

EPHEMERIDES

1 2.9

1 3.0

2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
462013	2006 <i>XC</i> ₄₆		1 2.9 326°65	3°8/	1.8 16		278944	2008 <i>UR</i> ₅₂		1 2.9 155°52	2°4/	3.5 18	
12 3	7 17.14	+27 56.7	1.517	2.378	14.5	21.2	12 3	7 14.48	+15 19.8	2.493	3.323	10.6	21.1
12 13	7 11.56	+29 18.6	1.443	2.367	10.6	20.9	12 13	7 8.34	+15 3.2	2.421	3.327	7.8	20.9
12 23	7 2.96	+30 42.5	1.393	2.356	6.3	20.7	12 23	7 0.65	+14 52.2	2.376	3.332	4.7	20.7
1 2	6 52.28	+32 0.3	1.369	2.345	3.8	20.5	1 2	6 52.08	+14 46.5	2.360	3.336	2.4	20.5
1 12	6 41.07	+33 4.6	1.374	2.335	6.5	20.6	1 12	6 43.45	+14 45.8	2.374	3.339	3.9	20.7
1 22	6 31.00	+33 51.2	1.404	2.326	10.9	20.9	1 22	6 35.58	+14 49.4	2.419	3.343	6.8	20.8
2 1	6 23.55	+34 20.2	1.459	2.317	15.1	21.1	2 1	6 29.18	+14 56.6	2.491	3.346	9.7	21.0
2 11	6 19.67	+34 34.5	1.532	2.309	18.6	21.3	2 11	6 24.73	+15 6.4	2.587	3.349	12.2	21.2
321705	2010 <i>FL</i> ₁₀₀		1 2.9 137°23	1°1/	3.2 18		523499	2017 <i>HJ</i> ₆₂		1 2.9 83°28	0°7/	2.8 18	
12 3	7 19.52	+19 6.2	1.758	2.602	13.7	21.4	12 3	7 18.09	+23 28.7	1.777	2.628	13.2	21.5
12 13	7 12.43	+19 19.5	1.695	2.611	9.8	21.2	12 13	7 11.43	+23 57.0	1.720	2.641	9.4	21.3
12 23	7 3.03	+19 38.3	1.657	2.620	5.4	20.9	12 23	7 2.50	+24 27.1	1.688	2.654	5.1	21.1
1 2	6 52.28	+20 0.2	1.647	2.629	1.2	20.7	1 2	6 52.25	+24 55.3	1.684	2.667	0.8	20.8
1 12	6 41.45	+20 22.7	1.666	2.637	4.3	20.9	1 12	6 41.98	+25 18.5	1.709	2.679	4.3	21.1
1 22	6 31.82	+20 43.9	1.714	2.644	8.6	21.2	1 22	6 32.93	+25 35.5	1.762	2.692	8.5	21.4
2 1	6 24.40	+21 3.2	1.788	2.652	12.5	21.4	2 1	6 26.09	+25 46.3	1.842	2.705	12.2	21.6
2 11	6 19.83	+21 20.3	1.884	2.658	15.7	21.7	2 11	6 22.07	+25 52.3	1.942	2.717	15.3	21.9
367522	2009 <i>PC</i> ₁₈		1 2.9 100°09	3°3/	3.8 18		332159	2005 <i>YB</i> ₁₇₀		1 2.9 267°23	1°4/	3.2 18	
12 3	7 15.35	+13 13.4	1.911	2.746	13.1	21.2	12 3	7 15.72	+19 2.7	1.990	2.835	12.3	21.3
12 13	7 9.33	+13 10.1	1.843	2.751	9.7	21.0	12 13	7 9.66	+18 57.0	1.912	2.829	8.9	21.1
12 23	7 1.32	+13 16.8	1.801	2.756	6.1	20.8	12 23	7 1.54	+18 55.7	1.860	2.823	5.0	20.8
1 2	6 52.12	+13 32.9	1.786	2.761	3.4	20.6	1 2	6 52.17	+18 57.5	1.836	2.817	1.5	20.6
1 12	6 42.83	+13 56.9	1.800	2.765	4.9	20.7	1 12	6 42.63	+19 1.4	1.841	2.811	4.0	20.7
1 22	6 34.50	+14 26.7	1.843	2.770	8.4	20.9	1 22	6 34.00	+19 6.5	1.875	2.805	8.0	21.0
2 1	6 28.04	+14 59.9	1.912	2.774	11.8	21.1	2 1	6 27.22	+19 12.4	1.935	2.799	11.7	21.2
2 11	6 24.04	+15 34.7	2.002	2.779	14.8	21.4	2 11	6 22.94	+19 18.8	2.018	2.793	14.8	21.4
85816	1998 <i>XG</i>		1 2.9 85°69	2°7/	3.6 18		428389	2007 <i>RW</i> ₃₁₅		1 3.0 57°85	3°4/	2.6 18	
12 3	7 20.57	+15 28.1	1.426	2.273	16.1	19.4	12 3	7 19.05	+32 44.0	1.996	2.840	12.3	20.7
12 13	7 13.35	+15 36.5	1.378	2.294	11.7	19.2	12 13	7 11.88	+32 58.4	1.949	2.862	8.9	20.5
12 23	7 3.54	+15 55.6	1.354	2.315	6.8	19.0	12 23	7 2.61	+33 5.4	1.927	2.884	5.5	20.4
1 2	6 52.32	+16 22.9	1.356	2.335	2.8	18.8	1 2	6 52.26	+33 1.7	1.933	2.906	3.4	20.3
1 12	6 41.21	+16 55.6	1.386	2.355	5.2	19.0	1 12	6 42.09	+32 46.0	1.968	2.928	5.1	20.4
1 22	6 31.63	+17 30.5	1.443	2.375	9.8	19.3	1 22	6 33.25	+32 19.6	2.032	2.951	8.3	20.7
2 1	6 24.68	+18 5.4	1.525	2.395	13.9	19.6	2 1	6 26.62	+31 45.4	2.123	2.973	11.4	20.9
2 11	6 20.93	+18 38.8	1.627	2.414	17.3	19.9	2 11	6 22.70	+31 6.9	2.235	2.996	13.9	21.1
224801	2006 <i>UQ</i> ₁₂₇		1 2.9 127°98	1°8/	2.7 18		282609	2005 <i>JN</i> ₂		1 3.0 213°84	4°6/	4.1 17	
12 3	7 22.38	+25 54.2	1.336	2.196	16.2	21.4	12 3	7 12.65	+6 55.2	2.716	3.520	10.6	21.7
12 13	7 15.19	+26 17.4	1.275	2.200	11.6	21.1	12 13	7 7.01	+6 32.1	2.634	3.515	8.3	21.5
12 23	7 4.79	+26 40.0	1.237	2.204	6.4	20.9	12 23	6 59.95	+6 19.1	2.577	3.508	6.0	21.4
1 2	6 52.45	+26 56.8	1.225	2.207	1.8	20.6	1 2	6 52.03	+6 17.3	2.549	3.502	4.6	21.3
1 12	6 40.00	+27 4.3	1.241	2.211	5.6	20.8	1 12	6 43.99	+6 26.6	2.551	3.495	5.3	21.3
1 22	6 29.21	+27 1.8	1.282	2.214	10.8	21.1	1 22	6 36.53	+6 46.0	2.582	3.488	7.3	21.4
2 1	6 21.48	+26 51.6	1.348	2.217	15.4	21.4	2 1	6 30.32	+7 13.5	2.641	3.481	9.7	21.6
2 11	6 17.54	+26 36.8	1.432	2.220	19.2	21.7	2 11	6 25.85	+7 46.8	2.723	3.473	12.0	21.7
245980	2006 <i>SD</i> ₁₅₄		1 2.9 92°21	2°5/	3.5 17		495228	2013 <i>GA</i> ₁₀₁		1 3.0 245°84	3°5/	2.1 18	
12 3	7 19.12	+15 34.7	1.874	2.709	13.4	21.0	12 3	7 20.04	+29 53.3	1.799	2.647	13.2	21.6
12 13	7 11.80	+15 31.7	1.826	2.735	9.7	20.8	12 13	7 13.24	+30 47.4	1.721	2.638	9.6	21.3
12 23	7 2.53	+15 36.3	1.803	2.761	5.7	20.6	12 23	7 3.71	+31 39.2	1.669	2.629	5.9	21.1
1 2	6 52.23	+15 47.4	1.809	2.787	2.6	20.5	1 2	6 52.39	+32 22.6	1.644	2.619	3.5	20.9
1 12	6 42.08	+16 3.2	1.845	2.812	4.5	20.7	1 12	6 40.69	+32 52.7	1.648	2.609	5.8	21.0
1 22	6 33.14	+16 22.3	1.910	2.837	8.1	20.9	1 22	6 30.07	+33 7.9	1.680	2.598	9.7	21.2
2 1	6 26.26	+16 43.1	2.001	2.861	11.5	21.2	2 1	6 21.83	+33 9.5	1.737	2.587	13.5	21.4
2 11	6 21.93	+17 4.6	2.115	2.884	14.4	21.4	2 11	6 16.78	+33 1.1	1.815	2.577	16.7	21.6
15484	1999 <i>CU</i> ₄₆		1 2.9 63°50	2°9/	2.4 18		279508	2011 <i>AO</i> ₅₈		1 3.0 274°59	0°9/	3.2 18	
12 3	7 16.94	+30 57.1	2.136	2.981	11.5	18.0	12 3	7 15.66	+19 9.6	1.924	2.771	12.6	21.4
12 13	7 10.45	+31 20.6	2.073	2.988	8.4	17.8	12 13	7 9.70	+19 25.3	1.850	2.767	9.0	21.2
12 23	7 1.91	+31 39.3	2.035	2.994	5.0	17.6	12 23	7 1.60	+19 46.5	1.800	2.764	5.0	20.9
1 2	6 52.19	+31 49.7	2.025	3.001	2.9	17.5	1 2	6 52.20	+20 11.2	1.778	2.761	1.1	20.6
1 12	6 42.43	+31 49.6	2.045	3.007	4.8	17.7	1 12	6 42.60	+20 36.9	1.786	2.757	4.0	20.8
1 22	6 33.73	+31 39.1	2.094	3.014	8.0	17.9	1 22	6 33.93	+21 1.6	1.823	2.754	8.1	21.1
2 1	6 27.02	+31 20.2	2.169	3.020	11.1	18.1	2 1	6 27.17	+21 24.5	1.885	2.751	11.9	21.3
2 11	6 22.86	+30 55.6	2.266	3.027	13.8	18.3	2 11	6 22.99	+21 44.9	1.970	2.748	15.0	21.5
199742	2006 <i>JD</i>		1 2.9 169°73	2°8/	2.1 18		464048	2014 <i>WH</i> ₂₁₁		1 3.0 337°22	0°4/	2.9 18	
12 3	7 16.54	+30 5.5	2.409	3.250	10.5	20.3	12 3	7 16.24	+23 1.3	1.914	2.764	12.5	21.5
12 13	7 10.10	+30 53.8	2.338	3.251	7.6	20.2	12 13	7 10.12	+23 17.7	1.843	2.763	8.9	21.2
12 23	7 1.73	+31 39.4	2.294	3.253	4.6	20.0	12 23	7 1.83	+23 36.0	1.797	2.763	4.8	21.0
1 2	6 52.18	+32 18.0	2.280	3.254	2.8	19.8	1 2	6 52.22	+23 53.6	1.779	2.762	0.5	20.7
1 12	6 42.45	+32 46.7	2.296	3.255	4.6	20.0	1 12	6 42.46	+24 8.0	1.790	2.761	4.0	20.9
1 22	6 33.56	+33 4.3	2.342	3.256	7.6	20.2	1 22	6 33.71	+24 18.3	1.830	2.761	8.2	21.2
2 1	6 26.40	+33 11.6	2.414	3.256	10.5	20.3	2 1	6 26.96	+24 24.3	1.896	2.760	11.9	21.4
2 11	6 21.58	+33 10.5	2.509	3.257	12.9	20.5	2 11	6 22.86	+24 27.1	1.984	2.760	15.0	21.6
13226	Soulié		1 2.9 192°87	0°5/	3.1 18		7971	Meckbach		1 3.0 264°66	8°1/	4.3 18	
12 3	7 15.95	+21 45.9	2.329	3.170	10.9	18.6	12 3	7 15.10	+2 26.2				

EPHEMERIDES

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
313821	2004 BY ₁₂₉		1 3.0	60°22	1.7/ 3.4	18	37247	2000 WM ₁₈₁		1 3.0	182°42	4.2/ 2.3	18
12 3	7 18.09	+17 40.6	1.478	2.331	15.3	21.0	12 3	7 21.09	+35 57.0	2.286	3.117	11.4	19.3
12 13	7 11.61	+17 52.2	1.429	2.349	11.0	20.8	12 13	7 13.43	+36 18.9	2.215	3.118	8.6	19.1
12 23	7 2.65	+18 11.8	1.403	2.366	6.2	20.6	12 23	7 3.58	+36 31.9	2.170	3.118	5.8	18.9
1 2	6 52.30	+18 37.0	1.403	2.385	1.9	20.4	1 2	6 52.46	+36 32.0	2.153	3.118	4.2	18.8
1 12	6 42.03	+19 4.8	1.432	2.403	4.8	20.6	1 12	6 41.28	+36 17.3	2.167	3.117	5.6	18.9
1 22	6 33.18	+19 32.8	1.487	2.421	9.4	20.9	1 22	6 31.24	+35 48.5	2.210	3.116	8.4	19.1
2 1	6 26.81	+19 59.4	1.567	2.440	13.4	21.2	2 1	6 23.29	+35 8.9	2.279	3.115	11.2	19.3
2 11	6 23.51	+20 23.9	1.668	2.459	16.8	21.5	2 11	6 18.05	+34 22.6	2.371	3.113	13.8	19.4
238334	2004 BE ₃₇		1 3.0	3°24	0°0/ 2.9	18	153520	2001 SW ₂₈		1 3.0	129°06	3°2/ 3.7	18
12 3	7 13.96	+21 47.7	1.780	2.635	13.0	20.7	12 3	7 20.58	+13 35.1	1.836	2.665	13.8	20.6
12 13	7 8.62	+22 5.6	1.712	2.635	9.2	20.5	12 13	7 13.01	+13 33.1	1.778	2.683	10.2	20.4
12 23	7 1.06	+22 27.0	1.669	2.635	5.0	20.2	12 23	7 3.32	+13 40.8	1.745	2.700	6.3	20.2
1 2	6 52.17	+22 49.3	1.653	2.636	0.5	19.9	1 2	6 52.44	+13 57.2	1.741	2.716	3.3	20.1
1 12	6 43.14	+23 9.9	1.665	2.637	4.1	20.2	1 12	6 41.59	+14 20.5	1.766	2.731	4.9	20.2
1 22	6 35.15	+23 27.3	1.706	2.639	8.4	20.4	1 22	6 31.91	+14 48.6	1.821	2.746	8.6	20.5
2 1	6 29.20	+23 41.0	1.771	2.642	12.2	20.7	2 1	6 24.35	+15 19.4	1.902	2.759	12.2	20.7
2 11	6 25.94	+23 51.1	1.858	2.645	15.4	20.9	2 11	6 19.47	+15 51.1	2.005	2.772	15.1	21.0
293269	2007 CY ₃₃		1 3.0	88°94	2°8/ 2.7	18	99986	1981 ET ₂₈		1 3.0	27°40	4°7/ 2.7	18
12 3	7 19.89	+30 43.6	1.853	2.700	12.9	20.5	12 3	7 21.43	+35 4.6	1.677	2.523	14.1	18.8
12 13	7 12.76	+30 52.6	1.789	2.705	9.4	20.2	12 13	7 14.16	+35 16.6	1.614	2.526	10.5	18.6
12 23	7 3.25	+30 55.8	1.749	2.710	5.5	20.0	12 23	7 4.12	+35 18.0	1.575	2.530	6.9	18.4
1 2	6 52.37	+30 49.4	1.738	2.715	2.9	19.9	1 2	6 52.51	+35 3.9	1.563	2.533	4.7	18.3
1 12	6 41.50	+30 31.9	1.756	2.720	5.0	20.0	1 12	6 40.94	+34 32.6	1.579	2.537	6.4	18.4
1 22	6 31.92	+30 4.3	1.801	2.725	8.8	20.3	1 22	6 30.93	+33 46.3	1.623	2.541	10.0	18.6
2 1	6 24.68	+29 29.4	1.873	2.730	12.4	20.5	2 1	6 23.64	+32 49.9	1.691	2.545	13.6	18.9
2 11	6 20.39	+28 50.9	1.967	2.735	15.4	20.7	2 11	6 19.69	+31 48.7	1.780	2.550	16.7	19.1
145285	2005 JN ₁₆₇		1 3.0	215°67	0°7/ 3.2	18	376616	2013 PH ₄₃		1 3.0	117°15	2°4/ 3.4	18
12 3	7 17.52	+19 45.5	1.883	2.728	12.9	20.4	12 3	7 15.83	+16 29.4	2.175	3.011	11.7	20.9
12 13	7 11.10	+20 3.9	1.807	2.724	9.2	20.2	12 13	7 9.48	+16 6.6	2.108	3.018	8.5	20.7
12 23	7 2.41	+20 27.4	1.756	2.720	5.1	19.9	12 23	7 1.37	+15 49.0	2.066	3.025	5.1	20.5
1 2	6 52.32	+20 53.7	1.733	2.715	0.9	19.6	1 2	6 52.26	+15 36.6	2.054	3.031	2.4	20.3
1 12	6 42.00	+21 20.0	1.740	2.711	4.1	19.8	1 12	6 43.13	+15 29.2	2.071	3.038	4.1	20.5
1 22	6 32.65	+21 44.5	1.775	2.706	8.4	20.1	1 22	6 34.91	+15 26.2	2.118	3.044	7.5	20.7
2 1	6 25.31	+22 6.2	1.837	2.701	12.2	20.3	2 1	6 28.39	+15 27.2	2.192	3.051	10.7	20.9
2 11	6 20.67	+22 25.0	1.921	2.695	15.4	20.5	2 11	6 24.10	+15 31.3	2.289	3.057	13.4	21.1
158000	2000 OK ₃₃		1 3.0	194°74	1°7/ 3.6	17	119224	2001 QE ₂₂₃		1 3.0	3°69	4°8/ 2.7	17
12 3	7 9.51	+15 1.4	3.699	4.523	7.6	20.7	12 3	7 21.76	+32 44.2	1.205	2.070	17.2	19.3
12 13	7 4.53	+14 54.4	3.618	4.521	5.6	20.5	12 13	7 15.19	+33 3.9	1.146	2.069	12.7	19.0
12 23	6 58.53	+14 51.6	3.564	4.519	3.4	20.4	12 23	7 5.00	+33 14.0	1.108	2.069	7.9	18.8
1 2	6 51.95	+14 52.6	3.541	4.517	1.8	20.2	1 2	6 52.62	+33 7.7	1.095	2.070	4.8	18.6
1 12	6 45.31	+14 57.1	3.550	4.514	2.8	20.3	1 12	6 40.17	+32 41.8	1.107	2.071	7.3	18.7
1 22	6 39.11	+15 4.4	3.589	4.512	4.9	20.5	1 22	6 29.69	+31 58.8	1.143	2.073	12.1	19.0
2 1	6 33.81	+15 13.9	3.657	4.509	7.0	20.6	2 1	6 22.69	+31 4.5	1.202	2.075	16.6	19.3
2 11	6 29.80	+15 25.0	3.751	4.506	8.9	20.7	2 11	6 19.90	+30 5.7	1.280	2.078	20.5	19.5
290014	2005 QC ₁₄		1 3.0	58°46	7°6/ 5.3	18	408113	2013 CC ₁₃		1 3.0	234°81	0°9/ 2.9	18
12 3	7 14.71	+ 2 17.8	1.720	2.527	15.6	20.1	12 3	7 19.98	+24 16.7	1.797	2.644	13.3	21.7
12 13	7 8.99	+ 2 0.3	1.661	2.536	12.6	20.0	12 13	7 13.08	+24 37.6	1.715	2.634	9.5	21.4
12 23	7 1.20	+ 2 3.6	1.624	2.546	9.6	19.8	12 23	7 3.62	+24 59.7	1.659	2.624	5.2	21.1
1 2	6 52.21	+ 2 29.2	1.612	2.556	7.8	19.7	1 2	6 52.51	+25 19.3	1.630	2.613	1.0	20.8
1 12	6 43.16	+ 3 16.0	1.627	2.566	8.2	19.8	1 12	6 41.07	+25 33.6	1.631	2.601	4.5	21.0
1 22	6 35.14	+ 4 19.7	1.669	2.576	10.5	19.9	1 22	6 30.67	+25 41.3	1.660	2.589	9.0	21.3
2 1	6 29.09	+ 5 34.9	1.735	2.587	13.4	20.1	2 1	6 22.52	+25 42.9	1.716	2.577	13.1	21.5
2 11	6 25.61	+ 6 55.8	1.823	2.597	16.2	20.3	2 11	6 17.38	+25 40.2	1.792	2.564	16.5	21.7
248017	2004 FZ ₂₅		1 3.0	344°77	9°5/ 31.9	18	55313	2001 SS ₆₃		1 3.0	105°07	0°3/ 3.1	18 R
12 3	7 20.36	+46 10.9	1.764	2.588	14.6	19.5	12 3	7 17.60	+21 19.4	1.859	2.706	12.9	19.2
12 13	7 13.98	+47 16.7	1.699	2.578	12.2	19.3	12 13	7 11.06	+21 29.6	1.795	2.714	9.2	19.0
12 23	7 4.30	+48 5.2	1.657	2.569	10.2	19.2	12 23	7 2.35	+21 42.9	1.756	2.721	5.0	18.7
1 2	6 52.52	+48 27.8	1.638	2.561	9.5	19.1	1 2	6 52.38	+21 56.9	1.746	2.729	0.6	18.4
1 12	6 40.48	+48 20.2	1.646	2.554	10.5	19.2	1 12	6 42.35	+22 9.7	1.765	2.737	4.0	18.7
1 22	6 30.06	+47 43.3	1.677	2.548	12.7	19.3	1 22	6 33.43	+22 20.0	1.813	2.744	8.2	19.0
2 1	6 22.72	+46 42.9	1.730	2.542	15.3	19.5	2 1	6 26.58	+22 27.9	1.887	2.751	11.9	19.2
2 11	6 19.24	+45 27.1	1.803	2.537	17.7	19.6	2 11	6 22.41	+22 33.6	1.982	2.758	15.0	19.4
352884	2008 YZ ₁₀		1 3.0	255°38	2°8/ 3.3	18	161157	2002 SJ ₃₉		1 3.0	74°73	1°9/ 3.6	18
12 3	7 19.45	+17 6.3	1.685	2.528	14.2	21.1	12 3	7 14.52	+16 4.8	2.140	2.978	11.8	20.2
12 13	7 12.71	+16 35.1	1.600	2.514	10.5	20.8	12 13	7 8.59	+16 14.8	2.079	2.991	8.5	20.1
12 23	7 3.40	+16 9.1	1.539	2.499	6.3	20.5	12 23	7 0.92	+16 31.7	2.045	3.004	5.0	19.9
1 2	6 52.45	+15 48.4	1.506	2.484	2.9	20.3	1 2	6 52.25	+16 54.1	2.039	3.018	2.0	19.7
1 12	6 41.16	+15 33.3	1.501	2.469	5.2	20.4	1 12	6 43.55	+17 20.2	2.062	3.031	3.8	19.8
1 22	6 30.92	+15 23.8	1.525	2.453	9.7	20.6	1 22	6 35.76	+17 48.2	2.115	3.045	7.3	20.1
2 1	6 22.90	+15 19.9	1.573	2.437	13.9	20.8	2 1	6 29.65	+18 16.4	2.195	3.058	10.5	20.3
2 11	6 17.89	+15 20.8	1.643	2.420	17.5	21.0	2 11	6 25.76	+18 43.7	2.298	3.071	13.2	20.5
81682	2000 JA ₆		1 3.0	86°98	0°9/ 2.8	18	432060	2008 YE ₃₂		1 3.0	69°85	2°6/ 1.9	18
12 3	7 19.57	+23 26.2	1.855	2.701	13.0	19.2	12 3	7 27.96	+16 54.5	1.000	1.860	20.4	

EPHEMERIDES

1 3.0

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
277065	2005 <i>EX</i> ₈₈		1 3.0 163°13	5°6/ 4.5	18		16576	1992 <i>EY</i> ₁₁		1 3.0 332°31	0°7/ 2.9	18	
12 3	7 12.95	+ 4 58.0	2.362	3.165	12.0	20.8	12 3	7 14.09	+23 51.4	2.030	2.881	11.8	18.2
12 13	7 7.39	+ 4 36.3	2.289	3.166	9.5	20.6	12 13	7 8.62	+24 11.4	1.952	2.873	8.4	17.9
12 23	7 0.25	+ 4 28.0	2.241	3.167	7.1	20.5	12 23	7 1.10	+24 33.0	1.900	2.866	4.6	17.7
1 2	6 52.19	+ 4 34.0	2.221	3.169	5.6	20.4	1 2	6 52.31	+24 53.4	1.876	2.859	0.8	17.4
1 12	6 44.03	+ 4 54.2	2.229	3.170	6.2	20.4	1 12	6 43.30	+25 10.2	1.881	2.852	3.9	17.6
1 22	6 36.57	+ 5 26.8	2.266	3.171	8.3	20.6	1 22	6 35.17	+25 22.2	1.915	2.845	7.9	17.8
2 1	6 30.54	+ 6 9.0	2.329	3.171	10.8	20.7	2 1	6 28.87	+25 29.4	1.974	2.839	11.4	18.0
2 11	6 26.47	+ 6 57.4	2.415	3.172	13.1	20.9	2 11	6 25.06	+25 32.5	2.056	2.834	14.5	18.2
379457	2010 <i>CD</i> ₁₅₅		1 3.0 53°17	1°5/ 2.7	18		456583	2007 <i>DJ</i> ₃₉		1 3.0 293°48	7°0/ 4.8	16	
12 3	7 15.80	+26 20.0	2.118	2.966	11.5	21.0	12 3	7 13.87	+ 3 40.0	1.874	2.683	14.4	21.6
12 13	7 9.69	+26 41.8	2.051	2.970	8.2	20.8	12 13	7 8.53	+ 3 22.6	1.790	2.668	11.6	21.4
12 23	7 1.59	+27 2.6	2.010	2.974	4.5	20.6	12 23	7 1.10	+ 3 23.3	1.728	2.654	8.9	21.2
1 2	6 52.32	+27 19.5	1.997	2.978	1.5	20.4	1 2	6 52.33	+ 3 44.0	1.692	2.640	7.1	21.1
1 12	6 42.96	+27 30.3	2.014	2.982	4.0	20.6	1 12	6 43.23	+ 4 24.4	1.684	2.626	7.7	21.1
1 22	6 34.57	+27 34.3	2.060	2.987	7.7	20.8	1 22	6 34.91	+ 5 21.7	1.703	2.613	10.2	21.2
2 1	6 28.05	+27 32.1	2.132	2.991	11.0	21.0	2 1	6 28.35	+ 6 31.4	1.746	2.599	13.3	21.4
2 11	6 23.97	+27 25.3	2.227	2.996	13.8	21.2	2 11	6 24.25	+ 7 48.1	1.812	2.585	16.3	21.5
425425	2010 <i>DU</i> ₈		1 3.0 263°32	4°1/ 4.1	18		450799	2007 <i>TO</i> ₃₄₅		1 3.0 168°57	0°2/ 3.1	18	
12 3	7 12.93	+ 9 35.2	2.343	3.163	11.5	21.1	12 3	7 19.88	+21 12.3	1.950	2.791	12.7	21.8
12 13	7 7.48	+ 9 26.7	2.260	3.154	8.8	20.9	12 13	7 12.68	+21 30.1	1.880	2.795	9.0	21.6
12 23	7 0.36	+ 9 28.8	2.202	3.146	6.0	20.7	12 23	7 3.27	+21 51.1	1.835	2.799	4.9	21.4
1 2	6 52.22	+ 9 41.9	2.173	3.138	4.2	20.5	1 2	6 52.53	+22 12.7	1.819	2.802	0.5	21.0
1 12	6 43.89	+10 5.2	2.173	3.129	5.0	20.6	1 12	6 41.65	+22 32.4	1.834	2.805	4.0	21.3
1 22	6 36.24	+10 37.0	2.202	3.120	7.7	20.7	1 22	6 31.83	+22 48.7	1.878	2.807	8.1	21.6
2 1	6 30.02	+11 15.0	2.257	3.112	10.6	20.9	2 1	6 24.05	+23 1.6	1.949	2.808	11.8	21.8
2 11	6 25.81	+11 56.7	2.336	3.103	13.2	21.1	2 11	6 18.96	+23 11.4	2.042	2.808	14.9	22.0
127906	2003 <i>GV</i> ₂₃		1 3.0 169°59	10°4/ 2.9	18		232065	2001 <i>UW</i> ₂₀₇		1 3.0 309°23	7°2/ 31.7	18	
12 3	7 37.46	+51 2.9	1.780	2.567	16.0	19.7	12 3	7 19.31	+42 4.6	2.133	2.959	12.3	20.1
12 13	7 26.03	+51 35.8	1.719	2.570	13.5	19.5	12 13	7 12.82	+43 16.3	2.057	2.944	9.9	20.0
12 23	7 10.65	+51 43.2	1.680	2.572	11.4	19.4	12 23	7 3.61	+44 17.0	2.006	2.930	7.9	19.8
1 2	6 53.18	+51 15.6	1.666	2.574	10.4	19.3	1 2	6 52.58	+44 59.5	1.981	2.916	7.3	19.7
1 12	6 36.13	+50 10.5	1.678	2.576	11.1	19.4	1 12	6 41.13	+45 19.3	1.985	2.903	8.4	19.8
1 22	6 21.76	+48 33.3	1.717	2.577	13.1	19.5	1 22	6 30.76	+45 15.8	2.014	2.889	10.7	19.9
2 1	6 11.51	+46 34.7	1.781	2.577	15.5	19.7	2 1	6 22.73	+44 51.9	2.067	2.876	13.2	20.0
2 11	6 5.86	+44 26.5	1.864	2.577	17.9	19.8	2 11	6 17.90	+44 13.2	2.141	2.863	15.6	20.2
407439	2010 <i>TN</i> ₁₇₄		1 3.0 102°79	6°3/ 1.5	18		335669	2006 <i>TS</i> ₁₇		1 3.0 79°06	0°3/ 3.0	18	
12 3	7 24.06	+38 20.9	1.916	2.747	13.3	22.0	12 3	7 22.58	+21 59.4	1.229	2.091	17.2	21.3
12 13	7 15.95	+39 34.6	1.868	2.766	10.2	21.8	12 13	7 15.30	+22 25.6	1.182	2.108	12.2	21.0
12 23	7 5.11	+40 36.9	1.846	2.784	7.5	21.7	12 23	7 4.89	+22 56.0	1.158	2.125	6.6	20.8
1 2	6 52.67	+41 20.6	1.852	2.802	6.4	21.7	1 2	6 52.69	+23 25.9	1.159	2.142	0.7	20.4
1 12	6 40.20	+41 41.5	1.886	2.820	7.7	21.8	1 12	6 40.59	+23 50.9	1.186	2.159	5.3	20.8
1 22	6 29.20	+41 40.4	1.947	2.837	10.3	22.0	1 22	6 30.35	+24 9.3	1.240	2.175	10.7	21.1
2 1	6 20.87	+41 21.1	2.033	2.853	13.0	22.2	2 1	6 23.23	+24 21.5	1.317	2.192	15.3	21.4
2 11	6 15.85	+40 49.6	2.140	2.870	15.4	22.4	2 11	6 19.88	+24 29.0	1.414	2.208	19.0	21.7
399781	2005 <i>ND</i> ₄₇		1 3.0 37°69	2°0/ 3.8	16		500158	2012 <i>ED</i> ₅		1 3.0 250°31	2°5/ 2.5	17	
12 3	7 17.33	+13 53.5	1.266	2.122	17.2	20.2	12 3	7 20.01	+30 12.5	2.488	3.322	10.5	22.7
12 13	7 11.35	+15 3.8	1.227	2.147	12.4	19.9	12 13	7 12.73	+30 35.2	2.388	3.298	7.7	22.4
12 23	7 2.65	+16 29.6	1.210	2.173	7.1	19.7	12 23	7 3.34	+30 54.2	2.315	3.274	4.6	22.2
1 2	6 52.44	+18 4.4	1.219	2.200	2.3	19.5	1 2	6 52.57	+31 6.1	2.273	3.249	2.5	22.0
1 12	6 42.31	+19 40.3	1.256	2.228	5.0	19.8	1 12	6 41.44	+31 8.5	2.261	3.223	4.4	22.1
1 22	6 33.77	+21 10.5	1.319	2.256	9.9	20.1	1 22	6 31.05	+31 0.7	2.280	3.196	7.6	22.3
2 1	6 27.94	+22 30.5	1.407	2.285	14.3	20.4	2 1	6 22.36	+30 44.2	2.327	3.169	10.8	22.4
2 11	6 25.44	+23 38.7	1.515	2.315	17.7	20.8	2 11	6 16.09	+30 21.5	2.397	3.141	13.6	22.6
265367	2004 <i>RZ</i> ₁₅₉		1 3.0 93°50	0°9/ 2.9	18		409447	2005 <i>QJ</i> ₇₇		1 3.0 113°33	0°5/ 2.9	18	
12 3	7 18.24	+25 26.6	2.005	2.851	12.2	20.5	12 3	7 19.35	+23 58.7	2.123	2.964	11.8	21.6
12 13	7 11.36	+25 33.6	1.946	2.864	8.6	20.3	12 13	7 12.03	+24 10.2	2.067	2.983	8.3	21.4
12 23	7 2.45	+25 39.6	1.913	2.878	4.7	20.1	12 23	7 2.78	+24 21.7	2.037	3.001	4.5	21.2
1 2	6 52.42	+25 42.0	1.909	2.891	1.0	19.9	1 2	6 52.50	+24 30.9	2.037	3.019	0.7	21.0
1 12	6 42.43	+25 39.4	1.935	2.905	3.9	20.1	1 12	6 42.27	+24 36.1	2.067	3.037	3.7	21.2
1 22	6 33.57	+25 31.8	1.990	2.918	7.8	20.4	1 22	6 33.14	+24 36.8	2.127	3.054	7.4	21.5
2 1	6 26.74	+25 20.1	2.071	2.931	11.2	20.6	2 1	6 25.95	+24 33.9	2.214	3.070	10.7	21.7
2 11	6 22.48	+25 6.2	2.175	2.944	14.0	20.8	2 11	6 21.24	+24 28.4	2.324	3.086	13.4	22.0
275778	2001 <i>QD</i> ₇		1 3.0 121°19	2°2/ 2.7	18		71757	2000 <i>RA</i> ₅₃		1 3.0 71°72	3°9/ 3.7	18	
12 3	7 25.03	+28 25.3	1.802	2.642	13.6	21.7	12 3	7 21.43	+14 22.7	1.178	2.033	18.3	18.9
12 13	7 16.31	+28 42.5	1.749	2.664	9.7	21.5	12 13	7 14.36	+14 13.4	1.135	2.053	13.4	18.7
12 23	7 5.14	+28 55.4	1.722	2.684	5.5	21.3	12 23	7 4.32	+14 17.5	1.112	2.072	8.1	18.5
1 2	6 52.67	+29 0.0	1.724	2.704	2.2	21.1	1 2	6 52.64	+14 34.0	1.115	2.092	4.0	18.3
1 12	6 40.36	+28 54.3	1.756	2.722	4.8	21.3	1 12	6 41.14	+14 59.9	1.144	2.112	6.3	18.5
1 22	6 29.56	+28 39.1	1.817	2.740	8.8	21.6	1 22	6 31.46	+15 32.0	1.198	2.132	11.1	18.8
2 1	6 21.30	+28 17.1	1.905	2.757	12.4	21.8	2 1	6 24.80	+16 7.2	1.275	2.152	15.6	19.1
2 11	6 16.12	+27 51.5	2.015	2.773	15.3	22.1	2 11	6 21.75	+16 42.9	1.371	2.171	19.3	19.4
126160	Fabienkuntz		1 3.0 29°90	0°5/ 2.9	18		219561	2001 <i>SC</i> ₂₆		1 3.0 332°06	5°4/ 2.2	18	
12 3	7 17.68	+24 29.6	1.727										

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1 3.0

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
205022	1998 <i>AW</i> ₄		1 3.0 303°72	3°5/ 4.3 18			101845	1999 <i>JL</i> ₇₄		1 3.1 298°43	5°0/ 1.4 18		
12 3	7 13.23	+10 24.6	2.152	2.978	12.2	19.9	12 3	7 19.26	+32 10.6	1.755	2.605	13.4	19.2
12 13	7 7.95	+10 51.1	2.060	2.960	9.2	19.6	12 13	7 12.97	+33 35.7	1.680	2.595	10.0	18.9
12 23	7 0.77	+11 30.9	1.993	2.943	6.0	19.4	12 23	7 3.81	+34 58.2	1.631	2.585	6.6	18.7
1 2	6 52.34	+12 23.0	1.954	2.926	3.6	19.2	1 2	6 52.67	+36 9.9	1.608	2.575	5.0	18.6
1 12	6 43.57	+13 25.0	1.945	2.909	4.7	19.3	1 12	6 41.02	+37 4.3	1.615	2.566	7.0	18.7
1 22	6 35.43	+14 33.2	1.965	2.892	7.9	19.4	1 22	6 30.43	+37 38.5	1.648	2.556	10.6	18.9
2 1	6 28.83	+15 44.1	2.013	2.876	11.3	19.6	2 1	6 22.28	+37 53.8	1.706	2.547	14.1	19.1
2 11	6 24.44	+16 54.2	2.084	2.859	14.3	19.8	2 11	6 17.50	+37 54.2	1.784	2.538	17.2	19.3
423359	2005 <i>JF</i> ₁₅		1 3.0 277°53	6°4/ 4.4 17			353293	2010 <i>GU</i> ₁₄₅		1 3.1 219°21	2°5/ 2.7 18		
12 3	7 12.84	+ 2 54.6	2.400	3.193	12.1	21.7	12 3	7 23.24	+29 59.9	1.963	2.802	12.7	21.4
12 13	7 7.46	+ 2 22.4	2.306	3.173	9.9	21.5	12 13	7 15.30	+30 9.0	1.880	2.793	9.2	21.1
12 23	7 0.42	+ 2 3.9	2.237	3.153	7.7	21.3	12 23	7 4.82	+30 12.8	1.823	2.783	5.4	20.9
1 2	6 52.31	+ 2 1.2	2.194	3.132	6.5	21.2	1 2	6 52.76	+30 7.4	1.795	2.773	2.6	20.7
1 12	6 43.92	+ 2 15.1	2.180	3.111	7.0	21.2	1 12	6 40.49	+29 50.8	1.796	2.761	4.9	20.8
1 22	6 36.11	+ 2 44.2	2.194	3.090	9.0	21.3	1 22	6 29.36	+29 23.6	1.828	2.749	8.8	21.0
2 1	6 29.64	+ 3 26.1	2.234	3.069	11.5	21.4	2 1	6 20.53	+28 48.7	1.886	2.736	12.6	21.2
2 11	6 25.13	+ 4 17.1	2.296	3.048	13.9	21.5	2 11	6 14.71	+28 9.8	1.965	2.723	15.7	21.4
425717	2011 <i>BS</i> ₂₉		1 3.0 306°03	0°4/ 2.9 18			27110	Annemaryvonne		1 3.1 70°09	1°4/ 3.3 18		
12 3	7 16.10	+21 20.4	1.817	2.668	13.0	21.0	12 3	7 21.05	+19 37.3	1.307	2.164	16.6	18.9
12 13	7 10.31	+22 6.4	1.739	2.660	9.3	20.7	12 13	7 14.01	+19 36.2	1.259	2.182	11.9	18.7
12 23	7 2.17	+22 58.2	1.686	2.652	5.0	20.5	12 23	7 4.13	+19 41.1	1.234	2.199	6.6	18.5
1 2	6 52.48	+23 51.6	1.661	2.644	0.6	20.1	1 2	6 52.68	+19 49.7	1.235	2.217	1.5	18.2
1 12	6 42.46	+24 42.5	1.666	2.637	4.2	20.4	1 12	6 41.37	+19 59.6	1.263	2.235	5.1	18.5
1 22	6 33.36	+25 27.6	1.699	2.630	8.7	20.6	1 22	6 31.75	+20 9.5	1.317	2.252	10.2	18.8
2 1	6 26.30	+26 5.3	1.757	2.623	12.6	20.9	2 1	6 25.00	+20 18.9	1.395	2.270	14.6	19.1
2 11	6 22.04	+26 35.8	1.837	2.616	15.9	21.1	2 11	6 21.70	+20 27.8	1.493	2.288	18.2	19.4
397340	2006 <i>TH</i> ₉₀		1 3.1 84°80	0°4/ 2.9 17			315545	2008 <i>BJ</i> ₄₆		1 3.1 64°96	7°6/ 2.8 18		
12 3	7 20.54	+23 24.7	1.767	2.614	13.5	21.3	12 3	7 26.88	+42 14.7	1.617	2.447	15.4	19.7
12 13	7 13.08	+23 35.3	1.720	2.639	9.5	21.1	12 13	7 18.20	+42 41.6	1.569	2.462	12.1	19.6
12 23	7 3.41	+23 46.7	1.697	2.663	5.1	20.9	12 23	7 6.37	+42 50.2	1.543	2.477	9.1	19.4
1 2	6 52.58	+23 56.0	1.703	2.686	0.6	20.6	1 2	6 52.90	+42 34.1	1.544	2.492	7.6	19.4
1 12	6 41.91	+24 1.4	1.739	2.710	4.1	20.9	1 12	6 39.75	+41 51.5	1.571	2.507	8.7	19.5
1 22	6 32.60	+24 2.5	1.803	2.733	8.3	21.2	1 22	6 28.69	+40 46.5	1.625	2.523	11.4	19.7
2 1	6 25.59	+24 0.0	1.893	2.755	12.0	21.5	2 1	6 20.91	+39 26.7	1.703	2.538	14.4	19.9
2 11	6 21.41	+23 55.3	2.005	2.778	14.9	21.8	2 11	6 16.93	+38 0.4	1.802	2.554	17.1	20.1
3418	Izvekov		1 3.1 70°78	0°3/ 2.9 18			389960	2012 <i>TS</i> ₁₉₀		1 3.1 160°60	5°5/ 2.2 18		
12 3	7 15.79	+22 51.1	2.168	3.013	11.4	17.2	12 3	7 24.63	+33 52.2	1.447	2.298	15.7	21.1
12 13	7 9.51	+23 8.2	2.113	3.031	8.1	17.0	12 13	7 17.01	+34 44.8	1.386	2.300	11.7	20.8
12 23	7 1.45	+23 26.8	2.085	3.050	4.3	16.8	12 23	7 6.00	+35 28.9	1.347	2.302	7.7	20.6
1 2	6 52.40	+23 44.4	2.085	3.068	0.5	16.5	1 2	6 52.89	+35 56.4	1.335	2.304	5.5	20.5
1 12	6 43.38	+23 59.2	2.116	3.087	3.5	16.8	1 12	6 39.59	+36 2.4	1.350	2.306	7.6	20.6
1 22	6 35.35	+24 10.3	2.176	3.105	7.1	17.1	1 22	6 28.01	+35 47.3	1.391	2.307	11.6	20.8
2 1	6 29.10	+24 17.6	2.263	3.124	10.3	17.3	2 1	6 19.63	+35 15.8	1.456	2.308	15.5	21.1
2 11	6 25.14	+24 21.9	2.373	3.142	13.0	17.5	2 11	6 15.22	+34 34.5	1.540	2.309	18.9	21.3
519843	2013 <i>LL</i> ₃₆		1 3.1 188°62	1°5/ 2.7 18			378446	2007 <i>RD</i> ₃₀₁		1 3.1 204°78	3°8/ 2.1 18		
12 3	7 18.46	+26 20.2	2.298	3.138	11.0	22.0	12 3	7 17.32	+33 46.5	2.410	3.247	10.7	21.6
12 13	7 11.54	+26 47.4	2.222	3.137	7.9	21.8	12 13	7 10.80	+34 26.0	2.338	3.246	7.9	21.5
12 23	7 2.64	+27 13.6	2.173	3.136	4.4	21.6	12 23	7 2.27	+34 59.8	2.292	3.244	5.2	21.3
1 2	6 52.53	+27 35.9	2.153	3.134	1.5	21.3	1 2	6 52.52	+35 23.7	2.275	3.242	3.8	21.2
1 12	6 42.26	+27 51.6	2.164	3.132	3.9	21.5	1 12	6 42.62	+35 35.1	2.288	3.240	5.2	21.3
1 22	6 32.86	+28 0.0	2.205	3.129	7.4	21.7	1 22	6 33.61	+35 33.6	2.330	3.238	7.9	21.4
2 1	6 25.24	+28 1.6	2.274	3.125	10.7	21.9	2 1	6 26.42	+35 20.8	2.398	3.236	10.7	21.6
2 11	6 20.03	+27 58.1	2.365	3.121	13.4	22.1	2 11	6 21.66	+34 59.8	2.489	3.233	13.1	21.8
240912	2006 <i>DU</i> ₁₉₀		1 3.1 143°57	1°0/ 2.8 18			205473	2001 <i>QE</i> ₁₅₅		1 3.1 21°11	10°7/ 4.3 18		
12 3	7 20.88	+24 32.0	1.928	2.771	12.7	21.4	12 3	7 31.05	+52 5.4	1.627	2.425	16.8	19.0
12 13	7 13.41	+24 58.6	1.865	2.781	9.0	21.2	12 13	7 21.30	+52 11.9	1.581	2.437	14.2	18.8
12 23	7 3.68	+25 25.5	1.827	2.792	4.9	21.0	12 23	7 7.97	+51 50.2	1.555	2.451	12.0	18.7
1 2	6 52.63	+25 49.2	1.819	2.801	1.1	20.7	1 2	6 53.03	+50 53.5	1.553	2.465	10.8	18.7
1 12	6 41.52	+26 6.9	1.841	2.810	4.2	20.9	1 12	6 38.92	+49 21.6	1.577	2.481	11.2	18.8
1 22	6 31.57	+26 17.6	1.892	2.818	8.2	21.2	1 22	6 27.59	+47 21.9	1.626	2.497	13.0	18.9
2 1	6 23.77	+26 22.0	1.969	2.826	11.8	21.4	2 1	6 20.18	+45 5.3	1.699	2.515	15.3	19.1
2 11	6 18.76	+26 21.7	2.069	2.833	14.8	21.7	2 11	6 16.97	+42 43.3	1.793	2.533	17.6	19.3
429023	2009 <i>BY</i> ₁₄₈		1 3.1 55°70	1°2/ 3.4 18			326729	2003 <i>GE</i> ₄₃		1 3.1 308°94	0°5/ 3.2 18		
12 3	7 13.82	+17 41.2	2.235	3.075	11.3	21.2	12 3	7 16.02	+18 6.7	1.623	2.475	14.2	20.1
12 13	7 8.18	+18 5.1	2.166	3.080	8.1	21.0	12 13	7 10.65	+19 3.9	1.533	2.454	10.3	19.8
12 23	7 0.79	+18 35.1	2.122	3.085	4.6	20.8	12 23	7 2.57	+20 13.2	1.467	2.432	5.7	19.5
1 2	6 52.35	+19 9.2	2.108	3.089	1.3	20.5	1 2	6 52.58	+21 30.4	1.429	2.411	0.8	19.1
1 12	6 43.80	+19 45.0	2.124	3.094	3.5	20.7	1 12	6 41.97	+22 49.6	1.419	2.391	4.6	19.4
1 22	6 36.04	+20 20.4	2.169	3.099	7.1	21.0	1 22	6 32.17	+24 5.3	1.437	2.371	9.6	19.6
2 1	6 29.88	+20 53.9	2.241	3.104	10.3	21.2	2 1	6 24.54	+25 13.6	1.480	2.351	14.2	19.8
2 11	6 25.88	+21 24.7	2.336	3.109	13.1	21.4	2 11	6 20.05	+26 13.0	1.544	2.331	18.0	20.0
134449	1998 <i>SR</i> ₈₁		1 3.1 100°27	6°0/ 4.5 18			428503	2007 <i>WQ</i> ₃₄		1 3.1 3°55	2°1/ 2.6 18		
12 3	7 16.90	+ 6 51.2	1.782	2.600	14.7	20.5							

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
284910	2010 <i>AU</i> ₁₁		1 3.1 321°38	1.2°/ 2.9	18		426306	2012 <i>TB</i> ₁₆₄		1 3.1 137°11	1.8°/ 3.6	18	
12 3	7 20.24	+25 49.0	1.269	2.134	16.5	20.3	12 3	7 13.20	+15 51.5	2.727	3.557	9.8	21.5
12 13	7 14.00	+25 44.4	1.199	2.126	11.9	20.1	12 13	7 7.48	+15 56.6	2.657	3.564	7.1	21.3
12 23	7 4.44	+25 37.8	1.151	2.118	6.6	19.7	12 23	7 0.36	+16 7.2	2.613	3.571	4.2	21.1
1 2	6 52.77	+25 25.9	1.128	2.111	1.3	19.4	1 2	6 52.42	+16 22.4	2.600	3.578	1.9	21.0
1 12	6 40.83	+25 6.6	1.131	2.104	5.5	19.6	1 12	6 44.42	+16 41.0	2.617	3.585	3.3	21.1
1 22	6 30.47	+24 40.9	1.160	2.097	11.1	19.9	1 22	6 37.08	+17 1.7	2.665	3.591	6.1	21.3
2 1	6 23.18	+24 11.6	1.212	2.091	16.1	20.2	2 1	6 31.05	+17 23.5	2.740	3.597	8.9	21.5
2 11	6 19.77	+23 41.7	1.283	2.085	20.2	20.4	2 11	6 26.78	+17 45.4	2.840	3.603	11.2	21.6
339534	2005 <i>JL</i> ₁₄		1 3.1 166°04	7.2°/ 4.9	17		161205	2002 <i>TA</i> ₂₇₁		1 3.1 73°09	2°1/ 2.7	18	
12 3	7 12.50	- 5 11.9	3.138	3.876	10.8	21.9	12 3	7 17.70	+28 44.5	2.118	2.963	11.6	20.1
12 13	7 6.79	- 6 1.6	3.069	3.880	9.3	21.8	12 13	7 11.00	+28 59.2	2.063	2.979	8.3	19.9
12 23	6 59.90	- 6 36.8	3.024	3.885	8.0	21.7	12 23	7 2.34	+29 10.4	2.033	2.995	4.7	19.7
1 2	6 52.32	- 6 55.3	3.005	3.888	7.3	21.7	1 2	6 52.61	+29 15.2	2.031	3.011	2.1	19.6
1 12	6 44.66	- 6 56.2	3.015	3.892	7.4	21.7	1 12	6 42.94	+29 11.9	2.060	3.026	4.2	19.8
1 22	6 37.55	- 6 40.6	3.052	3.895	8.4	21.8	1 22	6 34.37	+29 0.8	2.118	3.042	7.6	20.0
2 1	6 31.51	- 6 10.6	3.114	3.897	9.8	21.9	2 1	6 27.77	+28 43.5	2.202	3.058	10.8	20.2
2 11	6 26.98	- 5 29.5	3.199	3.899	11.3	22.0	2 11	6 23.66	+28 22.3	2.309	3.073	13.5	20.4
401627	2013 <i>GJ</i> ₆₇		1 3.1 352°37	2°7/ 3.5	18		464429	2016 <i>BL</i> ₃₂		1 3.1 213°47	1°0/ 2.8	16	
12 3	7 17.53	+16 33.1	1.481	2.333	15.3	20.9	12 3	7 17.56	+23 55.3	2.213	3.055	11.3	21.5
12 13	7 11.52	+16 23.8	1.414	2.332	11.2	20.7	12 13	7 11.06	+24 35.8	2.133	3.050	8.1	21.3
12 23	7 2.88	+16 23.2	1.369	2.331	6.6	20.4	12 23	7 2.51	+25 18.3	2.080	3.044	4.4	21.1
1 2	6 52.62	+16 30.4	1.351	2.330	2.8	20.2	1 2	6 52.65	+25 59.4	2.056	3.038	1.1	20.8
1 12	6 42.18	+16 43.8	1.360	2.330	5.2	20.3	1 12	6 42.52	+26 35.6	2.063	3.031	3.9	21.0
1 22	6 32.98	+17 1.5	1.396	2.330	9.9	20.6	1 22	6 33.21	+27 5.1	2.099	3.025	7.6	21.3
2 1	6 26.20	+17 22.1	1.456	2.330	14.2	20.9	2 1	6 25.65	+27 27.3	2.163	3.017	11.0	21.5
2 11	6 22.58	+17 43.9	1.536	2.330	17.8	21.1	2 11	6 20.52	+27 43.2	2.249	3.009	13.9	21.6
68551	2001 <i>XH</i> ₅₇		1 3.1 165°50	2°1/ 2.3	18		157260	2004 <i>RZ</i> ₁₈₂		1 3.1 100°44	2°4/ 3.5	18	
12 3	7 18.90	+27 9.0	2.318	3.157	11.0	19.2	12 3	7 16.28	+16 14.8	1.988	2.826	12.6	19.9
12 13	7 11.91	+28 4.1	2.247	3.161	7.9	19.0	12 13	7 10.05	+16 1.0	1.922	2.833	9.2	19.7
12 23	7 2.89	+28 58.5	2.204	3.166	4.5	18.8	12 23	7 1.87	+15 53.7	1.881	2.840	5.4	19.5
1 2	6 52.63	+29 48.0	2.191	3.169	2.1	18.7	1 2	6 52.59	+15 52.3	1.869	2.847	2.5	19.3
1 12	6 42.16	+30 28.9	2.209	3.172	4.3	18.8	1 12	6 43.25	+15 56.0	1.886	2.854	4.3	19.4
1 22	6 32.55	+30 59.4	2.257	3.175	7.6	19.0	1 22	6 34.89	+16 3.9	1.932	2.860	8.0	19.7
2 1	6 24.72	+31 19.8	2.332	3.177	10.7	19.2	2 1	6 28.37	+16 14.9	2.004	2.867	11.4	19.9
2 11	6 19.33	+31 31.7	2.431	3.179	13.3	19.4	2 11	6 24.26	+16 28.1	2.098	2.873	14.3	20.1
171148	2005 <i>GX</i> ₆₈		1 3.1 143°61	5°8/31.6	18		457237	2008 <i>LJ</i> ₁₄		1 3.1 269°97	2°2/ 3.8	16	
12 3	7 21.27	+43 38.6	3.074	3.876	9.5	20.6	12 3	7 16.10	+14 37.2	1.887	2.725	13.1	21.6
12 13	7 13.51	+44 52.6	3.018	3.887	7.7	20.5	12 13	7 10.25	+15 6.3	1.803	2.714	9.7	21.4
12 23	7 3.74	+45 56.2	2.988	3.898	6.3	20.4	12 23	7 2.17	+15 46.4	1.745	2.704	5.8	21.1
1 2	6 52.71	+46 44.4	2.989	3.909	5.8	20.4	1 2	6 52.64	+16 35.6	1.714	2.693	2.4	20.9
1 12	6 41.46	+47 14.4	3.019	3.918	6.6	20.5	1 12	6 42.76	+17 30.4	1.713	2.683	4.4	21.0
1 22	6 31.03	+47 25.8	3.077	3.928	8.2	20.6	1 22	6 33.70	+18 27.4	1.741	2.672	8.5	21.2
2 1	6 22.36	+47 20.9	3.161	3.937	9.9	20.7	2 1	6 26.51	+19 23.4	1.795	2.661	12.3	21.4
2 11	6 16.08	+47 3.5	3.267	3.945	11.5	20.9	2 11	6 21.92	+20 16.4	1.871	2.650	15.6	21.6
495431	2014 <i>SM</i> ₂₁₅		1 3.1 48°88	6°4/31.9	17		3000	Leonardo		1 3.1 66°71	2°1/ 3.4	18	
12 3	7 20.86	+35 18.2	1.724	2.569	13.8	20.6	12 3	7 20.55	+17 49.5	1.338	2.193	16.5	16.9
12 13	7 14.08	+37 3.4	1.672	2.580	10.5	20.4	12 13	7 13.59	+17 46.7	1.293	2.213	11.9	16.7
12 23	7 4.37	+38 41.1	1.645	2.591	7.5	20.3	12 23	7 3.92	+17 52.0	1.270	2.234	6.7	16.5
1 2	6 52.80	+40 2.1	1.646	2.602	6.4	20.2	1 2	6 52.79	+18 3.3	1.273	2.254	2.2	16.2
1 12	6 40.93	+40 59.8	1.675	2.614	8.1	20.4	1 12	6 41.80	+18 18.3	1.304	2.275	5.1	16.5
1 22	6 30.39	+41 32.8	1.731	2.625	11.0	20.6	1 22	6 32.47	+18 35.3	1.361	2.296	10.0	16.8
2 1	6 22.53	+41 43.7	1.810	2.637	14.1	20.8	2 1	6 25.88	+18 52.8	1.442	2.316	14.3	17.1
2 11	6 18.14	+41 38.0	1.909	2.649	16.7	21.0	2 11	6 22.62	+19 10.1	1.543	2.337	17.8	17.4
152403	2005 <i>UT</i> ₃₀₇		1 3.1 116°93	1°7/ 2.7	18		190731	2001 <i>PW</i> ₁₄		1 3.1 102°32	3°5/ 3.9	18	
12 3	7 17.99	+26 32.3	1.906	2.755	12.6	20.5	12 3	7 21.02	+13 0.2	1.585	2.420	15.4	20.4
12 13	7 11.52	+26 59.9	1.838	2.757	9.0	20.3	12 13	7 13.62	+13 5.3	1.534	2.442	11.3	20.2
12 23	7 2.76	+27 26.7	1.796	2.760	5.0	20.1	12 23	7 3.85	+13 22.6	1.508	2.463	7.0	20.0
1 2	6 52.64	+27 48.8	1.781	2.762	1.8	19.9	1 2	6 52.78	+13 50.4	1.508	2.484	3.7	19.8
1 12	6 42.38	+28 3.4	1.796	2.764	4.4	20.1	1 12	6 41.79	+14 26.0	1.538	2.504	5.3	20.0
1 22	6 33.21	+28 9.6	1.840	2.767	8.4	20.3	1 22	6 32.17	+15 6.3	1.595	2.523	9.3	20.2
2 1	6 26.14	+28 8.3	1.909	2.769	12.0	20.5	2 1	6 24.93	+15 48.4	1.678	2.542	13.1	20.5
2 11	6 21.84	+28 1.5	2.000	2.771	15.0	20.8	2 11	6 20.65	+16 30.0	1.782	2.561	16.3	20.8
77895	2001 <i>SH</i> ₃₂₄		1 3.1 114°61	0°4/ 2.9	18		128142	2003 <i>QH</i> ₆₀		1 3.1 104°28	0°3/ 3.0	18	
12 3	7 11.47	+23 41.5	3.621	4.455	7.5	19.4	12 3	7 16.60	+22 47.3	2.175	3.018	11.4	20.2
12 13	7 6.01	+24 4.5	3.558	4.471	5.3	19.2	12 13	7 10.20	+23 8.5	2.112	3.030	8.1	20.0
12 23	6 59.46	+24 27.9	3.523	4.487	2.8	19.1	12 23	7 1.94	+23 31.3	2.076	3.041	4.4	19.8
1 2	6 52.31	+24 50.3	3.520	4.502	0.5	18.9	1 2	6 52.60	+23 53.3	2.069	3.052	0.5	19.5
1 12	6 45.13	+25 10.2	3.548	4.517	2.4	19.1	1 12	6 43.22	+24 12.2	2.093	3.063	3.6	19.8
1 22	6 38.47	+25 27.1	3.608	4.532	4.8	19.3	1 22	6 34.79	+24 27.0	2.146	3.074	7.3	20.0
2 1	6 32.84	+25 40.5	3.696	4.547	7.0	19.4	2 1	6 28.14	+24 37.5	2.225	3.085	10.5	20.3
2 11	6 28.61	+25 50.8	3.810	4.561	8.8	19.6	2 11	6 23.82	+24 44.4	2.328	3.096	13.3	20.5
201420	2002 <i>XG</i> ₅₆		1 3.1 72°48	1°0/ 2.9	18		212321	2005 <i>QQ</i> ₁₂₆		1 3.1 340°17	4°8/ 4.1	18	
12 3	7 17.10	+26 25.6	2.165	3.010	11.4								

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
251040	2006 <i>RN</i> ₃		1 3.1 109°37'	4.5/ 4.1	18		243965	2001 <i>QT</i> ₂₆₄		1 3.1 92°75'	3.3/ 3.7	18	
12 3	7 18.41	+ 9 55.3	1.972	2.792	13.4	21.8	12 3	7 15.04	+13 5.7	2.368	3.193	11.2	19.7
12 13	7 11.41	+ 9 40.6	1.918	2.813	10.1	21.6	12 13	7 8.86	+12 33.2	2.306	3.207	8.4	19.5
12 23	7 2.55	+ 9 37.8	1.889	2.833	6.8	21.5	12 23	7 1.14	+12 7.9	2.270	3.220	5.4	19.4
1 2	6 52.67	+ 9 47.0	1.887	2.853	4.5	21.4	1 2	6 52.57	+11 50.3	2.264	3.234	3.4	19.3
1 12	6 42.84	+10 7.1	1.916	2.873	5.5	21.5	1 12	6 44.01	+11 40.6	2.287	3.247	4.5	19.3
1 22	6 34.08	+10 35.8	1.973	2.891	8.5	21.7	1 22	6 36.30	+11 38.1	2.340	3.260	7.3	19.5
2 1	6 27.20	+11 10.5	2.057	2.910	11.6	21.9	2 1	6 30.11	+11 41.9	2.420	3.273	10.1	19.7
2 11	6 22.72	+11 48.6	2.163	2.927	14.2	22.1	2 11	6 25.93	+11 50.6	2.524	3.286	12.5	19.9
463339	2012 <i>OM</i> ₂		1 3.1 150°87'	4.5/ 4.9	18		122009	2000 <i>GG</i> ₁₀		1 3.1 197°19'	2.4/ 3.6	18	
12 3	7 13.25	+ 4 54.5	2.863	3.656	10.4	21.7	12 3	7 19.78	+16 16.8	1.696	2.537	14.3	20.6
12 13	7 7.44	+ 4 57.7	2.792	3.664	8.2	21.5	12 13	7 12.96	+16 18.5	1.622	2.535	10.4	20.3
12 23	7 0.33	+ 5 12.7	2.746	3.672	6.0	21.4	12 23	7 3.67	+16 28.5	1.572	2.532	6.1	20.1
1 2	6 52.45	+ 5 39.6	2.730	3.680	4.6	21.3	1 2	6 52.84	+16 45.4	1.550	2.529	2.5	19.8
1 12	6 44.51	+ 6 17.4	2.744	3.687	5.0	21.3	1 12	6 41.77	+17 7.3	1.557	2.526	4.8	20.0
1 22	6 37.16	+ 7 3.9	2.787	3.693	6.9	21.5	1 22	6 31.80	+17 32.0	1.592	2.522	9.2	20.2
2 1	6 31.02	+ 7 56.5	2.859	3.700	9.1	21.6	2 1	6 24.04	+17 57.9	1.653	2.518	13.3	20.5
2 11	6 26.51	+ 8 52.4	2.956	3.705	11.1	21.8	2 11	6 19.22	+18 23.8	1.735	2.513	16.7	20.7
36015	1999 <i>NN</i> ₄₀		1 3.1 125°22'	2.9/ 2.6	18		16236	<i>Stebrehmer</i>		1 3.1 161°36'	1.1/ 3.4	18	
12 3	7 20.15	+31 28.5	2.204	3.042	11.5	19.4	12 3	7 17.66	+18 41.5	2.307	3.140	11.2	19.7
12 13	7 12.75	+31 44.2	2.142	3.054	8.3	19.3	12 13	7 10.88	+18 49.3	2.236	3.147	8.1	19.5
12 23	7 3.32	+31 54.0	2.107	3.065	5.0	19.1	12 23	7 2.32	+19 1.3	2.191	3.153	4.5	19.3
1 2	6 52.76	+31 54.8	2.100	3.075	2.9	18.9	1 2	6 52.71	+19 16.1	2.176	3.158	1.2	19.1
1 12	6 42.22	+31 44.9	2.124	3.086	4.6	19.1	1 12	6 43.00	+19 32.0	2.193	3.163	3.5	19.2
1 22	6 32.81	+31 25.0	2.177	3.095	7.8	19.3	1 22	6 34.15	+19 47.8	2.239	3.167	7.1	19.5
2 1	6 25.42	+30 57.4	2.257	3.105	10.9	19.5	2 1	6 26.96	+20 2.9	2.313	3.170	10.3	19.7
2 11	6 20.61	+30 25.1	2.360	3.114	13.5	19.7	2 11	6 21.98	+20 16.9	2.410	3.173	13.0	19.9
360200	1997 <i>UF</i> ₈		1 3.1 136°68'	9.9/31.7	18		75607	2000 <i>AD</i> ₃₃		1 3.1 86°79'	1.5/ 2.7	18	
12 3	7 39.69	+59 11.5	2.798	3.520	12.3	21.6	12 3	7 20.86	+24 3.3	1.693	2.542	13.9	19.0
12 13	7 27.49	+60 28.7	2.760	3.539	11.1	21.5	12 13	7 13.64	+25 0.1	1.643	2.563	9.8	18.8
12 23	7 11.62	+61 23.8	2.746	3.558	10.2	21.5	12 23	7 3.96	+25 58.7	1.618	2.583	5.4	18.5
1 2	6 53.59	+61 49.4	2.756	3.575	9.9	21.5	1 2	6 52.87	+26 53.3	1.622	2.604	1.6	18.3
1 12	6 35.55	+61 42.6	2.792	3.592	10.4	21.6	1 12	6 41.77	+27 39.5	1.655	2.624	4.7	18.6
1 22	6 19.61	+61 6.1	2.852	3.608	11.3	21.7	1 22	6 32.01	+28 14.9	1.717	2.644	8.9	18.9
2 1	6 7.29	+60 6.2	2.934	3.623	12.4	21.8	2 1	6 24.65	+28 39.8	1.804	2.664	12.6	19.2
2 11	5 59.26	+58 51.4	3.036	3.637	13.5	21.9	2 11	6 20.32	+28 56.0	1.913	2.683	15.7	19.4
238	<i>Hypatia</i>		1 3.1 58°66'	6.5/ 4.7	18		458366	2010 <i>VV</i> ₂₁₈		1 3.1 57°27'	8.2/ 2.4	18	
12 3	7 14.06	+ 4 31.6	1.956	2.765	13.9	12.6	12 3	7 25.89	+43 2.9	1.617	2.446	15.4	20.7
12 13	7 8.46	+ 4 5.1	1.894	2.773	11.1	12.5	12 13	7 17.73	+43 46.6	1.568	2.459	12.3	20.6
12 23	7 1.03	+ 3 54.8	1.855	2.782	8.3	12.3	12 23	7 6.31	+44 12.1	1.543	2.472	9.5	20.4
1 2	6 52.54	+ 4 2.3	1.842	2.790	6.6	12.2	1 2	6 53.11	+44 11.9	1.543	2.485	8.2	20.4
1 12	6 43.98	+ 4 27.0	1.857	2.798	7.1	12.3	1 12	6 40.11	+43 43.4	1.569	2.499	9.3	20.5
1 22	6 36.33	+ 5 6.4	1.899	2.807	9.4	12.4	1 22	6 29.12	+42 50.1	1.621	2.512	11.9	20.7
2 1	6 30.40	+ 5 56.8	1.967	2.816	12.2	12.6	2 1	6 21.43	+41 39.0	1.696	2.526	14.8	20.9
2 11	6 26.76	+ 6 53.7	2.056	2.824	14.8	12.8	2 11	6 17.60	+40 18.7	1.792	2.540	17.3	21.1
449110	2012 <i>WP</i> ₃₂		1 3.1 321°26'	1.2/ 3.3	18		421421	2013 <i>WM</i> ₈₆		1 3.1 160°81'	2.2/ 3.8	18	
12 3	7 16.45	+19 18.2	1.203	2.071	17.0	20.8	12 3	7 14.07	+14 37.1	2.326	3.158	11.2	20.3
12 13	7 11.53	+19 30.5	1.126	2.055	12.4	20.5	12 13	7 8.38	+14 54.3	2.252	3.159	8.2	20.1
12 23	7 3.31	+19 52.1	1.071	2.038	7.0	20.1	12 23	7 1.00	+15 19.5	2.203	3.160	4.9	19.9
1 2	6 52.80	+20 20.0	1.040	2.023	1.5	19.7	1 2	6 52.60	+15 51.4	2.183	3.161	2.3	19.8
1 12	6 41.72	+20 50.6	1.035	2.008	5.6	19.9	1 12	6 44.05	+16 27.9	2.194	3.162	3.8	19.9
1 22	6 31.93	+21 20.6	1.053	1.994	11.5	20.2	1 22	6 36.23	+17 6.9	2.234	3.163	7.0	20.1
2 1	6 25.04	+21 48.1	1.094	1.981	16.8	20.5	2 1	6 29.92	+17 46.4	2.302	3.163	10.2	20.3
2 11	6 22.06	+22 12.3	1.153	1.969	21.3	20.7	2 11	6 25.68	+18 24.9	2.393	3.164	12.9	20.5
132779	2002 <i>PW</i> ₁₁₀		1 3.1 318°98'	1.1/ 3.2	18		166812	2002 <i>VU</i> ₈₁		1 3.1 71°71'	4.7/ 3.9	18	
12 3	7 16.34	+20 53.9	2.008	2.853	12.2	19.6	12 3	7 15.26	+ 9 21.6	2.177	2.996	12.4	19.6
12 13	7 10.19	+20 31.6	1.932	2.849	8.7	19.4	12 13	7 9.07	+ 8 42.5	2.124	3.016	9.5	19.5
12 23	7 2.02	+20 10.9	1.881	2.845	4.9	19.2	12 23	7 1.27	+ 8 14.0	2.096	3.036	6.6	19.3
1 2	6 52.64	+19 51.4	1.858	2.841	1.2	18.9	1 2	6 52.61	+ 7 57.5	2.097	3.057	4.8	19.2
1 12	6 43.16	+19 32.9	1.866	2.837	3.9	19.1	1 12	6 44.03	+ 7 52.9	2.126	3.077	5.6	19.3
1 22	6 34.63	+19 15.5	1.902	2.833	7.9	19.3	1 22	6 36.36	+ 7 59.2	2.184	3.097	8.1	19.5
2 1	6 27.97	+19 0.0	1.965	2.829	11.5	19.5	2 1	6 30.33	+ 8 14.4	2.269	3.117	10.8	19.7
2 11	6 23.78	+18 46.5	2.050	2.826	14.5	19.7	2 11	6 26.41	+ 8 36.1	2.376	3.137	13.2	19.9
227076	2005 <i>JT</i> ₁₄₄		1 3.1 105°33'	0.0/ 3.0	18		46399	2002 <i>CD</i> ₁₆₉		1 3.1 109°92'	1.1/ 3.4	18	
12 3	7 23.66	+21 26.2	1.482	2.331	15.5	21.3	12 3	7 16.19	+18 14.3	1.978	2.821	12.4	19.7
12 13	7 15.73	+21 51.0	1.433	2.352	11.0	21.1	12 13	7 10.12	+18 36.2	1.910	2.825	8.9	19.5
12 23	7 5.09	+22 19.5	1.407	2.373	5.9	20.9	12 23	7 2.03	+19 4.4	1.866	2.829	5.0	19.2
1 2	6 52.95	+22 47.8	1.409	2.393	0.6	20.6	1 2	6 52.71	+19 36.6	1.851	2.833	1.3	19.0
1 12	6 40.90	+23 12.2	1.440	2.412	4.7	20.9	1 12	6 43.24	+20 10.3	1.865	2.837	3.8	19.2
1 22	6 30.45	+23 31.3	1.499	2.430	9.5	21.2	1 22	6 34.71	+20 43.0	1.909	2.840	7.8	19.4
2 1	6 22.73	+23 45.1	1.582	2.448	13.7	21.5	2 1	6 28.03	+21 13.5	1.979	2.844	11.4	19.7
2 11	6 18.35	+23 54.9	1.687	2.465	17.1	21.8	2 11	6 23.83	+21 41.0	2.072	2.848	14.4	19.9
151833	2003 <i>FE</i> ₁₂₀		1 3.1 308°31'	3.1/ 3.7	18		178935	2001 <i>QY</i> ₆₈		1 3.1 119°52'	3.1/ 2.8	18	
12 3	7 15.14	+14 36.1	1.656	2.502	14.3	19							

EPHEMERIDES

1 3.1

1 3.1

2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
73779	1994 <i>RM</i> ₂		1 3.1 97°56	1.2/ 2.9	17		113700	2002 <i>TV</i> ₁₂₄		1 3.1 354°14	1.4/ 2.9	18	
12 3	7 22.51	+26 10.0	1.842	2.685	13.2	20.3	12 3	7 17.25	+27 25.9	1.906	2.757	12.5	19.1
12 13	7 14.51	+26 15.7	1.793	2.710	9.4	20.2	12 13	7 11.02	+27 17.8	1.835	2.754	9.0	18.9
12 23	7 4.29	+26 19.3	1.769	2.733	5.1	19.9	12 23	7 2.58	+27 6.3	1.788	2.753	5.0	18.7
1 2	6 52.93	+26 17.8	1.774	2.756	1.3	19.7	1 2	6 52.84	+26 49.3	1.770	2.751	1.4	18.4
1 12	6 41.74	+26 9.9	1.810	2.779	4.2	20.0	1 12	6 43.04	+26 26.0	1.780	2.750	4.2	18.6
1 22	6 31.96	+25 56.1	1.874	2.801	8.2	20.3	1 22	6 34.34	+25 57.2	1.819	2.750	8.2	18.9
2 1	6 24.50	+25 38.2	1.965	2.823	11.8	20.5	2 1	6 27.74	+25 24.9	1.884	2.749	11.9	19.1
2 11	6 19.90	+25 18.4	2.077	2.844	14.7	20.8	2 11	6 23.84	+24 51.5	1.971	2.749	15.0	19.3
271289	2003 <i>UW</i> ₂₆₄		1 3.1 57°78	0°8/ 3.3	18		298844	2004 <i>RL</i> ₁₉₁		1 3.1 139°28	12°1/ 1.8	17	
12 3	7 21.15	+18 34.3	1.094	1.960	18.5	20.0	12 3	7 41.38	+56 48.1	1.960	2.714	15.8	21.3
12 13	7 14.61	+19 16.5	1.051	1.978	13.2	19.8	12 13	7 29.44	+58 3.7	1.916	2.727	14.0	21.2
12 23	7 4.75	+20 9.3	1.029	1.996	7.2	19.5	12 23	7 12.96	+58 52.3	1.893	2.740	12.6	21.1
1 2	6 52.98	+21 6.8	1.031	2.014	1.2	19.2	1 2	6 53.89	+59 3.4	1.895	2.751	12.1	21.1
1 12	6 41.28	+22 2.5	1.059	2.032	5.5	19.5	1 12	6 35.09	+58 33.2	1.921	2.762	12.7	21.2
1 22	6 31.48	+22 52.0	1.112	2.051	11.2	19.9	1 22	6 19.21	+57 26.4	1.970	2.772	14.0	21.3
2 1	6 24.95	+23 33.3	1.188	2.070	16.1	20.2	2 1	6 7.94	+55 53.0	2.041	2.781	15.7	21.4
2 11	6 22.34	+24 6.5	1.282	2.089	20.0	20.5	2 11	6 1.78	+54 4.5	2.131	2.790	17.3	21.6
367370	2008 <i>GY</i> ₃₂		1 3.1 214°90	0°4/ 3.0	18		80400	1999 <i>XU</i> ₁₇₈		1 3.1 75°40	2°5/ 2.7	18	
12 3	7 17.57	+22 19.5	2.048	2.892	12.0	21.4	12 3	7 23.24	+26 48.9	1.292	2.152	16.6	18.6
12 13	7 11.18	+22 49.3	1.971	2.888	8.6	21.2	12 13	7 15.92	+27 27.4	1.244	2.169	11.9	18.4
12 23	7 2.66	+23 22.2	1.919	2.884	4.7	20.9	12 23	7 5.43	+28 4.3	1.220	2.185	6.6	18.1
1 2	6 52.79	+23 55.1	1.896	2.879	0.6	20.6	1 2	6 53.13	+28 33.2	1.221	2.201	2.6	17.9
1 12	6 42.68	+24 24.9	1.903	2.874	3.9	20.8	1 12	6 40.91	+28 50.0	1.249	2.218	5.8	18.2
1 22	6 33.45	+24 49.9	1.940	2.868	7.9	21.1	1 22	6 30.53	+28 54.2	1.303	2.234	10.7	18.5
2 1	6 26.10	+25 9.5	2.003	2.863	11.5	21.3	2 1	6 23.30	+28 48.0	1.381	2.251	15.1	18.8
2 11	6 21.29	+25 24.3	2.088	2.857	14.5	21.5	2 11	6 19.85	+28 35.4	1.478	2.267	18.7	19.1
381190	2007 <i>PO</i> ₂₄		1 3.1 50°52	5°3/ 2.9	18		197493	2004 <i>BU</i> ₆₈		1 3.1 1°68	25°0/ 11.6	18	
12 3	7 23.06	+38 20.4	1.876	2.710	13.4	19.6	12 3	7 13.17	-20 21.6	0.940	1.690	29.4	19.4
12 13	7 14.99	+38 27.9	1.832	2.734	10.1	19.5	12 13	7 9.39	-22 38.6	0.901	1.687	27.8	19.2
12 23	7 4.55	+38 22.3	1.814	2.759	7.0	19.3	12 23	7 2.21	-24 0.8	0.873	1.686	26.4	19.1
1 2	6 52.95	+37 59.7	1.822	2.783	5.3	19.3	1 2	6 52.84	-24 14.5	0.856	1.686	25.4	19.1
1 12	6 41.70	+37 19.6	1.859	2.808	6.5	19.4	1 12	6 43.14	-23 13.7	0.852	1.687	25.0	19.0
1 22	6 32.12	+36 25.1	1.924	2.833	9.3	19.6	1 22	6 35.04	-21 3.2	0.861	1.690	25.4	19.1
2 1	6 25.13	+35 21.2	2.015	2.859	12.2	19.8	2 1	6 30.10	-17 56.9	0.884	1.693	26.5	19.2
2 11	6 21.20	+34 13.3	2.128	2.884	14.7	20.1	2 11	6 29.22	-14 14.9	0.921	1.699	28.1	19.3
318138	2004 <i>PK</i> ₃₉		1 3.1 163°41	5°0/ 4.7	18		157525	2005 <i>SM</i> ₁₉₀		1 3.1 75°50	2°7/ 3.8	18	
12 3	7 15.14	+ 6 7.3	2.335	3.139	12.1	21.4	12 3	7 16.54	+14 50.2	1.799	2.639	13.6	20.2
12 13	7 9.06	+ 6 1.0	2.263	3.143	9.5	21.2	12 13	7 10.45	+14 54.5	1.737	2.648	10.0	20.0
12 23	7 1.35	+ 6 7.9	2.215	3.147	6.8	21.0	12 23	7 2.25	+15 8.1	1.699	2.658	6.0	19.7
1 2	6 52.66	+ 6 28.5	2.196	3.151	5.1	20.9	1 2	6 52.83	+15 29.7	1.690	2.667	2.8	19.6
1 12	6 43.86	+ 7 1.7	2.206	3.154	5.7	21.0	1 12	6 43.33	+15 57.4	1.709	2.677	4.6	19.7
1 22	6 35.80	+ 7 45.3	2.246	3.157	8.0	21.1	1 22	6 34.89	+16 28.7	1.756	2.687	8.4	20.0
2 1	6 29.22	+ 8 36.2	2.312	3.159	10.7	21.3	2 1	6 28.45	+17 1.6	1.829	2.696	12.1	20.2
2 11	6 24.68	+ 9 31.1	2.402	3.161	13.2	21.5	2 11	6 24.60	+17 34.3	1.924	2.706	15.2	20.4
418887	2008 <i>YF</i> ₁₁₅		1 3.1 305°41	2°4/ 3.2	18		351753	2006 <i>DO</i> ₁₄₆		1 3.1 335°02	0°7/ 3.0	18	
12 3	7 22.10	+32 34.8	2.190	3.025	11.7	20.7	12 3	7 18.13	+23 54.3	1.256	2.124	16.5	21.0
12 13	7 14.20	+32 1.6	2.107	3.017	8.6	20.5	12 13	7 12.61	+24 1.6	1.187	2.115	11.9	20.7
12 23	7 4.17	+31 19.0	2.051	3.009	5.1	20.3	12 23	7 3.86	+24 10.7	1.139	2.107	6.5	20.4
1 2	6 52.94	+30 25.4	2.024	3.001	2.5	20.1	1 2	6 53.01	+24 18.0	1.117	2.100	0.9	20.0
1 12	6 41.74	+29 21.0	2.028	2.994	4.3	20.2	1 12	6 41.83	+24 20.6	1.120	2.093	5.4	20.3
1 22	6 31.71	+28 8.9	2.063	2.986	7.9	20.4	1 22	6 32.13	+24 17.5	1.148	2.087	11.0	20.6
2 1	6 23.79	+26 53.1	2.126	2.979	11.2	20.6	2 1	6 25.37	+24 9.9	1.199	2.081	16.0	20.9
2 11	6 18.55	+25 38.0	2.213	2.972	14.1	20.8	2 11	6 22.41	+23 59.6	1.269	2.077	20.1	21.1
369809	2012 <i>HE</i> ₄₇		1 3.1 217°75	1°6/ 3.5	18		277931	2006 <i>KJ</i> ₁₁₉		1 3.1 120°87	4°9/ 4.4	18	
12 3	7 15.93	+17 7.6	2.113	2.951	11.9	21.0	12 3	7 13.75	+ 7 11.9	2.325	3.136	11.9	21.4
12 13	7 9.90	+17 19.4	2.036	2.948	8.7	20.8	12 13	7 8.10	+ 6 54.8	2.256	3.141	9.3	21.3
12 23	7 1.92	+17 37.7	1.983	2.944	5.0	20.6	12 23	7 0.86	+ 6 49.8	2.212	3.147	6.6	21.1
1 2	6 52.74	+18 1.0	1.960	2.940	1.7	20.3	1 2	6 52.69	+ 6 57.7	2.196	3.152	5.0	21.0
1 12	6 43.36	+18 27.4	1.966	2.936	3.9	20.5	1 12	6 44.43	+ 7 17.7	2.209	3.157	5.6	21.1
1 22	6 34.80	+18 54.8	2.002	2.932	7.6	20.7	1 22	6 36.92	+ 7 48.2	2.250	3.162	7.9	21.2
2 1	6 27.95	+19 22.0	2.064	2.927	11.1	20.9	2 1	6 30.88	+ 8 26.5	2.318	3.167	10.6	21.4
2 11	6 23.44	+19 48.0	2.150	2.922	14.1	21.1	2 11	6 26.82	+ 9 9.7	2.410	3.172	13.0	21.6
398354	2011 <i>SP</i> ₂₇		1 3.1 98°00	1°3/ 3.4	17		1669	<i>Dagmar</i>		1 3.1 276°91	0°4/ 3.0	18	
12 3	7 21.06	+18 40.8	1.635	2.480	14.5	21.6	12 3	7 15.06	+23 34.8	2.325	3.169	10.8	16.0
12 13	7 13.71	+18 53.5	1.584	2.501	10.4	21.4	12 13	7 9.25	+23 47.8	2.241	3.159	7.7	15.8
12 23	7 3.98	+19 12.2	1.558	2.521	5.8	21.1	12 23	7 1.59	+24 1.9	2.183	3.148	4.2	15.5
1 2	6 52.95	+19 34.3	1.559	2.541	1.4	20.9	1 2	6 52.77	+24 15.0	2.154	3.137	0.6	15.2
1 12	6 41.99	+19 57.3	1.589	2.560	4.4	21.1	1 12	6 43.74	+24 25.2	2.156	3.127	3.5	15.4
1 22	6 32.40	+20 19.2	1.648	2.579	8.8	21.4	1 22	6 35.47	+24 31.7	2.187	3.116	7.1	15.7
2 1	6 25.19	+20 39.2	1.732	2.598	12.7	21.7	2 1	6 28.79	+24 34.6	2.245	3.105	10.4	15.9
2 11	6 20.94	+20 57.2	1.837	2.616	15.9	22.0	2 11	6 24.34	+24 34.4	2.326	3.094	13.2	16.0
242787	2005 <i>YZ</i> ₁₈₈		1 3.1 292°51	3°9/ 4.0	18		405987	2006 <i>SZ</i> ₂₅₇		1 3.1 346°65	10°4/ 31.9	18	
12 3	7 17.13	+12 23.9	1.462	2.3									

EPHEMERIDES

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
463721	2014 <i>QW</i> ₂₆₀		1 3.1 327°43	21.8°/21.9	18		298937	2004 <i>TU</i> ₂₃₁		1 3.1 207°28	3°4/ 2.5	18	
12 3	7 59.85	+72 57.4	1.514	2.200	22.4	20.5	12 3	7 22.93	+30 40.7	1.862	2.704	13.1	21.5
12 13	7 52.26	+75 19.1	1.470	2.181	21.9	20.4	12 13	7 15.35	+31 16.0	1.786	2.699	9.6	21.2
12 23	7 30.52	+77 4.9	1.440	2.163	21.8	20.3	12 23	7 5.11	+31 46.9	1.735	2.693	5.8	21.0
1 2	6 55.97	+77 52.8	1.423	2.145	22.0	20.3	1 2	6 53.17	+32 8.0	1.712	2.687	3.4	20.8
1 12	6 19.15	+77 28.7	1.420	2.129	22.6	20.3	1 12	6 40.96	+32 15.8	1.719	2.681	5.5	21.0
1 22	5 52.61	+75 58.7	1.430	2.114	23.5	20.3	1 22	6 29.93	+32 9.7	1.755	2.673	9.3	21.2
2 1	5 40.95	+73 41.4	1.452	2.099	24.6	20.4	2 1	6 21.30	+31 52.3	1.816	2.665	13.0	21.4
2 11	5 41.86	+70 55.3	1.484	2.086	25.7	20.4	2 11	6 15.81	+31 27.4	1.899	2.657	16.2	21.6
148673	2001 <i>SB</i> ₁₇₆		1 3.1 9°11	1°1/ 2.9	18		113131	2002 <i>RK</i> ₈₆		1 3.1 103°05	8°7/ 5.9	18	
12 3	7 15.70	+23 39.2	1.324	2.193	15.7	19.3	12 3	7 13.05	- 4 50.5	2.307	3.063	13.7	19.6
12 13	7 10.63	+24 12.3	1.266	2.195	11.2	19.0	12 13	7 7.63	- 5 27.0	2.240	3.068	11.7	19.5
12 23	7 2.65	+24 48.7	1.229	2.197	6.1	18.7	12 23	7 0.63	- 5 43.7	2.196	3.072	9.9	19.4
1 2	6 52.89	+25 23.7	1.219	2.201	1.2	18.4	1 2	6 52.70	- 5 37.8	2.177	3.076	8.8	19.3
1 12	6 42.96	+25 52.9	1.234	2.206	5.2	18.7	1 12	6 44.67	- 5 9.2	2.184	3.080	9.0	19.3
1 22	6 34.46	+26 14.0	1.275	2.212	10.3	19.0	1 22	6 37.36	- 4 20.2	2.218	3.084	10.2	19.4
2 1	6 28.67	+26 26.9	1.339	2.219	14.8	19.3	2 1	6 31.50	- 3 14.8	2.276	3.088	12.1	19.6
2 11	6 26.32	+26 33.2	1.422	2.227	18.5	19.6	2 11	6 27.61	- 1 58.6	2.357	3.092	14.0	19.7
129529	1996 <i>EM</i> ₇		1 3.1 145°36	0°9/ 3.3	18		519056	2010 <i>KB</i> ₈₆		1 3.1 196°50	1°0/ 2.9	18	
12 3	7 15.87	+19 32.9	2.234	3.074	11.3	20.8	12 3	7 16.30	+26 19.7	2.627	3.465	9.9	21.9
12 13	7 9.74	+19 40.3	2.163	3.078	8.1	20.6	12 13	7 9.89	+26 22.8	2.549	3.463	7.0	21.7
12 23	7 1.80	+19 51.7	2.118	3.081	4.5	20.4	12 23	7 1.85	+26 24.3	2.498	3.461	3.9	21.5
1 2	6 52.80	+20 5.3	2.103	3.085	1.0	20.1	1 2	6 52.83	+26 22.2	2.477	3.459	1.0	21.3
1 12	6 43.70	+20 19.7	2.117	3.088	3.5	20.3	1 12	6 43.73	+26 15.6	2.487	3.456	3.3	21.5
1 22	6 35.44	+20 33.6	2.162	3.092	7.1	20.5	1 22	6 35.39	+26 4.4	2.527	3.453	6.5	21.7
2 1	6 28.85	+20 46.4	2.233	3.095	10.4	20.8	2 1	6 28.56	+25 49.4	2.596	3.450	9.4	21.9
2 11	6 24.48	+20 58.1	2.327	3.097	13.2	21.0	2 11	6 23.78	+25 32.0	2.688	3.446	11.9	22.1
203635	2002 <i>GK</i> ₂₄		1 3.1 356°08	0°9/ 3.3	18		258250	2001 <i>TC</i> ₁₇₁		1 3.1 94°96	2°3/ 3.5	18	
12 3	7 17.83	+20 21.4	1.330	2.192	16.1	20.5	12 3	7 19.33	+16 46.8	1.946	2.782	12.9	21.0
12 13	7 12.12	+20 25.2	1.265	2.190	11.6	20.2	12 13	7 12.16	+16 31.3	1.895	2.805	9.3	20.8
12 23	7 3.47	+20 34.8	1.222	2.188	6.4	19.9	12 23	7 3.06	+16 21.7	1.868	2.827	5.5	20.7
1 2	6 52.98	+20 47.8	1.205	2.187	1.2	19.6	1 2	6 52.96	+16 17.5	1.871	2.849	2.4	20.5
1 12	6 42.28	+21 1.4	1.214	2.187	5.0	19.8	1 12	6 42.97	+16 17.8	1.903	2.871	4.3	20.7
1 22	6 32.97	+21 13.9	1.249	2.187	10.3	20.1	1 22	6 34.13	+16 21.8	1.965	2.892	7.9	20.9
2 1	6 26.39	+21 24.9	1.307	2.187	15.0	20.4	2 1	6 27.26	+16 28.6	2.053	2.913	11.3	21.2
2 11	6 23.28	+21 34.3	1.385	2.189	18.9	20.7	2 11	6 22.89	+16 37.5	2.164	2.934	14.1	21.4
39710	1996 <i>TU</i> ₄₈		1 3.1 36°98	0°4/ 3.2	18		135021	2001 <i>KB</i> ₅₅		1 3.1 109°20	1°6/ 3.5	18	
12 3	7 18.98	+21 45.8	1.211	2.078	17.0	18.4	12 3	7 19.26	+17 41.7	1.987	2.823	12.7	20.7
12 13	7 12.89	+21 46.8	1.163	2.091	12.1	18.2	12 13	7 12.15	+17 44.5	1.931	2.843	9.1	20.5
12 23	7 3.80	+21 51.8	1.137	2.104	6.6	17.9	12 23	7 3.09	+17 52.9	1.901	2.862	5.2	20.3
1 2	6 53.00	+21 57.9	1.136	2.119	0.8	17.5	1 2	6 52.97	+18 5.3	1.900	2.881	1.7	20.1
1 12	6 42.30	+22 2.7	1.161	2.134	5.1	17.9	1 12	6 42.89	+18 20.1	1.930	2.899	4.0	20.3
1 22	6 33.32	+22 5.4	1.211	2.150	10.5	18.2	1 22	6 33.90	+18 35.8	1.988	2.917	7.7	20.6
2 1	6 27.32	+22 6.2	1.284	2.166	15.1	18.6	2 1	6 26.87	+18 51.7	2.074	2.934	11.1	20.8
2 11	6 24.89	+22 5.9	1.376	2.183	18.9	18.9	2 11	6 22.32	+19 7.2	2.182	2.951	14.0	21.0
327014	2004 <i>RO</i> ₁₄₁		1 3.1 165°15	4°9/ 2.2	18		395952	2013 <i>AV</i> ₁₃₃		1 3.1 229°06	0°7/ 3.3	18	
12 3	7 22.00	+37 32.6	2.274	3.102	11.6	21.5	12 3	7 19.28	+19 16.0	1.656	2.504	14.2	20.8
12 13	7 14.30	+38 4.4	2.207	3.105	8.8	21.3	12 13	7 12.84	+19 47.5	1.580	2.498	10.3	20.5
12 23	7 4.34	+38 26.6	2.166	3.109	6.2	21.1	12 23	7 3.80	+20 26.4	1.528	2.493	5.7	20.3
1 2	6 53.07	+38 34.3	2.153	3.112	4.9	21.0	1 2	6 53.07	+21 9.3	1.504	2.487	0.9	19.9
1 12	6 41.73	+38 25.4	2.170	3.114	6.1	21.1	1 12	6 42.00	+21 52.2	1.509	2.481	4.4	20.2
1 22	6 31.56	+38 0.7	2.216	3.116	8.7	21.3	1 22	6 31.98	+22 32.0	1.542	2.475	9.2	20.4
2 1	6 23.54	+37 23.3	2.288	3.118	11.4	21.5	2 1	6 24.23	+23 7.1	1.600	2.468	13.5	20.7
2 11	6 18.30	+36 37.8	2.382	3.119	13.8	21.6	2 11	6 19.56	+23 37.1	1.680	2.461	17.0	20.9
308820	2006 <i>QK</i> ₁₆₄		1 3.1 49°93	2°7/ 3.3	18		166555	2002 <i>RY</i> ₈₉		1 3.1 106°67	5°2/ 4.6	18	
12 3	7 19.48	+18 26.0	1.535	2.385	15.0	19.7	12 3	7 13.91	+ 6 11.5	2.304	3.111	12.1	20.5
12 13	7 12.74	+17 40.0	1.476	2.394	10.9	19.4	12 13	7 8.23	+ 5 56.1	2.238	3.119	9.5	20.3
12 23	7 3.55	+16 58.3	1.441	2.403	6.4	19.2	12 23	7 0.95	+ 5 53.8	2.196	3.128	6.9	20.2
1 2	6 52.99	+16 21.9	1.433	2.412	2.8	19.0	1 2	6 52.76	+ 6 5.2	2.183	3.136	5.3	20.1
1 12	6 42.47	+15 51.7	1.453	2.422	5.2	19.2	1 12	6 44.51	+ 6 29.6	2.198	3.145	5.8	20.2
1 22	6 33.33	+15 28.2	1.500	2.431	9.6	19.4	1 22	6 37.02	+ 7 4.9	2.243	3.153	8.0	20.3
2 1	6 26.62	+15 11.8	1.572	2.441	13.6	19.7	2 1	6 31.01	+ 7 48.3	2.313	3.161	10.6	20.5
2 11	6 22.93	+15 1.8	1.665	2.452	17.0	20.0	2 11	6 26.99	+ 8 36.6	2.407	3.169	13.0	20.7
95041	2002 <i>AY</i> ₃₀		1 3.1 71°82	2°0/ 2.9	18		93543	2000 <i>UG</i> ₂₁		1 3.1 56°32	2°6/ 3.7	18	
12 3	7 26.18	+27 41.3	1.388	2.241	16.1	19.0	12 3	7 16.18	+15 36.8	1.798	2.640	13.5	20.0
12 13	7 17.51	+27 47.0	1.352	2.272	11.5	18.8	12 13	7 10.23	+15 32.3	1.735	2.647	9.9	19.8
12 23	7 6.04	+27 48.2	1.339	2.304	6.3	18.6	12 23	7 2.18	+15 36.1	1.696	2.655	5.9	19.5
1 2	6 53.23	+27 41.2	1.354	2.335	2.1	18.4	1 2	6 52.89	+15 47.2	1.684	2.662	2.7	19.3
1 12	6 40.86	+27 24.6	1.396	2.366	5.2	18.7	1 12	6 43.54	+16 4.2	1.702	2.670	4.6	19.5
1 22	6 30.50	+27 0.2	1.466	2.396	9.8	19.1	1 22	6 35.23	+16 25.2	1.747	2.678	8.4	19.7
2 1	6 23.20	+26 31.2	1.560	2.426	13.9	19.4	2 1	6 28.91	+16 48.6	1.818	2.686	12.1	20.0
2 11	6 19.41	+26 1.1	1.675	2.455	17.1	19.7	2 11	6 25.18	+17 12.9	1.911	2.694	15.2	20.2
340578	2006 <i>OB</i> ₁₂		1 3.1 164°49	7°3/ 2.0	18		288429	2004 <i>EE</i> ₁₉		1 3.1 252°02	8°5/ 6.0	17	
12 3	7 27.14	+51 10.0	2.922										

EPHEMERIDES

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
355986	2009 <i>AL</i> ₄₇		1 3.1 45°36	0°6/ 3.3 17			487119	2014 <i>OP</i> ₁₇₁		1 3.1 197°53	2°5/ 2.6 18		
12 3	7 19.54	+19 28.9	1.175	2.041	17.5	20.5	12 3	7 21.52	+28 10.7	1.854	2.699	13.0	22.3
12 13	7 13.28	+20 1.9	1.136	2.062	12.5	20.3	12 13	7 14.32	+28 48.1	1.780	2.697	9.4	22.0
12 23	7 4.02	+20 43.0	1.117	2.084	6.8	20.0	12 23	7 4.56	+29 23.6	1.732	2.694	5.5	21.8
1 2	6 53.09	+21 27.2	1.124	2.107	1.0	19.7	1 2	6 53.19	+29 52.1	1.712	2.691	2.6	21.6
1 12	6 42.30	+22 9.5	1.157	2.130	5.1	20.1	1 12	6 41.56	+30 10.1	1.722	2.687	5.0	21.7
1 22	6 33.32	+22 46.6	1.215	2.154	10.5	20.5	1 22	6 31.06	+30 16.6	1.760	2.683	9.0	22.0
2 1	6 27.34	+23 17.3	1.297	2.178	15.0	20.8	2 1	6 22.85	+30 13.0	1.824	2.678	12.8	22.2
2 11	6 24.95	+23 41.7	1.397	2.202	18.7	21.1	2 11	6 17.67	+30 2.1	1.910	2.673	15.9	22.4
366936	2005 <i>UX</i> ₅₁₃		1 3.1 52°26	1°8/ 3.6 18			167145	2003 <i>SS</i> ₂₀₅		1 3.1 168°30	2°4/ 3.7 18		
12 3	7 17.81	+17 16.0	1.552	2.402	14.9	20.5	12 3	7 19.17	+15 29.8	2.052	2.882	12.5	21.2
12 13	7 11.49	+17 30.8	1.507	2.425	10.7	20.3	12 13	7 12.19	+15 26.4	1.980	2.887	9.2	21.0
12 23	7 2.86	+17 53.8	1.485	2.448	6.0	20.1	12 23	7 3.21	+15 30.1	1.934	2.891	5.5	20.8
1 2	6 52.97	+18 22.3	1.490	2.471	1.9	19.9	1 2	6 53.04	+15 40.0	1.917	2.895	2.5	20.6
1 12	6 43.18	+18 53.4	1.524	2.495	4.5	20.1	1 12	6 42.76	+15 54.9	1.930	2.897	4.3	20.7
1 22	6 34.74	+19 24.7	1.585	2.519	8.9	20.4	1 22	6 33.41	+16 13.2	1.973	2.899	7.9	20.9
2 1	6 28.64	+19 54.3	1.671	2.543	12.7	20.7	2 1	6 25.90	+16 33.7	2.042	2.901	11.4	21.2
2 11	6 25.42	+20 21.4	1.778	2.567	15.9	21.0	2 11	6 20.85	+16 55.2	2.135	2.901	14.3	21.4
143165	2002 <i>XO</i> ₅₈		1 3.1 49°68	2°4/ 2.7 18			432424	2010 <i>AS</i> ₈₂		1 3.1 85°09	0°5/ 3.1 18		
12 3	7 19.35	+27 9.7	1.531	2.388	14.6	19.3	12 3	7 20.79	+25 21.1	1.950	2.793	12.6	21.3
12 13	7 12.92	+27 46.8	1.477	2.400	10.5	19.1	12 13	7 13.25	+25 6.8	1.897	2.814	8.9	21.1
12 23	7 3.78	+28 22.4	1.447	2.412	5.9	18.9	12 23	7 3.69	+24 50.7	1.870	2.834	4.8	20.9
1 2	6 53.07	+28 51.3	1.444	2.424	2.4	18.7	1 2	6 53.08	+24 31.3	1.872	2.855	0.7	20.7
1 12	6 42.33	+29 9.7	1.468	2.436	5.3	18.9	1 12	6 42.63	+24 8.1	1.904	2.875	3.8	20.9
1 22	6 33.03	+29 17.0	1.520	2.449	9.6	19.2	1 22	6 33.46	+23 42.0	1.966	2.895	7.8	21.2
2 1	6 26.33	+29 14.5	1.596	2.462	13.6	19.5	2 1	6 26.43	+23 14.8	2.054	2.915	11.2	21.5
2 11	6 22.88	+29 5.2	1.692	2.475	16.9	19.7	2 11	6 22.03	+22 48.2	2.165	2.934	14.1	21.7
249304	2008 <i>UD</i> ₄₂		1 3.1 66°07	6°1/ 4.1 18			246251	2007 <i>TU</i> ₆		1 3.1 18°78	14°0/ 5.4 18		
12 3	7 14.84	+ 6 12.6	2.110	2.920	13.0	20.7	12 3	7 13.25	-12 32.6	1.833	2.561	17.7	19.1
12 13	7 8.98	+ 5 19.9	2.046	2.927	10.3	20.5	12 13	7 8.12	-14 26.6	1.786	2.568	16.1	19.0
12 23	7 1.40	+ 4 39.8	2.005	2.934	7.7	20.4	12 23	7 1.04	-15 52.1	1.759	2.577	14.7	18.9
1 2	6 52.83	+ 4 14.8	1.993	2.941	6.2	20.3	1 2	6 52.82	-16 42.9	1.752	2.586	14.1	18.9
1 12	6 44.20	+ 4 5.7	2.008	2.947	6.9	20.4	1 12	6 44.51	-16 56.3	1.768	2.596	14.2	18.9
1 22	6 36.43	+ 4 11.5	2.051	2.954	9.1	20.5	1 22	6 37.15	-16 34.2	1.804	2.607	15.1	19.0
2 1	6 30.30	+ 4 30.0	2.120	2.962	11.7	20.7	2 1	6 31.61	-15 41.9	1.859	2.619	16.3	19.1
2 11	6 26.32	+ 4 57.9	2.211	2.969	14.2	20.9	2 11	6 28.47	-14 27.3	1.932	2.631	17.8	19.3
354087	2001 <i>WR</i> ₅₇		1 3.1 47°59	2°4/ 2.8 17			293696	2007 <i>PF</i> ₃₉		1 3.1 128°59	0°5/ 3.3 18		
12 3	7 22.07	+26 26.6	1.125	1.995	17.8	21.2	12 3	7 21.11	+20 21.4	1.954	2.791	12.8	21.4
12 13	7 15.25	+26 58.5	1.088	2.016	12.7	21.0	12 13	7 13.59	+20 39.8	1.895	2.809	9.1	21.2
12 23	7 5.12	+27 28.7	1.072	2.038	7.0	20.7	12 23	7 3.95	+21 1.9	1.862	2.825	5.0	21.0
1 2	6 53.20	+27 51.1	1.080	2.061	2.4	20.5	1 2	6 53.12	+21 25.1	1.858	2.841	0.7	20.7
1 12	6 41.54	+28 1.9	1.114	2.085	6.0	20.8	1 12	6 42.29	+21 46.8	1.885	2.856	3.8	21.0
1 22	6 31.98	+28 11.1	1.173	2.109	11.2	21.2	1 22	6 32.58	+22 5.7	1.941	2.870	7.9	21.3
2 1	6 25.77	+27 51.3	1.255	2.133	15.7	21.5	2 1	6 24.94	+22 21.4	2.024	2.883	11.5	21.5
2 11	6 23.46	+27 36.0	1.355	2.158	19.3	21.8	2 11	6 19.95	+22 34.2	2.130	2.896	14.4	21.8
106058	2000 <i>SE</i> ₃₁₆		1 3.1 346°94	18°8/ 4.3 18 R			302901	2003 <i>QG</i> ₅₀		1 3.1 57°66	2°7/ 2.7 17		
12 3	7 13.41	-20 7.6	1.610	2.298	21.2	18.7	12 3	7 22.59	+27 17.1	1.333	2.193	16.2	20.1
12 13	7 8.68	-22 29.6	1.558	2.290	20.1	18.6	12 13	7 15.29	+28 0.1	1.295	2.219	11.5	19.9
12 23	7 1.55	-24 16.4	1.521	2.283	19.2	18.5	12 23	7 5.05	+28 40.3	1.281	2.245	6.5	19.7
1 2	6 52.86	-25 18.8	1.501	2.277	18.8	18.4	1 2	6 53.24	+29 11.7	1.292	2.272	2.7	19.5
1 12	6 43.86	-25 32.1	1.499	2.272	19.0	18.4	1 12	6 41.65	+29 30.4	1.331	2.299	5.7	19.8
1 22	6 35.82	-24 57.3	1.513	2.267	19.6	18.5	1 22	6 31.92	+29 36.0	1.396	2.325	10.3	20.1
2 1	6 29.89	-23 40.2	1.542	2.264	20.7	18.5	2 1	6 25.21	+29 31.2	1.484	2.352	14.3	20.4
2 11	6 26.82	-21 51.0	1.586	2.262	21.9	18.6	2 11	6 22.06	+29 19.4	1.593	2.379	17.6	20.7
122340	2000 <i>QL</i> ₃₆		1 3.1 94°49	0°8/ 2.9 18			368253	2001 <i>XE</i> ₁₀₂		1 3.2 335°36	11°6/ 2.8 18		
12 3	7 16.08	+25 21.8	2.440	3.281	10.4	19.7	12 3	7 15.63	- 0 5.2	1.529	2.333	17.4	19.5
12 13	7 9.76	+25 28.5	2.378	3.294	7.4	19.5	12 13	7 10.23	- 2 6.8	1.459	2.322	14.8	19.3
12 23	7 1.77	+25 34.3	2.342	3.306	4.0	19.3	12 23	7 2.39	- 3 49.7	1.411	2.311	12.6	19.1
1 2	6 52.87	+25 37.4	2.337	3.319	0.9	19.1	1 2	6 53.00	- 5 5.7	1.387	2.302	11.6	19.0
1 12	6 43.97	+25 36.4	2.361	3.331	3.3	19.3	1 12	6 43.31	- 5 49.7	1.387	2.293	12.4	19.1
1 22	6 35.95	+25 31.2	2.416	3.343	6.6	19.5	1 22	6 34.64	- 6 0.8	1.411	2.284	14.5	19.2
2 1	6 29.55	+25 22.4	2.498	3.356	9.6	19.7	2 1	6 28.11	- 5 42.6	1.455	2.277	17.2	19.3
2 11	6 25.27	+25 11.3	2.604	3.367	12.1	19.9	2 11	6 24.48	- 5 1.9	1.517	2.270	19.8	19.5
414021	2007 <i>HH</i> ₉₇		1 3.1 308°91	4°7/ 1.5 17			236927	2007 <i>TC</i> ₁₉₄		1 3.2 106°73	6°1/ 1.8 18		
12 3	7 18.35	+31 22.0	1.723	2.575	13.5	20.2	12 3	7 20.70	+41 14.6	2.319	3.140	11.6	20.5
12 13	7 12.58	+32 41.5	1.638	2.555	10.1	20.0	12 13	7 13.51	+41 58.2	2.256	3.144	9.2	20.4
12 23	7 3.89	+34 0.0	1.579	2.535	6.5	19.7	12 23	7 4.01	+42 30.1	2.218	3.147	7.0	20.2
1 2	6 53.13	+35 9.7	1.546	2.516	4.8	19.6	1 2	6 53.15	+42 45.3	2.207	3.150	6.1	20.2
1 12	6 41.72	+36 3.7	1.542	2.497	6.9	19.6	1 12	6 42.21	+42 41.0	2.225	3.153	7.1	20.3
1 22	6 31.24	+36 38.7	1.565	2.478	10.7	19.8	1 22	6 32.42	+42 18.2	2.271	3.156	9.2	20.4
2 1	6 23.16	+36 55.2	1.611	2.459	14.5	20.0	2 1	6 24.83	+41 40.1	2.342	3.159	11.6	20.6
2 11	6 18.47	+36 56.9	1.678	2.441	17.8	20.2	2 11	6 20.04	+40 51.7	2.435	3.163	13.8	20.7
377926	2006 <i>FK</i> ₁₈		1 3.1 173°41	5°0/ 1.6 18			276362	2002 <i>VD</i> ₁₈		1 3.2 76°77	0°3/ 3.1 18		
12 3	7 20.09	+39 10.2</											

EPHEMERIDES

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
183810	2004 <i>BQ</i> ₆₀		1 3.2 107°69	3°2/ 4.3	18		239356	2007 <i>RH</i> ₁₇₉		1 3.2 341°08	5°1/ 1.6	18	
12 3	7 18.42	+11 20.8	1.812	2.640	14.1	20.6	12 3	7 17.53	+35 23.4	2.099	2.940	11.9	20.2
12 13	7 11.84	+11 57.9	1.749	2.652	10.4	20.4	12 13	7 11.48	+36 27.5	2.029	2.936	9.0	20.0
12 23	7 3.09	+12 48.9	1.712	2.665	6.5	20.2	12 23	7 3.05	+37 25.2	1.985	2.932	6.3	19.8
1 2	6 53.06	+13 51.2	1.702	2.677	3.4	20.0	1 2	6 53.11	+38 10.6	1.969	2.929	5.1	19.7
1 12	6 42.92	+15 0.8	1.723	2.689	4.8	20.1	1 12	6 42.88	+38 39.5	1.981	2.925	6.5	19.8
1 22	6 33.80	+16 13.1	1.772	2.701	8.5	20.4	1 22	6 33.63	+38 50.8	2.021	2.923	9.3	20.0
2 1	6 26.69	+17 24.2	1.848	2.713	12.1	20.6	2 1	6 26.47	+38 46.3	2.085	2.920	12.2	20.2
2 11	6 22.22	+18 31.2	1.947	2.724	15.2	20.9	2 11	6 22.12	+38 29.9	2.171	2.918	14.7	20.3
456887	2007 <i>VU</i> ₁₂₂		1 3.2 338°38	2°0/ 3.5	18		297901	2002 <i>CB</i> ₂₆₅		1 3.2 221°20	2°5/ 2.8	18	
12 3	7 16.34	+18 22.3	1.309	2.173	16.2	20.7	12 3	7 22.02	+28 34.7	1.670	2.519	14.0	20.7
12 13	7 11.19	+18 18.2	1.239	2.164	11.8	20.5	12 13	7 14.88	+28 54.0	1.597	2.515	10.2	20.5
12 23	7 3.09	+18 22.2	1.190	2.155	6.8	20.2	12 23	7 4.96	+29 10.0	1.548	2.511	5.9	20.2
1 2	6 53.08	+18 32.8	1.167	2.148	2.1	19.8	1 2	6 53.31	+29 17.9	1.527	2.506	2.5	20.0
1 12	6 42.74	+18 47.8	1.169	2.141	5.3	20.0	1 12	6 41.43	+29 15.0	1.534	2.501	5.2	20.2
1 22	6 33.69	+19 5.2	1.197	2.135	10.6	20.3	1 22	6 30.84	+29 1.2	1.569	2.496	9.6	20.4
2 1	6 27.30	+19 23.7	1.247	2.130	15.4	20.6	2 1	6 22.78	+28 39.0	1.629	2.490	13.6	20.6
2 11	6 24.39	+19 42.0	1.317	2.126	19.4	20.8	2 11	6 18.02	+28 11.8	1.710	2.484	17.1	20.8
470597	2008 <i>OW</i> ₂		1 3.2 95°39	2°8/ 3.5	16		68069	2000 <i>YN</i> ₇₃		1 3.2 131°83	0°9/ 3.3	18	
12 3	7 38.53	+33 44.1	1.048	1.899	20.3	20.3	12 3	7 20.27	+20 21.1	1.717	2.562	13.9	19.5
12 13	7 27.10	+32 26.4	0.996	1.913	14.9	20.0	12 13	7 13.29	+20 20.6	1.653	2.570	10.0	19.3
12 23	7 11.50	+30 48.2	0.964	1.927	8.6	19.7	12 23	7 3.94	+20 23.9	1.613	2.577	5.5	19.0
1 2	6 53.91	+28 48.1	0.959	1.940	3.0	19.5	1 2	6 53.20	+20 29.0	1.602	2.584	1.1	18.7
1 12	6 37.17	+26 32.6	0.982	1.953	6.5	19.7	1 12	6 42.38	+20 34.4	1.620	2.591	4.3	19.0
1 22	6 23.60	+24 14.7	1.032	1.966	12.6	20.1	1 22	6 32.79	+20 39.1	1.666	2.598	8.7	19.3
2 1	6 14.54	+22 6.5	1.106	1.978	17.8	20.4	2 1	6 25.46	+20 43.0	1.738	2.604	12.7	19.5
2 11	6 10.32	+20 15.4	1.199	1.990	22.0	20.8	2 11	6 21.03	+20 46.4	1.831	2.610	15.9	19.8
430215	2013 <i>UF</i> ₁₄		1 3.2 51°84	7°0/ 4.9	18		10631	1998 <i>BM</i> ₁₅		1 3.2 145°20	0°4/ 3.3	18	
12 3	7 13.99	+ 3 13.3	1.982	2.786	14.0	20.7	12 3	7 15.11	+21 12.2	2.418	3.258	10.6	18.0
12 13	7 8.47	+ 2 36.6	1.924	2.797	11.2	20.6	12 13	7 9.16	+21 14.3	2.345	3.260	7.5	17.8
12 23	7 1.17	+ 2 16.7	1.889	2.809	8.7	20.4	12 23	7 1.55	+21 18.6	2.298	3.262	4.1	17.5
1 2	6 52.87	+ 2 15.5	1.879	2.820	7.1	20.3	1 2	6 52.95	+21 23.7	2.282	3.264	0.6	17.3
1 12	6 44.53	+ 2 33.0	1.898	2.832	7.6	20.4	1 12	6 44.27	+21 28.4	2.295	3.266	3.2	17.5
1 22	6 37.09	+ 3 6.7	1.943	2.844	9.6	20.5	1 22	6 36.37	+21 32.0	2.339	3.268	6.7	17.7
2 1	6 31.34	+ 3 53.0	2.013	2.857	12.2	20.7	2 1	6 30.01	+21 34.4	2.409	3.270	9.8	17.9
2 11	6 27.82	+ 4 47.4	2.105	2.869	14.6	20.9	2 11	6 25.71	+21 35.8	2.504	3.272	12.4	18.1
144667	2004 <i>FQ</i> ₁₂₇		1 3.2 137°36	0°5/ 3.3	18		282154	2001 <i>SU</i> ₁₂		1 3.2 52°88	9°1/ 5.6	17	
12 3	7 14.40	+20 33.0	2.690	3.526	9.7	20.9	12 3	7 17.98	+ 2 44.3	1.231	2.057	19.5	19.9
12 13	7 8.50	+20 42.2	2.620	3.533	6.9	20.7	12 13	7 11.99	+ 2 15.4	1.188	2.075	15.6	19.7
12 23	7 1.11	+20 53.9	2.577	3.540	3.8	20.6	12 23	7 3.31	+ 2 13.5	1.164	2.094	11.8	19.6
1 2	6 52.87	+21 6.8	2.564	3.547	0.7	20.3	1 2	6 53.14	+ 2 40.7	1.164	2.113	9.3	19.5
1 12	6 44.57	+21 19.4	2.582	3.553	2.9	20.5	1 12	6 43.04	+ 3 34.7	1.188	2.133	9.8	19.6
1 22	6 36.96	+21 30.9	2.631	3.559	6.1	20.7	1 22	6 34.48	+ 4 49.1	1.236	2.153	12.6	19.8
2 1	6 30.73	+21 41.0	2.707	3.565	8.9	20.9	2 1	6 28.57	+ 6 15.9	1.307	2.174	16.0	20.0
2 11	6 26.36	+21 49.5	2.808	3.571	11.3	21.1	2 11	6 25.94	+ 7 47.1	1.398	2.194	19.1	20.3
146650	2001 <i>UO</i> ₉₂		1 3.2 58°04	1°1/ 3.4	18		202020	2004 <i>RQ</i> ₄₅		1 3.2 129°46	1°2/ 2.9	18	
12 3	7 17.23	+18 54.0	1.705	2.554	13.8	19.4	12 3	7 23.15	+25 18.5	1.817	2.659	13.4	21.7
12 13	7 11.15	+19 8.4	1.643	2.561	9.9	19.2	12 13	7 15.24	+25 40.4	1.759	2.675	9.5	21.5
12 23	7 2.78	+19 28.9	1.605	2.569	5.5	18.9	12 23	7 4.96	+26 1.6	1.726	2.690	5.2	21.3
1 2	6 53.05	+19 53.4	1.595	2.577	1.3	18.7	1 2	6 53.32	+26 18.4	1.723	2.705	1.3	21.0
1 12	6 43.23	+20 19.0	1.614	2.585	4.2	18.9	1 12	6 41.70	+26 28.1	1.749	2.719	4.3	21.3
1 22	6 34.55	+20 43.8	1.660	2.594	8.6	19.2	1 22	6 31.38	+26 30.3	1.805	2.732	8.5	21.5
2 1	6 28.01	+21 6.6	1.732	2.602	12.5	19.4	2 1	6 23.41	+26 26.4	1.886	2.744	12.2	21.8
2 11	6 24.27	+21 26.9	1.825	2.611	15.7	19.6	2 11	6 18.40	+26 18.3	1.990	2.755	15.3	22.0
449598	2014 <i>JN</i> ₄₆		1 3.2 184°86	2°4/ 3.7	18		332412	2007 <i>PS</i> ₂₃		1 3.2 116°97	6°5/ 5.8	18	
12 3	7 19.58	+15 31.9	1.674	2.514	14.4	21.7	12 3	7 13.94	- 0 47.4	2.605	3.374	11.9	20.9
12 13	7 12.94	+15 45.7	1.602	2.515	10.6	21.5	12 13	7 8.11	- 0 58.9	2.543	3.390	9.8	20.8
12 23	7 3.83	+16 9.4	1.555	2.514	6.2	21.2	12 23	7 0.89	- 0 54.4	2.506	3.405	7.8	20.7
1 2	6 53.18	+16 41.2	1.534	2.514	2.5	21.0	1 2	6 52.90	- 0 32.8	2.495	3.419	6.6	20.7
1 12	6 42.28	+17 18.1	1.543	2.513	4.8	21.2	1 12	6 44.88	+ 0 5.0	2.514	3.433	6.8	20.7
1 22	6 32.47	+17 57.3	1.580	2.512	9.1	21.4	1 22	6 37.55	+ 0 56.7	2.561	3.447	8.2	20.8
2 1	6 24.87	+18 36.3	1.643	2.510	13.2	21.6	2 1	6 31.54	+ 1 58.6	2.635	3.461	10.2	21.0
2 11	6 20.21	+19 13.7	1.727	2.508	16.7	21.9	2 11	6 27.30	+ 3 6.8	2.732	3.474	12.1	21.1
285511	2000 <i>EJ</i> ₅₂		1 3.2 308°27	1°0/ 2.9	17		499429	2010 <i>CT</i> ₁₇₃		1 3.2 280°09	3°3/ 2.6	17	
12 3	7 18.47	+24 39.6	1.619	2.474	14.1	21.5	12 3	7 18.17	+32 16.6	2.198	3.039	11.4	21.5
12 13	7 12.37	+24 54.2	1.545	2.467	10.1	21.3	12 13	7 11.70	+32 36.9	2.119	3.031	8.4	21.3
12 23	7 3.60	+25 9.7	1.494	2.460	5.6	21.0	12 23	7 3.08	+32 51.7	2.066	3.023	5.2	21.1
1 2	6 53.16	+25 22.4	1.471	2.453	1.1	20.7	1 2	6 53.15	+32 57.1	2.042	3.015	3.3	21.0
1 12	6 42.44	+25 29.7	1.476	2.447	4.6	20.9	1 12	6 43.03	+32 51.0	2.047	3.007	4.9	21.1
1 22	6 32.89	+25 30.6	1.508	2.440	9.4	21.1	1 22	6 33.88	+32 33.5	2.081	2.999	8.1	21.2
2 1	6 25.73	+25 26.1	1.564	2.434	13.6	21.4	2 1	6 26.67	+32 6.7	2.141	2.991	11.3	21.4
2 11	6 21.72	+25 17.7	1.642	2.428	17.2	21.6	2 11	6 22.04	+31 33.7	2.223	2.983	14.1	21.6
247655	2002 <i>XV</i> ₁₉		1 3.2 108°13	4°3/ 3.9	18		134747	2000 <i>BR</i> ₁₀		1 3.2 354°41	0°4/ 3.3	18	
12 3	7 15.87	+ 9 28.2	2										

EPHEMERIDES

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
494737	2005 <i>UP</i> ₃₉₅		1 3.2 151°17	0°1/ 3.2 17			243947	2001 <i>QX</i> ₈₉		1 3.2 160°52	2°8/ 2.7 18		
12 3	7 17.72	+21 42.5	1.913	2.759	12.6	22.2	12 3	7 19.10	+33 57.5	2.943	3.769	9.3	20.8
12 13	7 11.41	+21 54.9	1.842	2.760	9.0	21.9	12 13	7 11.79	+34 2.5	2.872	3.775	6.8	20.7
12 23	7 2.93	+22 10.1	1.797	2.762	4.9	21.7	12 23	7 2.91	+34 1.0	2.828	3.780	4.3	20.5
1 2	6 53.14	+22 25.9	1.780	2.763	0.6	21.4	1 2	6 53.16	+33 50.7	2.815	3.785	2.8	20.4
1 12	6 43.20	+22 40.0	1.793	2.765	3.9	21.6	1 12	6 43.43	+33 30.8	2.833	3.790	4.0	20.5
1 22	6 34.27	+22 51.3	1.834	2.766	8.1	21.9	1 22	6 34.54	+33 1.8	2.883	3.794	6.4	20.7
2 1	6 27.33	+22 59.5	1.902	2.767	11.8	22.1	2 1	6 27.21	+32 25.9	2.960	3.797	8.9	20.9
2 11	6 23.02	+23 5.2	1.991	2.768	14.9	22.3	2 11	6 21.93	+31 45.7	3.062	3.801	11.0	21.0
487963	2015 <i>TR</i> ₂₉₇		1 3.2 230°71	0°6/ 3.1 18			278180	2007 <i>DC</i> ₉₁		1 3.2 296°06	2°2/ 2.8 18		
12 3	7 22.13	+23 49.1	1.520	2.373	15.0	21.7	12 3	7 18.81	+28 9.4	1.835	2.685	12.9	20.7
12 13	7 15.15	+23 59.0	1.445	2.366	10.8	21.4	12 13	7 12.42	+28 27.8	1.761	2.680	9.3	20.5
12 23	7 5.22	+24 10.3	1.393	2.359	5.9	21.2	12 23	7 3.59	+28 43.5	1.712	2.675	5.4	20.2
1 2	6 53.41	+24 19.2	1.369	2.352	0.8	20.8	1 2	6 53.25	+28 52.7	1.691	2.671	2.2	20.0
1 12	6 41.27	+24 23.2	1.372	2.344	4.8	21.0	1 12	6 42.72	+28 53.1	1.698	2.666	4.7	20.2
1 22	6 30.42	+24 21.3	1.403	2.336	10.0	21.3	1 22	6 33.30	+28 44.1	1.734	2.661	8.8	20.4
2 1	6 22.21	+24 14.7	1.459	2.328	14.5	21.6	2 1	6 26.09	+28 27.6	1.795	2.657	12.5	20.6
2 11	6 17.44	+24 5.5	1.535	2.319	18.3	21.8	2 11	6 21.79	+28 6.3	1.878	2.653	15.7	20.8
491987	2013 <i>EH</i> ₅₈		1 3.2 190°13	0°8/ 2.9 18			302521	2002 <i>JT</i> ₁₃₄		1 3.2 263°97	3°6/ 2.4 18		
12 3	7 20.22	+24 14.0	2.036	2.877	12.2	22.5	12 3	7 21.09	+29 48.6	1.626	2.478	14.2	20.8
12 13	7 13.17	+24 36.1	1.961	2.876	8.7	22.3	12 13	7 14.47	+30 34.6	1.551	2.470	10.4	20.6
12 23	7 3.90	+24 59.0	1.911	2.875	4.8	22.0	12 23	7 4.90	+31 17.7	1.500	2.461	6.3	20.3
1 2	6 53.26	+25 19.6	1.890	2.873	0.9	21.7	1 2	6 53.41	+31 51.8	1.477	2.453	3.6	20.1
1 12	6 42.42	+25 35.1	1.900	2.870	4.0	21.9	1 12	6 41.54	+32 12.0	1.481	2.444	6.0	20.3
1 22	6 32.55	+25 44.6	1.940	2.867	8.0	22.2	1 22	6 30.89	+32 17.2	1.513	2.436	10.2	20.5
2 1	6 24.67	+25 48.5	2.006	2.863	11.6	22.4	2 1	6 22.84	+32 9.1	1.569	2.427	14.2	20.7
2 11	6 19.44	+25 48.2	2.094	2.859	14.6	22.6	2 11	6 18.23	+31 51.9	1.645	2.418	17.7	20.9
121973	2000 <i>EW</i> ₁₁₈		1 3.2 237°47	3°4/ 2.3 18			104607	2000 <i>GF</i> ₁₀₀		1 3.2 252°65	2°1/ 2.9 18		
12 3	7 22.19	+28 1.7	1.532	2.385	14.8	19.7	12 3	7 22.17	+27 8.4	1.567	2.419	14.6	20.2
12 13	7 15.39	+29 3.1	1.459	2.379	10.8	19.5	12 13	7 15.25	+27 27.9	1.488	2.408	10.6	19.9
12 23	7 5.46	+30 4.6	1.410	2.372	6.4	19.2	12 23	7 5.34	+27 45.8	1.432	2.397	6.0	19.7
1 2	6 53.44	+30 58.7	1.388	2.365	3.4	19.0	1 2	6 53.46	+27 57.3	1.404	2.385	2.1	19.4
1 12	6 40.96	+31 39.4	1.394	2.358	6.1	19.2	1 12	6 41.20	+27 59.1	1.404	2.373	5.3	19.5
1 22	6 29.73	+32 4.1	1.427	2.350	10.6	19.4	1 22	6 30.20	+27 50.6	1.431	2.361	10.1	19.8
2 1	6 21.24	+32 13.9	1.484	2.343	14.9	19.6	2 1	6 21.83	+27 33.8	1.483	2.348	14.5	20.0
2 11	6 16.38	+32 12.6	1.561	2.335	18.5	19.9	2 11	6 16.96	+27 12.1	1.555	2.336	18.2	20.2
242925	2006 <i>QM</i> ₁₅		1 3.2 162°41	3°1/ 4.2 18			428810	2008 <i>TK</i> ₃₆		1 3.2 337°22	1°6/ 2.9 18		
12 3	7 13.38	+10 24.7	2.912	3.724	9.7	21.5	12 3	7 16.59	+26 33.8	1.777	2.631	13.1	20.6
12 13	7 7.69	+10 25.1	2.837	3.729	7.4	21.4	12 13	7 10.89	+26 49.1	1.702	2.624	9.4	20.4
12 23	7 0.69	+10 33.8	2.789	3.733	4.9	21.2	12 23	7 2.78	+27 3.2	1.652	2.617	5.3	20.1
1 2	6 52.92	+10 50.4	2.771	3.738	3.2	21.1	1 2	6 53.18	+27 12.9	1.630	2.611	1.7	19.9
1 12	6 45.06	+11 14.2	2.783	3.741	3.9	21.2	1 12	6 43.35	+27 15.7	1.635	2.605	4.5	20.0
1 22	6 37.79	+11 43.6	2.826	3.745	6.2	21.3	1 22	6 34.60	+27 11.0	1.669	2.600	8.8	20.3
2 1	6 31.70	+12 17.0	2.898	3.748	8.7	21.5	2 1	6 28.02	+27 0.0	1.727	2.595	12.6	20.5
2 11	6 27.24	+12 52.4	2.994	3.751	10.8	21.6	2 11	6 24.31	+26 44.8	1.807	2.591	15.9	20.7
52392	1993 <i>RG</i> ₅		1 3.2 165°96	0°7/ 3.0 18			322892	2001 <i>XH</i> ₁₄₆		1 3.2 303°19	0°8/ 2.9 18		
12 3	7 19.63	+24 35.5	2.418	3.253	10.7	20.0	12 3	7 17.10	+22 51.4	1.759	2.611	13.3	20.2
12 13	7 12.39	+24 50.3	2.346	3.259	7.6	19.8	12 13	7 11.33	+23 29.2	1.681	2.602	9.5	19.9
12 23	7 3.33	+25 4.8	2.301	3.265	4.2	19.6	12 23	7 3.08	+24 11.0	1.626	2.592	5.2	19.7
1 2	6 53.20	+25 16.6	2.287	3.269	0.8	19.3	1 2	6 53.22	+24 52.9	1.600	2.583	0.9	19.3
1 12	6 42.98	+25 24.1	2.304	3.273	3.4	19.5	1 12	6 43.00	+25 30.9	1.602	2.574	4.4	19.6
1 22	6 33.64	+25 26.6	2.351	3.277	6.9	19.7	1 22	6 33.74	+26 2.3	1.633	2.565	8.9	19.8
2 1	6 25.99	+25 24.7	2.427	3.279	10.0	20.0	2 1	6 26.61	+26 26.4	1.689	2.556	12.9	20.0
2 11	6 20.61	+25 19.7	2.526	3.281	12.7	20.1	2 11	6 22.38	+26 43.9	1.766	2.547	16.3	20.2
65400	2002 <i>RJ</i> ₈₃		1 3.2 88°07	1°7/ 3.6 18			236043	2005 <i>GU</i> ₂₂₁		1 3.2 191°43	0°2/ 3.2 18		
12 3	7 15.36	+17 3.7	2.200	3.038	11.6	19.6	12 3	7 14.88	+21 8.0	2.646	3.483	9.9	21.2
12 13	7 9.41	+17 6.2	2.136	3.048	8.4	19.4	12 13	7 8.97	+21 27.6	2.568	3.481	7.0	21.0
12 23	7 1.72	+17 14.4	2.098	3.058	4.8	19.2	12 23	7 1.48	+21 50.0	2.517	3.480	3.8	20.8
1 2	6 53.03	+17 27.2	2.088	3.068	1.8	19.1	1 2	6 53.04	+22 13.1	2.495	3.478	0.5	20.5
1 12	6 44.29	+17 43.2	2.108	3.078	3.7	19.2	1 12	6 44.44	+22 35.3	2.505	3.477	3.0	20.7
1 22	6 36.42	+18 1.0	2.158	3.088	7.2	19.4	1 22	6 36.51	+22 55.2	2.546	3.474	6.3	20.9
2 1	6 30.19	+18 19.6	2.235	3.098	10.4	19.7	2 1	6 29.96	+23 12.2	2.614	3.472	9.2	21.1
2 11	6 26.14	+18 38.0	2.334	3.108	13.1	19.9	2 11	6 25.34	+23 26.4	2.707	3.469	11.7	21.3
327461	2005 <i>XN</i> ₃₇		1 3.2 62°78	1°4/ 2.8 18			278460	2007 <i>TG</i> ₁₂₉		1 3.2 235°97	5°2/ 1.4 18		
12 3	7 17.69	+24 48.2	1.862	2.712	12.8	21.0	12 3	7 19.07	+38 37.1	2.547	3.372	10.6	20.1
12 13	7 11.51	+25 28.6	1.798	2.717	9.1	20.8	12 13	7 12.36	+39 34.9	2.472	3.365	8.2	20.0
12 23	7 3.04	+26 10.3	1.758	2.723	5.0	20.5	12 23	7 3.50	+40 24.7	2.423	3.358	6.1	19.8
1 2	6 53.18	+26 49.1	1.746	2.728	1.5	20.3	1 2	6 53.26	+41 1.5	2.402	3.351	5.2	19.8
1 12	6 43.17	+27 21.4	1.764	2.733	4.3	20.5	1 12	6 42.75	+41 21.8	2.411	3.343	6.3	19.8
1 22	6 34.21	+27 45.4	1.810	2.739	8.4	20.8	1 22	6 33.08	+41 25.0	2.449	3.336	8.5	19.9
2 1	6 27.34	+28 1.1	1.882	2.745	12.0	21.0	2 1	6 25.25	+41 13.1	2.512	3.328	11.0	20.1
2 11	6 23.22	+28 9.9	1.976	2.750	15.1	21.2	2 11	6 19.94	+40 49.8	2.597	3.320	13.1	20.2
330076	2005 <i>VU</i> ₁₀₉		1 3.2 240°84	2°1/ 3.6 18			28736	2000 <i>GE</i> ₁₃₃		1 3.2 309°02	3°8/ 4.2 18 R		
12 3	7 16.82	+16 56.9	1.958	2									

EPHEMERIDES

1 3.2

1 3.2

2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
40161	1998 QO ₉₁		1 3.2 113°88	6°6/ 5.2	18		355895	2008 WB ₅₀		1 3.2 314°92	13°7/26.2	17	
12 3	7 17.44	+ 3 23.1	1.939	2.738	14.4	17.9	12 3	7 27.14	+43 24.1	1.282	2.123	17.9	20.3
12 13	7 10.97	+ 3 9.6	1.880	2.754	11.5	17.8	12 13	7 21.46	+47 3.1	1.211	2.098	15.4	20.1
12 23	7 2.61	+ 3 13.8	1.845	2.769	8.6	17.6	12 23	7 10.30	+50 36.6	1.164	2.074	13.8	19.9
1 2	6 53.17	+ 3 36.8	1.837	2.783	6.8	17.5	1 2	6 54.19	+53 41.7	1.143	2.051	14.2	19.9
1 12	6 43.69	+ 4 17.3	1.856	2.797	7.2	17.6	1 12	6 35.37	+55 58.5	1.146	2.028	16.4	19.9
1 22	6 35.19	+ 5 11.8	1.904	2.811	9.5	17.8	1 22	6 17.37	+57 19.0	1.170	2.005	19.6	20.0
2 1	6 28.51	+ 6 16.0	1.978	2.824	12.2	18.0	2 1	6 3.84	+57 48.9	1.212	1.984	22.8	20.2
2 11	6 24.21	+ 7 24.9	2.074	2.837	14.8	18.2	2 11	5 57.11	+57 42.0	1.267	1.963	25.6	20.4
107115	2001 AG ₃₈		1 3.2 61°77	7°5/ 1.3	18		449546	2014 HN ₁₄₈		1 3.2 177°72	0°7/ 3.0	18	
12 3	7 23.80	+38 22.8	1.590	2.431	15.0	18.9	12 3	7 22.17	+23 21.3	1.731	2.576	13.8	21.8
12 13	7 16.69	+39 47.7	1.531	2.434	11.7	18.7	12 13	7 14.86	+23 48.3	1.661	2.578	9.9	21.6
12 23	7 6.22	+41 1.5	1.496	2.436	8.7	18.5	12 23	7 4.97	+24 17.6	1.615	2.580	5.4	21.3
1 2	6 53.57	+41 54.7	1.487	2.438	7.5	18.4	1 2	6 53.47	+24 45.0	1.598	2.581	0.9	21.0
1 12	6 40.61	+42 21.1	1.505	2.441	9.1	18.5	1 12	6 41.75	+25 7.4	1.610	2.581	4.4	21.3
1 22	6 29.20	+42 20.5	1.548	2.443	12.1	18.7	1 22	6 31.21	+25 23.0	1.651	2.580	9.0	21.6
2 1	6 20.88	+41 57.5	1.615	2.445	15.3	18.9	2 1	6 23.02	+25 32.2	1.717	2.579	13.0	21.8
2 11	6 16.47	+41 19.3	1.700	2.448	18.2	19.1	2 11	6 17.91	+25 36.5	1.805	2.578	16.4	22.0
459708	2013 PM ₃₂		1 3.2 90°66	4°3/ 4.2	18		77523	2001 HB ₅₅		1 3.2 155°80	1°8/ 2.6	18	
12 3	7 15.35	+10 11.7	2.064	2.887	12.7	21.2	12 3	7 17.18	+26 42.0	2.391	3.232	10.6	19.4
12 13	7 9.47	+ 9 54.0	1.999	2.896	9.7	21.0	12 13	7 10.83	+27 27.4	2.320	3.235	7.6	19.2
12 23	7 1.80	+ 9 47.4	1.959	2.904	6.5	20.9	12 23	7 2.59	+28 12.4	2.277	3.239	4.3	19.0
1 2	6 53.09	+ 9 52.4	1.946	2.912	4.4	20.8	1 2	6 53.21	+28 53.3	2.263	3.242	1.8	18.9
1 12	6 44.31	+10 8.2	1.963	2.920	5.4	20.8	1 12	6 43.65	+29 27.1	2.280	3.245	3.9	19.0
1 22	6 36.40	+10 33.1	2.008	2.929	8.2	21.0	1 22	6 34.90	+29 52.3	2.327	3.248	7.2	19.2
2 1	6 30.19	+11 4.6	2.079	2.937	11.3	21.2	2 1	6 27.80	+30 8.9	2.401	3.251	10.2	19.4
2 11	6 26.21	+11 40.2	2.173	2.945	14.0	21.4	2 11	6 22.97	+30 18.2	2.498	3.253	12.8	19.6
164279	2004 XV ₄₂		1 3.2 68°74	2°5/ 2.9	18		180876	2005 JU ₈₈		1 3.2 101°37	2°0/ 3.7	18	
12 3	7 22.81	+28 42.6	1.447	2.302	15.4	19.7	12 3	7 19.52	+16 11.8	1.996	2.829	12.8	20.3
12 13	7 15.47	+28 53.5	1.396	2.317	11.1	19.4	12 13	7 12.38	+16 18.0	1.944	2.853	9.2	20.1
12 23	7 5.26	+28 59.7	1.367	2.331	6.3	19.2	12 23	7 3.35	+16 31.1	1.917	2.876	5.4	19.9
1 2	6 53.45	+28 56.9	1.365	2.345	2.6	19.0	1 2	6 53.28	+16 49.5	1.920	2.899	2.2	19.8
1 12	6 41.76	+28 43.2	1.391	2.360	5.4	19.2	1 12	6 43.28	+17 11.3	1.953	2.922	4.0	19.9
1 22	6 31.77	+28 19.6	1.444	2.375	9.9	19.5	1 22	6 34.37	+17 34.7	2.015	2.943	7.7	20.2
2 1	6 24.64	+27 49.4	1.521	2.389	14.1	19.8	2 1	6 27.39	+17 58.6	2.104	2.965	11.0	20.5
2 11	6 20.99	+27 16.5	1.619	2.404	17.4	20.1	2 11	6 22.86	+18 21.8	2.216	2.985	13.8	20.7
308141	2004 YK ₃₅		1 3.2 342°52	0°0/ 3.1	18		425370	2010 CQ ₆		1 3.2 359°83	3°3/ 4.6	17	
12 3	7 16.14	+21 5.7	1.231	2.101	16.6	20.1	12 3	7 14.46	+ 9 40.9	2.220	3.039	12.1	20.9
12 13	7 11.34	+21 33.0	1.163	2.092	12.0	19.8	12 13	7 8.90	+10 22.1	2.142	3.039	9.1	20.7
12 23	7 3.37	+22 7.7	1.115	2.083	6.6	19.4	12 23	7 1.56	+11 17.0	2.090	3.039	5.9	20.5
1 2	6 53.29	+22 45.8	1.092	2.076	0.7	19.0	1 2	6 53.11	+12 23.6	2.067	3.039	3.4	20.3
1 12	6 42.81	+23 22.4	1.095	2.069	5.3	19.3	1 12	6 44.43	+13 38.8	2.074	3.039	4.4	20.4
1 22	6 33.67	+23 54.1	1.123	2.063	10.9	19.6	1 22	6 36.46	+14 58.3	2.112	3.039	7.5	20.6
2 1	6 27.39	+24 19.6	1.173	2.059	16.0	19.9	2 1	6 30.01	+16 18.3	2.177	3.039	10.6	20.8
2 11	6 24.84	+24 39.0	1.242	2.055	20.1	20.1	2 11	6 25.69	+17 35.4	2.266	3.040	13.4	21.0
96417	1998 FK ₆		1 3.2 344°06	2°1/ 2.8	18		237672	2001 SB ₃₂₇		1 3.2 197°73	5°3/ 2.1	18	
12 3	7 17.32	+25 28.1	1.226	2.097	16.6	18.8	12 3	7 18.90	+37 20.2	2.078	2.915	12.2	20.4
12 13	7 12.27	+26 3.2	1.159	2.089	12.0	18.5	12 13	7 12.42	+38 3.1	2.015	2.917	9.3	20.3
12 23	7 3.91	+26 40.5	1.114	2.081	6.7	18.2	12 23	7 3.57	+38 36.7	1.976	2.920	6.6	20.1
1 2	6 53.36	+27 14.0	1.093	2.075	2.1	17.9	1 2	6 53.32	+38 55.7	1.965	2.923	5.3	20.0
1 12	6 42.41	+27 38.5	1.098	2.069	5.9	18.1	1 12	6 42.95	+38 57.3	1.983	2.926	6.6	20.1
1 22	6 32.95	+27 51.9	1.127	2.065	11.3	18.4	1 22	6 33.74	+38 41.8	2.028	2.930	9.2	20.3
2 1	6 26.49	+27 55.0	1.179	2.061	16.2	18.7	2 1	6 26.73	+38 12.2	2.098	2.934	12.1	20.5
2 11	6 23.92	+27 50.4	1.249	2.058	20.3	19.0	2 11	6 22.58	+37 33.0	2.189	2.938	14.6	20.7
312283	2008 BS ₁₃		1 3.2 199°73	2°6/ 2.9	18		218882	2007 BT ₅₇		1 3.2 97°76	2°9/ 3.9	18	
12 3	7 22.77	+30 52.5	2.005	2.844	12.5	20.6	12 3	7 16.80	+13 58.5	1.869	2.705	13.4	20.4
12 13	7 15.03	+30 50.9	1.929	2.841	9.1	20.4	12 13	7 10.73	+14 3.9	1.803	2.712	9.8	20.2
12 23	7 4.94	+30 42.8	1.879	2.839	5.4	20.2	12 23	7 2.59	+14 19.2	1.762	2.719	6.0	20.0
1 2	6 53.45	+30 25.1	1.858	2.836	2.6	20.0	1 2	6 53.22	+14 43.2	1.749	2.726	3.0	19.8
1 12	6 41.88	+29 56.5	1.867	2.832	4.7	20.1	1 12	6 43.75	+15 13.9	1.765	2.733	4.6	19.9
1 22	6 31.51	+29 18.4	1.905	2.828	8.4	20.3	1 22	6 35.25	+15 48.9	1.809	2.739	8.3	20.2
2 1	6 23.37	+28 33.8	1.970	2.824	12.0	20.6	2 1	6 28.67	+16 25.8	1.880	2.746	11.9	20.4
2 11	6 18.11	+27 46.6	2.058	2.819	15.0	20.7	2 11	6 24.60	+17 2.7	1.973	2.753	14.9	20.6
253121	2002 VD ₄		1 3.2 135°78	4°4/ 2.1	18		296992	2010 EW ₁₂₉		1 3.2 222°12	3°7/ 4.0	18	
12 3	7 22.33	+33 20.0	1.963	2.802	12.7	20.7	12 3	7 13.82	+11 13.8	2.425	3.247	11.1	21.1
12 13	7 14.88	+34 16.3	1.902	2.811	9.4	20.5	12 13	7 8.27	+10 54.2	2.348	3.245	8.4	20.9
12 23	7 4.92	+35 6.2	1.867	2.820	6.2	20.3	12 23	7 1.14	+10 43.2	2.297	3.243	5.6	20.7
1 2	6 53.45	+35 43.8	1.861	2.828	4.4	20.2	1 2	6 53.07	+10 41.3	2.274	3.241	3.7	20.6
1 12	6 41.84	+36 5.2	1.884	2.836	6.1	20.3	1 12	6 44.88	+10 48.1	2.281	3.239	4.7	20.6
1 22	6 31.44	+36 9.9	1.935	2.844	9.2	20.5	1 22	6 37.38	+11 2.6	2.317	3.237	7.3	20.8
2 1	6 23.38	+36 0.4	2.011	2.851	12.4	20.7	2 1	6 31.28	+11 23.2	2.380	3.235	10.1	21.0
2 11	6 18.33	+35 40.8	2.110	2.858	15.1	20.9	2 11	6 27.12	+11 48.0	2.467	3.233	12.6	21.2
53390	1999 JM ₁₀₀		1 3.2 294°52	5°4/ 4.7	18		87089	2000 LF ₁		1 3.2 107°25	1°1/ 3.5	18	
12 3	7 15.22	+ 7 15.0	1.812	2.633	14.3	18.8	12 3	7 22.30	+18 4.0	1.750	2.587		

EPHEMERIDES

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
373413	1997 <i>TU</i>		1 3.2 30°67	6°2/ 2.1	18		283206	2010 <i>GK</i> ₁₃₉		1 3.2 101°57	3°9/ 4.3	18	
12 3	7 19.67	+36 23.4	1.539	2.391	14.9	20.5	12 3	7 13.81	+9 47.7	2.394	3.211	11.4	21.1
12 13	7 13.37	+37 22.5	1.499	2.410	11.2	20.3	12 13	7 8.25	+9 39.8	2.325	3.218	8.7	21.0
12 23	7 4.19	+38 10.3	1.481	2.430	7.9	20.1	12 23	7 1.14	+9 42.1	2.282	3.226	5.9	20.8
1 2	6 53.41	+38 39.8	1.489	2.450	6.2	20.1	1 2	6 53.13	+9 54.7	2.267	3.232	4.0	20.7
1 12	6 42.71	+38 47.4	1.524	2.472	7.8	20.2	1 12	6 45.04	+10 16.8	2.282	3.239	4.8	20.8
1 22	6 33.68	+38 34.3	1.585	2.494	10.8	20.5	1 22	6 37.67	+10 46.5	2.326	3.246	7.3	20.9
2 1	6 27.49	+38 4.8	1.668	2.517	14.0	20.7	2 1	6 31.73	+11 21.6	2.398	3.253	10.0	21.1
2 11	6 24.71	+37 24.7	1.772	2.541	16.8	21.0	2 11	6 27.73	+11 59.8	2.492	3.260	12.5	21.3
322043	2010 <i>VG</i> ₄₉		1 3.2 56°15	1°5/ 3.0	18		228754	2002 <i>VZ</i> ₃₅		1 3.2 20°75	0°8/ 3.3	17	
12 3	7 19.88	+26 47.3	1.692	2.544	13.7	20.9	12 3	7 17.78	+21 41.0	0.952	1.834	19.2	19.7
12 13	7 13.20	+26 52.4	1.629	2.549	9.8	20.6	12 13	7 12.74	+21 29.7	0.907	1.841	13.8	19.4
12 23	7 4.02	+26 55.1	1.589	2.554	5.5	20.4	12 23	7 4.14	+21 23.4	0.882	1.851	7.6	19.1
1 2	6 53.40	+26 52.5	1.578	2.559	1.6	20.1	1 2	6 53.47	+21 19.5	0.878	1.861	1.2	18.7
1 12	6 42.72	+26 42.6	1.595	2.565	4.6	20.4	1 12	6 42.85	+21 16.2	0.899	1.873	5.8	19.1
1 22	6 33.35	+26 26.0	1.640	2.571	8.9	20.6	1 22	6 34.25	+21 12.6	0.942	1.887	11.9	19.5
2 1	6 26.35	+26 4.4	1.710	2.576	12.8	20.9	2 1	6 29.09	+21 9.2	1.006	1.902	17.1	19.8
2 11	6 22.38	+25 40.4	1.801	2.582	16.1	21.1	2 11	6 27.99	+21 6.2	1.088	1.917	21.3	20.1
405022	2001 <i>QX</i> ₁₂₈		1 3.2 121°89	5°8/ 5.1	18		65389	2002 <i>RF</i> ₁₂		1 3.2 76°01	0°7/ 3.4	18	R
12 3	7 17.34	+3 52.0	2.257	3.049	12.8	21.8	12 3	7 12.73	+19 41.8	3.070	3.903	8.7	19.9
12 13	7 10.70	+3 39.9	2.198	3.068	10.2	21.7	12 13	7 7.18	+19 45.9	3.014	3.925	6.2	19.7
12 23	7 2.42	+3 42.8	2.165	3.087	7.6	21.6	12 23	7 0.44	+19 52.5	2.986	3.948	3.4	19.6
1 2	6 53.23	+4 1.4	2.159	3.105	5.9	21.5	1 2	6 53.06	+20 0.6	2.989	3.971	0.8	19.4
1 12	6 44.03	+4 34.7	2.182	3.122	6.4	21.6	1 12	6 45.71	+20 9.2	3.022	3.993	2.6	19.6
1 22	6 35.70	+5 19.9	2.235	3.139	8.4	21.7	1 22	6 39.00	+20 17.7	3.087	4.015	5.3	19.8
2 1	6 28.96	+6 13.6	2.314	3.155	10.9	21.9	2 1	6 33.48	+20 25.7	3.180	4.038	7.8	20.0
2 11	6 24.32	+7 12.0	2.417	3.170	13.2	22.1	2 11	6 29.54	+20 33.0	3.297	4.060	9.8	20.2
230993	2005 <i>CK</i> ₂₃		1 3.2 271°04	2°1/ 3.5	18		110748	2001 <i>UJ</i> ₈		1 3.2 244°60	4°5/ 1.9	18	
12 3	7 16.14	+17 23.6	2.157	2.994	11.8	20.4	12 3	7 20.96	+33 22.7	2.003	2.844	12.4	19.5
12 13	7 10.13	+16 59.5	2.077	2.988	8.6	20.2	12 13	7 14.13	+34 21.3	1.925	2.834	9.3	19.3
12 23	7 2.25	+16 39.7	2.022	2.981	5.1	19.9	12 23	7 4.70	+35 15.1	1.871	2.823	6.2	19.1
1 2	6 53.24	+16 24.2	1.996	2.975	2.2	19.7	1 2	6 53.56	+35 57.7	1.846	2.813	4.5	19.0
1 12	6 44.07	+16 12.9	2.000	2.968	4.1	19.8	1 12	6 42.02	+36 24.5	1.850	2.802	6.2	19.1
1 22	6 35.72	+16 5.5	2.034	2.962	7.6	20.0	1 22	6 31.47	+36 34.4	1.883	2.791	9.5	19.2
2 1	6 29.04	+16 1.9	2.094	2.956	11.0	20.2	2 1	6 23.13	+36 28.9	1.940	2.780	12.7	19.4
2 11	6 24.64	+16 1.5	2.176	2.949	13.9	20.4	2 11	6 17.80	+36 12.2	2.019	2.768	15.6	19.6
40192	1998 <i>RV</i> ₇₅		1 3.2 262°93	6°0/ 1.5	18		466034	2011 <i>JC</i> ₁₃		1 3.2 216°87	0°0/ 3.1	17	
12 3	7 21.82	+39 54.5	2.319	3.142	11.5	18.5	12 3	7 15.74	+22 3.3	2.597	3.434	10.0	22.5
12 13	7 14.65	+40 48.0	2.232	3.123	9.1	18.3	12 13	7 9.69	+22 18.5	2.514	3.427	7.2	22.3
12 23	7 4.94	+41 32.0	2.171	3.103	6.9	18.2	12 23	7 1.99	+22 35.6	2.457	3.421	3.9	22.1
1 2	6 53.55	+42 0.6	2.137	3.084	6.0	18.1	1 2	6 53.25	+22 52.8	2.431	3.414	0.4	21.8
1 12	6 41.73	+42 9.8	2.133	3.063	7.1	18.1	1 12	6 44.34	+23 8.5	2.435	3.406	3.1	22.0
1 22	6 30.85	+41 59.1	2.157	3.043	9.6	18.2	1 22	6 36.09	+23 21.5	2.470	3.399	6.5	22.2
2 1	6 22.09	+41 31.1	2.205	3.022	12.2	18.4	2 1	6 29.27	+23 31.6	2.533	3.391	9.5	22.4
2 11	6 16.25	+40 50.8	2.276	3.001	14.7	18.5	2 11	6 24.44	+23 39.1	2.620	3.382	12.1	22.6
55154	2001 <i>QD</i> ₂₂₀		1 3.2 113°49	1°9/ 3.0	18		450727	2007 <i>EL</i> ₂₂₀		1 3.2 181°78	2°0/ 2.8	18	
12 3	7 22.38	+29 1.3	2.023	2.862	12.3	18.8	12 3	7 22.60	+26 5.2	1.741	2.587	13.7	22.3
12 13	7 14.55	+28 57.0	1.963	2.877	8.9	18.6	12 13	7 15.29	+26 45.5	1.670	2.588	9.9	22.0
12 23	7 4.59	+28 47.8	1.930	2.892	5.0	18.4	12 23	7 5.30	+27 25.9	1.625	2.588	5.5	21.8
1 2	6 53.49	+28 31.3	1.926	2.906	1.9	18.2	1 2	6 53.63	+28 1.3	1.607	2.588	2.0	21.5
1 12	6 42.49	+28 6.7	1.952	2.920	4.2	18.4	1 12	6 41.70	+28 27.8	1.620	2.588	4.9	21.7
1 22	6 32.76	+27 35.3	2.008	2.933	7.9	18.6	1 22	6 30.95	+28 43.6	1.660	2.586	9.2	22.0
2 1	6 25.21	+26 59.4	2.091	2.946	11.3	18.8	2 1	6 22.61	+28 49.7	1.726	2.584	13.2	22.2
2 11	6 20.37	+26 22.1	2.196	2.959	14.1	19.1	2 11	6 17.42	+28 48.6	1.814	2.582	16.5	22.4
52236	1979 <i>MF</i> ₇		1 3.2 123°65	1°5/ 3.7	18		461762	2005 <i>UW</i> ₂₆₆		1 3.2 21°55	1°4/ 2.9	18	
12 3	7 14.96	+16 50.4	2.491	3.323	10.5	19.8	12 3	7 16.67	+24 7.0	1.390	2.255	15.3	21.0
12 13	7 9.05	+17 5.3	2.423	3.333	7.6	19.6	12 13	7 11.31	+24 45.5	1.336	2.263	10.9	20.8
12 23	7 1.56	+17 25.9	2.382	3.342	4.4	19.4	12 23	7 3.18	+25 26.5	1.305	2.272	6.0	20.5
1 2	6 53.17	+17 50.7	2.370	3.350	1.6	19.2	1 2	6 53.39	+26 4.9	1.300	2.282	1.5	20.3
1 12	6 44.69	+18 17.9	2.389	3.359	3.3	19.3	1 12	6 43.51	+26 36.5	1.322	2.294	5.0	20.5
1 22	6 36.94	+18 45.8	2.439	3.368	6.5	19.6	1 22	6 35.04	+26 59.0	1.370	2.306	9.8	20.8
2 1	6 30.64	+19 13.3	2.516	3.376	9.5	19.8	2 1	6 29.20	+27 12.7	1.441	2.318	14.1	21.1
2 11	6 26.30	+19 39.4	2.617	3.384	12.0	20.0	2 11	6 26.65	+27 19.0	1.533	2.332	17.6	21.4
141979	2002 <i>PU</i> ₁₂₉		1 3.2 76°86	1°4/ 2.9	18		95925	2003 <i>JF</i> ₇		1 3.2 290°94	2°6/ 3.7	18	
12 3	7 21.50	+24 39.5	1.627	2.478	14.3	20.0	12 3	7 18.78	+16 19.8	1.478	2.327	15.5	19.6
12 13	7 14.27	+25 19.6	1.581	2.501	10.1	19.8	12 13	7 12.74	+16 18.1	1.407	2.324	11.4	19.4
12 23	7 4.57	+26 0.2	1.560	2.525	5.5	19.6	12 23	7 3.97	+16 25.7	1.359	2.320	6.7	19.1
1 2	6 53.49	+26 36.6	1.566	2.548	1.5	19.4	1 2	6 53.49	+16 41.6	1.337	2.316	2.8	18.8
1 12	6 42.49	+27 4.9	1.601	2.571	4.6	19.7	1 12	6 42.72	+17 3.6	1.342	2.313	5.2	19.0
1 22	6 32.92	+27 24.0	1.664	2.594	8.9	20.0	1 22	6 33.15	+17 29.3	1.374	2.309	9.9	19.3
2 1	6 25.83	+27 34.5	1.753	2.616	12.7	20.3	2 1	6 26.01	+17 56.9	1.431	2.306	14.3	19.5
2 11	6 21.81	+27 38.6	1.863	2.638	15.8	20.5	2 11	6 22.08	+18 24.5	1.508	2.302	18.1	19.7
453019	2007 <i>RX</i> ₁₃		1 3.2 132°18	1°3/ 3.5	18		77725	2001 <i>OF</i> ₆₂		1 3.2 112°73	1°0/ 2.9	18	
12 3	7 20.85	+18 32.3	1.892	2.729	13.2	22.3							

EPHEMERIDES

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
37429	2001 YE ₁₀₅		1 3.2 235°65	1.6/ 3.6	18		475447	2006 RJ ₅₄		1 3.2 50°71 22°4/ 2.2	16		
12 3	7 16.82	+17 35.0	2.142	2.978	11.8	20.0	12 3	7 47.67	+61 3.6	0.925	1.723	26.5	20.6
12 13	7 10.72	+17 40.4	2.058	2.970	8.6	19.8	12 13	7 38.90	+63 34.6	0.903	1.733	24.4	20.5
12 23	7 2.65	+17 51.6	2.001	2.961	5.0	19.6	12 23	7 20.36	+65 17.8	0.895	1.744	22.9	20.5
1 2	6 53.34	+18 7.3	1.972	2.952	1.7	19.3	1 2	6 55.36	+65 49.8	0.903	1.756	22.4	20.5
1 12	6 43.79	+18 25.9	1.973	2.943	3.8	19.5	1 12	6 30.96	+65 2.1	0.925	1.768	22.9	20.6
1 22	6 35.01	+18 45.7	2.003	2.934	7.6	19.7	1 22	6 13.42	+63 7.6	0.963	1.780	24.2	20.7
2 1	6 27.92	+19 5.9	2.061	2.924	11.1	19.9	2 1	6 5.17	+60 29.4	1.015	1.793	25.9	20.9
2 11	6 23.17	+19 25.5	2.141	2.914	14.1	20.1	2 11	6 5.47	+57 30.1	1.080	1.806	27.7	21.1
430174	2013 TL ₉₅		1 3.2 25°70	6°1/ 4.5	18		355450	2007 VO ₁₅₃		1 3.2 152°15	1°2/ 3.4	18	
12 3	7 13.79	+ 7 46.9	1.689	2.519	14.8	20.3	12 3	7 20.71	+19 32.4	1.910	2.748	13.0	21.9
12 13	7 8.65	+ 7 10.3	1.635	2.531	11.5	20.1	12 13	7 13.53	+19 28.8	1.843	2.756	9.4	21.6
12 23	7 1.50	+ 6 49.1	1.604	2.544	8.3	19.9	12 23	7 4.18	+19 29.0	1.801	2.763	5.2	21.4
1 2	6 53.20	+ 6 44.8	1.599	2.557	6.2	19.8	1 2	6 53.55	+19 31.7	1.788	2.770	1.4	21.2
1 12	6 44.89	+ 6 57.2	1.620	2.572	7.0	19.9	1 12	6 42.85	+19 35.4	1.805	2.776	4.0	21.4
1 22	6 37.65	+ 7 23.9	1.668	2.587	9.7	20.1	1 22	6 33.24	+19 39.3	1.851	2.781	8.1	21.6
2 1	6 32.35	+ 8 1.4	1.740	2.603	12.8	20.3	2 1	6 25.68	+19 43.3	1.924	2.786	11.8	21.9
2 11	6 29.54	+ 8 45.4	1.834	2.620	15.7	20.6	2 11	6 20.78	+19 47.4	2.019	2.790	14.9	22.1
381223	2007 RX ₂₇₁		1 3.2 133°58	4°1/ 4.3	18		121855	2000 CX ₅₂		1 3.2 224°06	6°0/ 4.5	18	
12 3	7 14.34	+ 8 59.8	2.544	3.355	11.0	21.9	12 3	7 18.93	+ 7 24.3	1.662	2.482	15.5	19.5
12 13	7 8.54	+ 8 38.9	2.475	3.363	8.4	21.8	12 13	7 12.62	+ 7 8.4	1.584	2.476	12.1	19.3
12 23	7 1.28	+ 8 27.7	2.433	3.371	5.9	21.6	12 23	7 3.87	+ 7 9.1	1.529	2.469	8.6	19.1
1 2	6 53.19	+ 8 26.8	2.418	3.379	4.2	21.5	1 2	6 53.54	+ 7 27.7	1.500	2.461	6.2	18.9
1 12	6 45.02	+ 8 35.8	2.434	3.386	4.9	21.6	1 12	6 42.88	+ 8 3.4	1.499	2.454	7.1	19.0
1 22	6 37.56	+ 8 53.6	2.479	3.393	7.2	21.8	1 22	6 33.18	+ 8 52.9	1.525	2.445	10.4	19.1
2 1	6 31.46	+ 9 18.2	2.552	3.400	9.8	21.9	2 1	6 25.58	+ 9 52.1	1.577	2.437	14.1	19.3
2 11	6 27.20	+ 9 47.6	2.648	3.407	12.1	22.1	2 11	6 20.84	+10 56.1	1.649	2.427	17.4	19.5
140880	2001 VL ₂₀		1 3.2 328°91	1°0/ 3.4	18		76613	2000 GQ ₁₆₇		1 3.2 260°86	4°7/ 4.2	18	
12 3	7 17.72	+20 25.2	1.745	2.594	13.5	19.8	12 3	7 14.54	+ 9 2.1	2.254	3.071	12.0	19.2
12 13	7 11.65	+20 17.4	1.672	2.591	9.8	19.5	12 13	7 8.97	+ 8 35.3	2.173	3.064	9.3	19.0
12 23	7 3.25	+20 13.1	1.624	2.588	5.4	19.3	12 23	7 1.66	+ 8 19.0	2.116	3.056	6.5	18.9
1 2	6 53.42	+20 11.1	1.603	2.586	1.2	19.0	1 2	6 53.29	+ 8 14.4	2.087	3.048	4.7	18.7
1 12	6 43.41	+20 9.9	1.611	2.583	4.2	19.2	1 12	6 44.73	+ 8 21.4	2.088	3.040	5.5	18.8
1 22	6 34.48	+20 9.1	1.647	2.581	8.6	19.4	1 22	6 36.87	+ 8 38.9	2.117	3.033	8.2	18.9
2 1	6 27.67	+20 8.5	1.709	2.579	12.6	19.7	2 1	6 30.50	+ 9 5.0	2.172	3.025	11.1	19.1
2 11	6 23.67	+20 8.2	1.792	2.577	16.0	19.9	2 11	6 26.22	+ 9 37.0	2.250	3.017	13.7	19.2
236007	2005 GA ₄₁		1 3.2 354°78	12°0/29.9	18		128777	2004 RX ₁₉₇		1 3.2 183°81	0°4/ 3.2	18	
12 3	7 27.19	+53 50.6	1.926	2.710	15.0	19.4	12 3	7 18.00	+23 39.8	2.087	2.931	11.8	20.3
12 13	7 19.78	+55 39.7	1.874	2.707	13.4	19.3	12 13	7 11.58	+23 46.6	2.014	2.931	8.5	20.0
12 23	7 8.29	+57 7.3	1.845	2.705	12.3	19.2	12 23	7 3.13	+23 54.1	1.967	2.931	4.6	19.8
1 2	6 54.01	+58 3.1	1.839	2.703	12.1	19.2	1 2	6 53.45	+24 0.0	1.948	2.931	0.6	19.5
1 12	6 39.15	+58 21.4	1.857	2.702	12.9	19.3	1 12	6 43.64	+24 2.8	1.959	2.930	3.7	19.7
1 22	6 26.10	+58 3.2	1.896	2.702	14.3	19.4	1 22	6 34.77	+24 1.9	2.000	2.930	7.6	20.0
2 1	6 16.74	+57 15.1	1.956	2.702	16.1	19.5	2 1	6 27.76	+23 57.6	2.067	2.929	11.1	20.2
2 11	6 12.04	+56 6.4	2.033	2.702	17.8	19.6	2 11	6 23.22	+23 51.2	2.157	2.928	14.1	20.4
399169	2014 FA ₃₇		1 3.2 259°64	3°7/ 2.5	18		374045	2004 ND ₁₃		1 3.2 185°96	0°4/ 3.3	17	
12 3	7 22.92	+29 31.8	1.429	2.285	15.6	21.3	12 3	7 17.84	+21 6.3	2.765	3.594	9.7	23.6
12 13	7 16.16	+30 16.4	1.356	2.276	11.4	21.1	12 13	7 11.06	+21 12.8	2.684	3.594	6.9	23.4
12 23	7 6.07	+30 58.3	1.306	2.268	6.9	20.8	12 23	7 2.70	+21 21.1	2.631	3.593	3.8	23.2
1 2	6 53.77	+31 30.3	1.283	2.260	3.7	20.6	1 2	6 53.41	+21 29.7	2.608	3.591	0.6	23.0
1 12	6 41.02	+31 47.2	1.287	2.251	6.4	20.7	1 12	6 43.99	+21 37.5	2.618	3.589	2.9	23.2
1 22	6 29.69	+31 47.6	1.317	2.243	11.1	20.9	1 22	6 35.25	+21 43.6	2.659	3.586	6.2	23.4
2 1	6 21.33	+31 34.2	1.370	2.234	15.6	21.2	2 1	6 27.91	+21 48.1	2.729	3.582	9.0	23.6
2 11	6 16.83	+31 11.8	1.443	2.225	19.3	21.4	2 11	6 22.48	+21 51.2	2.823	3.577	11.5	23.7
196987	2003 UO ₈₁		1 3.2 63°88	1°4/ 3.6	18		451457	2011 SC ₂₅₅		1 3.2 52°33	3°5/ 2.5	17	
12 3	7 16.84	+17 15.5	1.924	2.765	12.8	19.5	12 3	7 22.22	+27 39.2	1.262	2.125	16.7	20.8
12 13	7 10.66	+17 38.6	1.872	2.786	9.2	19.3	12 13	7 15.46	+28 43.1	1.221	2.146	12.0	20.6
12 23	7 2.55	+18 8.6	1.845	2.807	5.2	19.1	12 23	7 5.50	+29 44.8	1.203	2.167	6.9	20.4
1 2	6 53.35	+18 43.2	1.847	2.828	1.6	18.9	1 2	6 53.72	+30 36.4	1.210	2.188	3.5	20.3
1 12	6 44.16	+19 19.5	1.878	2.849	3.8	19.1	1 12	6 42.02	+31 12.3	1.244	2.210	6.3	20.5
1 22	6 36.02	+19 55.1	1.938	2.870	7.7	19.4	1 22	6 32.17	+31 31.2	1.304	2.232	10.9	20.8
2 1	6 29.78	+20 28.5	2.025	2.892	11.1	19.6	2 1	6 25.46	+31 35.6	1.386	2.255	15.1	21.1
2 11	6 25.98	+20 58.8	2.134	2.913	14.0	19.9	2 11	6 22.52	+31 29.5	1.488	2.277	18.5	21.4
76372	2000 EA ₁₈₂		1 3.2 151°51	0°5/ 3.4	18		151057	2001 VO ₁₄		1 3.2 23°79	6°3/ 1.9	18	R
12 3	7 19.02	+18 50.7	2.090	2.926	12.1	19.5	12 3	7 21.18	+36 33.4	1.591	2.439	14.7	19.6
12 13	7 12.28	+19 33.0	2.021	2.934	8.7	19.3	12 13	7 14.67	+37 33.2	1.534	2.443	11.2	19.4
12 23	7 3.50	+20 21.4	1.978	2.940	4.8	19.0	12 23	7 5.12	+38 22.8	1.500	2.448	7.9	19.2
1 2	6 53.47	+21 12.6	1.964	2.947	0.8	18.7	1 2	6 53.69	+38 54.7	1.492	2.453	6.3	19.1
1 12	6 43.25	+22 3.1	1.981	2.952	3.6	19.0	1 12	6 42.11	+39 4.4	1.511	2.458	7.9	19.2
1 22	6 33.92	+22 50.0	2.028	2.958	7.6	19.2	1 22	6 32.05	+38 52.1	1.556	2.464	11.1	19.4
2 1	6 26.42	+23 31.7	2.103	2.962	11.1	19.5	2 1	6 24.85	+38 22.1	1.624	2.470	14.5	19.6
2 11	6 21.37	+24 7.9	2.201	2.967	14.0	19.7	2 11	6 21.23	+37 40.4	1.712	2.477	17.4	19.9
454089	2013 AB ₁₇₀		1 3.2 98°18	6°1/ 4.7	18		424837	2008 UG ₂₅₉		1 3.2 171°29	1°6/ 2.8	18	
12 3	7 18.52	+ 7 42.2	1.521	2.349	16.3	21.7	12 3	7 17.04	+26 40.1	2.292	3.1		

EPHEMERIDES

1 3.2

1 3.3

2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
521022	2015 <i>CT</i> ₆₈		1 3.2 262°33	0°7/ 3.4 18			169233	2001 <i>SF</i> ₃₂		1 3.2 156°09	0°0/ 3.1 18	R	
12 3	7 14.48	+19 48.6	2.418	3.257	10.6	21.5	12 3	7 15.38	+22 5.6	2.771	3.606	9.5	21.1
12 13	7 8.89	+20 1.1	2.340	3.255	7.6	21.3	12 13	7 9.32	+22 19.4	2.699	3.612	6.8	21.0
12 23	7 1.61	+20 17.4	2.289	3.252	4.2	21.0	12 23	7 1.77	+22 34.8	2.654	3.617	3.7	20.8
1 2	6 53.31	+20 35.9	2.267	3.250	0.9	20.8	1 2	6 53.35	+22 50.0	2.639	3.622	0.4	20.5
1 12	6 44.85	+20 54.9	2.276	3.248	3.2	21.0	1 12	6 44.85	+23 3.8	2.656	3.627	2.9	20.7
1 22	6 37.11	+21 13.0	2.314	3.245	6.7	21.2	1 22	6 37.02	+23 15.0	2.703	3.631	6.0	20.9
2 1	6 30.85	+21 29.5	2.380	3.243	9.8	21.4	2 1	6 30.55	+23 23.6	2.779	3.635	8.8	21.1
2 11	6 26.63	+21 44.2	2.469	3.241	12.5	21.6	2 11	6 25.92	+23 29.9	2.879	3.639	11.2	21.3
350421	2012 <i>VF</i> ₇₂		1 3.2 329°14	5°5/ 3.5 18			127900	2003 <i>GO</i> ₁₆		1 3.2 172°38	1°0/ 3.5 18		
12 3	7 16.10	+14 27.2	1.102	1.968	18.4	20.2	12 3	7 20.80	+18 18.3	1.879	2.716	13.2	20.6
12 13	7 11.59	+13 32.0	1.028	1.951	13.9	19.9	12 13	7 13.76	+18 45.7	1.807	2.720	9.6	20.4
12 23	7 3.73	+12 46.8	0.974	1.933	9.1	19.6	12 23	7 4.43	+19 19.9	1.760	2.723	5.4	20.1
1 2	6 53.58	+12 14.9	0.943	1.917	5.6	19.3	1 2	6 53.66	+19 58.0	1.743	2.725	1.2	19.9
1 12	6 42.89	+11 58.4	0.935	1.902	7.7	19.4	1 12	6 42.68	+20 36.7	1.755	2.726	4.0	20.1
1 22	6 33.54	+11 57.2	0.951	1.889	12.8	19.6	1 22	6 32.70	+21 13.5	1.797	2.727	8.3	20.3
2 1	6 27.13	+12 9.6	0.988	1.876	18.0	19.9	2 1	6 24.77	+21 46.9	1.865	2.727	12.1	20.6
2 11	6 24.65	+12 31.9	1.041	1.865	22.5	20.1	2 11	6 19.58	+22 16.5	1.956	2.727	15.3	20.8
455377	2002 <i>UV</i> ₃₇		1 3.2 61°92	2°3/ 3.6 16			307586	2003 <i>HJ</i> ₄₉		1 3.2 209°67	5°6/ 4.3 17		
12 3	7 21.42	+17 28.8	1.492	2.339	15.5	20.9	12 3	7 19.04	+5 31.9	2.382	3.175	12.2	22.5
12 13	7 14.11	+17 16.8	1.454	2.370	11.2	20.7	12 13	7 12.12	+5 2.1	2.294	3.166	9.7	22.3
12 23	7 4.45	+17 12.1	1.440	2.401	6.4	20.5	12 23	7 3.41	+4 44.5	2.231	3.157	7.2	22.2
1 2	6 53.61	+17 13.4	1.452	2.432	2.4	20.3	1 2	6 53.55	+4 40.6	2.197	3.146	5.7	22.1
1 12	6 43.04	+17 19.3	1.492	2.463	4.8	20.5	1 12	6 43.46	+4 50.7	2.193	3.134	6.3	22.1
1 22	6 34.02	+17 28.2	1.560	2.493	9.1	20.9	1 22	6 34.03	+5 13.6	2.219	3.121	8.6	22.2
2 1	6 27.51	+17 39.3	1.653	2.524	13.0	21.2	2 1	6 26.09	+5 46.9	2.272	3.107	11.3	22.3
2 11	6 23.99	+17 51.6	1.768	2.554	16.1	21.4	2 11	6 20.25	+6 27.6	2.348	3.092	13.8	22.5
325234	2008 <i>GX</i> ₅₇		1 3.2 286°21	1°5/ 3.5 18			134193	2005 <i>CB</i> ₆₈		1 3.2 221°57	1°5/ 3.8 18		
12 3	7 17.41	+18 21.6	1.763	2.609	13.5	21.4	12 3	7 10.43	+15 24.8	3.725	4.548	7.6	20.7
12 13	7 11.49	+18 24.9	1.686	2.603	9.8	21.2	12 13	7 5.56	+15 32.9	3.638	4.541	5.5	20.5
12 23	7 3.24	+18 34.4	1.633	2.596	5.6	20.9	12 23	6 59.66	+15 45.5	3.578	4.533	3.3	20.4
1 2	6 53.51	+18 48.6	1.608	2.589	1.7	20.6	1 2	6 53.13	+16 1.8	3.549	4.526	1.5	20.2
1 12	6 43.51	+19 5.6	1.611	2.582	4.3	20.8	1 12	6 46.48	+16 21.0	3.551	4.519	2.5	20.3
1 22	6 34.49	+19 23.6	1.642	2.576	8.7	21.0	1 22	6 40.24	+16 42.2	3.585	4.511	4.8	20.5
2 1	6 27.52	+19 41.6	1.699	2.569	12.7	21.3	2 1	6 34.87	+17 4.4	3.648	4.503	6.9	20.6
2 11	6 23.32	+19 58.9	1.777	2.562	16.1	21.5	2 11	6 30.76	+17 26.9	3.736	4.495	8.8	20.7
500178	2012 <i>FN</i> ₄₆		1 3.2 197°27	0°8/ 3.4 18			85490	1997 <i>SE</i> ₅		1 3.2 39°62	0°6/ 3.4 18		
12 3	7 17.48	+19 42.6	2.385	3.219	10.9	22.8	12 3	7 23.66	+20 15.7	2.141	2.970	12.2	19.3
12 13	7 11.04	+19 52.5	2.304	3.216	7.8	22.6	12 13	7 14.84	+20 24.2	2.131	3.040	8.5	19.2
12 23	7 2.80	+20 5.9	2.251	3.213	4.4	22.4	12 23	7 4.51	+20 34.9	2.147	3.109	4.6	19.1
1 2	6 53.46	+20 21.3	2.227	3.209	0.9	22.1	1 2	6 53.64	+20 45.7	2.194	3.177	0.8	19.0
1 12	6 43.94	+20 37.1	2.233	3.204	3.3	22.3	1 12	6 43.27	+20 55.2	2.273	3.244	3.3	19.3
1 22	6 35.17	+20 51.9	2.271	3.200	6.9	22.5	1 22	6 34.28	+21 3.1	2.382	3.310	6.7	19.6
2 1	6 27.97	+21 5.4	2.336	3.194	10.1	22.7	2 1	6 27.30	+21 9.2	2.520	3.375	9.6	19.9
2 11	6 22.93	+21 17.3	2.424	3.188	12.9	22.9	2 11	6 22.66	+21 14.1	2.681	3.439	12.0	20.1
140751	2001 <i>UN</i> ₁₁₄		1 3.2 147°01	0°0/ 3.2 18			164607	3273 <i>T</i> ₋₃		1 3.2 104°10	0°2/ 3.3 17		
12 3	7 15.25	+22 14.6	2.703	3.539	9.7	20.7	12 3	7 22.15	+21 39.0	1.725	2.569	13.9	21.0
12 13	7 9.25	+22 30.1	2.632	3.545	6.9	20.6	12 13	7 14.65	+21 50.4	1.672	2.589	9.9	20.8
12 23	7 1.74	+22 47.3	2.588	3.551	3.7	20.4	12 23	7 4.82	+22 4.5	1.644	2.608	5.4	20.6
1 2	6 53.34	+23 4.2	2.574	3.557	0.4	20.1	1 2	6 53.71	+22 18.4	1.645	2.628	0.7	20.3
1 12	6 44.85	+23 19.4	2.592	3.563	2.9	20.3	1 12	6 42.66	+22 30.1	1.674	2.646	4.1	20.6
1 22	6 37.06	+23 31.9	2.639	3.568	6.1	20.5	1 22	6 32.94	+22 38.5	1.733	2.664	8.5	20.9
2 1	6 30.65	+23 41.6	2.715	3.573	8.9	20.7	2 1	6 25.55	+22 43.8	1.817	2.682	12.3	21.2
2 11	6 26.13	+23 48.5	2.815	3.577	11.3	20.9	2 11	6 21.05	+22 46.9	1.924	2.699	15.4	21.4
214547	2006 <i>OC</i> ₂₁		1 3.2 148°61	0°1/ 3.3 18			427299	2014 <i>WZ</i> ₂₅₈		1 3.2 357°89	1°1/ 3.5 18		
12 3	7 19.94	+21 57.0	1.987	2.828	12.5	21.9	12 3	7 16.10	+18 24.7	1.710	2.560	13.7	21.0
12 13	7 12.99	+22 8.9	1.920	2.835	8.9	21.7	12 13	7 10.60	+18 46.2	1.640	2.558	9.9	20.8
12 23	7 3.91	+22 23.1	1.878	2.842	4.9	21.5	12 23	7 2.78	+19 15.1	1.593	2.557	5.6	20.5
1 2	6 53.58	+22 37.2	1.866	2.849	0.6	21.1	1 2	6 53.51	+19 48.9	1.575	2.557	1.4	20.2
1 12	6 43.16	+22 49.1	1.883	2.855	3.8	21.4	1 12	6 44.00	+20 24.5	1.584	2.557	4.2	20.4
1 22	6 33.77	+22 57.8	1.930	2.860	7.8	21.7	1 22	6 35.51	+20 59.3	1.622	2.557	8.6	20.7
2 1	6 26.37	+23 3.5	2.004	2.865	11.4	21.9	2 1	6 29.10	+21 31.5	1.684	2.557	12.6	20.9
2 11	6 21.57	+23 6.7	2.100	2.870	14.4	22.1	2 11	6 25.47	+22 0.3	1.768	2.558	16.0	21.1
370524	2003 <i>SM</i> ₂₉₅		1 3.2 77°00	3°6/ 2.7 18			370487	2003 <i>QW</i> ₉₅		1 3.3 103°98	0°9/ 3.5 18		
12 3	7 20.46	+33 16.4	2.029	2.870	12.3	20.8	12 3	7 16.90	+19 38.6	2.180	3.019	11.6	21.7
12 13	7 13.41	+33 34.4	1.970	2.880	9.0	20.6	12 13	7 10.64	+19 45.2	2.116	3.030	8.3	21.5
12 23	7 4.13	+33 45.0	1.935	2.891	5.7	20.4	12 23	7 2.58	+19 55.6	2.079	3.041	4.6	21.3
1 2	6 53.61	+33 44.4	1.929	2.901	3.7	20.3	1 2	6 53.47	+20 8.2	2.070	3.052	1.0	21.1
1 12	6 43.10	+33 30.9	1.953	2.911	5.2	20.4	1 12	6 44.32	+20 21.5	2.092	3.063	3.5	21.3
1 22	6 33.83	+33 5.4	2.004	2.922	8.4	20.6	1 22	6 36.08	+20 34.2	2.143	3.074	7.1	21.5
2 1	6 26.74	+32 30.7	2.082	2.932	11.6	20.8	2 1	6 29.55	+20 45.8	2.221	3.084	10.4	21.7
2 11	6 22.41	+31 50.6	2.182	2.943	14.2	21.0	2 11	6 25.28	+20 56.2	2.322	3.094	13.2	22.0
355322	2007 <i>TF</i>		1 3.2 184°65	1°5/ 3.1 18			243217	2007 <i>UC</i> ₁₂₆		1 3.3 93°63	3°0/ 4.4 18		
12 3	7 23.21	+27 18.9	1.769	2.614	13.6	21.7							

EPHEMERIDES

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
173044	2006 <i>QL</i> ₁₀₇		1 3.3 146°35	1.8/ 3.8	18		462769	2010 <i>EC</i> ₉₄		1 3.3 193°34	4.8/ 2.0	18	
12 3	7 14.46	+16 5.0	2.745	3.572	9.8	21.5	12 3	7 19.85	+38 34.5	2.611	3.434	10.4	21.4
12 13	7 8.64	+16 4.2	2.673	3.579	7.1	21.3	12 13	7 12.87	+39 11.7	2.540	3.433	8.0	21.3
12 23	7 1.41	+16 8.6	2.629	3.586	4.2	21.2	12 23	7 3.88	+39 40.2	2.494	3.432	5.8	21.1
1 2	6 53.35	+16 17.3	2.614	3.592	1.9	21.0	1 2	6 53.69	+39 55.6	2.477	3.430	4.8	21.1
1 12	6 45.23	+16 29.5	2.630	3.598	3.2	21.1	1 12	6 43.35	+39 55.7	2.490	3.428	5.8	21.1
1 22	6 37.76	+16 44.0	2.677	3.604	6.1	21.3	1 22	6 33.94	+39 40.6	2.532	3.426	8.0	21.3
2 1	6 31.59	+17 0.0	2.752	3.609	8.8	21.5	2 1	6 26.35	+39 12.7	2.600	3.423	10.4	21.4
2 11	6 27.19	+17 16.7	2.851	3.614	11.2	21.7	2 11	6 21.19	+38 35.8	2.691	3.420	12.6	21.6
96673	1999 <i>JO</i> ₃₇		1 3.3 282°32	1.3/ 3.1	18		378910	2008 <i>UM</i> ₆₃		1 3.3 105°10	2.7/ 3.8	18	
12 3	7 20.61	+24 59.4	1.527	2.382	14.8	19.1	12 3	7 16.11	+14 58.4	2.233	3.064	11.6	21.4
12 13	7 14.35	+25 17.1	1.443	2.365	10.7	18.8	12 13	7 10.04	+14 39.0	2.167	3.073	8.6	21.2
12 23	7 5.09	+25 35.8	1.383	2.348	6.0	18.5	12 23	7 2.26	+14 26.1	2.126	3.081	5.3	21.0
1 2	6 53.80	+25 51.4	1.349	2.331	1.4	18.2	1 2	6 53.51	+14 19.7	2.114	3.089	2.8	20.9
1 12	6 42.01	+26 0.3	1.343	2.314	5.0	18.4	1 12	6 44.70	+14 19.2	2.132	3.097	4.2	21.0
1 22	6 31.35	+26 1.4	1.364	2.297	10.1	18.6	1 22	6 36.75	+14 24.0	2.179	3.105	7.3	21.2
2 1	6 23.24	+25 55.6	1.409	2.280	14.8	18.9	2 1	6 30.41	+14 33.0	2.253	3.113	10.4	21.4
2 11	6 18.61	+25 45.3	1.474	2.263	18.7	19.1	2 11	6 26.20	+14 45.0	2.350	3.121	13.1	21.6
376349	2011 <i>HU</i> ₄₂		1 3.3 31°86	3.4/ 4.3	18		390982	2005 <i>SZ</i> ₁₉		1 3.3 69°01	1.5/ 3.4	18	
12 3	7 14.86	+12 3.2	1.913	2.746	13.2	20.8	12 3	7 23.58	+20 20.0	1.270	2.126	17.1	20.3
12 13	7 9.42	+12 14.1	1.846	2.751	9.9	20.6	12 13	7 16.13	+19 58.9	1.225	2.147	12.3	20.0
12 23	7 2.02	+12 36.7	1.803	2.756	6.3	20.4	12 23	7 5.78	+19 42.3	1.203	2.168	6.8	19.8
1 2	6 53.43	+13 10.0	1.788	2.761	3.5	20.2	1 2	6 53.90	+19 29.0	1.207	2.189	1.7	19.5
1 12	6 44.70	+13 51.8	1.801	2.767	4.8	20.3	1 12	6 42.24	+19 17.9	1.237	2.210	5.1	19.8
1 22	6 36.87	+14 39.0	1.843	2.773	8.2	20.5	1 22	6 32.39	+19 9.1	1.294	2.230	10.3	20.2
2 1	6 30.82	+15 28.7	1.911	2.779	11.6	20.7	2 1	6 25.52	+19 2.7	1.375	2.251	14.7	20.5
2 11	6 27.16	+16 18.1	2.002	2.786	14.6	21.0	2 11	6 22.16	+18 58.9	1.476	2.272	18.3	20.8
462352	2008 <i>RF</i> ₃₉		1 3.3 62°12	4.5/ 4.5	18		5438	Lorre		1 3.3 311°42	5.8/ 3.7	18	
12 3	7 15.26	+ 9 29.2	1.963	2.787	13.3	21.4	12 3	7 30.48	+39 58.1	1.658	2.486	15.2	15.5
12 13	7 9.58	+ 9 19.7	1.902	2.798	10.1	21.2	12 13	7 21.52	+39 28.3	1.558	2.456	11.8	15.2
12 23	7 2.05	+ 9 22.8	1.864	2.809	6.9	21.0	12 23	7 9.03	+38 37.9	1.482	2.427	8.3	15.0
1 2	6 53.44	+ 9 38.7	1.854	2.820	4.7	20.9	1 2	6 54.30	+37 20.6	1.432	2.397	5.9	14.7
1 12	6 44.76	+10 6.2	1.873	2.831	5.5	21.0	1 12	6 39.32	+35 35.2	1.413	2.368	7.3	14.8
1 22	6 37.00	+10 42.7	1.919	2.842	8.4	21.2	1 22	6 26.05	+33 27.4	1.422	2.340	11.2	14.9
2 1	6 30.99	+11 25.3	1.992	2.853	11.5	21.4	2 1	6 16.03	+31 7.6	1.458	2.311	15.4	15.1
2 11	6 27.28	+12 11.0	2.087	2.865	14.3	21.6	2 11	6 10.06	+28 46.7	1.516	2.284	19.2	15.3
259861	2004 <i>CM</i> ₉₈		1 3.3 154°81	5.6/ 2.7	18		13693	Bondar		1 3.3 190°41	0.6/ 3.4	18	R
12 3	7 26.20	+39 12.2	2.017	2.842	13.0	20.3	12 3	7 18.94	+20 26.7	2.233	3.069	11.5	19.2
12 13	7 17.68	+39 32.9	1.952	2.847	10.0	20.1	12 13	7 12.20	+20 32.4	2.155	3.068	8.2	19.0
12 23	7 6.55	+39 40.8	1.912	2.852	7.1	19.9	12 23	7 3.53	+20 41.1	2.104	3.066	4.6	18.7
1 2	6 53.94	+39 30.7	1.900	2.856	5.6	19.8	1 2	6 53.67	+20 51.1	2.081	3.064	0.9	18.5
1 12	6 41.38	+39 0.5	1.917	2.860	6.8	19.9	1 12	6 43.65	+21 0.9	2.090	3.061	3.5	18.7
1 22	6 30.28	+38 12.5	1.963	2.864	9.5	20.1	1 22	6 34.46	+21 9.4	2.128	3.058	7.3	18.9
2 1	6 21.78	+37 11.6	2.034	2.867	12.5	20.3	2 1	6 27.00	+21 16.4	2.194	3.054	10.7	19.1
2 11	6 16.46	+36 3.8	2.127	2.870	15.1	20.5	2 11	6 21.86	+21 22.2	2.283	3.049	13.5	19.3
375400	2008 <i>SU</i> ₂₅₀		1 3.3 123°12	0.9/ 3.1	18		240863	2006 <i>CN</i> ₁		1 3.3 287°55	4.6/ 4.1	18	
12 3	7 17.54	+24 47.9	2.223	3.065	11.3	21.8	12 3	7 18.02	+12 13.7	1.492	2.334	15.8	20.3
12 13	7 11.18	+25 6.8	2.156	3.072	8.0	21.6	12 13	7 12.36	+11 58.2	1.410	2.319	12.0	20.0
12 23	7 2.92	+25 25.9	2.115	3.079	4.4	21.4	12 23	7 3.97	+11 55.9	1.351	2.304	7.8	19.7
1 2	6 53.55	+25 42.5	2.103	3.086	1.0	21.1	1 2	6 53.75	+12 7.4	1.317	2.290	4.7	19.5
1 12	6 44.08	+25 54.5	2.122	3.092	3.6	21.3	1 12	6 43.06	+12 31.7	1.310	2.275	6.3	19.6
1 22	6 35.53	+26 1.1	2.170	3.098	7.2	21.6	1 22	6 33.37	+13 6.3	1.329	2.260	10.6	19.8
2 1	6 28.74	+26 2.7	2.245	3.104	10.5	21.8	2 1	6 25.98	+13 48.0	1.373	2.245	14.9	20.0
2 11	6 24.28	+26 0.4	2.343	3.110	13.2	22.0	2 11	6 21.77	+14 33.3	1.436	2.231	18.8	20.2
65843	1997 <i>AR</i> ₁₅		1 3.3 287°74	2.7/ 2.8	18		105112	2000 <i>LS</i> ₁₉		1 3.3 267°59	3.7/ 3.7	18	
12 3	7 19.85	+29 47.5	1.959	2.803	12.4	19.6	12 3	7 15.66	+12 30.5	2.430	3.251	11.1	19.2
12 13	7 13.40	+30 4.0	1.864	2.779	9.1	19.4	12 13	7 9.75	+11 49.4	2.340	3.237	8.4	19.0
12 23	7 4.43	+30 16.6	1.794	2.755	5.4	19.1	12 23	7 2.16	+11 14.5	2.275	3.223	5.6	18.8
1 2	6 53.76	+30 21.3	1.753	2.731	2.7	18.9	1 2	6 53.53	+10 47.2	2.240	3.208	3.8	18.6
1 12	6 42.65	+30 15.4	1.740	2.706	4.9	19.0	1 12	6 44.69	+10 28.1	2.235	3.193	4.8	18.7
1 22	6 32.45	+29 58.5	1.757	2.681	8.9	19.2	1 22	6 36.50	+10 17.3	2.260	3.178	7.6	18.8
2 1	6 24.34	+29 32.6	1.799	2.656	12.7	19.3	2 1	6 29.73	+10 14.2	2.312	3.163	10.5	19.0
2 11	6 19.15	+29 0.9	1.862	2.632	16.0	19.5	2 11	6 24.96	+10 17.6	2.386	3.147	13.2	19.1
174274	2002 <i>SH</i> ₁₁		1 3.3 24°02	0.9/ 3.1	18		210737	2000 <i>UC</i> ₁		1 3.3 32°01	3.7/ 3.9	17	
12 3	7 19.00	+23 49.6	1.591	2.445	14.3	20.1	12 3	7 18.07	+15 27.8	0.974	1.846	19.7	19.4
12 13	7 12.86	+24 15.0	1.525	2.447	10.2	19.8	12 13	7 12.62	+15 15.3	0.942	1.869	14.4	19.1
12 23	7 4.09	+24 42.6	1.483	2.449	5.6	19.6	12 23	7 3.99	+15 17.1	0.931	1.894	8.5	18.9
1 2	6 53.71	+25 8.3	1.468	2.451	1.1	19.2	1 2	6 53.71	+15 31.9	0.941	1.920	3.9	18.7
1 12	6 43.12	+25 28.8	1.481	2.453	4.6	19.5	1 12	6 43.73	+15 56.5	0.976	1.948	6.3	19.0
1 22	6 33.77	+25 42.5	1.522	2.455	9.2	19.8	1 22	6 35.75	+16 26.9	1.034	1.976	11.4	19.4
2 1	6 26.82	+25 49.8	1.587	2.458	13.4	20.0	2 1	6 30.95	+16 59.9	1.114	2.006	16.1	19.7
2 11	6 23.00	+25 52.0	1.674	2.461	16.9	20.3	2 11	6 29.83	+17 32.4	1.212	2.036	19.9	20.1
285253	1998 <i>HF</i>		1 3.3 351°57	0.7/ 3.1	18		461441	2002 <i>EJ</i> ₉₀		1 3.3 279°05	4.9/ 2.2	18	
12 3	7 16.99	+22 46.6	1.203	2.074	16.8	20.3	12 3	7 20.					

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
334681	2003 <i>BO</i> ₆		1 3.3 356°27	1.3/ 3.4	18		110686	2001 <i>TM</i> ₂₀₄		1 3.3 25°50	8°2/ 5.6	18	
12 3	7 15.32	+20 16.4	1.851	2.701	12.8	19.8	12 3	7 15.43	+1 38.8	1.676	2.481	16.0	19.9
12 13	7 9.88	+19 55.4	1.779	2.698	9.3	19.5	12 13	7 10.04	+1 14.6	1.612	2.484	13.1	19.7
12 23	7 2.34	+19 37.3	1.732	2.696	5.2	19.3	12 23	7 2.48	+1 12.0	1.568	2.487	10.2	19.5
1 2	6 53.55	+19 21.6	1.712	2.694	1.4	19.0	1 2	6 53.60	+1 33.4	1.550	2.491	8.3	19.4
1 12	6 44.63	+19 7.8	1.721	2.693	4.0	19.2	1 12	6 44.55	+2 17.9	1.557	2.494	8.7	19.4
1 22	6 36.69	+18 56.0	1.758	2.692	8.1	19.4	1 22	6 36.48	+3 21.7	1.591	2.498	11.0	19.6
2 1	6 30.69	+18 46.3	1.821	2.693	11.9	19.7	2 1	6 30.38	+4 39.1	1.649	2.503	13.9	19.8
2 11	6 27.24	+18 38.7	1.905	2.694	15.1	19.9	2 11	6 26.89	+6 3.6	1.728	2.507	16.7	20.0
340458	2006 <i>HF</i> ₇		1 3.3 155°48	5°7/ 1.1	18		243755	2000 <i>QV</i> ₁₆₂		1 3.3 211°91	1°2/ 3.5	18	
12 3	7 22.66	+45 51.5	3.383	4.172	9.0	21.9	12 3	7 15.30	+18 52.8	2.855	3.685	9.4	20.8
12 13	7 14.67	+46 46.3	3.324	4.182	7.4	21.8	12 13	7 9.29	+18 40.7	2.770	3.679	6.8	20.7
12 23	7 4.81	+47 30.1	3.292	4.191	6.1	21.7	12 23	7 1.84	+18 31.1	2.713	3.673	3.9	20.5
1 2	6 53.83	+47 58.8	3.288	4.200	5.7	21.7	1 2	6 53.52	+18 23.7	2.685	3.666	1.3	20.2
1 12	6 42.71	+48 10.0	3.315	4.208	6.3	21.7	1 12	6 45.09	+18 17.9	2.689	3.659	3.0	20.4
1 22	6 32.42	+48 4.2	3.370	4.216	7.6	21.8	1 22	6 37.26	+18 13.4	2.724	3.652	6.0	20.6
2 1	6 23.82	+47 43.6	3.451	4.222	9.2	21.9	2 1	6 30.70	+18 10.2	2.788	3.644	8.8	20.7
2 11	6 17.47	+47 11.8	3.554	4.229	10.7	22.1	2 11	6 25.90	+18 8.0	2.876	3.636	11.2	20.9
81306	2000 <i>GV</i> ₇		1 3.3 118°40	0°9/ 3.0	18		387858	2004 <i>QX</i> ₁₃		1 3.3 119°62	11°9/ 7.3	18	
12 3	7 20.46	+23 51.1	2.322	3.157	11.1	19.4	12 3	7 19.82	-10 24.9	1.916	2.640	17.1	21.1
12 13	7 13.11	+24 27.7	2.266	3.179	7.9	19.2	12 13	7 12.79	-11 22.9	1.867	2.661	15.0	21.0
12 23	7 3.94	+25 4.9	2.237	3.200	4.3	19.1	12 23	7 3.82	-11 53.3	1.838	2.680	13.2	20.9
1 2	6 53.73	+25 39.6	2.238	3.221	0.9	18.8	1 2	6 53.75	-11 51.9	1.833	2.699	12.0	20.9
1 12	6 43.50	+26 9.0	2.271	3.241	3.5	19.1	1 12	6 43.68	-11 18.3	1.852	2.717	12.0	20.9
1 22	6 34.23	+26 31.9	2.334	3.260	7.0	19.3	1 22	6 34.68	-10 16.2	1.896	2.734	13.0	21.0
2 1	6 26.73	+26 48.3	2.426	3.278	10.0	19.6	2 1	6 27.59	-8 52.0	1.963	2.750	14.6	21.2
2 11	6 21.55	+26 59.3	2.540	3.296	12.6	19.8	2 11	6 22.96	-7 13.8	2.050	2.766	16.4	21.3
377955	2006 <i>JV</i> ₂₁		1 3.3 256°57	5°5/ 4.6	18		187651	2007 <i>DU</i> ₉₁		1 3.3 98°58	3°9/ 4.5	18	
12 3	7 14.40	+6 13.9	2.203	3.011	12.6	21.2	12 3	7 17.32	+9 59.1	2.072	2.891	12.9	20.5
12 13	7 8.93	+5 49.6	2.127	3.009	9.9	21.0	12 13	7 10.95	+10 4.7	2.015	2.910	9.7	20.4
12 23	7 1.73	+5 38.4	2.075	3.006	7.3	20.8	12 23	7 2.80	+10 22.3	1.982	2.928	6.4	20.2
1 2	6 53.48	+5 41.7	2.051	3.004	5.6	20.7	1 2	6 53.63	+10 51.2	1.979	2.947	4.1	20.1
1 12	6 45.07	+5 59.2	2.055	3.001	6.2	20.7	1 12	6 44.45	+11 29.4	2.004	2.965	5.0	20.2
1 22	6 37.39	+6 29.3	2.087	2.998	8.5	20.9	1 22	6 36.20	+12 14.0	2.059	2.982	7.9	20.4
2 1	6 31.22	+7 9.1	2.146	2.996	11.3	21.0	2 1	6 29.68	+13 2.3	2.141	3.000	10.9	20.6
2 11	6 27.13	+7 55.2	2.227	2.993	13.8	21.2	2 11	6 25.41	+13 51.4	2.246	3.017	13.6	20.8
94562	2001 <i>VJ</i> ₂₈		1 3.3 2°08	2°4/ 2.8	18		190153	2005 <i>TK</i> ₄₅		1 3.3 161°32	0°8/ 3.5	18	
12 3	7 16.68	+25 34.6	1.040	1.920	18.1	18.0	12 3	7 22.24	+19 13.5	1.701	2.542	14.2	21.4
12 13	7 12.23	+26 14.4	0.984	1.918	13.0	17.7	12 13	7 15.01	+19 38.8	1.634	2.548	10.2	21.2
12 23	7 4.17	+26 56.5	0.948	1.916	7.3	17.4	12 23	7 5.25	+20 10.4	1.591	2.554	5.7	20.9
1 2	6 53.78	+27 34.0	0.935	1.917	2.5	17.1	1 2	6 53.94	+20 45.1	1.576	2.558	1.1	20.6
1 12	6 43.10	+28 0.9	0.947	1.919	6.3	17.4	1 12	6 42.42	+21 19.4	1.590	2.562	4.3	20.8
1 22	6 34.18	+28 14.9	0.981	1.922	12.1	17.7	1 22	6 32.07	+21 50.8	1.634	2.566	8.9	21.1
2 1	6 28.62	+28 17.1	1.036	1.927	17.2	18.0	2 1	6 24.02	+22 18.3	1.703	2.568	13.0	21.4
2 11	6 27.24	+28 10.6	1.109	1.933	21.4	18.3	2 11	6 18.98	+22 41.8	1.794	2.570	16.3	21.6
235093	2003 <i>JA</i> ₇		1 3.3 175°63	2°4/ 2.7	18		183512	2003 <i>FG</i> ₅₁		1 3.3 210°31	1°0/ 3.0	18	
12 3	7 22.43	+26 55.0	1.805	2.649	13.4	20.7	12 3	7 18.60	+24 5.5	1.964	2.809	12.4	20.5
12 13	7 15.21	+27 45.9	1.735	2.651	9.6	20.4	12 13	7 12.28	+24 35.2	1.890	2.807	8.9	20.3
12 23	7 5.39	+28 36.5	1.691	2.653	5.5	20.2	12 23	7 3.73	+25 6.6	1.841	2.805	4.9	20.1
1 2	6 53.92	+29 21.4	1.675	2.654	2.4	20.0	1 2	6 53.77	+25 36.1	1.821	2.803	1.1	19.8
1 12	6 42.16	+29 56.1	1.689	2.655	5.0	20.2	1 12	6 43.58	+26 0.7	1.830	2.800	4.0	20.0
1 22	6 31.54	+30 18.6	1.731	2.655	9.1	20.4	1 22	6 34.34	+26 18.8	1.868	2.798	8.1	20.3
2 1	6 23.24	+30 29.8	1.799	2.654	12.9	20.7	2 1	6 27.08	+26 30.3	1.933	2.795	11.8	20.5
2 11	6 18.02	+30 32.2	1.889	2.653	16.0	20.9	2 11	6 22.47	+26 36.5	2.020	2.792	14.9	20.7
402542	2006 <i>HS</i> ₄₈		1 3.3 185°12	1°2/ 2.9	18		323802	2005 <i>QA</i> ₁₅₇		1 3.3 15°90	5°9/ 4.0	18	
12 3	7 21.35	+24 49.3	2.006	2.846	12.4	22.6	12 3	7 15.58	+11 5.7	1.379	2.227	16.5	19.3
12 13	7 14.18	+25 19.4	1.931	2.847	8.9	22.4	12 13	7 10.43	+10 14.8	1.323	2.232	12.6	19.1
12 23	7 4.72	+25 50.2	1.883	2.846	4.9	22.2	12 23	7 2.78	+9 37.7	1.288	2.238	8.6	18.9
1 2	6 53.84	+26 17.9	1.863	2.845	1.3	21.9	1 2	6 53.66	+9 16.8	1.278	2.245	6.0	18.8
1 12	6 42.72	+26 39.6	1.874	2.844	4.1	22.1	1 12	6 44.47	+9 12.8	1.294	2.254	7.2	18.9
1 22	6 32.60	+26 53.8	1.915	2.842	8.1	22.3	1 22	6 36.56	+9 24.1	1.335	2.263	10.8	19.1
2 1	6 24.52	+27 0.9	1.982	2.839	11.8	22.6	2 1	6 31.02	+9 47.6	1.399	2.273	14.7	19.3
2 11	6 19.15	+27 2.6	2.071	2.835	14.8	22.8	2 11	6 28.50	+10 19.1	1.483	2.284	18.0	19.6
322050	2010 <i>VD</i> ₆₂		1 3.3 107°25	1°9/ 3.5	18		116586	2004 <i>BK</i> ₉₇		1 3.3 178°23	2°0/ 2.9	18	
12 3	7 20.54	+18 18.5	1.994	2.828	12.7	20.7	12 3	7 20.83	+27 23.0	1.900	2.745	12.8	20.2
12 13	7 13.24	+17 54.8	1.937	2.847	9.2	20.5	12 13	7 13.92	+27 46.5	1.829	2.746	9.2	20.0
12 23	7 4.01	+17 35.2	1.905	2.865	5.3	20.3	12 23	7 4.63	+28 8.2	1.784	2.746	5.2	19.8
1 2	6 53.74	+17 19.3	1.903	2.883	2.0	20.1	1 2	6 53.88	+28 24.0	1.767	2.747	2.0	19.6
1 12	6 43.54	+17 6.9	1.931	2.900	4.1	20.3	1 12	6 42.96	+28 31.4	1.779	2.747	4.5	19.7
1 22	6 34.47	+16 57.8	1.989	2.917	7.8	20.6	1 22	6 33.14	+28 29.8	1.820	2.747	8.5	20.0
2 1	6 27.36	+16 51.9	2.073	2.934	11.2	20.8	2 1	6 25.50	+28 20.6	1.887	2.746	12.2	20.2
2 11	6 22.72	+16 48.9	2.180	2.950	14.0	21.0	2 11	6 20.71	+28 6.1	1.976	2.745	15.3	20.4
275151	2009 <i>VZ</i> ₉₁		1 3.3 39°17	3°6/ 4.4	18		406189	2006 <i>WP</i> ₁₂₈		1 3.3 50°00	0°1/ 3.3	18	
12 3	7 15.97	+11 43.2	1.611	2.451	14.9	20.0							

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
418283	2008 EA ₁₃₁		1 3.3 203°70	1°8/ 3.8 17			6717	Antal		1 3.3 106°56	2°2/ 3.8 18		
12 3	7 17.50	+16 6.4	2.535	3.360	10.6	22.5	12 3	7 18.36	+16 4.6	2.239	3.068	11.7	18.6
12 13	7 11.05	+16 15.6	2.450	3.355	7.8	22.3	12 13	7 11.59	+15 53.7	2.182	3.088	8.5	18.4
12 23	7 2.90	+16 30.7	2.391	3.348	4.6	22.1	12 23	7 3.14	+15 48.6	2.152	3.108	5.1	18.2
1 2	6 53.70	+16 50.6	2.362	3.341	1.9	21.9	1 2	6 53.76	+15 48.7	2.150	3.128	2.3	18.1
1 12	6 44.29	+17 13.8	2.365	3.334	3.5	22.0	1 12	6 44.42	+15 53.2	2.179	3.147	3.9	18.2
1 22	6 35.53	+17 38.7	2.398	3.325	6.7	22.2	1 22	6 36.02	+16 1.1	2.238	3.165	7.1	18.5
2 1	6 28.20	+18 4.2	2.460	3.316	9.8	22.4	2 1	6 29.30	+16 11.5	2.325	3.183	10.2	18.7
2 11	6 22.88	+18 29.3	2.546	3.307	12.4	22.6	2 11	6 24.76	+16 23.5	2.434	3.201	12.8	18.9
327247	2005 SZ ₄₆		1 3.3 39°84	1°2/ 3.1 18			318024	2004 EE ₆		1 3.3 207°61	3°8/ 4.3 18		
12 3	7 18.91	+25 14.3	1.689	2.541	13.7	21.2	12 3	7 13.98	+10 8.2	2.468	3.285	11.1	21.0
12 13	7 12.67	+25 29.2	1.626	2.546	9.8	20.9	12 13	7 8.53	+9 55.2	2.390	3.283	8.5	20.9
12 23	7 3.98	+25 44.1	1.587	2.552	5.4	20.7	12 23	7 1.52	+9 51.7	2.338	3.282	5.8	20.7
1 2	6 53.82	+25 55.5	1.575	2.557	1.3	20.4	1 2	6 53.58	+9 58.0	2.315	3.280	3.9	20.6
1 12	6 43.56	+26 1.0	1.592	2.563	4.4	20.6	1 12	6 45.50	+10 13.6	2.322	3.279	4.7	20.6
1 22	6 34.53	+26 0.0	1.636	2.569	8.8	20.9	1 22	6 38.08	+10 37.0	2.357	3.277	7.2	20.8
2 1	6 27.79	+25 53.5	1.706	2.575	12.7	21.2	2 1	6 32.03	+11 6.4	2.420	3.275	10.0	20.9
2 11	6 24.00	+25 43.4	1.797	2.581	16.0	21.4	2 11	6 27.86	+11 39.6	2.507	3.273	12.4	21.1
350908	2002 RJ ₂₁₁		1 3.3 131°59	7°7/ 1.7 18			419889	2011 AX ₄₅		1 3.3 340°39	3°6/ 4.3 18		
12 3	7 27.25	+42 49.2	1.921	2.739	13.8	20.9	12 3	7 14.55	+12 39.1	1.529	2.376	15.2	20.1
12 13	7 18.88	+43 55.3	1.866	2.749	11.0	20.7	12 13	7 9.82	+12 53.6	1.454	2.366	11.4	19.9
12 23	7 7.47	+44 46.5	1.836	2.758	8.7	20.6	12 23	7 2.59	+13 22.6	1.400	2.357	7.2	19.6
1 2	6 54.23	+45 15.1	1.832	2.767	7.7	20.6	1 2	6 53.72	+14 5.4	1.373	2.349	3.8	19.4
1 12	6 40.89	+45 17.2	1.856	2.776	8.8	20.7	1 12	6 44.49	+14 58.7	1.372	2.341	5.4	19.5
1 22	6 29.13	+44 54.1	1.907	2.784	11.1	20.8	1 22	6 36.24	+15 58.3	1.398	2.334	9.6	19.7
2 1	6 20.26	+44 11.0	1.981	2.792	13.7	21.0	2 1	6 30.14	+17 0.1	1.449	2.328	13.9	19.9
2 11	6 14.98	+43 15.1	2.076	2.799	16.0	21.2	2 11	6 26.99	+18 0.3	1.520	2.323	17.6	20.2
490652	2010 FY ₈₆		1 3.3 282°47	1°3/ 3.0 18			61304	2000 OJ ₄₈		1 3.3 82°63	1°4/ 3.6 18		
12 3	7 20.76	+24 26.1	1.469	2.326	15.2	21.9	12 3	7 22.04	+18 30.0	1.518	2.365	15.3	19.2
12 13	7 14.64	+24 54.9	1.387	2.310	11.0	21.6	12 13	7 14.81	+18 42.6	1.471	2.388	11.0	19.0
12 23	7 5.40	+25 26.3	1.328	2.294	6.1	21.3	12 23	7 5.09	+19 2.0	1.448	2.411	6.2	18.8
1 2	6 54.03	+25 55.7	1.295	2.277	1.5	20.9	1 2	6 53.99	+19 25.4	1.451	2.433	1.6	18.5
1 12	6 42.10	+26 18.6	1.290	2.261	5.2	21.2	1 12	6 42.99	+19 49.8	1.484	2.456	4.5	18.8
1 22	6 31.31	+26 32.8	1.311	2.245	10.4	21.4	1 22	6 33.45	+20 13.3	1.544	2.477	9.1	19.1
2 1	6 23.15	+26 38.7	1.356	2.228	15.2	21.6	2 1	6 26.42	+20 34.8	1.629	2.499	13.1	19.4
2 11	6 18.58	+26 38.4	1.421	2.212	19.2	21.9	2 11	6 22.48	+20 54.0	1.735	2.520	16.4	19.7
161115	2002 RL ₂		1 3.3 20°65	1°2/ 3.6 18 R			476524	2008 GU ₉₃		1 3.3 36°95	1°6/ 3.1 17		
12 3	7 15.57	+18 36.0	1.950	2.795	12.5	19.2	12 3	7 21.73	+24 30.6	1.038	1.912	18.7	20.7
12 13	7 10.01	+18 45.2	1.881	2.797	9.0	19.0	12 13	7 15.72	+24 59.9	0.989	1.920	13.4	20.5
12 23	7 2.44	+19 0.1	1.837	2.800	5.1	18.8	12 23	7 6.03	+25 31.5	0.961	1.929	7.4	20.2
1 2	6 53.66	+19 19.0	1.822	2.803	1.4	18.5	1 2	6 54.12	+25 59.1	0.956	1.938	1.7	19.9
1 12	6 44.74	+19 39.7	1.835	2.807	3.8	18.7	1 12	6 42.13	+26 17.7	0.976	1.948	6.0	20.2
1 22	6 36.74	+20 0.7	1.877	2.811	7.8	19.0	1 22	6 32.14	+26 26.0	1.019	1.959	11.8	20.5
2 1	6 30.57	+20 20.9	1.945	2.815	11.4	19.2	2 1	6 25.67	+26 25.5	1.084	1.970	16.9	20.8
2 11	6 26.84	+20 39.6	2.036	2.819	14.4	19.4	2 11	6 23.41	+26 19.0	1.167	1.982	21.1	21.2
57001	2000 SO ₃₂₇		1 3.3 191°65	5°4/ 1.9 18			432095	2008 YU ₁₆₇		1 3.3 135°26	0°2/ 3.2 18		
12 3	7 23.09	+39 13.9	2.392	3.213	11.3	19.3	12 3	7 15.80	+21 36.8	2.474	3.312	10.4	21.1
12 13	7 15.42	+39 59.5	2.321	3.212	8.8	19.2	12 13	7 9.90	+22 13.0	2.403	3.317	7.4	20.9
12 23	7 5.43	+40 35.3	2.275	3.210	6.5	19.0	12 23	7 2.30	+22 52.3	2.358	3.322	4.0	20.7
1 2	6 54.01	+40 56.0	2.258	3.207	5.4	18.9	1 2	6 53.68	+23 32.0	2.343	3.326	0.5	20.5
1 12	6 42.40	+40 58.7	2.270	3.204	6.5	19.0	1 12	6 44.90	+24 9.4	2.359	3.330	3.2	20.7
1 22	6 31.84	+40 43.4	2.311	3.201	8.8	19.1	1 22	6 36.83	+24 42.8	2.405	3.334	6.6	20.9
2 1	6 23.37	+40 13.3	2.378	3.197	11.4	19.3	2 1	6 30.26	+25 11.2	2.479	3.338	9.6	21.1
2 11	6 17.67	+39 32.9	2.467	3.193	13.7	19.5	2 11	6 25.74	+25 34.6	2.577	3.342	12.2	21.3
61042	2000 KB ₆₁		1 3.3 63°77	0°1/ 3.3 18			353390	2011 OB ₄		1 3.3 229°58	0°3/ 3.3 18		
12 3	7 13.63	+21 47.5	2.869	3.705	9.2	18.4	12 3	7 22.42	+22 35.6	1.565	2.414	14.8	21.1
12 13	7 8.04	+22 14.3	2.815	3.729	6.5	18.3	12 13	7 15.43	+22 25.3	1.490	2.409	10.7	20.8
12 23	7 1.14	+22 42.9	2.790	3.753	3.5	18.1	12 23	7 5.64	+22 16.2	1.438	2.403	5.9	20.6
1 2	6 53.50	+23 11.4	2.794	3.777	0.4	17.9	1 2	6 54.09	+22 6.2	1.414	2.396	0.8	20.2
1 12	6 45.86	+23 38.0	2.830	3.801	2.7	18.1	1 12	6 42.27	+21 54.1	1.418	2.390	4.6	20.4
1 22	6 38.91	+24 1.5	2.896	3.825	5.6	18.4	1 22	6 31.72	+21 39.8	1.450	2.383	9.6	20.7
2 1	6 33.23	+24 21.5	2.990	3.849	8.2	18.6	2 1	6 23.68	+21 24.7	1.506	2.376	14.0	21.0
2 11	6 29.27	+24 37.9	3.109	3.872	10.3	18.8	2 11	6 18.93	+21 10.2	1.584	2.369	17.8	21.2
209604	2004 YP ₁₅		1 3.3 279°81	1°2/ 3.1 18			49353	1998 WY ₉		1 3.3 94°24	2°6/ 3.8 18		
12 3	7 20.48	+25 6.6	1.619	2.472	14.2	20.6	12 3	7 19.25	+16 2.8	1.758	2.597	13.9	18.7
12 13	7 14.18	+25 22.7	1.534	2.455	10.3	20.3	12 13	7 12.65	+15 53.5	1.699	2.610	10.2	18.5
12 23	7 5.05	+25 39.5	1.473	2.438	5.8	20.0	12 23	7 3.88	+15 52.0	1.665	2.624	6.0	18.3
1 2	6 54.00	+25 53.1	1.439	2.421	1.3	19.7	1 2	6 53.87	+15 57.2	1.658	2.637	2.7	18.1
1 12	6 42.48	+26 0.3	1.433	2.404	4.8	19.9	1 12	6 43.83	+16 8.0	1.681	2.650	4.6	18.2
1 22	6 32.02	+26 0.0	1.454	2.387	9.7	20.1	1 22	6 34.94	+16 22.8	1.731	2.662	8.5	18.5
2 1	6 23.98	+25 53.2	1.501	2.370	14.1	20.4	2 1	6 28.16	+16 40.2	1.808	2.675	12.2	18.8
2 11	6 19.23	+25 42.1	1.567	2.352	17.9	20.6	2 11	6 24.06	+16 58.9	1.906	2.687	15.3	19.0
147124	2002 TH ₁₂₉		1 3.3 158°50	0°3/ 3.3 18			408697	2014 MX ₆₃		1 3.3 202°62	0°6/ 3.5 18		
12 3	7 23.81	+22 27.0	1.555	2.402	15.0	20.3	12 3	7 20.69	+20 0.2	1.986	2.823	12.6	22.5

EPHEMERIDES

1 3.3

1 3.3

2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
143136	2002 <i>XC</i> ₃₈		1 3.3	0°19	7°2/ 1.9	18	272117	2005 <i>LE</i> ₁₀		1 3.3	115°20	1°9/ 3.8	18
12 3	7 24.23	+39 59.3	1.752	2.586	14.2	19.8	12 3	7 19.72	+16 39.7	2.036	2.868	12.6	21.8
12 13	7 16.93	+40 58.0	1.689	2.585	11.2	19.6	12 13	7 12.75	+16 41.2	1.978	2.886	9.1	21.6
12 23	7 6.53	+41 44.0	1.650	2.585	8.4	19.4	12 23	7 3.87	+16 48.9	1.945	2.904	5.3	21.4
1 2	6 54.19	+42 9.7	1.637	2.585	7.2	19.4	1 2	6 53.92	+17 1.7	1.942	2.921	2.1	21.2
1 12	6 41.64	+42 10.5	1.651	2.585	8.5	19.4	1 12	6 43.97	+17 17.8	1.968	2.938	3.9	21.4
1 22	6 30.58	+41 47.3	1.691	2.585	11.3	19.6	1 22	6 35.05	+17 35.9	2.025	2.954	7.6	21.6
2 1	6 22.39	+41 5.0	1.755	2.586	14.3	19.8	2 1	6 28.00	+17 54.7	2.108	2.969	11.0	21.9
2 11	6 17.81	+40 10.3	1.839	2.586	17.0	20.0	2 11	6 23.36	+18 13.6	2.214	2.984	13.8	22.1
21424	Faithchang		1 3.3	27°04	2°6/ 2.8	18	496397	2013 <i>TD</i> ₈₀		1 3.3	194°92	6°4/ 5.1	17
12 3	7 21.13	+25 39.6	1.112	1.983	17.9	17.9	12 3	7 15.53	- 0 10.6	2.803	3.569	11.3	22.5
12 13	7 15.29	+26 29.9	1.059	1.988	12.9	17.7	12 13	7 9.49	- 0 38.9	2.722	3.565	9.3	22.4
12 23	7 5.84	+27 22.1	1.026	1.993	7.3	17.4	12 23	7 2.04	- 0 53.4	2.665	3.562	7.5	22.2
1 2	6 54.12	+28 8.6	1.018	1.999	2.7	17.1	1 2	6 53.72	- 0 52.1	2.636	3.557	6.4	22.2
1 12	6 42.18	+28 42.9	1.035	2.005	6.3	17.4	1 12	6 45.25	- 0 35.1	2.636	3.552	6.7	22.2
1 22	6 32.05	+29 2.6	1.076	2.012	11.8	17.7	1 22	6 37.34	- 0 3.5	2.665	3.546	8.2	22.2
2 1	6 25.30	+29 9.2	1.139	2.020	16.7	18.0	2 1	6 30.64	+ 0 40.0	2.721	3.540	10.1	22.4
2 11	6 22.71	+29 6.2	1.220	2.028	20.8	18.3	2 11	6 25.63	+ 1 31.9	2.801	3.532	12.1	22.5
78745	2002 <i>TD</i> ₂₇₅		1 3.3	131°56	1°6/ 2.9	18	92551	2000 <i>OV</i> ₃₆		1 3.3	56°32	3°4/ 3.7	18
12 3	7 17.70	+27 40.7	2.453	3.291	10.5	20.3	12 3	7 20.90	+16 35.2	1.326	2.178	16.7	18.8
12 13	7 11.23	+27 57.4	2.385	3.299	7.5	20.1	12 13	7 14.29	+16 0.8	1.275	2.192	12.3	18.6
12 23	7 3.01	+28 11.9	2.344	3.306	4.2	19.9	12 23	7 4.94	+15 34.8	1.246	2.207	7.3	18.3
1 2	6 53.77	+28 21.6	2.333	3.313	1.7	19.8	1 2	6 54.06	+15 17.7	1.244	2.222	3.5	18.1
1 12	6 44.46	+28 24.9	2.353	3.320	3.6	19.9	1 12	6 43.25	+15 9.0	1.268	2.237	5.7	18.3
1 22	6 36.02	+28 21.5	2.402	3.327	6.8	20.1	1 22	6 34.00	+15 8.0	1.318	2.252	10.3	18.6
2 1	6 29.22	+28 12.2	2.479	3.333	9.8	20.3	2 1	6 27.46	+15 13.4	1.392	2.268	14.6	18.9
2 11	6 24.61	+27 58.8	2.579	3.339	12.3	20.5	2 11	6 24.22	+15 23.5	1.485	2.283	18.1	19.2
275041	2009 <i>UO</i> ₆₇		1 3.3	117°62	0°9/ 3.1	18	31808	1999 <i>NR</i> ₃₄		1 3.3	305°59	0°5/ 3.5	18
12 3	7 18.79	+23 49.1	2.095	2.937	11.9	21.3	12 3	7 16.89	+19 14.1	1.758	2.607	13.5	17.8
12 13	7 12.23	+24 21.1	2.032	2.948	8.4	21.1	12 13	7 11.39	+19 51.1	1.676	2.594	9.7	17.5
12 23	7 3.66	+24 54.4	1.994	2.958	4.6	20.9	12 23	7 3.47	+20 36.1	1.617	2.582	5.4	17.2
1 2	6 53.88	+25 25.7	1.986	2.968	1.0	20.6	1 2	6 53.91	+21 25.7	1.586	2.569	0.9	16.9
1 12	6 44.00	+25 52.3	2.008	2.978	3.7	20.8	1 12	6 43.93	+22 16.0	1.585	2.557	4.1	17.1
1 22	6 35.09	+26 12.6	2.059	2.988	7.5	21.1	1 22	6 34.82	+23 3.3	1.611	2.545	8.7	17.4
2 1	6 28.05	+26 26.6	2.137	2.997	10.9	21.3	2 1	6 27.73	+23 45.6	1.663	2.534	12.9	17.6
2 11	6 23.48	+26 35.4	2.238	3.006	13.7	21.5	2 11	6 23.47	+24 22.2	1.736	2.522	16.4	17.8
254652	2005 <i>JP</i> ₁₄₅		1 3.3	139°21	1°9/ 2.9	18	175978	2000 <i>PL</i> ₁₀		1 3.3	196°95	4°4/ 2.2	18
12 3	7 21.61	+28 3.2	2.355	3.189	11.0	21.9	12 3	7 22.09	+35 28.7	2.338	3.167	11.3	20.3
12 13	7 14.04	+28 27.7	2.293	3.204	7.9	21.7	12 13	7 14.73	+36 12.8	2.263	3.164	8.5	20.2
12 23	7 4.55	+28 49.5	2.257	3.218	4.5	21.5	12 23	7 5.11	+36 49.9	2.215	3.161	5.8	20.0
1 2	6 53.99	+29 5.3	2.252	3.231	1.9	21.3	1 2	6 54.09	+37 14.9	2.195	3.157	4.4	19.9
1 12	6 43.39	+29 13.2	2.278	3.244	3.9	21.5	1 12	6 42.84	+37 24.7	2.206	3.153	5.7	20.0
1 22	6 33.77	+29 12.8	2.334	3.256	7.2	21.7	1 22	6 32.55	+37 19.1	2.245	3.148	8.4	20.1
2 1	6 26.00	+29 5.3	2.418	3.267	10.2	21.9	2 1	6 24.25	+37 0.2	2.311	3.143	11.2	20.3
2 11	6 20.63	+28 52.9	2.526	3.278	12.8	22.1	2 11	6 18.63	+36 32.0	2.399	3.137	13.7	20.5
413956	2007 <i>BA</i> ₄₇		1 3.3	349°09	3°1/ 2.8	18	427408	1999 <i>TU</i> ₂₁₉		1 3.3	32°84	1°6/ 3.2	16
12 3	7 19.48	+29 46.8	1.663	2.516	13.9	21.2	12 3	7 21.07	+26 41.8	1.238	2.103	16.8	20.1
12 13	7 13.33	+30 15.3	1.594	2.513	10.1	21.0	12 13	7 14.38	+26 42.1	1.209	2.135	11.9	19.9
12 23	7 4.49	+30 39.8	1.550	2.511	6.0	20.7	12 23	7 4.88	+26 39.8	1.202	2.169	6.5	19.7
1 2	6 53.99	+30 55.7	1.532	2.509	3.2	20.5	1 2	6 54.03	+26 31.6	1.221	2.203	1.7	19.5
1 12	6 43.28	+30 59.5	1.542	2.508	5.4	20.7	1 12	6 43.63	+26 16.4	1.266	2.238	5.1	19.8
1 22	6 33.81	+30 51.0	1.579	2.506	9.5	20.9	1 22	6 35.18	+25 55.2	1.337	2.274	9.9	20.2
2 1	6 26.79	+30 32.4	1.641	2.506	13.4	21.1	2 1	6 29.69	+25 30.8	1.431	2.311	14.0	20.5
2 11	6 22.95	+30 7.1	1.724	2.505	16.7	21.4	2 11	6 27.58	+25 5.4	1.546	2.348	17.4	20.8
325298	2008 <i>HD</i> ₃₅		1 3.3	155°09	3°3/ 4.3	18	285577	2000 <i>QZ</i> ₃₈		1 3.3	147°12	3°7/ 2.8	18
12 3	7 17.02	+11 48.2	2.234	3.055	12.0	21.7	12 3	7 26.61	+33 20.9	2.001	2.832	12.8	21.1
12 13	7 10.80	+11 53.2	2.163	3.061	9.0	21.5	12 13	7 17.93	+33 40.2	1.938	2.844	9.4	20.9
12 23	7 2.83	+12 8.2	2.117	3.067	5.8	21.3	12 23	7 6.80	+33 51.3	1.902	2.855	5.9	20.7
1 2	6 53.79	+12 32.4	2.100	3.072	3.4	21.2	1 2	6 54.29	+33 49.9	1.894	2.866	3.7	20.6
1 12	6 44.63	+13 4.2	2.113	3.077	4.4	21.3	1 12	6 41.81	+33 33.9	1.917	2.875	5.4	20.7
1 22	6 36.25	+13 41.4	2.156	3.081	7.5	21.5	1 22	6 30.70	+33 4.6	1.969	2.884	8.7	21.0
2 1	6 29.46	+14 21.8	2.226	3.085	10.6	21.7	2 1	6 22.02	+32 25.6	2.048	2.892	12.0	21.2
2 11	6 24.82	+15 3.1	2.319	3.088	13.3	21.8	2 11	6 16.36	+31 41.4	2.149	2.899	14.8	21.4
425391	2010 <i>CM</i> ₆₃		1 3.3	298°75	0°2/ 3.4	16	164457	2006 <i>DN</i> ₈₉		1 3.3	118°97	6°1/ 5.2	18
12 3	7 15.87	+21 25.3	2.130	2.974	11.6	21.5	12 3	7 20.11	+ 3 59.0	2.081	2.873	13.8	21.3
12 13	7 10.24	+21 40.9	2.049	2.966	8.3	21.3	12 13	7 12.91	+ 3 44.1	2.027	2.897	10.9	21.1
12 23	7 2.63	+21 59.9	1.994	2.959	4.6	21.1	12 23	7 3.92	+ 3 45.4	1.996	2.919	8.1	21.0
1 2	6 53.78	+22 19.9	1.968	2.951	0.6	20.7	1 2	6 53.95	+ 4 3.4	1.994	2.941	6.3	20.9
1 12	6 44.69	+22 38.9	1.972	2.944	3.5	21.0	1 12	6 44.01	+ 4 37.0	2.021	2.962	6.7	21.0
1 22	6 36.40	+22 55.5	2.004	2.937	7.4	21.2	1 22	6 35.05	+ 5 23.2	2.077	2.982	8.9	21.2
2 1	6 29.81	+23 9.0	2.064	2.930	11.0	21.4	2 1	6 27.87	+ 6 18.2	2.159	3.001	11.6	21.4
2 11	6 25.57	+23 19.7	2.146	2.923	14.0	21.6	2 11	6 22.97	+ 7 17.9	2.265	3.019	14.0	21.6
153407	2001 <i>QT</i> ₁₃₁		1 3.3	181°87	2°5/ 3.9	18	94140	2000 <i>YC</i> ₁₃₄		1 3.3	38°85	2°4/ 3.9	18
12 3	7 20.93	+15 10.7	1.776	2.610	14.0								

EPHEMERIDES

1 3.3

1 3.3

2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
491983	2013 <i>EU</i> ₃₄		1 3.3 224°16	1.7/ 2.9	18		378409	2007 <i>RZ</i> ₁₀₈		1 3.3 339°45	7.8/ 1.7	18	
12 3	7 21.27	+26 5.5	1.904	2.748	12.8	21.9	12 3	7 23.08	+44 48.4	2.106	2.920	12.9	20.6
12 13	7 14.41	+26 36.1	1.824	2.740	9.2	21.7	12 13	7 15.89	+45 39.2	2.041	2.917	10.5	20.4
12 23	7 5.07	+27 6.8	1.769	2.732	5.2	21.5	12 23	7 5.92	+46 15.3	1.999	2.915	8.6	20.3
1 2	6 54.12	+27 33.4	1.742	2.723	1.7	21.2	1 2	6 54.26	+46 30.0	1.984	2.912	7.8	20.3
1 12	6 42.83	+27 52.4	1.745	2.714	4.5	21.4	1 12	6 42.44	+46 20.0	1.996	2.910	8.6	20.3
1 22	6 32.53	+28 2.5	1.777	2.704	8.6	21.6	1 22	6 31.96	+45 46.4	2.034	2.907	10.7	20.4
2 1	6 24.35	+28 4.5	1.835	2.694	12.5	21.8	2 1	6 24.06	+44 53.9	2.096	2.905	13.1	20.6
2 11	6 19.07	+28 0.3	1.915	2.683	15.7	22.0	2 11	6 19.43	+43 48.7	2.179	2.904	15.3	20.7
213278	2001 <i>OG</i> ₉₀		1 3.3 130°76	1.9/ 3.9	18		288643	2004 <i>PP</i> ₃₇		1 3.3 169°45	3.8/ 4.5	18	
12 3	7 19.11	+15 55.1	2.198	3.026	11.9	21.1	12 3	7 16.60	+ 9 34.0	2.449	3.260	11.4	21.4
12 13	7 12.27	+16 5.4	2.135	3.041	8.7	21.0	12 13	7 10.43	+ 9 34.9	2.374	3.264	8.7	21.2
12 23	7 3.62	+16 22.5	2.098	3.056	5.1	20.8	12 23	7 2.64	+ 9 46.2	2.325	3.268	5.9	21.1
1 2	6 53.93	+16 44.9	2.091	3.070	2.1	20.6	1 2	6 53.88	+10 7.9	2.305	3.270	3.9	20.9
1 12	6 44.19	+17 10.6	2.114	3.083	3.8	20.7	1 12	6 44.99	+10 38.6	2.315	3.273	4.6	21.0
1 22	6 35.36	+17 37.8	2.168	3.096	7.2	21.0	1 22	6 36.79	+11 16.3	2.355	3.275	7.2	21.2
2 1	6 28.24	+18 5.3	2.249	3.109	10.4	21.2	2 1	6 30.01	+11 58.6	2.423	3.276	10.0	21.3
2 11	6 23.39	+18 31.9	2.353	3.120	13.2	21.4	2 11	6 25.20	+12 43.2	2.515	3.277	12.5	21.5
163600	2002 <i>TF</i> ₂₃₈		1 3.3 82°13	3.3/ 3.9	18		98566	2000 <i>WC</i> ₁₉		1 3.3 324°62	2.2/ 2.8	18	
12 3	7 15.97	+13 20.9	2.225	3.052	11.8	19.5	12 3	7 18.24	+25 4.1	1.313	2.179	16.0	18.9
12 13	7 10.00	+12 53.6	2.161	3.063	8.8	19.3	12 13	7 13.16	+25 54.5	1.237	2.164	11.6	18.6
12 23	7 2.37	+12 33.9	2.122	3.073	5.6	19.1	12 23	7 4.81	+26 49.2	1.184	2.150	6.6	18.3
1 2	6 53.78	+12 22.2	2.112	3.083	3.4	19.0	1 2	6 54.18	+27 41.6	1.156	2.137	2.3	18.0
1 12	6 45.17	+12 18.3	2.132	3.094	4.5	19.1	1 12	6 42.95	+28 25.4	1.154	2.124	5.8	18.2
1 22	6 37.40	+12 21.5	2.180	3.104	7.5	19.3	1 22	6 32.95	+28 56.9	1.177	2.112	11.2	18.5
2 1	6 31.22	+12 30.6	2.256	3.114	10.5	19.5	2 1	6 25.79	+29 15.8	1.223	2.101	16.0	18.7
2 11	6 27.15	+12 44.0	2.354	3.125	13.1	19.7	2 11	6 22.46	+29 24.3	1.288	2.091	20.1	19.0
56476	2000 <i>GU</i> ₁₁₀		1 3.3 107°83	2.9/ 2.9	18		100588	1997 <i>MV</i> ₃		1 3.3 88°57	0.4/ 3.4	18	
12 3	7 25.94	+29 37.3	1.599	2.444	14.7	18.7	12 3	7 21.09	+20 14.7	1.818	2.659	13.4	19.3
12 13	7 17.75	+30 0.2	1.547	2.463	10.6	18.5	12 13	7 13.93	+20 42.6	1.769	2.684	9.6	19.1
12 23	7 6.79	+30 17.9	1.520	2.481	6.2	18.3	12 23	7 4.62	+21 14.9	1.745	2.708	5.2	18.9
1 2	6 54.31	+30 25.3	1.520	2.498	3.0	18.1	1 2	6 54.12	+21 48.2	1.750	2.732	0.7	18.6
1 12	6 41.92	+30 19.9	1.549	2.515	5.4	18.3	1 12	6 43.66	+22 19.5	1.784	2.756	3.9	18.9
1 22	6 31.16	+30 2.7	1.606	2.531	9.5	18.6	1 22	6 34.42	+22 46.8	1.848	2.779	8.0	19.2
2 1	6 23.17	+29 36.9	1.688	2.547	13.4	18.8	2 1	6 27.33	+23 9.7	1.938	2.802	11.6	19.5
2 11	6 18.55	+29 6.5	1.791	2.562	16.5	19.1	2 11	6 22.96	+23 28.2	2.050	2.824	14.6	19.7
100476	1996 <i>TK</i> ₃₇		1 3.3 151°66	0.8/ 3.5	18		384145	2008 <i>YR</i> ₁₃₈		1 3.3 276°04	3.1/ 4.5	18	
12 3	7 15.68	+19 53.7	2.505	3.340	10.4	20.7	12 3	7 14.53	+10 52.6	2.357	3.178	11.5	20.8
12 13	7 9.77	+19 58.2	2.432	3.344	7.4	20.5	12 13	7 9.12	+11 15.4	2.275	3.173	8.6	20.6
12 23	7 2.25	+20 5.9	2.385	3.347	4.2	20.3	12 23	7 2.01	+11 49.4	2.218	3.167	5.6	20.4
1 2	6 53.78	+20 15.3	2.368	3.351	0.9	20.0	1 2	6 53.83	+12 33.6	2.190	3.162	3.3	20.2
1 12	6 45.21	+20 25.2	2.382	3.354	3.1	20.2	1 12	6 45.42	+13 25.8	2.192	3.156	4.2	20.3
1 22	6 37.36	+20 34.8	2.426	3.357	6.4	20.4	1 22	6 37.65	+14 23.1	2.224	3.151	7.2	20.5
2 1	6 30.98	+20 43.6	2.498	3.359	9.5	20.6	2 1	6 31.29	+15 22.5	2.284	3.146	10.2	20.6
2 11	6 26.58	+20 51.4	2.593	3.362	12.0	20.8	2 11	6 26.94	+16 21.4	2.367	3.140	12.9	20.8
466845	2015 <i>BM</i> ₂₅₆		1 3.3 95°78	0.5/ 3.4	18		76325	2000 <i>EZ</i> ₁₄₅		1 3.3 217°62	2.9/ 3.1	18	
12 3	7 16.75	+21 2.9	2.326	3.164	11.0	21.5	12 3	7 24.19	+32 3.5	2.062	2.896	12.3	19.5
12 13	7 10.56	+21 2.4	2.262	3.176	7.8	21.3	12 13	7 16.30	+32 0.5	1.981	2.890	9.1	19.3
12 23	7 2.68	+21 4.2	2.225	3.188	4.3	21.1	12 23	7 6.02	+31 49.9	1.926	2.883	5.5	19.1
1 2	6 53.84	+21 6.8	2.217	3.200	0.8	20.9	1 2	6 54.31	+31 28.5	1.900	2.876	2.9	18.9
1 12	6 44.98	+21 9.3	2.240	3.212	3.2	21.1	1 12	6 42.47	+30 55.0	1.904	2.868	4.8	19.0
1 22	6 36.98	+21 10.9	2.292	3.223	6.7	21.3	1 22	6 31.79	+30 10.9	1.938	2.860	8.4	19.2
2 1	6 30.60	+21 11.6	2.372	3.235	9.9	21.6	2 1	6 23.32	+29 19.7	2.000	2.851	11.9	19.4
2 11	6 26.35	+21 11.6	2.476	3.246	12.5	21.8	2 11	6 17.73	+28 25.4	2.083	2.842	14.9	19.6
368169	1999 <i>VS</i> ₁₂₈		1 3.3 34°67	2.3/ 3.7	18		465732	2009 <i>VP</i> ₁₅		1 3.3 231°65	5.5/ 1.8	18	
12 3	7 16.78	+16 44.3	1.891	2.732	13.0	21.0	12 3	7 21.78	+37 18.6	2.168	2.999	12.0	21.5
12 13	7 10.92	+16 29.8	1.822	2.735	9.5	20.8	12 13	7 14.82	+38 17.4	2.094	2.992	9.2	21.3
12 23	7 3.02	+16 21.8	1.779	2.738	5.6	20.6	12 23	7 5.34	+39 8.1	2.045	2.985	6.7	21.1
1 2	6 53.90	+16 19.7	1.763	2.742	2.5	20.4	1 2	6 54.24	+39 44.6	2.024	2.979	5.5	21.0
1 12	6 44.67	+16 22.6	1.776	2.745	4.3	20.5	1 12	6 42.81	+40 2.9	2.032	2.971	6.8	21.1
1 22	6 36.41	+16 29.6	1.818	2.749	8.1	20.8	1 22	6 32.38	+40 2.4	2.068	2.964	9.4	21.3
2 1	6 30.03	+16 39.7	1.885	2.753	11.7	21.0	2 1	6 24.12	+39 45.5	2.129	2.956	12.2	21.4
2 11	6 26.15	+16 51.8	1.974	2.757	14.8	21.2	2 11	6 18.78	+39 16.7	2.212	2.948	14.8	21.6
223748	2004 <i>RT</i> ₁₈₈		1 3.3 122°63	0.1/ 3.3	18		339829	2005 <i>SB</i> ₂₅₇		1 3.3 26°50	6.6/ 2.3	18	
12 3	7 19.68	+23 27.1	2.345	3.180	11.0	20.4	12 3	7 22.51	+33 32.3	1.093	1.962	18.3	19.9
12 13	7 12.60	+23 25.7	2.283	3.196	7.8	20.3	12 13	7 16.58	+34 41.2	1.046	1.969	13.7	19.7
12 23	7 3.77	+23 24.4	2.248	3.212	4.3	20.1	12 23	7 6.71	+35 41.2	1.020	1.977	9.1	19.4
1 2	6 53.99	+23 21.5	2.244	3.227	0.5	19.8	1 2	6 54.41	+36 21.7	1.016	1.986	6.6	19.3
1 12	6 44.22	+23 16.2	2.270	3.241	3.3	20.1	1 12	6 41.98	+36 36.3	1.037	1.995	8.8	19.5
1 22	6 35.41	+23 8.3	2.327	3.255	6.8	20.3	1 22	6 31.66	+36 25.3	1.082	2.006	13.2	19.8
2 1	6 28.32	+22 58.4	2.411	3.269	9.9	20.5	2 1	6 25.09	+35 54.6	1.147	2.017	17.5	20.0
2 11	6 23.47	+22 47.4	2.519	3.282	12.5	20.7	2 11	6 22.97	+35 11.8	1.230	2.029	21.1	20.3
273002	2006 <i>DL</i> ₆₉		1 3.3 133°75	1.0/ 3.1	18		458370	2010 <i>WL</i> ₃		1 3.3 121°65	0.2/ 3.3	18	
12 3	7 17.85	+24 53.1	2.152	2.996									

EPHEMERIDES

1 3.3

1 3.4

2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
318650	2005 <i>MJ</i> ₄₁		1 3.3 175°11	1.2/ 3.1	18		105971	2000 <i>SB</i> ₂₆₃		1 3.4 170°07	2.2/ 2.9	18	
12 3	7 21.21	+26 47.6	2.365	3.199	11.0	22.0	12 3	7 22.70	+26 46.2	1.801	2.645	13.4	20.5
12 13	7 13.85	+26 54.0	2.290	3.202	7.9	21.8	12 13	7 15.50	+27 26.5	1.732	2.648	9.7	20.2
12 23	7 4.56	+26 58.1	2.243	3.205	4.4	21.6	12 23	7 5.72	+28 6.3	1.688	2.651	5.5	20.0
1 2	6 54.15	+26 57.7	2.225	3.206	1.3	21.3	1 2	6 54.34	+28 40.5	1.673	2.653	2.2	19.8
1 12	6 43.63	+26 51.2	2.239	3.207	3.6	21.5	1 12	6 42.72	+29 5.2	1.687	2.655	4.8	20.0
1 22	6 34.04	+26 38.7	2.282	3.208	7.1	21.7	1 22	6 32.26	+29 19.1	1.730	2.656	8.9	20.2
2 1	6 26.22	+26 21.5	2.354	3.207	10.3	21.9	2 1	6 24.10	+29 23.1	1.799	2.656	12.7	20.4
2 11	6 20.76	+26 1.4	2.450	3.207	13.0	22.1	2 11	6 19.00	+29 19.9	1.889	2.656	15.9	20.7
415687	2014 <i>SU</i> ₅₄		1 3.3 178°82	3°6/ 2.5	18		273625	2007 <i>DT</i> ₂₉		1 3.4 55°73	3°3/ 2.8	18	
12 3	7 23.57	+32 29.3	2.223	3.055	11.7	21.8	12 3	7 20.43	+30 44.3	1.839	2.686	13.1	21.1
12 13	7 15.81	+33 9.7	2.151	3.057	8.6	21.6	12 13	7 13.84	+31 13.3	1.774	2.689	9.5	20.9
12 23	7 5.76	+33 44.7	2.106	3.059	5.5	21.4	12 23	7 4.78	+31 37.6	1.733	2.692	5.8	20.7
1 2	6 54.31	+34 9.4	2.089	3.060	3.6	21.3	1 2	6 54.23	+31 52.5	1.719	2.695	3.3	20.6
1 12	6 42.65	+34 20.7	2.104	3.060	5.2	21.4	1 12	6 43.54	+31 55.2	1.735	2.698	5.3	20.7
1 22	6 32.02	+34 18.4	2.147	3.059	8.3	21.6	1 22	6 34.05	+31 45.6	1.778	2.701	8.9	20.9
2 1	6 23.44	+34 4.3	2.218	3.057	11.4	21.8	2 1	6 26.83	+31 26.0	1.847	2.704	12.5	21.1
2 11	6 17.60	+33 42.0	2.311	3.055	14.0	21.9	2 11	6 22.58	+30 59.7	1.937	2.707	15.5	21.3
310457	2000 <i>QU</i> ₁₄₇		1 3.3 126°96	18°6/ 10.3	18		348731	2006 <i>EH</i> ₄₇		1 3.4 333°36	0°5/ 3.3	18	
12 3	7 20.53	-16 16.7	1.201	1.935	24.9	20.3	12 3	7 18.53	+22 28.5	1.249	2.116	16.6	20.9
12 13	7 14.52	-17 23.7	1.149	1.939	22.7	20.1	12 13	7 13.34	+22 54.1	1.179	2.107	12.0	20.6
12 23	7 5.39	-17 44.9	1.109	1.942	20.6	20.0	12 23	7 4.90	+23 25.2	1.131	2.098	6.7	20.3
1 2	6 54.28	-17 10.8	1.087	1.945	19.1	19.9	1 2	6 54.29	+23 57.2	1.107	2.090	0.9	19.9
1 12	6 42.88	-15 39.1	1.084	1.947	18.6	19.9	1 12	6 43.21	+24 25.5	1.109	2.082	5.3	20.2
1 22	6 32.90	-13 16.7	1.100	1.950	19.5	19.9	1 22	6 33.50	+24 47.4	1.136	2.076	10.9	20.4
2 1	6 25.75	-10 17.1	1.136	1.952	21.3	20.1	2 1	6 26.67	+25 2.4	1.186	2.070	16.0	20.7
2 11	6 22.26	- 6 57.8	1.189	1.955	23.6	20.2	2 11	6 23.63	+25 11.5	1.254	2.064	20.2	21.0
353912	2012 <i>XL</i> ₁₁₈		1 3.3 16°69	4°9/ 2.4	18		118682	2000 <i>NJ</i> ₃		1 3.4 77°28	2°5/ 4.0	18	
12 3	7 20.57	+30 2.2	1.131	2.003	17.6	19.9	12 3	7 18.88	+14 44.4	1.822	2.657	13.7	20.2
12 13	7 15.06	+31 5.8	1.079	2.006	12.9	19.6	12 13	7 12.36	+14 55.8	1.771	2.679	10.0	20.0
12 23	7 5.87	+32 5.8	1.048	2.010	8.0	19.4	12 23	7 3.80	+15 16.4	1.744	2.702	6.0	19.8
1 2	6 54.34	+32 53.1	1.040	2.016	4.9	19.2	1 2	6 54.12	+15 44.6	1.746	2.724	2.7	19.7
1 12	6 42.58	+33 20.9	1.057	2.022	7.5	19.4	1 12	6 44.46	+16 17.8	1.777	2.746	4.3	19.8
1 22	6 32.67	+33 27.8	1.099	2.029	12.3	19.7	1 22	6 35.92	+16 53.4	1.836	2.768	8.1	20.1
2 1	6 26.19	+33 17.3	1.161	2.037	16.9	20.0	2 1	6 29.39	+17 29.4	1.922	2.789	11.6	20.4
2 11	6 23.94	+32 54.9	1.242	2.046	20.7	20.2	2 11	6 25.40	+18 4.1	2.030	2.810	14.5	20.6
272945	2006 <i>BT</i> ₂₇₈		1 3.3 4°17	0°7/ 3.5	18		281339	2007 <i>TX</i> ₄₃₃		1 3.4 152°58	8°4/ 4.9	18	
12 3	7 16.95	+20 2.6	1.945	2.790	12.5	21.1	12 3	7 15.17	- 4 56.7	2.649	3.392	12.4	21.0
12 13	7 11.13	+20 17.0	1.873	2.790	9.0	20.9	12 13	7 9.32	- 6 5.7	2.582	3.397	10.7	20.9
12 23	7 3.22	+20 36.0	1.826	2.790	5.0	20.7	12 23	7 2.04	- 6 58.2	2.539	3.401	9.2	20.8
1 2	6 54.02	+20 57.5	1.808	2.790	0.9	20.4	1 2	6 53.91	- 7 31.1	2.522	3.406	8.4	20.8
1 12	6 44.63	+21 19.1	1.818	2.790	3.7	20.6	1 12	6 45.68	- 7 43.0	2.532	3.410	8.7	20.8
1 22	6 36.16	+21 39.2	1.857	2.791	7.8	20.8	1 22	6 38.08	- 7 34.6	2.569	3.413	9.8	20.9
2 1	6 29.56	+21 57.0	1.923	2.791	11.5	21.1	2 1	6 31.75	- 7 8.6	2.630	3.417	11.4	21.0
2 11	6 25.48	+22 12.4	2.010	2.792	14.6	21.3	2 11	6 27.20	- 6 28.9	2.713	3.420	13.0	21.1
313412	2002 <i>PY</i> ₁₇₃		1 3.3 56°82	2°5/ 3.9	17		339515	2005 <i>GJ</i> ₁₃₄		1 3.4 173°39	0°9/ 3.6	17	
12 3	7 20.34	+16 16.5	1.422	2.271	16.0	21.2	12 3	7 15.41	+18 54.5	2.766	3.597	9.7	22.1
12 13	7 13.73	+16 17.5	1.379	2.295	11.6	21.0	12 13	7 9.53	+19 1.2	2.690	3.599	7.0	21.9
12 23	7 4.62	+16 28.0	1.359	2.320	6.8	20.8	12 23	7 2.17	+19 11.4	2.640	3.601	3.9	21.8
1 2	6 54.17	+16 46.2	1.366	2.345	2.7	20.6	1 2	6 53.95	+19 23.9	2.621	3.603	1.1	21.5
1 12	6 43.86	+17 9.4	1.400	2.370	4.9	20.8	1 12	6 45.60	+19 37.5	2.633	3.604	2.9	21.7
1 22	6 35.04	+17 35.4	1.460	2.396	9.4	21.1	1 22	6 37.89	+19 51.1	2.675	3.604	6.0	21.9
2 1	6 28.75	+18 2.0	1.546	2.421	13.4	21.4	2 1	6 31.49	+20 4.3	2.746	3.605	8.8	22.1
2 11	6 25.53	+18 27.8	1.652	2.447	16.7	21.7	2 11	6 26.88	+20 16.6	2.841	3.605	11.2	22.2
502920	2015 <i>EJ</i> ₂₂		1 3.3 298°39	4°4/ 4.6	17		228054	2008 <i>HB</i> ₇₀		1 3.4 200°15	2°3/ 2.9	18	
12 3	7 14.02	+ 8 53.5	2.226	3.044	12.1	21.7	12 3	7 25.12	+27 34.8	1.714	2.557	14.0	21.4
12 13	7 8.84	+ 8 46.3	2.143	3.035	9.4	21.5	12 13	7 17.42	+28 3.6	1.639	2.554	10.2	21.2
12 23	7 1.91	+ 8 51.0	2.083	3.025	6.5	21.3	12 23	7 6.89	+28 30.5	1.588	2.550	5.9	20.9
1 2	6 53.87	+ 9 8.0	2.052	3.015	4.5	21.2	1 2	6 54.54	+28 50.4	1.565	2.545	2.4	20.7
1 12	6 45.59	+ 9 36.4	2.049	3.006	5.3	21.2	1 12	6 41.87	+28 59.8	1.572	2.539	5.0	20.8
1 22	6 37.98	+10 14.2	2.076	2.997	8.0	21.3	1 22	6 30.43	+28 58.0	1.607	2.533	9.5	21.1
2 1	6 31.83	+10 58.8	2.128	2.987	11.0	21.5	2 1	6 21.50	+28 46.7	1.668	2.526	13.5	21.3
2 11	6 27.77	+11 47.1	2.204	2.978	13.7	21.7	2 11	6 15.88	+28 29.4	1.750	2.518	17.0	21.5
414483	2009 <i>QD</i> ₁₅		1 3.3 42°87	6°8/ 2.6	18		135789	2002 <i>RL</i> ₉₂		1 3.4 137°09	1°1/ 3.2	18	
12 3	7 24.01	+39 45.4	1.677	2.513	14.6	20.3	12 3	7 21.43	+25 24.4	1.927	2.770	12.7	20.7
12 13	7 16.67	+40 21.7	1.624	2.523	11.4	20.2	12 13	7 14.33	+25 40.9	1.863	2.779	9.1	20.5
12 23	7 6.37	+40 43.8	1.593	2.533	8.3	20.0	12 23	7 4.97	+25 56.8	1.824	2.787	5.0	20.3
1 2	6 54.39	+40 45.2	1.589	2.543	6.8	19.9	1 2	6 54.29	+26 8.9	1.813	2.795	1.3	20.0
1 12	6 42.46	+40 23.4	1.612	2.554	8.0	20.0	1 12	6 43.52	+26 14.9	1.833	2.803	4.1	20.2
1 22	6 32.22	+39 40.4	1.661	2.565	10.8	20.2	1 22	6 33.88	+26 14.5	1.881	2.810	8.1	20.5
2 1	6 24.88	+38 42.0	1.734	2.576	13.9	20.4	2 1	6 26.36	+26 8.5	1.956	2.817	11.7	20.7
2 11	6 21.06	+37 35.0	1.828	2.587	16.7	20.7	2 11	6 21.58	+25 58.8	2.053	2.824	14.7	20.9
185042	2006 <i>QF</i> ₁₄₇		1 3.3 342°45	1°5/ 3.1	18		456616	2007 <i>GB</i> ₇₁		1 3.4 262°55	1°3/ 3.6	18	
12 3	7 19.32	+25 20.5	1										

EPHEMERIDES

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
178999	2001 <i>RT</i> ₁₀		1 3.4 120°14	6°2/ 4.9 18			171414	2006 <i>RJ</i> ₉₁		1 3.4 25°15	0°1/ 3.3 18		
12 3	7 17.58	+ 4 46.4	2.020	2.822	13.8	20.3	12 3	7 15.51	+22 35.2	2.067	2.914	11.8	20.4
12 13	7 11.33	+ 4 21.3	1.958	2.834	10.9	20.1	12 13	7 10.00	+22 47.0	2.001	2.920	8.4	20.2
12 23	7 3.24	+ 4 11.8	1.919	2.845	8.1	20.0	12 23	7 2.58	+23 0.8	1.962	2.926	4.6	20.0
1 2	6 54.08	+ 4 19.2	1.908	2.857	6.4	19.9	1 2	6 54.03	+23 14.4	1.950	2.933	0.6	19.7
1 12	6 44.86	+ 4 43.0	1.925	2.868	6.9	19.9	1 12	6 45.39	+23 26.1	1.968	2.940	3.5	19.9
1 22	6 36.53	+ 5 20.6	1.970	2.878	9.1	20.1	1 22	6 37.65	+23 34.7	2.014	2.948	7.3	20.2
2 1	6 29.93	+ 6 8.6	2.041	2.888	11.9	20.3	2 1	6 31.69	+23 40.2	2.087	2.955	10.8	20.4
2 11	6 25.62	+ 7 2.7	2.135	2.898	14.4	20.5	2 11	6 28.07	+23 43.1	2.183	2.964	13.6	20.6
204558	2005 <i>EP</i> ₂₆₄		1 3.4 235°68	4°0/ 4.3 18			18897	2000 <i>HG</i> ₃₀		1 3.4 165°64	0°1/ 3.3 18		
12 3	7 14.97	+10 24.1	2.284	3.104	11.8	21.0	12 3	7 19.69	+20 31.5	2.126	2.963	11.9	17.3
12 13	7 9.44	+10 6.5	2.208	3.102	9.0	20.8	12 13	7 13.04	+21 20.8	2.053	2.966	8.5	17.1
12 23	7 2.21	+ 9 58.7	2.156	3.100	6.1	20.6	12 23	7 4.30	+22 15.2	2.007	2.970	4.7	16.9
1 2	6 53.97	+10 1.4	2.132	3.098	4.1	20.5	1 2	6 54.26	+23 11.0	1.990	2.973	0.6	16.6
1 12	6 45.56	+10 13.9	2.138	3.096	5.0	20.5	1 12	6 43.98	+24 4.2	2.004	2.976	3.6	16.8
1 22	6 37.87	+10 35.0	2.173	3.094	7.7	20.7	1 22	6 34.52	+24 52.1	2.049	2.978	7.5	17.1
2 1	6 31.65	+11 2.7	2.234	3.091	10.6	20.9	2 1	6 26.86	+25 33.1	2.120	2.979	11.0	17.3
2 11	6 27.48	+11 34.6	2.319	3.089	13.2	21.0	2 11	6 21.66	+26 7.3	2.215	2.981	13.9	17.5
253225	2002 <i>YU</i> ₈		1 3.4 358°47	2°7/ 3.6 18			7672	Hawking		1 3.4 44°58	5°7/ 2.4 18		
12 3	7 17.33	+18 33.2	1.341	2.202	16.1	19.6	12 3	7 24.24	+32 58.7	1.265	2.124	17.0	18.3
12 13	7 12.04	+17 53.8	1.276	2.199	11.8	19.4	12 13	7 17.52	+33 56.2	1.211	2.130	12.6	18.1
12 23	7 3.96	+17 19.7	1.233	2.197	6.9	19.1	12 23	7 7.19	+34 45.9	1.179	2.136	8.2	17.9
1 2	6 54.19	+16 51.4	1.215	2.195	2.9	18.8	1 2	6 54.62	+35 19.0	1.171	2.142	5.7	17.8
1 12	6 44.24	+16 29.6	1.224	2.195	5.4	19.0	1 12	6 41.88	+35 29.9	1.190	2.149	7.8	17.9
1 22	6 35.63	+16 14.4	1.258	2.196	10.3	19.3	1 22	6 31.00	+35 18.7	1.233	2.156	12.1	18.2
2 1	6 29.59	+16 5.7	1.316	2.198	14.8	19.5	2 1	6 23.51	+34 50.5	1.299	2.163	16.3	18.4
2 11	6 26.83	+16 2.5	1.393	2.201	18.6	19.8	2 11	6 20.18	+34 11.7	1.383	2.170	19.8	18.7
33596	Taesoolee		1 3.4 183°44	0°8/ 3.6 18			296661	2009 <i>SK</i> ₁₅₁		1 3.4 75°21	1°1/ 3.6 18		
12 3	7 18.16	+19 52.6	1.924	2.767	12.7	18.8	12 3	7 18.33	+19 26.4	1.852	2.696	13.1	20.8
12 13	7 12.03	+20 1.1	1.851	2.767	9.2	18.6	12 13	7 12.11	+19 28.3	1.790	2.705	9.4	20.5
12 23	7 3.75	+20 14.1	1.804	2.767	5.1	18.3	12 23	7 3.77	+19 34.9	1.752	2.715	5.3	20.3
1 2	6 54.16	+20 29.6	1.784	2.767	1.1	18.0	1 2	6 54.19	+19 44.4	1.743	2.725	1.3	20.1
1 12	6 44.38	+20 45.6	1.794	2.766	3.8	18.2	1 12	6 44.55	+19 55.2	1.763	2.735	3.9	20.3
1 22	6 35.54	+21 0.7	1.833	2.766	8.0	18.5	1 22	6 35.97	+20 6.0	1.811	2.745	8.0	20.5
2 1	6 28.63	+21 14.3	1.898	2.766	11.7	18.7	2 1	6 29.38	+20 16.3	1.886	2.755	11.7	20.8
2 11	6 24.29	+21 26.1	1.986	2.765	14.8	18.9	2 11	6 25.39	+20 25.9	1.982	2.764	14.8	21.0
373998	2004 <i>BG</i> ₉₂		1 3.4 0°10	1°8/ 3.3 18			247199	2001 <i>OF</i> ₉₇		1 3.4 55°35	2°0/ 3.9 18		
12 3	7 18.25	+28 31.0	1.662	2.517	13.8	19.6	12 3	7 21.95	+15 26.1	1.465	2.308	16.0	20.0
12 13	7 12.38	+28 15.3	1.594	2.515	9.9	19.4	12 13	7 14.75	+16 3.7	1.432	2.346	11.5	19.8
12 23	7 4.02	+27 54.7	1.550	2.514	5.6	19.1	12 23	7 5.16	+16 51.7	1.423	2.384	6.6	19.7
1 2	6 54.19	+27 27.0	1.532	2.514	1.9	18.9	1 2	6 54.35	+17 46.0	1.441	2.422	2.2	19.5
1 12	6 44.29	+26 51.6	1.543	2.514	4.5	19.0	1 12	6 43.78	+18 41.8	1.487	2.459	4.5	19.7
1 22	6 35.65	+26 10.1	1.581	2.515	8.9	19.3	1 22	6 34.76	+19 35.2	1.562	2.496	8.9	20.1
2 1	6 29.37	+25 25.4	1.645	2.518	12.9	19.5	2 1	6 28.24	+20 23.9	1.661	2.534	12.8	20.4
2 11	6 26.07	+24 40.6	1.729	2.521	16.2	19.8	2 11	6 24.73	+21 6.8	1.782	2.570	15.9	20.7
108187	2001 <i>HF</i> ₁₆		1 3.4 153°63	0°1/ 3.4 18			118172	Vorgebirge		1 3.4 323°86	6°6/ 31.7 18		
12 3	7 23.21	+21 18.5	1.676	2.520	14.3	20.3	12 3	7 18.72	+31 31.4	1.376	2.239	15.6	18.7
12 13	7 15.86	+21 39.6	1.611	2.527	10.3	20.1	12 13	7 14.23	+33 27.4	1.278	2.199	11.9	18.4
12 23	7 5.93	+22 4.7	1.570	2.534	5.6	19.9	12 23	7 5.96	+35 29.6	1.203	2.159	8.2	18.0
1 2	6 54.44	+22 30.4	1.557	2.540	0.7	19.5	1 2	6 54.57	+37 26.2	1.154	2.120	6.7	17.8
1 12	6 42.78	+22 53.4	1.574	2.546	4.3	19.8	1 12	6 41.67	+39 4.6	1.131	2.081	9.4	17.9
1 22	6 32.35	+23 12.1	1.619	2.551	8.9	20.1	1 22	6 29.40	+40 16.3	1.132	2.044	14.0	18.0
2 1	6 24.29	+23 26.3	1.690	2.555	13.0	20.3	2 1	6 19.98	+40 59.5	1.155	2.008	18.7	18.2
2 11	6 19.31	+23 36.7	1.782	2.559	16.4	20.6	2 11	6 15.02	+41 18.4	1.195	1.972	22.8	18.4
252065	2000 <i>SY</i> ₁₂₈		1 3.4 117°97	0°2/ 3.4 18			465716	2009 <i>UV</i> ₆₉		1 3.4 92°84	0°8/ 3.6 18		
12 3	7 19.41	+22 30.5	1.978	2.820	12.4	20.6	12 3	7 18.14	+19 1.5	1.955	2.796	12.6	21.7
12 13	7 12.80	+22 27.7	1.911	2.827	8.9	20.4	12 13	7 11.92	+19 23.8	1.892	2.807	9.1	21.5
12 23	7 4.11	+22 26.2	1.870	2.834	4.9	20.1	12 23	7 3.66	+19 51.5	1.855	2.818	5.1	21.3
1 2	6 54.21	+22 24.2	1.857	2.840	0.6	19.8	1 2	6 54.19	+20 22.4	1.846	2.828	1.1	21.1
1 12	6 44.23	+22 20.5	1.875	2.847	3.7	20.1	1 12	6 44.62	+20 53.5	1.867	2.839	3.7	21.3
1 22	6 35.30	+22 14.9	1.921	2.853	7.7	20.3	1 22	6 36.03	+21 22.9	1.916	2.849	7.7	21.5
2 1	6 28.32	+22 7.7	1.994	2.859	11.3	20.6	2 1	6 29.33	+21 49.5	1.993	2.860	11.3	21.8
2 11	6 23.90	+21 59.7	2.089	2.865	14.3	20.8	2 11	6 25.12	+22 12.7	2.092	2.870	14.2	22.0
81050	2000 <i>ES</i> ₆₃		1 3.4 300°44	1°6/ 3.7 18			10041	Parkinson		1 3.4 271°93	14°3/ 5.7 18		
12 3	7 18.24	+17 59.4	1.691	2.538	14.0	20.2	12 3	7 17.72	-12 0.6	1.733	2.461	18.5	17.7
12 13	7 12.35	+18 6.9	1.618	2.534	10.2	19.9	12 13	7 12.09	-13 16.1	1.650	2.440	16.8	17.5
12 23	7 4.05	+18 21.5	1.568	2.530	5.9	19.7	12 23	7 4.02	-14 3.1	1.585	2.420	15.3	17.4
1 2	6 54.22	+18 41.5	1.545	2.526	1.8	19.4	1 2	6 54.27	-14 13.9	1.541	2.399	14.4	17.3
1 12	6 44.11	+19 4.5	1.551	2.523	4.3	19.5	1 12	6 43.99	-13 44.6	1.519	2.377	14.5	17.2
1 22	6 35.03	+19 28.4	1.584	2.519	8.8	19.8	1 22	6 34.46	-12 36.6	1.520	2.355	15.8	17.2
2 1	6 28.08	+19 51.9	1.643	2.516	12.9	20.0	2 1	6 26.84	-10 55.7	1.541	2.333	17.8	17.3
2 11	6 23.98	+20 14.0	1.723	2.512	16.4	20.3	2 11	6 21.99	- 8 51.5	1.581	2.311	20.0	17.4
89752	2002 <i>AX</i> ₃₂		1 3.4 57°82	0°2/ 3.3 17			503711	2016 <i>JU</i> ₂₀		1 3.4 315°03	3°1/ 2.5 18		
12 3	7 21.82	+21 1.3	1.277	2.137	16.8	19.1	12 3	7 17.91	+30 49.				

EPHEMERIDES

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
463781	2014 <i>SM</i> ₂₂₂		1 3.4 133°15	1.2/ 3.2	18		308731	2006 <i>HO</i> ₄₈		1 3.4 189°39	0.2/ 3.4	18	
12 3	7 21.12	+25 43.0	2.058	2.898	12.1	21.8	12 3	7 21.08	+21 8.1	1.985	2.823	12.6	21.8
12 13	7 14.00	+25 58.5	1.995	2.909	8.7	21.6	12 13	7 14.14	+21 25.2	1.909	2.823	9.1	21.6
12 23	7 4.78	+26 13.1	1.957	2.920	4.8	21.4	12 23	7 4.97	+21 45.7	1.858	2.821	5.0	21.3
1 2	6 54.34	+26 23.7	1.948	2.930	1.3	21.2	1 2	6 54.41	+22 7.1	1.837	2.820	0.7	21.0
1 12	6 43.85	+26 28.4	1.970	2.940	3.9	21.4	1 12	6 43.61	+22 26.9	1.845	2.817	3.8	21.2
1 22	6 34.42	+26 26.7	2.021	2.949	7.7	21.6	1 22	6 33.75	+22 43.6	1.883	2.814	8.0	21.5
2 1	6 26.98	+26 19.7	2.099	2.957	11.1	21.9	2 1	6 25.86	+22 56.8	1.948	2.810	11.7	21.7
2 11	6 22.13	+26 9.1	2.199	2.966	14.0	22.1	2 11	6 20.60	+23 7.0	2.035	2.806	14.8	21.9
369144	2008 <i>RY</i> ₁₃₆		1 3.4 56°37	1.8/ 3.1	18		238010	2002 <i>TQ</i> ₂₅₁		1 3.4 57°21	1.1/ 3.6	17	
12 3	7 20.01	+27 37.0	1.837	2.685	13.0	20.8	12 3	7 21.59	+18 53.1	1.198	2.058	17.6	20.3
12 13	7 13.29	+27 48.2	1.787	2.705	9.3	20.6	12 13	7 15.26	+19 14.6	1.149	2.072	12.7	20.0
12 23	7 4.37	+27 56.5	1.763	2.726	5.2	20.4	12 23	7 5.80	+19 44.9	1.121	2.086	7.1	19.8
1 2	6 54.28	+27 58.9	1.766	2.747	1.9	20.3	1 2	6 54.50	+20 20.2	1.118	2.101	1.5	19.5
1 12	6 44.28	+27 53.7	1.799	2.768	4.3	20.5	1 12	6 43.17	+20 56.0	1.142	2.115	5.1	19.7
1 22	6 35.56	+27 41.2	1.859	2.789	8.1	20.7	1 22	6 33.52	+21 29.1	1.191	2.130	10.6	20.1
2 1	6 29.04	+27 23.2	1.946	2.810	11.6	21.0	2 1	6 26.86	+21 57.8	1.263	2.145	15.3	20.4
2 11	6 25.25	+27 1.9	2.055	2.831	14.5	21.2	2 11	6 23.88	+22 22.1	1.355	2.161	19.2	20.7
241185	2007 <i>RR</i> ₂₈₁		1 3.4 124°24	2.1/ 3.9	18		459430	2012 <i>SW</i> ₆₃		1 3.4 184°19	4.5/ 4.5	18	
12 3	7 20.79	+15 13.4	1.786	2.620	14.0	20.2	12 3	7 14.57	+7 55.8	2.548	3.355	11.1	21.2
12 13	7 13.94	+15 42.9	1.724	2.633	10.2	20.0	12 13	7 9.02	+7 32.4	2.471	3.355	8.6	21.0
12 23	7 4.83	+16 22.4	1.686	2.645	6.0	19.8	12 23	7 1.97	+7 19.3	2.420	3.355	6.2	20.8
1 2	6 54.36	+17 9.1	1.677	2.657	2.3	19.6	1 2	6 54.03	+7 17.3	2.398	3.354	4.6	20.7
1 12	6 43.76	+17 59.5	1.698	2.669	4.3	19.8	1 12	6 45.96	+7 26.3	2.405	3.354	5.2	20.8
1 22	6 34.24	+18 50.0	1.748	2.680	8.4	20.0	1 22	6 38.53	+7 45.1	2.441	3.353	7.4	20.9
2 1	6 26.81	+19 38.3	1.824	2.690	12.2	20.3	2 1	6 32.41	+8 11.8	2.504	3.352	9.9	21.1
2 11	6 22.11	+20 22.7	1.923	2.700	15.3	20.5	2 11	6 28.12	+8 44.0	2.591	3.351	12.3	21.2
35384	1997 <i>WK</i> ₃₇		1 3.4 86°68	1.4/ 3.7	18		395722	2012 <i>TE</i> ₃₁₁		1 3.4 45°58	4.4/ 4.1	17	
12 3	7 23.21	+18 27.3	1.528	2.372	15.4	19.2	12 3	7 20.65	+14 21.3	1.092	1.953	19.0	20.5
12 13	7 15.74	+18 38.5	1.482	2.397	11.0	19.0	12 13	7 14.60	+13 57.7	1.048	1.968	14.0	20.3
12 23	7 5.78	+18 56.4	1.459	2.422	6.2	18.8	12 23	7 5.42	+13 48.2	1.024	1.984	8.7	20.0
1 2	6 54.46	+19 18.1	1.464	2.446	1.7	18.6	1 2	6 54.46	+13 52.7	1.023	2.000	4.6	19.9
1 12	6 43.26	+19 41.0	1.498	2.470	4.5	18.8	1 12	6 43.57	+14 9.4	1.048	2.017	6.6	20.0
1 22	6 33.54	+20 3.1	1.559	2.493	9.0	19.2	1 22	6 34.47	+14 35.0	1.096	2.034	11.4	20.3
2 1	6 26.33	+20 23.3	1.646	2.516	13.1	19.5	2 1	6 28.42	+15 6.3	1.167	2.052	16.1	20.7
2 11	6 22.22	+20 41.5	1.754	2.538	16.3	19.7	2 11	6 26.05	+15 39.8	1.257	2.071	19.9	21.0
36048	1999 <i>RR</i> ₁₇		1 3.4 269°40	3.4/ 2.8	18		204256	2004 <i>EW</i> ₆₈		1 3.4 29°07	9.2/ 2.7	16	
12 3	7 20.74	+32 0.6	2.000	2.842	12.4	19.0	12 3	7 24.93	+45 49.3	1.636	2.459	15.5	18.9
12 13	7 14.07	+32 21.2	1.921	2.833	9.1	18.8	12 13	7 17.56	+46 34.5	1.595	2.476	12.7	18.7
12 23	7 4.99	+32 36.2	1.867	2.824	5.7	18.6	12 23	7 6.96	+46 59.4	1.577	2.494	10.3	18.6
1 2	6 54.40	+32 41.1	1.841	2.815	3.4	18.4	1 2	6 54.64	+46 57.0	1.582	2.513	9.2	18.6
1 12	6 43.56	+32 33.5	1.844	2.806	5.2	18.5	1 12	6 42.55	+46 25.0	1.614	2.532	10.0	18.7
1 22	6 33.77	+32 13.5	1.876	2.797	8.7	18.7	1 22	6 32.49	+45 27.0	1.670	2.552	12.1	18.9
2 1	6 26.13	+31 43.6	1.933	2.787	12.1	18.9	2 1	6 25.66	+44 10.4	1.749	2.573	14.6	19.1
2 11	6 21.33	+31 7.3	2.013	2.778	15.1	19.1	2 11	6 22.59	+42 43.6	1.848	2.594	16.9	19.3
202551	2006 <i>DX</i> ₁₈₈		1 3.4 195°97	1.2/ 2.9	18		170356	2003 <i>SY</i> ₁₈₆		1 3.4 166°26	1.9/ 3.9	18	
12 3	7 12.97	+27 32.8	3.589	4.422	7.6	20.9	12 3	7 20.39	+16 26.8	2.008	2.839	12.7	21.2
12 13	7 7.64	+27 49.7	3.509	4.421	5.4	20.8	12 13	7 13.53	+16 35.1	1.936	2.844	9.3	21.0
12 23	7 1.13	+28 5.2	3.458	4.419	3.1	20.6	12 23	7 4.58	+16 50.5	1.890	2.848	5.5	20.8
1 2	6 53.91	+28 17.8	3.437	4.416	1.2	20.5	1 2	6 54.37	+17 11.4	1.872	2.852	2.1	20.6
1 12	6 46.59	+28 26.1	3.447	4.414	2.6	20.6	1 12	6 43.99	+17 35.8	1.885	2.855	4.0	20.7
1 22	6 39.76	+28 29.8	3.489	4.412	5.0	20.8	1 22	6 34.55	+18 1.8	1.928	2.858	7.9	21.0
2 1	6 33.97	+28 29.0	3.559	4.409	7.2	20.9	2 1	6 26.97	+18 28.0	1.997	2.859	11.4	21.2
2 11	6 29.63	+28 24.5	3.654	4.406	9.1	21.0	2 11	6 21.91	+18 53.4	2.089	2.860	14.5	21.4
495397	2014 <i>QW</i> ₃₀₆		1 3.4 81°36	7.3/ 5.6	18		422613	2014 <i>UA</i> ₂		1 3.4 330°48	3.7/ 2.3	18	
12 3	7 17.20	+2 38.5	1.764	2.567	15.5	21.2	12 3	7 19.08	+29 53.1	1.755	2.607	13.4	20.2
12 13	7 11.32	+2 23.3	1.704	2.578	12.4	21.1	12 13	7 13.20	+30 53.4	1.683	2.601	9.8	19.9
12 23	7 3.36	+2 28.2	1.666	2.589	9.5	20.9	12 23	7 4.67	+31 51.9	1.636	2.595	6.0	19.7
1 2	6 54.19	+2 54.6	1.654	2.600	7.5	20.8	1 2	6 54.40	+32 42.2	1.616	2.590	3.7	19.6
1 12	6 44.92	+3 41.1	1.669	2.610	7.8	20.9	1 12	6 43.75	+33 19.4	1.624	2.585	5.8	19.7
1 22	6 36.65	+4 43.8	1.711	2.621	10.2	21.0	1 22	6 34.15	+33 41.2	1.660	2.581	9.6	19.9
2 1	6 30.30	+5 57.4	1.779	2.632	13.1	21.2	2 1	6 26.86	+33 48.8	1.720	2.576	13.3	20.1
2 11	6 26.47	+7 16.2	1.868	2.643	15.8	21.4	2 11	6 22.68	+33 45.1	1.801	2.573	16.4	20.3
317377	2002 <i>ND</i> ₇₉		1 3.4 50°24	0.4/ 3.6	18		207734	2007 <i>RK</i> ₁₉₂		1 3.4 61°89	1.1/ 3.2	17	
12 3	7 26.34	+11 22.4	0.964	1.818	21.4	19.5	12 3	7 22.56	+23 57.1	1.377	2.234	16.0	20.2
12 13	7 19.68	+14 16.2	0.907	1.827	15.6	19.2	12 13	7 15.61	+24 24.6	1.333	2.256	11.4	20.0
12 23	7 8.80	+17 45.9	0.872	1.836	8.8	18.8	12 23	7 5.84	+24 53.5	1.312	2.278	6.2	19.8
1 2	6 54.92	+21 34.7	0.863	1.846	1.3	18.4	1 2	6 54.51	+25 19.2	1.317	2.300	1.2	19.5
1 12	6 40.28	+25 18.5	0.883	1.856	6.3	18.8	1 12	6 43.29	+25 38.1	1.350	2.322	4.8	19.8
1 22	6 27.35	+28 36.7	0.930	1.867	13.2	19.2	1 22	6 33.72	+25 49.1	1.410	2.345	9.7	20.1
2 1	6 18.19	+31 18.9	1.001	1.877	18.9	19.5	2 1	6 26.96	+25 53.2	1.494	2.367	13.9	20.4
2 11	6 13.96	+33 25.4	1.090	1.888	23.3	19.9	2 11	6 23.58	+25 52.2	1.598	2.389	17.3	20.7
68767	2002 <i>ES</i> ₁₀₄		1 3.4 114°68	6.7/ 5.5	18		257444	4188 <i>P-L</i>		1 3.4 177°50	5.6/ 2.3	18	
12 3	7 20.23	+2 50.4	1.932	2.724									

EPHEMERIDES

1 3.4

1 3.4

2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
17374	1981 <i>EF</i> ₄		1 3.4 242°79	2°5/ 3.7 18			445581	2011 <i>QL</i> ₇₄		1 3.4 32°71	3°6/ 3.0 16		
12 3	7 21.18	+17 7.7	1.787	2.624	13.8	18.9	12 3	7 21.72	+29 28.4	1.146	2.015	17.6	20.7
12 13	7 14.46	+16 46.5	1.701	2.611	10.2	18.7	12 13	7 15.61	+29 54.2	1.102	2.028	12.8	20.5
12 23	7 5.27	+16 30.9	1.639	2.598	6.1	18.4	12 23	7 6.09	+30 14.6	1.078	2.043	7.5	20.3
1 2	6 54.48	+16 20.6	1.604	2.583	2.6	18.2	1 2	6 54.62	+30 23.6	1.079	2.058	3.6	20.1
1 12	6 43.32	+16 15.0	1.600	2.569	4.7	18.3	1 12	6 43.25	+30 17.8	1.106	2.075	6.4	20.3
1 22	6 33.10	+16 13.7	1.623	2.553	9.1	18.5	1 22	6 33.86	+29 58.3	1.157	2.092	11.3	20.6
2 1	6 24.95	+16 16.3	1.673	2.538	13.1	18.7	2 1	6 27.79	+29 29.0	1.230	2.110	15.8	20.9
2 11	6 19.66	+16 22.2	1.744	2.521	16.7	18.9	2 11	6 25.65	+28 54.7	1.322	2.128	19.5	21.2
59367	1999 <i>EQ</i> ₃		1 3.4 155°15	0°3/ 3.3 18			447697	2007 <i>DV</i> ₁₈		1 3.4 284°73	3°2/ 2.9 18		
12 3	7 22.46	+22 35.6	1.987	2.824	12.6	19.9	12 3	7 23.35	+28 57.2	1.369	2.227	16.0	21.3
12 13	7 15.06	+22 59.6	1.920	2.833	9.0	19.7	12 13	7 16.81	+29 22.7	1.297	2.218	11.7	21.0
12 23	7 5.44	+23 25.9	1.878	2.841	5.0	19.5	12 23	7 6.89	+29 44.9	1.246	2.209	6.9	20.7
1 2	6 54.49	+23 51.0	1.866	2.849	0.7	19.1	1 2	6 54.76	+29 57.6	1.222	2.201	3.2	20.5
1 12	6 43.41	+24 12.4	1.884	2.855	3.8	19.4	1 12	6 42.21	+29 56.8	1.224	2.192	6.0	20.6
1 22	6 33.36	+24 28.6	1.932	2.861	7.9	19.7	1 22	6 31.12	+29 42.1	1.253	2.184	11.0	20.9
2 1	6 25.36	+24 39.6	2.007	2.867	11.5	19.9	2 1	6 23.05	+29 16.7	1.304	2.175	15.7	21.1
2 11	6 20.04	+24 46.6	2.105	2.871	14.5	20.1	2 11	6 18.85	+28 45.0	1.375	2.167	19.6	21.4
220556	2004 <i>HN</i> ₃		1 3.4 239°30	4°0/ 4.2 18			190754	2001 <i>QL</i> ₇₉		1 3.4 103°88	2°6/ 3.0 18		
12 3	7 17.60	+11 17.2	2.104	2.925	12.6	21.0	12 3	7 27.00	+28 36.9	1.680	2.521	14.4	20.6
12 13	7 11.57	+11 3.7	2.017	2.914	9.6	20.8	12 13	7 18.46	+29 5.0	1.633	2.547	10.3	20.5
12 23	7 3.56	+11 0.3	1.955	2.902	6.4	20.6	12 23	7 7.31	+29 28.9	1.611	2.572	5.9	20.3
1 2	6 54.28	+11 7.4	1.921	2.890	4.1	20.4	1 2	6 54.77	+29 43.6	1.617	2.596	2.6	20.1
1 12	6 44.70	+11 24.4	1.917	2.878	5.1	20.4	1 12	6 42.38	+29 46.6	1.653	2.620	5.0	20.3
1 22	6 35.85	+11 49.7	1.942	2.865	8.3	20.6	1 22	6 31.57	+29 38.4	1.718	2.642	9.1	20.6
2 1	6 28.64	+12 21.1	1.993	2.852	11.6	20.8	2 1	6 23.43	+29 21.6	1.808	2.664	12.7	20.9
2 11	6 23.74	+12 56.3	2.067	2.838	14.6	21.0	2 11	6 18.51	+28 59.7	1.920	2.685	15.7	21.1
134443	1998 <i>SN</i> ₅₆		1 3.4 99°21	4°1/ 2.7 18			484244	2007 <i>EV</i> ₂₁₁		1 3.4 335°48	2°5/ 3.1 18		
12 3	7 25.79	+33 22.4	1.912	2.747	13.1	20.4	12 3	7 22.24	+27 18.5	1.263	2.126	16.7	21.0
12 13	7 17.45	+33 58.7	1.866	2.772	9.7	20.2	12 13	7 16.07	+27 39.5	1.197	2.122	12.1	20.8
12 23	7 6.70	+34 26.9	1.844	2.797	6.2	20.0	12 23	7 6.49	+27 58.7	1.153	2.118	7.0	20.5
1 2	6 54.64	+34 42.0	1.852	2.822	4.1	20.0	1 2	6 54.70	+28 10.6	1.134	2.115	2.5	20.2
1 12	6 42.71	+34 41.7	1.889	2.845	5.7	20.1	1 12	6 42.60	+28 11.2	1.141	2.112	5.8	20.4
1 22	6 32.24	+34 26.8	1.955	2.868	8.9	20.3	1 22	6 32.09	+28 0.3	1.174	2.109	11.1	20.7
2 1	6 24.23	+34 0.6	2.047	2.891	12.0	20.6	2 1	6 24.68	+27 40.4	1.229	2.107	16.0	20.9
2 11	6 19.25	+33 27.6	2.160	2.913	14.6	20.8	2 11	6 21.22	+27 15.5	1.303	2.105	20.0	21.2
290813	2005 <i>VR</i> ₁₀₂		1 3.4 78°70	7°1/ 2.3 18			185525	2007 <i>VJ</i> ₁₆₄		1 3.4 264°98	0°7/ 3.5 18		
12 3	7 26.62	+41 23.1	1.848	2.672	14.0	20.1	12 3	7 19.92	+20 15.0	1.712	2.558	13.9	21.1
12 13	7 18.40	+42 15.7	1.804	2.693	11.0	19.9	12 13	7 13.75	+20 26.8	1.628	2.545	10.1	20.8
12 23	7 7.35	+42 53.5	1.784	2.714	8.4	19.8	12 23	7 5.00	+20 43.7	1.568	2.531	5.7	20.5
1 2	6 54.73	+43 9.6	1.791	2.735	7.1	19.8	1 2	6 54.53	+21 3.4	1.535	2.518	1.0	20.2
1 12	6 42.23	+43 1.4	1.826	2.756	8.2	19.9	1 12	6 43.63	+21 23.2	1.531	2.504	4.3	20.4
1 22	6 31.42	+42 30.9	1.887	2.776	10.6	20.1	1 22	6 33.68	+21 41.3	1.555	2.489	9.0	20.6
2 1	6 23.45	+41 43.4	1.973	2.797	13.2	20.3	2 1	6 25.89	+21 56.9	1.605	2.475	13.3	20.9
2 11	6 18.91	+40 45.7	2.079	2.817	15.6	20.5	2 11	6 21.09	+22 10.1	1.675	2.460	16.9	21.1
221299	2005 <i>UD</i> ₄₉₁		1 3.4 120°82	3°2/ 2.8 18			463544	2013 <i>RM</i> ₄₄		1 3.4 94°65	1°0/ 3.3 18		
12 3	7 21.78	+31 26.0	2.034	2.874	12.3	20.5	12 3	7 19.89	+26 21.9	2.092	2.934	11.9	20.9
12 13	7 14.63	+31 53.1	1.972	2.883	9.0	20.3	12 13	7 13.11	+26 18.6	2.029	2.944	8.5	20.7
12 23	7 5.21	+32 14.9	1.936	2.893	5.5	20.1	12 23	7 4.33	+26 13.2	1.991	2.954	4.7	20.5
1 2	6 54.48	+32 27.0	1.928	2.902	3.2	20.0	1 2	6 54.42	+26 3.7	1.982	2.964	1.2	20.2
1 12	6 43.68	+32 27.1	1.949	2.911	5.0	20.1	1 12	6 44.50	+25 49.1	2.003	2.974	3.7	20.4
1 22	6 34.04	+32 15.4	2.000	2.919	8.3	20.3	1 22	6 35.65	+25 29.7	2.053	2.983	7.5	20.7
2 1	6 26.55	+31 54.2	2.076	2.927	11.5	20.5	2 1	6 28.72	+25 7.0	2.131	2.993	10.8	20.9
2 11	6 21.81	+31 26.7	2.175	2.935	14.3	20.7	2 11	6 24.29	+24 42.8	2.231	3.002	13.7	21.1
498699	2008 <i>SR</i> ₃₀₉		1 3.4 41°15	0°7/ 3.1 17			197692	2004 <i>OJ</i> ₃		1 3.4 164°61	1°1/ 3.2 18		
12 3	7 19.08	+19 38.0	1.783	2.628	13.5	20.0	12 3	7 24.11	+25 31.2	1.805	2.646	13.5	21.2
12 13	7 12.90	+21 11.9	1.726	2.643	9.6	19.8	12 13	7 16.46	+25 41.2	1.736	2.651	9.7	21.0
12 23	7 4.38	+22 53.8	1.695	2.659	5.2	19.6	12 23	7 6.32	+25 50.2	1.693	2.656	5.4	20.7
1 2	6 54.41	+24 37.0	1.693	2.676	0.9	19.3	1 2	6 54.68	+25 54.8	1.678	2.660	1.3	20.4
1 12	6 44.20	+26 14.5	1.721	2.692	4.2	19.6	1 12	6 42.91	+25 52.9	1.693	2.663	4.3	20.7
1 22	6 35.02	+27 41.0	1.780	2.709	8.4	19.9	1 22	6 32.36	+25 44.3	1.736	2.666	8.6	20.9
2 1	6 27.93	+28 54.0	1.864	2.727	12.1	20.2	2 1	6 24.14	+25 30.6	1.807	2.668	12.5	21.2
2 11	6 23.62	+29 53.5	1.972	2.745	15.2	20.4	2 11	6 18.91	+25 14.1	1.898	2.669	15.7	21.4
78803	2003 <i>MK</i> ₅		1 3.4 167°31	0°9/ 3.5 18 R			180576	2004 <i>FV</i> ₇		1 3.4 302°79	2°2/ 3.5 18		
12 3	7 19.18	+20 54.6	2.323	3.157	11.1	19.7	12 3	7 20.50	+20 5.1	1.590	2.439	14.6	19.7
12 13	7 12.44	+20 34.2	2.248	3.160	8.0	19.5	12 13	7 14.36	+19 18.2	1.496	2.414	10.8	19.4
12 23	7 3.91	+20 15.3	2.201	3.162	4.5	19.3	12 23	7 5.43	+18 31.8	1.426	2.388	6.3	19.0
1 2	6 54.34	+19 57.1	2.182	3.164	1.1	19.1	1 2	6 54.60	+17 46.4	1.382	2.363	2.3	18.7
1 12	6 44.70	+19 39.4	2.195	3.166	3.4	19.2	1 12	6 43.26	+17 3.1	1.367	2.338	5.1	18.8
1 22	6 35.92	+19 22.3	2.238	3.168	7.0	19.5	1 22	6 32.91	+16 23.8	1.379	2.313	10.0	19.1
2 1	6 28.81	+19 6.5	2.309	3.169	10.2	19.7	2 1	6 24.86	+15 50.3	1.416	2.288	14.6	19.3
2 11	6 23.90	+18 52.4	2.404	3.170	12.9	19.9	2 11	6 20.00	+15 23.4	1.473	2.264	18.6	19.5
36699	2000 <i>RQ</i> ₁₇		1 3.4 63°44	4°3/ 4.1 18			440607	2005 <i>VB</i> ₇₆		1 3.4 79°24	2°5/ 2.9 18		
12 3	7 17.49	+11 58.9	1.849</										

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
164188	2004 <i>BB</i> ₇₄		1 3.4 35°00'	2°9'	4.3	18	262578	2006 <i>VW</i> ₆₇		1 3.4 52°57'	2°8'	2.8	16
12 3	7 15.28	+13 9.6	2.000	2.833	12.7	19.5	12 3	7 22.91	+27 10.5	1.409	2.265	15.7	20.6
12 13	7 9.91	+13 24.5	1.933	2.839	9.4	19.3	12 13	7 15.88	+28 3.6	1.372	2.294	11.2	20.4
12 23	7 2.64	+13 50.0	1.891	2.846	5.9	19.1	12 23	7 6.05	+28 54.6	1.359	2.323	6.4	20.2
1 2	6 54.23	+14 24.6	1.877	2.852	3.0	18.9	1 2	6 54.69	+29 36.8	1.373	2.352	2.9	20.0
1 12	6 45.68	+15 6.0	1.892	2.859	4.3	19.0	1 12	6 43.50	+30 6.1	1.414	2.381	5.5	20.3
1 22	6 37.98	+15 51.4	1.935	2.867	7.7	19.3	1 22	6 34.00	+30 21.3	1.481	2.411	9.8	20.6
2 1	6 31.98	+16 38.1	2.005	2.874	11.1	19.5	2 1	6 27.33	+30 24.8	1.573	2.440	13.7	20.9
2 11	6 28.28	+17 23.8	2.098	2.882	14.0	19.7	2 11	6 24.05	+30 19.6	1.686	2.470	16.9	21.2
39568	1992 <i>SM</i> ₃		1 3.4 21°50'	0°3'	3.5	18	251721	1997 <i>UO</i>		1 3.4 92°18'	8°8'	5.8	18
12 3	7 18.86	+20 58.7	1.238	2.103	16.8	19.0	12 3	7 18.64	- 1 41.3	1.945	2.719	15.3	21.0
12 13	7 13.41	+21 15.1	1.182	2.108	12.1	18.7	12 13	7 12.12	- 2 30.4	1.896	2.742	12.7	20.8
12 23	7 4.90	+21 37.7	1.147	2.114	6.7	18.4	12 23	7 3.77	- 2 58.6	1.870	2.764	10.4	20.7
1 2	6 54.52	+22 2.7	1.138	2.121	0.9	18.1	1 2	6 54.42	- 3 3.2	1.870	2.786	8.9	20.7
1 12	6 43.99	+22 26.5	1.154	2.128	5.0	18.4	1 12	6 45.10	- 2 44.1	1.896	2.808	9.1	20.7
1 22	6 34.98	+22 46.7	1.196	2.137	10.4	18.7	1 22	6 36.79	- 2 4.3	1.948	2.829	10.7	20.9
2 1	6 28.81	+23 2.6	1.261	2.146	15.1	19.0	2 1	6 30.29	- 1 8.4	2.026	2.850	12.9	21.1
2 11	6 26.22	+23 14.5	1.345	2.155	19.0	19.3	2 11	6 26.11	- 0 2.4	2.124	2.871	15.0	21.3
318064	2004 <i>FS</i> ₁₂₇		1 3.4 284°07'	2°0'	3.8	18	492174	2013 <i>PN</i> ₆₉		1 3.4 162°06'	0°4'	3.5	18
12 3	7 18.42	+17 36.4	1.743	2.587	13.8	21.9	12 3	7 19.14	+21 43.1	2.572	3.402	10.3	21.4
12 13	7 12.60	+17 31.6	1.658	2.573	10.1	21.6	12 13	7 12.31	+21 38.0	2.499	3.409	7.4	21.2
12 23	7 4.34	+17 33.5	1.597	2.559	5.9	21.3	12 23	7 3.85	+21 34.0	2.453	3.415	4.1	21.0
1 2	6 54.48	+17 41.0	1.564	2.544	2.2	21.0	1 2	6 54.44	+21 30.0	2.437	3.420	0.7	20.7
1 12	6 44.24	+17 52.7	1.559	2.530	4.5	21.2	1 12	6 44.96	+21 25.1	2.453	3.425	3.0	20.9
1 22	6 34.89	+18 7.0	1.582	2.516	8.9	21.4	1 22	6 36.27	+21 19.1	2.500	3.429	6.4	21.2
2 1	6 27.59	+18 22.9	1.630	2.501	13.1	21.6	2 1	6 29.09	+21 12.2	2.575	3.432	9.4	21.4
2 11	6 23.11	+18 39.5	1.699	2.487	16.6	21.8	2 11	6 23.95	+21 5.0	2.675	3.435	11.9	21.5
66301	1999 <i>JF</i> ₃₅		1 3.4 192°44'	0°9'	3.6	18	156481	2002 <i>CH</i> ₆₃		1 3.4 281°79'	1°0'	3.1	18
12 3	7 21.50	+19 59.7	1.986	2.821	12.7	20.6	12 3	7 18.63	+23 15.5	1.974	2.819	12.4	20.8
12 13	7 14.46	+20 3.9	1.908	2.820	9.2	20.4	12 13	7 12.74	+23 59.1	1.882	2.799	8.9	20.5
12 23	7 5.21	+20 11.9	1.856	2.818	5.2	20.1	12 23	7 4.47	+24 46.9	1.814	2.778	5.0	20.2
1 2	6 54.58	+20 21.9	1.833	2.815	1.1	19.8	1 2	6 54.56	+25 34.9	1.776	2.758	1.1	19.9
1 12	6 43.73	+20 32.0	1.840	2.811	3.8	20.0	1 12	6 44.14	+26 18.9	1.767	2.737	4.1	20.1
1 22	6 33.81	+20 41.2	1.876	2.807	8.0	20.3	1 22	6 34.43	+26 56.1	1.787	2.717	8.4	20.3
2 1	6 25.85	+20 49.0	1.940	2.802	11.7	20.5	2 1	6 26.59	+27 25.5	1.833	2.696	12.3	20.5
2 11	6 20.52	+20 55.8	2.026	2.797	14.9	20.7	2 11	6 21.45	+27 47.4	1.902	2.675	15.6	20.7
344538	2002 <i>TV</i> ₃₇₇		1 3.4 35°65'	4°1'	2.9	17	391401	2007 <i>BK</i> ₆₅		1 3.4 235°23'	0°7'	3.3	18
12 3	7 22.64	+29 14.7	1.035	1.908	18.7	20.2	12 3	7 23.28	+24 0.6	1.617	2.464	14.5	22.0
12 13	7 16.60	+29 57.9	0.992	1.921	13.6	20.0	12 13	7 16.33	+24 14.5	1.536	2.455	10.5	21.7
12 23	7 6.79	+30 36.5	0.969	1.934	8.1	19.7	12 23	7 6.52	+24 29.7	1.480	2.444	5.8	21.5
1 2	6 54.77	+31 2.5	0.970	1.948	4.1	19.6	1 2	6 54.82	+24 42.7	1.451	2.434	1.0	21.1
1 12	6 42.79	+31 10.9	0.996	1.964	7.1	19.8	1 12	6 42.71	+24 50.3	1.451	2.422	4.6	21.3
1 22	6 32.97	+31 2.0	1.044	1.980	12.2	20.1	1 22	6 31.74	+24 51.6	1.478	2.411	9.6	21.6
2 1	6 26.78	+30 40.1	1.115	1.997	16.9	20.4	2 1	6 23.23	+24 47.4	1.531	2.399	14.0	21.8
2 11	6 24.87	+30 10.5	1.203	2.014	20.8	20.7	2 11	6 18.03	+24 39.7	1.604	2.386	17.7	22.0
334536	2002 <i>RT</i> ₂₄₃		1 3.4 137°02'	0°8'	3.3	18	185737	1998 <i>YA</i> ₁₇		1 3.4 319°24'	0°2'	3.5	18
12 3	7 18.38	+25 13.6	2.389	3.227	10.7	21.2	12 3	7 19.01	+22 24.4	1.615	2.468	14.2	20.4
12 13	7 11.90	+25 18.6	2.320	3.234	7.7	21.0	12 13	7 13.16	+22 22.4	1.539	2.460	10.3	20.1
12 23	7 3.65	+25 22.9	2.278	3.241	4.2	20.8	12 23	7 4.71	+22 22.5	1.487	2.452	5.7	19.9
1 2	6 54.38	+25 24.4	2.265	3.247	0.9	20.6	1 2	6 54.60	+22 22.8	1.462	2.445	0.8	19.5
1 12	6 45.04	+25 21.9	2.282	3.253	3.3	20.8	1 12	6 44.21	+22 21.4	1.465	2.438	4.3	19.7
1 22	6 36.56	+25 15.0	2.330	3.259	6.8	21.0	1 22	6 34.92	+22 17.6	1.495	2.431	9.1	20.0
2 1	6 29.74	+25 4.6	2.405	3.264	9.9	21.2	2 1	6 27.93	+22 11.9	1.550	2.425	13.4	20.3
2 11	6 25.10	+24 51.9	2.504	3.270	12.5	21.4	2 11	6 23.99	+22 5.3	1.625	2.418	17.0	20.5
429006	2009 <i>BA</i> ₆₃		1 3.4 12°97'	0°4'	3.3	18	142289	2002 <i>RJ</i> ₁₃₇		1 3.4 68°80'	7°0'	5.8	18
12 3	7 15.98	+22 51.6	1.834	2.686	12.8	20.8	12 3	7 18.67	+ 3 31.8	1.627	2.436	16.3	19.4
12 13	7 10.65	+23 12.1	1.768	2.689	9.2	20.6	12 13	7 12.46	+ 3 30.5	1.578	2.457	12.9	19.2
12 23	7 3.14	+23 35.2	1.727	2.692	5.0	20.4	12 23	7 4.09	+ 3 50.5	1.550	2.478	9.5	19.0
1 2	6 54.32	+23 57.9	1.714	2.697	0.7	20.0	1 2	6 54.50	+ 4 32.1	1.548	2.500	7.2	19.0
1 12	6 45.35	+24 17.8	1.729	2.702	3.9	20.3	1 12	6 44.91	+ 5 32.3	1.573	2.521	7.5	19.0
1 22	6 37.38	+24 33.2	1.772	2.707	8.1	20.6	1 22	6 36.49	+ 6 46.3	1.626	2.542	10.1	19.2
2 1	6 31.38	+24 44.0	1.841	2.713	11.8	20.8	2 1	6 30.17	+ 8 8.0	1.703	2.563	13.2	19.5
2 11	6 28.00	+24 50.6	1.932	2.720	14.9	21.0	2 11	6 26.53	+ 9 31.7	1.803	2.585	16.0	19.7
240254	2002 <i>VN</i> ₁₈		1 3.4 102°83'	2°6'	2.9	18	238302	2003 <i>XD</i> ₂₀		1 3.4 358°07'	2°6'	3.1	18
12 3	7 23.97	+29 4.4	1.961	2.800	12.7	21.6	12 3	7 19.01	+30 13.6	1.802	2.652	13.1	19.8
12 13	7 16.11	+29 38.9	1.912	2.824	9.2	21.5	12 13	7 12.95	+30 16.3	1.732	2.650	9.6	19.5
12 23	7 6.02	+30 9.5	1.888	2.848	5.4	21.3	12 23	7 4.48	+30 13.7	1.687	2.648	5.7	19.3
1 2	6 54.68	+30 31.7	1.893	2.871	2.6	21.2	1 2	6 54.56	+30 2.5	1.669	2.647	2.7	19.1
1 12	6 43.41	+30 43.1	1.929	2.893	4.7	21.3	1 12	6 44.53	+29 41.1	1.680	2.647	4.8	19.2
1 22	6 33.42	+30 43.4	1.993	2.915	8.2	21.6	1 22	6 35.69	+29 10.5	1.718	2.647	8.7	19.5
2 1	6 25.67	+30 34.6	2.084	2.936	11.5	21.8	2 1	6 29.08	+28 33.2	1.782	2.648	12.4	19.7
2 11	6 20.73	+30 19.6	2.198	2.957	14.2	22.1	2 11	6 25.36	+27 52.7	1.867	2.649	15.5	19.9
496793	2017 <i>HJ</i> ₃₄		1 3.4 117°78'	0°1'	3.4	18	105321	2000 <i>QY</i> ₇₅		1 3.4 61°69'	4°0'	3.0	18
12 3	7 19.78	+20 44.3	1.893	2.735	12.9	20.							

EPHEMERIDES

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
415564	2014 <i>QD</i> ₂₃₄		1 3.4 45°46	7.4/ 2.4	18		408187	2013 <i>EU</i> ₁₁		1 3.4 245°04	0°5/ 3.3	18	
12 3	7 25.37	+40 1.9	1.608	2.444	15.1	21.1	12 3	7 21.43	+22 57.3	1.724	2.571	13.8	21.9
12 13	7 18.03	+40 50.9	1.552	2.450	11.9	20.9	12 13	7 14.90	+23 19.9	1.642	2.560	10.0	21.7
12 23	7 7.46	+41 25.7	1.518	2.455	8.8	20.8	12 23	7 5.72	+23 45.6	1.585	2.549	5.5	21.4
1 2	6 54.95	+41 38.6	1.510	2.461	7.4	20.7	1 2	6 54.79	+24 10.7	1.555	2.538	0.8	21.0
1 12	6 42.36	+41 25.7	1.528	2.467	8.6	20.8	1 12	6 43.43	+24 32.0	1.554	2.526	4.3	21.3
1 22	6 31.48	+40 48.8	1.572	2.473	11.5	21.0	1 22	6 33.08	+24 47.6	1.581	2.514	9.0	21.5
2 1	6 23.68	+39 53.8	1.640	2.480	14.7	21.2	2 1	6 24.96	+24 57.4	1.634	2.501	13.3	21.7
2 11	6 19.64	+38 48.3	1.728	2.486	17.5	21.4	2 11	6 19.90	+25 2.6	1.708	2.489	16.8	21.9
412145	2013 <i>GV</i> ₆₃		1 3.4 197°60	0°7/ 3.3	18		189631	2001 <i>LX</i> ₈		1 3.4 117°36	2°9/ 4.1	18	
12 3	7 21.19	+24 29.4	2.152	2.990	11.8	21.6	12 3	7 23.66	+14 38.9	1.741	2.570	14.5	21.2
12 13	7 14.19	+24 40.0	2.073	2.987	8.5	21.3	12 13	7 15.97	+14 38.1	1.687	2.592	10.6	21.0
12 23	7 5.08	+24 50.7	2.020	2.983	4.7	21.1	12 23	7 6.02	+14 46.5	1.657	2.613	6.4	20.8
1 2	6 54.66	+24 58.8	1.997	2.979	0.9	20.8	1 2	6 54.82	+15 2.9	1.656	2.633	3.0	20.6
1 12	6 44.03	+25 2.4	2.004	2.975	3.7	21.0	1 12	6 43.64	+15 25.1	1.684	2.652	4.7	20.8
1 22	6 34.30	+25 1.0	2.041	2.970	7.6	21.3	1 22	6 33.72	+15 51.0	1.742	2.671	8.6	21.0
2 1	6 26.44	+24 55.3	2.105	2.964	11.1	21.5	2 1	6 26.03	+16 18.8	1.826	2.688	12.3	21.3
2 11	6 21.09	+24 46.6	2.192	2.957	14.0	21.7	2 11	6 21.13	+16 47.0	1.931	2.705	15.4	21.5
473869	2016 <i>EU</i> ₁₃₅		1 3.4 121°99	2°5/ 2.8	18		380676	2005 <i>GN</i> ₅₁		1 3.4 4°36	4°8/ 4.5	18	
12 3	7 18.87	+30 12.6	2.450	3.286	10.5	21.2	12 3	7 15.11	+ 8 39.6	2.194	3.010	12.4	21.2
12 13	7 12.32	+30 40.5	2.385	3.296	7.7	21.0	12 13	7 9.70	+ 8 15.1	2.120	3.010	9.6	21.1
12 23	7 3.95	+31 4.8	2.347	3.305	4.6	20.8	12 23	7 2.56	+ 8 2.1	2.071	3.010	6.8	20.9
1 2	6 54.50	+31 22.2	2.339	3.314	2.5	20.7	1 2	6 54.39	+ 8 1.4	2.050	3.010	4.9	20.8
1 12	6 44.98	+31 30.5	2.361	3.323	4.1	20.8	1 12	6 46.06	+ 8 12.8	2.057	3.010	5.6	20.8
1 22	6 36.33	+31 29.5	2.412	3.332	7.1	21.0	1 22	6 38.47	+ 8 34.8	2.093	3.010	8.1	21.0
2 1	6 29.38	+31 20.3	2.491	3.340	9.9	21.2	2 1	6 32.41	+ 9 5.3	2.155	3.011	11.0	21.1
2 11	6 24.69	+31 5.2	2.593	3.349	12.4	21.4	2 11	6 28.43	+ 9 41.2	2.239	3.011	13.6	21.3
371664	2007 <i>CP</i> ₄₁		1 3.4 318°99	4°4/ 3.0	18		60448	2000 <i>CU</i> ₉₁		1 3.4 16°50	2°9/ 4.0	18	
12 3	7 22.28	+34 6.5	1.661	2.508	14.2	20.4	12 3	7 18.32	+16 7.1	1.087	1.954	18.5	18.3
12 13	7 15.68	+34 18.0	1.584	2.497	10.7	20.2	12 13	7 13.31	+16 9.9	1.033	1.958	13.6	18.0
12 23	7 6.16	+34 20.1	1.531	2.486	6.9	19.9	12 23	7 5.04	+16 25.9	0.998	1.962	8.1	17.7
1 2	6 54.82	+34 7.9	1.505	2.476	4.4	19.7	1 2	6 54.74	+16 53.3	0.987	1.967	3.2	17.5
1 12	6 43.23	+33 38.8	1.506	2.467	6.2	19.8	1 12	6 44.21	+17 28.5	1.001	1.974	5.8	17.6
1 22	6 32.98	+32 54.3	1.534	2.457	10.1	20.0	1 22	6 35.29	+18 7.4	1.038	1.981	11.3	18.0
2 1	6 25.37	+31 58.8	1.587	2.448	13.9	20.2	2 1	6 29.39	+18 46.7	1.097	1.989	16.3	18.3
2 11	6 21.16	+30 57.8	1.661	2.440	17.3	20.5	2 11	6 27.28	+19 23.8	1.175	1.998	20.5	18.6
83716	2001 <i>TM</i> ₈₈		1 3.4 350°81	6°7/ 4.5	18		132480	2002 <i>JT</i> ₂₀		1 3.5 148°34	2°0/ 3.9	18	
12 3	7 14.05	+ 6 4.9	1.869	2.686	14.1	18.9	12 3	7 20.38	+15 53.4	1.868	2.702	13.4	20.7
12 13	7 9.18	+ 5 13.6	1.796	2.681	11.3	18.7	12 13	7 13.74	+16 9.8	1.800	2.709	9.8	20.5
12 23	7 2.36	+ 4 36.5	1.746	2.676	8.5	18.5	12 23	7 4.90	+16 34.7	1.757	2.716	5.8	20.3
1 2	6 54.33	+ 4 16.3	1.723	2.672	6.8	18.4	1 2	6 54.71	+17 6.2	1.742	2.722	2.2	20.0
1 12	6 46.11	+ 4 14.2	1.726	2.669	7.5	18.5	1 12	6 44.36	+17 41.7	1.757	2.728	4.2	20.2
1 22	6 38.71	+ 4 28.9	1.756	2.666	9.9	18.6	1 22	6 34.99	+18 18.5	1.801	2.733	8.2	20.4
2 1	6 33.03	+ 4 57.8	1.810	2.664	12.8	18.8	2 1	6 27.61	+18 54.6	1.872	2.738	11.9	20.7
2 11	6 29.70	+ 5 36.6	1.885	2.663	15.6	19.0	2 11	6 22.86	+19 28.7	1.965	2.742	15.0	20.9
231656	2009 <i>WT</i> ₁₆₅		1 3.4 220°80	1°2/ 3.2	18		468110	2013 <i>XQ</i> ₁₃		1 3.5 81°06	2°4/ 3.8	18	
12 3	7 18.43	+25 17.3	2.073	2.917	11.9	20.9	12 3	7 17.12	+16 37.5	2.306	3.137	11.3	20.5
12 13	7 12.30	+25 38.5	2.000	2.917	8.5	20.7	12 13	7 11.00	+16 5.1	2.238	3.145	8.3	20.3
12 23	7 4.07	+25 59.9	1.952	2.916	4.8	20.5	12 23	7 3.22	+15 37.3	2.196	3.152	5.0	20.1
1 2	6 54.55	+26 18.3	1.933	2.915	1.3	20.2	1 2	6 54.49	+15 14.3	2.183	3.160	2.5	20.0
1 12	6 44.84	+26 31.5	1.944	2.914	3.8	20.4	1 12	6 45.72	+14 56.4	2.201	3.168	3.9	20.1
1 22	6 36.04	+26 38.3	1.983	2.913	7.7	20.7	1 22	6 37.78	+14 43.4	2.248	3.175	7.1	20.3
2 1	6 29.10	+26 39.3	2.049	2.912	11.2	20.9	2 1	6 31.42	+14 35.2	2.322	3.183	10.1	20.5
2 11	6 24.67	+26 35.7	2.138	2.911	14.1	21.1	2 11	6 27.14	+14 31.1	2.420	3.190	12.7	20.7
352125	2007 <i>EJ</i> ₂₂₃		1 3.4 256°31	0°8/ 3.3	18		151891	2004 <i>BF</i> ₈₄		1 3.5 277°72	1°9/ 3.9	18	
12 3	7 22.06	+23 0.1	1.522	2.374	15.0	21.0	12 3	7 15.43	+16 3.0	2.423	3.254	10.8	20.3
12 13	7 15.66	+23 30.7	1.443	2.363	10.9	20.7	12 13	7 9.98	+16 6.5	2.329	3.236	8.0	20.0
12 23	7 6.27	+24 5.4	1.387	2.352	6.1	20.4	12 23	7 2.79	+16 16.3	2.260	3.218	4.8	19.8
1 2	6 54.86	+24 39.8	1.357	2.340	1.0	20.1	1 2	6 54.45	+16 31.6	2.221	3.199	2.1	19.6
1 12	6 42.94	+25 9.5	1.356	2.329	4.8	20.3	1 12	6 45.83	+16 51.2	2.211	3.181	3.6	19.7
1 22	6 32.15	+25 32.0	1.383	2.317	9.9	20.6	1 22	6 37.78	+17 13.6	2.232	3.162	6.9	19.9
2 1	6 23.88	+25 46.9	1.433	2.304	14.6	20.8	2 1	6 31.12	+17 37.4	2.280	3.143	10.2	20.0
2 11	6 19.05	+25 55.8	1.504	2.292	18.4	21.0	2 11	6 26.48	+18 1.7	2.351	3.125	13.0	20.2
58334	1994 <i>UJ</i> ₆		1 3.4 78°23	0°0/ 3.3	17		117921	4621 <i>P-L</i>		1 3.5 84°99	0°9/ 3.6	18	
12 3	7 23.93	+22 34.3	1.387	2.240	16.1	20.0	12 3	7 23.20	+19 43.5	1.511	2.358	15.4	20.3
12 13	7 16.65	+22 39.1	1.338	2.259	11.5	19.8	12 13	7 15.93	+19 55.5	1.463	2.380	11.0	20.1
12 23	7 6.54	+22 46.3	1.313	2.278	6.3	19.6	12 23	7 6.11	+20 12.9	1.438	2.402	6.1	19.9
1 2	6 54.86	+22 52.7	1.314	2.297	0.8	19.2	1 2	6 54.86	+20 32.8	1.441	2.423	1.3	19.6
1 12	6 43.27	+22 55.9	1.342	2.315	4.6	19.6	1 12	6 43.69	+20 52.5	1.472	2.445	4.4	19.9
1 22	6 33.32	+22 55.5	1.398	2.334	9.7	19.9	1 22	6 33.99	+21 10.1	1.531	2.466	9.1	20.2
2 1	6 26.17	+22 52.3	1.478	2.352	14.0	20.2	2 1	6 26.82	+21 25.3	1.615	2.486	13.2	20.5
2 11	6 22.43	+22 47.5	1.578	2.370	17.5	20.5	2 11	6 22.79	+21 38.1	1.720	2.506	16.5	20.8
363936	2005 <i>TE</i> ₈₃		1 3.4 69°36	5°8/ 4.4	18		171948	2001 <i>SJ</i> ₂₈₈		1 3.5 94°49	0°3/ 3.3	18	
12 3	7 19.44	+ 8 45.7	1.753	2.574	14								

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
104417	2000 <i>FX</i> ₅₇		1 3.5 174°40	0°3/ 3.4	18		225033	2007 <i>FM</i> ₃₅		1 3.5 143°94	2°0/ 4.1	18	
12 3	7 17.14	+22 41.3	2.365	3.204	10.8	19.7	12 3	7 17.76	+14 57.2	2.304	3.130	11.5	20.6
12 13	7 11.17	+23 5.7	2.290	3.204	7.7	19.5	12 13	7 11.55	+15 15.8	2.234	3.138	8.4	20.4
12 23	7 3.40	+23 32.1	2.242	3.205	4.2	19.3	12 23	7 3.59	+15 42.1	2.190	3.146	5.0	20.2
1 2	6 54.53	+23 58.1	2.223	3.206	0.6	19.0	1 2	6 54.58	+16 14.6	2.175	3.153	2.2	20.0
1 12	6 45.48	+24 21.6	2.235	3.206	3.3	19.2	1 12	6 45.44	+16 51.1	2.191	3.160	3.6	20.1
1 22	6 37.18	+24 40.9	2.276	3.206	6.8	19.4	1 22	6 37.06	+17 29.3	2.237	3.167	7.0	20.4
2 1	6 30.46	+24 55.9	2.345	3.207	10.0	19.6	2 1	6 30.24	+18 7.5	2.311	3.173	10.1	20.6
2 11	6 25.89	+25 6.8	2.438	3.206	12.7	19.8	2 11	6 25.54	+18 44.2	2.408	3.178	12.8	20.8
236806	2007 <i>RC</i> ₂		1 3.5 202°82	4°0/ 2.5	18		355973	2009 <i>AR</i> ₁₉		1 3.5 123°35	0°2/ 3.5	18	
12 3	7 19.67	+34 36.9	2.364	3.198	11.0	20.6	12 3	7 21.87	+20 14.7	1.707	2.550	14.1	20.6
12 13	7 13.15	+35 12.8	2.292	3.197	8.2	20.4	12 13	7 15.01	+20 50.4	1.645	2.561	10.1	20.4
12 23	7 4.55	+35 42.2	2.246	3.196	5.5	20.2	12 23	7 5.68	+21 31.9	1.608	2.572	5.6	20.1
1 2	6 54.68	+36 1.0	2.229	3.194	4.0	20.1	1 2	6 54.87	+22 15.1	1.599	2.582	0.8	19.8
1 12	6 44.63	+36 6.5	2.241	3.193	5.3	20.2	1 12	6 43.88	+22 56.1	1.619	2.591	4.1	20.1
1 22	6 35.49	+35 58.5	2.282	3.192	8.0	20.4	1 22	6 34.06	+23 32.3	1.668	2.601	8.6	20.4
2 1	6 28.21	+35 39.0	2.350	3.190	10.8	20.6	2 1	6 26.49	+24 2.4	1.742	2.610	12.6	20.6
2 11	6 23.41	+35 11.2	2.440	3.189	13.2	20.7	2 11	6 21.86	+24 26.9	1.839	2.618	15.9	20.9
20843	Kuotzuhao		1 3.5 204°41	0°8/ 3.3	18		131713	2001 <i>YN</i> ₆₅		1 3.5 3°23	1°6/ 3.3	18	
12 3	7 22.32	+24 18.6	1.893	2.734	13.0	19.2	12 3	7 20.41	+25 58.2	1.198	2.066	17.1	19.8
12 13	7 15.29	+24 32.6	1.815	2.730	9.4	19.0	12 13	7 14.84	+26 7.7	1.137	2.065	12.3	19.5
12 23	7 5.84	+24 47.3	1.762	2.726	5.2	18.7	12 23	7 5.92	+26 16.4	1.098	2.065	6.9	19.2
1 2	6 54.86	+24 59.4	1.738	2.721	1.0	18.4	1 2	6 54.91	+26 19.9	1.083	2.065	1.8	18.9
1 12	6 43.61	+25 6.6	1.744	2.715	4.1	18.6	1 12	6 43.67	+26 15.3	1.094	2.067	5.5	19.1
1 22	6 33.39	+25 8.0	1.779	2.709	8.4	18.9	1 22	6 34.07	+26 2.4	1.130	2.069	11.0	19.4
2 1	6 25.28	+25 4.3	1.840	2.703	12.3	19.1	2 1	6 27.56	+25 43.5	1.188	2.072	15.9	19.7
2 11	6 20.02	+24 57.2	1.923	2.695	15.5	19.3	2 11	6 24.91	+25 21.4	1.264	2.076	19.9	20.0
77279	2001 <i>FM</i> ₆₁		1 3.5 320°66	2°7/ 4.1	18		194214	2001 <i>TD</i> ₁₂₄		1 3.5 36°01	2°0/ 3.5	17	
12 3	7 18.58	+15 11.2	1.573	2.417	15.0	19.6	12 3	7 22.62	+21 21.9	1.061	1.930	18.7	19.1
12 13	7 12.86	+15 18.2	1.501	2.414	11.1	19.4	12 13	7 16.15	+20 30.8	1.018	1.946	13.5	18.9
12 23	7 4.59	+15 36.0	1.452	2.411	6.7	19.1	12 23	7 6.42	+19 42.9	0.997	1.963	7.6	18.6
1 2	6 54.70	+16 3.3	1.429	2.408	2.9	18.9	1 2	6 54.94	+18 58.8	0.999	1.981	2.2	18.3
1 12	6 44.51	+16 37.3	1.435	2.405	4.9	19.0	1 12	6 43.71	+18 19.8	1.027	2.000	5.6	18.6
1 22	6 35.36	+17 15.2	1.467	2.403	9.3	19.3	1 22	6 34.50	+17 47.3	1.079	2.020	11.2	19.0
2 1	6 28.45	+17 54.2	1.525	2.400	13.6	19.5	2 1	6 28.55	+17 22.4	1.153	2.041	16.0	19.3
2 11	6 24.51	+18 32.3	1.603	2.398	17.2	19.7	2 11	6 26.39	+17 4.8	1.246	2.062	19.9	19.6
372335	2009 <i>DJ</i> ₄		1 3.5 36°22	18°6/ 3.3	17		209396	2004 <i>EN</i> ₇₁		1 3.5 188°18	4°6/ 2.5	18	
12 3	7 45.30	+58 11.8	1.080	1.875	23.6	20.0	12 3	7 20.70	+38 8.4	2.559	3.382	10.6	20.7
12 13	7 35.68	+59 49.6	1.041	1.879	21.3	19.9	12 13	7 13.78	+38 37.0	2.487	3.382	8.1	20.5
12 23	7 18.41	+60 47.6	1.018	1.883	19.4	19.8	12 23	7 4.87	+38 56.8	2.442	3.381	5.8	20.3
1 2	6 56.46	+60 46.0	1.013	1.888	18.6	19.8	1 2	6 54.76	+39 3.7	2.425	3.381	4.6	20.3
1 12	6 35.04	+59 37.4	1.026	1.894	19.1	19.8	1 12	6 44.53	+38 55.7	2.438	3.380	5.6	20.3
1 22	6 18.75	+57 31.5	1.058	1.899	20.7	19.9	1 22	6 35.25	+38 33.2	2.480	3.379	7.9	20.5
2 1	6 9.75	+54 48.1	1.107	1.905	22.9	20.1	2 1	6 27.81	+37 58.8	2.548	3.378	10.4	20.6
2 11	6 7.94	+51 47.8	1.172	1.912	25.2	20.3	2 11	6 22.80	+37 16.2	2.639	3.377	12.6	20.8
215709	2004 <i>BV</i> ₂₁		1 3.5 309°76	0°9/ 3.3	18		426917	2013 <i>WH</i> ₉₄		1 3.5 127°49	0°2/ 3.4	18	
12 3	7 19.83	+23 7.7	1.636	2.487	14.1	20.2	12 3	7 17.47	+23 15.4	2.529	3.365	10.3	21.4
12 13	7 13.80	+23 42.3	1.564	2.484	10.2	19.9	12 13	7 11.23	+23 19.6	2.461	3.374	7.3	21.2
12 23	7 5.14	+24 20.5	1.516	2.481	5.6	19.6	12 23	7 3.36	+23 24.4	2.420	3.383	4.0	21.0
1 2	6 54.78	+24 58.0	1.496	2.479	1.1	19.3	1 2	6 54.57	+23 28.3	2.409	3.392	0.5	20.8
1 12	6 44.09	+25 30.8	1.504	2.476	4.5	19.5	1 12	6 45.70	+23 29.9	2.428	3.400	3.0	21.0
1 22	6 34.50	+25 56.6	1.539	2.473	9.1	19.8	1 22	6 37.63	+23 28.8	2.478	3.408	6.3	21.2
2 1	6 27.22	+26 14.8	1.600	2.471	13.3	20.1	2 1	6 31.07	+23 25.4	2.556	3.416	9.3	21.4
2 11	6 23.02	+26 26.6	1.681	2.468	16.8	20.3	2 11	6 26.53	+23 20.2	2.657	3.424	11.8	21.6
351726	2006 <i>CV</i> ₅		1 3.5 261°03	1°2/ 3.7	17		33078	1997 <i>WN</i> ₃₅		1 3.5 340°29	3°8/ 3.8	18	
12 3	7 20.98	+19 23.3	1.626	2.472	14.5	22.1	12 3	7 19.44	+16 29.7	1.300	2.156	16.8	18.3
12 13	7 14.69	+19 26.5	1.542	2.458	10.6	21.9	12 13	7 13.84	+15 46.1	1.231	2.150	12.5	18.1
12 23	7 5.69	+19 35.5	1.481	2.444	6.1	21.6	12 23	7 5.28	+15 10.0	1.184	2.144	7.7	17.8
1 2	6 54.86	+19 48.3	1.448	2.430	1.5	21.2	1 2	6 54.84	+14 42.7	1.162	2.139	3.9	17.5
1 12	6 43.58	+20 2.6	1.443	2.415	4.5	21.4	1 12	6 44.11	+14 24.8	1.166	2.135	6.1	17.7
1 22	6 33.29	+20 16.9	1.466	2.400	9.4	21.7	1 22	6 34.72	+14 16.4	1.195	2.131	10.9	17.9
2 1	6 25.27	+20 30.2	1.514	2.385	13.9	21.9	2 1	6 27.98	+14 16.6	1.248	2.128	15.6	18.2
2 11	6 20.37	+20 42.6	1.582	2.370	17.6	22.1	2 11	6 24.69	+14 23.6	1.319	2.126	19.5	18.4
340704	2006 <i>SR</i> ₃₃		1 3.5 132°02	3°4/ 4.4	18		239545	2008 <i>SC</i> ₉₈		1 3.5 34°14	1°3/ 3.2	18	
12 3	7 14.91	+10 36.1	2.763	3.575	10.2	21.4	12 3	7 18.33	+25 51.5	1.957	2.804	12.4	20.8
12 13	7 9.23	+10 19.9	2.694	3.585	7.8	21.3	12 13	7 12.31	+26 8.8	1.890	2.808	8.9	20.6
12 23	7 2.20	+10 11.8	2.651	3.594	5.2	21.1	12 23	7 4.14	+26 25.5	1.848	2.812	5.0	20.4
1 2	6 54.39	+10 12.0	2.638	3.603	3.5	21.0	1 2	6 54.68	+26 38.6	1.834	2.816	1.4	20.2
1 12	6 46.51	+10 20.1	2.655	3.612	4.2	21.1	1 12	6 45.07	+26 45.9	1.849	2.820	4.0	20.4
1 22	6 39.26	+10 35.0	2.702	3.620	6.5	21.2	1 22	6 36.48	+26 46.6	1.893	2.824	7.9	20.6
2 1	6 33.26	+10 55.3	2.776	3.628	8.9	21.4	2 1	6 29.86	+26 41.6	1.963	2.829	11.5	20.8
2 11	6 28.95	+11 19.3	2.875	3.636	11.1	21.6	2 11	6 25.83	+26 32.5	2.055	2.833	14.4	21.0
122138	2000 <i>JQ</i> ₃₈		1 3.5 51°33	5°9/ 3.9	18		419483	2010 <i>DA</i> ₇₅		1 3.5 249°50	5°2/ 4.9	18	
12 3	7 21.42	+12 28.3	1.268	2.114	1								

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
413664	2005 VA ₉₉		1 3.5 289°55	2°8/ 4.1 18			487675	2015 PR ₁₅₃		1 3.5 118°90	1°2/ 3.7 18		
12 3	7 17.54	+14 57.0	1.849	2.687	13.4	21.3	12 3	7 24.47	+18 28.0	1.586	2.427	15.1	21.9
12 13	7 11.83	+14 51.7	1.772	2.681	9.9	21.0	12 13	7 16.88	+18 49.0	1.531	2.444	10.9	21.6
12 23	7 3.94	+14 55.0	1.719	2.676	6.1	20.8	12 23	7 6.72	+19 17.1	1.500	2.462	6.1	21.4
1 2	6 54.68	+15 6.4	1.694	2.671	3.0	20.6	1 2	6 55.06	+19 48.8	1.496	2.478	1.5	21.1
1 12	6 45.16	+15 24.7	1.697	2.666	4.6	20.7	1 12	6 43.36	+20 20.9	1.522	2.494	4.4	21.4
1 22	6 36.52	+15 47.8	1.729	2.661	8.4	20.9	1 22	6 33.02	+20 50.8	1.576	2.509	9.0	21.7
2 1	6 29.77	+16 14.1	1.786	2.655	12.2	21.1	2 1	6 25.14	+21 17.5	1.656	2.524	13.1	22.0
2 11	6 25.59	+16 41.8	1.865	2.651	15.4	21.3	2 11	6 20.39	+21 40.7	1.757	2.538	16.4	22.2
233795	2008 UA ₆₀		1 3.5 267°88	1°2/ 3.7 18			491018	2011 OU ₁		1 3.5 47°97	9°4/ 6.3 17		
12 3	7 17.46	+19 43.3	2.199	3.037	11.5	20.4	12 3	7 18.67	+ 1 23.8	1.261	2.079	19.6	21.0
12 13	7 11.52	+19 31.9	2.115	3.028	8.4	20.2	12 13	7 12.96	+ 1 1.0	1.218	2.098	15.8	20.8
12 23	7 3.68	+19 23.5	2.057	3.018	4.8	20.0	12 23	7 4.63	+ 1 6.5	1.193	2.118	12.1	20.6
1 2	6 54.65	+19 17.3	2.027	3.009	1.4	19.7	1 2	6 54.79	+ 1 42.1	1.192	2.138	9.7	20.6
1 12	6 45.39	+19 12.6	2.028	2.999	3.6	19.9	1 12	6 44.98	+ 2 45.2	1.215	2.159	9.8	20.6
1 22	6 36.91	+19 8.8	2.058	2.990	7.3	20.1	1 22	6 36.61	+ 4 9.0	1.263	2.180	12.4	20.8
2 1	6 30.07	+19 6.0	2.115	2.980	10.8	20.3	2 1	6 30.80	+ 5 45.1	1.334	2.201	15.7	21.1
2 11	6 25.50	+19 4.1	2.195	2.970	13.7	20.5	2 11	6 28.15	+ 7 24.8	1.424	2.223	18.7	21.4
87858	2000 ST ₂₂₅		1 3.5 38°71	4°3/ 4.7 18			389003	2008 UJ ₁₄₈		1 3.5 142°84	1°4/ 3.2 18		
12 3	7 17.46	+11 18.8	1.443	2.285	16.2	19.1	12 3	7 24.79	+25 36.1	1.949	2.785	12.9	22.0
12 13	7 11.89	+11 24.0	1.398	2.306	12.1	18.9	12 13	7 16.88	+26 2.6	1.886	2.799	9.2	21.8
12 23	7 3.95	+11 44.6	1.374	2.328	7.8	18.7	12 23	7 6.66	+26 28.5	1.850	2.812	5.1	21.6
1 2	6 54.67	+12 19.3	1.377	2.350	4.5	18.5	1 2	6 55.08	+26 49.7	1.843	2.824	1.5	21.4
1 12	6 45.42	+13 4.9	1.406	2.373	5.7	18.7	1 12	6 43.42	+27 3.7	1.866	2.836	4.1	21.6
1 22	6 37.48	+13 57.1	1.462	2.396	9.5	18.9	1 22	6 32.93	+27 9.6	1.919	2.846	8.1	21.9
2 1	6 31.85	+14 51.9	1.543	2.420	13.3	19.2	2 1	6 24.63	+27 8.5	1.999	2.856	11.7	22.1
2 11	6 29.10	+15 45.6	1.644	2.445	16.5	19.5	2 11	6 19.15	+27 2.5	2.102	2.865	14.7	22.3
302905	2003 SQ ₂₉		1 3.5 89°63	0°1/ 3.5 17			376299	2011 FC ₁₃₈		1 3.5 310°43	0°7/ 3.6 18		
12 3	7 23.31	+22 39.8	1.627	2.473	14.5	20.9	12 3	7 17.78	+20 31.5	2.020	2.862	12.2	21.7
12 13	7 15.94	+22 37.6	1.575	2.492	10.4	20.7	12 13	7 11.88	+20 36.2	1.946	2.861	8.8	21.5
12 23	7 6.12	+22 36.8	1.547	2.511	5.7	20.5	12 23	7 3.93	+20 44.4	1.897	2.860	4.9	21.3
1 2	6 54.95	+22 35.3	1.547	2.530	0.7	20.2	1 2	6 54.73	+20 54.5	1.877	2.859	1.0	21.0
1 12	6 43.86	+22 31.3	1.576	2.548	4.2	20.5	1 12	6 45.35	+21 4.8	1.886	2.858	3.6	21.2
1 22	6 34.17	+22 24.9	1.633	2.566	8.7	20.8	1 22	6 36.85	+21 14.0	1.924	2.857	7.6	21.4
2 1	6 26.93	+22 16.7	1.715	2.584	12.7	21.1	2 1	6 30.16	+21 21.8	1.988	2.856	11.2	21.7
2 11	6 22.69	+22 8.0	1.819	2.602	15.9	21.3	2 11	6 25.91	+21 28.4	2.075	2.856	14.3	21.9
415158	2012 FL ₂₈		1 3.5 90°00	2°9/ 2.7 18			310299	2011 UU ₉₀		1 3.5 147°94	4°4/ 2.6 18		
12 3	7 20.62	+28 45.6	1.856	2.703	13.0	21.6	12 3	7 25.46	+32 41.6	1.779	2.618	13.8	21.1
12 13	7 14.16	+29 31.3	1.792	2.707	9.4	21.4	12 13	7 17.79	+33 31.4	1.716	2.625	10.2	20.9
12 23	7 5.27	+30 15.0	1.752	2.712	5.6	21.1	12 23	7 7.34	+34 14.9	1.679	2.632	6.6	20.7
1 2	6 54.86	+30 51.4	1.740	2.717	2.9	21.0	1 2	6 55.18	+34 45.7	1.669	2.639	4.4	20.6
1 12	6 44.25	+31 16.8	1.757	2.722	5.0	21.1	1 12	6 42.84	+34 59.7	1.688	2.645	6.2	20.7
1 22	6 34.73	+31 29.8	1.802	2.726	8.8	21.4	1 22	6 31.83	+34 56.7	1.736	2.651	9.7	20.9
2 1	6 27.42	+31 31.7	1.873	2.731	12.3	21.6	2 1	6 23.38	+34 39.6	1.808	2.656	13.2	21.2
2 11	6 23.00	+31 25.1	1.966	2.736	15.3	21.8	2 11	6 18.22	+34 13.1	1.902	2.660	16.1	21.4
309728	2008 JF		1 3.5 96°67	3°1/ 2.6 16			469011	2015 AL ₂₂₃		1 3.5 314°01	3°8/ 4.1 18		
12 3	7 37.36	+23 38.8	1.289	2.126	18.1	21.2	12 3	7 15.92	+12 38.0	2.043	2.873	12.6	21.0
12 13	7 26.55	+25 44.2	1.255	2.167	12.8	21.0	12 13	7 10.50	+12 9.8	1.963	2.865	9.5	20.8
12 23	7 12.17	+25 50.9	1.246	2.207	7.2	20.8	12 23	7 3.17	+11 50.1	1.907	2.857	6.3	20.6
1 2	6 55.75	+29 45.8	1.266	2.245	3.1	20.7	1 2	6 54.64	+11 39.8	1.878	2.849	3.9	20.4
1 12	6 39.50	+31 18.5	1.317	2.281	6.3	21.0	1 12	6 45.88	+11 38.9	1.879	2.841	5.1	20.5
1 22	6 25.46	+32 25.7	1.396	2.316	11.2	21.3	1 22	6 37.90	+11 46.6	1.908	2.834	8.2	20.6
2 1	6 15.08	+33 10.0	1.501	2.349	15.4	21.7	2 1	6 31.56	+12 1.5	1.963	2.826	11.5	20.8
2 11	6 8.98	+33 37.2	1.625	2.380	18.6	22.0	2 11	6 27.51	+12 21.4	2.040	2.819	14.5	21.0
294263	2007 UO ₈₇		1 3.5 132°53	3°3/ 2.5 18			485378	2011 FO ₅₃		1 3.5 218°55	0°4/ 3.4 18		
12 3	7 18.28	+31 44.5	2.365	3.203	10.8	20.7	12 3	7 23.98	+22 1.1	1.725	2.567	14.0	22.0
12 13	7 12.16	+32 25.8	2.294	3.203	8.0	20.5	12 13	7 16.82	+22 32.4	1.643	2.558	10.2	21.8
12 23	7 4.05	+33 3.0	2.248	3.203	5.0	20.3	12 23	7 6.91	+23 8.2	1.585	2.548	5.7	21.5
1 2	6 54.71	+33 32.2	2.232	3.204	3.3	20.2	1 2	6 55.15	+23 44.4	1.555	2.538	0.8	21.1
1 12	6 45.17	+33 50.4	2.246	3.204	4.7	20.3	1 12	6 42.92	+24 16.9	1.555	2.527	4.3	21.4
1 22	6 36.47	+33 56.8	2.289	3.204	7.6	20.5	1 22	6 31.69	+24 43.4	1.584	2.515	9.1	21.6
2 1	6 29.52	+33 52.6	2.358	3.204	10.5	20.7	2 1	6 22.75	+25 3.2	1.639	2.502	13.4	21.8
2 11	6 24.93	+33 40.3	2.450	3.205	13.0	20.8	2 11	6 16.95	+25 17.5	1.715	2.489	17.0	22.1
81204	2000 FV ₁₀		1 3.5 97°10	1°8/ 3.9 18			147575	2004 FR ₆₉		1 3.5 201°97	0°7/ 3.3 18		
12 3	7 20.44	+17 24.1	1.876	2.712	13.3	20.2	12 3	7 20.26	+23 59.6	2.140	2.978	11.8	21.3
12 13	7 13.66	+17 27.5	1.820	2.731	9.6	20.0	12 13	7 13.65	+24 20.4	2.061	2.975	8.5	21.1
12 23	7 4.81	+17 37.3	1.790	2.750	5.6	19.8	12 23	7 4.93	+24 42.2	2.009	2.972	4.7	20.9
1 2	6 54.80	+17 51.7	1.787	2.768	1.9	19.6	1 2	6 54.88	+25 2.3	1.985	2.968	0.9	20.6
1 12	6 44.79	+18 9.1	1.815	2.786	4.0	19.8	1 12	6 44.59	+25 18.2	1.992	2.963	3.7	20.8
1 22	6 35.88	+18 27.6	1.871	2.803	7.9	20.1	1 22	6 35.17	+25 28.6	2.028	2.958	7.6	21.0
2 1	6 28.97	+18 46.4	1.954	2.820	11.5	20.3	2 1	6 27.56	+25 33.8	2.092	2.953	11.1	21.2
2 11	6 24.63	+19 4.5	2.059	2.837	14.4	20.5	2 11	6 22.44	+25 34.9	2.178	2.947	14.0	21.4
81814	2000 KE ₃₁		1 3.5 209°44	3°1/ 2.4 18			445111	2008 UL ₁₃₅		1 3.5 38°12	1°4/ 3.3 17		
12 3	7 21.62	+29 24.8	2.180	3.017	11.7	19.4	12 3	7 21.58	+24 36.2	1.124	1.993	17.9</	

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
400119	2006 <i>UM</i> ₃₂		1 3.5 99°68	2°0/ 3.9 18			170104	2002 <i>XR</i> ₇₅		1 3.5 357°48	3°6/ 2.1 18		
12 3	7 21.41	+16 57.5	1.929	2.761	13.1	21.7	12 3	7 18.37	+29 45.6	2.019	2.865	12.1	19.1
12 13	7 14.26	+16 54.8	1.876	2.785	9.5	21.5	12 13	7 12.61	+31 1.9	1.949	2.863	8.9	18.9
12 23	7 5.12	+16 58.5	1.849	2.808	5.6	21.3	12 23	7 4.50	+32 17.1	1.905	2.862	5.5	18.7
1 2	6 54.89	+17 7.1	1.850	2.830	2.1	21.1	1 2	6 54.87	+33 25.0	1.890	2.862	3.6	18.6
1 12	6 44.72	+17 19.1	1.882	2.852	4.0	21.3	1 12	6 44.87	+34 20.5	1.904	2.861	5.5	18.7
1 22	6 35.66	+17 33.2	1.942	2.873	7.8	21.6	1 22	6 35.74	+35 0.9	1.946	2.861	8.8	18.9
2 1	6 28.60	+17 48.4	2.030	2.894	11.2	21.8	2 1	6 28.58	+35 26.5	2.014	2.862	12.0	19.1
2 11	6 24.05	+18 3.9	2.140	2.914	14.1	22.1	2 11	6 24.14	+35 39.6	2.104	2.863	14.8	19.3
494226	2016 <i>NP</i> ₂₄		1 3.5 172°34	1°1/ 3.9 17			433301	2013 <i>LD</i> ₂₉		1 3.5 59°03	0°2/ 3.6 18		
12 3	7 12.07	+17 46.9	3.877	4.700	7.3	21.5	12 3	7 28.00	+11 29.3	0.975	1.826	21.5	19.8
12 13	7 7.01	+17 42.1	3.798	4.702	5.3	21.4	12 13	7 21.20	+14 24.8	0.913	1.832	15.7	19.5
12 23	7 0.97	+17 40.0	3.747	4.704	3.1	21.2	12 23	7 10.03	+17 57.9	0.873	1.837	8.9	19.1
1 2	6 54.36	+17 40.2	3.726	4.706	1.2	21.1	1 2	6 55.66	+21 52.1	0.860	1.843	1.2	18.7
1 12	6 47.67	+17 42.1	3.738	4.707	2.3	21.2	1 12	6 40.29	+25 42.6	0.876	1.849	6.4	19.0
1 22	6 41.41	+17 45.3	3.781	4.708	4.5	21.3	1 22	6 26.50	+29 7.3	0.920	1.855	13.4	19.4
2 1	6 36.03	+17 49.4	3.853	4.709	6.6	21.5	2 1	6 16.50	+31 55.0	0.987	1.861	19.3	19.8
2 11	6 31.87	+17 54.0	3.951	4.710	8.4	21.6	2 11	6 11.55	+34 6.0	1.073	1.868	23.8	20.1
162755	<i>Spaciosa</i>		1 3.5 69°96	2°6/ 4.1 18			431698	2008 <i>ES</i>		1 3.5 107°32	1°8/ 4.1 15		
12 3	7 20.46	+15 24.2	1.469	2.314	15.8	20.0	12 3	7 26.84	+15 10.3	2.643	3.446	10.9	23.8
12 13	7 14.18	+15 33.9	1.413	2.327	11.6	19.8	12 13	7 17.55	+15 25.5	2.595	3.488	7.9	23.6
12 23	7 5.32	+15 54.5	1.381	2.341	6.9	19.6	12 23	7 6.73	+15 46.0	2.575	3.528	4.7	23.5
1 2	6 54.94	+16 24.0	1.375	2.354	2.9	19.3	1 2	6 55.13	+16 10.1	2.589	3.567	2.0	23.4
1 12	6 44.47	+16 59.2	1.396	2.367	4.9	19.5	1 12	6 43.68	+16 35.9	2.637	3.604	3.3	23.5
1 22	6 35.31	+17 37.1	1.445	2.381	9.4	19.8	1 22	6 33.21	+17 2.0	2.717	3.639	6.3	23.8
2 1	6 28.58	+18 14.9	1.518	2.394	13.6	20.1	2 1	6 24.42	+17 27.5	2.829	3.673	9.0	24.0
2 11	6 24.94	+18 51.0	1.612	2.407	17.1	20.3	2 11	6 17.74	+17 51.8	2.965	3.705	11.3	24.2
40422	1999 <i>RF</i> ₂₃		1 3.5 118°10	1°5/ 3.8 18			236830	2007 <i>RL</i> ₆₇		1 3.5 3°61	1°4/ 3.2 18		
12 3	7 21.75	+17 54.6	1.864	2.699	13.4	19.5	12 3	7 18.10	+26 15.9	2.008	2.855	12.1	20.3
12 13	7 14.66	+18 4.1	1.805	2.716	9.7	19.3	12 13	7 12.18	+26 28.7	1.937	2.855	8.7	20.1
12 23	7 5.42	+18 19.8	1.772	2.732	5.5	19.1	12 23	7 4.15	+26 40.5	1.891	2.855	4.9	19.9
1 2	6 54.94	+18 39.5	1.767	2.748	1.7	18.8	1 2	6 54.82	+26 48.3	1.874	2.855	1.5	19.6
1 12	6 44.42	+19 1.1	1.791	2.763	4.0	19.0	1 12	6 45.33	+26 50.4	1.885	2.856	3.9	19.8
1 22	6 35.01	+19 22.8	1.845	2.777	8.0	19.3	1 22	6 36.81	+26 46.1	1.925	2.857	7.8	20.1
2 1	6 27.66	+19 43.5	1.926	2.791	11.7	19.6	2 1	6 30.20	+26 36.4	1.992	2.858	11.3	20.3
2 11	6 22.96	+20 2.7	2.029	2.805	14.7	19.8	2 11	6 26.14	+26 22.9	2.081	2.859	14.3	20.5
19823	2000 <i>SD</i> ₁₇₀		1 3.5 196°11	0°7/ 3.3 18			108718	2001 <i>ON</i> ₂₃		1 3.5 223°54	4°8/ 2.3 18		
12 3	7 19.69	+24 30.9	2.370	3.206	10.9	19.1	12 3	7 23.65	+34 45.7	2.038	2.872	12.5	20.4
12 13	7 13.06	+24 44.0	2.291	3.203	7.8	18.9	12 13	7 16.47	+35 36.4	1.960	2.864	9.4	20.2
12 23	7 4.53	+24 57.3	2.238	3.200	4.3	18.7	12 23	7 6.68	+36 20.6	1.908	2.856	6.4	20.0
1 2	6 54.84	+25 8.4	2.214	3.197	0.9	18.4	1 2	6 55.18	+36 52.2	1.884	2.848	4.8	19.9
1 12	6 44.96	+25 15.4	2.222	3.193	3.4	18.6	1 12	6 43.31	+37 6.9	1.889	2.839	6.3	19.9
1 22	6 35.87	+25 17.7	2.260	3.189	7.0	18.8	1 22	6 32.47	+37 4.2	1.922	2.830	9.4	20.1
2 1	6 28.43	+25 15.6	2.325	3.184	10.2	19.0	2 1	6 23.88	+36 46.5	1.982	2.820	12.5	20.3
2 11	6 23.25	+25 10.3	2.414	3.178	12.9	19.2	2 11	6 18.30	+36 18.1	2.062	2.810	15.4	20.5
328551	2009 <i>RE</i> ₅₉		1 3.5 100°79	2°2/ 3.9 18			40099	1998 <i>OB</i> ₁₅		1 3.5 102°35	0°8/ 3.3 18		
12 3	7 18.35	+16 10.4	1.961	2.796	12.8	21.2	12 3	7 18.96	+24 35.9	2.086	2.928	11.9	18.7
12 13	7 12.22	+16 9.8	1.896	2.805	9.4	21.0	12 13	7 12.67	+24 49.9	2.019	2.935	8.5	18.4
12 23	7 4.09	+16 16.4	1.856	2.814	5.6	20.7	12 23	7 4.36	+25 4.2	1.977	2.941	4.7	18.2
1 2	6 54.78	+16 29.1	1.843	2.822	2.4	20.5	1 2	6 54.85	+25 16.0	1.965	2.947	1.0	18.0
1 12	6 45.37	+16 46.4	1.861	2.831	4.1	20.7	1 12	6 45.23	+25 23.6	1.982	2.953	3.6	18.2
1 22	6 36.90	+17 6.6	1.907	2.839	7.8	20.9	1 22	6 36.56	+25 26.1	2.028	2.959	7.5	18.4
2 1	6 30.27	+17 28.2	1.980	2.847	11.3	21.2	2 1	6 29.75	+25 24.0	2.101	2.965	10.9	18.7
2 11	6 26.07	+17 50.2	2.075	2.855	14.3	21.4	2 11	6 25.39	+25 18.6	2.197	2.971	13.8	18.9
298384	2003 <i>SA</i> ₁₁₆		1 3.5 69°19	2°3/ 3.8 18			152508	2005 <i>XZ</i> ₄		1 3.5 76°59	4°5/ 5.2 18		
12 3	7 20.94	+17 48.7	1.510	2.358	15.3	20.5	12 3	7 19.57	+ 7 46.5	1.875	2.689	14.3	20.0
12 13	7 14.48	+17 33.0	1.452	2.368	11.2	20.3	12 13	7 12.99	+ 8 10.9	1.826	2.716	10.9	19.9
12 23	7 5.47	+17 24.1	1.417	2.378	6.5	20.0	12 23	7 4.46	+ 8 50.9	1.801	2.743	7.3	19.7
1 2	6 54.97	+17 21.0	1.408	2.388	2.5	19.8	1 2	6 54.86	+ 9 44.8	1.803	2.769	4.7	19.6
1 12	6 44.41	+17 22.7	1.428	2.399	4.8	20.0	1 12	6 45.27	+10 49.3	1.835	2.796	5.4	19.7
1 22	6 35.17	+17 28.0	1.474	2.409	9.3	20.3	1 22	6 36.74	+11 59.9	1.897	2.822	8.3	19.9
2 1	6 28.34	+17 36.0	1.545	2.420	13.5	20.5	2 1	6 30.12	+13 12.2	1.985	2.847	11.5	20.2
2 11	6 24.58	+17 45.9	1.637	2.430	16.9	20.8	2 11	6 25.93	+14 22.8	2.096	2.873	14.2	20.4
215483	2002 <i>TA</i> ₃₃		1 3.5 100°16	1°5/ 3.2 18			188308	2003 <i>FF</i> ₉		1 3.5 307°04	0°6/ 3.3 18		
12 3	7 21.56	+25 28.8	1.725	2.573	13.7	20.8	12 3	7 19.44	+20 52.1	1.796	2.641	13.4	19.9
12 13	7 14.86	+25 54.3	1.663	2.581	9.8	20.6	12 13	7 13.46	+21 56.2	1.721	2.638	9.6	19.6
12 23	7 5.68	+26 19.8	1.626	2.589	5.5	20.4	12 23	7 5.03	+23 7.6	1.672	2.636	5.3	19.4
1 2	6 55.00	+26 41.3	1.616	2.598	1.6	20.1	1 2	6 54.98	+24 21.1	1.651	2.633	0.9	19.0
1 12	6 44.20	+26 55.7	1.635	2.606	4.4	20.3	1 12	6 44.52	+25 31.1	1.659	2.631	4.2	19.3
1 22	6 34.61	+27 2.1	1.683	2.614	8.7	20.6	1 22	6 34.96	+26 33.4	1.697	2.628	8.6	19.5
2 1	6 27.33	+27 1.4	1.756	2.622	12.6	20.9	2 1	6 27.46	+27 25.9	1.760	2.626	12.6	19.8
2 11	6 23.02	+26 55.6	1.850	2.629	15.8	21.1	2 11	6 22.80	+28 8.5	1.846	2.624	15.9	20.0
212289	2005 <i>MF</i> ₃		1 3.5 114°33	5°6/ 4.9 18			30198	2000 <i>GR</i> ₁₀₃		1 3.5 183°15	2°5/ 4.0 18		
12 3	7 19.14	+ 6 38.4	2.003	2.810	13.7	20.7							

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
389194	2009 CS ₂₃		1 3.5 244°59	3°4/ 4.9	16		90811	1995 DC ₅		1 3.5 77°39	0°2/ 3.5	18	
12 3	7 15.43	+ 8 56.4	2.653	3.460	10.7	21.4	12 3	7 23.16	+22 17.1	1.432	2.285	15.7	19.8
12 13	7 9.88	+ 9 19.7	2.562	3.449	8.2	21.2	12 13	7 16.21	+22 19.2	1.379	2.299	11.3	19.6
12 23	7 2.78	+ 9 54.4	2.496	3.438	5.6	21.0	12 23	7 6.50	+22 23.8	1.348	2.313	6.2	19.4
1 2	6 54.67	+10 39.8	2.460	3.427	3.6	20.9	1 2	6 55.19	+22 28.3	1.344	2.327	0.8	19.0
1 12	6 46.30	+11 34.1	2.455	3.416	4.2	20.9	1 12	6 43.89	+22 30.4	1.368	2.341	4.5	19.3
1 22	6 38.44	+12 34.5	2.481	3.404	6.7	21.0	1 22	6 34.10	+22 29.6	1.419	2.356	9.5	19.6
2 1	6 31.81	+13 38.2	2.535	3.392	9.5	21.2	2 1	6 26.99	+22 26.5	1.495	2.370	13.8	19.9
2 11	6 26.97	+14 42.4	2.614	3.380	12.0	21.4	2 11	6 23.19	+22 22.1	1.591	2.384	17.3	20.2
59493	1999 JG ₅		1 3.5 30°96	19°0/ 2.6	18 R		317570	2002 VO ₁₁₈		1 3.5 50°43	0°4/ 3.5	18	
12 3	7 23.21	- 5 53.3	1.014	1.814	24.5	17.6	12 3	7 25.98	+25 5.0	1.400	2.252	16.1	19.4
12 13	7 16.90	- 9 17.2	0.972	1.817	21.9	17.4	12 13	7 17.98	+24 7.4	1.354	2.273	11.5	19.1
12 23	7 7.15	-12 6.7	0.948	1.822	19.8	17.3	12 23	7 7.29	+23 6.9	1.331	2.295	6.3	18.9
1 2	6 55.26	-14 6.0	0.943	1.826	19.0	17.2	1 2	6 55.27	+22 3.8	1.335	2.318	0.9	18.6
1 12	6 43.15	-15 6.0	0.958	1.832	19.6	17.3	1 12	6 43.59	+21 0.5	1.368	2.341	4.6	18.9
1 22	6 32.72	-15 8.0	0.990	1.837	21.4	17.4	1 22	6 33.73	+20 0.3	1.428	2.364	9.5	19.3
2 1	6 25.47	-14 21.4	1.038	1.843	23.7	17.6	2 1	6 26.72	+19 6.3	1.513	2.387	13.8	19.6
2 11	6 22.21	-13 0.5	1.099	1.850	25.9	17.8	2 11	6 23.04	+18 20.1	1.620	2.411	17.2	19.9
240351	2003 RV ₂		1 3.5 104°41	1°0/ 3.7	18		189979	2004 DG ₁₈		1 3.5 193°54	0°8/ 3.6	18	
12 3	7 22.52	+18 59.1	1.755	2.594	13.9	21.3	12 3	7 23.89	+20 37.8	1.736	2.575	14.1	20.9
12 13	7 15.31	+19 14.2	1.701	2.614	10.0	21.1	12 13	7 16.59	+20 36.8	1.660	2.574	10.2	20.6
12 23	7 5.83	+19 34.7	1.671	2.633	5.6	20.9	12 23	7 6.72	+20 39.3	1.609	2.572	5.7	20.3
1 2	6 55.06	+19 58.3	1.670	2.652	1.3	20.6	1 2	6 55.24	+20 43.3	1.586	2.569	1.2	20.0
1 12	6 44.29	+20 22.1	1.699	2.671	4.0	20.8	1 12	6 43.50	+20 46.8	1.593	2.565	4.2	20.2
1 22	6 34.74	+20 44.4	1.756	2.689	8.3	21.1	1 22	6 32.87	+20 49.1	1.628	2.561	8.8	20.5
2 1	6 27.40	+21 4.4	1.840	2.707	12.0	21.4	2 1	6 24.50	+20 50.2	1.690	2.556	13.0	20.7
2 11	6 22.85	+21 21.8	1.945	2.724	15.1	21.7	2 11	6 19.15	+20 50.8	1.773	2.550	16.4	21.0
112510	2002 PO ₂₃		1 3.5 201°40	0°8/ 3.7	18		421426	2013 WX ₁₀₉		1 3.5 63°11	1°0/ 3.6	18	
12 3	7 20.79	+19 52.6	2.065	2.900	12.3	21.3	12 3	7 18.34	+20 54.7	2.119	2.958	11.8	20.8
12 13	7 14.06	+20 2.6	1.985	2.896	8.9	21.1	12 13	7 12.13	+20 34.4	2.051	2.965	8.5	20.6
12 23	7 5.21	+20 16.9	1.931	2.892	5.0	20.9	12 23	7 4.04	+20 16.0	2.009	2.971	4.8	20.4
1 2	6 55.00	+20 33.3	1.905	2.887	1.1	20.6	1 2	6 54.87	+19 58.8	1.996	2.978	1.2	20.1
1 12	6 44.54	+20 49.8	1.910	2.882	3.7	20.7	1 12	6 45.64	+19 42.6	2.013	2.984	3.5	20.3
1 22	6 34.93	+21 5.0	1.945	2.876	7.7	21.0	1 22	6 37.35	+19 27.4	2.059	2.991	7.3	20.6
2 1	6 27.16	+21 18.4	2.006	2.869	11.4	21.2	2 1	6 30.82	+19 13.6	2.132	2.998	10.6	20.8
2 11	6 21.89	+21 30.0	2.091	2.862	14.4	21.4	2 11	6 26.61	+19 1.5	2.227	3.005	13.5	21.0
454243	2013 LB ₇		1 3.5 161°12	4°9/ 1.3	18		368453	2003 OX ₃₁		1 3.5 134°12	0°8/ 3.4	18	
12 3	7 25.51	+30 25.6	1.880	2.717	13.2	20.4	12 3	7 20.51	+25 43.5	2.308	3.144	11.1	20.6
12 13	7 18.11	+32 31.3	1.811	2.720	9.8	20.2	12 13	7 13.57	+25 39.7	2.241	3.154	8.0	20.4
12 23	7 7.78	+34 36.9	1.770	2.722	6.4	20.0	12 23	7 4.79	+25 34.3	2.200	3.163	4.4	20.2
1 2	6 55.37	+36 32.4	1.758	2.724	4.9	19.9	1 2	6 54.97	+25 25.4	2.189	3.171	0.9	20.0
1 12	6 42.31	+38 9.1	1.778	2.725	6.9	20.0	1 12	6 45.11	+25 12.2	2.208	3.179	3.4	20.2
1 22	6 30.15	+39 22.6	1.827	2.727	10.2	20.2	1 22	6 36.19	+24 54.9	2.258	3.187	6.9	20.4
2 1	6 20.31	+40 13.0	1.902	2.728	13.5	20.5	2 1	6 29.03	+24 34.7	2.336	3.195	10.1	20.6
2 11	6 13.77	+40 44.4	1.998	2.729	16.3	20.7	2 11	6 24.18	+24 13.1	2.436	3.202	12.8	20.8
284729	2008 UX ₁₂₉		1 3.5 168°04	4°5/ 2.6	18		258137	2001 RM ₆₈		1 3.5 104°44	1°5/ 3.8	18	
12 3	7 25.88	+32 30.5	1.709	2.550	14.2	21.3	12 3	7 21.40	+18 30.5	2.077	2.908	12.4	21.5
12 13	7 18.28	+33 20.3	1.643	2.553	10.5	21.1	12 13	7 14.19	+18 24.1	2.023	2.931	8.9	21.4
12 23	7 7.73	+34 4.0	1.602	2.556	6.8	20.9	12 23	7 5.11	+18 22.0	1.994	2.954	5.1	21.2
1 2	6 55.34	+34 35.0	1.588	2.558	4.5	20.7	1 2	6 55.01	+18 23.1	1.995	2.976	1.7	21.0
1 12	6 42.70	+34 48.8	1.603	2.560	6.3	20.9	1 12	6 44.97	+18 26.2	2.027	2.997	3.7	21.2
1 22	6 31.41	+34 45.0	1.645	2.562	10.0	21.1	1 22	6 35.98	+18 30.6	2.088	3.018	7.3	21.4
2 1	6 22.77	+34 26.7	1.713	2.563	13.7	21.3	2 1	6 28.88	+18 35.8	2.177	3.039	10.6	21.7
2 11	6 17.56	+33 58.7	1.801	2.563	16.8	21.5	2 11	6 24.16	+18 41.6	2.288	3.058	13.4	21.9
174395	2002 VU ₃₉		1 3.5 352°49	5°8/ 4.7	18		239498	2007 VF ₈₄		1 3.5 36°88	0°0/ 3.4	18	
12 3	7 16.17	+ 9 25.2	1.428	2.268	16.5	19.1	12 3	7 17.84	+23 31.4	2.227	3.068	11.3	20.0
12 13	7 11.33	+ 9 6.6	1.359	2.264	12.7	18.9	12 13	7 11.76	+23 20.3	2.156	3.071	8.1	19.8
12 23	7 3.91	+ 9 4.8	1.312	2.260	8.8	18.7	12 23	7 3.85	+23 9.3	2.110	3.073	4.5	19.6
1 2	6 54.85	+ 9 21.2	1.290	2.257	6.0	18.5	1 2	6 54.86	+22 57.0	2.093	3.076	0.6	19.3
1 12	6 45.49	+ 9 54.4	1.294	2.255	6.9	18.5	1 12	6 45.78	+22 42.9	2.107	3.079	3.3	19.5
1 22	6 37.21	+10 41.1	1.323	2.254	10.6	18.7	1 22	6 37.58	+22 27.0	2.150	3.082	7.0	19.7
2 1	6 31.20	+11 36.8	1.376	2.253	14.6	19.0	2 1	6 31.08	+22 10.1	2.220	3.085	10.3	19.9
2 11	6 28.21	+12 36.4	1.449	2.254	18.2	19.2	2 11	6 26.84	+21 53.1	2.313	3.088	13.1	20.1
47944	2000 JK ₁₂		1 3.5 72°34	0°5/ 3.6	18		275535	1998 QW ₉₄		1 3.5 61°21	4°0/ 4.0	18	
12 3	7 17.67	+20 24.7	2.145	2.985	11.7	18.5	12 3	7 25.01	+15 20.8	1.188	2.039	18.4	19.8
12 13	7 11.60	+20 38.2	2.088	3.001	8.4	18.4	12 13	7 17.49	+14 44.2	1.153	2.068	13.5	19.6
12 23	7 3.72	+20 55.4	2.056	3.019	4.6	18.2	12 23	7 7.10	+14 19.0	1.139	2.097	8.2	19.4
1 2	6 54.81	+21 13.9	2.053	3.036	0.8	17.9	1 2	6 55.27	+14 5.6	1.150	2.126	4.2	19.2
1 12	6 45.86	+21 32.1	2.080	3.053	3.3	18.1	1 12	6 43.77	+14 3.0	1.188	2.156	6.1	19.4
1 22	6 37.84	+21 48.4	2.137	3.069	7.0	18.4	1 22	6 34.17	+14 9.6	1.251	2.185	10.7	19.8
2 1	6 31.55	+22 2.5	2.220	3.086	10.3	18.6	2 1	6 27.56	+14 23.1	1.337	2.214	15.0	20.1
2 11	6 27.51	+22 14.2	2.327	3.103	13.0	18.9	2 11	6 24.44	+14 41.0	1.444	2.243	18.5	20.4
284787	2008 YF ₅₁		1 3.5 221°94	0°5/ 3.7	18		331279	2011 DO ₄		1 3.5 255°13	4°0/ 4.7	18	
12 3	7 16.11	+19 12.9	2.515	3.349	10.4	21.1	12 3	7 16.57	+ 9 25.5	2.302	3.115		

EPHEMERIDES

1 3.5

1 3.5

2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
422890	2002 <i>QD</i> ₁₁₁		1 3.5 55°71	0°6/ 3.4	18		484624	2008 <i>SM</i> ₁₄₃		1 3.5 67°18	6°0/ 2.3	18	
12 3	7 21.14	+24 34.3	1.839	2.684	13.1	21.2	12 3	7 25.32	+33 38.4	1.379	2.231	16.2	21.1
12 13	7 14.15	+24 36.6	1.798	2.715	9.3	21.1	12 13	7 18.38	+34 51.9	1.327	2.241	12.2	20.9
12 23	7 5.10	+24 38.5	1.782	2.746	5.1	20.9	12 23	7 7.99	+35 57.6	1.298	2.251	8.1	20.7
1 2	6 55.01	+24 37.8	1.794	2.777	0.9	20.6	1 2	6 55.47	+36 46.4	1.294	2.261	6.0	20.6
1 12	6 45.10	+24 33.2	1.836	2.808	3.8	20.9	1 12	6 42.74	+37 12.1	1.318	2.271	7.9	20.7
1 22	6 36.49	+24 24.6	1.906	2.839	7.7	21.2	1 22	6 31.73	+37 14.2	1.366	2.282	11.7	21.0
2 1	6 30.03	+24 13.2	2.003	2.870	11.2	21.5	2 1	6 23.93	+36 57.2	1.438	2.292	15.5	21.2
2 11	6 26.20	+24 0.2	2.122	2.900	14.0	21.7	2 11	6 20.10	+36 27.4	1.528	2.303	18.8	21.5
502884	2015 <i>DK</i> ₂₁₇		1 3.5 283°89	11°2/ 7.1	17		98885	2001 <i>BX</i> ₂₉		1 3.5 182°97	0°0/ 3.4	18	
12 3	7 14.15	-14 58.4	2.545	3.227	14.3	21.7	12 3	7 18.34	+21 41.2	2.095	2.936	11.9	19.8
12 13	7 9.09	-15 43.2	2.459	3.209	13.0	21.5	12 13	7 12.31	+22 0.4	2.021	2.936	8.6	19.6
12 23	7 2.41	-16 4.9	2.393	3.191	11.9	21.4	12 23	7 4.26	+22 22.8	1.973	2.936	4.7	19.3
1 2	6 54.68	-15 59.4	2.349	3.173	11.3	21.4	1 2	6 54.97	+22 45.8	1.953	2.936	0.6	19.0
1 12	6 46.68	-15 25.2	2.328	3.155	11.2	21.3	1 12	6 45.46	+23 7.1	1.964	2.936	3.5	19.2
1 22	6 39.21	-14 23.6	2.331	3.137	12.0	21.3	1 22	6 36.81	+23 25.1	2.003	2.936	7.4	19.5
2 1	6 33.01	-12 58.5	2.357	3.119	13.2	21.4	2 1	6 29.93	+23 39.3	2.070	2.935	10.9	19.7
2 11	6 28.67	-11 16.1	2.404	3.101	14.7	21.5	2 11	6 25.45	+23 50.2	2.159	2.935	13.9	19.9
491934	2013 <i>CL</i> ₁₀₈		1 3.5 324°88	0°4/ 3.5	17		363208	2001 <i>UY</i> ₁₆₃		1 3.5 351°18	22°3/ 8.1	18	
12 3	7 18.80	+22 26.1	1.250	2.117	16.6	21.9	12 3	7 18.52	-15 11.8	0.984	1.750	27.4	20.6
12 13	7 13.88	+22 45.9	1.175	2.102	12.1	21.6	12 13	7 13.84	-17 31.7	0.939	1.747	25.4	20.4
12 23	7 5.66	+23 11.1	1.120	2.087	6.8	21.3	12 23	7 5.67	-19 4.6	0.906	1.745	23.6	20.3
1 2	6 55.16	+23 37.7	1.090	2.073	1.0	20.8	1 2	6 55.19	-19 36.5	0.888	1.743	22.5	20.2
1 12	6 44.08	+24 1.3	1.086	2.060	5.2	21.1	1 12	6 44.26	-19 0.9	0.885	1.742	22.4	20.2
1 22	6 34.24	+24 19.2	1.107	2.048	11.0	21.4	1 22	6 34.81	-17 21.7	0.897	1.742	23.3	20.3
2 1	6 27.26	+24 31.2	1.150	2.037	16.2	21.6	2 1	6 28.48	-14 51.4	0.924	1.742	25.0	20.4
2 11	6 24.10	+24 38.0	1.212	2.026	20.5	21.9	2 11	6 26.20	-11 48.6	0.966	1.743	27.1	20.5
494167	2016 <i>GZ</i> ₁₂₂		1 3.5 95°01	3°2/ 2.6	18		174919	2004 <i>CV</i> ₂₀		1 3.5 348°38	1°0/ 3.3	18	
12 3	7 19.16	+31 25.3	2.278	3.116	11.2	21.5	12 3	7 20.50	+24 14.8	1.636	2.487	14.2	21.0
12 13	7 12.86	+32 5.9	2.212	3.122	8.2	21.4	12 13	7 14.36	+24 38.5	1.566	2.486	10.2	20.7
12 23	7 4.53	+32 42.4	2.172	3.127	5.1	21.2	12 23	7 5.59	+25 3.8	1.521	2.485	5.7	20.4
1 2	6 54.97	+33 10.5	2.161	3.133	3.2	21.1	1 2	6 55.17	+25 26.9	1.502	2.485	1.2	20.1
1 12	6 45.25	+33 27.6	2.180	3.139	4.8	21.2	1 12	6 44.49	+25 44.6	1.512	2.484	4.4	20.4
1 22	6 36.44	+33 32.8	2.227	3.144	7.7	21.4	1 22	6 34.96	+25 55.3	1.550	2.484	9.1	20.6
2 1	6 29.46	+33 27.5	2.301	3.150	10.7	21.6	2 1	6 27.76	+25 59.4	1.612	2.484	13.2	20.9
2 11	6 24.91	+33 14.3	2.398	3.155	13.2	21.8	2 11	6 23.65	+25 58.6	1.696	2.483	16.7	21.1
354520	2004 <i>RX</i> ₅₃		1 3.5 36°02	2°5/ 3.1	17		123093	2000 <i>SD</i> ₃₃₅		1 3.5 14°03	1°2/ 3.9	18	
12 3	7 21.70	+26 10.2	1.084	1.956	18.2	20.4	12 3	7 17.86	+18 6.3	1.693	2.540	14.0	19.7
12 13	7 15.83	+26 49.5	1.044	1.973	13.0	20.1	12 13	7 12.31	+18 28.8	1.625	2.541	10.1	19.4
12 23	7 6.52	+27 28.5	1.024	1.991	7.3	19.9	12 23	7 4.40	+18 59.1	1.580	2.543	5.8	19.2
1 2	6 55.23	+28 0.3	1.029	2.010	2.6	19.7	1 2	6 55.02	+19 34.6	1.563	2.545	1.5	18.9
1 12	6 44.02	+28 20.1	1.058	2.030	6.0	19.9	1 12	6 45.40	+20 12.2	1.574	2.547	4.1	19.1
1 22	6 34.79	+28 26.9	1.112	2.050	11.3	20.3	1 22	6 36.79	+20 49.0	1.614	2.550	8.5	19.4
2 1	6 28.88	+28 23.0	1.188	2.072	15.9	20.6	2 1	6 30.27	+21 23.0	1.678	2.553	12.6	19.6
2 11	6 26.92	+28 11.8	1.282	2.094	19.7	20.9	2 11	6 26.53	+21 53.5	1.764	2.556	15.9	19.8
427840	2005 <i>LE</i> ₄		1 3.5 170°46	4°9/ 4.9	18		201975	2004 <i>PU</i> ₃₂		1 3.5 104°65	0°0/ 3.4	18	
12 3	7 14.62	+ 4 39.9	2.966	3.753	10.2	21.8	12 3	7 24.71	+21 30.4	1.689	2.529	14.3	20.7
12 13	7 9.07	+ 4 13.6	2.890	3.756	8.2	21.6	12 13	7 16.99	+21 54.8	1.638	2.553	10.2	20.5
12 23	7 2.25	+ 3 57.8	2.840	3.759	6.2	21.5	12 23	7 6.84	+22 22.5	1.612	2.575	5.6	20.2
1 2	6 54.67	+ 3 53.7	2.818	3.761	4.9	21.4	1 2	6 55.33	+22 49.9	1.615	2.598	0.7	19.9
1 12	6 46.99	+ 4 1.3	2.827	3.763	5.3	21.5	1 12	6 43.86	+23 13.8	1.647	2.619	4.1	20.2
1 22	6 39.85	+ 4 19.5	2.864	3.764	7.0	21.6	1 22	6 33.75	+23 32.7	1.708	2.640	8.5	20.6
2 1	6 33.82	+ 4 46.5	2.930	3.765	9.0	21.7	2 1	6 26.02	+23 46.6	1.795	2.660	12.4	20.8
2 11	6 29.36	+ 5 19.8	3.019	3.766	11.0	21.9	2 11	6 21.28	+23 56.5	1.904	2.680	15.5	21.1
159479	2000 <i>SY</i> ₃₃		1 3.5 151°84	0°4/ 3.6	18		335917	2007 <i>SV</i> ₁₄		1 3.5 86°35	0°7/ 3.7	18	R
12 3	7 22.53	+20 29.6	1.875	2.712	13.2	21.2	12 3	7 17.93	+21 4.9	2.300	3.137	11.1	20.8
12 13	7 15.41	+20 49.7	1.808	2.721	9.5	21.0	12 13	7 11.73	+20 51.2	2.234	3.146	8.0	20.6
12 23	7 5.99	+21 14.0	1.766	2.728	5.3	20.8	12 23	7 3.82	+20 39.4	2.194	3.156	4.5	20.4
1 2	6 55.18	+21 39.8	1.753	2.736	0.8	20.4	1 2	6 54.93	+20 28.6	2.183	3.166	1.0	20.2
1 12	6 44.21	+22 4.1	1.770	2.742	3.8	20.7	1 12	6 46.00	+20 18.2	2.203	3.175	3.2	20.3
1 22	6 34.29	+22 25.3	1.816	2.748	8.1	21.0	1 22	6 37.93	+20 8.0	2.253	3.185	6.8	20.6
2 1	6 26.47	+22 42.8	1.889	2.753	11.9	21.2	2 1	6 31.50	+19 58.3	2.330	3.194	9.9	20.8
2 11	6 21.38	+22 57.0	1.984	2.758	15.0	21.4	2 11	6 27.21	+19 49.4	2.430	3.204	12.6	21.0
324033	2005 <i>UD</i> ₄₄₀		1 3.5 42°33	2°1/ 3.2	18		421241	2013 <i>SK</i> ₄₇		1 3.5 216°46	4°3/ 4.6	18	
12 3	7 21.08	+28 2.5	1.731	2.580	13.6	20.4	12 3	7 16.72	+ 9 49.6	2.140	2.958	12.6	21.8
12 13	7 14.59	+28 13.0	1.667	2.584	9.8	20.2	12 13	7 11.05	+ 9 36.5	2.063	2.956	9.6	21.6
12 23	7 5.60	+28 20.3	1.626	2.589	5.6	20.0	12 23	7 3.55	+ 9 34.6	2.010	2.953	6.6	21.4
1 2	6 55.12	+28 21.0	1.613	2.593	2.1	19.8	1 2	6 54.91	+ 9 44.3	1.985	2.951	4.4	21.2
1 12	6 44.54	+28 13.0	1.629	2.598	4.6	19.9	1 12	6 46.06	+10 5.0	1.990	2.948	5.2	21.3
1 22	6 35.18	+27 56.5	1.672	2.603	8.8	20.2	1 22	6 37.96	+10 34.8	2.023	2.945	8.1	21.4
2 1	6 28.16	+27 33.6	1.741	2.608	12.6	20.4	2 1	6 31.44	+11 11.2	2.083	2.942	11.1	21.6
2 11	6 24.11	+27 7.1	1.831	2.613	15.8	20.7	2 11	6 27.11	+11 51.5	2.165	2.939	13.9	21.8
81509	2000 <i>GU</i> ₁₆₇		1 3.5 148°23	5°5/ 2.2	18		90328	Haryou		1 3.5 163°86	3°4/ 2.9	18	
12 3	7 25.31	+38 19.4	2.215										

EPHEMERIDES

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
464209	2015 <i>BL</i> ₁₂₆		1 3.5	7°88	0°5/ 3.4	18	490371	2009 <i>HT</i> ₈₄		1 3.5	133°19	5°3/ 5.2	18
12 3	7 17.47	+23 20.1	2.172	3.015	11.5	21.3	12 3	7 18.80	+6 5.8	2.110	2.912	13.3	21.7
12 13	7 11.66	+23 37.9	2.099	3.015	8.2	21.1	12 13	7 12.45	+6 2.6	2.045	2.924	10.4	21.5
12 23	7 3.90	+23 57.3	2.051	3.015	4.5	20.9	12 23	7 4.28	+6 14.2	2.004	2.936	7.4	21.4
1 2	6 54.96	+24 15.8	2.032	3.015	0.7	20.6	1 2	6 55.04	+6 40.7	1.990	2.947	5.4	21.3
1 12	6 45.83	+24 31.3	2.043	3.015	3.5	20.8	1 12	6 45.68	+7 20.7	2.006	2.957	5.9	21.3
1 22	6 37.53	+24 42.6	2.083	3.015	7.2	21.0	1 22	6 37.17	+8 11.2	2.051	2.967	8.4	21.5
2 1	6 30.95	+24 49.7	2.150	3.016	10.6	21.2	2 1	6 30.31	+9 8.7	2.123	2.976	11.2	21.7
2 11	6 26.68	+24 53.2	2.240	3.016	13.5	21.4	2 11	6 25.68	+10 9.4	2.218	2.985	13.9	21.9
452471	2003 <i>YZ</i> ₁₈₀		1 3.5	35°15	1°7/ 4.0	16	234053	1999 <i>FR</i> ₁		1 3.5	185°27	1°4/ 3.3	18
12 3	7 19.67	+15 49.1	1.090	1.954	18.7	19.9	12 3	7 23.64	+25 42.7	1.781	2.624	13.6	21.0
12 13	7 14.10	+16 41.0	1.056	1.980	13.5	19.7	12 13	7 16.47	+26 0.7	1.708	2.624	9.8	20.8
12 23	7 5.48	+17 46.9	1.042	2.007	7.7	19.5	12 23	7 6.73	+26 18.0	1.661	2.624	5.5	20.5
1 2	6 55.16	+19 1.0	1.053	2.035	2.1	19.2	1 2	6 55.38	+26 31.1	1.641	2.623	1.5	20.3
1 12	6 44.95	+20 15.7	1.089	2.064	5.1	19.5	1 12	6 43.81	+26 37.1	1.651	2.622	4.4	20.5
1 22	6 36.53	+21 24.9	1.151	2.093	10.4	19.9	1 22	6 33.37	+26 35.4	1.690	2.620	8.7	20.7
2 1	6 31.10	+22 25.3	1.235	2.124	15.1	20.2	2 1	6 25.23	+26 27.2	1.754	2.618	12.7	21.0
2 11	6 29.25	+23 15.5	1.339	2.155	18.8	20.6	2 11	6 20.12	+26 14.8	1.840	2.615	16.0	21.2
129386	1027 <i>T</i> ₋₂		1 3.5	157°07	3°6/ 4.5	18	80551	2000 <i>AL</i> ₈₉		1 3.5	57°69	0°3/ 3.6	17
12 3	7 16.67	+10 59.6	2.388	3.204	11.5	20.6	12 3	7 24.45	+22 38.6	1.179	2.040	17.8	18.8
12 13	7 10.82	+10 51.6	2.315	3.209	8.7	20.4	12 13	7 17.50	+22 29.8	1.133	2.058	12.7	18.6
12 23	7 3.34	+10 53.0	2.267	3.213	5.8	20.3	12 23	7 7.36	+22 23.4	1.110	2.076	7.0	18.3
1 2	6 54.88	+11 3.9	2.248	3.216	3.7	20.1	1 2	6 55.46	+22 16.8	1.111	2.094	1.0	18.0
1 12	6 46.28	+11 23.2	2.259	3.220	4.5	20.2	1 12	6 43.69	+22 8.2	1.139	2.113	5.0	18.3
1 22	6 38.40	+11 49.3	2.300	3.223	7.2	20.4	1 22	6 33.81	+21 57.7	1.192	2.131	10.5	18.7
2 1	6 31.95	+12 20.4	2.368	3.226	10.1	20.6	2 1	6 27.07	+21 46.5	1.268	2.150	15.3	19.0
2 11	6 27.48	+12 54.3	2.459	3.228	12.6	20.7	2 11	6 24.07	+21 35.8	1.364	2.169	19.1	19.3
89799	2002 <i>AS</i> ₁₄₄		1 3.5	110°70	3°4/ 4.7	18	57134	2001 <i>PX</i> ₆		1 3.5	8°25	3°6/ 3.2	18
12 3	7 18.44	+10 52.0	2.071	2.891	12.9	20.0	12 3	7 22.45	+31 39.0	1.560	2.412	14.7	18.6
12 13	7 12.25	+11 12.4	2.007	2.904	9.7	19.9	12 13	7 15.92	+31 50.3	1.495	2.412	10.8	18.4
12 23	7 4.18	+11 44.8	1.968	2.916	6.2	19.7	12 23	7 6.51	+31 54.5	1.453	2.413	6.6	18.1
1 2	6 55.00	+12 27.9	1.957	2.929	3.6	19.5	1 2	6 55.36	+31 47.0	1.438	2.414	3.6	17.9
1 12	6 45.70	+13 18.9	1.976	2.941	4.5	19.6	1 12	6 44.08	+31 25.4	1.450	2.416	5.7	18.1
1 22	6 37.26	+14 14.7	2.024	2.952	7.7	19.8	1 22	6 34.25	+30 51.1	1.489	2.418	9.8	18.3
2 1	6 30.52	+15 12.0	2.100	2.964	10.9	20.1	2 1	6 27.09	+30 7.9	1.553	2.421	13.8	18.6
2 11	6 26.05	+16 8.2	2.200	2.975	13.7	20.3	2 11	6 23.31	+29 20.3	1.637	2.423	17.2	18.8
328639	2009 <i>SB</i> ₂₁₃		1 3.5	61°01	2°6/ 2.9	18	444250	2005 <i>US</i> ₁₈₃		1 3.5	47°62	2°8/ 3.1	15
12 3	7 20.45	+28 30.9	1.837	2.684	13.0	20.7	12 3	7 24.22	+26 32.1	1.088	1.956	18.4	21.5
12 13	7 14.09	+29 2.7	1.775	2.691	9.4	20.5	12 13	7 17.62	+27 15.2	1.050	1.978	13.2	21.3
12 23	7 5.34	+29 32.0	1.737	2.698	5.5	20.3	12 23	7 7.53	+27 57.2	1.034	2.000	7.5	21.0
1 2	6 55.16	+29 54.3	1.727	2.706	2.6	20.1	1 2	6 55.49	+28 30.6	1.042	2.023	2.8	20.8
1 12	6 44.84	+30 6.7	1.746	2.713	4.7	20.3	1 12	6 43.61	+28 50.7	1.076	2.046	6.1	21.1
1 22	6 35.66	+30 8.5	1.794	2.721	8.6	20.5	1 22	6 33.82	+28 56.7	1.134	2.070	11.3	21.5
2 1	6 28.68	+30 1.1	1.866	2.728	12.1	20.8	2 1	6 27.46	+28 51.4	1.214	2.095	15.9	21.8
2 11	6 24.55	+29 47.1	1.961	2.736	15.1	21.0	2 11	6 25.10	+28 38.7	1.313	2.119	19.6	22.1
312272	2008 <i>AE</i> ₉₆		1 3.5	30°64	1°9/ 3.1	18	101747	1999 <i>FL</i> ₁₁		1 3.5	207°93	4°9/ 2.2	18
12 3	7 20.40	+25 18.3	1.457	2.315	15.2	20.6	12 3	7 21.94	+41 15.6	3.045	3.852	9.5	20.2
12 13	7 14.50	+25 58.3	1.398	2.321	10.9	20.3	12 13	7 14.66	+41 49.6	2.966	3.846	7.5	20.0
12 23	7 5.75	+26 39.6	1.362	2.327	6.2	20.1	12 23	7 5.51	+42 14.2	2.914	3.840	5.7	19.9
1 2	6 55.23	+27 16.9	1.352	2.333	2.0	19.8	1 2	6 55.23	+42 25.7	2.892	3.833	4.9	19.8
1 12	6 44.49	+27 45.7	1.369	2.340	5.0	20.0	1 12	6 44.77	+42 21.9	2.899	3.825	5.7	19.9
1 22	6 35.11	+28 4.1	1.413	2.347	9.8	20.3	1 22	6 35.11	+42 2.9	2.935	3.817	7.5	20.0
2 1	6 28.33	+28 12.7	1.481	2.355	14.0	20.6	2 1	6 27.08	+41 31.1	2.999	3.809	9.5	20.1
2 11	6 24.90	+28 13.6	1.569	2.363	17.5	20.9	2 11	6 21.28	+40 49.9	3.085	3.800	11.4	20.2
162918	2001 <i>OX</i> ₅		1 3.5	23°63	1°6/ 3.6	18	217107	2001 <i>XV</i> ₁₃₆		1 3.5	64°83	0°1/ 3.6	18
12 3	7 19.55	+21 42.1	1.594	2.446	14.4	18.0	12 3	7 19.85	+21 57.0	1.755	2.602	13.6	20.6
12 13	7 13.33	+20 47.0	1.540	2.459	10.4	17.8	12 13	7 13.63	+22 4.6	1.692	2.609	9.7	20.4
12 23	7 4.82	+19 53.0	1.510	2.474	5.9	17.5	12 23	7 5.09	+22 14.9	1.653	2.617	5.4	20.1
1 2	6 55.08	+19 0.7	1.508	2.489	1.7	17.3	1 2	6 55.19	+22 25.7	1.643	2.626	0.8	19.8
1 12	6 45.44	+18 11.9	1.534	2.506	4.4	17.5	1 12	6 45.17	+22 34.7	1.661	2.634	3.9	20.1
1 22	6 37.15	+17 28.3	1.588	2.523	8.7	17.8	1 22	6 36.28	+22 41.0	1.707	2.642	8.3	20.3
2 1	6 31.16	+16 51.2	1.666	2.541	12.6	18.1	2 1	6 29.53	+22 44.5	1.779	2.651	12.2	20.6
2 11	6 27.98	+16 20.9	1.767	2.560	15.8	18.3	2 11	6 25.55	+22 45.9	1.873	2.659	15.4	20.8
144	<i>Vibilia</i>		1 3.5	64°30	1°3/ 3.2	18	238353	2004 <i>BF</i> ₁₂₂		1 3.5	346°91	5°3/ 1.4	18
12 3	7 22.40	+24 23.7	1.594	2.443	14.6	11.7	12 3	7 19.58	+32 55.1	1.867	2.713	12.9	19.6
12 13	7 15.48	+25 1.7	1.550	2.469	10.4	11.5	12 13	7 13.89	+34 31.5	1.797	2.708	9.7	19.4
12 23	7 6.06	+25 40.6	1.530	2.494	5.7	11.3	12 23	7 5.50	+36 5.1	1.752	2.703	6.7	19.2
1 2	6 55.26	+26 15.6	1.538	2.520	1.5	11.0	1 2	6 55.27	+37 27.7	1.736	2.699	5.3	19.1
1 12	6 44.53	+26 43.1	1.574	2.545	4.4	11.3	1 12	6 44.52	+38 32.8	1.748	2.695	7.0	19.2
1 22	6 35.21	+27 1.7	1.638	2.571	8.8	11.6	1 22	6 34.70	+39 17.4	1.787	2.692	10.1	19.4
2 1	6 28.36	+27 12.1	1.728	2.596	12.6	11.9	2 1	6 27.10	+39 42.0	1.851	2.689	13.3	19.6
2 11	6 24.56	+27 16.0	1.839	2.621	15.7	12.2	2 11	6 22.60	+39 50.4	1.935	2.687	16.1	19.8
420970	2013 <i>PV</i> ₁₆		1 3.5	168°55	0°6/ 3.7	18	495779	2017 <i>FW</i> ₆		1 3.5	270°90	3°3/ 2.9	18
12 3	7 19.55	+21 13.7	2.304	3.138	11.2	21.3							

EPHEMERIDES

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
457210	2008 JY ₂₂		1 3.5 307°06	9°0/ 4.6 16			413654	2005 VB ₃₅		1 3.6 321°14	2°0/ 3.2 18		
12 3	7 16.63	+ 2 47.7	1.617	2.426	16.3	21.4	12 3	7 18.97	+26 45.7	1.549	2.406	14.5	20.3
12 13	7 11.65	+ 1 48.4	1.529	2.404	13.5	21.2	12 13	7 13.66	+27 4.2	1.466	2.388	10.6	20.0
12 23	7 4.23	+ 1 7.1	1.463	2.383	10.8	21.0	12 23	7 5.47	+27 22.2	1.406	2.370	6.1	19.7
1 2	6 55.11	+ 0 48.7	1.422	2.361	9.1	20.8	1 2	6 55.32	+27 35.3	1.372	2.353	2.1	19.4
1 12	6 45.47	+ 0 55.6	1.405	2.340	9.7	20.8	1 12	6 44.69	+27 40.1	1.365	2.336	5.0	19.5
1 22	6 36.61	+ 1 27.0	1.414	2.319	12.3	20.9	1 22	6 35.11	+27 35.7	1.385	2.320	9.8	19.8
2 1	6 29.70	+ 2 18.7	1.446	2.299	15.6	21.1	2 1	6 27.98	+27 23.1	1.429	2.305	14.3	20.0
2 11	6 25.61	+ 3 24.7	1.497	2.279	18.8	21.2	2 11	6 24.16	+27 5.1	1.493	2.290	18.1	20.2
229248	2004 XU ₁₃₅		1 3.5 312°79	0°6/ 3.5 18			60744	2000 GB ₉₃		1 3.6 98°41	0°4/ 3.7 18		
12 3	7 19.52	+25 30.4	1.807	2.655	13.2	19.4	12 3	7 24.88	+19 33.7	1.594	2.435	15.0	18.8
12 13	7 13.61	+25 15.0	1.718	2.636	9.5	19.1	12 13	7 17.27	+20 13.1	1.545	2.459	10.8	18.6
12 23	7 5.23	+24 57.6	1.653	2.617	5.4	18.8	12 23	7 7.11	+20 58.4	1.520	2.483	5.9	18.4
1 2	6 55.23	+24 36.1	1.616	2.599	0.9	18.5	1 2	6 55.51	+21 45.5	1.524	2.507	0.9	18.1
1 12	6 44.88	+24 9.7	1.608	2.581	4.1	18.7	1 12	6 43.92	+22 29.8	1.557	2.529	4.2	18.4
1 22	6 35.49	+23 39.0	1.628	2.563	8.6	18.9	1 22	6 33.72	+23 8.6	1.618	2.552	8.8	18.7
2 1	6 28.20	+23 6.1	1.674	2.545	12.8	19.1	2 1	6 25.99	+23 40.8	1.706	2.573	12.8	19.0
2 11	6 23.78	+22 33.0	1.741	2.528	16.3	19.3	2 11	6 21.36	+24 7.0	1.815	2.594	16.0	19.2
388535	2007 HN ₃₁		1 3.5 179°39	0°0/ 3.6 17			209596	2004 XY ₁₅₉		1 3.6 345°40	3°4/ 2.8 18		
12 3	7 12.49	+22 18.4	4.054	4.882	6.9	22.3	12 3	7 22.28	+28 40.5	1.483	2.338	15.2	19.8
12 13	7 7.40	+22 25.6	3.973	4.883	4.9	22.2	12 13	7 16.05	+29 28.0	1.416	2.336	11.1	19.6
12 23	7 1.33	+22 33.7	3.921	4.883	2.7	22.0	12 23	7 6.77	+30 13.9	1.373	2.335	6.6	19.3
1 2	6 54.68	+22 41.6	3.901	4.883	0.4	21.8	1 2	6 55.50	+30 51.6	1.356	2.334	3.4	19.1
1 12	6 47.94	+22 48.8	3.912	4.883	2.0	21.9	1 12	6 43.88	+31 16.0	1.366	2.333	5.9	19.3
1 22	6 41.61	+22 54.5	3.955	4.883	4.2	22.1	1 22	6 33.60	+31 25.4	1.403	2.332	10.3	19.5
2 1	6 36.13	+22 58.6	4.027	4.883	6.3	22.3	2 1	6 26.03	+31 21.8	1.464	2.331	14.5	19.8
2 11	6 31.88	+23 1.3	4.125	4.882	8.1	22.4	2 11	6 22.01	+31 8.7	1.545	2.331	18.1	20.0
244979	2004 BL ₈₂		1 3.5 331°58	1°7/ 3.7 18			441344	2008 CD ₁₉₁		1 3.6 188°09	2°6/ 4.2 18		
12 3	7 17.19	+19 42.2	1.838	2.684	13.1	19.6	12 3	7 23.90	+14 37.3	1.860	2.685	13.9	22.1
12 13	7 11.76	+19 12.6	1.756	2.672	9.5	19.4	12 13	7 16.53	+14 49.6	1.781	2.685	10.3	21.9
12 23	7 4.11	+18 45.7	1.698	2.660	5.5	19.1	12 23	7 6.78	+15 11.7	1.728	2.683	6.2	21.6
1 2	6 55.07	+18 21.4	1.668	2.649	1.9	18.9	1 2	6 55.50	+15 41.8	1.704	2.681	2.8	21.4
1 12	6 45.78	+17 59.9	1.667	2.638	4.2	19.0	1 12	6 43.91	+16 17.4	1.709	2.678	4.5	21.5
1 22	6 37.39	+17 41.4	1.693	2.628	8.3	19.2	1 22	6 33.25	+16 55.9	1.744	2.674	8.6	21.7
2 1	6 30.92	+17 26.3	1.745	2.619	12.2	19.4	2 1	6 24.63	+17 34.9	1.806	2.668	12.5	22.0
2 11	6 27.05	+17 14.7	1.819	2.610	15.6	19.6	2 11	6 18.78	+18 12.8	1.891	2.662	15.8	22.2
412492	2014 JV ₂₀		1 3.5 187°20	0°4/ 3.5 18			163595	2002 TM ₂₀₉		1 3.6 82°68	2°9/ 4.5 18		
12 3	7 23.32	+21 58.4	1.763	2.604	13.8	21.4	12 3	7 16.54	+12 25.1	2.207	3.032	12.0	20.3
12 13	7 16.29	+22 31.1	1.689	2.604	9.9	21.2	12 13	7 10.87	+12 40.0	2.142	3.043	8.9	20.1
12 23	7 6.69	+23 8.0	1.640	2.604	5.5	20.9	12 23	7 3.47	+13 4.7	2.102	3.053	5.6	19.9
1 2	6 55.43	+23 44.9	1.619	2.602	0.8	20.6	1 2	6 55.04	+13 38.3	2.090	3.064	3.1	19.7
1 12	6 43.85	+24 18.3	1.628	2.600	4.2	20.8	1 12	6 46.49	+14 18.5	2.108	3.075	4.1	19.8
1 22	6 33.32	+24 45.5	1.666	2.598	8.7	21.1	1 22	6 38.72	+15 2.8	2.156	3.085	7.2	20.0
2 1	6 25.01	+25 6.3	1.730	2.595	12.8	21.3	2 1	6 32.52	+15 48.6	2.231	3.096	10.3	20.3
2 11	6 19.70	+25 21.5	1.816	2.591	16.2	21.5	2 11	6 28.42	+16 33.9	2.329	3.106	13.0	20.5
191606	2004 GN ₇₄		1 3.5 144°42	1°3/ 3.9 18			199820	2007 DF ₇₁		1 3.6 128°04	0°8/ 3.7 17		
12 3	7 23.47	+17 57.9	1.728	2.564	14.2	20.7	12 3	7 23.71	+19 41.8	1.610	2.452	14.8	21.1
12 13	7 16.23	+18 16.5	1.664	2.575	10.3	20.5	12 13	7 16.55	+20 0.2	1.549	2.464	10.7	20.9
12 23	7 6.56	+18 42.1	1.624	2.585	5.9	20.3	12 23	7 6.80	+20 24.4	1.513	2.475	6.0	20.6
1 2	6 55.40	+19 12.2	1.612	2.594	1.6	20.0	1 2	6 55.50	+20 51.2	1.504	2.486	1.2	20.3
1 12	6 44.09	+19 43.6	1.630	2.602	4.2	20.2	1 12	6 44.07	+21 17.4	1.524	2.496	4.2	20.6
1 22	6 33.93	+20 13.9	1.677	2.610	8.6	20.5	1 22	6 33.91	+21 41.0	1.572	2.506	8.9	20.9
2 1	6 25.99	+20 41.9	1.750	2.617	12.6	20.8	2 1	6 26.16	+22 1.1	1.646	2.516	13.1	21.1
2 11	6 20.97	+21 7.0	1.846	2.624	15.9	21.0	2 11	6 21.48	+22 17.9	1.741	2.524	16.5	21.4
166869	2002 XJ ₄₇		1 3.5 347°51	0°2/ 3.5 18			448136	2008 SW ₁₀₁		1 3.6 14°43	5°3/ 4.3 18		
12 3	7 16.58	+22 35.4	1.973	2.821	12.3	19.9	12 3	7 19.50	+12 29.8	1.271	2.121	17.5	21.0
12 13	7 11.23	+22 51.2	1.898	2.817	8.8	19.6	12 13	7 13.97	+11 52.6	1.210	2.122	13.3	20.7
12 23	7 3.78	+23 9.7	1.849	2.813	4.9	19.4	12 23	7 5.55	+11 29.1	1.171	2.124	8.8	20.5
1 2	6 55.03	+23 28.3	1.827	2.810	0.7	19.1	1 2	6 55.34	+11 20.8	1.155	2.127	5.4	20.3
1 12	6 46.05	+23 44.6	1.834	2.807	3.6	19.3	1 12	6 44.92	+11 27.5	1.165	2.130	6.9	20.4
1 22	6 37.94	+23 57.5	1.870	2.805	7.7	19.5	1 22	6 35.84	+11 47.2	1.200	2.134	11.2	20.6
2 1	6 31.66	+24 6.4	1.932	2.803	11.4	19.8	2 1	6 29.40	+12 16.6	1.258	2.138	15.5	20.9
2 11	6 27.86	+24 12.0	2.016	2.801	14.4	20.0	2 11	6 26.34	+12 51.8	1.335	2.143	19.3	21.2
454293	2014 JX ₁₄		1 3.6 96°98	0°6/ 3.7 16			165858	2001 SX ₃₅		1 3.6 45°46	3°0/ 2.9 18		
12 3	7 23.42	+19 43.2	1.639	2.481	14.6	21.9	12 3	7 19.12	+30 7.9	1.993	2.838	12.3	19.6
12 13	7 16.17	+20 6.5	1.588	2.502	10.5	21.7	12 13	7 13.01	+30 41.9	1.937	2.852	8.9	19.4
12 23	7 6.47	+20 35.4	1.560	2.523	5.8	21.4	12 23	7 4.74	+31 11.9	1.907	2.866	5.4	19.2
1 2	6 55.39	+21 6.2	1.561	2.544	1.1	21.2	1 2	6 55.21	+31 34.0	1.904	2.880	3.0	19.1
1 12	6 44.31	+21 35.9	1.591	2.564	4.1	21.4	1 12	6 45.63	+31 45.3	1.931	2.894	4.8	19.2
1 22	6 34.55	+22 2.3	1.649	2.583	8.6	21.7	1 22	6 37.13	+31 45.6	1.986	2.909	8.1	19.5
2 1	6 27.16	+22 24.6	1.733	2.602	12.6	22.0	2 1	6 30.66	+31 36.3	2.066	2.924	11.3	19.7
2 11	6 22.74	+22 43.0	1.839	2.621	15.8	22.3	2 11	6 26.81	+31 20.1	2.169	2.940	14.0	19.9
473458	2015 XA ₅₅		1 3.6 48°55	4°1/ 3.6 16			349686	2008 WS ₁₁₀		1 3.6 198°95	2°4/ 2.9 18		
12 3	7 32.97	+33 18.6	1.205	2.054	18.3	20.1							

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
179963	2002 <i>XO</i> ₈		1 3.6 88°61	0°8/ 3.4	18		493498	2015 <i>AB</i> ₂₇₇		1 3.6 197°34	3°6/ 4.3	18	
12 3	7 20.95	+23 9.1	1.728	2.576	13.7	19.9	12 3	7 16.28	+11 51.3	2.315	3.136	11.6	21.5
12 13	7 14.53	+23 42.0	1.667	2.585	9.8	19.7	12 13	7 10.67	+11 29.3	2.239	3.136	8.8	21.3
12 23	7 5.69	+24 17.6	1.629	2.594	5.4	19.5	12 23	7 3.38	+11 15.8	2.189	3.135	5.8	21.1
1 2	6 55.36	+24 52.0	1.620	2.603	1.0	19.2	1 2	6 55.08	+11 11.2	2.166	3.135	3.7	21.0
1 12	6 44.88	+25 21.4	1.640	2.612	4.1	19.4	1 12	6 46.62	+11 15.4	2.174	3.134	4.6	21.1
1 22	6 35.53	+25 44.1	1.687	2.620	8.5	19.7	1 22	6 38.87	+11 27.1	2.210	3.133	7.4	21.2
2 1	6 28.41	+25 59.9	1.761	2.629	12.4	20.0	2 1	6 32.59	+11 45.1	2.273	3.133	10.4	21.4
2 11	6 24.17	+26 9.8	1.856	2.638	15.6	20.2	2 11	6 28.34	+12 7.3	2.360	3.132	13.0	21.6
30917	Moehorgan		1 3.6 160°57	8°5/31.2	18		47925	2000 <i>GC</i> ₁₁₈		1 3.6 63°31	1°6/ 3.3	18	
12 3	7 27.87	+52 12.6	2.778	3.546	11.3	20.4	12 3	7 23.45	+26 2.1	1.528	2.379	15.0	18.6
12 13	7 19.65	+53 32.5	2.723	3.550	9.9	20.3	12 13	7 16.35	+26 20.7	1.483	2.402	10.7	18.4
12 23	7 8.63	+54 36.6	2.692	3.554	8.8	20.2	12 23	7 6.64	+26 38.0	1.462	2.426	6.0	18.2
1 2	6 55.78	+55 18.5	2.687	3.557	8.5	20.2	1 2	6 55.51	+26 50.0	1.468	2.450	1.7	18.0
1 12	6 42.56	+55 34.6	2.709	3.560	9.1	20.2	1 12	6 44.50	+26 54.1	1.502	2.473	4.6	18.2
1 22	6 30.47	+55 25.5	2.756	3.563	10.3	20.3	1 22	6 35.03	+26 50.2	1.564	2.497	9.1	18.6
2 1	6 20.79	+54 54.7	2.827	3.565	11.8	20.4	2 1	6 28.16	+26 40.0	1.650	2.521	13.0	18.9
2 11	6 14.32	+54 8.4	2.917	3.567	13.2	20.6	2 11	6 24.46	+26 26.0	1.758	2.544	16.2	19.1
325902	2010 <i>UU</i> ₅₅		1 3.6 302°51	6°5/ 1.4	18		313232	2001 <i>TL</i> ₂₁₁		1 3.6 104°05	6°3/ 2.9	18	
12 3	7 22.45	+35 30.5	1.678	2.522	14.2	20.2	12 3	7 27.03	+39 48.0	1.870	2.696	13.8	20.4
12 13	7 16.42	+36 57.7	1.599	2.506	11.0	20.0	12 13	7 18.99	+40 18.7	1.812	2.705	10.7	20.2
12 23	7 7.16	+38 19.8	1.545	2.491	7.9	19.8	12 23	7 8.16	+40 36.1	1.777	2.714	7.8	20.1
1 2	6 55.62	+39 27.6	1.517	2.475	6.5	19.7	1 2	6 55.73	+40 34.1	1.770	2.723	6.3	20.0
1 12	6 43.36	+40 13.6	1.517	2.460	8.2	19.7	1 12	6 43.31	+40 10.4	1.790	2.732	7.4	20.1
1 22	6 32.14	+40 35.2	1.542	2.445	11.6	19.9	1 22	6 32.44	+39 26.8	1.839	2.740	10.1	20.3
2 1	6 23.57	+40 34.5	1.591	2.430	15.1	20.1	2 1	6 24.28	+38 28.6	1.912	2.748	13.0	20.5
2 11	6 18.67	+40 16.9	1.660	2.416	18.2	20.3	2 11	6 19.47	+37 22.2	2.007	2.756	15.7	20.7
334218	2001 <i>SW</i> ₃₅₁		1 3.6 87°50	4°1/ 5.1	18		468717	2010 <i>EK</i> ₈₂		1 3.6 243°89	0°5/ 3.7	17	
12 3	7 16.60	+7 45.2	2.510	3.313	11.4	21.0	12 3	7 16.65	+20 13.1	2.508	3.342	10.4	22.1
12 13	7 10.63	+7 48.6	2.456	3.338	8.7	20.9	12 13	7 10.97	+20 25.5	2.423	3.334	7.5	21.9
12 23	7 3.22	+8 3.4	2.427	3.363	6.1	20.7	12 23	7 3.58	+20 41.4	2.364	3.325	4.2	21.7
1 2	6 55.02	+8 29.1	2.427	3.388	4.2	20.7	1 2	6 55.12	+20 59.2	2.334	3.316	0.8	21.4
1 12	6 46.82	+9 4.4	2.458	3.412	4.7	20.7	1 12	6 46.43	+21 17.0	2.335	3.307	3.0	21.5
1 22	6 39.37	+9 46.8	2.518	3.436	6.9	20.9	1 22	6 38.36	+21 33.8	2.366	3.298	6.5	21.8
2 1	6 33.30	+10 33.8	2.606	3.459	9.4	21.1	2 1	6 31.71	+21 48.7	2.425	3.289	9.6	21.9
2 11	6 29.08	+11 22.7	2.718	3.483	11.6	21.3	2 11	6 27.06	+22 1.7	2.508	3.279	12.3	22.1
201383	2002 <i>UT</i> ₆₁		1 3.6 32°70	7°2/ 5.0	18		459795	2013 <i>RP</i> ₆₄		1 3.6 120°61	0°8/ 3.4	18	
12 3	7 15.86	+3 34.9	1.945	2.748	14.2	19.9	12 3	7 19.47	+24 29.0	2.120	2.961	11.8	21.5
12 13	7 10.53	+2 46.4	1.882	2.754	11.5	19.8	12 13	7 13.15	+24 44.3	2.052	2.967	8.5	21.3
12 23	7 3.34	+2 14.1	1.841	2.760	8.9	19.6	12 23	7 4.82	+25 0.0	2.009	2.972	4.7	21.1
1 2	6 55.05	+2 0.7	1.827	2.767	7.3	19.6	1 2	6 55.28	+25 13.4	1.996	2.978	1.0	20.8
1 12	6 46.65	+2 6.5	1.839	2.774	7.8	19.6	1 12	6 45.62	+25 22.6	2.012	2.984	3.6	21.0
1 22	6 39.09	+2 30.1	1.878	2.781	9.8	19.7	1 22	6 36.89	+25 26.7	2.058	2.989	7.4	21.3
2 1	6 33.22	+3 7.8	1.942	2.789	12.4	19.9	2 1	6 29.98	+25 26.1	2.130	2.994	10.8	21.5
2 11	6 29.61	+3 55.4	2.028	2.797	14.9	20.1	2 11	6 25.49	+25 22.0	2.226	2.999	13.6	21.7
88506	2001 <i>QW</i> ₁₄₀		1 3.6 62°48	2°2/ 3.8	18		194297	2001 <i>UG</i> ₆₂		1 3.6 115°59	1°7/ 3.3	17	
12 3	7 23.59	+19 22.7	1.315	2.168	16.8	18.6	12 3	7 25.95	+26 4.6	1.681	2.523	14.3	21.3
12 13	7 16.69	+18 49.9	1.263	2.182	12.2	18.3	12 13	7 18.08	+26 30.4	1.627	2.542	10.3	21.1
12 23	7 6.92	+18 22.2	1.235	2.197	7.0	18.1	12 23	7 7.62	+26 55.0	1.597	2.560	5.8	20.9
1 2	6 55.54	+17 59.2	1.231	2.212	2.4	17.8	1 2	6 55.67	+27 14.0	1.596	2.577	1.8	20.7
1 12	6 44.23	+17 40.9	1.255	2.227	5.1	18.1	1 12	6 43.72	+27 24.4	1.624	2.594	4.5	20.9
1 22	6 34.54	+17 27.3	1.306	2.243	10.1	18.4	1 22	6 33.18	+27 25.8	1.680	2.610	8.9	21.2
2 1	6 27.65	+17 18.5	1.380	2.258	14.5	18.7	2 1	6 25.15	+27 19.7	1.763	2.625	12.7	21.5
2 11	6 24.17	+17 13.9	1.474	2.274	18.2	19.0	2 11	6 20.27	+27 8.8	1.866	2.640	15.9	21.7
426177	2012 <i>JB</i> ₁₃		1 3.6 77°03	4°3/ 2.2	18		113268	2002 <i>RE</i> ₁₅₁		1 3.6 273°29	0°4/ 3.5	18	
12 3	7 21.45	+32 17.8	1.953	2.795	12.6	20.4	12 3	7 19.30	+24 45.8	2.164	3.004	11.6	19.7
12 13	7 14.93	+33 24.9	1.892	2.802	9.4	20.2	12 13	7 13.04	+24 37.1	2.083	2.998	8.4	19.5
12 23	7 5.95	+34 27.4	1.857	2.810	6.1	20.1	12 23	7 4.78	+24 27.5	2.029	2.992	4.6	19.2
1 2	6 55.43	+35 19.1	1.850	2.818	4.3	20.0	1 2	6 55.29	+24 15.3	2.003	2.986	0.8	18.9
1 12	6 44.66	+35 55.4	1.872	2.826	5.9	20.1	1 12	6 45.62	+23 59.6	2.008	2.980	3.5	19.1
1 22	6 34.96	+36 15.1	1.921	2.834	9.1	20.3	1 22	6 36.83	+23 40.7	2.042	2.974	7.3	19.4
2 1	6 27.45	+36 19.6	1.997	2.841	12.2	20.5	2 1	6 29.81	+23 19.5	2.103	2.968	10.8	19.6
2 11	6 22.84	+36 12.5	2.093	2.849	14.9	20.7	2 11	6 25.19	+22 57.6	2.187	2.962	13.8	19.7
416611	2004 <i>RB</i> ₄₄		1 3.6 75°90	4°3/ 4.5	18		61199	2000 <i>OA</i> ₄		1 3.6 210°93	3°5/ 4.3	18	
12 3	7 19.00	+11 2.5	1.900	2.724	13.7	21.4	12 3	7 21.17	+13 12.8	1.830	2.658	14.0	19.9
12 13	7 12.69	+10 42.5	1.848	2.745	10.3	21.2	12 13	7 14.64	+13 7.1	1.750	2.653	10.5	19.7
12 23	7 4.48	+10 33.8	1.820	2.766	6.9	21.0	12 23	7 5.79	+13 11.7	1.694	2.647	6.7	19.5
1 2	6 55.21	+10 36.7	1.819	2.787	4.4	20.9	1 2	6 55.45	+13 26.2	1.666	2.640	3.6	19.3
1 12	6 45.96	+10 50.2	1.847	2.808	5.3	21.0	1 12	6 44.77	+13 49.3	1.667	2.633	5.0	19.3
1 22	6 37.74	+11 12.4	1.904	2.828	8.3	21.2	1 22	6 34.99	+14 18.8	1.697	2.626	8.8	19.5
2 1	6 31.38	+11 40.8	1.987	2.849	11.5	21.5	2 1	6 27.17	+14 52.4	1.752	2.617	12.6	19.8
2 11	6 27.41	+12 12.9	2.092	2.869	14.2	21.7	2 11	6 22.03	+15 27.9	1.830	2.609	15.9	20.0
277972	2006 <i>TF</i> ₂₂		1 3.6 67°35	1°5/ 3.9	17		314754	2006 <i>SA</i> ₂₉₈		1 3.6 129°01	4°8/ 2.5	18	
12 3	7 21.92	+18 16.3	1.586	2.430	14.9	2							

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
230634	2003 <i>QR</i> ₂		1 3.6 62°82	0°0/ 3.5 18			59265	1999 <i>CJ</i> ₃₁		1 3.6 26°15	3°8/ 3.0 18		
12 3	7 19.46	+23 2.8	1.946	2.789	12.6	20.4	12 3	7 23.26	+29 40.2	1.267	2.128	16.8	18.8
12 13	7 13.21	+22 58.7	1.880	2.796	9.0	20.2	12 13	7 17.05	+30 14.5	1.209	2.132	12.3	18.6
12 23	7 4.87	+22 55.6	1.840	2.804	5.0	20.0	12 23	7 7.43	+30 44.6	1.174	2.137	7.4	18.3
1 2	6 55.30	+22 51.7	1.828	2.811	0.7	19.7	1 2	6 55.71	+31 3.7	1.164	2.142	3.8	18.1
1 12	6 45.65	+22 45.9	1.845	2.818	3.6	19.9	1 12	6 43.79	+31 7.3	1.180	2.147	6.4	18.3
1 22	6 37.03	+22 37.7	1.892	2.826	7.7	20.2	1 22	6 33.57	+30 55.6	1.221	2.153	11.1	18.6
2 1	6 30.37	+22 27.9	1.964	2.833	11.3	20.4	2 1	6 26.50	+30 31.9	1.284	2.159	15.6	18.9
2 11	6 26.24	+22 17.4	2.059	2.841	14.3	20.6	2 11	6 23.34	+30 1.1	1.367	2.166	19.4	19.1
483484	2002 <i>RJ</i> ₇₉		1 3.6 113°48	2°5/ 4.1 18			6226	Paulwarren		1 3.6 23°68	0°1/ 3.6 18		
12 3	7 24.73	+15 45.3	1.572	2.407	15.5	22.1	12 3	7 21.57	+22 44.5	1.057	1.929	18.6	17.2
12 13	7 17.18	+15 52.7	1.518	2.427	11.3	21.9	12 13	7 15.98	+22 40.0	1.006	1.935	13.4	16.9
12 23	7 7.12	+16 9.5	1.488	2.447	6.7	21.7	12 23	7 6.87	+22 38.6	0.974	1.941	7.5	16.6
1 2	6 55.61	+16 33.7	1.486	2.465	2.7	21.5	1 2	6 55.63	+22 37.4	0.966	1.949	1.0	16.2
1 12	6 44.09	+17 2.4	1.513	2.483	4.7	21.7	1 12	6 44.28	+22 33.8	0.982	1.957	5.4	16.6
1 22	6 33.93	+17 33.1	1.567	2.500	9.1	22.0	1 22	6 34.77	+22 27.4	1.023	1.966	11.3	16.9
2 1	6 26.19	+18 3.8	1.648	2.517	13.1	22.3	2 1	6 28.55	+22 19.3	1.085	1.976	16.5	17.2
2 11	6 21.52	+18 33.4	1.750	2.532	16.4	22.5	2 11	6 26.35	+22 10.6	1.165	1.987	20.7	17.5
71268	2000 <i>AF</i> ₃₀		1 3.6 55°09	0°5/ 3.5 18			233009	2005 <i>EQ</i> ₂₀₇		1 3.6 190°18	1°6/ 3.2 18		
12 3	7 18.65	+23 2.9	1.921	2.767	12.6	18.8	12 3	7 18.81	+27 26.6	2.444	3.281	10.6	20.6
12 13	7 12.70	+23 26.0	1.858	2.775	9.0	18.6	12 13	7 12.56	+27 42.0	2.368	3.280	7.6	20.4
12 23	7 4.63	+23 51.1	1.820	2.784	5.0	18.3	12 23	7 4.48	+27 55.6	2.318	3.279	4.4	20.2
1 2	6 55.28	+24 15.5	1.810	2.793	0.8	18.1	1 2	6 55.29	+28 4.8	2.298	3.278	1.6	20.0
1 12	6 45.79	+24 36.4	1.829	2.802	3.7	18.3	1 12	6 45.95	+28 7.8	2.309	3.277	3.6	20.1
1 22	6 37.31	+24 52.3	1.877	2.811	7.8	18.6	1 22	6 37.39	+28 4.1	2.349	3.276	6.8	20.3
2 1	6 30.77	+25 3.1	1.951	2.820	11.4	18.8	2 1	6 30.45	+27 54.6	2.417	3.274	9.9	20.5
2 11	6 26.79	+25 9.7	2.048	2.829	14.4	19.0	2 11	6 25.70	+27 40.8	2.508	3.272	12.5	20.7
132007	2002 <i>CC</i> ₁₀₀		1 3.6 168°09	1°6/ 3.2 18			117277	2004 <i>TX</i> ₁₁₈		1 3.6 93°27	4°5/ 2.8 18		
12 3	7 23.61	+26 14.8	1.990	2.828	12.6	20.3	12 3	7 26.30	+31 52.0	1.505	2.352	15.4	19.9
12 13	7 16.29	+26 40.7	1.920	2.832	9.1	20.1	12 13	7 18.80	+32 43.1	1.453	2.367	11.3	19.7
12 23	7 6.64	+27 5.8	1.875	2.836	5.1	19.9	12 23	7 8.22	+33 27.7	1.425	2.381	7.2	19.5
1 2	6 55.56	+27 26.2	1.859	2.840	1.7	19.6	1 2	6 55.82	+33 58.7	1.423	2.396	4.6	19.4
1 12	6 44.29	+27 39.1	1.873	2.842	4.1	19.8	1 12	6 43.34	+34 11.7	1.450	2.410	6.5	19.5
1 22	6 34.06	+27 43.7	1.917	2.844	8.1	20.0	1 22	6 32.49	+34 6.7	1.503	2.424	10.4	19.8
2 1	6 25.92	+27 41.0	1.988	2.846	11.7	20.3	2 1	6 24.58	+33 47.5	1.580	2.437	14.2	20.0
2 11	6 20.54	+27 33.1	2.081	2.846	14.7	20.5	2 11	6 20.27	+33 19.1	1.678	2.451	17.4	20.3
8171	Stauffenberg		1 3.6 186°42	3°3/ 2.9 18			58718	1998 <i>DN</i> ₆		1 3.6 258°12	3°9/ 2.4 18		
12 3	7 20.43	+33 14.1	2.424	3.256	10.8	18.1	12 3	7 21.49	+31 40.7	2.043	2.883	12.2	18.8
12 13	7 13.79	+33 36.6	2.351	3.256	8.0	17.9	12 13	7 15.07	+32 37.6	1.962	2.872	9.1	18.6
12 23	7 5.16	+33 53.2	2.303	3.256	5.1	17.7	12 23	7 6.15	+33 31.5	1.906	2.860	5.8	18.3
1 2	6 55.35	+34 0.4	2.285	3.255	3.4	17.6	1 2	6 55.55	+34 16.5	1.878	2.848	3.9	18.2
1 12	6 45.40	+33 56.2	2.297	3.255	4.7	17.7	1 12	6 44.50	+34 48.0	1.879	2.836	5.6	18.3
1 22	6 36.34	+33 40.7	2.338	3.254	7.5	17.8	1 22	6 34.32	+35 4.4	1.909	2.824	9.0	18.5
2 1	6 29.06	+33 15.7	2.406	3.253	10.3	18.0	2 1	6 26.18	+35 6.6	1.965	2.812	12.3	18.6
2 11	6 24.16	+32 44.3	2.498	3.251	12.8	18.2	2 11	6 20.90	+34 57.9	2.043	2.799	15.2	18.8
492056	2013 <i>HS</i> ₂₅		1 3.6 156°36	4°0/ 4.9 18			229019	2003 <i>YD</i> ₆₅		1 3.6 254°32	1°8/ 4.3 18		
12 3	7 18.62	+ 8 25.1	2.451	3.254	11.6	22.3	12 3	7 16.65	+14 42.5	2.570	3.393	10.5	20.0
12 13	7 12.23	+ 8 31.8	2.379	3.263	8.9	22.2	12 13	7 11.00	+15 12.0	2.475	3.378	7.8	19.8
12 23	7 4.22	+ 8 49.9	2.332	3.271	6.1	22.0	12 23	7 3.66	+15 49.9	2.407	3.363	4.7	19.5
1 2	6 55.23	+ 9 19.2	2.315	3.278	4.1	21.9	1 2	6 55.20	+16 34.4	2.369	3.348	2.0	19.3
1 12	6 46.10	+ 9 58.1	2.328	3.284	4.7	21.9	1 12	6 46.42	+17 23.3	2.362	3.332	3.3	19.4
1 22	6 37.67	+10 44.2	2.371	3.290	7.2	22.1	1 22	6 38.15	+18 14.1	2.386	3.316	6.5	19.6
2 1	6 30.68	+11 34.6	2.443	3.296	10.0	22.3	2 1	6 31.17	+19 4.4	2.438	3.300	9.6	19.8
2 11	6 25.65	+12 26.9	2.538	3.300	12.4	22.5	2 11	6 26.11	+19 52.6	2.515	3.284	12.4	19.9
50692	2000 <i>EB</i> ₁₂₄		1 3.6 222°73	4°8/ 4.9 18			92817	2000 <i>QO</i> ₁₇₃		1 3.6 208°33	0°0/ 3.5 18		
12 3	7 15.86	+ 7 26.5	2.236	3.045	12.4	19.2	12 3	7 23.66	+23 18.1	1.686	2.530	14.2	19.8
12 13	7 10.45	+ 7 15.8	2.159	3.044	9.7	19.0	12 13	7 16.62	+23 10.0	1.611	2.527	10.3	19.5
12 23	7 3.32	+ 7 17.7	2.108	3.043	6.9	18.8	12 23	7 6.96	+23 2.4	1.560	2.524	5.7	19.2
1 2	6 55.12	+ 7 33.0	2.083	3.042	5.0	18.7	1 2	6 55.66	+22 53.2	1.537	2.520	0.8	18.9
1 12	6 46.74	+ 8 0.7	2.088	3.041	5.5	18.8	1 12	6 44.11	+22 40.9	1.543	2.516	4.2	19.1
1 22	6 39.05	+ 8 38.9	2.121	3.040	8.0	18.9	1 22	6 33.73	+22 25.7	1.578	2.512	8.9	19.4
2 1	6 32.83	+ 9 24.6	2.181	3.038	10.8	19.1	2 1	6 25.71	+22 8.8	1.638	2.507	13.1	19.6
2 11	6 28.67	+10 14.6	2.265	3.037	13.4	19.3	2 11	6 20.75	+21 51.8	1.719	2.502	16.7	19.9
403552	2010 <i>JP</i> ₇₁		1 3.6 192°43	4°4/ 4.6 18			198975	2005 <i>VO</i> ₉		1 3.6 165°90	1°5/ 3.9 18		
12 3	7 20.57	+ 9 23.5	2.201	3.009	12.6	22.8	12 3	7 23.34	+18 17.7	1.740	2.577	14.1	21.7
12 13	7 13.84	+ 9 8.5	2.120	3.007	9.7	22.6	12 13	7 16.23	+18 22.2	1.670	2.582	10.3	21.4
12 23	7 5.22	+ 9 4.6	2.064	3.004	6.7	22.4	12 23	7 6.68	+18 33.0	1.625	2.586	5.9	21.2
1 2	6 55.39	+ 9 12.3	2.037	3.001	4.5	22.2	1 2	6 55.62	+18 48.0	1.608	2.589	1.8	20.9
1 12	6 45.33	+ 9 30.8	2.040	2.996	5.3	22.3	1 12	6 44.35	+19 5.0	1.620	2.592	4.2	21.1
1 22	6 36.02	+ 9 58.6	2.073	2.991	8.1	22.4	1 22	6 34.18	+19 22.4	1.661	2.594	8.6	21.4
2 1	6 28.33	+10 33.2	2.133	2.985	11.2	22.6	2 1	6 26.21	+19 39.3	1.728	2.596	12.7	21.6
2 11	6 22.88	+11 12.1	2.216	2.978	14.0	22.8	2 11	6 21.14	+19 55.2	1.817	2.597	16.0	21.8
221507	2006 <i>DE</i> ₁₀₂		1 3.6 129°15	0°8/ 3.3 18			497242	2005 <i>EA</i> ₂₃₇		1 3.6 198°89	4°0/ 2.4 18		
12 3	7 14.03	+25 26.3	3.436	4.268	7.9	20.9	12 3						

EPHEMERIDES

1 3.6

1 3.6

2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
437819	2015 <i>DN</i> ₁₁₇		1 3.6 328°00	5°4/ 4.9 18			98734	2000 <i>YQ</i> ₃₃		1 3.6 18°85	1°6/ 3.9 18		
12 3	7 14.71	+ 7 21.7	2.078	2.893	13.0	20.5	12 3	7 19.12	+18 46.2	1.232	2.094	17.1	18.9
12 13	7 9.80	+ 6 59.6	1.998	2.885	10.2	20.3	12 13	7 13.89	+18 48.8	1.175	2.099	12.4	18.6
12 23	7 3.05	+ 6 50.5	1.941	2.876	7.4	20.1	12 23	7 5.65	+18 59.8	1.140	2.104	7.1	18.3
1 2	6 55.13	+ 6 55.8	1.911	2.868	5.5	19.9	1 2	6 55.56	+19 17.0	1.129	2.111	2.0	18.0
1 12	6 46.97	+ 7 15.4	1.909	2.860	6.1	20.0	1 12	6 45.28	+19 37.3	1.144	2.118	5.0	18.2
1 22	6 39.49	+ 7 47.4	1.934	2.853	8.6	20.1	1 22	6 36.47	+19 58.3	1.184	2.126	10.3	18.6
2 1	6 33.57	+ 8 28.9	1.986	2.846	11.6	20.3	2 1	6 30.42	+20 18.6	1.248	2.135	15.1	18.9
2 11	6 29.80	+ 9 16.5	2.060	2.839	14.4	20.4	2 11	6 27.87	+20 37.1	1.330	2.145	19.0	19.1
318803	2005 <i>SC</i> ₁₅₅		1 3.6 186°85	0°3/ 3.7 18			201890	2004 <i>BB</i> ₁₃		1 3.6 26°68	0°8/ 3.8 18		
12 3	7 20.15	+21 41.5	1.975	2.816	12.5	21.7	12 3	7 16.93	+19 6.4	1.816	2.663	13.2	19.5
12 13	7 13.80	+21 47.4	1.901	2.815	9.0	21.5	12 13	7 11.59	+19 30.5	1.753	2.670	9.5	19.3
12 23	7 5.29	+21 56.0	1.852	2.815	5.0	21.2	12 23	7 4.11	+20 0.7	1.715	2.678	5.4	19.0
1 2	6 55.44	+22 5.0	1.832	2.815	0.8	20.9	1 2	6 55.33	+20 34.6	1.704	2.686	1.1	18.8
1 12	6 45.40	+22 12.8	1.841	2.814	3.6	21.1	1 12	6 46.40	+21 9.2	1.722	2.695	3.7	19.0
1 22	6 36.29	+22 18.2	1.880	2.813	7.8	21.4	1 22	6 38.44	+21 41.9	1.768	2.705	7.9	19.3
2 1	6 29.09	+22 21.3	1.945	2.812	11.5	21.6	2 1	6 32.41	+22 11.3	1.840	2.715	11.7	19.5
2 11	6 24.45	+22 22.7	2.032	2.810	14.6	21.8	2 11	6 28.95	+22 36.9	1.935	2.725	14.8	19.7
428955	2008 <i>YB</i> ₄₉		1 3.6 350°55	2°3/ 3.2 18			235951	2005 <i>EL</i> ₁₆₀		1 3.6 21°39	0°4/ 3.7 18		
12 3	7 19.37	+30 2.9	2.288	3.127	11.1	20.8	12 3	7 17.41	+20 58.7	2.077	2.919	12.0	20.4
12 13	7 13.07	+30 11.1	2.215	3.127	8.1	20.6	12 13	7 11.77	+21 10.9	2.005	2.921	8.6	20.2
12 23	7 4.81	+30 15.0	2.167	3.126	4.8	20.4	12 23	7 4.16	+21 26.5	1.959	2.922	4.8	20.0
1 2	6 55.37	+30 12.0	2.148	3.126	2.3	20.2	1 2	6 55.35	+21 43.6	1.941	2.924	0.8	19.7
1 12	6 45.82	+30 0.5	2.160	3.126	4.0	20.3	1 12	6 46.36	+22 0.1	1.953	2.926	3.4	19.9
1 22	6 37.17	+29 40.8	2.200	3.126	7.3	20.5	1 22	6 38.22	+22 14.6	1.994	2.928	7.3	20.2
2 1	6 30.31	+29 14.6	2.268	3.125	10.4	20.7	2 1	6 31.82	+22 26.7	2.061	2.931	10.8	20.4
2 11	6 25.81	+28 44.3	2.358	3.125	13.1	20.9	2 11	6 27.77	+22 36.4	2.152	2.933	13.8	20.6
219447	2000 <i>VN</i> ₂₅		1 3.6 174°42	3°2/ 4.2 18			73752	1994 <i>AD</i> ₁		1 3.6 51°83	2°0/ 3.6 18		
12 3	7 18.53	+13 31.3	2.189	3.013	12.1	20.5	12 3	7 24.81	+29 40.9	1.619	2.466	14.5	18.0
12 13	7 12.38	+13 12.4	2.114	3.014	9.1	20.3	12 13	7 17.37	+29 18.4	1.560	2.476	10.5	17.8
12 23	7 4.41	+13 1.2	2.065	3.015	5.8	20.1	12 23	7 7.30	+28 49.1	1.524	2.486	6.1	17.6
1 2	6 55.34	+12 57.9	2.044	3.016	3.3	20.0	1 2	6 55.77	+28 10.8	1.516	2.497	2.2	17.3
1 12	6 46.10	+13 2.0	2.053	3.017	4.4	20.1	1 12	6 44.34	+27 23.4	1.537	2.507	4.6	17.5
1 22	6 37.65	+13 12.4	2.091	3.017	7.6	20.2	1 22	6 34.42	+26 29.6	1.586	2.518	9.0	17.8
2 1	6 30.82	+13 27.9	2.156	3.017	10.8	20.4	2 1	6 27.11	+25 33.3	1.660	2.530	13.0	18.1
2 11	6 26.19	+13 46.8	2.245	3.017	13.6	20.6	2 11	6 22.99	+24 38.4	1.757	2.541	16.3	18.3
442844	2013 <i>AP</i> ₁₁₆		1 3.6 45°41	4°9/ 3.2 17			387554	2001 <i>QT</i> ₆₉		1 3.6 154°40	0°9/ 3.8 18		
12 3	7 26.27	+32 48.0	1.156	2.018	18.1	20.6	12 3	7 24.57	+19 38.7	2.133	2.959	12.3	22.5
12 13	7 19.16	+33 12.5	1.116	2.037	13.3	20.4	12 13	7 16.72	+19 41.6	2.065	2.971	8.9	22.3
12 23	7 8.49	+33 26.8	1.098	2.057	8.3	20.1	12 23	7 6.82	+19 48.0	2.023	2.983	5.0	22.1
1 2	6 55.89	+33 24.1	1.103	2.078	5.0	20.0	1 2	6 55.72	+19 56.1	2.011	2.993	1.2	21.9
1 12	6 43.53	+33 2.0	1.134	2.099	7.1	20.2	1 12	6 44.53	+20 4.2	2.030	3.002	3.5	22.1
1 22	6 33.38	+32 23.3	1.190	2.121	11.6	20.5	1 22	6 34.34	+20 11.4	2.081	3.010	7.4	22.3
2 1	6 26.75	+31 34.1	1.268	2.143	15.8	20.8	2 1	6 26.04	+20 17.6	2.159	3.017	10.9	22.6
2 11	6 24.18	+30 40.7	1.366	2.165	19.3	21.1	2 11	6 20.24	+20 23.0	2.260	3.023	13.8	22.8
163791	2003 <i>QW</i> ₄₄		1 3.6 132°49	1°2/ 3.3 18			27724	<i>Jeanoel</i>		1 3.6 154°99	1°2/ 3.8 18		
12 3	7 23.96	+24 59.8	1.936	2.773	12.9	21.1	12 3	7 23.60	+19 12.7	1.857	2.691	13.5	19.0
12 13	7 16.49	+25 26.7	1.875	2.788	9.2	20.9	12 13	7 16.29	+19 12.0	1.789	2.700	9.8	18.8
12 23	7 6.75	+25 53.7	1.839	2.802	5.1	20.7	12 23	7 6.68	+19 15.9	1.746	2.707	5.6	18.5
1 2	6 55.66	+26 17.0	1.833	2.815	1.3	20.4	1 2	6 55.71	+19 22.5	1.732	2.714	1.5	18.3
1 12	6 44.49	+26 33.8	1.857	2.827	4.0	20.7	1 12	6 44.59	+19 30.3	1.748	2.720	4.0	18.4
1 22	6 34.45	+26 43.1	1.910	2.839	8.0	20.9	1 22	6 34.57	+19 38.1	1.793	2.726	8.2	18.7
2 1	6 26.54	+26 45.7	1.990	2.850	11.6	21.2	2 1	6 26.64	+19 45.6	1.865	2.730	12.0	19.0
2 11	6 21.40	+26 43.3	2.093	2.861	14.5	21.4	2 11	6 21.46	+19 52.9	1.959	2.734	15.2	19.2
256072	2006 <i>UQ</i> ₁₇₉		1 3.6 44°21	2°3/ 4.2 18			502204	2015 <i>BK</i> ₇₄		1 3.6 282°13	0°4/ 3.7 18		
12 3	7 19.19	+15 57.8	1.497	2.345	15.4	20.3	12 3	7 17.09	+19 49.8	2.220	3.058	11.4	21.2
12 13	7 13.46	+16 10.3	1.441	2.356	11.3	20.1	12 13	7 11.54	+20 20.9	2.138	3.052	8.3	20.9
12 23	7 5.22	+16 33.1	1.407	2.367	6.7	19.8	12 23	7 4.07	+20 57.2	2.082	3.045	4.6	20.7
1 2	6 55.47	+17 4.2	1.399	2.379	2.6	19.6	1 2	6 55.35	+21 36.3	2.055	3.038	0.8	20.4
1 12	6 45.60	+17 40.3	1.420	2.392	4.6	19.8	1 12	6 46.34	+22 15.3	2.058	3.031	3.3	20.6
1 22	6 36.95	+18 18.4	1.467	2.404	9.1	20.0	1 22	6 38.03	+22 51.8	2.091	3.024	7.1	20.8
2 1	6 30.63	+18 55.8	1.538	2.417	13.3	20.3	2 1	6 31.30	+23 24.5	2.151	3.017	10.6	21.0
2 11	6 27.30	+19 31.0	1.631	2.430	16.7	20.6	2 11	6 26.81	+23 52.9	2.234	3.011	13.5	21.2
100365	1995 <i>UE</i> ₃₂		1 3.6 106°60	2°7/ 3.0 18			265019	2003 <i>HS</i> ₁		1 3.6 165°72	0°9/ 3.9 18		
12 3	7 27.08	+27 14.3	1.547	2.392	15.2	20.0	12 3	7 19.03	+18 43.8	2.285	3.117	11.4	21.1
12 13	7 19.16	+28 3.7	1.497	2.413	10.9	19.8	12 13	7 12.76	+19 1.8	2.211	3.120	8.2	20.9
12 23	7 8.37	+28 51.3	1.471	2.433	6.3	19.6	12 23	7 4.66	+19 24.9	2.163	3.124	4.7	20.7
1 2	6 55.91	+29 30.9	1.473	2.452	2.7	19.4	1 2	6 55.43	+19 50.9	2.145	3.127	1.2	20.4
1 12	6 43.41	+29 57.9	1.504	2.471	5.3	19.6	1 12	6 46.01	+20 17.8	2.157	3.129	3.3	20.6
1 22	6 32.46	+30 11.3	1.562	2.489	9.6	19.9	1 22	6 37.36	+20 43.8	2.200	3.131	6.9	20.8
2 1	6 24.27	+30 13.0	1.646	2.506	13.5	20.2	2 1	6 30.32	+21 7.9	2.269	3.133	10.2	21.0
2 11	6 19.50	+30 6.5	1.750	2.523	16.8	20.4	2 11	6 25.47	+21 29.5	2.363	3.134	13.0	21.2
13595	1994 <i>PL</i> ₃		1 3.6 43°06	0°9/ 3.5 18			425505	2010 <i>GW</i> ₁₇₁		1 3.6 284°23	2°8/ 2.7 18		
12 3	7 21.57	+24 31.6	1.443	2.299									

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
196632	2003 <i>SH</i> ₁		1 3.6 60°90	0.4/ 3.6 18			361537	2007 <i>JH</i> ₁₆		1 3.6 136°54	8.4/ 7.6 18		
12 3	7 19.77	+23 41.5	1.895	2.740	12.8	20.7	12 3	7 37.56	- 4 39.6	0.855	1.655	28.0	20.1
12 13	7 13.49	+23 46.6	1.837	2.754	9.2	20.5	12 13	7 28.56	- 2 9.9	0.792	1.667	22.6	19.8
12 23	7 5.10	+23 52.5	1.804	2.768	5.1	20.3	12 23	7 14.58	+ 1 29.2	0.745	1.678	16.0	19.5
1 2	6 55.49	+23 56.9	1.799	2.782	0.8	20.0	1 2	6 56.97	+ 6 12.1	0.723	1.688	9.8	19.2
1 12	6 45.85	+23 58.1	1.823	2.796	3.7	20.3	1 12	6 38.35	+11 31.7	0.731	1.697	9.3	19.2
1 22	6 37.31	+23 55.7	1.876	2.810	7.7	20.6	1 22	6 21.73	+16 49.1	0.768	1.706	15.0	19.5
2 1	6 30.78	+23 50.2	1.955	2.824	11.3	20.8	2 1	6 9.55	+21 33.2	0.831	1.712	21.3	19.9
2 11	6 26.84	+23 42.6	2.056	2.838	14.3	21.0	2 11	6 3.05	+25 31.0	0.915	1.718	26.4	20.3
261410	2005 <i>UD</i> ₄₇₈		1 3.6 25°62	2.4/ 2.9 18			240353	2003 <i>SR</i> ₄		1 3.6 126°15	0°5/ 3.5 18		
12 3	7 19.34	+24 45.6	1.432	2.292	15.3	19.5	12 3	7 23.61	+22 53.5	1.929	2.765	13.0	22.0
12 13	7 13.93	+25 57.4	1.377	2.301	11.0	19.3	12 13	7 16.24	+23 19.3	1.869	2.782	9.3	21.8
12 23	7 5.66	+27 12.5	1.346	2.311	6.2	19.0	12 23	7 6.65	+23 46.9	1.835	2.798	5.1	21.6
1 2	6 55.60	+28 23.7	1.342	2.322	2.4	18.8	1 2	6 55.75	+24 13.1	1.830	2.813	0.8	21.3
1 12	6 45.29	+29 24.4	1.364	2.334	5.3	19.1	1 12	6 44.78	+24 34.9	1.855	2.827	3.8	21.6
1 22	6 36.29	+30 11.1	1.414	2.346	9.9	19.3	1 22	6 34.92	+24 51.0	1.910	2.841	7.9	21.8
2 1	6 29.88	+30 43.3	1.487	2.359	14.0	19.6	2 1	6 27.15	+25 1.6	1.992	2.854	11.5	22.1
2 11	6 26.80	+31 3.1	1.580	2.373	17.4	19.9	2 11	6 22.09	+25 7.7	2.096	2.866	14.5	22.3
458249	2010 <i>TB</i> ₇₄		1 3.6 336°35	5.7/ 4.6 18			465440	2008 <i>RW</i> ₁₁₂		1 3.6 50°29	4.5/ 4.5 18		
12 3	7 17.78	+ 9 50.1	1.561	2.395	15.7	21.5	12 3	7 17.22	+10 46.4	1.970	2.794	13.2	21.4
12 13	7 12.49	+ 9 16.1	1.489	2.389	12.1	21.3	12 13	7 11.59	+10 18.7	1.904	2.800	10.1	21.2
12 23	7 4.76	+ 8 56.1	1.439	2.384	8.4	21.1	12 23	7 4.06	+10 1.7	1.861	2.806	6.9	21.0
1 2	6 55.48	+ 8 51.9	1.414	2.379	5.9	20.9	1 2	6 55.40	+ 9 56.4	1.846	2.813	4.6	20.9
1 12	6 45.89	+ 9 3.6	1.416	2.375	6.8	20.9	1 12	6 46.61	+10 2.4	1.860	2.819	5.5	20.9
1 22	6 37.30	+ 9 29.2	1.444	2.371	10.3	21.1	1 22	6 38.70	+10 18.4	1.902	2.826	8.4	21.1
2 1	6 30.83	+10 5.5	1.497	2.368	14.1	21.3	2 1	6 32.51	+10 42.2	1.969	2.832	11.6	21.3
2 11	6 27.23	+10 48.5	1.570	2.365	17.5	21.6	2 11	6 28.63	+11 11.1	2.059	2.839	14.4	21.5
129584	1997 <i>SY</i> ₁₇		1 3.6 25°46	2.2/ 4.0 17			64176	2001 <i>TA</i> ₆₂		1 3.6 58°55	1.4/ 3.9 18		
12 3	7 18.71	+17 47.8	1.006	1.879	19.2	19.8	12 3	7 19.43	+18 20.4	1.711	2.555	14.0	19.0
12 13	7 13.87	+17 48.7	0.963	1.891	13.9	19.5	12 13	7 13.49	+18 31.2	1.648	2.563	10.1	18.8
12 23	7 5.71	+18 0.9	0.939	1.905	8.1	19.2	12 23	7 5.23	+18 48.9	1.608	2.570	5.8	18.5
1 2	6 55.60	+18 21.9	0.938	1.920	2.6	19.0	1 2	6 55.57	+19 11.1	1.596	2.578	1.7	18.3
1 12	6 45.46	+18 48.1	0.962	1.936	5.6	19.2	1 12	6 45.75	+19 35.5	1.613	2.585	4.1	18.5
1 22	6 37.13	+19 16.1	1.008	1.954	11.2	19.6	1 22	6 37.01	+19 59.9	1.657	2.593	8.4	18.7
2 1	6 31.94	+19 43.5	1.077	1.972	16.2	19.9	2 1	6 30.36	+20 22.9	1.727	2.601	12.3	19.0
2 11	6 30.55	+20 8.5	1.163	1.992	20.3	20.2	2 11	6 26.48	+20 44.0	1.819	2.609	15.6	19.2
27066	1998 <i>SZ</i> ₆₄		1 3.6 226°07	1.3/ 3.9 18			116128	2003 <i>WN</i> ₁₄₀		1 3.6 350°31	3.2/ 3.9 18		
12 3	7 22.37	+18 25.4	1.588	2.431	14.9	18.5	12 3	7 17.50	+15 50.6	1.824	2.664	13.5	19.2
12 13	7 15.94	+18 42.5	1.511	2.425	10.9	18.2	12 13	7 12.01	+15 11.4	1.750	2.660	10.0	19.0
12 23	7 6.77	+19 7.5	1.457	2.419	6.3	17.9	12 23	7 4.38	+14 38.3	1.700	2.656	6.2	18.8
1 2	6 55.78	+19 37.8	1.431	2.413	1.6	17.6	1 2	6 55.46	+14 12.2	1.678	2.653	3.3	18.6
1 12	6 44.39	+20 10.0	1.433	2.406	4.4	17.8	1 12	6 46.34	+13 53.7	1.684	2.651	4.8	18.7
1 22	6 34.04	+20 41.3	1.463	2.399	9.3	18.0	1 22	6 38.17	+13 42.7	1.718	2.649	8.6	18.9
2 1	6 26.02	+21 10.2	1.518	2.391	13.8	18.3	2 1	6 31.88	+13 38.6	1.777	2.648	12.2	19.1
2 11	6 21.15	+21 36.1	1.594	2.383	17.5	18.5	2 11	6 28.12	+13 40.1	1.858	2.647	15.4	19.3
296522	2009 <i>OB</i>		1 3.6 157°52	1.7/ 4.3 18			435836	2008 <i>WD</i> ₈₃		1 3.6 351°77	0.8/ 3.4 18		
12 3	7 19.78	+15 2.2	2.401	3.222	11.3	20.9	12 3	7 17.97	+22 34.4	2.138	2.979	11.7	20.5
12 13	7 13.21	+15 32.3	2.328	3.230	8.3	20.8	12 13	7 12.26	+23 21.2	2.063	2.979	8.4	20.3
12 23	7 4.89	+16 10.1	2.282	3.237	4.9	20.6	12 23	7 4.52	+24 11.7	2.015	2.978	4.7	20.1
1 2	6 55.50	+16 53.8	2.265	3.244	1.9	20.4	1 2	6 55.49	+25 2.2	1.995	2.978	0.9	19.8
1 12	6 45.92	+17 40.6	2.280	3.250	3.4	20.5	1 12	6 46.17	+25 49.1	2.006	2.978	3.6	20.0
1 22	6 37.06	+18 28.0	2.325	3.255	6.7	20.7	1 22	6 37.63	+26 29.7	2.046	2.977	7.4	20.3
2 1	6 29.71	+19 13.9	2.400	3.260	9.9	20.9	2 1	6 30.79	+27 2.9	2.113	2.977	10.8	20.5
2 11	6 24.45	+19 57.0	2.498	3.264	12.5	21.1	2 11	6 26.33	+27 29.1	2.203	2.977	13.7	20.7
56587	2000 <i>JL</i> ₃₁		1 3.6 170°37	4.8/ 2.5 18			482809	2013 <i>WU</i> ₂₅		1 3.6 61°25	12.2/ 6.8 18		
12 3	7 26.37	+32 49.2	1.719	2.559	14.1	19.1	12 3	7 16.82	-13 15.8	2.192	2.893	15.8	20.8
12 13	7 18.87	+33 49.1	1.653	2.562	10.6	18.9	12 13	7 11.13	-14 47.9	2.145	2.908	14.3	20.7
12 23	7 8.40	+34 43.3	1.612	2.564	6.9	18.7	12 23	7 3.74	-15 54.8	2.118	2.923	13.0	20.6
1 2	6 56.01	+35 24.4	1.598	2.566	4.8	18.6	1 2	6 55.37	-16 31.7	2.114	2.939	12.3	20.6
1 12	6 43.30	+35 47.6	1.613	2.568	6.6	18.7	1 12	6 46.92	-16 36.9	2.132	2.955	12.3	20.6
1 22	6 31.88	+35 51.7	1.655	2.569	10.1	18.9	1 22	6 39.27	-16 12.3	2.173	2.970	13.0	20.7
2 1	6 23.11	+35 39.7	1.722	2.569	13.7	19.1	2 1	6 33.19	-15 22.2	2.235	2.986	14.2	20.8
2 11	6 17.77	+35 16.5	1.810	2.569	16.8	19.3	2 11	6 29.20	-14 13.3	2.316	3.002	15.5	21.0
316210	2010 <i>MJ</i> ₉₅		1 3.6 81°33	3.9/ 3.3 18			171193	2005 <i>JG</i> ₂₅		1 3.6 166°85	0.6/ 3.5 18		
12 3	7 26.93	+33 32.0	1.734	2.572	14.1	20.2	12 3	7 17.58	+23 48.2	2.566	3.401	10.2	21.2
12 13	7 18.77	+33 43.2	1.686	2.594	10.4	20.1	12 13	7 11.64	+24 6.7	2.491	3.403	7.3	21.0
12 23	7 8.03	+33 45.3	1.661	2.616	6.6	19.9	12 23	7 4.04	+24 26.1	2.443	3.405	4.0	20.8
1 2	6 55.92	+33 34.0	1.665	2.637	4.0	19.8	1 2	6 55.43	+24 44.2	2.424	3.407	0.8	20.5
1 12	6 44.00	+33 7.8	1.697	2.659	5.6	19.9	1 12	6 46.66	+24 59.2	2.437	3.408	3.0	20.7
1 22	6 33.68	+32 28.9	1.758	2.680	9.1	20.2	1 22	6 38.59	+25 10.2	2.480	3.410	6.3	20.9
2 1	6 26.01	+31 41.6	1.845	2.700	12.5	20.4	2 1	6 31.97	+25 17.0	2.550	3.411	9.3	21.1
2 11	6 21.52	+30 50.5	1.953	2.721	15.4	20.7	2 11	6 27.35	+25 20.2	2.644	3.412	11.9	21.3
125137	2001 <i>UJ</i> ₆₂		1 3.6 10°98	1.2/ 3.8 18			454749	2014 <i>UG</i> ₂₀₄		1 3.6 20°74	1.7/ 3.7 18		
12 3	7 18.80	+20 42.6	1.051</										

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
193723	2001 <i>FP</i> ₁₁₂		1 3.6 275°34	0°1/ 3.7 18			82230	2001 <i>HL</i> ₆₅		1 3.6 306°69	1°4/ 3.5 18		
12 3	7 18.36	+21 31.1	2.075	2.916	12.0	20.4	12 3	7 22.52	+25 15.3	1.238	2.101	17.0	19.3
12 13	7 12.58	+21 45.2	1.993	2.908	8.7	20.2	12 13	7 16.85	+25 27.6	1.162	2.087	12.4	19.0
12 23	7 4.73	+22 2.5	1.937	2.900	4.8	20.0	12 23	7 7.65	+25 40.6	1.108	2.074	7.0	18.6
1 2	6 55.54	+22 20.8	1.909	2.892	0.7	19.6	1 2	6 56.02	+25 49.8	1.078	2.060	1.7	18.2
1 12	6 46.07	+22 38.0	1.910	2.883	3.5	19.8	1 12	6 43.79	+25 51.3	1.074	2.047	5.5	18.5
1 22	6 37.39	+22 52.6	1.941	2.875	7.5	20.1	1 22	6 32.94	+25 44.0	1.096	2.035	11.3	18.7
2 1	6 30.45	+23 4.1	1.999	2.867	11.2	20.3	2 1	6 25.14	+25 29.9	1.139	2.023	16.5	19.0
2 11	6 25.94	+23 12.8	2.079	2.858	14.2	20.5	2 11	6 21.37	+25 11.8	1.201	2.011	20.9	19.2
404574	2013 <i>JE</i> ₆₂		1 3.6 295°36	1°2/ 3.4 18			93639	2000 <i>UQ</i> ₈₆		1 3.6 123°74	1°2/ 3.3 18		
12 3	7 21.01	+24 14.6	1.548	2.401	14.7	21.4	12 3	7 20.17	+24 34.9	1.995	2.837	12.4	19.7
12 13	7 15.20	+24 41.7	1.468	2.388	10.7	21.1	12 13	7 13.92	+25 11.2	1.926	2.842	8.9	19.5
12 23	7 6.49	+25 11.4	1.411	2.376	6.0	20.8	12 23	7 5.48	+25 48.9	1.883	2.846	5.0	19.3
1 2	6 55.82	+25 39.5	1.381	2.363	1.4	20.5	1 2	6 55.68	+26 24.2	1.868	2.850	1.4	19.0
1 12	6 44.65	+26 1.9	1.379	2.351	4.7	20.7	1 12	6 45.66	+26 53.8	1.884	2.854	3.9	19.2
1 22	6 34.55	+26 16.5	1.404	2.339	9.7	20.9	1 22	6 36.58	+27 15.9	1.928	2.858	7.8	19.5
2 1	6 26.88	+26 23.4	1.453	2.327	14.2	21.2	2 1	6 29.43	+27 30.4	1.999	2.862	11.4	19.7
2 11	6 22.53	+26 24.4	1.523	2.315	18.0	21.4	2 11	6 24.87	+27 38.6	2.092	2.866	14.4	19.9
101195	1998 <i>SV</i> ₂₅		1 3.6 114°93	1°7/ 3.3 18			266786	2009 <i>SE</i> ₂₅₃		1 3.6 287°39	0°7/ 3.5 18		
12 3	7 25.87	+25 5.3	1.592	2.437	14.8	19.7	12 3	7 19.77	+24 10.4	1.888	2.734	12.8	21.2
12 13	7 18.29	+25 44.4	1.537	2.453	10.6	19.5	12 13	7 13.85	+24 21.8	1.804	2.721	9.3	21.0
12 23	7 7.96	+26 24.1	1.506	2.469	6.0	19.2	12 23	7 5.56	+24 34.3	1.744	2.707	5.2	20.7
1 2	6 56.00	+26 59.1	1.503	2.485	1.8	19.0	1 2	6 55.71	+24 45.0	1.711	2.694	1.0	20.4
1 12	6 43.96	+27 25.3	1.530	2.500	4.7	19.2	1 12	6 45.50	+24 51.7	1.708	2.681	3.9	20.6
1 22	6 33.32	+27 41.3	1.584	2.514	9.2	19.5	1 22	6 36.16	+24 53.3	1.734	2.667	8.3	20.8
2 1	6 25.28	+27 48.2	1.663	2.528	13.2	19.8	2 1	6 28.81	+24 50.2	1.785	2.654	12.2	21.0
2 11	6 20.51	+27 48.3	1.764	2.541	16.5	20.0	2 11	6 24.20	+24 43.7	1.858	2.641	15.6	21.2
164175	2004 <i>BO</i> ₃₇		1 3.6 91°15	0°8/ 3.9 18			452472	2004 <i>AY</i> ₁₄		1 3.6 49°05	1°0/ 3.4 18		
12 3	7 17.87	+18 53.8	2.317	3.151	11.2	20.2	12 3	7 21.73	+23 14.9	1.384	2.241	15.9	21.1
12 13	7 11.86	+19 14.2	2.256	3.167	8.0	20.0	12 13	7 15.53	+23 49.2	1.335	2.258	11.4	20.9
12 23	7 4.16	+19 39.1	2.221	3.182	4.5	19.8	12 23	7 6.51	+24 26.6	1.309	2.275	6.3	20.7
1 2	6 55.46	+20 6.7	2.216	3.198	1.1	19.6	1 2	6 55.82	+25 2.0	1.310	2.292	1.2	20.4
1 12	6 46.68	+20 34.7	2.241	3.213	3.1	19.8	1 12	6 45.10	+25 31.3	1.337	2.310	4.7	20.7
1 22	6 38.72	+21 1.5	2.295	3.228	6.6	20.0	1 22	6 35.86	+25 52.5	1.391	2.328	9.6	21.0
2 1	6 32.32	+21 26.0	2.378	3.243	9.7	20.3	2 1	6 29.32	+26 5.7	1.469	2.347	13.9	21.3
2 11	6 28.03	+21 47.8	2.484	3.258	12.4	20.5	2 11	6 26.10	+26 12.6	1.568	2.365	17.4	21.6
490320	2009 <i>BM</i> ₇₅		1 3.6 309°05	3°0/ 3.2 18			227353	2005 <i>UQ</i> ₁₀₀		1 3.6 111°49	0°9/ 3.9 18		
12 3	7 22.92	+29 5.6	1.450	2.305	15.4	21.1	12 3	7 19.73	+19 8.0	1.960	2.798	12.7	21.1
12 13	7 16.73	+29 26.6	1.376	2.296	11.3	20.8	12 13	7 13.51	+19 22.0	1.894	2.807	9.2	20.9
12 23	7 7.38	+29 44.1	1.325	2.288	6.7	20.5	12 23	7 5.20	+19 41.3	1.853	2.815	5.2	20.7
1 2	6 55.95	+29 52.7	1.300	2.279	3.1	20.3	1 2	6 55.64	+20 3.6	1.841	2.823	1.2	20.5
1 12	6 44.13	+29 48.7	1.302	2.271	5.7	20.4	1 12	6 45.94	+20 26.8	1.858	2.830	3.6	20.6
1 22	6 33.64	+29 32.0	1.331	2.263	10.4	20.7	1 22	6 37.19	+20 48.9	1.904	2.838	7.6	20.9
2 1	6 25.93	+29 5.2	1.383	2.256	14.9	20.9	2 1	6 30.31	+21 9.0	1.977	2.845	11.2	21.1
2 11	6 21.86	+28 32.7	1.455	2.248	18.7	21.1	2 11	6 25.92	+21 26.9	2.072	2.852	14.3	21.4
246226	2007 <i>RH</i> ₂₁₂		1 3.6 219°42	0°6/ 3.7 18			18074	2000 <i>DW</i>		1 3.6 44°80	8°2/ 2.4 18		
12 3	7 22.33	+21 9.9	1.754	2.596	13.8	21.2	12 3	7 27.17	+37 29.6	1.179	2.035	18.2	16.9
12 13	7 15.70	+21 10.9	1.676	2.591	10.0	20.9	12 13	7 20.38	+38 44.1	1.135	2.046	14.1	16.7
12 23	7 6.56	+21 15.2	1.623	2.586	5.6	20.7	12 23	7 9.55	+39 44.8	1.112	2.058	10.1	16.6
1 2	6 55.82	+21 20.6	1.597	2.580	1.0	20.3	1 2	6 56.28	+40 20.4	1.112	2.071	8.2	16.5
1 12	6 44.78	+21 25.2	1.601	2.574	4.0	20.5	1 12	6 42.92	+40 24.9	1.137	2.084	9.8	16.6
1 22	6 34.77	+21 28.1	1.633	2.568	8.6	20.8	1 22	6 31.75	+40 0.3	1.185	2.098	13.4	16.9
2 1	6 26.93	+21 29.3	1.691	2.561	12.8	21.0	2 1	6 24.41	+39 13.9	1.255	2.112	17.2	17.1
2 11	6 22.00	+21 29.5	1.771	2.554	16.2	21.3	2 11	6 21.56	+38 14.9	1.342	2.126	20.4	17.4
66277	1999 <i>JY</i> ₁₀		1 3.6 131°09	6°3/ 1.3 18			462788	2010 <i>LS</i> ₇₆		1 3.6 163°22	9°9/ 30.9 18		
12 3	7 30.48	+37 36.5	2.082	2.900	12.8	20.0	12 3	7 31.65	+56 13.5	2.641	3.390	12.3	21.4
12 13	7 21.64	+39 22.1	2.029	2.919	9.9	19.8	12 13	7 22.88	+57 35.7	2.588	3.392	11.0	21.3
12 23	7 9.91	+40 58.4	2.004	2.937	7.4	19.7	12 23	7 10.77	+58 39.1	2.559	3.394	10.1	21.2
1 2	6 56.31	+42 16.6	2.008	2.954	6.3	19.7	1 2	6 56.47	+59 16.5	2.554	3.396	9.9	21.2
1 12	6 42.33	+43 10.8	2.043	2.970	7.6	19.8	1 12	6 41.75	+59 24.1	2.574	3.398	10.4	21.3
1 22	6 29.55	+43 40.1	2.106	2.985	10.1	19.9	1 22	6 28.48	+59 2.8	2.618	3.400	11.5	21.4
2 1	6 19.28	+43 47.5	2.194	3.000	12.7	20.1	2 1	6 18.16	+58 17.5	2.683	3.401	12.8	21.5
2 11	6 12.32	+43 38.8	2.304	3.013	15.0	20.3	2 11	6 11.63	+57 15.1	2.768	3.403	14.1	21.6
435386	2007 <i>XQ</i> ₅₅		1 3.6 9°00	2°6/ 3.9 18			420884	2013 <i>LB</i> ₉		1 3.6 164°75	2°5/ 2.8 18		
12 3	7 17.47	+17 16.3	1.942	2.782	12.8	20.1	12 3	7 22.48	+27 52.7	2.216	3.051	11.6	21.8
12 13	7 11.84	+16 37.6	1.873	2.784	9.4	19.9	12 13	7 15.51	+28 48.1	2.145	3.056	8.4	21.6
12 23	7 4.24	+16 3.6	1.828	2.785	5.7	19.7	12 23	7 6.36	+29 42.7	2.101	3.060	5.0	21.4
1 2	6 55.48	+15 34.8	1.810	2.788	2.7	19.5	1 2	6 55.83	+30 31.5	2.087	3.064	2.5	21.2
1 12	6 46.60	+15 11.8	1.822	2.791	4.3	19.6	1 12	6 45.02	+31 10.8	2.103	3.067	4.4	21.3
1 22	6 38.65	+14 54.7	1.863	2.794	8.0	19.8	1 22	6 35.09	+31 38.5	2.150	3.070	7.8	21.6
2 1	6 32.51	+14 43.3	1.929	2.798	11.4	20.1	2 1	6 27.00	+31 55.3	2.223	3.072	11.0	21.8
2 11	6 28.76	+14 36.9	2.017	2.803	14.4	20.3	2 11	6 21.46	+32 2.9	2.319	3.074	13.7	22.0
464624	1997 <i>SG</i> ₁₅		1 3.6 99°62	4°3/ 2.8 18			485010	2009 <i>VS</i> ₁₁₆		1 3.6 74°95	1°4/ 3.3 18		
12 3	7 22.11	+35 38.7	2.254</										

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
378711	2008 <i>PP</i> ₁₆		1 3.6 139°60	0.4/ 3.6	18	R	429330	2010 <i>EO</i> ₁₂₅		1 3.6 269°28	5.2/ 2.6	17	
12 3	7 21.72	+25 7.3	2.301	3.135	11.2	20.7	12 3	7 23.32	+39 22.8	2.408	3.228	11.3	20.8
12 13	7 14.64	+24 52.1	2.232	3.143	8.1	20.5	12 13	7 16.21	+39 48.6	2.322	3.212	8.8	20.6
12 23	7 5.71	+24 35.2	2.188	3.151	4.5	20.3	12 23	7 6.80	+40 4.3	2.261	3.197	6.5	20.4
1 2	6 55.72	+24 15.4	2.175	3.158	0.7	20.0	1 2	6 55.92	+40 5.2	2.228	3.181	5.2	20.3
1 12	6 45.70	+23 52.1	2.193	3.165	3.3	20.2	1 12	6 44.77	+39 48.7	2.224	3.164	6.2	20.3
1 22	6 36.62	+23 26.1	2.241	3.171	6.9	20.5	1 22	6 34.57	+39 15.4	2.249	3.148	8.6	20.4
2 1	6 29.31	+22 58.6	2.317	3.177	10.1	20.7	2 1	6 26.38	+38 28.1	2.301	3.132	11.3	20.6
2 11	6 24.30	+22 31.2	2.416	3.183	12.8	20.9	2 11	6 20.87	+37 31.8	2.375	3.115	13.8	20.7
364393	2006 <i>VT</i> ₈₄		1 3.6 136°71	1.0/ 3.8	18		251406	2007 <i>YO</i> ₆₃		1 3.6 174°71	1.8/ 3.3	18	
12 3	7 22.99	+21 2.4	2.062	2.895	12.4	20.9	12 3	7 22.41	+26 51.5	1.916	2.758	12.8	21.1
12 13	7 15.66	+20 39.2	1.996	2.906	8.9	20.7	12 13	7 15.64	+27 14.4	1.845	2.759	9.3	20.9
12 23	7 6.30	+20 17.6	1.955	2.916	5.1	20.5	12 23	7 6.49	+27 36.0	1.799	2.761	5.3	20.6
1 2	6 55.81	+19 56.7	1.944	2.926	1.2	20.3	1 2	6 55.87	+27 52.6	1.781	2.761	1.9	20.4
1 12	6 45.28	+19 36.3	1.964	2.935	3.6	20.4	1 12	6 45.04	+28 1.3	1.792	2.762	4.3	20.6
1 22	6 35.80	+19 16.8	2.013	2.944	7.5	20.7	1 22	6 35.25	+28 1.6	1.833	2.762	8.3	20.8
2 1	6 28.24	+18 59.0	2.090	2.953	11.0	20.9	2 1	6 27.57	+27 54.4	1.900	2.762	11.9	21.0
2 11	6 23.17	+18 43.3	2.190	2.960	13.9	21.2	2 11	6 22.68	+27 42.1	1.989	2.762	15.0	21.2
190087	2004 <i>TR</i> ₁₃₂		1 3.6 198°96	0.8/ 3.9	18		420686	2012 <i>KD</i> ₂₈		1 3.6 297°27	7.1/ 4.4	18	
12 3	7 18.79	+18 56.9	2.204	3.039	11.7	20.2	12 3	7 17.82	+ 6 9.8	1.825	2.638	14.6	20.9
12 13	7 12.76	+19 18.7	2.126	3.037	8.4	20.0	12 13	7 12.37	+ 5 10.8	1.741	2.623	11.7	20.7
12 23	7 4.80	+19 45.9	2.074	3.035	4.8	19.8	12 23	7 4.72	+ 4 25.0	1.680	2.608	8.9	20.5
1 2	6 55.61	+20 16.3	2.050	3.032	1.1	19.5	1 2	6 55.64	+ 3 56.1	1.645	2.593	7.2	20.4
1 12	6 46.17	+20 47.4	2.057	3.030	3.4	19.7	1 12	6 46.19	+ 3 45.8	1.637	2.579	7.9	20.4
1 22	6 37.49	+21 17.2	2.094	3.027	7.1	19.9	1 22	6 37.51	+ 3 53.8	1.655	2.565	10.5	20.5
2 1	6 30.43	+21 44.6	2.158	3.023	10.6	20.1	2 1	6 30.63	+ 4 17.7	1.699	2.550	13.7	20.7
2 11	6 25.65	+22 9.0	2.245	3.020	13.5	20.3	2 11	6 26.27	+ 4 53.4	1.763	2.536	16.7	20.8
207665	2007 <i>PK</i> ₈		1 3.6 89°79	0.9/ 3.5	17		202002	2004 <i>QW</i> ₇		1 3.7 71°18	3.1/ 4.4	17	
12 3	7 24.50	+23 49.6	1.594	2.440	14.7	20.5	12 3	7 22.28	+14 35.7	1.385	2.230	16.6	20.5
12 13	7 17.20	+24 15.5	1.544	2.461	10.5	20.3	12 13	7 15.79	+14 40.4	1.335	2.247	12.3	20.3
12 23	7 7.31	+24 42.7	1.518	2.482	5.8	20.0	12 23	7 6.62	+14 57.2	1.307	2.265	7.4	20.1
1 2	6 55.95	+25 7.1	1.520	2.502	1.2	19.8	1 2	6 55.89	+15 24.4	1.305	2.283	3.4	19.9
1 12	6 44.61	+25 25.5	1.550	2.522	4.3	20.0	1 12	6 45.13	+15 58.8	1.330	2.300	5.2	20.1
1 22	6 34.68	+25 36.6	1.608	2.542	8.9	20.4	1 22	6 35.79	+16 37.0	1.382	2.318	9.7	20.4
2 1	6 27.26	+25 41.3	1.692	2.561	12.8	20.6	2 1	6 29.01	+17 16.2	1.458	2.336	13.9	20.7
2 11	6 22.95	+25 41.4	1.797	2.580	16.1	20.9	2 11	6 25.43	+17 54.0	1.555	2.353	17.4	20.9
477979	2011 <i>SK</i> ₈₅		1 3.6 151°96	19.2/ 7.4	18		448745	2011 <i>JF</i> ₂₆		1 3.7 156°96	1.0/ 3.4	18	
12 3	7 22.91	-14 6.0	1.197	1.940	24.5	20.9	12 3	7 25.13	+23 36.9	1.739	2.579	14.0	22.2
12 13	7 16.73	-16 11.0	1.149	1.944	22.4	20.7	12 13	7 17.72	+24 13.3	1.672	2.587	10.1	21.9
12 23	7 7.39	-17 35.3	1.115	1.947	20.5	20.6	12 23	7 7.71	+24 52.0	1.630	2.593	5.6	21.7
1 2	6 56.00	-18 7.6	1.099	1.949	19.4	20.5	1 2	6 56.07	+25 28.5	1.617	2.599	1.2	21.4
1 12	6 44.26	-17 43.1	1.101	1.952	19.3	20.5	1 12	6 44.19	+25 58.7	1.633	2.605	4.3	21.6
1 22	6 33.90	-16 25.4	1.121	1.954	20.4	20.6	1 22	6 33.47	+26 20.9	1.679	2.609	8.8	21.9
2 1	6 26.37	-14 25.3	1.158	1.955	22.2	20.7	2 1	6 25.09	+26 35.0	1.750	2.613	12.7	22.2
2 11	6 22.51	-11 57.6	1.211	1.957	24.2	20.9	2 11	6 19.77	+26 42.9	1.843	2.616	16.0	22.4
262579	2006 <i>VH</i> ₆₈		1 3.6 149°39	4.0/ 2.3	18		165847	2001 <i>SE</i> ₁₂		1 3.7 50°39	0.7/ 3.5	18	
12 3	7 24.20	+32 10.6	2.204	3.036	11.8	20.6	12 3	7 19.10	+24 1.4	1.926	2.771	12.6	20.1
12 13	7 16.82	+33 18.6	2.140	3.045	8.7	20.5	12 13	7 13.02	+24 20.5	1.874	2.791	9.0	19.9
12 23	7 7.12	+34 22.4	2.102	3.053	5.7	20.3	12 23	7 4.91	+24 40.5	1.848	2.812	5.0	19.7
1 2	6 55.95	+35 16.1	2.094	3.061	4.0	20.2	1 2	6 55.64	+24 58.4	1.850	2.833	1.0	19.4
1 12	6 44.51	+35 55.2	2.116	3.069	5.5	20.3	1 12	6 46.38	+25 12.1	1.882	2.854	3.7	19.7
1 22	6 34.02	+36 18.5	2.167	3.076	8.4	20.5	1 22	6 38.20	+25 20.5	1.942	2.875	7.6	20.0
2 1	6 25.54	+36 27.2	2.245	3.082	11.4	20.7	2 1	6 31.98	+25 24.1	2.028	2.896	11.0	20.2
2 11	6 19.78	+36 24.7	2.346	3.087	13.9	20.9	2 11	6 28.28	+25 23.8	2.136	2.918	13.9	20.5
182652	2001 <i>UU</i> ₁₈₂		1 3.6 16°26	0.2/ 3.7	18		282488	2004 <i>NW</i> ₃₂		1 3.7 103°75	0.8/ 3.5	17	
12 3	7 19.33	+20 52.9	1.616	2.466	14.3	19.9	12 3	7 26.93	+24 50.5	1.694	2.534	14.3	21.1
12 13	7 13.67	+21 16.8	1.549	2.468	10.3	19.7	12 13	7 18.74	+24 56.9	1.644	2.558	10.2	20.9
12 23	7 5.49	+21 46.1	1.506	2.470	5.8	19.4	12 23	7 8.08	+25 2.6	1.619	2.582	5.7	20.7
1 2	6 55.72	+22 17.5	1.490	2.472	0.9	19.1	1 2	6 56.09	+25 4.4	1.622	2.605	1.1	20.4
1 12	6 45.70	+22 47.5	1.502	2.475	4.1	19.3	1 12	6 44.22	+25 0.4	1.655	2.627	4.1	20.7
1 22	6 36.78	+23 13.8	1.541	2.478	8.8	19.6	1 22	6 33.81	+24 50.9	1.717	2.649	8.5	21.0
2 1	6 30.10	+23 35.4	1.606	2.482	13.0	19.9	2 1	6 25.89	+24 37.4	1.805	2.670	12.4	21.3
2 11	6 26.37	+23 52.5	1.691	2.485	16.4	20.1	2 11	6 21.03	+24 22.0	1.915	2.690	15.5	21.5
32175	2000 <i>NF</i> ₁₄		1 3.6 264°80	4.1/ 5.0	18		109049	2001 <i>QY</i> ₁₄		1 3.7 207°79	5.9/ 2.5	18	
12 3	7 15.72	+ 8 4.0	2.538	3.343	11.2	19.4	12 3	7 28.46	+41 36.0	2.432	3.239	11.6	20.2
12 13	7 10.40	+ 8 7.1	2.443	3.327	8.7	19.2	12 13	7 19.90	+42 10.3	2.353	3.232	9.2	20.0
12 23	7 3.45	+ 8 21.8	2.374	3.311	6.1	19.1	12 23	7 8.84	+42 32.7	2.299	3.225	7.0	19.9
1 2	6 55.43	+ 8 48.2	2.332	3.294	4.2	18.9	1 2	6 56.23	+42 37.7	2.274	3.216	5.9	19.8
1 12	6 47.12	+ 9 25.4	2.321	3.277	4.8	18.9	1 12	6 43.40	+42 22.3	2.278	3.207	6.8	19.8
1 22	6 39.31	+10 11.2	2.340	3.260	7.2	19.0	1 22	6 31.69	+41 47.5	2.311	3.197	9.0	20.0
2 1	6 32.76	+11 3.0	2.386	3.242	10.0	19.2	2 1	6 22.21	+40 57.1	2.371	3.187	11.5	20.1
2 11	6 28.06	+11 57.9	2.456	3.225	12.6	19.3	2 11	6 15.67	+39 56.5	2.454	3.175	13.9	20.3
17249	<i>Eliotyong</i>		1 3.6 94°68	0.9/ 3.4	18		143049	2002 <i>VY</i> ₁₃₄		1 3.7 129°71	3.3/ 3.3	18	
12 3	7 19.34	+25 17.8	2.279										

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
364384	2006 VC ₄₈		1 3.7 194°14	4°6/ 4.5 18			142527	2002 TF ₄₅		1 3.7 103°42	4°9/ 4.6 18		
12 3	7 19.74	+ 9 49.1	2.170	2.981	12.6	21.2	12 3	7 19.18	+10 26.4	1.741	2.568	14.6	20.0
12 13	7 13.36	+ 9 17.7	2.091	2.980	9.7	21.0	12 13	7 13.31	+10 0.2	1.671	2.568	11.2	19.8
12 23	7 5.11	+ 8 56.3	2.037	2.977	6.8	20.8	12 23	7 5.21	+ 9 46.6	1.624	2.569	7.6	19.5
1 2	6 55.70	+ 8 46.2	2.012	2.974	4.7	20.7	1 2	6 55.73	+ 9 46.5	1.603	2.570	5.1	19.4
1 12	6 46.08	+ 8 47.4	2.016	2.971	5.5	20.7	1 12	6 46.04	+ 9 59.4	1.611	2.571	6.0	19.5
1 22	6 37.23	+ 8 59.0	2.049	2.967	8.3	20.9	1 22	6 37.29	+10 23.5	1.646	2.572	9.3	19.7
2 1	6 29.99	+ 9 19.1	2.109	2.963	11.3	21.1	2 1	6 30.52	+10 56.1	1.706	2.572	12.9	19.9
2 11	6 24.97	+ 9 45.3	2.192	2.958	14.0	21.3	2 11	6 26.38	+11 33.8	1.788	2.573	16.0	20.1
38163	1999 JP ₇₇		1 3.7 143°13	3°6/ 4.6 18			29932	1999 JB ₄₆		1 3.7 257°81	6°0/ 4.9 18		
12 3	7 21.83	+11 23.6	2.180	2.992	12.6	19.8	12 3	7 15.60	+ 4 0.6	2.478	3.269	11.9	18.8
12 13	7 14.73	+11 17.1	2.114	3.007	9.5	19.6	12 13	7 10.26	+ 3 19.8	2.395	3.262	9.6	18.6
12 23	7 5.80	+11 20.5	2.074	3.020	6.2	19.5	12 23	7 3.35	+ 2 51.3	2.337	3.254	7.4	18.4
1 2	6 55.79	+11 33.4	2.064	3.033	3.8	19.3	1 2	6 55.46	+ 2 37.3	2.306	3.246	6.1	18.3
1 12	6 45.69	+11 54.7	2.083	3.045	4.7	19.4	1 12	6 47.37	+ 2 38.2	2.304	3.237	6.5	18.4
1 22	6 36.48	+12 22.4	2.133	3.056	7.7	19.6	1 22	6 39.86	+ 2 53.3	2.330	3.229	8.4	18.5
2 1	6 28.97	+12 54.4	2.210	3.067	10.7	19.8	2 1	6 33.65	+ 3 20.5	2.382	3.221	10.7	18.6
2 11	6 23.72	+13 28.6	2.311	3.076	13.4	20.0	2 11	6 29.29	+ 3 56.6	2.457	3.213	13.0	18.7
323131	2003 BC ₅₅		1 3.7 348°38	2°0/ 3.3 18			349599	2008 TS ₁₁₇		1 3.7 236°08	2°8/ 3.1 18		
12 3	7 18.69	+25 52.1	1.371	2.235	15.6	20.2	12 3	7 24.77	+28 28.3	1.640	2.486	14.4	20.9
12 13	7 13.74	+26 20.0	1.302	2.227	11.3	19.9	12 13	7 17.87	+29 1.3	1.562	2.477	10.6	20.6
12 23	7 5.77	+26 48.9	1.256	2.221	6.5	19.6	12 23	7 8.00	+29 32.2	1.508	2.468	6.3	20.3
1 2	6 55.82	+27 13.8	1.234	2.216	2.1	19.3	1 2	6 56.16	+29 55.6	1.481	2.459	2.9	20.1
1 12	6 45.48	+27 30.6	1.239	2.211	5.2	19.5	1 12	6 43.87	+30 7.3	1.482	2.450	5.3	20.2
1 22	6 36.42	+27 37.6	1.270	2.208	10.2	19.8	1 22	6 32.75	+30 6.1	1.512	2.440	9.8	20.5
2 1	6 30.02	+27 35.6	1.324	2.205	14.8	20.1	2 1	6 24.16	+29 54.0	1.566	2.429	14.0	20.7
2 11	6 27.11	+27 26.9	1.397	2.203	18.6	20.3	2 11	6 18.96	+29 34.6	1.641	2.419	17.5	20.9
120054	2003 BR ₇₁		1 3.7 48°12	0°6/ 3.7 18			319953	2007 BY ₃₇		1 3.7 35°56	1°5/ 3.9 17		
12 3	7 24.56	+23 4.5	1.229	2.088	17.3	19.2	12 3	7 22.17	+18 45.1	1.247	2.105	17.3	21.3
12 13	7 17.77	+22 34.0	1.176	2.099	12.5	18.9	12 13	7 16.22	+18 52.1	1.187	2.108	12.6	21.0
12 23	7 7.83	+22 4.2	1.145	2.110	7.0	18.6	12 23	7 7.12	+19 7.6	1.148	2.112	7.2	20.8
1 2	6 56.09	+21 33.8	1.139	2.122	1.2	18.3	1 2	6 56.03	+19 29.0	1.133	2.115	1.9	20.4
1 12	6 44.38	+21 2.7	1.160	2.133	4.9	18.6	1 12	6 44.68	+19 53.0	1.146	2.119	5.0	20.6
1 22	6 34.42	+20 32.5	1.206	2.146	10.4	18.9	1 22	6 34.78	+20 16.7	1.183	2.124	10.5	21.0
2 1	6 27.51	+20 5.0	1.276	2.158	15.2	19.2	2 1	6 27.74	+20 38.9	1.244	2.128	15.4	21.3
2 11	6 24.25	+19 41.4	1.365	2.171	19.0	19.5	2 11	6 24.35	+20 58.8	1.324	2.133	19.4	21.5
327432	2005 WL ₇₅		1 3.7 205°69	1°6/ 3.3 18			206850	2004 FZ ₂₀		1 3.7 246°49	1°5/ 3.3 18		
12 3	7 20.96	+26 31.8	2.001	2.843	12.3	21.5	12 3	7 18.38	+27 19.2	2.567	3.402	10.2	20.6
12 13	7 14.55	+26 51.8	1.926	2.841	8.9	21.3	12 13	7 12.36	+27 32.3	2.482	3.393	7.3	20.4
12 23	7 5.89	+27 10.8	1.877	2.839	5.1	21.1	12 23	7 4.56	+27 43.7	2.423	3.384	4.2	20.1
1 2	6 55.82	+27 25.6	1.857	2.838	1.7	20.8	1 2	6 55.65	+27 51.2	2.394	3.375	1.5	19.9
1 12	6 45.53	+27 33.4	1.866	2.836	4.0	21.0	1 12	6 46.53	+27 52.9	2.396	3.365	3.4	20.1
1 22	6 36.19	+27 33.7	1.904	2.833	8.0	21.2	1 22	6 38.09	+27 48.4	2.428	3.355	6.6	20.3
2 1	6 28.83	+27 27.3	1.968	2.831	11.5	21.4	2 1	6 31.16	+27 38.4	2.488	3.345	9.6	20.4
2 11	6 24.11	+27 16.1	2.055	2.829	14.6	21.6	2 11	6 26.31	+27 24.3	2.571	3.335	12.2	20.6
96259	1995 MV ₁		1 3.7 104°33	3°0/ 4.5 18			336924	2011 HT ₅₁		1 3.7 173°49	4°2/ 4.9 18		
12 3	7 22.21	+13 34.6	1.734	2.563	14.5	19.6	12 3	7 16.42	+ 8 29.5	2.467	3.275	11.4	21.3
12 13	7 15.35	+13 45.0	1.678	2.582	10.7	19.4	12 13	7 10.83	+ 8 23.0	2.391	3.276	8.8	21.2
12 23	7 6.26	+14 6.3	1.646	2.601	6.6	19.2	12 23	7 3.66	+ 8 27.4	2.340	3.277	6.2	21.0
1 2	6 55.87	+14 36.9	1.642	2.619	3.2	19.0	1 2	6 55.52	+ 8 42.9	2.317	3.278	4.3	20.9
1 12	6 45.42	+15 14.1	1.668	2.636	4.7	19.1	1 12	6 47.23	+ 9 8.8	2.324	3.279	4.9	20.9
1 22	6 36.11	+15 54.8	1.721	2.653	8.5	19.4	1 22	6 39.56	+ 9 43.1	2.360	3.279	7.2	21.1
2 1	6 28.91	+16 36.6	1.801	2.670	12.2	19.6	2 1	6 33.26	+10 23.5	2.424	3.280	9.9	21.2
2 11	6 24.44	+17 17.2	1.904	2.686	15.3	19.9	2 11	6 28.83	+11 7.3	2.512	3.280	12.4	21.4
100221	1994 PP ₁₂		1 3.7 131°01	1°2/ 3.9 18			417095	2005 UZ ₃₃₁		1 3.7 226°30	0°8/ 3.5 18		
12 3	7 21.10	+19 18.9	1.744	2.586	13.9	19.8	12 3	7 20.06	+23 21.4	2.002	2.843	12.4	21.3
12 13	7 14.74	+19 21.5	1.675	2.590	10.1	19.5	12 13	7 13.94	+23 54.0	1.925	2.840	8.9	21.1
12 23	7 6.01	+19 29.2	1.631	2.593	5.7	19.3	12 23	7 5.59	+24 29.4	1.873	2.836	5.0	20.8
1 2	6 55.84	+19 40.4	1.615	2.597	1.5	19.0	1 2	6 55.82	+25 3.8	1.849	2.832	1.0	20.6
1 12	6 45.48	+19 52.9	1.627	2.600	4.0	19.2	1 12	6 45.74	+25 34.2	1.856	2.828	3.8	20.8
1 22	6 36.18	+20 5.4	1.668	2.603	8.4	19.5	1 22	6 36.51	+25 58.5	1.892	2.823	7.9	21.0
2 1	6 29.00	+20 17.2	1.735	2.607	12.4	19.7	2 1	6 29.16	+26 16.2	1.954	2.819	11.5	21.2
2 11	6 24.62	+20 28.0	1.823	2.610	15.7	19.9	2 11	6 24.40	+26 28.2	2.038	2.814	14.6	21.4
370567	2003 UJ ₁₈₇		1 3.7 36°14	7°7/ 5.3 18			56660	2000 KO ₅₆		1 3.7 277°21	2°3/ 4.0 18		
12 3	7 16.84	+ 3 57.9	1.705	2.515	15.6	20.4	12 3	7 21.64	+17 38.3	1.464	2.312	15.7	18.7
12 13	7 11.48	+ 3 5.3	1.653	2.530	12.5	20.3	12 13	7 15.61	+17 28.1	1.389	2.304	11.6	18.4
12 23	7 4.10	+ 2 31.1	1.623	2.545	9.6	20.1	12 23	7 6.73	+17 25.4	1.336	2.297	6.9	18.1
1 2	6 55.55	+ 2 17.8	1.618	2.561	7.8	20.0	1 2	6 56.00	+17 29.3	1.310	2.290	2.5	17.9
1 12	6 46.97	+ 2 25.8	1.640	2.578	8.2	20.1	1 12	6 44.86	+17 38.1	1.311	2.283	4.9	18.0
1 22	6 39.41	+ 2 52.8	1.687	2.595	10.4	20.3	1 22	6 34.87	+17 50.2	1.338	2.275	9.9	18.3
2 1	6 33.77	+ 3 34.6	1.759	2.612	13.2	20.5	2 1	6 27.33	+18 4.6	1.390	2.268	14.5	18.5
2 11	6 30.60	+ 4 25.9	1.851	2.630	15.8	20.7	2 11	6 23.06	+18 20.1	1.462	2.261	18.3	18.7
405144	2002 RD ₂₁₈		1 3.7 58°03	8°8/ 2.6 16			250219	2002 VS ₈₆		1 3.7 34°21	1°6/ 3.5 18		
12 3	7 29.23	+42 23.5	1.486	2.317	16.4	20.4	12 3	7 21.56	+26 1.6	1.341	2.20		

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
217055	2001 <i>QZ</i> ₂₆₄		1 3.7 140°57	2°1/ 4.2 18			30422	2000 <i>LE</i> ₄		1 3.7 329°65	8°7/ 4.7 18		
12 3	7 20.56	+15 43.9	2.373	3.195	11.4	21.7	12 3	7 17.95	+3 22.0	1.657	2.465	16.1	18.2
12 13	7 13.75	+15 42.5	2.307	3.208	8.3	21.5	12 13	7 12.57	+2 11.1	1.585	2.459	13.2	18.0
12 23	7 5.25	+15 47.1	2.267	3.222	5.0	21.3	12 23	7 4.91	+1 17.5	1.535	2.453	10.4	17.8
1 2	6 55.76	+15 56.9	2.257	3.234	2.2	21.2	1 2	6 55.78	+0 45.6	1.509	2.448	8.8	17.7
1 12	6 46.19	+16 10.6	2.277	3.246	3.6	21.3	1 12	6 46.36	+0 37.8	1.510	2.443	9.3	17.8
1 22	6 37.44	+16 26.9	2.329	3.257	6.8	21.5	1 22	6 37.86	+0 53.1	1.536	2.438	11.7	17.9
2 1	6 30.26	+16 44.8	2.408	3.268	9.8	21.7	2 1	6 31.32	+1 27.8	1.586	2.434	14.7	18.1
2 11	6 25.18	+17 3.3	2.511	3.277	12.4	21.9	2 11	6 27.47	+2 16.4	1.655	2.430	17.5	18.2
458810	2011 <i>SA</i> ₂₃₆		1 3.7 55°58	2°1/ 3.9 17			417402	2006 <i>JO</i> ₅		1 3.7 309°72	3°1/ 2.9 16		
12 3	7 23.36	+19 21.9	1.355	2.206	16.5	20.7	12 3	7 19.66	+29 33.5	1.884	2.731	12.8	21.4
12 13	7 16.57	+18 50.4	1.306	2.225	12.0	20.4	12 13	7 13.98	+30 13.5	1.801	2.717	9.4	21.2
12 23	7 7.04	+18 24.0	1.281	2.243	6.9	20.2	12 23	7 5.79	+30 51.5	1.743	2.703	5.7	20.9
1 2	6 56.01	+18 2.4	1.281	2.262	2.3	20.0	1 2	6 55.92	+31 22.5	1.713	2.689	3.1	20.7
1 12	6 45.09	+17 45.4	1.309	2.281	4.9	20.2	1 12	6 45.62	+31 42.7	1.711	2.675	5.1	20.8
1 22	6 35.75	+17 32.9	1.363	2.300	9.7	20.5	1 22	6 36.21	+31 50.4	1.736	2.662	8.9	21.0
2 1	6 29.10	+17 24.9	1.441	2.320	14.0	20.8	2 1	6 28.89	+31 46.7	1.788	2.649	12.6	21.2
2 11	6 25.72	+17 20.7	1.540	2.339	17.5	21.1	2 11	6 24.45	+31 34.3	1.860	2.636	15.8	21.4
432093	2008 <i>YP</i> ₁₅₈		1 3.7 6°91	2°9/ 4.6 18			522257	2016 <i>AD</i> ₂₇₅		1 3.7 174°98	1°2/ 3.9 18		
12 3	7 15.98	+12 52.5	2.105	2.934	12.3	21.0	12 3	7 19.56	+19 0.4	2.063	2.899	12.3	22.0
12 13	7 10.78	+13 3.4	2.031	2.934	9.2	20.8	12 13	7 13.40	+19 1.6	1.989	2.900	8.9	21.8
12 23	7 3.75	+13 24.5	1.982	2.935	5.8	20.6	12 23	7 5.23	+19 7.4	1.940	2.901	5.1	21.6
1 2	6 55.57	+13 54.8	1.961	2.936	3.1	20.4	1 2	6 55.82	+19 16.3	1.920	2.901	1.5	21.3
1 12	6 47.18	+14 32.4	1.969	2.937	4.2	20.5	1 12	6 46.22	+19 26.8	1.929	2.902	3.6	21.5
1 22	6 39.53	+15 14.6	2.006	2.938	7.5	20.7	1 22	6 37.48	+19 37.8	1.968	2.902	7.5	21.7
2 1	6 33.47	+15 59.0	2.070	2.940	10.8	20.9	2 1	6 30.51	+19 48.5	2.034	2.902	11.0	21.9
2 11	6 29.59	+16 43.3	2.157	2.942	13.6	21.1	2 11	6 25.93	+19 58.7	2.123	2.902	14.0	22.1
109617	2001 <i>QC</i> ₂₉₂		1 3.7 79°32	4°8/ 2.4 18			419952	2011 <i>BW</i> ₉₄		1 3.7 42°24	0°6/ 3.5 18		
12 3	7 21.28	+36 4.3	2.243	3.074	11.6	20.0	12 3	7 19.67	+22 14.9	1.781	2.628	13.4	21.2
12 13	7 14.74	+36 53.4	2.180	3.081	8.8	19.8	12 13	7 13.81	+22 53.8	1.714	2.631	9.6	21.0
12 23	7 6.00	+37 35.0	2.143	3.088	6.1	19.7	12 23	7 5.59	+23 36.8	1.672	2.636	5.3	20.8
1 2	6 55.89	+38 3.9	2.135	3.094	4.8	19.6	1 2	6 55.89	+24 19.9	1.657	2.640	0.9	20.5
1 12	6 45.62	+38 17.2	2.155	3.101	6.0	19.7	1 12	6 45.93	+24 59.3	1.672	2.644	4.0	20.7
1 22	6 36.34	+38 14.6	2.204	3.108	8.5	19.9	1 22	6 36.98	+25 32.4	1.715	2.649	8.3	21.0
2 1	6 29.05	+37 58.1	2.278	3.114	11.2	20.0	2 1	6 30.11	+25 58.3	1.783	2.654	12.2	21.2
2 11	6 24.40	+37 31.7	2.375	3.121	13.6	20.2	2 11	6 26.01	+26 17.6	1.874	2.659	15.4	21.4
145663	6805 <i>P-L</i>		1 3.7 93°02	1°1/ 3.4 17			358018	2006 <i>DH</i> ₁₇₄		1 3.7 304°31	1°0/ 3.9 18		
12 3	7 24.26	+24 35.6	1.898	2.736	13.1	20.7	12 3	7 20.41	+19 29.9	1.392	2.247	15.9	21.3
12 13	7 16.70	+25 3.0	1.850	2.763	9.3	20.6	12 13	7 15.03	+19 45.0	1.312	2.233	11.7	21.0
12 23	7 6.96	+25 30.5	1.828	2.790	5.2	20.4	12 23	7 6.60	+20 8.1	1.254	2.219	6.7	20.7
1 2	6 56.03	+25 54.4	1.834	2.816	1.3	20.1	1 2	6 56.07	+20 36.5	1.222	2.205	1.4	20.3
1 12	6 45.15	+26 12.0	1.871	2.842	3.9	20.4	1 12	6 44.95	+21 6.4	1.217	2.191	4.8	20.5
1 22	6 35.50	+26 22.4	1.937	2.867	7.8	20.7	1 22	6 34.91	+21 34.9	1.238	2.178	10.2	20.8
2 1	6 28.03	+26 26.5	2.030	2.892	11.3	20.9	2 1	6 27.41	+22 0.5	1.282	2.165	15.1	21.1
2 11	6 23.28	+26 25.8	2.145	2.915	14.2	21.2	2 11	6 23.39	+22 22.6	1.346	2.152	19.3	21.3
250190	2002 <i>TN</i> ₃₂₄		1 3.7 143°41	0°2/ 3.6 18			421377	2013 <i>TM</i> ₁₃₇		1 3.7 86°27	1°1/ 3.8 18		
12 3	7 22.14	+22 33.4	1.937	2.776	12.8	21.7	12 3	7 20.27	+20 51.5	2.065	2.902	12.2	20.8
12 13	7 15.34	+22 48.5	1.870	2.784	9.2	21.5	12 13	7 13.81	+20 27.9	1.998	2.910	8.8	20.6
12 23	7 6.31	+23 5.8	1.828	2.791	5.1	21.3	12 23	7 5.39	+20 6.2	1.956	2.917	5.0	20.4
1 2	6 55.95	+23 22.5	1.815	2.798	0.8	21.0	1 2	6 55.86	+19 45.8	1.943	2.925	1.3	20.2
1 12	6 45.44	+23 36.2	1.831	2.804	3.7	21.2	1 12	6 46.26	+19 26.4	1.960	2.932	3.5	20.3
1 22	6 35.94	+23 45.8	1.877	2.810	7.8	21.5	1 22	6 37.63	+19 8.4	2.006	2.939	7.4	20.6
2 1	6 28.46	+23 51.4	1.950	2.815	11.5	21.7	2 1	6 30.83	+18 52.1	2.080	2.947	10.8	20.8
2 11	6 23.62	+23 53.8	2.045	2.820	14.6	21.9	2 11	6 26.41	+18 38.0	2.176	2.954	13.7	21.0
197273	2003 <i>WQ</i> ₉₆		1 3.7 16°12	1°2/ 3.5 18			300429	2007 <i>TN</i> ₁₂		1 3.7 72°58	3°3/ 3.1 18		
12 3	7 18.25	+25 9.1	1.583	2.440	14.2	20.0	12 3	7 25.04	+28 57.1	1.497	2.348	15.3	20.6
12 13	7 12.94	+25 25.4	1.524	2.446	10.2	19.8	12 13	7 17.91	+29 40.1	1.450	2.367	11.1	20.4
12 23	7 5.12	+25 42.0	1.487	2.452	5.7	19.6	12 23	7 7.90	+30 19.4	1.425	2.386	6.6	20.2
1 2	6 55.79	+25 55.7	1.478	2.460	1.4	19.3	1 2	6 56.23	+30 49.0	1.428	2.405	3.3	20.0
1 12	6 46.32	+26 3.6	1.496	2.468	4.3	19.5	1 12	6 44.55	+31 4.9	1.458	2.424	5.6	20.2
1 22	6 38.06	+26 5.0	1.540	2.477	8.8	19.8	1 22	6 34.44	+31 6.9	1.515	2.443	9.8	20.5
2 1	6 32.10	+26 0.6	1.610	2.487	12.9	20.1	2 1	6 27.09	+30 57.3	1.597	2.462	13.7	20.8
2 11	6 29.11	+25 52.0	1.700	2.498	16.2	20.3	2 11	6 23.14	+30 40.0	1.699	2.481	16.9	21.0
199888	2007 <i>FW</i> ₁₁		1 3.7 144°50	3°4/ 4.5 18			100229	Jeanbailly		1 3.7 73°86	1°4/ 4.2 18 R		
12 3	7 23.25	+13 10.8	1.727	2.554	14.7	20.7	12 3	7 14.50	+16 47.7	3.020	3.845	9.1	19.8
12 13	7 16.22	+13 11.1	1.662	2.564	11.0	20.5	12 13	7 9.19	+16 52.4	2.962	3.866	6.6	19.7
12 23	7 6.85	+13 22.4	1.621	2.574	6.9	20.3	12 23	7 2.66	+17 1.4	2.930	3.887	3.9	19.5
1 2	6 56.04	+13 44.0	1.608	2.583	3.6	20.1	1 2	6 55.46	+17 13.9	2.929	3.908	1.5	19.4
1 12	6 45.08	+14 13.5	1.624	2.591	5.0	20.2	1 12	6 48.23	+17 28.9	2.959	3.929	2.7	19.5
1 22	6 35.20	+14 48.4	1.669	2.599	8.8	20.5	1 22	6 41.60	+17 45.3	3.019	3.950	5.3	19.7
2 1	6 27.47	+15 26.1	1.739	2.606	12.6	20.7	2 1	6 36.12	+18 2.2	3.108	3.970	7.8	19.9
2 11	6 22.54	+16 4.3	1.832	2.612	15.9	21.0	2 11	6 32.20	+18 18.9	3.222	3.991	9.9	20.1
379721	2011 <i>GM</i> ₃₉		1 3.7 147°69	0°6/ 3.8 18			241293	2007 <i>UF</i> ₅₁		1 3.7 46°54	0°7/ 3.4 18		
12 3	7 18.45	+19 48.4	2.201	3.037	11.6	21.4	12						

EPHEMERIDES

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
154077	2002 CV ₂₂₂		1 3.7 148°29	0°5/ 3.6 18			499453	2010 EQ ₉₈		1 3.7 319°07	6°3/ 5.4 18		
12 3	7 20.72	+24 11.5	2.014	2.855	12.3	20.2	12 3	7 15.29	+ 4 25.1	2.058	2.862	13.5	21.1
12 13	7 14.31	+24 13.8	1.942	2.857	8.9	20.0	12 13	7 10.40	+ 4 6.6	1.976	2.852	10.9	20.9
12 23	7 5.76	+24 16.3	1.896	2.859	4.9	19.8	12 23	7 3.63	+ 4 4.0	1.916	2.842	8.2	20.8
1 2	6 55.93	+24 16.7	1.878	2.861	0.8	19.5	1 2	6 55.66	+ 4 18.7	1.883	2.832	6.4	20.6
1 12	6 45.94	+24 13.5	1.890	2.862	3.6	19.7	1 12	6 47.41	+ 4 50.7	1.878	2.823	6.8	20.6
1 22	6 36.92	+24 6.5	1.931	2.864	7.6	20.0	1 22	6 39.81	+ 5 37.4	1.900	2.814	9.1	20.8
2 1	6 29.81	+23 56.2	1.999	2.866	11.2	20.2	2 1	6 33.76	+ 6 35.3	1.948	2.805	11.9	20.9
2 11	6 25.25	+23 44.0	2.089	2.867	14.2	20.4	2 11	6 29.89	+ 7 39.9	2.018	2.796	14.7	21.1
153983	2002 AC ₁₂₁		1 3.7 302°66	1°1/ 3.4 18			217844	2001 OK ₇₇		1 3.7 109°67	1°5/ 3.0 17		
12 3	7 19.52	+24 24.3	1.778	2.627	13.3	19.9	12 3	7 15.26	+28 18.2	3.611	4.440	7.6	21.0
12 13	7 13.92	+24 51.3	1.694	2.612	9.7	19.7	12 13	7 9.70	+28 50.0	3.549	4.457	5.5	20.8
12 23	7 5.79	+25 20.5	1.634	2.598	5.5	19.4	12 23	7 2.97	+29 20.2	3.515	4.473	3.2	20.7
1 2	6 55.96	+25 48.2	1.602	2.584	1.3	19.1	1 2	6 55.55	+29 46.7	3.512	4.489	1.5	20.6
1 12	6 45.69	+26 10.8	1.598	2.570	4.2	19.2	1 12	6 48.05	+30 8.0	3.541	4.505	2.7	20.7
1 22	6 36.30	+26 26.5	1.623	2.557	8.7	19.5	1 22	6 41.07	+30 23.4	3.600	4.521	4.9	20.9
2 1	6 29.00	+26 35.1	1.672	2.543	12.8	19.7	2 1	6 35.14	+30 32.9	3.689	4.536	7.0	21.0
2 11	6 24.60	+26 38.0	1.743	2.530	16.3	19.9	2 11	6 30.67	+30 37.3	3.803	4.552	8.9	21.2
168042	2005 MN ₂₃		1 3.7 292°73	8°3/ 5.2 18			59873	1999 RO ₁₁₂		1 3.7 140°62	3°9/ 4.7 18		
12 3	7 15.49	- 1 33.9	2.258	3.029	13.5	20.2	12 3	7 21.53	+11 3.9	2.006	2.822	13.3	20.1
12 13	7 10.41	- 2 27.4	2.173	3.015	11.4	20.0	12 13	7 14.73	+11 0.2	1.940	2.834	10.1	20.0
12 23	7 3.58	- 3 4.1	2.111	3.001	9.5	19.8	12 23	7 5.96	+11 7.8	1.900	2.846	6.6	19.8
1 2	6 55.63	- 3 20.7	2.074	2.986	8.4	19.7	1 2	6 56.00	+11 26.1	1.887	2.857	4.0	19.6
1 12	6 47.38	- 3 15.7	2.063	2.972	8.7	19.7	1 12	6 45.92	+11 53.8	1.905	2.867	4.9	19.7
1 22	6 39.72	- 2 49.9	2.079	2.958	10.3	19.8	1 22	6 36.76	+12 28.4	1.951	2.877	8.1	19.9
2 1	6 33.46	- 2 6.4	2.120	2.944	12.4	19.9	2 1	6 29.41	+13 7.3	2.025	2.886	11.4	20.1
2 11	6 29.20	- 1 9.8	2.182	2.930	14.6	20.0	2 11	6 24.46	+13 48.1	2.122	2.894	14.2	20.3
492994	2014 SD ₁₈₆		1 3.7 119°89	0°7/ 3.5 18			281182	2007 ER ₁₀₅		1 3.7 116°30	4°3/ 4.7 17		
12 3	7 22.42	+23 18.4	2.013	2.850	12.5	21.5	12 3	7 22.84	+11 21.4	1.575	2.403	15.8	21.2
12 13	7 15.46	+23 50.2	1.952	2.865	8.9	21.3	12 13	7 16.07	+11 18.4	1.516	2.417	11.9	20.9
12 23	7 6.37	+24 23.8	1.917	2.880	4.9	21.1	12 23	7 6.84	+11 29.4	1.480	2.430	7.7	20.7
1 2	6 56.02	+24 55.6	1.912	2.894	1.0	20.9	1 2	6 56.13	+11 53.6	1.470	2.442	4.5	20.6
1 12	6 45.56	+25 22.6	1.937	2.908	3.7	21.1	1 12	6 45.29	+12 28.9	1.489	2.454	5.7	20.7
1 22	6 36.13	+25 43.4	1.991	2.922	7.6	21.4	1 22	6 35.66	+13 11.8	1.536	2.466	9.5	20.9
2 1	6 28.66	+25 57.9	2.072	2.934	11.1	21.6	2 1	6 28.30	+13 58.9	1.607	2.477	13.3	21.2
2 11	6 23.77	+26 7.0	2.176	2.947	14.0	21.8	2 11	6 23.89	+14 46.9	1.701	2.488	16.6	21.4
236333	2006 BF ₉₅		1 3.7 162°96	0°3/ 3.6 18			39956	1998 FK ₁₂₀		1 3.7 159°16	3°2/ 3.1 18		
12 3	7 23.99	+23 11.3	2.002	2.837	12.6	21.2	12 3	7 25.23	+30 28.5	1.846	2.685	13.4	20.0
12 13	7 16.64	+23 23.5	1.932	2.843	9.1	21.0	12 13	7 17.85	+31 1.0	1.779	2.690	9.8	19.7
12 23	7 7.06	+23 36.9	1.887	2.849	5.1	20.8	12 23	7 7.87	+31 29.0	1.737	2.694	6.0	19.5
1 2	6 56.13	+23 48.7	1.872	2.854	0.8	20.5	1 2	6 56.29	+31 47.5	1.723	2.698	3.3	19.4
1 12	6 45.03	+23 56.9	1.886	2.859	3.7	20.7	1 12	6 44.51	+31 53.2	1.738	2.702	5.2	19.5
1 22	6 34.96	+24 0.6	1.931	2.862	7.8	21.0	1 22	6 33.93	+31 45.9	1.782	2.705	8.9	19.7
2 1	6 26.89	+24 0.3	2.003	2.865	11.4	21.2	2 1	6 25.71	+31 27.8	1.852	2.708	12.5	19.9
2 11	6 21.49	+23 57.2	2.097	2.867	14.5	21.4	2 11	6 20.55	+31 2.8	1.944	2.710	15.6	20.2
22415	Humeivey		1 3.7 201°12	3°9/ 4.4 18			348160	2004 HF ₃₇		1 3.7 237°90	3°4/ 2.9 18		
12 3	7 20.79	+12 2.2	2.008	2.828	13.2	19.2	12 3	7 25.65	+28 59.8	1.651	2.495	14.4	21.5
12 13	7 14.34	+11 42.6	1.928	2.825	10.0	19.0	12 13	7 18.68	+29 50.9	1.569	2.484	10.6	21.2
12 23	7 5.81	+11 32.6	1.874	2.821	6.6	18.8	12 23	7 8.62	+30 41.0	1.512	2.472	6.4	21.0
1 2	6 55.97	+11 32.6	1.847	2.817	4.0	18.6	1 2	6 56.44	+31 23.2	1.483	2.459	3.4	20.7
1 12	6 45.88	+11 42.2	1.850	2.812	5.1	18.7	1 12	6 43.65	+31 52.1	1.482	2.446	5.8	20.9
1 22	6 36.60	+11 59.9	1.881	2.806	8.4	18.9	1 22	6 31.95	+32 5.4	1.508	2.433	10.1	21.1
2 1	6 29.08	+12 23.9	1.940	2.800	11.8	19.1	2 1	6 22.80	+32 4.7	1.560	2.418	14.3	21.3
2 11	6 24.00	+12 51.9	2.021	2.794	14.8	19.3	2 11	6 17.13	+31 53.7	1.632	2.404	17.9	21.5
313421	2002 QP ₄₂		1 3.7 35°74	0°0/ 3.7 17			250205	2002 VU ₃		1 3.7 17°61	6°9/ 4.4 18		
12 3	7 21.60	+18 0.0	1.083	1.948	18.7	18.9	12 3	7 19.63	+ 8 1.7	1.628	2.451	15.6	19.9
12 13	7 15.80	+19 19.9	1.052	1.978	13.3	18.7	12 13	7 13.76	+ 6 56.9	1.562	2.452	12.3	19.7
12 23	7 6.84	+20 51.1	1.042	2.008	7.3	18.4	12 23	7 5.57	+ 6 5.7	1.518	2.453	9.0	19.5
1 2	6 56.10	+22 24.8	1.057	2.040	1.1	18.1	1 2	6 55.96	+ 5 31.6	1.500	2.455	7.0	19.3
1 12	6 45.48	+23 52.1	1.098	2.072	5.0	18.5	1 12	6 46.15	+ 5 16.2	1.509	2.457	7.8	19.4
1 22	6 36.70	+25 6.8	1.164	2.105	10.5	18.9	1 22	6 37.39	+ 5 18.9	1.544	2.459	10.7	19.6
2 1	6 31.01	+26 6.8	1.253	2.139	15.1	19.3	2 1	6 30.71	+ 5 37.1	1.603	2.461	14.0	19.8
2 11	6 28.99	+26 52.8	1.362	2.174	18.7	19.6	2 11	6 26.77	+ 6 6.4	1.683	2.464	17.0	20.0
312211	2007 VZ ₂₉₆		1 3.7 81°86	4°2/ 4.8 18			139361	2001 MV ₂		1 3.7 188°97	2°8/ 3.0 18		
12 3	7 20.36	+11 19.9	1.605	2.436	15.4	20.5	12 3	7 23.43	+30 7.2	2.219	3.052	11.6	20.4
12 13	7 14.29	+11 19.2	1.544	2.447	11.6	20.3	12 13	7 16.28	+30 40.4	2.143	3.051	8.5	20.2
12 23	7 5.85	+11 32.4	1.507	2.457	7.6	20.1	12 23	7 6.92	+31 10.2	2.093	3.050	5.2	20.0
1 2	6 55.97	+11 58.9	1.496	2.468	4.5	19.9	1 2	6 56.16	+31 32.3	2.072	3.048	2.8	19.8
1 12	6 45.95	+12 36.5	1.512	2.478	5.5	20.0	1 12	6 45.15	+31 43.9	2.082	3.045	4.5	19.9
1 22	6 37.04	+13 21.7	1.557	2.488	9.2	20.3	1 22	6 35.05	+31 44.1	2.122	3.042	7.9	20.1
2 1	6 30.28	+14 10.8	1.626	2.498	13.0	20.5	2 1	6 26.88	+31 34.6	2.188	3.038	11.1	20.3
2 11	6 26.35	+15 0.8	1.717	2.509	16.3	20.7	2 11	6 21.29	+31 17.9	2.278	3.034	13.8	20.5
356511	2011 SM ₅₆		1 3.7 179°10	3°2/ 4.4 18			516460	2005 LW ₇		1 3.7 123°54	2°0/ 3.3 18		
12 3	7 21.57	+13 41.9	1.785	2.614	14.2	22.0	12 3	7 29.47	+27 48.1	1.985	2.813	13.0	

EPHEMERIDES

1 3.7

1 3.7

2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
375573	2008 <i>UG</i> ₃₄₄		1 3.7 55°95	4.4/ 5.1	18		304013	2006 <i>DV</i> ₅		1 3.7 241°77	2°0/ 4.3	18	
12 3	7 18.78	+ 9 18.4	1.853	2.674	14.1	20.4	12 3	7 21.86	+15 37.8	1.799	2.632	13.9	21.0
12 13	7 12.74	+ 9 24.4	1.808	2.702	10.7	20.2	12 13	7 15.55	+16 3.9	1.711	2.619	10.3	20.7
12 23	7 4.80	+ 9 44.3	1.787	2.731	7.2	20.1	12 23	7 6.74	+16 40.7	1.647	2.606	6.2	20.4
1 2	6 55.83	+10 17.1	1.793	2.760	4.6	20.0	1 2	6 56.21	+17 25.9	1.612	2.592	2.3	20.2
1 12	6 46.90	+11 0.4	1.828	2.789	5.2	20.1	1 12	6 45.15	+18 16.1	1.605	2.577	4.3	20.3
1 22	6 39.02	+11 50.6	1.891	2.818	8.2	20.3	1 22	6 34.88	+19 7.6	1.628	2.562	8.7	20.5
2 1	6 33.01	+12 44.3	1.981	2.847	11.3	20.6	2 1	6 26.58	+19 57.7	1.677	2.546	12.9	20.7
2 11	6 29.36	+13 38.3	2.093	2.876	14.0	20.8	2 11	6 21.10	+20 44.6	1.748	2.530	16.4	20.9
404192	2013 <i>CK</i> ₁₂₀		1 3.7 255°98	3°5/ 4.5	18		199143	2005 <i>YC</i> ₁₂₆		1 3.7 175°41	1°2/ 3.4	18	
12 3	7 20.42	+13 16.4	1.633	2.468	15.0	21.3	12 3	7 24.01	+23 38.2	1.705	2.548	14.1	21.0
12 13	7 14.55	+13 19.5	1.555	2.461	11.3	21.0	12 13	7 17.14	+24 21.2	1.634	2.550	10.2	20.8
12 23	7 6.15	+13 34.8	1.500	2.454	7.1	20.8	12 23	7 7.60	+25 7.3	1.588	2.551	5.7	20.5
1 2	6 56.07	+14 1.7	1.471	2.447	3.7	20.5	1 2	6 56.32	+25 51.6	1.570	2.552	1.4	20.2
1 12	6 45.59	+14 37.9	1.471	2.439	5.1	20.6	1 12	6 44.71	+26 29.6	1.581	2.553	4.4	20.4
1 22	6 36.05	+15 20.3	1.498	2.432	9.3	20.8	1 22	6 34.18	+26 58.8	1.621	2.553	8.9	20.7
2 1	6 28.62	+16 5.8	1.550	2.424	13.5	21.1	2 1	6 25.97	+27 18.9	1.687	2.552	13.0	20.9
2 11	6 24.12	+16 51.6	1.624	2.416	17.1	21.3	2 11	6 20.86	+27 31.6	1.774	2.551	16.4	21.2
245967	2006 <i>SC</i> ₈₈		1 3.7 200°29	0°8/ 3.5	18		114293	2002 <i>XW</i> ₂₉		1 3.7 41°77	1°3/ 4.2	18	
12 3	7 17.41	+24 45.9	2.747	3.581	9.6	21.4	12 3	7 17.31	+16 39.3	2.006	2.844	12.5	18.9
12 13	7 11.58	+25 4.7	2.668	3.579	6.9	21.2	12 13	7 11.85	+17 16.3	1.943	2.854	9.1	18.7
12 23	7 4.16	+25 23.8	2.615	3.576	3.9	21.0	12 23	7 4.44	+18 1.6	1.905	2.865	5.2	18.5
1 2	6 55.75	+25 41.0	2.592	3.574	0.9	20.8	1 2	6 55.85	+18 52.4	1.896	2.877	1.6	18.3
1 12	6 47.17	+25 54.7	2.600	3.571	2.9	20.9	1 12	6 47.10	+19 45.1	1.916	2.889	3.5	18.5
1 22	6 39.21	+26 3.9	2.638	3.567	6.1	21.1	1 22	6 39.20	+20 36.7	1.965	2.901	7.3	18.7
2 1	6 32.61	+26 8.6	2.705	3.564	8.9	21.3	2 1	6 33.02	+21 24.9	2.041	2.913	10.8	18.9
2 11	6 27.88	+26 9.5	2.796	3.560	11.4	21.5	2 11	6 29.17	+22 8.3	2.140	2.925	13.7	19.2
68582	2001 <i>YS</i> ₁₁₈		1 3.7 242°01	1°0/ 4.0	18		428801	2008 <i>TN</i> ₅		1 3.7 65°98	5°4/ 5.2	18	
12 3	7 19.15	+18 7.2	2.105	2.939	12.1	19.5	12 3	7 17.73	+ 7 15.3	1.984	2.796	13.6	21.0
12 13	7 13.25	+18 36.3	2.021	2.931	8.8	19.3	12 13	7 11.99	+ 6 54.8	1.928	2.813	10.6	20.8
12 23	7 5.28	+19 12.3	1.962	2.922	5.1	19.0	12 23	7 4.44	+ 6 48.4	1.896	2.830	7.6	20.7
1 2	6 55.94	+19 52.9	1.932	2.914	1.3	18.7	1 2	6 55.84	+ 6 56.8	1.890	2.848	5.5	20.6
1 12	6 46.26	+20 35.0	1.932	2.905	3.5	18.9	1 12	6 47.21	+ 7 19.2	1.913	2.865	6.0	20.7
1 22	6 37.28	+21 16.0	1.962	2.896	7.5	19.1	1 22	6 39.48	+ 7 53.0	1.965	2.883	8.5	20.9
2 1	6 29.98	+21 54.1	2.019	2.886	11.1	19.3	2 1	6 33.45	+ 8 35.1	2.042	2.901	11.4	21.1
2 11	6 25.06	+22 28.5	2.099	2.877	14.2	19.5	2 11	6 29.66	+ 9 21.8	2.141	2.918	14.0	21.3
486742	2014 <i>EM</i> ₃₄		1 3.7 271°34	3°9/ 2.9	18		413608	2005 <i>UB</i> ₂₂₂		1 3.7 243°26	0°1/ 3.7	18	
12 3	7 25.13	+29 10.2	1.352	2.207	16.3	21.8	12 3	7 20.50	+22 17.7	1.927	2.769	12.8	21.3
12 13	7 18.76	+30 1.9	1.279	2.199	12.0	21.5	12 13	7 14.32	+22 20.2	1.851	2.766	9.2	21.1
12 23	7 8.85	+30 52.2	1.229	2.190	7.3	21.2	12 23	7 5.90	+22 24.7	1.799	2.762	5.2	20.8
1 2	6 56.50	+31 33.2	1.204	2.181	4.0	21.0	1 2	6 56.09	+22 29.3	1.776	2.758	0.8	20.5
1 12	6 43.56	+31 58.5	1.206	2.172	6.5	21.1	1 12	6 46.04	+22 32.1	1.782	2.755	3.7	20.7
1 22	6 31.99	+32 6.1	1.234	2.163	11.4	21.3	1 22	6 36.91	+22 32.4	1.816	2.751	7.9	21.0
2 1	6 23.47	+31 58.2	1.285	2.154	16.0	21.6	2 1	6 29.72	+22 30.4	1.877	2.747	11.7	21.2
2 11	6 18.96	+31 39.6	1.355	2.145	20.0	21.8	2 11	6 25.16	+22 26.8	1.961	2.743	14.9	21.4
464266	2015 <i>FK</i> ₁₂₇		1 3.7 75°67	0°6/ 3.8	18		89176	2001 <i>UP</i> ₅₉		1 3.7 291°24	0°1/ 3.7	18	
12 3	7 18.98	+21 31.0	2.213	3.051	11.5	20.8	12 3	7 22.00	+21 45.5	1.419	2.273	15.8	19.5
12 13	7 12.83	+21 17.6	2.146	3.059	8.3	20.6	12 13	7 16.22	+21 55.9	1.338	2.259	11.5	19.2
12 23	7 4.88	+21 5.9	2.105	3.067	4.6	20.4	12 23	7 7.34	+22 10.9	1.280	2.244	6.5	18.9
1 2	6 55.87	+20 54.9	2.093	3.076	0.9	20.1	1 2	6 56.34	+22 27.5	1.247	2.230	1.0	18.5
1 12	6 46.81	+20 43.9	2.111	3.084	3.3	20.3	1 12	6 44.77	+22 42.3	1.242	2.216	4.7	18.7
1 22	6 38.62	+20 32.8	2.159	3.092	6.9	20.5	1 22	6 34.31	+22 53.4	1.263	2.202	10.2	19.0
2 1	6 32.12	+20 21.9	2.234	3.101	10.2	20.8	2 1	6 26.43	+23 0.7	1.308	2.188	15.1	19.2
2 11	6 27.84	+20 11.7	2.332	3.109	13.0	21.0	2 11	6 22.07	+23 5.0	1.372	2.174	19.2	19.4
255874	2006 <i>SB</i> ₂₁₅		1 3.7 38°35	8°2/ 5.0	18		68847	2002 <i>GK</i> ₁₅₅		1 3.7 100°57	2°7/ 4.4	18	
12 3	7 19.03	+ 5 38.1	1.428	2.252	17.4	18.9	12 3	7 22.27	+14 29.6	1.674	2.507	14.8	19.3
12 13	7 13.42	+ 4 33.8	1.377	2.265	13.9	18.8	12 13	7 15.59	+14 43.9	1.617	2.524	10.9	19.1
12 23	7 5.38	+ 3 48.6	1.348	2.279	10.4	18.6	12 23	7 6.58	+15 8.9	1.583	2.540	6.6	18.9
1 2	6 55.95	+ 3 26.4	1.344	2.293	8.3	18.5	1 2	6 56.19	+15 42.5	1.578	2.556	2.9	18.7
1 12	6 46.48	+ 3 27.7	1.364	2.309	8.9	18.6	1 12	6 45.70	+16 21.8	1.601	2.571	4.5	18.9
1 22	6 38.26	+ 3 50.3	1.410	2.324	11.5	18.8	1 22	6 36.37	+17 3.5	1.652	2.586	8.6	19.1
2 1	6 32.32	+ 4 29.5	1.479	2.341	14.8	19.0	2 1	6 29.21	+17 45.2	1.730	2.601	12.5	19.4
2 11	6 29.28	+ 5 19.3	1.568	2.357	17.7	19.3	2 11	6 24.86	+18 25.0	1.829	2.615	15.7	19.7
219545	2001 <i>RN</i> ₂₇		1 3.7 138°20	1°7/ 3.1	18		472316	2014 <i>YD</i> ₁₀		1 3.7 258°75	5°5/ 6.1	16	
12 3	7 15.12	+30 7.3	3.724	4.552	7.5	20.8	12 3	7 17.12	+ 2 9.2	2.572	3.350	11.8	21.7
12 13	7 9.61	+30 24.9	3.655	4.561	5.4	20.7	12 13	7 11.49	+ 2 25.6	2.474	3.333	9.6	21.5
12 23	7 2.93	+30 39.8	3.613	4.569	3.2	20.5	12 23	7 4.22	+ 2 58.2	2.401	3.316	7.3	21.3
1 2	6 55.59	+30 50.3	3.602	4.578	1.7	20.4	1 2	6 55.86	+ 3 47.5	2.355	3.299	5.7	21.2
1 12	6 48.17	+30 55.4	3.623	4.586	2.8	20.5	1 12	6 47.17	+ 4 52.2	2.340	3.282	5.9	21.2
1 22	6 41.27	+30 54.6	3.674	4.593	4.9	20.7	1 22	6 38.94	+ 6 9.1	2.355	3.264	7.8	21.3
2 1	6 35.40	+30 48.5	3.754	4.601	6.9	20.8	2 1	6 31.95	+ 7 34.2	2.398	3.246	10.3	21.4
2 11	6 30.97	+30 38.1	3.859	4.608	8.7	20.9	2 11	6 26.79	+ 9 3.2	2.466	3.227	12.8	21.6
119730	2001 <i>YP</i> ₇		1 3.7 171°61	1°3/ 3.8	18		472577	2015 <i>DU</i> ₁₁₀		1 3.7 244°45	2°8/ 2.7	16	
12 3	7 22.13	+20 24.9	2.149										

EPHEMERIDES

1 3.7

1 3.7

2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
279435	2010 <i>NL</i> ₁₁₁		1 3.7 78°53	1.8/ 4.4	18		3072	Vilnius		1 3.7 165°82	2.5/ 4.3	18	
12 3	7 14.52	+14 40.2	3.165	3.983	8.9	21.3	12 3	7 23.70	+15 5.9	1.790	2.618	14.2	17.9
12 13	7 9.20	+14 51.2	3.109	4.008	6.5	21.2	12 13	7 16.66	+15 12.9	1.719	2.624	10.5	17.6
12 23	7 2.73	+15 7.6	3.079	4.032	4.0	21.0	12 23	7 7.25	+15 29.2	1.673	2.629	6.4	17.4
1 2	6 55.62	+15 28.6	3.080	4.057	1.9	20.9	1 2	6 56.37	+15 53.3	1.655	2.633	2.8	17.2
1 12	6 48.49	+15 52.8	3.113	4.081	2.8	21.0	1 12	6 45.24	+16 22.8	1.666	2.636	4.4	17.3
1 22	6 41.93	+16 19.0	3.176	4.105	5.2	21.2	1 22	6 35.14	+16 55.2	1.707	2.639	8.5	17.6
2 1	6 36.45	+16 46.0	3.268	4.129	7.5	21.4	2 1	6 27.11	+17 28.5	1.774	2.640	12.4	17.8
2 11	6 32.44	+17 12.7	3.385	4.152	9.5	21.6	2 11	6 21.87	+18 1.2	1.863	2.641	15.7	18.0
10384	1996 <i>TQ</i> ₁₀		1 3.7 105°30	2.2/ 4.5	18		316090	2009 <i>KW</i> ₂₈		1 3.7 190°88	0.3/ 3.7	18	
12 3	7 17.08	+14 20.4	2.344	3.170	11.4	18.0	12 3	7 22.22	+23 17.4	2.274	3.106	11.4	21.5
12 13	7 11.46	+14 36.6	2.274	3.177	8.4	17.8	12 13	7 15.30	+23 26.3	2.194	3.105	8.2	21.3
12 23	7 4.17	+15 0.8	2.230	3.184	5.1	17.6	12 23	7 6.39	+23 36.0	2.141	3.103	4.6	21.1
1 2	6 55.85	+15 31.8	2.214	3.191	2.4	17.4	1 2	6 56.24	+23 44.4	2.117	3.100	0.7	20.8
1 12	6 47.39	+16 7.6	2.229	3.198	3.6	17.5	1 12	6 45.87	+23 49.8	2.125	3.097	3.3	21.0
1 22	6 39.63	+16 46.0	2.273	3.205	6.7	17.7	1 22	6 36.32	+23 51.3	2.162	3.093	7.1	21.2
2 1	6 33.33	+17 24.9	2.345	3.211	9.8	17.9	2 1	6 28.49	+23 49.4	2.227	3.088	10.5	21.5
2 11	6 29.05	+18 2.8	2.441	3.218	12.5	18.1	2 11	6 23.01	+23 44.9	2.316	3.083	13.4	21.6
334137	2001 <i>RF</i> ₄₁		1 3.7 129°99	1.8/ 3.4	18		486846	2014 <i>JF</i> ₆₀		1 3.7 210°36	0.5/ 3.8	18	
12 3	7 20.45	+28 54.3	2.452	3.287	10.6	20.9	12 3	7 23.66	+20 16.8	1.842	2.678	13.5	22.4
12 13	7 13.86	+28 56.4	2.382	3.292	7.7	20.7	12 13	7 16.78	+20 36.5	1.760	2.672	9.8	22.2
12 23	7 5.48	+28 54.9	2.338	3.298	4.5	20.5	12 23	7 7.42	+21 1.3	1.704	2.665	5.6	21.9
1 2	6 56.05	+28 47.8	2.324	3.304	1.8	20.4	1 2	6 56.41	+21 28.3	1.675	2.658	1.0	21.6
1 12	6 46.56	+28 33.8	2.341	3.309	3.6	20.5	1 12	6 45.01	+21 54.6	1.677	2.650	3.9	21.8
1 22	6 37.93	+28 13.2	2.387	3.314	6.7	20.7	1 22	6 34.53	+22 17.9	1.708	2.641	8.4	22.1
2 1	6 30.97	+27 47.6	2.461	3.319	9.7	20.9	2 1	6 26.11	+22 37.6	1.765	2.632	12.5	22.3
2 11	6 26.22	+27 19.0	2.559	3.324	12.3	21.1	2 11	6 20.54	+22 53.8	1.845	2.621	15.9	22.5
129615	1998 <i>BP</i> ₃₀		1 3.7 233°85	2.6/ 4.1	18		314843	2006 <i>UT</i> ₁₈₁		1 3.7 348°00	1.7/ 4.2	18	
12 3	7 22.08	+16 51.1	1.699	2.537	14.4	20.3	12 3	7 17.66	+16 27.3	1.383	2.238	16.0	19.8
12 13	7 15.68	+16 31.4	1.621	2.531	10.6	20.0	12 13	7 13.00	+17 3.7	1.312	2.231	11.8	19.5
12 23	7 6.78	+16 18.3	1.566	2.524	6.4	19.8	12 23	7 5.52	+17 53.3	1.262	2.225	6.9	19.3
1 2	6 56.27	+16 11.4	1.539	2.517	2.8	19.5	1 2	6 56.14	+18 52.8	1.239	2.220	2.1	18.9
1 12	6 45.44	+16 10.0	1.540	2.510	4.7	19.6	1 12	6 46.30	+19 56.9	1.242	2.216	4.6	19.1
1 22	6 35.61	+16 13.2	1.569	2.503	9.0	19.9	1 22	6 37.53	+21 0.5	1.271	2.213	9.8	19.4
2 1	6 27.91	+16 20.3	1.624	2.495	13.1	20.1	2 1	6 31.17	+21 59.5	1.324	2.210	14.5	19.6
2 11	6 23.11	+16 30.3	1.701	2.487	16.7	20.3	2 11	6 28.08	+22 51.9	1.398	2.209	18.4	19.9
139430	2001 <i>OA</i> ₄₅		1 3.7 153°82	5.1/ 5.4	18		330488	2007 <i>GC</i> ₅₅		1 3.7 359°57	3.6/ 4.7	18	
12 3	7 19.46	+ 6 16.6	2.146	2.947	13.1	20.0	12 3	7 17.20	+12 45.9	1.598	2.438	15.0	19.6
12 13	7 13.25	+ 6 17.9	2.075	2.954	10.3	19.8	12 13	7 12.23	+12 51.0	1.528	2.437	11.3	19.4
12 23	7 5.20	+ 6 33.7	2.028	2.960	7.3	19.6	12 23	7 4.89	+13 9.2	1.481	2.435	7.2	19.1
1 2	6 56.03	+ 7 4.4	2.008	2.966	5.3	19.5	1 2	6 56.03	+13 39.8	1.460	2.435	3.9	18.9
1 12	6 46.68	+ 7 48.3	2.019	2.971	5.7	19.5	1 12	6 46.88	+14 20.4	1.466	2.435	5.1	19.0
1 22	6 38.09	+ 8 42.4	2.058	2.976	8.2	19.7	1 22	6 38.70	+15 7.4	1.500	2.436	9.1	19.2
2 1	6 31.11	+ 9 43.0	2.124	2.980	11.1	19.9	2 1	6 32.59	+15 57.4	1.558	2.437	13.1	19.5
2 11	6 26.33	+10 46.5	2.214	2.984	13.8	20.1	2 11	6 29.26	+16 47.2	1.638	2.439	16.5	19.7
258497	2002 <i>AU</i> ₆₅		1 3.7 45°12	0.4/ 3.8	18		76912	2000 <i>YZ</i> ₁₃₅		1 3.7 105°53	1.0/ 3.6	18	
12 3	7 19.81	+20 35.6	1.703	2.550	13.9	20.6	12 3	7 28.07	+24 46.0	1.437	2.283	16.0	18.8
12 13	7 13.97	+20 52.9	1.640	2.557	10.0	20.4	12 13	7 20.11	+24 56.5	1.385	2.302	11.5	18.6
12 23	7 5.76	+21 15.1	1.600	2.564	5.6	20.1	12 23	7 9.22	+25 6.7	1.357	2.320	6.4	18.4
1 2	6 56.12	+21 39.4	1.589	2.571	1.0	19.8	1 2	6 56.66	+25 12.8	1.356	2.338	1.3	18.1
1 12	6 46.30	+22 3.0	1.605	2.579	3.9	20.0	1 12	6 44.14	+25 12.1	1.383	2.355	4.6	18.4
1 22	6 37.56	+22 23.8	1.650	2.587	8.4	20.3	1 22	6 33.27	+25 4.7	1.438	2.372	9.6	18.7
2 1	6 30.95	+22 41.2	1.720	2.595	12.3	20.6	2 1	6 25.26	+24 52.3	1.517	2.388	13.9	19.0
2 11	6 27.14	+22 55.3	1.812	2.603	15.6	20.8	2 11	6 20.74	+24 37.5	1.618	2.404	17.4	19.3
378435	2007 <i>RA</i> ₂₅₀		1 3.7 137°35	3.3/ 4.5	18		303649	2005 <i>KP</i> ₁₁		1 3.7 296°28	13.7/ 1.9	18	
12 3	7 17.33	+12 16.6	2.480	3.297	11.1	21.2	12 3	7 27.25	+ 5 24.7	1.023	1.856	22.0	19.9
12 13	7 11.52	+11 56.8	2.409	3.303	8.3	21.0	12 13	7 20.47	+ 2 17.3	0.959	1.848	18.3	19.6
12 23	7 4.16	+11 44.7	2.363	3.310	5.5	20.8	12 23	7 9.92	- 0 37.4	0.917	1.839	15.1	19.4
1 2	6 55.88	+11 40.7	2.346	3.316	3.4	20.7	1 2	6 56.83	- 3 3.7	0.896	1.831	13.7	19.3
1 12	6 47.48	+11 44.2	2.360	3.321	4.2	20.7	1 12	6 43.21	- 4 48.8	0.899	1.823	15.2	19.3
1 22	6 39.78	+11 54.3	2.403	3.327	6.9	20.9	1 22	6 31.15	- 5 47.4	0.924	1.815	18.6	19.5
2 1	6 33.47	+12 9.8	2.473	3.332	9.7	21.1	2 1	6 22.38	- 6 2.3	0.967	1.807	22.4	19.7
2 11	6 29.05	+12 29.0	2.568	3.337	12.1	21.3	2 11	6 17.87	- 5 43.4	1.024	1.800	25.9	19.9
200366	2000 <i>QC</i> ₄₈		1 3.7 105°33	0.8/ 3.6	17		422012	2014 <i>QL</i> ₃₂₉		1 3.7 42°77	0.1/ 3.7	18	
12 3	7 25.83	+24 15.1	1.691	2.532	14.3	21.1	12 3	7 20.10	+20 51.1	1.609	2.458	14.4	20.6
12 13	7 18.16	+24 29.9	1.638	2.552	10.2	20.9	12 13	7 14.33	+21 29.3	1.548	2.467	10.4	20.4
12 23	7 8.00	+24 45.0	1.610	2.572	5.7	20.6	12 23	7 6.05	+22 13.3	1.512	2.476	5.8	20.1
1 2	6 56.45	+24 56.9	1.609	2.592	1.1	20.4	1 2	6 56.22	+22 59.1	1.502	2.485	0.9	19.8
1 12	6 44.91	+25 3.3	1.639	2.611	4.1	20.6	1 12	6 46.17	+23 42.3	1.521	2.495	4.1	20.1
1 22	6 34.74	+25 3.6	1.697	2.629	8.5	20.9	1 22	6 37.27	+24 19.9	1.568	2.505	8.7	20.4
2 1	6 26.99	+24 59.0	1.780	2.647	12.4	21.2	2 1	6 30.61	+24 50.7	1.639	2.515	12.8	20.6
2 11	6 22.26	+24 51.2	1.886	2.664	15.6	21.5	2 11	6 26.91	+25 15.0	1.732	2.525	16.1	20.9
402567	2006 <i>RB</i> ₁₁		1 3.7 98°54	1.5/ 3.4	14 C		39906	1998 <i>FE</i> ₃₂		1 3.7 316°65	5.5/ 4.5	18	
12 3	7 25.60	+26 13.2	1.984	2.818	1								

EPHEMERIDES

1 3.7

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
460344	2014 <i>RN</i> ₂₃		1 3.7 28°27	1.6/ 3.6	18		246666	2008 <i>YP</i> ₁₀₆		1 3.7 322°28	0.6/ 3.9	17	
12 3	7 21.73	+26 39.9	1.317	2.178	16.3	20.8	12 3	7 17.13	+19 2.0	2.217	3.054	11.5	20.9
12 13	7 15.82	+26 40.5	1.266	2.189	11.7	20.5	12 13	7 11.76	+19 32.6	2.138	3.050	8.3	20.6
12 23	7 6.94	+26 38.9	1.237	2.202	6.6	20.3	12 23	7 4.50	+20 9.0	2.085	3.046	4.7	20.4
1 2	6 56.35	+26 31.7	1.233	2.215	1.8	20.0	1 2	6 56.03	+20 48.8	2.060	3.043	1.0	20.1
1 12	6 45.75	+26 17.0	1.256	2.229	4.9	20.3	1 12	6 47.30	+21 29.3	2.066	3.039	3.2	20.3
1 22	6 36.77	+25 55.5	1.305	2.244	9.9	20.6	1 22	6 39.25	+22 8.0	2.101	3.036	7.0	20.5
2 1	6 30.60	+25 29.7	1.377	2.259	14.3	20.9	2 1	6 32.77	+22 43.3	2.164	3.033	10.4	20.7
2 11	6 27.88	+25 2.2	1.469	2.276	17.9	21.2	2 11	6 28.48	+23 14.5	2.249	3.030	13.3	20.9
5030	Gyldenkerne		1 3.7 235°13	5.9/ 2.5	18		134455	1998 <i>ST</i> ₁₁₆		1 3.7 89°34	1.7/ 4.1	18	
12 3	7 27.24	+34 45.2	1.572	2.414	15.1	17.4	12 3	7 23.44	+18 22.9	1.770	2.606	14.0	19.7
12 13	7 20.13	+35 47.6	1.500	2.407	11.5	17.2	12 13	7 16.27	+18 14.4	1.719	2.629	10.1	19.5
12 23	7 9.61	+36 42.9	1.451	2.400	7.9	17.0	12 23	7 6.92	+18 11.3	1.693	2.653	5.8	19.3
1 2	6 56.80	+37 22.4	1.428	2.393	5.9	16.8	1 2	6 56.38	+18 12.2	1.695	2.675	1.9	19.1
1 12	6 43.45	+37 40.2	1.433	2.385	7.7	16.9	1 12	6 45.88	+18 15.8	1.726	2.698	4.0	19.3
1 22	6 31.45	+37 35.0	1.464	2.377	11.3	17.1	1 22	6 36.62	+18 21.2	1.786	2.720	8.1	19.6
2 1	6 22.37	+37 10.8	1.519	2.368	15.1	17.3	2 1	6 29.51	+18 27.7	1.872	2.741	11.8	19.9
2 11	6 17.14	+36 33.8	1.594	2.359	18.5	17.5	2 11	6 25.11	+18 34.9	1.981	2.762	14.8	20.1
37321	2001 <i>QX</i> ₆₉		1 3.7 17°26	9.7/ 5.7	18		132893	2002 <i>RY</i> ₁₈₄		1 3.7 218°34	2.8/ 4.3	18	R
12 3	7 16.75	+ 1 58.6	1.396	2.212	18.1	17.2	12 3	7 18.06	+14 46.7	2.262	3.089	11.7	19.6
12 13	7 12.00	+ 0 59.5	1.340	2.217	14.9	17.0	12 13	7 12.26	+14 23.3	2.185	3.087	8.7	19.4
12 23	7 4.77	+ 0 23.7	1.304	2.223	11.8	16.8	12 23	7 4.70	+14 6.2	2.133	3.085	5.5	19.2
1 2	6 56.04	+ 0 15.6	1.292	2.231	9.9	16.7	1 2	6 56.06	+13 55.6	2.109	3.084	3.0	19.1
1 12	6 47.14	+ 0 36.0	1.303	2.239	10.2	16.8	1 12	6 47.25	+13 51.4	2.116	3.082	4.1	19.1
1 22	6 39.38	+ 1 21.5	1.338	2.248	12.5	16.9	1 22	6 39.17	+13 52.9	2.151	3.080	7.3	19.3
2 1	6 33.84	+ 2 25.9	1.396	2.257	15.5	17.1	2 1	6 32.62	+13 59.2	2.214	3.078	10.4	19.5
2 11	6 31.21	+ 3 41.7	1.474	2.268	18.4	17.4	2 11	6 28.18	+14 9.2	2.300	3.076	13.2	19.7
46846	1998 <i>QN</i> ₂₄		1 3.7 75°97	3.8/ 4.5	18		184869	2005 <i>UA</i> ₁₁₅		1 3.7 64°55	8.3/ 6.2	18	
12 3	7 20.36	+13 4.0	1.637	2.472	15.0	18.8	12 3	7 19.25	+ 0 45.2	1.739	2.530	16.1	19.8
12 13	7 14.36	+12 53.7	1.574	2.480	11.2	18.6	12 13	7 13.26	+ 0 8.0	1.691	2.553	13.2	19.6
12 23	7 6.01	+12 54.9	1.534	2.487	7.2	18.3	12 23	7 5.25	- 0 7.8	1.666	2.576	10.4	19.5
1 2	6 56.23	+13 7.2	1.521	2.495	4.0	18.2	1 2	6 56.13	- 0 0.1	1.666	2.599	8.5	19.5
1 12	6 46.29	+13 29.1	1.536	2.502	5.2	18.3	1 12	6 47.01	+ 0 30.5	1.692	2.622	8.7	19.5
1 22	6 37.43	+13 58.2	1.578	2.510	9.1	18.5	1 22	6 38.97	+ 1 20.2	1.744	2.645	10.6	19.7
2 1	6 30.69	+14 31.9	1.645	2.518	12.9	18.7	2 1	6 32.85	+ 2 24.0	1.821	2.667	13.1	19.9
2 11	6 26.74	+15 7.5	1.734	2.526	16.2	19.0	2 11	6 29.21	+ 3 35.5	1.919	2.690	15.6	20.1
207867	2007 <i>VF</i> ₁₇₃		1 3.7 120°11	0.6/ 3.9	18		31690	Nayamenezes		1 3.8 149°59	0.0/ 3.6	18	
12 3	7 17.49	+19 35.1	2.481	3.313	10.6	20.6	12 3	7 17.69	+22 11.7	2.745	3.576	9.7	19.9
12 13	7 11.75	+19 56.4	2.410	3.320	7.6	20.5	12 13	7 11.77	+22 22.4	2.672	3.582	7.0	19.7
12 23	7 4.36	+20 21.9	2.366	3.327	4.3	20.3	12 23	7 4.34	+22 34.7	2.627	3.588	3.9	19.5
1 2	6 55.98	+20 49.4	2.352	3.334	0.9	20.0	1 2	6 56.01	+22 46.9	2.611	3.593	0.6	19.3
1 12	6 47.45	+21 17.0	2.368	3.341	2.9	20.2	1 12	6 47.56	+22 57.6	2.626	3.599	2.7	19.5
1 22	6 39.61	+21 43.1	2.414	3.347	6.3	20.4	1 22	6 39.76	+23 6.0	2.672	3.603	5.9	19.7
2 1	6 33.21	+22 6.7	2.488	3.353	9.4	20.6	2 1	6 33.30	+23 11.9	2.746	3.608	8.7	19.9
2 11	6 28.79	+22 27.4	2.587	3.360	11.9	20.8	2 11	6 28.68	+23 15.6	2.845	3.612	11.1	20.1
95973	2004 <i>LQ</i> ₁₆		1 3.7 105°02	3.8/ 4.5	18		425510	2010 <i>JW</i> ₄₄		1 3.8 301°65	6.7/ 4.9	17	
12 3	7 24.16	+12 53.5	1.703	2.529	14.9	19.8	12 3	7 16.12	+ 4 13.0	2.107	2.907	13.4	20.8
12 13	7 16.82	+12 39.1	1.651	2.551	11.1	19.6	12 13	7 11.09	+ 3 32.7	2.017	2.889	10.9	20.6
12 23	7 7.24	+12 35.6	1.622	2.573	7.1	19.4	12 23	7 4.18	+ 3 6.5	1.951	2.872	8.4	20.4
1 2	6 56.40	+12 42.4	1.622	2.595	4.0	19.3	1 2	6 56.01	+ 2 57.1	1.911	2.854	6.8	20.3
1 12	6 45.59	+12 58.3	1.650	2.615	5.2	19.4	1 12	6 47.51	+ 3 5.3	1.899	2.837	7.3	20.3
1 22	6 36.00	+13 21.1	1.707	2.636	8.8	19.7	1 22	6 39.61	+ 3 30.2	1.914	2.820	9.5	20.4
2 1	6 28.61	+13 48.5	1.790	2.655	12.4	19.9	2 1	6 33.20	+ 4 9.0	1.954	2.803	12.3	20.5
2 11	6 23.98	+14 18.3	1.895	2.674	15.5	20.2	2 11	6 28.96	+ 4 57.6	2.016	2.786	15.0	20.7
465459	2008 <i>SF</i> ₁₀₄		1 3.7 103°77	2.4/ 4.3	18		499968	2011 <i>KM</i> ₂₂		1 3.8 339°86	0.2/ 3.7	18	
12 3	7 18.48	+15 6.1	2.245	3.072	11.7	21.6	12 3	7 18.29	+20 39.0	2.051	2.891	12.1	20.9
12 13	7 12.48	+14 58.8	2.180	3.084	8.7	21.4	12 13	7 12.76	+21 25.5	1.974	2.889	8.8	20.7
12 23	7 4.76	+14 58.4	2.141	3.095	5.3	21.2	12 23	7 5.14	+22 17.8	1.924	2.887	4.9	20.4
1 2	6 56.04	+15 4.3	2.131	3.107	2.6	21.1	1 2	6 56.16	+23 12.1	1.902	2.885	0.7	20.1
1 12	6 47.23	+15 15.4	2.150	3.118	3.8	21.2	1 12	6 46.86	+24 4.7	1.910	2.883	3.5	20.3
1 22	6 39.22	+15 30.5	2.199	3.129	7.0	21.4	1 22	6 38.32	+24 52.5	1.947	2.881	7.5	20.6
2 1	6 32.80	+15 48.3	2.275	3.140	10.1	21.6	2 1	6 31.52	+25 33.8	2.011	2.879	11.1	20.8
2 11	6 28.49	+16 7.5	2.375	3.151	12.8	21.8	2 11	6 27.13	+26 8.2	2.098	2.878	14.1	21.0
133655	2003 <i>UC</i> ₁₆₈		1 3.7 66°18	4.4/ 2.6	18		246674	2008 <i>YS</i> ₁₃₈		1 3.8 240°98	1.0/ 3.9	18	
12 3	7 22.09	+33 40.0	2.006	2.844	12.5	19.4	12 3	7 22.57	+20 29.9	1.637	2.482	14.5	20.5
12 13	7 15.54	+34 32.8	1.950	2.857	9.3	19.2	12 13	7 16.17	+20 22.4	1.562	2.477	10.6	20.2
12 23	7 6.65	+35 19.2	1.920	2.870	6.2	19.1	12 23	7 7.16	+20 18.7	1.510	2.473	6.0	19.9
1 2	6 56.33	+35 53.8	1.917	2.884	4.4	19.0	1 2	6 56.47	+20 17.1	1.486	2.468	1.4	19.6
1 12	6 45.88	+36 13.0	1.944	2.897	5.8	19.1	1 12	6 45.47	+20 16.1	1.490	2.463	4.2	19.8
1 22	6 36.55	+36 16.5	1.998	2.911	8.8	19.3	1 22	6 35.56	+20 15.0	1.522	2.458	9.0	20.1
2 1	6 29.38	+36 6.4	2.078	2.924	11.8	19.5	2 1	6 27.92	+20 13.7	1.579	2.453	13.3	20.3
2 11	6 25.00	+35 46.3	2.180	2.938	14.3	19.7	2 11	6 23.32	+20 12.7	1.657	2.447	16.9	20.5
282990	2007 <i>TJ</i> ₂₂₂		1 3.7 180°44	2.7/ 4.5	18		81902	2000 <i>MG</i> ₁		1 3.8 275°51	1.8/ 4.6	18	
12 3	7 16.78	+13 6.2	2.656	3.473	10.4	21.							

EPHEMERIDES

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
144115	2004 <i>BR</i> ₇₆		1 3.8 192°59	2.5/	4.1	18	17046	Kenway		1 3.8 216°69	0.2/	3.8	18
12 3	7 21.49	+16 53.3	1.893	2.726	13.3	20.0	12 3	7 17.67	+21 39.3	2.781	3.611	9.6	19.7
12 13	7 15.02	+16 30.0	1.818	2.726	9.8	19.8	12 13	7 11.84	+21 48.2	2.695	3.604	6.9	19.6
12 23	7 6.37	+16 12.4	1.768	2.725	5.9	19.6	12 23	7 4.46	+21 59.1	2.636	3.597	3.9	19.3
1 2	6 56.36	+16 0.2	1.745	2.723	2.6	19.4	1 2	6 56.10	+22 10.4	2.608	3.590	0.6	19.1
1 12	6 46.14	+15 53.1	1.752	2.722	4.3	19.5	1 12	6 47.54	+22 20.8	2.610	3.583	2.7	19.2
1 22	6 36.86	+15 50.6	1.788	2.720	8.2	19.7	1 22	6 39.57	+22 29.3	2.643	3.575	5.9	19.4
2 1	6 29.51	+15 52.1	1.850	2.718	12.0	19.9	2 1	6 32.88	+22 35.7	2.705	3.567	8.8	19.6
2 11	6 24.74	+15 56.9	1.935	2.715	15.1	20.1	2 11	6 28.01	+22 40.2	2.791	3.558	11.3	19.8
24614	1978 <i>VY</i> ₃		1 3.8 72°63	0.5/	3.8	18	428981	2008 <i>YF</i> ₁₆₃		1 3.8 100°03	1.2/	4.2	18
12 3	7 22.90	+21 33.2	1.600	2.446	14.7	18.6	12 3	7 17.56	+17 5.0	2.336	3.167	11.2	21.1
12 13	7 16.21	+21 30.6	1.545	2.462	10.6	18.4	12 13	7 11.92	+17 31.1	2.266	3.173	8.2	21.0
12 23	7 7.05	+21 30.9	1.514	2.477	5.9	18.1	12 23	7 4.55	+18 3.7	2.221	3.180	4.7	20.8
1 2	6 56.46	+21 32.1	1.510	2.493	1.1	17.8	1 2	6 56.12	+18 40.7	2.205	3.186	1.5	20.5
1 12	6 45.86	+21 32.5	1.535	2.508	4.1	18.1	1 12	6 47.51	+19 19.8	2.220	3.192	3.2	20.7
1 22	6 36.57	+21 31.3	1.587	2.524	8.6	18.4	1 22	6 39.61	+19 58.7	2.265	3.198	6.6	20.9
2 1	6 29.63	+21 29.0	1.665	2.539	12.7	18.7	2 1	6 33.21	+20 35.6	2.337	3.204	9.8	21.1
2 11	6 25.67	+21 26.0	1.764	2.555	16.0	18.9	2 11	6 28.86	+21 9.7	2.433	3.210	12.5	21.3
174329	2002 <i>TV</i> ₁₃₆		1 3.8 45°33	3.5/	3.5	18	268631	2006 <i>DK</i> ₄₆		1 3.8 46°77	0.9/	3.9	18
12 3	7 25.16	+31 25.1	1.430	2.282	15.8	19.2	12 3	7 19.10	+19 21.4	1.884	2.726	13.0	21.3
12 13	7 18.20	+31 31.3	1.379	2.296	11.6	19.0	12 13	7 13.35	+19 32.4	1.817	2.731	9.4	21.1
12 23	7 8.25	+31 29.9	1.351	2.311	7.0	18.8	12 23	7 5.46	+19 48.6	1.774	2.736	5.4	20.9
1 2	6 56.64	+31 16.3	1.349	2.326	3.6	18.6	1 2	6 56.26	+20 8.2	1.759	2.741	1.3	20.6
1 12	6 45.11	+30 48.9	1.374	2.341	5.7	18.8	1 12	6 46.88	+20 28.7	1.773	2.746	3.7	20.8
1 22	6 35.28	+30 9.8	1.426	2.357	9.9	19.1	1 22	6 38.44	+20 48.5	1.815	2.751	7.8	21.0
2 1	6 28.34	+29 23.3	1.502	2.374	14.0	19.4	2 1	6 31.89	+21 6.6	1.884	2.757	11.5	21.3
2 11	6 24.88	+28 34.1	1.598	2.390	17.3	19.6	2 11	6 27.88	+21 22.7	1.975	2.762	14.6	21.5
169714	2002 <i>LB</i> ₅₂		1 3.8 171°36	2.1/	4.3	18	461790	2005 <i>VD</i> ₅₄		1 3.8 20°67	2.4/	4.3	18
12 3	7 21.58	+15 47.1	1.937	2.767	13.2	20.5	12 3	7 18.18	+16 37.3	1.423	2.276	15.8	21.1
12 13	7 15.09	+16 0.8	1.864	2.770	9.7	20.3	12 13	7 13.12	+16 37.0	1.365	2.283	11.6	20.9
12 23	7 6.42	+16 22.9	1.815	2.772	5.8	20.1	12 23	7 5.48	+16 46.4	1.330	2.291	6.9	20.6
1 2	6 56.39	+16 51.7	1.795	2.774	2.3	19.8	1 2	6 56.27	+17 4.0	1.320	2.300	2.7	20.4
1 12	6 46.10	+17 24.8	1.805	2.776	4.0	20.0	1 12	6 46.90	+17 27.5	1.337	2.310	4.7	20.6
1 22	6 36.70	+17 59.6	1.844	2.777	7.9	20.2	1 22	6 38.76	+17 54.1	1.381	2.321	9.3	20.8
2 1	6 29.18	+18 34.3	1.909	2.777	11.6	20.4	2 1	6 32.97	+18 21.8	1.448	2.332	13.6	21.1
2 11	6 24.20	+19 7.4	1.998	2.777	14.8	20.6	2 11	6 30.20	+18 48.8	1.536	2.345	17.1	21.4
314725	2006 <i>SB</i> ₇₈		1 3.8 37°70	0.6/	3.9	18	282796	2006 <i>PA</i> ₁₉		1 3.8 149°52	3.1/	4.9	18
12 3	7 20.36	+19 27.1	1.511	2.362	15.1	20.9	12 3	7 16.63	+11 11.4	2.519	3.333	11.0	20.7
12 13	7 14.66	+19 56.2	1.450	2.369	11.0	20.7	12 13	7 11.13	+11 19.9	2.444	3.337	8.3	20.5
12 23	7 6.34	+20 32.8	1.412	2.376	6.2	20.4	12 23	7 4.07	+11 37.9	2.394	3.340	5.4	20.4
1 2	6 56.38	+21 13.1	1.401	2.383	1.2	20.1	1 2	6 56.06	+12 4.9	2.373	3.344	3.3	20.2
1 12	6 46.19	+21 53.3	1.417	2.391	4.2	20.3	1 12	6 47.89	+12 39.2	2.383	3.347	4.0	20.3
1 22	6 37.19	+22 30.0	1.461	2.400	9.0	20.6	1 22	6 40.33	+13 18.8	2.423	3.350	6.7	20.4
2 1	6 30.54	+23 1.8	1.530	2.408	13.3	20.9	2 1	6 34.10	+14 1.4	2.490	3.352	9.5	20.6
2 11	6 26.98	+23 28.3	1.619	2.417	16.9	21.2	2 11	6 29.73	+14 45.0	2.582	3.355	12.0	20.8
153448	2001 <i>QE</i> ₂₇₃		1 3.8 80°42	5.4/	2.9	17	401047	2011 <i>TH</i> ₁₃		1 3.8 141°56	4.0/	4.4	18
12 3	7 28.28	+33 40.6	1.386	2.234	16.4	19.7	12 3	7 23.45	+12 15.8	1.977	2.793	13.5	21.5
12 13	7 20.72	+34 27.6	1.337	2.249	12.3	19.5	12 13	7 16.21	+11 44.0	1.912	2.806	10.2	21.3
12 23	7 9.80	+35 5.7	1.311	2.265	8.0	19.3	12 23	7 6.95	+11 21.3	1.872	2.818	6.7	21.1
1 2	6 56.89	+35 26.8	1.310	2.280	5.4	19.2	1 2	6 56.50	+11 8.4	1.861	2.830	4.2	21.0
1 12	6 43.96	+35 26.9	1.336	2.295	7.2	19.4	1 12	6 45.98	+11 5.2	1.879	2.840	5.2	21.1
1 22	6 32.86	+35 7.0	1.388	2.310	11.1	19.6	1 22	6 36.45	+11 10.7	1.927	2.850	8.4	21.3
2 1	6 24.98	+34 32.2	1.464	2.324	15.0	19.9	2 1	6 28.81	+11 23.5	2.002	2.859	11.6	21.5
2 11	6 20.97	+33 48.8	1.560	2.339	18.2	20.2	2 11	6 23.64	+11 41.5	2.099	2.867	14.5	21.7
499920	2011 <i>HX</i> ₂		1 3.8 191°47	1.2/	4.2	17	109338	2001 <i>QW</i> ₁₄₇		1 3.8 63°53	3.6/	5.1	18
12 3	7 18.06	+17 5.5	2.376	3.205	11.1	21.9	12 3	7 19.63	+10 34.9	1.729	2.556	14.7	19.2
12 13	7 12.30	+17 32.2	2.298	3.204	8.1	21.7	12 13	7 13.83	+11 8.3	1.665	2.565	11.1	19.0
12 23	7 4.78	+18 5.6	2.245	3.204	4.7	21.5	12 23	7 5.78	+11 57.1	1.624	2.574	7.1	18.8
1 2	6 56.14	+18 43.6	2.221	3.202	1.5	21.3	1 2	6 56.34	+12 59.2	1.610	2.584	3.9	18.7
1 12	6 47.27	+19 23.7	2.229	3.201	3.2	21.4	1 12	6 46.68	+14 10.6	1.626	2.593	4.9	18.7
1 22	6 39.05	+20 3.7	2.266	3.199	6.7	21.6	1 22	6 37.97	+15 26.3	1.669	2.603	8.5	19.0
2 1	6 32.29	+20 41.8	2.332	3.198	9.9	21.8	2 1	6 31.24	+16 41.8	1.739	2.613	12.3	19.2
2 11	6 27.60	+21 17.0	2.421	3.196	12.6	22.0	2 11	6 27.16	+17 53.4	1.832	2.623	15.5	19.5
225376	1999 <i>RR</i> ₁₆₄		1 3.8 111°14	1.7/	3.6	17	351294	2004 <i>TX</i> ₁₀₅		1 3.8 140°31	4.0/	2.9	18
12 3	7 27.81	+26 29.3	1.427	2.275	16.0	20.2	12 3	7 26.90	+31 9.8	1.746	2.585	14.0	21.0
12 13	7 20.11	+26 40.0	1.371	2.288	11.6	20.0	12 13	7 19.33	+32 1.3	1.684	2.594	10.3	20.8
12 23	7 9.36	+26 48.6	1.338	2.301	6.6	19.7	12 23	7 8.95	+32 48.0	1.648	2.603	6.5	20.6
1 2	6 56.83	+26 50.9	1.332	2.314	1.9	19.5	1 2	6 56.84	+33 23.6	1.639	2.612	4.0	20.4
1 12	6 44.27	+26 44.3	1.354	2.326	4.9	19.7	1 12	6 44.51	+33 43.7	1.660	2.620	5.8	20.6
1 22	6 33.33	+26 29.1	1.404	2.338	9.8	20.0	1 22	6 33.48	+33 47.5	1.708	2.628	9.5	20.8
2 1	6 25.29	+26 7.9	1.478	2.349	14.2	20.3	2 1	6 24.98	+33 37.6	1.782	2.634	13.1	21.0
2 11	6 20.81	+25 44.0	1.572	2.360	17.7	20.6	2 11	6 19.76	+33 18.2	1.877	2.641	16.1	21.2
371828	2007 <i>VC</i> ₅		1 3.8 7°56	4.0/	3.4	18	522220	2016 <i>AG</i> ₂₆₄		1 3.8 164°29	5.6/	5.3	18
12 3	7 20.67	+33 14.4	1.687	2.536	13.9								

EPHEMERIDES

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
303477	2005 EA ₂₁		1 3.8 328°70	1°0/ 3.6 18			298982	2004 WA ₁₁		1 3.8 12°32	0°6/ 3.9 18		
12 3	7 20.60	+23 41.3	1.378	2.237	15.8	20.5	12 3	7 19.97	+21 0.8	1.162	2.029	17.6	20.2
12 13	7 15.35	+24 7.4	1.304	2.227	11.5	20.2	12 13	7 14.99	+21 5.3	1.105	2.032	12.8	19.9
12 23	7 7.01	+24 37.2	1.253	2.218	6.5	19.9	12 23	7 6.79	+21 15.8	1.069	2.035	7.2	19.6
1 2	6 56.60	+25 6.2	1.227	2.209	1.4	19.6	1 2	6 56.57	+21 29.4	1.057	2.040	1.3	19.3
1 12	6 45.69	+25 30.1	1.228	2.201	4.9	19.8	1 12	6 46.10	+21 42.8	1.070	2.045	4.9	19.5
1 22	6 35.97	+25 46.4	1.254	2.193	10.2	20.1	1 22	6 37.16	+21 54.3	1.108	2.052	10.6	19.9
2 1	6 28.88	+25 55.2	1.304	2.186	14.9	20.3	2 1	6 31.14	+22 3.2	1.168	2.059	15.6	20.2
2 11	6 25.33	+25 57.8	1.374	2.180	18.9	20.5	2 11	6 28.81	+22 9.7	1.247	2.068	19.6	20.4
114185	2002 VA ₈₂		1 3.8 120°95	0°9/ 3.5 18			9853	1991 AN ₂		1 3.8 127°67	6°2/ 6.1 18		
12 3	7 24.13	+21 18.6	1.430	2.280	15.9	19.6	12 3	7 20.35	+ 2 56.8	2.052	2.840	14.1	17.5
12 13	7 17.71	+22 20.0	1.365	2.284	11.5	19.4	12 13	7 13.99	+ 2 59.8	1.987	2.853	11.3	17.4
12 23	7 8.25	+23 29.2	1.324	2.288	6.4	19.1	12 23	7 5.76	+ 3 20.9	1.945	2.866	8.4	17.2
1 2	6 56.78	+24 39.6	1.309	2.292	1.2	18.8	1 2	6 56.39	+ 4 0.2	1.931	2.878	6.4	17.1
1 12	6 44.90	+25 44.6	1.323	2.296	4.8	19.0	1 12	6 46.89	+ 4 56.1	1.946	2.890	6.7	17.2
1 22	6 34.27	+26 39.5	1.364	2.299	9.9	19.3	1 22	6 38.23	+ 6 4.5	1.989	2.901	8.8	17.3
2 1	6 26.28	+27 22.8	1.430	2.303	14.4	19.6	2 1	6 31.25	+ 7 21.0	2.059	2.911	11.6	17.5
2 11	6 21.79	+27 55.4	1.515	2.306	18.2	19.9	2 11	6 26.54	+ 8 40.5	2.153	2.922	14.2	17.7
117628	2005 EH ₁₁₉		1 3.8 157°09	3°8/ 2.9 18			214221	2005 ET ₁₀₀		1 3.8 351°31	7°1/ 1.9 18		
12 3	7 21.62	+34 15.3	2.377	3.208	11.0	20.0	12 3	7 23.73	+35 14.3	1.377	2.231	16.2	19.7
12 13	7 15.01	+34 44.1	2.307	3.210	8.3	19.8	12 13	7 18.01	+36 43.3	1.315	2.227	12.4	19.5
12 23	7 6.36	+35 6.4	2.262	3.212	5.5	19.7	12 23	7 8.69	+38 5.5	1.276	2.224	8.9	19.3
1 2	6 56.46	+35 18.3	2.246	3.214	3.8	19.5	1 2	6 56.90	+39 10.0	1.261	2.222	7.1	19.2
1 12	6 46.40	+35 17.6	2.260	3.215	5.0	19.6	1 12	6 44.56	+39 49.1	1.272	2.220	8.9	19.3
1 22	6 37.26	+35 4.3	2.303	3.217	7.7	19.8	1 22	6 33.68	+40 0.8	1.308	2.219	12.5	19.5
2 1	6 29.94	+34 40.3	2.373	3.218	10.5	20.0	2 1	6 25.95	+39 48.8	1.366	2.219	16.3	19.7
2 11	6 25.07	+34 8.9	2.466	3.219	13.0	20.2	2 11	6 22.32	+39 19.8	1.442	2.219	19.6	19.9
223668	2004 PB ₄₈		1 3.8 132°82	0°7/ 3.9 18			19861	Auster		1 3.8 109°52	1°8/ 4.1 18		
12 3	7 20.96	+20 22.9	2.223	3.055	11.6	21.5	12 3	7 20.94	+17 57.2	2.088	2.919	12.3	18.4
12 13	7 14.37	+20 24.0	2.156	3.066	8.4	21.3	12 13	7 14.40	+17 39.5	2.024	2.931	9.0	18.2
12 23	7 5.93	+20 28.1	2.115	3.076	4.7	21.1	12 23	7 5.97	+17 26.3	1.985	2.943	5.3	18.0
1 2	6 56.40	+20 33.6	2.104	3.086	1.1	20.8	1 2	6 56.43	+17 17.2	1.976	2.955	2.0	17.8
1 12	6 46.77	+20 39.1	2.123	3.096	3.2	21.0	1 12	6 46.84	+17 11.4	1.996	2.967	3.7	17.9
1 22	6 38.01	+20 44.0	2.172	3.105	6.9	21.3	1 22	6 38.19	+17 8.6	2.046	2.978	7.3	18.2
2 1	6 30.95	+20 47.8	2.249	3.114	10.2	21.5	2 1	6 31.32	+17 8.2	2.123	2.989	10.7	18.4
2 11	6 26.16	+20 50.8	2.349	3.122	13.0	21.7	2 11	6 26.77	+17 10.0	2.223	3.000	13.5	18.6
267782	2003 SQ ₁₅₅		1 3.8 87°16	1°2/ 3.9 18			83644	2001 SX ₃₄₃		1 3.8 334°25	1°3/ 4.3 18		
12 3	7 27.36	+19 27.6	1.277	2.126	17.5	21.0	12 3	7 16.90	+16 51.0	2.119	2.955	12.0	19.0
12 13	7 19.79	+19 33.3	1.232	2.149	12.6	20.8	12 13	7 11.73	+17 22.1	2.039	2.949	8.8	18.8
12 23	7 9.19	+19 45.7	1.208	2.171	7.1	20.5	12 23	7 4.62	+18 1.3	1.985	2.944	5.1	18.6
1 2	6 56.89	+20 1.6	1.211	2.193	1.7	20.2	1 2	6 56.26	+18 46.2	1.959	2.940	1.6	18.3
1 12	6 44.67	+20 18.0	1.240	2.214	4.8	20.5	1 12	6 47.60	+19 34.1	1.962	2.935	3.4	18.4
1 22	6 34.18	+20 33.0	1.297	2.235	10.0	20.9	1 22	6 39.63	+20 21.9	1.995	2.931	7.2	18.7
2 1	6 26.66	+20 46.2	1.377	2.256	14.6	21.2	2 1	6 33.25	+21 7.4	2.055	2.927	10.7	18.9
2 11	6 22.72	+20 57.7	1.478	2.276	18.2	21.5	2 11	6 29.12	+21 49.2	2.139	2.924	13.7	19.1
348539	2005 UV ₂₁₈		1 3.8 246°99	2°1/ 4.0 18			148311	2000 NE ₂₂		1 3.8 140°40	1°1/ 3.7 18		
12 3	7 23.91	+18 29.4	1.565	2.407	15.2	20.9	12 3	7 24.40	+27 1.0	2.344	3.173	11.2	20.8
12 13	7 17.35	+18 9.4	1.484	2.396	11.2	20.6	12 13	7 16.76	+26 52.4	2.277	3.185	8.1	20.6
12 23	7 7.98	+17 54.5	1.425	2.386	6.6	20.4	12 23	7 7.23	+26 40.8	2.237	3.197	4.6	20.4
1 2	6 56.76	+17 44.1	1.394	2.375	2.4	20.1	1 2	6 56.64	+26 24.4	2.226	3.208	1.2	20.1
1 12	6 45.09	+17 37.4	1.391	2.363	4.8	20.2	1 12	6 46.04	+26 2.5	2.248	3.218	3.3	20.3
1 22	6 34.49	+17 33.8	1.416	2.351	9.6	20.4	1 22	6 36.43	+25 35.7	2.300	3.228	6.9	20.6
2 1	6 26.24	+17 33.2	1.465	2.339	14.1	20.7	2 1	6 28.64	+25 5.9	2.380	3.238	10.0	20.8
2 11	6 21.19	+17 35.4	1.536	2.326	18.0	20.9	2 11	6 23.20	+24 34.9	2.484	3.246	12.7	21.0
313428	2002 QR ₇₉		1 3.8 35°77	7°8/ 6.5 16			459252	2012 FP ₃₆		1 3.8 295°01	0°7/ 3.9 18		
12 3	7 18.63	+ 3 20.4	1.276	2.101	19.0	20.2	12 3	7 19.87	+19 6.5	1.791	2.633	13.5	21.5
12 13	7 13.49	+ 3 25.0	1.229	2.118	15.1	20.0	12 13	7 14.18	+19 34.0	1.714	2.628	9.9	21.3
12 23	7 5.71	+ 3 56.6	1.202	2.136	11.1	19.8	12 23	7 6.12	+20 8.6	1.661	2.623	5.6	21.0
1 2	6 56.38	+ 4 55.2	1.198	2.154	8.2	19.7	1 2	6 56.51	+20 47.4	1.636	2.619	1.2	20.7
1 12	6 46.96	+ 6 16.7	1.220	2.174	8.4	19.8	1 12	6 46.53	+21 26.9	1.640	2.614	3.8	20.9
1 22	6 38.88	+ 7 53.5	1.266	2.194	11.3	20.0	1 22	6 37.44	+22 4.3	1.673	2.609	8.3	21.2
2 1	6 33.26	+ 9 37.0	1.337	2.215	14.9	20.3	2 1	6 30.33	+22 37.9	1.731	2.605	12.3	21.4
2 11	6 30.75	+11 19.7	1.428	2.237	18.2	20.6	2 11	6 25.96	+23 6.9	1.812	2.601	15.7	21.6
489084	2006 AF ₁₀₁		1 3.8 7°88	4°1/ 4.8 17			400193	Castión		1 3.8 41°07	8°1/ 4.9 16		
12 3	7 16.42	+13 20.1	0.993	1.863	19.6	20.6	12 3	7 21.96	+ 7 15.8	1.277	2.109	18.6	19.8
12 13	7 12.71	+13 31.2	0.939	1.863	14.7	20.3	12 13	7 15.61	+ 5 57.3	1.243	2.137	14.6	19.6
12 23	7 5.64	+14 1.8	0.904	1.865	9.2	20.0	12 23	7 6.74	+ 4 59.0	1.231	2.166	10.7	19.5
1 2	6 56.40	+14 50.3	0.891	1.869	4.4	19.8	1 2	6 56.57	+ 4 24.5	1.242	2.196	8.3	19.5
1 12	6 46.82	+15 51.6	0.902	1.875	6.2	19.9	1 12	6 46.61	+ 4 14.7	1.279	2.227	8.9	19.6
1 22	6 38.75	+16 59.0	0.935	1.882	11.6	20.2	1 22	6 38.22	+ 4 26.9	1.340	2.258	11.8	19.8
2 1	6 33.72	+18 6.4	0.990	1.891	16.8	20.6	2 1	6 32.39	+ 4 56.0	1.424	2.289	15.0	20.1
2 11	6 32.53	+19 9.1	1.063	1.901	21.1	20.9	2 11	6 29.63	+ 5 35.9	1.528	2.321	17.9	20.4
432175	2009 CF ₂₁		1 3.8 279°84	1°9/ 3.5 17			412984	1996 TJ ₃₂		1 3.8 93°96	3°4/ 2.9 18		
12 3	7 20.17	+29 11.3	2.397	3.232	10.8	21.1	12 3	7 24.62	+30 38.2	1.985	2.821	12.7	22.0

EPHEMERIDES

1 3.8

1 3.8

2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
113309	2002 <i>RN</i> ₁₈₇		1 3.8 93°62	3:2/ 4.2 18			197962	2004 <i>RT</i> ₉₉		1 3.8 221°33	0°0/ 3.8 18		
12 3	7 25.04	+16 11.0	1.399	2.241	16.6	19.7	12 3	7 24.82	+22 41.6	1.767	2.606	13.9	20.8
12 13	7 18.01	+15 47.0	1.345	2.256	12.3	19.4	12 13	7 17.81	+22 40.3	1.685	2.599	10.1	20.6
12 23	7 8.22	+15 31.8	1.313	2.271	7.4	19.2	12 23	7 8.19	+22 40.6	1.628	2.590	5.7	20.3
1 2	6 56.82	+15 25.2	1.307	2.285	3.4	19.0	1 2	6 56.87	+22 40.0	1.599	2.582	0.9	19.9
1 12	6 45.39	+15 26.0	1.330	2.300	5.3	19.2	1 12	6 45.19	+22 36.7	1.599	2.572	4.0	20.1
1 22	6 35.42	+15 33.1	1.379	2.314	9.9	19.5	1 22	6 34.53	+22 30.1	1.628	2.562	8.7	20.4
2 1	6 28.07	+15 44.9	1.452	2.327	14.1	19.7	2 1	6 26.08	+22 21.1	1.683	2.552	12.9	20.6
2 11	6 23.98	+15 59.9	1.546	2.341	17.7	20.0	2 11	6 20.62	+22 10.9	1.760	2.541	16.4	20.8
433430	2013 <i>TZ</i> ₉₂		1 3.8 38°22	4°9/ 2.4 18			503404	2016 <i>CW</i> ₂₄₅		1 3.8 214°53	5°5/ 5.6 17		
12 3	7 21.70	+35 11.7	2.107	2.942	12.1	20.9	12 3	7 15.74	+ 2 1.4	2.904	3.678	10.7	22.5
12 13	7 15.43	+36 9.1	2.042	2.945	9.2	20.7	12 13	7 10.40	+ 1 43.6	2.818	3.671	8.8	22.4
12 23	7 6.77	+36 59.9	2.001	2.947	6.4	20.5	12 23	7 3.71	+ 1 38.5	2.756	3.664	6.8	22.2
1 2	6 56.62	+37 38.3	1.989	2.950	4.9	20.5	1 2	6 56.16	+ 1 47.2	2.723	3.656	5.6	22.1
1 12	6 46.19	+38 0.7	2.005	2.953	6.2	20.5	1 12	6 48.42	+ 2 9.6	2.719	3.648	5.8	22.1
1 22	6 36.74	+38 6.0	2.050	2.956	8.9	20.7	1 22	6 41.15	+ 2 44.3	2.744	3.640	7.4	22.2
2 1	6 29.36	+37 56.4	2.119	2.959	11.8	20.9	2 1	6 34.98	+ 3 28.9	2.796	3.631	9.4	22.4
2 11	6 24.75	+37 35.6	2.211	2.963	14.3	21.1	2 11	6 30.39	+ 4 20.3	2.873	3.622	11.4	22.5
216666	2004 <i>AX</i> ₂₀		1 3.8 215°33	0°4/ 3.9 18			418847	2008 <i>WR</i> ₆₀		1 3.8 23°23	2°1/ 4.2 18		
12 3	7 21.59	+19 47.8	2.127	2.959	12.1	21.2	12 3	7 18.23	+17 23.4	1.825	2.667	13.4	20.4
12 13	7 15.15	+20 16.7	2.043	2.952	8.8	21.0	12 13	7 12.77	+17 9.2	1.760	2.672	9.8	20.2
12 23	7 6.58	+20 51.1	1.984	2.945	5.0	20.8	12 23	7 5.21	+17 1.2	1.719	2.678	5.8	20.0
1 2	6 56.60	+21 28.1	1.954	2.937	0.9	20.4	1 2	6 56.40	+16 58.9	1.705	2.684	2.4	19.8
1 12	6 46.25	+22 4.7	1.955	2.928	3.4	20.6	1 12	6 47.44	+17 1.2	1.719	2.691	4.1	19.9
1 22	6 36.63	+22 38.6	1.986	2.919	7.5	20.9	1 22	6 39.44	+17 7.1	1.762	2.698	8.0	20.1
2 1	6 28.74	+23 8.5	2.044	2.909	11.1	21.1	2 1	6 33.35	+17 15.7	1.830	2.705	11.7	20.4
2 11	6 23.28	+23 34.1	2.126	2.898	14.2	21.3	2 11	6 29.76	+17 25.9	1.921	2.713	14.8	20.6
473798	2016 <i>EZ</i> ₉₁		1 3.8 50°94	0°6/ 3.6 18			464976	2005 <i>YO</i> ₁₀₀		1 3.8 70°26	2°6/ 3.1 18		
12 3	7 20.33	+21 44.4	1.821	2.665	13.3	21.3	12 3	7 22.12	+27 43.8	1.822	2.667	13.2	21.4
12 13	7 14.47	+22 33.3	1.753	2.669	9.6	21.1	12 13	7 15.73	+28 33.2	1.765	2.680	9.6	21.2
12 23	7 6.26	+23 27.2	1.710	2.673	5.3	20.8	12 23	7 6.93	+29 21.3	1.733	2.693	5.6	21.0
1 2	6 56.55	+24 21.8	1.695	2.678	1.0	20.5	1 2	6 56.67	+30 2.8	1.728	2.706	2.7	20.8
1 12	6 46.55	+25 12.7	1.710	2.682	3.9	20.8	1 12	6 46.24	+30 33.9	1.753	2.720	4.7	21.0
1 22	6 37.49	+25 56.6	1.753	2.687	8.2	21.0	1 22	6 36.94	+30 52.9	1.806	2.733	8.5	21.3
2 1	6 30.45	+26 32.5	1.822	2.691	12.0	21.3	2 1	6 29.83	+31 0.9	1.885	2.747	12.1	21.5
2 11	6 26.14	+27 0.5	1.913	2.696	15.2	21.5	2 11	6 25.57	+31 0.2	1.986	2.760	15.0	21.7
261369	2005 <i>UZ</i> ₃₄₁		1 3.8 337°69	1°6/ 3.9 18			201309	2002 <i>TH</i> ₇₀		1 3.8 38°07	3°5/ 4.4 18		
12 3	7 20.30	+19 59.8	1.648	2.495	14.3	20.1	12 3	7 18.13	+13 33.5	2.056	2.884	12.6	19.6
12 13	7 14.56	+19 32.6	1.573	2.489	10.4	19.8	12 13	7 12.49	+13 2.6	1.987	2.888	9.5	19.4
12 23	7 6.34	+19 8.5	1.522	2.484	6.1	19.6	12 23	7 4.98	+12 39.5	1.943	2.893	6.1	19.2
1 2	6 56.56	+18 47.2	1.498	2.479	1.9	19.3	1 2	6 56.37	+12 25.0	1.926	2.898	3.7	19.1
1 12	6 46.53	+18 28.6	1.502	2.474	4.3	19.4	1 12	6 47.62	+12 19.0	1.939	2.903	4.7	19.2
1 22	6 37.55	+18 12.6	1.533	2.470	8.8	19.7	1 22	6 39.71	+12 20.7	1.980	2.908	7.8	19.4
2 1	6 30.73	+17 59.7	1.589	2.467	13.0	19.9	2 1	6 33.46	+12 29.0	2.048	2.914	11.0	19.6
2 11	6 26.81	+17 50.0	1.667	2.463	16.5	20.2	2 11	6 29.46	+12 42.1	2.138	2.919	13.9	19.8
103554	2000 <i>BF</i> ₂₇		1 3.8 275°89	3°5/ 3.3 18			53344	1999 <i>JX</i> ₅₄		1 3.8 272°89	4°9/ 4.3 18		
12 3	7 25.50	+29 37.2	1.433	2.285	15.8	19.1	12 3	7 19.88	+11 5.0	1.922	2.744	13.6	18.2
12 13	7 19.02	+30 6.4	1.356	2.273	11.7	18.9	12 13	7 13.99	+10 17.8	1.837	2.732	10.5	18.0
12 23	7 9.17	+30 32.2	1.301	2.262	7.1	18.6	12 23	7 5.96	+ 9 39.6	1.777	2.720	7.3	17.8
1 2	6 57.03	+30 48.2	1.272	2.250	3.5	18.3	1 2	6 56.54	+ 9 12.6	1.744	2.708	5.0	17.6
1 12	6 44.34	+30 49.8	1.270	2.238	6.0	18.4	1 12	6 46.79	+ 8 57.8	1.739	2.696	6.0	17.6
1 22	6 32.95	+30 36.4	1.295	2.226	10.8	18.7	1 22	6 37.83	+ 8 54.9	1.763	2.684	9.1	17.8
2 1	6 24.44	+30 10.8	1.343	2.214	15.4	18.9	2 1	6 30.64	+ 9 2.7	1.812	2.672	12.5	18.0
2 11	6 19.75	+29 37.9	1.411	2.201	19.3	19.1	2 11	6 25.91	+ 9 18.8	1.883	2.660	15.6	18.2
12947	3099 <i>T</i> ₋₁		1 3.8 17°72	4°3/ 3.4 18			286811	2002 <i>KH</i> ₉		1 3.8 175°95	12°2/ 7.4 18		
12 3	7 24.99	+31 0.2	1.109	1.975	18.3	16.9	12 3	7 27.50	- 4 19.2	1.244	2.025	21.8	21.2
12 13	7 19.01	+31 22.4	1.054	1.978	13.5	16.7	12 13	7 20.29	- 4 45.8	1.179	2.029	18.5	20.9
12 23	7 9.20	+31 37.5	1.020	1.982	8.3	16.4	12 23	7 9.81	- 4 37.4	1.132	2.032	15.1	20.7
1 2	6 57.01	+31 38.5	1.009	1.986	4.4	16.2	1 2	6 57.16	- 3 48.4	1.107	2.033	12.7	20.6
1 12	6 44.64	+31 21.6	1.023	1.991	6.9	16.4	1 12	6 44.03	- 2 19.5	1.107	2.034	12.5	20.6
1 22	6 34.21	+30 48.2	1.061	1.997	11.9	16.7	1 22	6 32.22	- 0 18.6	1.130	2.033	14.9	20.7
2 1	6 27.32	+30 3.8	1.121	2.004	16.8	17.0	2 1	6 23.23	+ 2 2.4	1.177	2.031	18.3	20.9
2 11	6 24.70	+29 14.2	1.199	2.011	20.8	17.2	2 11	6 17.98	+ 4 30.6	1.244	2.029	21.7	21.2
236228	2005 <i>XK</i> ₆₇		1 3.8 334°33	0°7/ 3.9 18			208761	2002 <i>PF</i> ₆₄		1 3.8 214°66	1°3/ 4.1 18		
12 3	7 21.79	+21 39.7	1.225	2.087	17.2	20.1	12 3	7 22.12	+18 33.7	2.041	2.872	12.6	21.5
12 13	7 16.39	+21 29.3	1.155	2.080	12.6	19.8	12 13	7 15.56	+18 39.0	1.957	2.865	9.2	21.3
12 23	7 7.69	+21 22.7	1.107	2.072	7.2	19.5	12 23	7 6.83	+18 49.6	1.898	2.858	5.3	21.0
1 2	6 56.80	+21 17.6	1.083	2.066	1.4	19.1	1 2	6 56.68	+19 3.9	1.868	2.850	1.6	20.7
1 12	6 45.48	+21 12.4	1.085	2.060	5.0	19.4	1 12	6 46.19	+19 19.9	1.869	2.841	3.7	20.9
1 22	6 35.55	+21 6.2	1.112	2.054	10.8	19.7	1 22	6 36.51	+19 36.2	1.899	2.832	7.7	21.1
2 1	6 28.51	+20 59.6	1.162	2.050	15.9	19.9	2 1	6 28.62	+19 51.8	1.956	2.822	11.5	21.3
2 11	6 25.24	+20 53.4	1.230	2.046	20.2	20.2	2 11	6 23.24	+20 6.6	2.035	2.811	14.6	21.5
28406	1999 <i>TB</i> ₁₀₀		1 3.8 192°52	7°1/ 6.1 18			15685	1981 <i>EU</i> ₃₃		1 3.8 108°94	2°8/ 4.3 18		
12 3	7 17.42	+ 0 26.2	2.226	3.									

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
3416	Dorrit		1 3.8 132°18	15°6/	1.3 18		228860	2003 GX ₄		1 3.8 246°16	4°6/	4.7 18	
12 3	7 51.38	+55 28.7	1.398	2.173	20.1	16.8	12 3	7 21.85	+11 18.0	1.704	2.530	14.9	20.4
12 13	7 39.89	+57 43.1	1.364	2.190	17.8	16.7	12 13	7 15.72	+10 59.5	1.619	2.518	11.4	20.2
12 23	7 21.72	+59 25.6	1.350	2.206	16.2	16.6	12 23	7 7.08	+10 53.3	1.557	2.505	7.7	19.9
1 2	6 59.03	+60 18.3	1.358	2.221	15.6	16.7	1 2	6 56.76	+11 0.0	1.522	2.492	4.8	19.7
1 12	6 35.99	+60 13.1	1.387	2.235	16.3	16.7	1 12	6 45.97	+11 19.0	1.515	2.478	5.9	19.7
1 22	6 16.81	+59 16.0	1.438	2.247	17.9	16.9	1 22	6 36.03	+11 48.4	1.536	2.464	9.6	19.9
2 1	6 4.04	+57 42.2	1.507	2.259	19.9	17.1	2 1	6 28.10	+12 25.4	1.582	2.450	13.6	20.1
2 11	5 58.20	+55 48.9	1.592	2.270	21.7	17.2	2 11	6 23.01	+13 6.7	1.649	2.435	17.1	20.3
183995	2004 EU ₆₃		1 3.8 288°53	3°1/	4.5 18		214697	2006 SO ₂₉₆		1 3.8 145°70	0°9/	4.0 18	
12 3	7 19.73	+14 22.0	1.733	2.569	14.2	20.8	12 3	7 22.20	+19 56.4	1.900	2.736	13.1	21.5
12 13	7 14.08	+14 17.0	1.656	2.563	10.7	20.6	12 13	7 15.62	+20 0.3	1.831	2.742	9.5	21.3
12 23	7 6.08	+14 21.8	1.603	2.558	6.7	20.4	12 23	7 6.84	+20 8.4	1.787	2.748	5.4	21.1
1 2	6 56.56	+14 36.2	1.576	2.552	3.3	20.2	1 2	6 56.70	+20 18.8	1.771	2.753	1.3	20.8
1 12	6 46.71	+14 58.4	1.578	2.547	4.8	20.2	1 12	6 46.39	+20 29.6	1.785	2.758	3.7	21.0
1 22	6 37.76	+15 26.4	1.607	2.542	8.8	20.5	1 22	6 37.06	+20 39.6	1.828	2.763	7.9	21.3
2 1	6 30.79	+15 57.8	1.663	2.536	12.7	20.7	2 1	6 29.71	+20 48.4	1.898	2.767	11.6	21.5
2 11	6 26.54	+16 30.5	1.739	2.531	16.1	20.9	2 11	6 24.97	+20 56.0	1.990	2.771	14.8	21.7
232759	2004 PM ₃		1 3.8 192°21	2°8/	3.3 18		338228	2002 TS ₆₄		1 3.8 142°44	4°5/	2.8 17	
12 3	7 27.27	+29 46.7	1.938	2.771	13.1	21.4	12 3	7 29.66	+32 26.5	1.737	2.571	14.3	22.0
12 13	7 19.46	+30 9.4	1.861	2.770	9.6	21.2	12 13	7 21.42	+33 24.8	1.678	2.584	10.6	21.8
12 23	7 9.06	+30 27.9	1.810	2.768	5.8	21.0	12 23	7 10.24	+34 16.9	1.644	2.596	6.8	21.6
1 2	6 57.02	+30 37.6	1.787	2.765	2.8	20.8	1 2	6 57.24	+34 55.8	1.638	2.607	4.6	21.4
1 12	6 44.70	+30 35.9	1.795	2.761	4.8	20.9	1 12	6 44.03	+35 16.6	1.661	2.618	6.3	21.6
1 22	6 33.49	+30 22.4	1.832	2.756	8.6	21.1	1 22	6 32.22	+35 19.0	1.712	2.627	9.8	21.8
2 1	6 24.54	+29 59.5	1.895	2.750	12.3	21.3	2 1	6 23.09	+35 6.0	1.789	2.636	13.3	22.0
2 11	6 18.60	+29 30.8	1.981	2.744	15.4	21.5	2 11	6 17.39	+34 42.7	1.887	2.644	16.3	22.3
463062	2011 HZ ₈₈		1 3.8 3°31	4°5/	5.1 18		131490	2001 SJ ₁₆₄		1 3.8 94°78	7°5/	1.8 18	
12 3	7 17.02	+ 9 2.5	2.014	2.832	13.2	21.2	12 3	7 27.57	+47 25.6	2.566	3.355	11.5	20.1
12 13	7 11.80	+ 8 58.4	1.940	2.832	10.2	21.0	12 13	7 19.51	+48 28.7	2.521	3.376	9.6	20.0
12 23	7 4.67	+ 9 7.4	1.890	2.832	7.0	20.8	12 23	7 8.99	+49 16.9	2.502	3.396	8.1	19.9
1 2	6 56.34	+ 9 29.8	1.868	2.832	4.7	20.6	1 2	6 57.03	+49 44.7	2.509	3.416	7.5	19.9
1 12	6 47.79	+10 4.1	1.873	2.833	5.4	20.7	1 12	6 44.98	+49 49.2	2.544	3.435	8.1	20.0
1 22	6 39.99	+10 47.9	1.907	2.833	8.2	20.8	1 22	6 34.17	+49 31.6	2.606	3.454	9.5	20.1
2 1	6 33.82	+11 37.7	1.968	2.834	11.4	21.0	2 1	6 25.66	+48 55.6	2.693	3.473	11.3	20.3
2 11	6 29.89	+12 30.4	2.051	2.835	14.3	21.2	2 11	6 20.08	+48 6.9	2.801	3.492	12.9	20.4
403256	2008 YH ₄₇		1 3.8 311°72	0°7/	3.6 18		397456	2007 GE ₆		1 3.8 240°56	3°4/	4.4 18	
12 3	7 21.69	+21 45.2	1.451	2.305	15.5	20.3	12 3	7 23.12	+14 41.1	1.695	2.527	14.7	21.7
12 13	7 16.07	+22 32.4	1.378	2.298	11.3	20.0	12 13	7 16.67	+14 24.3	1.610	2.515	11.0	21.4
12 23	7 7.46	+23 26.7	1.327	2.292	6.3	19.7	12 23	7 7.64	+14 16.3	1.548	2.502	6.9	21.2
1 2	6 56.81	+24 22.9	1.303	2.285	1.2	19.3	1 2	6 56.86	+14 17.2	1.513	2.489	3.6	20.9
1 12	6 45.64	+25 15.3	1.306	2.279	4.7	19.6	1 12	6 45.61	+14 26.1	1.507	2.475	5.1	21.0
1 22	6 35.56	+25 59.9	1.336	2.273	9.9	19.9	1 22	6 35.26	+14 41.6	1.529	2.460	9.4	21.2
2 1	6 27.99	+26 34.9	1.390	2.268	14.5	20.1	2 1	6 27.00	+15 2.1	1.576	2.446	13.5	21.4
2 11	6 23.84	+27 1.0	1.465	2.263	18.4	20.3	2 11	6 21.68	+15 25.7	1.645	2.430	17.2	21.6
68704	2002 CY ₂₁₉		1 3.8 148°96	1°5/	4.2 18		194154	2001 TA ₁₀		1 3.8 80°18	1°5/	4.1 17	
12 3	7 22.81	+17 47.7	1.818	2.653	13.7	19.7	12 3	7 24.59	+18 39.5	1.406	2.253	16.3	20.6
12 13	7 16.13	+17 57.5	1.750	2.659	10.0	19.5	12 13	7 17.73	+18 43.5	1.355	2.271	11.8	20.4
12 23	7 7.15	+18 14.0	1.706	2.666	5.8	19.3	12 23	7 8.11	+18 54.7	1.327	2.288	6.8	20.1
1 2	6 56.74	+18 35.3	1.691	2.672	1.8	19.0	1 2	6 56.90	+19 10.5	1.325	2.306	1.9	19.9
1 12	6 46.13	+18 58.9	1.705	2.677	3.9	19.2	1 12	6 45.66	+19 28.4	1.350	2.324	4.5	20.1
1 22	6 36.53	+19 22.8	1.748	2.682	8.2	19.4	1 22	6 35.89	+19 46.2	1.403	2.341	9.4	20.4
2 1	6 28.98	+19 45.8	1.817	2.687	12.0	19.7	2 1	6 28.74	+20 3.1	1.481	2.359	13.7	20.7
2 11	6 24.14	+20 7.3	1.908	2.691	15.3	19.9	2 11	6 24.87	+20 18.5	1.579	2.376	17.3	21.0
89272	2001 VF ₁₁		1 3.8 131°15	0°0/	3.7 18		242209	2003 QH ₇₁		1 3.8 139°96	0°0/	3.7 18	
12 3	7 23.69	+23 44.8	2.125	2.958	12.1	19.5	12 3	7 23.47	+20 0.6	1.833	2.670	13.5	20.6
12 13	7 16.41	+23 29.7	2.059	2.969	8.7	19.3	12 13	7 16.68	+20 47.5	1.767	2.679	9.8	20.4
12 23	7 7.14	+23 14.1	2.019	2.980	4.8	19.1	12 23	7 7.50	+21 40.7	1.725	2.687	5.5	20.2
1 2	6 56.73	+22 56.7	2.008	2.991	0.8	18.8	1 2	6 56.82	+22 35.9	1.713	2.695	0.9	19.9
1 12	6 46.28	+22 37.0	2.028	3.001	3.4	19.1	1 12	6 45.88	+23 28.6	1.730	2.703	3.8	20.1
1 22	6 36.85	+22 15.2	2.079	3.011	7.2	19.3	1 22	6 35.93	+24 15.6	1.777	2.710	8.1	20.4
2 1	6 29.33	+21 52.7	2.156	3.020	10.7	19.5	2 1	6 28.05	+24 55.5	1.850	2.717	12.0	20.6
2 11	6 24.26	+21 30.7	2.257	3.029	13.5	19.8	2 11	6 22.96	+25 28.2	1.946	2.723	15.2	20.9
61032	2000 KC ₅₆		1 3.8 157°65	0°2/	3.8 18		273791	2007 FG ₇		1 3.8 214°36	3°1/	3.1 18	
12 3	7 24.46	+21 32.6	1.800	2.638	13.7	19.9	12 3	7 22.18	+30 30.0	2.036	2.875	12.3	20.5
12 13	7 17.42	+22 3.9	1.732	2.644	9.9	19.6	12 13	7 15.76	+31 5.7	1.962	2.873	9.0	20.3
12 23	7 7.92	+22 39.3	1.688	2.650	5.5	19.4	12 23	7 6.99	+31 37.8	1.914	2.871	5.6	20.1
1 2	6 56.87	+23 15.2	1.673	2.655	0.9	19.1	1 2	6 56.75	+32 1.7	1.895	2.869	3.2	19.9
1 12	6 45.56	+23 47.8	1.687	2.660	3.9	19.3	1 12	6 46.23	+32 14.4	1.904	2.867	4.9	20.0
1 22	6 35.30	+24 15.0	1.731	2.664	8.3	19.6	1 22	6 36.66	+32 14.8	1.942	2.865	8.3	20.2
2 1	6 27.21	+24 36.3	1.801	2.668	12.3	19.8	2 1	6 29.12	+32 4.7	2.007	2.863	11.7	20.4
2 11	6 21.99	+24 52.2	1.893	2.671	15.5	20.1	2 11	6 24.29	+31 46.7	2.093	2.861	14.6	20.6
25141	1998 SC ₂₇		1 3.8 185°10	0°1/	3.8 18		259245	2003 BX ₇₁		1 3.8 333°87	7°6/	5.7 18	
12 3	7 22.28	+22 8.0	1.918	2.756	12.9	19.9	12 3	7 17.01	+ 4 19.0	1.539	2.357	16.6	

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
196752	2003 <i>SO</i> ₁₄₉		1 3.8	83°02	1°0/ 4.1	18	83537	2001 <i>SU</i> ₁₆₃		1 3.8	189°68	7°3/ 5.0	18
12 3	7 19.21	+19 10.5	2.074	2.911	12.2	20.4	12 3	7 19.22	+ 4 24.6	1.878	2.680	14.7	19.0
12 13	7 13.32	+19 20.3	2.008	2.919	8.8	20.2	12 13	7 13.47	+ 3 31.5	1.807	2.680	11.9	18.8
12 23	7 5.50	+19 35.0	1.967	2.927	5.0	20.0	12 23	7 5.66	+ 2 54.0	1.759	2.680	9.1	18.7
1 2	6 56.50	+19 52.6	1.954	2.936	1.3	19.8	1 2	6 56.58	+ 2 34.9	1.737	2.680	7.4	18.6
1 12	6 47.37	+20 11.3	1.971	2.944	3.4	19.9	1 12	6 47.27	+ 2 35.4	1.742	2.679	7.9	18.6
1 22	6 39.10	+20 29.5	2.018	2.953	7.2	20.2	1 22	6 38.81	+ 2 54.1	1.774	2.679	10.1	18.7
2 1	6 32.57	+20 46.3	2.091	2.961	10.7	20.4	2 1	6 32.12	+ 3 28.0	1.831	2.679	13.0	18.9
2 11	6 28.35	+21 1.4	2.187	2.969	13.6	20.6	2 11	6 27.84	+ 4 12.3	1.909	2.679	15.7	19.1
319674	2006 <i>TX</i> ₇₁		1 3.8	24°47	7°7/ 1.4	17	258432	2001 <i>XC</i> ₂₁₀		1 3.8	42°97	1°0/ 3.5	18
12 3	7 25.52	+37 41.6	1.572	2.413	15.2	20.3	12 3	7 21.97	+19 58.5	1.508	2.357	15.3	19.4
12 13	7 19.12	+39 25.9	1.514	2.416	11.9	20.1	12 13	7 15.99	+21 31.2	1.454	2.372	11.0	19.2
12 23	7 9.29	+41 1.2	1.480	2.418	8.9	20.0	12 23	7 7.28	+23 12.8	1.424	2.388	6.1	18.9
1 2	6 57.14	+42 16.8	1.472	2.422	7.8	19.9	1 2	6 56.84	+24 55.8	1.422	2.404	1.2	18.6
1 12	6 44.45	+43 5.1	1.491	2.425	9.2	20.0	1 12	6 46.12	+26 32.0	1.449	2.421	4.5	18.9
1 22	6 33.13	+43 24.6	1.535	2.429	12.2	20.2	1 22	6 36.58	+27 55.4	1.504	2.439	9.3	19.2
2 1	6 24.78	+43 18.9	1.602	2.433	15.4	20.4	2 1	6 29.48	+29 3.6	1.585	2.456	13.4	19.5
2 11	6 20.32	+42 55.0	1.688	2.438	18.2	20.6	2 11	6 25.55	+29 57.1	1.687	2.474	16.7	19.8
10793	Quito		1 3.8	71°20	0°4/ 3.9	18	146337	2001 <i>OW</i> ₁₄		1 3.8	58°68	5°3/ 3.6	18
12 3	7 19.38	+22 4.6	2.238	3.075	11.4	17.6	12 3	7 30.33	+36 32.8	1.535	2.372	15.7	18.3
12 13	7 13.30	+21 53.3	2.171	3.083	8.2	17.4	12 13	7 21.71	+36 44.9	1.498	2.402	11.8	18.1
12 23	7 5.42	+21 43.2	2.130	3.092	4.6	17.2	12 23	7 10.19	+36 43.8	1.484	2.433	7.8	17.9
1 2	6 56.49	+21 33.3	2.118	3.101	0.8	16.9	1 2	6 57.25	+36 24.5	1.496	2.463	5.4	17.9
1 12	6 47.48	+21 22.8	2.137	3.110	3.2	17.1	1 12	6 44.70	+35 46.0	1.537	2.493	6.7	18.0
1 22	6 39.34	+21 11.7	2.184	3.118	6.8	17.4	1 22	6 34.13	+34 52.1	1.605	2.524	10.0	18.3
2 1	6 32.87	+21 0.3	2.260	3.127	10.1	17.6	2 1	6 26.63	+33 48.6	1.697	2.554	13.4	18.6
2 11	6 28.60	+20 49.1	2.358	3.136	12.8	17.8	2 11	6 22.64	+32 41.9	1.811	2.584	16.3	18.8
73550	2003 <i>PG</i> ₉		1 3.8	202°74	4°6/ 3.4	18	467717	2009 <i>BM</i> ₇₀		1 3.8	28°77	4°6/ 6.2	16
12 3	7 27.88	+34 25.4	1.650	2.488	14.7	19.2	12 3	7 18.91	+ 5 26.4	1.856	2.663	14.6	20.1
12 13	7 20.29	+34 40.1	1.580	2.487	11.1	19.0	12 13	7 13.29	+ 6 29.2	1.789	2.674	11.3	19.9
12 23	7 9.66	+34 45.1	1.533	2.486	7.2	18.7	12 23	7 5.59	+ 7 52.7	1.746	2.685	7.8	19.7
1 2	6 57.18	+34 34.8	1.514	2.485	4.6	18.6	1 2	6 56.58	+ 9 34.0	1.731	2.696	4.9	19.6
1 12	6 44.50	+34 6.6	1.523	2.483	6.2	18.7	1 12	6 47.33	+11 27.9	1.745	2.708	5.3	19.6
1 22	6 33.29	+33 22.2	1.559	2.481	10.0	18.9	1 22	6 38.92	+13 27.1	1.790	2.721	8.3	19.8
2 1	6 24.86	+32 26.4	1.621	2.480	13.8	19.1	2 1	6 32.31	+15 25.1	1.863	2.734	11.7	20.0
2 11	6 19.93	+31 25.2	1.703	2.478	17.1	19.3	2 11	6 28.14	+17 16.5	1.960	2.748	14.7	20.3
226337	2003 <i>FA</i> ₆₆		1 3.8	204°58	5°7/ 4.9	18	185912	2000 <i>SN</i> ₁₈₃		1 3.8	172°11	4°7/ 4.6	18
12 3	7 18.87	+ 6 35.6	2.127	2.930	13.1	20.4	12 3	7 20.03	+ 9 33.1	2.240	3.048	12.4	20.2
12 13	7 13.05	+ 6 1.4	2.049	2.928	10.4	20.3	12 13	7 13.76	+ 8 56.3	2.165	3.051	9.6	20.0
12 23	7 5.36	+ 5 40.0	1.996	2.925	7.7	20.1	12 23	7 5.72	+ 8 29.3	2.116	3.053	6.7	19.9
1 2	6 56.51	+ 5 33.1	1.970	2.922	5.8	20.0	1 2	6 56.59	+ 8 13.5	2.094	3.055	4.8	19.7
1 12	6 47.42	+ 5 41.0	1.972	2.919	6.4	20.0	1 12	6 47.30	+ 8 9.0	2.103	3.056	5.5	19.8
1 22	6 39.07	+ 6 2.2	2.003	2.916	8.7	20.1	1 22	6 38.76	+ 8 15.2	2.140	3.057	8.0	19.9
2 1	6 32.28	+ 6 34.4	2.060	2.912	11.6	20.3	2 1	6 31.77	+ 8 30.4	2.205	3.057	10.9	20.1
2 11	6 27.69	+ 7 14.0	2.140	2.908	14.3	20.5	2 11	6 26.91	+ 8 52.3	2.292	3.057	13.5	20.3
382235	2012 <i>RU</i> ₃₀		1 3.8	69°68	1°0/ 3.9	18	140293	2001 <i>SQ</i> ₂₉₉		1 3.8	282°01	2°2/ 4.2	18
12 3	7 19.82	+20 52.3	2.257	3.091	11.4	20.3	12 3	7 20.38	+17 14.6	1.776	2.615	13.8	20.3
12 13	7 13.61	+20 25.8	2.184	3.094	8.3	20.1	12 13	7 14.56	+17 5.3	1.698	2.609	10.2	20.1
12 23	7 5.60	+20 0.9	2.138	3.098	4.7	19.9	12 23	7 6.39	+17 2.5	1.644	2.603	6.1	19.8
1 2	6 56.53	+19 37.1	2.120	3.102	1.3	19.7	1 2	6 56.72	+17 5.6	1.617	2.597	2.4	19.6
1 12	6 47.37	+19 14.3	2.134	3.106	3.3	19.8	1 12	6 46.74	+17 13.3	1.619	2.590	4.3	19.7
1 22	6 39.06	+18 52.9	2.177	3.110	6.9	20.1	1 22	6 37.66	+17 24.3	1.649	2.584	8.5	19.9
2 1	6 32.38	+18 33.5	2.247	3.114	10.2	20.3	2 1	6 30.58	+17 37.4	1.704	2.578	12.5	20.2
2 11	6 27.90	+18 16.4	2.341	3.118	12.9	20.5	2 11	6 26.19	+17 51.8	1.782	2.572	15.9	20.4
424168	2007 <i>HY</i> ₄₃		1 3.8	61°84	3°1/ 4.6	18	495215	2013 <i>EN</i> ₅		1 3.8	289°50	1°7/ 4.1	17
12 3	7 18.92	+13 54.0	1.887	2.719	13.4	21.2	12 3	7 21.52	+18 24.5	1.510	2.357	15.3	22.4
12 13	7 13.22	+13 50.3	1.822	2.727	10.0	21.0	12 13	7 15.84	+18 25.0	1.429	2.345	11.3	22.1
12 23	7 5.49	+13 56.2	1.782	2.735	6.3	20.8	12 23	7 7.33	+18 32.8	1.370	2.332	6.6	21.8
1 2	6 56.52	+14 10.9	1.768	2.743	3.3	20.7	1 2	6 56.89	+18 46.4	1.338	2.319	2.1	21.5
1 12	6 47.41	+14 33.1	1.784	2.752	4.5	20.7	1 12	6 45.94	+19 3.5	1.333	2.306	4.6	21.6
1 22	6 39.21	+15 0.4	1.828	2.760	8.0	21.0	1 22	6 36.00	+19 21.9	1.355	2.294	9.6	21.9
2 1	6 32.83	+15 30.9	1.898	2.769	11.5	21.2	2 1	6 28.38	+19 40.5	1.402	2.281	14.3	22.1
2 11	6 28.88	+16 2.4	1.990	2.778	14.5	21.4	2 11	6 23.99	+19 58.4	1.468	2.269	18.2	22.4
175434	2006 <i>QV</i> ₂₆		1 3.8	127°03	1°3/ 4.2	18	20618	Daniebutler		1 3.8	64°12	1°0/ 4.1	18
12 3	7 22.29	+17 42.3	2.017	2.847	12.7	21.2	12 3	7 22.59	+18 9.4	1.450	2.297	15.9	18.0
12 13	7 15.54	+18 1.4	1.954	2.861	9.3	21.1	12 13	7 16.35	+18 44.9	1.397	2.314	11.5	17.8
12 23	7 6.75	+18 26.8	1.916	2.875	5.3	20.8	12 23	7 7.42	+19 29.2	1.368	2.330	6.5	17.5
1 2	6 56.73	+18 56.4	1.907	2.888	1.6	20.6	1 2	6 56.88	+20 18.5	1.364	2.347	1.5	17.2
1 12	6 46.58	+19 27.4	1.928	2.900	3.6	20.8	1 12	6 46.21	+21 7.9	1.389	2.363	4.3	17.5
1 22	6 37.38	+19 57.7	1.979	2.912	7.4	21.0	1 22	6 36.86	+21 53.7	1.441	2.380	9.1	17.8
2 1	6 30.03	+20 26.1	2.057	2.924	11.0	21.3	2 1	6 29.99	+22 33.9	1.519	2.397	13.4	18.1
2 11	6 25.14	+20 51.8	2.159	2.935	13.9	21.5	2 11	6 26.29	+23 7.9	1.616	2.414	16.9	18.4
155780	2000 <i>SM</i> ₃₀₄		1 3.8	358°31	7°8/ 2.8	18	122373	2000 <i>QN</i> ₆₁		1 3.8	128°83	1°8/ 4.3	18
12 3	7 26.16	+41 34.0	1.642	2.473	15.1	19.							

EPHEMERIDES

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
114606	2003 CV ₁₈		1 3.8 335°41	0°7/ 4.1 18			278404	2007 QH ₁₇		1 3.8 143°85	0°8/ 4.1 18		
12 3	7 20.32	+17 54.5	1.781	2.621	13.7	19.2	12 3	7 18.79	+19 33.1	2.688	3.514	10.0	21.6
12 13	7 14.58	+18 41.3	1.707	2.620	10.0	19.0	12 13	7 12.68	+19 36.0	2.617	3.524	7.2	21.5
12 23	7 6.45	+19 37.4	1.657	2.619	5.7	18.7	12 23	7 5.06	+19 42.0	2.573	3.532	4.1	21.3
1 2	6 56.75	+20 39.0	1.635	2.618	1.2	18.4	1 2	6 56.54	+19 49.8	2.559	3.541	1.1	21.0
1 12	6 46.68	+21 41.5	1.643	2.617	3.8	18.6	1 12	6 47.91	+19 58.2	2.576	3.549	2.8	21.2
1 22	6 37.48	+22 40.8	1.680	2.616	8.3	18.9	1 22	6 39.96	+20 6.5	2.624	3.556	5.9	21.4
2 1	6 30.26	+23 34.2	1.742	2.615	12.3	19.1	2 1	6 33.36	+20 14.2	2.701	3.563	8.8	21.6
2 11	6 25.79	+24 20.6	1.827	2.615	15.6	19.4	2 11	6 28.62	+20 21.1	2.801	3.570	11.2	21.8
1718	Namibia		1 3.8 97°84	4°5/ 4.8 18			322844	2001 TJ ₁₂₄		1 3.8 58°63	7°7/ 3.2 18		
12 3	7 24.89	+10 56.8	1.717	2.536	15.1	17.8	12 3	7 29.52	+41 47.1	1.611	2.438	15.5	20.2
12 13	7 17.41	+10 38.0	1.669	2.563	11.4	17.7	12 13	7 21.54	+42 29.1	1.566	2.456	12.3	20.1
12 23	7 7.76	+10 31.8	1.645	2.590	7.5	17.5	12 23	7 10.34	+42 54.3	1.544	2.475	9.3	19.9
1 2	6 56.92	+10 38.1	1.648	2.616	4.7	17.4	1 2	6 57.36	+42 55.5	1.547	2.494	7.8	19.9
1 12	6 46.14	+10 55.6	1.680	2.642	5.6	17.5	1 12	6 44.51	+42 30.0	1.577	2.513	8.7	20.0
1 22	6 36.61	+11 21.8	1.741	2.667	8.9	17.7	1 22	6 33.57	+41 40.9	1.633	2.532	11.3	20.2
2 1	6 29.24	+11 54.1	1.828	2.691	12.3	18.0	2 1	6 25.79	+40 34.8	1.713	2.551	14.2	20.4
2 11	6 24.58	+12 29.5	1.937	2.714	15.2	18.2	2 11	6 21.75	+39 19.7	1.813	2.570	16.9	20.6
138436	2000 HA ₈₉		1 3.8 359°98	6°9/ 4.8 18			427070	2014 UM ₁₉		1 3.8 141°15	2°3/ 4.4 18		
12 3	7 18.77	+ 7 56.9	1.506	2.334	16.4	19.7	12 3	7 20.35	+15 28.6	2.062	2.890	12.6	21.6
12 13	7 13.56	+ 7 5.7	1.439	2.333	12.9	19.5	12 13	7 14.17	+15 28.0	1.992	2.896	9.3	21.4
12 23	7 5.88	+ 6 30.0	1.394	2.332	9.4	19.3	12 23	7 6.03	+15 35.0	1.947	2.902	5.7	21.2
1 2	6 56.66	+ 6 13.0	1.373	2.331	7.1	19.1	1 2	6 56.70	+15 48.4	1.930	2.908	2.6	21.0
1 12	6 47.16	+ 6 15.5	1.379	2.332	7.8	19.2	1 12	6 47.19	+16 6.9	1.943	2.913	3.9	21.1
1 22	6 38.71	+ 6 35.9	1.410	2.333	10.9	19.4	1 22	6 38.54	+16 28.7	1.986	2.918	7.5	21.4
2 1	6 32.42	+ 7 10.5	1.465	2.334	14.4	19.6	2 1	6 31.61	+16 52.3	2.055	2.923	10.9	21.6
2 11	6 29.00	+ 7 54.6	1.540	2.336	17.7	19.8	2 11	6 27.01	+17 16.4	2.148	2.928	13.9	21.8
95011	2002 AS ₁		1 3.8 328°23	1°0/ 4.1 18			375305	2008 QR ₂₁		1 3.8 58°19	4°1/ 4.6 18		
12 3	7 21.76	+19 17.0	1.436	2.287	15.8	19.3	12 3	7 18.85	+11 59.0	1.944	2.769	13.3	20.0
12 13	7 16.02	+19 32.3	1.365	2.284	11.5	19.1	12 13	7 13.12	+11 30.8	1.878	2.776	10.1	19.8
12 23	7 7.41	+19 55.2	1.317	2.281	6.6	18.8	12 23	7 5.44	+11 12.5	1.837	2.784	6.7	19.6
1 2	6 56.91	+20 23.0	1.296	2.278	1.5	18.4	1 2	6 56.60	+11 4.9	1.823	2.792	4.3	19.5
1 12	6 46.01	+20 52.0	1.301	2.275	4.5	18.6	1 12	6 47.64	+11 7.5	1.837	2.799	5.2	19.6
1 22	6 36.28	+21 19.5	1.333	2.273	9.6	18.9	1 22	6 39.56	+11 19.3	1.880	2.807	8.2	19.8
2 1	6 29.03	+21 44.1	1.390	2.271	14.3	19.2	2 1	6 33.24	+11 38.2	1.949	2.816	11.5	20.0
2 11	6 25.09	+22 5.3	1.466	2.269	18.1	19.4	2 11	6 29.26	+12 1.9	2.041	2.824	14.4	20.2
425352	2010 BX ₄₆		1 3.8 209°11	5°9/ 5.1 18			240860	2006 BE ₂₁₇		1 3.8 49°40	3°0/ 4.5 18		
12 3	7 16.49	+ 3 59.3	2.536	3.324	11.7	21.5	12 3	7 21.90	+15 16.9	1.334	2.182	16.9	20.1
12 13	7 11.11	+ 3 19.0	2.458	3.323	9.5	21.4	12 13	7 16.07	+15 19.4	1.275	2.190	12.5	19.9
12 23	7 4.21	+ 2 50.9	2.405	3.321	7.3	21.2	12 23	7 7.39	+15 33.9	1.238	2.197	7.6	19.6
1 2	6 56.38	+ 2 36.9	2.380	3.319	6.0	21.2	1 2	6 56.93	+15 58.9	1.227	2.206	3.3	19.4
1 12	6 48.38	+ 2 37.5	2.383	3.316	6.3	21.2	1 12	6 46.25	+16 31.2	1.242	2.214	5.2	19.5
1 22	6 40.97	+ 2 51.9	2.414	3.314	8.1	21.3	1 22	6 36.91	+17 7.7	1.284	2.223	10.0	19.8
2 1	6 34.83	+ 3 17.8	2.472	3.312	10.3	21.4	2 1	6 30.15	+17 45.2	1.349	2.232	14.5	20.1
2 11	6 30.49	+ 3 52.4	2.553	3.309	12.5	21.6	2 11	6 26.71	+18 21.6	1.434	2.241	18.2	20.4
410516	2008 EG ₁₄₃		1 3.8 134°97	5°3/ 4.9 18			288397	2004 CN ₁₂₃		1 3.8 3°73	2°0/ 4.3 18		
12 3	7 20.17	+ 7 56.0	2.049	2.857	13.4	21.7	12 3	7 20.05	+17 11.2	1.513	2.361	15.3	21.1
12 13	7 13.96	+ 7 26.7	1.982	2.866	10.5	21.5	12 13	7 14.60	+17 16.4	1.445	2.360	11.2	20.9
12 23	7 5.87	+ 7 9.9	1.940	2.874	7.5	21.4	12 23	7 6.54	+17 30.4	1.400	2.361	6.6	20.6
1 2	6 56.64	+ 7 6.9	1.924	2.882	5.4	21.3	1 2	6 56.81	+17 51.6	1.380	2.361	2.4	20.3
1 12	6 47.28	+ 7 17.4	1.938	2.890	6.0	21.3	1 12	6 46.77	+18 17.5	1.389	2.362	4.5	20.5
1 22	6 38.76	+ 7 39.8	1.980	2.897	8.6	21.5	1 22	6 37.83	+18 45.3	1.424	2.363	9.2	20.7
2 1	6 31.93	+ 8 11.5	2.048	2.904	11.5	21.7	2 1	6 31.18	+19 13.2	1.484	2.365	13.5	21.0
2 11	6 27.37	+ 8 49.2	2.139	2.910	14.2	21.9	2 11	6 27.56	+19 39.8	1.564	2.367	17.2	21.2
124926	2001 TO ₇₀		1 3.8 221°49	4°2/ 2.5 18			469715	2005 JB ₁₃₂		1 3.8 246°29	1°0/ 4.2 16		
12 3	7 21.61	+36 49.3	2.865	3.685	9.7	20.5	12 3	7 17.83	+17 58.5	2.758	3.583	9.9	23.1
12 13	7 14.98	+37 30.5	2.783	3.676	7.4	20.3	12 13	7 12.16	+18 18.8	2.662	3.567	7.2	22.9
12 23	7 6.47	+38 5.3	2.727	3.667	5.3	20.1	12 23	7 4.88	+18 44.2	2.592	3.550	4.2	22.7
1 2	6 56.75	+38 29.6	2.701	3.657	4.2	20.0	1 2	6 56.54	+19 13.1	2.553	3.534	1.2	22.5
1 12	6 46.75	+38 40.9	2.705	3.647	5.1	20.1	1 12	6 47.89	+19 43.8	2.545	3.517	2.8	22.6
1 22	6 37.43	+38 38.5	2.738	3.637	7.3	20.2	1 22	6 39.72	+20 14.5	2.567	3.499	6.0	22.7
2 1	6 29.64	+38 24.0	2.799	3.627	9.6	20.4	2 1	6 32.76	+20 44.0	2.619	3.481	9.0	22.9
2 11	6 24.02	+38 0.1	2.883	3.616	11.8	20.5	2 11	6 27.61	+21 11.5	2.695	3.463	11.6	23.1
310125	2011 EZ ₈₃		1 3.8 66°90	2°9/ 4.5 18			430257	2013 WV ₃₁		1 3.8 307°52	3°5/ 4.4 17		
12 3	7 19.06	+14 39.4	1.951	2.782	13.1	20.4	12 3	7 17.97	+13 30.6	2.195	3.020	12.0	20.8
12 13	7 13.30	+14 28.3	1.885	2.790	9.7	20.2	12 13	7 12.42	+12 57.3	2.115	3.014	9.1	20.6
12 23	7 5.55	+14 25.4	1.843	2.797	6.0	20.0	12 23	7 5.06	+12 31.0	2.060	3.009	5.9	20.4
1 2	6 56.60	+14 30.4	1.829	2.805	3.1	19.9	1 2	6 56.57	+12 12.5	2.033	3.004	3.6	20.3
1 12	6 47.52	+14 42.2	1.844	2.813	4.3	20.0	1 12	6 47.87	+12 2.1	2.035	2.998	4.6	20.3
1 22	6 39.33	+14 59.2	1.888	2.820	7.8	20.2	1 22	6 39.90	+11 59.5	2.066	2.993	7.6	20.5
2 1	6 32.92	+15 19.9	1.958	2.828	11.3	20.4	2 1	6 33.46	+12 3.6	2.124	2.988	10.8	20.7
2 11	6 28.88	+15 42.4	2.050	2.836	14.2	20.6	2 11	6 29.16	+12 13.0	2.205	2.983	13.6	20.9
518445	2004 RW ₈₄		1 3.8 175°34	16°0/ 8.7 18			272980	2006 DL ₂₂		1 3.9 177°26	1°9/ 4.4 18		
12 3	7 23.57	-14 55.8	1.537	2.248	21.2	21.6	12 3	7 18.69	+15 52.0	2.404	3.229	11.	

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
296551	2009 QY ₁		1 3.9 173°72	1.7/ 4.1	18		310413	1999 TN ₁₅₀		1 3.9 56°28	8°0/ 3.1	17	
12 3	7 22.12	+18 34.4	2.194	3.022	11.9	21.1	12 3	7 30.85	+39 49.9	1.358	2.197	17.2	19.9
12 13	7 15.35	+18 12.7	2.119	3.025	8.7	20.9	12 13	7 22.79	+40 47.3	1.323	2.223	13.4	19.7
12 23	7 6.67	+17 54.4	2.069	3.027	5.1	20.7	12 23	7 11.15	+41 27.7	1.311	2.249	9.9	19.6
1 2	6 56.83	+17 39.1	2.048	3.028	1.9	20.5	1 2	6 57.56	+41 42.3	1.323	2.276	8.0	19.6
1 12	6 46.83	+17 26.5	2.058	3.029	3.6	20.6	1 12	6 44.22	+41 28.0	1.361	2.302	9.2	19.7
1 22	6 37.69	+17 16.4	2.098	3.030	7.2	20.8	1 22	6 33.10	+40 48.0	1.424	2.329	12.1	19.9
2 1	6 30.25	+17 8.8	2.166	3.030	10.6	21.1	2 1	6 25.54	+39 50.0	1.510	2.356	15.4	20.2
2 11	6 25.11	+17 3.6	2.257	3.029	13.5	21.3	2 11	6 22.06	+38 42.5	1.615	2.383	18.2	20.5
324644	2007 CV		1 3.9 87°68	8°7/ 4.0	18		380662	2005 EM ₁₅₂		1 3.9 243°14	0°3/ 3.9	18	
12 3	7 36.61	+48 22.3	1.917	2.709	14.8	20.4	12 3	7 18.53	+20 59.1	2.494	3.326	10.5	21.3
12 13	7 26.36	+48 36.3	1.860	2.719	12.3	20.3	12 13	7 12.79	+21 11.8	2.407	3.316	7.6	21.1
12 23	7 12.90	+48 28.5	1.825	2.729	10.0	20.1	12 23	7 5.29	+21 27.5	2.345	3.306	4.3	20.8
1 2	6 57.77	+47 52.3	1.817	2.740	8.7	20.1	1 2	6 56.67	+21 44.5	2.313	3.296	0.8	20.5
1 12	6 43.01	+46 46.0	1.836	2.750	9.3	20.1	1 12	6 47.77	+22 0.9	2.312	3.285	3.0	20.7
1 22	6 30.39	+45 14.5	1.883	2.760	11.2	20.3	1 22	6 39.49	+22 15.6	2.341	3.274	6.5	20.9
2 1	6 21.13	+43 26.1	1.955	2.770	13.7	20.5	2 1	6 32.62	+22 28.0	2.398	3.263	9.7	21.1
2 11	6 15.72	+41 30.4	2.050	2.780	16.0	20.6	2 11	6 27.76	+22 38.0	2.479	3.252	12.4	21.3
320755	2008 EH ₆₇		1 3.9 174°47	0°4/ 3.9	18		446754	2015 PY ₈		1 3.9 65°49	8°0/ 3.1	17	
12 3	7 21.82	+21 24.2	2.218	3.050	11.7	21.7	12 3	7 32.72	+38 55.5	1.264	2.106	18.1	20.3
12 13	7 15.19	+21 27.9	2.143	3.052	8.4	21.5	12 13	7 24.30	+39 55.1	1.229	2.132	13.9	20.1
12 23	7 6.61	+21 34.0	2.093	3.054	4.8	21.2	12 23	7 12.05	+40 37.9	1.216	2.157	10.1	19.9
1 2	6 56.82	+21 40.5	2.073	3.056	0.9	20.9	1 2	6 57.71	+40 54.3	1.227	2.183	8.0	19.9
1 12	6 46.85	+21 46.0	2.084	3.057	3.2	21.1	1 12	6 43.64	+40 40.4	1.264	2.209	9.3	20.0
1 22	6 37.71	+21 49.7	2.124	3.057	7.1	21.4	1 22	6 31.96	+40 0.0	1.325	2.235	12.6	20.3
2 1	6 30.28	+21 51.5	2.193	3.057	10.5	21.6	2 1	6 24.09	+39 1.3	1.410	2.260	16.0	20.6
2 11	6 25.16	+21 51.9	2.284	3.057	13.3	21.8	2 11	6 20.54	+37 53.5	1.513	2.286	19.0	20.9
379956	2012 PJ ₃₃		1 3.9 240°94	0°2/ 3.9	17		30347	Pattyhunt		1 3.9 240°44	2°5/ 4.2	18	
12 3	7 20.65	+22 19.3	2.551	3.380	10.4	21.8	12 3	7 23.56	+17 21.4	1.614	2.453	15.0	18.7
12 13	7 14.28	+22 17.2	2.456	3.364	7.6	21.6	12 13	7 17.11	+17 1.4	1.534	2.444	11.1	18.5
12 23	7 6.10	+22 16.2	2.387	3.348	4.3	21.4	12 23	7 7.99	+16 47.7	1.478	2.436	6.7	18.2
1 2	6 56.76	+22 14.9	2.348	3.331	0.7	21.1	1 2	6 57.12	+16 39.9	1.448	2.427	2.7	17.9
1 12	6 47.11	+22 12.0	2.341	3.314	3.0	21.3	1 12	6 45.84	+16 37.2	1.447	2.418	4.8	18.0
1 22	6 38.08	+22 7.1	2.364	3.296	6.5	21.5	1 22	6 35.59	+16 38.7	1.474	2.409	9.3	18.3
2 1	6 30.49	+22 0.4	2.416	3.277	9.7	21.6	2 1	6 27.60	+16 44.0	1.526	2.399	13.7	18.5
2 11	6 24.96	+21 52.6	2.491	3.258	12.5	21.8	2 11	6 22.66	+16 52.1	1.599	2.389	17.4	18.7
186875	2004 HG ₆₁		1 3.9 327°77	6°4/ 1.9	18		320726	2008 DV ₈₈		1 3.9 165°51	0°0/ 3.7	18	
12 3	7 22.90	+34 19.0	1.526	2.376	15.1	19.6	12 3	7 21.88	+22 18.2	1.954	2.793	12.7	21.5
12 13	7 17.33	+35 47.9	1.454	2.365	11.5	19.4	12 13	7 15.49	+22 27.1	1.882	2.795	9.2	21.3
12 23	7 8.42	+37 12.3	1.406	2.356	8.1	19.2	12 23	7 6.89	+22 38.3	1.835	2.797	5.2	21.1
1 2	6 57.17	+38 22.5	1.384	2.347	6.4	19.1	1 2	6 56.93	+22 49.4	1.816	2.798	0.8	20.8
1 12	6 45.23	+39 10.8	1.389	2.338	8.2	19.1	1 12	6 46.74	+22 58.4	1.826	2.800	3.6	21.0
1 22	6 34.46	+39 34.2	1.419	2.330	11.8	19.3	1 22	6 37.50	+23 4.2	1.866	2.801	7.7	21.2
2 1	6 26.48	+39 34.9	1.472	2.322	15.5	19.5	2 1	6 30.19	+23 6.8	1.933	2.802	11.4	21.5
2 11	6 22.29	+39 18.4	1.545	2.315	18.8	19.7	2 11	6 25.47	+23 7.1	2.022	2.802	14.6	21.7
287463	2003 AD ₁₉		1 3.9 280°73	1°9/ 4.4	18		174154	2002 PP ₄₆		1 3.9 73°82	1°2/ 3.7	18	
12 3	7 19.92	+16 10.8	1.825	2.662	13.6	20.2	12 3	7 27.60	+25 35.0	1.664	2.503	14.5	20.3
12 13	7 14.35	+16 31.2	1.737	2.647	10.1	20.0	12 13	7 19.47	+25 46.4	1.625	2.539	10.4	20.1
12 23	7 6.41	+17 1.2	1.673	2.631	6.0	19.7	12 23	7 8.95	+25 56.4	1.612	2.574	5.8	19.9
1 2	6 56.83	+17 39.1	1.636	2.616	2.2	19.4	1 2	6 57.21	+26 1.6	1.626	2.608	1.4	19.7
1 12	6 46.76	+18 21.9	1.628	2.601	4.1	19.5	1 12	6 45.71	+26 0.1	1.670	2.642	4.1	20.0
1 22	6 37.43	+19 6.4	1.649	2.585	8.4	19.7	1 22	6 35.75	+25 52.0	1.743	2.675	8.3	20.3
2 1	6 29.97	+19 50.1	1.696	2.570	12.5	19.9	2 1	6 28.29	+25 39.2	1.842	2.708	12.0	20.6
2 11	6 25.19	+20 31.2	1.765	2.554	16.0	20.1	2 11	6 23.84	+25 23.8	1.962	2.740	15.0	20.9
168518	1999 TX ₁₇₀		1 3.9 16°71	1°0/ 3.7	18		137572	1999 VC ₁₁₂		1 3.9 344°21	0°8/ 3.7	18	
12 3	7 21.09	+24 17.2	1.252	2.117	16.8	19.7	12 3	7 23.33	+23 3.0	1.258	2.118	17.0	20.0
12 13	7 15.79	+24 32.2	1.195	2.121	12.1	19.4	12 13	7 17.58	+23 29.5	1.192	2.115	12.4	19.7
12 23	7 7.35	+24 49.0	1.160	2.126	6.8	19.2	12 23	7 8.50	+24 0.5	1.148	2.113	7.0	19.4
1 2	6 56.96	+25 3.5	1.149	2.132	1.4	18.8	1 2	6 57.21	+24 31.1	1.128	2.111	1.3	19.1
1 12	6 46.36	+25 12.3	1.165	2.139	4.9	19.1	1 12	6 45.48	+24 56.6	1.135	2.109	5.0	19.3
1 22	6 37.26	+25 14.2	1.205	2.146	10.2	19.4	1 22	6 35.16	+25 14.4	1.168	2.108	10.6	19.6
2 1	6 31.01	+25 10.2	1.269	2.155	14.9	19.7	2 1	6 27.75	+25 24.6	1.223	2.107	15.6	19.9
2 11	6 28.35	+25 2.0	1.351	2.164	18.8	20.0	2 11	6 24.15	+25 28.9	1.298	2.106	19.7	20.2
143408	2003 BS ₄₅		1 3.9 201°35	1°6/ 4.2	18		210264	2007 SY ₂		1 3.9 33°26	0°6/ 3.9	18	
12 3	7 20.23	+17 32.3	2.000	2.833	12.7	20.3	12 3	7 21.99	+21 26.2	1.191	2.054	17.5	19.6
12 13	7 14.25	+17 39.3	1.923	2.832	9.3	20.1	12 13	7 16.33	+21 24.5	1.143	2.067	12.6	19.3
12 23	7 6.18	+17 52.6	1.872	2.830	5.5	19.9	12 23	7 7.59	+21 27.5	1.116	2.081	7.1	19.1
1 2	6 56.79	+18 10.9	1.848	2.829	1.9	19.6	1 2	6 57.03	+21 32.6	1.114	2.096	1.3	18.7
1 12	6 47.13	+18 32.2	1.855	2.827	3.7	19.7	1 12	6 46.44	+21 37.2	1.137	2.112	4.8	19.0
1 22	6 38.30	+18 54.6	1.890	2.825	7.6	20.0	1 22	6 37.48	+21 40.2	1.186	2.129	10.2	19.4
2 1	6 31.24	+19 16.9	1.952	2.822	11.3	20.2	2 1	6 31.44	+21 41.6	1.258	2.146	14.9	19.7
2 11	6 26.62	+19 38.2	2.037	2.820	14.4	20.4	2 11	6 28.95	+21 41.8	1.349	2.164	18.7	20.0
261183	2005 TL ₁₃₅		1 3.9 313°57	5°7/ 2.7	18		407883	2012 BQ ₁₀₄		1 3.9 1°87	3°7/ 4.5	18	
12 3	7 24.02	+35 37.1	1.695	2.537	14.2	20.2	12 3	7 19.07	+14 38.5	1.367	2.217	16.	

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
454600	2014 <i>PT</i> ₆₂		1 3.9 209°37	0°5/ 3.7 18			399321	1998 <i>QL</i> ₅₂		1 3.9 62°62	7°3/ 6.4 18		
12 3	7 23.95	+23 5.9	1.889	2.726	13.2	22.3	12 3	7 23.50	+3 9.8	1.521	2.325	17.5	20.8
12 13	7 17.18	+23 28.3	1.809	2.721	9.5	22.1	12 13	7 16.54	+3 5.2	1.487	2.362	13.8	20.6
12 23	7 7.95	+23 53.1	1.754	2.716	5.4	21.8	12 23	7 7.36	+3 23.2	1.473	2.399	10.2	20.5
1 2	6 57.12	+24 17.0	1.727	2.710	1.0	21.5	1 2	6 57.01	+4 3.5	1.485	2.436	7.6	20.4
1 12	6 45.91	+24 36.9	1.730	2.703	3.9	21.7	1 12	6 46.83	+5 2.9	1.524	2.472	7.8	20.5
1 22	6 35.63	+24 51.3	1.763	2.696	8.2	22.0	1 22	6 38.02	+6 15.7	1.591	2.508	10.2	20.8
2 1	6 27.39	+25 0.0	1.822	2.688	12.2	22.2	2 1	6 31.49	+7 35.6	1.682	2.544	13.3	21.0
2 11	6 21.96	+25 4.3	1.903	2.679	15.5	22.4	2 11	6 27.74	+8 56.8	1.796	2.579	16.0	21.3
432901	2011 <i>OX</i> ₃₉		1 3.9 211°02	3°2/ 3.3 17			29875	1999 <i>GY</i> ₁₄		1 3.9 353°34	0°2/ 3.9 18		
12 3	7 22.64	+35 30.7	3.056	3.873	9.2	22.7	12 3	7 18.03	+21 40.3	1.860	2.707	12.9	18.6
12 13	7 15.49	+35 36.1	2.972	3.867	6.9	22.5	12 13	7 12.87	+21 50.0	1.787	2.704	9.3	18.3
12 23	7 6.68	+35 34.5	2.914	3.860	4.6	22.4	12 23	7 5.50	+22 3.0	1.738	2.701	5.3	18.1
1 2	6 56.89	+35 23.4	2.887	3.852	3.2	22.2	1 2	6 56.75	+22 17.3	1.716	2.699	0.9	17.8
1 12	6 46.97	+35 1.6	2.891	3.845	4.1	22.3	1 12	6 47.75	+22 30.6	1.723	2.697	3.6	18.0
1 22	6 37.79	+34 29.5	2.926	3.837	6.4	22.4	1 22	6 39.63	+22 41.5	1.758	2.696	7.9	18.2
2 1	6 30.09	+33 49.3	2.989	3.828	8.8	22.6	2 1	6 33.40	+22 49.7	1.819	2.695	11.7	18.5
2 11	6 24.40	+33 3.6	3.078	3.819	10.9	22.7	2 11	6 29.74	+22 55.3	1.902	2.695	14.9	18.7
250112	2002 <i>KY</i> ₁₄		1 3.9 86°49	1°0/ 5.0 16			210468	1995 <i>SW</i> ₈		1 3.9 261°50	3°5/ 3.2 18		
12 3	7 2.36	+9 32.2	12.636	13.431	2.6	21.1	12 3	7 25.77	+30 54.6	1.834	2.673	13.5	20.9
12 13	7 0.28	+9 27.2	12.567	13.444	2.0	21.1	12 13	7 18.89	+31 26.9	1.743	2.653	10.0	20.7
12 23	6 57.95	+9 24.2	12.526	13.458	1.4	21.0	12 23	7 9.13	+31 55.4	1.676	2.632	6.3	20.4
1 2	6 55.49	+9 23.2	12.515	13.472	1.0	21.0	1 2	6 57.37	+32 14.4	1.637	2.611	3.6	20.2
1 12	6 53.02	+9 24.1	12.535	13.486	1.1	21.0	1 12	6 45.01	+32 19.9	1.627	2.590	5.5	20.3
1 22	6 50.64	+9 26.7	12.585	13.500	1.6	21.1	1 22	6 33.58	+32 10.8	1.645	2.568	9.5	20.5
2 1	6 48.47	+9 30.8	12.665	13.513	2.2	21.1	2 1	6 24.45	+31 49.1	1.688	2.546	13.4	20.6
2 11	6 46.62	+9 36.2	12.772	13.527	2.8	21.2	2 11	6 18.54	+31 19.1	1.753	2.523	16.9	20.8
395392	2011 <i>SX</i> ₈₆		1 3.9 104°48	2°0/ 4.3 18			309846	2009 <i>CD</i> ₅₀		1 3.9 276°90	1°7/ 3.5 18		
12 3	7 25.22	+17 7.9	1.775	2.606	14.2	21.5	12 3	7 23.32	+25 27.6	1.640	2.488	14.3	21.1
12 13	7 17.74	+17 4.0	1.723	2.630	10.3	21.3	12 13	7 17.24	+25 57.9	1.553	2.470	10.5	20.8
12 23	7 8.04	+17 6.8	1.695	2.653	6.1	21.1	12 23	7 8.25	+26 29.8	1.490	2.453	6.0	20.5
1 2	6 57.10	+17 14.7	1.696	2.675	2.3	20.9	1 2	6 57.23	+26 58.8	1.453	2.435	1.9	20.2
1 12	6 46.19	+17 26.2	1.726	2.697	4.1	21.1	1 12	6 45.59	+27 20.5	1.445	2.417	4.7	20.3
1 22	6 36.49	+17 39.6	1.786	2.719	8.1	21.4	1 22	6 34.89	+27 32.9	1.465	2.399	9.5	20.6
2 1	6 28.97	+17 54.1	1.872	2.739	11.8	21.7	2 1	6 26.51	+27 36.2	1.509	2.380	14.0	20.8
2 11	6 24.18	+18 9.0	1.980	2.759	14.9	21.9	2 11	6 21.41	+27 32.8	1.575	2.362	17.7	21.0
42252	2001 <i>LU</i> ₂		1 3.9 190°37	4°6/ 2.3 18			491955	2013 <i>CZ</i> ₁₇₀		1 3.9 11°46	2°5/ 4.3 18		
12 3	7 24.97	+31 32.8	1.875	2.713	13.2	18.7	12 3	7 19.41	+17 39.7	1.107	1.974	18.3	20.5
12 13	7 18.21	+32 56.0	1.805	2.713	9.9	18.5	12 13	7 14.77	+17 29.7	1.051	1.976	13.5	20.3
12 23	7 8.68	+34 16.7	1.760	2.712	6.5	18.3	12 23	7 6.90	+17 30.0	1.016	1.979	8.0	20.0
1 2	6 57.26	+35 27.2	1.743	2.711	4.6	18.2	1 2	6 56.99	+17 39.2	1.003	1.984	2.9	19.7
1 12	6 45.35	+36 21.4	1.756	2.710	6.3	18.3	1 12	6 46.83	+17 54.9	1.016	1.990	5.4	19.9
1 22	6 34.40	+36 56.7	1.797	2.708	9.7	18.5	1 22	6 38.17	+18 14.7	1.052	1.997	10.9	20.2
2 1	6 25.73	+37 14.0	1.863	2.707	13.0	18.7	2 1	6 32.43	+18 36.3	1.111	2.005	15.9	20.5
2 11	6 20.20	+37 17.1	1.951	2.705	15.9	18.9	2 11	6 30.39	+18 57.9	1.187	2.014	20.0	20.8
325778	2010 <i>OG</i> ₆₀		1 3.9 26°56	6°1/ 4.9 18			131284	2001 <i>FH</i> ₉₇		1 3.9 351°48	0°0/ 3.8 18		
12 3	7 19.27	+9 38.1	1.467	2.301	16.5	20.3	12 3	7 19.31	+21 1.9	1.995	2.835	12.4	19.4
12 13	7 13.93	+8 53.9	1.408	2.308	12.7	20.1	12 13	7 13.69	+21 31.9	1.921	2.835	9.0	19.2
12 23	7 6.13	+8 24.6	1.371	2.315	8.9	19.9	12 23	7 5.94	+22 6.5	1.872	2.834	5.0	18.9
1 2	6 56.84	+8 12.4	1.359	2.323	6.3	19.8	1 2	6 56.83	+22 42.8	1.851	2.834	0.8	18.6
1 12	6 47.39	+8 17.5	1.374	2.332	7.1	19.9	1 12	6 47.45	+23 17.6	1.860	2.833	3.5	18.8
1 22	6 39.09	+8 37.8	1.414	2.341	10.4	20.1	1 22	6 38.88	+23 48.6	1.897	2.833	7.6	19.1
2 1	6 33.03	+9 9.8	1.478	2.351	14.1	20.3	2 1	6 32.10	+24 14.7	1.962	2.833	11.2	19.3
2 11	6 29.86	+9 49.2	1.562	2.361	17.3	20.5	2 11	6 27.80	+24 35.9	2.049	2.833	14.3	19.5
247295	2001 <i>SA</i> ₃₄₄		1 3.9 48°00	1°8/ 3.9 18			34156	Gopalakrishnan		1 3.9 130°93	2°8/ 3.3 18		
12 3	7 24.09	+20 39.2	1.462	2.310	15.7	19.2	12 3	7 26.65	+28 54.4	1.733	2.573	14.0	18.8
12 13	7 17.26	+19 54.9	1.413	2.329	11.4	19.0	12 13	7 19.21	+29 27.8	1.672	2.584	10.2	18.6
12 23	7 7.87	+19 13.4	1.387	2.349	6.5	18.8	12 23	7 9.08	+29 58.1	1.635	2.594	6.1	18.4
1 2	6 57.09	+18 35.1	1.387	2.368	2.1	18.5	1 2	6 57.33	+30 19.9	1.626	2.604	2.9	18.2
1 12	6 46.43	+18 0.6	1.416	2.389	4.5	18.7	1 12	6 45.42	+30 30.0	1.647	2.614	5.0	18.4
1 22	6 37.26	+17 31.0	1.472	2.409	9.1	19.1	1 22	6 34.80	+30 27.7	1.696	2.623	9.0	18.6
2 1	6 30.62	+17 7.1	1.553	2.430	13.3	19.4	2 1	6 26.64	+30 15.3	1.771	2.631	12.7	18.9
2 11	6 27.05	+16 48.8	1.654	2.451	16.6	19.6	2 11	6 21.63	+29 56.2	1.867	2.640	15.9	19.1
420851	2013 <i>JN</i> ₅₆		1 3.9 133°50	0°1/ 3.9 18			166707	2002 <i>TS</i> ₁₉₂		1 3.9 134°37	0°8/ 4.0 18		
12 3	7 22.02	+20 52.3	2.179	3.011	11.9	21.9	12 3	7 20.24	+20 39.3	2.657	3.483	10.2	20.5
12 13	7 15.35	+21 19.9	2.114	3.023	8.5	21.7	12 13	7 13.73	+20 22.0	2.588	3.494	7.3	20.3
12 23	7 6.73	+21 51.1	2.074	3.035	4.8	21.5	12 23	7 5.69	+20 6.3	2.545	3.505	4.2	20.1
1 2	6 56.93	+22 23.2	2.064	3.046	0.8	21.2	1 2	6 56.78	+19 51.6	2.533	3.515	1.1	19.9
1 12	6 46.97	+22 53.4	2.084	3.057	3.2	21.4	1 12	6 47.82	+19 37.5	2.553	3.525	2.8	20.1
1 22	6 37.88	+23 19.8	2.135	3.068	7.0	21.7	1 22	6 39.60	+19 24.0	2.603	3.534	6.0	20.3
2 1	6 30.53	+23 42.0	2.213	3.078	10.4	21.9	2 1	6 32.80	+19 11.3	2.681	3.543	8.9	20.5
2 11	6 25.52	+23 59.9	2.315	3.087	13.2	22.1	2 11	6 27.90	+18 59.8	2.785	3.552	11.3	20.7
503730	2016 <i>LF</i> ₅		1 3.9 224°99	9°2/ 6.8 17			313417	2002 <i>PJ</i> ₁₉₇		1 3.9 188°43	0°6/ 3.8 18		
12 3	7 15.67	-11 27.0	2.906	3.600	12.4	22.4							

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
242453	2004 <i>RH</i> ₁		1 3.9 133°71	0°4/ 3.8 18			454445	2014 <i>OF</i> ₃₀		1 3.9 38°82	0°6/ 3.8 18		
12 3	7 21.54	+22 12.2	2.361	3.191	11.1	21.3	12 3	7 22.53	+23 38.4	1.360	2.218	16.1	20.5
12 13	7 14.93	+22 46.1	2.295	3.205	8.0	21.1	12 13	7 16.58	+23 50.6	1.307	2.229	11.6	20.2
12 23	7 6.48	+23 22.4	2.256	3.217	4.4	20.9	12 23	7 7.74	+24 4.8	1.276	2.241	6.5	20.0
1 2	6 56.92	+23 58.3	2.247	3.229	0.8	20.6	1 2	6 57.16	+24 17.4	1.270	2.253	1.2	19.7
1 12	6 47.21	+24 31.0	2.269	3.241	3.1	20.8	1 12	6 46.49	+24 25.5	1.292	2.266	4.5	19.9
1 22	6 38.30	+24 58.8	2.321	3.252	6.7	21.1	1 22	6 37.27	+24 28.0	1.340	2.279	9.6	20.3
2 1	6 31.00	+25 21.1	2.401	3.263	9.8	21.3	2 1	6 30.75	+24 25.6	1.411	2.293	14.0	20.5
2 11	6 25.90	+25 38.3	2.506	3.273	12.4	21.5	2 11	6 27.59	+24 19.9	1.503	2.308	17.6	20.8
392487	2011 <i>JK</i> ₁₀		1 3.9 171°53	2°6/ 3.4 18			413957	2007 <i>BJ</i> ₅₀		1 3.9 314°11	3°0/ 4.9 18		
12 3	7 27.84	+28 24.9	1.701	2.540	14.3	21.2	12 3	7 18.94	+12 16.2	1.636	2.472	15.0	20.3
12 13	7 20.20	+28 51.6	1.632	2.544	10.4	21.0	12 13	7 13.94	+12 57.2	1.549	2.455	11.3	20.0
12 23	7 9.72	+29 15.4	1.587	2.547	6.2	20.7	12 23	7 6.37	+13 55.1	1.484	2.439	7.1	19.7
1 2	6 57.47	+29 31.2	1.570	2.549	2.7	20.5	1 2	6 56.99	+15 7.8	1.446	2.423	3.3	19.4
1 12	6 44.95	+29 35.8	1.582	2.550	4.9	20.6	1 12	6 47.01	+16 30.7	1.436	2.408	4.7	19.5
1 22	6 33.69	+29 28.6	1.623	2.551	9.2	20.9	1 22	6 37.75	+17 57.9	1.455	2.393	9.1	19.7
2 1	6 24.96	+29 11.8	1.690	2.552	13.2	21.1	2 1	6 30.48	+19 24.1	1.499	2.379	13.5	19.9
2 11	6 19.50	+28 49.2	1.778	2.551	16.5	21.4	2 11	6 26.11	+20 45.1	1.565	2.365	17.3	20.2
315499	2008 <i>AX</i> ₁₄		1 3.9 22°96	0°0/ 3.8 18			38818	2000 <i>RJ</i> ₇₄		1 3.9 54°38	1°4/ 4.2 18		
12 3	7 22.64	+23 19.0	1.521	2.372	15.1	20.9	12 3	7 22.14	+17 52.7	1.432	2.281	16.0	18.2
12 13	7 16.50	+23 9.2	1.456	2.374	10.9	20.7	12 13	7 16.25	+18 15.0	1.371	2.288	11.7	18.0
12 23	7 7.64	+23 0.4	1.413	2.377	6.1	20.4	12 23	7 7.57	+18 46.5	1.333	2.295	6.7	17.7
1 2	6 57.13	+22 50.6	1.398	2.381	1.0	20.1	1 2	6 57.16	+19 24.3	1.321	2.303	1.8	17.4
1 12	6 46.44	+22 38.3	1.410	2.384	4.2	20.3	1 12	6 46.50	+20 4.2	1.336	2.310	4.4	17.6
1 22	6 37.01	+22 23.6	1.450	2.388	9.1	20.6	1 22	6 37.07	+20 42.9	1.378	2.318	9.4	17.9
2 1	6 30.03	+22 7.6	1.514	2.392	13.4	20.9	2 1	6 30.11	+21 18.3	1.445	2.326	13.8	18.2
2 11	6 26.21	+21 51.6	1.599	2.397	17.0	21.1	2 11	6 26.38	+21 49.4	1.532	2.334	17.5	18.5
350601	2001 <i>RG</i> ₁₀₄		1 3.9 61°84	1°2/ 3.7 17			112422	2002 <i>NU</i> ₄₆		1 3.9 219°75	1°4/ 3.7 18		
12 3	7 25.24	+23 26.4	1.266	2.123	17.1	20.2	12 3	7 24.32	+26 13.1	1.863	2.702	13.2	19.8
12 13	7 18.65	+24 2.8	1.219	2.141	12.3	19.9	12 13	7 17.51	+26 22.8	1.784	2.697	9.6	19.5
12 23	7 8.92	+24 42.4	1.195	2.159	6.9	19.7	12 23	7 8.19	+26 31.3	1.730	2.691	5.5	19.3
1 2	6 57.34	+25 19.3	1.196	2.178	1.5	19.4	1 2	6 57.27	+26 35.3	1.704	2.685	1.6	19.0
1 12	6 45.70	+25 49.0	1.223	2.197	4.9	19.7	1 12	6 46.04	+26 32.5	1.707	2.679	4.1	19.2
1 22	6 35.72	+26 9.1	1.277	2.215	10.1	20.0	1 22	6 35.82	+26 22.4	1.740	2.672	8.4	19.4
2 1	6 28.71	+26 20.5	1.355	2.234	14.6	20.3	2 1	6 27.75	+26 6.6	1.798	2.665	12.3	19.6
2 11	6 25.33	+26 25.0	1.452	2.253	18.3	20.6	2 11	6 22.56	+25 47.2	1.879	2.657	15.6	19.8
396040	2013 <i>CW</i> ₂₉		1 3.9 234°54	0°4/ 3.8 17			109972	2001 <i>SR</i> ₅₂		1 3.9 194°14	7°4/ 1.9 18		
12 3	7 14.74	+23 36.0	3.577	4.406	7.7	21.5	12 3	7 27.97	+42 4.2	2.055	2.871	13.1	20.1
12 13	7 9.69	+23 51.5	3.489	4.397	5.5	21.4	12 13	7 20.44	+43 13.3	1.988	2.869	10.5	20.0
12 23	7 3.44	+24 7.8	3.428	4.389	3.1	21.2	12 23	7 9.97	+44 10.3	1.946	2.868	8.3	19.8
1 2	6 56.46	+24 23.5	3.397	4.379	0.6	21.0	1 2	6 57.58	+44 47.6	1.930	2.866	7.4	19.7
1 12	6 49.30	+24 37.3	3.398	4.370	2.2	21.1	1 12	6 44.78	+45 0.6	1.943	2.864	8.4	19.8
1 22	6 42.56	+24 48.5	3.430	4.361	4.8	21.3	1 22	6 33.19	+44 49.1	1.982	2.862	10.6	19.9
2 1	6 36.77	+24 56.9	3.492	4.351	7.1	21.4	2 1	6 24.14	+44 17.1	2.045	2.859	13.2	20.1
2 11	6 32.37	+25 2.5	3.579	4.341	9.1	21.6	2 11	6 18.44	+43 30.8	2.130	2.856	15.6	20.3
201477	2003 <i>GN</i> ₃₇		1 3.9 192°38	1°1/ 4.1 18			373279	2012 <i>HE</i> ₄₀		1 3.9 201°67	3°1/ 4.7 17		
12 3	7 24.04	+19 20.3	1.847	2.681	13.6	21.0	12 3	7 19.11	+11 57.5	2.665	3.474	10.6	21.9
12 13	7 17.19	+19 22.4	1.770	2.680	9.9	20.7	12 13	7 13.05	+11 45.6	2.579	3.470	8.1	21.7
12 23	7 7.96	+19 29.4	1.718	2.678	5.7	20.5	12 23	7 5.43	+11 41.3	2.520	3.464	5.3	21.5
1 2	6 57.20	+19 39.3	1.694	2.676	1.5	20.2	1 2	6 56.83	+11 44.6	2.489	3.459	3.3	21.4
1 12	6 46.15	+19 50.3	1.700	2.673	3.9	20.3	1 12	6 48.01	+11 55.0	2.490	3.452	4.0	21.4
1 22	6 36.05	+20 1.1	1.735	2.669	8.2	20.6	1 22	6 39.77	+12 11.5	2.521	3.445	6.6	21.6
2 1	6 28.00	+20 11.0	1.796	2.665	12.2	20.8	2 1	6 32.80	+12 32.5	2.581	3.437	9.4	21.8
2 11	6 22.70	+20 20.2	1.880	2.660	15.5	21.0	2 11	6 27.66	+12 56.7	2.665	3.429	11.8	21.9
279108	2009 <i>BM</i> ₈₄		1 3.9 78°04	1°2/ 3.7 18			81777	2000 <i>JV</i> ₇₂		1 3.9 246°05	3°5/ 4.4 18		
12 3	7 20.50	+26 57.0	2.297	3.133	11.2	20.2	12 3	7 21.55	+14 1.0	2.048	2.870	12.9	19.4
12 13	7 14.23	+26 56.8	2.229	3.141	8.0	20.0	12 13	7 15.28	+13 30.9	1.957	2.857	9.7	19.2
12 23	7 6.10	+26 54.4	2.187	3.148	4.6	19.8	12 23	7 6.88	+13 7.7	1.892	2.842	6.3	18.9
1 2	6 56.88	+26 47.9	2.175	3.156	1.4	19.6	1 2	6 57.08	+12 52.2	1.855	2.827	3.6	18.7
1 12	6 47.59	+26 36.1	2.192	3.164	3.4	19.7	1 12	6 46.93	+12 44.5	1.847	2.812	4.8	18.8
1 22	6 39.18	+26 19.1	2.240	3.171	6.8	20.0	1 22	6 37.49	+12 44.1	1.869	2.797	8.3	19.0
2 1	6 32.48	+25 58.2	2.315	3.179	10.0	20.2	2 1	6 29.76	+12 50.3	1.917	2.780	11.8	19.2
2 11	6 28.04	+25 35.0	2.413	3.186	12.7	20.4	2 11	6 24.44	+13 1.4	1.988	2.764	15.0	19.3
408911	2001 <i>WH</i> ₄₅		1 3.9 83°24	6°4/ 5.1 18			274211	2008 <i>HQ</i> ₆₇		1 3.9 129°02	3°9/ 4.5 17		
12 3	7 22.13	+ 6 30.5	1.872	2.677	14.6	21.2	12 3	7 25.43	+14 14.2	1.523	2.356	16.0	21.4
12 13	7 15.39	+ 5 39.8	1.823	2.701	11.5	21.1	12 13	7 18.34	+13 47.0	1.461	2.366	12.0	21.2
12 23	7 6.71	+ 5 3.7	1.798	2.726	8.5	20.9	12 23	7 8.64	+13 29.8	1.423	2.376	7.6	21.0
1 2	6 56.98	+ 4 44.4	1.799	2.750	6.5	20.9	1 2	6 57.35	+13 22.8	1.412	2.386	4.1	20.8
1 12	6 47.28	+ 4 42.0	1.829	2.773	7.0	20.9	1 12	6 45.93	+13 25.5	1.428	2.395	5.5	20.9
1 22	6 38.65	+ 4 55.0	1.887	2.797	9.4	21.1	1 22	6 35.78	+13 36.2	1.472	2.404	9.7	21.2
2 1	6 31.90	+ 5 20.3	1.970	2.820	12.1	21.4	2 1	6 28.04	+13 53.2	1.542	2.412	13.7	21.4
2 11	6 27.58	+ 5 53.9	2.075	2.843	14.7	21.6	2 11	6 23.40	+14 14.4	1.632	2.420	17.2	21.7
176894	2002 <i>VA</i> ₄₁		1 3.9 95°46	2°8/ 4.3 18			50850	2000 <i>FX</i> ₄₆		1 3.9 133°61	1°2/ 3.5 18		
12 3	7 22.68	+16 38.4	1.764	2.599									

EPHEMERIDES

1 3.9

1 3.9

2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
245380	2005 <i>GT</i> ₉₉		1 3.9 150°20	4°0/ 4.8 18			409932	2006 <i>UZ</i> ₅₂		1 3.9 182°27	2°7/ 4.5 18		
12 3	7 17.51	+10 36.2	2.374	3.188	11.6	20.5	12 3	7 21.23	+14 33.4	2.067	2.891	12.7	21.5
12 13	7 12.01	+10 10.2	2.299	3.189	8.9	20.3	12 13	7 14.94	+14 28.8	1.990	2.891	9.5	21.3
12 23	7 4.87	+9 53.2	2.248	3.190	6.1	20.2	12 23	7 6.64	+14 32.2	1.939	2.892	5.9	21.1
1 2	6 56.74	+9 46.1	2.226	3.191	4.1	20.0	1 2	6 57.07	+14 43.0	1.916	2.892	2.9	20.9
1 12	6 48.45	+9 48.6	2.234	3.192	4.8	20.1	1 12	6 47.26	+15 0.1	1.923	2.891	4.2	21.0
1 22	6 40.82	+9 59.8	2.271	3.193	7.3	20.2	1 22	6 38.26	+15 21.5	1.959	2.890	7.7	21.2
2 1	6 34.60	+10 18.1	2.334	3.193	10.1	20.4	2 1	6 30.97	+15 45.9	2.022	2.888	11.1	21.4
2 11	6 30.32	+10 41.3	2.421	3.194	12.7	20.6	2 11	6 26.03	+16 11.6	2.108	2.886	14.1	21.6
237646	2001 <i>SR</i> ₁₄₀		1 3.9 73°00	6°8/ 5.9 18			310932	2003 <i>SL</i> ₂₇₅		1 3.9 127°54	2°2/ 3.4 18		
12 3	7 16.89	+1 23.3	2.290	3.071	13.0	20.1	12 3	7 25.99	+27 33.2	1.914	2.750	13.1	21.5
12 13	7 11.52	+0 51.0	2.228	3.084	10.6	20.0	12 13	7 18.52	+28 4.3	1.854	2.765	9.5	21.3
12 23	7 4.57	+0 34.8	2.190	3.097	8.4	19.8	12 23	7 8.66	+28 33.4	1.819	2.779	5.5	21.1
1 2	6 56.69	+0 36.3	2.178	3.110	7.0	19.8	1 2	6 57.39	+28 56.1	1.814	2.793	2.2	20.9
1 12	6 48.71	+0 55.4	2.195	3.123	7.1	19.8	1 12	6 46.00	+29 9.4	1.838	2.806	4.3	21.0
1 22	6 41.45	+1 30.1	2.238	3.135	8.8	19.9	1 22	6 35.77	+29 12.6	1.891	2.818	8.2	21.3
2 1	6 35.62	+2 17.1	2.308	3.148	11.0	20.1	2 1	6 27.74	+29 7.2	1.971	2.830	11.7	21.5
2 11	6 31.72	+3 12.0	2.401	3.161	13.1	20.3	2 11	6 22.55	+28 55.8	2.073	2.842	14.6	21.8
462775	2010 <i>GY</i> ₆		1 3.9 125°62	31°1/14.7 16			429933	2012 <i>TS</i> ₂₈₄		1 3.9 177°27	0°8/ 4.2 16		
12 3	7 44.73	-23 34.8	0.692	1.425	38.8	20.9	12 3	7 17.62	+18 21.0	2.868	3.692	9.5	22.2
12 13	7 33.64	-27 15.2	0.684	1.452	36.0	20.9	12 13	7 11.96	+18 47.3	2.788	3.693	6.9	22.0
12 23	7 17.62	-29 40.4	0.683	1.477	33.5	20.8	12 23	7 4.82	+19 18.1	2.736	3.694	4.0	21.8
1 2	6 58.79	-30 32.4	0.691	1.500	31.9	20.8	1 2	6 56.77	+19 51.7	2.713	3.695	1.0	21.6
1 12	6 40.31	-29 47.1	0.710	1.520	31.1	20.9	1 12	6 48.53	+20 26.2	2.723	3.695	2.6	21.7
1 22	6 25.09	-27 37.5	0.740	1.538	31.3	21.0	1 22	6 40.82	+20 59.8	2.763	3.695	5.7	21.9
2 1	6 14.99	-24 26.7	0.780	1.553	32.2	21.2	2 1	6 34.31	+21 31.3	2.832	3.695	8.4	22.1
2 11	6 10.59	-20 41.6	0.830	1.565	33.6	21.4	2 11	6 29.52	+22 0.1	2.926	3.694	10.8	22.2
417582	2006 <i>VX</i> ₃		1 3.9 70°04	6°0/ 4.5 18			279546	2011 <i>CA</i> ₃₄		1 3.9 177°58	1°2/ 3.7 18		
12 3	7 21.68	+9 47.0	1.712	2.533	15.1	21.0	12 3	7 21.82	+25 46.8	2.023	2.863	12.3	21.2
12 13	7 15.41	+8 43.3	1.648	2.540	11.7	20.8	12 13	7 15.51	+25 59.2	1.950	2.864	8.9	20.9
12 23	7 6.91	+7 51.1	1.607	2.546	8.3	20.6	12 23	7 7.00	+26 11.0	1.902	2.864	5.1	20.7
1 2	6 57.08	+7 13.3	1.593	2.553	6.1	20.5	1 2	6 57.13	+26 19.3	1.882	2.864	1.4	20.4
1 12	6 47.11	+6 51.6	1.607	2.559	6.9	20.6	1 12	6 47.05	+26 22.0	1.892	2.864	3.7	20.6
1 22	6 38.18	+6 45.4	1.648	2.566	9.9	20.8	1 22	6 37.90	+26 18.4	1.932	2.864	7.7	20.9
2 1	6 31.27	+6 52.8	1.714	2.573	13.2	21.0	2 1	6 30.66	+26 9.6	1.997	2.864	11.2	21.1
2 11	6 27.02	+7 10.6	1.801	2.579	16.2	21.2	2 11	6 26.00	+25 57.0	2.086	2.864	14.3	21.3
233430	2006 <i>HZ</i> ₄₁		1 3.9 208°66	2°5/ 4.7 18			298993	2004 <i>XO</i> ₂₇		1 3.9 38°30	1°8/ 3.8 18		
12 3	7 18.14	+13 42.3	2.235	3.059	11.9	20.5	12 3	7 25.18	+27 23.1	1.337	2.193	16.4	20.1
12 13	7 12.63	+13 56.2	2.157	3.058	8.9	20.3	12 13	7 18.64	+27 19.1	1.280	2.200	11.9	19.9
12 23	7 5.30	+14 19.3	2.104	3.057	5.5	20.1	12 23	7 8.98	+27 11.8	1.244	2.208	6.8	19.6
1 2	6 56.83	+14 50.3	2.080	3.056	2.7	19.9	1 2	6 57.45	+26 57.4	1.234	2.216	2.1	19.3
1 12	6 48.11	+15 27.3	2.086	3.055	3.8	20.0	1 12	6 45.83	+26 34.3	1.251	2.224	5.0	19.5
1 22	6 40.07	+16 7.9	2.121	3.054	7.1	20.2	1 22	6 35.82	+26 3.7	1.295	2.233	10.0	19.9
2 1	6 33.53	+16 49.9	2.184	3.052	10.3	20.4	2 1	6 28.72	+25 28.8	1.362	2.242	14.6	20.1
2 11	6 29.11	+17 31.2	2.270	3.051	13.2	20.6	2 11	6 25.21	+24 53.0	1.449	2.252	18.3	20.4
351265	2004 <i>RW</i> ₁₈₄		1 3.9 95°23	0°0/ 3.8 17			4532	Copland		1 3.9 280°04	4°9/ 5.0 18		
12 3	7 26.40	+23 18.0	1.531	2.376	15.3	21.0	12 3	7 17.64	+8 27.7	2.180	2.991	12.6	16.8
12 13	7 19.05	+23 11.0	1.475	2.391	11.0	20.8	12 13	7 12.28	+8 2.0	2.101	2.986	9.8	16.6
12 23	7 9.01	+23 4.9	1.444	2.406	6.2	20.6	12 23	7 5.12	+7 47.7	2.046	2.982	7.0	16.4
1 2	6 57.42	+22 57.3	1.439	2.422	1.0	20.3	1 2	6 56.84	+7 46.1	2.018	2.978	5.0	16.3
1 12	6 45.82	+22 46.7	1.463	2.436	4.2	20.5	1 12	6 48.31	+7 57.0	2.020	2.973	5.6	16.3
1 22	6 35.66	+22 33.2	1.514	2.451	9.0	20.9	1 22	6 40.47	+8 19.1	2.050	2.969	8.1	16.5
2 1	6 28.08	+22 18.3	1.591	2.465	13.2	21.1	2 1	6 34.12	+8 49.9	2.106	2.965	11.1	16.7
2 11	6 23.70	+22 3.3	1.690	2.479	16.6	21.4	2 11	6 29.88	+9 26.7	2.185	2.961	13.8	16.8
472674	2015 <i>EQ</i> ₂₂		1 3.9 309°45	2°9/ 4.7 18			304103	2006 <i>HU</i> ₇₁		1 3.9 3°27	2°7/ 4.5 18		
12 3	7 17.08	+13 9.6	2.231	3.056	11.9	21.1	12 3	7 20.04	+15 34.8	1.288	2.142	17.1	20.2
12 13	7 11.88	+13 8.8	2.151	3.051	8.9	20.9	12 13	7 15.04	+15 46.2	1.224	2.141	12.7	19.9
12 23	7 4.89	+13 17.0	2.095	3.046	5.7	20.7	12 23	7 7.07	+16 10.5	1.180	2.141	7.6	19.7
1 2	6 56.77	+13 33.7	2.068	3.041	3.1	20.5	1 2	6 57.17	+16 45.9	1.162	2.141	3.1	19.4
1 12	6 48.40	+13 57.6	2.070	3.036	4.1	20.6	1 12	6 46.90	+17 28.5	1.169	2.143	5.1	19.5
1 22	6 40.69	+14 26.9	2.101	3.032	7.2	20.7	1 22	6 37.85	+18 14.3	1.202	2.145	10.2	19.8
2 1	6 34.45	+14 59.6	2.159	3.027	10.4	20.9	2 1	6 31.39	+18 59.8	1.259	2.147	14.9	20.1
2 11	6 30.30	+15 33.7	2.240	3.023	13.3	21.1	2 11	6 28.34	+19 42.5	1.335	2.150	18.9	20.4
429346	2010 <i>FO</i> ₅₄		1 3.9 275°00	2°0/ 3.3 17			296485	2009 <i>HP</i> ₁₀₄		1 3.9 197°21	0°3/ 3.8 18		
12 3	7 19.64	+27 47.9	2.347	3.184	10.9	21.5	12 3	7 22.73	+22 46.4	1.983	2.820	12.6	21.9
12 13	7 13.86	+28 19.6	2.260	3.172	8.0	21.2	12 13	7 16.22	+23 5.0	1.905	2.818	9.2	21.7
12 23	7 6.08	+28 50.4	2.200	3.160	4.7	21.0	12 23	7 7.44	+23 25.9	1.853	2.815	5.2	21.4
1 2	6 56.98	+29 16.9	2.169	3.148	2.1	20.8	1 2	6 57.22	+23 46.3	1.830	2.813	0.9	21.1
1 12	6 47.55	+29 36.2	2.168	3.135	3.9	20.9	1 12	6 46.70	+24 3.6	1.837	2.810	3.6	21.3
1 22	6 38.79	+29 47.1	2.196	3.123	7.2	21.1	1 22	6 37.07	+24 16.2	1.873	2.806	7.8	21.6
2 1	6 31.64	+29 49.8	2.251	3.111	10.5	21.3	2 1	6 29.35	+24 24.3	1.935	2.802	11.5	21.8
2 11	6 26.78	+29 45.9	2.330	3.098	13.2	21.5	2 11	6 24.25	+24 28.5	2.020	2.798	14.7	22.0
468207	2015 <i>BG</i> ₅₃		1 3.9 300°26	2°7/ 4.5 18			292359	2006 <i>SJ</i> ₂₃₆		1 3.9 56°14	0°2/ 3.9 18		
12 3	7 18.09	+14 52.4	2.038	2.869	12.6	21.1	12						

EPHEMERIDES

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
46582	1992 <i>RR</i> ₃		1 3.9	42°38'	4.8/ 3.5	17	169108	2001 <i>OO</i> ₁₇		1 3.9	152°92'	0.2/ 3.9	18
12 3	7 27.63	+32 13.3	1.113	1.976	18.5	18.5	12 3	7 19.31	+23 16.3	2.981	3.807	9.2	21.7
12 13	7 20.93	+32 35.6	1.066	1.987	13.7	18.2	12 13	7 13.08	+23 25.3	2.909	3.816	6.6	21.5
12 23	7 10.43	+32 48.7	1.040	2.000	8.6	18.0	12 23	7 5.42	+23 34.8	2.864	3.824	3.7	21.3
1 2	6 57.70	+32 45.5	1.037	2.013	4.9	17.8	1 2	6 56.92	+23 43.4	2.849	3.832	0.6	21.1
1 12	6 44.99	+32 22.8	1.060	2.027	7.0	18.0	1 12	6 48.32	+23 49.7	2.867	3.839	2.5	21.3
1 22	6 34.41	+31 43.1	1.107	2.041	11.8	18.3	1 22	6 40.34	+23 53.3	2.916	3.846	5.5	21.5
2 1	6 27.44	+30 52.4	1.176	2.056	16.4	18.6	2 1	6 33.62	+23 54.1	2.993	3.853	8.1	21.7
2 11	6 24.70	+29 57.4	1.263	2.071	20.2	18.9	2 11	6 28.64	+23 52.6	3.096	3.858	10.4	21.8
381298	2007 <i>UL</i> ₃₃		1 3.9	51°82'	6.0/ 3.5	18	321383	2009 <i>PX</i> ₁		1 3.9	323°61'	5.9/ 3.1	18
12 3	7 27.06	+40 46.8	2.017	2.837	13.1	20.7	12 3	7 26.32	+37 41.9	1.795	2.628	14.0	20.3
12 13	7 19.26	+41 1.1	1.967	2.856	10.2	20.5	12 13	7 19.28	+38 15.5	1.727	2.626	10.8	20.1
12 23	7 9.00	+41 1.6	1.940	2.874	7.5	20.4	12 23	7 9.34	+38 38.1	1.682	2.624	7.7	19.9
1 2	6 57.44	+40 43.8	1.941	2.893	6.0	20.3	1 2	6 57.59	+38 43.5	1.663	2.623	5.9	19.8
1 12	6 46.04	+40 6.4	1.971	2.912	6.8	20.4	1 12	6 45.60	+38 28.4	1.673	2.621	7.1	19.8
1 22	6 36.13	+39 12.1	2.028	2.931	9.2	20.6	1 22	6 34.95	+37 53.6	1.710	2.620	10.1	20.0
2 1	6 28.70	+38 5.8	2.112	2.951	11.9	20.8	2 1	6 26.91	+37 3.6	1.771	2.619	13.4	20.2
2 11	6 24.28	+36 53.2	2.217	2.970	14.3	21.0	2 11	6 22.21	+36 4.5	1.854	2.617	16.3	20.4
153163	2000 <i>SP</i> ₃₃₉		1 3.9	76°14'	2.1/ 4.5	18	313492	2002 <i>VT</i> ₂		1 3.9	48°18'	0.2/ 3.9	18
12 3	7 20.08	+15 52.8	1.859	2.693	13.5	20.1	12 3	7 22.44	+21 27.0	1.439	2.292	15.7	20.6
12 13	7 14.27	+16 3.9	1.792	2.701	9.9	19.9	12 13	7 16.37	+21 41.0	1.388	2.307	11.3	20.4
12 23	7 6.32	+16 23.6	1.750	2.708	5.9	19.6	12 23	7 7.62	+21 59.3	1.360	2.324	6.3	20.2
1 2	6 57.05	+16 50.2	1.736	2.715	2.4	19.4	1 2	6 57.29	+22 18.7	1.358	2.340	1.1	19.9
1 12	6 47.59	+17 21.4	1.750	2.722	4.0	19.6	1 12	6 46.90	+22 36.2	1.383	2.358	4.2	20.1
1 22	6 39.04	+17 54.7	1.794	2.729	7.9	19.8	1 22	6 37.88	+22 50.2	1.436	2.375	9.1	20.5
2 1	6 32.38	+18 28.1	1.863	2.737	11.6	20.0	2 1	6 31.38	+23 0.3	1.512	2.393	13.3	20.8
2 11	6 28.24	+19 0.0	1.955	2.744	14.7	20.3	2 11	6 28.04	+23 7.1	1.610	2.411	16.8	21.0
3830	Trelleborg		1 3.9	142°55'	1.8/ 4.3	18	32631	Majzoub		1 3.9	304°60'	3.2/ 4.4	18
12 3	7 19.53	+17 36.9	2.442	3.268	10.9	16.7	12 3	7 22.07	+16 6.2	1.386	2.233	16.5	18.1
12 13	7 13.42	+17 18.6	2.369	3.273	8.0	16.5	12 13	7 16.45	+15 47.1	1.311	2.225	12.3	17.9
12 23	7 5.67	+17 4.4	2.322	3.279	4.8	16.3	12 23	7 7.90	+15 37.3	1.258	2.217	7.6	17.6
1 2	6 56.94	+16 53.8	2.305	3.284	2.0	16.1	1 2	6 57.38	+15 36.6	1.231	2.209	3.5	17.3
1 12	6 48.09	+16 46.5	2.319	3.289	3.3	16.2	1 12	6 46.41	+15 43.9	1.230	2.201	5.4	17.4
1 22	6 39.97	+16 42.1	2.362	3.293	6.5	16.5	1 22	6 36.57	+15 57.6	1.255	2.193	10.2	17.7
2 1	6 33.33	+16 40.3	2.434	3.298	9.6	16.7	2 1	6 29.21	+16 16.0	1.304	2.186	14.9	17.9
2 11	6 28.69	+16 40.5	2.529	3.302	12.2	16.8	2 11	6 25.20	+16 37.2	1.373	2.179	18.9	18.1
301122	2008 <i>WQ</i> ₆₄		1 3.9	200°14'	0.0/ 3.9	18	518972	2010 <i>HX</i> ₅₄		1 3.9	148°89'	4.8/ 2.3	18
12 3	7 25.34	+22 19.1	1.801	2.638	13.7	21.8	12 3	7 22.81	+35 20.1	2.262	3.092	11.6	21.3
12 13	7 18.28	+22 24.3	1.723	2.635	10.0	21.5	12 13	7 16.34	+36 24.7	2.194	3.094	8.8	21.2
12 23	7 8.68	+22 31.7	1.670	2.631	5.6	21.3	12 23	7 7.57	+37 23.4	2.152	3.096	6.2	21.0
1 2	6 57.45	+22 38.7	1.644	2.627	0.9	20.9	1 2	6 57.31	+38 10.2	2.138	3.097	4.8	20.9
1 12	6 45.89	+22 43.1	1.649	2.622	3.9	21.1	1 12	6 46.72	+38 41.2	2.154	3.099	6.0	21.0
1 22	6 35.34	+22 44.1	1.682	2.617	8.4	21.4	1 22	6 37.00	+38 55.2	2.198	3.101	8.6	21.2
2 1	6 26.97	+22 42.1	1.742	2.611	12.5	21.6	2 1	6 29.22	+38 53.8	2.268	3.102	11.3	21.3
2 11	6 21.51	+22 38.1	1.824	2.604	15.9	21.8	2 11	6 24.08	+38 40.5	2.360	3.104	13.8	21.5
309443	2007 <i>UT</i> ₅₄		1 3.9	338°31'	3.4/ 4.3	18	196272	2003 <i>EE</i> ₂₁		1 3.9	311°67'	2.0/ 3.6	18
12 3	7 19.82	+16 25.3	1.331	2.184	16.6	20.5	12 3	7 23.62	+26 24.8	1.317	2.176	16.4	20.6
12 13	7 14.87	+15 56.7	1.258	2.175	12.4	20.2	12 13	7 17.96	+26 42.0	1.241	2.164	12.1	20.3
12 23	7 7.00	+15 36.7	1.207	2.167	7.7	19.9	12 23	7 8.92	+26 59.0	1.188	2.152	7.0	20.0
1 2	6 57.19	+15 25.7	1.181	2.159	3.6	19.7	1 2	6 57.57	+27 10.7	1.160	2.141	2.2	19.6
1 12	6 46.97	+15 23.4	1.180	2.152	5.5	19.8	1 12	6 45.65	+27 13.1	1.158	2.130	5.3	19.8
1 22	6 37.89	+15 28.7	1.206	2.145	10.4	20.0	1 22	6 35.03	+27 5.3	1.181	2.120	10.7	20.1
2 1	6 31.32	+15 40.2	1.254	2.140	15.1	20.3	2 1	6 27.30	+26 49.0	1.228	2.110	15.7	20.3
2 11	6 28.11	+15 55.9	1.321	2.136	19.1	20.5	2 11	6 23.40	+26 27.6	1.294	2.100	19.8	20.6
23225	2000 <i>WD</i> ₂₅		1 3.9	54°98'	7.6/ 6.3	18	255914	2006 <i>SY</i> ₃₅₆		1 3.9	63°03'	8.6/ 6.1	18
12 3	7 22.77	+ 4 7.9	1.313	2.131	18.9	17.5	12 3	7 20.71	+ 1 40.3	1.599	2.398	17.0	20.4
12 13	7 16.42	+ 3 59.4	1.276	2.161	14.9	17.3	12 13	7 14.73	+ 0 54.0	1.551	2.418	13.8	20.3
12 23	7 7.52	+ 4 15.3	1.259	2.192	10.8	17.2	12 23	7 6.56	+ 0 29.6	1.525	2.439	10.8	20.1
1 2	6 57.24	+ 4 56.0	1.267	2.222	8.0	17.1	1 2	6 57.13	+ 0 29.8	1.522	2.459	8.9	20.1
1 12	6 47.06	+ 5 57.6	1.300	2.253	8.2	17.2	1 12	6 47.67	+ 0 54.3	1.546	2.480	9.0	20.1
1 22	6 38.35	+ 7 13.9	1.359	2.283	11.0	17.4	1 22	6 39.34	+ 1 39.6	1.596	2.500	11.1	20.3
2 1	6 32.17	+ 8 37.6	1.442	2.314	14.4	17.7	2 1	6 33.10	+ 2 40.1	1.669	2.521	13.9	20.5
2 11	6 29.05	+10 2.1	1.546	2.345	17.5	18.0	2 11	6 29.51	+ 3 49.3	1.763	2.541	16.5	20.7
93734	2000 <i>VS</i> ₄₇		1 3.9	84°57'	0.3/ 3.8	18	127978	2003 <i>HL</i> ₄₀		1 3.9	172°99'	0.8/ 3.7	18
12 3	7 21.39	+22 44.8	1.904	2.745	12.9	19.9	12 3	7 21.41	+24 34.7	2.524	3.354	10.5	21.0
12 13	7 15.22	+23 3.3	1.840	2.754	9.3	19.7	12 13	7 14.87	+24 53.9	2.448	3.357	7.6	20.8
12 23	7 6.85	+23 24.1	1.800	2.763	5.2	19.5	12 23	7 6.56	+25 13.4	2.399	3.360	4.3	20.6
1 2	6 57.15	+23 44.4	1.789	2.772	0.9	19.2	1 2	6 57.14	+25 30.7	2.380	3.362	1.0	20.4
1 12	6 47.28	+24 1.5	1.807	2.781	3.6	19.4	1 12	6 47.54	+25 44.0	2.392	3.363	3.1	20.5
1 22	6 38.41	+24 14.3	1.854	2.789	7.7	19.7	1 22	6 38.66	+25 52.2	2.435	3.364	6.5	20.8
2 1	6 31.51	+24 22.5	1.927	2.798	11.4	20.0	2 1	6 31.31	+25 55.5	2.505	3.365	9.5	21.0
2 11	6 27.20	+24 27.0	2.023	2.807	14.5	20.2	2 11	6 26.06	+25 54.9	2.600	3.365	12.1	21.1
467028	2016 <i>CD</i> ₁₈₉		1 3.9	355°27'	2.4/ 4.5	18	489106	2006 <i>BG</i> ₂₁₉		1 3.9	330°40'	2.7/ 3.7	18
12 3	7 19.12	+15 45.4	1.789	2.627	13.8	2							

EPHEMERIDES

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
511621	2015 <i>BT</i> ₃₄		1 3.9 75°23 0°2/ 3.9 18				262931	2007 <i>DM</i> ₁₂		1 3.9 71°89 0°8/ 4.2 18			
12 3	7 19.62	+21 59.5	2.139	2.977	11.8	20.9	12 3	7 20.59	+18 45.6	1.843	2.683	13.4	20.4
12 13	7 13.77	+22 22.9	2.074	2.987	8.5	20.7	12 13	7 14.77	+19 13.1	1.774	2.686	9.7	20.2
12 23	7 6.00	+22 49.1	2.035	2.997	4.8	20.5	12 23	7 6.71	+19 47.4	1.728	2.689	5.6	20.0
1 2	6 57.05	+23 15.5	2.024	3.007	0.8	20.3	1 2	6 57.22	+20 25.8	1.711	2.693	1.3	19.7
1 12	6 47.96	+23 39.7	2.043	3.017	3.2	20.5	1 12	6 47.46	+21 5.0	1.723	2.696	3.7	19.9
1 22	6 39.70	+24 0.1	2.092	3.027	7.0	20.7	1 22	6 38.60	+21 42.2	1.763	2.700	7.9	20.1
2 1	6 33.16	+24 16.1	2.168	3.036	10.4	21.0	2 1	6 31.68	+22 15.7	1.830	2.704	11.8	20.4
2 11	6 28.91	+24 28.1	2.266	3.046	13.2	21.2	2 11	6 27.37	+22 44.9	1.919	2.707	15.0	20.6
160423	2005 <i>EU</i> ₁₀		1 3.9 90°20 5°5/ 3.1 18				59557	1999 <i>JH</i> ₄₁		1 3.9 219°30 2°5/ 3.1 18			
12 3	7 27.58	+41 33.6	2.532	3.339	11.2	19.5	12 3	7 22.76	+28 2.3	2.243	3.077	11.5	20.4
12 13	7 19.29	+42 3.8	2.487	3.366	8.8	19.4	12 13	7 16.26	+28 51.7	2.160	3.069	8.4	20.2
12 23	7 8.95	+42 22.0	2.468	3.393	6.6	19.3	12 23	7 7.55	+29 40.7	2.104	3.062	5.0	20.0
1 2	6 57.52	+42 24.0	2.478	3.420	5.5	19.3	1 2	6 57.37	+30 24.6	2.077	3.054	2.5	19.8
1 12	6 46.20	+42 8.3	2.517	3.446	6.2	19.4	1 12	6 46.78	+30 59.7	2.080	3.045	4.3	19.9
1 22	6 36.11	+41 36.3	2.584	3.472	8.1	19.5	1 22	6 36.93	+31 24.0	2.114	3.036	7.7	20.1
2 1	6 28.13	+40 51.6	2.679	3.498	10.3	19.7	2 1	6 28.84	+31 37.5	2.174	3.027	11.0	20.3
2 11	6 22.75	+39 58.9	2.797	3.523	12.2	19.9	2 11	6 23.24	+31 42.3	2.257	3.017	13.8	20.5
345214	2005 <i>UO</i> ₁₁₄		1 3.9 67°87 0°7/ 3.8 18				501946	2014 <i>YH</i> ₃		1 3.9 327°48 2°9/ 4.9 17			
12 3	7 25.72	+21 42.4	1.274	2.129	17.2	19.9	12 3	7 18.05	+12 14.6	2.155	2.977	12.3	20.8
12 13	7 19.05	+22 31.1	1.228	2.148	12.3	19.6	12 13	7 12.69	+12 37.1	2.076	2.975	9.3	20.6
12 23	7 9.26	+23 25.6	1.203	2.168	6.9	19.4	12 23	7 5.45	+13 10.7	2.023	2.974	5.9	20.4
1 2	6 57.60	+24 19.6	1.205	2.187	1.3	19.1	1 2	6 57.02	+13 54.2	1.998	2.973	3.1	20.2
1 12	6 45.85	+25 7.1	1.233	2.207	4.8	19.4	1 12	6 48.32	+14 44.9	2.003	2.971	4.0	20.2
1 22	6 35.72	+25 45.0	1.288	2.227	10.0	19.7	1 22	6 40.29	+15 39.9	2.037	2.970	7.3	20.4
2 1	6 28.51	+26 12.7	1.367	2.246	14.6	20.1	2 1	6 33.79	+16 36.0	2.099	2.969	10.6	20.6
2 11	6 24.92	+26 31.7	1.466	2.266	18.2	20.3	2 11	6 29.47	+17 30.7	2.184	2.968	13.5	20.8
381340	2008 <i>BZ</i> ₄₇		1 3.9 192°05 0°1/ 3.9 18				459197	2012 <i>DZ</i> ₅₆		1 3.9 14°92 8°1/ 5.9 18			
12 3	7 17.40	+20 30.3	2.752	3.582	9.7	20.9	12 3	7 17.68	+ 4 35.0	1.353	2.179	18.0	21.0
12 13	7 11.93	+21 3.2	2.672	3.581	7.0	20.7	12 13	7 13.08	+ 4 4.4	1.294	2.183	14.5	20.8
12 23	7 4.90	+21 39.9	2.619	3.580	3.9	20.5	12 23	7 5.90	+ 3 56.5	1.256	2.188	10.9	20.6
1 2	6 56.89	+22 18.1	2.596	3.579	0.7	20.3	1 2	6 57.10	+ 4 13.7	1.241	2.194	8.4	20.5
1 12	6 48.66	+22 55.4	2.605	3.578	2.7	20.4	1 12	6 48.05	+ 4 55.3	1.250	2.201	8.7	20.5
1 22	6 40.98	+23 30.1	2.644	3.577	5.9	20.6	1 22	6 40.13	+ 5 56.7	1.284	2.208	11.5	20.7
2 1	6 34.56	+24 1.0	2.712	3.575	8.7	20.8	2 1	6 34.50	+ 7 11.5	1.341	2.217	15.0	20.9
2 11	6 29.93	+24 27.7	2.804	3.574	11.2	21.0	2 11	6 31.87	+ 8 32.3	1.418	2.226	18.3	21.1
86491	2000 <i>DL</i> ₁₅		1 3.9 338°61 0°6/ 3.8 18				325059	2008 <i>CT</i> ₁₉₉		1 3.9 22°52 3°3/ 4.6 16			
12 3	7 19.44	+23 23.9	1.953	2.796	12.5	18.9	12 3	7 19.22	+15 20.6	1.273	2.128	17.1	20.5
12 13	7 13.93	+23 45.0	1.877	2.793	9.1	18.7	12 13	7 14.31	+15 12.3	1.220	2.137	12.7	20.2
12 23	7 6.23	+24 8.3	1.826	2.789	5.1	18.5	12 23	7 6.61	+15 16.0	1.188	2.147	7.8	20.0
1 2	6 57.13	+24 30.9	1.804	2.786	1.0	18.2	1 2	6 57.21	+15 30.8	1.180	2.158	3.6	19.8
1 12	6 47.73	+24 50.2	1.810	2.783	3.6	18.4	1 12	6 47.66	+15 54.2	1.198	2.171	5.3	19.9
1 22	6 39.19	+25 4.5	1.845	2.780	7.7	18.6	1 22	6 39.46	+16 23.4	1.242	2.184	10.0	20.2
2 1	6 32.51	+25 13.7	1.906	2.778	11.4	18.8	2 1	6 33.80	+16 55.3	1.309	2.198	14.4	20.5
2 11	6 28.37	+25 18.5	1.989	2.776	14.6	19.0	2 11	6 31.38	+17 27.5	1.396	2.213	18.1	20.8
175954	2000 <i>GE</i> ₁₈₆		1 3.9 251°51 1°1/ 3.6 18				407389	2010 <i>SK</i> ₂₇		1 3.9 88°83 2°2/ 4.4 18			
12 3	7 22.50	+24 16.1	2.000	2.838	12.5	20.8	12 3	7 22.70	+16 39.3	1.785	2.619	14.0	21.4
12 13	7 16.26	+24 49.2	1.911	2.824	9.1	20.6	12 13	7 16.11	+16 34.4	1.729	2.637	10.2	21.3
12 23	7 7.63	+25 24.8	1.847	2.809	5.2	20.3	12 23	7 7.35	+16 36.6	1.698	2.655	6.1	21.0
1 2	6 57.38	+25 58.8	1.812	2.794	1.3	20.0	1 2	6 57.33	+16 45.0	1.694	2.673	2.5	20.8
1 12	6 46.63	+26 27.9	1.807	2.779	3.9	20.2	1 12	6 47.26	+16 57.7	1.719	2.690	4.1	21.0
1 22	6 36.64	+26 49.9	1.832	2.763	8.1	20.4	1 22	6 38.29	+17 13.3	1.773	2.708	8.1	21.3
2 1	6 28.53	+27 4.5	1.882	2.747	11.9	20.6	2 1	6 31.37	+17 30.4	1.853	2.725	11.7	21.5
2 11	6 23.09	+27 12.7	1.955	2.731	15.2	20.8	2 11	6 27.08	+17 48.0	1.955	2.741	14.8	21.8
200819	2001 <i>XF</i> ₁₈₉		1 3.9 332°37 1°1/ 4.1 18				90841	1995 <i>WT</i> ₁₃		1 3.9 54°80 1°4/ 3.5 18			
12 3	7 19.64	+19 17.9	1.206	2.070	17.3	19.8	12 3	7 21.20	+24 12.6	1.835	2.680	13.2	19.4
12 13	7 15.17	+19 31.9	1.132	2.057	12.7	19.5	12 13	7 15.30	+25 0.2	1.770	2.686	9.5	19.2
12 23	7 7.42	+19 55.5	1.079	2.044	7.4	19.2	12 23	7 7.04	+25 50.3	1.730	2.693	5.4	19.0
1 2	6 57.37	+20 25.7	1.050	2.032	1.7	18.8	1 2	6 57.30	+26 38.2	1.719	2.700	1.6	18.7
1 12	6 46.69	+20 58.6	1.046	2.022	5.0	18.9	1 12	6 47.29	+27 19.8	1.736	2.707	4.1	18.9
1 22	6 37.19	+21 30.5	1.067	2.012	10.8	19.2	1 22	6 38.26	+27 52.6	1.782	2.714	8.2	19.2
2 1	6 30.47	+21 59.3	1.110	2.003	16.1	19.5	2 1	6 31.27	+28 16.1	1.854	2.722	11.9	19.4
2 11	6 27.52	+22 24.0	1.172	1.995	20.5	19.8	2 11	6 27.02	+28 31.5	1.947	2.729	15.0	19.7
196478	2003 <i>KC</i>		1 3.9 309°14 0°5/ 4.1 18				267772	2003 <i>SB</i> ₇₀		1 3.9 118°36 1°0/ 4.2 18			
12 3	7 21.60	+19 47.8	1.355	2.210	16.3	20.4	12 3	7 19.95	+19 16.0	2.200	3.033	11.7	20.4
12 13	7 16.37	+20 14.4	1.277	2.198	12.0	20.1	12 13	7 13.96	+19 22.6	2.131	3.040	8.5	20.2
12 23	7 8.01	+20 49.9	1.221	2.185	6.9	19.7	12 23	7 6.11	+19 33.5	2.087	3.047	4.9	20.0
1 2	6 57.47	+21 30.7	1.191	2.173	1.3	19.3	1 2	6 57.13	+19 47.1	2.072	3.054	1.3	19.8
1 12	6 46.29	+22 12.2	1.187	2.161	4.7	19.5	1 12	6 48.00	+20 1.8	2.088	3.061	3.2	19.9
1 22	6 36.17	+22 50.4	1.209	2.150	10.2	19.8	1 22	6 39.67	+20 16.2	2.132	3.067	6.9	20.2
2 1	6 28.64	+23 23.2	1.255	2.139	15.2	20.1	2 1	6 32.99	+20 29.6	2.205	3.074	10.2	20.4
2 11	6 24.67	+23 50.4	1.320	2.129	19.4	20.3	2 11	6 28.51	+20 41.7	2.300	3.080	13.1	20.6
367589	2009 <i>SD</i> ₂₆₃		1 3.9 138°57 1°0/ 3.7 18				399370	2001 <i>QL</i> ₉₁		1 3.9 47°33 6°0/ 6.2 16			
12 3	7 21.92	+24 28.5	2.074										

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
381327	2007 VQ ₂₇₉		1 3.9 264°94	8°1/ 4.7 18			340897	2007 CQ ₆₄		1 3.9 104°46	0°9/ 3.8 17		
12 3	7 18.28	- 1 11.1	2.469	3.231	12.7	20.8	12 3	7 28.52	+24 53.2	1.472	2.316	15.8	21.0
12 13	7 12.62	- 2 29.4	2.388	3.223	10.8	20.6	12 13	7 20.76	+24 58.0	1.418	2.334	11.4	20.8
12 23	7 5.33	- 3 33.7	2.332	3.215	9.1	20.5	12 23	7 10.11	+25 2.4	1.388	2.351	6.4	20.6
1 2	6 57.02	- 4 20.2	2.302	3.207	8.1	20.4	1 2	6 57.80	+25 2.7	1.385	2.368	1.3	20.3
1 12	6 48.47	- 4 46.5	2.300	3.199	8.4	20.4	1 12	6 45.49	+24 56.9	1.411	2.384	4.4	20.5
1 22	6 40.48	- 4 52.7	2.325	3.191	9.9	20.5	1 22	6 34.75	+24 44.9	1.464	2.399	9.3	20.8
2 1	6 33.81	- 4 40.7	2.375	3.183	11.8	20.6	2 1	6 26.78	+24 28.8	1.542	2.415	13.6	21.1
2 11	6 29.01	- 4 14.2	2.447	3.175	13.7	20.7	2 11	6 22.21	+24 11.0	1.641	2.429	17.1	21.4
222521	2001 TH ₁₆₁		1 3.9 200°70	2°5/ 3.0 17			373287	2012 HP ₅₀		1 3.9 251°30	2°4/ 4.5 18		
12 3	7 16.82	+33 37.1	3.828	4.649	7.4	21.1	12 3	7 19.84	+15 22.5	2.020	2.850	12.7	21.5
12 13	7 11.24	+33 59.2	3.747	4.646	5.5	21.0	12 13	7 14.13	+15 23.8	1.938	2.843	9.5	21.2
12 23	7 4.42	+34 17.3	3.694	4.642	3.6	20.8	12 23	7 6.34	+15 33.2	1.880	2.836	5.8	21.0
1 2	6 56.86	+34 29.3	3.671	4.638	2.5	20.7	1 2	6 57.21	+15 49.7	1.850	2.828	2.6	20.8
1 12	6 49.15	+34 34.1	3.679	4.634	3.3	20.8	1 12	6 47.75	+16 11.8	1.850	2.820	4.0	20.9
1 22	6 41.91	+34 31.1	3.718	4.629	5.1	20.9	1 22	6 39.03	+16 37.6	1.879	2.813	7.7	21.1
2 1	6 35.71	+34 21.1	3.786	4.625	7.1	21.0	2 1	6 32.01	+17 5.4	1.934	2.805	11.4	21.3
2 11	6 30.96	+34 5.4	3.879	4.620	8.8	21.2	2 11	6 27.37	+17 33.5	2.012	2.797	14.5	21.5
456454	2006 VR ₁₀₉		1 3.9 42°33	4°5/ 2.5 17			58425	1996 DR ₁		1 3.9 350°81	5°3/ 3.2 18		
12 3	7 24.99	+27 42.1	1.291	2.149	16.8	20.1	12 3	7 24.43	+32 7.4	1.199	2.061	17.5	18.9
12 13	7 18.70	+29 30.7	1.253	2.174	12.1	19.9	12 13	7 18.89	+32 51.7	1.137	2.057	13.1	18.6
12 23	7 9.17	+31 18.2	1.239	2.199	7.4	19.7	12 23	7 9.58	+33 29.7	1.095	2.054	8.4	18.3
1 2	6 57.65	+32 53.6	1.251	2.226	4.5	19.6	1 2	6 57.78	+33 53.1	1.077	2.051	5.3	18.2
1 12	6 46.00	+34 8.6	1.290	2.253	6.8	19.8	1 12	6 45.52	+33 56.1	1.085	2.049	7.4	18.3
1 22	6 36.00	+34 59.9	1.356	2.280	11.0	20.1	1 22	6 34.93	+33 38.4	1.116	2.047	12.1	18.5
2 1	6 29.03	+35 29.4	1.444	2.308	14.9	20.4	2 1	6 27.68	+33 4.4	1.170	2.047	16.7	18.8
2 11	6 25.80	+35 41.9	1.552	2.336	18.1	20.7	2 11	6 24.66	+32 20.6	1.241	2.047	20.6	19.0
466045	2011 LY ₁₃		1 3.9 191°32	5°2/ 5.3 17			149799	2005 JL ₄₅		1 3.9 92°99	6°6/ 6.9 18		
12 3	7 17.03	+ 3 51.2	2.954	3.733	10.4	22.3	12 3	7 28.76	+ 1 49.1	1.071	1.888	22.4	19.3
12 13	7 11.47	+ 3 18.9	2.873	3.732	8.4	22.1	12 13	7 21.83	+ 3 25.1	1.011	1.899	17.7	19.0
12 23	7 4.59	+ 2 57.3	2.817	3.729	6.5	22.0	12 23	7 11.21	+ 5 42.7	0.970	1.910	12.2	18.8
1 2	6 56.89	+ 2 48.0	2.789	3.727	5.3	21.9	1 2	6 58.07	+ 8 37.1	0.953	1.921	7.4	18.6
1 12	6 49.03	+ 2 51.0	2.792	3.724	5.5	21.9	1 12	6 44.36	+11 54.2	0.964	1.931	7.5	18.6
1 22	6 41.67	+ 3 5.8	2.823	3.721	7.1	22.0	1 22	6 32.18	+15 15.3	1.003	1.942	12.2	18.9
2 1	6 35.40	+ 3 30.3	2.882	3.717	9.2	22.2	2 1	6 23.24	+18 24.0	1.068	1.952	17.3	19.2
2 11	6 30.70	+ 4 2.3	2.965	3.713	11.1	22.3	2 11	6 18.52	+21 11.0	1.153	1.962	21.6	19.5
40369	1999 NY ₂₈		1 3.9 197°88	0°2/ 3.9 18			236653	2006 KN ₉₉		1 3.9 139°72	3°3/ 4.9 18		
12 3	7 24.03	+22 9.6	1.946	2.781	12.9	19.6	12 3	7 22.68	+12 2.9	2.118	2.932	12.8	21.2
12 13	7 17.26	+22 30.4	1.868	2.779	9.4	19.4	12 13	7 15.89	+12 5.4	2.052	2.945	9.6	21.0
12 23	7 8.14	+22 54.4	1.814	2.776	5.3	19.1	12 23	7 7.19	+12 17.9	2.011	2.958	6.2	20.9
1 2	6 57.50	+23 18.4	1.789	2.772	0.9	18.8	1 2	6 57.35	+12 39.8	1.999	2.971	3.5	20.7
1 12	6 46.52	+23 39.6	1.794	2.768	3.7	19.0	1 12	6 47.37	+13 9.2	2.017	2.982	4.4	20.8
1 22	6 36.43	+23 56.3	1.829	2.763	7.9	19.3	1 22	6 38.25	+13 43.9	2.065	2.993	7.6	21.0
2 1	6 28.30	+24 8.3	1.890	2.757	11.8	19.5	2 1	6 30.84	+14 21.6	2.141	3.003	10.8	21.2
2 11	6 22.87	+24 16.2	1.974	2.751	15.0	19.7	2 11	6 25.72	+15 0.1	2.240	3.012	13.6	21.4
336694	Fey		1 3.9 138°23	3°4/ 3.1 18			54362	Restitutum		1 3.9 208°54	1°0/ 3.6 18		
12 3	7 21.63	+33 34.5	2.485	3.314	10.7	20.9	12 3	7 22.46	+23 3.6	2.127	2.962	12.0	19.5
12 13	7 15.19	+34 1.9	2.415	3.318	8.0	20.7	12 13	7 16.09	+23 55.4	2.046	2.957	8.7	19.3
12 23	7 6.81	+34 23.5	2.371	3.322	5.2	20.5	12 23	7 7.50	+24 51.1	1.991	2.953	4.9	19.1
1 2	6 57.26	+34 35.8	2.357	3.325	3.5	20.4	1 2	6 57.43	+25 46.4	1.966	2.948	1.2	18.8
1 12	6 47.55	+34 36.7	2.372	3.329	4.6	20.5	1 12	6 46.96	+26 37.0	1.971	2.942	3.7	19.0
1 22	6 38.70	+34 25.9	2.417	3.332	7.3	20.7	1 22	6 37.22	+27 20.2	2.006	2.936	7.6	19.2
2 1	6 31.55	+34 5.3	2.489	3.335	10.0	20.8	2 1	6 29.23	+27 54.7	2.069	2.930	11.1	19.4
2 11	6 26.70	+33 37.5	2.584	3.339	12.4	21.0	2 11	6 23.74	+28 21.2	2.154	2.923	14.1	19.6
182406	2001 RB ₃₈		1 3.9 45°61	2°7/ 4.5 18			493411	2014 WL ₁₉₉		1 3.9 157°55	1°6/ 4.5 18		
12 3	7 20.55	+15 20.7	1.652	2.491	14.7	20.1	12 3	7 20.78	+15 29.5	2.053	2.881	12.7	20.8
12 13	7 14.85	+15 19.2	1.587	2.497	10.9	19.9	12 13	7 14.77	+16 10.1	1.978	2.883	9.3	20.6
12 23	7 6.79	+15 27.3	1.545	2.502	6.6	19.6	12 23	7 6.70	+17 0.4	1.929	2.886	5.5	20.4
1 2	6 57.27	+15 43.9	1.530	2.508	3.0	19.4	1 2	6 57.30	+17 57.6	1.908	2.888	1.9	20.1
1 12	6 47.53	+16 7.1	1.543	2.514	4.5	19.5	1 12	6 47.60	+18 58.0	1.918	2.890	3.5	20.3
1 22	6 38.82	+16 34.5	1.584	2.521	8.7	19.8	1 22	6 38.65	+19 58.0	1.957	2.892	7.4	20.5
2 1	6 32.21	+17 3.9	1.650	2.527	12.6	20.0	2 1	6 31.41	+20 54.8	2.024	2.894	11.0	20.7
2 11	6 28.36	+17 33.5	1.737	2.534	16.0	20.3	2 11	6 26.54	+21 46.7	2.115	2.895	14.0	20.9
263849	2009 BL ₈₃		1 3.9 275°47	0°7/ 4.1 18			134218	2005 UE ₄₃₉		1 3.9 54°54	0°7/ 4.1 18		
12 3	7 22.20	+19 24.3	1.645	2.488	14.5	20.7	12 3	7 19.99	+19 46.8	1.982	2.820	12.6	20.1
12 13	7 16.42	+19 49.1	1.558	2.473	10.7	20.4	12 13	7 14.24	+20 0.0	1.910	2.822	9.2	19.9
12 23	7 7.91	+20 21.6	1.495	2.457	6.1	20.1	12 23	7 6.40	+20 18.1	1.862	2.824	5.2	19.6
1 2	6 57.49	+20 58.8	1.459	2.441	1.3	19.7	1 2	6 57.25	+20 38.9	1.843	2.825	1.2	19.4
1 12	6 46.47	+21 37.0	1.451	2.425	4.1	19.9	1 12	6 47.86	+21 0.1	1.854	2.827	3.5	19.5
1 22	6 36.30	+22 13.0	1.471	2.409	9.1	20.2	1 22	6 39.32	+21 20.1	1.893	2.829	7.5	19.8
2 1	6 28.29	+22 45.0	1.517	2.393	13.6	20.4	2 1	6 32.58	+21 38.0	1.958	2.831	11.2	20.0
2 11	6 23.34	+23 12.5	1.583	2.377	17.4	20.6	2 11	6 28.29	+21 53.4	2.047	2.833	14.2	20.2
413600	2005 UU ₁₇₁		1 3.9 164°80	2°9/ 3.1 18			71450	2000 AV ₂₄₂		1 3.9 8°04	4°7/ 4.9 18		
12 3	7 23.40	+29 47.0	2.189	3.023	11.7	21.6	12 3	7 18.32	+10 18.5	1.973	2.794	13.4	19.1

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
20643	Angelicaliu		1 3.9 271°33	0°8/ 4.1 18			401379	2013 CY ₁₁		1 3.9 199°61	0°5/ 3.9 18		
12 3	7 22.93	+20 41.9	1.662	2.505	14.4	19.0	12 3	7 23.96	+22 17.6	1.698	2.541	14.2	21.6
12 13	7 16.87	+20 41.3	1.577	2.491	10.5	18.7	12 13	7 17.53	+22 47.0	1.625	2.539	10.3	21.3
12 23	7 8.13	+20 44.9	1.515	2.478	6.1	18.4	12 23	7 8.46	+23 20.6	1.575	2.537	5.8	21.1
1 2	6 57.57	+20 50.6	1.481	2.464	1.3	18.1	1 2	6 57.66	+23 54.3	1.553	2.535	1.0	20.7
1 12	6 46.53	+20 56.4	1.476	2.449	4.1	18.3	1 12	6 46.49	+24 24.5	1.559	2.533	4.0	21.0
1 22	6 36.41	+21 1.1	1.498	2.435	9.0	18.5	1 22	6 36.32	+24 48.7	1.595	2.530	8.7	21.2
2 1	6 28.48	+21 4.5	1.545	2.421	13.4	18.7	2 1	6 28.39	+25 6.5	1.655	2.527	12.9	21.5
2 11	6 23.59	+21 6.9	1.614	2.406	17.1	19.0	2 11	6 23.47	+25 18.7	1.738	2.524	16.4	21.7
125960	2001 XE ₂₆₅		1 3.9 157°70	0°0/ 3.8 18			433510	2013 WV ₅₄		1 3.9 51°36	0°1/ 4.0 18		
12 3	7 21.65	+21 45.9	2.044	2.880	12.3	20.5	12 3	7 19.37	+19 13.8	2.116	2.951	12.0	20.4
12 13	7 15.41	+22 5.0	1.971	2.883	8.9	20.3	12 13	7 13.72	+20 8.3	2.049	2.960	8.7	20.2
12 23	7 7.05	+22 27.3	1.924	2.886	5.0	20.0	12 23	7 6.11	+21 9.2	2.008	2.970	4.9	20.0
1 2	6 57.37	+22 50.0	1.906	2.889	0.8	19.7	1 2	6 57.26	+22 12.9	1.997	2.979	0.8	19.7
1 12	6 47.46	+23 10.8	1.918	2.891	3.4	20.0	1 12	6 48.16	+23 15.2	2.015	2.989	3.2	19.9
1 22	6 38.42	+23 28.0	1.959	2.894	7.4	20.2	1 22	6 39.84	+24 12.7	2.064	2.999	7.1	20.2
2 1	6 31.19	+23 41.2	2.027	2.895	11.0	20.4	2 1	6 33.18	+25 3.5	2.140	3.009	10.5	20.4
2 11	6 26.44	+23 50.8	2.118	2.897	14.0	20.6	2 11	6 28.82	+25 47.0	2.240	3.019	13.4	20.6
173668	2001 KU ₃₈		1 3.9 168°71	1°4/ 3.5 18			308208	2005 EP ₈₀		1 3.9 327°48	0°1/ 3.9 18		
12 3	7 23.79	+24 45.6	2.239	3.070	11.6	20.8	12 3	7 21.46	+22 48.0	1.342	2.201	16.2	21.1
12 13	7 16.89	+25 35.0	2.166	3.075	8.4	20.6	12 13	7 16.30	+22 50.7	1.266	2.189	11.8	20.8
12 23	7 7.88	+26 26.0	2.119	3.079	4.8	20.4	12 23	7 8.02	+22 56.6	1.213	2.178	6.7	20.5
1 2	6 57.52	+27 14.3	2.101	3.082	1.6	20.2	1 2	6 57.63	+23 2.6	1.184	2.167	1.1	20.1
1 12	6 46.85	+27 56.2	2.115	3.085	3.7	20.3	1 12	6 46.71	+23 6.0	1.182	2.157	4.6	20.3
1 22	6 36.98	+28 29.5	2.160	3.087	7.3	20.6	1 22	6 36.99	+23 5.6	1.205	2.147	10.2	20.6
2 1	6 28.85	+28 53.9	2.232	3.088	10.6	20.8	2 1	6 29.91	+23 1.8	1.252	2.139	15.1	20.9
2 11	6 23.17	+29 10.5	2.327	3.089	13.4	21.0	2 11	6 26.39	+22 55.8	1.319	2.131	19.2	21.1
467306	2016 FJ ₁		1 3.9 50°96	1°0/ 3.8 18			284239	2006 DW ₁₇₂		1 3.9 109°51	0°5/ 4.1 18		
12 3	7 22.11	+25 31.5	1.884	2.727	13.0	21.0	12 3	7 25.18	+20 6.5	1.724	2.561	14.3	20.9
12 13	7 15.86	+25 33.9	1.816	2.730	9.4	20.8	12 13	7 18.09	+20 27.4	1.668	2.579	10.3	20.7
12 23	7 7.33	+25 35.5	1.772	2.734	5.3	20.6	12 23	7 8.60	+20 53.3	1.635	2.596	5.8	20.5
1 2	6 57.42	+25 33.7	1.756	2.738	1.3	20.3	1 2	6 57.68	+21 21.0	1.631	2.613	1.1	20.2
1 12	6 47.34	+25 26.9	1.769	2.741	3.8	20.5	1 12	6 46.66	+21 47.4	1.656	2.630	3.8	20.4
1 22	6 38.29	+25 14.8	1.811	2.745	7.9	20.7	1 22	6 36.83	+22 10.6	1.710	2.646	8.2	20.8
2 1	6 31.28	+24 58.7	1.879	2.749	11.6	21.0	2 1	6 29.22	+22 29.9	1.791	2.661	12.1	21.0
2 11	6 26.97	+24 40.4	1.969	2.754	14.8	21.2	2 11	6 24.48	+22 45.6	1.893	2.676	15.3	21.3
70258	1999 RL ₈₉		1 3.9 290°79	1°8/ 3.6 18			170482	2003 UC ₂₆₉		1 3.9 151°59	3°0/ 3.2 18		
12 3	7 23.38	+26 1.3	1.559	2.409	14.8	18.5	12 3	7 24.45	+28 3.8	1.683	2.528	14.1	19.8
12 13	7 17.45	+26 23.7	1.478	2.397	10.8	18.2	12 13	7 18.00	+28 55.3	1.615	2.530	10.3	19.6
12 23	7 8.56	+26 46.6	1.421	2.384	6.3	17.9	12 23	7 8.78	+29 46.0	1.571	2.531	6.2	19.4
1 2	6 57.66	+27 5.3	1.390	2.371	2.0	17.6	1 2	6 57.74	+30 29.9	1.555	2.533	3.1	19.2
1 12	6 46.23	+27 16.2	1.386	2.358	4.8	17.8	1 12	6 46.33	+31 2.2	1.567	2.534	5.2	19.3
1 22	6 35.86	+27 17.8	1.410	2.346	9.6	18.0	1 22	6 36.04	+31 20.7	1.607	2.535	9.3	19.6
2 1	6 27.94	+27 11.1	1.459	2.333	14.1	18.3	2 1	6 28.14	+31 26.6	1.672	2.536	13.2	19.8
2 11	6 23.36	+26 58.6	1.527	2.321	17.9	18.5	2 11	6 23.42	+31 22.8	1.758	2.537	16.5	20.0
466477	2013 TD ₁₄₃		1 3.9 81°05	1°6/ 4.3 18			114191	2002 VQ ₈₈		1 3.9 84°21	0°4/ 3.9 18		
12 3	7 19.59	+17 38.6	2.234	3.064	11.7	21.3	12 3	7 25.42	+22 8.0	1.789	2.625	13.8	20.1
12 13	7 13.61	+17 33.9	2.174	3.080	8.5	21.1	12 13	7 18.10	+22 38.6	1.743	2.655	9.9	19.9
12 23	7 5.89	+17 34.3	2.139	3.097	5.0	20.9	12 23	7 8.51	+23 11.8	1.721	2.683	5.5	19.7
1 2	6 57.17	+17 38.8	2.133	3.113	1.9	20.7	1 2	6 57.66	+23 43.8	1.729	2.711	0.9	19.4
1 12	6 48.39	+17 46.2	2.157	3.129	3.3	20.9	1 12	6 46.84	+24 11.6	1.766	2.739	3.7	19.7
1 22	6 40.45	+17 55.5	2.211	3.145	6.7	21.1	1 22	6 37.26	+24 33.5	1.832	2.766	7.9	20.0
2 1	6 34.12	+18 5.9	2.292	3.161	9.9	21.3	2 1	6 29.88	+24 49.3	1.925	2.793	11.5	20.3
2 11	6 29.90	+18 16.7	2.397	3.177	12.6	21.6	2 11	6 25.28	+25 0.2	2.040	2.819	14.5	20.5
64451	2001 VD ₃₀		1 3.9 137°21	1°4/ 3.6 18			76136	2000 EF ₁₂		1 3.9 103°41	2°0/ 4.7 18 R		
12 3	7 23.09	+25 53.2	2.103	2.939	12.1	19.6	12 3	7 19.24	+14 49.4	2.233	3.057	11.9	19.5
12 13	7 16.39	+26 16.1	2.036	2.947	8.7	19.4	12 13	7 13.48	+15 13.4	2.164	3.067	8.8	19.3
12 23	7 7.57	+26 38.6	1.994	2.955	5.0	19.2	12 23	7 5.92	+15 45.9	2.121	3.076	5.3	19.1
1 2	6 57.47	+26 57.2	1.982	2.963	1.5	18.9	1 2	6 57.26	+16 25.0	2.107	3.085	2.2	18.9
1 12	6 47.20	+27 9.6	2.000	2.971	3.7	19.1	1 12	6 48.42	+17 8.2	2.123	3.094	3.5	19.0
1 22	6 37.87	+27 14.9	2.047	2.978	7.4	19.4	1 22	6 40.31	+17 52.8	2.169	3.103	6.9	19.3
2 1	6 30.42	+27 13.7	2.121	2.984	10.8	19.6	2 1	6 33.76	+18 36.7	2.243	3.112	10.1	19.5
2 11	6 25.49	+27 7.6	2.219	2.991	13.7	19.8	2 11	6 29.32	+19 18.4	2.341	3.121	12.8	19.7
307353	2002 RM ₁₈₅		1 3.9 111°83	6°7/ 5.5 18			500293	2012 PW ₄₃		1 3.9 103°25	4°1/ 5.5 18		
12 3	7 22.01	+ 4 30.4	1.954	2.749	14.5	21.2	12 3	7 17.60	+ 7 56.2	2.508	3.310	11.4	21.5
12 13	7 15.45	+ 3 49.0	1.896	2.766	11.6	21.0	12 13	7 12.07	+ 7 57.7	2.442	3.323	8.8	21.3
12 23	7 6.96	+ 3 23.4	1.862	2.783	8.7	20.9	12 23	7 5.03	+ 8 10.6	2.401	3.336	6.2	21.2
1 2	6 57.36	+ 3 15.6	1.855	2.800	6.9	20.8	1 2	6 57.11	+ 8 34.7	2.388	3.349	4.3	21.1
1 12	6 47.69	+ 3 25.6	1.876	2.816	7.2	20.8	1 12	6 49.06	+ 9 8.8	2.406	3.361	4.7	21.1
1 22	6 38.96	+ 3 51.4	1.925	2.831	9.4	21.0	1 22	6 41.67	+ 9 50.6	2.453	3.374	6.9	21.3
2 1	6 32.02	+ 4 29.5	1.999	2.846	12.1	21.2	2 1	6 35.61	+10 37.6	2.527	3.386	9.5	21.5
2 11	6 27.43	+ 5 15.6	2.096	2.861	14.6	21.4	2 11	6 31.36	+11 26.8	2.626	3.398	11.8	21.7
411601	2011 FE ₁₅₄		1 3.9 267°75	2°8/ 4.3 18			6225	Hiroko		1 3.9 288°14	3°9/ 4.5 18		
12 3	7 24.29	+17 18.9	1.369	2.216	16.7	21.2	12 3	7 23.45	+14 52.3	1.358	2.202	16.9	18.4

EPHEMERIDES

1 3.9

1 3.9

2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
491671	2012 <i>UU</i> ₁		1 3.9 41°95	1.2/ 3.7	17		27561	2000 <i>KJ</i> ₁		1 3.9 82°67	1.1/ 4.4	18	
12 3	7 24.28	+23 6.3	1.162	2.025	17.9	21.6	12 3	7 15.46	+17 32.9	3.165	3.988	8.8	18.4
12 13	7 18.47	+23 45.9	1.109	2.033	12.9	21.3	12 13	7 10.32	+17 41.9	3.102	4.005	6.4	18.3
12 23	7 9.24	+24 30.4	1.077	2.043	7.3	21.0	12 23	7 3.98	+17 54.8	3.066	4.023	3.7	18.1
1 2	6 57.84	+25 13.6	1.070	2.052	1.6	20.7	1 2	6 56.95	+18 10.6	3.060	4.040	1.3	17.9
1 12	6 46.18	+25 49.8	1.088	2.062	5.2	21.0	1 12	6 49.86	+18 28.2	3.085	4.056	2.4	18.1
1 22	6 36.15	+26 15.8	1.132	2.073	10.8	21.3	1 22	6 43.30	+18 46.4	3.140	4.073	5.0	18.3
2 1	6 29.24	+26 31.9	1.198	2.084	15.7	21.6	2 1	6 37.82	+19 4.6	3.225	4.090	7.5	18.4
2 11	6 26.21	+26 39.9	1.283	2.095	19.7	21.9	2 11	6 33.82	+19 22.0	3.335	4.106	9.5	18.6
455863	2005 <i>US</i> ₄₈		1 3.9 70°20	0°3/ 3.9	18		301177	2008 <i>YZ</i> ₁₀₄		1 3.9 39°99	0°3/ 3.9	18	
12 3	7 23.77	+23 22.0	1.752	2.594	13.8	21.2	12 3	7 24.41	+23 53.6	1.337	2.192	16.5	20.0
12 13	7 16.98	+23 28.9	1.701	2.616	9.9	21.0	12 13	7 18.16	+23 46.2	1.279	2.200	11.9	19.8
12 23	7 7.92	+23 37.0	1.676	2.638	5.5	20.8	12 23	7 8.89	+23 39.6	1.243	2.208	6.7	19.5
1 2	6 57.59	+23 43.7	1.678	2.660	1.0	20.5	1 2	6 57.80	+23 31.2	1.234	2.216	1.1	19.2
1 12	6 47.27	+23 46.9	1.709	2.682	3.7	20.8	1 12	6 46.57	+23 19.1	1.251	2.225	4.5	19.4
1 22	6 38.19	+23 46.2	1.769	2.704	8.0	21.1	1 22	6 36.85	+23 3.6	1.294	2.234	9.8	19.7
2 1	6 31.31	+23 42.2	1.854	2.726	11.7	21.3	2 1	6 29.91	+22 46.2	1.361	2.244	14.4	20.0
2 11	6 27.19	+23 35.9	1.962	2.748	14.8	21.6	2 11	6 26.44	+22 28.5	1.448	2.254	18.1	20.3
186156	2001 <i>UD</i> ₁₀₅		1 3.9 204°36	0°3/ 3.9	18		39616	1994 <i>AA</i> ₄		1 3.9 354°19	0°6/ 3.8	18	
12 3	7 21.74	+22 16.5	1.847	2.688	13.2	20.4	12 3	7 16.23	+20 59.9	0.997	1.877	18.7	17.8
12 13	7 15.73	+22 39.6	1.774	2.688	9.6	20.1	12 13	7 13.20	+21 46.0	0.935	1.868	13.6	17.5
12 23	7 7.38	+23 6.1	1.725	2.688	5.4	19.9	12 23	7 6.58	+22 43.3	0.893	1.861	7.7	17.2
1 2	6 57.53	+23 32.9	1.704	2.687	0.9	19.6	1 2	6 57.47	+23 45.9	0.873	1.856	1.4	16.7
1 12	6 47.37	+23 56.9	1.713	2.687	3.7	19.8	1 12	6 47.74	+24 46.2	0.876	1.852	5.4	17.0
1 22	6 38.14	+24 16.3	1.750	2.686	8.0	20.0	1 22	6 39.44	+25 38.1	0.903	1.851	11.7	17.3
2 1	6 30.91	+24 30.6	1.813	2.685	11.9	20.3	2 1	6 34.29	+26 18.6	0.950	1.852	17.2	17.6
2 11	6 26.39	+24 40.4	1.899	2.685	15.2	20.5	2 11	6 33.27	+26 47.5	1.014	1.854	21.7	17.9
31738	1999 <i>JC</i> ₇₇		1 3.9 14°06	8°1/ 6.5	18		451441	2011 <i>SL</i> ₁₀₃		1 3.9 90°12	3°3/ 3.4	15	
12 3	7 16.36	- 0 51.2	2.045	2.824	14.4	18.0	12 3	7 28.59	+29 44.9	1.607	2.448	14.9	21.6
12 13	7 11.51	- 1 23.4	1.976	2.826	12.1	17.9	12 13	7 20.77	+30 23.0	1.560	2.472	10.9	21.4
12 23	7 4.86	- 1 36.1	1.929	2.829	9.8	17.7	12 23	7 10.17	+30 56.3	1.537	2.495	6.5	21.2
1 2	6 57.09	- 1 26.9	1.908	2.831	8.3	17.6	1 2	6 58.00	+31 19.2	1.542	2.518	3.4	21.1
1 12	6 49.13	- 0 55.8	1.912	2.835	8.4	17.7	1 12	6 45.85	+31 28.3	1.575	2.541	5.3	21.2
1 22	6 41.88	- 0 5.2	1.943	2.838	10.0	17.8	1 22	6 35.23	+31 23.6	1.636	2.563	9.3	21.5
2 1	6 36.17	+ 1 0.4	1.999	2.842	12.3	17.9	2 1	6 27.30	+31 8.0	1.723	2.585	13.0	21.8
2 11	6 32.58	+ 2 15.4	2.078	2.847	14.6	18.1	2 11	6 22.68	+30 45.5	1.831	2.606	16.1	22.1
422875	2002 <i>QU</i> ₁₇		1 3.9 142°40	1°9/ 3.5	18		454975	2015 <i>TF</i> ₂₀₉		1 3.9 102°06	2°2/ 3.6	18	
12 3	7 21.73	+28 55.7	2.612	3.441	10.2	22.0	12 3	7 26.62	+26 59.0	1.520	2.367	15.3	21.2
12 13	7 15.12	+29 14.0	2.543	3.450	7.4	21.9	12 13	7 19.59	+27 27.8	1.462	2.378	11.1	21.0
12 23	7 6.78	+29 29.5	2.502	3.459	4.4	21.7	12 23	7 9.64	+27 55.2	1.427	2.389	6.4	20.8
1 2	6 57.41	+29 39.5	2.490	3.468	2.0	21.5	1 2	6 57.93	+28 16.2	1.419	2.399	2.4	20.5
1 12	6 47.92	+29 42.3	2.509	3.476	3.5	21.6	1 12	6 46.05	+28 26.9	1.440	2.410	4.9	20.7
1 22	6 39.22	+29 37.5	2.559	3.484	6.4	21.8	1 22	6 35.58	+28 26.8	1.487	2.420	9.5	21.0
2 1	6 32.07	+29 26.1	2.636	3.491	9.3	22.0	2 1	6 27.78	+28 17.6	1.560	2.431	13.6	21.3
2 11	6 27.01	+29 9.9	2.738	3.498	11.7	22.2	2 11	6 23.35	+28 2.5	1.653	2.440	17.0	21.5
397031	2005 <i>UL</i> ₁₈		1 3.9 48°78	4°1/ 3.2	17		41293	1999 <i>XY</i> ₁₀₈		1 3.9 109°15	0°8/ 4.2	18	
12 3	7 25.88	+28 42.2	1.202	2.063	17.5	20.6	12 3	7 20.53	+19 33.9	2.109	2.943	12.1	19.3
12 13	7 19.66	+29 44.0	1.154	2.076	12.8	20.4	12 13	7 14.52	+19 45.4	2.042	2.951	8.8	19.1
12 23	7 9.91	+30 43.6	1.127	2.089	7.8	20.1	12 23	7 6.56	+20 1.4	1.999	2.959	5.0	18.9
1 2	6 57.97	+31 32.4	1.125	2.102	4.1	19.9	1 2	6 57.41	+20 20.0	1.985	2.967	1.2	18.6
1 12	6 45.81	+32 3.9	1.149	2.116	6.6	20.1	1 12	6 48.10	+20 39.1	2.001	2.975	3.3	18.8
1 22	6 35.41	+32 16.6	1.198	2.130	11.3	20.4	1 22	6 39.63	+20 57.2	2.047	2.982	7.1	19.1
2 1	6 28.27	+32 13.3	1.270	2.145	15.7	20.7	2 1	6 32.87	+21 13.5	2.119	2.990	10.5	19.3
2 11	6 25.12	+31 58.8	1.360	2.160	19.4	21.0	2 11	6 28.42	+21 27.8	2.215	2.997	13.4	19.5
256050	2006 <i>UV</i> ₁₀₂		1 3.9 193°75	0°9/ 4.2	18		282555	2004 <i>TU</i> ₃₅₆		1 3.9 38°84	2°4/ 4.8	18	
12 3	7 22.18	+19 8.1	2.025	2.858	12.6	21.3	12 3	7 22.25	+13 32.9	1.089	1.946	19.3	19.1
12 13	7 15.86	+19 21.9	1.947	2.856	9.2	21.0	12 13	7 16.83	+14 33.8	1.048	1.967	14.2	18.9
12 23	7 7.39	+19 41.0	1.895	2.854	5.3	20.8	12 23	7 8.22	+15 53.3	1.028	1.989	8.4	18.6
1 2	6 57.54	+20 3.3	1.870	2.852	1.3	20.5	1 2	6 57.70	+17 25.2	1.031	2.012	3.0	18.4
1 12	6 47.40	+20 26.5	1.876	2.850	3.5	20.7	1 12	6 47.09	+19 0.7	1.061	2.036	5.1	18.6
1 22	6 38.07	+20 48.7	1.912	2.847	7.6	20.9	1 22	6 38.13	+20 31.6	1.116	2.061	10.5	19.0
2 1	6 30.54	+21 8.9	1.974	2.843	11.2	21.1	2 1	6 32.15	+21 52.5	1.194	2.086	15.3	19.3
2 11	6 25.50	+21 26.9	2.059	2.839	14.4	21.3	2 11	6 29.83	+23 1.2	1.292	2.112	19.1	19.7
110797	2001 <i>UV</i> ₃₈		1 3.9 182°48	1°9/ 4.5	18		33851	2000 <i>HD</i> ₃₃		1 3.9 127°15	7°3/ 31.5	18	
12 3	7 17.93	+15 42.2	2.668	3.489	10.3	20.5	12 3	7 31.32	+38 10.1	2.011	2.830	13.2	18.3
12 13	7 12.34	+15 40.9	2.588	3.489	7.6	20.3	12 13	7 23.27	+40 30.0	1.953	2.840	10.4	18.2
12 23	7 5.22	+15 45.2	2.535	3.489	4.6	20.1	12 23	7 12.00	+42 42.1	1.923	2.849	8.1	18.1
1 2	6 57.16	+15 54.5	2.512	3.489	2.1	20.0	1 2	6 58.41	+44 35.5	1.922	2.859	7.3	18.0
1 12	6 48.93	+16 7.8	2.519	3.489	3.2	20.0	1 12	6 44.02	+46 2.0	1.951	2.868	8.7	18.1
1 22	6 41.29	+16 23.8	2.557	3.488	6.1	20.2	1 22	6 30.55	+46 58.6	2.009	2.876	11.1	18.3
2 1	6 34.92	+16 41.6	2.622	3.487	9.0	20.4	2 1	6 19.59	+47 28.0	2.091	2.884	13.7	18.5
2 11	6 30.35	+17 0.2	2.712	3.486	11.4	20.6	2 11	6 12.15	+47 36.4	2.193	2.892	15.9	18.7
388360	2006 <i>UC</i> ₂₅		1 3.9 35°73	3°5/ 3.5	17		198911	2005 <i>UM</i> ₆₄		1 3.9 43°70	7°6/ 5.6	18	
12 3	7 25.71	+28 14.9	1.051										

EPHEMERIDES

1 3.9

1 4.0

2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
334209	2001 SZ ₃₀₈		1 3.9 73°49	3°5/ 4.9 18			269628	2011 AN ₂₃		1 3.9 359°71	5°3/ 5.6 18		
12 3	7 18.45	+11 40.2	2.237	3.055	12.1	21.2	12 3	7 15.28	+9 34.0	1.253	2.103	17.7	18.8
12 13	7 12.82	+11 27.1	2.175	3.070	9.1	21.0	12 13	7 11.75	+9 44.9	1.188	2.098	13.7	18.6
12 23	7 5.52	+11 23.5	2.139	3.085	6.0	20.9	12 23	7 5.45	+10 16.9	1.144	2.096	9.2	18.3
1 2	6 57.25	+11 29.4	2.130	3.100	3.7	20.7	1 2	6 57.32	+11 9.8	1.123	2.095	5.6	18.1
1 12	6 48.90	+11 43.7	2.152	3.115	4.4	20.8	1 12	6 48.79	+12 19.8	1.127	2.095	6.4	18.2
1 22	6 41.32	+12 5.0	2.202	3.130	7.2	21.0	1 22	6 41.34	+13 40.5	1.156	2.097	10.5	18.4
2 1	6 35.27	+12 31.2	2.279	3.144	10.1	21.2	2 1	6 36.28	+15 5.2	1.207	2.101	14.9	18.7
2 11	6 31.24	+13 0.4	2.380	3.159	12.7	21.4	2 11	6 34.43	+16 27.6	1.279	2.107	18.8	18.9
126667	2002 CQ ₂₁₂		1 3.9 98°05	1°0/ 3.8 18			9278	1981 EM ₁		1 4.0 8°67	0°4/ 4.1 18		
12 3	7 22.73	+25 13.6	1.980	2.819	12.6	20.3	12 3	7 18.27	+20 45.7	1.820	2.667	13.2	17.2
12 13	7 16.23	+25 26.5	1.917	2.830	9.1	20.1	12 13	7 13.23	+20 59.8	1.752	2.669	9.5	17.0
12 23	7 7.56	+25 39.1	1.879	2.840	5.1	19.9	12 23	7 6.00	+21 18.5	1.708	2.671	5.4	16.7
1 2	6 57.60	+25 48.6	1.869	2.851	1.3	19.6	1 2	6 57.40	+21 39.4	1.691	2.674	1.0	16.4
1 12	6 47.53	+25 52.8	1.889	2.861	3.6	19.8	1 12	6 48.57	+22 0.0	1.703	2.677	3.6	16.6
1 22	6 38.47	+25 51.3	1.938	2.871	7.6	20.1	1 22	6 40.65	+22 18.6	1.743	2.682	7.8	16.9
2 1	6 31.37	+25 44.7	2.014	2.882	11.1	20.3	2 1	6 34.63	+22 34.2	1.808	2.686	11.6	17.1
2 11	6 26.86	+25 34.7	2.112	2.891	14.1	20.5	2 11	6 31.17	+22 46.9	1.895	2.692	14.8	17.4
434008	2000 WY ₂		1 3.9 2°87	6°6/ 2.9 18			13559	Werth		1 4.0 114°53	5°9/ 2.7 18		
12 3	7 34.00	+19 26.7	0.967	1.824	21.2	19.3	12 3	7 25.95	+40 43.4	2.299	3.115	11.9	18.2
12 13	7 25.77	+16 39.5	0.906	1.823	16.0	19.0	12 13	7 18.65	+41 26.0	2.238	3.123	9.4	18.0
12 23	7 13.44	+13 45.9	0.865	1.823	10.3	18.6	12 23	7 8.99	+41 57.4	2.203	3.131	7.1	17.9
1 2	6 58.63	+10 56.7	0.850	1.823	6.6	18.5	1 2	6 57.90	+42 12.3	2.195	3.139	6.0	17.9
1 12	6 43.72	+8 25.6	0.862	1.824	9.3	18.6	1 12	6 46.67	+42 8.0	2.215	3.147	6.8	17.9
1 22	6 31.01	+6 23.6	0.898	1.825	14.8	18.9	1 22	6 36.56	+41 45.2	2.264	3.155	9.0	18.1
2 1	6 22.12	+4 55.5	0.955	1.826	20.0	19.2	2 1	6 28.62	+41 7.1	2.338	3.162	11.4	18.2
2 11	6 17.80	+3 58.3	1.028	1.829	24.3	19.5	2 11	6 23.48	+40 18.7	2.434	3.170	13.6	18.4
166276	2002 GN ₉₅		1 3.9 203°44	2°1/ 4.4 18			518223	2016 SO ₁		1 4.0 326°43	8°9/ 31.4 18		
12 3	7 23.61	+17 19.3	1.932	2.761	13.3	20.8	12 3	7 31.47	+29 34.1	0.975	1.841	20.3	20.3
12 13	7 16.96	+17 5.2	1.852	2.757	9.8	20.6	12 13	7 25.48	+32 55.2	0.918	1.839	15.3	20.0
12 23	7 8.06	+16 56.8	1.797	2.753	5.9	20.3	12 23	7 14.30	+36 25.3	0.883	1.838	10.7	19.7
1 2	6 57.73	+16 53.2	1.770	2.749	2.4	20.1	1 2	6 58.97	+39 40.2	0.874	1.837	8.9	19.6
1 12	6 47.10	+16 53.6	1.773	2.743	4.1	20.2	1 12	6 42.00	+42 16.8	0.889	1.836	12.0	19.8
1 22	6 37.34	+16 57.1	1.805	2.738	8.1	20.4	1 22	6 26.62	+44 3.8	0.929	1.835	16.9	20.1
2 1	6 29.48	+17 3.2	1.863	2.732	11.8	20.7	2 1	6 15.68	+45 4.1	0.987	1.834	21.6	20.3
2 11	6 24.21	+17 11.0	1.945	2.725	15.1	20.9	2 11	6 10.72	+45 29.2	1.061	1.833	25.4	20.6
19552	1999 JJ ₆₈		1 3.9 103°00	1°2/ 4.3 18			341016	2007 FV ₄₇		1 4.0 348°87	1°1/ 3.7 18		
12 3	7 25.26	+18 33.9	1.700	2.535	14.5	18.7	12 3	7 22.32	+22 2.2	1.195	2.058	17.5	19.7
12 13	7 18.16	+18 49.7	1.645	2.555	10.5	18.5	12 13	7 17.27	+22 53.4	1.129	2.054	12.7	19.4
12 23	7 8.68	+19 12.0	1.615	2.575	6.0	18.3	12 23	7 8.77	+23 52.9	1.085	2.051	7.2	19.1
1 2	6 57.81	+19 37.8	1.613	2.594	1.6	18.0	1 2	6 57.92	+24 54.3	1.065	2.048	1.5	18.7
1 12	6 46.88	+20 4.4	1.640	2.613	3.9	18.2	1 12	6 46.49	+25 50.5	1.071	2.046	5.2	18.9
1 22	6 37.14	+20 29.6	1.695	2.631	8.3	18.5	1 22	6 36.39	+26 36.5	1.103	2.044	10.9	19.2
2 1	6 29.64	+20 52.4	1.777	2.649	12.1	18.8	2 1	6 29.25	+27 10.9	1.156	2.043	16.0	19.5
2 11	6 24.99	+21 12.4	1.882	2.666	15.3	19.0	2 11	6 26.03	+27 34.6	1.229	2.043	20.3	19.8
101651	1999 CU ₆₆		1 3.9 327°60	0°1/ 3.9 18			425964	2011 HO ₂₃		1 4.0 238°30	4°4/ 2.6 18		
12 3	7 20.83	+24 1.5	2.022	2.862	12.3	19.3	12 3	7 22.93	+34 47.5	2.303	3.133	11.4	21.4
12 13	7 14.92	+23 46.2	1.942	2.856	8.9	19.1	12 13	7 16.54	+35 38.7	2.226	3.127	8.6	21.2
12 23	7 6.88	+23 30.4	1.888	2.850	5.0	18.9	12 23	7 7.89	+36 24.2	2.175	3.121	5.9	21.0
1 2	6 57.53	+23 12.8	1.862	2.845	0.9	18.6	1 2	6 57.74	+36 59.0	2.152	3.114	4.4	20.9
1 12	6 47.95	+22 52.7	1.866	2.840	3.4	18.8	1 12	6 47.24	+37 19.2	2.158	3.108	5.6	21.0
1 22	6 39.26	+22 30.4	1.899	2.835	7.5	19.0	1 22	6 37.55	+37 24.0	2.193	3.101	8.3	21.1
2 1	6 32.40	+22 7.0	1.958	2.830	11.2	19.2	2 1	6 29.72	+37 14.9	2.255	3.094	11.2	21.3
2 11	6 28.02	+21 43.7	2.040	2.826	14.3	19.4	2 11	6 24.47	+36 55.1	2.338	3.088	13.7	21.5
30903	1993 FU ₃₇		1 3.9 295°68	3°6/ 3.3 18			32538	2001 PB ₄₄		1 4.0 54°24	0°8/ 4.2 18		
12 3	7 25.30	+29 0.1	1.388	2.242	16.1	19.0	12 3	7 22.49	+20 20.5	1.561	2.408	15.0	19.4
12 13	7 19.26	+29 41.8	1.315	2.233	11.9	18.8	12 13	7 16.40	+20 25.6	1.506	2.422	10.8	19.2
12 23	7 9.82	+30 21.8	1.264	2.225	7.2	18.5	12 23	7 7.80	+20 35.6	1.474	2.436	6.2	19.0
1 2	6 58.07	+30 53.2	1.239	2.217	3.7	18.2	1 2	6 57.72	+20 48.1	1.469	2.451	1.3	18.7
1 12	6 45.75	+31 10.3	1.241	2.209	6.1	18.4	1 12	6 47.54	+21 0.8	1.491	2.466	4.0	18.9
1 22	6 34.74	+31 11.6	1.269	2.201	10.8	18.6	1 22	6 38.60	+21 12.2	1.542	2.481	8.6	19.2
2 1	6 26.60	+30 59.2	1.320	2.193	15.4	18.9	2 1	6 31.97	+21 21.7	1.617	2.496	12.7	19.5
2 11	6 22.28	+30 37.5	1.391	2.186	19.3	19.1	2 11	6 28.30	+21 29.5	1.714	2.512	16.1	19.7
165710	2001 QC ₁		1 3.9 208°65	1°7/ 4.5 18			502282	2015 BD ₁₃₈		1 4.0 202°04	5°9/ 2.8 17		
12 3	7 18.38	+16 12.2	2.802	3.621	9.9	21.3	12 3	7 28.17	+46 15.5	3.100	3.883	9.9	21.4
12 13	7 12.67	+16 16.1	2.715	3.616	7.3	21.1	12 13	7 19.86	+46 39.1	3.023	3.878	8.1	21.3
12 23	7 5.45	+16 25.3	2.655	3.610	4.4	20.9	12 23	7 9.53	+46 50.2	2.971	3.874	6.6	21.2
1 2	6 57.29	+16 38.9	2.625	3.603	1.9	20.7	1 2	6 58.00	+46 44.8	2.948	3.868	5.9	21.2
1 12	6 48.91	+16 55.7	2.626	3.596	3.0	20.8	1 12	6 46.38	+46 20.8	2.955	3.862	6.4	21.2
1 22	6 41.05	+17 14.6	2.658	3.589	5.9	21.0	1 22	6 35.73	+45 39.3	2.991	3.856	7.9	21.3
2 1	6 34.41	+17 34.5	2.718	3.581	8.7	21.1	2 1	6 26.94	+44 43.4	3.054	3.849	9.7	21.4
2 11	6 29.50	+17 54.5	2.803	3.573	11.2	21.3	2 11	6 20.60	+43 37.7	3.140	3.842	11.5	21.5
206352	2003 QT ₂₈		1 3.9 155°70	0°8/ 3.8 18			457081	2008 EZ ₉₈		1 4.0 317°50	1°8/ 4.2 18		
12 3	7 25.21	+23 53.1	1.999	2.833	12.7	21.2	12 3	7 21.32	+19 41.5	1.481	2.332	15.4	20.