i> ₄₄		2 4.2 356°54	2°9/ 5.5	18	
1 2	9 35.34	+13 41.1	1.349	2.189	17.1	21.0	1 2	9 34.87	+ 9 51.1	1.384	2.213	17.4	19.9
1 12	9 30.30	+13 21.0	1.262	2.172	13.0	20.7	1 12	9 29.64	+ 9 33.3	1.311	2.212	13.3	19.7
1 22	9 22.12	+13 11.7	1.197	2.155	8.0	20.3	1 22	9 21.54	+ 9 30.9	1.259	2.212	8.5	19.4
2 1	9 11.61	+13 10.6	1.156	2.139	2.7	20.0	2 1	9 11.45	+ 9 42.0	1.232	2.211	3.8	19.1
2 11	9 0.23	+13 13.7	1.142	2.123	4.0	20.0	2 11	9 0.78	+10 2.4	1.232	2.211	4.2	19.2
2 21	8 49.63	+13 16.8	1.154	2.108	9.6	20.3	2 21	8 51.03	+10 27.1	1.257	2.211	9.0	19.4
3 2	8 41.33	+13 16.6	1.189	2.093	14.8	20.5	3 2	8 43.53	+10 51.1	1.307	2.211	13.7	19.7
3 12	8 36.39	+13 10.5	1.244	2.079	19.3	20.7	3 12	8 39.13	+11 10.1	1.378	2.212	17.8	19.9
409946	2006 <i>UC</i> ₁₆₇		2 4.2 139°52	1°0/ 4.9	18		427427	2000 <i>SB</i> ₁₆₂		2 4.2 115°29	6°2/ 9.5	18	
1 2	9 33.16	+11 2.2	1.965	2.780	13.5	22.0	1 2	9 32.04	- 4 42.2	2.309	3.047	14.1	21.0
1 12	9 27.61	+11 32.7	1.892	2.789	10.1	21.8	1 12	9 26.45	- 4 58.3	2.238	3.066	11.6	20.9
1 22	9 19.99	+12 15.5	1.843	2.797	6.1	21.5	1 22	9 19.17	- 4 54.7	2.190	3.084	9.1	20.8
2 1	9 11.00	+13 6.7	1.823	2.805	2.0	21.3	2 1	9 10.80	- 4 31.0	2.167	3.102	6.9	20.7
2 11	9 1.66	+14 1.2	1.832	2.812	2.9	21.4	2 11	9 2.19	- 3 49.5	2.173	3.119	6.2	20.6
2 21	8 53.00	+14 53.5	1.870	2.819	6.9	21.6	2 21	8 54.17	- 2 54.3	2.207	3.135	7.4	20.7
3 2	8 45.94	+15 39.3	1.936	2.826	10.7	21.9	3 2	8 47.50	- 1 50.6	2.269	3.151	9.7	20.9
3 12	8 41.15	+16 15.7	2.025	2.832	13.9	22.1	3 12	8 42.72	- 0 44.5	2.356	3.167	12.1	21.1
182457	2001 <i>SO</i> ₆₄		2 4.2 121°27	1°4/ 5.3	18		421986	2014 <i>QP</i> ₃₀₅		2 4.2 167°95	0°5/ 3.9	18	
1 2	9 33.47	+ 9 39.5	2.335	3.136	12.1	21.6	1 2	9 34.74	+15 22.8	2.062	2.884	12.7	22.0
1 12	9 27.45	+10 7.8	2.269	3.157	9.1	21.4	1 12	9 28.76	+16 1.5	1.986	2.888	9.3	21.8
1 22	9 19.71	+10 47.0	2.228	3.178	5.6	21.2	1 22	9 20.68	+16 48.9	1.935	2.892	5.5	21.6
2 1	9 10.91	+11 34.0	2.217	3.197	2.1	21.0	2 1	9 11.20	+17 40.2	1.912	2.896	1.3	21.3
2 11	9 1.90	+12 24.4	2.237	3.216	2.6	21.1	2 11	9 1.33	+18 29.8	1.920	2.899	3.1	21.4
2 21	8 53.52	+13 13.8	2.287	3.234	6.0	21.3	2 21	8 52.11	+19 13.0	1.958	2.901	7.2	21.7
3 2	8 46.54	+13 58.6	2.366	3.252	9.2	21.5	3 2	8 44.48	+19 46.5	2.023	2.902	10.8	21.9
3 12	8 41.50	+14 36.2	2.469	3.269	11.9	21.8	3 12	8 39.13	+20 8.8	2.111	2.903	13.9	22.1
39373	2002 <i>CX</i> ₅₃		2 4.2 266°75	1°1/ 4.8	18		429332	2010 <i>EZ</i> ₁₂₉		2 4.2 318°54	3°7/ 7.1	17	
1 2	9 34.14	+11 59.7	1.689	2.514	14.9	19.5	1 2	9 28.72	+ 3 30.7	2.183	2.972	13.2	20.9
1 12	9 28.93	+12 16.0	1.594	2.496	11.3	19.2	1 12	9 24.27	+ 3 33.3	2.096	2.969	10.4	20.7
1 22	9 21.10	+12 45.8	1.522	2.478	6.9	18.9	1 22	9 18.02	+ 3 51.8	2.032	2.966	7.3	20.5
2 1	9 11.35	+13 25.8	1.476	2.459	2.2	18.6	2 1	9 10.56	+ 4 25.2	1.996	2.963	4.5	20.4
2 11	9 0.82	+14 10.6	1.459	2.440	3.4	18.6	2 11	9 2.70	+ 5 10.3	1.988	2.960	4.0	20.3
2 21	8 50.83	+14 54.3	1.470	2.421	8.3	18.8	2 21	8 55.33	+ 6 2.9	2.008	2.957	6.6	20.5
3 2	8 42.64	+15 31.9	1.507	2.401	12.9	19.1	3 2	8 49.26	+ 6 57.9	2.056	2.954	9.8	20.7
3 12	8 37.18	+16 0.1	1.565	2.381	16.9	19.3	3 12	8 45.11	+ 7 50.5	2.129	2.951	12.8	20.8
426806	2013 <i>TO</i> ₁₃₇		2 4.2 13°21	8°0/31.9	18		371081	2005 <i>UV</i> ₃₆₉		2 4.2 331°28	1°8/ 5.5	18	
1 2	9 39.01	+35 42.1	1.454	2.301	15.7	19.8	1 2	9 30.97	+ 9 28.0	1.811	2.630	14.3	21.4
1 12	9 32.65	+36 5.4	1.404	2.308	12.3	19.6	1 12	9 26.25	+ 9 46.2	1.732	2.628	10.9	21.2
1 22	9 23.14	+36 16.0	1.376	2.316	9.3	19.4	1 22	9 19.32	+10 19.0	1.675	2.627	6.8	20.9
2 1	9 11.76	+36 5.3	1.373	2.326	8.0	19.4	2 1	9 10.89	+11 3.3	1.645	2.625	2.8	20.7
2 11	9 0.27	+35 28.5	1.395	2.337	9.3	19.5	2 11	9 2.00	+11 54.2	1.644	2.624	3.2	20.7
2 21	8 50.34	+34 26.6	1.443	2.350	12.3	19.7	2 21	8 53.75	+12 46.0	1.670	2.622	7.3	20.9
3 2	8 43.22	+33 4.2	1.513	2.363	15.5	19.9	3 2	8 47.14	+13 33.6	1.724	2.621	11.3	21.2
3 12	8 39.50	+31 28.1	1.603	2.378	18.3	20.2	3 12	8 42.91	+14 13.2	1.799	2.620	14.8	21.4
492729	2014 <i>QK</i> ₁₂₀		2 4.2 239°35	0°4/ 4.4	18		185860	2000 <i>GT</i> ₂₉		2 4.2 173°93	6°0/ 8.9	18	
1 2	9 34.42	+13 2.4	1.805	2.628	14.2	22.1	1 2	9 31.02	- 2 48.6	2.022	2.781	15.1	21.0
1 12	9 28.95	+13 34.0	1.714	2.616	10.6	21.8	1 12	9 26.07	- 2 53.1	1.937	2.782	12.4	20.8
1 22	9 21.02	+14 18.2	1.646	2.603	6.4	21.5	1 22	9 19.13	- 2 35.8	1.874	2.784	9.5	20.6
2 1	9 11.32	+15 10.8	1.606	2.589	1.7	21.2	2 1	9 10.84	- 1 56.6	1.837	2.785	6.9	20.5
2 11	9 0.94	+16 5.8	1.595	2.575	3.2	21.3	2 11	9 2.13	- 0 58.1	1.828	2.785	6.1	20.4
2 21	8 51.12	+16 57.2	1.613	2.560	8.0	21.5	2 21	8 53.95	+ 0 14.3	1.847	2.786	7.8	20.5
3 2	8 43.02	+17 40.1	1.657	2.545	12.3	21.8	3 2	8 47.23	+ 1 34.0	1.893	2.786	10.7	20.7
3 12	8 37.50	+18 11.7	1.723	2.529	16.0	22.0	3 12	8 42.63	+ 2 54.1	1.963	2.785	13.7	20.9
354368	2003 <i>QS</i> ₄		2 4.2 271°32	2°6/ 5.8	17		232260	2002 <i>PA</i> ₁₆₁		2 4.2 248°71	0°1/ 4.3	18	
1 2	9 34.38	+ 7 56.9	1.786	2.594	15.0	22.3	1 2	9 29.61	+12 39.2	2.187	3.008	12.1	20.8
1 12	9 29.11	+ 8 6.4	1.676	2.566	11.6	22.0	1 12	9 24.99	+13 27.4	2.101	3.002	9.0	20.6
1 22	9 21.26	+ 8 32.5	1.590	2.537	7.6	21.7	1 22	9 18.49	+14 27.1	2.040	2.996	5.3	20.4
2 1	9 11.42	+ 9 13.4	1.530	2.508	3.6	21.4	2 1	9 10.69	+15 34.1	2.007	2.991	1.4	20.1
2 11	9 0.65	+10 5.0	1.499	2.477	3.8	21.3	2 11	9 2.44	+16 42.7	2.005	2.985	2.7	20.2
2 21	8 50.20	+11 1.5	1.496	2.446	8.2	21.5	2 21	8 54.68	+17 47.5	2.032	2.979	6.7	20.4
3 2	8 41.37	+11 56.8	1.520	2.415	12.8	21.7	3 2	8 48.26	+18 43.9	2.087	2.973	10.2	20.6
3 12	8 35.13	+12 45.7	1.566	2.382	16.8	21.9	3 12	8 43.84	+19 29.2	2.165	2.966	13.3	20.8
33318	1998 <i>MU</i> ₉		2 4.2 177°74	1°6/ 5.5	18		522328	2016 <i>BM</i> ₁₀₅		2 4.2 279°64	1°4/ 3.3	18	

EPHEMERIDES

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
228696	2002 <i>PX</i> ₉₅		2 4.2 190°85	1.6/ 4.9	18		443086	2013 <i>GQ</i> ₆₉		2 4.2 265°17	0.5/ 3.7	17	
1 2	9 37.80	+11 52.2	1.525	2.349	16.3	20.6	1 2	9 26.30	+16 29.1	3.362	4.181	8.3	21.5
1 12	9 31.64	+11 52.1	1.448	2.349	12.3	20.4	1 12	9 22.04	+17 1.9	3.266	4.168	6.1	21.3
1 22	9 22.67	+12 5.0	1.393	2.348	7.6	20.1	1 22	9 16.54	+17 39.7	3.197	4.155	3.5	21.2
2 1	9 11.75	+12 27.7	1.365	2.347	2.7	19.8	2 1	9 10.22	+18 19.7	3.158	4.142	0.9	20.9
2 11	9 0.24	+12 55.3	1.364	2.345	3.6	19.9	2 11	9 3.61	+18 58.9	3.151	4.129	2.1	21.0
2 21	8 49.61	+13 22.5	1.392	2.342	8.6	20.2	2 21	8 57.30	+19 34.7	3.175	4.116	4.8	21.2
3 2	8 41.14	+13 45.1	1.444	2.340	13.3	20.4	3 2	8 51.82	+20 4.6	3.227	4.102	7.3	21.3
3 12	8 35.68	+14 0.2	1.518	2.336	17.2	20.7	3 12	8 47.61	+20 27.5	3.305	4.089	9.5	21.5
347385	2012 <i>RO</i> ₂₄		2 4.2 30°96	4.4/31.8	18		94278	2001 <i>DT</i> ₃₆		2 4.2 49°64	0.8/ 3.6	18	
1 2	9 33.10	+28 50.5	2.262	3.099	11.2	20.1	1 2	9 31.23	+18 27.6	2.495	3.320	10.6	19.5
1 12	9 27.53	+29 37.0	2.194	3.100	8.4	19.9	1 12	9 25.87	+18 37.9	2.419	3.324	7.8	19.3
1 22	9 19.93	+30 21.0	2.152	3.102	5.7	19.8	1 22	9 18.86	+18 52.0	2.369	3.328	4.5	19.1
2 1	9 11.03	+30 56.5	2.138	3.103	4.4	19.7	2 1	9 10.78	+19 6.7	2.348	3.331	1.2	18.8
2 11	9 1.81	+31 18.6	2.153	3.105	5.8	19.8	2 11	9 2.46	+19 18.8	2.358	3.335	2.7	19.0
2 21	8 53.29	+31 24.8	2.197	3.106	8.5	20.0	2 21	8 54.70	+19 25.8	2.397	3.339	6.1	19.2
3 2	8 46.37	+31 14.8	2.265	3.108	11.3	20.1	3 2	8 48.24	+19 26.2	2.464	3.343	9.1	19.4
3 12	8 41.67	+30 50.5	2.356	3.109	13.8	20.3	3 12	8 43.61	+19 19.5	2.555	3.347	11.8	19.6
346778	2009 <i>BP</i> ₁₁₃		2 4.2 268°42	1.1/ 3.0	17		430857	2005 <i>NG</i> ₁₅		2 4.2 222°57	0.9/ 3.3	17	
1 2	9 29.11	+15 35.9	2.415	3.240	11.0	20.5	1 2	9 29.75	+17 37.0	2.835	3.657	9.6	21.7
1 12	9 24.60	+16 54.5	2.320	3.226	8.0	20.2	1 12	9 24.74	+18 15.5	2.745	3.648	7.0	21.5
1 22	9 18.27	+18 23.6	2.252	3.212	4.7	20.0	1 22	9 18.21	+18 59.4	2.681	3.639	4.1	21.3
2 1	9 10.66	+19 57.8	2.215	3.198	1.4	19.7	2 1	9 10.64	+19 44.9	2.647	3.630	1.2	21.1
2 11	9 2.54	+21 30.5	2.208	3.183	3.3	19.9	2 11	9 2.73	+20 28.3	2.645	3.621	2.7	21.2
2 21	8 54.76	+22 55.5	2.232	3.169	6.8	20.1	2 21	8 55.20	+21 6.0	2.673	3.611	5.8	21.4
3 2	8 48.16	+24 8.4	2.285	3.154	10.2	20.2	3 2	8 48.72	+21 35.7	2.729	3.601	8.6	21.6
3 12	8 43.43	+25 6.6	2.361	3.140	13.0	20.4	3 12	8 43.86	+21 56.1	2.810	3.590	11.1	21.7
17064	1999 <i>GX</i> ₁₆		2 4.2 311°36	0.3/ 4.4	18		522647	2016 <i>GB</i> ₂₆₂		2 4.2 184°96	0.7/ 4.8	17	
1 2	9 31.42	+12 0.3	1.405	2.245	16.6	17.2	1 2	9 30.50	+12 38.7	2.865	3.671	9.9	22.1
1 12	9 27.24	+12 49.7	1.327	2.237	12.4	16.9	1 12	9 25.18	+12 54.2	2.778	3.671	7.4	21.9
1 22	9 20.23	+13 57.6	1.271	2.230	7.4	16.6	1 22	9 18.41	+13 16.7	2.718	3.671	4.5	21.7
2 1	9 11.19	+15 18.0	1.240	2.224	2.0	16.2	2 1	9 10.68	+13 44.0	2.688	3.670	1.4	21.5
2 11	9 1.43	+16 41.9	1.236	2.217	3.8	16.3	2 11	9 2.68	+14 13.0	2.689	3.668	2.1	21.5
2 21	8 52.42	+18 0.2	1.259	2.211	9.2	16.6	2 21	8 55.09	+14 41.0	2.720	3.667	5.2	21.7
3 2	8 45.53	+19 5.6	1.306	2.205	14.1	16.9	3 2	8 48.56	+15 5.4	2.781	3.664	8.1	21.9
3 12	8 41.67	+19 54.2	1.374	2.199	18.3	17.1	3 12	8 43.60	+15 24.4	2.867	3.662	10.6	22.1
29776	Radzhabov		2 4.2 81°85	1.2/ 3.4	18		453850	2011 <i>UL</i> ₂₇		2 4.2 79°20	0.3/ 4.1	18	
1 2	9 34.35	+17 31.7	1.736	2.572	14.1	18.9	1 2	9 34.97	+14 30.4	1.504	2.340	15.9	21.4
1 12	9 28.69	+18 7.4	1.676	2.586	10.3	18.6	1 12	9 29.41	+15 8.2	1.446	2.355	11.6	21.2
1 22	9 20.70	+18 50.5	1.639	2.600	6.0	18.4	1 22	9 21.24	+15 57.8	1.411	2.371	6.8	20.9
2 1	9 11.24	+19 35.2	1.630	2.613	1.7	18.2	2 1	9 11.41	+16 53.1	1.403	2.386	1.6	20.6
2 11	9 1.47	+20 15.4	1.650	2.627	3.7	18.3	2 11	9 1.24	+17 46.8	1.422	2.402	3.6	20.8
2 21	8 52.61	+20 46.5	1.698	2.641	8.0	18.6	2 21	8 52.10	+18 32.6	1.469	2.417	8.5	21.1
3 2	8 45.66	+21 5.9	1.771	2.654	11.9	18.9	3 2	8 45.12	+19 6.6	1.541	2.432	12.8	21.4
3 12	8 41.29	+21 12.9	1.867	2.668	15.1	19.1	3 12	8 41.00	+19 27.3	1.634	2.447	16.4	21.7
463983	2014 <i>WE</i> ₄₂		2 4.2 85°40	2.8/ 2.2	18		468331	2016 <i>CC</i> ₂₄₃		2 4.2 344°09	8.4/28.8	16	
1 2	9 32.83	+20 46.5	1.786	2.628	13.5	21.5	1 2	9 32.13	+31 30.9	1.443	2.302	15.1	20.9
1 12	9 27.73	+21 47.1	1.716	2.629	9.8	21.3	1 12	9 28.10	+33 31.7	1.382	2.296	11.8	20.7
1 22	9 20.25	+22 53.5	1.670	2.631	5.9	21.1	1 22	9 20.89	+35 30.5	1.346	2.290	9.1	20.6
2 1	9 11.15	+23 58.7	1.653	2.632	2.8	20.9	2 1	9 11.40	+37 13.6	1.334	2.284	8.5	20.5
2 11	9 1.59	+24 55.2	1.664	2.634	4.9	21.0	2 11	9 1.15	+38 29.2	1.348	2.280	10.7	20.6
2 21	8 52.79	+25 37.6	1.702	2.636	8.9	21.3	2 21	8 51.86	+39 11.4	1.386	2.276	13.9	20.8
3 2	8 45.83	+26 3.3	1.766	2.637	12.6	21.5	3 2	8 45.05	+39 20.0	1.445	2.273	17.3	21.0
3 12	8 41.45	+26 12.5	1.852	2.639	15.8	21.7	3 12	8 41.66	+38 59.7	1.520	2.270	20.2	21.2
416837	2005 <i>JU</i> ₁₃₄		2 4.2 128°06	10.4/15.9	18		201187	2002 <i>PK</i> ₇₀		2 4.2 58°91	5.5/ 8.7	18 R	
1 2	9 34.12	-23 2.3	2.752	3.336	15.0	22.9	1 2	9 30.48	- 1 23.5	1.952	2.722	15.2	19.7
1 12	9 27.87	-23 52.1	2.683	3.358	13.7	22.9	1 12	9 25.53	- 1 29.2	1.893	2.747	12.3	19.5
1 22	9 19.99	-24 17.0	2.631	3.379	12.3	22.8	1 22	9 18.72	- 1 14.0	1.855	2.771	9.1	19.4
2 1	9 11.05	-24 14.1	2.601	3.400	11.1	22.7	2 1	9 10.76	- 0 38.7	1.844	2.796	6.4	19.3
2 11	9 1.84	-23 43.1	2.595	3.419	10.5	22.7	2 11	9 2.60	+ 0 13.1	1.860	2.820	5.6	19.3
2 21	8 53.17	-22 46.5	2.613	3.438	10.5	22.7	2 21	8 55.17	+ 1 16.1	1.904	2.845	7.4	19.4
3 2	8 45.76	-21 29.4	2.657	3.455	11.1	22.8	3 2	8 49.27	+ 2 23.9	1.974	2.870	10.2	19.6
3 12	8 40.16	-19 58.8	2.723	3.472	12.2	22.9	3 12	8 45.47	+ 3 30.5	2.069	2.894	13.0	19.8
316945	2001 <i>DF</i> ₈		2 4.2 148°77	0.7/ 4.9	18		205483	2001 <i>QU</i> ₂₂₃		2 4.2 135°51	0.3/ 4.5	18	
1 2	9 30.55	+10 35.5	2.497	3.303	11.3	20.9	1 2	9 30.81	+13 46.9	2.768	3.578	10.1	21.5
1 12	9 25.39	+11 27.5	2.419	3.311	8.4	20.7	1 12	9 25.39	+14 11.0	2.694	3.591	7.5	21.4
1 22	9 18.59	+12 30.5	2.367	3.320	5.1	20.5	1 22	9 18.51	+14 41.8	2.647	3.602	4.4	21.2
2 1	9 10.71	+13 40.8	2.345	3.327	1.6	20.3	2 1	9 10.71	+15 16.4	2.631	3.614	1.2	21.0
2 11	9 2.53	+14 53.2	2.354	3.334	2.3	20.3	2 11	9 2.70	+15 51.4	2.645	3.625	2.2	21.1
2 21	8 54.83	+16 2.9	2.395	3.341	5.8	20.6	2 21	8 55.17	+16 23.8	2.690	3.635	5.3	21.3
3 2	8 48.35	+17 5.6	2.464	3.347	9.0	20.8	3 2	8 48.78	+16 51.0	2.764	3.645	8.2	21.5
3 12	8 43.62	+17 58.6	2.558	3.353	11.7	21.0	3 12	8 44.01	+17 11.6	2.863	3.655	10.6	21.7
154287	2002 <i>TE</i> ₁₀₁		2 4.2 64°33	1.6/ 5.0	18		492907	2014 <i>QG</i> ₄₃₇		2 4.2 130°25	1.5/ 3.0	18	
1 2	9 36.40	+11 25.7	1.229	2.068	18.5	20.3	1 2	9 33.39	+17 5.4	2.02			

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
431840	2008 SG ₄₅		2 4.2 191°04	5°9/30.4	16		274967	2009 SG ₃₄₂		2 4.2 98°46	2°9/ 6.3	18	
1 2	9 37.22	+34 44.4	2.453	3.278	10.8	22.0	1 2	9 31.53	+ 6 40.2	1.932	2.736	14.1	21.2
1 12	9 30.56	+35 39.9	2.385	3.276	8.5	21.8	1 12	9 26.49	+ 6 46.4	1.856	2.742	10.9	21.0
1 22	9 21.75	+36 28.9	2.343	3.275	6.6	21.7	1 22	9 19.42	+ 7 7.8	1.803	2.747	7.2	20.8
2 1	9 11.54	+37 4.8	2.329	3.272	5.9	21.7	2 1	9 11.00	+ 7 42.5	1.778	2.752	3.7	20.6
2 11	9 0.98	+37 22.7	2.345	3.270	7.1	21.7	2 11	9 2.20	+ 8 26.3	1.781	2.758	3.6	20.6
2 21	8 51.16	+37 20.6	2.388	3.267	9.3	21.9	2 21	8 54.04	+ 9 14.4	1.812	2.763	7.0	20.8
3 2	8 43.02	+36 59.4	2.457	3.263	11.7	22.0	3 2	8 47.45	+10 1.7	1.871	2.768	10.6	21.0
3 12	8 37.22	+36 22.1	2.547	3.259	13.8	22.2	3 12	8 43.07	+10 44.1	1.952	2.773	13.8	21.3
17150	1999 JP ₁₀₉		2 4.2 129°30	0°2/ 4.0	18		455372	2002 TM ₂₈₁		2 4.2 67°92	7°5/31.6	16	
1 2	9 30.19	+15 21.1	2.719	3.536	10.1	19.0	1 2	9 44.90	+34 26.5	1.571	2.406	15.3	20.5
1 12	9 24.99	+15 52.1	2.647	3.547	7.4	18.8	1 12	9 36.55	+35 22.0	1.540	2.439	11.9	20.4
1 22	9 18.30	+16 29.2	2.601	3.558	4.3	18.6	1 22	9 25.26	+36 5.9	1.533	2.471	8.8	20.3
2 1	9 10.68	+17 9.1	2.585	3.569	1.0	18.4	2 1	9 12.37	+36 29.0	1.552	2.503	7.5	20.3
2 11	9 2.82	+17 48.1	2.600	3.579	2.3	18.5	2 11	8 59.60	+36 26.0	1.599	2.535	8.9	20.4
2 21	8 55.45	+18 22.9	2.645	3.588	5.5	18.7	2 21	8 48.54	+35 57.4	1.671	2.566	11.7	20.7
3 2	8 49.24	+18 51.2	2.719	3.598	8.4	18.9	3 2	8 40.31	+35 7.5	1.768	2.597	14.5	20.9
3 12	8 44.67	+19 11.5	2.818	3.607	10.9	19.1	3 12	8 35.44	+34 2.4	1.884	2.628	17.0	21.2
231787	2000 CW ₉₉		2 4.2 64°56	0°9/ 3.8	18		404835	2014 JN ₇₇		2 4.2 212°53	3°5/ 6.2	18	
1 2	9 38.95	+18 11.6	1.363	2.206	16.8	20.4	1 2	9 34.93	+ 6 24.8	1.615	2.423	16.3	22.1
1 12	9 32.73	+18 14.5	1.295	2.208	12.4	20.1	1 12	9 29.47	+ 6 25.4	1.531	2.419	12.6	21.9
1 22	9 23.41	+18 24.3	1.250	2.211	7.3	19.8	1 22	9 21.43	+ 6 44.3	1.470	2.415	8.4	21.6
2 1	9 12.00	+18 35.5	1.230	2.213	1.9	19.5	2 1	9 11.55	+ 7 19.7	1.435	2.410	4.4	21.4
2 11	9 0.09	+18 42.6	1.237	2.216	4.2	19.7	2 11	9 1.04	+ 8 7.3	1.428	2.405	4.3	21.4
2 21	8 49.32	+18 41.5	1.270	2.219	9.6	20.0	2 21	8 51.22	+ 9 0.8	1.448	2.399	8.3	21.6
3 2	8 41.08	+18 30.7	1.328	2.221	14.4	20.3	3 2	8 43.31	+ 9 54.0	1.494	2.393	12.7	21.8
3 12	8 36.20	+18 10.3	1.406	2.224	18.4	20.5	3 12	8 38.15	+10 41.5	1.562	2.387	16.5	22.0
456686	2007 RD ₁₅₈		2 4.2 90°04	0°2/ 4.1	18		269110	2007 JG ₂₇		2 4.2 246°04	1°1/ 5.1	17	
1 2	9 36.29	+14 10.3	1.636	2.464	15.2	21.4	1 2	9 31.05	+10 54.3	2.247	3.059	12.2	21.4
1 12	9 30.12	+14 53.0	1.583	2.489	11.1	21.2	1 12	9 26.07	+11 19.3	2.152	3.047	9.2	21.2
1 22	9 21.54	+15 46.6	1.554	2.513	6.5	21.0	1 22	9 19.18	+11 55.8	2.082	3.034	5.7	21.0
2 1	9 11.49	+16 45.2	1.552	2.536	1.5	20.7	2 1	9 10.96	+12 40.9	2.040	3.021	2.0	20.7
2 11	9 1.21	+17 41.6	1.579	2.559	3.4	20.9	2 11	9 2.26	+13 30.2	2.028	3.008	2.6	20.7
2 21	8 51.96	+18 30.1	1.635	2.582	8.0	21.2	2 21	8 53.99	+14 19.1	2.046	2.995	6.4	20.9
3 2	8 44.76	+19 7.1	1.717	2.604	12.0	21.5	3 2	8 47.02	+15 3.6	2.092	2.981	10.0	21.1
3 12	8 40.24	+19 31.2	1.820	2.625	15.3	21.7	3 12	8 42.04	+15 40.5	2.161	2.967	13.2	21.3
380385	2002 VU ₆₈		2 4.2 44°28	2°7/ 2.0	18		432427	2010 AK ₁₀₄		2 4.2 244°98	4°0/ 6.9	17	
1 2	9 30.09	+19 26.0	1.823	2.666	13.2	19.6	1 2	9 31.85	+ 4 1.9	2.357	3.138	12.6	20.6
1 12	9 25.56	+20 51.4	1.769	2.684	9.5	19.4	1 12	9 26.46	+ 3 33.0	2.267	3.134	10.0	20.4
1 22	9 18.89	+22 23.3	1.742	2.703	5.6	19.2	1 22	9 19.31	+ 3 16.5	2.201	3.130	7.1	20.2
2 1	9 10.85	+23 53.8	1.742	2.722	2.7	19.1	2 1	9 10.98	+ 3 12.7	2.163	3.126	4.6	20.0
2 11	9 2.51	+25 14.8	1.771	2.741	4.8	19.2	2 11	9 2.26	+ 3 20.0	2.154	3.122	4.3	20.0
2 21	8 54.95	+26 20.4	1.829	2.761	8.5	19.5	2 21	8 54.02	+ 3 35.8	2.175	3.117	6.6	20.2
3 2	8 49.12	+27 7.6	1.912	2.780	11.9	19.7	3 2	8 47.04	+ 3 56.9	2.223	3.113	9.5	20.3
3 12	8 45.65	+27 36.2	2.017	2.801	14.8	20.0	3 12	8 41.93	+ 4 19.6	2.296	3.109	12.3	20.5
245006	2004 CX ₅₆		2 4.2 19°75	11°2/29.2	18		33627	1999 JS ₇₁		2 4.2 128°10	3°6/31.5	18	
1 2	9 35.85	+40 25.5	1.325	2.176	16.7	19.0	1 2	9 32.25	+28 19.6	2.916	3.745	9.2	19.1
1 12	9 30.81	+41 48.7	1.296	2.192	13.8	18.9	1 12	9 26.51	+29 17.0	2.857	3.760	6.8	19.0
1 22	9 22.28	+42 53.6	1.287	2.209	11.7	18.8	1 22	9 19.21	+30 12.3	2.826	3.774	4.6	18.8
2 1	9 11.67	+43 28.6	1.302	2.228	11.3	18.8	2 1	9 10.93	+31 0.7	2.825	3.788	3.6	18.8
2 11	9 0.95	+43 27.3	1.339	2.249	12.7	18.9	2 11	9 2.44	+31 38.2	2.855	3.802	4.8	18.9
2 21	8 51.95	+42 50.4	1.399	2.270	15.0	19.1	2 21	8 54.49	+32 2.4	2.914	3.815	7.0	19.0
3 2	8 46.01	+41 43.9	1.478	2.294	17.6	19.4	3 2	8 47.77	+32 12.6	3.000	3.828	9.2	19.2
3 12	8 43.68	+40 15.9	1.574	2.318	19.9	19.6	3 12	8 42.79	+32 9.9	3.109	3.840	11.2	19.4
230492	2002 TO ₁₉₅		2 4.2 90°57	5°7/ 1.1	18		89501	2001 XR ₄₈		2 4.2 182°84	10°9/11.1	18	
1 2	9 40.13	+26 45.5	1.368	2.218	16.3	20.1	1 2	9 33.37	-12 37.0	1.971	2.669	17.4	19.0
1 12	9 33.60	+27 57.2	1.320	2.234	12.1	19.9	1 12	9 27.98	-13 59.5	1.890	2.669	15.4	18.9
1 22	9 23.86	+29 7.8	1.295	2.250	8.0	19.7	1 22	9 20.40	-14 57.6	1.828	2.669	13.3	18.7
2 1	9 12.09	+30 6.2	1.295	2.265	5.7	19.6	2 1	9 11.29	-15 26.5	1.789	2.669	11.6	18.6
2 11	9 0.00	+30 43.4	1.323	2.281	7.8	19.8	2 11	9 1.62	-15 24.5	1.774	2.669	10.9	18.6
2 21	8 49.32	+30 55.7	1.376	2.296	11.7	20.0	2 21	8 52.48	-14 53.6	1.783	2.669	11.6	18.6
3 2	8 41.40	+30 44.2	1.452	2.311	15.5	20.3	3 2	8 44.90	-13 59.5	1.817	2.669	13.2	18.7
3 12	8 36.96	+30 13.2	1.547	2.326	18.7	20.5	3 12	8 39.62	-12 50.4	1.872	2.668	15.3	18.8
215683	2003 WB ₁₅₆		2 4.2 49°40	4°8/ 1.5	18		325220	2008 GO ₂₉		2 4.2 115°92	0°6/ 3.9	18	
1 2	9 35.82	+25 4.3	1.428	2.281	15.6	20.2	1 2	9 34.00	+16 2.6	1.847	2.677	13.6	21.6
1 12	9 30.35	+26 5.0	1.374	2.291	11.5	20.0	1 12	9 28.42	+16 31.8	1.777	2.684	10.0	21.3
1 22	9 21.94	+27 6.7	1.343	2.301	7.3	19.8	1 22	9 20.60	+17 9.3	1.731	2.690	5.8	21.1
2 1	9 11.63	+28 0.2	1.337	2.312	4.8	19.7	2 1	9 11.31	+17 50.4	1.713	2.697	1.4	20.8
2 11	9 0.94	+28 36.9	1.359	2.323	6.9	19.8	2 11	9 1.65	+18 29.5	1.725	2.704	3.3	21.0
2 21	8 51.43	+28 52.7	1.406	2.334	10.9	20.1	2 21	8 52.77	+19 1.9	1.765	2.710	7.6	21.2
3 2	8 44.38	+28 47.3	1.477	2.345	14.7	20.3	3 2	8 45.65	+19 24.7	1.831	2.716	11.5	21.5
3 12	8 40.51	+28 23.7	1.567	2.357	18.0	20.6	3 12	8 40.97	+19 36.6	1.920	2.722	14.7	21.7
68697	2002 CR ₁₇₆		2 4.2 237°47	0°7/ 3.8	18		354969	2006 HO ₅₆		2 4.2 223°36	0°5/ 3.8	17	
1 2	9 35.37	+15 51.5	1.843	2.670	13.8	20.3	1 2	9 34					

EPHEMERIDES

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
95182	2002 <i>BZ</i> ₄		2 4.2 303°69	4°6/	1.8 18		107456	2001 <i>DF</i> ₂₄		2 4.2 302°09	2°4/	2.9 18	
1 2	9 37.80	+27 44.8	1.756	2.597	13.7	19.6	1 2	9 33.56	+19 37.3	1.497	2.345	15.3	20.1
1 12	9 31.62	+28 9.6	1.674	2.584	10.3	19.3	1 12	9 28.86	+20 20.2	1.413	2.330	11.3	19.8
1 22	9 22.69	+28 31.8	1.617	2.571	6.8	19.1	1 22	9 21.27	+21 11.6	1.353	2.315	6.7	19.5
2 1	9 11.86	+28 44.4	1.586	2.558	4.6	18.9	2 1	9 11.58	+22 4.5	1.319	2.301	2.6	19.2
2 11	9 0.48	+28 41.5	1.583	2.545	6.3	19.0	2 11	9 1.10	+22 50.7	1.311	2.286	5.0	19.3
2 21	8 49.96	+28 20.7	1.608	2.533	10.0	19.2	2 21	8 51.36	+23 23.9	1.330	2.272	9.9	19.5
3 2	8 41.57	+27 42.7	1.658	2.521	13.7	19.4	3 2	8 43.76	+23 40.6	1.373	2.259	14.5	19.8
3 12	8 36.12	+26 50.4	1.729	2.509	17.0	19.6	3 12	8 39.23	+23 40.4	1.436	2.245	18.5	20.0
83948	2001 <i>WN</i> ₃₇		2 4.2 166°11	1°5/	2.8 18		431215	2006 <i>SE</i> ₂₂₈		2 4.2 187°21	2°7/	1.9 17	
1 2	9 30.39	+19 44.3	2.752	3.577	9.8	19.9	1 2	9 33.28	+25 16.1	2.795	3.622	9.6	21.9
1 12	9 25.22	+20 27.7	2.675	3.581	7.1	19.7	1 12	9 27.33	+25 44.6	2.717	3.621	7.1	21.7
1 22	9 18.50	+21 14.9	2.625	3.584	4.2	19.5	1 22	9 19.74	+26 12.7	2.666	3.620	4.4	21.5
2 1	9 10.77	+22 1.8	2.605	3.586	1.6	19.4	2 1	9 11.10	+26 36.2	2.645	3.619	2.7	21.4
2 11	9 2.76	+22 44.3	2.616	3.589	3.1	19.5	2 11	9 2.19	+26 51.6	2.654	3.617	4.0	21.5
2 21	8 55.21	+23 19.1	2.658	3.591	6.1	19.7	2 21	8 53.81	+26 56.8	2.694	3.615	6.6	21.6
3 2	8 48.81	+23 44.2	2.727	3.593	8.8	19.9	3 2	8 46.68	+26 51.1	2.761	3.613	9.2	21.8
3 12	8 44.09	+23 59.0	2.821	3.594	11.2	20.0	3 12	8 41.34	+26 35.0	2.853	3.611	11.5	22.0
288923	2004 <i>SK</i> ₁₇		2 4.2 114°04	4°7/	1.2 18		273184	2006 <i>HW</i> ₉₄		2 4.2 48°80	1°6/	3.2 18	
1 2	9 38.09	+25 13.7	1.623	2.466	14.5	20.8	1 2	9 32.34	+18 46.4	1.856	2.694	13.2	20.8
1 12	9 31.76	+26 28.5	1.569	2.481	10.7	20.6	1 12	9 27.21	+19 21.8	1.790	2.702	9.6	20.6
1 22	9 22.69	+27 44.3	1.539	2.494	6.9	20.4	1 22	9 19.89	+20 3.2	1.749	2.710	5.6	20.3
2 1	9 11.84	+28 51.5	1.536	2.508	4.7	20.3	2 1	9 11.16	+20 45.1	1.735	2.718	1.8	20.1
2 11	9 0.62	+29 41.9	1.562	2.521	6.7	20.5	2 11	9 2.10	+21 22.0	1.751	2.727	3.8	20.2
2 21	8 50.48	+29 11.1	1.614	2.533	10.3	20.7	2 21	8 53.81	+21 49.6	1.794	2.735	7.8	20.5
3 2	8 42.61	+30 18.6	1.691	2.545	13.9	21.0	3 2	8 47.28	+22 5.4	1.863	2.744	11.5	20.7
3 12	8 37.76	+30 7.1	1.788	2.557	16.9	21.2	3 12	8 43.13	+22 9.0	1.954	2.753	14.6	21.0
508576	2017 <i>OO</i> ₃		2 4.2 158°64	0°1/	4.2 18		379892	2012 <i>HO</i> ₇₂		2 4.2 159°81	2°0/	2.4 18	
1 2	9 30.32	+14 53.3	2.746	3.562	10.1	22.3	1 2	9 32.25	+20 7.4	2.550	3.376	10.4	21.8
1 12	9 25.12	+15 22.0	2.668	3.567	7.4	22.1	1 12	9 26.71	+21 8.9	2.477	3.383	7.6	21.7
1 22	9 18.42	+15 57.0	2.615	3.572	4.3	21.9	1 22	9 19.44	+22 14.8	2.430	3.389	4.5	21.5
2 1	9 10.76	+16 35.3	2.593	3.576	1.1	21.7	2 1	9 11.04	+23 19.9	2.414	3.394	2.0	21.3
2 11	9 2.82	+17 13.3	2.601	3.580	2.3	21.8	2 11	9 2.31	+24 19.0	2.430	3.400	3.6	21.4
2 21	8 55.35	+17 47.7	2.640	3.584	5.5	22.0	2 21	8 54.09	+25 7.9	2.475	3.404	6.7	21.6
3 2	8 49.00	+18 16.0	2.708	3.588	8.4	22.2	3 2	8 47.15	+25 44.4	2.549	3.408	9.6	21.8
3 12	8 44.28	+18 36.8	2.800	3.591	10.9	22.4	3 12	8 42.06	+26 7.8	2.646	3.411	12.1	22.0
127680	2003 <i>EX</i> ₁₀		2 4.2 254°22	0°9/	4.7 18		355892	2008 <i>WL</i> ₄₆		2 4.2 66°72	0°4/	4.5 18	
1 2	9 35.93	+12 54.8	1.650	2.475	15.2	20.1	1 2	9 36.35	+13 32.9	1.340	2.178	17.3	21.3
1 12	9 30.33	+13 4.5	1.559	2.461	11.5	19.8	1 12	9 30.61	+13 55.0	1.288	2.197	12.8	21.1
1 22	9 22.01	+13 26.2	1.490	2.446	7.0	19.5	1 22	9 22.04	+14 30.3	1.257	2.216	7.6	20.9
2 1	9 11.73	+13 56.7	1.448	2.431	2.1	19.2	2 1	9 11.69	+15 13.2	1.252	2.235	2.0	20.6
2 11	9 0.70	+14 30.5	1.435	2.416	3.4	19.2	2 11	9 1.07	+15 56.6	1.274	2.254	3.7	20.7
2 21	8 50.28	+15 2.6	1.450	2.400	8.4	19.5	2 21	8 51.65	+16 34.2	1.322	2.274	8.9	21.1
3 2	8 41.77	+15 28.5	1.490	2.383	13.1	19.7	3 2	8 44.65	+17 2.0	1.395	2.293	13.5	21.4
3 12	8 36.10	+15 45.5	1.552	2.367	17.1	19.9	3 12	8 40.75	+17 17.9	1.488	2.312	17.2	21.7
62614	2000 <i>SS</i> ₃₃₉		2 4.2 95°36	4°5/	7.7 18		411347	2010 <i>UR</i> ₇₃		2 4.2 104°19	6°0/	30.5 18	
1 2	9 32.55	+1 21.5	2.092	2.867	14.2	19.9	1 2	9 39.02	+31 46.0	2.090	2.921	12.2	21.0
1 12	9 26.97	+1 20.1	2.027	2.889	11.2	19.7	1 12	9 31.97	+33 12.9	2.049	2.947	9.3	20.8
1 22	9 19.58	+1 36.5	1.986	2.910	8.0	19.6	1 22	9 22.60	+34 33.8	2.035	2.974	6.9	20.7
2 1	9 11.04	+2 9.3	1.971	2.931	5.2	19.4	2 1	9 11.82	+35 40.3	2.049	2.999	6.0	20.7
2 11	9 2.28	+2 55.3	1.985	2.952	4.6	19.4	2 11	9 0.82	+36 26.2	2.093	3.024	7.4	20.8
2 21	8 54.21	+3 49.5	2.028	2.972	6.9	19.6	2 21	8 50.80	+36 49.2	2.164	3.048	9.9	21.0
3 2	8 47.63	+4 46.7	2.099	2.992	9.8	19.8	3 2	8 42.76	+36 50.3	2.260	3.071	12.4	21.2
3 12	8 43.09	+5 41.9	2.194	3.012	12.6	20.0	3 12	8 37.33	+36 33.0	2.376	3.094	14.6	21.5
47984	2000 <i>XE</i> ₂₀		2 4.2 266°96	0°3/	4.1 18		430383	2014 <i>US</i> ₅₄		2 4.2 118°67	2°1/	5.7 18	
1 2	9 36.73	+16 38.7	1.591	2.426	15.2	19.0	1 2	9 36.51	+9 7.3	2.278	3.072	12.6	21.2
1 12	9 30.89	+16 43.2	1.510	2.419	11.3	18.7	1 12	9 29.71	+9 4.4	2.212	3.095	9.5	21.0
1 22	9 22.30	+16 55.6	1.452	2.412	6.7	18.4	1 22	9 21.12	+9 11.9	2.172	3.117	6.1	20.8
2 1	9 11.79	+17 11.5	1.421	2.405	1.6	18.1	2 1	9 11.44	+9 27.8	2.161	3.138	2.8	20.6
2 11	9 0.68	+17 25.8	1.418	2.398	3.6	18.2	2 11	9 1.58	+9 49.0	2.180	3.158	2.9	20.7
2 21	8 50.39	+17 34.4	1.442	2.391	8.7	18.5	2 21	8 52.43	+10 12.2	2.231	3.177	6.1	20.9
3 2	8 42.18	+17 34.9	1.492	2.383	13.2	18.7	3 2	8 44.79	+10 34.4	2.310	3.196	9.4	21.2
3 12	8 36.91	+17 26.2	1.563	2.376	17.0	19.0	3 12	8 39.19	+10 53.1	2.413	3.214	12.1	21.4
113831	2002 <i>TC</i> ₂₂₇		2 4.2 60°89	4°8/	31.4 18		171911	2001 <i>SD</i> ₅₁		2 4.2 171°37	2°1/	6.4 18	
1 2	9 32.76	+28 13.3	2.067	2.908	11.9	19.3	1 2	9 28.88	+6 13.4	2.761	3.550	10.8	20.7
1 12	9 27.45	+29 20.1	2.009	2.918	8.9	19.1	1 12	9 24.09	+6 40.1	2.675	3.552	8.3	20.6
1 22	9 20.00	+30 25.0	1.978	2.928	6.1	19.0	1 22	9 17.84	+7 18.8	2.614	3.555	5.4	20.4
2 1	9 11.17	+31 20.8	1.974	2.939	4.8	18.9	2 1	9 10.65	+8 7.5	2.582	3.556	2.8	20.2
2 11	9 2.03	+32 1.6	2.000	2.949	6.3	19.0	2 11	9 3.17	+9 2.6	2.581	3.558	2.6	20.2
2 21	8 53.68	+32 24.1	2.052	2.960	9.1	19.2	2 21	8 56.09	+10 0.3	2.611	3.559	5.2	20.4
3 2	8 47.04	+32 27.9	2.130	2.970	12.0	19.4	3 2	8 50.04	+10 56.6	2.669	3.560	8.1	20.6
3 12	8 42.77	+32 15.0	2.228	2.981	14.5	19.6	3 12	8 45.54	+11 48.2	2.754	3.560	10.6	20.7
403331	2009 <i>DP</i> ₇₇		2 4.2 15°57	3°1/	6.2 18		76799	2000 <i>OR</i> ₃₄		2 4.2 237°17	2°6/	6.8 18	
1 2	9 29.55	+6 1.7	1.291	2.122	18.3	20.6	1 2	9 28.29	+4 36.1	2.522	3.309		

EPHEMERIDES

2 4.2

2 4.3

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
45868	2000 VB ₂₀		2 4.2 196°26	0°0/ 4.2 18			393433	2001 SF ₂₉₂		2 4.3 88°04	4°7/ 7.3 17		
1 2	9 29.41	+14 27.2	2.761	3.577	10.0	19.9	1 2	9 37.16	+ 2 32.5	1.555	2.347	17.5	21.0
1 12	9 24.51	+14 54.2	2.676	3.575	7.4	19.7	1 12	9 30.78	+ 2 36.6	1.503	2.377	13.7	20.9
1 22	9 18.11	+15 28.0	2.617	3.573	4.4	19.5	1 22	9 21.97	+ 3 2.8	1.472	2.406	9.5	20.7
2 1	9 10.73	+16 5.6	2.587	3.571	1.1	19.3	2 1	9 11.70	+ 3 48.8	1.467	2.434	5.7	20.5
2 11	9 3.05	+16 43.5	2.589	3.568	2.2	19.4	2 11	9 1.24	+ 4 49.2	1.490	2.462	5.1	20.5
2 21	8 55.78	+17 18.5	2.621	3.566	5.5	19.6	2 21	8 51.84	+ 5 56.7	1.540	2.489	8.2	20.8
3 2	8 49.59	+17 47.9	2.681	3.563	8.4	19.8	3 2	8 44.54	+ 7 4.1	1.617	2.516	11.9	21.1
3 12	8 45.00	+18 9.9	2.766	3.560	10.9	20.0	3 12	8 39.97	+ 8 5.4	1.717	2.541	15.3	21.3
77927	2002 FK ₆		2 4.2 355°18	21°6/23.1 17			173	Ino		2 4.3 94°82	1°6/ 5.6 18		
1 2	9 52.18	+53 40.4	0.927	1.756	23.9	18.5	1 2	9 31.75	+ 7 45.8	2.039	2.844	13.5	12.4
1 12	9 46.37	+56 13.1	0.898	1.754	22.3	18.4	1 12	9 26.52	+ 8 37.3	1.975	2.864	10.1	12.2
1 22	9 33.15	+58 7.8	0.885	1.752	21.6	18.3	1 22	9 19.39	+ 9 43.9	1.935	2.884	6.3	12.0
2 1	9 14.64	+59 0.7	0.888	1.750	22.0	18.3	2 1	9 11.07	+11 1.3	1.924	2.904	2.5	11.7
2 11	8 55.35	+58 39.2	0.906	1.750	23.5	18.4	2 11	9 2.48	+12 23.1	1.943	2.923	2.8	11.8
2 21	8 39.90	+57 8.0	0.939	1.750	25.5	18.5	2 21	8 54.57	+13 43.1	1.993	2.943	6.5	12.1
3 2	8 31.00	+54 43.1	0.985	1.751	27.7	18.7	3 2	8 48.17	+14 55.8	2.070	2.961	10.0	12.4
3 12	8 29.01	+51 43.5	1.042	1.753	29.8	18.9	3 12	8 43.87	+15 57.6	2.171	2.980	13.0	12.6
30625	4236 P-L		2 4.2 93°65	2°8/ 2.9 18			427727	2004 NF ₂₁		2 4.3 102°72	2°4/ 6.2 18		
1 2	9 40.64	+21 52.0	1.446	2.288	16.1	19.4	1 2	9 34.00	+ 7 5.5	2.310	3.101	12.5	22.0
1 12	9 33.73	+22 17.9	1.390	2.302	11.8	19.1	1 12	9 27.87	+ 7 13.1	2.248	3.127	9.5	21.9
1 22	9 23.88	+22 46.7	1.357	2.317	7.0	18.9	1 22	9 20.06	+ 7 32.8	2.211	3.153	6.2	21.7
2 1	9 12.18	+23 11.3	1.350	2.331	3.0	18.7	2 1	9 11.22	+ 8 2.5	2.203	3.178	3.1	21.5
2 11	9 0.21	+23 25.2	1.372	2.345	5.1	18.9	2 11	9 2.23	+ 8 38.7	2.225	3.202	3.0	21.6
2 21	8 49.52	+23 25.0	1.420	2.359	9.7	19.2	2 21	8 53.91	+ 9 17.4	2.278	3.226	6.0	21.8
3 2	8 41.37	+23 10.7	1.493	2.373	13.9	19.4	3 2	8 47.00	+ 9 55.0	2.359	3.249	9.0	22.0
3 12	8 36.46	+22 43.9	1.587	2.386	17.4	19.7	3 12	8 42.03	+10 28.5	2.465	3.271	11.7	22.2
55045	2001 QH ₆₂		2 4.2 349°02	2°0/ 5.3 18 R			220534	2004 FC ₃₄		2 4.3 260°11	3°5/ 2.1 17		
1 2	9 31.08	+10 37.9	1.448	2.282	16.4	18.5	1 2	9 38.91	+25 33.8	2.044	2.874	12.5	20.9
1 12	9 26.87	+10 41.6	1.372	2.277	12.5	18.2	1 12	9 32.23	+26 1.4	1.948	2.854	9.3	20.6
1 22	9 19.99	+11 0.9	1.318	2.273	7.8	17.9	1 22	9 23.04	+26 28.9	1.877	2.832	5.9	20.4
2 1	9 11.27	+11 32.9	1.288	2.269	3.0	17.6	2 1	9 12.05	+26 50.1	1.835	2.810	3.6	20.2
2 11	9 1.96	+12 12.2	1.286	2.267	3.6	17.7	2 11	9 0.40	+26 59.5	1.823	2.788	5.3	20.3
2 21	8 53.45	+12 52.7	1.309	2.264	8.5	17.9	2 21	8 49.36	+26 54.0	1.840	2.765	8.9	20.4
3 2	8 46.96	+13 28.9	1.357	2.263	13.2	18.2	3 2	8 40.11	+26 33.0	1.883	2.742	12.5	20.6
3 12	8 43.34	+13 56.7	1.425	2.262	17.2	18.4	3 12	8 33.48	+25 58.5	1.949	2.718	15.7	20.8
325896	2010 UF ₂₉		2 4.3 114°88	0°2/ 4.1 18			40478	1999 RT ₅₄		2 4.3 229°80	0°4/ 4.5 18		
1 2	9 36.90	+16 2.2	1.962	2.784	13.3	21.6	1 2	9 34.83	+13 18.0	1.912	2.732	13.6	20.1
1 12	9 30.33	+16 15.9	1.898	2.800	9.7	21.4	1 12	9 29.19	+13 43.9	1.821	2.722	10.2	19.8
1 22	9 21.63	+16 36.5	1.859	2.816	5.7	21.2	1 22	9 21.21	+14 21.1	1.755	2.711	6.1	19.6
2 1	9 11.61	+16 59.8	1.848	2.832	1.4	20.9	2 1	9 11.59	+15 5.5	1.716	2.699	1.7	19.2
2 11	9 1.36	+17 21.4	1.867	2.847	3.0	21.0	2 11	9 1.35	+15 51.9	1.707	2.687	3.0	19.3
2 21	8 51.94	+17 38.0	1.916	2.861	7.1	21.3	2 21	8 51.67	+16 34.9	1.727	2.674	7.5	19.6
3 2	8 44.30	+17 47.4	1.992	2.875	10.8	21.6	3 2	8 43.63	+17 10.5	1.773	2.661	11.7	19.8
3 12	8 39.04	+17 48.6	2.091	2.889	13.8	21.8	3 12	8 38.02	+17 36.2	1.843	2.647	15.2	20.0
165876	2001 SZ ₁₂₉		2 4.3 99°37	3°1/ 2.0 18			273202	2006 JO ₁₂		2 4.3 139°22	2°4/ 1.7 18		
1 2	9 34.48	+25 31.9	2.331	3.163	11.1	20.2	1 2	9 31.79	+23 45.0	3.100	3.924	8.8	21.0
1 12	9 28.42	+25 59.6	2.265	3.171	8.1	20.1	1 12	9 26.09	+24 37.6	3.035	3.939	6.4	20.9
1 22	9 20.46	+26 26.4	2.225	3.180	5.1	19.9	1 22	9 18.98	+25 30.9	2.999	3.953	4.0	20.7
2 1	9 11.32	+26 47.6	2.213	3.188	3.1	19.8	2 1	9 10.97	+26 20.8	2.993	3.967	2.4	20.6
2 11	9 1.95	+26 59.0	2.232	3.196	4.5	19.9	2 11	9 2.74	+27 3.2	3.018	3.980	3.6	20.7
2 21	8 53.29	+26 58.4	2.280	3.204	7.5	20.1	2 21	8 54.98	+27 35.7	3.074	3.993	6.0	20.9
3 2	8 46.19	+26 45.7	2.355	3.212	10.4	20.3	3 2	8 48.32	+27 57.0	3.159	4.005	8.3	21.1
3 12	8 41.20	+26 21.9	2.452	3.220	12.9	20.4	3 12	8 43.23	+28 7.2	3.268	4.016	10.4	21.3
102098	1999 RJ ₁₅₈		2 4.3 195°68	1°4/ 3.3 18			409886	2006 SN ₃₆₄		2 4.3 108°34	4°8/ 1.2 18		
1 2	9 36.10	+18 24.6	1.995	2.822	12.9	20.8	1 2	9 36.91	+27 9.2	1.801	2.642	13.4	21.3
1 12	9 29.97	+19 0.9	1.914	2.820	9.4	20.6	1 12	9 30.76	+28 5.7	1.741	2.651	10.0	21.1
1 22	9 21.58	+19 43.6	1.858	2.817	5.5	20.3	1 22	9 22.08	+29 0.8	1.706	2.659	6.6	20.9
2 1	9 11.64	+20 27.4	1.831	2.814	1.7	20.1	2 1	9 11.77	+29 46.8	1.699	2.668	4.8	20.8
2 11	9 1.22	+21 6.6	1.834	2.810	3.7	20.2	2 11	9 1.12	+30 16.9	1.720	2.676	6.5	20.9
2 21	8 51.45	+21 36.8	1.866	2.805	7.8	20.4	2 21	8 51.42	+30 28.0	1.768	2.684	9.8	21.1
3 2	8 43.38	+21 55.5	1.925	2.799	11.5	20.7	3 2	8 43.79	+30 20.0	1.841	2.692	13.1	21.3
3 12	8 37.73	+22 2.1	2.006	2.793	14.7	20.9	3 12	8 38.93	+29 55.6	1.934	2.700	15.9	21.6
238338	2004 BP ₅₉		2 4.3 5°71	0°4/ 4.6 18			11632	1996 XB ₃		2 4.3 169°18	0°1/ 4.4 18		
1 2	9 28.57	+11 47.1	1.940	2.767	13.2	19.7	1 2	9 34.81	+13 32.2	2.081	2.897	12.8	18.5
1 12	9 24.44	+12 35.3	1.863	2.767	9.8	19.5	1 12	9 28.88	+14 8.1	2.003	2.902	9.5	18.2
1 22	9 18.31	+13 36.7	1.810	2.767	5.9	19.3	1 22	9 20.87	+14 54.0	1.950	2.906	5.6	18.0
2 1	9 10.82	+14 46.7	1.785	2.768	1.6	19.0	2 1	9 11.47	+15 45.6	1.926	2.909	1.4	17.7
2 11	9 2.92	+15 59.2	1.789	2.770	2.8	19.1	2 11	9 1.68	+16 37.6	1.932	2.912	2.8	17.8
2 21	8 55.59	+17 7.9	1.821	2.771	7.0	19.3	2 21	8 52.50	+17 25.1	1.968	2.914	6.9	18.1
3 2	8 49.76	+18 7.6	1.881	2.773	10.8	19.6	3 2	8 44.89	+18 4.3	2.032	2.915	10.6	18.3
3 12	8 46.09	+18 55.2	1.963	2.775	14.1	19.8	3 12	8 39.50	+18 33.2	2.119	2.915	13.7	18.5
184913	2005 UQ ₃₈₂		2 4.3 149°53	0°0/ 4.2 18			411379	2010 VS ₆₂		2 4.3 100°12	0°2/ 4.4 18		
1 2	9 28.49	+14 13.8	2.904	3.718	9.6	20.6	1 2	9 35.44	+14 19.8	1.928	2.749	13.5	21.8
1 12	9 23.76	+14 52.6	2.825	3.724									

EPHEMERIDES

2 4.3

2 4.3

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
205278	2000 <i>SL</i> ₁₀₅		2 4.3 52°88	3°1/ 5.9 18			322235	2011 <i>BH</i> ₈₂		2 4.3 141°83	2°1/ 2.6 18		
1 2	9 34.28	+ 7 39.2	1.281	2.110	18.5	19.9	1 2	9 32.98	+19 29.7	2.101	2.933	12.1	20.8
1 12	9 29.15	+ 7 46.1	1.230	2.130	14.1	19.7	1 12	9 27.56	+20 29.2	2.031	2.940	8.8	20.6
1 22	9 21.23	+ 8 13.5	1.200	2.151	9.1	19.5	1 22	9 20.10	+21 34.6	1.987	2.947	5.2	20.4
2 1	9 11.56	+ 8 57.5	1.194	2.172	4.2	19.2	2 1	9 11.29	+22 39.6	1.972	2.953	2.2	20.2
2 11	9 1.61	+ 9 51.6	1.214	2.193	4.2	19.3	2 11	9 2.11	+23 38.1	1.987	2.959	4.0	20.3
2 21	8 52.84	+10 47.8	1.260	2.215	8.8	19.6	2 21	8 53.58	+24 25.3	2.031	2.965	7.6	20.5
3 2	8 46.43	+11 39.6	1.330	2.237	13.3	19.9	3 2	8 46.60	+24 58.6	2.102	2.970	11.0	20.8
3 12	8 43.08	+12 21.9	1.421	2.259	17.1	20.2	3 12	8 41.84	+25 17.5	2.196	2.975	13.8	21.0
500005	2011 <i>QC</i> ₅		2 4.3 144°88	3°7/ 7.2 17			179929	2002 <i>VY</i> ₇₂		2 4.3 31°33	4°9/ 7.5 18		
1 2	9 31.45	+ 3 4.1	2.803	3.571	11.1	21.8	1 2	9 30.19	+ 2 29.2	1.467	2.275	17.7	20.2
1 12	9 25.90	+ 2 39.4	2.719	3.577	8.8	21.6	1 12	9 26.05	+ 2 32.3	1.400	2.283	14.0	20.0
1 22	9 18.89	+ 2 26.1	2.660	3.583	6.3	21.5	1 22	9 19.43	+ 2 59.4	1.354	2.291	9.8	19.8
2 1	9 10.96	+ 2 23.9	2.630	3.589	4.2	21.4	2 1	9 11.16	+ 3 49.0	1.331	2.299	6.0	19.6
2 11	9 2.77	+ 2 31.7	2.631	3.595	3.9	21.3	2 11	9 2.44	+ 4 55.8	1.335	2.309	5.3	19.6
2 21	8 55.02	+ 2 47.0	2.661	3.601	5.7	21.5	2 21	8 54.55	+ 6 12.2	1.365	2.319	8.5	19.8
3 2	8 48.35	+ 3 7.0	2.720	3.606	8.2	21.6	3 2	8 48.60	+ 7 29.7	1.421	2.329	12.5	20.0
3 12	8 43.25	+ 3 28.8	2.805	3.611	10.5	21.8	3 12	8 45.35	+ 8 41.0	1.497	2.340	16.2	20.3
274647	2008 <i>TN</i> ₁₃₅		2 4.3 181°99	2°0/ 5.9 17			80121	1999 <i>RV</i> ₁₄₄		2 4.3 231°70	2°8/ 7.1 18		
1 2	9 31.39	+ 8 28.2	2.497	3.294	11.5	21.5	1 2	9 28.63	+ 3 53.5	3.117	3.890	10.0	20.5
1 12	9 26.07	+ 8 37.4	2.411	3.295	8.8	21.3	1 12	9 23.85	+ 4 2.6	3.012	3.876	7.9	20.3
1 22	9 19.10	+ 8 57.5	2.350	3.295	5.7	21.1	1 22	9 17.74	+ 4 23.0	2.933	3.863	5.5	20.1
2 1	9 11.02	+ 9 26.5	2.318	3.295	2.6	20.9	2 1	9 10.71	+ 4 53.9	2.882	3.848	3.3	20.0
2 11	9 2.62	+10 1.2	2.316	3.294	2.7	20.9	2 11	9 3.34	+ 5 33.0	2.862	3.833	3.0	19.9
2 21	8 54.68	+10 38.2	2.345	3.293	5.8	21.1	2 21	8 56.25	+ 6 17.4	2.873	3.818	5.0	20.0
3 2	8 47.94	+11 13.9	2.402	3.292	8.9	21.3	3 2	8 50.04	+ 7 3.7	2.914	3.802	7.5	20.2
3 12	8 42.98	+11 45.4	2.483	3.290	11.7	21.5	3 12	8 45.18	+ 7 48.8	2.980	3.786	9.9	20.3
301133	2008 <i>WC</i> ₁₃₄		2 4.3 147°12	2°5/ 2.5 18			307379	2002 <i>SU</i> ₅₃		2 4.3 96°77	8°0/ 9.5 18		
1 2	9 36.97	+20 11.2	1.893	2.724	13.3	21.1	1 2	9 34.11	- 4 57.9	1.816	2.566	16.9	19.9
1 12	9 30.64	+21 11.5	1.827	2.735	9.7	20.9	1 12	9 28.50	- 5 46.6	1.747	2.579	14.2	19.8
1 22	9 21.97	+22 17.3	1.786	2.745	5.7	20.7	1 22	9 20.71	- 6 12.2	1.697	2.592	11.2	19.6
2 1	9 11.75	+23 21.6	1.774	2.754	2.5	20.5	2 1	9 11.46	- 6 12.6	1.673	2.604	8.8	19.5
2 11	9 1.15	+24 17.2	1.792	2.763	4.5	20.7	2 11	9 1.84	- 5 48.7	1.674	2.616	8.1	19.5
2 21	8 51.34	+24 59.4	1.839	2.771	8.4	20.9	2 21	8 52.95	- 5 4.8	1.702	2.628	9.4	19.6
3 2	8 43.40	+25 25.7	1.912	2.778	12.0	21.2	3 2	8 45.76	- 4 7.4	1.756	2.640	12.0	19.8
3 12	8 38.01	+25 36.6	2.007	2.784	15.1	21.4	3 12	8 40.96	- 3 4.0	1.832	2.651	14.7	20.0
16356	Univbalttech		2 4.3 321°16	0°2/ 4.4 18			351639	2005 <i>YA</i> ₅₃		2 4.3 24°26	0°4/ 4.5 18		
1 2	9 29.26	+13 45.8	2.075	2.902	12.4	17.2	1 2	9 35.81	+14 33.0	1.341	2.183	17.1	21.1
1 12	9 24.91	+14 13.0	1.988	2.892	9.2	17.0	1 12	9 30.50	+14 39.7	1.273	2.184	12.7	20.9
1 22	9 18.59	+14 50.2	1.925	2.883	5.5	16.8	1 22	9 22.21	+14 58.2	1.227	2.187	7.6	20.6
2 1	9 10.92	+15 33.7	1.890	2.874	1.4	16.5	2 1	9 11.88	+15 24.1	1.205	2.189	2.0	20.2
2 11	9 2.80	+16 18.8	1.885	2.865	2.8	16.6	2 11	9 1.00	+15 51.2	1.211	2.192	3.8	20.4
2 21	8 55.19	+17 0.8	1.908	2.857	6.8	16.8	2 21	8 51.16	+16 13.8	1.242	2.195	9.2	20.7
3 2	8 48.98	+17 35.8	1.957	2.848	10.5	17.0	3 2	8 43.70	+16 28.3	1.298	2.198	14.1	21.0
3 12	8 44.86	+18 1.5	2.030	2.840	13.8	17.2	3 12	8 39.46	+16 32.7	1.373	2.201	18.2	21.2
450558	2006 <i>EM</i> ₄₉		2 4.3 55°26	0°9/ 3.7 18			288221	2003 <i>YK</i> ₄₅		2 4.3 91°33	1°1/ 3.4 18		
1 2	9 34.60	+15 12.9	1.259	2.108	17.5	20.9	1 2	9 31.92	+17 22.6	2.171	2.999	11.9	20.5
1 12	9 29.56	+16 3.2	1.209	2.125	12.8	20.7	1 12	9 26.63	+18 7.9	2.108	3.015	8.7	20.3
1 22	9 21.56	+17 6.9	1.180	2.142	7.4	20.5	1 22	9 19.48	+18 59.5	2.071	3.030	5.0	20.1
2 1	9 11.66	+18 15.8	1.176	2.160	1.8	20.2	2 1	9 11.15	+19 52.5	2.062	3.045	1.5	19.9
2 11	9 1.42	+19 20.4	1.199	2.178	4.3	20.4	2 11	9 2.56	+20 41.5	2.084	3.060	3.2	20.0
2 21	8 52.41	+20 13.2	1.247	2.196	9.6	20.7	2 21	8 54.64	+21 22.5	2.135	3.075	6.8	20.3
3 2	8 45.89	+20 50.0	1.319	2.215	14.3	21.0	3 2	8 48.21	+21 52.6	2.213	3.089	10.1	20.5
3 12	8 42.58	+21 9.7	1.411	2.233	18.1	21.3	3 12	8 43.84	+22 11.2	2.314	3.104	12.9	20.7
170921	2004 <i>YF</i> ₅		2 4.3 343°33	1°1/ 4.8 18			52313	1991 <i>VH</i> ₉		2 4.3 239°70	2°3/ 5.7 18		
1 2	9 33.29	+13 0.8	1.343	2.185	17.1	19.9	1 2	9 34.89	+ 8 25.2	1.745	2.556	15.2	19.6
1 12	9 28.71	+13 3.0	1.269	2.180	12.8	19.7	1 12	9 29.47	+ 8 40.8	1.651	2.542	11.6	19.3
1 22	9 21.19	+13 18.9	1.216	2.175	7.8	19.4	1 22	9 21.52	+ 9 12.8	1.580	2.529	7.5	19.0
2 1	9 11.62	+13 44.8	1.188	2.171	2.5	19.0	2 1	9 11.74	+ 9 58.9	1.535	2.514	3.3	18.8
2 11	9 1.40	+14 14.9	1.186	2.167	3.7	19.1	2 11	9 1.22	+10 53.9	1.520	2.499	3.5	18.7
2 21	8 52.07	+14 43.3	1.210	2.164	9.1	19.4	2 21	8 51.23	+11 51.7	1.532	2.483	8.0	19.0
3 2	8 45.02	+15 5.4	1.257	2.162	14.1	19.7	3 2	8 42.97	+12 46.4	1.571	2.467	12.4	19.2
3 12	8 41.11	+15 18.1	1.325	2.160	18.3	19.9	3 12	8 37.32	+13 33.3	1.633	2.450	16.2	19.4
260763	2005 <i>MS</i> ₄₄		2 4.3 160°16	4°6/31.3 18			466054	2011 <i>QN</i> ₉₄		2 4.3 217°35	4°9/ 9.9 17		
1 2	9 35.38	+26 45.8	2.155	2.990	11.7	20.8	1 2	9 28.13	- 6 1.7	3.292	4.007	10.7	23.3
1 12	9 29.43	+28 13.8	2.090	2.996	8.7	20.6	1 12	9 23.43	- 5 56.1	3.185	3.997	8.9	23.1
1 22	9 21.26	+29 42.3	2.051	3.002	5.9	20.4	1 22	9 17.47	- 5 34.9	3.103	3.986	7.1	23.0
2 1	9 11.59	+31 3.1	2.042	3.007	4.6	20.3	2 1	9 10.66	- 4 58.1	3.048	3.975	5.5	22.9
2 11	9 1.47	+32 9.1	2.063	3.012	6.2	20.4	2 11	9 3.53	- 4 7.0	3.022	3.963	4.9	22.8
2 21	8 52.02	+32 55.9	2.113	3.016	9.1	20.6	2 21	8 56.67	- 3 4.6	3.026	3.951	5.8	22.8
3 2	8 44.24	+33 22.3	2.188	3.019	12.0	20.8	3 2	8 50.64	- 1 54.8	3.060	3.938	7.6	22.9
3 12	8 38.84	+33 29.7	2.284	3.022	14.5	21.0	3 12	8 45.88	- 0 42.1	3.120	3.925	9.6	23.1
450436	2005 <i>UC</i> ₂₅₃		2 4.3 148°13	1°6/ 3.3 18			442609	2012 <i>KU</i> ₄₂		2 4.3 107°04	0°2/ 4.5 15		
1 2	9 39.01	+18 29.7	1.801	2.629	14.0	21.7	1 2	9 40.49	+10 47.1	2.015			

EPHEMERIDES

2 4.3

2 4.3

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
215863	2005 <i>EX</i> ₁₃₂		2 4.3	4°90	1°9/ 5.3	18	260015	2004 <i>FG</i> ₁₄₈		2 4.3	294°22	4°9/ 1.8	18
1 2	9 31.33	+10 36.4	1.281	2.122	17.7	20.7	1 2	9 39.22	+28 10.2	1.680	2.521	14.2	20.0
1 12	9 27.30	+10 44.4	1.213	2.122	13.4	20.4	1 12	9 32.82	+28 38.1	1.602	2.511	10.7	19.8
1 22	9 20.38	+11 10.1	1.165	2.122	8.4	20.1	1 22	9 23.52	+29 3.0	1.548	2.501	7.1	19.6
2 1	9 11.45	+11 49.9	1.142	2.123	3.2	19.8	2 1	9 12.25	+29 17.3	1.520	2.491	4.9	19.4
2 11	9 1.95	+12 37.1	1.144	2.125	3.8	19.9	2 11	9 0.41	+29 14.8	1.521	2.482	6.6	19.5
2 21	8 53.39	+13 24.7	1.172	2.128	9.1	20.2	2 21	8 49.53	+28 53.0	1.548	2.472	10.4	19.7
3 2	8 47.10	+14 6.2	1.223	2.132	14.0	20.5	3 2	8 40.91	+28 13.0	1.601	2.462	14.2	19.9
3 12	8 43.94	+14 37.3	1.294	2.136	18.2	20.7	3 12	8 35.40	+27 18.2	1.673	2.453	17.5	20.1
265801	2005 <i>XZ</i> ₂		2 4.3	119°86	0°9/ 4.9	18	201281	2002 <i>RL</i> ₂₇₁		2 4.3	171°92	0°2/ 4.5	17
1 2	9 36.54	+13 26.6	2.088	2.901	12.9	20.6	1 2	9 31.58	+14 5.8	2.451	3.266	11.1	21.5
1 12	9 29.99	+13 20.9	2.018	2.914	9.6	20.4	1 12	9 26.27	+14 28.1	2.370	3.269	8.2	21.3
1 22	9 21.45	+13 22.9	1.973	2.926	5.8	20.2	1 22	9 19.26	+14 58.0	2.315	3.270	4.9	21.1
2 1	9 11.65	+13 30.2	1.957	2.939	1.9	19.9	2 1	9 11.14	+15 32.3	2.288	3.272	1.3	20.9
2 11	9 1.60	+13 39.4	1.971	2.951	2.7	20.0	2 11	9 2.69	+16 7.2	2.293	3.273	2.4	20.9
2 21	8 52.30	+13 47.7	2.014	2.962	6.6	20.3	2 21	8 54.75	+16 39.2	2.327	3.274	6.0	21.2
3 2	8 44.64	+13 52.8	2.086	2.973	10.2	20.5	3 2	8 48.08	+17 5.4	2.390	3.274	9.2	21.4
3 12	8 39.20	+13 53.2	2.181	2.984	13.2	20.7	3 12	8 43.23	+17 24.2	2.477	3.274	11.9	21.6
322469	2011 <i>UT</i> ₁₄₈		2 4.3	258°81	2°8/ 5.9	18	347066	2010 <i>FY</i> ₃₀		2 4.3	261°42	2°8/ 1.9	17
1 2	9 34.00	+ 8 9.4	1.637	2.452	15.8	20.7	1 2	9 31.56	+23 4.3	2.349	3.184	10.9	21.5
1 12	9 28.91	+ 8 12.0	1.548	2.441	12.2	20.4	1 12	9 26.50	+23 52.5	2.265	3.174	8.0	21.2
1 22	9 21.22	+ 8 31.1	1.481	2.430	7.9	20.1	1 22	9 19.51	+24 43.5	2.207	3.164	4.9	21.0
2 1	9 11.68	+ 9 4.8	1.441	2.418	3.8	19.9	2 1	9 11.22	+25 31.9	2.178	3.155	2.8	20.9
2 11	9 1.43	+ 9 48.6	1.427	2.406	3.9	19.8	2 11	9 2.50	+26 12.4	2.179	3.145	4.4	21.0
2 21	8 51.78	+10 36.7	1.442	2.394	8.2	20.1	2 21	8 54.27	+26 41.4	2.209	3.135	7.5	21.1
3 2	8 43.97	+11 23.3	1.482	2.382	12.7	20.3	3 2	8 47.42	+26 57.0	2.265	3.125	10.6	21.3
3 12	8 38.88	+12 3.6	1.544	2.370	16.6	20.5	3 12	8 42.59	+26 59.0	2.344	3.115	13.3	21.5
208961	2002 <i>XY</i> ₁₄		2 4.3	1°78	7°3/ 9.2	18	33079	1997 <i>WB</i> ₃₉		2 4.3	158°45	3°0/ 2.3	18
1 2	9 30.37	- 4 6.0	2.068	2.820	15.1	19.8	1 2	9 37.62	+22 3.2	1.843	2.677	13.5	19.2
1 12	9 25.66	- 4 54.6	1.985	2.819	12.6	19.6	1 12	9 31.25	+22 58.1	1.775	2.684	9.9	19.0
1 22	9 19.02	- 5 23.8	1.924	2.819	10.1	19.4	1 22	9 22.42	+23 56.9	1.732	2.690	6.0	18.8
2 1	9 11.08	- 5 31.5	1.887	2.819	7.9	19.3	2 1	9 11.95	+24 52.3	1.717	2.695	3.1	18.6
2 11	9 2.71	- 5 18.3	1.877	2.820	7.3	19.3	2 11	9 1.06	+25 37.3	1.732	2.700	5.0	18.8
2 21	8 54.86	- 4 47.1	1.894	2.821	8.6	19.3	2 21	8 50.99	+26 7.6	1.775	2.704	8.8	19.0
3 2	8 48.41	- 4 2.9	1.937	2.822	11.0	19.5	3 2	8 42.87	+26 21.3	1.844	2.708	12.5	19.2
3 12	8 44.01	- 3 11.9	2.003	2.823	13.6	19.6	3 12	8 37.42	+26 19.6	1.934	2.710	15.6	19.5
371228	2006 <i>BO</i> ₆₂		2 4.3	35°14	0°6/ 4.7	18	309220	2007 <i>PV</i> ₁₂		2 4.3	156°28	1°3/ 3.5	18
1 2	9 29.68	+10 56.2	1.597	2.430	15.3	20.1	1 2	9 38.91	+18 53.1	2.076	2.897	12.7	22.0
1 12	9 25.55	+11 50.6	1.534	2.440	11.3	19.9	1 12	9 31.86	+19 18.1	2.004	2.907	9.3	21.8
1 22	9 19.09	+13 1.2	1.494	2.451	6.8	19.6	1 22	9 22.62	+19 47.5	1.958	2.916	5.4	21.6
2 1	9 11.10	+14 22.2	1.480	2.463	2.0	19.3	2 1	9 11.99	+20 16.6	1.941	2.923	1.7	21.4
2 11	9 2.72	+15 45.6	1.494	2.475	3.2	19.5	2 11	9 1.02	+20 40.8	1.954	2.931	3.5	21.5
2 21	8 55.13	+17 3.5	1.535	2.487	7.9	19.8	2 21	8 50.84	+20 56.5	1.998	2.937	7.4	21.8
3 2	8 49.39	+18 9.9	1.603	2.500	12.1	20.0	3 2	8 42.40	+21 2.3	2.070	2.942	10.9	22.0
3 12	8 46.17	+19 1.3	1.692	2.514	15.6	20.3	3 12	8 36.36	+20 58.0	2.164	2.947	13.9	22.2
297391	2000 <i>QT</i> ₉₀		2 4.3	123°94	3°1/ 6.5	18	503542	2016 <i>FN</i> ₃₀		2 4.3	195°71	0°3/ 4.6	17
1 2	9 35.39	+ 5 30.5	1.867	2.661	14.9	21.3	1 2	9 31.26	+12 50.5	2.087	2.908	12.6	21.9
1 12	9 29.35	+ 5 45.4	1.799	2.679	11.5	21.1	1 12	9 26.34	+13 25.2	2.007	2.907	9.4	21.7
1 22	9 21.16	+ 6 17.3	1.755	2.695	7.6	20.9	1 22	9 19.44	+14 10.8	1.950	2.906	5.6	21.4
2 1	9 11.60	+ 7 3.5	1.738	2.711	4.0	20.7	2 1	9 11.21	+15 3.2	1.922	2.905	1.5	21.1
2 11	9 1.72	+ 7 59.3	1.750	2.726	3.7	20.7	2 11	9 2.56	+15 57.2	1.924	2.904	2.7	21.2
2 21	8 52.61	+ 8 58.8	1.791	2.741	7.1	21.0	2 21	8 54.47	+16 47.9	1.955	2.903	6.8	21.5
3 2	8 45.23	+ 9 56.6	1.860	2.755	10.8	21.2	3 2	8 47.83	+17 31.2	2.013	2.902	10.4	21.7
3 12	8 40.21	+10 47.9	1.953	2.768	14.0	21.5	3 12	8 43.30	+18 4.5	2.095	2.900	13.6	21.9
14447	Hosakakanai		2 4.3	84°73	1°6/ 2.9	18	59828	Ossikar		2 4.3	276°99	1°2/ 5.2	18
1 2	9 33.03	+18 43.5	2.288	3.115	11.4	18.5	1 2	9 31.20	+10 58.0	1.962	2.781	13.4	19.7
1 12	9 27.29	+19 41.0	2.237	3.144	8.3	18.3	1 12	9 26.40	+11 19.8	1.880	2.778	10.1	19.4
1 22	9 19.79	+20 43.1	2.213	3.172	4.8	18.1	1 22	9 19.53	+11 54.1	1.821	2.774	6.2	19.2
2 1	9 11.23	+21 44.3	2.218	3.200	1.8	18.0	2 1	9 11.24	+12 37.7	1.790	2.771	2.2	18.9
2 11	9 2.51	+22 39.2	2.254	3.227	3.5	18.1	2 11	9 2.50	+13 25.6	1.788	2.768	2.8	19.0
2 21	8 54.50	+23 24.1	2.320	3.255	6.7	18.4	2 21	8 54.34	+14 12.9	1.814	2.765	6.9	19.2
3 2	8 47.96	+23 56.8	2.413	3.281	9.8	18.6	3 2	8 47.69	+14 55.1	1.867	2.762	10.8	19.4
3 12	8 43.42	+24 16.8	2.530	3.307	12.3	18.8	3 12	8 43.26	+15 29.0	1.944	2.759	14.1	19.6
1503	Kuopio		2 4.3	359°01	0°4/ 4.1	18	164576	2006 <i>SV</i> ₂₈		2 4.3	45°73	1°0/ 3.7	18
1 2	9 37.67	+18 23.4	1.516	2.355	15.6	14.1	1 2	9 35.85	+19 49.1	2.099	2.926	12.3	19.9
1 12	9 31.61	+18 3.0	1.443	2.354	11.6	13.9	1 12	9 29.54	+19 42.1	2.028	2.934	9.0	19.7
1 22	9 22.75	+17 46.8	1.392	2.352	6.8	13.6	1 22	9 21.21	+19 37.6	1.983	2.942	5.3	19.5
2 1	9 12.03	+17 31.5	1.368	2.352	1.7	13.3	2 1	9 11.63	+19 32.2	1.967	2.950	1.5	19.2
2 11	9 0.86	+17 13.6	1.372	2.352	3.7	13.4	2 11	9 1.81	+19 23.0	1.981	2.958	3.1	19.4
2 21	8 50.68	+16 50.8	1.403	2.353	8.7	13.7	2 21	8 52.77	+19 8.0	2.024	2.967	6.9	19.6
3 2	8 42.75	+16 22.4	1.459	2.354	13.2	13.9	3 2	8 45.41	+18 46.7	2.094	2.976	10.4	19.8
3 12	8 37.86	+15 48.5	1.537	2.355	17.0	14.2	3 12	8 40.30	+18 19.3	2.188	2.985	13.4	20.0
207161	2005 <i>CT</i> ₄₃		2 4.3	325°66	0°1/ 4.4	18	301506	2009 <i>ES</i> ₂₈		2 4.3	230°02	0°7/ 3.7	17
1 2	9 31.69	+13 32.9	1.393	2.237	16.5	19.9	1 2	9 29.92	+16 56.0	2.676	3.498	10.1	21.4

EPHEMERIDES

2 4.3

2 4.3

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
421882	2014 <i>QM</i> ₁₇₄		2 4.3 175°32	0°3/ 4.1 18			50107	2000 <i>AP</i> ₁₁₃		2 4.3 310°67	3°7/ 6.1 18		
1 2	9 35.36	+15 2.2	2.025	2.845	13.0	22.5	1 2	9 32.57	+7 19.6	1.284	2.114	18.4	18.6
1 12	9 29.38	+15 35.4	1.946	2.848	9.6	22.2	1 12	9 28.43	+7 14.5	1.202	2.102	14.3	18.3
1 22	9 21.25	+16 17.5	1.893	2.850	5.6	22.0	1 22	9 21.24	+7 30.4	1.140	2.091	9.5	18.0
2 1	9 11.67	+17 4.1	1.868	2.852	1.4	21.7	2 1	9 11.78	+8 5.9	1.102	2.079	4.8	17.7
2 11	9 1.66	+17 49.6	1.873	2.852	3.0	21.8	2 11	9 1.46	+8 56.1	1.089	2.068	4.7	17.7
2 21	8 52.30	+18 29.4	1.908	2.853	7.2	22.1	2 21	8 51.89	+9 53.3	1.102	2.058	9.6	17.9
3 2	8 44.56	+19 0.3	1.970	2.852	10.9	22.3	3 2	8 44.57	+10 49.8	1.137	2.048	14.7	18.2
3 12	8 39.13	+19 20.5	2.056	2.851	14.1	22.5	3 12	8 40.51	+11 38.8	1.193	2.039	19.2	18.4
189022	1999 <i>JA</i> ₉₄		2 4.3 240°99	1°3/ 3.2 18			4384	Henrybuhl		2 4.3 115°53	0°2/ 4.2 18		
1 2	9 33.25	+18 1.4	2.545	3.366	10.6	21.0	1 2	9 38.40	+16 53.8	2.022	2.841	13.0	17.0
1 12	9 27.67	+18 49.2	2.443	3.346	7.8	20.8	1 12	9 31.42	+16 53.6	1.956	2.857	9.6	16.8
1 22	9 20.21	+19 43.6	2.368	3.326	4.6	20.6	1 22	9 22.33	+16 58.7	1.915	2.872	5.6	16.6
2 1	9 11.42	+20 40.1	2.323	3.305	1.5	20.3	2 1	9 11.94	+17 5.5	1.903	2.887	1.4	16.3
2 11	9 2.10	+21 33.8	2.309	3.284	3.2	20.4	2 11	9 1.33	+17 10.6	1.921	2.901	2.9	16.4
2 21	8 53.10	+22 20.3	2.326	3.261	6.7	20.6	2 21	8 51.57	+17 11.3	1.970	2.915	7.0	16.7
3 2	8 45.30	+22 56.5	2.371	3.238	9.9	20.8	3 2	8 43.59	+17 6.1	2.046	2.928	10.6	17.0
3 12	8 39.38	+23 21.1	2.440	3.214	12.8	20.9	3 12	8 37.98	+16 54.6	2.145	2.941	13.6	17.2
444229	2005 <i>UJ</i> ₄₇		2 4.3 113°93	2°7/ 5.9 18			403890	2011 <i>WO</i> ₁₂₄		2 4.3 139°34	1°0/ 3.7 18		
1 2	9 37.56	+7 53.8	1.619	2.427	16.2	21.8	1 2	9 34.98	+16 15.5	1.639	2.474	14.8	21.6
1 12	9 31.19	+8 3.0	1.557	2.446	12.3	21.6	1 12	9 29.53	+16 57.2	1.569	2.479	10.9	21.3
1 22	9 22.35	+8 28.8	1.517	2.464	7.9	21.4	1 22	9 21.52	+17 48.9	1.522	2.482	6.4	21.1
2 1	9 11.94	+9 7.9	1.504	2.481	3.6	21.2	2 1	9 11.79	+18 44.7	1.502	2.486	1.7	20.8
2 11	9 1.20	+9 55.0	1.520	2.498	3.7	21.2	2 11	9 1.57	+19 37.4	1.511	2.489	3.8	20.9
2 21	8 51.42	+10 44.2	1.563	2.514	7.9	21.5	2 21	8 52.19	+20 21.0	1.548	2.493	8.5	21.2
3 2	8 43.69	+11 30.0	1.634	2.530	12.0	21.8	3 2	8 44.78	+20 51.9	1.610	2.496	12.7	21.5
3 12	8 38.68	+12 8.4	1.726	2.544	15.5	22.1	3 12	8 40.13	+21 8.9	1.693	2.498	16.3	21.7
374069	2004 <i>RJ</i> ₁₀₀		2 4.3 207°94	2°5/ 2.4 17			295620	2008 <i>SM</i> ₂₂₃		2 4.3 256°48	3°6/ 6.3 18		
1 2	9 36.67	+23 56.5	2.516	3.339	10.6	21.6	1 2	9 34.94	+6 26.9	1.586	2.395	16.5	22.0
1 12	9 30.07	+24 23.8	2.430	3.333	7.8	21.4	1 12	9 29.78	+6 25.7	1.492	2.380	12.9	21.7
1 22	9 21.55	+24 51.5	2.370	3.326	4.8	21.2	1 22	9 21.87	+6 43.2	1.419	2.364	8.7	21.4
2 1	9 11.74	+25 15.2	2.341	3.318	2.6	21.0	2 1	9 11.94	+7 18.2	1.373	2.347	4.6	21.1
2 11	9 1.55	+25 30.7	2.342	3.309	4.0	21.1	2 11	9 1.16	+8 6.4	1.353	2.331	4.4	21.1
2 21	8 51.92	+25 35.4	2.374	3.300	7.1	21.3	2 21	8 50.92	+9 1.8	1.361	2.313	8.6	21.3
3 2	8 43.71	+25 28.6	2.434	3.290	10.1	21.5	3 2	8 42.56	+9 57.8	1.395	2.296	13.3	21.5
3 12	8 37.55	+25 10.9	2.517	3.280	12.7	21.6	3 12	8 37.04	+10 48.3	1.450	2.278	17.4	21.7
223267	2003 <i>GH</i> ₁₃		2 4.3 287°41	0°3/ 4.1 17			127369	2002 <i>JC</i> ₁₄₃		2 4.3 210°40	1°7/ 2.7 18		
1 2	9 32.60	+15 8.6	1.844	2.675	13.6	20.9	1 2	9 32.07	+19 16.1	2.514	3.339	10.6	20.5
1 12	9 27.78	+15 37.8	1.745	2.652	10.2	20.6	1 12	9 26.75	+20 9.9	2.427	3.333	7.7	20.3
1 22	9 20.56	+16 17.7	1.670	2.629	6.0	20.3	1 22	9 19.64	+21 9.2	2.368	3.326	4.5	20.1
2 1	9 11.56	+17 4.0	1.623	2.606	1.5	19.9	2 1	9 11.30	+22 9.0	2.338	3.319	1.8	19.9
2 11	9 1.82	+17 51.0	1.604	2.583	3.3	20.0	2 11	9 2.54	+23 4.4	2.339	3.311	3.5	20.0
2 21	8 52.54	+18 32.9	1.613	2.560	8.0	20.2	2 21	8 54.22	+23 50.9	2.370	3.303	6.7	20.2
3 2	8 44.88	+19 5.6	1.649	2.537	12.3	20.4	3 2	8 47.14	+24 26.0	2.429	3.294	9.8	20.4
3 12	8 39.71	+19 26.8	1.706	2.514	16.0	20.6	3 12	8 41.93	+24 48.8	2.512	3.285	12.5	20.5
520823	2014 <i>UQ</i> ₁₁₈		2 4.3 76°14	3°8/ 6.2 18			203117	2000 <i>SN</i> ₂₁₈		2 4.3 139°35	0°1/ 4.4 18		
1 2	9 37.07	+7 37.1	1.711	2.516	15.6	20.7	1 2	9 36.05	+12 57.2	2.150	2.960	12.7	21.3
1 12	9 30.76	+6 57.4	1.642	2.527	12.1	20.5	1 12	9 29.68	+13 43.9	2.081	2.977	9.3	21.1
1 22	9 22.09	+6 31.2	1.596	2.538	8.1	20.3	1 22	9 21.33	+14 40.8	2.038	2.993	5.5	20.9
2 1	9 11.89	+6 18.1	1.577	2.549	4.5	20.1	2 1	9 11.71	+15 43.0	2.025	3.008	1.4	20.6
2 11	9 1.34	+6 16.0	1.586	2.560	4.4	20.1	2 11	9 1.78	+16 44.9	2.043	3.022	2.7	20.7
2 21	8 51.68	+6 21.9	1.623	2.571	7.9	20.4	2 21	8 52.54	+17 41.3	2.091	3.035	6.7	21.0
3 2	8 43.92	+6 31.9	1.687	2.582	11.7	20.6	3 2	8 44.86	+18 28.7	2.167	3.047	10.2	21.3
3 12	8 38.78	+6 42.4	1.773	2.593	15.0	20.8	3 12	8 39.35	+19 4.9	2.268	3.058	13.1	21.5
463567	2013 <i>RS</i> ₇₈		2 4.3 99°34	1°0/ 5.0 18			96231	1993 <i>TF</i> ₃₉		2 4.3 136°11	0°3/ 4.5 18		
1 2	9 31.35	+11 6.1	2.011	2.828	13.2	21.4	1 2	9 35.30	+12 38.1	1.778	2.599	14.5	20.2
1 12	9 26.39	+11 37.6	1.938	2.835	9.8	21.2	1 12	9 29.52	+13 19.9	1.708	2.610	10.7	20.0
1 22	9 19.46	+12 21.2	1.889	2.843	6.0	21.0	1 22	9 21.41	+14 14.2	1.664	2.620	6.4	19.8
2 1	9 11.23	+13 13.3	1.868	2.850	2.0	20.8	2 1	9 11.76	+15 15.9	1.646	2.630	1.7	19.5
2 11	9 2.65	+14 8.5	1.877	2.857	2.7	20.8	2 11	9 1.71	+16 18.5	1.658	2.639	3.1	19.6
2 21	8 54.70	+15 1.7	1.914	2.864	6.7	21.1	2 21	8 52.44	+17 15.6	1.700	2.647	7.6	19.9
3 2	8 48.26	+15 48.5	1.979	2.871	10.4	21.3	3 2	8 45.00	+18 2.9	1.767	2.655	11.7	20.2
3 12	8 43.97	+16 26.0	2.068	2.878	13.5	21.6	3 12	8 40.08	+18 37.9	1.858	2.663	15.0	20.4
115931	2003 <i>WJ</i> ₂₂		2 4.3 231°17	1°5/ 4.6 18			69484	1996 <i>YR</i> ₁		2 4.3 20°54	0°9/ 4.7 18		
1 2	9 49.32	+16 16.0	1.267	2.094	18.8	18.6	1 2	9 35.74	+14 13.8	1.403	2.242	16.7	18.7
1 12	9 40.97	+15 19.2	1.183	2.086	14.3	18.3	1 12	9 30.35	+14 4.1	1.335	2.244	12.4	18.4
1 22	9 28.72	+14 25.8	1.121	2.077	8.8	17.9	1 22	9 22.10	+14 5.0	1.289	2.248	7.5	18.2
2 1	9 13.67	+13 34.0	1.085	2.068	2.8	17.5	2 1	9 11.96	+14 13.1	1.269	2.252	2.3	17.8
2 11	8 57.69	+12 42.2	1.078	2.058	4.4	17.6	2 11	9 1.34	+14 23.7	1.275	2.256	3.6	17.9
2 21	8 42.90	+11 50.3	1.099	2.048	10.6	17.9	2 21	8 51.73	+14 32.6	1.307	2.260	8.8	18.2
3 2	8 31.13	+10 59.3	1.144	2.037	16.2	18.2	3 2	8 44.39	+14 36.6	1.364	2.266	13.5	18.5
3 12	8 23.45	+10 9.4	1.209	2.026	20.9	18.5	3 12	8 40.13	+14 33.6	1.442	2.271	17.4	18.8
59585	1999 <i>JV</i> ₅₅		2 4.3 39°73	8°8/30.2 18 R			27358	2000 <i>DX</i> ₁₀₄		2 4.3 181°95	1°7/ 3.2 18		
1 2	9 38.49	+35 55.4	1.514	2.359									

EPHEMERIDES

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
269237	2008 <i>QC</i> ₉		2 4.3 193°40	2°1/ 6.2 17			89369	2001 <i>VL</i> ₈₆		2 4.3 223°89	5°4/30.5 18		
1 2	9 30.65	+ 6 23.1	2.535	3.324	11.6	21.2	1 2	9 35.21	+29 32.3	2.175	3.011	11.6	19.6
1 12	9 25.61	+ 6 56.4	2.444	3.322	8.9	21.0	1 12	9 29.52	+30 58.1	2.099	3.002	8.9	19.4
1 22	9 18.93	+ 7 43.1	2.378	3.320	5.8	20.8	1 22	9 21.50	+32 23.1	2.048	2.993	6.4	19.2
2 1	9 11.13	+ 8 40.9	2.341	3.317	2.8	20.6	2 1	9 11.84	+33 39.0	2.027	2.984	5.4	19.2
2 11	9 2.97	+ 9 45.7	2.335	3.313	2.7	20.6	2 11	9 1.58	+34 38.6	2.035	2.974	7.0	19.2
2 21	8 55.20	+10 52.8	2.360	3.309	5.7	20.8	2 21	8 51.90	+35 17.5	2.070	2.964	9.8	19.4
3 2	8 48.58	+11 57.6	2.414	3.304	8.8	21.0	3 2	8 43.87	+35 34.6	2.131	2.953	12.7	19.5
3 12	8 43.67	+12 56.4	2.493	3.299	11.6	21.2	3 12	8 38.28	+35 31.7	2.212	2.942	15.2	19.7
55099	2001 <i>QK</i> ₁₃₇		2 4.3 97°09	2°3/ 2.6 18			130681	2000 <i>SK</i> ₁₂₁		2 4.3 69°26	4°5/ 1.6 18		
1 2	9 33.97	+23 4.4	2.379	3.209	11.0	18.7	1 2	9 36.50	+23 49.8	1.430	2.282	15.7	19.3
1 12	9 28.04	+23 28.1	2.313	3.220	8.0	18.5	1 12	9 30.95	+24 59.1	1.377	2.293	11.5	19.1
1 22	9 20.31	+23 52.7	2.273	3.231	4.8	18.3	1 22	9 22.47	+26 11.4	1.346	2.305	7.2	18.9
2 1	9 11.46	+24 13.8	2.262	3.241	2.4	18.2	2 1	9 12.06	+27 16.6	1.342	2.318	4.5	18.8
2 11	9 2.39	+24 27.5	2.282	3.252	3.8	18.3	2 11	9 1.26	+28 5.8	1.365	2.330	6.6	18.9
2 21	8 53.99	+24 31.5	2.331	3.262	6.9	18.5	2 21	8 51.62	+28 34.1	1.414	2.342	10.7	19.2
3 2	8 47.07	+24 25.2	2.407	3.272	9.9	18.7	3 2	8 44.40	+28 40.4	1.486	2.354	14.7	19.4
3 12	8 42.17	+24 8.9	2.506	3.282	12.4	18.9	3 12	8 40.37	+28 27.5	1.577	2.367	18.0	19.7
236681	2006 <i>QA</i> ₁₀₀		2 4.3 205°39	2°1/ 6.2 17			90637	3340 <i>T</i> ₋₂		2 4.3 216°55	1°5/ 5.4 18		
1 2	9 29.59	+ 7 7.2	2.640	3.433	11.1	21.5	1 2	9 34.75	+ 9 26.0	1.894	2.703	14.2	20.5
1 12	9 24.77	+ 7 22.2	2.549	3.429	8.5	21.3	1 12	9 29.21	+ 9 59.7	1.803	2.695	10.8	20.2
1 22	9 18.40	+ 7 48.7	2.483	3.425	5.6	21.1	1 22	9 21.34	+10 48.9	1.736	2.686	6.7	19.9
2 1	9 11.00	+ 8 25.0	2.446	3.421	2.8	20.9	2 1	9 11.81	+11 50.0	1.696	2.677	2.5	19.7
2 11	9 3.26	+ 9 7.8	2.440	3.417	2.7	20.9	2 11	9 1.65	+12 57.4	1.686	2.666	3.1	19.7
2 21	8 55.91	+ 9 53.6	2.463	3.412	5.5	21.1	2 21	8 52.02	+14 4.5	1.706	2.655	7.4	19.9
3 2	8 49.65	+10 38.7	2.516	3.407	8.5	21.2	3 2	8 43.99	+15 5.7	1.752	2.643	11.6	20.1
3 12	8 45.02	+11 19.8	2.593	3.402	11.1	21.4	3 12	8 38.39	+15 56.9	1.822	2.631	15.2	20.3
120225	2004 <i>FK</i> ₄₅		2 4.3 224°84	2°1/ 3.0 18			266686	2009 <i>OM</i> ₂₀		2 4.3 118°10	0°3/ 4.5 18		
1 2	9 36.86	+18 35.4	1.644	2.481	14.7	20.3	1 2	9 36.16	+14 31.2	2.306	3.117	11.9	21.7
1 12	9 31.13	+19 27.3	1.562	2.473	10.9	20.0	1 12	9 29.57	+14 41.8	2.241	3.137	8.8	21.5
1 22	9 22.63	+20 28.5	1.504	2.464	6.4	19.7	1 22	9 21.18	+14 59.2	2.202	3.156	5.2	21.3
2 1	9 12.13	+21 31.7	1.473	2.455	2.3	19.5	2 1	9 11.70	+15 20.1	2.192	3.175	1.4	21.1
2 11	9 0.93	+22 28.8	1.470	2.445	4.6	19.6	2 11	9 2.02	+15 41.1	2.214	3.194	2.5	21.2
2 21	8 50.43	+23 13.6	1.496	2.435	9.3	19.8	2 21	8 53.06	+15 58.9	2.266	3.211	6.1	21.5
3 2	8 41.95	+23 42.2	1.546	2.424	13.7	20.1	3 2	8 45.59	+16 11.6	2.346	3.229	9.4	21.7
3 12	8 36.41	+23 54.4	1.618	2.412	17.4	20.3	3 12	8 40.16	+16 17.9	2.451	3.245	12.2	21.9
35153	1993 <i>FU</i> ₅₂		2 4.3 70°68	0°0/ 4.2 18			459729	2013 <i>PQ</i> ₇₁		2 4.3 163°42	0°5/ 4.7 18		
1 2	9 31.83	+13 29.7	1.842	2.669	13.7	19.2	1 2	9 32.25	+12 16.0	2.315	3.127	11.8	22.0
1 12	9 26.91	+14 8.8	1.774	2.679	10.1	19.0	1 12	9 26.88	+12 51.1	2.236	3.132	8.8	21.8
1 22	9 19.84	+14 59.2	1.730	2.688	6.0	18.8	1 22	9 19.71	+13 36.1	2.182	3.136	5.3	21.6
2 1	9 11.37	+15 55.9	1.714	2.698	1.5	18.5	2 1	9 11.36	+14 27.4	2.157	3.140	1.5	21.4
2 11	9 2.55	+16 52.9	1.727	2.707	3.0	18.7	2 11	9 2.65	+15 20.5	2.163	3.143	2.5	21.4
2 21	8 54.45	+17 44.6	1.769	2.717	7.3	18.9	2 21	8 54.46	+16 10.7	2.199	3.146	6.2	21.7
3 2	8 48.02	+18 26.8	1.836	2.727	11.2	19.2	3 2	8 47.62	+16 54.4	2.263	3.149	9.6	21.9
3 12	8 43.93	+18 57.3	1.927	2.736	14.4	19.4	3 12	8 42.70	+17 29.2	2.352	3.151	12.5	22.1
428375	2007 <i>RB</i> ₂₃₄		2 4.3 114°12	1°2/ 3.3 18			259219	2003 <i>BB</i> ₁₈		2 4.3 339°23	0°3/ 4.5 18		
1 2	9 34.76	+20 12.3	2.824	3.641	9.8	21.3	1 2	9 28.08	+11 15.2	1.422	2.265	16.3	19.6
1 12	9 28.27	+20 30.7	2.762	3.663	7.1	21.1	1 12	9 24.88	+12 15.1	1.342	2.254	12.2	19.3
1 22	9 20.30	+20 51.2	2.728	3.685	4.1	21.0	1 22	9 19.03	+13 35.3	1.284	2.244	7.3	19.0
2 1	9 11.45	+21 10.3	2.725	3.707	1.4	20.8	2 1	9 11.25	+15 9.7	1.252	2.235	2.0	18.7
2 11	9 2.47	+21 25.0	2.753	3.727	2.8	20.9	2 11	9 2.77	+16 48.9	1.246	2.227	3.6	18.8
2 21	8 54.10	+21 33.3	2.812	3.747	5.7	21.2	2 21	8 54.96	+18 22.7	1.267	2.220	9.0	19.1
3 2	8 46.99	+21 34.1	2.900	3.767	8.3	21.4	3 2	8 49.11	+19 42.9	1.312	2.214	13.8	19.3
3 12	8 41.61	+21 27.5	3.013	3.786	10.6	21.6	3 12	8 46.13	+20 44.7	1.378	2.209	18.0	19.6
426939	2013 <i>YW</i> ₃		2 4.3 296°69	5°0/ 7.6 17			65748	1993 <i>TS</i> ₃₈		2 4.3 91°45	3°3/ 6.6 18		
1 2	9 30.87	+ 1 37.7	2.145	2.923	13.8	20.4	1 2	9 34.04	+ 5 2.7	1.567	2.374	16.8	18.9
1 12	9 26.04	+ 1 10.3	2.053	2.915	11.1	20.2	1 12	9 28.73	+ 5 30.5	1.505	2.391	12.9	18.7
1 22	9 19.31	+ 0 58.7	1.985	2.907	8.2	20.0	1 22	9 21.00	+ 6 19.3	1.465	2.408	8.5	18.5
2 1	9 11.26	+ 1 3.2	1.942	2.899	5.6	19.8	2 1	9 11.69	+ 7 25.7	1.450	2.425	4.3	18.3
2 11	9 2.75	+ 1 22.4	1.928	2.892	5.2	19.8	2 11	9 2.03	+ 8 42.9	1.463	2.441	4.0	18.3
2 21	8 54.70	+ 1 53.1	1.942	2.884	7.3	19.9	2 21	8 53.26	+10 2.9	1.505	2.458	7.9	18.6
3 2	8 47.98	+ 2 30.9	1.983	2.877	10.3	20.0	3 2	8 46.45	+11 18.4	1.572	2.474	12.0	18.9
3 12	8 43.27	+ 3 10.8	2.048	2.869	13.2	20.2	3 12	8 42.30	+12 23.7	1.662	2.489	15.6	19.1
113651	2002 <i>TW</i> ₈₀		2 4.3 136°33	0°9/ 3.6 18			100370	1995 <i>UJ</i> ₅₁		2 4.3 165°55	1°0/ 5.1 18		
1 2	9 33.98	+15 42.7	2.000	2.825	12.9	20.3	1 2	9 34.57	+11 2.6	2.083	2.892	13.1	20.9
1 12	9 28.38	+16 37.1	1.931	2.836	9.4	20.1	1 12	9 28.75	+11 30.4	2.005	2.898	9.8	20.7
1 22	9 20.67	+17 40.5	1.887	2.846	5.5	19.9	1 22	9 20.88	+12 9.9	1.951	2.903	6.0	20.4
2 1	9 11.59	+18 47.4	1.872	2.855	1.4	19.6	2 1	9 11.66	+12 57.6	1.925	2.907	2.0	20.2
2 11	9 2.14	+19 51.3	1.887	2.864	3.3	19.8	2 11	9 2.05	+13 48.6	1.930	2.910	2.7	20.2
2 21	8 53.37	+20 46.7	1.931	2.873	7.3	20.1	2 21	8 53.04	+14 37.8	1.965	2.913	6.7	20.5
3 2	8 46.23	+21 30.1	2.003	2.881	11.0	20.3	3 2	8 45.56	+15 21.2	2.027	2.915	10.4	20.7
3 12	8 41.37	+22 0.2	2.097	2.889	14.0	20.5	3 12	8 40.27	+15 56.0	2.113	2.916	13.5	20.9
231658	2009 <i>WG</i> ₁₈₃		2 4.3 87°38	4°5/ 1.7 18			378904	2008 <i>UL</i> ₅₁		2 4.3 357°67	8°2/28.7 18		
1 2	9 37.31	+22 13.3	1.299	2.152	16.8	20.6	1 2	9 35.05	+3				

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
146565	2001 <i>TU</i> ₂₁		2 4.3 43°83	9°1/28.9	18		208452	2001 <i>TA</i> ₁₇₁		2 4.3 15°29	5°9/ 1.2	18	
1 2	9 36.93	+36 9.6	1.593	2.438	14.7	19.3	1 2	9 36.60	+31 32.6	1.732	2.576	13.7	19.2
1 12	9 31.43	+37 52.1	1.547	2.446	11.8	19.1	1 12	9 30.68	+32 2.1	1.674	2.581	10.5	19.0
1 22	9 22.83	+39 24.8	1.525	2.454	9.6	19.0	1 22	9 22.14	+32 24.9	1.640	2.587	7.4	18.9
2 1	9 12.18	+40 36.0	1.528	2.463	9.2	19.0	2 1	9 11.99	+32 33.9	1.632	2.595	5.9	18.8
2 11	9 1.08	+41 17.2	1.556	2.472	10.8	19.1	2 11	9 1.59	+32 24.0	1.652	2.602	7.3	18.9
2 21	8 51.16	+41 25.9	1.609	2.481	13.4	19.3	2 21	8 52.31	+31 54.2	1.698	2.611	10.3	19.1
3 2	8 43.79	+41 4.6	1.683	2.490	16.1	19.5	3 2	8 45.23	+31 6.3	1.768	2.620	13.5	19.3
3 12	8 39.75	+40 19.3	1.774	2.500	18.5	19.7	3 12	8 41.01	+30 4.4	1.858	2.630	16.3	19.5
463848	2014 <i>UB</i> ₅		2 4.3 186°97	0°3/ 4.1	18		459249	2012 <i>FY</i> ₃₁		2 4.3 199°81	3°2/ 7.1	16	
1 2	9 32.96	+14 42.1	1.991	2.815	13.0	21.1	1 2	9 31.16	+ 3 25.8	2.350	3.130	12.7	22.1
1 12	9 27.71	+15 19.3	1.911	2.815	9.6	20.9	1 12	9 26.13	+ 3 50.4	2.258	3.127	9.9	21.9
1 22	9 20.35	+16 6.2	1.857	2.815	5.6	20.6	1 22	9 19.32	+ 4 31.2	2.190	3.123	6.8	21.7
2 1	9 11.55	+16 58.4	1.831	2.814	1.4	20.3	2 1	9 11.31	+ 5 26.6	2.150	3.119	3.9	21.5
2 11	9 2.30	+17 50.1	1.834	2.813	3.0	20.5	2 11	9 2.88	+ 6 32.6	2.140	3.114	3.5	21.5
2 21	8 53.66	+18 36.2	1.866	2.812	7.2	20.7	2 21	8 54.87	+ 7 44.2	2.160	3.109	6.2	21.6
3 2	8 46.59	+19 13.1	1.925	2.811	11.0	21.0	3 2	8 48.08	+ 8 56.0	2.209	3.103	9.4	21.8
3 12	8 41.79	+19 38.8	2.008	2.809	14.2	21.2	3 12	8 43.14	+10 3.2	2.283	3.096	12.3	22.0
258333	2001 <i>VA</i> ₆₈		2 4.3 93°90	1°8/ 5.6	18		217611	2008 <i>TN</i> ₂₀		2 4.3 158°62	2°7/ 2.2	18	
1 2	9 37.81	+ 9 57.3	2.143	2.941	13.1	20.8	1 2	9 33.54	+23 12.0	2.313	3.145	11.2	21.2
1 12	9 30.74	+ 9 58.5	2.089	2.974	9.8	20.6	1 12	9 27.91	+23 54.8	2.240	3.148	8.2	21.0
1 22	9 21.84	+10 10.0	2.060	3.007	6.2	20.4	1 22	9 20.36	+24 39.3	2.194	3.151	5.0	20.8
2 1	9 11.86	+10 29.4	2.059	3.038	2.6	20.3	2 1	9 11.56	+25 20.4	2.177	3.154	2.7	20.7
2 11	9 1.79	+10 53.2	2.090	3.069	2.8	20.3	2 11	9 2.43	+25 53.2	2.190	3.157	4.3	20.8
2 21	8 52.57	+11 17.7	2.151	3.099	6.3	20.6	2 21	8 53.91	+26 14.3	2.232	3.159	7.4	21.0
3 2	8 44.98	+11 40.1	2.241	3.128	9.6	20.9	3 2	8 46.87	+26 22.5	2.301	3.161	10.5	21.2
3 12	8 39.56	+11 57.9	2.355	3.157	12.4	21.1	3 12	8 41.90	+26 18.1	2.393	3.163	13.1	21.4
428137	2006 <i>SH</i> ₁₂₃		2 4.3 219°05	2°5/ 6.9	18		288466	2004 <i>EK</i> ₉₄		2 4.3 29°98	5°1/31.7	18	
1 2	9 28.71	+ 3 54.2	2.838	3.615	10.8	21.5	1 2	9 34.70	+30 13.3	2.070	2.908	12.0	20.1
1 12	9 24.08	+ 4 29.3	2.738	3.607	8.4	21.4	1 12	9 29.01	+31 0.3	2.007	2.912	9.1	19.9
1 22	9 18.01	+ 5 18.4	2.665	3.599	5.7	21.2	1 22	9 21.10	+31 43.4	1.969	2.916	6.4	19.8
2 1	9 10.94	+ 6 19.5	2.620	3.590	3.2	21.0	2 1	9 11.75	+32 15.9	1.958	2.920	5.1	19.7
2 11	9 3.52	+ 7 29.1	2.606	3.581	2.8	20.9	2 11	9 2.09	+32 32.5	1.976	2.924	6.5	19.8
2 21	8 56.42	+ 8 42.9	2.623	3.571	5.2	21.1	2 21	8 53.24	+32 31.1	2.021	2.929	9.3	20.0
3 2	8 50.27	+ 9 56.3	2.670	3.562	8.1	21.3	3 2	8 46.19	+32 11.8	2.092	2.933	12.1	20.2
3 12	8 45.63	+11 5.2	2.744	3.552	10.6	21.4	3 12	8 41.59	+31 37.3	2.183	2.938	14.7	20.4
369638	2011 <i>EM</i> ₂₄		2 4.3 110°29	6°2/30.9	18		125392	2001 <i>VU</i> ₉₁		2 4.3 35°32	3°4/ 2.2	18	
1 2	9 39.40	+34 43.8	2.185	3.012	11.9	19.9	1 2	9 31.83	+17 53.4	1.149	2.011	17.9	19.0
1 12	9 32.31	+35 33.9	2.132	3.024	9.3	19.8	1 12	9 28.00	+19 34.2	1.099	2.022	13.0	18.8
1 22	9 22.94	+36 15.9	2.104	3.037	7.1	19.6	1 22	9 20.96	+21 28.6	1.070	2.034	7.6	18.5
2 1	9 12.17	+36 42.9	2.104	3.049	6.3	19.6	2 1	9 11.77	+23 24.0	1.066	2.047	3.4	18.3
2 11	9 1.19	+36 50.3	2.132	3.061	7.5	19.7	2 11	9 2.07	+25 6.4	1.088	2.061	6.3	18.5
2 21	8 51.19	+36 36.7	2.188	3.073	9.8	19.9	2 21	8 53.56	+26 25.8	1.134	2.075	11.4	18.9
3 2	8 43.15	+36 3.9	2.269	3.085	12.2	20.1	3 2	8 47.66	+27 17.8	1.203	2.089	16.1	19.2
3 12	8 37.69	+35 15.7	2.371	3.096	14.4	20.2	3 12	8 45.20	+27 43.1	1.290	2.105	19.9	19.5
355297	2007 <i>RM</i> ₁₈₅		2 4.3 212°37	1°4/ 3.4	18		326074	2011 <i>AG</i> ₆₇		2 4.3 151°67	1°1/ 3.5	18	
1 2	9 36.66	+18 0.9	1.992	2.818	12.9	22.2	1 2	9 32.07	+16 20.9	1.881	2.714	13.3	20.6
1 12	9 30.55	+18 39.7	1.906	2.811	9.5	22.0	1 12	9 27.20	+17 13.8	1.805	2.714	9.7	20.4
1 22	9 22.10	+19 25.8	1.844	2.803	5.6	21.7	1 22	9 20.12	+18 16.2	1.755	2.715	5.7	20.1
2 1	9 12.01	+20 13.7	1.811	2.794	1.7	21.4	2 1	9 11.54	+19 22.5	1.732	2.716	1.6	19.9
2 11	9 1.36	+20 57.5	1.808	2.784	3.7	21.6	2 11	9 2.49	+20 25.8	1.739	2.716	3.6	20.0
2 21	8 51.30	+21 32.4	1.835	2.774	7.8	21.8	2 21	8 54.09	+21 20.3	1.774	2.717	7.8	20.3
3 2	8 42.92	+21 55.5	1.888	2.763	11.7	22.0	3 2	8 47.33	+22 2.1	1.835	2.717	11.6	20.5
3 12	8 36.97	+22 6.0	1.964	2.751	15.0	22.2	3 12	8 42.95	+22 29.7	1.918	2.717	14.9	20.7
217064	2001 <i>SM</i> ₁₂		2 4.3 240°33	1°2/ 5.1	18		45551	2000 <i>CF</i> ₄₇		2 4.3 73°75	4°2/ 7.5	18	
1 2	9 34.60	+12 11.1	1.967	2.782	13.5	21.0	1 2	9 35.28	+ 2 1.6	1.661	2.450	16.7	18.5
1 12	9 28.99	+12 14.5	1.876	2.773	10.2	20.7	1 12	9 29.34	+ 2 26.0	1.613	2.485	13.0	18.4
1 22	9 21.16	+12 28.2	1.811	2.764	6.3	20.5	1 22	9 21.20	+ 3 12.3	1.586	2.519	9.0	18.2
2 1	9 11.77	+12 49.4	1.772	2.754	2.2	20.2	2 1	9 11.76	+ 4 17.1	1.585	2.553	5.3	18.1
2 11	9 1.85	+13 14.4	1.763	2.744	2.9	20.2	2 11	9 2.17	+ 5 34.3	1.613	2.586	4.5	18.1
2 21	8 52.49	+13 39.1	1.784	2.733	7.2	20.5	2 21	8 53.57	+ 6 56.1	1.669	2.619	7.5	18.3
3 2	8 44.72	+14 0.0	1.831	2.723	11.1	20.7	3 2	8 46.89	+ 8 15.3	1.753	2.652	11.1	18.6
3 12	8 39.28	+14 14.7	1.901	2.712	14.5	20.9	3 12	8 42.70	+ 9 26.2	1.860	2.683	14.3	18.9
402094	2003 <i>UQ</i> ₂₉₇		2 4.3 92°77	0°8/ 3.9	18		217094	2001 <i>VY</i> ₉₁		2 4.3 161°79	2°2/ 6.3	18	
1 2	9 37.15	+16 38.2	1.653	2.484	14.9	22.0	1 2	9 32.12	+ 6 15.5	2.408	3.197	12.1	21.1
1 12	9 30.92	+17 6.1	1.595	2.502	10.9	21.8	1 12	9 26.72	+ 6 47.0	2.326	3.204	9.3	20.9
1 22	9 22.24	+17 41.9	1.561	2.520	6.3	21.6	1 22	9 19.62	+ 7 32.4	2.268	3.210	6.1	20.7
2 1	9 12.01	+18 20.3	1.554	2.538	1.6	21.3	2 1	9 11.39	+ 8 29.0	2.240	3.215	3.0	20.5
2 11	9 1.52	+18 55.2	1.576	2.555	3.6	21.5	2 11	9 2.82	+ 9 32.6	2.242	3.220	2.8	20.5
2 21	8 52.03	+19 22.0	1.627	2.572	8.1	21.8	2 21	8 54.73	+10 38.2	2.275	3.224	5.9	20.7
3 2	8 44.60	+19 38.2	1.703	2.589	12.1	22.1	3 2	8 47.90	+11 41.3	2.337	3.228	9.1	20.9
3 12	8 39.90	+19 43.1	1.801	2.605	15.5	22.3	3 12	8 42.89	+12 38.0	2.424	3.231	11.9	21.1
423850	2006 <i>QS</i> ₉₄		2 4.3 234°26	1°9/ 6.1	17		299558	2006 <i>DY</i> ₁₅₁		2 4.3 286°95	1°9/ 3.4	18	
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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
338427	2003 CV ₄		2 4.3	8°86	1°9/ 3.5	18	51334	2000 NW ₁₁		2 4.3	23°30	3°7/ 7.2	18
1 2	9 36.86	+22 30.6	1.727	2.566	14.0	19.7	1 2	9 28.85	+3 51.1	1.926	2.724	14.4	18.7
1 12	9 30.75	+22 15.6	1.657	2.569	10.3	19.5	1 12	9 24.70	+4 3.1	1.850	2.729	11.3	18.5
1 22	9 22.17	+22 0.7	1.612	2.572	6.1	19.3	1 22	9 18.59	+4 33.3	1.797	2.734	7.8	18.3
2 1	9 12.04	+21 41.8	1.594	2.575	2.2	19.0	2 1	9 11.18	+5 19.8	1.769	2.739	4.5	18.1
2 11	9 1.61	+21 15.9	1.604	2.580	4.0	19.2	2 11	9 3.39	+6 18.4	1.770	2.744	4.0	18.1
2 21	8 52.15	+20 41.7	1.642	2.586	8.2	19.4	2 21	8 56.20	+7 23.4	1.799	2.750	6.9	18.3
3 2	8 44.74	+19 59.5	1.707	2.592	12.1	19.7	3 2	8 50.47	+8 28.9	1.854	2.757	10.4	18.5
3 12	8 40.03	+19 10.9	1.793	2.599	15.5	19.9	3 12	8 46.85	+9 29.4	1.933	2.763	13.6	18.7
30589	2001 QQ ₇		2 4.3	97°62	1°2/ 5.4	18	518593	2007 VR ₃₃₈		2 4.3	116°15	3°1/ 6.8	18
1 2	9 29.72	+9 35.2	2.316	3.124	12.0	18.9	1 2	9 30.79	+5 11.4	2.493	3.278	11.9	21.8
1 12	9 25.02	+10 11.7	2.242	3.134	9.0	18.7	1 12	9 25.67	+5 5.2	2.414	3.286	9.2	21.6
1 22	9 18.62	+11 0.2	2.193	3.143	5.6	18.5	1 22	9 18.97	+5 11.3	2.360	3.294	6.3	21.4
2 1	9 11.14	+11 57.2	2.172	3.153	2.1	18.3	2 1	9 11.26	+5 28.6	2.333	3.302	3.7	21.3
2 11	9 3.35	+12 58.2	2.182	3.162	2.4	18.4	2 11	9 3.27	+5 54.6	2.337	3.310	3.4	21.3
2 21	8 56.09	+13 58.2	2.221	3.171	5.9	18.6	2 21	8 55.77	+6 26.1	2.371	3.317	5.8	21.4
3 2	8 50.11	+14 53.0	2.288	3.180	9.2	18.8	3 2	8 49.46	+6 59.7	2.432	3.325	8.7	21.6
3 12	8 45.96	+15 39.6	2.380	3.189	12.0	19.0	3 12	8 44.88	+7 31.8	2.519	3.332	11.3	21.8
10931	2001 Ceccano		2 4.3	217°89	2°0/ 2.8	18	345903	2007 RD ₁₁₉		2 4.3	71°73	1°0/ 5.2	18
1 2	9 32.85	+19 14.7	1.978	2.813	12.6	17.6	1 2	9 31.33	+10 38.0	2.151	2.964	12.6	20.8
1 12	9 27.74	+20 8.3	1.900	2.810	9.3	17.4	1 12	9 26.20	+11 9.8	2.092	2.987	9.4	20.6
1 22	9 20.43	+21 8.6	1.847	2.807	5.5	17.1	1 22	9 19.31	+11 52.8	2.058	3.010	5.7	20.4
2 1	9 11.63	+22 9.6	1.823	2.804	2.2	16.9	2 1	9 11.33	+12 43.2	2.052	3.034	2.0	20.2
2 11	9 2.35	+23 4.8	1.828	2.801	4.1	17.0	2 11	9 3.16	+13 36.1	2.076	3.057	2.5	20.3
2 21	8 53.68	+23 49.2	1.861	2.798	8.0	17.2	2 21	8 55.66	+14 27.0	2.130	3.080	6.1	20.6
3 2	8 46.63	+24 19.6	1.921	2.795	11.6	17.5	3 2	8 49.60	+15 12.0	2.211	3.103	9.5	20.8
3 12	8 41.91	+24 35.5	2.003	2.791	14.7	17.7	3 12	8 45.51	+15 48.4	2.316	3.125	12.3	21.0
267470	2002 FF ₂₂		2 4.3	251°30	2°8/ 1.8	17	416613	2004 RD ₄₇		2 4.3	165°17	2°0/ 2.9	16
1 2	9 33.16	+22 25.7	2.442	3.272	10.7	20.8	1 2	9 35.73	+21 27.4	2.343	3.169	11.3	22.1
1 12	9 27.79	+23 28.8	2.345	3.252	7.9	20.6	1 12	9 29.46	+21 54.7	2.268	3.173	8.2	21.9
1 22	9 20.44	+24 36.4	2.274	3.231	4.9	20.3	1 22	9 21.27	+22 24.3	2.220	3.177	4.9	21.7
2 1	9 11.65	+25 42.7	2.233	3.210	2.8	20.2	2 1	9 11.85	+22 51.8	2.200	3.181	2.1	21.5
2 11	9 2.27	+26 41.9	2.223	3.188	4.5	20.2	2 11	9 2.11	+23 12.8	2.212	3.184	3.6	21.6
2 21	8 53.26	+27 29.1	2.243	3.166	7.6	20.4	2 21	8 53.01	+23 24.6	2.253	3.186	7.0	21.8
3 2	8 45.52	+28 1.9	2.290	3.143	10.8	20.6	3 2	8 45.39	+23 25.8	2.322	3.188	10.1	22.0
3 12	8 39.79	+28 19.6	2.359	3.119	13.6	20.7	3 12	8 39.88	+23 16.8	2.414	3.190	12.8	22.2
318793	2005 SF ₁₃₀		2 4.3	156°06	3°0/ 2.1	18	277278	2005 SV ₆₈		2 4.3	210°27	3°5/ 6.7	18
1 2	9 35.51	+23 16.9	2.100	2.933	12.1	21.2	1 2	9 35.79	+4 42.7	1.882	2.672	15.0	21.6
1 12	9 29.53	+24 3.9	2.030	2.938	8.9	21.0	1 12	9 30.00	+4 55.2	1.789	2.665	11.7	21.4
1 22	9 21.39	+24 52.9	1.986	2.943	5.4	20.8	1 22	9 21.87	+5 26.0	1.719	2.657	8.0	21.2
2 1	9 11.86	+25 37.9	1.970	2.947	3.0	20.6	2 1	9 12.05	+6 13.5	1.676	2.648	4.4	20.9
2 11	9 1.95	+26 13.2	1.985	2.951	4.7	20.7	2 11	9 1.60	+7 13.3	1.663	2.638	4.1	20.9
2 21	8 52.76	+26 35.3	2.028	2.955	8.1	21.0	2 21	8 51.67	+8 19.7	1.679	2.628	7.6	21.1
3 2	8 45.24	+26 42.9	2.097	2.958	11.3	21.2	3 2	8 43.35	+9 26.1	1.722	2.616	11.6	21.3
3 12	8 40.05	+26 36.7	2.189	2.961	14.1	21.4	3 12	8 37.46	+10 27.2	1.788	2.603	15.1	21.5
219419	2000 SC ₃₁₅		2 4.3	112°88	1°1/ 3.7	18	304037	2006 DO ₁₀₄		2 4.3	310°87	3°9/ 6.6	18
1 2	9 38.24	+19 36.5	2.070	2.893	12.6	20.3	1 2	9 30.30	+5 35.7	1.338	2.164	18.1	20.4
1 12	9 31.34	+19 40.8	2.003	2.907	9.2	20.1	1 12	9 26.80	+5 45.2	1.248	2.144	14.2	20.1
1 22	9 22.36	+19 48.0	1.962	2.920	5.4	19.9	1 22	9 20.38	+6 19.0	1.178	2.125	9.6	19.8
2 1	9 12.08	+19 54.3	1.949	2.932	1.6	19.7	2 1	9 11.75	+7 15.9	1.131	2.106	5.1	19.5
2 11	9 1.59	+19 56.2	1.968	2.945	3.3	19.8	2 11	9 2.15	+8 30.5	1.109	2.088	4.7	19.4
2 21	8 51.93	+19 51.2	2.015	2.957	7.1	20.1	2 21	8 53.12	+9 54.1	1.113	2.070	9.4	19.6
3 2	8 44.02	+19 38.6	2.091	2.969	10.6	20.3	3 2	8 46.13	+11 17.0	1.141	2.053	14.5	19.9
3 12	8 38.46	+19 18.5	2.190	2.980	13.5	20.6	3 12	8 42.27	+12 30.9	1.189	2.037	19.2	20.1
39942	1998 FH ₁₀₄		2 4.3	182°27	2°3/ 5.7	18	82946	2001 QN ₁₁₉		2 4.3	69°04	0°9/ 3.5	18
1 2	9 35.92	+9 30.8	1.844	2.653	14.5	19.1	1 2	9 30.24	+15 51.1	2.140	2.969	12.0	19.1
1 12	9 30.00	+9 26.9	1.763	2.654	11.1	18.8	1 12	9 25.57	+16 49.0	2.073	2.980	8.8	19.0
1 22	9 21.78	+9 35.8	1.706	2.654	7.1	18.6	1 22	9 19.04	+17 55.4	2.031	2.990	5.1	18.7
2 1	9 11.99	+9 55.3	1.676	2.654	3.2	18.4	2 1	9 11.29	+19 4.9	2.017	3.001	1.4	18.5
2 11	9 1.72	+10 21.8	1.674	2.653	3.4	18.4	2 11	9 3.22	+20 11.7	2.034	3.011	3.1	18.7
2 21	8 52.13	+10 50.9	1.702	2.652	7.4	18.6	2 21	8 55.75	+21 10.4	2.080	3.022	6.9	18.9
3 2	8 44.26	+11 18.5	1.757	2.651	11.4	18.8	3 2	8 49.71	+21 57.6	2.153	3.033	10.2	19.1
3 12	8 38.86	+11 41.2	1.834	2.649	14.8	19.1	3 12	8 45.69	+22 31.6	2.249	3.044	13.1	19.3
496840	1998 YX ₃₁		2 4.3	309°58	2°2/ 5.5	17	116364	2003 YQ ₁₀₁		2 4.3	13°32	4°5/ 1.1	18
1 2	9 34.45	+11 9.0	2.012	2.824	13.4	20.4	1 2	9 30.32	+24 27.3	1.653	2.507	13.8	18.5
1 12	9 28.84	+10 38.8	1.919	2.811	10.2	20.2	1 12	9 26.24	+25 43.2	1.593	2.511	10.1	18.3
1 22	9 21.08	+10 17.0	1.850	2.799	6.5	20.0	1 22	9 19.69	+27 1.8	1.558	2.516	6.5	18.1
2 1	9 11.81	+10 2.7	1.809	2.787	3.0	19.7	2 1	9 11.49	+28 14.5	1.548	2.522	4.5	17.9
2 11	9 2.04	+9 54.1	1.797	2.775	3.3	19.7	2 11	9 2.86	+29 13.1	1.567	2.528	6.4	18.1
2 21	8 52.81	+9 48.9	1.814	2.764	7.0	19.9	2 21	8 55.06	+29 52.3	1.611	2.535	10.0	18.3
3 2	8 45.12	+9 44.7	1.858	2.752	10.8	20.1	3 2	8 49.20	+30 10.3	1.680	2.543	13.5	18.5
3 12	8 39.70	+9 39.2	1.926	2.741	14.2	20.3	3 12	8 46.01	+30 8.5	1.768	2.552	16.5	18.8
405975	2006 SB ₁₃₂		2 4.3	100°58	4°9/ 1.9	18	362058	2009 BJ ₅₁		2 4.3	319°33	0°0/ 4.2	18
1 2	9 45.01	+30 0.3	1.905	2.731	13.4	21.5	1 2	9 32.00	+12 36.3	1.476	2.314		

EPHEMERIDES

2 4.3

2 4.4

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
200693	2001 <i>UU</i> ₃₈		2 4.3 223°73	2°8/ 6.1	18		276295	2002 <i>TV</i> ₉₅		2 4.3 159°80	3°8/ 6.9	18	
1 2	9 35.06	+ 6 58.0	1.789	2.592	15.1	21.5	1 2	9 37.42	+ 4 12.1	1.909	2.693	15.0	21.7
1 12	9 29.59	+ 7 11.7	1.697	2.583	11.7	21.2	1 12	9 31.00	+ 4 13.5	1.831	2.702	11.8	21.5
1 22	9 21.68	+ 7 42.5	1.629	2.574	7.7	21.0	1 22	9 22.34	+ 4 32.2	1.776	2.711	8.1	21.3
2 1	9 12.03	+ 8 28.4	1.587	2.563	3.8	20.7	2 1	9 12.18	+ 5 6.7	1.749	2.718	4.7	21.1
2 11	9 1.71	+ 9 24.5	1.574	2.552	3.7	20.7	2 11	9 1.60	+ 5 53.1	1.750	2.724	4.3	21.1
2 21	8 51.93	+10 25.0	1.590	2.541	7.7	20.9	2 21	8 51.70	+ 6 46.2	1.782	2.729	7.4	21.3
3 2	8 43.85	+11 23.6	1.633	2.529	12.0	21.1	3 2	8 43.50	+ 7 40.5	1.841	2.733	11.0	21.5
3 12	8 38.29	+12 15.4	1.698	2.516	15.7	21.3	3 12	8 37.71	+ 8 30.9	1.923	2.736	14.3	21.7
407948	2012 <i>DF</i> ₅		2 4.3 57°76	1°7/ 5.6	18		251718	1997 <i>SV</i> ₁₈		2 4.3 66°82	1°6/ 3.4	18	R
1 2	9 31.30	+ 7 7.3	1.522	2.343	16.5	20.7	1 2	9 39.29	+18 52.0	1.620	2.454	15.0	20.3
1 12	9 26.88	+ 8 13.0	1.461	2.358	12.4	20.5	1 12	9 32.34	+19 23.4	1.580	2.489	10.9	20.2
1 22	9 20.03	+ 9 40.2	1.422	2.374	7.8	20.3	1 22	9 23.00	+19 59.8	1.564	2.524	6.3	20.0
2 1	9 11.58	+11 22.8	1.409	2.390	3.0	20.0	2 1	9 12.29	+20 35.1	1.576	2.558	2.0	19.8
2 11	9 2.74	+13 11.3	1.425	2.406	3.3	20.1	2 11	9 1.56	+21 3.5	1.616	2.593	4.0	20.0
2 21	8 54.74	+14 55.9	1.469	2.422	7.9	20.4	2 21	8 52.05	+21 21.2	1.685	2.626	8.2	20.3
3 2	8 48.68	+16 28.6	1.538	2.439	12.3	20.7	3 2	8 44.75	+21 27.1	1.779	2.660	12.0	20.6
3 12	8 45.26	+17 44.6	1.630	2.455	15.9	21.0	3 12	8 40.21	+21 21.7	1.895	2.693	15.1	20.9
394360	2007 <i>BZ</i> ₇₉		2 4.3 314°40	0°6/ 4.1	18		209485	2004 <i>HZ</i> ₅₁		2 4.3 359°17	4°5/31.4	18	
1 2	9 36.11	+16 17.9	1.266	2.114	17.5	21.1	1 2	9 30.59	+25 55.5	2.006	2.851	12.0	19.5
1 12	9 31.16	+16 33.3	1.191	2.107	13.0	20.8	1 12	9 26.18	+27 18.1	1.938	2.850	8.9	19.3
1 22	9 22.95	+17 0.1	1.138	2.100	7.8	20.4	1 22	9 19.58	+28 42.4	1.895	2.850	5.9	19.1
2 1	9 12.40	+17 32.6	1.109	2.093	2.0	20.1	2 1	9 11.49	+30 0.6	1.881	2.849	4.5	19.0
2 11	9 1.08	+18 3.5	1.107	2.087	4.2	20.2	2 11	9 2.94	+31 5.3	1.895	2.849	6.2	19.1
2 21	8 50.73	+18 26.6	1.129	2.081	10.0	20.5	2 21	8 55.02	+31 51.6	1.937	2.850	9.3	19.3
3 2	8 42.88	+18 38.1	1.175	2.076	15.2	20.8	3 2	8 48.73	+32 17.7	2.004	2.850	12.4	19.5
3 12	8 38.52	+18 36.7	1.240	2.070	19.6	21.0	3 12	8 44.78	+32 24.7	2.091	2.851	15.1	19.7
83674	2001 <i>TP</i> ₄₁		2 4.3 150°13	5°2/30.9	18		384588	2010 <i>JS</i> ₁₅₁		2 4.3 183°28	4°1/31.5	17	
1 2	9 37.20	+31 2.2	2.334	3.162	11.2	19.0	1 2	9 32.32	+28 22.1	2.569	3.402	10.1	20.9
1 12	9 30.70	+32 9.4	2.273	3.172	8.5	18.9	1 12	9 27.01	+29 22.2	2.498	3.402	7.6	20.7
1 22	9 22.09	+33 12.6	2.239	3.180	6.2	18.7	1 22	9 19.88	+30 20.9	2.454	3.402	5.2	20.5
2 1	9 12.09	+34 4.9	2.234	3.189	5.2	18.7	2 1	9 11.56	+31 12.5	2.439	3.402	4.1	20.5
2 11	9 1.77	+34 40.7	2.258	3.196	6.5	18.8	2 11	9 2.88	+31 52.1	2.454	3.402	5.4	20.5
2 21	8 52.18	+34 57.4	2.311	3.203	9.0	19.0	2 21	8 54.74	+32 16.8	2.497	3.401	7.9	20.7
3 2	8 44.27	+34 55.3	2.389	3.209	11.5	19.1	3 2	8 47.94	+32 25.6	2.567	3.400	10.4	20.9
3 12	8 38.67	+34 36.6	2.489	3.215	13.8	19.3	3 12	8 43.10	+32 19.6	2.658	3.399	12.6	21.0
436768	2012 <i>HT</i> ₂		2 4.3 27°09	13°1/15.3	17		170494	2003 <i>VE</i> ₄		2 4.3 117°69	1°9/ 5.5	18	
1 2	9 29.19	-16 57.1	1.095	1.833	26.5	20.4	1 2	9 36.35	+ 9 58.8	1.830	2.640	14.6	20.5
1 12	9 26.27	-16 43.1	1.025	1.836	23.4	20.2	1 12	9 30.21	+10 3.7	1.762	2.654	11.0	20.3
1 22	9 20.14	-15 33.0	0.968	1.840	19.7	19.9	1 22	9 21.84	+10 21.4	1.718	2.668	6.9	20.1
2 1	9 11.70	-13 20.1	0.929	1.845	16.0	19.7	2 1	9 12.06	+10 48.8	1.702	2.682	2.8	19.9
2 11	9 2.48	-10 8.0	0.911	1.850	13.4	19.6	2 11	9 1.95	+11 21.8	1.715	2.695	3.2	19.9
2 21	8 54.21	- 6 12.6	0.916	1.855	13.6	19.6	2 21	8 52.65	+11 55.6	1.757	2.707	7.2	20.2
3 2	8 48.45	- 1 58.6	0.946	1.861	16.5	19.8	3 2	8 45.14	+12 26.3	1.826	2.720	11.0	20.5
3 12	8 46.19	+ 2 7.9	0.999	1.868	20.3	20.1	3 12	8 40.08	+12 50.7	1.918	2.731	14.3	20.7
488835	2005 <i>QA</i> ₇₁		2 4.3 174°94	1°1/ 3.4	17		140807	2001 <i>UR</i> ₁₅₃		2 4.3 51°79	6°4/29.7	18	
1 2	9 35.26	+18 34.6	2.561	3.379	10.7	22.6	1 2	9 33.33	+33 39.4	2.188	3.025	11.5	19.4
1 12	9 29.00	+19 6.0	2.481	3.382	7.8	22.4	1 12	9 28.09	+35 1.3	2.134	3.033	9.0	19.3
1 22	9 20.98	+19 41.7	2.428	3.385	4.6	22.2	1 22	9 20.64	+36 17.4	2.105	3.040	7.0	19.1
2 1	9 11.81	+20 17.8	2.405	3.387	1.4	21.9	2 1	9 11.76	+37 20.2	2.104	3.048	6.4	19.1
2 11	9 2.32	+20 50.1	2.413	3.388	2.9	22.1	2 11	9 2.51	+38 3.4	2.132	3.056	7.8	19.2
2 21	8 53.35	+21 15.4	2.452	3.389	6.3	22.3	2 21	8 54.01	+38 24.4	2.185	3.063	10.1	19.4
3 2	8 45.70	+21 31.9	2.519	3.389	9.3	22.5	3 2	8 47.22	+38 23.4	2.263	3.071	12.5	19.6
3 12	8 39.94	+21 38.9	2.611	3.388	12.0	22.7	3 12	8 42.83	+38 3.5	2.360	3.080	14.6	19.7
31110	Clapas		2 4.3 270°17	2°3/ 5.6	18		334272	2001 <i>UN</i> ₅₈		2 4.3 95°35	3°9/ 7.9	18	
1 2	9 35.06	+ 9 32.6	1.564	2.384	16.1	19.8	1 2	9 30.55	+ 1 10.9	2.550	3.316	12.2	21.5
1 12	9 29.99	+ 9 35.6	1.470	2.367	12.4	19.5	1 12	9 25.42	+ 1 10.6	2.481	3.337	9.7	21.3
1 22	9 22.13	+ 9 54.5	1.398	2.349	8.0	19.2	1 22	9 18.81	+ 1 25.1	2.436	3.357	7.0	21.2
2 1	9 12.20	+10 27.3	1.352	2.331	3.4	18.9	2 1	9 11.26	+ 1 53.4	2.419	3.377	4.6	21.1
2 11	9 1.41	+11 9.1	1.333	2.313	3.8	18.9	2 11	9 3.52	+ 2 32.7	2.431	3.396	4.1	21.1
2 21	8 51.17	+11 54.0	1.342	2.295	8.6	19.1	2 21	8 56.30	+ 3 19.5	2.473	3.415	5.9	21.2
3 2	8 42.84	+12 36.1	1.375	2.276	13.4	19.4	3 2	8 50.25	+ 4 9.5	2.543	3.434	8.4	21.4
3 12	8 37.40	+13 11.0	1.430	2.257	17.7	19.6	3 12	8 45.87	+ 4 58.6	2.639	3.453	10.8	21.6
335212	2005 <i>EW</i> ₂₁₇		2 4.3 4°04	1°3/ 3.4	18		465726	2009 <i>UT</i> ₁₃₅		2 4.4 85°08	2°2/ 2.7	18	
1 2	9 31.45	+18 8.9	1.984	2.819	12.6	21.1	1 2	9 34.03	+20 1.1	1.931	2.766	12.9	21.0
1 12	9 26.66	+18 43.8	1.909	2.819	9.2	20.9	1 12	9 28.49	+20 55.7	1.873	2.783	9.4	20.8
1 22	9 19.79	+19 25.2	1.859	2.819	5.4	20.6	1 22	9 20.81	+21 55.2	1.841	2.801	5.5	20.6
2 1	9 11.53	+20 8.2	1.836	2.819	1.7	20.4	2 1	9 11.80	+22 53.1	1.837	2.818	2.4	20.4
2 11	9 2.87	+20 47.5	1.843	2.820	3.5	20.5	2 11	9 2.50	+23 43.3	1.863	2.835	4.2	20.6
2 21	8 54.85	+21 18.7	1.878	2.821	7.4	20.8	2 21	8 54.01	+24 21.3	1.917	2.852	7.9	20.8
3 2	8 48.41	+21 39.1	1.940	2.822	11.1	21.0	3 2	8 47.26	+24 45.1	1.997	2.869	11.3	21.1
3 12	8 44.21	+21 47.7	2.023	2.823	14.2	21.2	3 12	8 42.86	+24 54.6	2.100	2.885	14.2	21.3
413088	2001 <i>TE</i> ₂₃₀		2 4.3 98°87	3°9/ 7.2	18		253020	2002 <i>RG</i> ₁₉₅		2 4.4 215°35	0°0/ 4.2	17	
1 2	9 32.62	+ 3 37.8	1.892	2.683	14.9	21.8	1 2	9 34.48	+14 9.0	2.0			

EPHEMERIDES

2 4.4

2 4.4

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
463919	2014 <i>UN</i> ₁₄₃		2 4.4 109°99	7.8/ 9.6	18		69654	1998 <i>FR</i> ₁₀₂		2 4.4 331°35	5.7/ 6.7	18	
1 2	9 32.21	- 4 58.3	1.848	2.600	16.6	21.2	1 2	9 30.17	+ 5 48.1	1.188	2.022	19.3	18.5
1 12	9 27.31	- 5 34.7	1.768	2.602	13.9	21.0	1 12	9 26.99	+ 5 4.9	1.102	2.001	15.4	18.2
1 22	9 20.24	- 5 48.0	1.709	2.605	11.1	20.8	1 22	9 20.66	+ 4 41.8	1.036	1.982	10.9	17.8
2 1	9 11.69	- 5 36.1	1.673	2.607	8.6	20.7	2 1	9 11.93	+ 4 40.6	0.992	1.964	6.7	17.6
2 11	9 2.66	- 5 0.1	1.664	2.610	7.8	20.6	2 11	9 2.18	+ 4 59.5	0.971	1.947	6.3	17.5
2 21	8 54.22	- 4 4.6	1.682	2.612	9.2	20.7	2 21	8 53.11	+ 5 33.3	0.974	1.931	10.5	17.6
3 2	8 47.38	- 2 56.2	1.725	2.614	11.8	20.9	3 2	8 46.30	+ 6 14.9	0.999	1.917	15.6	17.9
3 12	8 42.84	- 1 42.8	1.791	2.617	14.7	21.1	3 12	8 42.92	+ 6 56.3	1.042	1.904	20.2	18.1
120930	1998 <i>SX</i> ₁₂₁		2 4.4 178°97	3.0/ 6.3	18		328418	2008 <i>SZ</i> ₁₆₄		2 4.4 199°08	5.2/ 9.8	17	
1 2	9 36.39	+ 6 16.5	1.922	2.716	14.6	20.7	1 2	9 30.55	- 5 55.5	3.043	3.758	11.5	22.7
1 12	9 30.31	+ 6 26.0	1.839	2.718	11.3	20.5	1 12	9 25.39	- 5 53.4	2.941	3.753	9.6	22.5
1 22	9 21.99	+ 6 51.4	1.779	2.720	7.5	20.3	1 22	9 18.83	- 5 34.6	2.864	3.748	7.6	22.4
2 1	9 12.14	+ 7 30.8	1.747	2.721	3.9	20.0	2 1	9 11.33	- 4 59.0	2.813	3.741	5.8	22.3
2 11	9 1.79	+ 8 19.9	1.744	2.721	3.7	20.0	2 11	9 3.49	- 4 8.1	2.792	3.734	5.2	22.2
2 21	8 52.06	+ 9 13.3	1.770	2.720	7.2	20.2	2 21	8 55.96	- 3 5.3	2.801	3.726	6.2	22.3
3 2	8 43.97	+ 10 5.8	1.825	2.718	11.1	20.5	3 2	8 49.35	- 1 54.7	2.840	3.718	8.1	22.4
3 12	8 38.27	+ 10 52.8	1.902	2.715	14.5	20.7	3 12	8 44.17	- 0 41.2	2.904	3.708	10.2	22.5
343542	2010 <i>FV</i> ₁₁		2 4.4 200°76	7.7/28.2	17		113867	2002 <i>TA</i> ₂₅₈		2 4.4 111°52	3.8/ 2.2	18	
1 2	9 42.69	+45 10.2	2.845	3.637	10.4	21.1	1 2	9 38.57	+22 3.7	1.441	2.287	15.9	19.9
1 12	9 34.68	+46 1.6	2.783	3.633	8.9	21.0	1 12	9 32.55	+23 10.2	1.384	2.298	11.6	19.6
1 22	9 24.41	+46 40.3	2.746	3.629	7.9	21.0	1 22	9 23.55	+24 21.8	1.350	2.309	7.1	19.4
2 1	9 12.72	+47 0.0	2.737	3.625	7.8	20.9	2 1	9 12.57	+25 28.8	1.342	2.320	3.8	19.2
2 11	9 0.75	+46 56.6	2.755	3.620	8.6	21.0	2 11	9 1.14	+26 22.1	1.362	2.330	6.1	19.4
2 21	8 49.66	+46 29.8	2.800	3.615	10.1	21.1	2 21	8 50.83	+26 56.1	1.408	2.341	10.4	19.7
3 2	8 40.44	+45 41.8	2.868	3.609	11.7	21.2	3 2	8 42.97	+27 9.2	1.479	2.350	14.5	19.9
3 12	8 33.75	+44 36.8	2.957	3.603	13.3	21.3	3 12	8 38.34	+27 3.4	1.569	2.360	18.0	20.2
462839	2010 <i>TM</i> ₁₆₅		2 4.4 74°70	3.0/ 2.5	18		378308	2007 <i>FD</i> ₁₄		2 4.4 252°20	6.3/30.4	17	
1 2	9 37.11	+21 58.0	1.656	2.496	14.4	21.6	1 2	9 37.53	+33 19.1	2.147	2.979	11.9	20.9
1 12	9 30.97	+22 44.5	1.605	2.517	10.5	21.4	1 12	9 31.38	+34 24.0	2.068	2.965	9.3	20.7
1 22	9 22.35	+23 34.0	1.579	2.538	6.3	21.2	1 22	9 22.75	+35 24.2	2.014	2.951	7.1	20.5
2 1	9 12.20	+24 19.3	1.580	2.559	3.1	21.0	2 1	9 12.38	+36 11.6	1.988	2.936	6.3	20.4
2 11	9 1.83	+24 53.8	1.609	2.580	5.0	21.2	2 11	9 1.43	+36 39.7	1.991	2.922	7.8	20.5
2 21	8 52.53	+25 13.6	1.666	2.601	8.9	21.5	2 21	8 51.15	+36 45.4	2.020	2.907	10.4	20.6
3 2	8 45.35	+25 17.8	1.749	2.621	12.6	21.8	3 2	8 42.69	+36 29.0	2.074	2.892	13.1	20.8
3 12	8 40.94	+25 7.7	1.852	2.642	15.7	22.0	3 12	8 36.86	+35 53.7	2.148	2.876	15.6	20.9
357981	2006 <i>BW</i> ₂₂₇		2 4.4 282°87	0.6/ 4.7	17		275851	2001 <i>SW</i> ₉₄		2 4.4 181°39	2.2/ 2.8	18	
1 2	9 34.13	+12 56.2	1.512	2.345	15.9	21.6	1 2	9 33.88	+22 29.0	2.385	3.214	11.0	20.4
1 12	9 29.39	+13 18.9	1.423	2.330	12.0	21.3	1 12	9 28.15	+22 52.6	2.308	3.214	8.0	20.2
1 22	9 21.83	+13 56.3	1.356	2.314	7.3	21.0	1 22	9 20.57	+23 17.7	2.257	3.214	4.8	20.0
2 1	9 12.17	+14 43.9	1.315	2.298	2.1	20.6	2 1	9 11.78	+23 40.1	2.235	3.214	2.3	19.8
2 11	9 1.68	+15 35.4	1.301	2.282	3.5	20.7	2 11	9 2.67	+23 55.7	2.243	3.214	3.7	19.9
2 21	8 51.80	+16 23.7	1.314	2.266	8.9	21.0	2 21	8 54.16	+24 2.0	2.281	3.214	6.9	20.1
3 2	8 43.92	+17 3.4	1.352	2.250	13.8	21.2	3 2	8 47.08	+23 57.9	2.346	3.214	10.0	20.3
3 12	8 39.01	+17 31.2	1.410	2.234	18.0	21.4	3 12	8 42.00	+23 43.6	2.434	3.213	12.7	20.5
341263	2007 <i>RR</i> ₂₄₉		2 4.4 152°71	0.5/ 3.9	17		204155	2003 <i>YM</i> ₁₇₁		2 4.4 352°71	5.2/31.1	18	
1 2	9 31.51	+15 56.0	2.518	3.338	10.8	21.7	1 2	9 32.50	+28 34.8	2.013	2.857	12.1	19.6
1 12	9 26.28	+16 29.5	2.441	3.343	7.9	21.5	1 12	9 27.63	+29 51.4	1.946	2.855	9.1	19.4
1 22	9 19.41	+17 9.3	2.391	3.348	4.6	21.3	1 22	9 20.48	+31 7.0	1.905	2.854	6.4	19.3
2 1	9 11.46	+17 52.0	2.369	3.353	1.2	21.1	2 1	9 11.80	+32 13.8	1.891	2.853	5.2	19.2
2 11	9 3.20	+18 33.2	2.379	3.357	2.6	21.2	2 11	9 2.64	+33 4.7	1.906	2.853	6.8	19.3
2 21	8 55.45	+19 9.4	2.418	3.362	6.0	21.4	2 21	8 54.17	+33 35.8	1.948	2.852	9.7	19.5
3 2	8 48.94	+19 38.1	2.486	3.365	9.1	21.6	3 2	8 47.42	+33 46.0	2.014	2.852	12.7	19.6
3 12	8 44.21	+19 57.7	2.578	3.369	11.7	21.8	3 12	8 43.11	+33 37.2	2.101	2.852	15.3	19.8
234933	2002 <i>UL</i> ₂₇		2 4.4 200°43	4.3/ 7.9	18		128147	2003 <i>QX</i> ₆₈		2 4.4 260°42	2.5/ 2.2	18	
1 2	9 30.46	+ 0 49.9	2.529	3.294	12.3	20.0	1 2	9 32.61	+20 37.3	2.169	3.002	11.7	19.8
1 12	9 25.53	+ 0 39.5	2.438	3.292	9.9	19.9	1 12	9 27.62	+21 42.3	2.076	2.985	8.6	19.6
1 22	9 18.99	+ 0 43.9	2.371	3.289	7.3	19.7	1 22	9 20.49	+22 53.9	2.009	2.967	5.2	19.3
2 1	9 11.37	+ 1 3.0	2.331	3.287	5.0	19.5	2 1	9 11.82	+24 6.0	1.970	2.950	2.6	19.1
2 11	9 3.38	+ 1 34.7	2.321	3.284	4.5	19.5	2 11	9 2.53	+25 11.8	1.962	2.932	4.4	19.2
2 21	8 55.81	+ 2 15.8	2.339	3.280	6.3	19.6	2 21	8 53.67	+26 5.8	1.983	2.913	8.0	19.4
3 2	8 49.36	+ 3 2.1	2.386	3.277	8.9	19.8	3 2	8 46.22	+26 44.8	2.031	2.894	11.5	19.6
3 12	8 44.61	+ 3 49.3	2.458	3.273	11.5	19.9	3 12	8 40.97	+27 7.8	2.101	2.875	14.6	19.7
466709	2014 <i>WL</i> ₄₄₆		2 4.4 69°51	1.3/ 5.2	18		280849	2005 <i>UW</i> ₂₅₂		2 4.4 139°13	0.4/ 4.6	18	
1 2	9 34.24	+11 42.7	1.777	2.598	14.5	21.5	1 2	9 38.75	+13 25.6	1.781	2.599	14.6	21.7
1 12	9 28.70	+11 50.9	1.715	2.614	10.8	21.3	1 12	9 32.09	+13 49.5	1.714	2.612	10.8	21.5
1 22	9 20.98	+12 10.6	1.676	2.630	6.6	21.1	1 22	9 23.04	+14 24.0	1.670	2.625	6.5	21.3
2 1	9 11.86	+12 38.6	1.665	2.646	2.3	20.9	2 1	9 12.43	+15 4.7	1.655	2.638	1.8	21.0
2 11	9 2.48	+13 10.1	1.682	2.662	3.0	21.0	2 11	9 1.46	+15 45.8	1.669	2.649	3.1	21.1
2 21	8 53.93	+13 40.7	1.727	2.679	7.2	21.3	2 21	8 51.36	+16 22.5	1.712	2.660	7.6	21.4
3 2	8 47.17	+14 6.6	1.799	2.695	11.1	21.5	3 2	8 43.18	+16 51.2	1.782	2.669	11.6	21.7
3 12	8 42.84	+14 25.3	1.894	2.711	14.3	21.8	3 12	8 37.62	+17 10.1	1.875	2.678	15.0	21.9
249404	2009 <i>CE</i> ₂₀		2 4.4 6°68	1.1/ 5.1	17		500257	2012 <i>KQ</i> ₄₆		2 4.4 226°72	3.0/ 1.8	17	</

EPHEMERIDES

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
467605	2007 <i>VU</i> ₂₉₈		2 4.4 70°08'	7.5/27.9	18		130511	2000 <i>QG</i> ₁₅₂		2 4.4 47°17'	5.3/1.6	18	
1 2	9 36.47	+36 29.6	2.206	3.035	11.7	20.1	1 2	9 37.11	+24 53.1	1.228	2.087	17.2	19.0
1 12	9 30.43	+38 33.7	2.177	3.064	9.4	20.0	1 12	9 31.77	+26 1.0	1.184	2.103	12.7	18.7
1 22	9 22.06	+40 28.2	2.174	3.093	7.8	20.0	1 22	9 23.17	+27 10.1	1.161	2.120	8.0	18.5
2 1	9 12.18	+42 3.8	2.201	3.122	7.6	20.0	2 1	9 12.51	+28 9.3	1.164	2.138	5.3	18.4
2 11	9 1.96	+43 14.0	2.255	3.150	8.9	20.2	2 11	9 1.55	+28 49.0	1.191	2.156	7.4	18.6
2 21	8 52.58	+43 56.6	2.336	3.178	10.9	20.3	2 21	8 52.01	+29 5.0	1.244	2.175	11.7	18.9
3 2	8 45.08	+44 13.0	2.440	3.207	12.9	20.5	3 2	8 45.25	+28 57.5	1.319	2.193	15.8	19.2
3 12	8 40.13	+44 7.1	2.562	3.234	14.6	20.7	3 12	8 41.97	+28 30.3	1.412	2.213	19.2	19.4
399708	2004 <i>TV</i> ₃₆₀		2 4.4 201°83'	1.2/3.5	18		221857	2008 <i>GF</i> ₁₀		2 4.4 235°20'	0.4/4.1	17	
1 2	9 37.28	+17 25.2	2.003	2.826	13.0	23.1	1 2	9 33.18	+15 5.2	1.975	2.800	13.0	21.4
1 12	9 31.05	+18 7.3	1.918	2.822	9.6	22.9	1 12	9 28.05	+15 40.7	1.889	2.794	9.6	21.1
1 22	9 22.50	+18 57.1	1.858	2.816	5.6	22.6	1 22	9 20.74	+16 25.9	1.829	2.787	5.7	20.9
2 1	9 12.33	+19 49.3	1.827	2.810	1.7	22.4	2 1	9 11.91	+17 16.4	1.796	2.780	1.4	20.6
2 11	9 1.60	+20 37.8	1.826	2.803	3.6	22.5	2 11	9 2.56	+18 6.4	1.793	2.773	3.1	20.7
2 21	8 51.47	+21 17.6	1.855	2.795	7.7	22.7	2 21	8 53.77	+18 50.8	1.819	2.765	7.3	20.9
3 2	8 43.01	+21 45.7	1.911	2.786	11.6	22.9	3 2	8 46.54	+19 25.8	1.872	2.757	11.2	21.2
3 12	8 36.98	+22 1.0	1.989	2.776	14.8	23.1	3 12	8 41.61	+19 49.5	1.947	2.749	14.5	21.4
3704	Gaoshiqi		2 4.4 228°82'	3.8/6.6	18		380699	2005 <i>JE</i> ₈₈		2 4.4 320°31'	2.5/6.0	17	
1 2	9 34.03	+5 36.4	1.701	2.504	15.8	16.6	1 2	9 30.11	+8 24.1	1.898	2.712	14.0	21.1
1 12	9 28.87	+5 29.7	1.618	2.501	12.3	16.4	1 12	9 25.85	+8 27.1	1.807	2.700	10.7	20.8
1 22	9 21.30	+5 40.5	1.557	2.497	8.4	16.1	1 22	9 19.47	+8 44.3	1.739	2.687	7.0	20.6
2 1	9 12.03	+6 7.7	1.521	2.493	4.7	15.9	2 1	9 11.59	+9 13.9	1.698	2.675	3.3	20.3
2 11	9 2.19	+6 47.7	1.514	2.489	4.4	15.9	2 11	9 3.17	+9 52.0	1.685	2.664	3.3	20.3
2 21	8 52.99	+7 35.1	1.534	2.485	7.9	16.1	2 21	8 55.24	+10 34.1	1.699	2.652	7.1	20.5
3 2	8 45.55	+8 24.1	1.580	2.481	12.0	16.3	3 2	8 48.81	+11 15.2	1.740	2.642	11.0	20.7
3 12	8 40.68	+9 9.3	1.649	2.476	15.6	16.5	3 12	8 44.61	+11 51.1	1.804	2.631	14.5	20.9
182702	2001 <i>VY</i> ₁₁₉		2 4.4 84°13'	6.3/30.7	18		302390	2002 <i>CZ</i> ₇₉		2 4.4 343°93'	2.1/3.4	18	
1 2	9 37.46	+30 54.8	1.830	2.670	13.3	19.9	1 2	9 37.65	+20 17.3	1.399	2.246	16.2	20.4
1 12	9 31.30	+32 21.5	1.786	2.690	10.1	19.8	1 12	9 32.05	+20 32.8	1.328	2.243	12.0	20.1
1 22	9 22.61	+33 43.0	1.767	2.710	7.4	19.6	1 22	9 23.38	+20 53.5	1.280	2.241	7.1	19.8
2 1	9 12.33	+34 50.1	1.775	2.730	6.4	19.6	2 1	9 12.62	+21 13.3	1.257	2.239	2.5	19.5
2 11	9 1.76	+35 35.8	1.812	2.750	7.9	19.7	2 11	9 1.27	+21 25.5	1.260	2.237	4.7	19.7
2 21	8 52.22	+35 57.3	1.875	2.769	10.6	19.9	2 21	8 50.95	+21 26.2	1.291	2.236	9.8	19.9
3 2	8 44.80	+35 55.3	1.962	2.788	13.4	20.2	3 2	8 43.05	+21 13.7	1.345	2.235	14.4	20.2
3 12	8 40.16	+35 33.7	2.069	2.807	15.9	20.4	3 12	8 38.41	+20 49.1	1.419	2.234	18.3	20.5
155620	2000 <i>ER</i> ₁₀₀		2 4.4 291°09'	0.4/4.6	18		284935	2010 <i>DS</i> ₅₀		2 4.4 186°66'	0.3/4.1	18	
1 2	9 35.40	+13 48.4	1.394	2.232	16.8	20.3	1 2	9 29.21	+13 11.7	2.445	3.263	11.1	20.6
1 12	9 30.40	+14 6.5	1.317	2.226	12.5	20.0	1 12	9 24.76	+14 16.3	2.362	3.263	8.2	20.4
1 22	9 22.44	+14 38.2	1.262	2.221	7.6	19.7	1 22	9 18.62	+15 31.5	2.306	3.262	4.8	20.2
2 1	9 12.36	+15 18.8	1.232	2.215	2.1	19.3	2 1	9 11.35	+16 52.5	2.279	3.262	1.2	19.9
2 11	9 1.58	+16 1.4	1.229	2.210	3.7	19.4	2 11	9 3.70	+18 13.7	2.283	3.262	2.6	20.0
2 21	8 51.63	+16 39.6	1.252	2.205	9.2	19.7	2 21	8 56.47	+19 29.7	2.317	3.262	6.1	20.3
3 2	8 43.93	+17 8.3	1.300	2.199	14.1	20.0	3 2	8 50.41	+20 36.1	2.380	3.261	9.4	20.5
3 12	8 39.38	+17 25.2	1.368	2.194	18.3	20.2	3 12	8 46.13	+21 30.5	2.468	3.261	12.1	20.7
372663	2009 <i>WN</i> ₇₉		2 4.4 100°92'	1.4/3.3	18		363270	2002 <i>GE</i> ₆		2 4.4 307°09'	16.1/15.3	18	
1 2	9 33.07	+17 54.8	2.049	2.879	12.5	21.4	1 2	9 29.33	-20 56.5	1.567	2.237	22.2	20.9
1 12	9 27.75	+18 42.5	1.983	2.891	9.1	21.2	1 12	9 25.98	-22 17.6	1.475	2.217	20.5	20.7
1 22	9 20.41	+19 36.7	1.943	2.902	5.3	21.0	1 22	9 19.93	-23 3.6	1.396	2.197	18.8	20.5
2 1	9 11.77	+20 32.0	1.931	2.914	1.7	20.8	2 1	9 11.79	-23 5.4	1.334	2.178	17.2	20.3
2 11	9 2.82	+21 22.6	1.949	2.925	3.5	20.9	2 11	9 2.69	-22 17.9	1.291	2.159	16.2	20.2
2 21	8 54.56	+22 4.1	1.997	2.937	7.3	21.2	2 21	8 53.99	-20 42.1	1.268	2.140	16.3	20.1
3 2	8 47.87	+22 33.6	2.070	2.948	10.7	21.4	3 2	8 47.08	-18 25.6	1.265	2.122	17.5	20.2
3 12	8 43.38	+22 50.4	2.167	2.958	13.6	21.6	3 12	8 43.03	-15 42.2	1.283	2.104	19.6	20.2
198972	2005 <i>UB</i> ₅₂₇		2 4.4 325°76'	0.0/4.2	18		10855	1995 <i>DR</i> ₁		2 4.4 18°54'	0.1/4.5	18	
1 2	9 35.05	+14 30.9	1.325	2.168	17.2	20.9	1 2	9 31.87	+11 46.8	1.358	2.198	17.0	17.4
1 12	9 30.25	+14 49.6	1.252	2.164	12.8	20.6	1 12	9 27.78	+12 45.8	1.289	2.200	12.7	17.1
1 22	9 22.39	+15 22.6	1.199	2.160	7.7	20.3	1 22	9 20.87	+14 4.0	1.243	2.202	7.6	16.8
2 1	9 12.36	+16 3.5	1.172	2.156	2.0	19.9	2 1	9 11.98	+15 34.3	1.221	2.205	2.0	16.5
2 11	9 1.63	+16 45.4	1.171	2.152	3.9	20.1	2 11	9 2.49	+17 6.8	1.227	2.208	3.7	16.6
2 21	8 51.81	+17 21.4	1.196	2.149	9.5	20.4	2 21	8 53.85	+18 31.7	1.258	2.211	9.2	16.9
3 2	8 44.34	+17 47.1	1.245	2.146	14.5	20.6	3 2	8 47.37	+19 41.7	1.315	2.214	14.0	17.2
3 12	8 40.13	+17 59.9	1.313	2.143	18.8	20.9	3 12	8 43.93	+20 33.1	1.391	2.218	18.0	17.5
468106	2013 <i>WE</i> ₆₃		2 4.4 45°17'	3.3/1.5	18		32474	2000 <i>SP</i> ₂₁₂		2 4.4 184°02'	4.4/30.9	18	
1 2	9 30.88	+20 33.2	1.834	2.678	13.1	20.1	1 2	9 32.60	+30 24.5	2.743	3.573	9.7	18.2
1 12	9 26.38	+22 14.0	1.782	2.697	9.5	19.9	1 12	9 27.19	+31 26.7	2.673	3.573	7.3	18.0
1 22	9 19.70	+24 0.4	1.757	2.717	5.7	19.7	1 22	9 20.03	+32 26.3	2.630	3.573	5.3	17.9
2 1	9 11.61	+25 43.8	1.760	2.737	3.3	19.6	2 1	9 11.71	+33 17.7	2.616	3.572	4.5	17.8
2 11	9 3.18	+27 15.3	1.792	2.757	5.3	19.8	2 11	9 3.05	+33 56.3	2.633	3.572	5.7	17.9
2 21	8 55.52	+28 28.9	1.853	2.778	8.8	20.1	2 21	8 54.89	+34 19.3	2.677	3.571	7.9	18.1
3 2	8 49.59	+29 21.6	1.939	2.799	12.1	20.3	3 2	8 48.02	+34 26.2	2.748	3.570	10.2	18.2
3 12	8 46.03	+29 53.8	2.046	2.821	14.9	20.5	3 12	8 43.03	+34 18.2	2.841	3.568	12.2	18.4
455756	2005 <i>MA</i> ₁		2 4.4 147°30'	0.3/4.6	18		308688	2006 <i>DD</i> ₁₁₃		2 4.4 213°34'	1.2/3.5	18	
1 2	9 36.87	+14 54.0	2.231	3.043	12.2	21.4	1 2	9 36.41	+17 23.2	1.921	2.748		

EPHEMERIDES

2 4.4

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
158166	2001 <i>QG</i> ₁₀₅		2 4.4 92°44	2.6/ 2.8	18		113414	2002 <i>SS</i> ₂₇		2 4.4 249°51	6.2/29.9	18	
1 2	9 37.00	+19 1.4	1.424	2.268	16.1	20.1	1 2	9 35.86	+34 29.1	2.378	3.206	11.0	19.8
1 12	9 31.38	+20 3.9	1.367	2.281	11.8	19.9	1 12	9 29.99	+35 35.7	2.302	3.195	8.7	19.6
1 22	9 22.87	+21 14.9	1.333	2.294	6.9	19.6	1 22	9 21.88	+36 36.9	2.252	3.184	6.8	19.5
2 1	9 12.47	+22 25.6	1.325	2.307	2.8	19.4	2 1	9 12.24	+37 25.6	2.230	3.172	6.2	19.4
2 11	9 1.63	+23 26.9	1.345	2.319	5.1	19.6	2 11	9 2.10	+37 56.0	2.236	3.160	7.5	19.5
2 21	8 51.88	+24 12.1	1.391	2.331	9.8	19.9	2 21	8 52.57	+38 5.3	2.270	3.148	9.8	19.6
3 2	8 44.48	+24 38.6	1.462	2.343	14.1	20.2	3 2	8 44.66	+37 53.8	2.328	3.135	12.2	19.8
3 12	8 40.20	+24 46.9	1.553	2.355	17.6	20.4	3 12	8 39.12	+37 24.2	2.407	3.122	14.5	19.9
99585	2002 <i>GA</i> ₈		2 4.4 201°74	0.4/ 4.7	18		109934	2001 <i>SL</i> ₃₈		2 4.4 154°31	0.2/ 4.6	18	
1 2	9 34.20	+12 9.3	1.879	2.698	13.9	19.9	1 2	9 30.90	+13 50.7	2.763	3.574	10.2	20.6
1 12	9 28.87	+12 52.1	1.796	2.695	10.4	19.7	1 12	9 25.74	+14 17.2	2.684	3.580	7.5	20.5
1 22	9 21.27	+13 48.3	1.736	2.692	6.3	19.4	1 22	9 19.09	+14 50.6	2.631	3.586	4.5	20.3
2 1	9 12.07	+14 53.2	1.705	2.688	1.8	19.1	2 1	9 11.48	+15 28.0	2.608	3.591	1.2	20.0
2 11	9 2.32	+16 0.4	1.703	2.683	3.0	19.2	2 11	9 3.61	+16 6.0	2.616	3.596	2.1	20.1
2 21	8 53.15	+17 3.7	1.730	2.678	7.5	19.5	2 21	8 56.18	+16 41.1	2.655	3.601	5.3	20.3
3 2	8 45.63	+17 57.9	1.784	2.673	11.5	19.7	3 2	8 49.85	+17 11.0	2.723	3.606	8.2	20.5
3 12	8 40.50	+18 40.1	1.861	2.667	15.0	19.9	3 12	8 45.13	+17 33.8	2.815	3.610	10.7	20.7
306017	2010 <i>DY</i> ₂₃		2 4.4 80°57	0.4/ 4.7	18		334759	2003 <i>RJ</i> ₂₇		2 4.4 216°26	0.4/ 4.2	18	
1 2	9 34.41	+ 9 58.2	1.516	2.340	16.3	20.3	1 2	9 37.31	+15 57.6	2.020	2.839	13.0	21.9
1 12	9 29.19	+11 17.0	1.460	2.362	12.1	20.1	1 12	9 31.08	+16 18.0	1.930	2.831	9.7	21.6
1 22	9 21.45	+12 54.1	1.428	2.384	7.2	19.9	1 22	9 22.56	+16 46.2	1.865	2.822	5.8	21.4
2 1	9 12.09	+14 41.7	1.423	2.406	2.0	19.6	2 1	9 12.43	+17 18.0	1.828	2.812	1.5	21.1
2 11	9 2.38	+16 29.7	1.447	2.427	3.3	19.8	2 11	9 1.74	+17 48.7	1.822	2.801	3.1	21.2
2 21	8 53.62	+18 8.5	1.499	2.449	8.2	20.1	2 21	8 51.62	+18 13.9	1.846	2.790	7.4	21.4
3 2	8 46.90	+19 31.4	1.577	2.469	12.5	20.4	3 2	8 43.13	+18 30.9	1.896	2.778	11.3	21.6
3 12	8 42.94	+20 35.4	1.677	2.490	16.1	20.7	3 12	8 37.03	+18 38.3	1.970	2.766	14.7	21.8
81505	2000 <i>GU</i> ₁₆₃		2 4.4 297°81	9.4/11.3	18		237492	2000 <i>OY</i> ₃₉		2 4.4 159°85	3.7/ 6.9	18	
1 2	9 29.68	- 9 34.5	1.758	2.492	18.0	19.3	1 2	9 35.04	+ 4 37.8	1.821	2.614	15.3	20.7
1 12	9 25.75	- 9 58.9	1.665	2.480	15.5	19.1	1 12	9 29.43	+ 4 44.0	1.743	2.620	11.9	20.5
1 22	9 19.54	- 9 54.3	1.590	2.468	12.9	18.9	1 22	9 21.57	+ 5 8.2	1.687	2.625	8.1	20.3
2 1	9 11.66	- 9 17.3	1.537	2.456	10.5	18.8	2 1	9 12.17	+ 5 48.8	1.658	2.629	4.6	20.1
2 11	9 3.11	- 8 8.7	1.509	2.445	9.4	18.7	2 11	9 2.30	+ 6 41.5	1.658	2.633	4.2	20.1
2 21	8 55.02	- 6 33.4	1.507	2.433	10.4	18.7	2 21	8 53.11	+ 7 40.5	1.686	2.636	7.5	20.3
3 2	8 48.50	- 4 40.3	1.530	2.422	12.9	18.8	3 2	8 45.60	+ 8 39.7	1.741	2.639	11.3	20.5
3 12	8 44.39	- 2 40.1	1.575	2.411	15.9	19.0	3 12	8 40.51	+ 9 34.0	1.820	2.641	14.7	20.7
104910	2000 <i>JL</i> ₁₃		2 4.4 175°71	5.7/30.4	18		114088	2002 <i>VQ</i> ₃₆		2 4.4 74°72	3.8/ 6.5	18	
1 2	9 37.43	+32 13.6	2.322	3.150	11.2	20.4	1 2	9 35.37	+ 6 13.4	1.331	2.151	18.5	20.3
1 12	9 31.05	+33 28.8	2.256	3.153	8.7	20.3	1 12	9 30.24	+ 6 14.4	1.268	2.161	14.3	20.1
1 22	9 22.45	+34 39.7	2.217	3.155	6.5	20.1	1 22	9 22.26	+ 6 36.9	1.225	2.172	9.5	19.9
2 1	9 12.36	+35 38.8	2.207	3.156	5.7	20.1	2 1	9 12.36	+ 7 18.5	1.207	2.182	4.9	19.6
2 11	9 1.84	+36 20.2	2.226	3.157	7.1	20.2	2 11	9 1.98	+ 8 13.3	1.214	2.193	4.6	19.6
2 21	8 52.00	+36 40.9	2.273	3.157	9.5	20.3	2 21	8 52.60	+ 9 13.6	1.248	2.203	8.9	19.9
3 2	8 43.84	+36 41.0	2.345	3.157	12.0	20.5	3 2	8 45.50	+10 11.8	1.307	2.214	13.5	20.2
3 12	8 38.07	+36 23.0	2.438	3.156	14.2	20.6	3 12	8 41.49	+11 2.1	1.386	2.224	17.5	20.5
30117	Childress		2 4.4 192°75	0.5/ 4.7	18		330718	2008 <i>QT</i> ₄		2 4.4 166°23	3.1/ 7.1	18	
1 2	9 36.03	+12 21.1	1.800	2.619	14.4	19.4	1 2	9 30.87	+ 3 40.2	2.278	3.062	12.9	21.4
1 12	9 30.30	+12 55.2	1.718	2.618	10.8	19.1	1 12	9 26.01	+ 4 4.5	2.194	3.065	10.1	21.2
1 22	9 22.15	+13 42.2	1.661	2.616	6.5	18.9	1 22	9 19.40	+ 4 45.1	2.133	3.067	6.9	21.0
2 1	9 12.31	+14 37.8	1.630	2.613	1.9	18.6	2 1	9 11.60	+ 5 40.1	2.100	3.070	4.0	20.8
2 11	9 1.91	+15 35.7	1.629	2.610	3.1	18.7	2 11	9 3.43	+ 6 45.3	2.097	3.072	3.5	20.8
2 21	8 52.16	+16 29.8	1.657	2.606	7.7	18.9	2 21	8 55.73	+ 7 55.7	2.124	3.073	6.2	21.0
3 2	8 44.18	+17 15.5	1.712	2.601	11.9	19.2	3 2	8 49.30	+ 9 5.8	2.179	3.075	9.4	21.2
3 12	8 38.75	+17 49.8	1.789	2.596	15.5	19.4	3 12	8 44.74	+10 10.9	2.259	3.076	12.3	21.3
461949	2006 <i>TM</i> ₅		2 4.4 56°11	2.1/ 3.3	16		241872	2001 <i>UR</i> ₂₇		2 4.4 98°95	7.3/27.6	18	
1 2	9 38.83	+19 57.5	1.436	2.279	16.1	21.5	1 2	9 37.70	+40 48.0	2.662	3.474	10.5	20.1
1 12	9 32.37	+20 24.9	1.395	2.308	11.7	21.4	1 12	9 31.10	+42 22.5	2.629	3.499	8.7	20.0
1 22	9 23.23	+20 56.9	1.376	2.337	6.8	21.1	1 22	9 22.40	+43 46.2	2.623	3.523	7.5	20.0
2 1	9 12.52	+21 26.9	1.383	2.366	2.4	20.9	2 1	9 12.36	+44 51.9	2.645	3.547	7.4	20.0
2 11	9 1.73	+21 48.6	1.419	2.395	4.5	21.1	2 11	9 2.02	+45 35.0	2.695	3.570	8.4	20.1
2 21	8 52.27	+21 58.5	1.481	2.424	9.0	21.5	2 21	8 52.46	+45 54.2	2.771	3.593	10.0	20.2
3 2	8 45.23	+21 55.5	1.568	2.454	13.0	21.8	3 2	8 44.60	+45 51.1	2.870	3.616	11.6	20.4
3 12	8 41.18	+21 40.8	1.676	2.483	16.3	22.1	3 12	8 39.06	+45 29.3	2.989	3.637	13.1	20.5
40386	1999 <i>NK</i> ₄₉		2 4.4 149°88	2.8/ 6.4	18		301290	2009 <i>BG</i> ₁₁₃		2 4.4 187°06	3.0/ 7.5	17	
1 2	9 34.76	+ 6 27.7	1.939	2.736	14.4	19.5	1 2	9 28.67	+ 2 38.6	2.939	3.709	10.6	21.6
1 12	9 29.08	+ 6 41.9	1.863	2.745	11.0	19.3	1 12	9 24.07	+ 2 57.1	2.847	3.708	8.4	21.4
1 22	9 21.28	+ 7 12.0	1.810	2.752	7.3	19.1	1 22	9 18.11	+ 3 28.8	2.780	3.707	5.9	21.2
2 1	9 12.07	+ 7 55.4	1.784	2.759	3.7	18.9	2 1	9 11.26	+ 4 12.3	2.742	3.706	3.6	21.1
2 11	9 2.45	+ 8 47.7	1.788	2.766	3.5	18.9	2 11	9 4.11	+ 5 4.8	2.734	3.705	3.2	21.0
2 21	8 53.49	+ 9 43.5	1.822	2.772	7.0	19.1	2 21	8 57.30	+ 6 2.7	2.756	3.703	5.1	21.2
3 2	8 46.14	+10 37.5	1.882	2.777	10.7	19.4	3 2	8 51.43	+ 7 2.2	2.808	3.700	7.7	21.3
3 12	8 41.07	+11 25.4	1.966	2.782	13.9	19.6	3 12	8 46.99	+ 7 59.4	2.886	3.698	10.1	21.5
492575	2014 <i>OC</i> ₁₈₀		2 4.4 188°63	1.1/ 3.6	18		135654	2002 <i>LT</i> ₁₉		2 4.4 247°39	4.5/ 1.0	18	
1 2	9 36.33	+17 7.1	2.067	2.890	12.7	23.1	1 2	9 36.89	+25 36.2				

EPHEMERIDES

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
163505	2002 SW ₄₈		2 4.4 174°57'	0°9/ 3.6 17			4826	Wilhelms		2 4.4 170°10'	7°5/28.4 18	R	
1 2	9 31.88	+17 34.9	2.659	3.479	10.2	20.6	1 2	9 39.31	+33 20.4	1.989	2.821	12.7	17.1
1 12	9 26.57	+18 11.8	2.579	3.481	7.5	20.4	1 12	9 33.02	+35 34.2	1.931	2.825	10.0	16.9
1 22	9 19.65	+18 53.9	2.525	3.483	4.4	20.2	1 22	9 23.95	+37 43.8	1.899	2.829	8.0	16.8
2 1	9 11.67	+19 37.4	2.501	3.484	1.3	20.0	2 1	9 12.89	+39 37.8	1.897	2.832	7.7	16.8
2 11	9 3.37	+20 18.3	2.508	3.485	2.7	20.1	2 11	9 1.09	+41 6.5	1.923	2.834	9.3	16.9
2 21	8 55.53	+20 53.1	2.546	3.486	5.9	20.3	2 21	8 49.99	+42 5.1	1.977	2.836	11.9	17.1
3 2	8 48.87	+21 19.4	2.612	3.486	8.9	20.5	3 2	8 40.90	+42 33.7	2.054	2.837	14.5	17.2
3 12	8 43.93	+21 36.3	2.702	3.485	11.4	20.7	3 12	8 34.71	+42 36.5	2.149	2.837	16.7	17.4
311010	2003 YP ₆₄		2 4.4 344°91'	1°4/ 3.0 18			26359	1998 YF ₁₂		2 4.4 189°76'	2°9/ 1.7 18		
1 2	9 27.10	+18 11.3	2.532	3.364	10.3	19.3	1 2	9 31.93	+22 59.8	2.411	3.244	10.7	17.8
1 12	9 23.22	+19 3.3	2.449	3.358	7.5	19.1	1 12	9 26.87	+24 2.7	2.335	3.243	7.9	17.7
1 22	9 17.75	+20 1.5	2.393	3.353	4.4	18.9	1 22	9 19.96	+25 8.5	2.286	3.243	4.9	17.5
2 1	9 11.19	+21 1.5	2.365	3.347	1.6	18.7	2 1	9 11.80	+26 11.6	2.266	3.242	2.9	17.3
2 11	9 4.28	+21 58.3	2.368	3.342	3.1	18.8	2 11	9 3.25	+27 6.3	2.276	3.240	4.5	17.4
2 21	8 57.78	+22 47.9	2.399	3.338	6.3	19.0	2 21	8 55.20	+27 48.5	2.316	3.239	7.4	17.6
3 2	8 52.41	+23 27.2	2.459	3.334	9.3	19.2	3 2	8 48.48	+28 16.3	2.382	3.237	10.4	17.8
3 12	8 48.73	+23 54.9	2.541	3.330	11.9	19.4	3 12	8 43.72	+28 29.5	2.472	3.235	12.9	18.0
208403	2001 SM ₂₁₇		2 4.4 53°20'	5°6/31.6 18			100760	1998 FN ₁₀		2 4.4 342°96'	0°4/ 4.6 18		
1 2	9 36.60	+31 53.4	2.063	2.898	12.2	20.3	1 2	9 33.16	+14 22.8	1.272	2.121	17.4	19.8
1 12	9 30.45	+32 37.8	2.008	2.910	9.3	20.2	1 12	9 29.00	+14 30.2	1.199	2.113	13.0	19.5
1 22	9 22.06	+33 16.3	1.979	2.922	6.7	20.0	1 22	9 21.76	+14 50.8	1.146	2.106	7.9	19.2
2 1	9 12.29	+33 42.3	1.977	2.934	5.6	20.0	2 1	9 12.34	+15 20.1	1.117	2.100	2.2	18.8
2 11	9 2.29	+33 50.9	2.004	2.947	6.9	20.1	2 11	9 2.20	+15 51.7	1.114	2.095	3.8	18.9
2 21	8 53.23	+33 40.6	2.058	2.960	9.4	20.2	2 21	8 52.96	+16 19.2	1.136	2.091	9.5	19.2
3 2	8 46.05	+33 12.5	2.137	2.973	12.1	20.4	3 2	8 46.07	+16 38.1	1.181	2.087	14.6	19.5
3 12	8 41.37	+32 29.6	2.237	2.985	14.5	20.6	3 12	8 42.47	+16 45.7	1.245	2.085	19.0	19.7
233023	2005 ER ₂₆₄		2 4.4 291°50'	0°6/ 4.9 17 R			428473	2007 VM ₂₄		2 4.4 54°11'	4°2/ 7.9 18		
1 2	9 31.47	+13 1.6	2.116	2.936	12.5	20.4	1 2	9 29.44	+ 1 31.2	2.202	2.980	13.5	21.0
1 12	9 26.69	+13 16.8	2.027	2.926	9.3	20.2	1 12	9 25.01	+ 1 34.0	2.122	2.986	10.7	20.8
1 22	9 19.92	+13 41.6	1.962	2.917	5.7	19.9	1 22	9 18.83	+ 1 54.0	2.066	2.992	7.7	20.6
2 1	9 11.79	+14 13.1	1.924	2.907	1.7	19.7	2 1	9 11.51	+ 2 30.2	2.036	2.997	5.0	20.4
2 11	9 3.18	+14 47.0	1.917	2.897	2.6	19.7	2 11	9 3.85	+ 3 19.5	2.035	3.003	4.4	20.4
2 21	8 55.07	+15 19.4	1.938	2.888	6.6	19.9	2 21	8 56.69	+ 4 17.3	2.062	3.009	6.5	20.6
3 2	8 48.36	+15 46.7	1.986	2.878	10.4	20.1	3 2	8 50.82	+ 5 18.4	2.117	3.015	9.5	20.8
3 12	8 43.72	+16 6.5	2.058	2.869	13.6	20.3	3 12	8 46.83	+ 6 17.6	2.196	3.021	12.3	20.9
130500	2000 QR ₁₃₄		2 4.4 89°54'	1°8/ 3.4 18			9978	1994 AJ ₁		2 4.4 67°07'	2°4/ 5.9 18		
1 2	9 39.13	+18 34.8	1.562	2.397	15.4	19.5	1 2	9 33.52	+ 9 13.0	2.064	2.870	13.3	17.8
1 12	9 32.58	+19 15.9	1.511	2.420	11.2	19.3	1 12	9 28.03	+ 8 59.5	1.992	2.880	10.1	17.6
1 22	9 23.42	+20 3.6	1.484	2.443	6.5	19.1	1 22	9 20.62	+ 8 57.1	1.943	2.890	6.6	17.4
2 1	9 12.66	+20 50.9	1.483	2.466	2.2	18.9	2 1	9 11.97	+ 9 4.3	1.923	2.899	3.1	17.2
2 11	9 1.66	+21 30.9	1.512	2.488	4.2	19.1	2 11	9 3.02	+ 9 18.3	1.931	2.909	3.2	17.3
2 21	8 51.81	+21 58.8	1.568	2.510	8.7	19.4	2 21	8 54.72	+ 9 35.7	1.969	2.919	6.5	17.5
3 2	8 44.20	+22 12.8	1.650	2.531	12.7	19.7	3 2	8 47.94	+ 9 53.3	2.034	2.929	10.0	17.7
3 12	8 39.48	+22 13.3	1.753	2.552	16.0	19.9	3 12	8 43.27	+10 8.2	2.122	2.939	13.0	17.9
279543	2011 CZ ₂₂		2 4.4 152°33'	2°1/ 5.9 18			314647	2006 KW ₁₀₁		2 4.4 286°97'	1°5/ 6.1 17		
1 2	9 32.14	+ 8 13.4	2.068	2.872	13.3	21.4	1 2	9 26.49	+ 8 13.2	3.098	3.894	9.5	20.9
1 12	9 27.11	+ 8 29.7	1.988	2.875	10.2	21.2	1 12	9 22.50	+ 8 36.9	3.000	3.883	7.3	20.8
1 22	9 20.13	+ 8 59.7	1.932	2.878	6.5	21.0	1 22	9 17.23	+ 9 10.3	2.928	3.873	4.7	20.6
2 1	9 11.83	+ 9 40.8	1.903	2.881	3.0	20.8	2 1	9 11.09	+ 9 51.7	2.885	3.862	2.2	20.4
2 11	9 3.14	+10 28.8	1.904	2.883	3.0	20.8	2 11	9 4.66	+10 38.1	2.872	3.851	2.1	20.4
2 21	8 55.02	+11 18.8	1.934	2.886	6.5	21.0	2 21	8 58.51	+11 26.3	2.891	3.841	4.7	20.5
3 2	8 48.33	+12 6.1	1.992	2.888	10.1	21.3	3 2	8 53.21	+12 13.1	2.938	3.830	7.4	20.7
3 12	8 43.74	+12 47.2	2.073	2.889	13.3	21.5	3 12	8 49.24	+12 55.7	3.011	3.820	9.8	20.8
241970	2002 GY ₁₀₄		2 4.4 205°46'	0°8/ 3.8 18			311590	2006 HB ₁₅₂		2 4.4 137°53'	3°5/ 2.1 18		
1 2	9 34.87	+15 28.2	2.096	2.916	12.6	20.9	1 2	9 38.17	+23 27.7	1.799	2.635	13.6	21.3
1 12	9 29.25	+16 20.9	2.009	2.911	9.3	20.7	1 12	9 31.87	+24 20.8	1.735	2.644	10.0	21.1
1 22	9 21.49	+17 23.4	1.947	2.905	5.5	20.4	1 22	9 23.07	+25 16.2	1.696	2.653	6.2	20.8
2 1	9 12.21	+18 30.6	1.915	2.898	1.4	20.1	2 1	9 12.63	+26 6.4	1.685	2.661	3.5	20.7
2 11	9 2.39	+19 36.2	1.913	2.891	3.2	20.2	2 11	9 1.79	+26 44.7	1.703	2.669	5.4	20.8
2 21	8 53.08	+20 34.5	1.941	2.883	7.3	20.5	2 21	8 51.85	+27 6.9	1.749	2.677	9.1	21.1
3 2	8 45.27	+21 21.6	1.996	2.874	11.0	20.7	3 2	8 43.90	+27 12.1	1.820	2.684	12.6	21.3
3 12	8 39.70	+21 55.5	2.075	2.864	14.2	20.9	3 12	8 38.68	+27 1.8	1.913	2.690	15.7	21.5
458378	2010 WW ₂₉		2 4.4 130°23'	1°1/ 5.3 18			421278	2013 SE ₈₁		2 4.4 131°38'	1°3/ 3.5 18		
1 2	9 35.08	+10 58.9	2.226	3.030	12.5	22.3	1 2	9 34.23	+18 36.9	2.166	2.993	12.0	21.8
1 12	9 29.03	+11 20.3	2.156	3.046	9.3	22.1	1 12	9 28.57	+19 8.0	2.095	3.000	8.8	21.6
1 22	9 21.14	+11 52.1	2.112	3.062	5.7	21.9	1 22	9 20.96	+19 44.1	2.049	3.008	5.1	21.4
2 1	9 12.08	+12 31.0	2.096	3.077	2.0	21.7	2 1	9 12.07	+20 20.8	2.032	3.015	1.6	21.1
2 11	9 2.74	+13 12.9	2.111	3.091	2.5	21.7	2 11	9 2.86	+20 53.3	2.045	3.021	3.3	21.3
2 21	8 54.05	+13 53.4	2.157	3.105	6.2	22.0	2 21	8 54.30	+21 17.9	2.087	3.028	7.0	21.5
3 2	8 46.82	+14 29.2	2.230	3.118	9.6	22.2	3 2	8 47.26	+21 32.6	2.157	3.034	10.3	21.7
3 12	8 41.62	+14 57.8	2.328	3.130	12.5	22.5	3 12	8 42.36	+21 36.7	2.250	3.040	13.2	21.9
318118	2004 KL ₁₂		2 4.4 279°04'	0°4/ 4.7 18			63455	2001 OD ₅		2 4.4 151°87'	3°9/ 7.5 18		
1 2	9 31.81	+11 51.7	1.817	2.641	14.1	20.5	1 2	9 31.79	+ 2 35.1				

EPHEMERIDES

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
363914	2005 <i>SB</i> ₂₂₀		2 4.4 149°14	2°1/ 6.4	18		5226	Pollack		2 4.4 35°43	7°6/30.8	18	
1 2	9 33.06	+ 6 14.4	2.481	3.267	11.9	22.1	1 2	9 36.48	+29 12.4	1.287	2.146	16.5	16.3
1 12	9 27.46	+ 6 46.3	2.403	3.279	9.1	21.9	1 12	9 31.63	+30 53.5	1.236	2.152	12.6	16.1
1 22	9 20.22	+ 7 31.5	2.349	3.290	6.0	21.7	1 22	9 23.38	+32 32.6	1.207	2.158	9.0	15.9
2 1	9 11.89	+ 8 27.4	2.325	3.300	2.9	21.5	2 1	9 12.80	+33 56.3	1.204	2.165	7.7	15.8
2 11	9 3.26	+ 9 29.8	2.332	3.310	2.7	21.5	2 11	9 1.65	+34 53.2	1.225	2.172	9.7	16.0
2 21	8 55.12	+10 33.9	2.370	3.319	5.7	21.7	2 21	8 51.75	+35 18.3	1.271	2.180	13.4	16.2
3 2	8 48.22	+11 35.3	2.437	3.327	8.8	21.9	3 2	8 44.63	+35 12.6	1.337	2.188	17.1	16.4
3 12	8 43.10	+12 30.5	2.529	3.334	11.5	22.1	3 12	8 41.13	+34 41.4	1.421	2.196	20.3	16.7
386833	2010 <i>HE</i> ₁₀₃		2 4.4 250°26	3°0/ 1.7	18		456320	2006 <i>SZ</i> ₂₉₆		2 4.4 79°16	6°1/ 9.1	18	
1 2	9 31.31	+23 10.7	2.352	3.187	10.9	20.9	1 2	9 33.12	- 2 23.9	1.723	2.493	17.0	22.1
1 12	9 26.49	+24 13.5	2.274	3.183	8.0	20.7	1 12	9 28.01	- 2 21.8	1.661	2.514	13.8	21.9
1 22	9 19.79	+25 19.4	2.222	3.179	5.0	20.5	1 22	9 20.73	- 1 54.9	1.620	2.535	10.3	21.7
2 1	9 11.80	+26 22.6	2.199	3.175	3.0	20.3	2 1	9 12.06	- 1 4.1	1.603	2.555	7.2	21.6
2 11	9 3.39	+27 17.3	2.207	3.170	4.6	20.4	2 11	9 3.09	+ 0 6.3	1.614	2.576	6.2	21.6
2 21	8 55.47	+27 59.3	2.243	3.166	7.6	20.6	2 21	8 54.91	+ 1 29.2	1.652	2.596	8.1	21.7
3 2	8 48.90	+28 26.5	2.305	3.161	10.6	20.8	3 2	8 48.49	+ 2 56.6	1.717	2.616	11.3	22.0
3 12	8 44.33	+28 38.7	2.391	3.157	13.2	21.0	3 12	8 44.44	+ 4 20.9	1.805	2.636	14.3	22.2
11017	Billputnam		2 4.4 102°37	2°4/ 2.3	18 R		304113	2006 <i>JK</i> ₅		2 4.4 240°96	4°2/ 7.0	18	
1 2	9 33.26	+19 17.4	2.040	2.872	12.4	16.9	1 2	9 34.01	+ 4 19.9	1.701	2.500	16.0	20.8
1 12	9 28.01	+20 38.8	1.978	2.887	9.0	16.7	1 12	9 29.00	+ 4 15.1	1.614	2.493	12.6	20.6
1 22	9 20.70	+22 6.5	1.943	2.902	5.3	16.5	1 22	9 21.54	+ 4 29.4	1.548	2.486	8.8	20.3
2 1	9 12.03	+23 33.5	1.937	2.917	2.5	16.3	2 1	9 12.33	+ 5 1.8	1.508	2.478	5.2	20.1
2 11	9 3.00	+24 52.3	1.961	2.931	4.3	16.5	2 11	9 2.49	+ 5 48.9	1.496	2.470	4.7	20.0
2 21	8 54.65	+25 57.3	2.014	2.945	7.9	16.7	2 21	8 53.22	+ 6 44.9	1.512	2.463	8.1	20.2
3 2	8 47.89	+26 45.7	2.094	2.958	11.2	17.0	3 2	8 45.69	+ 7 43.3	1.553	2.454	12.1	20.4
3 12	8 43.36	+27 16.9	2.196	2.972	14.0	17.2	3 12	8 40.72	+ 8 38.3	1.617	2.446	15.8	20.6
19970	Johannpeter		2 4.4 212°06	0°9/ 3.8	18		135205	2001 <i>RO</i> ₆₀		2 4.4 164°71	4°0/ 1.0	18	
1 2	9 36.57	+16 54.3	1.928	2.753	13.3	19.0	1 2	9 34.19	+28 19.8	2.480	3.311	10.5	20.2
1 12	9 30.66	+17 24.8	1.843	2.748	9.9	18.8	1 12	9 28.49	+29 7.5	2.410	3.314	7.9	20.1
1 22	9 22.40	+18 3.2	1.783	2.741	5.8	18.5	1 22	9 20.91	+29 53.3	2.367	3.316	5.3	19.9
2 1	9 12.50	+18 44.6	1.751	2.734	1.6	18.2	2 1	9 12.11	+30 31.6	2.352	3.317	4.0	19.8
2 11	9 2.05	+19 23.4	1.749	2.727	3.4	18.3	2 11	9 2.99	+30 57.9	2.367	3.319	5.3	19.9
2 21	8 52.21	+19 54.9	1.775	2.719	7.7	18.6	2 21	8 54.47	+31 9.6	2.411	3.320	7.9	20.1
3 2	8 44.07	+20 16.1	1.829	2.710	11.7	18.8	3 2	8 47.39	+31 6.1	2.481	3.321	10.5	20.2
3 12	8 38.40	+20 25.8	1.905	2.701	15.1	19.0	3 12	8 42.35	+30 48.9	2.574	3.322	12.8	20.4
9813	Rozgaj		2 4.4 52°13	1°3/ 5.1	18		176230	2001 <i>QE</i> ₁₅₁		2 4.4 67°78	0°0/ 4.3	18	
1 2	9 35.38	+11 32.6	1.242	2.082	18.3	17.3	1 2	9 42.94	+17 49.8	2.252	3.059	12.3	20.2
1 12	9 30.42	+11 50.6	1.185	2.094	13.7	17.1	1 12	9 34.46	+17 25.7	2.201	3.095	9.0	20.1
1 22	9 22.46	+12 25.6	1.149	2.106	8.4	16.8	1 22	9 24.16	+17 4.4	2.177	3.131	5.3	19.9
2 1	9 12.51	+13 12.7	1.137	2.120	2.8	16.5	2 1	9 12.89	+16 43.7	2.183	3.166	1.3	19.7
2 11	9 2.13	+14 4.0	1.151	2.133	3.7	16.6	2 11	9 1.66	+16 21.7	2.222	3.201	2.6	19.8
2 21	8 52.90	+14 52.2	1.191	2.147	9.1	17.0	2 21	8 51.43	+15 57.4	2.292	3.236	6.2	20.1
3 2	8 46.13	+15 31.4	1.255	2.161	14.0	17.3	3 2	8 42.98	+15 30.4	2.392	3.270	9.4	20.4
3 12	8 42.60	+15 58.5	1.339	2.175	18.1	17.6	3 12	8 36.79	+15 0.8	2.516	3.304	12.1	20.6
431517	2007 <i>TN</i> ₁₉₂		2 4.4 205°99	4°0/ 7.9	18		284844	2009 <i>BJ</i> ₈₄		2 4.4 216°84	0°9/ 5.1	17	
1 2	9 30.37	+ 1 31.2	2.509	3.278	12.3	21.2	1 2	9 32.89	+12 47.4	2.552	3.360	11.0	20.9
1 12	9 25.57	+ 1 27.5	2.417	3.275	9.8	21.0	1 12	9 27.39	+12 46.2	2.463	3.355	8.2	20.7
1 22	9 19.15	+ 1 38.7	2.350	3.272	7.1	20.9	1 22	9 20.22	+12 52.1	2.399	3.351	5.1	20.4
2 1	9 11.63	+ 2 4.3	2.309	3.268	4.7	20.7	2 1	9 11.94	+13 3.0	2.365	3.346	1.8	20.2
2 11	9 3.74	+ 2 42.0	2.298	3.264	4.2	20.7	2 11	9 3.31	+13 16.4	2.361	3.341	2.3	20.2
2 21	8 56.26	+ 3 28.2	2.317	3.261	6.2	20.8	2 21	8 55.13	+13 29.5	2.388	3.336	5.7	20.5
3 2	8 49.90	+ 4 18.7	2.364	3.256	8.9	20.9	3 2	8 48.15	+13 40.1	2.443	3.331	8.8	20.7
3 12	8 45.24	+ 5 9.0	2.435	3.252	11.5	21.1	3 12	8 42.95	+13 46.4	2.522	3.325	11.6	20.8
148813	2001 <i>UY</i> ₁₁₆		2 4.4 36°92	0°1/ 4.5	18		200331	2000 <i>GR</i> ₁₂₉		2 4.4 69°57	8°9/13.6	18	
1 2	9 33.00	+13 42.3	1.808	2.635	14.0	20.4	1 2	9 30.18	-13 57.7	2.155	2.842	16.3	20.3
1 12	9 28.06	+14 12.2	1.731	2.635	10.4	20.2	1 12	9 25.56	-14 8.6	2.088	2.863	14.2	20.2
1 22	9 20.85	+14 53.4	1.678	2.635	6.2	19.9	1 22	9 19.17	-13 52.1	2.040	2.884	12.0	20.1
2 1	9 12.09	+15 41.3	1.652	2.636	1.7	19.6	2 1	9 11.66	-13 6.8	2.014	2.905	10.0	20.0
2 11	9 2.87	+16 30.3	1.656	2.636	3.0	19.7	2 11	9 3.88	-11 54.9	2.014	2.926	8.9	20.0
2 21	8 54.31	+17 14.9	1.687	2.636	7.5	20.0	2 21	8 56.72	-10 21.5	2.041	2.946	9.3	20.0
3 2	8 47.44	+17 51.0	1.744	2.637	11.5	20.2	3 2	8 50.94	- 8 34.3	2.094	2.967	10.8	20.1
3 12	8 43.00	+18 16.1	1.824	2.637	15.0	20.4	3 12	8 47.12	- 6 41.9	2.171	2.988	12.8	20.3
413522	2005 <i>SE</i> ₄₀		2 4.4 164°52	1°0/ 3.7	18		465054	2006 <i>SY</i> ₃		2 4.4 154°43	7°5/13.7	18	
1 2	9 34.88	+17 28.1	2.143	2.967	12.2	22.1	1 2	9 29.04	-15 57.0	3.086	3.731	12.6	22.1
1 12	9 29.11	+18 1.5	2.067	2.971	9.0	21.8	1 12	9 24.35	-16 8.3	2.998	3.738	11.1	21.9
1 22	9 21.33	+18 41.3	2.017	2.975	5.3	21.6	1 22	9 18.33	-15 59.1	2.930	3.744	9.6	21.8
2 1	9 12.21	+19 22.8	1.995	2.978	1.5	21.4	2 1	9 11.44	-15 28.3	2.886	3.750	8.2	21.7
2 11	9 2.70	+20 1.1	2.003	2.981	3.2	21.5	2 11	9 4.29	-14 36.6	2.869	3.756	7.5	21.7
2 21	8 53.82	+20 32.1	2.041	2.983	7.0	21.7	2 21	8 57.50	-13 26.9	2.879	3.761	7.8	21.7
3 2	8 46.46	+20 53.2	2.107	2.985	10.5	22.0	3 2	8 51.65	-12 3.7	2.916	3.766	8.8	21.8
3 12	8 41.28	+21 3.7	2.195	2.986	13.5	22.2	3 12	8 47.22	-10 32.7	2.979	3.771	10.3	21.9
184049	2004 <i>FB</i> ₉₉		2 4.4 258°21	2°7/ 2.7	18		165339	2000 <i>VA</i> ₁₈		2 4.4 12°16	4°8/ 1.5	18	
1 2	9 36.04	+21 45.3	1.821	2.658	13.5	20.4							

EPHEMERIDES

2 4.4

2 4.4

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
385959	2006 VX ₇₁		2 4.4 139°65	0°7/ 3.7 17			283061	2008 QZ ₅		2 4.4 186°00	1°5/ 5.5 18		
1 2	9 30.76	+17 10.4	3.111	3.926	9.0	21.8	1 2	9 36.17	+9 2.5	1.835	2.642	14.7	21.6
1 12	9 25.54	+17 45.2	3.039	3.938	6.6	21.7	1 12	9 30.43	+9 39.1	1.752	2.643	11.1	21.3
1 22	9 18.99	+18 24.4	2.993	3.950	3.8	21.5	1 22	9 22.32	+10 31.7	1.693	2.642	7.0	21.1
2 1	9 11.60	+19 4.7	2.978	3.962	1.1	21.3	2 1	9 12.56	+11 36.6	1.661	2.641	2.7	20.8
2 11	9 4.00	+19 42.9	2.995	3.972	2.3	21.4	2 11	9 2.24	+12 47.5	1.659	2.639	3.0	20.8
2 21	8 56.82	+20 16.1	3.043	3.983	5.1	21.6	2 21	8 52.53	+13 57.7	1.686	2.636	7.4	21.1
3 2	8 50.63	+20 42.4	3.120	3.993	7.6	21.8	3 2	8 44.51	+15 1.3	1.740	2.633	11.6	21.3
3 12	8 45.90	+21 0.7	3.222	4.002	9.8	22.0	3 12	8 38.98	+15 54.2	1.818	2.628	15.1	21.5
206903	2004 HV ₅₂		2 4.4 249°09	0°5/ 4.1 17			266389	2007 EH ₁₃₅		2 4.4 151°52	0°6/ 4.9 18		
1 2	9 33.59	+17 38.9	2.623	3.440	10.4	20.3	1 2	9 33.30	+12 31.4	2.120	2.936	12.7	21.2
1 12	9 27.94	+17 45.6	2.528	3.428	7.7	20.1	1 12	9 27.97	+12 55.0	2.043	2.940	9.4	21.0
1 22	9 20.57	+17 56.3	2.459	3.416	4.6	19.9	1 22	9 20.69	+13 28.7	1.990	2.944	5.7	20.8
2 1	9 12.05	+18 8.3	2.420	3.404	1.2	19.7	2 1	9 12.11	+14 9.0	1.966	2.948	1.7	20.5
2 11	9 3.14	+18 18.5	2.412	3.391	2.5	19.7	2 11	9 3.16	+14 51.4	1.971	2.952	2.6	20.6
2 21	8 54.66	+18 24.4	2.435	3.378	5.9	19.9	2 21	8 54.80	+15 31.4	2.006	2.955	6.5	20.9
3 2	8 47.38	+18 24.4	2.485	3.365	9.1	20.1	3 2	8 47.89	+16 5.5	2.069	2.959	10.1	21.1
3 12	8 41.88	+18 17.7	2.561	3.352	11.8	20.3	3 12	8 43.08	+16 31.4	2.155	2.961	13.2	21.3
63734	2001 QN ₂₄₆		2 4.4 70°45	1°6/ 3.6 18			330451	2007 EP ₇		2 4.4 106°53	1°3/ 5.4 18		
1 2	9 40.33	+18 14.3	1.325	2.168	17.2	18.7	1 2	9 33.00	+10 33.5	1.952	2.766	13.6	21.6
1 12	9 33.77	+18 45.6	1.281	2.193	12.6	18.5	1 12	9 27.85	+10 56.5	1.879	2.774	10.2	21.4
1 22	9 24.27	+19 24.6	1.258	2.219	7.3	18.3	1 22	9 20.65	+11 32.1	1.831	2.783	6.3	21.2
2 1	9 12.99	+20 3.7	1.261	2.244	2.2	18.0	2 1	9 12.10	+12 16.8	1.810	2.791	2.3	21.0
2 11	9 1.55	+20 35.7	1.291	2.269	4.4	18.2	2 11	9 3.19	+13 5.6	1.818	2.799	2.8	21.0
2 21	8 51.49	+20 55.7	1.349	2.295	9.4	18.6	2 21	8 54.93	+13 53.5	1.856	2.807	6.8	21.3
3 2	8 44.03	+21 2.2	1.430	2.319	13.8	18.9	3 2	8 48.24	+14 36.1	1.920	2.815	10.5	21.5
3 12	8 39.81	+20 55.6	1.532	2.344	17.4	19.2	3 12	8 43.76	+15 10.3	2.008	2.822	13.7	21.8
496937	2001 VH ₁₁₀		2 4.4 123°31	2°6/ 7.1 18			238071	2003 FM ₁		2 4.4 358°95	23°6/ 26.4 17		
1 2	9 31.23	+4 26.8	3.177	3.945	9.9	22.2	1 2	9 57.12	+60 28.8	0.939	1.744	25.5	18.4
1 12	9 25.77	+4 29.7	3.104	3.966	7.7	22.1	1 12	9 50.67	+61 58.0	0.909	1.737	24.4	18.3
1 22	9 19.08	+4 42.8	3.057	3.986	5.3	22.0	1 22	9 35.92	+62 41.0	0.891	1.733	23.7	18.3
2 1	9 11.63	+5 5.0	3.039	4.005	3.2	21.8	2 1	9 16.04	+62 16.1	0.888	1.730	23.8	18.2
2 11	9 4.01	+5 34.0	3.053	4.024	2.8	21.8	2 11	8 56.54	+60 34.2	0.898	1.731	24.5	18.3
2 21	8 56.82	+6 7.2	3.098	4.042	4.7	22.0	2 21	8 42.06	+57 43.1	0.924	1.733	25.9	18.4
3 2	8 50.58	+6 41.8	3.172	4.060	7.0	22.2	3 2	8 34.59	+54 1.6	0.963	1.739	27.6	18.6
3 12	8 45.71	+7 15.1	3.273	4.077	9.2	22.3	3 12	8 33.79	+49 50.8	1.016	1.746	29.3	18.7
146333	2001 OE ₁		2 4.4 148°34	0°9/ 5.2 18			258559	2002 CX ₆₈		2 4.4 310°40	0°9/ 3.7 18		
1 2	9 34.87	+11 27.7	2.362	3.165	11.9	20.9	1 2	9 30.93	+15 5.9	1.747	2.583	14.0	20.0
1 12	9 28.87	+11 49.6	2.286	3.177	8.9	20.7	1 12	9 26.78	+16 4.3	1.663	2.573	10.3	19.7
1 22	9 21.10	+12 21.1	2.237	3.187	5.4	20.5	1 22	9 20.27	+17 15.5	1.603	2.563	6.1	19.4
2 1	9 12.18	+12 59.1	2.216	3.197	1.9	20.3	2 1	9 12.06	+18 33.6	1.569	2.553	1.6	19.1
2 11	9 2.96	+13 39.6	2.226	3.207	2.4	20.3	2 11	9 3.22	+19 50.9	1.565	2.543	3.6	19.2
2 21	8 54.31	+14 18.7	2.267	3.215	6.0	20.6	2 21	8 54.93	+21 0.1	1.588	2.534	8.2	19.5
3 2	8 47.01	+14 53.0	2.337	3.223	9.3	20.8	3 2	8 48.32	+21 55.9	1.637	2.525	12.4	19.7
3 12	8 41.66	+15 20.4	2.431	3.230	12.1	21.0	3 12	8 44.21	+22 35.6	1.707	2.516	16.0	19.9
359066	2008 YB ₉₉		2 4.4 262°90	0°0/ 4.5 17			101842	1999 JL ₆₉		2 4.4 350°83	7°7/ 9.0 18		
1 2	9 35.63	+14 15.6	1.655	2.484	15.0	21.9	1 2	9 28.92	-1 36.7	1.411	2.206	18.9	18.4
1 12	9 30.40	+14 37.7	1.565	2.470	11.2	21.6	1 12	9 25.60	-2 12.3	1.332	2.199	15.6	18.2
1 22	9 22.49	+15 11.6	1.498	2.456	6.8	21.3	1 22	9 19.69	-2 21.5	1.273	2.193	12.0	18.0
2 1	9 12.64	+15 53.0	1.458	2.441	1.8	21.0	2 1	9 11.92	-2 2.2	1.236	2.189	8.8	17.8
2 11	9 2.02	+16 35.8	1.445	2.426	3.4	21.1	2 11	9 3.49	-1 16.2	1.224	2.185	7.8	17.7
2 21	8 51.99	+17 14.2	1.461	2.411	8.4	21.3	2 21	8 55.74	-0 9.5	1.236	2.182	10.0	17.8
3 2	8 43.83	+17 43.9	1.502	2.395	13.0	21.5	3 2	8 49.90	+1 9.1	1.271	2.181	13.6	18.0
3 12	8 38.45	+18 2.2	1.565	2.379	17.0	21.8	3 12	8 46.84	+2 29.8	1.327	2.180	17.2	18.2
502850	2015 DS ₁₇₃		2 4.4 225°34	2°5/ 2.1 17			234542	2001 UQ ₂₂₉		2 4.4 261°96	1°9/ 5.9 18		
1 2	9 31.17	+21 18.6	2.394	3.227	10.8	21.3	1 2	9 30.35	+8 31.6	2.376	3.178	11.9	21.0
1 12	9 26.38	+22 23.1	2.315	3.223	7.9	21.1	1 12	9 25.72	+8 46.4	2.282	3.168	9.1	20.8
1 22	9 19.75	+23 32.1	2.261	3.219	4.8	20.9	1 22	9 19.35	+9 13.1	2.212	3.158	5.9	20.6
2 1	9 11.86	+24 40.2	2.237	3.215	2.5	20.8	2 1	9 11.78	+9 49.7	2.170	3.148	2.7	20.4
2 11	9 3.55	+25 41.4	2.244	3.211	4.1	20.9	2 11	9 3.78	+10 32.6	2.159	3.138	2.7	20.3
2 21	8 55.70	+26 31.3	2.279	3.207	7.3	21.0	2 21	8 56.17	+11 17.9	2.177	3.127	6.0	20.5
3 2	8 49.15	+27 7.3	2.342	3.203	10.3	21.2	3 2	8 49.75	+12 1.5	2.222	3.117	9.3	20.7
3 12	8 44.53	+27 28.8	2.428	3.198	12.9	21.4	3 12	8 45.14	+12 40.1	2.293	3.106	12.3	20.9
196745	2003 SY ₁₃₉		2 4.4 80°80	0°6/ 4.9 18 R			502745	2015 DM ₄₅		2 4.4 308°24	1°8/ 3.0 17		
1 2	9 32.54	+12 56.8	2.030	2.850	13.0	20.3	1 2	9 31.41	+19 24.1	2.129	2.963	11.9	21.3
1 12	9 27.45	+13 17.1	1.958	2.857	9.6	20.1	1 12	9 26.72	+20 7.0	2.047	2.956	8.7	21.1
1 22	9 20.38	+13 47.2	1.910	2.865	5.8	19.9	1 22	9 20.03	+20 55.7	1.991	2.950	5.2	20.9
2 1	9 12.02	+14 23.8	1.890	2.873	1.7	19.6	2 1	9 11.97	+21 45.1	1.963	2.944	2.0	20.6
2 11	9 3.31	+15 2.1	1.899	2.880	2.6	19.7	2 11	9 3.46	+22 29.7	1.964	2.938	3.7	20.8
2 21	8 55.25	+15 37.9	1.938	2.888	6.7	19.9	2 21	8 55.48	+23 5.2	1.994	2.933	7.4	21.0
3 2	8 48.71	+16 7.7	2.003	2.895	10.3	20.2	3 2	8 48.95	+23 28.8	2.050	2.927	10.8	21.2
3 12	8 44.31	+16 29.2	2.092	2.903	13.4	20.4	3 12	8 44.54	+23 39.7	2.130	2.921	13.8	21.4
18798	1999 JG ₆₅		2 4.4 209°88	2°2/ 2.6 18			220596	2004 NK ₆		2 4.4 164°96	1°9/ 5.8 18		
1 2	9 34.80	+21 23.7	2.383	3.210	11.1	19.7	1 2	9 33.47	+9 5.2	2.205	3.007	12.7	21.4
1 12	9 29.04	+22 9.4	2.298	3.203</									

EPHEMERIDES

2 4.4

2 4.5

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
6129	Demokritos		2 4.4 285°00	1.4°/ 5.3	18		412516	2014 <i>MM</i> ₁₄		2 4.5 356°22	2°0/ 5.7	18	
1 2	9 33.78	+12 2.8	1.986	2.803	13.3	17.4	1 2	9 33.17	+ 8 24.6	1.380	2.208	17.5	20.9
1 12	9 28.63	+12 0.3	1.889	2.785	10.1	17.2	1 12	9 28.81	+ 8 59.6	1.306	2.207	13.3	20.7
1 22	9 21.26	+12 7.7	1.816	2.768	6.3	16.9	1 22	9 21.64	+ 9 56.1	1.254	2.207	8.4	20.4
2 1	9 12.32	+12 22.9	1.770	2.751	2.3	16.6	2 1	9 12.46	+11 9.5	1.226	2.207	3.4	20.1
2 11	9 2.77	+12 42.4	1.753	2.734	2.9	16.6	2 11	9 2.62	+12 32.0	1.225	2.206	3.6	20.1
2 21	8 53.69	+13 2.5	1.765	2.716	7.1	16.8	2 21	8 53.58	+13 54.2	1.251	2.206	8.8	20.4
3 2	8 46.11	+13 19.8	1.804	2.699	11.1	17.0	3 2	8 46.66	+15 7.9	1.301	2.207	13.7	20.7
3 12	8 40.80	+13 31.6	1.866	2.681	14.6	17.2	3 12	8 42.75	+16 7.8	1.372	2.207	17.8	20.9
258065	2001 <i>OR</i> ₅₅		2 4.4 53°98	3°0/ 3.2	18		456958	2008 <i>AO</i> ₆₈		2 4.5 320°54	1°9/ 3.4	17	
1 2	9 42.75	+23 42.1	1.471	2.311	16.0	19.7	1 2	9 34.32	+19 7.3	1.494	2.340	15.4	21.4
1 12	9 35.24	+23 48.2	1.429	2.340	11.7	19.5	1 12	9 29.65	+19 36.9	1.414	2.329	11.4	21.1
1 22	9 24.99	+23 53.9	1.410	2.369	7.0	19.3	1 22	9 22.14	+20 14.4	1.357	2.319	6.8	20.8
2 1	9 13.19	+23 53.2	1.418	2.398	3.2	19.2	2 1	9 12.60	+20 53.4	1.326	2.309	2.3	20.5
2 11	9 1.41	+23 41.6	1.455	2.428	5.0	19.4	2 11	9 2.36	+21 26.9	1.322	2.299	4.5	20.6
2 21	8 51.11	+23 17.9	1.518	2.457	9.2	19.7	2 21	8 52.89	+21 49.3	1.344	2.290	9.4	20.9
3 2	8 43.38	+22 43.2	1.607	2.487	13.1	20.0	3 2	8 45.54	+21 57.6	1.390	2.281	14.0	21.1
3 12	8 38.75	+21 59.9	1.717	2.517	16.3	20.3	3 12	8 41.20	+21 51.4	1.457	2.273	17.9	21.3
256238	2006 <i>WD</i>		2 4.4 36°39	9°4/10.2	18		196193	2003 <i>AD</i> ₄₀		2 4.5 24°98	4°0/ 6.3	18	
1 2	9 32.56	- 5 47.4	1.519	2.282	19.2	19.7	1 2	9 35.28	+ 7 51.1	1.213	2.044	19.2	19.6
1 12	9 27.98	- 6 47.1	1.454	2.292	16.2	19.5	1 12	9 30.53	+ 7 25.5	1.148	2.048	14.9	19.4
1 22	9 20.93	- 7 19.4	1.408	2.303	13.0	19.3	1 22	9 22.69	+ 7 19.3	1.104	2.053	9.9	19.1
2 1	9 12.22	- 7 21.2	1.384	2.314	10.4	19.2	2 1	9 12.73	+ 7 31.4	1.082	2.059	5.1	18.9
2 11	9 3.05	- 6 53.3	1.385	2.326	9.4	19.2	2 11	9 2.19	+ 7 57.4	1.086	2.065	4.9	18.9
2 21	8 54.68	- 6 0.7	1.410	2.339	10.7	19.3	2 21	8 52.69	+ 8 31.2	1.115	2.071	9.5	19.1
3 2	8 48.24	- 4 51.5	1.459	2.352	13.3	19.5	3 2	8 45.66	+ 9 6.1	1.167	2.078	14.4	19.4
3 12	8 44.46	- 3 35.3	1.529	2.365	16.2	19.7	3 12	8 41.94	+ 9 36.4	1.239	2.086	18.6	19.7
218002	2001 <i>XK</i> ₇₅		2 4.4 113°55	0°7/ 3.9	18		420923	2013 <i>NC</i> ₁₂		2 4.5 111°41	0°5/ 4.8	18	
1 2	9 35.31	+16 45.9	1.951	2.777	13.1	20.4	1 2	9 34.25	+12 48.7	2.254	3.065	12.1	22.2
1 12	9 29.56	+17 11.0	1.882	2.787	9.7	20.2	1 12	9 28.46	+13 15.4	2.188	3.084	9.0	22.1
1 22	9 21.66	+17 43.0	1.838	2.796	5.7	20.0	1 22	9 20.89	+13 51.0	2.149	3.103	5.4	21.9
2 1	9 12.38	+18 17.5	1.822	2.805	1.5	19.7	2 1	9 12.19	+14 31.9	2.138	3.121	1.6	21.6
2 11	9 2.76	+18 49.4	1.836	2.814	3.1	19.9	2 11	9 3.25	+15 13.8	2.158	3.139	2.4	21.7
2 21	8 53.89	+19 14.8	1.878	2.823	7.2	20.2	2 21	8 54.96	+15 52.6	2.208	3.156	6.1	22.0
3 2	8 46.70	+19 31.1	1.947	2.832	10.9	20.4	3 2	8 48.11	+16 25.2	2.286	3.173	9.4	22.2
3 12	8 41.84	+19 37.3	2.040	2.840	14.0	20.6	3 12	8 43.24	+16 49.6	2.388	3.189	12.2	22.4
358972	2008 <i>RY</i> ₁₂₆		2 4.4 318°04	3°1/ 7.5	18		384560	2010 <i>FO</i> ₃₀		2 4.5 49°18	4°9/31.6	18	
1 2	9 26.77	+ 3 33.2	2.853	3.632	10.7	20.2	1 2	9 33.99	+29 0.8	2.088	2.927	11.9	20.4
1 12	9 22.83	+ 3 38.0	2.756	3.623	8.4	20.0	1 12	9 28.67	+30 0.5	2.027	2.934	9.0	20.2
1 22	9 17.53	+ 3 55.1	2.684	3.613	5.9	19.8	1 22	9 21.19	+30 57.7	1.992	2.941	6.2	20.0
2 1	9 11.30	+ 4 23.7	2.639	3.604	3.7	19.6	2 1	9 12.29	+31 45.5	1.985	2.948	4.9	20.0
2 11	9 4.76	+ 5 1.5	2.624	3.596	3.3	19.6	2 11	9 3.06	+32 18.1	2.006	2.955	6.4	20.1
2 21	8 58.52	+ 5 45.4	2.639	3.587	5.3	19.7	2 21	8 54.59	+32 32.7	2.055	2.962	9.1	20.2
3 2	8 53.22	+ 6 31.7	2.682	3.578	7.8	19.9	3 2	8 47.82	+32 28.8	2.128	2.970	11.9	20.4
3 12	8 49.33	+ 7 17.0	2.751	3.570	10.3	20.0	3 12	8 43.41	+32 8.6	2.223	2.978	14.4	20.6
522215	2016 <i>AR</i> ₂₆₃		2 4.5 277°15	4°0/ 2.2	18		197274	2003 <i>WR</i> ₉₆		2 4.5 91°14	1°3/ 3.5	18	
1 2	9 38.63	+26 36.3	1.908	2.743	13.0	21.2	1 2	9 32.74	+17 56.1	2.109	2.939	12.2	20.6
1 12	9 32.37	+27 2.1	1.823	2.729	9.8	20.9	1 12	9 27.60	+18 35.4	2.040	2.947	8.9	20.4
1 22	9 23.53	+27 26.6	1.762	2.716	6.3	20.7	1 22	9 20.49	+19 20.9	1.996	2.955	5.2	20.2
2 1	9 12.92	+27 43.3	1.730	2.703	4.0	20.5	2 1	9 12.11	+20 7.8	1.980	2.963	1.6	20.0
2 11	9 1.74	+27 46.9	1.726	2.690	5.6	20.6	2 11	9 3.40	+20 50.7	1.994	2.971	3.3	20.1
2 21	8 51.30	+27 34.5	1.750	2.676	9.2	20.8	2 21	8 55.33	+21 25.6	2.037	2.979	7.0	20.3
3 2	8 42.77	+27 6.2	1.800	2.663	12.8	21.0	3 2	8 48.76	+21 49.7	2.107	2.987	10.4	20.6
3 12	8 36.96	+26 24.2	1.872	2.649	16.0	21.1	3 12	8 44.32	+22 2.4	2.200	2.995	13.4	20.8
89381	2001 <i>VR</i> ₉₇		2 4.5 122°83	4°5/ 8.4	18		363132	2001 <i>QQ</i> ₁₄₇		2 4.5 116°35	5°2/31.2	18	
1 2	9 32.88	- 0 32.2	2.297	3.057	13.5	20.1	1 2	9 39.19	+30 53.4	2.295	3.122	11.4	21.3
1 12	9 27.43	- 0 22.4	2.224	3.074	10.9	20.0	1 12	9 32.23	+32 5.0	2.247	3.145	8.7	21.1
1 22	9 20.28	+ 0 5.4	2.175	3.091	7.9	19.8	1 22	9 23.17	+33 11.8	2.226	3.167	6.2	21.0
2 1	9 12.02	+ 0 50.2	2.152	3.107	5.3	19.7	2 1	9 12.79	+34 6.7	2.234	3.189	5.2	21.0
2 11	9 3.49	+ 1 48.6	2.159	3.123	4.6	19.6	2 11	9 2.18	+34 44.5	2.272	3.210	6.5	21.1
2 21	8 55.52	+ 2 55.6	2.195	3.138	6.5	19.8	2 21	8 52.41	+35 2.6	2.338	3.230	8.9	21.3
3 2	8 48.87	+ 4 5.9	2.260	3.153	9.3	20.0	3 2	8 44.40	+35 1.7	2.430	3.249	11.4	21.5
3 12	8 44.10	+ 5 14.1	2.350	3.167	11.9	20.2	3 12	8 38.76	+34 44.5	2.544	3.268	13.6	21.7
65711	1992 <i>RJ</i> ₂		2 4.5 150°49	0°6/ 4.8	18		52083	2002 <i>RQ</i> ₈₈		2 4.5 88°69	0°4/ 4.8	18	
1 2	9 36.75	+12 44.9	2.011	2.823	13.4	20.4	1 2	9 34.66	+12 33.1	1.684	2.509	14.9	20.5
1 12	9 30.56	+13 9.8	1.937	2.833	9.9	20.2	1 12	9 29.34	+13 7.5	1.620	2.522	11.1	20.2
1 22	9 22.26	+13 44.8	1.889	2.842	6.0	20.0	1 22	9 21.66	+13 54.7	1.579	2.536	6.7	20.0
2 1	9 12.55	+14 26.3	1.868	2.851	1.8	19.8	2 1	9 12.44	+14 49.7	1.566	2.549	1.9	19.7
2 11	9 2.48	+15 9.3	1.878	2.859	2.7	19.8	2 11	9 2.86	+15 45.9	1.581	2.562	3.1	19.8
2 21	8 53.09	+15 49.0	1.918	2.866	6.9	20.1	2 21	8 54.10	+16 37.4	1.624	2.575	7.6	20.2
3 2	8 45.34	+16 21.9	1.985	2.872	10.6	20.4	3 2	8 47.22	+17 19.7	1.694	2.588	11.7	20.4
3 12	8 39.88	+16 45.9	2.076	2.878	13.8	20.6	3 12	8 42.89	+17 50.3	1.785	2.600	15.2	20.7
396206	2013 <i>SK</i> ₂₁		2 4.5 134°08	0°3/ 4.2	18		473833	2016 <i>EF</i> ₁₂₄		2 4.5 114°50	0°5/ 4.8	18	
1 2	9 34.14	+15 53.7											

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
38015	1998 <i>KX</i> ₆₃		2 4.5 197°76	2°6/ 2.5 18			19426	Leal		2 4.5 231°23	3°5/ 7.2 18		
1 2	9 33.84	+21 31.9	2.134	2.967	11.9	19.0	1 2	9 32.11	+3 55.3	2.299	3.080	12.9	19.3
1 12	9 28.52	+22 22.7	2.057	2.966	8.7	18.8	1 12	9 27.10	+3 57.8	2.202	3.071	10.2	19.1
1 22	9 21.12	+23 17.6	2.006	2.964	5.3	18.6	1 22	9 20.25	+4 15.3	2.129	3.061	7.1	18.9
2 1	9 12.32	+24 10.8	1.983	2.962	2.6	18.4	2 1	9 12.12	+4 46.7	2.083	3.050	4.3	18.7
2 11	9 3.07	+24 56.5	1.991	2.960	4.3	18.5	2 11	9 3.50	+5 29.4	2.067	3.040	3.8	18.6
2 21	8 54.41	+25 30.3	2.027	2.958	7.8	18.7	2 21	8 55.28	+6 19.2	2.081	3.028	6.4	18.8
3 2	8 47.28	+25 50.1	2.089	2.956	11.1	18.9	3 2	8 48.29	+7 11.4	2.122	3.017	9.7	19.0
3 12	8 42.36	+25 55.9	2.174	2.953	14.0	19.1	3 12	8 43.19	+8 1.6	2.188	3.005	12.7	19.1
445269	2009 <i>SU</i> ₃₂₅		2 4.5 175°41	2°8/ 2.6 18			424677	2008 <i>RO</i> ₉₉		2 4.5 132°22	0°6/ 4.9 17		
1 2	9 41.01	+21 2.7	1.930	2.754	13.3	23.3	1 2	9 32.47	+12 28.6	2.187	3.002	12.3	22.0
1 12	9 33.99	+22 4.1	1.855	2.759	9.8	23.1	1 12	9 27.34	+12 53.6	2.111	3.008	9.2	21.8
1 22	9 24.46	+23 10.5	1.806	2.763	5.9	22.9	1 22	9 20.35	+13 28.5	2.059	3.013	5.6	21.6
2 1	9 13.20	+24 14.6	1.786	2.765	2.9	22.7	2 1	9 12.12	+14 9.9	2.036	3.018	1.7	21.4
2 11	9 1.42	+25 9.3	1.797	2.766	4.7	22.8	2 11	9 3.55	+14 53.2	2.043	3.023	2.5	21.4
2 21	8 50.38	+25 49.3	1.837	2.766	8.6	23.0	2 21	8 55.54	+15 34.3	2.079	3.028	6.3	21.7
3 2	8 41.23	+26 12.6	1.904	2.765	12.3	23.2	3 2	8 48.92	+16 9.5	2.143	3.033	9.8	21.9
3 12	8 34.74	+26 19.8	1.993	2.762	15.4	23.5	3 12	8 44.32	+16 36.5	2.231	3.038	12.8	22.1
339441	2005 <i>EE</i> ₁₅₄		2 4.5 264°57	2°1/ 2.9 17			429242	2010 <i>AC</i> ₈₆		2 4.5 220°29	6°9/ 29.7 18		
1 2	9 33.55	+21 18.9	2.217	3.049	11.6	21.1	1 2	9 37.21	+37 5.4	2.338	3.162	11.3	20.9
1 12	9 28.24	+21 49.8	2.134	3.042	8.5	20.8	1 12	9 31.07	+38 8.3	2.274	3.161	9.1	20.8
1 22	9 20.93	+22 23.9	2.077	3.036	5.1	20.6	1 22	9 22.65	+39 3.1	2.235	3.159	7.4	20.7
2 1	9 12.27	+22 56.6	2.049	3.029	2.2	20.4	2 1	9 12.74	+39 42.6	2.224	3.156	6.9	20.6
2 11	9 3.18	+23 23.1	2.050	3.022	3.8	20.5	2 11	9 2.43	+40 1.5	2.241	3.154	8.1	20.7
2 21	8 54.65	+23 40.0	2.080	3.016	7.3	20.7	2 21	8 52.88	+39 58.1	2.285	3.152	10.1	20.8
3 2	8 47.57	+23 45.6	2.137	3.009	10.6	20.9	3 2	8 45.10	+39 33.2	2.352	3.150	12.4	21.0
3 12	8 42.63	+23 39.7	2.216	3.002	13.5	21.1	3 12	8 39.77	+38 50.6	2.440	3.147	14.5	21.1
408905	2001 <i>VL</i> ₆₁		2 4.5 74°09	3°1/ 2.6 18			105042	2000 <i>KB</i> ₄₂		2 4.5 152°88	3°7/ 31.9 18		
1 2	9 39.42	+22 58.8	1.751	2.586	14.0	21.1	1 2	9 32.76	+26 15.9	2.488	3.321	10.4	19.7
1 12	9 32.60	+23 40.6	1.708	2.616	10.2	20.9	1 12	9 27.52	+27 21.4	2.419	3.325	7.7	19.6
1 22	9 23.43	+24 23.5	1.689	2.646	6.2	20.7	1 22	9 20.45	+28 27.2	2.377	3.329	5.1	19.4
2 1	9 12.87	+25 0.7	1.698	2.676	3.2	20.6	2 1	9 12.16	+29 27.2	2.364	3.332	3.7	19.3
2 11	9 2.21	+25 26.5	1.736	2.705	4.9	20.8	2 11	9 3.51	+30 16.3	2.381	3.336	5.1	19.4
2 21	8 52.68	+25 38.0	1.803	2.734	8.5	21.1	2 21	8 55.39	+30 50.8	2.428	3.339	7.7	19.6
3 2	8 45.25	+25 34.9	1.895	2.763	12.0	21.3	3 2	8 48.64	+31 9.5	2.500	3.342	10.4	19.8
3 12	8 40.50	+25 18.9	2.009	2.791	14.9	21.6	3 12	8 43.84	+31 13.1	2.595	3.345	12.7	19.9
187212	2005 <i>SY</i> ₁₀₅		2 4.5 147°24	3°4/ 7.3 18			52935	1998 <i>SF</i> ₁₃₂		2 4.5 103°79	2°9/ 3.0 18		
1 2	9 32.83	+3 35.4	2.246	3.026	13.2	21.0	1 2	9 41.39	+21 48.9	1.482	2.322	15.9	20.1
1 12	9 27.52	+3 47.7	2.167	3.035	10.3	20.8	1 12	9 34.61	+22 20.1	1.425	2.336	11.7	19.9
1 22	9 20.42	+4 15.9	2.111	3.043	7.1	20.7	1 22	9 24.90	+22 54.7	1.390	2.349	7.0	19.7
2 1	9 12.12	+4 58.1	2.083	3.051	4.2	20.5	2 1	9 13.33	+23 25.1	1.382	2.362	3.1	19.5
2 11	9 3.48	+5 50.9	2.085	3.058	3.7	20.5	2 11	9 1.42	+23 44.8	1.402	2.375	5.1	19.6
2 21	8 55.37	+6 49.5	2.116	3.065	6.3	20.6	2 21	8 50.71	+23 50.0	1.449	2.388	9.6	19.9
3 2	8 48.59	+7 48.8	2.176	3.071	9.5	20.8	3 2	8 42.45	+23 40.2	1.521	2.400	13.8	20.2
3 12	8 43.74	+8 44.4	2.260	3.076	12.3	21.0	3 12	8 37.38	+23 17.1	1.614	2.412	17.2	20.5
266730	2009 <i>RC</i> ₄₉		2 4.5 191°34	0°6/ 4.0 16			202779	2007 <i>UY</i> ₁₀		2 4.5 101°15	1°5/ 5.6 18		
1 2	9 34.39	+16 28.9	2.081	2.905	12.5	21.6	1 2	9 32.69	+10 49.5	2.322	3.128	12.0	20.3
1 12	9 28.91	+16 56.7	2.001	2.904	9.2	21.3	1 12	9 27.37	+10 48.8	2.245	3.135	9.0	20.1
1 22	9 21.35	+17 31.8	1.945	2.903	5.4	21.1	1 22	9 20.31	+10 57.4	2.193	3.142	5.7	19.9
2 1	9 12.39	+18 10.0	1.919	2.902	1.4	20.8	2 1	9 12.11	+11 13.3	2.169	3.149	2.3	19.7
2 11	9 3.00	+18 46.3	1.922	2.900	3.0	20.9	2 11	9 3.63	+11 33.4	2.176	3.155	2.6	19.8
2 21	8 54.20	+19 16.6	1.954	2.899	7.0	21.2	2 21	8 55.69	+11 54.5	2.212	3.162	5.9	20.0
3 2	8 46.93	+19 38.0	2.013	2.896	10.7	21.4	3 2	8 49.08	+12 13.9	2.276	3.169	9.2	20.2
3 12	8 41.87	+19 49.2	2.096	2.894	13.8	21.6	3 12	8 44.35	+12 29.1	2.364	3.175	12.0	20.4
17027	1999 <i>EF</i> ₁₂		2 4.5 140°42	0°0/ 4.3 18			36539	2000 <i>QZ</i> ₉₂		2 4.5 110°67	3°1/ 6.6 18		
1 2	9 32.99	+13 1.5	2.000	2.820	13.1	17.8	1 2	9 35.15	+5 50.2	1.664	2.467	16.1	18.9
1 12	9 27.90	+13 49.1	1.925	2.826	9.7	17.6	1 12	9 29.72	+6 8.7	1.596	2.481	12.4	18.7
1 22	9 20.76	+14 48.3	1.875	2.832	5.8	17.4	1 22	9 21.93	+6 46.1	1.551	2.494	8.2	18.5
2 1	9 12.24	+15 54.1	1.854	2.837	1.5	17.1	2 1	9 12.57	+7 39.5	1.531	2.506	4.2	18.3
2 11	9 3.30	+17 0.5	1.862	2.842	2.8	17.2	2 11	9 2.80	+8 43.2	1.541	2.519	3.8	18.3
2 21	8 54.96	+18 1.7	1.899	2.847	7.0	17.5	2 21	8 53.83	+9 50.4	1.578	2.531	7.6	18.6
3 2	8 48.16	+18 53.3	1.964	2.851	10.7	17.7	3 2	8 46.72	+10 54.5	1.642	2.542	11.6	18.8
3 12	8 43.56	+19 32.8	2.052	2.856	13.9	17.9	3 12	8 42.18	+11 50.5	1.728	2.553	15.1	19.1
77707	2001 <i>ON</i> ₃₀		2 4.5 101°25	4°4/ 31.8 18			186878	2004 <i>HD</i> ₆₆		2 4.5 318°01	2°3/ 3.1 18		
1 2	9 34.02	+28 6.1	2.294	3.129	11.1	19.6	1 2	9 35.13	+20 18.4	1.634	2.476	14.5	20.2
1 12	9 28.52	+29 7.8	2.233	3.139	8.3	19.4	1 12	9 30.03	+20 51.3	1.557	2.470	10.7	19.9
1 22	9 21.05	+30 7.7	2.199	3.148	5.7	19.3	1 22	9 22.28	+21 30.0	1.504	2.464	6.4	19.6
2 1	9 12.29	+30 59.5	2.193	3.157	4.4	19.2	2 1	9 12.70	+22 8.3	1.477	2.459	2.5	19.4
2 11	9 3.23	+31 37.9	2.216	3.167	5.8	19.3	2 11	9 2.53	+22 39.6	1.478	2.453	4.5	19.5
2 21	8 54.83	+31 59.9	2.268	3.176	8.4	19.5	2 21	8 53.14	+22 59.0	1.507	2.448	9.0	19.7
3 2	8 47.99	+32 4.9	2.346	3.185	11.1	19.7	3 2	8 45.75	+23 4.3	1.560	2.444	13.2	20.0
3 12	8 43.29	+31 54.4	2.445	3.194	13.4	19.8	3 12	8 41.16	+22 55.5	1.634	2.439	16.8	20.2
64332	2001 <i>UL</i> ₅₆		2 4.5 41°95	0°2/ 4.6 18			70345	1999 <i>RF</i> ₁₇₇		2 4.5 237°87	1°8/ 5.7 18		
1 2	9 34.08	+14 14.3	1.728	2.557	14.4	19.6	1 2	9 34.61	+9 5.0	1.910	2.718	14.1	

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
284475	2007 <i>HJ</i> ₅₇		2 4.5 307°19	1°2/ 5.4	18		325142	2008 <i>EQ</i> ₁₅₃		2 4.5 92°23	1°9/ 5.8	18	
1 2	9 31.36	+10 28.5	1.887	2.706	13.8	21.1	1 2	9 34.24	+9 15.6	1.796	2.609	14.7	20.9
1 12	9 26.89	+10 56.1	1.803	2.701	10.4	20.9	1 12	9 28.92	+9 33.3	1.729	2.622	11.1	20.7
1 22	9 20.27	+11 37.7	1.743	2.696	6.5	20.7	1 22	9 21.40	+10 5.3	1.686	2.635	7.0	20.5
2 1	9 12.16	+12 29.7	1.710	2.691	2.3	20.4	2 1	9 12.46	+10 48.3	1.669	2.648	2.9	20.2
2 11	9 3.54	+13 26.9	1.705	2.686	2.8	20.4	2 11	9 3.17	+11 37.1	1.681	2.661	3.1	20.3
2 21	8 55.47	+14 23.5	1.729	2.682	7.1	20.7	2 21	8 54.63	+12 26.4	1.722	2.674	7.1	20.5
3 2	8 48.94	+15 14.3	1.780	2.677	11.1	20.9	3 2	8 47.82	+13 11.1	1.789	2.687	11.0	20.8
3 12	8 44.67	+15 55.7	1.853	2.673	14.5	21.1	3 12	8 43.39	+13 47.9	1.879	2.699	14.3	21.0
243154	2007 <i>TV</i> ₄₉		2 4.5 317°71	1°1/ 5.3	18		148954	2001 <i>XX</i> ₂₀₃		2 4.5 91°79	6°9/ 29.7	18	
1 2	9 31.36	+11 50.4	2.124	2.941	12.6	20.7	1 2	9 35.75	+31 13.0	1.817	2.659	13.2	19.7
1 12	9 26.66	+12 1.6	2.039	2.936	9.5	20.5	1 12	9 30.48	+33 2.2	1.761	2.666	10.2	19.5
1 22	9 20.02	+12 23.1	1.978	2.931	5.8	20.3	1 22	9 22.55	+34 48.2	1.731	2.672	7.7	19.4
2 1	9 12.08	+12 52.2	1.945	2.926	2.1	20.0	2 1	9 12.80	+36 20.3	1.729	2.678	7.0	19.3
2 11	9 3.71	+13 24.9	1.941	2.922	2.6	20.0	2 11	9 2.50	+37 29.8	1.754	2.685	8.7	19.5
2 21	8 55.86	+13 57.3	1.966	2.917	6.5	20.3	2 21	8 53.02	+38 12.1	1.806	2.691	11.5	19.6
3 2	8 49.38	+14 25.7	2.018	2.913	10.1	20.5	3 2	8 45.59	+38 27.2	1.880	2.697	14.3	19.8
3 12	8 44.95	+14 47.6	2.094	2.909	13.2	20.7	3 12	8 40.98	+38 18.7	1.974	2.703	16.8	20.0
503062	2015 <i>FZ</i> ₁₉₅		2 4.5 309°69	2°6/ 3.0	17		468182	2015 <i>AX</i> ₃₆		2 4.5 61°28	0°8/ 3.9	18	
1 2	9 36.65	+23 40.0	2.024	2.857	12.5	20.9	1 2	9 33.16	+16 25.5	1.875	2.706	13.4	21.0
1 12	9 30.76	+23 47.0	1.935	2.842	9.3	20.6	1 12	9 28.11	+17 0.2	1.809	2.717	9.8	20.8
1 22	9 22.56	+23 54.2	1.870	2.827	5.7	20.4	1 22	9 20.92	+17 42.9	1.768	2.727	5.7	20.6
2 1	9 12.77	+23 56.9	1.833	2.813	2.7	20.1	2 1	9 12.34	+18 28.8	1.754	2.737	1.5	20.3
2 11	9 2.46	+23 51.0	1.826	2.798	4.3	20.2	2 11	9 3.41	+19 12.0	1.769	2.748	3.2	20.5
2 21	8 52.80	+23 34.1	1.847	2.784	8.0	20.4	2 21	8 55.22	+19 47.9	1.813	2.759	7.4	20.7
3 2	8 44.83	+23 5.8	1.895	2.770	11.7	20.6	3 2	8 48.71	+20 13.4	1.882	2.769	11.1	21.0
3 12	8 39.31	+22 27.3	1.966	2.756	14.9	20.8	3 12	8 44.52	+20 27.5	1.975	2.780	14.3	21.2
239588	2008 <i>UU</i> ₃₀		2 4.5 333°68	2°2/ 5.7	18		367554	2009 <i>SE</i> ₂₃		2 4.5 200°59	2°2/ 6.2	16	
1 2	9 32.99	+9 31.4	1.306	2.141	17.9	21.0	1 2	9 34.30	+7 56.7	2.334	3.127	12.4	22.6
1 12	9 28.89	+9 44.7	1.230	2.135	13.7	20.7	1 12	9 28.66	+8 2.9	2.242	3.123	9.5	22.4
1 22	9 21.83	+10 17.6	1.175	2.129	8.7	20.4	1 22	9 21.17	+8 21.1	2.175	3.118	6.2	22.1
2 1	9 12.64	+11 6.7	1.144	2.124	3.5	20.1	2 1	9 12.42	+8 49.3	2.137	3.113	3.0	21.9
2 11	9 2.69	+12 5.2	1.139	2.120	3.8	20.1	2 11	9 3.22	+9 24.5	2.129	3.107	2.9	21.9
2 21	8 53.55	+13 5.1	1.159	2.116	9.1	20.4	2 21	8 54.47	+10 2.7	2.151	3.101	6.1	22.1
3 2	8 46.63	+13 59.0	1.203	2.112	14.2	20.6	3 2	8 47.02	+10 40.0	2.202	3.094	9.5	22.3
3 12	8 42.87	+14 41.9	1.267	2.109	18.6	20.9	3 12	8 41.49	+11 13.3	2.277	3.086	12.5	22.5
303412	2004 <i>YE</i> ₆		2 4.5 20°84	2°4/ 5.6	18		401095	2011 <i>UA</i> ₁₇₇		2 4.5 160°81	1°6/ 3.5	18	
1 2	9 35.16	+11 7.1	1.256	2.095	18.2	20.7	1 2	9 37.92	+18 35.5	1.820	2.649	13.8	22.2
1 12	9 30.39	+10 48.1	1.193	2.099	13.8	20.5	1 12	9 31.77	+19 12.8	1.748	2.654	10.2	22.0
1 22	9 22.61	+10 44.3	1.150	2.105	8.8	20.2	1 22	9 23.17	+19 56.7	1.700	2.659	6.0	21.7
2 1	9 12.80	+10 53.3	1.131	2.111	3.6	19.9	2 1	9 12.95	+20 41.3	1.681	2.663	2.0	21.5
2 11	9 2.48	+11 10.5	1.138	2.118	4.0	20.0	2 11	9 2.27	+21 20.5	1.690	2.667	3.9	21.6
2 21	8 53.22	+11 30.5	1.170	2.126	9.1	20.3	2 21	8 52.38	+21 49.5	1.729	2.670	8.1	21.9
3 2	8 46.35	+11 48.6	1.225	2.135	14.0	20.6	3 2	8 44.36	+22 5.9	1.794	2.672	12.0	22.1
3 12	8 42.71	+12 0.8	1.301	2.144	18.1	20.9	3 12	8 38.94	+22 9.6	1.881	2.674	15.3	22.4
1322	Coppernicus		2 4.5 240°08	11°3/ 11.2	18	8	297885	2002 <i>CD</i> ₁₅₉		2 4.5 30°86	3°1/ 3.1	18	
1 2	9 36.33	-15 11.0	2.172	2.838	16.8	17.1	1 2	9 37.40	+21 33.7	1.236	2.091	17.3	20.1
1 12	9 30.55	-16 34.3	2.071	2.822	15.1	17.0	1 12	9 32.18	+22 2.2	1.180	2.099	12.8	19.8
1 22	9 22.53	-17 34.8	1.989	2.806	13.3	16.8	1 22	9 23.71	+22 35.5	1.145	2.107	7.7	19.6
2 1	9 12.81	-18 7.2	1.930	2.789	11.9	16.7	2 1	9 13.10	+23 5.6	1.134	2.115	3.3	19.3
2 11	9 2.31	-18 8.6	1.895	2.772	11.3	16.6	2 11	9 2.06	+23 24.6	1.150	2.125	5.5	19.5
2 21	8 52.10	-17 39.8	1.885	2.753	11.9	16.6	2 21	8 52.29	+23 28.2	1.190	2.135	10.5	19.8
3 2	8 43.23	-16 45.3	1.899	2.735	13.4	16.7	3 2	8 45.20	+23 15.5	1.254	2.146	15.1	20.1
3 12	8 36.57	-15 32.8	1.935	2.715	15.4	16.8	3 12	8 41.55	+22 48.3	1.336	2.157	19.0	20.4
401130	2011 <i>UJ</i> ₃₀₉		2 4.5 142°67	3°3/ 2.1	18		81437	2000 <i>GL</i> ₁₁₀		2 4.5 225°55	6°7/ 9.7	18	
1 2	9 38.18	+22 20.2	1.889	2.721	13.3	21.8	1 2	9 32.17	-4 50.7	2.100	2.844	15.1	20.6
1 12	9 31.90	+23 30.5	1.826	2.733	9.7	21.6	1 12	9 27.34	-5 4.0	2.006	2.836	12.7	20.4
1 22	9 23.21	+24 44.5	1.788	2.744	6.0	21.4	1 22	9 20.51	-4 55.4	1.932	2.829	10.0	20.2
2 1	9 12.94	+25 54.5	1.778	2.755	3.4	21.3	2 1	9 12.27	-4 23.6	1.884	2.821	7.6	20.1
2 11	9 2.24	+26 53.0	1.799	2.765	5.2	21.4	2 11	9 3.49	-3 30.3	1.863	2.812	6.7	20.0
2 21	8 52.35	+27 35.3	1.848	2.774	8.8	21.6	2 21	8 55.13	-2 20.0	1.869	2.803	8.2	20.1
3 2	8 44.34	+27 59.4	1.923	2.782	12.3	21.9	3 2	8 48.12	-0 59.2	1.903	2.794	10.8	20.2
3 12	8 38.92	+28 6.3	2.020	2.789	15.2	22.1	3 12	8 43.16	+0 24.8	1.962	2.784	13.7	20.4
44383	1998 <i>SL</i> ₆₀		2 4.5 284°08	1°4/ 3.5	18		309337	2007 <i>TR</i> ₅		2 4.5 132°11	0°8/ 5.0	18	
1 2	9 32.72	+18 6.8	2.047	2.878	12.4	18.9	1 2	9 37.15	+11 59.1	1.958	2.769	13.7	22.2
1 12	9 27.76	+18 45.1	1.969	2.877	9.1	18.7	1 12	9 30.90	+12 24.1	1.890	2.784	10.2	22.0
1 22	9 20.72	+19 30.2	1.917	2.876	5.4	18.4	1 22	9 22.52	+13 0.2	1.846	2.799	6.2	21.7
2 1	9 12.29	+20 16.9	1.892	2.875	1.7	18.2	2 1	9 12.76	+13 43.3	1.831	2.813	2.0	21.5
2 11	9 3.42	+20 59.9	1.897	2.873	3.4	18.3	2 11	9 2.68	+14 28.5	1.846	2.826	2.7	21.6
2 21	8 55.15	+21 34.7	1.930	2.872	7.3	18.6	2 21	8 53.34	+15 10.7	1.890	2.839	6.9	21.9
3 2	8 48.40	+21 58.4	1.990	2.871	10.9	18.8	3 2	8 45.68	+15 46.4	1.962	2.851	10.6	22.1
3 12	8 43.86	+22 10.0	2.073	2.870	14.0	19.0	3 12	8 40.36	+16 13.3	2.057	2.862	13.8	22.3
432109	2009 <i>AJ</i> ₄₈		2 4.5 12°15	9°6/ 30.6	18		127676	2003 <i>EE</i> ₆		2 4.5 272°17	2°0/ 3.3	18	
1 2	9 39.08	+39 10.7	1.507	2.348	15.6	20.1	1 2	9 35.69	+17 44.2	1.541			

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
258152	2001 SA ₂₅		2 4.5 114°61'	1°0'	3.8	18	104005	2000 DS ₁₀₁		2 4.5 4°43'	0°9'	3.8	18
1 2	9 36.00	+17 26.0	1.960	2.787	13.1	21.5	1 2	9 30.68	+15 13.2	1.989	2.819	12.8	19.8
1 12	9 30.10	+17 58.0	1.895	2.800	9.6	21.3	1 12	9 26.33	+16 13.0	1.912	2.819	9.4	19.6
1 22	9 22.06	+18 36.6	1.854	2.812	5.6	21.0	1 22	9 19.93	+17 23.5	1.860	2.819	5.5	19.3
2 1	9 12.65	+19 16.8	1.842	2.825	1.6	20.8	2 1	9 12.14	+18 39.0	1.836	2.820	1.5	19.1
2 11	9 2.92	+19 53.2	1.859	2.837	3.3	20.9	2 11	9 3.88	+19 52.7	1.842	2.820	3.2	19.2
2 21	8 53.95	+20 21.8	1.905	2.848	7.3	21.2	2 21	8 56.18	+20 58.7	1.876	2.821	7.3	19.5
3 2	8 46.68	+20 40.1	1.978	2.860	10.9	21.4	3 2	8 49.96	+21 52.4	1.937	2.822	11.0	19.7
3 12	8 41.76	+20 47.4	2.074	2.871	14.0	21.7	3 12	8 45.92	+22 31.8	2.021	2.822	14.1	19.9
372331	2009 BU ₁₄₂		2 4.5 67°83'	3°0'	3.9	17	467070	2016 DN ₁₉		2 4.5 24°00'	0°6'	4.2	18
1 2	9 54.76	+25 22.5	1.026	1.872	20.9	20.3	1 2	9 35.37	+16 46.6	1.597	2.434	15.0	21.0
1 12	9 45.36	+24 38.6	0.972	1.884	15.6	20.1	1 12	9 30.12	+17 0.0	1.527	2.437	11.1	20.7
1 22	9 31.59	+23 48.3	0.938	1.897	9.5	19.8	1 22	9 22.31	+17 21.5	1.480	2.440	6.6	20.5
2 1	9 15.14	+22 45.7	0.928	1.909	3.7	19.5	2 1	9 12.77	+17 46.4	1.460	2.443	1.7	20.2
2 11	8 58.55	+21 28.2	0.945	1.922	5.7	19.7	2 11	9 2.78	+18 9.3	1.467	2.447	3.5	20.3
2 21	8 44.24	+19 59.4	0.988	1.935	11.7	20.0	2 21	8 53.65	+18 25.7	1.502	2.451	8.3	20.6
3 2	8 33.91	+18 25.6	1.054	1.948	17.1	20.4	3 2	8 46.53	+18 32.9	1.562	2.456	12.5	20.9
3 12	8 28.21	+16 52.0	1.139	1.961	21.5	20.7	3 12	8 42.16	+18 30.0	1.643	2.460	16.2	21.1
428750	2008 SR ₂₃		2 4.5 79°32'	1°7'	5.8	18	277724	2006 DN ₅₇		2 4.5 272°16'	0°5'	4.9	17
1 2	9 31.95	+ 9 3.6	1.999	2.809	13.5	21.3	1 2	9 32.69	+13 11.4	2.094	2.913	12.7	21.5
1 12	9 27.09	+ 9 26.1	1.928	2.819	10.2	21.1	1 12	9 27.77	+13 28.7	2.002	2.901	9.5	21.2
1 22	9 20.28	+10 2.2	1.881	2.830	6.5	20.9	1 22	9 20.79	+13 55.9	1.934	2.889	5.8	21.0
2 1	9 12.19	+10 48.5	1.861	2.840	2.7	20.7	2 1	9 12.38	+14 29.7	1.894	2.877	1.7	20.7
2 11	9 3.76	+11 40.5	1.870	2.850	2.8	20.7	2 11	9 3.44	+15 5.9	1.884	2.865	2.7	20.7
2 21	8 55.95	+12 32.8	1.908	2.861	6.5	21.0	2 21	8 54.98	+15 40.2	1.902	2.852	6.8	21.0
3 2	8 49.64	+13 20.9	1.974	2.871	10.2	21.2	3 2	8 47.92	+16 9.0	1.948	2.840	10.5	21.2
3 12	8 45.44	+14 1.4	2.063	2.881	13.3	21.4	3 12	8 43.00	+16 29.8	2.017	2.827	13.8	21.4
93293	2000 SM ₁₉₉		2 4.5 31°66'	2°0'	5.9	18	103027	1999 XS ₁₁₂		2 4.5 95°05'	4°9'	31.7	18
1 2	9 31.79	+ 8 53.6	1.714	2.533	15.0	19.6	1 2	9 37.74	+33 34.6	2.685	3.506	10.1	18.8
1 12	9 27.30	+ 9 13.8	1.641	2.537	11.4	19.4	1 12	9 30.95	+34 6.2	2.629	3.521	7.8	18.7
1 22	9 20.55	+ 9 49.8	1.591	2.541	7.3	19.2	1 22	9 22.38	+34 31.3	2.600	3.536	5.8	18.6
2 1	9 12.28	+10 38.4	1.566	2.546	3.1	18.9	2 1	9 12.73	+34 45.2	2.600	3.550	4.9	18.5
2 11	9 3.56	+11 34.1	1.570	2.551	3.2	18.9	2 11	9 2.95	+34 44.5	2.629	3.565	5.9	18.6
2 21	8 55.53	+12 30.8	1.602	2.556	7.4	19.2	2 21	8 53.93	+34 28.2	2.688	3.579	7.9	18.8
3 2	8 49.20	+13 22.9	1.660	2.561	11.4	19.4	3 2	8 46.45	+33 57.2	2.772	3.594	10.1	18.9
3 12	8 45.30	+14 6.2	1.740	2.567	15.0	19.7	3 12	8 41.02	+33 14.2	2.880	3.608	12.1	19.1
212885	2007 VP ₂₅₃		2 4.5 42°76'	0°5'	4.9	18	132709	2002 OV ₁₃		2 4.5 70°01'	3°6'	7.7	18
1 2	9 30.32	+12 3.9	1.967	2.790	13.2	20.0	1 2	9 31.09	+ 2 23.2	2.054	2.837	14.1	19.9
1 12	9 25.91	+12 42.3	1.903	2.804	9.8	19.8	1 12	9 26.35	+ 2 49.0	1.989	2.858	11.1	19.8
1 22	9 19.57	+13 32.3	1.863	2.819	5.9	19.6	1 22	9 19.79	+ 3 33.1	1.948	2.879	7.7	19.6
2 1	9 12.00	+14 29.5	1.851	2.834	1.7	19.3	2 1	9 12.09	+ 4 33.1	1.933	2.901	4.5	19.4
2 11	9 4.13	+15 28.3	1.868	2.849	2.6	19.4	2 11	9 4.12	+ 5 44.2	1.948	2.922	3.9	19.4
2 21	8 56.91	+16 23.4	1.913	2.864	6.6	19.7	2 21	8 56.80	+ 7 0.4	1.992	2.943	6.4	19.6
3 2	8 51.19	+17 10.6	1.985	2.880	10.2	19.9	3 2	8 50.91	+ 8 15.7	2.064	2.963	9.6	19.9
3 12	8 47.57	+17 47.1	2.081	2.896	13.3	20.2	3 12	8 47.00	+ 9 24.9	2.160	2.984	12.5	20.1
212956	2009 BH ₅₁		2 4.5 290°11'	1°1'	3.9	18	465475	2008 SF ₂₇₄		2 4.5 132°46'	0°1'	4.4	18
1 2	9 35.63	+17 4.8	1.543	2.382	15.4	20.7	1 2	9 33.47	+15 5.0	2.190	3.010	12.1	21.5
1 12	9 30.74	+17 30.2	1.451	2.362	11.5	20.4	1 12	9 28.12	+15 28.7	2.115	3.016	9.0	21.3
1 22	9 22.96	+18 5.7	1.381	2.341	6.9	20.1	1 22	9 20.88	+16 0.2	2.065	3.021	5.3	21.1
2 1	9 13.00	+18 45.9	1.338	2.321	1.9	19.7	2 1	9 12.39	+16 35.6	2.043	3.027	1.4	20.8
2 11	9 2.15	+19 24.0	1.322	2.301	4.0	19.8	2 11	9 3.56	+17 10.6	2.052	3.032	2.6	21.0
2 21	8 51.87	+19 53.9	1.332	2.280	9.2	20.0	2 21	8 55.32	+17 41.3	2.090	3.037	6.5	21.2
3 2	8 43.61	+20 11.6	1.368	2.260	14.1	20.3	3 2	8 48.51	+18 4.7	2.156	3.042	9.9	21.4
3 12	8 38.36	+20 15.8	1.424	2.240	18.2	20.5	3 12	8 43.75	+18 19.5	2.245	3.046	12.9	21.6
196804	2003 SZ ₂₀₈		2 4.5 205°03'	1°4'	5.6	17	458505	2011 CW ₃₆		2 4.5 243°28'	0°0'	4.4	18
1 2	9 33.83	+10 41.5	2.543	3.342	11.3	20.7	1 2	9 32.14	+12 39.1	2.281	3.095	11.9	21.1
1 12	9 28.20	+10 46.7	2.451	3.337	8.5	20.5	1 12	9 27.29	+13 37.6	2.184	3.081	8.9	20.8
1 22	9 20.85	+11 0.8	2.384	3.332	5.4	20.3	1 22	9 20.51	+14 48.5	2.112	3.067	5.3	20.6
2 1	9 12.35	+11 21.8	2.346	3.326	2.2	20.1	2 1	9 12.33	+16 7.3	2.069	3.052	1.4	20.3
2 11	9 3.47	+11 46.9	2.339	3.319	2.4	20.1	2 11	9 3.59	+17 28.0	2.057	3.037	2.7	20.4
2 21	8 55.00	+12 12.8	2.363	3.312	5.7	20.3	2 21	8 55.20	+18 44.6	2.075	3.021	6.6	20.6
3 2	8 47.72	+12 36.6	2.416	3.304	8.9	20.5	3 2	8 48.06	+19 52.1	2.122	3.005	10.2	20.8
3 12	8 42.23	+12 56.1	2.493	3.296	11.7	20.7	3 12	8 42.88	+20 47.4	2.193	2.988	13.4	21.0
27222	1999 FR ₃₄		2 4.5 57°49'	6°8'	10.5	18	163787	2003 QD ₃₉		2 4.5 66°97'	1°0'	3.9	18
1 2	9 29.66	- 6 13.9	2.204	2.940	14.7	17.5	1 2	9 38.55	+16 53.5	1.431	2.269	16.4	19.8
1 12	9 25.30	- 6 30.3	2.125	2.948	12.4	17.3	1 12	9 32.43	+17 24.4	1.384	2.294	12.0	19.6
1 22	9 19.18	- 6 25.0	2.068	2.956	9.8	17.2	1 22	9 23.60	+18 4.1	1.359	2.319	7.0	19.4
2 1	9 11.91	- 5 57.4	2.035	2.964	7.7	17.1	2 1	9 13.10	+18 45.9	1.360	2.343	1.9	19.1
2 11	9 4.30	- 5 9.2	2.029	2.972	6.8	17.0	2 11	9 2.40	+19 22.9	1.389	2.368	3.9	19.3
2 21	8 57.19	- 4 4.8	2.051	2.980	7.9	17.1	2 21	8 52.92	+19 50.1	1.445	2.393	8.7	19.7
3 2	8 51.36	- 2 50.1	2.099	2.988	10.1	17.2	3 2	8 45.77	+20 5.0	1.526	2.417	13.0	20.0
3 12	8 47.40	- 1 31.9	2.172	2.996	12.5	17.4	3 12	8 41.61	+20 7.4	1.628	2.442	16.5	20.3
22375	1993 TF ₃₄		2 4.5 102°53'	1°2'	3.8	18	9985	Akiko		2 4.5 316°19'	4°2'	2.1	18
1 2	9 38.80	+15 57.0	1.383	2.221	16.9	18.6	1 2	9 34.18	+21 56.0	1.280	2.139	16.6	17.5
1 12	9 32.87	+16 46.6	1.326	2.236	12.4								

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
60855	2000 <i>HU</i> ₆₆		2 4.5 152°75	0°9/ 5.1 18			209479	2004 <i>HU</i> ₁₈		2 4.5 272°07	9°9/12.0 18		
1 2	9 37.11	+11 43.7	1.749	2.565	14.9	20.3	1 2	9 31.86	-16 0.7	2.602	3.254	14.5	20.1
1 12	9 31.21	+12 8.7	1.675	2.572	11.1	20.1	1 12	9 26.96	-17 9.5	2.499	3.237	13.1	19.9
1 22	9 22.91	+12 46.7	1.625	2.579	6.8	19.8	1 22	9 20.29	-17 57.9	2.415	3.220	11.6	19.8
2 1	9 12.97	+13 33.5	1.603	2.585	2.2	19.5	2 1	9 12.33	-18 22.3	2.353	3.203	10.4	19.6
2 11	9 2.57	+14 23.4	1.609	2.590	3.0	19.6	2 11	9 3.81	-18 20.7	2.317	3.186	9.9	19.6
2 21	8 52.92	+15 10.5	1.645	2.595	7.6	19.9	2 21	8 55.53	-17 54.2	2.305	3.168	10.3	19.6
3 2	8 45.11	+15 50.4	1.707	2.599	11.7	20.1	3 2	8 48.31	-17 6.3	2.318	3.150	11.4	19.6
3 12	8 39.89	+16 20.4	1.791	2.603	15.2	20.4	3 12	8 42.83	-16 2.9	2.354	3.132	13.1	19.7
405174	2002 <i>VR</i> ₁₀₆		2 4.5 91°14	8°9/29.9 18			496704	2016 <i>EC</i> ₁₆₆		2 4.5 319°56	4°8/ 7.6 18		
1 2	9 44.01	+38 43.3	1.770	2.596	14.3	21.0	1 2	9 30.76	+ 2 54.7	1.648	2.448	16.3	20.8
1 12	9 36.55	+40 1.2	1.730	2.615	11.6	20.9	1 12	9 26.81	+ 2 50.7	1.559	2.437	13.0	20.6
1 22	9 26.09	+41 6.0	1.715	2.634	9.5	20.8	1 22	9 20.47	+ 3 7.8	1.492	2.427	9.3	20.3
2 1	9 13.78	+41 47.8	1.725	2.652	8.9	20.8	2 1	9 12.41	+ 3 45.8	1.449	2.416	5.8	20.1
2 11	9 1.26	+42 0.2	1.762	2.670	10.2	20.9	2 11	9 3.69	+ 4 40.9	1.433	2.406	5.1	20.0
2 21	8 50.11	+41 42.8	1.823	2.688	12.4	21.1	2 21	8 55.50	+ 5 47.2	1.444	2.397	8.2	20.2
3 2	8 41.58	+40 59.5	1.908	2.705	14.9	21.3	3 2	8 48.98	+ 6 57.3	1.480	2.388	12.2	20.4
3 12	8 36.34	+39 56.5	2.011	2.723	17.1	21.5	3 12	8 44.98	+ 8 4.1	1.539	2.379	15.9	20.6
303469	2005 <i>CK</i> ₅₂		2 4.5 344°14	1°2/ 5.3 18			444331	2005 <i>WT</i> ₅₇		2 4.5 106°22	1°6/ 3.6 18		
1 2	9 32.73	+10 4.8	1.525	2.353	16.1	20.1	1 2	9 40.63	+18 17.4	1.555	2.387	15.6	21.8
1 12	9 28.37	+10 42.9	1.449	2.351	12.2	19.9	1 12	9 33.94	+18 54.2	1.499	2.407	11.4	21.6
1 22	9 21.41	+11 39.0	1.395	2.350	7.6	19.6	1 22	9 24.53	+19 38.0	1.466	2.426	6.7	21.4
2 1	9 12.62	+12 48.5	1.367	2.349	2.6	19.3	2 1	9 13.42	+20 22.1	1.461	2.444	2.1	21.1
2 11	9 3.22	+14 3.9	1.366	2.348	3.3	19.4	2 11	9 2.00	+20 59.6	1.485	2.462	4.1	21.3
2 21	8 54.53	+15 17.2	1.393	2.347	8.2	19.6	2 21	8 51.69	+21 25.6	1.536	2.479	8.7	21.6
3 2	8 47.76	+16 21.6	1.445	2.346	12.8	19.9	3 2	8 43.65	+21 38.2	1.613	2.496	12.9	21.9
3 12	8 43.76	+17 12.6	1.518	2.346	16.7	20.2	3 12	8 38.58	+21 37.6	1.711	2.512	16.3	22.1
386842	2010 <i>JQ</i> ₁₁₇		2 4.5 197°60	1°5/ 3.1 17			418318	2008 <i>FZ</i> ₁₀₁		2 4.5 144°65	5°6/ 9.3 18		
1 2	9 31.13	+19 26.2	2.780	3.604	9.7	21.5	1 2	9 32.04	- 3 2.5	2.146	2.898	14.6	21.8
1 12	9 26.17	+20 8.6	2.697	3.601	7.1	21.4	1 12	9 27.12	- 2 57.8	2.064	2.904	12.0	21.6
1 22	9 19.66	+20 55.2	2.641	3.599	4.2	21.2	1 22	9 20.35	- 2 32.0	2.004	2.911	9.1	21.4
2 1	9 12.10	+21 42.1	2.615	3.596	1.6	21.0	2 1	9 12.33	- 1 45.3	1.970	2.917	6.5	21.3
2 11	9 4.21	+22 25.0	2.619	3.593	3.0	21.1	2 11	9 3.92	- 0 40.7	1.965	2.923	5.6	21.2
2 21	8 56.72	+23 0.8	2.654	3.590	5.9	21.3	2 21	8 56.02	+ 0 36.3	1.988	2.928	7.3	21.4
3 2	8 50.33	+23 27.1	2.717	3.586	8.8	21.4	3 2	8 49.48	+ 1 59.4	2.039	2.933	10.0	21.5
3 12	8 45.58	+23 43.1	2.804	3.582	11.2	21.6	3 12	8 44.92	+ 3 21.9	2.115	2.938	12.8	21.7
364224	2006 <i>RT</i> ₉₄		2 4.5 238°60	0°6/ 4.9 16			385109	2012 <i>VQ</i> ₉₇		2 4.5 170°10	3°3/31.9 18		
1 2	9 35.58	+13 5.1	1.985	2.801	13.4	22.1	1 2	9 32.96	+27 36.4	3.151	3.975	8.7	21.4
1 12	9 30.05	+13 24.1	1.891	2.788	10.0	21.9	1 12	9 27.40	+28 32.1	3.079	3.980	6.5	21.2
1 22	9 22.25	+13 53.6	1.821	2.776	6.1	21.6	1 22	9 20.35	+29 26.8	3.035	3.983	4.4	21.1
2 1	9 12.84	+14 30.4	1.779	2.762	1.8	21.3	2 1	9 12.32	+30 16.0	3.022	3.986	3.3	21.0
2 11	9 2.80	+15 9.6	1.767	2.748	2.8	21.3	2 11	9 3.99	+30 55.6	3.039	3.989	4.4	21.1
2 21	8 53.26	+15 46.5	1.785	2.734	7.2	21.6	2 21	8 56.09	+31 23.3	3.087	3.991	6.5	21.2
3 2	8 45.26	+16 17.2	1.829	2.719	11.2	21.8	3 2	8 49.26	+31 37.9	3.162	3.993	8.7	21.4
3 12	8 39.58	+16 39.2	1.896	2.703	14.7	22.0	3 12	8 44.02	+31 40.1	3.260	3.994	10.7	21.5
142520	2002 <i>TO</i> ₄₁		2 4.5 140°54	4°4/ 1.1 18			246802	2009 <i>EN</i> ₂₆		2 4.5 124°32	0°9/ 5.2 18		
1 2	9 38.66	+27 27.5	2.171	3.001	11.9	21.1	1 2	9 35.81	+11 24.5	1.908	2.721	13.9	20.8
1 12	9 32.06	+28 30.6	2.111	3.014	8.9	20.9	1 12	9 30.04	+11 52.6	1.839	2.734	10.4	20.6
1 22	9 23.27	+29 32.2	2.077	3.026	5.9	20.8	1 22	9 22.12	+12 32.8	1.795	2.748	6.4	20.4
2 1	9 13.07	+30 25.3	2.071	3.038	4.4	20.7	2 1	9 12.80	+13 21.1	1.779	2.760	2.1	20.1
2 11	9 2.53	+31 4.1	2.096	3.049	5.8	20.8	2 11	9 3.13	+14 12.1	1.792	2.773	2.8	20.2
2 21	8 52.77	+31 25.3	2.149	3.059	8.7	21.0	2 21	8 54.19	+15 0.4	1.834	2.784	6.9	20.5
3 2	8 44.74	+31 28.6	2.229	3.068	11.6	21.2	3 2	8 46.92	+15 42.0	1.904	2.796	10.8	20.7
3 12	8 39.11	+31 16.2	2.330	3.077	14.1	21.4	3 12	8 41.98	+16 14.2	1.997	2.806	14.0	20.9
139626	2001 <i>QF</i> ₁₅₀		2 4.5 174°65	1°5/ 3.2 18			1549	<i>Mikko</i>		2 4.5 34°81	3°7/ 2.5 18		
1 2	9 35.30	+19 4.6	2.504	3.323	10.8	20.8	1 2	9 35.61	+20 22.1	1.207	2.065	17.5	15.2
1 12	9 29.35	+19 51.4	2.424	3.326	7.9	20.6	1 12	9 31.09	+21 32.4	1.149	2.070	12.9	14.9
1 22	9 21.60	+20 43.0	2.372	3.329	4.7	20.4	1 22	9 23.26	+22 52.0	1.113	2.076	7.7	14.7
2 1	9 12.64	+21 34.8	2.350	3.331	1.7	20.2	2 1	9 13.17	+24 10.2	1.102	2.082	3.8	14.5
2 11	9 3.31	+22 21.9	2.359	3.333	3.2	20.3	2 11	9 2.47	+25 15.7	1.116	2.089	6.3	14.6
2 21	8 54.49	+23 0.5	2.398	3.333	6.5	20.5	2 21	8 52.91	+26 0.8	1.155	2.096	11.2	14.9
3 2	8 46.97	+23 28.1	2.466	3.333	9.6	20.7	3 2	8 46.00	+26 22.6	1.216	2.103	15.9	15.2
3 12	8 41.36	+23 44.3	2.558	3.332	12.2	20.9	3 12	8 42.59	+26 22.6	1.296	2.111	19.8	15.5
307655	2003 <i>SR</i> ₁₉₇		2 4.5 110°98	1°9/ 5.9 18			275346	2010 <i>XJ</i> ₅₈		2 4.5 77°90	0°9/ 3.9 18		
1 2	9 34.52	+ 8 19.9	1.697	2.509	15.4	20.8	1 2	9 36.07	+15 22.5	1.731	2.559	14.5	20.4
1 12	9 29.33	+ 8 51.4	1.627	2.520	11.7	20.6	1 12	9 30.30	+16 19.2	1.681	2.586	10.5	20.3
1 22	9 21.81	+ 9 39.9	1.581	2.530	7.4	20.3	1 22	9 22.27	+17 25.5	1.655	2.613	6.1	20.1
2 1	9 12.72	+10 41.4	1.561	2.540	3.1	20.1	2 1	9 12.83	+18 34.6	1.657	2.640	1.6	19.8
2 11	9 3.20	+11 49.7	1.570	2.550	3.2	20.1	2 11	9 3.16	+19 39.4	1.688	2.667	3.4	20.0
2 21	8 54.43	+12 57.7	1.607	2.560	7.4	20.4	2 21	8 54.42	+20 34.1	1.748	2.693	7.7	20.3
3 2	8 47.46	+13 59.5	1.670	2.569	11.6	20.7	3 2	8 47.58	+21 15.3	1.834	2.719	11.5	20.6
3 12	8 43.01	+14 50.8	1.757	2.578	15.1	20.9	3 12	8 43.26	+21 41.9	1.943	2.744	14.6	20.9
448209	2008 <i>UF</i> ₂₂₇		2 4.5 72°17	3°4/ 2.7 18			458271	2010 <i>UM</i> ₂₆		2 4.5 111°43	1°8/ 5.9 18		
1 2													

EPHEMERIDES

2 4.5

2 4.5

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
296196	2009 <i>BN</i> ₁₈₃		2 4.5 200°96	4.3/ 1.2	17		128724	2004 <i>RK</i> ₁₄₀		2 4.5 111°40	3.7/ 1.9	18	
1 2	9 39.21	+32 20.6	2.842	3.658	9.7	21.6	1 2	9 35.38	+24 29.6	1.953	2.791	12.7	19.8
1 12	9 32.08	+32 42.3	2.764	3.655	7.5	21.5	1 12	9 29.90	+25 22.8	1.885	2.795	9.4	19.6
1 22	9 23.14	+32 58.5	2.713	3.652	5.4	21.3	1 22	9 22.14	+26 17.6	1.843	2.799	5.9	19.4
2 1	9 13.06	+33 4.7	2.692	3.648	4.3	21.2	2 1	9 12.86	+27 7.1	1.828	2.802	3.7	19.3
2 11	9 2.73	+32 57.6	2.702	3.645	5.3	21.3	2 11	9 3.17	+27 45.0	1.842	2.806	5.3	19.4
2 21	8 53.03	+32 35.9	2.741	3.640	7.5	21.4	2 21	8 54.21	+28 7.6	1.884	2.810	8.7	19.6
3 2	8 44.77	+32 0.6	2.809	3.636	9.8	21.6	3 2	8 47.01	+28 13.4	1.952	2.813	12.0	19.8
3 12	8 38.51	+31 13.7	2.900	3.631	11.9	21.7	3 12	8 42.26	+28 3.9	2.042	2.817	14.9	20.0
187290	2005 <i>TW</i> ₉₉		2 4.5 159°11	5.2/ 8.8	18		454307	2014 <i>JJ</i> ₆₆		2 4.5 145°67	1°1/ 3.8	18	
1 2	9 32.89	- 1 32.8	2.259	3.014	13.9	21.0	1 2	9 37.99	+16 25.4	1.794	2.619	14.2	22.1
1 12	9 27.68	- 1 39.3	2.175	3.019	11.3	20.8	1 12	9 31.87	+17 11.4	1.725	2.629	10.4	21.8
1 22	9 20.67	- 1 27.4	2.114	3.024	8.5	20.6	1 22	9 23.33	+18 6.5	1.680	2.638	6.1	21.6
2 1	9 12.44	- 0 57.1	2.080	3.029	6.0	20.5	2 1	9 13.19	+19 4.6	1.664	2.647	1.7	21.3
2 11	9 3.83	- 0 10.8	2.074	3.033	5.3	20.4	2 11	9 2.60	+19 58.8	1.677	2.655	3.6	21.5
2 21	8 55.71	+ 0 47.1	2.097	3.037	7.0	20.5	2 21	8 52.81	+20 43.8	1.720	2.663	7.9	21.8
3 2	8 48.89	+ 1 51.2	2.148	3.040	9.7	20.7	3 2	8 44.89	+21 16.1	1.788	2.670	11.9	22.0
3 12	8 43.98	+ 2 56.0	2.224	3.043	12.4	20.9	3 12	8 39.57	+21 34.9	1.879	2.676	15.2	22.2
350441	5073 <i>T</i> ₋₃		2 4.5 64°57	1°6/ 3.6	17		201259	2002 <i>RO</i> ₁₄₁		2 4.5 176°66	4°0/ 7.7	18	
1 2	9 38.39	+15 35.6	1.243	2.087	18.0	20.6	1 2	9 31.23	+ 2 29.6	2.265	3.043	13.2	20.1
1 12	9 32.62	+16 47.8	1.203	2.117	13.1	20.4	1 12	9 26.49	+ 2 24.8	2.179	3.043	10.5	19.9
1 22	9 23.86	+18 12.4	1.186	2.147	7.6	20.2	1 22	9 19.99	+ 2 35.6	2.117	3.043	7.5	19.7
2 1	9 13.27	+19 39.3	1.194	2.177	2.2	19.9	2 1	9 12.29	+ 3 1.4	2.081	3.043	4.8	19.5
2 11	9 2.47	+20 57.7	1.229	2.207	4.6	20.2	2 11	9 4.20	+ 3 39.6	2.074	3.044	4.2	19.5
2 21	8 53.05	+22 0.0	1.290	2.237	9.7	20.5	2 21	8 56.58	+ 4 26.1	2.097	3.044	6.5	19.6
3 2	8 46.22	+22 42.6	1.376	2.266	14.2	20.9	3 2	8 50.21	+ 5 16.4	2.147	3.044	9.5	19.8
3 12	8 42.64	+23 5.5	1.481	2.295	17.8	21.2	3 12	8 45.71	+ 6 5.7	2.221	3.043	12.3	20.0
322734	2000 <i>SM</i> ₂₃₆		2 4.5 136°84	1°8/ 6.1	18		82957	2001 <i>QU</i> ₁₂₇		2 4.5 144°13	3°7/ 8.1	18	
1 2	9 33.84	+ 8 12.3	2.489	3.280	11.7	22.0	1 2	9 30.20	+ 1 2.7	2.590	3.355	12.0	19.5
1 12	9 28.16	+ 8 31.6	2.414	3.295	8.9	21.8	1 12	9 25.51	+ 1 15.8	2.506	3.361	9.6	19.4
1 22	9 20.84	+ 9 2.1	2.365	3.309	5.7	21.6	1 22	9 19.30	+ 1 44.2	2.446	3.367	6.9	19.2
2 1	9 12.47	+ 9 41.5	2.345	3.322	2.6	21.4	2 1	9 12.10	+ 2 27.0	2.414	3.373	4.5	19.0
2 11	9 3.83	+10 26.0	2.356	3.335	2.5	21.5	2 11	9 4.58	+ 3 21.1	2.411	3.379	3.9	19.0
2 21	8 55.71	+11 11.6	2.398	3.347	5.6	21.7	2 21	8 57.48	+ 4 22.4	2.439	3.384	5.8	19.1
3 2	8 48.84	+11 54.8	2.468	3.359	8.7	21.9	3 2	8 51.48	+ 5 26.3	2.495	3.389	8.4	19.3
3 12	8 43.76	+12 32.6	2.564	3.369	11.4	22.1	3 12	8 47.09	+ 6 28.2	2.576	3.394	11.0	19.5
14196	1998 <i>XH</i> ₅₉		2 4.5 200°06	1°4/ 3.5	18		308754	2006 <i>KX</i> ₁₀		2 4.5 85°97	4°3/ 1.8	18	
1 2	9 37.23	+16 47.6	1.931	2.755	13.4	17.9	1 2	9 37.47	+23 48.1	1.541	2.387	15.0	20.4
1 12	9 31.35	+17 45.1	1.847	2.751	9.9	17.7	1 12	9 31.88	+24 58.2	1.485	2.398	11.1	20.1
1 22	9 23.08	+18 52.2	1.789	2.746	5.8	17.4	1 22	9 23.49	+26 11.2	1.452	2.409	7.0	19.9
2 1	9 13.13	+20 2.9	1.758	2.741	1.8	17.1	2 1	9 13.24	+27 17.9	1.445	2.420	4.4	19.8
2 11	9 2.56	+21 10.0	1.758	2.735	3.7	17.3	2 11	9 2.55	+28 9.5	1.467	2.431	6.3	19.9
2 21	8 52.57	+22 7.3	1.788	2.728	8.0	17.5	2 21	8 52.89	+28 41.1	1.515	2.442	10.2	20.2
3 2	8 44.25	+22 50.9	1.844	2.720	11.9	17.7	3 2	8 45.48	+28 51.5	1.587	2.453	14.0	20.5
3 12	8 38.41	+23 19.5	1.923	2.711	15.2	17.9	3 12	8 41.07	+28 42.8	1.679	2.464	17.2	20.7
520817	2014 <i>TD</i> ₉₃		2 4.5 58°70	0°5/ 4.9	18		503102	2015 <i>FV</i> ₃₁₅		2 4.5 37°23	1°0/ 5.5	18	
1 2	9 31.58	+10 5.0	1.792	2.612	14.4	21.2	1 2	9 29.53	+ 9 58.6	2.314	3.123	11.9	21.1
1 12	9 27.21	+11 12.2	1.714	2.614	10.8	20.9	1 12	9 25.23	+10 37.5	2.233	3.126	8.9	20.9
1 22	9 20.61	+12 36.7	1.661	2.616	6.6	20.7	1 22	9 19.24	+11 28.5	2.177	3.128	5.6	20.7
2 1	9 12.46	+14 12.7	1.635	2.618	2.0	20.4	2 1	9 12.09	+12 28.3	2.149	3.130	2.0	20.5
2 11	9 3.79	+15 52.3	1.639	2.620	2.9	20.5	2 11	9 4.59	+13 32.1	2.152	3.133	2.4	20.5
2 21	8 55.71	+17 27.2	1.671	2.622	7.4	20.7	2 21	8 57.55	+14 34.8	2.184	3.135	5.9	20.7
3 2	8 49.25	+18 50.6	1.731	2.624	11.6	21.0	3 2	8 51.73	+15 32.1	2.244	3.138	9.3	21.0
3 12	8 45.16	+19 58.4	1.813	2.626	15.0	21.2	3 12	8 47.71	+16 20.7	2.328	3.140	12.2	21.2
129572	1997 <i>GF</i> ₄₄		2 4.5 337°80	9°7/ 10.9	18		416255	2003 <i>EW</i> ₃₅		2 4.5 326°66	8°4/ 30.9	18	
1 2	9 29.32	- 7 57.5	1.678	2.426	18.2	19.4	1 2	9 40.04	+35 14.2	1.545	2.388	15.2	20.2
1 12	9 25.75	- 8 49.0	1.591	2.415	15.7	19.2	1 12	9 34.26	+36 10.3	1.475	2.376	12.1	20.0
1 22	9 19.86	- 9 14.1	1.522	2.406	13.0	19.0	1 22	9 25.15	+36 57.7	1.427	2.364	9.4	19.8
2 1	9 12.29	- 9 8.7	1.476	2.396	10.7	18.8	2 1	9 13.73	+37 25.6	1.405	2.353	8.4	19.7
2 11	9 4.07	- 8 32.6	1.453	2.388	9.7	18.7	2 11	9 1.65	+37 25.9	1.408	2.343	10.0	19.7
2 21	8 56.35	- 7 29.7	1.455	2.380	10.8	18.8	2 21	8 50.68	+36 56.3	1.435	2.333	13.0	19.9
3 2	8 50.24	- 6 7.3	1.481	2.374	13.2	18.9	3 2	8 42.33	+35 59.5	1.485	2.324	16.4	20.1
3 12	8 46.57	- 4 35.2	1.529	2.367	16.1	19.1	3 12	8 37.50	+34 41.7	1.554	2.315	19.4	20.3
48859	1998 <i>HY</i> ₁₃		2 4.5 166°89	2°0/ 3.3	18		124898	2001 <i>TX</i> ₅₀		2 4.5 88°96	3°6/ 2.2	18	
1 2	9 38.78	+18 15.6	1.659	2.491	14.8	20.0	1 2	9 36.83	+23 41.4	1.801	2.640	13.5	20.6
1 12	9 32.72	+19 11.7	1.588	2.496	10.9	19.8	1 12	9 31.02	+24 35.2	1.744	2.654	9.9	20.4
1 22	9 23.97	+20 16.5	1.541	2.500	6.4	19.5	1 22	9 22.80	+25 30.9	1.710	2.667	6.2	20.2
2 1	9 13.37	+21 22.7	1.521	2.503	2.3	19.3	2 1	9 13.04	+26 21.1	1.705	2.681	3.6	20.0
2 11	9 2.21	+22 22.3	1.530	2.506	4.4	19.4	2 11	9 2.95	+26 59.4	1.728	2.694	5.3	20.2
2 21	8 51.87	+23 9.0	1.568	2.508	8.9	19.7	2 21	8 53.75	+27 21.7	1.779	2.707	8.9	20.4
3 2	8 43.57	+23 39.7	1.631	2.509	13.1	19.9	3 2	8 46.50	+27 27.2	1.855	2.720	12.4	20.7
3 12	8 38.12	+23 54.0	1.716	2.509	16.6	20.2	3 12	8 41.86	+27 17.1	1.953	2.733	15.3	20.9
332679	2009 <i>CK</i> ₄₃		2 4.5 285°32	1°3/ 3.8	18		138665	2000 <i>RE</i> ₉₆		2 4.5 150°80	6°6/ 12.1	18	
1 2													

EPHEMERIDES

2 4.5

2 4.6

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
445937	2013 <i>AR</i> ₃₅		2 4.5	53°81	1°0/ 4.1	18	469119	2015 <i>DY</i> ₁₇₃		2 4.6	321°08	4°4/ 7.7	18
1 2	9 40.67	+17 48.5	1.182	2.030	18.5	21.0	1 2	9 30.96	+ 2 37.8	2.066	2.851	14.0	20.9
1 12	9 34.49	+17 54.6	1.135	2.050	13.6	20.7	1 12	9 26.50	+ 2 27.1	1.978	2.846	11.2	20.7
1 22	9 25.06	+18 9.0	1.109	2.070	8.0	20.5	1 22	9 20.11	+ 2 33.0	1.913	2.841	8.0	20.5
2 1	9 13.64	+18 25.5	1.108	2.091	2.1	20.2	2 1	9 12.38	+ 2 55.2	1.874	2.837	5.2	20.4
2 11	9 1.99	+18 37.5	1.132	2.112	4.2	20.4	2 11	9 4.20	+ 3 31.3	1.863	2.833	4.6	20.3
2 21	8 51.83	+18 40.9	1.182	2.134	9.7	20.7	2 21	8 56.48	+ 4 16.9	1.881	2.829	7.0	20.4
3 2	8 44.47	+18 34.0	1.256	2.155	14.5	21.1	3 2	8 50.12	+ 5 7.1	1.925	2.825	10.2	20.6
3 12	8 40.61	+18 17.0	1.349	2.177	18.4	21.4	3 12	8 45.79	+ 5 56.6	1.993	2.821	13.3	20.8
82853	2001 <i>QD</i> ₅₅		2 4.5	82°87	0°9/ 3.9	18	436016	2009 <i>HA</i> ₃₀		2 4.6	260°53	0°9/ 3.7	17
1 2	9 33.02	+17 6.3	2.277	3.100	11.6	19.4	1 2	9 30.47	+16 51.9	2.526	3.350	10.6	21.7
1 12	9 27.71	+17 40.6	2.215	3.118	8.5	19.2	1 12	9 25.90	+17 34.1	2.438	3.342	7.8	21.5
1 22	9 20.64	+18 20.7	2.179	3.136	4.9	19.0	1 22	9 19.65	+18 23.0	2.376	3.334	4.6	21.3
2 1	9 12.46	+19 2.3	2.171	3.154	1.4	18.8	2 1	9 12.25	+19 14.7	2.344	3.327	1.3	21.0
2 11	9 4.05	+19 41.0	2.194	3.172	2.8	18.9	2 11	9 4.45	+20 4.6	2.341	3.319	2.8	21.1
2 21	8 56.27	+20 12.9	2.246	3.190	6.4	19.2	2 21	8 57.05	+20 48.7	2.369	3.311	6.1	21.4
3 2	8 49.90	+20 35.9	2.326	3.207	9.5	19.4	3 2	8 50.80	+21 23.8	2.424	3.303	9.3	21.5
3 12	8 45.47	+20 49.0	2.430	3.224	12.2	19.6	3 12	8 46.30	+21 48.6	2.503	3.295	12.0	21.7
371265	2006 <i>DW</i> ₁		2 4.5	36°55	2°5/ 3.1	18	253213	2002 <i>XU</i> ₁₀₃		2 4.6	60°73	3°7/ 2.1	18
1 2	9 36.63	+22 7.9	1.707	2.547	14.1	20.6	1 2	9 35.44	+21 59.1	1.553	2.399	14.9	19.9
1 12	9 30.95	+22 27.6	1.643	2.554	10.4	20.4	1 12	9 30.30	+23 12.4	1.501	2.415	10.9	19.7
1 22	9 22.80	+22 49.7	1.603	2.562	6.2	20.1	1 22	9 22.52	+24 30.4	1.472	2.431	6.7	19.5
2 1	9 13.06	+23 8.5	1.590	2.570	2.7	19.9	2 1	9 13.03	+25 44.0	1.470	2.448	3.7	19.3
2 11	9 2.97	+23 18.8	1.605	2.579	4.5	20.1	2 11	9 3.16	+26 44.5	1.497	2.464	5.7	19.5
2 21	8 53.81	+23 17.6	1.648	2.588	8.5	20.3	2 21	8 54.29	+27 26.6	1.550	2.481	9.7	19.8
3 2	8 46.64	+23 4.0	1.716	2.597	12.3	20.6	3 2	8 47.56	+27 48.3	1.627	2.498	13.5	20.0
3 12	8 42.16	+22 39.1	1.805	2.606	15.6	20.8	3 12	8 43.67	+27 51.0	1.724	2.515	16.6	20.3
148557	2001 <i>QH</i> ₁₉₄		2 4.5	1°97	0°6/ 4.8	18	420028	2011 <i>CK</i> ₁₁₄		2 4.6	45°89	0°0/ 4.5	18
1 2	9 39.50	+16 59.3	1.427	2.264	16.5	17.7	1 2	9 34.92	+15 13.2	1.918	2.743	13.4	21.1
1 12	9 33.48	+16 19.6	1.355	2.263	12.4	17.5	1 12	9 29.52	+15 22.8	1.841	2.744	10.0	20.9
1 22	9 24.50	+15 44.8	1.304	2.262	7.5	17.2	1 22	9 21.93	+15 40.3	1.788	2.745	6.0	20.6
2 1	9 13.55	+15 12.6	1.280	2.263	2.2	16.9	2 1	9 12.87	+16 2.3	1.762	2.745	1.6	20.3
2 11	9 2.09	+14 40.7	1.283	2.264	3.5	17.0	2 11	9 3.39	+16 24.5	1.766	2.746	2.8	20.4
2 21	8 51.66	+14 7.5	1.313	2.266	8.7	17.3	2 21	8 54.58	+16 42.9	1.798	2.748	7.1	20.7
3 2	8 43.57	+13 32.2	1.367	2.268	13.5	17.5	3 2	8 47.41	+16 54.8	1.857	2.749	11.0	20.9
3 12	8 38.64	+12 54.6	1.443	2.272	17.4	17.8	3 12	8 42.59	+16 58.7	1.939	2.750	14.3	21.1
208267	2000 <i>WQ</i> ₁₆₆		2 4.6	33°95	0°0/ 4.5	18	383665	2007 <i>TG</i> ₁₅₅		2 4.6	77°58	4°0/ 7.8	18
1 2	9 33.42	+13 17.4	1.133	1.985	18.8	19.6	1 2	9 32.10	+ 2 36.6	2.261	3.038	13.2	20.7
1 12	9 29.31	+13 53.0	1.085	2.001	13.9	19.4	1 12	9 27.01	+ 2 30.4	2.193	3.057	10.4	20.5
1 22	9 22.11	+14 45.3	1.056	2.018	8.3	19.1	1 22	9 20.23	+ 2 39.5	2.149	3.076	7.4	20.3
2 1	9 12.90	+15 47.0	1.052	2.035	2.2	18.8	2 1	9 12.39	+ 3 3.0	2.132	3.095	4.7	20.2
2 11	9 3.32	+16 48.7	1.072	2.054	3.9	19.0	2 11	9 4.31	+ 3 38.0	2.144	3.113	4.1	20.2
2 21	8 54.97	+17 42.0	1.118	2.073	9.5	19.4	2 21	8 56.81	+ 4 20.5	2.186	3.132	6.3	20.4
3 2	8 49.17	+18 21.6	1.186	2.094	14.5	19.7	3 2	8 50.63	+ 5 6.0	2.255	3.151	9.1	20.6
3 12	8 46.66	+18 45.0	1.273	2.114	18.5	20.0	3 12	8 46.30	+ 5 50.3	2.348	3.169	11.8	20.8
411199	2010 <i>KW</i> ₁₁₇		2 4.6	215°89	1°9/ 3.0	17	500554	2012 <i>UE</i> ₄₃		2 4.6	177°82	5°7/ 10.4	17
1 2	9 37.25	+19 16.9	2.267	3.088	11.8	22.5	1 2	9 29.91	- 6 28.4	2.818	3.536	12.2	21.8
1 12	9 31.15	+20 11.9	2.175	3.077	8.7	22.3	1 12	9 25.26	- 6 35.6	2.726	3.537	10.3	21.7
1 22	9 22.91	+21 13.4	2.108	3.065	5.2	22.1	1 22	9 19.18	- 6 25.2	2.657	3.538	8.2	21.5
2 1	9 13.13	+22 15.7	2.072	3.053	2.1	21.8	2 1	9 12.13	- 5 56.8	2.614	3.539	6.4	21.4
2 11	9 2.77	+23 12.8	2.067	3.039	3.8	21.9	2 11	9 4.77	- 5 11.9	2.600	3.539	5.7	21.4
2 21	8 52.83	+23 59.7	2.092	3.025	7.4	22.1	2 21	8 57.76	- 4 13.6	2.614	3.539	6.6	21.4
3 2	8 44.33	+24 33.5	2.144	3.009	10.9	22.3	3 2	8 51.73	- 3 6.5	2.657	3.538	8.5	21.5
3 12	8 38.00	+24 53.4	2.220	2.993	13.9	22.5	3 12	8 47.20	- 1 55.7	2.725	3.538	10.6	21.7
192045	2006 <i>AX</i> ₄₅		2 4.6	254°31	1°6/ 3.2	18	59379	1999 <i>FO</i> ₄		2 4.6	47°73	1°3/ 5.4	18
1 2	9 32.08	+16 42.3	2.008	2.839	12.7	19.8	1 2	9 33.43	+10 55.7	1.704	2.526	14.9	19.8
1 12	9 27.50	+17 53.6	1.925	2.833	9.3	19.6	1 12	9 28.62	+11 13.6	1.632	2.531	11.2	19.6
1 22	9 20.79	+19 15.3	1.868	2.827	5.5	19.4	1 22	9 21.48	+11 45.2	1.583	2.537	7.0	19.3
2 1	9 12.58	+20 41.0	1.839	2.822	1.8	19.1	2 1	9 12.78	+12 27.0	1.561	2.542	2.5	19.1
2 11	9 3.81	+22 3.3	1.840	2.816	3.7	19.2	2 11	9 3.63	+13 13.6	1.566	2.548	3.0	19.1
2 21	8 55.54	+23 15.6	1.871	2.810	7.7	19.5	2 21	8 55.20	+13 59.2	1.600	2.553	7.4	19.4
3 2	8 48.75	+24 13.5	1.928	2.804	11.4	19.7	3 2	8 48.54	+14 39.1	1.659	2.559	11.6	19.6
3 12	8 44.19	+24 55.1	2.007	2.798	14.6	19.9	3 12	8 44.37	+15 10.1	1.741	2.565	15.1	19.9
57169	2001 <i>QN</i> ₁₉		2 4.6	41°96	0°3/ 4.4	18	155000	2005 <i>NJ</i> ₂₉		2 4.6	75°43	3°8/ 7.8	18
1 2	9 36.17	+16 18.0	1.616	2.450	15.0	18.4	1 2	9 34.35	+ 1 38.3	1.845	2.626	15.6	19.8
1 12	9 30.72	+16 27.0	1.548	2.456	11.1	18.2	1 12	9 28.89	+ 2 15.3	1.790	2.658	12.2	19.6
1 22	9 22.74	+16 44.1	1.503	2.462	6.6	17.9	1 22	9 21.42	+ 3 13.1	1.758	2.689	8.4	19.5
2 1	9 13.08	+17 5.0	1.484	2.468	1.7	17.6	2 1	9 12.72	+ 4 28.5	1.753	2.720	4.9	19.3
2 11	9 3.00	+17 24.6	1.494	2.474	3.3	17.8	2 11	9 3.81	+ 5 55.1	1.777	2.751	4.1	19.3
2 21	8 53.79	+17 38.8	1.531	2.481	8.1	18.1	2 21	8 55.71	+ 7 25.6	1.830	2.781	6.9	19.5
3 2	8 46.57	+17 44.8	1.593	2.488	12.3	18.3	3 2	8 49.28	+ 8 52.9	1.911	2.811	10.3	19.8
3 12	8 42.09	+17 41.6	1.677	2.495	15.9	18.6	3 12	8 45.10	+10 11.5	2.017	2.840	13.3	20.1
21039	1990 <i>ES</i> ₄		2 4.6	269°16	0°8/ 5.0	18	346009	2007 <i>TT</i> ₂₃₉		2 4.6	131°81	6°6/ 29.7	18
1 2	9 35.38	+12 36.9	1.724	2.547	14.8	19.1	1 2	9 36.47					

EPHEMERIDES

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
36560	2000 <i>QP</i> ₁₀₇		2 4.6 51°28'	0.4/ 4.3	18		152185	2005 <i>QY</i> ₁₆		2 4.6 204°37'	1.3/ 3.8	18	
1 2	9 33.36	+14 44.3	1.740	2.571	14.3	19.1	1 2	9 38.85	+17 15.0	1.598	2.430	15.3	20.8
1 12	9 28.56	+15 21.4	1.670	2.576	10.5	18.8	1 12	9 32.97	+17 51.3	1.520	2.427	11.3	20.5
1 22	9 21.44	+16 9.2	1.624	2.582	6.2	18.6	1 22	9 24.28	+18 37.0	1.464	2.423	6.7	20.3
2 1	9 12.78	+17 2.7	1.605	2.588	1.6	18.3	2 1	9 13.60	+19 26.1	1.436	2.419	2.0	19.9
2 11	9 3.68	+17 55.5	1.614	2.594	3.2	18.4	2 11	9 2.26	+20 11.2	1.436	2.414	4.0	20.1
2 21	8 55.30	+18 41.8	1.651	2.600	7.7	18.7	2 21	8 51.68	+20 46.4	1.464	2.409	8.9	20.3
3 2	8 48.69	+19 17.6	1.715	2.607	11.7	19.0	3 2	8 43.18	+21 8.3	1.518	2.404	13.4	20.6
3 12	8 44.55	+19 41.0	1.800	2.613	15.1	19.2	3 12	8 37.64	+21 16.2	1.592	2.397	17.1	20.8
89769	2002 <i>AQ</i> ₇₃		2 4.6 144°23'	0.4/ 4.3	18		66958	1999 <i>XO</i> ₂₃		2 4.6 168°09'	3.4/ 7.4	18	
1 2	9 38.44	+15 1.6	1.942	2.759	13.6	20.7	1 2	9 32.40	+3 45.2	2.375	3.154	12.6	19.8
1 12	9 32.03	+15 36.6	1.872	2.771	10.0	20.5	1 12	9 27.31	+3 48.3	2.290	3.157	9.9	19.6
1 22	9 23.39	+16 20.6	1.827	2.783	5.9	20.3	1 22	9 20.50	+4 6.0	2.229	3.159	6.9	19.5
2 1	9 13.28	+17 8.6	1.811	2.794	1.5	20.0	2 1	9 12.54	+4 36.9	2.195	3.162	4.2	19.3
2 11	9 2.80	+17 55.0	1.825	2.805	3.0	20.2	2 11	9 4.21	+5 18.3	2.191	3.163	3.7	19.3
2 21	8 53.06	+18 34.8	1.869	2.814	7.2	20.4	2 21	8 56.34	+6 6.0	2.217	3.165	6.1	19.4
3 2	8 45.07	+19 5.0	1.940	2.823	11.0	20.7	3 2	8 49.69	+6 55.7	2.271	3.166	9.1	19.6
3 12	8 39.49	+19 24.2	2.034	2.831	14.2	20.9	3 12	8 44.86	+7 43.2	2.350	3.167	11.9	19.8
38955	2000 <i>SE</i> ₃₁₉		2 4.6 56°87'	2.4/ 5.9	18		183237	2002 <i>TR</i> ₈₂		2 4.6 55°17'	1.8/ 3.5	18	
1 2	9 36.99	+10 29.2	1.753	2.566	15.0	19.0	1 2	9 36.18	+18 15.9	1.470	2.313	15.8	20.4
1 12	9 31.06	+10 2.9	1.685	2.577	11.4	18.8	1 12	9 30.87	+18 56.8	1.416	2.329	11.5	20.2
1 22	9 22.83	+9 47.8	1.641	2.589	7.3	18.6	1 22	9 22.88	+19 45.6	1.386	2.347	6.8	20.0
2 1	9 13.13	+9 42.5	1.623	2.601	3.3	18.4	2 1	9 13.19	+20 35.2	1.382	2.364	2.2	19.7
2 11	9 3.10	+9 44.2	1.634	2.613	3.4	18.4	2 11	9 3.17	+21 18.2	1.405	2.382	4.3	19.9
2 21	8 53.90	+9 49.6	1.674	2.626	7.3	18.6	2 21	8 54.21	+21 49.4	1.455	2.400	8.9	20.2
3 2	8 46.54	+9 55.7	1.740	2.638	11.2	18.9	3 2	8 47.46	+22 6.1	1.529	2.418	13.1	20.5
3 12	8 41.68	+9 59.6	1.828	2.651	14.5	19.1	3 12	8 43.60	+22 8.4	1.625	2.437	16.5	20.8
80153	1999 <i>TP</i> ₁₉₆		2 4.6 13°63'	2.5/ 5.6	18		375331	2008 <i>RR</i> ₁₃₆		2 4.6 293°15'	7.8/ 30.0	18	
1 2	9 37.52	+11 15.5	1.208	2.045	18.9	18.6	1 2	9 39.58	+37 3.2	1.970	2.799	12.9	20.5
1 12	9 32.45	+10 54.0	1.140	2.046	14.4	18.4	1 12	9 33.39	+38 6.7	1.902	2.791	10.4	20.3
1 22	9 24.13	+10 47.8	1.093	2.047	9.1	18.1	1 22	9 24.45	+39 1.3	1.858	2.783	8.4	20.1
2 1	9 13.55	+10 54.6	1.069	2.049	3.8	17.8	2 1	9 13.64	+39 38.3	1.840	2.776	7.8	20.1
2 11	9 2.31	+11 9.9	1.071	2.052	4.1	17.8	2 11	9 2.30	+39 51.1	1.850	2.768	9.2	20.2
2 21	8 52.12	+11 28.2	1.098	2.055	9.5	18.1	2 21	8 51.87	+39 37.6	1.885	2.760	11.6	20.3
3 2	8 44.48	+11 44.6	1.148	2.058	14.7	18.4	3 2	8 43.56	+38 59.4	1.944	2.753	14.2	20.4
3 12	8 40.29	+11 55.2	1.218	2.062	19.1	18.7	3 12	8 38.18	+38 1.3	2.022	2.746	16.6	20.6
417028	2005 <i>UZ</i> ₈₉		2 4.6 65°97'	0.5/ 4.9	18		116689	2004 <i>CB</i> ₈₃		2 4.6 125°08'	0.9/ 5.3	18	
1 2	9 36.15	+13 49.3	1.713	2.538	14.7	21.3	1 2	9 33.45	+9 17.4	1.873	2.684	14.2	20.0
1 12	9 30.45	+13 58.7	1.654	2.556	10.9	21.1	1 12	9 28.50	+10 21.7	1.799	2.693	10.7	19.8
1 22	9 22.46	+14 18.1	1.618	2.574	6.6	20.9	1 22	9 21.38	+11 42.5	1.750	2.702	6.6	19.6
2 1	9 13.03	+14 43.5	1.609	2.591	1.9	20.6	2 1	9 12.80	+13 14.6	1.729	2.711	2.2	19.3
2 11	9 3.32	+15 10.1	1.628	2.610	2.9	20.7	2 11	9 3.77	+14 50.3	1.738	2.719	2.8	19.4
2 21	8 54.50	+15 33.5	1.676	2.628	7.4	21.1	2 21	8 55.36	+16 22.0	1.776	2.727	7.1	19.6
3 2	8 47.57	+15 50.7	1.750	2.646	11.3	21.3	3 2	8 48.55	+17 43.2	1.842	2.734	11.0	19.9
3 12	8 43.16	+15 59.9	1.847	2.664	14.7	21.6	3 12	8 44.04	+18 50.2	1.932	2.742	14.4	20.1
347327	2011 <i>SV</i> ₁₉₆		2 4.6 253°84'	0.7/ 3.9	17		208652	2002 <i>ET</i> ₁₅₅		2 4.6 351°92'	3.7/ 2.7	18	
1 2	9 32.11	+17 34.0	2.528	3.350	10.7	21.4	1 2	9 35.60	+22 13.1	1.254	2.112	17.0	19.9
1 12	9 27.07	+17 54.6	2.441	3.344	7.8	21.2	1 12	9 31.16	+22 54.9	1.187	2.108	12.6	19.6
1 22	9 20.34	+18 20.3	2.381	3.338	4.6	21.0	1 22	9 23.44	+23 42.2	1.142	2.104	7.7	19.4
2 1	9 12.47	+18 47.7	2.349	3.332	1.3	20.7	2 1	9 13.41	+24 26.4	1.122	2.101	3.9	19.1
2 11	9 4.24	+19 13.1	2.348	3.326	2.6	20.8	2 11	9 2.69	+24 58.3	1.126	2.100	6.1	19.2
2 21	8 56.45	+19 33.4	2.376	3.320	6.0	21.1	2 21	8 53.03	+25 12.2	1.156	2.098	11.0	19.5
3 2	8 49.87	+19 46.5	2.433	3.314	9.2	21.2	3 2	8 45.93	+25 6.4	1.208	2.098	15.7	19.8
3 12	8 45.07	+19 51.4	2.514	3.308	11.9	21.4	3 12	8 42.31	+24 42.8	1.278	2.098	19.7	20.0
97574	2000 <i>DA</i> ₁₀₉		2 4.6 339°96'	0.4/ 4.3	18		246414	2007 <i>UQ</i> ₁₃₇		2 4.6 252°19'	11.2/ 14.9	17	
1 2	9 31.97	+15 8.7	2.001	2.828	12.8	19.9	1 2	9 31.25	-21 32.0	2.564	3.173	15.5	20.9
1 12	9 27.34	+15 42.2	1.922	2.826	9.5	19.7	1 12	9 26.60	-22 39.2	2.473	3.167	14.3	20.8
1 22	9 20.66	+16 25.0	1.867	2.825	5.6	19.5	1 22	9 20.17	-23 22.5	2.399	3.161	13.0	20.7
2 1	9 12.58	+17 12.7	1.839	2.823	1.5	19.2	2 1	9 12.49	-23 37.9	2.346	3.154	11.9	20.6
2 11	9 4.05	+17 59.9	1.841	2.821	2.9	19.3	2 11	9 4.30	-23 23.6	2.315	3.148	11.3	20.5
2 21	8 56.08	+18 41.8	1.872	2.820	7.0	19.5	2 21	8 56.45	-22 41.0	2.308	3.142	11.3	20.5
3 2	8 49.61	+19 14.7	1.929	2.819	10.8	19.8	3 2	8 49.74	-21 34.2	2.324	3.135	12.1	20.5
3 12	8 45.32	+19 36.8	2.009	2.818	14.0	20.0	3 12	8 44.82	-20 9.9	2.362	3.128	13.4	20.6
95832	2003 <i>FQ</i> ₉₈		2 4.6 169°31'	3.3/ 2.3	18		47916	2000 <i>GA</i> ₉₈		2 4.6 84°10'	6.0/ 9.7	18	
1 2	9 40.32	+23 46.7	2.013	2.840	12.8	19.7	1 2	9 31.05	-3 40.8	2.214	2.962	14.3	18.6
1 12	9 33.51	+24 36.7	1.942	2.846	9.4	19.5	1 12	9 26.38	-3 53.1	2.138	2.973	11.8	18.4
1 22	9 24.33	+25 28.5	1.895	2.850	5.9	19.3	1 22	9 19.97	-3 45.3	2.084	2.984	9.1	18.3
2 1	9 13.55	+26 15.3	1.878	2.854	3.4	19.2	2 1	9 12.41	-3 17.4	2.055	2.995	6.8	18.2
2 11	9 2.33	+26 50.9	1.891	2.857	5.0	19.3	2 11	9 4.53	-2 31.5	2.054	3.006	6.0	18.1
2 21	8 51.87	+27 11.5	1.933	2.859	8.5	19.5	2 21	8 57.16	-1 32.0	2.081	3.017	7.3	18.2
3 2	8 43.24	+27 16.2	2.002	2.860	11.9	19.7	3 2	8 51.09	-0 24.7	2.136	3.028	9.7	18.4
3 12	8 37.15	+27 6.1	2.093	2.860	14.8	19.9	3 12	8 46.90	+0 44.5	2.214	3.038	12.3	18.6
309157	2007 <i>AW</i> ₇		2 4.6 213°75'	2.3/ 4.9	16		98976	2001 <i>DZ</i> ₁₈		2 4.6 333°10'	5.4/ 1.2	18	
1 2	9 52.43	+16 17.0	1.099	1.930	20.7	19.9	1 2	9 34.01	+27 21.9	1.			

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
134485	1998 <i>WA</i> ₂₁		2 4.6	85°04	3°5/ 2.3	18	30345	2000 <i>JN</i> ₃₆		2 4.6	120°34	7°1/30.1	18
1 2	9 40.33	+23 35.4	1.785	2.618	13.9	20.2	1 2	9 40.23	+34 57.8	2.025	2.853	12.6	18.4
1 12	9 33.46	+24 30.9	1.741	2.648	10.1	20.1	1 12	9 33.61	+36 18.1	1.975	2.867	10.0	18.2
1 22	9 24.20	+25 27.1	1.722	2.678	6.2	19.9	1 22	9 24.45	+37 30.6	1.950	2.879	7.8	18.1
2 1	9 13.52	+26 16.8	1.732	2.708	3.6	19.8	2 1	9 13.65	+38 26.6	1.952	2.892	7.2	18.1
2 11	9 2.69	+26 53.4	1.770	2.736	5.2	20.0	2 11	9 2.48	+38 59.6	1.983	2.904	8.5	18.2
2 21	8 52.95	+27 13.8	1.837	2.765	8.7	20.2	2 21	8 52.26	+39 7.6	2.040	2.915	10.8	18.4
3 2	8 45.29	+27 17.5	1.930	2.792	12.1	20.5	3 2	8 44.11	+38 52.0	2.121	2.927	13.3	18.5
3 12	8 40.31	+27 6.6	2.044	2.819	14.9	20.7	3 12	8 38.72	+38 17.0	2.222	2.937	15.5	18.7
112911	2002 <i>QB</i> ₅₇		2 4.6	62°83	0°8/ 5.2	18	161090	2002 <i>ON</i> ₁₃		2 4.6	209°89	4°0/ 7.8	18
1 2	9 32.37	+12 11.0	2.073	2.890	12.8	20.3	1 2	9 32.41	+ 2 9.1	2.498	3.266	12.3	20.7
1 12	9 27.51	+12 30.3	1.996	2.894	9.6	20.1	1 12	9 27.31	+ 1 57.4	2.404	3.261	9.9	20.5
1 22	9 20.72	+13 0.1	1.944	2.898	5.9	19.9	1 22	9 20.53	+ 1 59.6	2.334	3.256	7.1	20.3
2 1	9 12.63	+13 37.1	1.920	2.902	1.9	19.7	2 1	9 12.60	+ 2 15.7	2.292	3.251	4.7	20.2
2 11	9 4.16	+14 16.9	1.925	2.906	2.5	19.7	2 11	9 4.27	+ 2 43.6	2.279	3.246	4.2	20.1
2 21	8 56.28	+14 55.0	1.959	2.911	6.5	20.0	2 21	8 56.32	+ 3 20.1	2.296	3.240	6.2	20.2
3 2	8 49.84	+15 27.9	2.021	2.915	10.1	20.2	3 2	8 49.52	+ 4 1.4	2.341	3.233	9.0	20.4
3 12	8 45.47	+15 52.8	2.105	2.919	13.2	20.4	3 12	8 44.44	+ 4 43.2	2.411	3.227	11.7	20.6
345365	2006 <i>AK</i> ₇₀		2 4.6	19°14	2°2/ 5.6	18	340650	2006 <i>QQ</i> ₁₈₅		2 4.6	51°01	2°6/ 2.8	18
1 2	9 37.38	+11 37.1	1.306	2.140	17.9	20.3	1 2	9 35.31	+23 40.1	2.239	3.070	11.5	20.6
1 12	9 32.16	+11 17.7	1.238	2.142	13.6	20.0	1 12	9 29.59	+24 1.4	2.167	3.073	8.5	20.4
1 22	9 23.89	+11 12.2	1.190	2.144	8.6	19.7	1 22	9 21.91	+24 23.4	2.121	3.077	5.2	20.2
2 1	9 13.53	+11 18.3	1.166	2.147	3.5	19.4	2 1	9 12.97	+24 41.4	2.103	3.081	2.7	20.0
2 11	9 2.58	+11 31.7	1.169	2.150	3.9	19.5	2 11	9 3.71	+24 51.3	2.115	3.085	4.1	20.1
2 21	8 52.61	+11 47.3	1.198	2.154	9.0	19.8	2 21	8 55.12	+24 50.7	2.156	3.089	7.3	20.3
3 2	8 45.03	+12 0.9	1.251	2.158	14.0	20.1	3 2	8 48.06	+24 38.9	2.224	3.093	10.4	20.6
3 12	8 40.68	+12 8.8	1.324	2.162	18.1	20.3	3 12	8 43.14	+24 16.6	2.315	3.097	13.1	20.7
191584	2004 <i>BA</i> ₁₄₃		2 4.6	99°93	0°5/ 4.2	18	462982	2011 <i>EV</i> ₈₃		2 4.6	35°05	1°8/ 5.8	18
1 2	9 34.76	+16 44.3	2.403	3.220	11.3	21.1	1 2	9 31.81	+ 9 12.9	1.654	2.476	15.3	20.8
1 12	9 28.92	+17 3.7	2.340	3.240	8.3	21.0	1 12	9 27.48	+ 9 36.0	1.587	2.484	11.6	20.6
1 22	9 21.37	+17 28.3	2.302	3.258	4.9	20.8	1 22	9 20.85	+10 15.0	1.542	2.494	7.3	20.4
2 1	9 12.78	+17 54.7	2.294	3.277	1.3	20.6	2 1	9 12.71	+11 6.4	1.523	2.503	3.0	20.1
2 11	9 3.97	+18 19.1	2.316	3.295	2.5	20.7	2 11	9 4.15	+12 4.3	1.532	2.513	3.1	20.1
2 21	8 55.80	+18 38.5	2.369	3.313	6.0	20.9	2 21	8 56.34	+13 2.2	1.569	2.524	7.4	20.4
3 2	8 49.01	+18 51.0	2.449	3.331	9.1	21.2	3 2	8 50.28	+13 54.5	1.631	2.535	11.5	20.7
3 12	8 44.11	+18 55.7	2.554	3.348	11.7	21.4	3 12	8 46.68	+14 37.2	1.716	2.546	15.0	20.9
274213	Satriani		2 4.6	258°55	0°7/ 4.9	18	29091	1981 <i>EF</i> ₈		2 4.6	54°55	3°6/ 7.5	18
1 2	9 36.81	+12 37.9	1.337	2.172	17.5	21.1	1 2	9 31.19	+ 3 52.9	2.089	2.878	13.7	18.2
1 12	9 31.86	+13 0.8	1.260	2.168	13.2	20.9	1 12	9 26.54	+ 3 53.7	2.020	2.893	10.8	18.0
1 22	9 23.83	+13 39.9	1.206	2.163	8.1	20.5	1 22	9 20.09	+ 4 10.5	1.975	2.908	7.5	17.8
2 1	9 13.55	+14 30.1	1.176	2.159	2.4	20.2	2 1	9 12.48	+ 4 41.7	1.956	2.924	4.5	17.7
2 11	9 2.49	+15 24.0	1.172	2.154	3.6	20.3	2 11	9 4.59	+ 5 23.9	1.966	2.940	3.9	17.7
2 21	8 52.27	+16 13.9	1.195	2.149	9.3	20.6	2 21	8 57.30	+ 6 12.6	2.005	2.955	6.4	17.9
3 2	8 44.34	+16 54.0	1.242	2.144	14.4	20.8	3 2	8 51.40	+ 7 2.8	2.071	2.972	9.6	18.1
3 12	8 39.69	+17 21.0	1.309	2.139	18.8	21.1	3 12	8 47.46	+ 7 50.1	2.161	2.988	12.5	18.3
523774	2014 <i>XV</i> ₄₀		2 4.6	351°29	0°6/28.2	18	284322	2006 <i>QP</i> ₁₆₄		2 4.6	170°04	1°8/ 6.0	17
1 2	9 13.17	+40 16.3	35.115	35.922	0.9	21.7	1 2	9 33.73	+ 9 41.7	2.693	3.486	10.9	20.8
1 12	9 12.22	+40 24.4	35.050	35.918	0.7	21.7	1 12	9 28.10	+ 9 30.7	2.607	3.489	8.3	20.7
1 22	9 11.15	+40 31.7	35.013	35.914	0.6	21.7	1 22	9 20.91	+ 9 28.0	2.547	3.491	5.4	20.5
2 1	9 10.02	+40 38.0	35.004	35.910	0.6	21.7	2 1	9 12.70	+ 9 32.2	2.516	3.492	2.5	20.3
2 11	9 8.87	+40 43.1	35.024	35.906	0.7	21.7	2 11	9 4.19	+ 9 41.3	2.516	3.494	2.5	20.3
2 21	9 7.75	+40 46.8	35.071	35.902	0.9	21.7	2 21	8 56.13	+ 9 52.9	2.546	3.495	5.3	20.5
3 2	9 6.70	+40 49.1	35.144	35.898	1.0	21.8	3 2	8 49.19	+10 4.5	2.605	3.496	8.3	20.7
3 12	9 5.77	+40 49.9	35.240	35.894	1.2	21.8	3 12	8 43.92	+10 14.2	2.690	3.496	10.9	20.8
298791	2004 <i>PZ</i> ₁₀₁		2 4.6	157°58	0°0/ 4.5	18	347919	2003 <i>BS</i> ₄₂		2 4.6	351°02	3°3/ 6.5	18
1 2	9 38.97	+14 24.1	2.139	2.948	12.8	21.5	1 2	9 30.98	+ 7 33.4	1.399	2.227	17.3	20.5
1 12	9 32.28	+14 48.9	2.064	2.958	9.5	21.3	1 12	9 27.35	+ 7 29.0	1.323	2.221	13.4	20.2
1 22	9 23.52	+15 22.0	2.014	2.968	5.7	21.0	1 22	9 21.03	+ 7 43.7	1.267	2.216	8.9	19.9
2 1	9 13.39	+15 59.4	1.993	2.976	1.5	20.8	2 1	9 12.82	+ 8 15.8	1.235	2.212	4.5	19.7
2 11	9 2.88	+16 36.3	2.003	2.983	2.7	20.9	2 11	9 3.95	+ 9 0.5	1.229	2.208	4.2	19.6
2 21	8 53.04	+17 8.7	2.044	2.990	6.7	21.1	2 21	8 55.80	+ 9 51.1	1.249	2.206	8.5	19.9
3 2	8 44.79	+17 33.7	2.113	2.995	10.3	21.4	3 2	8 49.65	+10 40.8	1.292	2.205	13.2	20.1
3 12	8 38.77	+17 49.9	2.206	2.999	13.3	21.6	3 12	8 46.35	+11 23.9	1.357	2.204	17.2	20.4
34721	2001 <i>QH</i> ₅		2 4.6	51°45	0°9/ 3.9	18	316788	1999 <i>TP</i> ₁₇₃		2 4.6	181°81	0°4/ 4.4	18
1 2	9 33.72	+17 5.1	1.903	2.734	13.2	18.5	1 2	9 40.26	+15 25.9	1.818	2.637	14.3	21.5
1 12	9 28.52	+17 36.3	1.848	2.756	9.7	18.3	1 12	9 33.68	+15 52.8	1.739	2.638	10.6	21.3
1 22	9 21.27	+18 14.1	1.819	2.778	5.6	18.1	1 22	9 24.57	+16 29.0	1.683	2.639	6.3	21.0
2 1	9 12.77	+18 53.8	1.817	2.800	1.6	17.8	2 1	9 13.74	+17 9.5	1.656	2.639	1.7	20.7
2 11	9 4.05	+19 30.0	1.844	2.823	3.2	18.0	2 11	9 2.34	+17 48.5	1.659	2.638	3.2	20.8
2 21	8 56.14	+19 58.7	1.900	2.846	7.1	18.3	2 21	8 51.67	+18 21.2	1.690	2.636	7.8	21.1
3 2	8 49.90	+20 17.5	1.982	2.869	10.6	18.5	3 2	8 42.87	+18 44.2	1.749	2.633	12.0	21.3
3 12	8 45.92	+20 25.5	2.087	2.892	13.6	18.8	3 12	8 36.71	+18 56.3	1.831	2.630	15.5	21.6
375748	2009 <i>ST</i> ₄₀		2 4.6	194°81	1°7/ 3.4	16	223407	2003 <i>SF</i> ₁₆₀		2 4.6	94°25	0°4/ 4.9	18 R
1 2	9 35.56	+19 40.1	2.060	2.889	12.5	21.9	1 2	9 33.62	+13 34.3				

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
78686	2002 <i>TA</i> ₁₃₉		2 4.6 200°47	2°1/ 3.3 18			10502	Armaghobs		2 4.6 33°19	11°8/15.8 18	R	
1 2	9 38.56	+20 55.2	1.951	2.779	13.1	19.5	1 2	9 28.34	-17 8.9	0.953	1.708	28.6	17.2
1 12	9 32.32	+21 19.3	1.871	2.777	9.7	19.3	1 12	9 25.83	-16 14.5	0.913	1.737	24.6	17.0
1 22	9 23.71	+21 46.9	1.816	2.774	5.8	19.1	1 22	9 20.18	-14 19.2	0.885	1.768	20.0	16.9
2 1	9 13.49	+22 12.9	1.790	2.771	2.3	18.8	2 1	9 12.57	-11 23.1	0.875	1.801	15.4	16.7
2 11	9 2.80	+22 32.0	1.793	2.767	4.0	18.9	2 11	9 4.69	-7 39.2	0.887	1.835	12.3	16.7
2 21	8 52.80	+22 40.8	1.825	2.763	7.9	19.2	2 21	8 58.15	-3 30.7	0.923	1.870	12.3	16.8
3 2	8 44.57	+22 37.8	1.883	2.759	11.7	19.4	3 2	8 54.22	+0 35.7	0.983	1.907	15.1	17.1
3 12	8 38.85	+22 23.5	1.965	2.754	14.9	19.6	3 12	8 53.55	+4 18.3	1.067	1.944	18.7	17.4
301645	2010 <i>EB</i> ₉₇		2 4.6 208°41	3°3/ 2.6 18			405034	2001 <i>RW</i> ₁₁₁		2 4.6 59°26	4°3/ 7.9 18		
1 2	9 39.53	+22 33.8	1.704	2.540	14.3	21.1	1 2	9 31.99	+1 28.4	1.627	2.421	16.8	20.6
1 12	9 33.43	+23 22.1	1.627	2.536	10.6	20.8	1 12	9 27.59	+2 0.2	1.563	2.437	13.3	20.4
1 22	9 24.56	+24 14.5	1.574	2.531	6.5	20.6	1 22	9 20.93	+2 56.2	1.520	2.453	9.3	20.2
2 1	9 13.76	+25 3.5	1.548	2.526	3.4	20.4	2 1	9 12.77	+4 13.5	1.502	2.470	5.5	20.0
2 11	9 2.31	+25 41.7	1.551	2.521	5.3	20.5	2 11	9 4.24	+5 45.6	1.512	2.487	4.5	20.0
2 21	8 51.65	+26 4.2	1.582	2.515	9.4	20.7	2 21	8 56.46	+7 23.9	1.550	2.503	7.6	20.2
3 2	8 43.04	+26 9.1	1.638	2.508	13.5	20.9	3 2	8 50.46	+8 59.8	1.614	2.521	11.4	20.4
3 12	8 37.34	+25 57.9	1.715	2.501	16.9	21.2	3 12	8 46.89	+10 26.4	1.701	2.538	14.8	20.7
8535	Pellevanslös		2 4.6 184°38	0°2/ 4.8 18	R		10817	1993 <i>FR</i> ₄₄		2 4.6 23°39	0°8/ 4.1 18	R	
1 2	9 31.52	+13 56.5	2.846	3.655	9.9	19.1	1 2	9 33.28	+17 25.1	1.898	2.730	13.2	17.0
1 12	9 26.47	+14 20.0	2.760	3.655	7.4	19.0	1 12	9 28.36	+17 41.2	1.828	2.736	9.7	16.8
1 22	9 19.95	+14 50.3	2.701	3.654	4.4	18.8	1 22	9 21.31	+18 3.6	1.783	2.742	5.7	16.6
2 1	9 12.46	+15 24.5	2.671	3.654	1.2	18.5	2 1	9 12.87	+18 28.3	1.765	2.749	1.6	16.3
2 11	9 4.66	+15 59.5	2.672	3.653	2.0	18.6	2 11	9 4.08	+18 50.5	1.776	2.756	3.1	16.5
2 21	8 57.25	+16 32.0	2.704	3.651	5.2	18.8	2 21	8 56.00	+19 6.6	1.815	2.763	7.2	16.7
3 2	8 50.87	+16 59.7	2.765	3.649	8.1	19.0	3 2	8 49.57	+19 14.3	1.881	2.771	10.9	17.0
3 12	8 46.05	+17 20.7	2.851	3.647	10.6	19.2	3 12	8 45.43	+19 12.6	1.969	2.779	14.1	17.2
372003	2008 <i>HW</i> ₄₄		2 4.6 250°40	1°3/ 5.5 17			500675	2012 <i>VK</i> ₅₉		2 4.6 194°06	1°5/ 5.9 17		
1 2	9 33.88	+10 36.4	2.032	2.842	13.3	22.6	1 2	9 30.86	+9 14.2	2.798	3.594	10.5	22.5
1 12	9 28.87	+10 58.3	1.936	2.829	10.1	22.3	1 12	9 26.02	+9 30.5	2.708	3.592	7.9	22.3
1 22	9 21.70	+11 33.1	1.864	2.815	6.3	22.1	1 22	9 19.72	+9 56.5	2.644	3.590	5.1	22.1
2 1	9 13.00	+12 17.7	1.820	2.801	2.3	21.8	2 1	9 12.43	+10 30.1	2.609	3.587	2.2	21.9
2 11	9 3.69	+13 7.6	1.806	2.786	2.7	21.8	2 11	9 4.82	+11 8.2	2.605	3.585	2.2	21.9
2 21	8 54.80	+13 57.6	1.820	2.772	6.9	22.0	2 21	8 57.57	+11 47.5	2.631	3.582	5.1	22.1
3 2	8 47.35	+14 43.0	1.862	2.756	10.8	22.2	3 2	8 51.34	+12 24.9	2.687	3.578	8.0	22.3
3 12	8 42.09	+15 20.4	1.927	2.741	14.3	22.4	3 12	8 46.64	+12 57.8	2.767	3.575	10.6	22.4
268597	2006 <i>BK</i> ₂₄₂		2 4.6 131°84	2°0/ 3.2 18			463580	2013 <i>ST</i> ₁₇		2 4.6 123°66	1°5/ 3.5 18		
1 2	9 36.99	+21 39.2	2.298	3.122	11.5	20.7	1 2	9 34.35	+18 36.9	2.115	2.943	12.2	21.6
1 12	9 30.74	+22 5.1	2.229	3.133	8.4	20.5	1 12	9 29.00	+19 16.7	2.044	2.950	8.9	21.4
1 22	9 22.56	+22 33.0	2.187	3.144	5.0	20.3	1 22	9 21.64	+20 2.3	1.999	2.957	5.3	21.2
2 1	9 13.17	+22 58.4	2.174	3.154	2.2	20.1	2 1	9 12.96	+20 48.5	1.981	2.964	1.8	21.0
2 11	9 3.50	+23 17.2	2.191	3.163	3.6	20.2	2 11	9 3.91	+21 30.2	1.994	2.970	3.4	21.1
2 21	8 54.51	+23 26.5	2.238	3.173	6.9	20.5	2 21	8 55.50	+22 3.1	2.036	2.977	7.1	21.3
3 2	8 47.04	+23 25.4	2.312	3.182	10.1	20.7	3 2	8 48.60	+22 24.8	2.105	2.983	10.5	21.6
3 12	8 41.67	+23 14.2	2.410	3.190	12.7	20.9	3 12	8 43.86	+22 34.7	2.197	2.989	13.4	21.8
263963	2009 <i>JL</i> ₄		2 4.6 183°64	0°4/ 4.9 18			239502	2007 <i>VP</i> ₁₆₄		2 4.6 158°83	5°0/ 30.1 18		
1 2	9 35.47	+13 3.4	2.450	3.255	11.5	21.5	1 2	9 35.44	+34 20.1	3.083	3.902	9.0	20.9
1 12	9 29.60	+13 29.0	2.364	3.256	8.5	21.3	1 12	9 29.43	+35 25.8	3.022	3.909	7.1	20.8
1 22	9 21.92	+14 3.3	2.304	3.256	5.2	21.1	1 22	9 21.75	+36 26.5	2.988	3.916	5.5	20.7
2 1	9 13.02	+14 42.9	2.273	3.255	1.5	20.8	2 1	9 12.98	+37 16.8	2.984	3.923	5.0	20.7
2 11	9 3.73	+15 23.7	2.273	3.254	2.3	20.9	2 11	9 3.89	+37 52.6	3.010	3.929	6.0	20.7
2 21	8 54.91	+16 2.0	2.304	3.251	6.0	21.1	2 21	8 55.30	+38 12.0	3.064	3.934	7.8	20.9
3 2	8 47.36	+16 34.6	2.364	3.248	9.3	21.3	3 2	8 47.96	+38 14.7	3.145	3.939	9.7	21.0
3 12	8 41.70	+16 59.4	2.449	3.244	12.1	21.5	3 12	8 42.40	+38 2.6	3.247	3.943	11.4	21.1
42330	2001 <i>XC</i> ₁₉₄		2 4.6 134°28	1°0/ 5.3 18			85528	1997 <i>WP</i> ₁₂		2 4.6 69°77	0°2/ 4.4 18		
1 2	9 38.13	+11 42.1	1.822	2.634	14.5	19.7	1 2	9 33.83	+15 19.5	2.059	2.882	12.7	20.4
1 12	9 31.94	+12 2.4	1.752	2.647	10.9	19.5	1 12	9 28.52	+15 44.9	1.998	2.901	9.3	20.2
1 22	9 23.44	+12 34.8	1.707	2.659	6.7	19.3	1 22	9 21.29	+16 18.0	1.962	2.919	5.5	20.0
2 1	9 13.44	+13 15.2	1.690	2.671	2.2	19.0	2 1	9 12.85	+16 54.7	1.954	2.937	1.4	19.8
2 11	9 3.04	+13 58.4	1.701	2.682	2.9	19.1	2 11	9 4.16	+17 30.1	1.975	2.955	2.7	19.9
2 21	8 53.43	+14 39.4	1.743	2.693	7.2	19.4	2 21	8 56.18	+18 0.5	2.026	2.973	6.6	20.2
3 2	8 45.62	+15 14.0	1.811	2.703	11.2	19.6	3 2	8 49.73	+18 23.1	2.103	2.991	10.0	20.4
3 12	8 40.30	+15 39.7	1.902	2.712	14.6	19.9	3 12	8 45.41	+18 36.4	2.204	3.010	13.0	20.7
465985	2011 <i>CZ</i> ₁₀₁		2 4.6 358°57	1°9/ 5.8 16			204817	2007 <i>OE</i> ₁		2 4.6 156°78	0°0/ 4.4 18		
1 2	9 32.92	+9 48.5	1.809	2.625	14.5	22.1	1 2	9 37.82	+14 23.4	1.987	2.803	13.4	21.4
1 12	9 28.23	+9 56.8	1.730	2.625	11.0	21.9	1 12	9 31.63	+14 52.5	1.913	2.811	9.9	21.2
1 22	9 21.32	+10 18.7	1.674	2.624	7.0	21.6	1 22	9 23.25	+15 31.0	1.863	2.818	5.9	21.0
2 1	9 12.89	+10 51.6	1.645	2.624	2.9	21.4	2 1	9 13.41	+16 14.3	1.842	2.825	1.6	20.7
2 11	9 3.98	+11 31.0	1.644	2.624	3.0	21.4	2 11	9 3.16	+16 57.3	1.851	2.831	2.8	20.8
2 21	8 55.69	+12 12.0	1.670	2.624	7.1	21.6	2 21	8 53.58	+17 35.2	1.889	2.836	7.1	21.1
3 2	8 49.02	+12 49.7	1.724	2.625	11.1	21.9	3 2	8 45.66	+18 4.6	1.955	2.841	10.8	21.3
3 12	8 44.71	+13 20.6	1.800	2.625	14.6	22.1	3 12	8 40.09	+18 24.1	2.045	2.844	14.0	21.5
235509	2004 <i>BH</i> ₁₃₈		2 4.6 57°32	0°1/ 4.7 18			30431	Michaeltran		2 4.6 342°96	2°1/ 5.8 18	R	
1 2	9 32.48	+14 13.5	2.173	2.993	12.2	21.0	1 2	9 30.82	+8 48.1	1.169	2.012	19.0	18.1

EPHEMERIDES

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
326715	2003 <i>EO</i> ₁₄		2 4.6 349°38	4.5/ 2.3	18		375293	2008 <i>OL</i> ₁		2 4.6 168°73	0.5/ 4.2	16	
1 2	9 32.79	+23 57.1	1.266	2.129	16.5	20.0	1 2	9 35.63	+16 48.4	2.540	3.353	10.9	21.5
1 12	9 29.17	+24 41.7	1.197	2.119	12.3	19.8	1 12	9 29.64	+17 6.8	2.459	3.357	8.0	21.3
1 22	9 22.35	+25 30.2	1.150	2.111	7.8	19.5	1 22	9 21.93	+17 30.3	2.405	3.361	4.7	21.1
2 1	9 13.25	+26 13.4	1.126	2.104	4.6	19.3	2 1	9 13.08	+17 55.7	2.381	3.364	1.3	20.9
2 11	9 3.44	+26 42.4	1.128	2.098	6.7	19.4	2 11	9 3.92	+18 19.3	2.388	3.367	2.5	21.0
2 21	8 54.61	+26 51.5	1.154	2.094	11.3	19.6	2 21	8 55.26	+18 38.1	2.425	3.369	5.9	21.2
3 2	8 48.24	+26 39.4	1.202	2.091	15.9	19.9	3 2	8 47.89	+18 50.3	2.491	3.370	9.0	21.4
3 12	8 45.26	+26 8.2	1.268	2.089	19.8	20.1	3 12	8 42.37	+18 54.8	2.582	3.371	11.7	21.6
437173	2012 <i>VL</i> ₆₅		2 4.6 324°60	5.1/ 8.4	18		139698	2001 <i>QB</i> ₂₂₃		2 4.6 51°95	1.5/ 3.7	18	
1 2	9 29.83	+0 36.7	2.076	2.854	14.2	20.9	1 2	9 34.79	+16 46.0	1.492	2.333	15.7	19.2
1 12	9 25.78	+0 23.1	1.984	2.843	11.5	20.7	1 12	9 29.88	+17 38.5	1.439	2.351	11.5	18.9
1 22	9 19.83	+0 0 27.5	1.913	2.834	8.5	20.5	1 22	9 22.39	+18 40.9	1.408	2.369	6.7	18.7
2 1	9 12.53	+0 50.1	1.868	2.824	5.9	20.3	2 1	9 13.23	+19 45.9	1.405	2.388	2.0	18.5
2 11	9 4.72	+1 28.8	1.850	2.815	5.2	20.2	2 11	9 3.73	+20 45.4	1.428	2.407	4.0	18.6
2 21	8 57.34	+2 19.5	1.860	2.806	7.2	20.3	2 21	8 55.22	+21 33.0	1.479	2.426	8.7	19.0
3 2	8 51.25	+3 16.8	1.897	2.798	10.3	20.5	3 2	8 48.81	+22 5.5	1.555	2.445	12.8	19.3
3 12	8 47.15	+4 15.0	1.958	2.790	13.3	20.7	3 12	8 45.19	+22 22.0	1.651	2.465	16.3	19.5
277912	2006 <i>KN</i> ₈₅		2 4.6 225°50	0.9/ 5.4	17		218373	2004 <i>JC</i> ₂₉		2 4.6 145°86	1.7/ 3.1	18	
1 2	9 31.20	+10 19.3	2.503	3.307	11.3	21.2	1 2	9 35.78	+19 43.6	2.494	3.314	10.8	21.2
1 12	9 26.51	+11 1.1	2.410	3.300	8.5	21.0	1 12	9 29.78	+20 31.1	2.424	3.326	7.9	21.0
1 22	9 20.14	+11 54.5	2.341	3.292	5.3	20.8	1 22	9 22.02	+21 22.7	2.381	3.338	4.7	20.8
2 1	9 12.60	+12 56.3	2.302	3.283	1.8	20.5	2 1	9 13.11	+22 13.5	2.368	3.349	1.9	20.6
2 11	9 4.62	+14 2.0	2.294	3.275	2.2	20.5	2 11	9 3.90	+22 58.7	2.386	3.359	3.3	20.7
2 21	8 56.99	+15 6.7	2.316	3.265	5.7	20.8	2 21	8 55.25	+23 34.8	2.435	3.369	6.5	21.0
3 2	8 50.49	+16 6.2	2.367	3.256	9.0	20.9	3 2	8 47.93	+23 59.7	2.512	3.378	9.5	21.2
3 12	8 45.71	+16 57.1	2.442	3.246	11.9	21.1	3 12	8 42.53	+24 13.0	2.612	3.386	12.0	21.4
214201	2005 <i>EQ</i> ₄₉		2 4.6 281°76	1.7/ 5.6	18		90269	2003 <i>CD</i> ₉		2 4.6 270°43	1.7/ 6.4	18	
1 2	9 34.60	+10 24.8	1.638	2.459	15.5	20.7	1 2	9 29.76	+6 37.2	2.487	3.280	11.7	19.7
1 12	9 29.89	+10 35.1	1.546	2.444	11.8	20.4	1 12	9 25.52	+7 26.1	2.385	3.266	9.0	19.5
1 22	9 22.57	+11 0.5	1.477	2.429	7.5	20.1	1 22	9 19.61	+8 30.1	2.308	3.251	5.8	19.2
2 1	9 13.33	+11 38.1	1.433	2.414	3.0	19.8	2 1	9 12.50	+9 46.6	2.260	3.237	2.6	19.0
2 11	9 3.31	+12 23.0	1.418	2.399	3.3	19.8	2 11	9 4.91	+11 10.6	2.242	3.222	2.5	19.0
2 21	8 53.82	+13 9.2	1.429	2.383	8.1	20.0	2 21	8 57.62	+12 36.7	2.255	3.207	5.7	19.2
3 2	8 46.11	+13 51.2	1.467	2.368	12.7	20.3	3 2	8 51.39	+13 59.4	2.297	3.192	9.0	19.3
3 12	8 41.11	+14 24.8	1.526	2.353	16.7	20.5	3 12	8 46.85	+15 14.1	2.365	3.177	12.0	19.5
30918	1993 <i>KV</i> ₂		2 4.6 279°46	3.1/ 2.7	18		116320	2003 <i>YW</i> ₆₉		2 4.6 41°93	0.4/ 4.9	18	
1 2	9 35.55	+19 24.0	1.445	2.292	15.8	18.9	1 2	9 32.79	+13 20.7	1.797	2.624	14.1	20.2
1 12	9 30.91	+20 35.9	1.371	2.287	11.7	18.6	1 12	9 28.07	+13 43.7	1.733	2.636	10.4	20.0
1 22	9 23.30	+21 58.5	1.320	2.281	7.0	18.3	1 22	9 21.19	+14 17.4	1.692	2.649	6.3	19.7
2 1	9 13.53	+23 22.7	1.295	2.276	3.2	18.1	2 1	9 12.92	+14 57.7	1.679	2.662	1.8	19.5
2 11	9 3.00	+24 38.2	1.298	2.271	5.5	18.2	2 11	9 4.31	+15 39.3	1.694	2.675	2.8	19.6
2 21	8 53.24	+25 36.8	1.326	2.265	10.3	18.4	2 21	8 56.44	+16 17.3	1.736	2.688	7.1	19.9
3 2	8 45.68	+26 14.5	1.379	2.260	14.8	18.7	3 2	8 50.26	+16 47.8	1.806	2.702	11.0	20.1
3 12	8 41.25	+26 30.9	1.451	2.255	18.6	18.9	3 12	8 46.40	+17 8.7	1.897	2.716	14.2	20.4
34421	2000 <i>SA</i> ₁₂		2 4.6 142°59	2.1/ 3.2	18		27046	1998 <i>RP</i> ₇₅		2 4.6 214°52	2.1/ 3.4	18	
1 2	9 37.74	+23 33.9	2.657	3.476	10.3	18.7	1 2	9 38.11	+18 46.9	1.489	2.329	15.8	19.0
1 12	9 31.07	+23 41.5	2.583	3.483	7.6	18.5	1 12	9 32.66	+19 30.1	1.416	2.327	11.7	18.7
1 22	9 22.70	+23 48.7	2.535	3.489	4.6	18.3	1 22	9 24.27	+20 22.0	1.365	2.325	7.0	18.4
2 1	9 13.26	+23 52.2	2.517	3.496	2.2	18.2	2 1	9 13.81	+21 15.5	1.340	2.322	2.5	18.1
2 11	9 3.59	+23 48.8	2.531	3.502	3.4	18.3	2 11	9 2.68	+22 2.5	1.343	2.319	4.6	18.3
2 21	8 54.54	+23 37.2	2.575	3.508	6.3	18.5	2 21	8 52.39	+22 36.7	1.473	2.316	9.5	18.5
3 2	8 46.85	+23 16.8	2.648	3.513	9.1	18.7	3 2	8 44.31	+22 54.9	1.427	2.313	14.0	18.8
3 12	8 41.06	+22 48.6	2.746	3.518	11.5	18.8	3 12	8 39.33	+22 57.1	1.502	2.310	17.9	19.0
236055	2005 <i>JD</i> ₂₃		2 4.6 217°83	0.6/ 4.2	17		458305	2010 <i>VP</i> ₃₇		2 4.6 80°14	4.0/ 1.8	18	
1 2	9 32.87	+16 26.4	2.374	3.195	11.3	21.2	1 2	9 36.69	+23 42.3	1.704	2.545	14.0	21.1
1 12	9 27.79	+16 52.7	2.290	3.192	8.3	21.0	1 12	9 31.16	+24 53.0	1.649	2.561	10.3	20.9
1 22	9 20.91	+17 25.6	2.231	3.188	4.9	20.8	1 22	9 23.12	+26 6.2	1.619	2.576	6.5	20.7
2 1	9 12.82	+18 1.2	2.201	3.185	1.3	20.5	2 1	9 13.44	+27 13.4	1.617	2.591	4.1	20.6
2 11	9 4.33	+18 35.6	2.202	3.181	2.6	20.6	2 11	9 3.40	+28 6.8	1.643	2.607	5.8	20.7
2 21	8 56.32	+19 4.9	2.232	3.177	6.3	20.8	2 21	8 54.28	+28 41.8	1.696	2.622	9.4	21.0
3 2	8 49.59	+19 26.6	2.290	3.173	9.6	21.0	3 2	8 47.18	+28 57.1	1.774	2.637	12.9	21.2
3 12	8 44.75	+19 39.3	2.371	3.169	12.4	21.2	3 12	8 42.79	+28 54.3	1.873	2.652	15.9	21.4
461573	2004 <i>OA</i> ₁₃		2 4.6 242°82	1.5/ 3.6	17		225189	2008 <i>HG</i> ₆₂		2 4.6 118°08	1.6/ 5.8	18	
1 2	9 38.68	+20 22.8	2.391	3.208	11.3	22.2	1 2	9 33.22	+9 20.1	1.920	2.730	14.0	20.9
1 12	9 32.20	+20 39.5	2.290	3.190	8.4	22.0	1 12	9 28.34	+9 47.8	1.843	2.735	10.6	20.7
1 22	9 23.63	+20 59.2	2.215	3.171	5.0	21.8	1 22	9 21.37	+10 29.8	1.791	2.740	6.7	20.5
2 1	9 13.58	+21 18.0	2.169	3.151	1.8	21.5	2 1	9 12.98	+11 22.7	1.765	2.745	2.7	20.2
2 11	9 2.97	+21 31.7	2.155	3.130	3.3	21.6	2 11	9 4.16	+12 21.1	1.769	2.750	2.8	20.2
2 21	8 52.79	+21 37.3	2.171	3.109	6.9	21.8	2 21	8 55.95	+13 19.5	1.802	2.754	6.8	20.5
3 2	8 43.99	+21 33.4	2.215	3.087	10.4	21.9	3 2	8 49.27	+14 12.7	1.861	2.759	10.6	20.7
3 12	8 37.31	+21 20.0	2.284	3.064	13.4	22.1	3 12	8 44.83	+14 57.0	1.944	2.763	13.9	20.9
2817	<i>Persec</i>		2 4.6 128°86	1.2/ 5.4	18		45766	2000 <i>LX</i> ₅		2 4.6 337°67	4.8/ 31.8	18	R
1 2	9 37.99	+11 19.6	1.809	2.621	14.6	18.1	1 2	9 34.31	+28 26.8	2.149			

EPHEMERIDES

2 4.6

2 4.7

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
6179	Brett		2 4.6 310°39	5°9/ 9.4	18	R	274492	2008 SJ ₁₁₆		2 4.6 151°10	1°8/ 3.2	17	
1 2	9 29.49	- 3 44.6	1.460	2.241	19.0	17.1	1 2	9 33.93	+19 36.8	2.218	3.046	11.7	20.9
1 12	9 26.49	- 2 50.3	1.355	2.217	15.7	16.8	1 12	9 28.70	+20 19.9	2.143	3.049	8.6	20.7
1 22	9 20.78	- 1 16.9	1.270	2.194	11.7	16.5	1 22	9 21.53	+21 7.9	2.094	3.052	5.1	20.5
2 1	9 12.95	+ 0 56.3	1.209	2.170	7.6	16.2	2 1	9 13.06	+21 55.8	2.074	3.055	2.0	20.2
2 11	9 4.08	+ 3 43.1	1.175	2.147	6.0	16.1	2 11	9 4.21	+22 38.5	2.084	3.058	3.6	20.4
2 21	8 55.53	+ 6 50.3	1.168	2.125	9.1	16.2	2 21	8 55.93	+23 11.8	2.123	3.060	7.1	20.6
3 2	8 48.73	+10 1.0	1.189	2.103	13.9	16.4	3 2	8 49.08	+23 33.5	2.189	3.063	10.3	20.8
3 12	8 44.78	+12 59.6	1.233	2.082	18.5	16.6	3 12	8 44.30	+23 43.0	2.278	3.065	13.2	21.0
413121	2001 WL ₅₆		2 4.6 68°77	2°7/ 2.9	18		310986	2003 UG ₃₈₃		2 4.6 85°91	0°1/ 4.7	18	
1 2	9 37.87	+21 19.3	1.674	2.511	14.4	21.0	1 2	9 36.31	+13 15.8	1.593	2.420	15.5	21.5
1 12	9 31.89	+22 4.6	1.625	2.535	10.5	20.8	1 12	9 30.90	+13 53.5	1.532	2.436	11.5	21.3
1 22	9 23.46	+22 53.5	1.600	2.558	6.3	20.6	1 22	9 23.00	+14 43.8	1.495	2.451	6.9	21.0
2 1	9 13.53	+23 38.9	1.602	2.582	2.9	20.5	2 1	9 13.47	+15 41.3	1.484	2.467	1.9	20.7
2 11	9 3.37	+24 14.4	1.633	2.605	4.7	20.6	2 11	9 3.56	+16 38.9	1.501	2.482	3.2	20.9
2 21	8 54.25	+24 36.1	1.692	2.629	8.6	20.9	2 21	8 54.54	+17 30.2	1.546	2.497	7.9	21.2
3 2	8 47.19	+24 42.7	1.776	2.652	12.3	21.2	3 2	8 47.51	+18 10.9	1.617	2.512	12.1	21.5
3 12	8 42.81	+24 35.4	1.881	2.675	15.3	21.5	3 12	8 43.17	+18 38.8	1.710	2.526	15.7	21.7
491076	2011 RQ ₁₀		2 4.6 120°50	0°6/ 5.0	18		167935	2005 EJ ₁₇₄		2 4.6 110°24	3°7/ 7.9	18	
1 2	9 39.34	+12 57.9	1.815	2.628	14.5	22.4	1 2	9 31.47	+ 2 24.5	2.347	3.122	12.8	20.7
1 12	9 32.81	+13 18.7	1.751	2.647	10.8	22.2	1 12	9 26.69	+ 2 32.0	2.269	3.132	10.2	20.5
1 22	9 23.98	+13 50.2	1.711	2.665	6.5	22.0	1 22	9 20.25	+ 2 55.2	2.215	3.142	7.2	20.3
2 1	9 13.68	+14 28.0	1.700	2.682	2.0	21.7	2 1	9 12.71	+ 3 32.8	2.188	3.152	4.5	20.2
2 11	9 3.06	+15 7.0	1.718	2.699	2.9	21.8	2 11	9 4.85	+ 4 21.7	2.191	3.161	3.9	20.2
2 21	8 53.30	+15 42.2	1.765	2.714	7.2	22.1	2 21	8 57.49	+ 5 17.4	2.223	3.171	6.1	20.3
3 2	8 45.40	+16 10.3	1.840	2.730	11.2	22.4	3 2	8 51.35	+ 6 15.2	2.283	3.180	9.0	20.5
3 12	8 40.02	+16 29.2	1.937	2.744	14.4	22.6	3 12	8 46.99	+ 7 10.6	2.368	3.189	11.7	20.7
150167	1997 XB ₁		2 4.6 32°98	8°2/31.1	18		361732	2007 WN ₆₂		2 4.6 163°15	2°1/ 3.2	18	
1 2	9 36.78	+28 55.1	1.067	1.936	18.4	18.5	1 2	9 37.40	+19 40.7	1.847	2.678	13.6	21.9
1 12	9 32.08	+30 50.6	1.049	1.969	13.8	18.4	1 12	9 31.61	+20 25.4	1.775	2.682	10.0	21.6
1 22	9 23.88	+32 38.5	1.052	2.004	9.8	18.3	1 22	9 23.42	+21 16.2	1.727	2.685	6.0	21.4
2 1	9 13.64	+34 4.1	1.078	2.040	8.2	18.3	2 1	9 13.61	+22 6.6	1.707	2.688	2.4	21.2
2 11	9 3.33	+34 57.2	1.129	2.077	10.2	18.5	2 11	9 3.31	+22 50.4	1.716	2.690	4.1	21.3
2 21	8 54.79	+35 15.6	1.202	2.115	13.6	18.8	2 21	8 53.74	+23 22.6	1.754	2.692	8.2	21.5
3 2	8 49.29	+35 2.8	1.295	2.154	17.1	19.1	3 2	8 45.98	+23 40.8	1.818	2.694	12.0	21.8
3 12	8 47.37	+34 25.9	1.407	2.193	19.9	19.4	3 12	8 40.77	+23 45.0	1.904	2.695	15.2	22.0
412052	2013 EG ₁₃		2 4.6 218°24	1°3/ 3.8	17		53874	2000 FB ₃₃		2 4.6 126°53	3°4/ 1.8	18	
1 2	9 37.88	+17 44.7	1.934	2.758	13.3	22.2	1 2	9 35.69	+21 28.3	1.941	2.775	12.9	18.3
1 12	9 31.98	+18 19.5	1.846	2.750	9.9	22.0	1 12	9 30.30	+22 58.6	1.877	2.786	9.4	18.1
1 22	9 23.67	+19 2.0	1.784	2.741	5.9	21.7	1 22	9 22.62	+24 34.3	1.840	2.797	5.8	17.9
2 1	9 13.66	+19 46.7	1.749	2.732	1.8	21.4	2 1	9 13.40	+26 7.2	1.831	2.807	3.4	17.8
2 11	9 3.03	+20 27.9	1.745	2.722	3.5	21.5	2 11	9 3.71	+27 29.0	1.852	2.817	5.2	17.9
2 21	8 52.98	+21 0.5	1.769	2.712	7.8	21.8	2 21	8 54.70	+28 33.8	1.902	2.826	8.7	18.1
3 2	8 44.61	+21 21.7	1.821	2.701	11.8	22.0	3 2	8 47.39	+29 18.8	1.978	2.835	12.1	18.4
3 12	8 38.72	+21 30.5	1.894	2.689	15.2	22.2	3 12	8 42.51	+29 44.5	2.075	2.843	14.9	18.6
431576	2007 VH ₂₄		2 4.6 349°04	5°8/31.4	18		309448	2007 UA ₉₀		2 4.6 216°03	1°0/ 5.3	18	
1 2	9 32.05	+28 26.0	1.723	2.574	13.4	19.9	1 2	9 36.45	+11 49.2	1.830	2.645	14.4	21.3
1 12	9 28.03	+29 39.4	1.654	2.567	10.2	19.7	1 12	9 30.97	+12 6.8	1.744	2.640	10.8	21.1
1 22	9 21.44	+30 52.5	1.609	2.560	7.1	19.5	1 22	9 23.10	+12 36.7	1.682	2.635	6.7	20.8
2 1	9 13.07	+31 56.3	1.590	2.554	5.8	19.4	2 1	9 13.55	+13 15.6	1.647	2.628	2.3	20.5
2 11	9 4.13	+32 42.9	1.599	2.549	7.5	19.5	2 11	9 3.41	+13 58.3	1.641	2.622	2.9	20.6
2 21	8 55.92	+33 7.5	1.633	2.545	10.7	19.7	2 21	8 53.84	+14 39.7	1.663	2.615	7.4	20.8
3 2	8 49.62	+33 9.1	1.690	2.542	14.0	19.9	3 2	8 45.96	+15 15.4	1.713	2.607	11.6	21.1
3 12	8 46.04	+32 50.0	1.767	2.540	17.0	20.1	3 12	8 40.55	+15 42.2	1.785	2.599	15.2	21.3
395765	2012 VC ₄₄		2 4.6 242°84	1°4/ 5.4	18		509951	2009 SX ₄₅		2 4.6 212°89	5°2/31.2	17	
1 2	9 37.13	+11 20.5	1.351	2.182	17.6	21.7	1 2	9 39.32	+31 59.4	2.485	3.308	10.8	21.6
1 12	9 32.09	+11 33.6	1.277	2.181	13.3	21.4	1 12	9 32.75	+32 57.5	2.406	3.299	8.4	21.4
1 22	9 24.02	+12 3.2	1.224	2.179	8.3	21.1	1 22	9 24.00	+33 51.8	2.353	3.290	6.1	21.2
2 1	9 13.81	+12 45.2	1.196	2.178	2.9	20.8	2 1	9 13.78	+34 35.5	2.329	3.281	5.2	21.1
2 11	9 2.87	+13 33.2	1.195	2.177	3.6	20.8	2 11	9 3.06	+35 3.4	2.334	3.271	6.5	21.2
2 21	8 52.80	+14 19.8	1.220	2.175	9.0	21.1	2 21	8 52.90	+35 12.7	2.369	3.260	8.9	21.3
3 2	8 44.99	+14 59.2	1.269	2.174	14.0	21.4	3 2	8 44.30	+35 3.3	2.429	3.248	11.4	21.5
3 12	8 40.38	+15 27.7	1.339	2.172	18.3	21.7	3 12	8 37.95	+34 37.5	2.512	3.236	13.7	21.6
110143	2001 SZ ₁₅₁		2 4.6 109°39	0°7/ 5.1	18		277600	2006 AG ₃₉		2 4.7 166°99	1°4/ 5.6	18	
1 2	9 35.66	+12 34.9	1.910	2.727	13.8	20.1	1 2	9 36.29	+11 50.1	2.188	2.994	12.6	21.3
1 12	9 30.10	+12 52.9	1.841	2.738	10.3	19.9	1 12	9 30.39	+11 42.8	2.106	2.996	9.5	21.1
1 22	9 22.39	+13 21.5	1.795	2.749	6.3	19.7	1 22	9 22.52	+11 44.2	2.049	2.998	6.0	20.9
2 1	9 13.29	+13 57.1	1.777	2.760	2.0	19.4	2 1	9 13.36	+11 52.3	2.020	3.000	2.3	20.7
2 11	9 3.83	+14 34.8	1.789	2.770	2.7	19.5	2 11	9 3.81	+12 4.2	2.021	3.002	2.6	20.7
2 21	8 55.08	+15 10.1	1.829	2.780	6.9	19.7	2 21	8 54.84	+12 16.7	2.053	3.003	6.3	20.9
3 2	8 47.98	+15 39.3	1.897	2.790	10.7	20.0	3 2	8 47.31	+12 27.3	2.112	3.004	9.8	21.2
3 12	8 43.19	+16 0.2	1.987	2.800	13.9	20.2	3 12	8 41.87	+12 33.9	2.195	3.005	12.9	21.4
417099	2005 UE ₃₆₀		2 4.6 129°90	0°1/ 4.7	18		481506	2007 ES ₆₇		2 4.7 230°80	11°9/13.7	17	
1 2	9 34.93	+14 9.0	1.990	2.810	13.2	22.1	1 2	9 34.20	-14 37.2	1.289	2.015	23.7	21.7
1 12	9 29.55	+14 3											

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
345579	2006 <i>SU</i> ₁₇		2 4.7 113°44	1.7°/ 3.3	18		127429	2002 <i>PK</i> ₅		2 4.7 304°49	5.4°/ 7.2	18	
1 2	9 34.16	+20 54.5	2.450	3.276	10.8	21.1	1 2	9 35.04	+ 4 33.6	1.523	2.328	17.2	20.0
1 12	9 28.67	+21 16.9	2.377	3.281	7.9	20.9	1 12	9 30.42	+ 3 52.8	1.430	2.311	13.8	19.7
1 22	9 21.43	+21 41.8	2.329	3.286	4.7	20.7	1 22	9 23.06	+ 3 29.4	1.359	2.295	9.9	19.4
2 1	9 13.05	+22 5.4	2.310	3.291	1.9	20.5	2 1	9 13.63	+ 3 24.6	1.312	2.279	6.3	19.2
2 11	9 4.38	+22 23.8	2.321	3.296	3.2	20.6	2 11	9 3.34	+ 3 37.1	1.291	2.263	5.8	19.1
2 21	8 56.26	+22 34.4	2.363	3.301	6.4	20.9	2 21	8 53.56	+ 4 3.1	1.296	2.247	9.1	19.2
3 2	8 49.49	+22 35.7	2.432	3.305	9.5	21.1	3 2	8 45.65	+ 4 37.0	1.326	2.232	13.4	19.4
3 12	8 44.61	+22 27.7	2.524	3.310	12.1	21.2	3 12	8 40.59	+ 5 12.5	1.377	2.217	17.5	19.6
150181	1998 <i>FR</i> ₂₄		2 4.7 332°25	1.3°/ 5.4	18		78665	2002 <i>TO</i> ₈₉		2 4.7 169°60	1°1/ 5.6	18	
1 2	9 31.97	+12 15.2	1.464	2.301	16.2	19.5	1 2	9 32.93	+11 12.5	2.469	3.273	11.4	20.0
1 12	9 28.20	+12 17.5	1.378	2.285	12.3	19.2	1 12	9 27.76	+11 23.9	2.386	3.275	8.6	19.9
1 22	9 21.71	+12 33.5	1.314	2.270	7.7	18.9	1 22	9 20.91	+11 44.5	2.328	3.277	5.4	19.7
2 1	9 13.23	+13 0.5	1.274	2.256	2.7	18.6	2 1	9 12.95	+12 11.8	2.298	3.279	2.0	19.4
2 11	9 3.97	+13 33.2	1.261	2.243	3.3	18.6	2 11	9 4.64	+12 42.6	2.299	3.280	2.3	19.4
2 21	8 55.33	+14 6.0	1.273	2.230	8.5	18.9	2 21	8 56.79	+13 13.3	2.330	3.281	5.6	19.7
3 2	8 48.63	+14 33.7	1.310	2.218	13.4	19.1	3 2	8 50.15	+13 41.0	2.390	3.282	8.9	19.9
3 12	8 44.80	+14 52.6	1.368	2.208	17.6	19.3	3 12	8 45.28	+14 3.4	2.474	3.282	11.6	20.1
465765	2009 <i>WJ</i> ₁₇₅		2 4.7 183°29	2°3/ 6.3	16		406171	2006 <i>WC</i> ₅₈		2 4.7 64°11	1°3/ 5.4	18	
1 2	9 35.08	+ 8 33.0	2.284	3.079	12.5	21.9	1 2	9 37.32	+11 41.6	1.571	2.393	16.0	21.2
1 12	9 29.45	+ 8 27.9	2.198	3.080	9.6	21.7	1 12	9 31.55	+11 48.7	1.517	2.416	11.9	21.0
1 22	9 21.96	+ 8 33.7	2.137	3.080	6.3	21.5	1 22	9 23.33	+12 8.6	1.485	2.439	7.4	20.8
2 1	9 13.22	+ 8 49.0	2.104	3.079	3.1	21.3	2 1	9 13.59	+12 37.6	1.481	2.462	2.6	20.6
2 11	9 4.07	+ 9 10.9	2.100	3.078	2.9	21.3	2 11	9 3.61	+13 10.2	1.504	2.485	3.1	20.7
2 21	8 55.41	+ 9 36.1	2.127	3.077	6.1	21.5	2 21	8 54.63	+13 41.4	1.555	2.508	7.6	21.0
3 2	8 48.09	+10 1.2	2.182	3.076	9.5	21.7	3 2	8 47.69	+14 7.2	1.632	2.531	11.7	21.3
3 12	8 42.73	+10 23.3	2.261	3.074	12.5	21.9	3 12	8 43.42	+14 25.1	1.730	2.554	15.2	21.6
69825	1998 <i>RU</i> ₇₁		2 4.7 82°68	1°4/ 3.7	18		116921	2004 <i>GA</i> ₂₄		2 4.7 271°49	0°1/ 4.8	18	
1 2	9 34.53	+18 25.7	2.038	2.867	12.6	19.5	1 2	9 30.90	+13 21.1	2.382	3.198	11.4	20.1
1 12	9 29.20	+19 0.3	1.973	2.879	9.2	19.3	1 12	9 26.42	+13 55.2	2.293	3.192	8.5	19.9
1 22	9 21.85	+19 40.6	1.932	2.890	5.4	19.1	1 22	9 20.19	+14 38.7	2.230	3.185	5.1	19.7
2 1	9 13.18	+20 21.7	1.919	2.902	1.8	18.8	2 1	9 12.77	+15 28.2	2.195	3.178	1.4	19.4
2 11	9 4.19	+20 58.3	1.936	2.913	3.3	19.0	2 11	9 4.92	+16 19.1	2.191	3.171	2.3	19.5
2 21	8 55.89	+21 26.5	1.982	2.925	7.1	19.2	2 21	8 57.48	+17 7.0	2.216	3.165	6.0	19.7
3 2	8 49.17	+21 44.0	2.055	2.936	10.6	19.5	3 2	8 51.24	+17 48.5	2.269	3.158	9.4	19.9
3 12	8 44.65	+21 50.2	2.151	2.948	13.5	19.7	3 12	8 46.81	+18 20.9	2.346	3.151	12.3	20.1
9573	Matsumotomas		2 4.7 130°51	1°2/ 3.7	18		185146	2006 <i>SS</i> ₁₅₇		2 4.7 50°11	2°3/ 3.4	18	
1 2	9 34.14	+18 6.0	2.260	3.084	11.7	18.1	1 2	9 37.09	+19 43.7	1.439	2.284	15.9	20.7
1 12	9 28.79	+18 39.3	2.187	3.090	8.6	17.9	1 12	9 31.72	+20 20.1	1.386	2.300	11.7	20.4
1 22	9 21.56	+19 18.1	2.139	3.097	5.0	17.7	1 22	9 23.58	+21 2.7	1.356	2.316	6.9	20.2
2 1	9 13.10	+19 58.0	2.121	3.103	1.6	17.5	2 1	9 13.69	+21 44.4	1.351	2.333	2.6	20.0
2 11	9 4.31	+20 34.4	2.132	3.109	3.0	17.6	2 11	9 3.46	+22 17.9	1.374	2.350	4.6	20.1
2 21	8 56.09	+21 3.5	2.173	3.115	6.6	17.9	2 21	8 54.33	+22 38.5	1.423	2.367	9.2	20.4
3 2	8 49.28	+21 22.9	2.242	3.121	9.9	18.1	3 2	8 47.47	+22 44.5	1.496	2.385	13.3	20.7
3 12	8 44.48	+21 32.0	2.334	3.126	12.7	18.3	3 12	8 43.59	+22 36.3	1.590	2.402	16.8	21.0
417777	2007 <i>ES</i> ₁₃		2 4.7 324°27	4°0/ 2.4	18		10722	Monari		2 4.7 114°39	6°6/ 1.1	18	
1 2	9 37.38	+25 13.8	1.642	2.486	14.4	20.7	1 2	9 47.14	+32 48.1	1.754	2.581	14.4	17.8
1 12	9 32.01	+25 45.0	1.565	2.477	10.7	20.4	1 12	9 38.85	+33 39.6	1.705	2.600	11.1	17.6
1 22	9 23.87	+26 16.8	1.512	2.468	6.8	20.2	1 22	9 27.69	+34 22.9	1.681	2.619	8.1	17.5
2 1	9 13.79	+26 42.0	1.485	2.460	4.1	20.0	2 1	9 14.78	+34 49.3	1.683	2.638	6.6	17.4
2 11	9 3.10	+26 54.2	1.485	2.453	5.8	20.1	2 11	9 1.67	+34 52.7	1.714	2.656	8.0	17.6
2 21	8 53.24	+26 49.8	1.512	2.445	9.8	20.3	2 21	8 49.90	+34 32.2	1.773	2.673	10.8	17.8
3 2	8 45.48	+26 28.3	1.564	2.438	13.7	20.5	3 2	8 40.67	+33 50.6	1.856	2.689	13.8	18.0
3 12	8 40.65	+25 51.8	1.636	2.432	17.2	20.7	3 12	8 34.63	+32 53.3	1.960	2.705	16.4	18.2
30413	2000 <i>KS</i> ₅₉		2 4.7 173°67	0°1/ 4.6	18		169335	2001 <i>TK</i> ₁₇₈		2 4.7 21°21	4°3/ 7.9	18	
1 2	9 32.15	+14 33.2	2.455	3.271	11.1	19.1	1 2	9 30.88	+ 2 40.3	2.075	2.860	14.0	19.7
1 12	9 27.23	+15 4.5	2.374	3.272	8.2	18.9	1 12	9 26.51	+ 2 30.1	1.996	2.863	11.1	19.5
1 22	9 20.61	+15 43.6	2.318	3.273	4.9	18.7	1 22	9 20.28	+ 2 36.5	1.939	2.867	8.0	19.3
2 1	9 12.85	+16 27.0	2.291	3.274	1.3	18.5	2 1	9 12.80	+ 2 58.8	1.908	2.871	5.1	19.1
2 11	9 4.74	+17 10.4	2.294	3.275	2.4	18.5	2 11	9 4.93	+ 3 34.4	1.906	2.875	4.5	19.1
2 21	8 57.08	+17 50.0	2.328	3.275	5.9	18.8	2 21	8 57.58	+ 4 19.0	1.931	2.880	6.8	19.2
3 2	8 50.64	+18 22.7	2.390	3.275	9.1	19.0	3 2	8 51.58	+ 5 7.7	1.984	2.885	9.9	19.4
3 12	8 45.99	+18 46.7	2.475	3.275	11.9	19.2	3 12	8 47.56	+ 5 55.5	2.060	2.890	12.9	19.6
323107	2002 <i>YW</i> ₇		2 4.7 94°25	0°0/ 4.6	18		58050	2002 <i>YA</i>		2 4.7 80°06	1°9/ 5.5	18	
1 2	9 35.33	+13 43.5	1.778	2.602	14.3	21.3	1 2	9 48.88	+12 47.3	1.908	2.701	14.7	18.7
1 12	9 30.02	+14 16.7	1.712	2.614	10.6	21.1	1 12	9 39.37	+12 4.7	1.856	2.739	11.0	18.5
1 22	9 22.44	+15 0.9	1.669	2.626	6.3	20.9	1 22	9 27.65	+11 29.6	1.830	2.776	6.9	18.3
2 1	9 13.37	+15 51.4	1.654	2.637	1.7	20.6	2 1	9 14.72	+11 0.7	1.834	2.813	2.8	18.2
2 11	9 3.90	+16 42.0	1.667	2.648	2.9	20.7	2 11	9 1.83	+10 36.2	1.871	2.849	3.1	18.2
2 21	8 55.19	+17 27.4	1.709	2.659	7.4	21.0	2 21	8 50.14	+10 14.9	1.938	2.885	6.9	18.6
3 2	8 48.25	+18 3.5	1.778	2.670	11.4	21.3	3 2	8 40.58	+ 9 55.2	2.035	2.919	10.5	18.8
3 12	8 43.76	+18 28.2	1.869	2.681	14.7	21.5	3 12	8 33.69	+ 9 35.8	2.156	2.953	13.5	19.1
279988	2001 <i>UK</i> ₂₆		2 4.7 82°71	0°7/ 5.3	18		326433	2001 <i>UF</i> ₄₈		2 4.7 43°61	6°1/ 1.1	18	
1 2	9 34.93	+12 44.7	2.446	3.252	11.5	20.7	1 2	9 37.34	+27 40.6	1.400	2.254	15.8	

EPHEMERIDES

2 4.7

2 4.7

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
231813	2000 <i>GJ</i> ₄₃		2 4.7 289°52	0°3/ 4.4	17		226029	2002 <i>EQ</i> ₁₄₁		2 4.7 282°84	1°8/ 3.5	18	
1 2	9 32.72	+15 24.4	2.126	2.950	12.3	21.3	1 2	9 35.05	+19 25.0	1.919	2.752	13.1	20.6
1 12	9 28.05	+15 50.1	2.030	2.932	9.2	21.1	1 12	9 29.86	+19 58.8	1.842	2.750	9.6	20.4
1 22	9 21.32	+16 24.4	1.958	2.915	5.5	20.8	1 22	9 22.41	+20 38.2	1.789	2.748	5.7	20.1
2 1	9 13.12	+17 3.6	1.914	2.897	1.5	20.5	2 1	9 13.42	+21 18.1	1.765	2.746	2.1	19.9
2 11	9 4.35	+17 43.0	1.900	2.880	2.8	20.6	2 11	9 3.95	+21 52.7	1.769	2.745	3.8	20.0
2 21	8 55.98	+18 18.1	1.914	2.862	6.9	20.8	2 21	8 55.13	+22 17.7	1.801	2.743	7.8	20.2
3 2	8 48.99	+18 45.5	1.956	2.845	10.7	21.0	3 2	8 47.97	+22 30.7	1.860	2.741	11.5	20.4
3 12	8 44.09	+19 3.0	2.021	2.828	13.9	21.2	3 12	8 43.20	+22 31.3	1.941	2.739	14.7	20.7
258078	2001 <i>PE</i> ₂₁		2 4.7 110°10	0°1/ 4.6	18		464074	2014 <i>WX</i> ₂₇₅		2 4.7 216°73	3°1/ 1.9	18	
1 2	9 40.40	+16 44.2	1.899	2.717	13.8	20.2	1 2	9 34.97	+21 35.6	2.093	2.925	12.2	20.9
1 12	9 33.57	+16 38.1	1.830	2.730	10.2	19.9	1 12	9 29.80	+22 55.0	2.011	2.919	9.0	20.6
1 22	9 24.47	+16 37.5	1.786	2.742	6.1	19.7	1 22	9 22.41	+24 20.5	1.956	2.913	5.5	20.4
2 1	9 13.93	+16 39.1	1.771	2.754	1.6	19.4	2 1	9 13.44	+25 44.8	1.929	2.906	3.2	20.3
2 11	9 3.08	+16 39.3	1.785	2.765	2.9	19.6	2 11	9 3.88	+27 0.4	1.933	2.898	4.9	20.4
2 21	8 53.09	+16 35.6	1.829	2.777	7.2	19.9	2 21	8 54.80	+28 1.4	1.966	2.891	8.4	20.6
3 2	8 44.94	+16 26.5	1.900	2.788	11.0	20.1	3 2	8 47.24	+28 44.7	2.025	2.883	11.8	20.7
3 12	8 39.29	+16 11.5	1.994	2.798	14.2	20.3	3 12	8 41.96	+29 9.9	2.106	2.874	14.7	20.9
411271	2010 <i>RF</i> ₁₅₈		2 4.7 123°86	5°8/ 31.8	18		490218	2008 <i>VS</i> ₁₃		2 4.7 23°29	19°6/ 19.5	17	
1 2	9 42.89	+32 9.9	2.053	2.878	12.6	21.8	1 2	9 40.72	+52 4.3	1.051	1.886	21.3	20.2
1 12	9 35.46	+33 3.3	1.999	2.895	9.7	21.6	1 12	9 37.55	+55 28.5	1.042	1.896	19.9	20.2
1 22	9 25.60	+33 50.6	1.971	2.910	7.0	21.5	1 22	9 28.55	+58 13.7	1.051	1.908	19.7	20.2
2 1	9 14.23	+34 24.0	1.971	2.925	5.8	21.5	2 1	9 15.25	+60 1.2	1.078	1.921	20.4	20.3
2 11	9 2.60	+34 38.3	2.000	2.940	7.1	21.6	2 11	9 0.96	+60 42.2	1.121	1.935	21.8	20.4
2 21	8 51.97	+34 31.8	2.057	2.954	9.7	21.8	2 21	8 49.23	+60 20.5	1.179	1.951	23.5	20.6
3 2	8 43.39	+34 5.8	2.139	2.967	12.4	22.0	3 2	8 42.53	+59 7.8	1.249	1.968	25.1	20.8
3 12	8 37.51	+33 24.2	2.242	2.980	14.8	22.2	3 12	8 41.56	+57 18.4	1.329	1.986	26.5	21.0
246431	2007 <i>VP</i> ₈₇		2 4.7 175°06	1°4/ 5.7	18		468708	2010 <i>BA</i> ₉₅		2 4.7 210°86	4°9/ 10.2	17	
1 2	9 33.37	+11 1.3	2.373	3.178	11.8	20.4	1 2	9 29.81	- 5 18.7	2.814	3.539	12.1	21.8
1 12	9 28.15	+10 59.8	2.289	3.178	8.9	20.2	1 12	9 25.37	- 4 55.0	2.714	3.535	10.0	21.7
1 22	9 21.18	+11 7.2	2.230	3.179	5.6	20.0	1 22	9 19.48	- 4 12.5	2.637	3.530	7.8	21.5
2 1	9 13.05	+11 21.7	2.200	3.179	2.3	19.8	2 1	9 12.61	- 3 11.6	2.587	3.524	5.8	21.4
2 11	9 4.56	+11 40.4	2.199	3.179	2.5	19.8	2 11	9 5.37	- 1 54.9	2.567	3.519	4.9	21.3
2 21	8 56.56	+12 0.1	2.228	3.179	5.8	20.0	2 21	8 58.44	- 0 26.7	2.577	3.513	6.1	21.4
3 2	8 49.81	+12 18.1	2.286	3.179	9.1	20.2	3 2	8 52.47	+ 1 7.5	2.616	3.507	8.2	21.5
3 12	8 44.92	+12 32.0	2.367	3.179	12.0	20.4	3 12	8 47.98	+ 2 42.1	2.683	3.501	10.6	21.6
84172	2002 <i>RZ</i> ₁₀₂		2 4.7 57°13	2°0/ 3.6	18		202414	2005 <i>UV</i> ₁₉		2 4.7 8°92	3°5/ 2.8	18	
1 2	9 39.21	+19 21.8	1.446	2.287	16.1	19.0	1 2	9 38.23	+21 32.7	1.341	2.191	16.6	20.4
1 12	9 33.11	+19 53.7	1.402	2.313	11.8	18.8	1 12	9 33.06	+22 21.2	1.275	2.191	12.3	20.2
1 22	9 24.31	+20 31.4	1.381	2.340	6.9	18.6	1 22	9 24.70	+23 16.1	1.231	2.191	7.5	19.9
2 1	9 13.88	+21 8.0	1.385	2.368	2.4	18.3	2 1	9 14.11	+24 8.4	1.212	2.192	3.6	19.7
2 11	9 3.29	+21 36.7	1.418	2.395	4.3	18.5	2 11	9 2.85	+24 49.1	1.219	2.192	5.8	19.8
2 21	8 53.93	+21 53.4	1.478	2.422	8.8	18.9	2 21	8 52.62	+25 12.3	1.253	2.193	10.6	20.1
3 2	8 46.91	+21 56.8	1.562	2.450	12.9	19.2	3 2	8 44.87	+25 16.1	1.309	2.194	15.1	20.3
3 12	8 42.84	+21 47.5	1.667	2.477	16.3	19.5	3 12	8 40.49	+25 1.9	1.385	2.195	19.0	20.6
428349	2007 <i>MQ</i> ₅		2 4.7 113°36	2°0/ 2.9	18		429858	2012 <i>RC</i> ₂₈		2 4.7 76°40	5°8/ 1.3	18	
1 2	9 32.91	+18 54.5	2.187	3.016	11.8	21.2	1 2	9 44.97	+35 46.7	2.321	3.135	11.7	21.2
1 12	9 28.02	+19 58.2	2.117	3.024	8.6	21.0	1 12	9 36.62	+36 6.3	2.270	3.154	9.2	21.1
1 22	9 21.19	+21 8.3	2.072	3.031	5.1	20.8	1 22	9 26.10	+36 16.3	2.244	3.174	6.9	21.0
2 1	9 13.06	+22 18.9	2.057	3.038	2.1	20.6	2 1	9 14.36	+36 11.0	2.246	3.193	5.8	20.9
2 11	9 4.55	+23 23.7	2.071	3.045	3.7	20.7	2 11	9 2.58	+35 47.2	2.279	3.212	6.8	21.0
2 21	8 56.59	+24 17.9	2.115	3.051	7.2	21.0	2 21	8 51.91	+35 5.1	2.340	3.231	8.9	21.2
3 2	8 50.05	+24 58.4	2.186	3.058	10.5	21.2	3 2	8 43.25	+34 7.2	2.428	3.250	11.3	21.4
3 12	8 45.57	+25 24.4	2.280	3.064	13.3	21.4	3 12	8 37.14	+32 57.7	2.539	3.269	13.4	21.6
162989	2001 <i>SJ</i> ₃₅		2 4.7 151°20	2°3/ 2.6	18		26809	1984 <i>QU</i>		2 4.7 85°51	2°3/ 3.5	17	
1 2	9 33.72	+22 39.9	2.693	3.517	10.0	20.6	1 2	9 43.52	+20 2.7	1.454	2.289	16.4	19.3
1 12	9 28.28	+23 20.2	2.620	3.524	7.3	20.5	1 12	9 36.28	+20 37.3	1.409	2.317	12.0	19.1
1 22	9 21.19	+24 2.3	2.574	3.530	4.5	20.3	1 22	9 26.21	+21 16.7	1.386	2.345	7.1	18.9
2 1	9 13.05	+24 41.8	2.558	3.535	2.3	20.1	2 1	9 14.42	+21 53.5	1.390	2.372	2.7	18.7
2 11	9 4.61	+25 14.6	2.572	3.541	3.6	20.2	2 11	9 2.47	+22 20.9	1.423	2.398	4.6	18.9
2 21	8 56.66	+25 37.7	2.617	3.546	6.4	20.4	2 21	8 51.86	+22 35.0	1.483	2.424	9.1	19.2
3 2	8 49.93	+25 49.8	2.689	3.550	9.1	20.6	3 2	8 43.74	+22 34.8	1.568	2.450	13.2	19.5
3 12	8 44.95	+25 50.9	2.785	3.555	11.5	20.8	3 12	8 38.77	+22 21.7	1.674	2.475	16.6	19.8
456577	2007 <i>DZ</i> ₂₁		2 4.7 273°54	0°1/ 4.6	18		253168	2002 <i>WL</i> ₁₆		2 4.7 123°94	6°6/ 9.4	18	
1 2	9 34.72	+15 2.5	1.872	2.697	13.6	21.8	1 2	9 33.69	- 2 51.4	1.871	2.630	16.2	20.3
1 12	9 29.64	+15 23.7	1.791	2.695	10.2	21.6	1 12	9 28.80	- 3 13.0	1.791	2.635	13.4	20.1
1 22	9 22.29	+15 54.2	1.735	2.692	6.1	21.3	1 22	9 21.77	- 3 12.3	1.733	2.640	10.3	20.0
2 1	9 13.39	+16 29.9	1.706	2.689	1.6	21.0	2 1	9 13.27	- 2 48.5	1.700	2.644	7.6	19.8
2 11	9 3.99	+17 5.6	1.706	2.686	2.9	21.1	2 11	9 4.29	- 2 3.7	1.693	2.649	6.7	19.8
2 21	8 55.20	+17 36.7	1.734	2.684	7.3	21.4	2 21	8 55.89	- 1 2.9	1.714	2.653	8.3	19.9
3 2	8 48.06	+17 59.7	1.789	2.681	11.3	21.6	3 2	8 49.04	+ 0 7.2	1.761	2.657	11.2	20.0
3 12	8 43.29	+18 12.8	1.866	2.678	14.7	21.8	3 12	8 44.45	+ 1 19.5	1.832	2.661	14.2	20.2
4391	Balodis		2 4.7 205°28	2°3/ 6.3	18		230434	2002 <i>PV</i> ₁₄₇		2 4.7 153°32	0°9/ 3.9	17	
1 2	9 35.84	+ 7 32.4	2.089	2.884	13.5	18.8	1 2	9 34.87	+18 7.7	2.480	3.		

EPHEMERIDES

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
256025	2006 <i>UJ</i> ₃₆		2 4.7 40°57' 13.6"/27.7 18				39623	1994 <i>PJ</i> ₇		2 4.7 173°74' 0.4"/5.1 18			
1 2	9 45.21	+46 11.0	1.374	2.201	17.6	19.6	1 2	9 33.48	+12 40.3	2.167	2.981	12.5	19.5
1 12	9 38.75	+47 59.7	1.351	2.219	15.3	19.5	1 12	9 28.45	+13 9.4	2.086	2.982	9.3	19.3
1 22	9 28.16	+49 24.4	1.348	2.238	13.9	19.5	1 22	9 21.49	+13 48.7	2.030	2.983	5.7	19.1
2 1	9 15.00	+50 11.5	1.366	2.257	13.8	19.5	2 1	9 13.23	+14 34.7	2.002	2.984	1.7	18.8
2 11	9 1.60	+50 14.2	1.407	2.277	14.9	19.7	2 11	9 4.55	+15 22.6	2.003	2.985	2.5	18.9
2 21	8 50.23	+49 34.4	1.468	2.298	16.9	19.8	2 21	8 56.39	+16 7.8	2.035	2.985	6.4	19.1
3 2	8 42.47	+48 19.8	1.548	2.319	18.9	20.0	3 2	8 49.60	+16 46.5	2.094	2.985	10.0	19.3
3 12	8 38.92	+46 40.7	1.644	2.340	20.8	20.3	3 12	8 44.85	+17 16.3	2.177	2.985	13.0	19.5
29725	Mikewest		2 4.7 266°42' 0°/4.6 18				337051	1996 <i>VF</i> ₂₅		2 4.7 178°19' 1°4"/3.3 17			
1 2	9 31.96	+14 6.8	2.333	3.150	11.6	18.7	1 2	9 32.96	+19 45.9	3.033	3.850	9.2	22.3
1 12	9 27.27	+14 34.6	2.242	3.141	8.6	18.5	1 12	9 27.60	+20 22.1	2.951	3.852	6.7	22.1
1 22	9 20.77	+15 11.2	2.176	3.131	5.2	18.3	1 22	9 20.78	+21 1.5	2.897	3.853	4.0	21.9
2 1	9 13.00	+15 53.0	2.138	3.121	1.4	18.0	2 1	9 13.01	+21 40.6	2.873	3.854	1.5	21.7
2 11	9 4.78	+16 36.0	2.131	3.112	2.4	18.1	2 11	9 4.94	+22 15.9	2.880	3.854	2.7	21.8
2 21	8 56.97	+17 15.7	2.153	3.102	6.2	18.3	2 21	8 57.26	+22 44.5	2.918	3.854	5.5	22.0
3 2	8 50.40	+17 49.0	2.203	3.092	9.6	18.5	3 2	8 50.60	+23 4.7	2.986	3.853	8.1	22.2
3 12	8 45.71	+18 13.5	2.277	3.082	12.6	18.7	3 12	8 45.47	+23 15.7	3.077	3.852	10.4	22.3
182356	2001 <i>QV</i> ₇₃		2 4.7 123°17' 1°6"/5.9 18				450543	2006 <i>BH</i> ₂₇₇		2 4.7 4°66' 1°9"/5.9 18			
1 2	9 35.79	+9 12.6	2.268	3.064	12.6	21.1	1 2	9 33.72	+8 56.5	1.380	2.209	17.4	21.3
1 12	9 29.89	+9 31.7	2.199	3.083	9.5	20.9	1 12	9 29.54	+9 26.1	1.307	2.209	13.3	21.1
1 22	9 22.20	+10 2.2	2.155	3.101	6.0	20.7	1 22	9 22.56	+10 16.1	1.256	2.209	8.4	20.8
2 1	9 13.36	+10 41.3	2.140	3.118	2.5	20.5	2 1	9 13.58	+11 22.2	1.228	2.209	3.3	20.5
2 11	9 4.25	+11 24.9	2.155	3.135	2.5	20.5	2 11	9 3.94	+12 36.8	1.228	2.210	3.5	20.5
2 21	8 55.74	+12 8.8	2.201	3.151	5.9	20.8	2 21	8 55.08	+13 51.2	1.254	2.211	8.6	20.8
3 2	8 48.64	+12 49.2	2.275	3.167	9.2	21.0	3 2	8 48.30	+14 57.7	1.304	2.212	13.5	21.1
3 12	8 43.50	+13 23.3	2.374	3.181	12.1	21.2	3 12	8 44.50	+15 51.0	1.375	2.213	17.6	21.3
53090	1998 <i>YS</i> ₇		2 4.7 50°39' 6°9"/3.8 18				427460	2001 <i>SP</i> ₂₉₉		2 4.7 54°51' 1°9"/3.4 18			
1 2	10 2.95	+33 58.4	1.111	1.942	20.6	16.5	1 2	9 35.51	+21 11.5	2.146	2.975	12.0	20.7
1 12	9 50.91	+33 24.7	1.073	1.972	15.8	16.3	1 12	9 29.92	+21 29.2	2.075	2.981	8.8	20.5
1 22	9 34.77	+32 33.6	1.056	2.002	10.7	16.1	1 22	9 22.34	+21 49.4	2.030	2.988	5.3	20.2
2 1	9 16.63	+31 17.0	1.064	2.032	7.1	16.0	2 1	9 13.46	+22 7.8	2.013	2.994	2.1	20.0
2 11	8 59.21	+29 34.4	1.100	2.063	8.2	16.2	2 11	9 4.28	+22 20.3	2.026	3.001	3.5	20.2
2 21	8 44.76	+27 33.4	1.163	2.094	12.3	16.5	2 21	8 55.76	+22 24.1	2.068	3.007	7.1	20.4
3 2	8 34.57	+25 24.4	1.251	2.125	16.5	16.8	3 2	8 48.80	+22 18.1	2.136	3.014	10.4	20.6
3 12	8 28.95	+23 16.3	1.360	2.156	20.0	17.1	3 12	8 44.01	+22 2.5	2.228	3.021	13.2	20.8
293767	2007 <i>RG</i> ₉₆		2 4.7 80°26' 2°7"/3.1 18				87758	2000 <i>SL</i> ₈₅		2 4.7 121°43' 6°5'/30.6 18			
1 2	9 39.24	+20 27.7	1.538	2.376	15.4	20.5	1 2	9 40.86	+35 3.1	2.237	3.060	11.8	19.9
1 12	9 33.18	+21 18.6	1.487	2.398	11.3	20.3	1 12	9 33.97	+36 11.5	2.187	3.076	9.3	19.8
1 22	9 24.43	+22 14.7	1.459	2.419	6.7	20.0	1 22	9 24.78	+37 12.3	2.163	3.091	7.2	19.7
2 1	9 13.99	+23 8.1	1.459	2.439	2.9	19.9	2 1	9 14.13	+37 57.8	2.166	3.106	6.5	19.6
2 11	9 3.26	+23 51.5	1.487	2.460	4.8	20.0	2 11	9 3.18	+38 22.9	2.199	3.121	7.7	19.7
2 21	8 53.62	+24 19.8	1.542	2.480	9.1	20.3	2 21	8 53.12	+38 25.5	2.258	3.135	9.9	19.9
3 2	8 46.22	+24 31.7	1.621	2.501	13.0	20.6	3 2	8 44.95	+38 7.3	2.343	3.148	12.2	20.1
3 12	8 41.73	+24 28.2	1.722	2.520	16.3	20.9	3 12	8 39.31	+37 31.7	2.448	3.161	14.3	20.3
313988	2004 <i>TR</i> ₁₃₃		2 4.7 74°50' 4°1'/2.5 18				260563	2005 <i>EV</i> ₂₁₆		2 4.7 297°05' 3°2'/2.7 18			
1 2	9 42.00	+23 40.9	1.425	2.268	16.2	20.2	1 2	9 35.81	+21 4.4	1.518	2.364	15.2	20.7
1 12	9 35.32	+24 35.2	1.383	2.294	11.9	20.0	1 12	9 31.28	+21 56.2	1.429	2.344	11.3	20.4
1 22	9 25.71	+25 30.9	1.363	2.320	7.4	19.8	1 22	9 23.76	+22 56.2	1.363	2.323	7.0	20.1
2 1	9 14.32	+26 18.7	1.370	2.346	4.2	19.7	2 1	9 13.98	+23 56.5	1.323	2.303	3.4	19.8
2 11	9 2.74	+26 51.2	1.404	2.372	6.0	19.9	2 11	9 3.25	+24 48.3	1.310	2.283	5.5	19.9
2 21	8 52.51	+27 4.6	1.465	2.398	10.1	20.2	2 21	8 53.11	+25 24.6	1.323	2.263	10.3	20.1
3 2	8 44.83	+26 59.0	1.550	2.423	13.9	20.5	3 2	8 45.02	+25 41.9	1.361	2.243	14.9	20.4
3 12	8 40.34	+26 37.5	1.656	2.448	17.2	20.7	3 12	8 40.04	+25 40.0	1.417	2.223	18.8	20.6
349399	2007 <i>XD</i> ₅₆		2 4.7 96°07' 4°3'/7.9 18				54079	2000 <i>GY</i> ₁₅₇		2 4.7 330°29' 1°2'/3.9 18			
1 2	9 36.63	+1 42.7	2.693	3.446	11.9	20.8	1 2	9 33.93	+15 4.3	1.267	2.116	17.4	19.2
1 12	9 30.19	+1 4.4	2.624	3.470	9.5	20.6	1 12	9 30.07	+16 0.0	1.194	2.109	13.0	18.9
1 22	9 22.25	+0 38.5	2.580	3.494	7.0	20.5	1 22	9 23.07	+17 12.4	1.142	2.103	7.7	18.6
2 1	9 13.38	+0 25.2	2.565	3.517	4.8	20.4	2 1	9 13.78	+18 33.7	1.114	2.098	2.2	18.2
2 11	9 4.31	+0 23.4	2.581	3.540	4.4	20.4	2 11	9 3.66	+19 53.6	1.113	2.093	4.4	18.3
2 21	8 55.79	+0 30.9	2.627	3.562	6.0	20.5	2 21	8 54.35	+21 2.2	1.137	2.088	10.1	18.6
3 2	8 48.47	+0 44.9	2.701	3.584	8.3	20.7	3 2	8 47.36	+21 53.3	1.185	2.084	15.2	18.9
3 12	8 42.85	+1 2.1	2.802	3.606	10.5	20.9	3 12	8 43.70	+22 24.3	1.251	2.081	19.5	19.2
157111	2004 <i>LU</i> ₂₃		2 4.7 115°62' 2°0'/6.1 17				260049	2004 <i>GK</i> ₈₆		2 4.7 155°48' 0°9'/5.3 18			
1 2	9 39.34	+8 34.0	1.931	2.728	14.4	20.9	1 2	9 34.34	+11 16.5	1.919	2.734	13.8	21.4
1 12	9 32.71	+8 53.6	1.870	2.753	10.9	20.7	1 12	9 29.30	+11 47.2	1.841	2.737	10.4	21.2
1 22	9 23.96	+9 26.9	1.832	2.777	7.0	20.5	1 22	9 22.10	+12 30.8	1.787	2.740	6.4	20.9
2 1	9 13.87	+10 10.6	1.822	2.800	3.0	20.3	2 1	9 13.44	+13 23.4	1.760	2.742	2.1	20.7
2 11	9 3.52	+10 59.6	1.843	2.823	2.9	20.4	2 11	9 4.30	+14 19.4	1.763	2.744	2.7	20.7
2 21	8 53.97	+11 48.8	1.893	2.844	6.7	20.7	2 21	8 55.76	+15 13.3	1.795	2.746	6.9	21.0
3 2	8 46.16	+12 33.7	1.972	2.864	10.4	20.9	3 2	8 48.79	+16 0.5	1.853	2.748	10.8	21.2
3 12	8 40.69	+13 11.1	2.074	2.884	13.5	21.2	3 12	8 44.09	+16 37.8	1.935	2.750	14.2	21.4
378324	2007 <i>GO</i> ₃₇		2 4.7 188°37' 2°1'/3.0 18				53922	2000 <i>GC</i> ₂₇		2 4.7 112°32' 0°6'/5.1 18			
1 2	9 34.80	+20 19.4	2.187	3.016	11.8	21.3	1 2	9 36.48	+12 13.1	2.081	2.		

EPHEMERIDES

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
345742	2007 <i>DJ</i> ₁₀₅		2 4.7 336°49	4°0/ 2.8 18			432115	2009 <i>BO</i> ₁₅		2 4.7 30°36	0°0/ 4.5 18		
1 2	9 37.15	+22 14.7	1.183	2.042	17.7	20.7	1 2	9 34.36	+15 38.4	1.892	2.719	13.5	20.8
1 12	9 32.73	+22 59.2	1.114	2.035	13.2	20.4	1 12	9 29.25	+15 42.2	1.824	2.727	10.0	20.6
1 22	9 24.77	+23 50.2	1.067	2.029	8.2	20.1	1 22	9 22.02	+15 53.4	1.779	2.736	6.0	20.4
2 1	9 14.26	+24 38.1	1.043	2.023	4.1	19.9	2 1	9 13.42	+16 8.6	1.761	2.744	1.6	20.1
2 11	9 2.90	+25 12.8	1.044	2.018	6.4	20.0	2 11	9 4.47	+16 23.6	1.773	2.754	2.7	20.2
2 21	8 52.60	+25 28.0	1.070	2.013	11.6	20.3	2 21	8 56.25	+16 35.2	1.812	2.763	6.9	20.5
3 2	8 45.03	+25 21.9	1.117	2.009	16.6	20.5	3 2	8 49.67	+16 40.8	1.879	2.773	10.7	20.8
3 12	8 41.17	+24 56.4	1.183	2.006	20.8	20.8	3 12	8 45.39	+16 39.2	1.968	2.784	13.9	21.0
248637	2006 <i>GD</i> ₂		2 4.7 304°74	6°7/ 7.2 18			52037	2002 <i>PR</i> ₄₇		2 4.7 171°31	4°8/ 9.3 18		
1 2	9 36.01	+ 3 41.4	1.401	2.207	18.4	20.5	1 2	9 31.03	- 2 12.7	2.512	3.260	12.8	20.0
1 12	9 31.67	+ 2 43.4	1.295	2.175	15.1	20.2	1 12	9 26.42	- 2 3.9	2.423	3.262	10.5	19.9
1 22	9 24.20	+ 2 2.2	1.210	2.143	11.1	19.9	1 22	9 20.21	- 1 37.2	2.356	3.264	7.9	19.7
2 1	9 14.17	+ 1 41.1	1.148	2.111	7.6	19.6	2 1	9 12.92	- 0 53.1	2.317	3.265	5.6	19.5
2 11	9 2.83	+ 1 40.6	1.111	2.080	7.1	19.4	2 11	9 5.27	+ 0 5.9	2.307	3.266	4.8	19.5
2 21	8 51.74	+ 1 58.5	1.099	2.048	10.6	19.5	2 21	8 58.00	+ 1 15.3	2.326	3.267	6.3	19.6
3 2	8 42.55	+ 2 29.4	1.110	2.017	15.3	19.7	3 2	8 51.84	+ 2 29.9	2.374	3.268	8.8	19.7
3 12	8 36.54	+ 3 5.9	1.142	1.987	20.0	19.9	3 12	8 47.35	+ 3 44.4	2.447	3.268	11.4	19.9
82586	2001 <i>OH</i> ₈₈		2 4.7 148°52	0°5/ 5.1 18			83199	2001 <i>RM</i> ₅		2 4.7 293°35	1°2/ 4.1 18		
1 2	9 31.61	+11 47.9	2.570	3.376	11.0	20.1	1 2	9 37.35	+18 27.2	1.666	2.500	14.6	19.3
1 12	9 26.80	+12 29.0	2.490	3.382	8.2	19.9	1 12	9 32.09	+18 39.2	1.574	2.482	10.9	19.0
1 22	9 20.40	+13 19.8	2.436	3.388	5.0	19.7	1 22	9 24.08	+18 57.7	1.505	2.464	6.6	18.7
2 1	9 12.94	+14 16.9	2.411	3.393	1.5	19.5	2 1	9 14.07	+19 18.1	1.463	2.446	2.0	18.4
2 11	9 5.16	+15 15.7	2.418	3.399	2.1	19.5	2 11	9 3.27	+19 34.8	1.449	2.429	3.7	18.5
2 21	8 57.80	+16 12.0	2.454	3.403	5.5	19.8	2 21	8 53.06	+19 43.4	1.463	2.411	8.6	18.7
3 2	8 51.58	+17 2.2	2.520	3.408	8.6	20.0	3 2	8 44.76	+19 41.4	1.502	2.393	13.1	18.9
3 12	8 47.03	+17 43.7	2.610	3.412	11.3	20.1	3 12	8 39.28	+19 28.3	1.563	2.376	17.0	19.2
461430	2001 <i>VF</i> ₂₁		2 4.7 32°01	9°4/10.6 18			13234	Natashaowen		2 4.7 94°56	1°5/ 3.9 18		
1 2	9 32.72	- 5 19.2	1.400	2.172	20.1	19.9	1 2	9 39.44	+16 16.2	1.359	2.198	17.1	17.4
1 12	9 28.53	- 6 16.1	1.344	2.188	16.9	19.7	1 12	9 33.69	+17 10.1	1.304	2.214	12.6	17.1
1 22	9 21.78	- 6 43.5	1.305	2.205	13.5	19.6	1 22	9 24.95	+18 15.7	1.271	2.231	7.4	16.9
2 1	9 13.35	- 6 38.7	1.288	2.223	10.6	19.5	2 1	9 14.25	+19 24.8	1.264	2.247	2.2	16.6
2 11	9 4.51	- 6 3.4	1.295	2.242	9.4	19.4	2 11	9 3.11	+20 28.2	1.284	2.262	4.3	16.8
2 21	8 56.56	- 5 3.7	1.327	2.261	10.7	19.6	2 21	8 53.09	+21 18.7	1.331	2.278	9.4	17.1
3 2	8 50.63	- 3 48.7	1.381	2.282	13.4	19.8	3 2	8 45.49	+21 52.5	1.402	2.293	13.9	17.4
3 12	8 47.43	- 2 28.5	1.457	2.303	16.4	20.0	3 12	8 41.07	+22 9.2	1.494	2.307	17.7	17.7
184072	2004 <i>GM</i> ₁₇		2 4.7 232°40	0°8/ 4.1 18			153769	2001 <i>VJ</i> ₂₉		2 4.7 40°74	2°3/ 6.1 18 R		
1 2	9 34.82	+15 57.3	1.897	2.724	13.4	20.7	1 2	9 33.98	+ 8 59.1	1.436	2.262	17.0	19.6
1 12	9 29.79	+16 38.0	1.814	2.719	10.0	20.5	1 12	9 29.38	+ 9 10.4	1.381	2.280	12.9	19.4
1 22	9 22.47	+17 28.4	1.756	2.714	5.9	20.3	1 22	9 22.25	+ 9 39.0	1.348	2.299	8.2	19.1
2 1	9 13.56	+18 23.4	1.725	2.708	1.6	20.0	2 1	9 13.49	+10 21.2	1.340	2.319	3.5	18.9
2 11	9 4.09	+19 16.7	1.724	2.703	3.2	20.1	2 11	9 4.40	+11 10.9	1.358	2.339	3.4	18.9
2 21	8 55.18	+20 2.9	1.751	2.697	7.6	20.3	2 21	8 56.28	+12 1.4	1.403	2.360	7.9	19.3
3 2	8 47.89	+20 38.1	1.804	2.691	11.5	20.5	3 2	8 50.20	+12 46.8	1.473	2.381	12.2	19.6
3 12	8 42.97	+21 0.5	1.881	2.685	14.9	20.7	3 12	8 46.84	+13 23.1	1.565	2.403	15.8	19.8
227596	2006 <i>AV</i> ₄₁		2 4.7 80°97	1°5/ 5.8 18			463169	2012 <i>BR</i> ₅₂		2 4.7 42°97	0°6/ 4.3 18		
1 2	9 34.23	+10 18.7	1.917	2.730	13.9	21.0	1 2	9 33.33	+13 45.4	1.490	2.328	15.9	21.4
1 12	9 29.12	+10 31.7	1.847	2.740	10.5	20.8	1 12	9 29.04	+14 46.0	1.427	2.336	11.8	21.1
1 22	9 21.93	+10 57.2	1.800	2.750	6.6	20.6	1 22	9 22.15	+16 1.3	1.386	2.345	7.0	20.9
2 1	9 13.38	+11 32.0	1.780	2.760	2.6	20.3	2 1	9 13.50	+17 24.2	1.371	2.354	1.8	20.6
2 11	9 4.47	+12 11.8	1.789	2.770	2.8	20.4	2 11	9 4.34	+18 45.8	1.384	2.364	3.6	20.7
2 21	8 56.21	+12 51.7	1.828	2.780	6.7	20.6	2 21	8 56.01	+19 57.8	1.424	2.374	8.5	21.0
3 2	8 49.54	+13 27.6	1.892	2.791	10.5	20.9	3 2	8 49.67	+20 54.8	1.489	2.384	12.9	21.3
3 12	8 45.10	+13 56.4	1.981	2.801	13.7	21.1	3 12	8 46.09	+21 34.3	1.575	2.395	16.6	21.6
367201	2007 <i>BL</i> ₆₅		2 4.7 99°41	1°0/ 5.5 18			56906	2000 <i>QY</i> ₁₈₄		2 4.7 91°53	2°9/ 2.7 18		
1 2	9 33.31	+10 10.4	1.894	2.708	14.0	21.1	1 2	9 37.46	+25 29.5	2.380	3.206	11.1	19.3
1 12	9 28.52	+10 53.5	1.822	2.717	10.5	20.9	1 12	9 31.18	+25 47.2	2.313	3.216	8.2	19.1
1 22	9 21.63	+11 51.0	1.773	2.725	6.5	20.7	1 22	9 23.02	+26 3.8	2.271	3.225	5.2	19.0
2 1	9 13.31	+12 58.5	1.752	2.734	2.2	20.5	2 1	9 13.68	+26 14.8	2.259	3.234	3.0	18.8
2 11	9 4.58	+14 9.8	1.760	2.742	2.7	20.5	2 11	9 4.10	+26 16.7	2.277	3.243	4.2	18.9
2 21	8 56.46	+15 18.6	1.798	2.750	6.9	20.8	2 21	8 55.21	+26 7.4	2.324	3.252	7.1	19.1
3 2	8 49.91	+16 19.4	1.862	2.758	10.7	21.0	3 2	8 47.84	+25 47.1	2.398	3.261	10.0	19.3
3 12	8 45.61	+17 8.9	1.950	2.766	14.0	21.3	3 12	8 42.56	+25 16.8	2.497	3.270	12.5	19.5
109891	2001 <i>SU</i> ₁₀		2 4.7 129°40	1°7/ 6.3 18			205302	2000 <i>SM</i> ₂₇₁		2 4.7 73°67	5°2/ 1.6 18		
1 2	9 30.75	+ 7 7.5	2.382	3.177	12.1	20.0	1 2	9 39.00	+25 21.1	1.451	2.298	15.7	19.9
1 12	9 26.29	+ 7 53.3	2.299	3.182	9.2	19.8	1 12	9 33.38	+26 34.6	1.399	2.312	11.6	19.7
1 22	9 20.16	+ 8 53.3	2.242	3.186	5.9	19.6	1 22	9 24.78	+27 49.4	1.370	2.326	7.6	19.5
2 1	9 12.90	+10 4.2	2.213	3.191	2.6	19.4	2 1	9 14.22	+28 55.1	1.367	2.339	5.2	19.4
2 11	9 5.27	+11 21.3	2.215	3.195	2.4	19.4	2 11	9 3.22	+29 42.7	1.392	2.353	7.1	19.5
2 21	8 58.07	+12 38.9	2.247	3.199	5.7	19.6	2 21	8 53.36	+30 7.5	1.442	2.367	10.9	19.7
3 2	8 52.05	+13 52.0	2.308	3.203	9.0	19.8	3 2	8 45.92	+30 9.3	1.516	2.381	14.7	20.0
3 12	8 47.79	+14 56.7	2.393	3.207	11.8	20.0	3 12	8 41.66	+29 51.1	1.610	2.394	17.9	20.3
10350	Spallanzani		2 4.7 67°36	0°2/ 4.5 18			100480	1996 <i>UK</i>		2 4.7 116°58	3°8/ 8.4 18		
1 2	9 34.50	+13 52.5	1.674	2.504	14.8	17.1	1 2	9 35.33	+ 0 11.9	2.738	3.485		

EPHEMERIDES

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
62066	2000 <i>RM</i> ₇₃		2 4.7 164°70	0°3/ 4.5 18			506380	2017 <i>QK</i> ₃₄		2 4.7 216°28	3°9/ 8.3 17		
1 2	9 34.34	+14 38.2	1.992	2.815	13.1	19.3	1 2	9 32.29	+0 47.4	2.577	3.337	12.2	22.6
1 12	9 29.27	+15 13.4	1.915	2.816	9.7	19.1	1 12	9 27.39	+0 57.9	2.477	3.328	9.8	22.4
1 22	9 22.09	+15 58.3	1.861	2.818	5.8	18.9	1 22	9 20.84	+1 24.2	2.400	3.320	7.1	22.2
2 1	9 13.47	+16 48.4	1.836	2.819	1.6	18.6	2 1	9 13.15	+2 5.7	2.352	3.310	4.7	22.1
2 11	9 4.40	+17 38.2	1.840	2.820	2.8	18.7	2 11	9 5.01	+2 59.8	2.333	3.300	4.0	22.0
2 21	8 55.91	+18 22.8	1.873	2.821	7.0	18.9	2 21	8 57.20	+4 2.3	2.345	3.290	6.0	22.1
3 2	8 48.95	+18 58.3	1.933	2.822	10.8	19.2	3 2	8 50.45	+5 8.5	2.385	3.279	8.8	22.3
3 12	8 44.22	+19 22.8	2.016	2.822	14.0	19.4	3 12	8 45.36	+6 13.5	2.451	3.268	11.5	22.4
43633	2002 <i>CX</i> ₂₄₇		2 4.7 284°96	0°5/ 4.4 18			182905	2002 <i>EG</i> ₆₃		2 4.7 65°85	2°1/ 6.2 18		
1 2	9 35.20	+14 41.6	1.558	2.392	15.5	19.1	1 2	9 32.97	+8 15.7	1.873	2.682	14.3	20.4
1 12	9 30.69	+15 18.7	1.465	2.373	11.6	18.8	1 12	9 28.31	+8 35.0	1.798	2.688	10.9	20.2
1 22	9 23.36	+16 9.6	1.396	2.354	7.0	18.5	1 22	9 21.53	+9 9.5	1.747	2.694	7.1	20.0
2 1	9 13.91	+17 9.1	1.352	2.335	1.9	18.1	2 1	9 13.34	+9 56.1	1.722	2.700	3.2	19.8
2 11	9 3.55	+18 9.8	1.336	2.316	3.6	18.2	2 11	9 4.72	+10 49.9	1.726	2.707	3.0	19.8
2 21	8 53.70	+19 4.2	1.347	2.297	8.9	18.5	2 21	8 56.72	+11 45.4	1.759	2.713	6.8	20.0
3 2	8 45.74	+19 46.7	1.383	2.278	13.7	18.7	3 2	8 50.27	+12 37.2	1.818	2.719	10.6	20.2
3 12	8 40.68	+20 14.5	1.439	2.259	17.9	18.9	3 12	8 46.06	+13 21.5	1.901	2.726	14.0	20.5
178944	2001 <i>QA</i> ₁₂₁		2 4.7 156°71	1°2/ 3.8 18			468003	2012 <i>VC</i> ₅₁		2 4.7 142°78	3°8/ 1.0 17		
1 2	9 36.40	+17 41.1	2.181	3.002	12.1	20.6	1 2	9 34.54	+28 20.4	2.781	3.607	9.7	21.8
1 12	9 30.60	+18 22.9	2.107	3.009	8.9	20.4	1 12	9 28.96	+29 13.9	2.716	3.616	7.2	21.7
1 22	9 22.80	+19 11.2	2.058	3.015	5.3	20.2	1 22	9 21.70	+30 5.5	2.677	3.624	4.9	21.6
2 1	9 13.66	+20 1.0	2.039	3.021	1.7	20.0	2 1	9 13.36	+30 50.3	2.668	3.632	3.8	21.5
2 11	9 4.12	+20 46.8	2.049	3.026	3.2	20.1	2 11	9 4.74	+31 24.1	2.690	3.639	4.9	21.6
2 21	8 55.18	+21 24.6	2.090	3.031	6.9	20.3	2 21	8 56.62	+31 44.2	2.741	3.647	7.2	21.7
3 2	8 47.73	+21 51.4	2.158	3.035	10.3	20.5	3 2	8 49.76	+31 50.0	2.818	3.653	9.5	21.9
3 12	8 42.42	+22 6.6	2.250	3.039	13.3	20.7	3 12	8 44.71	+31 42.4	2.919	3.660	11.6	22.1
284194	2006 <i>BC</i> ₂₄		2 4.7 36°60	3°3/ 6.1 18			466227	2012 <i>TK</i> ₁₇₅		2 4.7 161°05	3°7/ 8.1 17		
1 2	9 38.82	+9 59.0	1.286	2.114	18.5	19.9	1 2	9 31.03	+1 45.8	2.510	3.279	12.3	21.7
1 12	9 33.36	+9 23.7	1.221	2.120	14.2	19.7	1 12	9 26.43	+1 52.3	2.424	3.282	9.8	21.5
1 22	9 24.85	+9 3.4	1.177	2.127	9.3	19.4	1 22	9 20.23	+2 14.0	2.361	3.284	7.0	21.4
2 1	9 14.26	+8 57.1	1.157	2.135	4.4	19.2	2 1	9 12.97	+2 50.0	2.325	3.286	4.5	21.2
2 11	9 3.14	+9 1.4	1.163	2.143	4.4	19.2	2 11	9 5.37	+3 37.4	2.319	3.288	3.9	21.2
2 21	8 53.07	+9 11.9	1.195	2.151	9.1	19.5	2 21	8 58.16	+4 32.3	2.343	3.290	5.9	21.3
3 2	8 45.41	+9 23.9	1.251	2.160	13.8	19.8	3 2	8 52.06	+5 30.1	2.395	3.291	8.6	21.5
3 12	8 41.00	+9 33.2	1.327	2.169	17.9	20.0	3 12	8 47.63	+6 26.5	2.472	3.293	11.3	21.6
137166	Netabahcall		2 4.7 244°66	1°8/ 6.4 18			65114	2002 <i>CH</i> ₄₉		2 4.7 220°90	4°0/ 8.1 18		
1 2	9 30.60	+7 26.2	2.437	3.233	11.8	20.4	1 2	9 32.20	+1 32.9	2.223	2.996	13.5	19.7
1 12	9 26.22	+7 56.3	2.345	3.227	9.1	20.2	1 12	9 27.55	+1 48.4	2.129	2.990	10.8	19.5
1 22	9 20.16	+8 39.7	2.277	3.221	5.9	20.0	1 22	9 21.04	+2 22.1	2.059	2.984	7.7	19.3
2 1	9 12.94	+9 33.9	2.238	3.215	2.7	19.8	2 1	9 13.22	+3 12.8	2.015	2.978	4.9	19.1
2 11	9 5.31	+10 34.9	2.228	3.208	2.5	19.7	2 11	9 4.92	+4 17.0	2.000	2.971	4.1	19.0
2 21	8 58.04	+11 37.9	2.249	3.202	5.7	19.9	2 21	8 57.01	+5 29.7	2.015	2.964	6.5	19.2
3 2	8 51.90	+12 38.4	2.299	3.195	8.9	20.1	3 2	8 50.35	+6 44.8	2.058	2.957	9.7	19.4
3 12	8 47.48	+13 32.6	2.373	3.188	11.8	20.3	3 12	8 45.59	+7 57.0	2.125	2.949	12.8	19.5
363628	2004 <i>RU</i> ₄₁		2 4.7 135°40	1°7/ 6.2 18			340772	2006 <i>SP</i> ₃₄₇		2 4.7 129°98	5°0/ 9.6 17		
1 2	9 35.37	+8 55.7	2.658	3.446	11.2	22.1	1 2	9 30.30	-3 1.4	2.622	3.365	12.5	21.3
1 12	9 29.41	+9 4.4	2.584	3.463	8.5	21.9	1 12	9 25.82	-3 5.8	2.537	3.370	10.3	21.1
1 22	9 21.89	+9 22.7	2.536	3.479	5.4	21.8	1 22	9 19.84	-2 53.2	2.474	3.375	7.9	21.0
2 1	9 13.39	+9 48.6	2.517	3.494	2.5	21.6	2 1	9 12.86	-2 23.8	2.439	3.380	5.8	20.8
2 11	9 4.64	+10 19.1	2.529	3.508	2.4	21.6	2 11	9 5.57	-1 39.6	2.431	3.385	5.1	20.8
2 21	8 56.39	+10 50.9	2.573	3.522	5.3	21.8	2 21	8 58.67	-0 44.1	2.453	3.390	6.3	20.9
3 2	8 49.33	+11 21.1	2.645	3.535	8.2	22.0	3 2	8 52.82	+0 18.0	2.503	3.394	8.5	21.0
3 12	8 43.97	+11 47.3	2.744	3.547	10.7	22.2	3 12	8 48.54	+1 21.8	2.578	3.399	10.9	21.2
28793	2000 <i>HM</i> ₆₁		2 4.7 236°21	0°9/ 5.3 18			433700	2014 <i>WP</i> ₄₆₇		2 4.7 30°48	1°3/ 3.6 18		
1 2	9 34.48	+11 36.9	1.926	2.741	13.7	18.5	1 2	9 31.45	+15 55.5	1.934	2.766	13.0	19.9
1 12	9 29.51	+12 2.5	1.838	2.735	10.4	18.3	1 12	9 27.23	+17 5.2	1.863	2.770	9.5	19.7
1 22	9 22.32	+12 40.6	1.775	2.728	6.4	18.0	1 22	9 20.93	+18 25.3	1.816	2.775	5.6	19.5
2 1	9 13.58	+13 27.8	1.739	2.721	2.2	17.7	2 1	9 13.20	+19 49.6	1.797	2.780	1.8	19.2
2 11	9 4.26	+14 18.9	1.732	2.714	2.7	17.7	2 11	9 5.01	+21 10.6	1.808	2.785	3.5	19.3
2 21	8 55.46	+15 8.4	1.755	2.706	7.0	18.0	2 21	8 57.40	+22 21.8	1.847	2.790	7.5	19.6
3 2	8 48.19	+15 51.8	1.804	2.699	11.1	18.2	3 2	8 51.30	+23 18.8	1.913	2.796	11.2	19.8
3 12	8 43.23	+16 25.8	1.876	2.691	14.5	18.4	3 12	8 47.42	+23 59.8	2.001	2.801	14.3	20.1
498255	2007 <i>UK</i> ₁₁₃		2 4.7 97°02	4°9/31.6 18			243397	2008 <i>YO</i> ₁₇₂		2 4.7 300°83	6°2/29.8 15		
1 2	9 35.37	+30 6.2	2.296	3.129	11.2	21.4	1 2	9 33.57	+30 59.1	2.111	2.950	11.8	20.3
1 12	9 29.92	+31 4.7	2.231	3.133	8.5	21.2	1 12	9 29.07	+32 36.6	2.031	2.934	9.2	20.1
1 22	9 22.42	+32 0.2	2.192	3.136	6.0	21.1	1 22	9 22.20	+34 13.6	1.978	2.918	6.9	19.9
2 1	9 13.57	+32 46.4	2.181	3.140	4.9	21.0	2 1	9 13.59	+35 41.1	1.952	2.902	6.3	19.8
2 11	9 4.34	+33 17.7	2.199	3.143	6.2	21.1	2 11	9 4.28	+36 51.0	1.955	2.886	7.8	19.9
2 21	8 55.75	+33 31.5	2.245	3.147	8.7	21.2	2 21	8 55.42	+37 38.2	1.984	2.871	10.5	20.0
3 2	8 48.73	+33 27.5	2.316	3.151	11.4	21.4	3 2	8 48.16	+38 1.2	2.037	2.855	13.3	20.2
3 12	8 43.91	+33 7.5	2.409	3.154	13.7	21.6	3 12	8 43.33	+38 1.8	2.111	2.840	15.8	20.4
155568	1999 <i>WN</i> ₁₇		2 4.7 199°09	2°8/ 2.3 18			356454	2011 <i>NM</i>		2 4.7 174°46	2°2/ 6.2 18		
1 2	9 36.40	+24 10.6	2.657	3.479	10.2	21.1	1 2	9 38.66	+8 20.3	2.076	2.869	13.7	22.1
1 12	9 30.42												

EPHEMERIDES

2 4.7

2 4.7

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
4746 Doi			2 4.7 78°43	0°3/ 4.9 18			378341 2007 HV ₄₇			2 4.7 215°24	0°3/ 4.5 17		
1 2	9 32.83	+13 31.0	2.333	3.147	11.7	17.2	1 2	9 33.98	+14 56.2	2.407	3.222	11.4	21.9
1 12	9 27.77	+13 54.7	2.267	3.164	8.6	17.1	1 12	9 28.78	+15 29.2	2.317	3.215	8.4	21.7
1 22	9 21.02	+14 26.7	2.227	3.181	5.2	16.9	1 22	9 21.75	+16 10.3	2.253	3.208	5.0	21.5
2 1	9 13.19	+15 3.4	2.215	3.197	1.5	16.7	2 1	9 13.45	+16 55.7	2.217	3.200	1.4	21.2
2 11	9 5.11	+15 40.8	2.233	3.214	2.3	16.7	2 11	9 4.70	+17 41.0	2.213	3.193	2.5	21.3
2 21	8 57.61	+16 15.2	2.281	3.231	5.8	17.0	2 21	8 56.36	+18 22.0	2.238	3.184	6.2	21.5
3 2	8 51.42	+16 43.7	2.357	3.247	9.0	17.2	3 2	8 49.26	+18 55.5	2.291	3.175	9.5	21.7
3 12	8 47.08	+17 4.4	2.457	3.263	11.8	17.4	3 12	8 44.04	+19 19.8	2.369	3.166	12.4	21.9
227679 2006 CG ₃₃			2 4.7 52°92	5°9/31.9 18			111345 2001 XC ₁₀₂			2 4.7 273°05	13°4/14.8 18		
1 2	9 37.83	+29 36.9	1.702	2.544	14.0	20.2	1 2	9 33.13	-20 38.7	2.005	2.642	18.7	19.8
1 12	9 32.23	+30 42.1	1.650	2.558	10.6	20.0	1 12	9 28.68	-21 58.4	1.914	2.632	17.2	19.6
1 22	9 23.98	+31 43.7	1.623	2.571	7.4	19.8	1 22	9 21.96	-22 49.7	1.839	2.621	15.6	19.5
2 1	9 14.03	+32 32.8	1.623	2.585	5.9	19.8	2 1	9 13.57	-23 6.4	1.783	2.610	14.3	19.3
2 11	9 3.74	+33 2.5	1.650	2.599	7.5	19.9	2 11	9 4.44	-22 45.5	1.749	2.599	13.5	19.3
2 21	8 54.47	+33 9.8	1.703	2.613	10.5	20.1	2 21	8 55.68	-21 48.1	1.736	2.588	13.6	19.2
3 2	8 47.35	+32 55.5	1.780	2.628	13.6	20.3	3 2	8 48.36	-20 20.0	1.746	2.577	14.6	19.3
3 12	8 43.07	+32 23.1	1.877	2.642	16.4	20.6	3 12	8 43.33	-18 30.4	1.777	2.566	16.2	19.4
3961 Arcturus			2 4.7 219°99	0°2/ 4.6 18			170103 2002 XT ₇₄			2 4.7 352°73	6°5/ 8.4 18		
1 2	9 38.70	+16 32.2	2.159	2.974	12.5	16.9	1 2	9 33.79	-0 16.6	1.971	2.739	15.2	18.8
1 12	9 32.41	+16 33.6	2.069	2.967	9.3	16.7	1 12	9 28.90	-1 14.7	1.886	2.736	12.5	18.6
1 22	9 23.97	+16 40.6	2.004	2.959	5.6	16.4	1 22	9 21.93	-1 56.1	1.823	2.734	9.6	18.4
2 1	9 14.05	+16 50.0	1.968	2.951	1.5	16.1	2 1	9 13.53	-2 18.9	1.786	2.731	7.2	18.3
2 11	9 3.64	+16 58.2	1.962	2.943	2.7	16.2	2 11	9 4.62	-2 23.2	1.776	2.730	6.5	18.2
2 21	8 53.77	+17 2.3	1.987	2.934	6.8	16.4	2 21	8 56.21	-2 11.4	1.793	2.729	8.3	18.3
3 2	8 45.43	+17 0.4	2.039	2.924	10.5	16.6	3 2	8 49.26	-1 47.7	1.836	2.728	11.1	18.5
3 12	8 39.31	+16 51.7	2.115	2.914	13.6	16.8	3 12	8 44.47	-1 17.4	1.902	2.728	13.9	18.7
427043 2014 TE ₃₇			2 4.7 129°02	2°2/ 3.0 18			119564 2001 VR ₆₉			2 4.7 135°17	1°2/ 3.9 18		
1 2	9 37.08	+20 22.4	2.092	2.919	12.4	21.6	1 2	9 38.59	+19 0.5	2.149	2.969	12.3	20.9
1 12	9 31.17	+21 12.8	2.027	2.932	9.1	21.4	1 12	9 32.19	+19 20.1	2.079	2.980	9.1	20.7
1 22	9 23.17	+22 7.5	1.988	2.945	5.4	21.2	1 22	9 23.75	+19 43.9	2.034	2.991	5.4	20.5
2 1	9 13.81	+23 0.7	1.977	2.957	2.4	21.0	2 1	9 13.99	+20 7.5	2.019	3.001	1.7	20.2
2 11	9 4.10	+23 46.6	1.996	2.969	3.9	21.1	2 11	9 3.92	+20 26.8	2.034	3.011	3.1	20.3
2 21	8 55.08	+24 21.1	2.045	2.980	7.5	21.4	2 21	8 54.55	+20 38.5	2.078	3.020	6.9	20.6
3 2	8 47.68	+24 42.2	2.121	2.991	10.8	21.6	3 2	8 46.78	+20 41.2	2.150	3.029	10.3	20.8
3 12	8 42.53	+24 49.8	2.219	3.001	13.7	21.8	3 12	8 41.24	+20 34.6	2.246	3.037	13.2	21.0
293089 2006 WK ₁₉₅			2 4.7 107°99	2°4/ 6.5 18			40830 1999 TV ₉₃			2 4.7 183°00	0°3/ 4.5 18		
1 2	9 36.63	+7 20.7	2.042	2.836	13.8	21.6	1 2	9 36.76	+14 28.7	2.031	2.847	13.1	19.7
1 12	9 30.71	+7 34.9	1.978	2.858	10.6	21.4	1 12	9 31.08	+15 7.4	1.949	2.848	9.7	19.5
1 22	9 22.83	+8 3.0	1.937	2.880	6.9	21.2	1 22	9 23.23	+15 56.0	1.893	2.848	5.8	19.2
2 1	9 13.71	+8 42.3	1.925	2.900	3.3	21.1	2 1	9 13.89	+16 49.9	1.865	2.848	1.6	18.9
2 11	9 4.31	+9 28.5	1.942	2.921	3.0	21.1	2 11	9 4.03	+17 43.4	1.867	2.847	2.8	19.0
2 21	8 55.62	+10 16.7	1.989	2.940	6.4	21.3	2 21	8 54.75	+18 31.3	1.898	2.845	7.0	19.3
3 2	8 48.48	+11 2.4	2.064	2.959	9.9	21.6	3 2	8 47.01	+19 9.9	1.957	2.843	10.8	19.5
3 12	8 43.49	+11 42.2	2.163	2.978	12.9	21.8	3 12	8 41.53	+19 37.1	2.040	2.840	14.1	19.7
81678 2000 JX ₂			2 4.7 170°38	2°9/ 7.3 18			405210 2003 OY ₁₀			2 4.7 218°65	1°9/ 3.3 17		
1 2	9 33.64	+3 48.7	2.298	3.076	13.0	20.1	1 2	9 37.73	+18 32.3	2.075	2.898	12.6	22.2
1 12	9 28.50	+4 19.3	2.212	3.080	10.1	19.9	1 12	9 31.93	+19 28.6	1.985	2.888	9.3	22.0
1 22	9 21.56	+5 6.5	2.150	3.083	6.9	19.7	1 22	9 23.83	+20 32.8	1.920	2.877	5.6	21.8
2 1	9 13.39	+6 7.9	2.116	3.086	3.8	19.5	2 1	9 14.08	+21 38.9	1.884	2.865	2.1	21.5
2 11	9 4.80	+7 19.3	2.112	3.088	3.3	19.5	2 11	9 3.67	+22 40.2	1.878	2.853	3.8	21.6
2 21	8 56.66	+8 35.1	2.139	3.090	6.1	19.7	2 21	8 53.72	+23 31.2	1.902	2.839	7.8	21.8
3 2	8 49.77	+9 49.8	2.194	3.091	9.3	19.9	3 2	8 45.30	+24 8.3	1.954	2.825	11.5	22.0
3 12	8 44.77	+10 58.7	2.275	3.091	12.3	20.1	3 12	8 39.22	+24 30.6	2.028	2.810	14.7	22.2
17799 Petewilliams			2 4.7 62°58	3°2/ 2.6 18			368115 2013 GQ ₇₉			2 4.7 312°21	3°1/ 2.8 18		
1 2	9 36.56	+22 48.8	1.755	2.594	13.8	18.2	1 2	9 33.78	+19 21.7	1.369	2.221	16.2	20.5
1 12	9 31.14	+23 35.0	1.694	2.605	10.1	18.0	1 12	9 30.03	+20 25.3	1.285	2.203	12.0	20.2
1 22	9 23.29	+24 24.0	1.658	2.615	6.2	17.8	1 22	9 23.18	+21 41.0	1.224	2.186	7.3	19.9
2 1	9 13.86	+25 8.9	1.648	2.626	3.3	17.6	2 1	9 13.98	+23 0.3	1.187	2.168	3.2	19.6
2 11	9 4.05	+25 43.2	1.667	2.637	5.0	17.7	2 11	9 3.79	+24 12.6	1.177	2.152	5.6	19.7
2 21	8 55.10	+26 2.9	1.714	2.648	8.7	18.0	2 21	8 54.22	+25 9.1	1.192	2.135	10.7	19.9
3 2	8 48.07	+26 6.8	1.786	2.659	12.4	18.2	3 2	8 46.84	+25 44.6	1.231	2.119	15.6	20.1
3 12	8 43.65	+25 55.8	1.879	2.670	15.4	18.5	3 12	8 42.73	+25 58.2	1.288	2.104	19.8	20.4
79901 1999 BK ₉			2 4.7 55°89	2°3/ 5.9 18			473895 2016 EX ₁₄₆			2 4.7 313°21	0°0/ 4.6 18		
1 2	9 41.57	+10 20.8	1.439	2.256	17.5	17.8	1 2	9 33.09	+13 46.4	1.877	2.703	13.6	21.2
1 12	9 34.68	+10 6.9	1.399	2.293	13.1	17.6	1 12	9 28.54	+14 23.9	1.797	2.700	10.2	21.0
1 22	9 25.24	+10 7.5	1.381	2.330	8.3	17.4	1 22	9 21.79	+15 12.9	1.740	2.697	6.1	20.7
2 1	9 14.34	+10 19.4	1.389	2.368	3.5	17.2	2 1	9 13.50	+16 8.8	1.711	2.694	1.7	20.4
2 11	9 3.41	+10 37.9	1.425	2.405	3.5	17.3	2 11	9 4.70	+17 5.7	1.710	2.691	2.9	20.5
2 21	8 53.77	+10 58.3	1.488	2.442	7.9	17.7	2 21	8 56.45	+17 57.8	1.738	2.688	7.3	20.8
3 2	8 46.45	+11 16.6	1.578	2.479	12.0	18.0	3 2	8 49.77	+18 40.6	1.793	2.686	11.2	21.0
3 12	8 42.02	+11 29.8	1.689	2.515	15.4	18.3	3 12	8 45.40	+19 11.8	1.870	2.683	14.6	21.2
369864 2012 KK ₁₇			2 4.7 111°24	0°0/ 4.6 18			427109 2014 UU ₈₄			2 4.7 38°27	3°3/ 6.9 18		
1 2	9 33.95	+13 42.5	2.105	2.923	12.6	21.2	1 2	9 33.79	+6 27.4	1.708	2.515	15.6	20.6
1 12	9 28.83	+14 19.5	2.034	2.933	9.4	21							

EPHEMERIDES

2 4.7

2 4.8

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
381625	2008 XR ₅₀		2 4.7 42°29	1.3/ 3.6	18		54447	2000 NX ₁		2 4.7 234°99	3.7/ 1.5	18	
1 2	9 31.03	+14 49.4	2.010	2.838	12.7	19.8	1 2	9 34.72	+22 10.5	1.948	2.785	12.7	18.4
1 12	9 26.86	+16 16.8	1.941	2.848	9.3	19.6	1 12	9 29.89	+23 42.7	1.869	2.779	9.4	18.2
1 22	9 20.70	+17 55.7	1.898	2.857	5.5	19.4	1 22	9 22.70	+25 21.6	1.816	2.773	5.9	18.0
2 1	9 13.19	+19 39.2	1.884	2.867	1.7	19.2	2 1	9 13.81	+26 58.9	1.792	2.766	3.7	17.8
2 11	9 5.25	+21 19.2	1.900	2.877	3.4	19.3	2 11	9 4.26	+28 25.7	1.797	2.759	5.6	17.9
2 21	8 57.87	+22 48.8	1.946	2.888	7.3	19.6	2 21	8 55.22	+29 35.4	1.830	2.752	9.1	18.1
3 2	8 51.93	+24 2.9	2.019	2.899	10.8	19.8	3 2	8 47.79	+30 24.6	1.890	2.745	12.6	18.3
3 12	8 48.09	+24 59.5	2.115	2.909	13.8	20.0	3 12	8 42.80	+30 53.0	1.971	2.738	15.6	18.5
463719	2014 QY ₂₃₃		2 4.7 62°69	1.0/ 4.1	18		18236	Bernardburke		2 4.7 236°07	2.4/ 6.3	18	
1 2	9 36.03	+15 58.1	1.545	2.381	15.5	21.2	1 2	9 35.43	+ 8 20.3	1.671	2.483	15.7	18.2
1 12	9 30.90	+16 42.2	1.488	2.397	11.4	21.0	1 12	9 30.50	+ 8 29.6	1.589	2.479	12.0	18.0
1 22	9 23.22	+17 36.7	1.454	2.414	6.7	20.7	1 22	9 23.09	+ 8 55.3	1.528	2.476	7.9	17.7
2 1	9 13.89	+18 34.9	1.447	2.430	1.9	20.5	2 1	9 13.92	+ 9 35.0	1.494	2.472	3.6	17.5
2 11	9 4.18	+19 29.4	1.468	2.447	3.6	20.6	2 11	9 4.12	+10 23.7	1.488	2.468	3.4	17.5
2 21	8 55.41	+20 14.2	1.516	2.464	8.3	20.9	2 21	8 54.94	+11 15.4	1.509	2.464	7.7	17.7
3 2	8 48.69	+20 45.7	1.589	2.481	12.5	21.2	3 2	8 47.53	+12 4.4	1.557	2.460	12.0	17.9
3 12	8 44.70	+21 2.8	1.684	2.499	15.9	21.5	3 12	8 42.70	+12 46.1	1.627	2.455	15.8	18.2
5818	1989 RC ₁		2 4.7 91°65	2.9/ 2.6	18		390794	2004 CY ₁₁₅		2 4.7 50°30	0.8/ 4.2	18	
1 2	9 39.34	+18 38.6	1.643	2.475	14.9	17.1	1 2	9 35.10	+17 43.2	1.994	2.822	12.9	20.6
1 12	9 33.21	+20 15.6	1.596	2.504	10.8	16.9	1 12	9 29.77	+17 57.9	1.926	2.831	9.5	20.4
1 22	9 24.54	+22 0.3	1.574	2.532	6.4	16.7	1 22	9 22.38	+18 18.2	1.884	2.841	5.6	20.2
2 1	9 14.24	+23 42.8	1.580	2.559	3.0	16.5	2 1	9 13.67	+18 40.2	1.869	2.852	1.6	19.9
2 11	9 3.62	+25 13.3	1.616	2.586	5.0	16.7	2 11	9 4.63	+18 59.3	1.883	2.862	3.0	20.1
2 21	8 53.98	+26 25.1	1.680	2.612	9.0	17.0	2 21	8 56.30	+19 12.4	1.926	2.873	6.9	20.3
3 2	8 46.42	+27 15.5	1.770	2.638	12.7	17.3	3 2	8 49.58	+19 17.4	1.996	2.884	10.5	20.6
3 12	8 41.63	+27 45.1	1.881	2.662	15.8	17.6	3 12	8 45.09	+19 13.6	2.088	2.895	13.6	20.8
83731	2001 TW ₁₁₆		2 4.7 157°08	8°3/12.8	18		171454	2007 SM ₁₇		2 4.7 124°69	4.2/ 1.9	18	
1 2	9 32.01	-14 18.1	2.785	3.445	13.5	19.9	1 2	9 40.14	+24 48.4	1.803	2.637	13.7	20.4
1 12	9 27.10	-15 5.8	2.699	3.448	12.0	19.8	1 12	9 33.80	+25 51.8	1.744	2.650	10.2	20.2
1 22	9 20.66	-15 33.7	2.632	3.452	10.4	19.7	1 22	9 24.93	+26 56.3	1.710	2.664	6.5	20.0
2 1	9 13.18	-15 39.3	2.590	3.456	9.0	19.6	2 1	9 14.39	+27 53.9	1.703	2.676	4.2	19.9
2 11	9 5.33	-15 22.5	2.573	3.459	8.4	19.5	2 11	9 3.46	+28 37.4	1.726	2.688	5.8	20.0
2 21	8 57.83	-14 45.2	2.582	3.462	8.7	19.5	2 21	8 53.42	+29 2.7	1.777	2.700	9.3	20.2
3 2	8 51.36	-13 51.4	2.618	3.464	9.8	19.6	3 2	8 45.40	+29 9.0	1.853	2.711	12.7	20.5
3 12	8 46.47	-12 46.8	2.678	3.467	11.4	19.7	3 12	8 40.11	+28 58.4	1.951	2.722	15.6	20.7
454122	2013 CZ ₁₄₂		2 4.7 54°68	0.7/ 5.1	15		503133	2015 FB ₃₈₄		2 4.7 83°73	1.2/ 5.6	18	
1 2	9 40.39	+14 2.5	1.226	2.065	18.6	21.2	1 2	9 34.56	+12 8.8	2.256	3.065	12.2	21.2
1 12	9 34.44	+14 0.6	1.179	2.087	13.8	20.9	1 12	9 29.18	+12 4.4	2.178	3.069	9.2	21.0
1 22	9 25.42	+14 11.3	1.151	2.109	8.3	20.7	1 22	9 21.97	+12 8.5	2.124	3.074	5.7	20.8
2 1	9 14.49	+14 29.8	1.149	2.132	2.5	20.4	2 1	9 13.56	+12 18.9	2.099	3.079	2.2	20.6
2 11	9 3.30	+14 50.1	1.173	2.155	3.5	20.6	2 11	9 4.81	+12 32.7	2.103	3.084	2.4	20.6
2 21	8 53.46	+15 7.1	1.223	2.178	9.0	20.9	2 21	8 56.61	+12 46.7	2.138	3.089	6.0	20.9
3 2	8 46.24	+15 17.1	1.296	2.201	13.7	21.3	3 2	8 49.77	+12 58.6	2.200	3.094	9.4	21.1
3 12	8 42.31	+15 18.5	1.390	2.224	17.7	21.6	3 12	8 44.88	+13 6.0	2.286	3.099	12.3	21.3
393455	2001 VB ₁₈		2 4.7 123°36	3.4/ 2.6	18		412568	2014 NU ₅₉		2 4.8 194°34	0.5/ 4.4	18	
1 2	9 42.24	+23 1.4	1.814	2.643	13.9	22.1	1 2	9 36.33	+14 13.3	1.862	2.683	13.9	21.2
1 12	9 35.22	+23 56.2	1.758	2.662	10.2	21.9	1 12	9 31.00	+15 2.9	1.781	2.682	10.3	21.0
1 22	9 25.69	+24 53.2	1.726	2.681	6.3	21.7	1 22	9 23.32	+16 4.5	1.723	2.680	6.2	20.7
2 1	9 14.57	+25 44.7	1.723	2.699	3.5	21.6	2 1	9 13.98	+17 12.5	1.694	2.677	1.7	20.4
2 11	9 3.12	+26 24.1	1.749	2.717	5.1	21.7	2 11	9 4.06	+18 20.2	1.694	2.674	3.1	20.5
2 21	8 52.64	+26 47.4	1.805	2.733	8.8	22.0	2 21	8 54.71	+19 21.2	1.724	2.671	7.6	20.8
3 2	8 44.21	+26 53.9	1.886	2.749	12.3	22.2	3 2	8 47.02	+20 10.7	1.780	2.667	11.7	21.0
3 12	8 38.52	+26 45.2	1.989	2.764	15.2	22.4	3 12	8 41.77	+20 46.5	1.859	2.662	15.1	21.2
23808	Joshuahammer		2 4.7 86°34	0.9/ 5.4	18 R		498942	2009 BY ₅₁		2 4.8 13°92	0.9/ 3.9	17	
1 2	9 33.67	+11 55.3	2.044	2.858	13.1	19.3	1 2	9 31.27	+15 33.6	2.152	2.978	12.1	21.4
1 12	9 28.71	+12 14.0	1.969	2.864	9.8	19.1	1 12	9 26.97	+16 31.2	2.074	2.978	8.9	21.2
1 22	9 21.76	+12 43.4	1.918	2.870	6.0	18.9	1 22	9 20.76	+17 38.2	2.021	2.979	5.3	20.9
2 1	9 13.49	+13 20.3	1.895	2.876	2.1	18.6	2 1	9 13.25	+18 49.6	1.997	2.980	1.5	20.7
2 11	9 4.84	+14 0.2	1.901	2.882	2.5	18.7	2 11	9 5.31	+19 59.1	2.003	2.981	3.0	20.8
2 21	8 56.78	+14 38.7	1.936	2.888	6.5	18.9	2 21	8 57.85	+21 1.3	2.038	2.983	6.8	21.0
3 2	8 50.18	+15 11.9	1.999	2.894	10.1	19.2	3 2	8 51.75	+21 52.3	2.100	2.984	10.3	21.2
3 12	8 45.70	+15 37.3	2.085	2.900	13.3	19.4	3 12	8 47.64	+22 29.9	2.186	2.986	13.3	21.4
522640	2016 GW ₁₉₄		2 4.7 257°57	4.9/31.8	17		160	Una		2 4.8 65°20	1.8/ 3.6	18	
1 2	9 36.33	+28 14.5	2.132	2.966	11.9	21.4	1 2	9 36.21	+19 30.6	1.808	2.642	13.7	13.3
1 12	9 30.97	+29 20.7	2.049	2.953	9.0	21.2	1 12	9 30.85	+20 2.0	1.740	2.648	10.1	13.0
1 22	9 23.29	+30 26.6	1.992	2.940	6.2	21.0	1 22	9 23.16	+20 38.9	1.696	2.655	6.0	12.8
2 1	9 13.96	+31 25.1	1.964	2.927	4.9	20.9	2 1	9 13.91	+21 15.7	1.680	2.661	2.2	12.6
2 11	9 4.01	+32 9.4	1.964	2.914	6.4	21.0	2 11	9 4.26	+21 46.7	1.692	2.668	3.8	12.7
2 21	8 54.60	+32 35.2	1.992	2.900	9.3	21.1	2 21	8 55.37	+22 7.7	1.732	2.675	7.9	13.0
3 2	8 46.80	+32 41.3	2.046	2.887	12.4	21.3	3 2	8 48.28	+22 16.5	1.798	2.682	11.7	13.2
3 12	8 41.39	+32 29.3	2.120	2.873	15.1	21.5	3 12	8 43.68	+22 13.1	1.887	2.689	15.0	13.4
311261	2005 EA ₉₅		2 4.7 276°57	0.7/ 5.6	18		47708	2000 DR ₁₅		2 4.8 142°90	0.2/ 4.9	18	
1 2	9 27.98	+10 38.5	3.215	4.016	9.1	20.6	1 2	9 32.12	+12 24.2	2.317	3.129	11.8	19.0
1 12	9 24.01	+11 14.3	3.114	4.002	6.9	2							

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
463747	2014 <i>QF</i> ₄₃₂		2 4.8 70°31'	4°0'	2.3 18		250173	2002 <i>TZ</i> ₁₉₆		2 4.8 58°15'	7°2'	9.9 18	
1 2	9 38.57	+24 40.8	1.704	2.544	14.1	21.2	1 2	9 33.75	- 3 30.3	1.563	2.334	18.4	20.6
1 12	9 32.65	+25 30.7	1.652	2.561	10.4	21.0	1 12	9 29.16	- 3 46.0	1.501	2.351	15.2	20.4
1 22	9 24.22	+26 21.2	1.623	2.579	6.6	20.8	1 22	9 22.20	- 3 34.6	1.459	2.368	11.6	20.2
2 1	9 14.19	+27 4.7	1.622	2.597	4.0	20.7	2 1	9 13.68	- 2 55.6	1.439	2.386	8.4	20.1
2 11	9 3.87	+27 34.8	1.649	2.615	5.6	20.8	2 11	9 4.76	- 1 52.7	1.446	2.404	7.2	20.0
2 21	8 54.55	+27 48.0	1.704	2.632	9.2	21.1	2 21	8 56.64	- 0 33.0	1.479	2.422	9.0	20.2
3 2	8 47.30	+27 43.8	1.783	2.650	12.7	21.3	3 2	8 50.37	+ 0 54.6	1.537	2.440	12.1	20.4
3 12	8 42.78	+27 24.4	1.883	2.667	15.6	21.6	3 12	8 46.65	+ 2 21.2	1.618	2.459	15.2	20.6
166726	2002 <i>TJ</i> ₂₄₆		2 4.8 89°51'	3°2'	2.4 18		34417	2000 <i>RE</i> ₁₀₅		2 4.8 235°29'	2°9'	6.6 18	
1 2	9 36.81	+25 4.3	2.234	3.063	11.6	20.4	1 2	9 36.54	+ 7 36.9	2.177	2.969	13.2	18.7
1 12	9 30.88	+25 39.0	2.172	3.077	8.6	20.2	1 12	9 30.84	+ 7 17.8	2.082	2.959	10.3	18.5
1 22	9 22.98	+26 13.5	2.137	3.091	5.4	20.0	1 22	9 23.11	+ 7 10.1	2.010	2.949	6.9	18.3
2 1	9 13.84	+26 42.4	2.130	3.104	3.2	19.9	2 1	9 13.95	+ 7 12.9	1.966	2.939	3.7	18.1
2 11	9 4.44	+27 1.2	2.153	3.118	4.6	20.0	2 11	9 4.25	+ 7 24.2	1.952	2.928	3.5	18.0
2 21	8 55.76	+27 7.5	2.205	3.131	7.5	20.2	2 21	8 54.98	+ 7 41.0	1.968	2.917	6.6	18.2
3 2	8 48.66	+27 0.7	2.283	3.144	10.5	20.4	3 2	8 47.09	+ 7 59.8	2.011	2.906	10.1	18.4
3 12	8 43.72	+26 41.9	2.385	3.157	13.1	20.6	3 12	8 41.26	+ 8 17.5	2.079	2.895	13.3	18.6
54052	2000 <i>GQ</i> ₁₂₆		2 4.8 151°14'	4°6'	8.9 18		196920	2003 <i>TX</i> ₅₄		2 4.8 358°15'	5°6'	31.7 18	
1 2	9 34.14	- 1 11.2	2.522	3.270	12.8	19.4	1 2	9 34.66	+28 15.9	1.741	2.588	13.5	19.6
1 12	9 28.70	- 1 10.3	2.440	3.280	10.4	19.3	1 12	9 30.06	+29 26.4	1.676	2.586	10.3	19.3
1 22	9 21.63	- 0 52.7	2.381	3.290	7.7	19.1	1 22	9 22.86	+30 36.1	1.634	2.585	7.1	19.2
2 1	9 13.47	- 0 18.9	2.349	3.299	5.4	19.0	2 1	9 13.89	+31 36.4	1.620	2.584	5.6	19.1
2 11	9 4.99	+ 0 28.6	2.347	3.308	4.6	19.0	2 11	9 4.39	+32 19.4	1.632	2.584	7.2	19.2
2 21	8 56.96	+ 1 25.7	2.375	3.316	6.2	19.1	2 21	8 55.66	+32 40.8	1.671	2.584	10.4	19.3
3 2	8 50.10	+ 2 27.7	2.432	3.323	8.8	19.2	3 2	8 48.88	+32 40.0	1.733	2.585	13.7	19.5
3 12	8 44.96	+ 3 29.7	2.514	3.329	11.3	19.4	3 12	8 44.83	+32 19.4	1.815	2.586	16.6	19.7
298324	2003 <i>FY</i> ₃₂		2 4.8 166°57'	5°6'	31.9 18		30895	1993 <i>FH</i> ₂₃		2 4.8 186°76'	2°7'	6.6 18	
1 2	9 44.09	+30 53.0	2.048	2.871	12.7	21.2	1 2	9 37.53	+ 7 0.3	1.895	2.690	14.7	19.9
1 12	9 36.63	+31 51.8	1.982	2.878	9.8	21.0	1 12	9 31.79	+ 7 11.2	1.809	2.690	11.4	19.6
1 22	9 26.60	+32 46.2	1.942	2.883	7.0	20.9	1 22	9 23.77	+ 7 38.0	1.748	2.689	7.5	19.4
2 1	9 14.88	+33 28.3	1.930	2.888	5.6	20.8	2 1	9 14.15	+ 8 18.3	1.713	2.688	3.7	19.2
2 11	9 2.72	+33 51.6	1.948	2.892	7.0	20.9	2 11	9 3.96	+ 9 7.9	1.707	2.686	3.4	19.1
2 21	8 51.43	+33 53.8	1.994	2.894	9.8	21.0	2 21	8 54.34	+10 1.1	1.731	2.683	7.1	19.4
3 2	8 42.16	+33 35.5	2.066	2.896	12.7	21.2	3 2	8 46.32	+10 52.8	1.783	2.680	11.1	19.6
3 12	8 35.64	+33 0.3	2.159	2.898	15.3	21.4	3 12	8 40.69	+11 38.5	1.857	2.675	14.5	19.8
107207	2001 <i>BY</i> ₃₄		2 4.8 316°47'	0°0'	4.6 18		5588	Jennabelle		2 4.8 134°59'	3°6'	1.6 18	
1 2	9 37.50	+15 42.9	1.497	2.331	16.0	19.4	1 2	9 35.54	+24 18.4	2.224	3.056	11.6	17.5
1 12	9 32.34	+15 44.6	1.417	2.324	12.0	19.1	1 12	9 30.11	+25 31.7	2.159	3.065	8.5	17.3
1 22	9 24.34	+15 55.7	1.359	2.317	7.3	18.8	1 22	9 22.64	+26 47.0	2.120	3.074	5.5	17.1
2 1	9 14.32	+16 12.0	1.328	2.311	2.0	18.5	2 1	9 13.80	+27 57.4	2.110	3.082	3.6	17.0
2 11	9 3.60	+16 28.4	1.323	2.304	3.4	18.6	2 11	9 4.57	+28 56.6	2.131	3.091	5.1	17.1
2 21	8 53.65	+16 40.3	1.346	2.298	8.6	18.8	2 21	8 55.93	+29 40.3	2.180	3.098	8.1	17.3
3 2	8 45.79	+16 44.5	1.393	2.293	13.3	19.1	3 2	8 48.80	+30 6.8	2.256	3.106	11.0	17.5
3 12	8 40.92	+16 39.6	1.461	2.287	17.4	19.3	3 12	8 43.83	+30 16.8	2.353	3.113	13.6	17.7
400559	2008 <i>WN</i> ₆₆		2 4.8 152°29'	10°3'	26.6 16		428425	2007 <i>TE</i> ₁₉₇		2 4.8 70°03'	0°2'	4.9 18	
1 2	9 48.53	+44 26.1	2.071	2.872	13.4	22.0	1 2	9 34.52	+14 20.9	2.108	2.926	12.6	21.2
1 12	9 40.55	+46 27.8	2.031	2.885	11.6	21.8	1 12	9 29.21	+14 37.4	2.044	2.943	9.3	21.0
1 22	9 29.27	+48 14.2	2.015	2.896	10.4	21.8	1 22	9 22.00	+15 1.9	2.005	2.960	5.6	20.8
2 1	9 15.68	+49 34.1	2.026	2.906	10.5	21.8	2 1	9 13.60	+15 30.9	1.994	2.977	1.6	20.6
2 11	9 1.40	+50 20.0	2.063	2.915	11.7	21.9	2 11	9 4.94	+16 0.2	2.013	2.994	2.5	20.7
2 21	8 48.21	+50 30.6	2.124	2.923	13.4	22.0	2 21	8 56.95	+16 26.1	2.061	3.011	6.3	20.9
3 2	8 37.62	+50 9.6	2.206	2.930	15.3	22.2	3 2	8 50.44	+16 45.9	2.136	3.028	9.8	21.2
3 12	8 30.52	+49 24.0	2.306	2.936	17.0	22.4	3 12	8 46.00	+16 57.9	2.235	3.045	12.7	21.4
402631	2006 <i>TB</i> ₅₀		2 4.8 79°87'	1°9'	3.6 18		169118	2001 <i>OG</i> ₇₈		2 4.8 131°37'	3°7'	1.4 18	
1 2	9 40.19	+19 31.5	1.718	2.548	14.5	21.5	1 2	9 34.45	+26 4.6	2.460	3.290	10.6	20.5
1 12	9 33.64	+20 6.1	1.669	2.575	10.6	21.3	1 12	9 29.14	+27 6.7	2.394	3.298	7.9	20.3
1 22	9 24.71	+20 45.4	1.644	2.602	6.2	21.1	1 22	9 21.99	+28 8.8	2.355	3.306	5.2	20.2
2 1	9 14.32	+21 23.2	1.647	2.629	2.3	20.9	2 1	9 13.62	+29 5.3	2.344	3.313	3.7	20.1
2 11	9 3.75	+21 53.8	1.679	2.655	3.9	21.1	2 11	9 4.90	+29 50.9	2.364	3.320	5.0	20.2
2 21	8 54.22	+22 13.3	1.739	2.681	8.0	21.4	2 21	8 56.72	+30 22.1	2.413	3.327	7.6	20.4
3 2	8 46.73	+22 20.2	1.826	2.707	11.7	21.7	3 2	8 49.92	+30 37.8	2.488	3.333	10.3	20.6
3 12	8 41.89	+22 15.2	1.935	2.732	14.8	21.9	3 12	8 45.07	+30 38.8	2.586	3.340	12.6	20.7
92369	2000 <i>HC</i> ₄₈		2 4.8 219°85'	4°1'	2.2 18		172482	2003 <i>SS</i> ₁₀₄		2 4.8 141°85'	2°4'	3.3 18	
1 2	9 39.63	+23 42.3	1.644	2.483	14.6	20.5	1 2	9 40.33	+21 19.9	1.845	2.674	13.7	20.6
1 12	9 33.88	+24 43.0	1.568	2.478	10.9	20.2	1 12	9 33.88	+21 53.4	1.777	2.683	10.1	20.3
1 22	9 25.26	+25 47.9	1.516	2.472	6.9	20.0	1 22	9 24.98	+22 30.4	1.734	2.691	6.1	20.1
2 1	9 14.58	+26 48.2	1.490	2.466	4.2	19.8	2 1	9 14.47	+23 4.8	1.719	2.699	2.7	19.9
2 11	9 3.18	+27 35.6	1.493	2.459	6.0	19.9	2 11	9 3.55	+23 30.9	1.733	2.706	4.3	20.0
2 21	8 52.55	+28 4.3	1.523	2.452	10.1	20.1	2 21	8 53.46	+23 44.9	1.776	2.713	8.2	20.3
3 2	8 44.02	+28 12.8	1.578	2.445	14.1	20.3	3 2	8 45.28	+23 45.5	1.845	2.719	11.9	20.5
3 12	8 38.49	+28 2.5	1.653	2.437	17.5	20.5	3 12	8 39.73	+23 33.5	1.936	2.725	15.1	20.7
283567	2001 <i>VH</i> ₁₀₈		2 4.8 82°71'	0°6'	4.4 16		230817	2004 <i>JC</i> ₃₁		2 4.8 310°96'	4°2'	2.4 18	
1 2	9 40.52	+15 40.1	1.445	2.277	16.6	21.6	1 2	9 36.04	+21 24.8	1.25			

EPHEMERIDES

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
408484	2013 <i>HW</i> ₁₄₂		2 4.8 62°37'	3°6/ 7.1 18			380328	2002 <i>NK</i> ₅₈		2 4.8 172°03'	4°5/ 8.8 17		
1 2	9 34.78	+ 5 14.4	1.488	2.298	17.4	21.2	1 2	9 32.71	- 0 55.2	2.741	3.487	11.9	21.9
1 12	9 30.09	+ 5 25.6	1.424	2.310	13.5	21.0	1 12	9 27.61	- 1 5.3	2.651	3.490	9.7	21.8
1 22	9 22.85	+ 5 58.0	1.380	2.322	9.1	20.7	1 22	9 21.00	- 1 0.7	2.586	3.493	7.3	21.6
2 1	9 13.91	+ 6 48.9	1.361	2.335	4.8	20.5	2 1	9 13.38	- 0 41.5	2.547	3.495	5.2	21.5
2 11	9 4.51	+ 7 52.5	1.370	2.348	4.2	20.5	2 11	9 5.42	- 0 9.4	2.539	3.497	4.5	21.4
2 21	8 55.94	+ 9 1.2	1.405	2.361	8.0	20.8	2 21	8 57.83	+ 0 32.5	2.560	3.498	6.0	21.5
3 2	8 49.34	+10 7.7	1.466	2.374	12.2	21.0	3 2	8 51.28	+ 1 20.3	2.610	3.499	8.3	21.7
3 12	8 45.46	+11 6.0	1.549	2.387	15.9	21.3	3 12	8 46.29	+ 2 9.8	2.685	3.499	10.7	21.8
366370	2000 <i>RM</i> ₉₈		2 4.8 120°17'	2°1/ 6.2 18			460795	2014 <i>WZ</i> ₃₇		2 4.8 201°86'	0°5/ 4.4 18		
1 2	9 38.15	+ 9 30.3	2.256	3.049	12.7	20.9	1 2	9 36.13	+15 50.2	1.900	2.724	13.5	22.0
1 12	9 31.74	+ 9 18.8	2.184	3.065	9.7	20.8	1 12	9 30.81	+16 17.9	1.820	2.722	10.1	21.7
1 22	9 23.48	+ 9 17.2	2.138	3.081	6.3	20.6	1 22	9 23.21	+16 54.4	1.764	2.721	6.0	21.5
2 1	9 14.04	+ 9 24.0	2.121	3.097	2.9	20.4	2 1	9 14.03	+17 35.1	1.736	2.719	1.6	21.2
2 11	9 4.33	+ 9 36.4	2.134	3.112	2.8	20.4	2 11	9 4.34	+18 14.6	1.737	2.717	3.0	21.3
2 21	8 55.27	+ 9 51.4	2.177	3.127	6.0	20.6	2 21	8 55.26	+18 48.1	1.766	2.714	7.4	21.5
3 2	8 47.65	+10 6.2	2.249	3.141	9.3	20.9	3 2	8 47.83	+19 12.2	1.823	2.712	11.3	21.8
3 12	8 42.07	+10 18.4	2.345	3.155	12.2	21.1	3 12	8 42.78	+19 25.5	1.902	2.709	14.7	22.0
473436	2015 <i>WN</i> ₁₄		2 4.8 49°95'	0°5/ 5.1 18			60839	2000 <i>HB</i> ₅₆		2 4.8 96°99'	2°7/ 6.5 18		
1 2	9 36.25	+11 20.9	1.196	2.036	18.8	20.7	1 2	9 37.40	+ 7 5.4	1.515	2.326	17.1	19.1
1 12	9 31.48	+12 9.8	1.153	2.062	14.0	20.5	1 12	9 31.98	+ 7 24.7	1.452	2.341	13.1	18.9
1 22	9 23.75	+13 17.1	1.130	2.087	8.4	20.2	1 22	9 23.98	+ 8 3.2	1.411	2.357	8.5	18.7
2 1	9 14.14	+14 35.0	1.131	2.114	2.5	20.0	2 1	9 14.26	+ 8 57.3	1.395	2.372	4.0	18.5
2 11	9 4.24	+15 53.4	1.158	2.140	3.5	20.1	2 11	9 4.10	+10 0.7	1.407	2.387	3.6	18.5
2 21	8 55.58	+17 3.3	1.212	2.168	9.0	20.5	2 21	8 54.82	+11 6.0	1.446	2.401	7.9	18.8
3 2	8 49.40	+17 58.6	1.289	2.195	13.7	20.8	3 2	8 47.58	+12 6.5	1.512	2.416	12.2	19.0
3 12	8 46.36	+18 36.8	1.387	2.222	17.6	21.2	3 12	8 43.10	+12 57.4	1.599	2.429	15.9	19.3
49520	1999 <i>CX</i> ₃₃		2 4.8 30°97'	0°1/ 4.7 18			261345	2005 <i>UB</i> ₂₇₅		2 4.8 170°91'	3°3/ 2.4 18 R		
1 2	9 33.73	+15 21.3	1.911	2.738	13.4	18.9	1 2	9 39.60	+25 43.2	2.331	3.154	11.4	20.5
1 12	9 28.91	+15 38.8	1.840	2.744	9.9	18.7	1 12	9 33.01	+26 18.1	2.257	3.158	8.5	20.3
1 22	9 21.98	+16 4.6	1.793	2.750	5.9	18.4	1 22	9 24.35	+26 52.3	2.209	3.161	5.4	20.2
2 1	9 13.65	+16 34.8	1.774	2.757	1.6	18.2	2 1	9 14.34	+27 20.6	2.191	3.163	3.4	20.0
2 11	9 4.95	+17 4.7	1.783	2.764	2.8	18.3	2 11	9 3.97	+27 38.3	2.202	3.165	4.7	20.1
2 21	8 56.91	+17 30.1	1.821	2.771	7.0	18.5	2 21	8 54.24	+27 42.7	2.244	3.167	7.6	20.3
3 2	8 50.46	+17 48.1	1.885	2.779	10.7	18.8	3 2	8 46.09	+27 33.5	2.313	3.168	10.6	20.5
3 12	8 46.26	+17 57.0	1.971	2.786	13.9	19.0	3 12	8 40.14	+27 11.9	2.404	3.168	13.2	20.7
196234	2003 <i>CH</i> ₂		2 4.8 301°02'	1°8/ 3.7 18			138342	2000 <i>GF</i> ₁₁₀		2 4.8 310°93'	7°7/ 31.0 18		
1 2	9 34.79	+16 31.7	1.349	2.196	16.7	19.8	1 2	9 39.30	+32 35.8	1.566	2.411	14.9	19.7
1 12	9 30.81	+17 27.7	1.266	2.181	12.5	19.5	1 12	9 34.03	+33 46.0	1.494	2.398	11.7	19.5
1 22	9 23.72	+18 38.7	1.205	2.166	7.5	19.2	1 22	9 25.55	+34 51.6	1.445	2.386	8.8	19.3
2 1	9 14.27	+19 57.2	1.169	2.152	2.4	18.9	2 1	9 14.77	+35 41.7	1.421	2.374	7.7	19.2
2 11	9 3.84	+21 13.0	1.160	2.138	4.7	19.0	2 11	9 3.21	+36 7.3	1.423	2.363	9.4	19.3
2 21	8 54.05	+22 16.9	1.176	2.124	10.2	19.2	2 21	8 52.55	+36 4.3	1.450	2.352	12.6	19.4
3 2	8 46.46	+23 2.7	1.215	2.111	15.3	19.5	3 2	8 44.30	+35 33.8	1.499	2.341	16.0	19.6
3 12	8 42.14	+23 28.5	1.274	2.097	19.6	19.7	3 12	8 39.41	+34 40.6	1.567	2.331	19.1	19.8
491972	2013 <i>ER</i> ₈		2 4.8 215°64'	0°4/ 4.5 18			8194	Satake		2 4.8 217°07'	2°6/ 3.4 18		
1 2	9 39.39	+16 18.4	1.779	2.602	14.4	21.7	1 2	9 40.04	+21 13.6	1.563	2.401	15.3	17.0
1 12	9 33.39	+16 32.2	1.695	2.597	10.7	21.5	1 12	9 34.19	+21 43.0	1.489	2.399	11.3	16.8
1 22	9 24.84	+16 54.0	1.635	2.592	6.4	21.2	1 22	9 25.45	+22 17.1	1.439	2.397	6.9	16.5
2 1	9 14.50	+17 19.5	1.603	2.586	1.8	20.9	2 1	9 14.71	+22 49.1	1.415	2.396	2.9	16.3
2 11	9 3.54	+17 43.5	1.599	2.580	3.2	21.0	2 11	9 3.36	+23 12.2	1.419	2.394	4.8	16.4
2 21	8 53.25	+18 1.7	1.624	2.573	7.9	21.3	2 21	8 52.88	+23 22.0	1.450	2.392	9.3	16.6
3 2	8 44.80	+18 11.3	1.676	2.566	12.1	21.5	3 2	8 44.59	+23 16.9	1.506	2.390	13.6	16.9
3 12	8 38.99	+18 11.1	1.750	2.558	15.7	21.7	3 12	8 39.33	+22 57.9	1.583	2.387	17.3	17.1
158195	2001 <i>RR</i> ₁₄₁		2 4.8 152°74'	3°2/ 2.6 18			215276	2001 <i>QT</i> ₃₂		2 4.8 132°02'	1°6/ 6.1 18		
1 2	9 40.63	+21 58.3	1.829	2.658	13.8	20.8	1 2	9 36.26	+ 8 51.5	2.430	3.220	12.0	22.0
1 12	9 34.20	+22 57.7	1.762	2.668	10.1	20.6	1 12	9 30.29	+ 9 12.9	2.358	3.238	9.1	21.8
1 22	9 25.24	+24 1.3	1.720	2.676	6.2	20.4	1 22	9 22.61	+ 9 45.4	2.312	3.256	5.8	21.6
2 1	9 14.59	+25 1.4	1.706	2.684	3.3	20.2	2 1	9 13.85	+10 26.2	2.295	3.273	2.5	21.5
2 11	9 3.45	+25 50.9	1.722	2.691	5.0	20.3	2 11	9 4.81	+11 11.5	2.309	3.289	2.4	21.5
2 21	8 53.12	+26 24.9	1.767	2.697	8.8	20.6	2 21	8 56.32	+11 57.1	2.354	3.304	5.6	21.7
3 2	8 44.73	+26 41.6	1.837	2.703	12.4	20.8	3 2	8 49.13	+12 39.5	2.428	3.318	8.8	21.9
3 12	8 39.02	+26 42.1	1.929	2.707	15.5	21.0	3 12	8 43.78	+13 15.9	2.527	3.332	11.5	22.1
213874	2003 <i>SO</i> ₂₁₃		2 4.8 45°90'	3°6/ 2.9 18			209023	2003 <i>EG</i> ₃₆		2 4.8 313°80'	0°6/ 5.4 18		
1 2	9 38.35	+22 22.6	1.373	2.222	16.3	19.7	1 2	9 30.76	+11 31.1	2.351	3.163	11.7	20.2
1 12	9 33.04	+23 6.0	1.318	2.234	12.0	19.5	1 12	9 26.48	+12 6.6	2.265	3.160	8.8	20.0
1 22	9 24.72	+23 53.3	1.286	2.245	7.4	19.2	1 22	9 20.47	+12 52.8	2.205	3.157	5.4	19.8
2 1	9 14.45	+24 36.2	1.278	2.257	3.7	19.0	2 1	9 13.28	+13 46.6	2.173	3.154	1.8	19.5
2 11	9 3.74	+25 6.7	1.297	2.270	5.6	19.2	2 11	9 5.69	+14 43.4	2.170	3.152	2.2	19.5
2 21	8 54.18	+25 20.2	1.343	2.282	10.1	19.5	2 21	8 58.51	+15 38.4	2.198	3.149	5.9	19.8
3 2	8 47.04	+25 15.9	1.411	2.295	14.3	19.8	3 2	8 52.52	+16 27.7	2.253	3.147	9.2	20.0
3 12	8 43.09	+24 55.4	1.500	2.309	17.8	20.0	3 12	8 48.33	+17 8.4	2.333	3.144	12.2	20.2
206136	2002 <i>TB</i> ₁₀		2 4.8 59°21'	2°0/ 6.5 18			310298	2011 <i>UA</i> ₈₆		2 4.8 214°98'	0°9/ 3.9 18		
1 2	9 31.96	+ 7 10.1	2.004	2.807	13.7	19.5	1 2	9 31.25	+17 22.4	2.985			

EPHEMERIDES

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
429955	2012 <i>UM</i> ₁₅₇		2 4.8 194°31	1.9°/ 3.1	17		110591	2001 <i>TW</i> ₁₂₅		2 4.8 251°40	0°1/ 4.9	18	
1 2	9 35.18	+22 9.5	2.948	3.765	9.4	22.2	1 2	9 37.43	+14 55.7	2.013	2.830	13.2	19.8
1 12	9 29.41	+22 36.2	2.863	3.763	6.9	22.1	1 12	9 31.79	+15 4.3	1.918	2.816	9.9	19.6
1 22	9 22.09	+23 4.5	2.805	3.760	4.2	21.9	1 22	9 23.87	+15 20.9	1.847	2.802	6.0	19.3
2 1	9 13.73	+23 30.7	2.777	3.756	2.0	21.7	2 1	9 14.32	+15 42.4	1.804	2.787	1.7	19.0
2 11	9 5.05	+23 51.6	2.781	3.752	3.1	21.8	2 11	9 4.13	+16 4.5	1.791	2.772	2.7	19.1
2 21	8 56.79	+24 4.5	2.816	3.748	5.8	22.0	2 21	8 54.42	+16 23.4	1.807	2.756	7.1	19.3
3 2	8 49.62	+24 8.3	2.879	3.743	8.5	22.1	3 2	8 46.24	+16 36.0	1.850	2.741	11.1	19.5
3 12	8 44.09	+24 3.0	2.967	3.737	10.8	22.3	3 12	8 40.37	+16 40.9	1.917	2.724	14.5	19.7
401903	2001 <i>TW</i> ₂₂		2 4.8 89°73	4°5/ 7.9	18		156429	2002 <i>AJ</i> ₁₀₂		2 4.8 351°66	1°6/ 3.8	18	
1 2	9 34.07	+ 2 23.8	1.835	2.620	15.5	20.9	1 2	9 33.01	+17 19.8	1.543	2.387	15.1	19.8
1 12	9 29.22	+ 2 22.4	1.761	2.629	12.3	20.7	1 12	9 28.99	+18 3.8	1.469	2.382	11.2	19.5
1 22	9 22.23	+ 2 40.4	1.709	2.638	8.7	20.5	1 22	9 22.37	+18 58.2	1.418	2.379	6.7	19.2
2 1	9 13.81	+ 3 16.8	1.682	2.647	5.5	20.3	2 1	9 13.91	+19 56.5	1.393	2.376	2.1	18.9
2 11	9 4.94	+ 4 7.7	1.684	2.655	4.7	20.3	2 11	9 4.83	+20 51.0	1.396	2.374	4.0	19.1
2 21	8 56.71	+ 5 7.6	1.713	2.664	7.3	20.4	2 21	8 56.47	+21 35.3	1.425	2.373	8.8	19.3
3 2	8 50.06	+ 6 10.3	1.770	2.673	10.8	20.7	3 2	8 50.04	+22 5.2	1.478	2.372	13.1	19.6
3 12	8 45.69	+ 7 9.8	1.850	2.681	14.0	20.9	3 12	8 46.35	+22 19.3	1.552	2.372	16.8	19.8
383770	2007 <i>VO</i> ₂₅₀		2 4.8 330°66	2°1/ 6.1	17		405891	2006 <i>FS</i> ₃₇		2 4.8 307°95	9°1/ 2.1	14	C
1 2	9 33.87	+10 27.5	1.990	2.801	13.5	20.4	1 2	9 53.94	+36 43.9	1.349	2.179	17.7	20.6
1 12	9 29.06	+10 10.7	1.901	2.792	10.4	20.2	1 12	9 45.86	+36 59.4	1.257	2.150	14.4	20.3
1 22	9 22.16	+10 4.1	1.836	2.784	6.7	19.9	1 22	9 33.19	+36 59.9	1.186	2.121	11.0	20.0
2 1	9 13.80	+10 6.5	1.797	2.776	3.0	19.7	2 1	9 17.06	+36 32.2	1.139	2.093	9.2	19.8
2 11	9 4.93	+10 15.2	1.788	2.768	3.0	19.7	2 11	8 59.69	+35 26.3	1.119	2.065	10.6	19.8
2 21	8 56.56	+10 27.0	1.807	2.761	6.7	19.9	2 21	8 43.67	+33 41.9	1.124	2.037	14.4	19.9
3 2	8 49.66	+10 38.8	1.853	2.754	10.5	20.1	3 2	8 31.18	+31 26.8	1.153	2.010	18.8	20.1
3 12	8 44.93	+10 47.6	1.922	2.747	13.8	20.3	3 12	8 23.39	+28 53.7	1.201	1.984	22.9	20.3
203578	2002 <i>CQ</i> ₂₁₄		2 4.8 285°89	1°5/ 3.9	18		512245	2016 <i>AU</i> ₈		2 4.8 163°42	11°0/ 4.8	18	
1 2	9 36.29	+17 8.7	1.526	2.364	15.5	20.8	1 2	11 0.65	+14 51.6	0.257	1.133	48.8	19.0
1 12	9 31.66	+17 48.4	1.438	2.348	11.6	20.6	1 12	10 42.46	+11 34.1	0.227	1.151	38.6	18.5
1 22	9 24.13	+18 39.4	1.372	2.332	7.0	20.2	1 22	10 11.11	+ 8 1.7	0.204	1.164	25.7	17.9
2 1	9 14.44	+19 35.6	1.333	2.316	2.2	19.9	2 1	9 28.12	+ 4 26.7	0.193	1.173	12.8	17.4
2 11	9 3.85	+20 29.0	1.321	2.300	4.1	20.0	2 11	8 42.70	+ 1 24.6	0.199	1.178	15.3	17.6
2 21	8 53.84	+21 12.7	1.336	2.283	9.3	20.2	2 21	8 5.88	- 0 34.2	0.221	1.178	27.9	18.2
3 2	8 45.82	+21 41.9	1.375	2.267	14.0	20.5	3 2	7 42.66	- 1 33.8	0.252	1.175	38.9	18.8
3 12	8 40.80	+21 55.3	1.435	2.251	18.1	20.7	3 12	7 31.92	- 1 58.8	0.288	1.167	47.2	19.3
164240	2004 <i>TO</i> ₄₄		2 4.8 265°85	0°7/ 5.2	18		199588	2006 <i>FO</i> ₁₆		2 4.8 127°43	0°5/ 5.2	18	R
1 2	9 37.44	+13 0.3	1.589	2.414	15.7	20.7	1 2	9 34.20	+12 57.2	2.150	2.964	12.5	20.5
1 12	9 32.33	+13 13.3	1.499	2.401	11.9	20.4	1 12	9 29.10	+13 16.9	2.072	2.968	9.4	20.3
1 22	9 24.45	+13 39.3	1.432	2.387	7.4	20.1	1 22	9 22.09	+13 46.1	2.019	2.973	5.7	20.0
2 1	9 14.51	+14 14.4	1.391	2.373	2.3	19.8	2 1	9 13.78	+14 21.6	1.995	2.977	1.8	19.8
2 11	9 3.74	+14 53.2	1.377	2.359	3.2	19.8	2 11	9 5.09	+14 58.9	1.999	2.981	2.4	19.8
2 21	8 53.55	+15 29.6	1.391	2.344	8.4	20.0	2 21	8 56.94	+15 33.9	2.034	2.985	6.3	20.1
3 2	8 45.25	+15 59.1	1.431	2.330	13.1	20.3	3 2	8 50.20	+16 3.2	2.096	2.989	9.9	20.3
3 12	8 39.81	+16 18.6	1.492	2.315	17.2	20.5	3 12	8 45.50	+16 24.7	2.181	2.992	12.9	20.5
312677	2010 <i>MK</i> ₆₃		2 4.8 236°54	5°4/ 7.1	18		239217	2006 <i>QH</i> ₁₅₂		2 4.8 88°21	1°4/ 6.0	18	
1 2	9 42.60	+ 3 46.2	1.982	2.752	15.0	19.9	1 2	9 31.33	+ 9 0.2	2.351	3.153	12.0	20.4
1 12	9 35.62	+ 2 41.5	1.882	2.740	12.1	19.7	1 12	9 26.83	+ 9 34.6	2.275	3.162	9.1	20.2
1 22	9 26.19	+ 1 48.6	1.806	2.728	8.9	19.5	1 22	9 20.65	+10 21.3	2.223	3.171	5.7	20.0
2 1	9 14.97	+ 1 9.6	1.757	2.715	6.1	19.3	2 1	9 13.37	+11 17.0	2.200	3.180	2.3	19.8
2 11	9 3.02	+ 0 44.9	1.738	2.701	5.7	19.2	2 11	9 5.76	+12 17.3	2.208	3.189	2.3	19.8
2 21	8 51.52	+ 0 33.2	1.749	2.687	8.3	19.3	2 21	8 58.62	+13 17.4	2.245	3.197	5.7	20.0
3 2	8 41.62	+ 0 31.8	1.788	2.673	11.7	19.5	3 2	8 52.69	+14 13.0	2.310	3.206	8.9	20.3
3 12	8 34.15	+ 0 36.7	1.850	2.657	15.0	19.7	3 12	8 48.54	+15 0.8	2.400	3.215	11.8	20.5
123570	2000 <i>XP</i> ₃₆		2 4.8 32°87	3°9/ 3.1	18		349935	2010 <i>AD</i> ₉		2 4.8 92°27	0°5/ 5.1	17	
1 2	9 41.33	+25 59.6	1.522	2.364	15.4	19.1	1 2	9 38.49	+11 30.6	1.414	2.240	17.2	21.3
1 12	9 34.96	+26 7.5	1.465	2.375	11.5	18.9	1 12	9 32.97	+12 18.5	1.357	2.259	12.8	21.1
1 22	9 25.76	+26 13.3	1.432	2.388	7.2	18.7	1 22	9 24.66	+13 23.0	1.322	2.277	7.8	20.8
2 1	9 14.78	+26 10.4	1.424	2.401	4.0	18.5	2 1	9 14.52	+14 37.6	1.313	2.296	2.3	20.6
2 11	9 3.54	+25 54.1	1.445	2.415	5.6	18.7	2 11	9 3.95	+15 53.4	1.332	2.313	3.3	20.7
2 21	8 53.51	+25 22.9	1.492	2.429	9.5	18.9	2 21	8 54.40	+17 2.3	1.378	2.331	8.5	21.0
3 2	8 45.88	+24 38.4	1.564	2.444	13.4	19.2	3 2	8 47.07	+17 58.4	1.450	2.348	13.0	21.3
3 12	8 41.31	+23 43.6	1.657	2.459	16.7	19.4	3 12	8 42.72	+18 39.0	1.543	2.365	16.8	21.6
6780	Borodin		2 4.8 189°81	0°4/ 4.6	18		79115	1984 <i>JK</i>		2 4.8 194°84	0°8/ 5.5	18	
1 2	9 40.60	+15 54.5	1.827	2.645	14.2	18.2	1 2	9 35.58	+11 27.2	2.450	3.250	11.6	20.9
1 12	9 34.23	+16 14.8	1.745	2.645	10.6	18.0	1 12	9 29.98	+11 54.1	2.359	3.247	8.8	20.7
1 22	9 25.35	+16 43.5	1.687	2.643	6.4	17.7	1 22	9 22.58	+12 31.1	2.294	3.244	5.4	20.5
2 1	9 14.72	+17 16.1	1.658	2.641	1.8	17.4	2 1	9 13.93	+13 15.1	2.258	3.239	1.9	20.2
2 11	9 3.51	+17 47.2	1.658	2.638	3.1	17.5	2 11	9 4.84	+14 1.9	2.253	3.234	2.2	20.3
2 21	8 52.98	+18 12.2	1.687	2.635	7.7	17.8	2 21	8 56.16	+14 47.5	2.279	3.229	5.8	20.5
3 2	8 44.28	+18 28.2	1.743	2.630	11.9	18.0	3 2	8 48.70	+15 28.2	2.334	3.222	9.2	20.7
3 12	8 38.19	+18 34.0	1.822	2.625	15.4	18.2	3 12	8 43.09	+16 1.5	2.414	3.215	12.1	20.9
402571	2006 <i>RK</i> ₃₅		2 4.8 120°94	2°6/ 6.9	18		465659	2009 <i>RE</i> ₇₂		2 4.8 3°88	7°5/ 31.5	18	
1 2	9 35.41	+ 5 8.1	2.040	2.828	14.1	21.9	1 2	9 37.87	+32 15.7	1.4			

EPHEMERIDES

2 4.8

2 4.8

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
207598	2006 <i>QQ</i> ₈₈		2 4.8 137°13	0°4/ 5.2 18			212266	2005 <i>JF</i> ₁₂₈		2 4.8 146°73	0°8/ 4.1 18		
1 2	9 32.25	+12 36.3	2.738	3.543	10.4	21.0	1 2	9 36.63	+16 2.8	2.361	3.173	11.6	20.7
1 12	9 27.29	+13 5.1	2.661	3.553	7.7	20.8	1 12	9 30.74	+16 49.8	2.288	3.186	8.5	20.5
1 22	9 20.84	+13 41.8	2.610	3.562	4.7	20.6	1 22	9 23.01	+17 43.9	2.242	3.198	5.0	20.3
2 1	9 13.43	+14 23.5	2.588	3.570	1.5	20.4	2 1	9 14.07	+18 40.6	2.226	3.208	1.4	20.1
2 11	9 5.72	+15 6.6	2.597	3.579	2.0	20.5	2 11	9 4.78	+19 34.7	2.240	3.219	2.7	20.2
2 21	8 58.45	+15 47.5	2.637	3.587	5.2	20.7	2 21	8 56.03	+20 21.8	2.286	3.228	6.3	20.4
3 2	8 52.24	+16 23.4	2.706	3.594	8.1	20.9	3 2	8 48.65	+20 59.0	2.359	3.237	9.6	20.6
3 12	8 47.62	+16 52.3	2.800	3.602	10.6	21.1	3 12	8 43.24	+21 25.1	2.457	3.245	12.3	20.8
407658	2011 <i>SS</i> ₁₅₉		2 4.8 272°22	4°8/ 7.4 18			228093	2008 <i>SV</i> ₉		2 4.8 212°12	0°8/ 5.8 17		
1 2	9 36.15	+ 4 20.7	1.538	2.340	17.3	21.0	1 2	9 28.64	+11 11.1	3.580	4.377	8.4	21.5
1 12	9 31.35	+ 4 0.7	1.452	2.332	13.7	20.7	1 12	9 24.41	+11 27.7	3.487	4.373	6.3	21.3
1 22	9 23.85	+ 4 0.4	1.387	2.323	9.7	20.5	1 22	9 19.05	+11 50.9	3.421	4.369	3.9	21.1
2 1	9 14.38	+ 4 19.7	1.346	2.315	5.9	20.2	2 1	9 12.94	+12 18.9	3.384	4.364	1.5	20.9
2 11	9 4.13	+ 4 55.6	1.332	2.306	5.2	20.2	2 11	9 6.60	+12 49.4	3.379	4.360	1.6	20.9
2 21	8 54.46	+ 5 42.7	1.345	2.298	8.6	20.3	2 21	9 0.51	+13 20.1	3.405	4.355	4.1	21.1
3 2	8 46.67	+ 6 34.4	1.383	2.289	12.9	20.6	3 2	8 55.17	+13 48.6	3.460	4.351	6.4	21.3
3 12	8 41.68	+ 7 24.0	1.442	2.281	16.9	20.8	3 12	8 50.98	+14 13.3	3.542	4.346	8.5	21.4
189188	Floralien		2 4.8 280°66	3°3/ 7.8 17			361638	2007 <i>TX</i> ₂₁₈		2 4.8 90°40	2°5/ 3.5 18		
1 2	9 32.95	+ 1 2.9	2.007	2.783	14.7	20.3	1 2	9 41.70	+21 6.8	1.570	2.404	15.4	21.2
1 12	9 28.63	+ 2 8.4	1.892	2.758	11.7	20.0	1 12	9 35.16	+21 34.5	1.513	2.421	11.3	21.0
1 22	9 22.11	+ 3 40.3	1.801	2.733	8.2	19.7	1 22	9 25.90	+22 6.0	1.479	2.437	6.8	20.8
2 1	9 13.89	+ 5 36.5	1.737	2.707	4.6	19.5	2 1	9 14.89	+22 34.5	1.473	2.454	2.8	20.6
2 11	9 4.85	+ 7 50.7	1.704	2.681	3.6	19.3	2 11	9 3.55	+22 54.1	1.495	2.470	4.5	20.7
2 21	8 56.01	+10 13.6	1.702	2.655	7.0	19.5	2 21	8 53.31	+23 0.9	1.544	2.485	8.9	21.0
3 2	8 48.44	+12 35.1	1.729	2.629	11.2	19.7	3 2	8 45.32	+22 54.2	1.619	2.501	12.9	21.3
3 12	8 43.02	+14 46.1	1.782	2.602	14.9	19.9	3 12	8 40.30	+22 35.1	1.715	2.516	16.3	21.6
344297	2001 <i>UV</i> ₆₁		2 4.8 191°98	3°8/ 1.6 18			460086	2014 <i>OS</i> ₃₄₃		2 4.8 127°99	0°7/ 4.4 18		
1 2	9 35.66	+27 32.2	2.541	3.369	10.4	20.8	1 2	9 39.29	+16 28.4	1.983	2.801	13.3	21.8
1 12	9 30.08	+28 16.1	2.466	3.368	7.8	20.7	1 12	9 32.93	+16 56.3	1.917	2.817	9.8	21.6
1 22	9 22.63	+28 58.8	2.417	3.367	5.2	20.5	1 22	9 24.40	+17 31.2	1.876	2.831	5.8	21.4
2 1	9 13.96	+29 35.1	2.398	3.365	3.8	20.4	2 1	9 14.47	+18 8.5	1.863	2.846	1.6	21.1
2 11	9 4.91	+30 0.4	2.408	3.364	5.0	20.5	2 11	9 4.20	+18 43.0	1.880	2.859	3.0	21.3
2 21	8 56.40	+30 12.0	2.448	3.362	7.5	20.6	2 21	8 54.68	+19 10.8	1.927	2.872	7.0	21.5
3 2	8 49.24	+30 9.3	2.514	3.360	10.2	20.8	3 2	8 46.86	+19 29.2	2.001	2.885	10.7	21.8
3 12	8 44.05	+29 53.3	2.603	3.358	12.5	21.0	3 12	8 41.41	+19 37.4	2.098	2.896	13.8	22.0
251753	1999 <i>AX</i> ₁₄		2 4.8 58°17	0°8/ 5.2 18			120	Lachesis		2 4.8 284°20	1°5/ 3.7 18		
1 2	9 38.92	+13 17.1	1.490	2.317	16.5	20.2	1 2	9 34.81	+19 53.2	2.277	3.102	11.5	12.7
1 12	9 33.00	+13 23.4	1.440	2.343	12.2	20.0	1 12	9 29.58	+20 13.5	2.193	3.097	8.5	12.5
1 22	9 24.52	+13 41.4	1.413	2.368	7.4	19.8	1 22	9 22.41	+20 37.5	2.135	3.092	5.1	12.3
2 1	9 14.47	+14 6.7	1.412	2.394	2.3	19.5	2 1	9 13.93	+21 1.3	2.105	3.087	1.8	12.0
2 11	9 4.19	+14 33.8	1.438	2.420	3.1	19.6	2 11	9 5.03	+21 20.8	2.106	3.082	3.2	12.1
2 21	8 55.02	+14 57.9	1.492	2.446	7.8	20.0	2 21	8 56.65	+21 32.8	2.135	3.077	6.7	12.3
3 2	8 48.00	+15 15.6	1.572	2.472	12.1	20.3	3 2	8 49.66	+21 35.6	2.192	3.072	10.1	12.5
3 12	8 43.79	+15 24.8	1.673	2.498	15.6	20.6	3 12	8 44.69	+21 28.6	2.273	3.067	13.0	12.7
403868	2011 <i>WN</i> ₁₆		2 4.8 85°30	3°2/ 2.7 18			177451	2004 <i>DQ</i> ₁₂		2 4.8 2°92	0°1/ 4.9 18		
1 2	9 37.53	+20 28.5	1.564	2.405	15.1	21.1	1 2	9 33.93	+13 8.3	1.529	2.362	15.8	19.9
1 12	9 32.21	+21 40.5	1.507	2.419	11.1	20.9	1 12	9 29.66	+13 43.0	1.455	2.362	11.8	19.7
1 22	9 24.21	+22 59.1	1.473	2.432	6.7	20.7	1 22	9 22.78	+14 31.9	1.404	2.362	7.2	19.4
2 1	9 14.43	+24 15.6	1.467	2.446	3.3	20.5	2 1	9 14.08	+15 29.9	1.379	2.362	2.1	19.1
2 11	9 4.19	+25 21.0	1.488	2.459	5.3	20.7	2 11	9 4.78	+16 29.9	1.381	2.363	3.2	19.2
2 21	8 54.87	+26 9.3	1.537	2.473	9.4	20.9	2 21	8 56.20	+17 24.8	1.410	2.364	8.2	19.5
3 2	8 47.66	+26 37.9	1.611	2.486	13.3	21.2	3 2	8 49.54	+18 9.2	1.464	2.365	12.7	19.7
3 12	8 43.30	+26 47.6	1.705	2.499	16.6	21.4	3 12	8 45.63	+18 40.2	1.540	2.367	16.6	20.0
199465	2006 <i>DX</i> ₅₈		2 4.8 192°66	0°6/ 5.3 18			400869	2010 <i>OM</i> ₃₆		2 4.8 67°02	1°6/ 4.1 18		
1 2	9 33.81	+12 29.9	2.195	3.007	12.4	20.5	1 2	9 42.72	+20 14.9	1.603	2.433	15.3	20.4
1 12	9 28.84	+12 50.9	2.112	3.006	9.3	20.3	1 12	9 35.70	+20 17.5	1.551	2.456	11.3	20.2
1 22	9 21.96	+13 21.9	2.053	3.006	5.7	20.1	1 22	9 26.10	+20 23.3	1.522	2.480	6.7	20.0
2 1	9 13.78	+13 59.6	2.023	3.005	1.8	19.8	2 1	9 14.93	+20 27.5	1.521	2.503	2.2	19.8
2 11	9 5.18	+14 39.7	2.022	3.004	2.4	19.9	2 11	9 3.59	+20 25.5	1.548	2.527	3.8	19.9
2 21	8 57.07	+15 18.0	2.052	3.003	6.2	20.1	2 21	8 53.43	+20 15.0	1.604	2.550	8.2	20.2
3 2	8 50.31	+15 51.0	2.108	3.001	9.8	20.3	3 2	8 45.52	+19 55.5	1.686	2.573	12.2	20.5
3 12	8 45.54	+16 16.1	2.189	3.000	12.9	20.5	3 12	8 40.47	+19 27.9	1.790	2.596	15.5	20.8
18352	1990 <i>QB</i> ₈		2 4.8 11°39	1°0/ 5.6 18			104096	2000 <i>EN</i> ₃₅		2 4.8 265°41	2°6/ 2.8 18		
1 2	9 32.63	+10 36.2	1.787	2.607	14.4	18.4	1 2	9 35.24	+19 20.3	1.830	2.664	13.5	19.7
1 12	9 28.34	+11 11.0	1.710	2.608	10.9	18.1	1 12	9 30.52	+20 29.6	1.741	2.650	10.0	19.5
1 22	9 21.83	+12 0.6	1.656	2.609	6.8	17.9	1 22	9 23.31	+21 48.4	1.677	2.635	6.1	19.2
2 1	9 13.77	+13 1.0	1.628	2.610	2.4	17.6	2 1	9 14.26	+23 9.4	1.640	2.620	2.7	19.0
2 11	9 5.21	+14 5.9	1.629	2.611	2.7	17.6	2 11	9 4.45	+24 24.5	1.633	2.605	4.7	19.0
2 21	8 57.24	+15 9.0	1.659	2.613	7.2	17.9	2 21	8 55.10	+25 26.5	1.654	2.590	8.8	19.3
3 2	8 50.87	+16 4.8	1.714	2.614	11.2	18.2	3 2	8 47.41	+26 11.2	1.700	2.574	12.8	19.5
3 12	8 46.84	+16 49.6	1.793	2.617	14.7	18.4	3 12	8 42.27	+26 37.5	1.768	2.559	16.3	19.7
113734	2002 <i>TS</i> ₁₅₀		2 4.8 243°44	1°8/ 3.8 18			258251	2001 <i>TZ</i> ₁₇₈		2 4.8 50°70	3°4/ 6.8 18		
1 2	9 40.53	+18 28.8	1.565	2.397									

EPHEMERIDES

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
492462	2014 <i>NZ</i> ₁		2 4.8 205°96	2.6/ 2.9	18		419048	2009 <i>RQ</i> ₄₁		2 4.8 132°41	1.1/ 5.6	18	
1 2	9 39.91	+21 18.7	2.008	2.833	12.9	22.6	1 2	9 36.34	+11 59.7	1.997	2.808	13.5	21.4
1 12	9 33.69	+22 7.7	1.924	2.828	9.6	22.4	1 12	9 30.82	+12 4.4	1.920	2.814	10.2	21.2
1 22	9 25.06	+23 1.6	1.865	2.821	5.8	22.2	1 22	9 23.21	+12 19.4	1.867	2.818	6.3	21.0
2 1	9 14.73	+23 53.9	1.835	2.814	2.8	22.0	2 1	9 14.20	+12 41.8	1.842	2.823	2.3	20.7
2 11	9 3.77	+24 38.1	1.835	2.806	4.4	22.0	2 11	9 4.77	+13 7.7	1.847	2.828	2.6	20.8
2 21	8 53.40	+25 9.6	1.864	2.797	8.2	22.3	2 21	8 55.95	+13 33.1	1.880	2.832	6.6	21.0
3 2	8 44.71	+25 26.1	1.920	2.787	11.9	22.5	3 2	8 48.69	+13 54.7	1.941	2.836	10.4	21.3
3 12	8 38.50	+25 27.7	1.998	2.776	15.1	22.7	3 12	8 43.66	+14 10.1	2.025	2.840	13.6	21.5
177104	2003 <i>FC</i> ₁₁₆		2 4.8 283°25	0°9/ 5.7	18		168369	1996 <i>XP</i> ₆		2 4.8 119°81	4°2/ 1.5	18	
1 2	9 30.32	+9 41.3	2.429	3.234	11.6	19.8	1 2	9 36.44	+28 26.2	2.391	3.220	10.9	20.4
1 12	9 26.21	+10 28.2	2.333	3.223	8.8	19.6	1 12	9 30.72	+29 11.2	2.325	3.226	8.2	20.2
1 22	9 20.40	+11 28.1	2.263	3.213	5.5	19.4	1 22	9 23.06	+29 53.9	2.284	3.232	5.6	20.1
2 1	9 13.40	+12 37.5	2.221	3.202	2.0	19.1	2 1	9 14.14	+30 28.9	2.272	3.237	4.2	20.0
2 11	9 5.92	+13 51.7	2.210	3.191	2.2	19.1	2 11	9 4.88	+30 51.5	2.290	3.243	5.4	20.1
2 21	8 58.77	+15 5.3	2.228	3.180	5.8	19.3	2 21	8 56.26	+30 59.0	2.336	3.248	7.9	20.3
3 2	8 52.73	+16 13.4	2.276	3.170	9.1	19.5	3 2	8 49.13	+30 51.3	2.409	3.254	10.6	20.4
3 12	8 48.41	+17 12.5	2.348	3.159	12.1	19.7	3 12	8 44.08	+30 29.8	2.504	3.259	13.0	20.6
182684	2001 <i>VW</i> ₂₄		2 4.8 162°91	6°9/30.2	18		465776	2009 <i>WM</i> ₂₅₇		2 4.8 161°54	1°7/ 6.1	18	
1 2	9 40.16	+34 32.0	2.126	2.953	12.2	20.4	1 2	9 34.77	+9 43.9	2.197	2.999	12.7	21.5
1 12	9 33.91	+35 52.0	2.066	2.957	9.6	20.3	1 12	9 29.52	+9 51.3	2.115	3.002	9.7	21.3
1 22	9 25.16	+37 5.7	2.031	2.960	7.5	20.1	1 22	9 22.38	+10 10.0	2.058	3.004	6.2	21.1
2 1	9 14.74	+38 4.7	2.023	2.964	6.9	20.1	2 1	9 13.97	+10 37.7	2.028	3.007	2.7	20.9
2 11	9 3.82	+38 42.2	2.044	2.967	8.2	20.2	2 11	9 5.14	+11 10.7	2.029	3.009	2.6	20.9
2 21	8 53.67	+38 55.7	2.092	2.969	10.5	20.3	2 21	8 56.83	+11 45.1	2.059	3.011	6.1	21.1
3 2	8 45.41	+38 45.7	2.164	2.971	13.0	20.5	3 2	8 49.88	+12 17.2	2.116	3.012	9.6	21.4
3 12	8 39.79	+38 15.9	2.256	2.973	15.3	20.7	3 12	8 44.92	+12 44.1	2.198	3.014	12.7	21.6
162914	2001 <i>NL</i> ₇		2 4.8 95°92	1°8/ 6.0	18		508430	2016 <i>JJ</i> ₄₀		2 4.8 204°01	4°5/ 9.8	17	
1 2	9 37.10	+10 41.8	2.342	3.139	12.2	19.3	1 2	9 30.60	-3 39.6	3.113	3.840	11.0	23.0
1 12	9 30.98	+10 23.5	2.270	3.153	9.2	19.1	1 12	9 26.02	-3 37.0	3.012	3.835	9.1	22.8
1 22	9 23.10	+10 13.8	2.223	3.168	5.9	18.9	1 22	9 20.12	-3 19.4	2.936	3.830	7.0	22.7
2 1	9 14.11	+10 11.0	2.205	3.182	2.6	18.7	2 1	9 13.31	-2 46.8	2.886	3.824	5.2	22.5
2 11	9 4.86	+10 13.1	2.217	3.197	2.6	18.7	2 11	9 6.18	-2 1.0	2.867	3.818	4.6	22.5
2 21	8 56.22	+10 17.5	2.260	3.211	5.8	19.0	2 21	8 59.31	-1 4.8	2.877	3.811	5.6	22.6
3 2	8 48.95	+10 21.9	2.331	3.224	9.0	19.2	3 2	8 53.30	-0 2.3	2.916	3.804	7.6	22.7
3 12	8 43.61	+10 24.2	2.427	3.238	11.8	19.4	3 12	8 48.62	+1 2.3	2.982	3.796	9.7	22.8
36925	2000 <i>SC</i> ₂₁₂		2 4.8 64°40	2°1/ 3.4	18		354064	2001 <i>TF</i> ₁₂₀		2 4.8 119°09	2°3/ 6.2	18	
1 2	9 36.22	+17 11.4	1.418	2.261	16.3	18.0	1 2	9 41.94	+9 14.9	1.810	2.608	15.2	21.7
1 12	9 31.47	+18 20.5	1.359	2.272	11.9	17.8	1 12	9 34.95	+9 9.8	1.746	2.629	11.6	21.5
1 22	9 23.90	+19 41.1	1.322	2.283	7.1	17.5	1 22	9 25.65	+9 17.6	1.705	2.649	7.4	21.3
2 1	9 14.41	+21 4.4	1.312	2.294	2.5	17.3	2 1	9 14.87	+9 35.9	1.692	2.669	3.4	21.1
2 11	9 4.40	+22 20.7	1.329	2.305	4.6	17.4	2 11	9 3.77	+10 0.8	1.708	2.688	3.2	21.1
2 21	8 55.32	+23 22.0	1.372	2.317	9.4	17.7	2 21	8 53.55	+10 27.8	1.754	2.705	7.1	21.4
3 2	8 48.43	+24 4.4	1.440	2.328	13.8	18.0	3 2	8 45.20	+10 53.2	1.828	2.722	11.0	21.7
3 12	8 44.54	+24 27.2	1.529	2.340	17.4	18.3	3 12	8 39.39	+11 13.9	1.925	2.738	14.3	21.9
43961	1997 <i>ER</i> ₅		2 4.8 80°17	0°7/ 5.3	18		301251	2009 <i>BZ</i> ₄₉		2 4.8 238°42	0°3/ 4.5	17	
1 2	9 36.86	+12 0.4	1.601	2.424	15.7	18.7	1 2	9 33.07	+15 42.7	2.697	3.510	10.3	21.9
1 12	9 31.53	+12 28.7	1.540	2.440	11.7	18.5	1 12	9 28.08	+16 8.3	2.601	3.499	7.7	21.7
1 22	9 23.74	+13 10.7	1.501	2.455	7.2	18.3	1 22	9 21.47	+16 40.2	2.532	3.487	4.6	21.5
2 1	9 14.34	+14 1.4	1.489	2.471	2.3	18.0	2 1	9 13.72	+17 15.4	2.492	3.475	1.3	21.3
2 11	9 4.54	+14 54.4	1.505	2.487	2.9	18.1	2 11	9 5.55	+17 50.2	2.482	3.462	2.3	21.3
2 21	8 55.61	+15 43.4	1.549	2.503	7.7	18.4	2 21	8 57.72	+18 21.3	2.504	3.450	5.6	21.5
3 2	8 48.62	+16 23.9	1.619	2.518	11.9	18.7	3 2	8 50.96	+18 46.0	2.553	3.437	8.7	21.7
3 12	8 44.28	+16 53.2	1.711	2.533	15.4	18.9	3 12	8 45.86	+19 2.9	2.628	3.423	11.4	21.9
346023	2007 <i>TD</i> ₃₃₅		2 4.8 99°45	4°3/ 1.3	18		238135	2003 <i>QL</i> ₇₁		2 4.8 83°08	16°8/ 17.6	18	
1 2	9 35.72	+28 11.7	2.356	3.187	11.0	21.1	1 2	9 35.64	-20 3.5	1.133	1.838	27.5	20.3
1 12	9 30.21	+29 5.8	2.294	3.196	8.3	20.9	1 12	9 31.67	-21 11.4	1.075	1.849	24.8	20.1
1 22	9 22.76	+29 58.1	2.258	3.206	5.6	20.8	1 22	9 24.35	-21 30.6	1.028	1.860	21.9	20.0
2 1	9 14.04	+30 42.5	2.250	3.215	4.3	20.7	2 1	9 14.63	-20 51.7	0.997	1.871	19.2	19.8
2 11	9 5.00	+31 14.2	2.273	3.225	5.5	20.8	2 11	9 4.12	-19 12.7	0.984	1.882	17.2	19.7
2 21	8 56.60	+31 30.3	2.323	3.234	8.1	20.9	2 21	8 54.60	-16 41.6	0.990	1.893	16.9	19.8
3 2	8 49.69	+31 30.2	2.400	3.243	10.7	21.1	3 2	8 47.67	-13 35.1	1.018	1.904	18.4	19.9
3 12	8 44.88	+31 15.6	2.499	3.252	13.1	21.3	3 12	8 44.31	-10 14.6	1.066	1.915	20.8	20.1
143429	2003 <i>BW</i> ₅₈		2 4.8 270°77	0°3/ 5.1	17		177872	2005 <i>QV</i> ₅₈		2 4.8 217°18	0°4/ 4.5	18	
1 2	9 32.37	+13 38.3	2.437	3.250	11.3	20.5	1 2	9 31.62	+15 17.1	2.756	3.569	10.1	20.7
1 12	9 27.72	+14 0.0	2.342	3.239	8.4	20.3	1 12	9 26.96	+15 52.4	2.667	3.565	7.5	20.5
1 22	9 21.30	+14 30.2	2.273	3.227	5.1	20.1	1 22	9 20.77	+16 34.5	2.605	3.560	4.5	20.3
2 1	9 13.66	+15 5.9	2.232	3.215	1.5	19.8	2 1	9 13.52	+17 20.2	2.572	3.555	1.2	20.1
2 11	9 5.56	+15 43.2	2.222	3.203	2.2	19.8	2 11	9 5.91	+18 5.5	2.570	3.549	2.2	20.2
2 21	8 57.84	+16 18.3	2.241	3.191	5.9	20.0	2 21	8 58.65	+18 46.9	2.598	3.544	5.4	20.4
3 2	8 51.27	+16 48.1	2.288	3.178	9.2	20.2	3 2	8 52.43	+19 21.4	2.655	3.538	8.4	20.5
3 12	8 46.50	+17 10.3	2.359	3.166	12.2	20.4	3 12	8 47.79	+19 47.5	2.736	3.532	11.0	20.7
104579	2000 <i>GW</i> ₈₀		2 4.8 47°52	0°3/ 5.0	18	R	431584	2007 <i>VV</i> ₉₇		2 4.8 103°64	3°7/ 7.9	17	
1 2	9 33.53	+13 48.2	2.114	2.932	12.6	19.8	1 2	9 33.18	+3 5.1	2.472			

EPHEMERIDES

2 4.8

2 4.9

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
201117	2002 <i>JQ</i> ₂₀		2 4.8 348°50	0°0/ 4.7 18			237624	2001 <i>RO</i> ₁₀₀		2 4.8 65°92	4°4/ 2.9 17		
1 2	9 34.00	+12 24.5	1.465	2.299	16.3	19.9	1 2	9 45.88	+24 22.9	1.267	2.111	17.7	20.2
1 12	9 29.88	+13 19.5	1.391	2.298	12.2	19.7	1 12	9 38.55	+25 5.2	1.231	2.142	13.0	20.0
1 22	9 23.04	+14 31.8	1.338	2.296	7.4	19.4	1 22	9 27.99	+25 47.4	1.217	2.174	8.1	19.8
2 1	9 14.24	+15 55.2	1.312	2.295	2.1	19.0	2 1	9 15.54	+26 20.0	1.228	2.205	4.5	19.7
2 11	9 4.76	+17 20.7	1.313	2.294	3.4	19.1	2 11	9 3.05	+26 35.7	1.267	2.236	6.3	19.8
2 21	8 55.97	+18 39.3	1.341	2.293	8.6	19.4	2 21	8 52.21	+26 32.0	1.331	2.267	10.6	20.2
3 2	8 49.17	+19 44.2	1.393	2.293	13.4	19.7	3 2	8 44.28	+26 10.3	1.419	2.297	14.6	20.5
3 12	8 45.23	+20 31.9	1.467	2.293	17.3	19.9	3 12	8 39.86	+25 34.3	1.527	2.327	18.0	20.8
451015	2008 <i>UK</i> ₁₇₉		2 4.8 73°32	0°5/ 4.6 18			244108	2001 <i>UW</i> ₂₀₄		2 4.8 54°04	3°8/ 7.8 18		
1 2	9 40.63	+15 42.9	1.377	2.212	17.1	21.7	1 2	9 32.24	+ 3 35.6	2.244	3.025	13.2	20.4
1 12	9 34.57	+16 6.4	1.325	2.233	12.6	21.5	1 12	9 27.61	+ 3 26.8	2.164	3.031	10.4	20.2
1 22	9 25.65	+16 40.5	1.296	2.254	7.5	21.3	1 22	9 21.24	+ 3 32.7	2.108	3.037	7.4	20.1
2 1	9 14.90	+17 18.8	1.292	2.276	2.1	21.0	2 1	9 13.69	+ 3 52.6	2.079	3.043	4.6	19.9
2 11	9 3.85	+17 54.5	1.316	2.297	3.6	21.1	2 11	9 5.79	+ 4 23.9	2.079	3.050	4.0	19.9
2 21	8 53.97	+18 22.1	1.367	2.318	8.7	21.5	2 21	8 58.37	+ 5 2.7	2.107	3.056	6.3	20.0
3 2	8 46.49	+18 38.5	1.442	2.339	13.2	21.8	3 2	8 52.21	+ 5 44.7	2.163	3.063	9.3	20.2
3 12	8 42.10	+18 43.0	1.538	2.359	16.9	22.1	3 12	8 47.90	+ 6 25.7	2.243	3.069	12.1	20.4
178121	2006 <i>TX</i> ₂₄		2 4.8 168°49	0°2/ 4.6 17			239563	2008 <i>SG</i> ₂₇₉		2 4.8 273°38	5°8/ 1.6 18		
1 2	9 32.76	+15 31.0	2.716	3.529	10.3	21.4	1 2	9 40.25	+26 46.2	1.440	2.287	15.8	20.9
1 12	9 27.77	+15 55.2	2.634	3.531	7.6	21.2	1 12	9 34.86	+27 52.2	1.370	2.281	12.0	20.7
1 22	9 21.22	+16 25.4	2.578	3.533	4.5	21.0	1 22	9 26.19	+28 59.4	1.322	2.276	8.0	20.5
2 1	9 13.66	+16 58.7	2.552	3.535	1.2	20.8	2 1	9 15.19	+29 57.4	1.300	2.270	5.8	20.3
2 11	9 5.77	+17 31.4	2.556	3.536	2.2	20.8	2 11	9 3.40	+30 36.6	1.305	2.264	7.7	20.4
2 21	8 58.30	+18 0.5	2.591	3.538	5.4	21.1	2 21	8 52.54	+30 51.5	1.335	2.259	11.7	20.6
3 2	8 51.92	+18 23.6	2.654	3.539	8.4	21.2	3 2	8 44.14	+30 41.7	1.388	2.253	15.7	20.8
3 12	8 47.17	+18 39.1	2.742	3.539	10.9	21.4	3 12	8 39.16	+30 10.6	1.460	2.247	19.3	21.1
124559	2001 <i>RR</i> ₁₅₂		2 4.8 194°80	2°3/ 3.3 18			242376	2004 <i>DT</i> ₃₀		2 4.8 293°43	2°9/ 2.6 17		
1 2	9 39.55	+19 15.5	1.790	2.618	14.1	20.6	1 2	9 34.23	+23 7.6	2.185	3.019	11.7	20.3
1 12	9 33.65	+20 9.2	1.711	2.616	10.4	20.3	1 12	9 29.40	+23 51.2	2.098	3.005	8.7	20.1
1 22	9 25.16	+21 10.4	1.656	2.614	6.3	20.1	1 22	9 22.48	+24 37.7	2.036	2.992	5.4	19.9
2 1	9 14.83	+22 12.3	1.630	2.611	2.5	19.8	2 1	9 14.08	+25 21.7	2.002	2.979	3.0	19.7
2 11	9 3.87	+23 7.5	1.632	2.607	4.3	19.9	2 11	9 5.15	+25 57.7	1.997	2.965	4.5	19.8
2 21	8 53.56	+23 50.1	1.664	2.602	8.6	20.2	2 21	8 56.68	+26 21.6	2.021	2.952	7.8	19.9
3 2	8 45.10	+24 17.1	1.721	2.597	12.6	20.4	3 2	8 49.65	+26 31.5	2.071	2.939	11.1	20.1
3 12	8 39.33	+24 28.2	1.800	2.591	16.0	20.6	3 12	8 44.77	+26 27.4	2.144	2.926	14.0	20.3
340585	2006 <i>PH</i> ₁₇		2 4.8 157°16	3°2/ 2.2 17			466202	2012 <i>MW</i>		2 4.8 280°66	7°6/ 9.4 17		
1 2	9 37.65	+27 24.3	2.860	3.679	9.6	21.0	1 2	9 34.48	- 4 10.4	1.984	2.731	15.8	21.3
1 12	9 31.29	+27 50.2	2.787	3.685	7.2	20.9	1 12	9 29.78	- 4 56.2	1.878	2.709	13.4	21.1
1 22	9 23.29	+28 14.1	2.742	3.690	4.7	20.7	1 22	9 22.85	- 5 22.4	1.793	2.688	10.7	20.9
2 1	9 14.23	+28 31.8	2.726	3.696	3.2	20.6	2 1	9 14.24	- 5 25.9	1.733	2.667	8.4	20.7
2 11	9 4.92	+28 40.0	2.742	3.701	4.2	20.7	2 11	9 4.85	- 5 6.5	1.699	2.645	7.6	20.6
2 21	8 56.16	+28 37.0	2.788	3.705	6.6	20.9	2 21	8 55.75	- 4 26.8	1.693	2.623	9.1	20.6
3 2	8 48.67	+28 22.4	2.861	3.709	9.0	21.0	3 2	8 47.99	- 3 32.0	1.712	2.601	11.9	20.8
3 12	8 42.98	+27 57.4	2.959	3.713	11.2	21.2	3 12	8 42.43	- 2 29.0	1.754	2.579	15.0	20.9
285116	1995 <i>SN</i> ₁		2 4.8 169°81	3°8/ 7.4 18			304947	2007 <i>TZ</i> ₉		2 4.9 173°30	3°3/ 2.8 18		
1 2	9 38.54	+ 3 56.2	1.890	2.671	15.3	22.3	1 2	9 40.34	+22 59.4	1.829	2.660	13.7	20.9
1 12	9 32.60	+ 4 2.2	1.808	2.677	12.0	22.0	1 12	9 34.15	+23 45.4	1.757	2.663	10.1	20.7
1 22	9 24.39	+ 4 26.3	1.748	2.681	8.3	21.8	1 22	9 25.40	+24 34.4	1.709	2.665	6.3	20.5
2 1	9 14.60	+ 5 7.0	1.716	2.684	4.8	21.6	2 1	9 14.92	+25 19.4	1.689	2.666	3.4	20.3
2 11	9 4.28	+ 6 0.3	1.712	2.687	4.1	21.6	2 11	9 3.91	+25 53.6	1.698	2.667	5.0	20.4
2 21	8 54.54	+ 7 0.5	1.738	2.689	7.2	21.8	2 21	8 53.67	+26 13.0	1.736	2.667	8.8	20.6
3 2	8 46.44	+ 8 1.7	1.792	2.689	11.0	22.0	3 2	8 45.34	+26 16.1	1.799	2.667	12.5	20.8
3 12	8 40.71	+ 8 58.4	1.869	2.689	14.4	22.2	3 12	8 39.70	+26 4.1	1.884	2.667	15.7	21.1
409952	2006 <i>UT</i> ₂₁₂		2 4.8 155°41	1°4/ 3.9 18			310720	2002 <i>NS</i> ₇₃		2 4.9 65°15	3°8/ 7.0 18		
1 2	9 37.99	+18 32.5	1.924	2.750	13.3	21.8	1 2	9 39.94	+ 6 5.1	1.525	2.327	17.4	20.3
1 12	9 32.20	+19 1.8	1.850	2.754	9.8	21.6	1 12	9 33.66	+ 5 52.5	1.477	2.359	13.4	20.1
1 22	9 24.13	+19 37.2	1.801	2.758	5.9	21.3	1 22	9 24.93	+ 5 58.0	1.451	2.391	9.0	19.9
2 1	9 14.52	+20 13.4	1.779	2.761	1.9	21.1	2 1	9 14.73	+ 6 19.6	1.451	2.423	4.9	19.7
2 11	9 4.45	+20 45.2	1.787	2.764	3.5	21.2	2 11	9 4.34	+ 6 52.7	1.478	2.455	4.3	19.8
2 21	8 55.07	+21 8.2	1.824	2.767	7.5	21.5	2 21	8 55.04	+ 7 31.6	1.534	2.486	7.8	20.1
3 2	8 47.40	+21 20.3	1.887	2.770	11.3	21.7	3 2	8 47.85	+ 8 10.8	1.615	2.518	11.6	20.4
3 12	8 42.15	+21 20.9	1.973	2.772	14.5	21.9	3 12	8 43.37	+ 8 45.6	1.718	2.549	15.0	20.6
429670	2011 <i>GA</i> ₆₈		2 4.8 291°06	6°6/30.0 18			109218	2001 <i>QM</i> ₈₆		2 4.9 99°46	2°8/ 6.3 18		
1 2	9 35.56	+31 20.2	1.981	2.820	12.5	20.6	1 2	9 40.00	+ 9 25.3	1.863	2.663	14.7	19.6
1 12	9 30.79	+32 57.0	1.908	2.810	9.7	20.4	1 12	9 33.58	+ 8 55.4	1.792	2.675	11.3	19.4
1 22	9 23.50	+34 32.2	1.861	2.801	7.3	20.2	1 22	9 24.90	+ 8 36.7	1.744	2.687	7.4	19.2
2 1	9 14.39	+35 56.4	1.842	2.791	6.6	20.2	2 1	9 14.75	+ 8 28.2	1.723	2.699	3.7	19.0
2 11	9 4.59	+37 1.1	1.850	2.782	8.2	20.2	2 11	9 4.24	+ 8 27.5	1.732	2.710	3.5	19.0
2 21	8 55.35	+37 41.6	1.885	2.773	10.9	20.4	2 21	8 54.49	+ 8 31.7	1.771	2.722	7.1	19.2
3 2	8 47.88	+37 56.6	1.943	2.764	13.8	20.5	3 2	8 46.50	+ 8 37.6	1.836	2.733	10.8	19.5
3 12	8 43.01	+37 48.9	2.021	2.755	16.3	20.7	3 12	8 40.93	+ 8 42.5	1.924	2.743	14.1	19.7
23437	<i>Śima</i>		2 4.8 199°85	2°4/ 6.5 18			340664	2006 <i>RD</i> ₃₀		2 4.9 136°34	3°7/ 8.4 17		
1 2	9 38.06	+ 7 25.1	1.935	2.729	14.5	18.8	1 2	9 31.73	+ 1 18.0				

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
239565	2008 <i>SH</i> ₂₉₆		2 4.9 82°69	0°0/ 4.7 18			337538	2001 <i>SJ</i> ₂₂₇		2 4.9 151°24	0°1/ 5.0 18		
1 2	9 38.39	+12 42.3	1.420	2.249	17.0	21.1	1 2	9 33.07	+13 49.4	2.831	3.637	10.1	22.2
1 12	9 32.95	+13 29.0	1.364	2.269	12.6	20.9	1 12	9 27.93	+14 15.6	2.752	3.644	7.5	22.0
1 22	9 24.74	+14 30.6	1.331	2.288	7.6	20.7	1 22	9 21.33	+14 48.6	2.699	3.652	4.5	21.9
2 1	9 14.73	+15 40.5	1.324	2.307	2.1	20.4	2 1	9 13.76	+15 25.6	2.676	3.659	1.3	21.6
2 11	9 4.31	+16 50.1	1.345	2.326	3.3	20.5	2 11	9 5.90	+16 3.0	2.684	3.665	2.0	21.7
2 21	8 54.92	+17 51.8	1.393	2.345	8.5	20.9	2 21	8 58.46	+16 37.8	2.723	3.671	5.1	21.9
3 2	8 47.74	+18 40.3	1.466	2.363	13.0	21.2	3 2	8 52.06	+17 7.4	2.791	3.677	8.0	22.1
3 12	8 43.51	+19 13.6	1.560	2.382	16.7	21.4	3 12	8 47.22	+17 30.0	2.884	3.682	10.4	22.3
369083	2008 <i>FZ</i> ₁₁₅		2 4.9 228°30	1°5/ 6.1 17			430982	2005 <i>WV</i> ₁₄₁		2 4.9 82°25	19°1/ 28.4 17		
1 2	9 34.85	+ 9 12.1	2.317	3.114	12.3	22.4	1 2	10 5.97	+53 38.0	1.097	1.900	22.7	20.2
1 12	9 29.68	+ 9 37.3	2.218	3.102	9.4	22.2	1 12	9 56.45	+55 29.9	1.068	1.908	20.7	20.1
1 22	9 22.60	+10 15.1	2.144	3.090	6.0	22.0	1 22	9 40.00	+56 46.0	1.056	1.916	19.4	20.0
2 1	9 14.14	+11 2.8	2.098	3.077	2.5	21.7	2 1	9 19.09	+57 5.3	1.063	1.925	19.2	20.0
2 11	9 5.13	+11 56.4	2.082	3.063	2.5	21.7	2 11	8 58.05	+56 18.1	1.087	1.933	20.2	20.1
2 21	8 56.47	+12 51.1	2.097	3.049	6.1	21.9	2 21	8 40.96	+54 30.5	1.130	1.941	22.0	20.3
3 2	8 49.04	+13 42.4	2.140	3.034	9.7	22.1	3 2	8 30.07	+51 58.8	1.189	1.950	24.1	20.5
3 12	8 43.51	+14 26.9	2.208	3.018	12.8	22.3	3 12	8 25.63	+49 1.3	1.262	1.958	26.1	20.6
368652	2005 <i>EX</i> ₁₆₁		2 4.9 55°41	3°2/ 2.7 18			175834	1999 <i>TC</i> ₁₂₉		2 4.9 114°84	0°9/ 4.3 18		
1 2	9 36.40	+23 19.9	1.898	2.735	13.0	20.1	1 2	9 39.79	+16 50.3	1.834	2.656	14.1	21.3
1 12	9 30.97	+24 3.0	1.844	2.753	9.6	20.0	1 12	9 33.50	+17 20.0	1.772	2.673	10.4	21.1
1 22	9 23.33	+24 47.6	1.815	2.771	5.9	19.8	1 22	9 24.89	+17 57.0	1.733	2.690	6.1	20.9
2 1	9 14.31	+25 27.5	1.813	2.790	3.2	19.6	2 1	9 14.79	+18 36.2	1.723	2.706	1.8	20.7
2 11	9 5.02	+25 57.2	1.840	2.809	4.7	19.8	2 11	9 4.35	+19 11.9	1.742	2.721	3.2	20.8
2 21	8 56.56	+26 13.3	1.895	2.828	8.1	20.0	2 21	8 54.74	+19 39.7	1.790	2.736	7.5	21.1
3 2	8 49.88	+26 14.9	1.976	2.847	11.4	20.3	3 2	8 46.97	+19 57.2	1.865	2.750	11.3	21.3
3 12	8 45.60	+26 2.8	2.079	2.866	14.3	20.5	3 12	8 41.71	+20 3.7	1.962	2.764	14.5	21.6
185365	2006 <i>VV</i> ₁₀₇		2 4.9 58°67	0°0/ 4.7 18			135340	2001 <i>TF</i> ₂₂		2 4.9 233°79	6°1/ 30.1 18		
1 2	9 37.92	+14 49.5	1.529	2.360	15.9	20.2	1 2	9 38.93	+36 34.1	2.665	3.482	10.3	19.8
1 12	9 32.38	+15 7.2	1.475	2.380	11.8	19.9	1 12	9 32.72	+37 32.0	2.589	3.471	8.3	19.6
1 22	9 24.30	+15 35.3	1.443	2.400	7.0	19.7	1 22	9 24.41	+38 23.3	2.538	3.460	6.7	19.5
2 1	9 14.60	+16 8.7	1.437	2.420	2.0	19.4	2 1	9 14.68	+39 1.6	2.516	3.449	6.2	19.5
2 11	9 4.59	+16 41.6	1.459	2.440	3.1	19.6	2 11	9 4.47	+39 22.2	2.523	3.437	7.2	19.5
2 21	8 55.57	+17 8.8	1.509	2.461	7.9	19.9	2 21	8 54.82	+39 22.7	2.557	3.425	9.2	19.6
3 2	8 48.65	+17 27.2	1.584	2.482	12.1	20.2	3 2	8 46.66	+39 3.6	2.616	3.413	11.3	19.8
3 12	8 44.48	+17 35.3	1.680	2.502	15.6	20.5	3 12	8 40.68	+38 27.6	2.697	3.401	13.3	19.9
459680	2013 <i>LV</i> ₃₃		2 4.9 258°10	1°1/ 4.1 16			260766	2005 <i>MZ</i> ₄₈		2 4.9 160°75	2°4/ 2.8 18		
1 2	9 36.86	+16 46.2	1.819	2.646	13.9	21.7	1 2	9 35.87	+19 10.4	2.104	2.930	12.3	20.6
1 12	9 31.73	+17 23.9	1.726	2.631	10.4	21.4	1 12	9 30.60	+20 29.8	2.030	2.935	9.0	20.4
1 22	9 24.10	+18 11.2	1.658	2.616	6.2	21.2	1 22	9 23.21	+21 56.6	1.982	2.940	5.4	20.2
2 1	9 14.62	+19 3.0	1.618	2.600	1.9	20.8	2 1	9 14.35	+23 23.8	1.964	2.944	2.5	20.0
2 11	9 4.39	+19 52.8	1.606	2.585	3.5	20.9	2 11	9 4.99	+24 44.0	1.976	2.947	4.2	20.1
2 21	8 54.65	+20 34.7	1.622	2.568	8.1	21.2	2 21	8 56.16	+25 51.2	2.018	2.950	7.7	20.3
3 2	8 46.58	+21 4.8	1.665	2.552	12.3	21.4	3 2	8 48.83	+26 42.1	2.087	2.953	11.1	20.5
3 12	8 41.06	+21 21.4	1.730	2.535	16.0	21.6	3 12	8 43.70	+27 15.9	2.179	2.955	14.0	20.7
191343	2003 <i>QF</i> ₃₃		2 4.9 196°95	1°3/ 5.8 18			400785	2010 <i>EY</i> ₁₂₈		2 4.9 212°16	3°2/ 6.9 18		
1 2	9 35.96	+11 24.0	2.384	3.185	11.9	20.5	1 2	9 36.80	+ 5 44.4	1.821	2.615	15.3	21.8
1 12	9 30.34	+11 25.6	2.296	3.183	9.0	20.3	1 12	9 31.55	+ 5 53.5	1.731	2.610	11.9	21.6
1 22	9 22.90	+11 36.1	2.232	3.180	5.7	20.1	1 22	9 23.92	+ 6 20.2	1.665	2.604	8.1	21.4
2 1	9 14.22	+11 53.3	2.197	3.177	2.2	19.9	2 1	9 14.59	+ 7 2.9	1.625	2.598	4.3	21.1
2 11	9 5.11	+12 14.2	2.193	3.173	2.4	19.9	2 11	9 4.61	+ 7 57.1	1.613	2.591	3.7	21.1
2 21	8 56.46	+12 35.7	2.219	3.170	5.9	20.1	2 21	8 55.14	+ 8 57.1	1.630	2.583	7.4	21.3
3 2	8 49.08	+12 54.7	2.273	3.165	9.2	20.3	3 2	8 47.27	+ 9 56.8	1.674	2.575	11.4	21.5
3 12	8 43.59	+13 9.2	2.352	3.160	12.2	20.5	3 12	8 41.83	+10 50.8	1.742	2.567	15.1	21.7
52448	1994 <i>UW</i> ₉		2 4.9 103°08	0°0/ 4.7 18			154270	2002 <i>SG</i> ₅		2 4.9 95°18	1°9/ 6.0 17		
1 2	9 39.10	+14 30.6	1.927	2.742	13.8	20.3	1 2	9 39.76	+ 9 5.6	1.437	2.253	17.5	20.9
1 12	9 32.81	+14 56.4	1.867	2.764	10.2	20.1	1 12	9 33.91	+ 9 28.8	1.379	2.273	13.3	20.7
1 22	9 24.39	+15 31.0	1.832	2.787	6.1	19.9	1 22	9 25.32	+10 9.9	1.343	2.293	8.4	20.4
2 1	9 14.61	+16 9.8	1.826	2.809	1.7	19.7	2 1	9 14.95	+11 4.2	1.333	2.313	3.4	20.2
2 11	9 4.57	+16 47.7	1.849	2.830	2.7	19.8	2 11	9 4.17	+12 4.8	1.350	2.332	3.3	20.2
2 21	8 55.34	+17 20.4	1.902	2.850	6.9	20.1	2 21	8 54.41	+13 4.1	1.395	2.350	8.1	20.5
3 2	8 47.84	+17 44.9	1.982	2.870	10.6	20.3	3 2	8 46.86	+13 56.1	1.466	2.368	12.6	20.9
3 12	8 42.69	+17 59.9	2.085	2.890	13.6	20.6	3 12	8 42.25	+14 37.1	1.558	2.386	16.4	21.1
31373	1998 <i>XN</i> ₁₂		2 4.9 337°04	8°5/ 29.3 18			155208	2005 <i>UV</i> ₄₆₀		2 4.9 256°03	1°7/ 3.7 18		
1 2	9 36.20	+32 45.9	1.546	2.395	14.8	17.0	1 2	9 35.94	+18 47.5	1.918	2.749	13.2	20.7
1 12	9 31.90	+34 38.6	1.484	2.389	11.7	16.8	1 12	9 30.83	+19 23.1	1.838	2.744	9.8	20.5
1 22	9 24.47	+36 27.9	1.445	2.383	9.2	16.6	1 22	9 23.43	+20 5.2	1.781	2.739	5.8	20.2
2 1	9 14.76	+38 1.3	1.432	2.378	8.6	16.5	2 1	9 14.44	+20 48.7	1.753	2.735	2.1	19.9
2 11	9 4.23	+39 7.8	1.445	2.373	10.4	16.6	2 11	9 4.90	+21 27.6	1.753	2.730	3.6	20.0
2 21	8 54.55	+39 41.9	1.482	2.368	13.4	16.8	2 21	8 55.94	+21 57.3	1.782	2.725	7.7	20.3
3 2	8 47.19	+39 43.9	1.540	2.364	16.6	17.0	3 2	8 48.62	+22 15.1	1.837	2.720	11.5	20.5
3 12	8 43.12	+39 18.2	1.616	2.361	19.4	17.2	3 12	8 43.69	+22 20.1	1.914	2.715	14.8	20.7
523501	2017 <i>HP</i> ₆₂		2 4.9 79°79	0°3/ 5.1 18			495121	2011 <i>UY</i> ₄₀₃		2 4.9 102°19	0°1/ 4.8 18		

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
64866	2001 YS ₅₇		2 4.9 216°18	0°8/ 5.4 18			241184	2007 RZ ₂₅₈		2 4.9 148°37	3°5/ 2.4 18		
1 2	9 35.76	+12 39.1	1.946	2.762	13.6	19.8	1 2	9 39.32	+22 27.5	1.829	2.661	13.6	20.3
1 12	9 30.59	+12 52.0	1.864	2.760	10.2	19.6	1 12	9 33.42	+23 35.5	1.762	2.669	10.1	20.1
1 22	9 23.23	+13 15.4	1.805	2.758	6.3	19.4	1 22	9 25.02	+24 47.8	1.721	2.677	6.3	19.9
2 1	9 14.38	+13 46.2	1.774	2.756	2.1	19.1	2 1	9 14.93	+25 56.4	1.707	2.684	3.6	19.7
2 11	9 5.01	+14 19.9	1.772	2.754	2.6	19.1	2 11	9 4.32	+26 53.6	1.723	2.690	5.3	19.9
2 21	8 56.21	+14 51.9	1.799	2.751	6.9	19.4	2 21	8 54.47	+27 34.3	1.767	2.696	8.9	20.1
3 2	8 48.96	+15 18.7	1.853	2.749	10.8	19.6	3 2	8 46.49	+27 56.4	1.837	2.701	12.5	20.3
3 12	8 43.98	+15 37.7	1.930	2.746	14.1	19.8	3 12	8 41.15	+28 0.9	1.929	2.706	15.6	20.5
258258	2001 TP ₂₀₂		2 4.9 45°13	11°2/27.7 18			170815	2004 EE ₂		2 4.9 310°43	0°9/ 4.2 17		
1 2	9 41.42	+41 15.6	1.560	2.393	15.5	19.6	1 2	9 31.69	+15 49.6	2.065	2.893	12.5	20.3
1 12	9 35.85	+43 11.7	1.523	2.404	13.1	19.5	1 12	9 27.64	+16 36.4	1.973	2.878	9.3	20.1
1 22	9 26.80	+44 52.3	1.509	2.416	11.5	19.4	1 22	9 21.53	+17 33.3	1.906	2.863	5.5	19.8
2 1	9 15.41	+46 4.8	1.519	2.428	11.3	19.4	2 1	9 13.95	+18 35.4	1.866	2.849	1.6	19.5
2 11	9 3.49	+46 40.8	1.553	2.440	12.7	19.5	2 11	9 5.79	+19 36.8	1.856	2.835	3.0	19.6
2 21	8 52.89	+46 38.9	1.609	2.453	14.9	19.7	2 21	8 58.02	+20 32.0	1.874	2.821	7.1	19.8
3 2	8 45.12	+46 3.3	1.685	2.466	17.2	19.9	3 2	8 51.61	+21 16.6	1.919	2.807	10.9	20.0
3 12	8 40.97	+45 1.7	1.778	2.479	19.3	20.1	3 12	8 47.30	+21 48.3	1.987	2.794	14.1	20.2
103281	2000 AY ₃₆		2 4.9 35°17	0°3/ 4.7 18			310086	2010 MY ₁₀₁		2 4.9 200°61	2°7/ 7.7 17		
1 2	9 39.40	+16 20.1	1.104	1.956	19.3	19.7	1 2	9 29.76	+ 3 51.6	3.065	3.836	10.2	21.9
1 12	9 34.39	+16 22.0	1.050	1.965	14.4	19.5	1 12	9 25.47	+ 4 1.4	2.972	3.834	8.0	21.7
1 22	9 25.93	+16 35.1	1.015	1.976	8.6	19.2	1 22	9 19.89	+ 4 22.7	2.904	3.832	5.6	21.6
2 1	9 15.17	+16 53.7	1.003	1.987	2.4	18.9	2 1	9 13.43	+ 4 54.3	2.864	3.830	3.4	21.4
2 11	9 3.90	+17 10.9	1.017	1.999	4.0	19.0	2 11	9 6.68	+ 5 34.1	2.855	3.828	2.9	21.4
2 21	8 53.93	+17 21.2	1.055	2.011	9.9	19.4	2 21	9 0.21	+ 6 18.8	2.876	3.825	4.8	21.5
3 2	8 46.77	+17 21.6	1.116	2.025	15.1	19.7	3 2	8 54.62	+ 7 5.3	2.926	3.822	7.3	21.7
3 12	8 43.21	+17 11.1	1.195	2.038	19.4	20.0	3 12	8 50.35	+ 7 50.1	3.002	3.820	9.6	21.8
377045	2002 TA ₄₇		2 4.9 177°93	14°8/15.8 18			157624	2005 WB ₁₀₆		2 4.9 119°64	2°0/ 6.2 18		
1 2	9 37.75	-19 51.3	1.513	2.180	22.9	21.5	1 2	9 39.47	+ 8 19.7	1.703	2.507	15.8	21.2
1 12	9 32.80	-20 52.3	1.435	2.182	20.8	21.3	1 12	9 33.41	+ 8 45.9	1.639	2.525	12.0	21.0
1 22	9 24.94	-21 14.8	1.372	2.184	18.5	21.1	1 22	9 24.94	+ 9 28.3	1.597	2.543	7.7	20.8
2 1	9 14.94	-20 51.2	1.326	2.185	16.3	21.0	2 1	9 14.89	+10 23.2	1.582	2.561	3.3	20.6
2 11	9 4.10	-19 38.7	1.301	2.185	15.0	20.9	2 11	9 4.44	+11 24.4	1.596	2.577	3.1	20.6
2 21	8 53.89	-17 42.0	1.298	2.184	15.0	20.9	2 21	8 54.82	+12 25.4	1.640	2.593	7.3	20.9
3 2	8 45.72	-15 12.1	1.318	2.183	16.4	21.0	3 2	8 47.07	+13 20.6	1.710	2.608	11.4	21.1
3 12	8 40.57	-12 24.6	1.359	2.181	18.7	21.1	3 12	8 41.90	+14 6.2	1.803	2.622	14.9	21.4
457851	2009 SY ₁₅₄		2 4.9 201°27	3°2/ 2.7 16			125783	2001 XD ₁₄₇		2 4.9 124°65	0°6/ 4.4 18		
1 2	9 39.89	+24 44.9	2.211	3.035	11.9	22.0	1 2	9 36.30	+15 35.2	2.081	2.900	12.7	20.2
1 12	9 33.51	+25 18.5	2.130	3.032	8.9	21.8	1 12	9 30.80	+16 13.1	2.012	2.912	9.4	20.0
1 22	9 24.93	+25 52.7	2.075	3.028	5.6	21.5	1 22	9 23.27	+16 59.2	1.967	2.923	5.6	19.7
2 1	9 14.86	+26 21.8	2.048	3.023	3.3	21.4	2 1	9 14.41	+17 48.8	1.951	2.934	1.6	19.5
2 11	9 4.31	+26 40.8	2.052	3.018	4.6	21.5	2 11	9 5.18	+18 36.5	1.965	2.945	2.8	19.6
2 21	8 54.38	+26 46.7	2.085	3.013	7.8	21.6	2 21	8 56.58	+19 17.8	2.008	2.955	6.7	19.9
3 2	8 46.05	+26 38.7	2.146	3.007	11.1	21.8	3 2	8 49.50	+19 49.5	2.079	2.965	10.3	20.1
3 12	8 40.02	+26 17.9	2.229	3.000	13.9	22.0	3 12	8 44.57	+20 10.1	2.174	2.974	13.3	20.3
41418	2000 AR ₂₃₃		2 4.9 75°79	7°7/29.6 18			284979	2010 GO ₁₀₅		2 4.9 195°19	0°9/ 4.0 18		
1 2	9 38.80	+35 13.0	1.925	2.758	13.0	17.9	1 2	9 32.47	+17 0.8	2.652	3.470	10.3	21.0
1 12	9 33.13	+36 48.9	1.879	2.772	10.4	17.7	1 12	9 27.71	+17 43.2	2.568	3.468	7.6	20.8
1 22	9 24.86	+38 16.8	1.858	2.786	8.3	17.6	1 22	9 21.33	+18 31.7	2.510	3.466	4.5	20.6
2 1	9 14.85	+39 27.4	1.864	2.800	7.7	17.6	2 1	9 13.86	+19 22.5	2.482	3.464	1.4	20.4
2 11	9 4.41	+40 13.4	1.897	2.814	9.1	17.7	2 11	9 6.02	+20 11.2	2.484	3.462	2.6	20.5
2 21	8 54.88	+40 32.3	1.956	2.828	11.4	17.9	2 21	8 58.56	+20 54.1	2.517	3.460	5.8	20.7
3 2	8 47.39	+40 25.2	2.038	2.841	13.8	18.1	3 2	8 52.20	+21 28.2	2.578	3.457	8.8	20.8
3 12	8 42.68	+39 56.6	2.139	2.855	16.0	18.3	3 12	8 47.51	+21 52.4	2.664	3.454	11.4	21.0
38063	1999 FH		2 4.9 206°75	4°7/ 8.6 18 R			233076	2005 ND ₁₅		2 4.9 195°43	3°0/ 7.8 18		
1 2	9 36.40	- 0 26.1	2.254	3.008	13.9	19.4	1 2	9 32.83	+ 3 24.4	3.288	4.046	9.8	21.1
1 12	9 30.87	- 0 21.6	2.155	3.001	11.3	19.2	1 12	9 27.63	+ 3 13.1	3.190	4.043	7.8	20.9
1 22	9 23.37	+ 0 1.6	2.079	2.993	8.4	18.9	1 22	9 21.14	+ 3 11.7	3.118	4.040	5.6	20.8
2 1	9 14.45	+ 0 43.2	2.030	2.985	5.6	18.8	2 1	9 13.79	+ 3 19.9	3.075	4.036	3.6	20.6
2 11	9 4.96	+ 1 40.6	2.010	2.975	4.8	18.7	2 11	9 6.14	+ 3 36.2	3.063	4.031	3.1	20.6
2 21	8 55.84	+ 2 48.9	2.020	2.964	6.9	18.8	2 21	8 58.76	+ 3 58.4	3.082	4.026	4.8	20.7
3 2	8 47.98	+ 4 2.4	2.059	2.953	10.0	19.0	3 2	8 52.24	+ 4 24.1	3.131	4.020	7.1	20.8
3 12	8 42.09	+ 5 15.1	2.123	2.940	13.0	19.1	3 12	8 47.01	+ 4 50.4	3.206	4.014	9.2	21.0
94677	2001 XQ ₂₂		2 4.9 72°29	1°4/ 4.2 18			463860	2014 UL ₂₀		2 4.9 215°74	2°6/ 2.9 18		
1 2	9 40.81	+17 36.4	1.373	2.211	17.0	19.9	1 2	9 36.70	+20 49.0	1.985	2.816	12.8	21.7
1 12	9 34.83	+18 4.7	1.321	2.230	12.5	19.7	1 12	9 31.41	+21 45.0	1.905	2.811	9.5	21.5
1 22	9 25.93	+18 41.5	1.290	2.249	7.4	19.5	1 22	9 23.82	+22 46.7	1.849	2.806	5.8	21.2
2 1	9 15.16	+19 20.1	1.285	2.268	2.2	19.2	2 1	9 14.61	+23 47.7	1.821	2.801	2.8	21.0
2 11	9 4.03	+19 53.2	1.308	2.287	4.0	19.3	2 11	9 4.82	+24 41.3	1.824	2.795	4.4	21.1
2 21	8 54.08	+20 15.8	1.357	2.306	9.0	19.7	2 21	8 55.59	+25 22.3	1.854	2.789	8.1	21.3
3 2	8 46.55	+20 25.5	1.431	2.325	13.5	20.0	3 2	8 47.96	+25 48.0	1.912	2.783	11.8	21.5
3 12	8 42.16	+20 22.2	1.525	2.343	17.2	20.3	3 12	8 42.71	+25 58.1	1.991	2.776	14.9	21.7
185161	2006 SY ₂₁₄		2 4.9 114°47	0°9/ 5.5 18			456680	2007 RK ₁₃₄		2 4.9 129°38	2°1/ 3.4 18		
1 2	9 37.41	+12 6.7	1.825	2.640	14.4	20.9	1 2	9 39.94	+19 24.5	1.907	2.731	13.5	22.1
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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
343704	2011 <i>ES</i> ₁₂		2 4.9 302°20	3°2/ 7.4 17			323497	2004 <i>PK</i> ₁₁₅		2 4.9 178°86	4°4/31.6 18		
1 2	9 31.13	+ 3 43.7	1.844	2.640	15.0	20.7	1 2	9 37.02	+27 36.0	2.446	3.273	10.8	21.3
1 12	9 27.49	+ 4 23.3	1.740	2.618	11.9	20.4	1 12	9 31.36	+28 57.3	2.374	3.275	8.1	21.1
1 22	9 21.60	+ 5 25.7	1.658	2.597	8.2	20.1	1 22	9 23.67	+30 18.6	2.329	3.276	5.6	21.0
2 1	9 14.03	+ 6 48.8	1.603	2.575	4.4	19.9	2 1	9 14.58	+31 33.0	2.314	3.276	4.4	20.9
2 11	9 5.69	+ 8 27.4	1.575	2.554	3.6	19.8	2 11	9 5.00	+32 34.2	2.329	3.276	5.8	21.0
2 21	8 57.65	+10 13.3	1.577	2.533	7.2	19.9	2 21	8 55.91	+33 18.2	2.374	3.276	8.3	21.1
3 2	8 51.01	+11 58.0	1.606	2.512	11.4	20.1	3 2	8 48.21	+33 43.6	2.444	3.275	11.0	21.3
3 12	8 46.63	+13 34.0	1.658	2.492	15.3	20.3	3 12	8 42.60	+33 51.5	2.537	3.273	13.3	21.5
452547	2004 <i>VD</i> ₆₆		2 4.9 97°08	0°1/ 4.9 18			40549	1999 <i>RP</i> ₁₁₂		2 4.9 208°06	3°1/ 6.9 18		
1 2	9 39.99	+13 50.5	1.600	2.422	15.7	22.3	1 2	9 36.07	+ 6 0.9	1.822	2.619	15.2	19.6
1 12	9 33.90	+14 16.9	1.541	2.442	11.7	22.1	1 12	9 31.01	+ 6 11.9	1.736	2.616	11.8	19.4
1 22	9 25.27	+14 54.6	1.506	2.461	7.0	21.9	1 22	9 23.63	+ 6 40.3	1.672	2.612	8.0	19.2
2 1	9 14.99	+15 38.5	1.497	2.480	2.0	21.6	2 1	9 14.60	+ 7 24.2	1.634	2.608	4.2	18.9
2 11	9 4.36	+16 22.2	1.517	2.498	3.0	21.7	2 11	9 4.96	+ 8 19.2	1.625	2.604	3.6	18.9
2 21	8 54.68	+17 0.2	1.565	2.516	7.8	22.0	2 21	8 55.84	+ 9 19.4	1.645	2.599	7.2	19.1
3 2	8 47.06	+17 28.8	1.639	2.534	12.0	22.3	3 2	8 48.32	+10 18.7	1.691	2.593	11.3	19.3
3 12	8 42.18	+17 46.3	1.736	2.551	15.5	22.6	3 12	8 43.18	+11 12.0	1.761	2.588	14.8	19.5
55955	1998 <i>HJ</i> ₈₁		2 4.9 229°81	0°9/ 4.0 18			182977	2002 <i>NU</i> ₃₈		2 4.9 187°65	2°8/ 6.9 18		
1 2	9 32.92	+17 46.3	2.784	3.600	9.9	19.9	1 2	9 39.65	+ 5 56.3	2.113	2.894	13.9	22.0
1 12	9 28.01	+18 17.6	2.692	3.591	7.3	19.8	1 12	9 33.36	+ 6 9.7	2.023	2.894	10.8	21.8
1 22	9 21.51	+18 54.0	2.627	3.583	4.4	19.6	1 22	9 24.92	+ 6 38.4	1.956	2.893	7.3	21.6
2 1	9 13.93	+19 32.0	2.591	3.574	1.4	19.3	2 1	9 14.97	+ 7 20.4	1.917	2.890	3.8	21.4
2 11	9 5.96	+20 8.0	2.586	3.564	2.5	19.4	2 11	9 4.46	+ 8 11.8	1.909	2.887	3.3	21.3
2 21	8 58.33	+20 38.5	2.612	3.554	5.6	19.6	2 21	8 54.42	+ 9 7.3	1.932	2.882	6.6	21.5
3 2	8 51.76	+21 1.3	2.666	3.544	8.6	19.8	3 2	8 45.84	+10 2.0	1.983	2.876	10.3	21.7
3 12	8 46.80	+21 15.3	2.745	3.534	11.1	19.9	3 12	8 39.46	+10 51.6	2.059	2.869	13.6	21.9
213248	2001 <i>CK</i> ₁₀		2 4.9 314°32	1°4/ 4.2 18			409442	2005 <i>QD</i> ₅		2 4.9 125°68	1°7/ 3.7 18		
1 2	9 38.05	+18 46.0	1.416	2.259	16.3	20.0	1 2	9 42.28	+21 32.5	2.541	3.351	11.0	21.5
1 12	9 33.23	+18 54.5	1.331	2.243	12.2	19.7	1 12	9 34.76	+21 50.3	2.478	3.373	8.1	21.4
1 22	9 25.32	+19 10.1	1.269	2.229	7.4	19.4	1 22	9 25.45	+22 9.2	2.441	3.395	4.8	21.2
2 1	9 15.12	+19 27.5	1.231	2.214	2.3	19.0	2 1	9 15.04	+22 25.3	2.435	3.415	2.0	21.0
2 11	9 4.04	+19 40.4	1.220	2.200	4.1	19.1	2 11	9 4.46	+22 35.2	2.462	3.435	3.1	21.2
2 21	8 53.68	+19 44.0	1.236	2.187	9.5	19.4	2 21	8 54.58	+22 36.7	2.519	3.454	6.2	21.4
3 2	8 45.53	+19 35.9	1.275	2.174	14.4	19.6	3 2	8 46.19	+22 29.3	2.606	3.472	9.2	21.6
3 12	8 40.60	+19 16.0	1.334	2.161	18.7	19.9	3 12	8 39.83	+22 13.4	2.717	3.490	11.6	21.8
164411	2006 <i>AP</i> ₃₅		2 4.9 269°65	0°3/ 5.1 18			501432	2013 <i>YP</i> ₁₅₀		2 4.9 91°86	3°7/ 1.6 18		
1 2	9 37.92	+13 33.8	1.613	2.438	15.5	20.9	1 2	9 34.91	+25 28.5	2.293	3.125	11.2	20.7
1 12	9 32.89	+13 54.1	1.517	2.418	11.8	20.6	1 12	9 29.75	+26 33.0	2.232	3.137	8.3	20.5
1 22	9 25.04	+14 27.6	1.443	2.399	7.3	20.3	1 22	9 22.65	+27 38.1	2.197	3.149	5.4	20.3
2 1	9 15.06	+15 10.1	1.396	2.379	2.2	20.0	2 1	9 14.29	+28 37.5	2.190	3.161	3.7	20.3
2 11	9 4.13	+15 55.6	1.377	2.358	3.2	20.0	2 11	9 5.58	+29 25.6	2.214	3.172	5.1	20.4
2 21	8 53.65	+16 37.7	1.385	2.337	8.5	20.2	2 21	8 57.47	+29 58.7	2.266	3.184	7.9	20.5
3 2	8 45.02	+17 11.5	1.419	2.316	13.3	20.5	3 2	8 50.82	+30 15.6	2.344	3.195	10.7	20.7
3 12	8 39.23	+17 33.8	1.474	2.295	17.5	20.7	3 12	8 46.22	+30 17.1	2.445	3.206	13.1	20.9
495932	2006 <i>DD</i> ₁₇₉		2 4.9 312°19	2°8/ 6.7 18			376667	2013 <i>QQ</i> ₁₃		2 4.9 168°80	1°8/ 6.3 17		
1 2	9 31.88	+ 6 23.2	1.329	2.155	18.1	20.9	1 2	9 35.87	+ 9 0.1	2.460	3.251	11.9	22.3
1 12	9 28.78	+ 6 54.5	1.238	2.136	14.2	20.6	1 12	9 30.24	+ 9 7.6	2.375	3.255	9.1	22.1
1 22	9 22.75	+ 7 51.9	1.168	2.117	9.4	20.3	1 22	9 22.88	+ 9 25.7	2.316	3.259	5.9	22.0
2 1	9 14.43	+ 9 13.0	1.121	2.099	4.4	19.9	2 1	9 14.36	+ 9 52.2	2.285	3.262	2.7	21.7
2 11	9 5.08	+10 50.3	1.100	2.082	3.9	19.9	2 11	9 5.46	+10 24.0	2.285	3.265	2.5	21.7
2 21	8 56.21	+12 33.3	1.105	2.064	9.0	20.1	2 21	8 57.02	+10 57.6	2.316	3.267	5.6	21.9
3 2	8 49.31	+14 11.2	1.133	2.048	14.4	20.3	3 2	8 49.81	+11 29.7	2.375	3.269	8.8	22.1
3 12	8 45.52	+15 35.4	1.183	2.032	19.1	20.6	3 12	8 44.40	+11 57.4	2.460	3.269	11.7	22.3
35248	1995 <i>UR</i> ₅₃		2 4.9 91°88	0°1/ 4.9 18			26543	2000 <i>DJ</i> ₃₃		2 4.9 187°34	0°0/ 4.7 18		
1 2	9 34.51	+14 14.5	2.505	3.314	11.1	19.1	1 2	9 40.57	+14 27.6	1.893	2.706	14.0	19.3
1 12	9 29.09	+14 37.1	2.442	3.336	8.2	18.9	1 12	9 34.28	+14 49.1	1.810	2.706	10.5	19.1
1 22	9 22.08	+15 6.7	2.404	3.358	4.9	18.8	1 22	9 25.56	+15 20.3	1.752	2.706	6.4	18.9
2 1	9 14.07	+15 40.0	2.396	3.379	1.4	18.5	2 1	9 15.17	+15 56.9	1.721	2.704	1.8	18.6
2 11	9 5.84	+16 13.2	2.419	3.400	2.1	18.6	2 11	9 4.19	+16 33.7	1.720	2.701	2.8	18.6
2 21	8 58.17	+16 43.1	2.472	3.420	5.5	18.9	2 21	8 53.84	+17 5.8	1.749	2.698	7.3	18.9
3 2	8 51.75	+17 7.1	2.553	3.441	8.5	19.1	3 2	8 45.21	+17 29.8	1.805	2.694	11.4	19.1
3 12	8 47.09	+17 23.9	2.659	3.461	11.1	19.3	3 12	8 39.09	+17 44.2	1.885	2.689	14.9	19.4
410949	2009 <i>SH</i> ₃₂₉		2 4.9 46°73	6°4/ 9.8 18			332852	2010 <i>RZ</i> ₃		2 4.9 8°93	4°2/ 6.8 18		
1 2	9 34.27	- 2 42.9	1.519	2.294	18.6	19.8	1 2	9 37.76	+ 7 27.9	1.483	2.296	17.3	20.3
1 12	9 29.61	- 2 37.3	1.472	2.327	15.1	19.6	1 12	9 32.60	+ 6 44.7	1.408	2.296	13.5	20.0
1 22	9 22.63	- 2 4.0	1.444	2.359	11.2	19.5	1 22	9 24.72	+ 6 16.5	1.355	2.297	9.2	19.8
2 1	9 14.24	- 1 4.6	1.440	2.393	7.7	19.3	2 1	9 14.94	+ 6 3.6	1.327	2.299	5.3	19.6
2 11	9 5.62	+ 0 15.2	1.462	2.426	6.4	19.3	2 11	9 4.56	+ 6 4.0	1.325	2.301	4.8	19.5
2 21	8 57.93	+ 1 46.9	1.511	2.459	8.3	19.5	2 21	8 54.95	+ 6 14.0	1.350	2.303	8.5	19.7
3 2	8 52.13	+ 3 21.2	1.586	2.493	11.5	19.8	3 2	8 47.37	+ 6 29.1	1.399	2.306	12.8	20.0
3 12	8 48.83	+ 4 50.0	1.684	2.527	14.6	20.1	3 12	8 42.65	+ 6 44.4	1.470	2.310	16.6	20.2
214225	2005 <i>EU</i> ₁₃₅		2 4.9 288°28	0°2/ 5.1 18			296620	2009 <i>SJ</i> ₄₀		2 4.9 119°66	2°4/ 6.7 18		
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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
428970	2008 <i>YD</i> ₁₄₇		2 4.9 359°32	3°8/ 1.8 18			124853	2001 <i>TO</i> ₁₉		2 4.9 77°84	0°0/ 4.7 18		
1 2	9 33.77	+24 15.4	2.017	2.856	12.3	20.9	1 2	9 42.18	+15 47.2	1.405	2.236	17.1	19.9
1 12	9 29.24	+25 23.5	1.946	2.855	9.1	20.7	1 12	9 35.86	+15 46.4	1.346	2.251	12.7	19.7
1 22	9 22.52	+26 34.4	1.900	2.855	5.8	20.5	1 22	9 26.61	+15 54.8	1.309	2.266	7.7	19.4
2 1	9 14.30	+27 41.1	1.882	2.855	3.8	20.4	2 1	9 15.46	+16 7.8	1.297	2.280	2.2	19.1
2 11	9 5.58	+28 36.6	1.893	2.855	5.4	20.5	2 11	9 3.92	+16 20.2	1.314	2.295	3.3	19.2
2 21	8 57.44	+29 16.3	1.931	2.855	8.6	20.7	2 21	8 53.51	+16 27.7	1.357	2.310	8.6	19.6
3 2	8 50.87	+29 38.1	1.995	2.855	11.8	20.9	3 2	8 45.49	+16 27.9	1.426	2.325	13.2	19.9
3 12	8 46.59	+29 42.6	2.081	2.856	14.6	21.1	3 12	8 40.59	+16 19.8	1.516	2.340	17.0	20.1
322311	2011 <i>FM</i> ₁₄₄		2 4.9 229°11	2°7/ 6.9 18			130609	2000 <i>SE</i> ₁₉		2 4.9 247°01	4°1/ 9.7 17		
1 2	9 33.93	+ 6 54.1	2.040	2.838	13.7	20.4	1 2	9 28.32	- 2 59.7	3.498	4.228	9.8	20.3
1 12	9 29.17	+ 6 56.8	1.956	2.837	10.7	20.2	1 12	9 24.34	- 3 4.5	3.396	4.220	8.1	20.1
1 22	9 22.40	+ 7 13.9	1.895	2.836	7.1	20.0	1 22	9 19.22	- 2 56.6	3.317	4.211	6.3	20.0
2 1	9 14.26	+ 7 43.5	1.862	2.835	3.7	19.8	2 1	9 13.32	- 2 36.0	3.266	4.203	4.7	19.9
2 11	9 5.64	+ 8 22.1	1.857	2.835	3.3	19.7	2 11	9 7.14	- 2 4.0	3.244	4.194	4.1	19.8
2 21	8 57.52	+ 9 5.3	1.881	2.834	6.5	19.9	2 21	9 1.19	- 1 22.8	3.251	4.185	5.1	19.9
3 2	8 50.80	+ 9 48.4	1.932	2.833	10.1	20.1	3 2	8 55.96	- 0 35.5	3.288	4.176	6.8	20.0
3 12	8 46.17	+10 27.3	2.007	2.832	13.3	20.3	3 12	8 51.86	+ 0 14.5	3.351	4.167	8.7	20.1
241261	2007 <i>TK</i> ₃₃₄		2 4.9 326°18	10°3/10.9 18			406161	2006 <i>WP</i> ₂₆		2 4.9 99°21	6°0/31.5 18		
1 2	9 34.11	- 7 43.0	1.551	2.299	19.5	20.4	1 2	9 42.32	+30 51.8	1.983	2.811	12.9	21.6
1 12	9 29.96	- 8 46.1	1.468	2.293	16.8	20.2	1 12	9 35.43	+32 13.7	1.941	2.839	9.8	21.4
1 22	9 23.21	- 9 22.0	1.404	2.288	13.9	20.0	1 22	9 26.12	+33 30.4	1.925	2.865	7.1	21.3
2 1	9 14.55	- 9 25.7	1.361	2.282	11.4	19.9	2 1	9 15.29	+34 33.4	1.937	2.891	6.0	21.3
2 11	9 5.13	- 8 56.5	1.342	2.278	10.3	19.8	2 11	9 4.19	+35 16.1	1.978	2.916	7.3	21.4
2 21	8 56.24	- 7 58.3	1.348	2.273	11.4	19.8	2 21	8 54.06	+35 36.0	2.046	2.940	9.9	21.6
3 2	8 49.14	- 6 38.9	1.376	2.269	14.0	20.0	3 2	8 45.95	+35 34.0	2.139	2.964	12.5	21.9
3 12	8 44.74	- 5 8.9	1.426	2.265	17.0	20.1	3 12	8 40.50	+35 13.6	2.254	2.987	14.8	22.1
485385	2011 <i>HM</i> ₆₉		2 4.9 225°98	2°4/ 3.5 18			65242	2002 <i>EW</i> ₁₁₅		2 4.9 214°06	4°6/ 1.9 18		
1 2	9 41.55	+19 46.3	1.669	2.499	14.9	22.1	1 2	9 40.07	+25 40.8	1.745	2.581	14.0	19.4
1 12	9 35.50	+20 29.9	1.583	2.488	11.1	21.9	1 12	9 34.29	+26 41.7	1.670	2.577	10.5	19.1
1 22	9 26.57	+21 21.0	1.520	2.478	6.7	21.6	1 22	9 25.75	+27 44.3	1.620	2.573	6.9	18.9
2 1	9 15.52	+22 12.7	1.485	2.466	2.7	21.3	2 1	9 15.27	+28 40.2	1.597	2.569	4.7	18.8
2 11	9 3.63	+22 57.3	1.478	2.453	4.6	21.4	2 11	9 4.12	+29 21.5	1.603	2.564	6.3	18.9
2 21	8 52.37	+23 28.8	1.500	2.440	9.2	21.6	2 21	8 53.72	+29 43.4	1.635	2.558	9.9	19.1
3 2	8 43.10	+23 44.4	1.547	2.426	13.6	21.9	3 2	8 45.34	+29 44.8	1.693	2.553	13.6	19.3
3 12	8 36.80	+23 44.2	1.616	2.412	17.3	22.1	3 12	8 39.82	+29 27.7	1.771	2.547	16.8	19.5
489533	2007 <i>RH</i> ₁₃₂		2 4.9 140°48	0°2/ 5.1 18			184077	2004 <i>GC</i> ₂₄		2 4.9 291°91	0°3/ 4.7 18		
1 2	9 37.88	+12 32.1	1.996	2.806	13.5	22.1	1 2	9 34.35	+14 0.3	1.702	2.531	14.6	20.4
1 12	9 32.06	+13 16.3	1.925	2.819	10.1	21.9	1 12	9 30.08	+14 40.7	1.609	2.514	11.0	20.1
1 22	9 24.11	+14 12.1	1.878	2.831	6.1	21.7	1 22	9 23.28	+15 34.7	1.540	2.497	6.7	19.8
2 1	9 14.73	+15 14.6	1.860	2.843	1.8	21.4	2 1	9 14.59	+16 37.5	1.497	2.480	1.9	19.5
2 11	9 4.94	+16 17.8	1.873	2.854	2.6	21.5	2 11	9 5.11	+17 42.1	1.482	2.463	3.2	19.5
2 21	8 55.78	+17 16.0	1.915	2.864	6.8	21.8	2 21	8 56.07	+18 41.6	1.495	2.446	8.1	19.8
3 2	8 48.22	+18 5.0	1.985	2.873	10.5	22.0	3 2	8 48.70	+19 30.4	1.533	2.429	12.6	20.0
3 12	8 42.91	+18 42.4	2.078	2.882	13.7	22.3	3 12	8 43.93	+20 5.3	1.594	2.413	16.5	20.2
240437	2003 <i>WG</i> ₁₅₉		2 4.9 117°92	3°9/ 8.9 18			467680	2008 <i>UA</i> ₂₄₀		2 4.9 45°20	4°8/ 1.7 18		
1 2	9 33.28	- 0 22.1	2.692	3.441	12.0	21.1	1 2	9 37.90	+28 30.9	1.946	2.782	12.8	20.8
1 12	9 28.12	- 0 7.2	2.618	3.461	9.6	20.9	1 12	9 32.28	+29 16.1	1.884	2.789	9.6	20.6
1 22	9 21.51	+ 0 23.3	2.568	3.481	7.0	20.8	1 22	9 24.31	+29 58.8	1.847	2.796	6.6	20.5
2 1	9 13.96	+ 1 8.2	2.546	3.500	4.7	20.7	2 1	9 14.80	+30 32.1	1.837	2.803	4.8	20.4
2 11	9 6.16	+ 2 4.4	2.554	3.519	4.0	20.6	2 11	9 4.93	+30 50.4	1.855	2.811	6.2	20.5
2 21	8 58.81	+ 3 7.8	2.592	3.537	5.6	20.8	2 21	8 55.87	+30 50.9	1.901	2.818	9.1	20.7
3 2	8 52.54	+ 4 13.8	2.660	3.554	8.0	20.9	3 2	8 48.65	+30 33.7	1.972	2.826	12.2	20.9
3 12	8 47.85	+ 5 18.1	2.754	3.571	10.4	21.1	3 12	8 43.95	+30 1.4	2.064	2.834	14.9	21.1
519630	2012 <i>UN</i> ₁₈₂		2 4.9 52°03	4°8/ 9.2 18			221727	2007 <i>ED</i> ₅₂		2 4.9 313°37	2°7/ 6.7 18		
1 2	9 31.09	- 1 2.7	2.427	3.184	13.0	20.8	1 2	9 33.56	+ 7 23.2	1.779	2.587	15.0	20.1
1 12	9 26.77	- 1 10.3	2.341	3.186	10.6	20.6	1 12	9 29.23	+ 7 30.4	1.692	2.580	11.6	19.9
1 22	9 20.83	- 1 1.0	2.278	3.188	8.0	20.5	1 22	9 22.61	+ 7 53.9	1.629	2.573	7.7	19.7
2 1	9 13.79	- 0 35.1	2.241	3.190	5.6	20.3	2 1	9 14.37	+ 8 31.7	1.591	2.567	3.8	19.4
2 11	9 6.38	+ 0 5.4	2.233	3.193	4.9	20.3	2 11	9 5.52	+ 9 19.5	1.581	2.561	3.4	19.4
2 21	8 59.37	+ 0 56.7	2.253	3.195	6.4	20.4	2 21	8 57.19	+10 11.8	1.599	2.555	7.2	19.6
3 2	8 53.48	+ 1 54.2	2.301	3.198	8.9	20.5	3 2	8 50.44	+11 2.9	1.643	2.549	11.3	19.8
3 12	8 49.28	+ 2 52.6	2.374	3.200	11.5	20.7	3 12	8 46.04	+11 47.9	1.710	2.543	14.9	20.0
122671	2000 <i>RY</i> ₁₀₁		2 4.9 88°34	0°7/ 4.5 18			333068	2011 <i>UM</i> ₃₆		2 4.9 16°73	0°9/ 5.4 11 C		
1 2	9 41.12	+18 16.0	1.939	2.758	13.5	19.6	1 2	9 32.48	+11 47.3	1.127	1.978	19.0	20.4
1 12	9 34.35	+18 16.3	1.877	2.777	10.0	19.4	1 12	9 29.27	+12 10.7	1.070	1.984	14.3	20.1
1 22	9 25.39	+18 21.1	1.840	2.796	5.9	19.2	1 22	9 22.94	+12 53.0	1.032	1.991	8.8	19.9
2 1	9 15.07	+18 26.4	1.832	2.814	1.7	19.0	2 1	9 14.48	+13 48.8	1.017	2.000	2.9	19.5
2 11	9 4.51	+18 28.6	1.853	2.833	2.9	19.1	2 11	9 5.43	+14 49.3	1.027	2.009	3.5	19.6
2 21	8 54.82	+18 25.1	1.904	2.851	7.0	19.4	2 21	8 57.41	+15 45.6	1.061	2.020	9.3	20.0
3 2	8 46.95	+18 14.8	1.982	2.868	10.7	19.6	3 2	8 51.81	+16 31.0	1.117	2.033	14.5	20.3
3 12	8 41.50	+17 57.6	2.083	2.886	13.7	19.9	3 12	8 49.47	+17 1.5	1.193	2.046	18.8	20.6
37840	Graeme		2 4.9 43°14	0°4/ 4.7 18			432170	2009 <i>BJ</i> ₁₈₅		2 4.9 239°83	1°1/ 5.9 17		
1 2	9 35.23	+13 24.5	1.269	2.112	17.8	18.5	1 2	9 31.40	+ 9 3				

EPHEMERIDES

2 4.9

2 4.9

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
205461	2001 QX ₄₀		2 4.9 140°38	0°3/ 4.7 18			377442	2004 TM ₃₁₉		2 4.9 188°61	3°4/ 7.9 16		
1 2	9 34.96	+15 56.3	2.692	3.501	10.4	21.2	1 2	9 34.06	+3 1.4	2.535	3.303	12.2	22.3
1 12	9 29.43	+16 14.8	2.616	3.511	7.7	21.1	1 12	9 28.94	+3 7.7	2.443	3.302	9.7	22.2
1 22	9 22.34	+16 38.8	2.566	3.520	4.6	20.9	1 22	9 22.15	+3 28.3	2.375	3.301	6.8	22.0
2 1	9 14.22	+17 5.2	2.546	3.529	1.3	20.6	2 1	9 14.23	+4 2.2	2.335	3.299	4.2	21.8
2 11	9 5.83	+17 30.6	2.558	3.538	2.2	20.7	2 11	9 5.90	+4 46.6	2.325	3.297	3.6	21.8
2 21	8 57.91	+17 52.3	2.600	3.546	5.4	21.0	2 21	8 57.94	+5 37.7	2.345	3.294	5.8	21.9
3 2	8 51.15	+18 8.0	2.670	3.554	8.4	21.2	3 2	8 51.09	+6 31.1	2.395	3.290	8.7	22.1
3 12	8 46.07	+18 16.8	2.766	3.561	10.9	21.3	3 12	8 45.93	+7 22.6	2.469	3.286	11.4	22.2
166189	2002 EX ₈₉		2 4.9 302°57	1°6/ 5.7 18			172002	2001 UO ₂₈		2 4.9 267°18	4°9/31.8 18		
1 2	9 37.23	+12 4.9	1.449	2.277	16.8	20.0	1 2	9 36.24	+30 5.4	2.312	3.143	11.2	19.9
1 12	9 32.53	+11 58.0	1.362	2.264	12.8	19.7	1 12	9 30.90	+31 1.1	2.240	3.140	8.6	19.7
1 22	9 24.89	+12 4.4	1.296	2.250	8.1	19.4	1 22	9 23.46	+31 54.3	2.193	3.137	6.1	19.6
2 1	9 15.08	+12 21.5	1.256	2.237	3.1	19.1	2 1	9 14.62	+32 38.4	2.175	3.134	4.9	19.5
2 11	9 4.40	+12 44.6	1.242	2.224	3.4	19.0	2 11	9 5.32	+33 8.1	2.185	3.131	6.2	19.6
2 21	8 54.34	+13 8.5	1.255	2.212	8.6	19.3	2 21	8 56.61	+33 20.3	2.223	3.128	8.7	19.7
3 2	8 46.31	+13 28.5	1.293	2.199	13.6	19.6	3 2	8 49.42	+33 14.8	2.287	3.124	11.4	19.9
3 12	8 41.32	+13 41.1	1.351	2.188	17.9	19.8	3 12	8 44.42	+32 53.1	2.373	3.121	13.8	20.0
408282	2013 GY ₃		2 4.9 5°26	3°8/ 7.3 18			199551	2006 EE ₁₇		2 4.9 142°85	1°2/ 3.9 18		
1 2	9 34.06	+5 3.9	1.415	2.229	17.9	21.3	1 2	9 35.06	+17 50.6	2.205	3.028	12.0	20.8
1 12	9 30.03	+5 14.6	1.340	2.229	14.0	21.1	1 12	9 29.91	+18 28.0	2.129	3.032	8.8	20.6
1 22	9 23.27	+5 48.1	1.286	2.229	9.5	20.8	1 22	9 22.82	+19 11.6	2.079	3.036	5.2	20.4
2 1	9 14.59	+6 42.6	1.256	2.229	5.1	20.6	2 1	9 14.43	+19 56.8	2.058	3.040	1.7	20.2
2 11	9 5.22	+7 52.0	1.251	2.230	4.3	20.5	2 11	9 5.63	+20 38.5	2.066	3.044	3.1	20.3
2 21	8 56.56	+9 8.2	1.274	2.231	8.4	20.7	2 21	8 57.37	+21 12.7	2.104	3.047	6.7	20.5
3 2	8 49.88	+10 22.8	1.321	2.233	13.0	21.0	3 2	8 50.53	+21 36.8	2.169	3.050	10.1	20.8
3 12	8 46.05	+11 28.7	1.389	2.235	17.0	21.3	3 12	8 45.72	+21 49.6	2.257	3.053	13.0	21.0
373184	2012 DL ₅₃		2 4.9 233°98	0°0/ 4.9 18			206792	2004 DF ₁₉		2 4.9 60°41	2°4/ 3.6 18		
1 2	9 34.98	+13 14.3	1.944	2.763	13.5	21.1	1 2	9 41.66	+23 44.4	2.011	2.835	12.9	19.3
1 12	9 30.15	+13 51.1	1.859	2.757	10.1	20.9	1 12	9 34.70	+23 45.0	1.953	2.855	9.5	19.2
1 22	9 23.11	+14 39.7	1.797	2.752	6.1	20.6	1 22	9 25.58	+23 45.2	1.920	2.875	5.8	19.0
2 1	9 14.52	+15 35.7	1.763	2.746	1.8	20.3	2 1	9 15.17	+23 40.5	1.915	2.895	2.7	18.8
2 11	9 5.35	+16 33.5	1.759	2.740	2.7	20.4	2 11	9 4.59	+23 27.6	1.941	2.914	3.9	18.9
2 21	8 56.68	+17 27.1	1.783	2.734	7.1	20.7	2 21	8 54.95	+23 5.0	1.996	2.934	7.4	19.2
3 2	8 49.52	+18 12.2	1.834	2.727	11.0	20.9	3 2	8 47.16	+22 33.3	2.079	2.954	10.7	19.4
3 12	8 44.63	+18 46.0	1.909	2.721	14.4	21.1	3 12	8 41.79	+21 53.7	2.184	2.974	13.6	19.6
169270	2001 SH ₂₀₁		2 4.9 163°38	4°4/ 1.2 17			295842	2008 VN ₁₄		2 4.9 117°89	1°3/ 5.7 18		
1 2	9 37.04	+29 39.6	2.522	3.348	10.5	20.7	1 2	9 38.50	+10 26.0	1.633	2.447	15.8	21.2
1 12	9 31.25	+30 27.3	2.452	3.350	8.0	20.5	1 12	9 32.90	+10 53.8	1.566	2.460	12.0	21.0
1 22	9 23.55	+31 12.3	2.409	3.353	5.6	20.4	1 22	9 24.80	+11 36.7	1.522	2.473	7.5	20.7
2 1	9 14.60	+31 48.9	2.394	3.355	4.4	20.3	2 1	9 15.01	+12 30.4	1.504	2.485	2.7	20.5
2 11	9 5.29	+32 12.6	2.409	3.357	5.5	20.4	2 11	9 4.76	+13 28.5	1.515	2.496	2.9	20.5
2 21	8 56.55	+32 20.9	2.453	3.359	7.9	20.5	2 21	8 55.30	+14 24.4	1.554	2.508	7.6	20.8
3 2	8 49.24	+32 13.5	2.523	3.361	10.4	20.7	3 2	8 47.76	+15 12.8	1.620	2.518	11.9	21.1
3 12	8 43.96	+31 51.9	2.616	3.362	12.7	20.9	3 12	8 42.88	+15 50.4	1.707	2.529	15.5	21.3
468712	2010 CM ₂₀₂		2 4.9 210°90	6°2/12.3 17			512354	2016 NS ₂₀		2 4.9 178°28	1°8/ 3.2 17		
1 2	9 30.74	-11 30.7	3.327	3.998	11.3	22.5	1 2	9 33.22	+19 16.6	2.456	3.280	10.8	21.6
1 12	9 26.20	-11 37.9	3.222	3.990	9.8	22.4	1 12	9 28.45	+20 14.1	2.377	3.281	8.0	21.4
1 22	9 20.38	-11 27.9	3.139	3.982	8.2	22.3	1 22	9 21.91	+21 17.2	2.324	3.281	4.8	21.2
2 1	9 13.69	-10 59.7	3.081	3.974	6.8	22.2	2 1	9 14.17	+22 20.9	2.301	3.282	2.0	21.0
2 11	9 6.67	-10 14.1	3.052	3.965	6.2	22.1	2 11	9 6.01	+23 19.7	2.309	3.282	3.4	21.1
2 21	8 59.88	-9 13.5	3.051	3.955	6.6	22.1	2 21	8 58.29	+24 9.4	2.346	3.282	6.6	21.3
3 2	8 53.89	-8 1.8	3.078	3.945	7.9	22.2	3 2	8 51.78	+24 47.1	2.410	3.281	9.6	21.5
3 12	8 49.16	-6 43.9	3.132	3.935	9.6	22.3	3 12	8 47.10	+25 11.8	2.499	3.281	12.3	21.7
231591	2008 UP ₃₃₆		2 4.9 197°29	0°9/ 4.3 18			176221	2001 QC ₉₇		2 4.9 219°06	1°6/ 6.2 17		
1 2	9 34.94	+17 12.7	2.268	3.089	11.7	20.9	1 2	9 35.96	+8 57.1	2.388	3.180	12.1	21.2
1 12	9 29.79	+17 40.7	2.186	3.088	8.7	20.7	1 12	9 30.53	+9 16.4	2.289	3.170	9.3	21.0
1 22	9 22.74	+18 15.0	2.130	3.086	5.2	20.5	1 22	9 23.21	+9 47.7	2.214	3.159	6.0	20.8
2 1	9 14.38	+18 51.6	2.102	3.085	1.5	20.3	2 1	9 14.56	+10 28.5	2.169	3.147	2.6	20.6
2 11	9 5.61	+19 25.9	2.104	3.083	2.8	20.4	2 11	9 5.38	+11 15.3	2.154	3.134	2.5	20.5
2 21	8 57.33	+19 54.1	2.136	3.082	6.5	20.6	2 21	8 56.54	+12 3.6	2.170	3.121	5.9	20.7
3 2	8 50.40	+20 13.7	2.196	3.080	9.9	20.8	3 2	8 48.90	+12 49.3	2.214	3.107	9.4	20.9
3 12	8 45.46	+20 23.6	2.278	3.078	12.8	21.0	3 12	8 43.14	+13 29.2	2.283	3.092	12.5	21.1
375981	2009 WC ₂₄₆		2 4.9 183°27	1°1/ 3.9 16			362123	2009 DG ₁₃		2 4.9 279°46	3°3/ 7.1 18		
1 2	9 35.43	+17 32.0	2.423	3.240	11.2	21.9	1 2	9 34.53	+5 29.6	1.673	2.477	16.0	21.2
1 12	9 30.06	+18 14.5	2.341	3.241	8.3	21.7	1 12	9 30.27	+5 44.1	1.574	2.458	12.6	20.9
1 22	9 22.86	+19 3.3	2.285	3.241	4.9	21.5	1 22	9 23.45	+6 19.0	1.497	2.439	8.6	20.6
2 1	9 14.42	+19 54.0	2.258	3.240	1.6	21.2	2 1	9 14.71	+7 12.8	1.445	2.419	4.6	20.3
2 11	9 5.56	+20 41.6	2.262	3.239	2.9	21.3	2 11	9 5.09	+8 20.9	1.421	2.400	3.9	20.2
2 21	8 57.15	+21 22.1	2.296	3.238	6.3	21.5	2 21	8 55.85	+9 36.4	1.425	2.380	7.9	20.4
3 2	8 50.01	+21 52.8	2.358	3.236	9.6	21.7	3 2	8 48.23	+10 51.6	1.454	2.361	12.4	20.6
3 12	8 44.76	+22 12.4	2.445	3.233	12.3	21.9	3 12	8 43.18	+11 59.9	1.506	2.341	16.5	20.8
124582	2001 SW ₁₅		2 4.9 50°37	0°6/ 5.2 18			165504	2001 BS ₇₂		2 4.9 5°15	4°1/ 7.3 18		
1 2	9 36.77	+12 12.8	1.254	2.092	18.2	19.8	1 2	9 34.95	+5 15.2	1.481	2.290	17.4	19.7
1 12	9 32.19	+12 44.7	1.196	2.104	1								

EPHEMERIDES

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
138428	2000 <i>HG</i> ₇₇		2 4.9 185°12	6°9/30.2	18		126992	2002 <i>FQ</i> ₃₃		2 4.9 25°44	1°1/ 4.4	18	
1 2	9 41.03	+34 14.9	2.124	2.950	12.2	19.8	1 2	9 38.58	+18 55.4	1.485	2.325	15.8	19.1
1 12	9 34.76	+35 38.3	2.059	2.950	9.7	19.7	1 12	9 33.17	+18 51.7	1.423	2.333	11.7	18.8
1 22	9 25.94	+36 56.2	2.020	2.950	7.6	19.5	1 22	9 25.03	+18 53.3	1.383	2.343	7.0	18.6
2 1	9 15.37	+37 59.8	2.008	2.949	6.9	19.5	2 1	9 15.11	+18 55.6	1.370	2.353	2.1	18.3
2 11	9 4.21	+38 42.0	2.025	2.947	8.2	19.6	2 11	9 4.79	+18 54.0	1.383	2.364	3.6	18.4
2 21	8 53.77	+38 59.7	2.069	2.946	10.6	19.7	2 21	8 55.47	+18 45.5	1.424	2.375	8.4	18.7
3 2	8 45.20	+38 53.3	2.137	2.943	13.2	19.9	3 2	8 48.34	+18 28.6	1.489	2.387	12.8	19.0
3 12	8 39.28	+38 26.4	2.224	2.940	15.5	20.0	3 12	8 44.12	+18 3.6	1.576	2.400	16.4	19.3
450995	2008 <i>TW</i> ₅₅		2 4.9 146°85	2°7/ 3.3	18		153798	2001 <i>VR</i> ₉₆		2 4.9 81°96	1°2/ 5.9	18	
1 2	9 41.90	+20 57.6	1.746	2.574	14.4	22.0	1 2	9 35.00	+ 8 46.4	1.836	2.644	14.6	20.5
1 12	9 35.41	+21 42.9	1.679	2.584	10.6	21.8	1 12	9 30.04	+ 9 39.1	1.774	2.665	11.0	20.3
1 22	9 26.31	+22 33.1	1.636	2.593	6.4	21.5	1 22	9 22.96	+10 47.6	1.735	2.685	6.9	20.1
2 1	9 15.46	+23 20.9	1.621	2.601	2.9	21.3	2 1	9 14.50	+12 7.1	1.724	2.705	2.6	19.8
2 11	9 4.12	+23 59.6	1.636	2.609	4.6	21.4	2 11	9 5.69	+13 30.4	1.743	2.725	2.6	19.9
2 21	8 53.64	+24 24.6	1.679	2.616	8.6	21.7	2 21	8 57.57	+14 50.6	1.791	2.744	6.8	20.2
3 2	8 45.17	+24 34.1	1.748	2.622	12.5	21.9	3 2	8 51.08	+16 1.8	1.866	2.764	10.6	20.4
3 12	8 39.47	+24 28.9	1.838	2.628	15.8	22.2	3 12	8 46.85	+17 0.3	1.964	2.783	13.8	20.7
367520	2009 <i>PC</i> ₁₆		2 4.9 190°46	2°0/ 6.6	18		66354	1999 <i>JM</i> ₈₃		2 4.9 242°55	0°9/ 4.2	18	
1 2	9 34.97	+ 7 23.5	2.385	3.173	12.3	22.0	1 2	9 35.01	+13 3.6	1.553	2.383	15.7	18.5
1 12	9 29.72	+ 7 45.0	2.295	3.172	9.4	21.8	1 12	9 30.71	+14 26.6	1.475	2.381	11.7	18.2
1 22	9 22.69	+ 8 19.4	2.229	3.170	6.2	21.6	1 22	9 23.73	+16 7.5	1.421	2.379	7.0	18.0
2 1	9 14.41	+ 9 4.5	2.192	3.168	3.0	21.4	2 1	9 14.80	+17 58.7	1.394	2.377	2.0	17.6
2 11	9 5.69	+ 9 56.5	2.185	3.165	2.6	21.4	2 11	9 5.14	+19 49.6	1.396	2.375	3.7	17.8
2 21	8 57.36	+10 50.8	2.209	3.161	5.8	21.6	2 21	8 56.08	+21 30.0	1.426	2.373	8.8	18.0
3 2	8 50.25	+11 43.2	2.262	3.157	9.1	21.8	3 2	8 48.90	+22 52.6	1.481	2.371	13.3	18.3
3 12	8 44.97	+12 29.9	2.339	3.152	12.1	22.0	3 12	8 44.50	+23 54.1	1.557	2.369	17.2	18.5
31090	1997 <i>BJ</i> ₅		2 4.9 104°55	0°5/ 5.4	18		373761	2002 <i>TQ</i> ₂₀₄		2 4.9 59°90	6°2/ 31.4	18	
1 2	9 35.49	+13 43.7	2.604	3.408	10.9	18.4	1 2	9 38.43	+32 15.1	1.988	2.822	12.6	20.0
1 12	9 29.82	+13 47.2	2.533	3.424	8.1	18.3	1 12	9 32.68	+33 19.4	1.939	2.838	9.8	19.8
1 22	9 22.57	+13 57.1	2.489	3.440	5.0	18.1	1 22	9 24.57	+34 17.9	1.914	2.854	7.2	19.7
2 1	9 14.34	+14 11.1	2.473	3.455	1.6	17.9	2 1	9 14.96	+35 3.0	1.917	2.870	6.2	19.7
2 11	9 5.87	+14 26.3	2.489	3.470	2.0	17.9	2 11	9 5.03	+35 28.8	1.948	2.885	7.4	19.8
2 21	8 57.92	+14 40.1	2.535	3.485	5.3	18.2	2 21	8 56.00	+35 33.1	2.005	2.902	9.9	20.0
3 2	8 51.19	+14 50.5	2.610	3.500	8.3	18.4	3 2	8 48.87	+35 16.8	2.087	2.918	12.6	20.2
3 12	8 46.17	+14 55.9	2.710	3.514	10.9	18.6	3 12	8 44.28	+34 43.1	2.189	2.934	14.9	20.4
341686	2007 <i>VK</i> ₁₁₅		2 4.9 25°52	4°0/ 8.2	17		101389	1998 <i>UQ</i> ₃₃		2 4.9 95°17	3°1/ 2.8	18	
1 2	9 31.86	+ 2 30.0	2.208	2.987	13.4	20.9	1 2	9 40.36	+22 2.2	1.858	2.687	13.6	20.0
1 12	9 27.51	+ 2 25.0	2.125	2.989	10.7	20.7	1 12	9 33.99	+23 2.8	1.808	2.713	10.0	19.8
1 22	9 21.38	+ 2 36.0	2.065	2.991	7.7	20.5	1 22	9 25.30	+24 6.3	1.783	2.739	6.1	19.6
2 1	9 14.03	+ 3 2.3	2.032	2.994	4.9	20.3	2 1	9 15.16	+25 5.4	1.786	2.763	3.2	19.5
2 11	9 6.29	+ 3 41.2	2.027	2.997	4.2	20.3	2 11	9 4.74	+25 53.4	1.819	2.788	4.8	19.6
2 21	8 59.00	+ 4 28.6	2.050	3.000	6.4	20.4	2 21	8 55.23	+26 26.1	1.880	2.811	8.3	19.9
3 2	8 52.96	+ 5 19.7	2.101	3.003	9.4	20.6	3 2	8 47.63	+26 42.3	1.968	2.835	11.7	20.1
3 12	8 48.78	+ 6 9.7	2.177	3.006	12.3	20.8	3 12	8 42.57	+26 43.1	2.078	2.857	14.5	20.4
411731	2012 <i>BN</i> ₅₂		2 4.9 167°92	2°1/ 6.3	18		114124	2002 <i>VB</i> ₅₀		2 4.9 2°87	3°6/ 1.9	18	
1 2	9 35.45	+ 8 44.1	1.776	2.585	15.0	21.1	1 2	9 33.71	+23 41.9	2.039	2.877	12.2	19.3
1 12	9 30.60	+ 8 59.2	1.696	2.586	11.5	20.9	1 12	9 29.20	+24 48.7	1.968	2.877	9.0	19.1
1 22	9 23.43	+ 9 29.8	1.639	2.586	7.4	20.7	1 22	9 22.55	+25 58.8	1.921	2.877	5.7	18.9
2 1	9 14.66	+10 13.0	1.608	2.587	3.3	20.4	2 1	9 14.42	+27 5.1	1.903	2.877	3.6	18.7
2 11	9 5.33	+11 3.8	1.606	2.587	3.0	20.4	2 11	9 5.79	+28 1.1	1.914	2.878	5.2	18.8
2 21	8 56.60	+11 56.3	1.633	2.587	7.2	20.7	2 21	8 57.74	+28 41.9	1.953	2.878	8.4	19.0
3 2	8 49.52	+12 45.3	1.685	2.588	11.3	20.9	3 2	8 51.23	+29 5.4	2.017	2.879	11.6	19.2
3 12	8 44.84	+13 26.6	1.761	2.588	14.8	21.1	3 12	8 46.96	+29 12.0	2.103	2.880	14.4	19.4
183144	2002 <i>RZ</i> ₂₄₁		2 4.9 351°31	3°4/ 6.9	18		122324	2000 <i>QO</i> ₁₉		2 4.9 84°71	3°7/ 2.9	18	
1 2	9 33.92	+ 7 9.5	1.413	2.234	17.5	19.7	1 2	9 42.48	+25 55.3	1.842	2.672	13.7	19.8
1 12	9 29.98	+ 7 4.1	1.337	2.231	13.6	19.5	1 12	9 35.68	+26 13.2	1.778	2.682	10.2	19.6
1 22	9 23.30	+ 7 18.0	1.281	2.227	9.2	19.2	1 22	9 26.38	+26 29.4	1.739	2.692	6.5	19.4
2 1	9 14.66	+ 7 49.6	1.249	2.225	4.7	18.9	2 1	9 15.48	+26 38.1	1.727	2.702	3.8	19.3
2 11	9 5.34	+ 8 34.1	1.243	2.223	4.1	18.9	2 11	9 4.27	+26 34.3	1.744	2.712	5.1	19.4
2 21	8 56.71	+ 9 25.1	1.264	2.222	8.4	19.1	2 21	8 54.01	+26 16.3	1.790	2.721	8.6	19.6
3 2	8 50.06	+10 15.5	1.308	2.221	13.0	19.4	3 2	8 45.79	+25 44.6	1.862	2.731	12.1	19.9
3 12	8 46.27	+10 59.6	1.374	2.221	17.1	19.6	3 12	8 40.29	+25 1.6	1.956	2.741	15.1	20.1
37809	1997 <i>YU</i> ₁₅		2 4.9 92°63	1°3/ 4.1	18		243573	1996 <i>LF</i> ₂		2 4.9 211°03	0°1/ 4.8	18	
1 2	9 40.45	+16 34.6	1.603	2.431	15.5	19.8	1 2	9 37.11	+13 11.0	1.747	2.568	14.7	21.2
1 12	9 34.30	+17 23.4	1.550	2.455	11.3	19.6	1 12	9 32.00	+13 59.5	1.663	2.563	11.0	20.9
1 22	9 25.58	+18 21.2	1.521	2.479	6.7	19.4	1 22	9 24.40	+15 2.0	1.603	2.559	6.7	20.7
2 1	9 15.24	+19 21.1	1.519	2.502	2.0	19.1	2 1	9 14.99	+16 13.1	1.570	2.553	1.9	20.3
2 11	9 4.58	+20 15.7	1.546	2.524	3.7	19.3	2 11	9 4.90	+17 25.4	1.567	2.548	3.1	20.4
2 21	8 54.91	+20 59.3	1.600	2.546	8.2	19.6	2 21	8 55.36	+18 31.9	1.592	2.542	7.8	20.7
3 2	8 47.33	+21 28.9	1.681	2.568	12.2	19.9	3 2	8 47.54	+19 27.1	1.643	2.535	12.2	20.9
3 12	8 42.52	+21 44.0	1.784	2.589	15.6	20.2	3 12	8 42.30	+20 8.0	1.717	2.528	15.8	21.1
459241	2012 <i>FN</i> ₁₅		2 4.9 16°02	11°6/30.3	18		237358	3206 <i>T-3</i>		2 4.9 87°10	3°4/ 3.1	18	
1 2	9 52.42	+45 18.4	1.628	2.436	16.2	20.2	1 2	9 42.52	+22 0.2				

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
247901	2003 <i>UF</i> ₂₇₇		2 4.9 192°32	5°6/31.6	18		280264	2002 <i>XO</i> ₁₁₇		2 4.9 62°62	0°3/ 5.2	18	
1 2	9 39.42	+32 17.9	2.279	3.105	11.5	20.7	1 2	9 33.03	+12 9.5	2.055	2.872	13.0	20.7
1 12	9 33.30	+33 10.7	2.209	3.104	8.9	20.5	1 12	9 28.46	+12 55.7	1.991	2.888	9.6	20.5
1 22	9 24.95	+33 58.8	2.165	3.103	6.6	20.3	1 22	9 21.98	+13 53.2	1.951	2.905	5.8	20.3
2 1	9 15.11	+34 35.5	2.149	3.102	5.6	20.3	2 1	9 14.28	+14 57.5	1.940	2.922	1.8	20.1
2 11	9 4.83	+34 55.3	2.162	3.100	6.8	20.3	2 11	9 6.24	+16 2.8	1.958	2.939	2.4	20.2
2 21	8 55.23	+34 55.8	2.203	3.099	9.2	20.5	2 21	8 58.81	+17 3.6	2.005	2.956	6.3	20.5
3 2	8 47.31	+34 37.3	2.269	3.097	11.8	20.7	3 2	8 52.80	+17 55.6	2.079	2.973	9.9	20.7
3 12	8 41.74	+34 2.7	2.356	3.095	14.1	20.8	3 12	8 48.82	+18 36.4	2.178	2.991	12.9	20.9
363522	2003 <i>UR</i> ₁₈₇		2 4.9 66°52	2°9/ 6.6	18		140267	2001 <i>SK</i> ₂₇₁		2 4.9 216°66	3°4/ 7.9	18	
1 2	9 38.52	+ 8 15.7	1.487	2.301	17.2	20.6	1 2	9 31.92	+ 3 13.1	2.474	3.249	12.3	20.3
1 12	9 32.99	+ 8 10.7	1.430	2.320	13.1	20.4	1 12	9 27.45	+ 3 19.4	2.383	3.246	9.7	20.1
1 22	9 24.87	+ 8 22.4	1.394	2.340	8.6	20.2	1 22	9 21.34	+ 3 40.2	2.316	3.243	6.9	19.9
2 1	9 15.08	+ 8 48.4	1.383	2.360	4.1	19.9	2 1	9 14.11	+ 4 14.5	2.276	3.241	4.2	19.7
2 11	9 4.94	+ 9 23.6	1.400	2.380	3.7	20.0	2 11	9 6.47	+ 4 59.5	2.265	3.238	3.6	19.7
2 21	8 55.76	+10 2.2	1.444	2.400	7.8	20.3	2 21	8 59.20	+ 5 51.2	2.285	3.235	5.8	19.8
3 2	8 48.66	+10 38.8	1.514	2.420	12.1	20.5	3 2	8 53.03	+ 6 45.3	2.332	3.231	8.7	20.0
3 12	8 44.34	+11 9.4	1.605	2.439	15.7	20.8	3 12	8 48.53	+ 7 37.3	2.405	3.228	11.5	20.2
163112	2002 <i>AD</i> ₁₇₂		2 4.9 275°81	0°0/ 4.8	18		155986	2001 <i>QK</i> ₂₅₈		2 4.9 101°62	0°7/ 4.5	18	
1 2	9 38.70	+14 58.9	1.556	2.385	15.8	20.3	1 2	9 39.48	+14 28.3	1.547	2.373	16.0	20.2
1 12	9 33.53	+15 8.4	1.468	2.372	11.9	20.0	1 12	9 33.77	+15 20.7	1.488	2.392	11.8	20.0
1 22	9 25.50	+15 28.4	1.402	2.359	7.3	19.7	1 22	9 25.40	+16 25.6	1.453	2.410	7.0	19.7
2 1	9 15.36	+15 55.0	1.362	2.345	2.1	19.4	2 1	9 15.29	+17 35.9	1.444	2.427	2.0	19.5
2 11	9 4.38	+16 22.6	1.351	2.332	3.3	19.4	2 11	9 4.75	+18 43.4	1.464	2.444	3.4	19.6
2 21	8 54.01	+16 45.7	1.366	2.319	8.5	19.7	2 21	8 55.13	+19 41.2	1.512	2.461	8.3	19.9
3 2	8 45.62	+17 0.7	1.406	2.305	13.3	19.9	3 2	8 47.60	+20 25.0	1.585	2.477	12.5	20.2
3 12	8 40.15	+17 5.5	1.468	2.292	17.4	20.2	3 12	8 42.89	+20 53.3	1.681	2.492	16.1	20.5
147266	2002 <i>YW</i> ₈		2 4.9 88°42	0°0/ 5.0	18		194123	2001 <i>SA</i> ₂₆₃		2 4.9 344°96	17°8/20.9	18	
1 2	9 37.09	+13 17.3	1.777	2.597	14.5	19.8	1 2	9 27.34	-23 54.7	1.256	1.934	26.4	19.5
1 12	9 31.67	+13 54.3	1.716	2.615	10.8	19.6	1 12	9 25.64	-24 57.4	1.178	1.924	24.6	19.3
1 22	9 23.98	+14 42.7	1.679	2.634	6.5	19.4	1 22	9 21.01	-25 12.6	1.112	1.915	22.5	19.1
2 1	9 14.83	+15 37.5	1.669	2.652	1.9	19.2	2 1	9 14.15	-24 29.3	1.059	1.908	20.3	18.9
2 11	9 5.32	+16 32.3	1.688	2.669	2.8	19.3	2 11	9 6.34	-22 42.0	1.022	1.901	18.5	18.8
2 21	8 56.60	+17 21.5	1.736	2.687	7.2	19.6	2 21	8 59.13	-19 54.2	1.004	1.896	17.8	18.7
3 2	8 49.64	+18 1.0	1.810	2.704	11.1	19.8	3 2	8 54.03	-16 19.1	1.007	1.892	18.6	18.8
3 12	8 45.10	+18 28.9	1.908	2.721	14.4	20.1	3 12	8 52.13	-12 18.1	1.031	1.890	20.6	18.9
433797	2015 <i>BW</i> ₉₈		2 4.9 217°36	0°0/ 4.8	17		212644	2006 <i>UA</i> ₃₈		2 4.9 181°50	0°4/ 5.4	17	
1 2	9 34.88	+14 44.1	2.290	3.105	11.9	21.7	1 2	9 32.81	+13 2.0	2.704	3.510	10.5	21.3
1 12	9 29.78	+15 5.6	2.204	3.101	8.8	21.5	1 12	9 27.97	+13 21.3	2.618	3.510	7.8	21.1
1 22	9 22.79	+15 35.0	2.142	3.097	5.3	21.2	1 22	9 21.59	+13 48.2	2.559	3.510	4.8	20.9
2 1	9 14.50	+16 9.0	2.110	3.092	1.5	21.0	2 1	9 14.17	+14 20.1	2.528	3.510	1.5	20.6
2 11	9 5.77	+16 43.2	2.107	3.088	2.4	21.0	2 11	9 6.42	+14 53.6	2.528	3.510	2.0	20.7
2 21	8 57.49	+17 14.0	2.134	3.083	6.2	21.3	2 21	8 59.04	+15 25.5	2.559	3.509	5.2	20.9
3 2	8 50.51	+17 38.3	2.189	3.078	9.7	21.5	3 2	8 52.74	+15 53.0	2.618	3.509	8.2	21.1
3 12	8 45.48	+17 54.3	2.267	3.073	12.6	21.7	3 12	8 48.03	+16 14.3	2.702	3.508	10.8	21.3
129277	Jianxinchun		2 4.9 137°77	0°6/ 5.5	18		432094	2008 <i>YV</i> ₁₆₅		2 4.9 16°89	0°7/ 4.6	18	
1 2	9 36.23	+11 49.0	2.389	3.190	11.8	20.7	1 2	9 37.23	+18 9.8	2.004	2.828	12.9	20.3
1 12	9 30.57	+12 20.6	2.315	3.204	8.9	20.6	1 12	9 31.67	+18 6.9	1.928	2.830	9.6	20.1
1 22	9 23.15	+13 1.8	2.267	3.217	5.4	20.4	1 22	9 23.98	+18 8.5	1.876	2.833	5.7	19.9
2 1	9 14.58	+13 49.2	2.249	3.230	1.8	20.1	2 1	9 14.87	+18 11.2	1.853	2.836	1.7	19.6
2 11	9 5.69	+14 38.4	2.261	3.242	2.2	20.2	2 11	9 5.38	+18 11.4	1.859	2.839	2.8	19.7
2 21	8 57.32	+15 25.1	2.304	3.254	5.7	20.4	2 21	8 56.56	+18 6.7	1.894	2.843	6.9	20.0
3 2	8 50.25	+16 5.8	2.376	3.265	9.0	20.7	3 2	8 49.34	+17 55.6	1.956	2.847	10.6	20.2
3 12	8 45.05	+16 38.4	2.472	3.275	11.8	20.9	3 12	8 44.39	+17 37.6	2.041	2.851	13.7	20.4
128762	2004 <i>RZ</i> ₁₉₀		2 4.9 130°89	5°3/ 8.8	18		518725	2009 <i>DN</i> ₁₄₅		2 4.9 277°93	0°8/ 4.3	17	
1 2	9 34.73	- 0 0.7	2.105	2.869	14.5	19.9	1 2	9 33.25	+16 42.1	2.356	3.177	11.4	21.7
1 12	9 29.72	- 0 21.9	2.024	2.874	11.8	19.7	1 12	9 28.61	+17 12.9	2.265	3.166	8.4	21.5
1 22	9 22.77	- 0 25.3	1.964	2.879	8.8	19.6	1 22	9 22.13	+17 50.6	2.199	3.156	5.0	21.2
2 1	9 14.51	- 0 10.8	1.931	2.883	6.1	19.4	2 1	9 14.36	+18 31.5	2.162	3.145	1.5	21.0
2 11	9 5.81	+ 0 19.8	1.925	2.887	5.3	19.4	2 11	9 6.11	+19 11.0	2.155	3.135	2.7	21.0
2 21	8 57.61	+ 1 2.5	1.948	2.891	7.2	19.5	2 21	8 58.26	+19 45.1	2.178	3.124	6.3	21.2
3 2	8 50.77	+ 1 52.2	1.999	2.895	10.1	19.7	3 2	8 51.64	+20 11.0	2.228	3.113	9.7	21.4
3 12	8 45.94	+ 2 43.5	2.073	2.899	12.9	19.9	3 12	8 46.90	+20 27.0	2.302	3.103	12.6	21.6
429764	2012 <i>DZ</i> ₄₃		2 4.9 79°41	13°3/16.9	18		490796	2010 <i>VY</i> ₂₉		2 4.9 90°21	1°9/ 6.4	18	
1 2	9 35.96	-19 50.6	1.199	1.898	26.5	21.0	1 2	9 37.22	+ 8 18.6	1.872	2.673	14.6	21.3
1 12	9 31.83	-19 32.2	1.135	1.914	23.5	20.8	1 12	9 31.60	+ 8 43.7	1.812	2.698	11.1	21.1
1 22	9 24.55	-18 19.7	1.083	1.930	20.0	20.6	1 22	9 23.89	+ 9 23.4	1.776	2.721	7.1	20.9
2 1	9 15.08	-16 7.3	1.050	1.947	16.4	20.4	2 1	9 14.84	+10 14.2	1.767	2.745	3.1	20.7
2 11	9 4.98	-12 59.0	1.038	1.963	13.8	20.3	2 11	9 5.50	+11 10.7	1.787	2.768	2.8	20.8
2 21	8 55.89	- 9 10.1	1.051	1.979	13.6	20.4	2 21	8 56.91	+12 7.1	1.837	2.790	6.6	21.0
3 2	8 49.25	- 5 3.4	1.090	1.995	15.7	20.5	3 2	8 49.98	+12 58.5	1.914	2.813	10.3	21.3
3 12	8 45.95	- 1 2.5	1.152	2.011	18.9	20.8	3 12	8 45.33	+13 41.5	2.014	2.834	13.5	21.6
229995	2000 <i>CE</i> ₁₅		2 4.9 50°38	0°8/ 4.5	18		181684	6330 <i>P-L</i>		2 4.9 82°72	2°7/ 3.5	18	
1 2	9 37.16	+14 38.3	1.258	2.102	17.9	20.4	1 2	9 41.04	+22 19.5	1			

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2 4.9

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
154332	2002 VO ₉₇		2 4.9 92°84	0°3/ 4.8 18			404190	2013 CB ₁₁₈		2 4.9 312°35	2°9/ 3.4 18		
1 2	9 40.19	+15 10.9	1.381	2.215	17.1	20.5	1 2	9 36.81	+20 5.0	1.341	2.191	16.6	21.0
1 12	9 34.65	+15 33.9	1.317	2.223	12.8	20.3	1 12	9 32.63	+20 47.3	1.260	2.176	12.4	20.7
1 22	9 26.11	+16 8.8	1.274	2.232	7.7	20.0	1 22	9 25.23	+21 38.8	1.200	2.161	7.6	20.4
2 1	9 15.55	+16 49.7	1.258	2.241	2.2	19.7	2 1	9 15.41	+22 31.7	1.165	2.147	3.2	20.1
2 11	9 4.42	+17 29.4	1.268	2.249	3.5	19.8	2 11	9 4.61	+23 16.8	1.156	2.132	5.3	20.2
2 21	8 54.28	+18 1.8	1.305	2.258	8.9	20.1	2 21	8 54.52	+23 46.9	1.173	2.119	10.5	20.4
3 2	8 46.47	+18 23.1	1.367	2.266	13.6	20.4	3 2	8 46.72	+23 58.5	1.212	2.106	15.4	20.7
3 12	8 41.79	+18 31.8	1.449	2.274	17.6	20.7	3 12	8 42.27	+23 51.5	1.271	2.094	19.7	20.9
354550	2004 SS ₅₄		2 4.9 71°75	1°9/ 3.7 17			241358	2007 WO ₆₀		2 4.9 226°43	3°7/ 8.1 17		
1 2	9 40.75	+16 46.6	1.410	2.245	16.8	20.5	1 2	9 32.51	+ 2 48.2	2.482	3.254	12.3	20.7
1 12	9 34.74	+17 57.2	1.368	2.277	12.2	20.3	1 12	9 27.90	+ 2 42.0	2.391	3.251	9.8	20.5
1 22	9 25.95	+19 17.6	1.350	2.308	7.2	20.1	1 22	9 21.64	+ 2 49.8	2.323	3.247	7.0	20.3
2 1	9 15.44	+20 38.6	1.357	2.340	2.4	19.9	2 1	9 14.25	+ 3 11.1	2.282	3.244	4.5	20.1
2 11	9 4.68	+21 50.8	1.393	2.370	4.3	20.1	2 11	9 6.46	+ 3 43.7	2.271	3.241	3.9	20.1
2 21	8 55.11	+22 47.4	1.457	2.401	9.0	20.4	2 21	8 59.03	+ 4 24.1	2.289	3.237	5.9	20.2
3 2	8 47.89	+23 25.4	1.545	2.431	13.1	20.7	3 2	8 52.70	+ 5 8.2	2.335	3.233	8.7	20.4
3 12	8 43.67	+23 45.2	1.654	2.460	16.5	21.0	3 12	8 48.06	+ 5 52.0	2.407	3.230	11.5	20.6
292157	2006 RT ₁₀₃		2 4.9 244°73	4°3/ 9.2 18			450170	2001 SV ₂₀₁		2 4.9 116°03	2°6/ 3.4 18		
1 2	9 31.21	- 1 8.5	2.580	3.332	12.4	21.0	1 2	9 43.82	+21 8.7	1.726	2.551	14.6	23.0
1 12	9 26.93	- 0 55.0	2.479	3.322	10.1	20.8	1 12	9 36.75	+21 49.4	1.669	2.572	10.8	22.8
1 22	9 21.06	- 0 24.1	2.401	3.312	7.5	20.6	1 22	9 27.11	+22 33.6	1.636	2.592	6.5	22.6
2 1	9 14.06	+ 0 23.5	2.350	3.302	5.2	20.5	2 1	9 15.82	+23 14.7	1.632	2.612	2.9	22.4
2 11	9 6.63	+ 1 25.4	2.328	3.292	4.4	20.4	2 11	9 4.20	+23 46.1	1.657	2.630	4.4	22.6
2 21	8 59.49	+ 2 37.2	2.336	3.282	6.0	20.5	2 21	8 53.60	+24 4.0	1.710	2.648	8.5	22.9
3 2	8 53.35	+ 3 53.9	2.373	3.271	8.6	20.6	3 2	8 45.11	+24 7.2	1.790	2.665	12.2	23.1
3 12	8 48.82	+ 5 10.0	2.436	3.260	11.3	20.8	3 12	8 39.43	+23 57.0	1.892	2.681	15.4	23.4
136085	2003 AQ ₇₄		2 4.9 0°78	1°8/ 3.9 18			136624	1994 PD ₁₄		2 4.9 111°87	0°5/ 5.4 18 R		
1 2	9 37.27	+21 14.2	1.909	2.740	13.2	19.0	1 2	9 33.96	+13 7.5	2.621	3.427	10.8	20.0
1 12	9 31.86	+21 17.8	1.833	2.739	9.8	18.7	1 12	9 28.79	+13 22.2	2.548	3.439	8.1	19.9
1 22	9 24.17	+21 23.7	1.781	2.739	5.9	18.5	1 22	9 22.07	+13 44.2	2.500	3.451	4.9	19.7
2 1	9 14.96	+21 27.8	1.757	2.739	2.2	18.3	2 1	9 14.35	+14 10.9	2.481	3.462	1.6	19.5
2 11	9 5.33	+21 25.9	1.762	2.739	3.6	18.4	2 11	9 6.36	+14 39.0	2.493	3.474	2.0	19.5
2 21	8 56.41	+21 15.5	1.796	2.740	7.5	18.6	2 21	8 58.84	+15 5.4	2.535	3.485	5.3	19.8
3 2	8 49.20	+20 55.8	1.855	2.742	11.3	18.8	3 2	8 52.47	+15 27.7	2.606	3.496	8.3	20.0
3 12	8 44.40	+20 27.1	1.937	2.744	14.5	19.0	3 12	8 47.76	+15 43.9	2.701	3.507	10.8	20.2
338948	2004 ER ₇₅		2 4.9 338°80	9°0/29.8 18			17543	Sosva		2 4.9 299°87	1°5/ 5.9 18 R		
1 2	9 41.07	+40 1.5	1.877	2.702	13.6	19.9	1 2	9 37.15	+12 28.3	2.323	3.126	12.1	17.7
1 12	9 35.24	+41 2.5	1.811	2.693	11.3	19.7	1 12	9 31.45	+12 3.0	2.228	3.116	9.2	17.5
1 22	9 26.45	+41 51.8	1.770	2.685	9.5	19.6	1 22	9 23.83	+11 44.3	2.159	3.107	5.9	17.3
2 1	9 15.65	+42 20.1	1.753	2.677	9.1	19.6	2 1	9 14.90	+11 31.1	2.118	3.097	2.4	17.1
2 11	9 4.31	+42 20.9	1.762	2.669	10.3	19.6	2 11	9 5.50	+11 21.4	2.108	3.088	2.5	17.0
2 21	8 53.95	+41 52.4	1.796	2.663	12.5	19.7	2 21	8 56.55	+11 13.2	2.127	3.079	6.0	17.3
3 2	8 45.88	+40 57.2	1.852	2.657	15.0	19.9	3 2	8 48.90	+11 4.7	2.175	3.070	9.5	17.4
3 12	8 40.90	+39 41.1	1.927	2.651	17.3	20.1	3 12	8 43.22	+10 54.2	2.248	3.061	12.5	17.6
301666	2008 UR ₁₄₀		2 4.9 210°94	0°5/ 4.6 18			205466	2001 QB ₁₀₀		2 4.9 129°03	2°3/ 2.6 18		
1 2	9 39.71	+15 16.1	1.848	2.666	14.1	21.9	1 2	9 34.71	+22 6.3	2.840	3.660	9.7	20.9
1 12	9 33.88	+15 51.1	1.760	2.659	10.6	21.6	1 12	9 29.32	+23 4.8	2.774	3.675	7.1	20.8
1 22	9 25.55	+16 36.4	1.697	2.652	6.4	21.4	1 22	9 22.39	+24 5.6	2.736	3.691	4.3	20.6
2 1	9 15.42	+17 27.1	1.661	2.644	1.8	21.0	2 1	9 14.45	+25 3.9	2.729	3.705	2.4	20.5
2 11	9 4.59	+18 17.0	1.655	2.635	3.1	21.1	2 11	9 6.22	+25 55.3	2.753	3.720	3.5	20.6
2 21	8 54.31	+19 0.3	1.678	2.626	7.7	21.4	2 21	8 58.45	+26 36.5	2.807	3.733	6.1	20.8
3 2	8 45.74	+19 33.2	1.728	2.616	11.9	21.6	3 2	8 51.80	+27 5.8	2.890	3.747	8.7	21.0
3 12	8 39.71	+19 53.8	1.801	2.605	15.5	21.8	3 12	8 46.81	+27 22.8	2.996	3.759	10.9	21.1
219357	2000 RW ₄₉		2 4.9 117°13	5°7/10.5 18			259205	2003 AT ₅₁		2 4.9 18°39	5°4/ 1.0 18		
1 2	9 35.32	- 5 38.8	2.573	3.291	13.3	21.2	1 2	9 33.95	+23 33.6	1.418	2.274	15.5	19.8
1 12	9 29.74	- 5 43.4	2.501	3.315	11.0	21.1	1 12	9 30.23	+25 21.7	1.360	2.278	11.5	19.6
1 22	9 22.61	- 5 29.3	2.452	3.337	8.6	21.0	1 22	9 23.59	+27 16.0	1.325	2.282	7.5	19.3
2 1	9 14.48	- 4 56.5	2.429	3.359	6.5	20.9	2 1	9 14.89	+29 4.6	1.316	2.288	5.4	19.2
2 11	9 6.10	- 4 7.2	2.436	3.381	5.7	20.8	2 11	9 5.53	+30 35.6	1.334	2.294	7.5	19.4
2 21	8 58.21	- 3 5.5	2.472	3.401	6.7	20.9	2 21	8 57.01	+31 41.3	1.377	2.301	11.4	19.6
3 2	8 51.50	- 1 56.4	2.536	3.421	8.7	21.1	3 2	8 50.69	+32 18.8	1.444	2.308	15.2	19.9
3 12	8 46.47	- 0 45.4	2.626	3.440	10.9	21.3	3 12	8 47.42	+32 30.0	1.529	2.317	18.5	20.1
327034	2004 RO ₃₂₄		2 4.9 142°35	3°1/ 7.4 18			161133	2002 RR ₁₀₈		2 4.9 109°60	2°6/ 7.2 18		
1 2	9 35.15	+ 4 56.0	2.285	3.066	13.0	21.4	1 2	9 32.32	+ 5 37.4	2.209	3.000	13.0	19.9
1 12	9 29.89	+ 4 57.3	2.205	3.074	10.2	21.2	1 12	9 27.93	+ 6 1.8	2.126	3.002	10.1	19.7
1 22	9 22.83	+ 5 12.7	2.149	3.082	7.0	21.0	1 22	9 21.72	+ 6 41.6	2.066	3.005	6.8	19.5
2 1	9 14.58	+ 5 40.7	2.120	3.089	4.0	20.8	2 1	9 14.29	+ 7 34.5	2.034	3.007	3.5	19.3
2 11	9 5.95	+ 6 18.2	2.122	3.096	3.4	20.8	2 11	9 6.44	+ 8 36.2	2.032	3.010	3.0	19.2
2 21	8 57.81	+ 7 1.3	2.152	3.103	6.0	21.0	2 21	8 59.03	+ 9 41.6	2.059	3.013	6.0	19.4
3 2	8 50.95	+ 7 45.6	2.211	3.109	9.2	21.2	3 2	8 52.88	+10 45.5	2.114	3.015	9.4	19.6
3 12	8 45.98	+ 8 27.2	2.295	3.115	12.0	21.4	3 12	8 48.60	+11 43.3	2.193	3.017	12.4	19.8
203426	2001 XZ ₂₄₉		2 4.9 104°61	3°3/ 2.8 18			219424	2000 SC ₃₅₁		2 4.9 96°16	1°7/ 3.6 18		
1 2	9 39.45	+20 31.3	1.545	2.383	15.4	20.2	1 2	9 36.06	+16 49.9	2.014	2.838	12.9	20.3
1 12	9 33.92	+21 43.1											

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
58310	1994 <i>PT</i> ₂₀		2 4.9 79°99	0°0/ 4.8 18			353320	2010 <i>LB</i>		2 4.9 224°96	8°6/14.0 17		
1 2	9 39.76	+14 18.9	1.665	2.486	15.3	19.5	1 2	9 32.94	-19 8.3	3.244	3.851	12.6	21.6
1 12	9 33.71	+14 42.3	1.611	2.511	11.3	19.3	1 12	9 28.03	-19 58.9	3.141	3.840	11.4	21.5
1 22	9 25.25	+15 15.7	1.580	2.535	6.8	19.1	1 22	9 21.68	-20 30.8	3.057	3.829	10.2	21.4
2 1	9 15.30	+15 54.3	1.576	2.559	2.0	18.9	2 1	9 14.32	-20 41.5	2.995	3.817	9.2	21.3
2 11	9 5.06	+16 32.3	1.601	2.583	2.9	19.0	2 11	9 6.51	-20 29.9	2.959	3.805	8.7	21.2
2 21	8 55.77	+17 4.6	1.655	2.606	7.4	19.3	2 21	8 58.92	-19 57.0	2.948	3.792	8.8	21.2
3 2	8 48.46	+17 28.2	1.735	2.629	11.5	19.6	3 2	8 52.16	-19 6.1	2.962	3.779	9.6	21.3
3 12	8 43.75	+17 41.6	1.837	2.652	14.8	19.9	3 12	8 46.78	-18 1.8	3.001	3.766	10.8	21.3
27816	1993 <i>TH</i> ₂		2 4.9 91°83	1°4/ 3.9 18			56659	2000 <i>KU</i> ₅₅		2 4.9 219°03	1°5/ 3.9 18		
1 2	9 38.43	+17 35.4	1.844	2.669	13.8	18.7	1 2	9 39.11	+17 13.4	1.840	2.663	13.9	20.7
1 12	9 32.64	+18 19.9	1.787	2.690	10.2	18.5	1 12	9 33.52	+18 2.7	1.753	2.655	10.4	20.5
1 22	9 24.60	+19 11.5	1.754	2.711	6.0	18.3	1 22	9 25.41	+19 1.6	1.690	2.646	6.2	20.2
2 1	9 15.12	+20 4.2	1.749	2.731	2.0	18.0	2 1	9 15.46	+20 4.2	1.655	2.637	2.1	19.9
2 11	9 5.32	+20 51.7	1.773	2.751	3.4	18.2	2 11	9 4.78	+21 3.3	1.649	2.627	3.7	20.0
2 21	8 56.33	+21 29.4	1.827	2.771	7.5	18.5	2 21	8 54.62	+21 52.7	1.673	2.616	8.1	20.3
3 2	8 49.14	+21 54.6	1.906	2.790	11.2	18.7	3 2	8 46.18	+22 28.4	1.723	2.604	12.3	20.5
3 12	8 44.37	+22 6.7	2.009	2.809	14.3	19.0	3 12	8 40.30	+22 49.3	1.795	2.592	15.8	20.7
309876	2009 <i>DL</i> ₁₁₆		2 4.9 44°99	2°8/ 3.7 18			54545	2000 <i>QS</i> ₆₄		2 4.9 187°45	5°7/30.6 18		
1 2	9 40.89	+21 29.3	1.360	2.205	16.7	20.2	1 2	9 39.17	+36 19.0	2.833	3.647	9.8	19.5
1 12	9 35.23	+21 50.5	1.302	2.214	12.4	19.9	1 12	9 32.84	+37 9.2	2.765	3.647	7.9	19.4
1 22	9 26.48	+22 15.7	1.265	2.224	7.5	19.7	1 22	9 24.62	+37 52.6	2.723	3.646	6.2	19.3
2 1	9 15.70	+22 37.9	1.253	2.234	3.1	19.5	2 1	9 15.15	+38 23.8	2.710	3.644	5.7	19.2
2 11	9 4.46	+22 50.4	1.268	2.245	4.9	19.6	2 11	9 5.33	+38 38.5	2.726	3.643	6.6	19.3
2 21	8 54.36	+22 49.3	1.310	2.255	9.6	19.9	2 21	8 56.09	+38 35.1	2.770	3.641	8.4	19.4
3 2	8 46.74	+22 33.8	1.375	2.267	14.1	20.2	3 2	8 48.26	+38 14.2	2.839	3.639	10.5	19.5
3 12	8 42.35	+22 5.6	1.461	2.278	17.8	20.4	3 12	8 42.45	+37 38.2	2.931	3.636	12.3	19.7
214156	2005 <i>CJ</i> ₁₁		2 4.9 348°87	1°5/ 4.1 18			302024	2000 <i>SM</i> ₁₃₄		2 4.9 214°41	3°2/ 7.1 17		
1 2	9 34.59	+16 37.1	1.312	2.161	17.0	20.5	1 2	9 39.01	+ 5 36.9	2.150	2.930	13.7	22.2
1 12	9 30.82	+17 20.7	1.241	2.156	12.6	20.2	1 12	9 33.05	+ 5 33.5	2.051	2.921	10.8	22.0
1 22	9 24.03	+18 17.4	1.191	2.152	7.6	19.9	1 22	9 24.95	+ 5 44.2	1.976	2.910	7.4	21.7
2 1	9 15.06	+19 20.0	1.165	2.148	2.4	19.6	2 1	9 15.30	+ 6 8.2	1.929	2.899	4.1	21.5
2 11	9 5.32	+20 19.4	1.166	2.145	4.3	19.7	2 11	9 5.03	+ 6 42.6	1.912	2.887	3.6	21.5
2 21	8 56.39	+21 7.7	1.192	2.143	9.6	20.0	2 21	8 55.14	+ 7 23.2	1.924	2.874	6.7	21.6
3 2	8 49.68	+21 39.9	1.241	2.142	14.5	20.2	3 2	8 46.62	+ 8 5.5	1.965	2.860	10.3	21.8
3 12	8 46.15	+21 54.4	1.310	2.141	18.7	20.5	3 12	8 40.23	+ 8 45.4	2.031	2.845	13.6	22.0
503460	2016 <i>ET</i> ₁₂₇		2 4.9 210°63	2°6/ 7.1 17			455072	2015 <i>UO</i> ₄₄		2 4.9 85°22	2°2/ 3.6 16		
1 2	9 33.95	+ 5 47.3	2.236	3.024	13.0	21.7	1 2	9 41.37	+17 48.4	1.506	2.338	16.0	21.4
1 12	9 29.17	+ 6 6.2	2.145	3.020	10.1	21.5	1 12	9 35.16	+18 58.3	1.460	2.367	11.7	21.2
1 22	9 22.52	+ 6 40.0	2.077	3.015	6.8	21.3	1 22	9 26.25	+20 16.7	1.437	2.395	6.9	21.0
2 1	9 14.55	+ 7 26.8	2.037	3.010	3.6	21.1	2 1	9 15.63	+21 34.8	1.441	2.423	2.6	20.8
2 11	9 6.10	+ 8 22.9	2.027	3.005	3.0	21.0	2 11	9 4.71	+22 43.5	1.474	2.450	4.4	21.0
2 21	8 58.04	+ 9 23.1	2.047	3.000	6.1	21.2	2 21	8 54.88	+23 36.7	1.535	2.476	8.9	21.3
3 2	8 51.23	+10 22.7	2.094	2.994	9.5	21.4	3 2	8 47.31	+24 11.5	1.621	2.502	12.9	21.6
3 12	8 46.33	+11 17.0	2.167	2.988	12.6	21.6	3 12	8 42.66	+24 28.4	1.728	2.528	16.2	21.9
138519	2000 <i>NE</i> ₁₂		2 4.9 195°32	4°2/ 9.7 18			144374	2004 <i>DF</i> ₅₅		2 4.9 216°69	0°0/ 4.8 18		
1 2	9 32.14	- 3 19.7	3.515	4.235	10.0	21.8	1 2	9 36.97	+14 17.8	1.889	2.708	13.8	21.0
1 12	9 27.20	- 3 30.0	3.414	4.232	8.2	21.7	1 12	9 31.75	+14 43.6	1.805	2.705	10.3	20.8
1 22	9 21.05	- 3 27.8	3.338	4.228	6.4	21.5	1 22	9 24.24	+15 19.7	1.746	2.701	6.3	20.6
2 1	9 14.09	- 3 12.8	3.289	4.223	4.8	21.4	2 1	9 15.10	+16 1.9	1.713	2.696	1.8	20.2
2 11	9 6.83	- 2 46.2	3.270	4.217	4.3	21.4	2 11	9 5.38	+16 44.8	1.711	2.692	2.8	20.3
2 21	8 59.80	- 2 10.2	3.282	4.211	5.2	21.4	2 21	8 56.22	+17 23.3	1.736	2.687	7.2	20.6
3 2	8 53.54	- 1 27.8	3.323	4.205	6.9	21.5	3 2	8 48.66	+17 53.6	1.789	2.682	11.3	20.8
3 12	8 48.47	- 0 42.2	3.391	4.198	8.8	21.7	3 12	8 43.48	+18 13.5	1.864	2.677	14.7	21.0
369545	2011 <i>AK</i> ₂₆		2 4.9 74°88	1°7/ 3.9 18			16515	Usman/grad		2 4.9 49°92	0°1/ 4.9 18		
1 2	9 38.08	+19 26.8	1.812	2.643	13.8	21.2	1 2	9 33.77	+14 30.8	2.011	2.833	13.0	17.6
1 12	9 32.54	+19 51.6	1.744	2.650	10.2	21.0	1 12	9 29.09	+15 1.3	1.947	2.848	9.6	17.4
1 22	9 24.63	+20 21.5	1.699	2.657	6.1	20.7	1 22	9 22.44	+15 40.8	1.907	2.863	5.8	17.2
2 1	9 15.16	+20 51.5	1.682	2.664	2.2	20.5	2 1	9 14.54	+16 25.0	1.896	2.879	1.6	17.0
2 11	9 5.26	+21 15.9	1.694	2.671	3.7	20.6	2 11	9 6.31	+17 8.9	1.913	2.895	2.6	17.1
2 21	8 56.13	+21 31.0	1.734	2.679	7.8	20.9	2 21	8 58.72	+17 47.8	1.960	2.911	6.5	17.4
3 2	8 48.80	+21 34.8	1.800	2.686	11.6	21.1	3 2	8 52.63	+18 18.5	2.033	2.927	10.1	17.6
3 12	8 43.97	+21 27.2	1.889	2.693	14.8	21.4	3 12	8 48.62	+18 39.1	2.130	2.943	13.1	17.9
230510	2002 <i>VW</i> ₃₇		2 4.9 56°55	4°5/ 2.5 18			301490	2009 <i>DE</i> ₁₄₂		2 4.9 346°19	4°0/ 7.9 17		
1 2	9 39.12	+21 33.8	1.180	2.036	18.0	19.8	1 2	9 33.37	+ 3 41.1	2.270	3.049	13.1	20.3
1 12	9 34.30	+22 55.5	1.132	2.051	13.3	19.6	1 12	9 28.68	+ 3 19.0	2.182	3.047	10.4	20.1
1 22	9 26.09	+24 24.3	1.106	2.066	8.2	19.4	1 22	9 22.19	+ 3 10.5	2.118	3.045	7.5	19.9
2 1	9 15.63	+25 48.2	1.104	2.081	4.6	19.2	2 1	9 14.48	+ 3 15.7	2.081	3.044	4.8	19.7
2 11	9 4.63	+26 55.6	1.127	2.097	6.7	19.4	2 11	9 6.35	+ 3 32.6	2.073	3.042	4.2	19.7
2 21	8 54.90	+27 39.2	1.176	2.113	11.4	19.7	2 21	8 58.64	+ 3 58.2	2.093	3.041	6.4	19.8
3 2	8 47.89	+27 57.3	1.246	2.130	15.9	20.0	3 2	8 52.16	+ 4 28.6	2.141	3.040	9.4	20.0
3 12	8 44.40	+27 52.4	1.336	2.146	19.5	20.3	3 12	8 47.53	+ 4 59.8	2.213	3.039	12.2	20.2
147159	2002 <i>UQ</i> ₃₁		2 4.9 228°14	0°3/ 5.1 18			494791	2006 <i>UW</i> ₂₁₇		2 4.9 82°70	7°1/10.7 17		
1 2	9 41.54	+14 31.5	1.597	2.418	15.8	20.5	1 2	9 37.52	- 5 33.4	1.8			

EPHEMERIDES

2 4.9

2 5.0

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
167564	2004 <i>BY</i> ₄₁		2 4.9 66°48'	3°6'	2.8 18		104923	2000 <i>JN</i> ₂₀		2 5.0 284°31'	2°0'	6.2 18	
1 2	9 40.06	+26 47.4	2.148	2.975	12.1	19.8	1 2	9 36.08	+9 50.6	1.766	2.578	14.9	20.0
1 12	9 33.71	+27 5.9	2.080	2.982	9.0	19.6	1 12	9 31.38	+9 51.9	1.668	2.560	11.5	19.8
1 22	9 25.21	+27 22.2	2.037	2.989	5.8	19.4	1 22	9 24.20	+10 7.2	1.594	2.542	7.5	19.5
2 1	9 15.33	+27 31.3	2.023	2.996	3.7	19.3	2 1	9 15.18	+10 34.3	1.546	2.524	3.3	19.2
2 11	9 5.15	+27 29.0	2.038	3.003	4.8	19.3	2 11	9 5.38	+11 9.1	1.526	2.507	3.1	19.1
2 21	8 55.74	+27 13.5	2.083	3.010	7.9	19.5	2 21	8 55.99	+11 46.8	1.534	2.489	7.5	19.3
3 2	8 48.04	+26 45.1	2.154	3.017	11.0	19.7	3 2	8 48.20	+12 22.4	1.568	2.471	11.9	19.6
3 12	8 42.66	+26 5.7	2.247	3.024	13.6	19.9	3 12	8 42.91	+12 51.8	1.624	2.453	15.8	19.8
211618	2003 <i>UH</i> ₆₁		2 4.9 81°60'	1°7'	3.9 18		197982	2004 <i>RW</i> ₁₄₆		2 5.0 24°41'	3°9'	7.1 18	
1 2	9 37.87	+17 25.5	1.556	2.392	15.4	20.3	1 2	9 33.38	+6 29.0	1.079	1.917	20.6	19.4
1 12	9 32.71	+18 15.6	1.493	2.402	11.4	20.1	1 12	9 30.08	+6 29.3	1.025	1.927	16.0	19.1
1 22	9 24.90	+19 15.2	1.454	2.413	6.8	19.8	1 22	9 23.62	+6 55.0	0.988	1.938	10.7	18.9
2 1	9 15.29	+20 17.2	1.441	2.423	2.3	19.6	2 1	9 15.00	+7 43.2	0.974	1.950	5.4	18.6
2 11	9 5.19	+21 13.6	1.456	2.434	4.0	19.7	2 11	9 5.80	+8 46.5	0.983	1.964	4.6	18.6
2 21	8 55.95	+21 58.4	1.499	2.445	8.6	20.0	2 21	8 57.67	+9 55.2	1.016	1.978	9.3	18.9
3 2	8 48.75	+22 28.0	1.566	2.455	12.8	20.3	3 2	8 52.01	+11 0.0	1.072	1.994	14.3	19.3
3 12	8 44.35	+22 41.7	1.655	2.466	16.4	20.5	3 12	8 49.66	+11 53.9	1.148	2.010	18.7	19.6
61600	2000 <i>QS</i> ₉₁		2 4.9 237°02'	2°3'	6.5 18		129846	1999 <i>RO</i> ₂₉		2 5.0 106°51'	6°8'	10.7 18	
1 2	9 37.19	+8 9.0	1.759	2.564	15.3	19.6	1 2	9 37.24	-5 59.0	1.964	2.696	16.4	20.7
1 12	9 32.14	+8 24.7	1.667	2.554	11.8	19.4	1 12	9 31.63	-6 0.4	1.898	2.720	13.6	20.5
1 22	9 24.61	+8 57.2	1.597	2.543	7.7	19.1	1 22	9 23.99	-5 37.1	1.852	2.744	10.6	20.4
2 1	9 15.26	+9 43.8	1.554	2.532	3.5	18.8	2 1	9 15.03	-4 49.1	1.832	2.767	7.9	20.3
2 11	9 5.15	+10 39.6	1.540	2.520	3.2	18.8	2 11	9 5.75	-3 39.9	1.839	2.789	6.8	20.3
2 21	8 55.51	+11 38.5	1.553	2.508	7.5	19.0	2 21	8 57.14	-2 15.6	1.874	2.810	8.0	20.4
3 2	8 47.51	+12 34.3	1.594	2.495	11.8	19.2	3 2	8 50.08	-0 43.8	1.938	2.831	10.5	20.6
3 12	8 42.02	+13 22.3	1.657	2.482	15.7	19.4	3 12	8 45.21	+0 47.9	2.025	2.851	13.2	20.8
369649	2011 <i>FA</i> ₂₀		2 4.9 88°03'	3°0'	3.2 18		20270	Phildeutsch		2 5.0 201°75'	1°0'	5.7 18	
1 2	9 40.29	+23 51.8	1.926	2.756	13.2	20.4	1 2	9 37.98	+11 20.6	2.047	2.852	13.4	19.1
1 12	9 34.09	+24 12.6	1.858	2.762	9.8	20.2	1 12	9 32.37	+11 42.4	1.958	2.848	10.2	18.9
1 22	9 25.54	+24 33.9	1.814	2.769	6.1	20.0	1 22	9 24.58	+12 16.0	1.893	2.843	6.4	18.6
2 1	9 15.46	+24 50.3	1.798	2.775	3.1	19.8	2 1	9 15.26	+12 58.1	1.857	2.838	2.3	18.4
2 11	9 4.99	+24 57.0	1.811	2.782	4.5	19.9	2 11	9 5.35	+13 44.0	1.850	2.832	2.5	18.4
2 21	8 55.34	+24 51.4	1.853	2.788	8.1	20.1	2 21	8 55.93	+14 28.9	1.874	2.825	6.7	18.6
3 2	8 47.51	+24 33.1	1.921	2.795	11.6	20.4	3 2	8 47.98	+15 8.4	1.925	2.818	10.6	18.8
3 12	8 42.20	+24 3.4	2.011	2.801	14.6	20.6	3 12	8 42.26	+15 39.6	1.999	2.810	13.9	19.0
185431	2006 <i>XX</i> ₂₅		2 4.9 356°27'	2°4'	3.5 18		417144	2005 <i>VE</i> ₉₀		2 5.0 116°09'	1°7'	6.3 18	
1 2	9 35.85	+19 17.4	1.600	2.441	14.8	20.0	1 2	9 37.69	+9 14.8	2.291	3.084	12.6	22.1
1 12	9 31.31	+20 7.5	1.528	2.439	11.0	19.7	1 12	9 31.70	+9 23.8	2.223	3.104	9.6	21.9
1 22	9 24.13	+21 5.7	1.479	2.438	6.6	19.5	1 22	9 23.92	+9 43.7	2.180	3.124	6.1	21.7
2 1	9 15.11	+22 5.0	1.457	2.438	2.7	19.2	2 1	9 15.00	+10 12.1	2.166	3.143	2.7	21.6
2 11	9 5.46	+22 57.5	1.462	2.438	4.5	19.4	2 11	9 5.81	+10 45.3	2.182	3.162	2.5	21.6
2 21	8 56.54	+23 37.3	1.494	2.438	8.9	19.6	2 21	8 57.22	+11 19.5	2.228	3.180	5.8	21.8
3 2	8 49.55	+24 0.9	1.551	2.438	13.1	19.9	3 2	8 50.01	+11 51.4	2.303	3.197	9.0	22.0
3 12	8 45.31	+24 8.1	1.629	2.438	16.6	20.1	3 12	8 44.74	+12 18.2	2.403	3.214	11.9	22.3
461498	2003 <i>BW</i> ₈₀		2 4.9 22°99'	0°2'	4.9 18		184446	2005 <i>NQ</i> ₄₉		2 5.0 195°15'	0°3'	4.7 18	
1 2	9 33.09	+13 18.9	1.337	2.180	17.0	20.1	1 2	9 36.85	+14 29.8	2.364	3.173	11.7	21.3
1 12	9 29.46	+14 3.4	1.277	2.188	12.7	19.9	1 12	9 31.29	+15 10.7	2.276	3.170	8.7	21.1
1 22	9 23.06	+15 3.5	1.238	2.197	7.6	19.6	1 22	9 23.82	+16 0.4	2.213	3.166	5.3	20.9
2 1	9 14.79	+16 12.9	1.224	2.207	2.2	19.3	2 1	9 15.02	+16 54.9	2.179	3.162	1.5	20.6
2 11	9 5.98	+17 22.6	1.237	2.219	3.4	19.4	2 11	9 5.73	+17 49.3	2.177	3.157	2.5	20.7
2 21	8 58.06	+18 24.5	1.275	2.231	8.7	19.8	2 21	8 56.85	+18 38.7	2.205	3.152	6.2	20.9
3 2	8 52.26	+19 12.9	1.338	2.243	13.3	20.1	3 2	8 49.24	+19 19.9	2.262	3.145	9.7	21.1
3 12	8 49.35	+19 45.0	1.421	2.257	17.2	20.3	3 12	8 43.58	+19 50.7	2.343	3.138	12.6	21.3
269091	2007 <i>HG</i> ₄₆		2 4.9 336°54'	1°3'	3.9 18		502560	2015 <i>BE</i> ₄₈₄		2 5.0 153°79'	0°4'	5.3 17	
1 2	9 31.60	+14 6.2	1.559	2.397	15.3	19.6	1 2	9 34.85	+13 9.4	2.402	3.210	11.6	21.9
1 12	9 28.28	+15 28.0	1.478	2.388	11.3	19.3	1 12	9 29.69	+13 31.4	2.322	3.215	8.7	21.8
1 22	9 22.40	+17 7.1	1.420	2.380	6.8	19.1	1 22	9 22.77	+14 1.8	2.268	3.219	5.3	21.6
2 1	9 14.64	+18 56.0	1.389	2.372	2.0	18.7	2 1	9 14.69	+14 37.7	2.242	3.224	1.7	21.3
2 11	9 6.12	+20 44.3	1.386	2.365	3.9	18.8	2 11	9 6.24	+15 15.0	2.246	3.228	2.2	21.4
2 21	8 58.13	+22 22.2	1.410	2.359	8.8	19.1	2 21	8 58.26	+15 49.9	2.281	3.231	5.7	21.6
3 2	8 51.92	+23 42.2	1.460	2.353	13.3	19.4	3 2	8 51.52	+16 19.4	2.344	3.235	9.0	21.8
3 12	8 48.38	+24 41.0	1.530	2.348	17.2	19.6	3 12	8 46.61	+16 41.5	2.431	3.238	11.9	22.0
387002	2012 <i>RY</i> ₅		2 4.9 101°99'	3°3'	8.1 18		212457	2006 <i>QO</i> ₂₂		2 5.0 225°03'	0°9'	4.4 18	
1 2	9 34.86	+2 59.5	2.807	3.568	11.3	21.6	1 2	9 37.50	+15 49.2	1.961	2.781	13.3	20.8
1 12	9 29.30	+2 50.6	2.739	3.593	8.9	21.5	1 12	9 32.20	+16 33.5	1.871	2.772	9.9	20.5
1 22	9 22.34	+2 53.8	2.695	3.617	6.3	21.3	1 22	9 24.58	+17 27.9	1.806	2.762	6.0	20.3
2 1	9 14.51	+3 8.3	2.680	3.640	4.0	21.2	2 1	9 15.28	+18 27.2	1.769	2.752	1.8	20.0
2 11	9 6.47	+3 31.9	2.695	3.664	3.5	21.2	2 11	9 5.31	+19 25.1	1.762	2.742	3.1	20.0
2 21	8 58.91	+4 1.7	2.741	3.686	5.2	21.4	2 21	8 55.81	+20 15.8	1.785	2.731	7.5	20.3
3 2	8 52.42	+4 34.5	2.816	3.708	7.6	21.5	3 2	8 47.86	+20 55.3	1.834	2.719	11.4	20.5
3 12	8 47.47	+5 7.1	2.917	3.730	9.9	21.7	3 12	8 42.26	+21 21.7	1.906	2.707	14.9	20.7
417244	2005 <i>YZ</i> ₁₆₀		2 5.0 0°21'	1°4'	3.9 18		358081	2006 <i>JG</i> ₁₆		2 5.0 233°35'	1°0'	4.4 17	
1 2	9 29.18	+14 20.0	1.308	2.160	16.8	19.8	1 2</						