

EPHEMERIDES

2 2.9

2 3.0

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
207010	2004 <i>TQ</i> ₃₁₉		2 2.9 24°82'	3°6/ 1.5 18			168694	2000 <i>GN</i> ₆₆		2 3.0 280°59'	0°8/ 2.5 17		
1 2	9 28.05	+21 50.1	1.002	1.882	18.4	19.7	1 2	9 25.98	+17 37.8	2.169	3.008	11.5	20.2
1 12	9 23.40	+22 30.9	0.961	1.894	13.2	19.5	1 12	9 20.67	+18 3.5	2.084	2.998	8.3	20.0
1 22	9 15.33	+23 16.2	0.939	1.908	7.6	19.2	1 22	9 13.45	+18 35.2	2.024	2.988	4.6	19.7
2 1	9 5.23	+23 56.1	0.941	1.923	3.6	19.0	2 1	9 4.97	+19 8.7	1.993	2.978	1.0	19.4
2 11	8 55.06	+24 21.7	0.967	1.939	7.0	19.3	2 11	8 56.16	+19 39.7	1.992	2.967	3.6	19.6
2 21	8 46.69	+24 28.6	1.015	1.957	12.2	19.6	2 21	8 47.99	+20 4.5	2.020	2.957	7.4	19.8
3 2	8 41.45	+24 16.5	1.084	1.976	17.0	20.0	3 2	8 41.34	+20 20.6	2.075	2.947	10.9	20.0
3 12	8 39.96	+23 48.0	1.171	1.996	20.8	20.3	3 12	8 36.86	+20 27.1	2.152	2.937	13.9	20.2
462704	2009 <i>WM</i> ₁₂		2 2.9 109°30'	0°7/ 3.5 18			415857	2001 <i>SM</i> ₁₃₂		2 3.0 136°91'	0°7/ 2.5 18		
1 2	9 26.66	+12 45.0	2.030	2.860	12.6	22.1	1 2	9 29.63	+17 28.2	2.088	2.923	12.1	21.8
1 12	9 21.07	+13 12.0	1.961	2.869	9.2	21.9	1 12	9 23.18	+17 53.9	2.021	2.933	8.7	21.6
1 22	9 13.59	+13 49.0	1.918	2.878	5.3	21.6	1 22	9 14.77	+18 25.1	1.980	2.943	4.8	21.3
2 1	9 4.94	+14 32.2	1.904	2.887	1.3	21.4	2 1	9 5.18	+18 57.4	1.968	2.953	1.0	21.1
2 11	8 56.09	+15 16.8	1.919	2.896	3.2	21.5	2 11	8 55.41	+19 26.3	1.987	2.962	3.6	21.3
2 21	8 48.02	+15 58.2	1.963	2.905	7.2	21.8	2 21	8 46.50	+19 48.4	2.035	2.970	7.4	21.5
3 2	8 41.59	+16 33.1	2.033	2.914	10.7	22.0	3 2	8 39.30	+20 1.7	2.109	2.979	10.9	21.8
3 12	8 37.38	+16 59.2	2.127	2.922	13.7	22.3	3 12	8 34.40	+20 5.8	2.207	2.986	13.8	22.0
429300	2010 <i>DA</i> ₁		2 2.9 264°52'	4°1/31.2 17			330513	2007 <i>RX</i> ₁₆		2 3.0 149°11'	2°4/ 4.8 18		
1 2	9 30.48	+29 15.6	2.316	3.156	10.8	21.3	1 2	9 26.05	+ 8 8.2	2.491	3.297	11.3	20.7
1 12	9 23.88	+29 44.5	2.234	3.144	8.1	21.1	1 12	9 20.36	+ 8 4.2	2.413	3.303	8.5	20.5
1 22	9 15.21	+30 9.7	2.178	3.131	5.4	20.9	1 22	9 13.11	+ 8 10.4	2.360	3.308	5.4	20.3
2 1	9 5.23	+30 25.8	2.152	3.119	4.2	20.8	2 1	9 4.90	+ 8 25.4	2.337	3.313	2.7	20.1
2 11	8 54.96	+30 28.5	2.155	3.106	5.8	20.9	2 11	8 56.50	+ 8 46.6	2.344	3.318	3.3	20.2
2 21	8 45.47	+30 15.9	2.187	3.093	8.7	21.0	2 21	8 48.70	+ 9 11.0	2.381	3.322	6.2	20.4
3 2	8 37.69	+29 48.5	2.244	3.080	11.6	21.2	3 2	8 42.21	+ 9 35.6	2.445	3.326	9.1	20.6
3 12	8 32.27	+29 8.6	2.324	3.067	14.2	21.4	3 12	8 37.53	+ 9 57.7	2.534	3.330	11.8	20.7
295409	2008 <i>JF</i> ₂₂		2 2.9 317°23'	5°7/ 5.3 18			496823	1995 <i>QZ</i> ₁₄		2 3.0 117°17'	2°3/ 4.9 18		
1 2	9 28.03	+ 5 13.5	1.517	2.336	16.6	20.0	1 2	9 24.40	+ 7 30.6	2.499	3.306	11.2	22.2
1 12	9 22.83	+ 4 19.7	1.428	2.319	13.1	19.8	1 12	9 19.17	+ 7 42.8	2.426	3.316	8.5	22.0
1 22	9 14.97	+ 3 41.4	1.360	2.302	9.3	19.5	1 22	9 12.43	+ 8 6.3	2.378	3.326	5.4	21.8
2 1	9 5.23	+ 3 20.2	1.318	2.286	6.1	19.3	2 1	9 4.79	+ 8 39.1	2.359	3.336	2.7	21.7
2 11	8 54.86	+ 3 15.6	1.302	2.270	6.4	19.2	2 11	8 56.98	+ 9 17.9	2.370	3.345	3.1	21.7
2 21	8 45.26	+ 3 24.6	1.312	2.254	10.0	19.4	2 21	8 49.76	+ 9 59.0	2.411	3.354	6.0	21.9
3 2	8 37.71	+ 3 42.7	1.346	2.239	14.2	19.6	3 2	8 43.82	+10 39.1	2.480	3.363	8.9	22.1
3 12	8 33.13	+ 4 4.3	1.400	2.225	18.0	19.8	3 12	8 39.63	+11 15.0	2.574	3.372	11.5	22.3
518463	2005 <i>JY</i> ₈₀		2 2.9 129°62'	1°5/ 1.4 18			422862	2002 <i>PE</i> ₃₅		2 3.0 251°21'	0°0/ 3.0 17		
1 2	9 29.09	+19 50.4	2.989	3.814	9.1	22.7	1 2	9 27.58	+15 36.3	2.502	3.328	10.6	22.4
1 12	9 22.29	+20 52.7	2.931	3.839	6.4	22.5	1 12	9 21.66	+15 50.4	2.402	3.309	7.7	22.2
1 22	9 14.08	+21 57.7	2.901	3.863	3.6	22.4	1 22	9 13.96	+16 10.4	2.329	3.290	4.4	21.9
2 1	9 5.03	+23 0.7	2.904	3.885	1.5	22.3	2 1	9 5.07	+16 33.6	2.285	3.270	0.8	21.6
2 11	8 55.86	+23 57.4	2.940	3.906	3.3	22.4	2 11	8 55.80	+16 56.5	2.272	3.249	3.0	21.7
2 21	8 47.30	+24 44.9	3.007	3.927	6.1	22.6	2 21	8 47.02	+17 16.1	2.290	3.228	6.6	21.9
3 2	8 39.98	+25 21.5	3.104	3.946	8.6	22.8	3 2	8 39.55	+17 30.1	2.336	3.206	9.9	22.1
3 12	8 34.37	+25 46.9	3.225	3.964	10.7	23.0	3 12	8 34.01	+17 37.2	2.405	3.184	12.8	22.3
421574	2014 <i>OV</i> ₁₉₃		2 3.0 229°91'	1°1/ 2.3 18			259992	2004 <i>FL</i> ₈₂		2 3.0 248°89'	1°5/ 1.9 17		
1 2	9 29.66	+17 14.0	1.925	2.762	12.8	21.7	1 2	9 28.12	+18 15.8	2.109	2.947	11.8	21.5
1 12	9 23.60	+17 57.2	1.837	2.751	9.3	21.4	1 12	9 22.40	+19 7.2	2.015	2.929	8.6	21.2
1 22	9 15.23	+18 48.6	1.776	2.739	5.2	21.2	1 22	9 14.54	+20 6.2	1.947	2.911	4.8	21.0
2 1	9 5.28	+19 42.8	1.742	2.727	1.2	20.9	2 1	9 5.18	+21 7.4	1.909	2.892	1.5	20.7
2 11	8 54.84	+20 33.7	1.739	2.713	4.1	21.0	2 11	8 55.32	+22 4.5	1.900	2.872	4.2	20.9
2 21	8 45.11	+21 16.0	1.765	2.699	8.5	21.3	2 21	8 46.02	+22 52.5	1.921	2.852	8.2	21.1
3 2	8 37.16	+21 46.4	1.817	2.685	12.4	21.5	3 2	8 38.31	+23 28.1	1.969	2.832	11.9	21.3
3 12	8 31.77	+22 4.1	1.890	2.670	15.8	21.7	3 12	8 32.93	+23 50.2	2.039	2.810	15.0	21.4
246197	2007 <i>RY</i> ₁₁₆		2 3.0 82°48'	3°3/31.9 18			30393	2000 <i>KN</i> ₃₀		2 3.0 73°08'	2°5/ 1.4 18		
1 2	9 29.80	+26 16.0	2.183	3.027	11.3	20.6	1 2	9 30.07	+20 45.3	1.698	2.547	13.7	17.8
1 12	9 23.25	+26 41.7	2.124	3.038	8.2	20.4	1 12	9 23.74	+21 42.7	1.654	2.573	9.7	17.6
1 22	9 14.77	+27 5.3	2.090	3.048	5.0	20.2	1 22	9 15.14	+22 43.5	1.634	2.599	5.5	17.4
2 1	9 5.16	+27 21.8	2.085	3.059	3.3	20.1	2 1	9 5.25	+23 40.7	1.643	2.624	2.5	17.2
2 11	8 55.47	+27 27.4	2.110	3.070	5.1	20.3	2 11	8 55.33	+24 27.4	1.680	2.649	5.1	17.5
2 21	8 46.71	+27 20.3	2.163	3.081	8.2	20.5	2 21	8 46.59	+24 59.8	1.745	2.674	9.0	17.8
3 2	8 39.73	+27 0.8	2.243	3.091	11.2	20.7	3 2	8 39.98	+25 16.6	1.836	2.699	12.6	18.0
3 12	8 35.06	+26 30.6	2.344	3.102	13.7	20.9	3 12	8 36.06	+25 18.8	1.947	2.723	15.5	18.3
413597	2005 <i>UO</i> ₁₁₇		2 3.0 337°05'	5°3/30.9 18			88996	2001 <i>TY</i> ₇₅		2 3.0 95°50'	3°1/31.9 18		
1 2	9 28.90	+27 41.2	1.545	2.405	14.2	20.3	1 2	9 29.60	+22 52.7	1.863	2.711	12.7	19.1
1 12	9 23.52	+28 33.1	1.476	2.398	10.5	20.0	1 12	9 23.38	+23 49.6	1.809	2.727	9.1	18.9
1 22	9 15.32	+29 23.3	1.432	2.390	6.9	19.8	1 22	9 14.96	+24 48.3	1.781	2.743	5.3	18.7
2 1	9 5.29	+30 3.3	1.413	2.383	5.3	19.7	2 1	9 5.24	+25 41.9	1.781	2.758	3.1	18.6
2 11	8 54.87	+30 25.5	1.421	2.377	7.6	19.8	2 11	8 55.37	+26 24.2	1.810	2.774	5.4	18.7
2 21	8 45.56	+30 26.5	1.454	2.372	11.4	20.0	2 21	8 46.53	+26 51.6	1.867	2.789	9.0	19.0
3 2	8 38.66	+30 6.6	1.511	2.367	15.2	20.2	3 2	8 39.67	+27 3.1	1.949	2.804	12.3	19.2
3 12	8 34.92	+29 29.1	1.586	2.362	18.5	20.4	3 12	8 35.38	+27 0.0	2.053	2.818	15.1	19.4
146824	2001 <i>YP</i> ₁₄₀		2 3.0 101°17'	2°9/ 1.5 18			379922	2012 <i>K7</i> ₁₈		2 3.0 255°66'	1°5/ 4.3 17		
1 2	9 34.09	+24 46.7	1.892	2.733	12.8	18.4	1 2	9 25.29	+ 8 51				

EPHEMERIDES

2 3.0

2 3.0

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
418973	2009 <i>HW</i> ₇₄		2 3.0 201°49	0°4/ 3.3	18		112590	2002 <i>PJ</i> ₅₇		2 3.0 127°78	1°6/ 1.9	18	
1 2	9 27.81	+12 41.4	1.959	2.788	13.0	21.6	1 2	9 28.85	+21 22.8	2.331	3.169	10.9	19.7
1 12	9 22.14	+13 24.1	1.877	2.785	9.5	21.4	1 12	9 22.50	+21 40.7	2.263	3.176	7.8	19.5
1 22	9 14.35	+14 18.8	1.821	2.781	5.5	21.2	1 22	9 14.38	+22 0.3	2.221	3.184	4.4	19.3
2 1	9 5.17	+15 20.9	1.793	2.777	1.1	20.9	2 1	9 5.18	+22 17.6	2.209	3.191	1.7	19.2
2 11	8 55.61	+16 24.3	1.795	2.773	3.5	21.0	2 11	8 55.86	+22 28.9	2.227	3.198	3.8	19.3
2 21	8 46.75	+17 23.3	1.827	2.768	7.7	21.3	2 21	8 47.31	+22 32.1	2.275	3.205	7.1	19.5
3 2	8 39.57	+18 13.5	1.885	2.762	11.6	21.5	3 2	8 40.33	+22 26.2	2.350	3.211	10.2	19.7
3 12	8 34.78	+18 52.5	1.966	2.756	14.9	21.7	3 12	8 35.46	+22 11.7	2.448	3.217	12.9	19.9
464394	2016 <i>BO</i> ₇		2 3.0 11°96	2°3/ 3.9	18		279865	2001 <i>HU</i> ₂₄		2 3.0 124°01	1°8/ 4.1	18	
1 2	9 31.60	+13 2.4	1.481	2.320	15.9	20.1	1 2	9 31.58	+ 9 49.6	1.651	2.475	15.3	21.4
1 12	9 25.23	+12 19.4	1.412	2.322	11.8	19.9	1 12	9 24.93	+10 17.4	1.590	2.492	11.3	21.2
1 22	9 16.19	+11 45.2	1.365	2.324	7.2	19.6	1 22	9 15.92	+11 0.1	1.552	2.508	6.8	21.0
2 1	9 5.49	+11 18.8	1.345	2.327	2.8	19.4	2 1	9 5.46	+11 53.3	1.542	2.524	2.4	20.7
2 11	8 54.52	+10 58.2	1.353	2.330	4.4	19.5	2 11	8 54.82	+12 50.8	1.561	2.539	3.8	20.8
2 21	8 44.71	+10 41.2	1.388	2.334	9.1	19.8	2 21	8 45.24	+13 46.3	1.608	2.553	8.3	21.1
3 2	8 37.22	+10 25.7	1.447	2.338	13.5	20.0	3 2	8 37.77	+14 34.9	1.682	2.566	12.4	21.4
3 12	8 32.78	+10 9.6	1.527	2.344	17.2	20.3	3 12	8 33.06	+15 13.5	1.778	2.579	15.8	21.7
500509	2012 <i>TJ</i> ₂₈₈		2 3.0 98°09	1°6/ 4.2	17		233901	2009 <i>BT</i>		2 3.0 38°95	2°6/ 4.4	18	
1 2	9 25.69	+10 42.2	2.450	3.267	11.1	21.7	1 2	9 28.45	+10 17.9	1.844	2.669	13.9	19.8
1 12	9 20.11	+10 42.9	2.379	3.278	8.2	21.5	1 12	9 22.43	+ 9 48.4	1.782	2.683	10.4	19.6
1 22	9 12.98	+10 52.5	2.334	3.288	5.0	21.3	1 22	9 14.40	+ 9 29.6	1.745	2.698	6.5	19.4
2 1	9 4.92	+11 8.7	2.318	3.299	2.0	21.2	2 1	9 5.19	+ 9 20.2	1.735	2.713	3.0	19.2
2 11	8 56.73	+11 28.9	2.332	3.309	2.9	21.2	2 11	8 55.88	+ 9 17.9	1.754	2.729	3.9	19.3
2 21	8 49.18	+11 50.0	2.376	3.319	6.1	21.5	2 21	8 47.53	+ 9 19.8	1.801	2.745	7.5	19.5
3 2	8 42.97	+12 9.5	2.448	3.329	9.1	21.7	3 2	8 41.00	+ 9 23.2	1.874	2.762	11.1	19.8
3 12	8 38.60	+12 25.2	2.544	3.339	11.7	21.9	3 12	8 36.85	+ 9 25.3	1.970	2.778	14.2	20.0
319529	2006 <i>RF</i> ₄₉		2 3.0 330°90	2°4/ 1.4	17		240515	2004 <i>FZ</i> ₂₉		2 3.0 295°31	0°9/ 3.8	18	
1 2	9 25.80	+22 18.9	2.089	2.937	11.5	20.2	1 2	9 23.70	+11 37.4	2.228	3.055	11.7	20.3
1 12	9 20.63	+22 51.7	2.012	2.930	8.3	20.0	1 12	9 18.99	+12 6.9	2.142	3.048	8.6	20.1
1 22	9 13.47	+23 26.8	1.960	2.923	4.8	19.8	1 22	9 12.52	+12 47.3	2.082	3.040	5.1	19.8
2 1	9 5.02	+23 59.4	1.937	2.917	2.4	19.6	2 1	9 4.89	+13 35.3	2.050	3.033	1.5	19.6
2 11	8 56.30	+24 24.4	1.943	2.911	4.6	19.8	2 11	8 56.96	+14 26.5	2.047	3.025	3.0	19.7
2 21	8 48.31	+24 38.7	1.977	2.905	8.1	20.0	2 21	8 49.59	+15 16.2	2.074	3.018	6.8	19.9
3 2	8 41.95	+24 40.8	2.036	2.900	11.5	20.2	3 2	8 43.60	+16 0.5	2.129	3.011	10.2	20.1
3 12	8 37.87	+24 31.2	2.118	2.894	14.4	20.3	3 12	8 39.60	+16 36.8	2.206	3.004	13.2	20.3
289930	2005 <i>NR</i> ₃₂		2 3.0 134°47	1°4/ 4.1	18		465077	2006 <i>SU</i> ₃₆₇		2 3.0 183°37	7°2/ 25.2	17	
1 2	9 25.89	+ 8 44.7	1.856	2.679	13.8	20.7	1 2	9 33.84	+47 53.5	3.401	4.189	8.9	22.0
1 12	9 20.78	+ 9 45.1	1.782	2.684	10.2	20.5	1 12	9 26.10	+48 58.8	3.350	4.190	7.8	21.9
1 22	9 13.59	+11 2.4	1.732	2.689	6.1	20.2	1 22	9 16.43	+49 51.7	3.326	4.189	7.2	21.8
2 1	9 5.05	+12 31.6	1.711	2.693	2.0	20.0	2 1	9 5.56	+50 26.7	3.329	4.189	7.4	21.9
2 11	8 56.19	+14 5.2	1.719	2.697	3.5	20.1	2 11	8 54.47	+50 40.8	3.359	4.187	8.2	21.9
2 21	8 48.07	+15 35.8	1.757	2.701	7.7	20.3	2 21	8 44.18	+50 33.5	3.415	4.185	9.4	22.0
3 2	8 41.67	+16 57.0	1.821	2.705	11.6	20.6	3 2	8 35.54	+50 6.6	3.493	4.183	10.7	22.1
3 12	8 37.63	+18 4.9	1.908	2.708	14.9	20.8	3 12	8 29.15	+49 23.5	3.590	4.180	11.9	22.2
421886	2014 <i>QM</i> ₁₇₇		2 3.0 234°07	1°2/ 2.3	18		304816	2007 <i>QE</i> ₁₀		2 3.0 202°60	1°1/ 2.3	18	
1 2	9 30.04	+17 40.6	1.817	2.658	13.3	21.3	1 2	9 30.56	+17 30.7	1.952	2.788	12.7	22.1
1 12	9 24.01	+18 21.1	1.732	2.648	9.6	21.0	1 12	9 24.19	+18 11.6	1.871	2.784	9.2	21.9
1 22	9 15.54	+19 9.7	1.672	2.636	5.4	20.8	1 22	9 15.56	+18 59.9	1.816	2.779	5.1	21.6
2 1	9 5.40	+20 0.8	1.640	2.624	1.3	20.5	2 1	9 5.43	+19 50.1	1.789	2.773	1.2	21.4
2 11	8 54.78	+20 47.8	1.638	2.612	4.4	20.6	2 11	8 54.91	+20 36.3	1.793	2.767	4.1	21.5
2 21	8 44.91	+21 25.6	1.663	2.599	8.8	20.9	2 21	8 45.16	+21 13.7	1.825	2.760	8.3	21.8
3 2	8 36.96	+21 51.1	1.715	2.585	12.9	21.1	3 2	8 37.22	+21 39.7	1.885	2.752	12.1	22.0
3 12	8 31.69	+22 3.5	1.788	2.571	16.4	21.3	3 12	8 31.81	+21 53.4	1.966	2.743	15.3	22.2
42934	1999 <i>TL</i> ₂₅		2 3.0 178°15	1°4/ 2.1	18		364403	2006 <i>VH</i> ₁₁₁		2 3.0 111°43	3°7/ 31.6	18	
1 2	9 30.68	+19 2.7	2.045	2.881	12.2	20.8	1 2	9 31.19	+25 9.6	1.877	2.724	12.7	21.3
1 12	9 24.11	+19 38.7	1.970	2.884	8.8	20.6	1 12	9 24.57	+26 2.6	1.822	2.738	9.2	21.1
1 22	9 15.41	+20 19.7	1.922	2.885	4.9	20.3	1 22	9 15.68	+26 55.1	1.792	2.751	5.6	20.9
2 1	9 5.36	+21 0.4	1.903	2.886	1.5	20.1	2 1	9 5.43	+27 40.2	1.790	2.765	3.7	20.8
2 11	8 55.04	+21 35.8	1.913	2.886	4.1	20.3	2 11	8 55.04	+28 12.0	1.818	2.777	5.9	21.0
2 21	8 45.52	+22 1.9	1.954	2.885	8.0	20.5	2 21	8 45.71	+28 27.5	1.873	2.790	9.3	21.2
3 2	8 37.79	+22 16.8	2.021	2.884	11.6	20.7	3 2	8 38.42	+28 26.5	1.953	2.802	12.6	21.4
3 12	8 32.47	+22 20.3	2.110	2.882	14.6	20.9	3 12	8 33.80	+28 11.0	2.055	2.813	15.3	21.7
258084	2001 <i>PN</i> ₆₅		2 3.0 138°82	1°9/ 1.6	18		296466	2009 <i>HU</i> ₈₈		2 3.0 274°80	1°3/ 3.8	16	
1 2	9 30.13	+20 51.1	2.179	3.016	11.5	21.4	1 2	9 28.21	+12 5.2	1.685	2.520	14.5	21.5
1 12	9 23.52	+21 30.9	2.115	3.029	8.2	21.2	1 12	9 22.82	+12 18.6	1.595	2.505	10.8	21.2
1 22	9 14.99	+22 13.6	2.078	3.040	4.7	21.0	1 22	9 14.95	+12 44.9	1.530	2.489	6.4	20.9
2 1	9 5.29	+22 54.0	2.070	3.051	1.9	20.8	2 1	9 5.35	+13 20.7	1.491	2.474	1.9	20.6
2 11	8 55.43	+23 27.1	2.093	3.062	4.2	21.0	2 11	8 55.20	+14 0.8	1.480	2.459	3.9	20.7
2 21	8 46.42	+23 49.9	2.145	3.072	7.7	21.2	2 21	8 45.78	+14 40.0	1.497	2.443	8.7	20.9
3 2	8 39.11	+24 1.0	2.224	3.081	10.9	21.5	3 2	8 38.27	+15 13.5	1.540	2.427	13.1	21.1
3 12	8 34.07	+24 0.8	2.325	3.090	13.6	21.7	3 12	8 33.52	+15 38.4	1.604	2.412	16.9	21.3
79325	1996 <i>QJ</i>		2 3.0 112°00	0°0/ 2.9	18		28241	1999 <i>AC</i> ₂₂		2 3.0 28°53	3°2/ 1.0	18	
1 2	9 26.35	+15 20.6	2.535	3.362	10.5	20.5	1 2	9 28.34	+22 28.7	1.629			

EPHEMERIDES

2 3.0

2 3.0

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
454184	2013 <i>GP</i> ₅₆		2 3.0 348°47	4.7/31.4	18		325246	2008 <i>GU</i> ₇₆		2 3.0 118°92	4.5/6.5	18	
1 2	9 26.59	+23 12.8	1.186	2.061	16.5	20.7	1 2	9 25.55	+1 35.7	1.922	2.716	14.6	21.4
1 12	9 22.44	+24 24.0	1.124	2.054	12.0	20.4	1 12	9 20.46	+1 51.6	1.847	2.723	11.5	21.2
1 22	9 15.02	+25 41.2	1.083	2.048	7.3	20.2	1 22	9 13.41	+2 27.8	1.795	2.729	8.0	21.0
2 1	9 5.37	+26 53.1	1.066	2.044	4.7	20.0	2 1	9 5.11	+3 22.4	1.769	2.735	5.1	20.8
2 11	8 55.21	+27 48.7	1.074	2.040	7.8	20.2	2 11	8 56.54	+4 31.0	1.772	2.740	4.9	20.8
2 21	8 46.34	+28 21.1	1.106	2.037	12.7	20.4	2 21	8 48.70	+5 47.5	1.803	2.746	7.7	21.0
3 2	8 40.26	+28 28.5	1.158	2.035	17.3	20.7	3 2	8 42.48	+7 5.1	1.861	2.752	11.0	21.2
3 12	8 37.86	+28 13.4	1.229	2.034	21.2	20.9	3 12	8 38.50	+8 18.0	1.943	2.757	14.1	21.4
419076	2009 <i>SY</i> ₇₈		2 3.0 129°98	1.3/3.8	18		14859	1989 <i>WU</i> ₁		2 3.0 141°73	4.3/6.6	18	
1 2	9 28.11	+12 12.6	1.935	2.763	13.2	21.5	1 2	9 27.72	+1 2.7	2.398	3.172	12.6	18.9
1 12	9 22.28	+12 18.4	1.861	2.767	9.7	21.3	1 12	9 21.62	+1 0.8	2.324	3.186	10.0	18.7
1 22	9 14.40	+12 34.4	1.812	2.770	5.7	21.1	1 22	9 13.90	+1 14.7	2.274	3.199	7.1	18.5
2 1	9 5.24	+12 57.4	1.791	2.774	1.8	20.8	2 1	9 5.18	+1 43.4	2.252	3.211	4.8	18.4
2 11	8 55.84	+13 23.7	1.799	2.777	3.4	20.9	2 11	8 56.29	+2 24.3	2.261	3.223	4.6	18.4
2 21	8 47.24	+13 49.2	1.836	2.780	7.5	21.2	2 21	8 48.05	+3 13.2	2.299	3.234	6.8	18.6
3 2	8 40.37	+14 10.8	1.900	2.783	11.2	21.4	3 2	8 41.19	+4 5.7	2.366	3.244	9.5	18.8
3 12	8 35.85	+14 26.1	1.986	2.786	14.4	21.6	3 12	8 36.22	+4 57.3	2.457	3.254	12.1	18.9
47974	2000 <i>WN</i> ₂₃		2 3.0 161°69	2.2/4.6	18		401166	2011 <i>WY</i> ₅₄		2 3.0 244°43	4.1/5.5	18	
1 2	9 28.53	+8 1.5	1.891	2.707	13.9	20.0	1 2	9 28.05	+5 5.2	1.648	2.461	15.7	21.0
1 12	9 22.64	+8 30.0	1.816	2.712	10.5	19.8	1 12	9 22.66	+5 3.2	1.564	2.455	12.2	20.8
1 22	9 14.65	+9 14.1	1.765	2.717	6.5	19.6	1 22	9 14.85	+5 20.2	1.503	2.447	8.2	20.5
2 1	9 5.30	+10 10.2	1.742	2.722	2.8	19.4	2 1	9 5.38	+5 54.9	1.467	2.440	4.7	20.3
2 11	8 55.65	+11 12.9	1.749	2.725	3.7	19.4	2 11	8 55.43	+6 43.2	1.460	2.433	5.0	20.3
2 21	8 46.78	+12 16.3	1.784	2.729	7.6	19.7	2 21	8 46.26	+7 39.3	1.479	2.425	8.8	20.5
3 2	8 39.66	+13 15.0	1.847	2.731	11.4	19.9	3 2	8 39.01	+8 36.8	1.525	2.417	12.9	20.7
3 12	8 34.94	+14 5.2	1.932	2.733	14.7	20.1	3 12	8 34.47	+9 29.7	1.591	2.409	16.6	20.9
247377	2001 <i>XQ</i> ₂₂₁		2 3.0 113°09	4.9/6.8	17		371239	2006 <i>BW</i> ₁₂₁		2 3.0 34°49	0.5/2.7	18	
1 2	9 24.35	+0 17.8	2.418	3.195	12.5	20.3	1 2	9 26.84	+16 23.8	1.882	2.724	12.9	21.5
1 12	9 19.27	-0 1.8	2.336	3.197	10.0	20.1	1 12	9 21.49	+16 53.5	1.811	2.726	9.3	21.3
1 22	9 12.60	-0 6.0	2.278	3.199	7.4	19.9	1 22	9 14.02	+17 30.9	1.764	2.727	5.2	21.0
2 1	9 4.94	+0 5.1	2.247	3.201	5.3	19.8	2 1	9 5.22	+18 11.4	1.745	2.729	0.9	20.7
2 11	8 57.05	+0 29.9	2.245	3.203	5.1	19.8	2 11	8 56.16	+18 49.8	1.755	2.731	3.7	21.0
2 21	8 49.72	+1 4.9	2.272	3.205	7.0	19.9	2 21	8 47.91	+19 21.6	1.793	2.733	7.9	21.2
3 2	8 43.66	+1 46.2	2.326	3.206	9.5	20.1	3 2	8 41.43	+19 44.0	1.857	2.735	11.7	21.4
3 12	8 39.40	+2 29.4	2.404	3.208	12.1	20.3	3 12	8 37.36	+19 55.8	1.943	2.738	14.9	21.7
54816	2001 <i>MC</i> ₃₀		2 3.0 125°46	0.9/3.7	18		3419	<i>Guth</i>		2 3.0 208°17	6.4/27.7	18	
1 2	9 26.11	+12 38.4	2.536	3.357	10.7	19.8	1 2	9 28.51	+37 22.5	2.573	3.407	10.1	16.4
1 12	9 20.40	+12 51.6	2.466	3.368	7.8	19.7	1 12	9 22.53	+38 37.9	2.513	3.405	8.1	16.2
1 22	9 13.18	+13 12.3	2.421	3.379	4.5	19.5	1 22	9 14.56	+39 45.4	2.479	3.402	6.7	16.1
2 1	9 5.03	+13 37.9	2.407	3.390	1.3	19.2	2 1	9 5.32	+40 38.4	2.473	3.400	6.6	16.1
2 11	8 56.75	+14 5.3	2.423	3.400	2.7	19.4	2 11	8 55.79	+41 12.0	2.495	3.397	7.9	16.2
2 21	8 49.10	+14 31.4	2.469	3.410	6.0	19.6	2 21	8 47.00	+41 24.5	2.544	3.394	9.9	16.3
3 2	8 42.76	+14 53.6	2.543	3.420	9.0	19.8	3 2	8 39.85	+41 16.4	2.617	3.391	11.9	16.5
3 12	8 38.23	+15 10.3	2.642	3.430	11.5	20.0	3 12	8 34.99	+40 50.8	2.709	3.388	13.8	16.6
226836	2004 <i>SE</i> ₁₃		2 3.0 112°06	2.5/1.3	18		363825	2005 <i>NJ</i> ₁₂₅		2 3.0 139°04	1.5/1.7	18	
1 2	9 28.28	+21 46.9	1.998	2.844	12.1	20.6	1 2	9 28.00	+17 52.1	2.187	3.024	11.5	21.2
1 12	9 22.41	+22 34.6	1.935	2.852	8.6	20.4	1 12	9 22.07	+19 2.1	2.122	3.035	8.2	21.0
1 22	9 14.48	+23 25.3	1.897	2.860	5.0	20.2	1 22	9 14.26	+20 18.7	2.083	3.047	4.6	20.8
2 1	9 5.27	+24 12.8	1.888	2.868	2.5	20.0	2 1	9 5.26	+21 35.8	2.075	3.057	1.6	20.6
2 11	8 55.85	+24 51.8	1.908	2.875	4.8	20.2	2 11	8 56.03	+22 46.9	2.097	3.067	4.0	20.8
2 21	8 47.31	+25 18.4	1.957	2.883	8.4	20.4	2 21	8 47.53	+23 47.2	2.149	3.077	7.6	21.0
3 2	8 40.55	+25 31.2	2.031	2.890	11.7	20.7	3 2	8 40.62	+24 33.8	2.228	3.086	10.9	21.3
3 12	8 36.19	+25 30.8	2.127	2.897	14.5	20.9	3 12	8 35.88	+25 6.0	2.330	3.094	13.6	21.5
451030	2008 <i>WQ</i> ₈₀		2 3.0 46°53	1.1/2.5	15		522571	2016 <i>EX</i> ₂₄₄		2 3.0 20°90	0.7/3.5	18	
1 2	9 28.86	+16 2.5	1.187	2.049	17.5	21.4	1 2	9 26.62	+13 11.4	1.775	2.613	13.7	21.8
1 12	9 23.63	+16 52.6	1.140	2.065	12.5	21.2	1 12	9 21.41	+13 32.7	1.702	2.614	10.0	21.6
1 22	9 15.43	+17 54.9	1.115	2.082	6.9	20.9	1 22	9 14.02	+14 4.9	1.654	2.615	5.8	21.3
2 1	9 5.43	+19 0.9	1.115	2.100	1.4	20.6	2 1	9 5.23	+14 44.2	1.633	2.617	1.4	21.0
2 11	8 55.30	+20 1.0	1.141	2.118	5.1	20.9	2 11	8 56.15	+15 25.3	1.641	2.619	3.6	21.2
2 21	8 46.65	+20 48.1	1.192	2.136	10.5	21.3	2 21	8 47.91	+16 3.3	1.676	2.621	8.0	21.5
3 2	8 40.71	+21 18.7	1.265	2.155	15.2	21.6	3 2	8 41.50	+16 34.3	1.737	2.623	11.9	21.7
3 12	8 38.14	+21 32.3	1.358	2.175	19.0	21.9	3 12	8 37.58	+16 55.9	1.820	2.625	15.3	21.9
474026	2016 <i>GX</i> ₁₂₅		2 3.0 302°36	7.5/7.8	17		180543	2004 <i>EY</i> ₁₄		2 3.0 18°80	3.8/31.6	18	
1 2	9 24.11	-3 33.8	1.780	2.557	16.2	20.7	1 2	9 26.25	+21 33.6	1.333	2.201	15.5	19.5
1 12	9 19.81	-3 56.0	1.680	2.535	13.5	20.4	1 12	9 21.78	+22 53.0	1.278	2.205	11.1	19.2
1 22	9 13.26	-3 54.2	1.601	2.512	10.6	20.2	1 22	9 14.47	+24 18.9	1.245	2.211	6.5	19.0
2 1	9 5.11	-3 26.3	1.545	2.490	8.1	20.0	2 1	9 5.32	+25 41.1	1.238	2.217	3.8	18.8
2 11	8 56.34	-2 33.6	1.516	2.468	7.7	19.9	2 11	8 55.84	+26 49.3	1.257	2.224	6.8	19.0
2 21	8 48.10	-1 20.9	1.513	2.447	9.7	20.0	2 21	8 47.57	+27 36.9	1.301	2.231	11.3	19.3
3 2	8 41.48	+0 4.3	1.535	2.425	13.0	20.1	3 2	8 41.78	+28 1.6	1.368	2.239	15.5	19.6
3 12	8 37.32	+1 33.6	1.579	2.404	16.4	20.3	3 12	8 39.21	+28 5.0	1.453	2.248	19.0	19.8
84781	2002 <i>XA</i> ₇₁		2 3.0 87°15	1.4/2.2	18		371648	2007 <i>BT</i> ₆₃		2 3.0 289°92	1.7/4.1	18	
1 2	9 30.49	+18 26.4	1.762	2.605	13.6	19.4	1 2	9 27.24	+11 9.9	1.788	2.619	14.0	20.9
1 12													

EPHEMERIDES

2 3.0

2 3.1

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
225548	2000 <i>SR</i> ₁₉₄		2 3.0 63°24	3°2/ 1.1	18		313773	2003 <i>YJ</i> ₁		2 3.1 116°86	0°4/ 2.9	17	
1 2	9 29.54	+23 48.9	1.824	2.674	12.9	20.3	1 2	9 49.27	+21 6.3	1.136	1.978	19.5	19.5
1 12	9 23.55	+24 28.8	1.757	2.676	9.3	20.1	1 12	9 38.60	+20 4.6	1.074	1.988	14.3	19.3
1 22	9 15.23	+25 9.8	1.715	2.677	5.5	19.9	1 22	9 23.96	+19 0.3	1.036	1.998	8.1	18.9
2 1	9 5.45	+25 45.6	1.701	2.679	3.2	19.7	2 1	9 6.98	+17 50.4	1.024	2.008	1.4	18.6
2 11	8 55.41	+26 10.4	1.716	2.681	5.5	19.9	2 11	8 50.02	+16 34.6	1.040	2.017	5.4	18.9
2 21	8 46.34	+26 21.0	1.758	2.683	9.2	20.1	2 21	8 35.32	+15 15.9	1.084	2.026	11.7	19.2
3 2	8 39.28	+26 16.6	1.825	2.684	12.8	20.3	3 2	8 24.47	+13 58.3	1.153	2.035	17.0	19.6
3 12	8 34.89	+25 58.6	1.913	2.686	15.8	20.5	3 12	8 18.11	+12 44.1	1.241	2.043	21.2	19.9
147814	2005 <i>SP</i> ₁₀₇		2 3.0 309°65	2°7/ 4.1	18		26088	1985 <i>QF</i> ₁		2 3.1 38°24	4°1/ 4.8	18	
1 2	9 30.15	+11 49.2	1.536	2.373	15.6	18.9	1 2	9 31.41	+ 8 44.0	1.462	2.290	16.7	16.9
1 12	9 24.52	+11 12.6	1.441	2.349	11.8	18.6	1 12	9 25.07	+ 7 54.5	1.400	2.300	12.7	16.7
1 22	9 16.09	+10 45.4	1.369	2.326	7.4	18.2	1 22	9 16.15	+ 7 18.7	1.359	2.310	8.3	16.5
2 1	9 5.65	+10 26.8	1.322	2.302	3.2	17.9	2 1	9 5.65	+ 6 56.8	1.345	2.320	4.5	16.3
2 11	8 54.49	+10 14.8	1.303	2.280	4.6	18.0	2 11	8 54.95	+ 6 46.8	1.358	2.331	5.2	16.3
2 21	8 44.09	+10 6.8	1.311	2.257	9.5	18.2	2 21	8 45.43	+ 6 45.6	1.397	2.342	9.2	16.6
3 2	8 35.80	+10 0.1	1.343	2.236	14.3	18.4	3 2	8 38.22	+ 6 49.4	1.462	2.354	13.3	16.9
3 12	8 30.58	+ 9 51.9	1.395	2.214	18.4	18.6	3 12	8 33.98	+ 6 54.2	1.547	2.366	16.9	17.1
350683	2001 <i>UO</i> ₁₈₃		2 3.0 102°51	2°1/ 1.8	18		323825	2005 <i>SJ</i> ₃₈		2 3.1 269°18	2°3/ 4.6	18	
1 2	9 32.71	+19 19.8	1.551	2.398	14.9	21.6	1 2	9 26.46	+ 8 48.7	1.819	2.643	14.1	20.9
1 12	9 25.93	+20 13.4	1.499	2.417	10.6	21.4	1 12	9 21.29	+ 9 3.5	1.741	2.641	10.6	20.7
1 22	9 16.57	+21 12.9	1.472	2.436	5.9	21.1	1 22	9 13.99	+ 9 33.1	1.686	2.640	6.6	20.4
2 1	9 5.67	+22 10.5	1.472	2.455	2.2	20.9	2 1	9 5.28	+10 14.6	1.658	2.638	2.8	20.2
2 11	8 54.66	+22 58.9	1.501	2.473	5.1	21.2	2 11	8 56.24	+11 3.2	1.659	2.637	3.8	20.3
2 21	8 44.92	+23 33.2	1.558	2.490	9.6	21.5	2 21	8 47.95	+11 53.6	1.689	2.635	7.8	20.5
3 2	8 37.54	+23 51.6	1.639	2.507	13.5	21.8	3 2	8 41.41	+12 40.7	1.744	2.634	11.7	20.7
3 12	8 33.17	+23 55.1	1.741	2.524	16.8	22.0	3 12	8 37.29	+13 20.7	1.822	2.632	15.1	20.9
77624	2001 <i>KQ</i> ₄₃		2 3.0 118°92	1°8/ 1.4	18		199104	2005 <i>YF</i> ₄₃		2 3.1 82°30	1°3/ 2.3	17	
1 2	9 26.15	+20 2.8	2.484	3.322	10.3	19.5	1 2	9 31.17	+15 48.9	1.405	2.254	16.0	20.8
1 12	9 20.56	+21 4.0	2.423	3.337	7.3	19.4	1 12	9 24.96	+16 57.9	1.358	2.277	11.4	20.6
1 22	9 13.33	+22 8.9	2.388	3.351	4.1	19.2	1 22	9 16.09	+18 18.0	1.335	2.300	6.3	20.3
2 1	9 5.12	+23 12.3	2.384	3.365	1.8	19.0	2 1	9 5.63	+19 40.2	1.338	2.322	1.4	20.1
2 11	8 56.73	+24 9.2	2.411	3.379	3.9	19.2	2 11	8 55.07	+20 55.3	1.370	2.345	4.9	20.3
2 21	8 49.01	+24 55.8	2.468	3.392	7.0	19.4	2 21	8 45.83	+21 56.2	1.428	2.367	9.7	20.7
3 2	8 42.67	+25 30.2	2.552	3.405	9.8	19.6	3 2	8 39.05	+22 39.6	1.511	2.388	13.9	21.0
3 12	8 38.25	+25 52.0	2.659	3.417	12.2	19.8	3 12	8 35.36	+23 5.2	1.614	2.410	17.4	21.3
100837	1998 <i>HG</i> ₁₅		2 3.0 141°62	2°9/ 1.2	18		440064	2002 <i>RW</i> ₁₈₄		2 3.1 113°94	1°7/ 3.9	18	
1 2	9 33.50	+21 26.4	1.738	2.581	13.7	20.1	1 2	9 34.15	+11 44.8	1.528	2.357	16.0	21.3
1 12	9 26.43	+22 30.9	1.678	2.594	9.8	19.9	1 12	9 26.93	+11 46.2	1.469	2.374	11.8	21.1
1 22	9 16.86	+23 39.3	1.644	2.607	5.7	19.7	1 22	9 17.15	+12 0.2	1.433	2.391	7.0	20.9
2 1	9 5.73	+24 43.7	1.639	2.619	2.9	19.6	2 1	9 5.82	+12 23.2	1.425	2.407	2.3	20.6
2 11	8 54.38	+25 36.6	1.663	2.629	5.5	19.7	2 11	8 54.36	+12 50.0	1.445	2.423	4.1	20.8
2 21	8 44.13	+26 13.4	1.716	2.639	9.5	20.0	2 21	8 44.13	+13 15.9	1.493	2.438	8.8	21.1
3 2	8 36.08	+26 32.8	1.794	2.648	13.2	20.3	3 2	8 36.27	+13 37.2	1.567	2.452	13.1	21.4
3 12	8 30.91	+26 36.1	1.892	2.657	16.3	20.5	3 12	8 31.40	+13 51.5	1.661	2.465	16.6	21.6
447381	2006 <i>AB</i> ₉₅		2 3.1 11°27	0°6/ 3.3	17		246665	2008 <i>YH</i> ₁₀₅		2 3.1 177°92	1°5/ 1.8	18	
1 2	9 26.48	+14 2.8	1.061	1.929	18.6	21.3	1 2	9 29.88	+17 31.9	2.143	2.976	11.9	21.4
1 12	9 22.32	+14 17.2	1.004	1.931	13.6	21.0	1 12	9 23.58	+18 43.4	2.067	2.979	8.5	21.2
1 22	9 14.93	+14 47.2	0.968	1.934	7.8	20.7	1 22	9 15.22	+20 2.7	2.018	2.981	4.7	21.0
2 1	9 5.43	+15 27.0	0.954	1.938	1.6	20.3	2 1	9 5.51	+21 23.4	1.999	2.982	1.6	20.8
2 11	8 55.58	+16 8.6	0.964	1.944	4.9	20.6	2 11	8 55.45	+22 38.7	2.012	2.983	4.1	21.0
2 21	8 47.14	+16 44.4	0.998	1.950	10.9	20.9	2 21	8 46.07	+23 43.1	2.054	2.982	7.9	21.2
3 2	8 41.55	+17 9.4	1.053	1.958	16.2	21.2	3 2	8 38.34	+24 33.3	2.124	2.980	11.4	21.4
3 12	8 39.58	+17 21.1	1.127	1.967	20.5	21.5	3 12	8 32.90	+25 8.4	2.216	2.978	14.3	21.6
163479	2002 <i>RM</i> ₂₂₉		2 3.1 120°02	1°1/ 2.1	18		257229	2009 <i>DS</i> ₆₁		2 3.1 143°78	1°7/ 4.5	18	
1 2	9 25.46	+17 32.7	2.324	3.161	10.9	20.5	1 2	9 28.42	+ 8 10.4	2.212	3.019	12.5	20.9
1 12	9 20.17	+18 26.9	2.256	3.170	7.8	20.3	1 12	9 22.30	+ 8 51.5	2.140	3.033	9.3	20.7
1 22	9 13.16	+19 27.1	2.215	3.179	4.3	20.1	1 22	9 14.38	+ 9 46.0	2.094	3.046	5.7	20.5
2 1	9 5.10	+20 28.5	2.203	3.187	1.2	19.9	2 1	9 5.35	+10 50.2	2.078	3.058	2.3	20.3
2 11	8 56.83	+21 25.8	2.222	3.195	3.5	20.1	2 11	8 56.11	+11 59.0	2.092	3.069	3.1	20.4
2 21	8 49.22	+22 14.7	2.271	3.203	7.0	20.3	2 21	8 47.58	+13 6.9	2.137	3.080	6.7	20.6
3 2	8 43.04	+22 52.7	2.346	3.211	10.1	20.5	3 2	8 40.56	+14 9.3	2.211	3.089	10.1	20.8
3 12	8 38.84	+23 18.7	2.445	3.218	12.8	20.7	3 12	8 35.63	+15 3.0	2.308	3.098	12.9	21.0
59746	1999 <i>LN</i> ₁₃		2 3.1 190°43	2°8/31.6	18		488525	2001 <i>RA</i> ₂		2 3.1 188°50	6°0/ 9.3	17	
1 2	9 27.38	+22 0.0	2.281	3.123	10.9	18.9	1 2	9 26.64	- 7 51.6	2.531	3.254	13.3	22.1
1 12	9 21.73	+23 16.6	2.206	3.122	7.8	18.7	1 12	9 20.95	- 7 16.6	2.436	3.253	11.1	21.9
1 22	9 14.15	+24 37.2	2.159	3.120	4.6	18.5	1 22	9 13.62	- 6 18.5	2.363	3.252	8.7	21.7
2 1	9 5.29	+25 55.4	2.141	3.118	2.8	18.4	2 1	9 5.24	- 4 57.5	2.317	3.249	6.7	21.6
2 11	8 56.09	+27 4.6	2.154	3.116	4.9	18.5	2 11	8 56.55	- 3 17.2	2.302	3.246	6.0	21.5
2 21	8 47.52	+28 0.2	2.197	3.113	8.2	18.7	2 21	8 48.36	- 1 23.5	2.318	3.243	7.3	21.6
3 2	8 40.47	+28 39.8	2.266	3.110	11.2	18.9	3 2	8 41.42	+ 0 36.4	2.363	3.238	9.7	21.8
3 12	8 35.59	+29 3.5	2.357	3.106	13.9	19.1	3 12	8 36.29	+ 2 35.2	2.436	3.233	12.1	21.9
236897	2007 <i>TU</i> ₁₇		2 3.1 70°40	4°7/30.7	18		39869	1998 <i>DV</i> ₂₇		2 3.1 58°68	1°3/ 2.4	18	
1 2	9 29.42	+30 5.2	2.176	3.021	11.3	19.9	1 2	9 30.00	+17 6				

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
191614	2004 <i>JH</i> ₆		2 3.1 254°18	4.8/31.5	18		294596	2008 <i>AV</i> ₁		2 3.1 245°61	2.4/4.7	17	
1 2	9 34.02	+26 0.6	1.531	2.384	14.7	20.6	1 2	9 27.16	+9 2.6	2.601	3.406	10.9	20.3
1 12	9 27.48	+26 52.5	1.453	2.371	10.9	20.4	1 12	9 21.27	+8 40.2	2.510	3.400	8.2	20.1
1 22	9 17.83	+27 45.1	1.398	2.357	6.9	20.1	1 22	9 13.79	+8 26.0	2.445	3.393	5.3	19.9
2 1	9 6.01	+28 29.3	1.369	2.343	4.8	19.9	2 1	9 5.30	+8 19.2	2.410	3.386	2.7	19.7
2 11	8 53.58	+28 56.6	1.369	2.329	7.3	20.0	2 11	8 56.56	+8 18.4	2.405	3.378	3.3	19.8
2 21	8 42.21	+29 2.8	1.394	2.314	11.6	20.3	2 21	8 48.35	+8 21.3	2.431	3.371	6.1	19.9
3 2	8 33.39	+28 47.7	1.444	2.299	15.8	20.5	3 2	8 41.38	+8 25.9	2.484	3.363	9.1	20.1
3 12	8 28.01	+28 14.7	1.512	2.283	19.4	20.7	3 12	8 36.19	+8 29.9	2.563	3.356	11.7	20.3
38350	1999 <i>RS</i> ₁₄₉		2 3.1 29°94	1.3/3.9	18 R		350028	2010 <i>JP</i> ₁₄₆		2 3.1 176°51	2.9/5.2	18	
1 2	9 25.85	+11 3.7	1.873	2.704	13.4	18.6	1 2	9 26.16	+6 42.7	2.434	3.236	11.6	20.6
1 12	9 20.80	+11 27.9	1.799	2.705	9.9	18.4	1 12	9 20.61	+6 35.5	2.351	3.237	8.9	20.4
1 22	9 13.69	+12 4.8	1.748	2.707	5.9	18.1	1 22	9 13.44	+6 39.6	2.294	3.238	5.9	20.2
2 1	9 5.26	+12 50.7	1.725	2.708	1.9	17.9	2 1	9 5.24	+6 54.0	2.265	3.238	3.3	20.0
2 11	8 56.54	+13 40.6	1.731	2.710	3.4	18.0	2 11	8 56.82	+7 16.1	2.266	3.238	3.6	20.1
2 21	8 48.57	+14 29.2	1.766	2.711	7.6	18.2	2 21	8 48.97	+7 42.9	2.297	3.238	6.4	20.2
3 2	8 42.31	+15 12.1	1.826	2.713	11.4	18.5	3 2	8 42.44	+8 11.0	2.356	3.238	9.4	20.4
3 12	8 38.39	+15 46.2	1.909	2.715	14.7	18.7	3 12	8 37.75	+8 37.5	2.439	3.238	12.1	20.6
124703	2001 <i>SS</i> ₁₄₇		2 3.1 29°81	4.8/5.4	18		205464	2001 <i>QH</i> ₇₃		2 3.1 100°80	1.0/1.9	18	
1 2	9 28.77	+6 6.2	1.273	2.106	18.4	19.5	1 2	9 26.05	+16 28.3	2.714	3.542	9.8	20.6
1 12	9 23.57	+5 43.6	1.209	2.110	14.2	19.2	1 12	9 20.35	+17 44.4	2.658	3.567	7.0	20.4
1 22	9 15.50	+5 41.7	1.166	2.115	9.5	19.0	1 22	9 13.21	+19 6.0	2.630	3.592	3.8	20.2
2 1	9 5.59	+5 59.8	1.146	2.120	5.4	18.8	2 1	9 5.19	+20 28.2	2.633	3.617	1.1	20.1
2 11	8 55.32	+6 33.4	1.152	2.126	5.8	18.8	2 11	8 57.05	+21 45.7	2.669	3.641	3.2	20.3
2 21	8 46.23	+7 16.2	1.183	2.132	10.0	19.1	2 21	8 49.51	+22 54.4	2.737	3.665	6.2	20.5
3 2	8 39.61	+8 1.1	1.238	2.139	14.5	19.3	3 2	8 43.22	+23 51.4	2.832	3.688	8.9	20.7
3 12	8 36.22	+8 41.9	1.312	2.146	18.5	19.6	3 12	8 38.66	+24 35.9	2.953	3.710	11.1	20.9
200373	2000 <i>QH</i> ₈₉		2 3.1 55°69	3.2/4.6	18		229358	2005 <i>QS</i> ₉₉		2 3.1 118°29	1.6/3.8	18	
1 2	9 30.82	+9 7.6	1.295	2.133	17.8	19.2	1 2	9 31.48	+12 12.1	1.381	2.222	16.7	20.3
1 12	9 24.79	+8 56.3	1.245	2.152	13.3	19.0	1 12	9 25.45	+12 14.7	1.313	2.224	12.4	20.1
1 22	9 16.03	+9 2.4	1.216	2.171	8.3	18.8	1 22	9 16.56	+12 31.0	1.267	2.227	7.4	19.8
2 1	9 5.66	+9 23.0	1.211	2.191	3.8	18.6	2 1	9 5.82	+12 57.3	1.246	2.229	2.3	19.5
2 11	8 55.21	+9 52.9	1.234	2.211	4.8	18.7	2 11	8 54.70	+13 28.1	1.253	2.232	4.4	19.6
2 21	8 46.13	+10 26.0	1.282	2.231	9.4	19.0	2 21	8 44.73	+13 57.7	1.286	2.234	9.6	19.9
3 2	8 39.57	+10 57.1	1.354	2.251	13.8	19.3	3 2	8 37.22	+14 21.8	1.344	2.236	14.3	20.2
3 12	8 36.17	+11 22.1	1.446	2.272	17.5	19.6	3 12	8 32.92	+14 37.4	1.421	2.238	18.2	20.5
115311	2003 <i>SH</i> ₂₁₄		2 3.1 68°73	0.2/2.9	18		424789	2008 <i>TP</i> ₁₇₄		2 3.1 194°15	0.4/3.3	18	
1 2	9 25.91	+15 19.1	2.023	2.861	12.3	20.1	1 2	9 26.51	+14 6.1	2.163	2.993	11.9	21.6
1 12	9 20.70	+15 53.8	1.955	2.868	8.9	19.9	1 12	9 21.07	+14 27.2	2.084	2.993	8.6	21.4
1 22	9 13.57	+16 36.8	1.911	2.874	5.0	19.7	1 22	9 13.79	+14 56.8	2.031	2.992	5.0	21.1
2 1	9 5.25	+17 23.6	1.896	2.880	0.8	19.4	2 1	9 5.31	+15 31.3	2.007	2.991	1.0	20.8
2 11	8 56.71	+18 9.1	1.910	2.887	3.4	19.6	2 11	8 56.58	+16 6.4	2.013	2.990	3.1	21.0
2 21	8 48.94	+18 48.8	1.953	2.893	7.4	19.9	2 21	8 48.51	+16 38.3	2.047	2.989	7.0	21.3
3 2	8 42.78	+19 19.7	2.022	2.900	10.9	20.1	3 2	8 41.97	+17 4.1	2.109	2.988	10.5	21.5
3 12	8 38.83	+19 40.2	2.114	2.907	13.9	20.3	3 12	8 37.53	+17 21.9	2.194	2.987	13.4	21.7
367593	2009 <i>SO</i> ₂₈₁		2 3.1 145°16	1.1/2.2	18		85102	2211 <i>T</i> ₋₃		2 3.1 266°41	1.1/3.8	18	
1 2	9 28.08	+17 59.6	2.181	3.018	11.6	22.1	1 2	9 28.46	+12 37.6	1.787	2.619	13.9	19.7
1 12	9 22.16	+18 42.4	2.112	3.025	8.3	21.9	1 12	9 22.88	+12 46.1	1.702	2.610	10.3	19.5
1 22	9 14.36	+19 30.9	2.070	3.033	4.6	21.7	1 22	9 15.00	+13 5.7	1.641	2.600	6.1	19.2
2 1	9 5.39	+20 20.2	2.056	3.040	1.2	21.5	2 1	9 5.55	+13 33.2	1.607	2.590	1.7	18.9
2 11	8 56.21	+21 5.1	2.074	3.047	3.7	21.7	2 11	8 55.66	+14 4.1	1.602	2.581	3.7	19.0
2 21	8 47.77	+21 41.7	2.120	3.053	7.4	21.9	2 21	8 46.53	+14 33.7	1.626	2.571	8.2	19.3
3 2	8 40.93	+22 7.6	2.193	3.059	10.7	22.1	3 2	8 39.23	+14 58.3	1.675	2.561	12.3	19.5
3 12	8 36.26	+22 22.2	2.290	3.064	13.5	22.3	3 12	8 34.52	+15 15.4	1.746	2.550	15.9	19.7
354911	2006 <i>DC</i> ₂₈		2 3.1 261°86	1.7/2.1	18		462049	2007 <i>DM</i> ₁₁₂		2 3.1 288°86	6.8/7.9	17	
1 2	9 31.07	+19 16.5	1.643	2.490	14.2	21.3	1 2	9 24.36	-3 20.1	1.948	2.720	15.2	21.1
1 12	9 25.09	+19 49.6	1.557	2.475	10.3	21.0	1 12	9 19.83	-3 32.8	1.851	2.703	12.6	20.8
1 22	9 16.39	+20 29.6	1.495	2.459	5.9	20.7	1 22	9 13.26	-3 22.9	1.775	2.686	9.8	20.6
2 1	9 5.79	+21 10.4	1.460	2.443	1.8	20.4	2 1	9 5.26	-2 49.2	1.724	2.670	7.4	20.5
2 11	8 54.59	+21 45.2	1.453	2.427	4.9	20.6	2 11	8 56.77	-1 53.7	1.700	2.653	6.9	20.4
2 21	8 44.23	+22 9.0	1.474	2.410	9.7	20.8	2 21	8 48.79	-0 41.2	1.703	2.636	8.8	20.5
3 2	8 36.00	+22 19.2	1.520	2.394	14.1	21.0	3 2	8 42.32	+0 41.5	1.732	2.619	11.9	20.6
3 12	8 30.77	+22 15.8	1.586	2.376	17.9	21.2	3 12	8 38.09	+2 6.6	1.784	2.603	15.0	20.8
59290	1999 <i>CC</i> ₅₅		2 3.1 102°16	2.6/1.5	18		301367	2009 <i>CP</i> ₄₉		2 3.1 280°48	8.4/27.7	17	
1 2	9 30.49	+19 48.0	1.495	2.348	15.0	18.6	1 2	9 38.31	+44 55.4	2.465	3.270	11.4	20.4
1 12	9 24.59	+20 51.5	1.436	2.357	10.7	18.3	1 12	9 29.86	+45 38.8	2.391	3.253	9.7	20.3
1 22	9 16.00	+22 2.1	1.401	2.366	6.1	18.1	1 22	9 18.84	+46 7.7	2.341	3.234	8.6	20.2
2 1	9 5.69	+23 11.1	1.393	2.374	2.6	17.9	2 1	9 6.21	+46 14.5	2.319	3.216	8.5	20.1
2 11	8 55.10	+24 10.1	1.413	2.383	5.6	18.1	2 11	8 53.36	+45 55.0	2.323	3.198	9.6	20.2
2 21	8 45.67	+24 53.1	1.459	2.391	10.1	18.4	2 21	8 41.65	+45 8.9	2.354	3.180	11.4	20.3
3 2	8 38.60	+25 17.8	1.530	2.399	14.3	18.6	3 2	8 32.23	+43 59.6	2.409	3.161	13.4	20.4
3 12	8 34.60	+25 25.0	1.620	2.407	17.7	18.9	3 12	8 25.76	+42 32.8	2.484	3.143	15.3	20.5
233151	2005 <i>UX</i> ₂₄₁		2 3.1 225°72	0.8/2.5	18		204345	2004 <i>RD</i> ₃₂₅		2 3.1 58°43	3.0/4.5	18	
1 2	9 28.41	+17 35.7	1.954	2.794	12.6	21.3	1 2	9 31.29	+9 49.3	1.340	2.177	17.4	19.7

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
501418	2013 YD ₁₃₁		2 3.1 110°51	2°0/ 1.6 17			72968	2002 CK ₁₅₁		2 3.1 235°16	4°2/31.3 18		
1 2	9 27.50	+22 31.3	2.404	3.244	10.5	21.3	1 2	9 31.18	+24 46.4	1.751	2.601	13.3	19.6
1 12	9 21.62	+22 55.6	2.335	3.249	7.5	21.1	1 12	9 25.11	+25 53.4	1.674	2.592	9.7	19.3
1 22	9 14.01	+23 20.9	2.292	3.254	4.3	20.9	1 22	9 16.39	+27 2.9	1.623	2.583	6.1	19.1
2 1	9 5.36	+23 43.2	2.278	3.258	2.0	20.8	2 1	9 5.86	+28 6.6	1.599	2.573	4.2	18.9
2 11	8 56.56	+23 58.7	2.295	3.263	4.0	20.9	2 11	8 54.83	+28 56.3	1.603	2.562	6.6	19.1
2 21	8 48.47	+24 5.1	2.341	3.267	7.1	21.1	2 21	8 44.67	+29 27.3	1.635	2.551	10.4	19.3
3 2	8 41.87	+24 1.6	2.413	3.272	10.1	21.3	3 2	8 36.64	+29 38.0	1.692	2.540	14.2	19.5
3 12	8 37.29	+23 48.5	2.509	3.276	12.6	21.5	3 12	8 31.54	+29 30.4	1.768	2.529	17.4	19.7
135403	2001 TV ₂₁₅		2 3.1 121°35	0°6/ 3.5 18			278174	2007 DR ₈₂		2 3.1 25°46	1°7/ 2.4 18		
1 2	9 26.71	+14 1.9	2.610	3.432	10.3	20.3	1 2	9 30.05	+20 23.7	1.136	2.005	17.5	19.1
1 12	9 20.85	+14 9.7	2.540	3.444	7.5	20.2	1 12	9 24.54	+20 23.3	1.095	2.023	12.6	18.9
1 22	9 13.51	+14 23.6	2.497	3.455	4.3	20.0	1 22	9 15.99	+20 27.2	1.076	2.043	7.0	18.6
2 1	9 5.27	+14 41.2	2.483	3.467	1.0	19.7	2 1	9 5.74	+20 29.5	1.080	2.064	1.9	18.4
2 11	8 56.92	+14 59.5	2.500	3.477	2.6	19.9	2 11	8 55.56	+20 25.0	1.110	2.086	5.3	18.7
2 21	8 49.19	+15 16.1	2.548	3.488	5.9	20.1	2 21	8 47.08	+20 10.9	1.164	2.110	10.5	19.0
3 2	8 42.76	+15 28.8	2.623	3.498	8.8	20.3	3 2	8 41.45	+19 47.1	1.240	2.135	15.1	19.4
3 12	8 38.11	+15 36.4	2.723	3.509	11.3	20.5	3 12	8 39.22	+19 14.6	1.336	2.161	18.8	19.7
65076	2002 AF ₁₉₉		2 3.1 236°10	0°8/ 2.4 18			493307	2014 UW ₁₈₄		2 3.1 130°76	1°9/ 4.6 18		
1 2	9 24.96	+18 2.3	2.676	3.509	9.8	20.0	1 2	9 28.73	+8 35.5	2.368	3.174	11.8	22.2
1 12	9 19.74	+18 31.9	2.590	3.502	7.0	19.8	1 12	9 22.41	+8 54.0	2.301	3.192	8.8	22.0
1 22	9 12.97	+19 6.2	2.531	3.494	3.9	19.6	1 22	9 14.44	+9 23.6	2.259	3.209	5.5	21.8
2 1	9 5.20	+19 41.6	2.501	3.485	0.9	19.4	2 1	9 5.48	+10 1.8	2.247	3.226	2.4	21.7
2 11	8 57.17	+20 14.4	2.503	3.477	3.1	19.5	2 11	8 56.40	+10 44.7	2.266	3.242	3.1	21.7
2 21	8 49.65	+20 41.6	2.534	3.468	6.3	19.7	2 21	8 48.02	+11 28.2	2.316	3.257	6.3	22.0
3 2	8 43.34	+21 1.2	2.593	3.460	9.2	19.9	3 2	8 41.07	+12 8.9	2.393	3.272	9.4	22.2
3 12	8 38.78	+21 12.1	2.676	3.450	11.8	20.0	3 12	8 36.09	+12 44.1	2.495	3.285	12.1	22.4
145338	2005 MR ₂		2 3.1 237°70	0°8/ 3.6 18			381262	2007 TX ₁₇₈		2 3.1 94°59	4°5/30.8 18		
1 2	9 28.86	+13 7.7	2.031	2.858	12.7	20.8	1 2	9 29.86	+30 3.9	2.313	3.154	10.8	20.5
1 12	9 22.99	+13 23.9	1.941	2.847	9.3	20.5	1 12	9 23.42	+30 45.6	2.256	3.165	8.0	20.3
1 22	9 15.00	+13 49.8	1.875	2.835	5.5	20.3	1 22	9 15.07	+31 22.7	2.226	3.176	5.5	20.2
2 1	9 5.58	+14 22.3	1.838	2.822	1.4	20.0	2 1	9 5.60	+31 49.8	2.224	3.187	4.5	20.1
2 11	8 55.73	+14 56.9	1.831	2.809	3.3	20.1	2 11	8 56.03	+32 2.6	2.252	3.198	6.0	20.3
2 21	8 46.53	+15 29.4	1.853	2.796	7.6	20.3	2 21	8 47.35	+31 59.6	2.309	3.209	8.6	20.4
3 2	8 38.94	+15 56.4	1.902	2.782	11.4	20.5	3 2	8 40.40	+31 41.5	2.390	3.220	11.2	20.6
3 12	8 33.69	+16 15.7	1.974	2.767	14.7	20.7	3 12	8 35.73	+31 10.4	2.494	3.230	13.5	20.8
108490	2001 KB ₆₃		2 3.1 256°09	2°6/ 1.3 18			240504	2004 ED ₅₄		2 3.1 249°48	2°9/ 5.7 18		
1 2	9 28.46	+20 11.7	1.738	2.588	13.4	19.8	1 2	9 23.41	+4 39.9	2.467	3.265	11.6	20.8
1 12	9 23.08	+21 16.4	1.659	2.578	9.7	19.6	1 12	9 18.73	+5 0.7	2.375	3.257	9.0	20.6
1 22	9 15.21	+22 28.5	1.604	2.569	5.6	19.3	1 22	9 12.47	+5 35.9	2.308	3.249	6.0	20.4
2 1	9 5.64	+23 40.5	1.578	2.559	2.6	19.1	2 1	9 5.16	+6 23.7	2.268	3.240	3.4	20.3
2 11	8 55.56	+24 44.4	1.580	2.549	5.4	19.3	2 11	8 57.56	+7 20.7	2.259	3.232	3.5	20.3
2 21	8 46.27	+25 34.2	1.610	2.539	9.6	19.5	2 21	8 50.43	+8 22.5	2.280	3.223	6.3	20.4
3 2	8 38.96	+26 6.7	1.665	2.528	13.6	19.7	3 2	8 44.49	+9 24.4	2.328	3.215	9.3	20.6
3 12	8 34.41	+26 21.7	1.740	2.518	17.0	19.9	3 12	8 40.32	+10 22.2	2.402	3.206	12.1	20.8
64944	2001 YG ₁₂₁		2 3.1 270°17	4°5/31.6 18			23284	Celik		2 3.1 248°94	1°7/ 1.9 18		
1 2	9 32.29	+25 11.1	1.539	2.393	14.5	19.4	1 2	9 29.77	+18 56.4	1.833	2.676	13.1	19.2
1 12	9 26.24	+26 4.4	1.459	2.379	10.7	19.2	1 12	9 23.94	+19 40.8	1.746	2.662	9.5	19.0
1 22	9 17.17	+26 59.5	1.403	2.364	6.7	18.9	1 22	9 15.69	+20 32.5	1.684	2.648	5.4	18.7
2 1	9 6.00	+27 47.8	1.374	2.350	4.5	18.7	2 1	9 5.76	+21 25.4	1.651	2.634	1.8	18.4
2 11	8 54.21	+28 20.7	1.373	2.334	7.1	18.9	2 11	8 55.30	+22 12.9	1.646	2.619	4.6	18.6
2 21	8 43.42	+28 33.6	1.397	2.319	11.4	19.1	2 21	8 45.56	+22 49.9	1.670	2.603	9.0	18.8
3 2	8 35.07	+28 25.7	1.445	2.304	15.6	19.3	3 2	8 37.70	+23 13.4	1.719	2.588	13.0	19.0
3 12	8 30.06	+27 59.5	1.512	2.288	19.2	19.5	3 12	8 32.52	+23 22.7	1.790	2.571	16.4	19.2
31800	1999 LT ₂₅		2 3.1 300°04	5°5/ 6.4 18			209646	2005 CE ₂		2 3.1 16°18	2°9/ 2.0 18		
1 2	9 25.91	+0 59.6	2.194	2.977	13.4	18.4	1 2	9 31.19	+22 30.9	1.148	2.018	17.4	19.7
1 12	9 20.76	+0 19.5	2.093	2.957	10.8	18.1	1 12	9 25.64	+22 38.9	1.094	2.022	12.6	19.5
1 22	9 13.72	-0 5.9	2.015	2.937	8.1	17.9	1 22	9 16.80	+22 48.9	1.061	2.028	7.2	19.2
2 1	9 5.37	-0 15.3	1.964	2.918	5.9	17.8	2 1	9 5.93	+22 53.8	1.052	2.035	2.9	19.0
2 11	8 56.57	-0 9.4	1.942	2.898	5.8	17.7	2 11	8 54.87	+22 47.4	1.069	2.043	6.1	19.2
2 21	8 48.24	+0 9.5	1.947	2.879	8.0	17.8	2 21	8 45.42	+22 27.3	1.109	2.052	11.4	19.5
3 2	8 41.27	+0 37.4	1.979	2.860	11.0	17.9	3 2	8 38.95	+21 54.0	1.172	2.062	16.1	19.8
3 12	8 36.35	+1 9.8	2.034	2.841	13.9	18.1	3 12	8 36.14	+21 9.8	1.253	2.073	20.0	20.1
125259	2001 UQ ₂₁₉		2 3.1 113°25	2°7/ 4.8 18			340726	2006 SH ₁₃₇		2 3.1 147°10	2°4/31.7 18		
1 2	9 29.10	+7 33.0	1.548	2.372	16.1	20.0	1 2	9 25.77	+23 33.2	2.938	3.775	8.9	21.5
1 12	9 23.44	+7 56.9	1.482	2.382	12.1	19.8	1 12	9 20.19	+24 27.2	2.872	3.785	6.4	21.4
1 22	9 15.33	+8 39.3	1.438	2.391	7.6	19.5	1 22	9 13.17	+25 22.0	2.834	3.794	3.8	21.2
2 1	9 5.65	+9 36.7	1.421	2.400	3.4	19.3	2 1	9 5.27	+26 13.4	2.826	3.802	2.4	21.1
2 11	8 55.68	+10 42.4	1.431	2.409	4.2	19.4	2 11	8 57.20	+26 57.3	2.850	3.810	3.9	21.2
2 21	8 46.71	+11 49.2	1.470	2.417	8.6	19.6	2 21	8 49.68	+27 31.0	2.904	3.818	6.5	21.4
3 2	8 39.84	+12 50.8	1.533	2.425	12.9	19.9	3 2	8 43.35	+27 53.1	2.985	3.825	8.9	21.6
3 12	8 35.78	+13 42.5	1.618	2.433	16.5	20.2	3 12	8 38.68	+28 3.9	3.090	3.832	11.0	21.8
304797	2007 PW ₆		2 3.1 102°60	0°2/ 3.3 18			414210	2008 EN ₁₆		2 3.1 21°12	12°8/28.3 18		
1 2	9 32.41	+14 15.7	1.741	2.572	14.2	21.5	1 2	9 44.97	+48 5.2	1.519	2.335	16.8	20.4
1 12	9 25.46	+14 41.6	1.687	2.596	10.3								

EPHEMERIDES

2 3.1

2 3.1

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
63848	2001 <i>RE</i> ₈₆		2 3.1	86°97	1°1/ 2.2	18	235752	2004 <i>TN</i> ₃₆₆		2 3.1	171°60	0°7/ 3.6	18
1 2	9 26.83	+18 44.8	2.323	3.161	10.9	19.7	1 2	9 31.28	+12 56.0	1.977	2.800	13.1	21.5
1 12	9 21.12	+19 16.6	2.264	3.177	7.8	19.5	1 12	9 24.66	+13 17.4	1.900	2.804	9.6	21.3
1 22	9 13.74	+19 52.4	2.231	3.194	4.3	19.3	1 22	9 15.92	+13 48.8	1.849	2.808	5.6	21.0
2 1	9 5.37	+20 28.0	2.227	3.210	1.2	19.1	2 1	9 5.82	+14 26.4	1.827	2.811	1.4	20.7
2 11	8 56.90	+20 59.3	2.253	3.227	3.4	19.3	2 11	8 55.42	+15 5.5	1.835	2.813	3.4	20.9
2 21	8 49.18	+21 23.3	2.309	3.243	6.8	19.6	2 21	8 45.82	+15 41.4	1.873	2.814	7.6	21.2
3 2	8 42.95	+21 38.2	2.392	3.259	9.9	19.8	3 2	8 37.99	+16 11.0	1.937	2.814	11.3	21.4
3 12	8 38.71	+21 43.6	2.498	3.275	12.4	20.0	3 12	8 32.59	+16 32.2	2.025	2.814	14.5	21.6
327464	2005 <i>XE</i> ₇₆		2 3.1	17°22	3°3/31.8	18	462329	2008 <i>JZ</i> ₃₀		2 3.1	303°86	7°0/ 7.9	16 C
1 2	9 27.77	+22 50.6	1.770	2.623	13.0	20.5	1 2	9 28.69	- 5 13.4	1.913	2.668	16.0	22.9
1 12	9 22.44	+23 49.6	1.703	2.624	9.4	20.3	1 12	9 23.55	- 4 50.7	1.769	2.612	13.5	22.6
1 22	9 14.76	+24 51.9	1.662	2.625	5.6	20.0	1 22	9 15.81	- 3 57.6	1.647	2.556	10.5	22.3
2 1	9 5.58	+25 50.2	1.648	2.626	3.3	19.9	2 1	9 5.91	- 2 31.0	1.550	2.498	7.8	22.0
2 11	8 56.08	+26 37.4	1.663	2.628	5.7	20.1	2 11	8 54.74	- 0 31.9	1.481	2.439	7.2	21.8
2 21	8 47.50	+27 9.0	1.705	2.629	9.5	20.3	2 21	8 43.51	+ 1 53.5	1.443	2.379	9.8	21.8
3 2	8 40.89	+27 23.5	1.771	2.631	13.1	20.5	3 2	8 33.55	+ 4 34.4	1.432	2.318	14.0	21.9
3 12	8 36.96	+27 21.6	1.858	2.633	16.2	20.7	3 12	8 26.06	+ 7 18.4	1.447	2.256	18.4	22.0
415732	1999 <i>VY</i> ₁₀₄		2 3.1	38°78	7°0/28.9	18	274690	2008 <i>UV</i> ₄₈		2 3.1	6°96	9°0/26.4	18
1 2	9 29.91	+33 43.5	1.850	2.699	12.7	20.1	1 2	9 32.32	+42 12.4	2.095	2.923	12.3	20.3
1 12	9 24.07	+35 3.6	1.796	2.703	9.9	20.0	1 12	9 25.88	+43 40.1	2.045	2.923	10.4	20.1
1 22	9 15.70	+36 16.6	1.767	2.708	7.6	19.8	1 22	9 16.78	+44 54.6	2.019	2.923	9.2	20.1
2 1	9 5.74	+37 13.4	1.766	2.713	7.1	19.8	2 1	9 5.99	+45 46.8	2.020	2.924	9.2	20.1
2 11	8 55.53	+37 47.4	1.791	2.717	8.8	19.9	2 11	8 54.90	+46 11.0	2.046	2.924	10.6	20.2
2 21	8 46.39	+37 56.2	1.842	2.722	11.5	20.1	2 21	8 44.92	+46 6.2	2.097	2.924	12.5	20.3
3 2	8 39.45	+37 41.2	1.916	2.728	14.3	20.3	3 2	8 37.24	+45 35.1	2.169	2.925	14.6	20.4
3 12	8 35.40	+37 6.5	2.009	2.733	16.7	20.5	3 12	8 32.56	+44 42.8	2.258	2.925	16.5	20.6
165657	2001 <i>KA</i> ₁₈		2 3.1	220°69	2°6/ 5.4	18	289098	2004 <i>TJ</i> ₂₉₈		2 3.1	83°47	0°8/ 3.6	17
1 2	9 24.58	+ 5 58.0	2.480	3.281	11.5	21.1	1 2	9 32.11	+12 27.1	1.513	2.348	15.8	21.4
1 12	9 19.55	+ 6 14.4	2.390	3.275	8.8	20.9	1 12	9 25.47	+12 59.7	1.465	2.375	11.5	21.2
1 22	9 12.93	+ 6 43.8	2.325	3.269	5.8	20.7	1 22	9 16.38	+13 45.1	1.440	2.401	6.6	21.0
2 1	9 5.26	+ 7 24.5	2.288	3.262	3.1	20.5	2 1	9 5.89	+14 37.6	1.443	2.427	1.5	20.7
2 11	8 57.30	+ 8 13.1	2.281	3.255	3.4	20.5	2 11	8 55.37	+15 30.4	1.474	2.452	3.9	21.0
2 21	8 49.83	+ 9 5.7	2.304	3.248	6.2	20.7	2 21	8 46.12	+16 17.4	1.533	2.478	8.6	21.3
3 2	8 43.59	+ 9 57.9	2.356	3.240	9.3	20.8	3 2	8 39.16	+16 54.8	1.617	2.502	12.7	21.6
3 12	8 39.12	+10 46.2	2.432	3.232	12.1	21.0	3 12	8 35.09	+17 20.6	1.723	2.526	16.1	21.9
402667	2006 <i>UB</i> ₁₉₃		2 3.1	37°69	7°1/31.7	16	22050	1999 <i>YV</i> ₁₃		2 3.1	118°65	1°0/ 2.3	18
1 2	9 37.66	+31 46.8	1.161	2.024	17.7	20.2	1 2	9 25.87	+16 40.7	2.184	3.021	11.5	17.7
1 12	9 29.94	+32 15.8	1.134	2.053	13.2	20.0	1 12	9 20.66	+17 36.8	2.114	3.028	8.2	17.5
1 22	9 18.91	+32 33.4	1.129	2.083	9.0	19.9	1 22	9 13.62	+18 40.4	2.071	3.035	4.6	17.3
2 1	9 6.26	+32 30.5	1.148	2.114	7.1	19.8	2 1	9 5.43	+19 46.2	2.057	3.041	1.1	17.0
2 11	8 54.07	+32 2.7	1.192	2.146	9.1	20.0	2 11	8 57.01	+20 48.5	2.074	3.048	3.6	17.2
2 21	8 44.13	+31 11.9	1.261	2.179	12.7	20.3	2 21	8 49.27	+21 42.4	2.119	3.054	7.3	17.5
3 2	8 37.56	+30 3.8	1.351	2.212	16.4	20.7	3 2	8 43.03	+22 24.9	2.192	3.060	10.6	17.7
3 12	8 34.72	+28 44.7	1.461	2.245	19.4	21.0	3 12	8 38.88	+22 54.8	2.287	3.066	13.4	17.9
492554	2014 <i>OA</i> ₁₃₃		2 3.1	209°84	1°3/ 2.3	18	461820	2006 <i>AU</i> ₇₈		2 3.1	236°19	0°9/ 2.4	18
1 2	9 31.05	+17 48.8	1.935	2.771	12.8	22.2	1 2	9 26.69	+17 1.3	2.034	2.874	12.1	21.3
1 12	9 24.71	+18 33.1	1.852	2.765	9.3	22.0	1 12	9 21.42	+17 44.5	1.956	2.871	8.7	21.0
1 22	9 16.05	+19 24.9	1.795	2.758	5.2	21.7	1 22	9 14.14	+18 35.3	1.903	2.867	4.9	20.8
2 1	9 5.84	+20 18.5	1.766	2.750	1.4	21.4	2 1	9 5.54	+19 28.7	1.879	2.863	1.1	20.5
2 11	8 55.19	+21 7.6	1.768	2.741	4.2	21.6	2 11	8 56.60	+20 19.1	1.885	2.859	3.8	20.7
2 21	8 45.29	+21 47.4	1.798	2.732	8.4	21.8	2 21	8 48.36	+21 1.8	1.919	2.855	7.8	20.9
3 2	8 37.20	+22 15.0	1.855	2.722	12.3	22.1	3 2	8 41.74	+21 33.7	1.979	2.851	11.4	21.2
3 12	8 31.68	+22 29.5	1.934	2.711	15.6	22.3	3 12	8 37.39	+21 53.5	2.062	2.847	14.4	21.4
323925	2005 <i>TW</i> ₁₀₅		2 3.1	116°49	2°0/ 1.7	18	169561	2002 <i>EY</i> ₁₃₉		2 3.1	273°08	1°0/ 2.6	18
1 2	9 29.13	+20 12.2	1.949	2.792	12.4	21.4	1 2	9 29.85	+17 9.0	1.593	2.440	14.6	20.8
1 12	9 23.13	+21 0.2	1.887	2.803	8.9	21.2	1 12	9 24.31	+17 41.2	1.507	2.425	10.6	20.5
1 22	9 15.03	+21 52.6	1.850	2.813	5.0	21.0	1 22	9 16.06	+18 22.9	1.445	2.410	6.0	20.2
2 1	9 5.64	+22 43.3	1.842	2.824	2.1	20.8	2 1	9 5.92	+19 8.4	1.410	2.394	1.3	19.8
2 11	8 56.05	+23 26.6	1.863	2.833	4.5	21.0	2 11	8 55.16	+19 50.9	1.403	2.379	4.6	20.0
2 21	8 47.35	+23 58.4	1.913	2.843	8.3	21.3	2 21	8 45.22	+20 24.6	1.423	2.363	9.6	20.3
3 2	8 40.47	+24 16.8	1.989	2.852	11.7	21.5	3 2	8 37.39	+20 46.1	1.467	2.347	14.1	20.5
3 12	8 36.02	+24 22.2	2.087	2.861	14.6	21.7	3 12	8 32.56	+20 54.2	1.532	2.331	18.0	20.7
411479	2011 <i>AD</i> ₃₅		2 3.1	94°99	4°4/30.6	18	244537	2002 <i>UE</i> ₂₉		2 3.1	131°83	0°8/ 2.6	18 R
1 2	9 30.65	+26 11.8	1.991	2.836	12.1	20.9	1 2	9 32.20	+18 14.9	2.255	3.083	11.5	21.2
1 12	9 24.20	+27 39.7	1.946	2.861	8.8	20.7	1 12	9 25.00	+18 36.5	2.192	3.101	8.3	21.0
1 22	9 15.61	+29 6.3	1.929	2.885	5.7	20.6	1 22	9 15.96	+19 2.2	2.156	3.118	4.6	20.8
2 1	9 5.74	+30 23.4	1.941	2.909	4.4	20.5	2 1	9 5.85	+19 27.8	2.150	3.134	1.0	20.6
2 11	8 55.74	+31 24.2	1.982	2.932	6.4	20.7	2 11	8 55.63	+19 49.3	2.175	3.149	3.4	20.8
2 21	8 46.74	+32 5.3	2.052	2.954	9.4	20.9	2 21	8 46.27	+20 4.0	2.230	3.164	7.0	21.1
3 2	8 39.68	+32 26.2	2.146	2.976	12.3	21.2	3 2	8 38.59	+20 10.5	2.314	3.178	10.3	21.3
3 12	8 35.14	+32 29.4	2.262	2.998	14.7	21.4	3 12	8 33.12	+20 8.7	2.420	3.191	13.0	21.5
74560	1999 <i>LC</i> ₁₅		2 3.1	297°90	12°4/24.0	18	8961	Schoenobaenus		2 3.1	314°93	0°6/ 2.7	18
1 2	9 31.41	+31 44.5	1.022	1.900	18.3	18.8	1 2	9 24.98	+16 49.9				

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
206403	2003 <i>SF</i> ₆₃		2 3.1 143°04	0°3/ 3.3 18			77904	2001 <i>TV</i> ₁₄₄		2 3.1 285°25	5°8/29.2 18		
1 2	9 31.79	+14 44.6	1.829	2.660	13.7	20.5	1 2	9 28.15	+32 32.8	2.235	3.079	11.0	19.4
1 12	9 25.12	+14 56.8	1.760	2.669	10.0	20.3	1 12	9 22.60	+33 43.2	2.162	3.069	8.5	19.2
1 22	9 16.22	+15 17.4	1.716	2.676	5.7	20.1	1 22	9 14.88	+34 49.2	2.115	3.058	6.4	19.0
2 1	9 5.91	+15 42.5	1.700	2.684	1.1	19.8	2 1	9 5.73	+35 43.5	2.096	3.047	5.9	19.0
2 11	8 55.38	+16 7.4	1.713	2.691	3.6	20.0	2 11	8 56.19	+36 20.3	2.106	3.036	7.5	19.1
2 21	8 45.80	+16 28.3	1.756	2.697	7.9	20.2	2 21	8 47.39	+36 36.5	2.143	3.025	10.1	19.2
3 2	8 38.17	+16 42.5	1.825	2.703	11.8	20.5	3 2	8 40.32	+36 32.2	2.203	3.014	12.7	19.4
3 12	8 33.12	+16 48.8	1.916	2.709	15.1	20.7	3 12	8 35.68	+36 9.9	2.284	3.003	15.0	19.5
500278	2012 <i>PM</i> ₃		2 3.1 2°96	1°6/ 2.2 18			202938	1999 <i>AY</i> ₁₈		2 3.1 193°93	0°0/ 3.2 18		
1 2	9 28.43	+20 52.8	1.929	2.775	12.4	20.8	1 2	9 25.52	+14 27.6	2.322	3.152	11.2	20.3
1 12	9 22.70	+21 4.7	1.857	2.775	9.0	20.6	1 12	9 20.35	+14 59.1	2.242	3.151	8.1	20.1
1 22	9 14.84	+21 19.2	1.811	2.775	5.1	20.3	1 22	9 13.45	+15 38.6	2.189	3.150	4.6	19.9
2 1	9 5.67	+21 32.0	1.792	2.775	1.7	20.1	2 1	9 5.46	+16 22.6	2.165	3.149	0.8	19.6
2 11	8 56.27	+21 38.8	1.802	2.776	4.2	20.3	2 11	8 57.21	+17 6.5	2.171	3.148	3.0	19.8
2 21	8 47.74	+21 37.1	1.841	2.777	8.1	20.5	2 21	8 49.56	+17 46.5	2.206	3.147	6.6	20.0
3 2	8 41.03	+21 26.0	1.905	2.778	11.7	20.7	3 2	8 43.29	+18 19.4	2.269	3.146	9.9	20.2
3 12	8 36.76	+21 5.6	1.992	2.780	14.8	20.9	3 12	8 38.98	+18 43.6	2.356	3.144	12.8	20.4
153931	2001 <i>YA</i> ₆₈		2 3.1 75°61	1°4/ 2.2 18			51336	2000 <i>NV</i> ₂₆		2 3.1 28°65	0°2/ 3.0 18		
1 2	9 27.90	+18 6.9	1.797	2.643	13.2	20.1	1 2	9 27.42	+16 49.4	2.152	2.988	11.7	18.1
1 12	9 22.42	+18 50.9	1.733	2.650	9.5	19.8	1 12	9 21.76	+16 54.4	2.079	2.991	8.5	17.9
1 22	9 14.73	+19 41.9	1.693	2.657	5.3	19.6	1 22	9 14.25	+17 4.7	2.031	2.994	4.8	17.6
2 1	9 5.65	+20 33.8	1.680	2.664	1.5	19.4	2 1	9 5.60	+17 17.1	2.012	2.997	0.8	17.3
2 11	8 56.33	+21 20.6	1.697	2.671	4.3	19.6	2 11	8 56.75	+17 28.2	2.023	3.000	3.2	17.5
2 21	8 47.92	+21 57.4	1.742	2.678	8.4	19.8	2 21	8 48.65	+17 35.3	2.062	3.003	7.0	17.8
3 2	8 41.39	+22 21.6	1.812	2.685	12.2	20.1	3 2	8 42.12	+17 36.5	2.129	3.007	10.4	18.0
3 12	8 37.40	+22 32.7	1.903	2.692	15.3	20.3	3 12	8 37.74	+17 31.1	2.218	3.010	13.3	18.2
333381	2002 <i>PX</i> ₁₈₈		2 3.1 116°04	1°3/ 1.9 18			256131	2006 <i>VR</i> ₅		2 3.1 132°94	1°6/ 4.3 18		
1 2	9 25.89	+17 36.8	2.332	3.168	10.9	20.4	1 2	9 29.31	+10 2.4	2.142	2.956	12.6	21.7
1 12	9 20.57	+18 38.9	2.266	3.180	7.8	20.2	1 12	9 23.04	+10 20.6	2.074	2.971	9.3	21.5
1 22	9 13.53	+19 47.2	2.227	3.191	4.3	20.0	1 22	9 14.95	+10 50.0	2.031	2.984	5.6	21.3
2 1	9 5.44	+20 56.3	2.218	3.201	1.3	19.8	2 1	9 5.73	+11 27.6	2.017	2.998	2.1	21.1
2 11	8 57.14	+22 0.8	2.240	3.212	3.6	20.0	2 11	8 56.34	+12 9.2	2.033	3.010	3.2	21.2
2 21	8 49.49	+22 56.1	2.291	3.222	7.0	20.3	2 21	8 47.71	+12 50.4	2.079	3.022	6.8	21.4
3 2	8 43.27	+23 39.6	2.370	3.232	10.1	20.5	3 2	8 40.68	+13 27.7	2.153	3.034	10.2	21.6
3 12	8 39.03	+24 10.2	2.472	3.242	12.7	20.7	3 12	8 35.80	+13 58.4	2.251	3.044	13.1	21.8
161619	2005 <i>VH</i> ₁₂₀		2 3.1 276°23	0°5/ 3.4 18			343081	2009 <i>DB</i> ₄		2 3.1 5°22	8°0/ 11.2 18		
1 2	9 31.52	+15 5.0	1.509	2.352	15.5	19.8	1 2	9 21.65	-10 49.2	1.847	2.583	17.2	19.7
1 12	9 25.57	+15 5.3	1.426	2.340	11.4	19.5	1 12	9 17.91	-10 12.4	1.763	2.583	14.6	19.5
1 22	9 16.79	+15 15.0	1.366	2.328	6.6	19.2	1 22	9 12.23	-9 2.3	1.699	2.585	11.8	19.3
2 1	9 6.06	+15 30.5	1.332	2.316	1.4	18.8	2 1	9 5.26	-7 18.7	1.659	2.586	9.2	19.2
2 11	8 54.77	+15 46.7	1.325	2.304	4.2	19.0	2 11	8 57.97	-5 6.3	1.646	2.589	8.0	19.1
2 21	8 44.40	+15 59.2	1.346	2.292	9.5	19.3	2 21	8 51.36	-2 34.1	1.660	2.592	9.1	19.2
3 2	8 36.29	+16 5.1	1.391	2.279	14.2	19.5	3 2	8 46.31	+0 6.5	1.703	2.596	11.7	19.3
3 12	8 31.31	+16 2.8	1.457	2.267	18.2	19.7	3 12	8 43.50	+2 43.8	1.771	2.601	14.6	19.5
57283	2001 <i>QZ</i> ₁₅₆		2 3.1 54°95	1°8/ 3.9 18			87240	2000 <i>OJ</i> ₄₅		2 3.1 183°34	3°5/ 6.3 18		
1 2	9 31.89	+12 23.2	1.240	2.088	17.8	19.1	1 2	9 26.18	+2 21.8	2.566	3.346	11.7	19.9
1 12	9 25.83	+12 17.0	1.187	2.101	13.1	18.9	1 12	9 20.66	+2 41.0	2.478	3.347	9.2	19.7
1 22	9 16.82	+12 25.1	1.155	2.116	7.8	18.6	1 22	9 13.58	+3 15.3	2.415	3.347	6.4	19.5
2 1	9 6.04	+12 43.4	1.147	2.130	2.5	18.3	2 1	9 5.50	+4 3.1	2.381	3.346	4.0	19.4
2 11	8 55.09	+13 6.5	1.166	2.145	4.5	18.5	2 11	8 57.14	+5 1.4	2.377	3.345	3.9	19.4
2 21	8 45.58	+13 28.8	1.211	2.160	9.8	18.8	2 21	8 49.29	+6 5.5	2.404	3.343	6.2	19.5
3 2	8 38.74	+13 46.2	1.279	2.176	14.5	19.1	3 2	8 42.66	+7 11.0	2.459	3.340	9.1	19.7
3 12	8 35.25	+13 56.0	1.367	2.191	18.4	19.4	3 12	8 37.77	+8 13.5	2.540	3.337	11.7	19.9
415545	2014 <i>QU</i> ₁₅₂		2 3.1 161°53	0°4/ 3.4 18			270003	2001 <i>AF</i> ₃₂		2 3.1 11°43	3°5/ 4.5 18		
1 2	9 30.15	+13 39.7	2.041	2.867	12.7	22.0	1 2	9 30.11	+10 36.7	1.454	2.290	16.3	19.6
1 12	9 23.81	+14 4.4	1.968	2.873	9.2	21.8	1 12	9 24.32	+9 42.1	1.388	2.293	12.3	19.4
1 22	9 15.45	+14 38.4	1.919	2.879	5.3	21.5	1 22	9 15.93	+8 58.9	1.343	2.298	7.9	19.1
2 1	9 5.81	+15 17.6	1.900	2.884	1.1	21.3	2 1	9 5.92	+8 27.0	1.325	2.303	4.0	18.9
2 11	8 55.91	+15 57.2	1.911	2.888	3.3	21.4	2 11	8 55.65	+8 5.1	1.333	2.309	4.9	19.0
2 21	8 46.79	+16 33.1	1.951	2.892	7.3	21.7	2 21	8 46.50	+7 50.9	1.368	2.316	9.1	19.2
3 2	8 39.37	+17 2.0	2.019	2.895	11.0	21.9	3 2	8 39.62	+7 41.3	1.428	2.324	13.4	19.5
3 12	8 34.27	+17 22.3	2.109	2.897	14.1	22.1	3 12	8 35.69	+7 33.2	1.508	2.332	17.0	19.7
234908	2002 <i>TN</i> ₂₅₂		2 3.1 148°32	3°5/ 6.3 18			499992	2011 <i>OP</i> ₁₅		2 3.1 198°04	0°0/ 2.9 17		
1 2	9 24.14	+2 37.6	2.417	3.205	12.1	20.6	1 2	9 27.13	+16 14.9	3.170	3.989	8.8	22.0
1 12	9 19.24	+2 58.1	2.336	3.209	9.5	20.4	1 12	9 21.09	+16 21.8	3.082	3.985	6.3	21.8
1 22	9 12.78	+3 34.4	2.279	3.213	6.5	20.2	1 22	9 13.71	+16 32.4	3.021	3.981	3.6	21.6
2 1	9 5.33	+4 24.7	2.250	3.217	4.0	20.1	2 1	9 5.51	+16 44.6	2.991	3.976	0.6	21.4
2 11	8 57.65	+5 25.4	2.252	3.221	3.9	20.1	2 11	8 57.12	+16 56.1	2.994	3.970	2.4	21.5
2 21	8 50.52	+6 31.8	2.282	3.224	6.3	20.2	2 21	8 49.19	+17 4.8	3.028	3.964	5.2	21.7
3 2	8 44.64	+7 39.0	2.342	3.228	9.3	20.4	3 2	8 42.31	+17 9.4	3.091	3.958	7.9	21.9
3 12	8 40.54	+8 42.6	2.425	3.231	11.9	20.6	3 12	8 36.96	+17 9.0	3.179	3.951	10.1	22.0
385035	2012 <i>TD</i> ₃₀₆		2 3.1 116°69	2°3/ 1.4 18			326477	2002 <i>AX</i> ₂₀₉		2 3.1 44°13	3°6/ 5.9 18		
1 2	9 28.05	+23 31.9	2.471	3.310	10.3	21.2	1 2	9 24.71	+3 23.0	1.701	2.512	15.5	

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
416930	2005 SV ₈₄		2 3.1 103°71	7°3/29.8	18		34199	Amyjin		2 3.1 325°31	2°2/1.9	18	
1 2	9 35.26	+35 42.6	1.841	2.682	13.2	20.7	1 2	9 27.17	+18 42.1	1.220	2.087	16.7	18.4
1 12	9 27.93	+36 36.9	1.786	2.687	10.4	20.6	1 12	9 23.00	+19 28.1	1.144	2.072	12.2	18.1
1 22	9 17.91	+37 21.0	1.755	2.691	8.0	20.4	1 22	9 15.62	+20 25.3	1.091	2.058	6.9	17.8
2 1	9 6.27	+37 46.5	1.751	2.696	7.4	20.4	2 1	9 5.95	+21 25.7	1.061	2.045	2.3	17.4
2 11	8 54.48	+37 47.8	1.775	2.701	8.9	20.5	2 11	8 55.58	+22 19.6	1.057	2.032	6.0	17.6
2 21	8 43.99	+37 24.1	1.824	2.706	11.6	20.7	2 21	8 46.26	+22 59.1	1.077	2.020	11.6	17.9
3 2	8 35.95	+36 38.5	1.897	2.710	14.4	20.9	3 2	8 39.57	+23 20.1	1.119	2.009	16.7	18.2
3 12	8 31.01	+35 36.1	1.990	2.715	16.8	21.1	3 12	8 36.50	+23 22.2	1.178	1.999	21.0	18.4
489087	2006 BQ ₂₁		2 3.1 209°97	0°0/2.9	18		315536	2008 BS ₁₂		2 3.1 91°43	5°1/30.4	18	
1 2	9 32.39	+15 40.0	1.841	2.673	13.6	21.2	1 2	9 30.90	+26 2.8	1.683	2.536	13.6	20.7
1 12	9 25.75	+15 55.7	1.758	2.667	9.9	21.0	1 12	9 24.81	+27 40.3	1.636	2.554	9.9	20.5
1 22	9 16.72	+16 19.4	1.700	2.661	5.7	20.7	1 22	9 16.19	+29 17.4	1.614	2.571	6.4	20.4
2 1	9 6.09	+16 46.9	1.670	2.654	1.0	20.4	2 1	9 5.99	+30 44.1	1.620	2.588	5.1	20.3
2 11	8 55.04	+17 13.5	1.670	2.647	3.7	20.6	2 11	8 55.59	+31 51.9	1.654	2.605	7.3	20.5
2 21	8 44.81	+17 34.8	1.698	2.639	8.3	20.8	2 21	8 46.31	+32 36.3	1.716	2.621	10.8	20.7
3 2	8 36.50	+17 48.4	1.754	2.630	12.4	21.1	3 2	8 39.27	+32 57.1	1.801	2.637	14.0	21.0
3 12	8 30.86	+17 52.9	1.831	2.620	15.8	21.3	3 12	8 35.13	+32 57.2	1.905	2.653	16.7	21.2
489548	2007 RC ₂₇₁		2 3.1 174°95	5°0/31.3	18		423357	2005 JH ₃		2 3.1 313°92	0°4/3.5	18	
1 2	9 36.25	+29 21.0	1.895	2.735	12.9	21.8	1 2	9 23.49	+11 59.2	1.905	2.741	13.0	20.7
1 12	9 28.51	+30 2.5	1.829	2.738	9.6	21.6	1 12	9 19.36	+12 52.9	1.813	2.724	9.6	20.4
1 22	9 18.22	+30 39.6	1.788	2.740	6.4	21.4	1 22	9 13.15	+14 1.2	1.745	2.707	5.6	20.1
2 1	9 6.34	+31 4.8	1.775	2.741	5.0	21.4	2 1	9 5.48	+15 19.6	1.705	2.690	1.2	19.8
2 11	8 54.23	+31 12.5	1.791	2.742	6.8	21.5	2 11	8 57.32	+16 41.3	1.695	2.673	3.5	19.9
2 21	8 43.24	+31 1.1	1.836	2.742	10.1	21.7	2 21	8 49.71	+17 59.5	1.712	2.657	7.9	20.1
3 2	8 34.51	+30 31.7	1.906	2.742	13.4	21.9	3 2	8 43.67	+19 8.3	1.756	2.641	11.9	20.4
3 12	8 28.72	+29 48.0	1.996	2.741	16.2	22.1	3 12	8 39.94	+20 4.0	1.822	2.625	15.4	20.5
50289	2000 CJ ₂₇		2 3.1 242°72	1°7/4.3	18		2878	Panacea		2 3.1 148°90	0°4/2.9	18	
1 2	9 27.66	+9 49.0	1.986	2.806	13.2	19.0	1 2	9 28.27	+17 27.7	2.430	3.260	10.7	17.1
1 12	9 22.25	+10 13.5	1.894	2.794	9.9	18.8	1 12	9 22.20	+17 36.3	2.355	3.264	7.7	16.9
1 22	9 14.72	+10 51.8	1.826	2.781	6.0	18.5	1 22	9 14.46	+17 49.2	2.307	3.268	4.3	16.7
2 1	9 5.74	+11 40.7	1.787	2.768	2.2	18.2	2 1	9 5.68	+18 3.2	2.288	3.272	0.8	16.4
2 11	8 56.30	+12 35.4	1.777	2.755	3.4	18.3	2 11	8 56.73	+18 15.2	2.300	3.276	3.0	16.6
2 21	8 47.44	+13 30.5	1.796	2.741	7.5	18.5	2 21	8 48.46	+18 22.7	2.342	3.279	6.5	16.8
3 2	8 40.18	+14 21.2	1.842	2.726	11.5	18.7	3 2	8 41.61	+18 24.3	2.411	3.283	9.6	17.0
3 12	8 35.24	+15 3.9	1.911	2.711	14.9	18.9	3 12	8 36.73	+18 19.3	2.505	3.285	12.3	17.2
312122	2007 TV ₂₂₈		2 3.1 82°68	0°3/2.9	18		141914	2002 PW ₈₀		2 3.1 207°59	1°1/2.3	18	
1 2	9 31.56	+15 38.3	1.566	2.408	15.0	22.1	1 2	9 26.67	+18 15.2	2.294	3.131	11.0	20.8
1 12	9 25.13	+16 9.2	1.514	2.428	10.8	21.9	1 12	9 21.25	+18 53.1	2.215	3.129	7.9	20.6
1 22	9 16.27	+16 49.2	1.486	2.449	6.1	21.7	1 22	9 14.01	+19 36.5	2.163	3.126	4.4	20.3
2 1	9 5.99	+17 32.6	1.485	2.470	1.0	21.4	2 1	9 5.61	+20 20.9	2.139	3.123	1.2	20.1
2 11	8 55.61	+18 13.0	1.513	2.490	4.0	21.6	2 11	8 56.93	+21 1.7	2.146	3.120	3.6	20.3
2 21	8 46.44	+18 45.6	1.568	2.510	8.7	22.0	2 21	8 48.88	+21 35.0	2.182	3.116	7.1	20.5
3 2	8 39.51	+19 7.6	1.649	2.530	12.8	22.3	3 2	8 42.28	+21 58.4	2.245	3.113	10.4	20.7
3 12	8 35.41	+19 18.1	1.750	2.549	16.1	22.5	3 12	8 37.73	+22 11.3	2.332	3.109	13.2	20.9
435275	2007 TK ₂₈₈		2 3.1 19°82	7°3/29.6	18		29307	Torbernerman		2 3.1 348°63	0°9/3.7	18	
1 2	9 27.45	+32 20.4	1.479	2.344	14.5	19.7	1 2	9 24.73	+11 34.0	1.452	2.299	15.7	17.3
1 12	9 22.59	+33 34.9	1.439	2.357	11.0	19.5	1 12	9 20.63	+12 14.9	1.379	2.294	11.6	17.0
1 22	9 14.99	+34 41.3	1.423	2.371	8.2	19.4	1 22	9 14.00	+13 12.9	1.328	2.290	6.8	16.7
2 1	9 5.76	+35 29.9	1.431	2.387	7.4	19.4	2 1	9 5.64	+14 22.7	1.302	2.286	1.7	16.4
2 11	8 56.44	+35 53.9	1.465	2.403	9.3	19.6	2 11	8 56.83	+15 36.5	1.304	2.283	4.0	16.5
2 21	8 48.48	+35 51.3	1.523	2.421	12.4	19.8	2 21	8 48.91	+16 46.1	1.332	2.281	9.1	16.8
3 2	8 43.02	+35 24.6	1.603	2.440	15.4	20.0	3 2	8 43.08	+17 45.2	1.384	2.279	13.8	17.1
3 12	8 40.65	+34 38.4	1.701	2.460	18.0	20.2	3 12	8 40.14	+18 30.0	1.456	2.278	17.6	17.3
335800	2007 HM ₂₄		2 3.1 260°49	4°3/6.5	17		335888	2007 RO ₁₈₈		2 3.1 134°41	0°4/3.5	18	
1 2	9 26.45	+1 11.1	2.528	3.303	12.0	22.2	1 2	9 25.73	+13 17.9	2.443	3.268	10.9	21.6
1 12	9 21.07	+1 10.8	2.414	3.276	9.6	22.0	1 12	9 20.38	+13 49.2	2.371	3.276	7.9	21.4
1 22	9 13.95	+1 25.9	2.324	3.249	7.0	21.8	1 22	9 13.44	+14 28.7	2.324	3.284	4.5	21.2
2 1	9 5.61	+1 56.3	2.262	3.222	4.7	21.6	2 1	9 5.50	+15 13.0	2.307	3.291	1.0	21.0
2 11	8 56.79	+2 39.9	2.230	3.193	4.6	21.6	2 11	8 57.38	+15 57.9	2.321	3.299	2.8	21.1
2 21	8 48.31	+3 33.2	2.228	3.164	6.9	21.7	2 21	8 49.87	+16 39.6	2.365	3.306	6.2	21.3
3 2	8 40.96	+4 31.6	2.254	3.134	9.8	21.8	3 2	8 43.68	+17 15.2	2.436	3.312	9.3	21.6
3 12	8 35.42	+5 30.3	2.305	3.104	12.7	21.9	3 12	8 39.34	+17 42.8	2.532	3.319	12.0	21.7
456246	2006 PD ₃₄		2 3.1 212°78	2°1/4.4	17		108908	2001 PM ₁₀		2 3.1 257°25	1°0/3.8	18	
1 2	9 31.00	+10 13.1	2.084	2.897	12.9	21.9	1 2	9 28.87	+12 27.3	1.916	2.744	13.3	20.4
1 12	9 24.50	+10 8.4	1.994	2.890	9.7	21.6	1 12	9 23.22	+12 41.5	1.823	2.729	9.8	20.1
1 22	9 15.93	+10 14.1	1.930	2.882	6.0	21.4	1 22	9 15.33	+13 6.6	1.754	2.713	5.8	19.9
2 1	9 5.96	+10 28.4	1.894	2.874	2.5	21.2	2 1	9 5.88	+13 39.6	1.713	2.697	1.7	19.5
2 11	8 55.61	+10 48.2	1.888	2.865	3.5	21.2	2 11	8 55.93	+14 15.9	1.702	2.680	3.5	19.6
2 21	8 45.92	+11 10.0	1.913	2.855	7.3	21.4	2 21	8 46.60	+14 51.0	1.719	2.663	7.9	19.9
3 2	8 37.85	+11 30.5	1.964	2.845	11.0	21.6	3 2	8 38.97	+15 20.9	1.763	2.646	12.0	20.1
3 12	8 32.08	+11 47.1	2.039	2.834	14.3	21.8	3 12	8 33.79	+15 43.1	1.829	2.629	15.5	20.3
365278	2009 QV ₄₆		2 3.1 165°94	1°9/1.6	18		198889	2005 TW ₈₁		2 3.1 307°77	3°3/1.7	18	
1 2	9 29.45	+20 59.0	2.379	3.214	10.8	21.9	1 2	9 32.52	+22 27.4	1.275	2.137	16.5	20.1
1 12	9 23.15	+21 42.1	2.307	3.220	7.7	21.7</							

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
446855	2001 UC ₇₂		2 3.1 124°51	0°6/ 2.7	15		214580	2006 QB ₅₀		2 3.2 166°23	1°5/ 4.6	18	
1 2	9 32.11	+14 54.1	1.859	2.689	13.5	22.1	1 2	9 24.01	+ 8 42.4	2.644	3.454	10.6	20.9
1 12	9 25.32	+15 53.9	1.800	2.710	9.7	21.9	1 12	9 19.10	+ 9 17.7	2.563	3.456	7.9	20.7
1 22	9 16.34	+17 3.2	1.768	2.730	5.4	21.7	1 22	9 12.73	+10 4.2	2.507	3.459	4.9	20.5
2 1	9 6.04	+18 15.6	1.764	2.749	1.0	21.4	2 1	9 5.43	+10 59.0	2.481	3.461	2.0	20.3
2 11	8 55.57	+19 24.1	1.791	2.767	3.8	21.6	2 11	8 57.91	+11 58.1	2.486	3.463	2.7	20.4
2 21	8 46.07	+20 23.1	1.848	2.784	8.0	21.9	2 21	8 50.88	+12 57.4	2.521	3.465	5.7	20.6
3 2	8 38.51	+21 9.2	1.931	2.800	11.8	22.2	3 2	8 45.01	+13 53.1	2.585	3.466	8.7	20.8
3 12	8 33.50	+21 41.3	2.037	2.816	14.8	22.4	3 12	8 40.79	+14 42.1	2.674	3.467	11.3	20.9
132782	2002 PB ₁₁₇		2 3.1 166°03	0°3/ 2.9	18		5626	1991 FE		2 3.2 38°54	3°1/ 4.7	18	R
1 2	9 28.58	+17 9.8	2.321	3.152	11.2	19.4	1 2	9 39.32	+ 6 28.4	0.679	1.542	26.6	15.5
1 12	9 22.53	+17 17.7	2.244	3.154	8.1	19.2	1 12	9 31.11	+ 7 26.6	0.680	1.600	19.2	15.4
1 22	9 14.70	+17 30.4	2.194	3.156	4.5	19.0	1 22	9 19.44	+ 8 52.8	0.697	1.658	11.4	15.2
2 1	9 5.76	+17 44.5	2.173	3.157	0.8	18.7	2 1	9 6.50	+10 33.4	0.736	1.717	4.2	15.1
2 11	8 56.62	+17 56.9	2.182	3.158	3.1	18.9	2 11	8 54.74	+12 12.4	0.797	1.777	5.6	15.4
2 21	8 48.17	+18 4.9	2.221	3.159	6.7	19.1	2 21	8 45.92	+13 37.8	0.880	1.836	11.5	15.9
3 2	8 41.22	+18 6.8	2.287	3.160	10.0	19.3	3 2	8 40.97	+14 43.6	0.984	1.894	16.6	16.4
3 12	8 36.31	+18 2.1	2.377	3.161	12.8	19.5	3 12	8 39.99	+15 28.5	1.106	1.952	20.4	16.9
45102	1999 XN ₆₉		2 3.1 217°58	3°1/ 5.1	18		380529	2004 GJ ₅₃		2 3.2 358°17	5°6/ 7.1	18	
1 2	9 29.30	+ 6 52.0	2.048	2.853	13.4	19.7	1 2	9 22.39	+ 0 40.5	1.740	2.542	15.5	20.2
1 12	9 23.33	+ 6 49.6	1.958	2.846	10.3	19.5	1 12	9 18.55	+ 0 32.7	1.663	2.539	12.4	20.0
1 22	9 15.30	+ 7 1.1	1.892	2.838	6.7	19.3	1 22	9 12.66	+ 0 46.6	1.606	2.537	9.1	19.8
2 1	9 5.89	+ 7 24.9	1.854	2.829	3.6	19.0	2 1	9 5.43	+ 1 21.8	1.575	2.536	6.2	19.6
2 11	8 56.08	+ 7 57.9	1.846	2.820	4.0	19.0	2 11	8 57.86	+ 2 15.0	1.570	2.535	5.9	19.6
2 21	8 46.88	+ 8 36.0	1.867	2.810	7.5	19.2	2 21	8 51.00	+ 3 20.4	1.592	2.536	8.4	19.7
3 2	8 39.27	+ 9 14.7	1.915	2.800	11.1	19.4	3 2	8 45.80	+ 4 31.2	1.639	2.537	11.8	19.9
3 12	8 33.92	+ 9 50.1	1.987	2.789	14.3	19.6	3 12	8 42.92	+ 5 40.3	1.708	2.539	15.0	20.1
502862	2015 DV ₂₀₁		2 3.1 347°01	0°9/ 2.6	17		296349	2009 FN ₉		2 3.2 198°09	1°0/ 3.9	18	
1 2	9 26.85	+18 13.8	1.893	2.738	12.7	20.8	1 2	9 29.23	+11 47.2	1.938	2.763	13.3	21.0
1 12	9 21.67	+18 29.2	1.817	2.734	9.2	20.6	1 12	9 23.36	+12 12.0	1.857	2.761	9.8	20.8
1 22	9 14.37	+18 50.1	1.766	2.730	5.1	20.3	1 22	9 15.35	+12 48.6	1.800	2.758	5.8	20.5
2 1	9 5.72	+19 12.3	1.742	2.727	1.1	20.1	2 1	9 5.92	+13 33.2	1.772	2.755	1.7	20.3
2 11	8 56.77	+19 31.3	1.748	2.724	3.8	20.2	2 11	8 56.13	+14 21.0	1.773	2.751	3.4	20.4
2 21	8 48.62	+19 43.7	1.781	2.721	8.0	20.5	2 21	8 47.05	+15 6.7	1.803	2.746	7.6	20.6
3 2	8 42.22	+19 47.4	1.839	2.719	11.7	20.7	3 2	8 39.68	+15 46.3	1.860	2.742	11.5	20.8
3 12	8 38.23	+19 41.8	1.920	2.717	14.9	20.9	3 12	8 34.71	+16 17.1	1.940	2.736	14.8	21.1
443863	2001 SZ ₂₄₆		2 3.1 92°29	0°4/ 3.4	16		138477	2000 JY ₈₆		2 3.2 137°42	5°2/ 28.6	18	
1 2	9 32.75	+13 6.6	1.537	2.372	15.6	22.1	1 2	9 29.06	+34 51.8	2.941	3.772	9.1	20.4
1 12	9 25.99	+13 45.6	1.488	2.398	11.3	21.9	1 12	9 22.76	+36 4.2	2.890	3.785	7.1	20.3
1 22	9 16.78	+14 36.8	1.462	2.423	6.4	21.6	1 22	9 14.79	+37 10.3	2.867	3.798	5.5	20.2
2 1	9 6.13	+15 34.1	1.464	2.448	1.3	21.4	2 1	9 5.80	+38 4.7	2.874	3.810	5.3	20.2
2 11	8 55.43	+16 30.3	1.494	2.472	3.9	21.6	2 11	8 56.62	+38 43.1	2.910	3.822	6.5	20.3
2 21	8 45.97	+17 19.4	1.553	2.496	8.6	21.9	2 21	8 48.11	+39 4.0	2.974	3.834	8.3	20.5
3 2	8 38.80	+17 57.6	1.637	2.519	12.8	22.2	3 2	8 41.01	+39 7.6	3.064	3.844	10.2	20.6
3 12	8 34.52	+18 23.5	1.742	2.541	16.1	22.5	3 12	8 35.84	+38 56.0	3.175	3.855	11.9	20.8
10557	Rowland		2 3.1 107°43	0°2/ 3.3	18		456137	2006 DQ ₁₃₉		2 3.2 98°87	0°8/ 2.6	18	
1 2	9 31.29	+14 50.0	1.536	2.378	15.3	18.1	1 2	9 29.65	+15 24.2	1.509	2.355	15.3	21.2
1 12	9 25.16	+15 7.4	1.471	2.384	11.1	17.8	1 12	9 24.05	+16 19.8	1.447	2.364	11.0	21.0
1 22	9 16.45	+15 35.2	1.428	2.391	6.4	17.6	1 22	9 15.86	+17 27.2	1.409	2.373	6.2	20.7
2 1	9 6.10	+16 8.4	1.413	2.397	1.2	17.2	2 1	9 6.02	+18 39.2	1.397	2.382	1.2	20.4
2 11	8 55.47	+16 41.2	1.426	2.404	4.0	17.4	2 11	8 55.87	+19 47.5	1.414	2.390	4.5	20.6
2 21	8 45.92	+17 8.6	1.466	2.410	8.9	17.7	2 21	8 46.79	+20 45.0	1.458	2.399	9.3	20.9
3 2	8 38.62	+17 27.4	1.530	2.416	13.3	18.0	3 2	8 39.94	+21 27.8	1.527	2.407	13.6	21.2
3 12	8 34.27	+17 36.2	1.616	2.422	16.9	18.3	3 12	8 36.03	+21 54.5	1.616	2.415	17.2	21.5
88390	2001 QP ₉		2 3.2 164°99	0°8/ 3.7	18		54720	2001 JY ₂		2 3.2 249°62	0°8/ 2.7	18	
1 2	9 31.48	+11 56.7	1.987	2.808	13.2	21.0	1 2	9 30.25	+15 28.9	1.510	2.355	15.3	19.5
1 12	9 24.87	+12 30.1	1.913	2.815	9.7	20.8	1 12	9 24.77	+16 18.5	1.428	2.344	11.2	19.2
1 22	9 16.13	+13 15.0	1.863	2.821	5.7	20.6	1 22	9 16.46	+17 21.3	1.369	2.333	6.3	18.9
2 1	9 6.05	+14 7.0	1.843	2.826	1.5	20.3	2 1	9 6.17	+18 30.8	1.337	2.321	1.2	18.5
2 11	8 55.67	+15 0.7	1.853	2.831	3.3	20.4	2 11	8 55.23	+19 38.5	1.333	2.309	4.6	18.7
2 21	8 46.08	+15 51.0	1.893	2.834	7.5	20.7	2 21	8 45.14	+20 36.7	1.356	2.297	9.9	19.0
3 2	8 38.24	+16 34.0	1.961	2.837	11.3	20.9	3 2	8 37.26	+21 20.7	1.403	2.284	14.6	19.2
3 12	8 32.81	+17 7.2	2.051	2.838	14.4	21.1	3 12	8 32.50	+21 48.5	1.471	2.271	18.6	19.5
98128	2000 SS ₂₄		2 3.2 170°14	1°7/ 4.1	18		453815	2011 SF ₁₀₂		2 3.2 140°70	0°4/ 2.9	18	
1 2	9 31.64	+11 21.4	1.836	2.659	14.0	19.3	1 2	9 32.63	+15 50.2	1.914	2.745	13.2	23.3
1 12	9 25.11	+11 23.9	1.761	2.662	10.4	19.1	1 12	9 25.69	+16 21.9	1.849	2.758	9.5	23.1
1 22	9 16.32	+11 37.5	1.709	2.665	6.3	18.9	1 22	9 16.58	+17 1.2	1.810	2.771	5.4	22.8
2 1	9 6.08	+11 59.6	1.685	2.667	2.2	18.6	2 1	9 6.14	+17 43.2	1.799	2.784	0.9	22.5
2 11	8 55.54	+12 25.9	1.691	2.669	3.6	18.7	2 11	8 55.51	+18 22.6	1.819	2.795	3.6	22.8
2 21	8 45.85	+12 52.4	1.726	2.670	7.9	19.0	2 21	8 45.81	+18 55.1	1.868	2.806	7.8	23.1
3 2	8 38.05	+13 15.3	1.788	2.671	11.8	19.2	3 2	8 38.02	+19 18.1	1.943	2.815	11.6	23.3
3 12	8 32.81	+13 32.4	1.871	2.671	15.2	19.4	3 12	8 32.76	+19 30.8	2.042	2.824	14.6	23.5
17628	1996 FB ₅		2 3.2 289°31	11°4/ 10.9	18		357235	2002 KC ₁		2 3.2 200°94	0°7/ 3.8	17	
1 2	9 25.93	-12 54.4	1.611	2.339	19.6	18.7	1 2	9 28.34	+10 31.9	2.177	2.994	12.3	21.8
1 12	9 21.70	-13 11.3	1.501										

EPHEMERIDES

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
405081	2001 <i>UH</i> ₁₇₂		2 3.2 79°98	2.1/ 1.8	18		151065	2001 <i>VV</i> ₂₉		2 3.2 112°35	1.6/ 1.9	18	
1 2	9 29.42	+20 8.8	1.748	2.596	13.4	21.2	1 2	9 30.38	+19 35.8	2.105	2.941	11.9	20.4
1 12	9 23.59	+20 53.7	1.689	2.607	9.6	21.0	1 12	9 23.91	+20 18.0	2.047	2.961	8.5	20.2
1 22	9 15.47	+21 43.3	1.654	2.618	5.4	20.7	1 22	9 15.51	+21 4.1	2.016	2.979	4.8	20.0
2 1	9 5.95	+22 31.3	1.647	2.629	2.1	20.5	2 1	9 5.97	+21 48.8	2.015	2.997	1.7	19.8
2 11	8 56.23	+23 11.5	1.669	2.640	4.7	20.7	2 11	8 56.32	+22 27.0	2.044	3.015	4.0	20.0
2 21	8 47.51	+23 39.5	1.718	2.651	8.8	21.0	2 21	8 47.55	+22 55.2	2.102	3.032	7.6	20.3
3 2	8 40.80	+23 53.6	1.793	2.662	12.5	21.2	3 2	8 40.51	+23 11.9	2.186	3.049	10.9	20.5
3 12	8 36.73	+23 54.2	1.889	2.673	15.6	21.5	3 12	8 35.76	+23 17.1	2.294	3.065	13.6	20.7
59247	1999 <i>CU</i> ₁₁		2 3.2 297°85	0.4/ 3.0	18		289393	2005 <i>CL</i> ₃₇		2 3.2 358°98	1.8/ 2.3	18	
1 2	9 36.87	+19 40.5	1.690	2.527	14.4	19.0	1 2	9 28.57	+18 59.5	1.272	2.136	16.4	20.8
1 12	9 29.35	+19 4.9	1.595	2.506	10.6	18.7	1 12	9 23.75	+19 29.7	1.208	2.133	11.9	20.5
1 22	9 18.97	+18 29.2	1.523	2.486	6.1	18.4	1 22	9 15.91	+20 8.0	1.165	2.132	6.7	20.2
2 1	9 6.63	+17 50.7	1.481	2.465	1.1	18.0	2 1	9 6.09	+20 47.4	1.147	2.131	2.0	19.9
2 11	8 53.71	+17 7.1	1.468	2.445	4.2	18.1	2 11	8 55.85	+21 20.1	1.156	2.131	5.4	20.1
2 21	8 41.70	+16 17.8	1.484	2.424	9.2	18.4	2 21	8 46.84	+21 40.4	1.189	2.132	10.7	20.4
3 2	8 31.95	+15 23.9	1.526	2.404	13.8	18.6	3 2	8 40.41	+21 46.0	1.244	2.134	15.4	20.7
3 12	8 25.31	+14 26.7	1.590	2.385	17.6	18.8	3 12	8 37.36	+21 36.9	1.319	2.136	19.4	20.9
39060	2000 <i>UD</i> ₁₀₆		2 3.2 122°94	2.9/ 1.3	18		168333	1994 <i>CU</i> ₁₇		2 3.2 329°81	2.6/ 1.7	18	
1 2	9 29.66	+23 24.4	1.931	2.777	12.4	19.4	1 2	9 28.42	+20 5.5	1.354	2.216	15.7	19.7
1 12	9 23.70	+24 3.1	1.862	2.779	9.0	19.2	1 12	9 23.64	+20 52.0	1.282	2.207	11.4	19.5
1 22	9 15.54	+24 43.2	1.819	2.781	5.3	19.0	1 22	9 15.88	+21 46.4	1.233	2.199	6.5	19.2
2 1	9 5.98	+25 18.8	1.804	2.782	2.9	18.8	2 1	9 6.09	+22 40.8	1.209	2.192	2.6	18.9
2 11	8 56.16	+25 44.4	1.818	2.784	5.1	18.9	2 11	8 55.77	+23 26.6	1.212	2.184	5.8	19.1
2 21	8 47.23	+25 56.9	1.860	2.785	8.8	19.2	2 21	8 46.51	+23 57.3	1.240	2.178	10.9	19.3
3 2	8 40.18	+25 55.2	1.927	2.787	12.2	19.4	3 2	8 39.71	+24 10.4	1.290	2.172	15.5	19.6
3 12	8 35.65	+25 40.6	2.016	2.788	15.2	19.6	3 12	8 36.25	+24 6.1	1.360	2.167	19.4	19.8
258275	2001 <i>UV</i> ₈		2 3.2 43°27	10.7/11.1	18		228021	2008 <i>FV</i> ₁₅		2 3.2 209°92	5.6/29.2	18	
1 2	9 25.49	-11 11.9	1.621	2.360	19.1	20.0	1 2	9 32.05	+33 28.9	2.470	3.304	10.5	21.3
1 12	9 20.86	-11 57.2	1.557	2.371	16.5	19.8	1 12	9 25.31	+34 39.1	2.397	3.296	8.1	21.2
1 22	9 14.00	-12 11.1	1.512	2.383	13.8	19.7	1 22	9 16.44	+35 44.0	2.351	3.288	6.2	21.0
2 1	9 5.71	-11 50.3	1.488	2.396	11.6	19.6	2 1	9 6.17	+36 36.8	2.334	3.280	5.7	21.0
2 11	8 57.13	-10 56.4	1.487	2.408	10.7	19.5	2 11	8 55.53	+37 12.0	2.347	3.271	7.2	21.1
2 21	8 49.44	-9 35.4	1.511	2.422	11.6	19.6	2 21	8 45.59	+37 27.0	2.388	3.261	9.5	21.2
3 2	8 43.64	-7 56.3	1.559	2.435	13.6	19.8	3 2	8 37.35	+37 22.3	2.453	3.250	12.0	21.3
3 12	8 40.41	-6 10.1	1.628	2.449	16.1	20.0	3 12	8 31.47	+37 0.4	2.540	3.239	14.1	21.5
189407	3283 <i>T</i> ₋₂		2 3.2 128°90	2.1/ 4.9	18		18393	1992 <i>QB</i>		2 3.2 192°78	10.8/24.2	18	
1 2	9 26.82	+7 23.7	2.235	3.042	12.4	21.1	1 2	9 40.66	+47 10.7	2.101	2.905	13.1	19.0
1 12	9 21.28	+7 56.0	2.164	3.055	9.3	20.9	1 12	9 32.46	+49 5.6	2.053	2.903	11.6	18.9
1 22	9 14.02	+8 41.9	2.118	3.067	5.8	20.7	1 22	9 20.88	+50 43.4	2.029	2.901	10.8	18.8
2 1	9 5.70	+9 38.3	2.101	3.079	2.6	20.5	2 1	9 7.00	+51 53.1	2.032	2.897	11.1	18.8
2 11	8 57.18	+10 40.4	2.114	3.091	3.2	20.6	2 11	8 52.53	+52 27.8	2.059	2.893	12.4	18.9
2 21	8 49.33	+11 43.2	2.158	3.102	6.5	20.8	2 21	8 39.35	+52 26.7	2.110	2.888	14.2	19.0
3 2	8 42.93	+12 42.1	2.229	3.112	9.8	21.0	3 2	8 29.00	+51 54.0	2.180	2.883	16.0	19.2
3 12	8 38.51	+13 33.7	2.324	3.122	12.6	21.3	3 12	8 22.38	+50 57.0	2.267	2.876	17.7	19.3
41651	2000 <i>ST</i> ₂₉₃		2 3.2 77°90	1.9/ 2.1	18		277588	2006 <i>AV</i> ₈		2 3.2 191°67	0.9/ 3.9	18	
1 2	9 32.54	+21 13.4	1.863	2.704	13.0	19.3	1 2	9 27.14	+12 10.1	2.177	3.001	12.0	21.9
1 12	9 25.54	+21 33.9	1.813	2.728	9.3	19.1	1 12	9 21.65	+12 32.0	2.096	3.000	8.9	21.7
1 22	9 16.42	+21 56.3	1.788	2.751	5.3	18.9	1 22	9 14.31	+13 3.8	2.041	2.999	5.2	21.5
2 1	9 6.11	+22 15.6	1.792	2.775	2.0	18.7	2 1	9 5.78	+13 42.4	2.014	2.997	1.5	21.2
2 11	8 55.81	+22 27.5	1.826	2.798	4.3	18.9	2 11	8 56.96	+14 23.5	2.018	2.996	3.0	21.3
2 21	8 46.64	+22 29.5	1.888	2.821	8.2	19.2	2 21	8 48.77	+15 2.9	2.051	2.994	6.9	21.6
3 2	8 39.50	+22 21.1	1.977	2.844	11.6	19.5	3 2	8 42.08	+15 37.1	2.111	2.992	10.4	21.8
3 12	8 34.92	+22 3.3	2.087	2.866	14.5	19.7	3 12	8 37.48	+16 3.8	2.194	2.989	13.4	22.0
417125	2005 <i>UT</i> ₅₁₂		2 3.2 116°09	5.0/30.2	18		198962	2005 <i>UJ</i> ₄₃₅		2 3.2 273°61	1.0/ 3.7	18	
1 2	9 31.35	+29 25.3	2.130	2.973	11.6	21.3	1 2	9 29.53	+12 21.8	1.425	2.268	16.2	20.7
1 12	9 24.77	+30 41.0	2.080	2.990	8.6	21.2	1 12	9 24.32	+12 46.2	1.344	2.257	12.0	20.4
1 22	9 16.06	+31 53.0	2.057	3.006	5.9	21.0	1 22	9 16.26	+13 26.3	1.285	2.246	7.1	20.1
2 1	9 6.07	+32 53.8	2.062	3.022	5.1	21.0	2 1	9 6.18	+14 17.3	1.251	2.235	1.8	19.8
2 11	8 55.91	+33 37.5	2.097	3.038	6.8	21.1	2 11	8 55.46	+15 12.4	1.244	2.223	4.3	19.9
2 21	8 46.70	+34 1.5	2.160	3.053	9.5	21.3	2 21	8 45.63	+16 4.4	1.264	2.212	9.7	20.2
3 2	8 39.37	+34 6.1	2.248	3.068	12.2	21.5	3 2	8 38.06	+16 47.6	1.309	2.201	14.6	20.4
3 12	8 34.51	+33 53.9	2.356	3.082	14.5	21.7	3 12	8 33.67	+17 18.5	1.373	2.189	18.8	20.6
368624	2004 <i>TW</i> ₂₁₀		2 3.2 103°76	1.9/ 4.5	18		83331	2001 <i>RG</i> ₁₃₁		2 3.2 206°85	2.0/ 1.6	18	
1 2	9 26.86	+9 22.0	2.022	2.841	13.0	21.3	1 2	9 26.92	+21 41.5	2.376	3.217	10.6	19.9
1 12	9 21.48	+9 39.4	1.951	2.850	9.7	21.1	1 12	9 21.42	+22 18.5	2.300	3.215	7.6	19.7
1 22	9 14.20	+10 9.5	1.905	2.858	6.0	20.8	1 22	9 14.14	+22 58.0	2.251	3.213	4.4	19.5
2 1	9 5.74	+10 49.3	1.886	2.867	2.4	20.6	2 1	9 5.75	+23 35.4	2.231	3.211	2.0	19.3
2 11	8 57.07	+11 34.4	1.897	2.875	3.3	20.7	2 11	8 57.10	+24 6.4	2.241	3.209	4.0	19.5
2 21	8 49.13	+12 20.1	1.937	2.883	7.0	21.0	2 21	8 49.10	+24 27.7	2.280	3.207	7.3	19.7
3 2	8 42.79	+13 2.2	2.004	2.891	10.6	21.2	3 2	8 42.55	+24 38.0	2.346	3.205	10.3	19.8
3 12	8 38.62	+13 37.5	2.094	2.899	13.6	21.4	3 12	8 38.02	+24 37.1	2.435	3.203	13.0	20.0
281322	2007 <i>TU</i> ₁₈₃		2 3.2 87°42	4.0/30.7	18		316793	1999 <i>TM</i> ₂₃₇		2 3.2 91°91	1.4/ 4.1	18	
1 2	9 28.64												

EPHEMERIDES

2 3.2

2 3.2

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
374568	2006 <i>BU</i> ₂₃₉		2 3.2 286°14	1°0/ 2.5 18			502948	2015 <i>ER</i> ₅₈		2 3.2 16°71	5°7/28.6 18		
1 2	9 27.03	+17 16.9	1.957	2.799	12.5	21.2	1 2	9 26.75	+31 41.7	2.295	3.142	10.7	20.8
1 12	9 21.79	+17 56.3	1.882	2.798	9.0	21.0	1 12	9 21.60	+33 17.5	2.235	3.142	8.2	20.6
1 22	9 14.48	+18 43.0	1.832	2.796	5.0	20.8	1 22	9 14.40	+34 49.8	2.201	3.143	6.2	20.5
2 1	9 5.82	+19 32.1	1.811	2.795	1.2	20.5	2 1	9 5.87	+36 10.7	2.196	3.144	5.8	20.5
2 11	8 56.85	+20 17.9	1.818	2.793	3.8	20.7	2 11	8 56.98	+37 13.9	2.220	3.145	7.5	20.6
2 21	8 48.62	+20 55.8	1.854	2.792	7.9	20.9	2 21	8 48.78	+37 55.9	2.271	3.146	9.9	20.7
3 2	8 42.08	+21 22.8	1.916	2.791	11.6	21.1	3 2	8 42.21	+38 16.1	2.346	3.147	12.3	20.9
3 12	8 37.89	+21 37.9	2.000	2.789	14.7	21.4	3 12	8 37.93	+38 16.9	2.441	3.148	14.5	21.0
332740	2009 <i>TT</i> ₃		2 3.2 130°71	5°7/ 7.5 18			15381	Spadolini		2 3.2 216°30	2°0/ 4.3 18		
1 2	9 26.83	- 1 31.2	2.132	2.902	14.1	20.9	1 2	9 31.36	+10 33.7	1.732	2.556	14.7	18.8
1 12	9 21.38	- 1 46.0	2.056	2.910	11.4	20.7	1 12	9 25.18	+10 37.6	1.648	2.550	11.0	18.5
1 22	9 14.14	- 1 41.9	2.003	2.918	8.6	20.5	1 22	9 16.55	+10 54.6	1.588	2.543	6.7	18.2
2 1	9 5.75	- 1 18.6	1.976	2.925	6.3	20.4	2 1	9 6.27	+11 21.9	1.555	2.536	2.6	18.0
2 11	8 57.12	- 0 38.7	1.977	2.933	5.9	20.4	2 11	8 55.52	+11 55.0	1.551	2.529	3.9	18.0
2 21	8 49.16	+ 0 13.6	2.007	2.939	7.8	20.5	2 21	8 45.57	+12 29.1	1.576	2.521	8.4	18.3
3 2	8 42.67	+ 1 12.7	2.064	2.946	10.5	20.7	3 2	8 37.56	+12 59.9	1.626	2.513	12.6	18.5
3 12	8 38.24	+ 2 12.9	2.144	2.952	13.2	20.9	3 12	8 32.26	+13 24.2	1.699	2.504	16.2	18.7
327414	2005 <i>VS</i> ₁₀₁		2 3.2 254°99	6°6/28.8 18			415004	2011 <i>FC</i> ₁₀₂		2 3.2 29°40	5°2/ 6.3 18		
1 2	9 29.89	+31 59.5	1.917	2.766	12.4	20.3	1 2	9 25.94	+ 3 30.1	1.468	2.286	17.1	20.7
1 12	9 24.23	+33 33.7	1.851	2.760	9.5	20.1	1 12	9 21.31	+ 3 13.7	1.408	2.298	13.4	20.5
1 22	9 16.04	+35 4.0	1.811	2.754	7.2	19.9	1 22	9 14.31	+ 3 18.7	1.370	2.311	9.3	20.3
2 1	9 6.13	+36 21.0	1.798	2.748	6.7	19.9	2 1	9 5.85	+ 3 44.3	1.356	2.324	5.8	20.2
2 11	8 55.75	+37 16.7	1.814	2.742	8.6	20.0	2 11	8 57.17	+ 4 26.3	1.368	2.339	5.7	20.2
2 21	8 46.24	+37 47.4	1.855	2.736	11.5	20.1	2 21	8 49.51	+ 5 18.2	1.406	2.353	8.9	20.4
3 2	8 38.78	+37 53.0	1.920	2.729	14.3	20.3	3 2	8 43.90	+ 6 13.3	1.469	2.369	12.7	20.7
3 12	8 34.16	+37 37.0	2.003	2.723	16.9	20.5	3 12	8 41.00	+ 7 5.0	1.553	2.385	16.2	20.9
57998	2002 <i>SO</i> ₉		2 3.2 51°60	1°2/ 2.3 18			290676	2005 <i>UO</i> ₃₃₈		2 3.2 88°28	0°1/ 3.3 18		
1 2	9 26.65	+18 16.0	1.986	2.830	12.2	19.3	1 2	9 29.58	+15 14.8	1.839	2.675	13.4	21.1
1 12	9 21.40	+18 52.5	1.923	2.839	8.8	19.1	1 12	9 23.61	+15 27.3	1.773	2.684	9.7	20.9
1 22	9 14.19	+19 34.8	1.884	2.848	4.9	18.9	1 22	9 15.50	+15 47.9	1.730	2.692	5.5	20.7
2 1	9 5.77	+20 17.8	1.873	2.857	1.3	18.6	2 1	9 6.06	+16 12.5	1.716	2.700	1.1	20.4
2 11	8 57.16	+20 56.3	1.892	2.866	3.8	18.8	2 11	8 56.42	+16 36.6	1.731	2.709	3.5	20.6
2 21	8 49.36	+21 26.5	1.939	2.876	7.7	19.1	2 21	8 47.68	+16 56.6	1.774	2.717	7.8	20.9
3 2	8 43.25	+21 46.0	2.012	2.886	11.2	19.3	3 2	8 40.80	+17 9.7	1.843	2.725	11.6	21.1
3 12	8 39.40	+21 54.2	2.108	2.896	14.1	19.5	3 12	8 36.40	+17 14.7	1.935	2.733	14.8	21.3
121248	1999 <i>RR</i> ₆₃		2 3.2 90°58	1°6/ 2.2 18			212008	2005 <i>BU</i> ₂₄		2 3.2 313°51	2°3/ 2.0 18		
1 2	9 31.28	+20 40.3	2.005	2.845	12.3	20.4	1 2	9 31.77	+21 3.0	1.505	2.357	14.9	20.1
1 12	9 24.61	+21 0.0	1.948	2.862	8.8	20.2	1 12	9 25.79	+21 27.4	1.433	2.353	10.8	19.8
1 22	9 15.93	+21 22.0	1.917	2.879	5.0	20.0	1 22	9 17.00	+21 55.9	1.385	2.349	6.2	19.5
2 1	9 6.08	+21 41.9	1.914	2.896	1.7	19.8	2 1	9 6.36	+22 22.2	1.363	2.346	2.4	19.3
2 11	8 56.17	+21 55.4	1.941	2.913	4.0	20.0	2 11	8 55.32	+22 39.9	1.369	2.342	5.3	19.5
2 21	8 47.23	+22 0.1	1.997	2.930	7.8	20.3	2 21	8 45.38	+22 45.1	1.402	2.339	10.0	19.7
3 2	8 40.14	+21 55.1	2.080	2.947	11.1	20.5	3 2	8 37.81	+22 36.5	1.458	2.335	14.4	20.0
3 12	8 35.44	+21 40.9	2.185	2.963	13.9	20.8	3 12	8 33.39	+22 15.4	1.535	2.332	18.0	20.2
39617	1994 <i>CZ</i> ₁₁		2 3.2 74°87	1°8/ 2.1 18			298838	2004 <i>RP</i> ₁₈₆		2 3.2 220°45	0°0/ 3.2 18		
1 2	9 32.30	+18 19.6	1.464	2.313	15.5	18.1	1 2	9 32.81	+16 2.3	1.667	2.505	14.5	20.9
1 12	9 25.84	+19 11.2	1.419	2.338	11.0	17.9	1 12	9 26.33	+16 12.7	1.587	2.499	10.6	20.7
1 22	9 16.79	+20 9.7	1.398	2.363	6.1	17.7	1 22	9 17.24	+16 31.3	1.531	2.493	6.1	20.4
2 1	9 6.24	+21 7.4	1.404	2.387	1.9	17.5	2 1	9 6.41	+16 53.7	1.502	2.487	1.1	20.0
2 11	8 55.65	+21 56.7	1.438	2.412	4.9	17.7	2 11	8 55.13	+17 14.8	1.502	2.480	4.0	20.2
2 21	8 46.40	+22 32.5	1.499	2.436	9.5	18.0	2 21	8 44.77	+17 30.5	1.531	2.473	8.9	20.5
3 2	8 39.57	+22 53.0	1.584	2.459	13.5	18.3	3 2	8 36.52	+17 38.1	1.584	2.465	13.2	20.7
3 12	8 35.75	+22 58.5	1.690	2.483	16.8	18.6	3 12	8 31.17	+17 36.7	1.659	2.457	16.9	20.9
467641	2008 <i>SY</i> ₁₂		2 3.2 174°23	1°1/ 2.3 17			112480	2002 <i>OF</i> ₂₅		2 3.2 187°53	0°3/ 2.9 18		
1 2	9 27.30	+17 57.8	2.180	3.018	11.5	21.7	1 2	9 29.24	+15 15.4	1.802	2.640	13.6	20.5
1 12	9 21.81	+18 36.8	2.106	3.019	8.3	21.5	1 12	9 23.55	+15 52.0	1.727	2.639	9.9	20.2
1 22	9 14.42	+19 21.6	2.057	3.020	4.6	21.3	1 22	9 15.57	+16 38.4	1.676	2.639	5.6	20.0
2 1	9 5.84	+20 7.7	2.037	3.021	1.2	21.0	2 1	9 6.10	+17 29.5	1.654	2.638	1.0	19.7
2 11	8 56.98	+20 50.1	2.047	3.021	3.6	21.2	2 11	8 56.27	+18 19.2	1.660	2.637	3.8	19.9
2 21	8 48.81	+21 24.6	2.086	3.021	7.3	21.4	2 21	8 47.25	+19 2.3	1.695	2.636	8.2	20.1
3 2	8 42.18	+21 49.0	2.152	3.021	10.7	21.6	3 2	8 40.11	+19 35.1	1.756	2.635	12.2	20.4
3 12	8 37.69	+22 2.4	2.241	3.021	13.6	21.8	3 12	8 35.53	+19 56.0	1.839	2.633	15.6	20.6
33640	1999 <i>JT</i> ₈₁		2 3.2 222°42	3°8/30.9 18			211455	2003 <i>BV</i> ₃₆		2 3.2 290°78	1°0/ 3.9 17		
1 2	9 28.86	+25 5.4	2.215	3.059	11.1	19.0	1 2	9 24.35	+11 44.8	2.346	3.170	11.3	20.9
1 12	9 23.12	+26 22.4	2.136	3.051	8.1	18.8	1 12	9 19.64	+12 6.5	2.254	3.158	8.3	20.6
1 22	9 15.28	+27 41.4	2.084	3.042	5.2	18.6	1 22	9 13.22	+12 38.1	2.188	3.145	5.0	20.4
2 1	9 6.01	+28 55.5	2.062	3.033	3.8	18.5	2 1	9 5.67	+13 16.9	2.150	3.133	1.5	20.1
2 11	8 56.31	+29 57.8	2.069	3.023	5.8	18.6	2 11	8 57.78	+13 59.0	2.143	3.121	2.9	20.2
2 21	8 47.24	+30 43.8	2.105	3.013	8.9	18.8	2 21	8 50.40	+14 40.4	2.164	3.109	6.5	20.4
3 2	8 39.77	+31 11.9	2.167	3.002	12.0	19.0	3 2	8 44.30	+15 17.6	2.213	3.097	9.9	20.6
3 12	8 34.62	+31 22.6	2.251	2.991	14.7	19.2	3 12	8 40.10	+15 47.9	2.286	3.085	12.8	20.8
299533	2006 <i>DD</i> ₃₂		2 3.2 353°29	0°7/ 3.5 18			32159	2000 <i>MR</i> ₂		2 3.2 191°11	0°6/ 2.6 18		
1 2	9 27.39	+13 30.7	1.200	2.059	17.6	20.3	1 2	9 25.81	+17 17.7				

EPHEMERIDES

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
358555	2007 <i>TD</i> ₁₉₁		2 3.2 24°29'	0°8/ 3.6 18			320716	2008 <i>DS</i> ₆₂		2 3.2 48°77'	1°0/ 2.6 18		
1 2	9 29.86	+13 29.1	1.459	2.302	15.8	21.3	1 2	9 29.01	+16 16.5	1.373	2.227	16.0	20.4
1 12	9 24.36	+13 43.3	1.389	2.303	11.6	21.0	1 12	9 23.66	+17 4.7	1.326	2.247	11.5	20.2
1 22	9 16.17	+14 10.0	1.343	2.305	6.8	20.8	1 22	9 15.69	+18 3.2	1.301	2.267	6.4	19.9
2 1	9 6.22	+14 44.8	1.322	2.306	1.6	20.4	2 1	9 6.15	+19 4.5	1.303	2.287	1.4	19.7
2 11	8 55.90	+15 21.5	1.329	2.308	4.1	20.6	2 11	8 56.50	+20 0.4	1.332	2.308	4.6	19.9
2 21	8 46.63	+15 54.7	1.362	2.309	9.2	20.9	2 21	8 48.13	+20 44.8	1.386	2.329	9.5	20.3
3 2	8 39.61	+16 20.1	1.420	2.311	13.7	21.2	3 2	8 42.14	+21 14.6	1.465	2.351	13.8	20.6
3 12	8 35.63	+16 35.4	1.498	2.313	17.6	21.4	3 12	8 39.16	+21 29.0	1.564	2.373	17.2	20.9
149695	2004 <i>HW</i> ₂₁		2 3.2 258°86'	1°9/ 1.7 18			275054	2009 <i>UH</i> ₁₀₇		2 3.2 55°64'	0°4/ 3.5 18		
1 2	9 26.37	+21 17.5	2.376	3.217	10.6	20.7	1 2	9 27.29	+13 46.2	1.808	2.646	13.5	21.1
1 12	9 21.07	+21 54.0	2.298	3.213	7.6	20.5	1 12	9 22.04	+14 12.5	1.742	2.653	9.9	20.9
1 22	9 14.00	+22 33.3	2.246	3.209	4.4	20.3	1 22	9 14.67	+14 49.1	1.700	2.661	5.7	20.6
2 1	9 5.81	+23 11.1	2.224	3.205	1.9	20.1	2 1	9 5.98	+15 31.6	1.685	2.669	1.2	20.3
2 11	8 57.35	+23 42.9	2.232	3.201	4.0	20.2	2 11	8 57.05	+16 14.7	1.699	2.677	3.5	20.5
2 21	8 49.52	+24 5.5	2.269	3.197	7.2	20.4	2 21	8 48.98	+16 53.5	1.741	2.686	7.8	20.8
3 2	8 43.11	+24 17.2	2.332	3.193	10.3	20.6	3 2	8 42.71	+17 24.5	1.809	2.694	11.6	21.0
3 12	8 38.69	+24 17.9	2.419	3.189	13.0	20.8	3 12	8 38.87	+17 45.6	1.900	2.703	14.8	21.3
427082	2014 <i>UJ</i> ₄₁		2 3.2 4°94'	7°4/ 7.5 18			365612	2010 <i>UQ</i> ₂₇		2 3.2 173°39'	3°9/ 6.1 18		
1 2	9 26.67	- 1 49.1	1.680	2.465	16.7	20.9	1 2	9 28.47	+ 3 20.8	2.227	3.015	13.0	22.3
1 12	9 21.75	- 2 32.5	1.604	2.465	13.7	20.7	1 12	9 22.59	+ 3 20.2	2.145	3.019	10.2	22.1
1 22	9 14.59	- 2 53.8	1.549	2.465	10.6	20.5	1 22	9 14.89	+ 3 35.0	2.087	3.021	7.1	21.9
2 1	9 5.94	- 2 50.9	1.518	2.466	8.0	20.3	2 1	9 6.02	+ 4 4.2	2.057	3.023	4.4	21.8
2 11	8 56.91	- 2 25.5	1.514	2.467	7.6	20.3	2 11	8 56.87	+ 4 44.7	2.056	3.025	4.4	21.8
2 21	8 48.66	- 1 41.8	1.535	2.468	9.7	20.4	2 21	8 48.35	+ 5 32.3	2.085	3.025	7.0	21.9
3 2	8 42.23	- 0 46.5	1.581	2.470	12.7	20.6	3 2	8 41.26	+ 6 22.4	2.142	3.025	10.1	22.1
3 12	8 38.34	+ 0 12.9	1.649	2.472	15.8	20.8	3 12	8 36.22	+ 7 10.5	2.223	3.025	13.0	22.3
212025	2005 <i>CZ</i> ₂₁		2 3.2 335°82'	2°5/ 1.8 18			522339	2016 <i>CH</i> ₂₉₅		2 3.2 95°78'	0°8/ 3.7 18		
1 2	9 27.66	+19 41.5	1.293	2.158	16.1	20.4	1 2	9 28.49	+12 40.4	1.726	2.561	14.2	21.8
1 12	9 23.23	+20 28.2	1.222	2.149	11.7	20.1	1 12	9 23.02	+13 5.1	1.656	2.565	10.4	21.6
1 22	9 15.75	+21 23.9	1.173	2.140	6.7	19.8	1 22	9 15.29	+13 41.7	1.609	2.570	6.1	21.4
2 1	9 6.18	+22 20.3	1.149	2.132	2.6	19.5	2 1	9 6.11	+14 26.0	1.590	2.574	1.5	21.1
2 11	8 56.05	+23 8.5	1.151	2.124	5.9	19.7	2 11	8 56.62	+15 12.3	1.600	2.578	3.6	21.2
2 21	8 47.00	+23 41.7	1.177	2.118	11.1	20.0	2 21	8 48.02	+15 55.3	1.637	2.583	8.1	21.5
3 2	8 40.47	+23 56.8	1.226	2.112	15.9	20.2	3 2	8 41.31	+16 30.9	1.700	2.587	12.1	21.7
3 12	8 37.35	+23 53.9	1.294	2.107	19.9	20.5	3 12	8 37.17	+16 56.6	1.785	2.591	15.5	22.0
92777	2000 <i>QM</i> ₁₃₄		2 3.2 63°96'	2°1/ 2.2 18			491268	2011 <i>UF</i> ₃₁₀		2 3.2 51°91'	2°7/ 1.8 18		
1 2	9 33.23	+19 49.3	1.336	2.191	16.3	19.1	1 2	9 31.19	+20 23.0	1.311	2.171	16.3	21.1
1 12	9 26.77	+20 20.6	1.289	2.210	11.7	18.9	1 12	9 25.41	+21 9.7	1.263	2.186	11.7	20.9
1 22	9 17.45	+20 57.4	1.263	2.229	6.6	18.6	1 22	9 16.76	+22 1.9	1.237	2.203	6.6	20.7
2 1	9 6.45	+21 32.2	1.264	2.248	2.2	18.4	2 1	9 6.37	+22 51.3	1.237	2.219	2.7	20.5
2 11	8 55.38	+21 58.2	1.292	2.267	5.3	18.7	2 11	8 55.85	+23 29.9	1.264	2.236	5.7	20.7
2 21	8 45.79	+22 11.3	1.347	2.286	10.1	19.0	2 21	8 46.75	+23 53.0	1.316	2.254	10.5	21.0
3 2	8 38.86	+22 10.4	1.424	2.305	14.4	19.3	3 2	8 40.27	+23 59.1	1.392	2.271	14.8	21.3
3 12	8 35.19	+21 56.7	1.522	2.324	17.9	19.6	3 12	8 37.06	+23 49.7	1.487	2.289	18.3	21.6
429042	2009 <i>CG</i> ₅₄		2 3.2 343°99'	4°6/ 7.1 17			379099	2008 <i>YE</i> ₆		2 3.2 117°34'	0°0/ 3.1 18		
1 2	9 21.04	+ 0 17.7	1.773	2.574	15.3	20.2	1 2	9 33.02	+14 33.4	1.756	2.587	14.2	22.0
1 12	9 17.70	+ 0 59.4	1.684	2.563	12.2	20.0	1 12	9 26.11	+15 9.5	1.699	2.608	10.2	21.8
1 22	9 12.32	+ 2 6.9	1.618	2.553	8.6	19.8	1 22	9 16.94	+15 55.1	1.666	2.627	5.8	21.6
2 1	9 5.55	+ 3 38.1	1.577	2.544	5.4	19.6	2 1	9 6.40	+16 44.9	1.662	2.646	1.0	21.3
2 11	8 58.36	+ 5 27.2	1.564	2.536	4.9	19.5	2 11	8 55.72	+17 32.6	1.687	2.665	3.7	21.5
2 21	8 51.76	+ 7 25.6	1.579	2.528	7.9	19.7	2 21	8 46.11	+18 13.3	1.742	2.682	8.1	21.8
3 2	8 46.74	+ 9 23.7	1.621	2.522	11.7	19.9	3 2	8 38.54	+18 44.0	1.822	2.699	12.0	22.1
3 12	8 44.02	+11 13.3	1.686	2.516	15.2	20.1	3 12	8 33.64	+19 3.5	1.925	2.715	15.2	22.3
180675	2004 <i>GK</i> ₇₇		2 3.2 196°62'	6°7/27.9 18			232368	2003 <i>AZ</i> ₂		2 3.2 170°95'	0°9/ 2.7 18 R		
1 2	9 32.31	+34 56.7	2.292	3.127	11.1	20.5	1 2	9 42.27	+ 5 20.5	0.877	1.714	24.3	20.3
1 12	9 25.76	+36 32.8	2.227	3.124	8.8	20.3	1 12	9 35.22	+ 8 35.1	0.812	1.723	18.0	20.0
1 22	9 16.86	+38 2.9	2.190	3.121	7.0	20.2	1 22	9 23.34	+12 44.3	0.767	1.730	10.2	19.6
2 1	9 6.38	+39 18.4	2.182	3.117	6.8	20.2	2 1	9 7.73	+17 26.9	0.750	1.734	1.7	19.1
2 11	8 55.46	+40 12.6	2.202	3.112	8.4	20.3	2 11	8 50.76	+22 6.7	0.761	1.737	7.4	19.4
2 21	8 45.30	+40 42.6	2.249	3.107	10.7	20.4	2 21	8 35.31	+26 9.5	0.800	1.737	15.4	19.9
3 2	8 36.99	+40 48.9	2.320	3.101	13.1	20.6	3 2	8 23.90	+29 17.5	0.862	1.735	22.1	20.2
3 12	8 31.27	+40 34.8	2.411	3.094	15.2	20.7	3 12	8 17.87	+31 30.6	0.940	1.730	27.3	20.6
465660	2009 <i>RJ</i> ₇₂		2 3.2 12°90'	10°4/29.2 18			96636	1999 <i>GG</i> ₇		2 3.2 280°98'	4°2/31.6 18		
1 2	9 35.18	+40 3.5	1.409	2.258	16.0	20.5	1 2	9 30.07	+22 57.5	1.487	2.345	14.8	19.0
1 12	9 28.67	+41 2.8	1.363	2.261	13.1	20.3	1 12	9 24.85	+24 11.6	1.410	2.333	10.8	18.8
1 22	9 18.70	+41 45.0	1.340	2.266	10.9	20.2	1 22	9 16.68	+25 31.8	1.357	2.320	6.6	18.5
2 1	9 6.69	+41 59.0	1.340	2.272	10.4	20.2	2 1	9 6.43	+26 48.6	1.331	2.308	4.2	18.3
2 11	8 54.63	+41 38.7	1.364	2.279	12.0	20.3	2 11	8 55.52	+27 52.0	1.332	2.296	7.0	18.4
2 21	8 44.39	+40 45.2	1.411	2.287	14.6	20.5	2 21	8 45.54	+28 35.2	1.359	2.283	11.4	18.7
3 2	8 37.35	+39 24.5	1.479	2.296	17.5	20.7	3 2	8 37.92	+28 55.8	1.409	2.271	15.7	18.9
3 12	8 34.09	+37 44.9	1.564	2.306	20.1	20.9	3 12	8 33.58	+28 55.1	1.478	2.259	19.3	19.1
235670	2004 <i>RP</i> ₂₅₀		2 3.2 23°92'	16°4/15.0 18			128073	2003 <i>OQ</i> ₁₀		2 3.2 255°59'	1°9/ 1.6 17		
1 2	9 24.78	-18 4.3	1.249	1.971	24.5	19.4	1 2</						

EPHEMERIDES

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
204025	2003 <i>UA</i> ₇₉		2 3.2 33°58'	4.8/ 6.6	18		369766	2012 <i>GZ</i>		2 3.2 276°63'	1.7/ 2.1	18	
1 2	9 25.92	+ 2 5.3	2.007	2.800	14.1	20.5	1 2	9 28.77	+19 12.5	1.812	2.658	13.1	20.8
1 12	9 20.91	+ 1 50.3	1.928	2.802	11.2	20.4	1 12	9 23.34	+19 50.3	1.731	2.649	9.5	20.5
1 22	9 14.01	+ 1 52.5	1.873	2.804	8.0	20.2	1 22	9 15.57	+20 34.4	1.675	2.639	5.4	20.3
2 1	9 5.89	+ 2 11.6	1.845	2.807	5.4	20.0	2 1	9 6.21	+21 19.3	1.646	2.629	1.8	20.0
2 11	8 57.49	+ 2 45.1	1.844	2.809	5.2	20.0	2 11	8 56.41	+21 58.7	1.646	2.620	4.5	20.2
2 21	8 49.75	+ 3 28.6	1.871	2.812	7.6	20.2	2 21	8 47.38	+22 28.0	1.674	2.610	8.8	20.4
3 2	8 43.55	+ 4 17.0	1.925	2.814	10.8	20.3	3 2	8 40.22	+22 44.6	1.728	2.601	12.7	20.6
3 12	8 39.49	+ 5 5.2	2.002	2.817	13.7	20.5	3 12	8 35.68	+22 48.0	1.802	2.591	16.1	20.8
152776	1999 <i>RF</i> ₁₅₂		2 3.2 149°80'	1.3/ 2.3	18		119588	2001 <i>VV</i> ₁₁₀		2 3.2 152°77'	1.1/ 3.9	18	
1 2	9 29.93	+19 47.8	2.478	3.309	10.5	19.9	1 2	9 29.17	+12 4.4	2.191	3.011	12.1	20.4
1 12	9 23.47	+20 12.6	2.408	3.318	7.6	19.8	1 12	9 23.09	+12 18.5	2.117	3.018	8.9	20.2
1 22	9 15.31	+20 40.2	2.365	3.327	4.3	19.6	1 22	9 15.18	+12 41.9	2.068	3.025	5.3	20.0
2 1	9 6.12	+21 6.7	2.352	3.335	1.3	19.4	2 1	9 6.11	+13 11.7	2.048	3.031	1.6	19.8
2 11	8 56.76	+21 28.5	2.370	3.343	3.4	19.5	2 11	8 56.82	+13 43.9	2.058	3.036	3.0	19.9
2 21	8 48.11	+21 43.0	2.419	3.350	6.7	19.7	2 21	8 48.24	+14 14.9	2.099	3.042	6.8	20.1
3 2	8 40.92	+21 48.8	2.495	3.356	9.7	19.9	3 2	8 41.20	+14 41.5	2.166	3.046	10.2	20.4
3 12	8 35.72	+21 45.9	2.595	3.362	12.3	20.1	3 12	8 36.27	+15 1.7	2.258	3.050	13.1	20.6
185741	1999 <i>CA</i> ₁₄₅		2 3.2 118°16'	0.1/ 3.3	18		136500	2005 <i>JY</i> ₄₄		2 3.2 142°57'	3.3/ 6.7	18	
1 2	9 30.08	+15 12.0	1.874	2.708	13.3	20.9	1 2	9 24.09	+ 1 40.7	2.994	3.767	10.4	20.9
1 12	9 23.99	+15 29.2	1.806	2.717	9.6	20.7	1 12	9 19.04	+ 1 54.3	2.915	3.777	8.2	20.8
1 22	9 15.76	+15 54.5	1.763	2.725	5.5	20.5	1 22	9 12.73	+ 2 20.8	2.861	3.788	5.8	20.6
2 1	9 6.21	+16 23.9	1.748	2.732	1.0	20.2	2 1	9 5.65	+ 2 59.0	2.836	3.797	3.8	20.5
2 11	8 56.43	+16 52.5	1.762	2.740	3.5	20.4	2 11	8 58.42	+ 3 46.2	2.842	3.807	3.6	20.5
2 21	8 47.54	+17 16.5	1.805	2.747	7.7	20.6	2 21	8 51.64	+ 4 39.1	2.878	3.816	5.4	20.6
3 2	8 40.49	+17 33.2	1.875	2.755	11.5	20.9	3 2	8 45.88	+ 5 33.9	2.943	3.824	7.8	20.8
3 12	8 35.89	+17 41.3	1.966	2.762	14.7	21.1	3 12	8 41.58	+ 6 27.1	3.035	3.833	10.0	21.0
4673	<i>Bortle</i>		2 3.2 38°49'	4.9/30.4	18		276869	2004 <i>RP</i> ₁₈₈		2 3.2 105°61'	0.3/ 3.4	18	
1 2	9 27.95	+23 36.0	1.570	2.429	14.1	15.5	1 2	9 30.42	+14 53.1	2.224	3.048	11.8	21.5
1 12	9 23.07	+25 31.2	1.510	2.433	10.2	15.3	1 12	9 23.85	+15 5.7	2.164	3.069	8.5	21.3
1 22	9 15.53	+27 31.4	1.476	2.437	6.4	15.1	1 22	9 15.51	+15 24.7	2.130	3.090	4.9	21.1
2 1	9 6.20	+29 25.4	1.469	2.441	4.9	15.0	2 1	9 6.16	+15 47.0	2.126	3.110	1.0	20.9
2 11	8 56.41	+31 2.0	1.490	2.445	7.5	15.1	2 11	8 56.73	+16 8.8	2.152	3.129	3.0	21.0
2 21	8 47.59	+32 14.1	1.538	2.449	11.4	15.4	2 21	8 48.12	+16 27.2	2.208	3.149	6.6	21.3
3 2	8 40.98	+32 59.5	1.609	2.454	15.0	15.6	3 2	8 41.13	+16 40.1	2.292	3.167	9.9	21.5
3 12	8 37.37	+33 20.0	1.700	2.459	18.0	15.8	3 12	8 36.24	+16 46.3	2.400	3.185	12.6	21.8
47172	1999 <i>TM</i> ₄₈		2 3.2 319°94'	0.2/ 3.3	18		341383	2007 <i>TL</i> ₁₂₃		2 3.2 162°64'	0.1/ 3.3	17	
1 2	9 29.19	+13 48.8	1.232	2.087	17.4	19.6	1 2	9 25.77	+14 19.8	2.421	3.248	10.9	21.5
1 12	9 24.40	+14 20.4	1.160	2.081	12.8	19.3	1 12	9 20.57	+14 48.9	2.343	3.250	7.9	21.3
1 22	9 16.49	+15 8.1	1.110	2.075	7.4	18.9	1 22	9 13.73	+15 25.5	2.292	3.252	4.5	21.1
2 1	9 6.40	+16 5.8	1.085	2.069	1.4	18.5	2 1	9 5.85	+16 6.4	2.270	3.254	0.9	20.8
2 11	8 55.70	+17 4.8	1.085	2.064	4.7	18.8	2 11	8 57.74	+16 47.4	2.278	3.255	2.8	20.9
2 21	8 46.11	+17 57.0	1.110	2.059	10.6	19.1	2 21	8 50.21	+17 24.7	2.316	3.257	6.3	21.2
3 2	8 39.11	+18 36.7	1.158	2.054	15.8	19.3	3 2	8 44.01	+17 55.7	2.382	3.258	9.5	21.4
3 12	8 35.61	+19 1.1	1.225	2.050	20.1	19.6	3 12	8 39.67	+18 18.4	2.471	3.259	12.2	21.6
460560	2014 <i>TF</i> ₆₈		2 3.2 151°03'	6.5/29.2	18		149329	2002 <i>VP</i> ₄₂		2 3.2 21°94'	3.1/ 1.5	18	
1 2	9 34.57	+34 51.9	2.185	3.019	11.6	21.3	1 2	9 27.91	+21 8.8	1.268	2.135	16.2	19.4
1 12	9 27.26	+36 3.1	2.131	3.028	9.1	21.2	1 12	9 23.23	+21 58.4	1.216	2.143	11.6	19.2
1 22	9 17.62	+37 6.3	2.103	3.037	7.0	21.0	1 22	9 15.64	+22 53.6	1.186	2.152	6.7	18.9
2 1	9 6.55	+37 53.7	2.103	3.045	6.6	21.0	2 1	9 6.21	+23 45.6	1.180	2.161	3.1	18.7
2 11	8 55.27	+38 20.0	2.132	3.052	8.0	21.1	2 11	8 56.55	+24 26.0	1.201	2.172	6.1	19.0
2 21	8 45.00	+38 23.4	2.188	3.058	10.4	21.3	2 21	8 48.21	+24 49.5	1.246	2.184	10.9	19.3
3 2	8 36.78	+38 5.5	2.268	3.064	12.8	21.5	3 2	8 42.45	+24 54.7	1.314	2.196	15.3	19.5
3 12	8 31.24	+37 30.2	2.369	3.070	15.0	21.6	3 12	8 39.96	+24 42.8	1.400	2.210	18.9	19.8
189510	2000 <i>DX</i> ₅₃		2 3.2 60°53'	2.9/ 4.9	18		415804	2001 <i>OW</i> ₁₅		2 3.2 99°00'	1.6/ 2.3	18	
1 2	9 29.13	+ 7 39.2	1.273	2.110	18.1	19.9	1 2	9 33.15	+20 11.7	1.930	2.767	12.8	21.4
1 12	9 23.99	+ 8 0.5	1.215	2.122	13.6	19.6	1 12	9 26.03	+20 35.7	1.877	2.789	9.2	21.2
1 22	9 16.03	+ 8 43.5	1.178	2.133	8.6	19.4	1 22	9 16.81	+21 2.6	1.849	2.811	5.2	21.0
2 1	9 6.28	+ 9 43.8	1.165	2.145	3.7	19.1	2 1	9 6.40	+21 27.5	1.850	2.832	1.7	20.8
2 11	8 56.24	+10 53.6	1.179	2.157	4.6	19.2	2 11	8 55.94	+21 45.7	1.881	2.853	4.1	21.0
2 21	8 47.41	+12 4.1	1.218	2.170	9.5	19.5	2 21	8 46.55	+21 54.6	1.941	2.874	7.9	21.3
3 2	8 41.05	+13 7.9	1.282	2.182	14.2	19.8	3 2	8 39.12	+21 53.2	2.027	2.894	11.4	21.5
3 12	8 37.86	+13 59.9	1.365	2.195	18.2	20.1	3 12	8 34.20	+21 42.1	2.136	2.913	14.3	21.8
491948	2013 <i>CE</i> ₁₄₃		2 3.2 141°95'	0.2/ 3.3	18		349505	2008 <i>PE</i> ₁₄		2 3.2 117°98'	0.4/ 3.5	18	
1 2	9 33.05	+15 14.8	1.762	2.594	14.1	21.7	1 2	9 32.75	+13 12.1	1.623	2.455	15.1	21.7
1 12	9 26.24	+15 26.9	1.694	2.603	10.2	21.5	1 12	9 26.11	+13 46.1	1.564	2.473	11.0	21.5
1 22	9 17.08	+15 47.2	1.651	2.612	5.8	21.2	1 22	9 17.03	+14 31.8	1.529	2.489	6.3	21.3
2 1	9 6.46	+16 11.5	1.635	2.620	1.1	20.9	2 1	9 6.46	+15 24.0	1.521	2.505	1.3	21.0
2 11	8 55.60	+16 35.1	1.649	2.627	3.7	21.1	2 11	8 55.70	+16 16.0	1.542	2.520	3.8	21.2
2 21	8 45.74	+16 53.9	1.692	2.634	8.2	21.4	2 21	8 46.04	+17 2.2	1.592	2.535	8.5	21.5
3 2	8 37.91	+17 5.6	1.761	2.640	12.2	21.7	3 2	8 38.55	+17 38.5	1.668	2.549	12.6	21.8
3 12	8 32.78	+17 9.0	1.852	2.646	15.5	21.9	3 12	8 33.87	+18 3.4	1.765	2.563	16.0	22.0
379926	2012 <i>KZ</i> ₄₂		2 3.2 245°66'	1.3/ 2.1	18		198864	2005 <i>QS</i> ₈₄		2 3.2 305°07'	1.3/ 3.9	18	
1 2	9 26.66	+16 35.0	2.109	2.947	11.9	20.7	1 2	9 28.21	+12 27.6	1.624			

EPHEMERIDES

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
161794	2006 <i>UE</i> ₂₈₇		2 3.2 345°50	2°7/ 4.1	18		493865	2015 <i>XO</i> ₆₇		2 3.2 36°64	6°1/ 6.7	18	
1 2	9 30.84	+13 20.2	1.350	2.196	16.7	18.7	1 2	9 27.98	+1 36.6	1.400	2.211	18.2	20.7
1 12	9 25.34	+12 24.7	1.272	2.185	12.6	18.4	1 12	9 23.06	+1 20.3	1.332	2.215	14.4	20.5
1 22	9 16.90	+11 37.0	1.216	2.176	7.8	18.1	1 22	9 15.52	+1 28.6	1.283	2.219	10.3	20.2
2 1	9 6.48	+10 56.9	1.186	2.167	3.2	17.8	2 1	9 6.25	+2 1.5	1.258	2.223	6.8	20.0
2 11	8 55.56	+10 23.2	1.182	2.160	4.8	17.8	2 11	8 56.57	+2 54.8	1.259	2.228	6.5	20.0
2 21	8 45.71	+9 54.4	1.204	2.154	9.8	18.1	2 21	8 47.88	+4 1.3	1.286	2.232	9.7	20.2
3 2	8 38.30	+9 28.7	1.250	2.149	14.6	18.4	3 2	8 41.38	+5 12.7	1.337	2.237	13.8	20.5
3 12	8 34.15	+9 3.8	1.315	2.145	18.7	18.6	3 12	8 37.85	+6 21.0	1.409	2.242	17.5	20.7
16305	6707 <i>P-L</i>		2 3.2 327°14	0°3/ 3.4	18		87585	2000 <i>RV</i> ₂₁		2 3.2 168°34	1°7/ 4.7	18	
1 2	9 25.68	+13 51.2	2.115	2.948	12.0	19.3	1 2	9 28.22	+9 17.3	2.637	3.441	10.8	20.7
1 12	9 20.73	+14 21.0	2.037	2.946	8.8	19.1	1 12	9 22.18	+9 29.7	2.556	3.446	8.1	20.5
1 22	9 13.92	+15 0.1	1.983	2.944	5.0	18.9	1 22	9 14.60	+9 51.8	2.501	3.451	5.0	20.3
2 1	9 5.90	+15 44.7	1.959	2.943	1.0	18.6	2 1	9 6.05	+10 21.3	2.476	3.455	2.1	20.1
2 11	8 57.59	+16 30.0	1.963	2.941	3.1	18.7	2 11	8 57.29	+10 55.2	2.482	3.458	2.8	20.2
2 21	8 49.93	+17 11.7	1.997	2.940	7.0	19.0	2 21	8 49.08	+11 30.2	2.519	3.461	5.8	20.4
3 2	8 43.76	+17 46.3	2.058	2.939	10.6	19.2	3 2	8 42.11	+12 3.2	2.585	3.463	8.8	20.6
3 12	8 39.71	+18 11.6	2.141	2.938	13.6	19.4	3 12	8 36.91	+12 31.8	2.676	3.464	11.4	20.7
32532	Thereus		2 3.2 217°50	1°6/ 9.0	18		191149	2002 <i>GO</i> ₁₄₈		2 3.2 56°02	0°5/ 2.9	18	
1 2	9 11.32	-4 44.8	11.724	12.440	3.2	20.2	1 2	9 28.73	+16 44.7	1.861	2.701	13.1	20.1
1 12	9 9.31	-4 43.7	11.626	12.436	2.7	20.2	1 12	9 23.09	+17 3.6	1.791	2.705	9.5	19.9
1 22	9 7.04	-4 38.6	11.552	12.431	2.1	20.1	1 22	9 15.32	+17 29.4	1.747	2.710	5.3	19.6
2 1	9 4.61	-4 29.6	11.507	12.426	1.7	20.1	2 1	9 6.19	+17 57.8	1.730	2.714	1.0	19.3
2 11	9 2.15	-4 17.1	11.492	12.422	1.6	20.1	2 11	8 56.82	+18 24.1	1.742	2.719	3.6	19.5
2 21	8 59.77	-4 1.8	11.506	12.417	1.8	20.1	2 21	8 48.31	+18 44.3	1.782	2.724	7.9	19.8
3 2	8 57.59	-3 44.2	11.549	12.412	2.3	20.1	3 2	8 41.62	+18 56.2	1.848	2.728	11.7	20.0
3 12	8 55.72	-3 25.1	11.618	12.407	2.9	20.2	3 12	8 37.38	+18 58.8	1.937	2.733	14.8	20.2
56471	2000 <i>GX</i> ₁₀₆		2 3.2 182°15	6°8/29.3	18		266922	2010 <i>CC</i> ₁₇₃		2 3.2 7°73	0°1/ 3.3	17	
1 2	9 36.46	+33 38.4	1.981	2.818	12.6	19.6	1 2	9 26.47	+14 50.6	1.948	2.786	12.7	21.1
1 12	9 28.93	+34 58.6	1.919	2.819	9.7	19.4	1 12	9 21.41	+15 10.2	1.874	2.786	9.2	20.9
1 22	9 18.74	+36 12.1	1.882	2.820	7.4	19.3	1 22	9 14.36	+15 38.4	1.825	2.787	5.3	20.7
2 1	9 6.81	+37 9.6	1.874	2.820	6.8	19.2	2 1	9 6.02	+16 11.4	1.804	2.788	1.0	20.4
2 11	8 54.50	+37 44.3	1.894	2.819	8.5	19.3	2 11	8 57.41	+16 44.5	1.811	2.789	3.3	20.5
2 21	8 43.24	+37 53.6	1.941	2.817	11.3	19.5	2 21	8 49.55	+17 13.5	1.847	2.791	7.4	20.8
3 2	8 34.23	+37 39.1	2.012	2.814	14.1	19.7	3 2	8 43.34	+17 35.5	1.909	2.793	11.2	21.0
3 12	8 28.22	+37 5.1	2.103	2.810	16.5	19.8	3 12	8 39.41	+17 48.8	1.993	2.795	14.3	21.2
27182	1999 <i>CL</i> ₃		2 3.2 61°44	1°9/ 1.6	18 R		493311	2014 <i>UA</i> ₁₉₀		2 3.2 164°33	2°0/ 4.8	18	
1 2	9 25.76	+19 7.5	2.089	2.933	11.7	17.2	1 2	9 28.67	+8 26.0	2.299	3.106	12.1	22.5
1 12	9 20.83	+20 12.2	2.022	2.939	8.4	17.0	1 12	9 22.70	+8 45.2	2.221	3.112	9.1	22.3
1 22	9 13.99	+21 22.9	1.981	2.945	4.7	16.8	1 22	9 14.97	+9 16.3	2.167	3.117	5.7	22.1
2 1	9 5.93	+22 33.6	1.969	2.951	1.9	16.7	2 1	9 6.13	+9 56.9	2.143	3.122	2.5	21.9
2 11	8 57.61	+23 37.9	1.987	2.958	4.3	16.8	2 11	8 57.04	+10 43.0	2.150	3.126	3.1	22.0
2 21	8 50.00	+24 31.0	2.034	2.964	7.8	17.1	2 21	8 48.58	+11 30.4	2.186	3.129	6.5	22.2
3 2	8 43.96	+25 10.1	2.107	2.971	11.2	17.3	3 2	8 41.55	+12 15.0	2.251	3.132	9.8	22.4
3 12	8 40.10	+25 34.6	2.202	2.977	14.0	17.5	3 12	8 36.52	+12 53.9	2.340	3.134	12.7	22.6
80172	1999 <i>UV</i> ₈		2 3.2 61°14	2°2/ 2.1	18		375439	2008 <i>TK</i> ₇₇		2 3.2 194°27	1°2/ 2.4	17	
1 2	9 32.94	+18 38.0	1.155	2.017	17.8	19.6	1 2	9 27.90	+18 31.9	2.148	2.986	11.6	21.4
1 12	9 26.91	+19 28.7	1.112	2.036	12.8	19.3	1 12	9 22.34	+19 5.5	2.072	2.986	8.4	21.2
1 22	9 17.70	+20 28.1	1.090	2.056	7.2	19.1	1 22	9 14.86	+19 44.5	2.022	2.985	4.7	21.0
2 1	9 6.61	+21 26.5	1.093	2.076	2.3	18.8	2 1	9 6.14	+20 24.1	2.000	2.984	1.3	20.8
2 11	8 55.44	+22 14.6	1.122	2.097	5.8	19.1	2 11	8 57.13	+20 59.7	2.009	2.983	3.7	20.9
2 21	8 45.90	+22 46.5	1.176	2.117	11.0	19.5	2 21	8 48.82	+21 27.5	2.046	2.981	7.4	21.2
3 2	8 39.30	+23 0.5	1.252	2.138	15.7	19.8	3 2	8 42.09	+21 45.2	2.110	2.980	10.9	21.4
3 12	8 36.26	+22 57.6	1.348	2.158	19.4	20.1	3 12	8 37.54	+21 52.2	2.197	2.978	13.8	21.6
219436	2000 <i>US</i> ₅₁		2 3.2 20°86	3°1/ 1.3	18		2803	Vilho		2 3.2 50°79	0°6/ 2.8	18 R	
1 2	9 26.91	+21 23.0	1.449	2.312	14.8	19.5	1 2	9 27.07	+16 56.7	1.968	2.809	12.5	16.4
1 12	9 22.28	+22 19.9	1.394	2.319	10.7	19.2	1 12	9 21.72	+17 24.6	1.910	2.825	8.9	16.2
1 22	9 15.03	+23 21.9	1.361	2.326	6.2	19.0	1 22	9 14.45	+17 58.8	1.878	2.841	5.0	16.0
2 1	9 6.14	+24 20.8	1.355	2.335	3.1	18.8	2 1	9 6.05	+18 34.8	1.873	2.857	1.0	15.7
2 11	8 56.99	+25 8.5	1.375	2.345	5.9	19.0	2 11	8 57.51	+19 8.0	1.897	2.874	3.5	15.9
2 21	8 48.97	+25 40.0	1.421	2.355	10.2	19.3	2 21	8 49.84	+19 34.5	1.950	2.891	7.4	16.2
3 2	8 43.22	+25 53.3	1.491	2.366	14.2	19.5	3 2	8 43.86	+19 52.1	2.030	2.908	10.9	16.4
3 12	8 40.44	+25 49.4	1.580	2.377	17.6	19.8	3 12	8 40.12	+19 59.9	2.131	2.925	13.8	16.7
190081	2004 <i>TB</i> ₅₀		2 3.2 112°89	0°0/ 3.2	18		158430	2002 <i>CL</i> ₁		2 3.2 311°86	6°4/29.1	18	
1 2	9 28.81	+15 33.0	2.097	2.928	12.2	20.7	1 2	9 27.23	+27 32.6	1.606	2.468	13.7	19.2
1 12	9 22.90	+15 52.8	2.029	2.938	8.8	20.5	1 12	9 23.00	+29 21.6	1.515	2.436	10.3	18.9
1 22	9 15.10	+16 19.6	1.987	2.948	5.0	20.3	1 22	9 15.83	+31 16.3	1.449	2.404	7.3	18.6
2 1	9 6.13	+16 49.6	1.973	2.958	0.9	20.0	2 1	9 6.40	+33 5.2	1.410	2.372	6.5	18.5
2 11	8 56.99	+17 18.5	1.990	2.967	3.2	20.2	2 11	8 56.00	+34 36.2	1.397	2.341	9.1	18.6
2 21	8 48.63	+17 42.9	2.036	2.976	7.1	20.4	2 21	8 46.19	+35 41.1	1.410	2.310	13.0	18.7
3 2	8 41.89	+18 0.2	2.108	2.985	10.6	20.7	3 2	8 38.51	+36 16.4	1.445	2.279	16.9	18.9
3 12	8 37.36	+18 9.2	2.204	2.994	13.5	20.9	3 12	8 34.09	+36 23.9	1.498	2.249	20.4	19.0
510638	2012 <i>TQ</i> ₂₀₈		2 3.2 151°66	1°8/ 4.3	18		330114	2005 <i>XZ</i> ₅₄		2 3.2 112°61	2°2/ 1.7	18	
1 2	9 33.89	+10 26.9	1.713	2.533	15.0	22.8	1 2	9 29.44	+20 54.7	1.968	2.811	12.3	21.8

EPHEMERIDES

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
399733	2005 <i>BJ</i> ₁₀		2 3.2 343°83	0°4/ 2.9	18		142963	2002 <i>VH</i> ₈₀		2 3.2 117°73	2°3/ 1.6	18	
1 2	9 24.40	+14 1.9	1.194	2.058	17.2	20.1	1 2	9 30.52	+20 28.4	1.909	2.751	12.7	19.9
1 12	9 21.03	+14 53.7	1.123	2.048	12.6	19.8	1 12	9 24.36	+21 24.3	1.849	2.765	9.1	19.7
1 22	9 14.65	+16 3.7	1.073	2.039	7.2	19.4	1 22	9 16.04	+22 24.6	1.815	2.778	5.2	19.4
2 1	9 6.15	+17 24.7	1.047	2.031	1.3	19.0	2 1	9 6.38	+23 22.6	1.810	2.791	2.3	19.3
2 11	8 57.04	+18 46.3	1.046	2.025	4.9	19.2	2 11	8 56.52	+24 12.0	1.834	2.803	4.7	19.5
2 21	8 48.96	+19 58.4	1.069	2.019	10.8	19.5	2 21	8 47.57	+24 48.6	1.887	2.815	8.5	19.7
3 2	8 43.36	+20 54.0	1.115	2.015	16.0	19.8	3 2	8 40.51	+25 10.5	1.966	2.827	11.9	19.9
3 12	8 41.17	+21 30.0	1.179	2.011	20.3	20.1	3 12	8 35.94	+25 18.2	2.066	2.838	14.8	20.2
24633	1981 <i>EP</i> ₂₅		2 3.2 347°66	0°9/ 3.8	18		6586	Seydler		2 3.2 15°11	3°2/ 4.9	18	
1 2	9 26.29	+12 52.2	1.803	2.640	13.6	18.9	1 2	9 26.90	+ 8 48.0	1.229	2.075	18.1	16.7
1 12	9 21.46	+13 7.8	1.726	2.636	10.0	18.6	1 12	9 22.53	+ 8 43.0	1.168	2.079	13.7	16.4
1 22	9 14.47	+13 34.5	1.673	2.633	5.9	18.4	1 22	9 15.33	+ 8 57.4	1.127	2.083	8.6	16.1
2 1	9 6.09	+14 8.7	1.647	2.630	1.6	18.1	2 1	9 6.27	+ 9 28.4	1.109	2.089	3.9	15.9
2 11	8 57.36	+14 45.7	1.649	2.628	3.4	18.2	2 11	8 56.86	+10 10.3	1.117	2.095	4.8	16.0
2 21	8 49.39	+15 20.6	1.680	2.626	7.8	18.5	2 21	8 48.62	+10 55.9	1.150	2.103	9.7	16.3
3 2	8 43.17	+15 49.6	1.736	2.625	11.8	18.7	3 2	8 42.82	+11 38.6	1.205	2.111	14.5	16.5
3 12	8 39.37	+16 10.2	1.814	2.624	15.1	18.9	3 12	8 40.22	+12 13.4	1.280	2.120	18.5	16.8
249021	2007 <i>RC</i> ₁₇₉		2 3.2 58°84	4°5/ 6.9	18		284683	2008 <i>SX</i> ₄		2 3.2 192°93	0°0/ 3.2	18	
1 2	9 24.48	+ 1 13.1	2.242	3.027	13.0	20.7	1 2	9 31.21	+13 44.0	1.799	2.630	13.9	21.4
1 12	9 19.73	+ 1 10.9	2.164	3.032	10.3	20.5	1 12	9 25.10	+14 32.6	1.720	2.628	10.2	21.1
1 22	9 13.32	+ 1 25.5	2.109	3.037	7.4	20.4	1 22	9 16.61	+15 33.5	1.665	2.626	5.8	20.9
2 1	9 5.86	+ 1 56.1	2.081	3.042	5.0	20.2	2 1	9 6.52	+16 41.2	1.639	2.623	1.1	20.5
2 11	8 58.16	+ 2 39.8	2.082	3.046	4.8	20.2	2 11	8 55.97	+17 48.5	1.642	2.619	3.8	20.7
2 21	8 51.04	+ 3 32.5	2.112	3.051	6.9	20.4	2 21	8 46.20	+18 49.2	1.674	2.615	8.4	21.0
3 2	8 45.27	+ 4 29.0	2.168	3.056	9.8	20.5	3 2	8 38.32	+19 38.7	1.733	2.610	12.5	21.2
3 12	8 41.40	+ 5 24.6	2.249	3.061	12.5	20.7	3 12	8 33.08	+20 14.9	1.814	2.604	16.0	21.4
187757	1996 <i>UH</i> ₄		2 3.2 104°59	2°8/ 1.7	17		251015	2006 <i>QA</i> ₆		2 3.2 245°45	1°5/ 4.2	17	
1 2	9 36.07	+20 42.4	1.472	2.318	15.6	20.6	1 2	9 28.45	+11 54.8	2.383	3.200	11.4	21.2
1 12	9 28.72	+21 37.6	1.424	2.341	11.1	20.4	1 12	9 22.56	+11 41.6	2.296	3.194	8.5	21.0
1 22	9 18.59	+22 37.1	1.400	2.363	6.4	20.2	1 22	9 14.93	+11 36.0	2.234	3.188	5.2	20.8
2 1	9 6.83	+23 32.5	1.403	2.384	2.8	20.0	2 1	9 6.18	+11 36.2	2.202	3.183	2.0	20.6
2 11	8 54.98	+24 16.0	1.435	2.405	5.6	20.2	2 11	8 57.16	+11 40.0	2.200	3.177	3.0	20.6
2 21	8 44.55	+24 43.1	1.494	2.425	10.1	20.5	2 21	8 48.72	+11 45.1	2.228	3.171	6.4	20.8
3 2	8 36.70	+24 53.1	1.577	2.444	14.1	20.8	3 2	8 41.67	+11 49.2	2.283	3.165	9.7	21.0
3 12	8 32.06	+24 47.6	1.681	2.462	17.4	21.1	3 12	8 36.57	+11 50.5	2.363	3.159	12.5	21.2
465655	2009 <i>RU</i> ₄₉		2 3.2 73°22	4°9/ 6.9	18		266060	2006 <i>QA</i> ₁₃₁		2 3.2 79°70	0°6/ 3.8	18	
1 2	9 26.65	+ 1 6.2	1.859	2.651	15.1	21.2	1 2	9 24.51	+10 24.3	2.336	3.156	11.5	20.2
1 12	9 21.49	+ 1 8.5	1.794	2.666	11.9	21.0	1 12	9 19.72	+11 33.3	2.266	3.168	8.4	20.1
1 22	9 14.38	+ 1 31.0	1.751	2.682	8.5	20.8	1 22	9 13.31	+12 54.4	2.223	3.181	4.9	19.9
2 1	9 6.06	+ 2 12.3	1.735	2.697	5.6	20.7	2 1	9 5.88	+14 22.9	2.210	3.194	1.2	19.6
2 11	8 57.54	+ 3 8.5	1.746	2.712	5.3	20.7	2 11	8 58.23	+15 52.7	2.228	3.206	2.8	19.8
2 21	8 49.83	+ 4 13.7	1.786	2.728	7.8	20.9	2 21	8 51.18	+17 17.9	2.277	3.219	6.3	20.0
3 2	8 43.80	+ 5 21.5	1.851	2.743	11.0	21.1	3 2	8 45.45	+18 33.9	2.354	3.232	9.6	20.2
3 12	8 40.04	+ 6 26.0	1.940	2.758	14.0	21.3	3 12	8 41.58	+19 37.8	2.455	3.244	12.3	20.4
321863	2010 <i>RG</i> ₁₅₅		2 3.2 80°00	1°5/ 4.3	18		329221	2012 <i>DX</i> ₈₂		2 3.2 191°46	1°0/ 2.5	18	
1 2	9 27.79	+10 1.2	1.678	2.508	14.8	21.1	1 2	9 28.32	+16 59.9	2.051	2.888	12.2	21.6
1 12	9 22.56	+10 36.2	1.612	2.517	10.9	20.9	1 12	9 22.76	+17 45.5	1.974	2.887	8.8	21.4
1 22	9 15.09	+11 26.5	1.570	2.527	6.6	20.7	1 22	9 15.16	+18 38.7	1.923	2.886	4.9	21.1
2 1	9 6.20	+12 27.7	1.555	2.537	2.2	20.4	2 1	9 6.24	+19 34.4	1.900	2.884	1.2	20.9
2 11	8 57.04	+13 33.1	1.568	2.547	3.6	20.5	2 11	8 56.98	+20 26.7	1.908	2.883	3.7	21.1
2 21	8 48.78	+14 36.3	1.609	2.557	8.0	20.8	2 21	8 48.42	+21 11.0	1.944	2.880	7.7	21.3
3 2	8 42.42	+15 31.8	1.677	2.566	12.1	21.1	3 2	8 41.49	+21 44.3	2.007	2.878	11.3	21.5
3 12	8 38.62	+16 16.3	1.766	2.576	15.5	21.3	3 12	8 36.84	+22 5.2	2.093	2.875	14.3	21.7
86800	2000 <i>GG</i> ₁₁₃		2 3.2 201°03	2°3/ 1.7	18		165678	2001 <i>OA</i> ₅₁		2 3.2 196°80	1°0/ 2.4	18	
1 2	9 33.27	+20 51.1	1.965	2.802	12.6	20.5	1 2	9 27.52	+18 53.5	2.548	3.380	10.2	20.7
1 12	9 26.49	+21 37.0	1.885	2.798	9.1	20.2	1 12	9 21.83	+19 19.4	2.468	3.378	7.4	20.5
1 22	9 17.35	+22 27.3	1.831	2.793	5.3	20.0	1 22	9 14.49	+19 49.1	2.414	3.376	4.1	20.3
2 1	9 6.64	+23 15.9	1.806	2.787	2.3	19.8	2 1	9 6.10	+20 19.1	2.390	3.373	1.1	20.1
2 11	8 55.51	+23 56.5	1.811	2.780	4.7	19.9	2 11	8 57.47	+20 45.5	2.397	3.370	3.2	20.3
2 21	8 45.16	+24 24.8	1.845	2.772	8.7	20.1	2 21	8 49.42	+21 5.5	2.433	3.367	6.5	20.5
3 2	8 36.70	+24 39.0	1.905	2.764	12.4	20.3	3 2	8 42.69	+21 17.4	2.498	3.364	9.5	20.7
3 12	8 30.84	+24 39.5	1.987	2.754	15.5	20.5	3 12	8 37.84	+21 20.5	2.586	3.360	12.1	20.8
384256	2009 <i>EJ</i> ₁₈		2 3.2 251°57	1°6/ 4.6	17		462023	2007 <i>AV</i> ₂₇		2 3.2 50°52	0°0/ 3.1	18	
1 2	9 24.25	+ 9 29.8	2.553	3.366	10.8	21.5	1 2	9 30.68	+15 58.1	1.576	2.419	14.9	20.9
1 12	9 19.48	+ 9 50.7	2.463	3.359	8.1	21.3	1 12	9 24.72	+16 3.5	1.516	2.431	10.8	20.7
1 22	9 13.17	+10 22.1	2.399	3.352	5.0	21.0	1 22	9 16.32	+16 16.9	1.480	2.443	6.1	20.5
2 1	9 5.85	+11 1.7	2.364	3.344	2.0	20.8	2 1	9 6.44	+16 34.1	1.470	2.455	1.1	20.2
2 11	8 58.24	+11 46.1	2.359	3.336	2.8	20.9	2 11	8 56.39	+16 50.4	1.489	2.467	3.9	20.4
2 21	8 51.11	+12 31.5	2.384	3.329	5.9	21.1	2 21	8 47.46	+17 2.0	1.535	2.480	8.5	20.7
3 2	8 45.15	+13 14.3	2.437	3.321	9.0	21.2	3 2	8 40.70	+17 6.4	1.606	2.493	12.7	21.0
3 12	8 40.91	+13 51.5	2.514	3.313	11.8	21.4	3 12	8 36.73	+17 2.7	1.698	2.506	16.1	21.2
288619	2004 <i>NL</i> ₁₆		2 3.2 199°13	1°3/ 2.1	18		499709	2011 <i>AN</i> ₄₂		2 3.2 279°13	0°0/ 3.2	18	
1 2	9 30.21	+13 52.5	1.764	2.598	14.0	20.4	1 2	9 31.31	+16 59.5	1.8			

EPHEMERIDES

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
423671	2005 YV ₁₈₅		2 3.2 289°43	2.4/ 4.4	17		370197	2002 CT ₂₉₆		2 3.2 187°22	3.5/31.9	18	
1 2	9 30.89	+11 0.5	1.931	2.751	13.5	20.9	1 2	9 32.45	+26 42.4	2.210	3.049	11.4	20.7
1 12	9 24.83	+10 31.1	1.831	2.730	10.2	20.7	1 12	9 25.64	+27 10.9	2.137	3.048	8.3	20.5
1 22	9 16.48	+10 10.4	1.756	2.708	6.5	20.4	1 22	9 16.74	+27 37.3	2.091	3.048	5.2	20.4
2 1	9 6.51	+9 57.6	1.708	2.687	2.9	20.1	2 1	9 6.56	+27 56.3	2.074	3.047	3.5	20.2
2 11	8 55.99	+9 50.6	1.690	2.666	3.9	20.1	2 11	8 56.14	+28 3.6	2.086	3.046	5.3	20.3
2 21	8 46.07	+9 47.1	1.701	2.645	7.9	20.3	2 21	8 46.57	+27 57.2	2.128	3.044	8.4	20.5
3 2	8 37.84	+9 44.7	1.738	2.623	12.0	20.5	3 2	8 38.78	+27 37.3	2.196	3.042	11.5	20.7
3 12	8 32.07	+9 41.0	1.798	2.602	15.5	20.7	3 12	8 33.36	+27 5.6	2.286	3.040	14.1	20.9
466870	2015 BV ₄₉₂		2 3.2 154°51	0°3/ 3.5	18		383591	2007 GU ₄₅		2 3.2 237°68	2°6/ 1.2	17	
1 2	9 26.81	+14 6.2	2.409	3.235	11.0	21.7	1 2	9 28.53	+22 22.1	2.151	2.994	11.5	21.0
1 12	9 21.34	+14 30.7	2.333	3.239	8.0	21.6	1 12	9 22.94	+23 12.3	2.070	2.986	8.3	20.8
1 22	9 14.22	+15 2.8	2.284	3.243	4.6	21.3	1 22	9 15.31	+24 5.7	2.016	2.978	4.9	20.6
2 1	9 6.05	+15 39.1	2.263	3.247	1.0	21.1	2 1	9 6.31	+24 56.6	1.991	2.969	2.6	20.4
2 11	8 57.67	+16 15.8	2.273	3.251	2.8	21.2	2 11	8 56.93	+25 39.2	1.995	2.961	4.8	20.6
2 21	8 49.89	+16 49.2	2.313	3.254	6.3	21.5	2 21	8 48.22	+26 9.6	2.028	2.952	8.3	20.8
3 2	8 43.47	+17 16.7	2.380	3.257	9.5	21.7	3 2	8 41.12	+26 26.0	2.087	2.943	11.6	21.0
3 12	8 38.94	+17 36.6	2.472	3.260	12.2	21.9	3 12	8 36.31	+26 28.4	2.168	2.934	14.4	21.1
225320	1997 WC ₁₁		2 3.2 96°39	4.4/30.8	18		274804	2008 WV ₁₂₇		2 3.2 170°58	0°6/ 2.7	17	
1 2	9 29.41	+28 46.0	2.209	3.053	11.1	20.0	1 2	9 26.90	+16 32.0	2.639	3.467	10.1	21.4
1 12	9 23.43	+29 41.2	2.151	3.063	8.2	19.9	1 12	9 21.33	+17 10.5	2.562	3.470	7.3	21.2
1 22	9 15.47	+30 33.3	2.119	3.072	5.6	19.7	1 22	9 14.20	+17 54.8	2.512	3.473	4.1	21.0
2 1	9 6.28	+31 16.2	2.116	3.081	4.5	19.7	2 1	9 6.08	+18 41.1	2.491	3.476	0.8	20.7
2 11	8 56.92	+31 44.8	2.142	3.090	6.1	19.8	2 11	8 57.74	+19 25.2	2.502	3.478	2.9	20.9
2 21	8 48.41	+31 56.8	2.196	3.099	8.9	20.0	2 21	8 49.94	+20 3.8	2.544	3.479	6.2	21.1
3 2	8 41.63	+31 52.0	2.275	3.108	11.6	20.2	3 2	8 43.39	+20 34.4	2.613	3.480	9.1	21.3
3 12	8 37.15	+31 32.7	2.376	3.117	14.0	20.3	3 12	8 38.62	+20 55.8	2.707	3.481	11.6	21.5
323139	2003 CG ₁		2 3.2 26°84	8°0/31.5	18		384597	2010 OE ₃₆		2 3.2 14°81	11°5/22.3	18	
1 2	9 35.36	+33 10.5	1.123	1.991	17.8	18.7	1 2	9 31.27	+45 37.5	1.859	2.686	13.7	19.5
1 12	9 28.83	+33 42.9	1.090	2.009	13.6	18.5	1 12	9 26.00	+48 8.3	1.824	2.689	12.1	19.4
1 22	9 18.79	+34 2.5	1.078	2.030	9.7	18.3	1 22	9 17.50	+50 21.6	1.814	2.693	11.5	19.3
2 1	9 6.87	+33 59.5	1.088	2.051	8.0	18.3	2 1	9 6.75	+52 5.4	1.829	2.697	12.0	19.4
2 11	8 55.20	+33 28.8	1.124	2.075	9.9	18.5	2 11	8 55.36	+53 12.0	1.868	2.702	13.5	19.5
2 21	8 45.67	+32 32.3	1.182	2.099	13.5	18.8	2 21	8 45.11	+53 40.1	1.928	2.707	15.3	19.6
3 2	8 39.51	+31 15.8	1.262	2.124	17.1	19.0	3 2	8 37.54	+53 33.2	2.006	2.713	17.1	19.8
3 12	8 37.17	+29 46.7	1.359	2.151	20.2	19.3	3 12	8 33.56	+52 58.2	2.099	2.719	18.7	19.9
322181	2010 XF ₄₀		2 3.2 106°87	0°3/ 3.5	18		315563	2008 CW ₃₈		2 3.3 250°60	0°7/ 2.8	17	
1 2	9 30.03	+13 10.5	2.080	2.904	12.5	20.9	1 2	9 29.16	+16 19.0	1.938	2.774	12.8	21.7
1 12	9 23.73	+13 51.7	2.023	2.928	9.1	20.7	1 12	9 23.60	+16 56.7	1.848	2.760	9.3	21.5
1 22	9 15.57	+14 42.3	1.992	2.951	5.2	20.5	1 22	9 15.79	+17 43.4	1.784	2.746	5.3	21.2
2 1	9 6.31	+15 37.6	1.990	2.974	1.1	20.2	2 1	9 6.43	+18 34.2	1.748	2.732	1.1	20.9
2 11	8 56.93	+16 32.2	2.018	2.996	3.1	20.4	2 11	8 56.56	+19 23.1	1.741	2.717	3.8	21.0
2 21	8 48.40	+17 21.4	2.076	3.017	7.0	20.7	2 21	8 47.33	+20 5.1	1.763	2.702	8.2	21.3
3 2	8 41.55	+18 2.1	2.162	3.038	10.4	20.9	3 2	8 39.80	+20 36.7	1.812	2.687	12.1	21.5
3 12	8 36.89	+18 32.6	2.271	3.058	13.2	21.2	3 12	8 34.73	+20 56.2	1.882	2.671	15.5	21.7
330034	2005 UR ₂₁₆		2 3.2 39°69	8°7/ 8.7	18		306026	2010 EY ₇₀		2 3.3 288°60	1°3/ 3.9	18	
1 2	9 27.15	- 4 53.6	1.612	2.384	17.9	20.1	1 2	9 29.26	+11 52.8	1.425	2.267	16.2	21.3
1 12	9 22.13	- 5 45.2	1.549	2.396	14.9	19.9	1 12	9 24.27	+12 10.4	1.342	2.254	12.1	21.0
1 22	9 14.87	- 6 11.1	1.507	2.410	11.8	19.7	1 22	9 16.43	+12 43.7	1.281	2.241	7.3	20.7
2 1	9 6.20	- 6 8.8	1.488	2.423	9.4	19.6	2 1	9 6.57	+13 28.7	1.245	2.229	2.1	20.4
2 11	8 57.28	- 5 39.9	1.495	2.437	8.8	19.6	2 11	8 56.06	+14 19.0	1.237	2.216	4.2	20.5
2 21	8 49.26	- 4 49.7	1.526	2.452	10.3	19.7	2 21	8 46.39	+15 7.6	1.254	2.203	9.6	20.7
3 2	8 43.17	- 3 45.5	1.582	2.467	13.0	19.9	3 2	8 38.95	+15 48.9	1.296	2.191	14.5	21.0
3 12	8 39.65	- 2 36.0	1.660	2.482	15.8	20.1	3 12	8 34.66	+16 19.2	1.357	2.178	18.7	21.2
236170	Cholnoky		2 3.2 316°47	4°2/ 1.1	18		35463	1998 DJ ₃₂		2 3.3 74°04	1°1/ 3.9	18	
1 2	9 30.52	+23 15.2	1.247	2.113	16.5	20.2	1 2	9 28.04	+12 3.7	1.792	2.624	13.9	18.5
1 12	9 25.63	+24 6.2	1.173	2.100	12.1	19.9	1 12	9 22.75	+12 24.4	1.717	2.624	10.2	18.2
1 22	9 17.37	+25 2.2	1.122	2.087	7.3	19.6	1 22	9 15.25	+12 57.1	1.666	2.625	6.1	18.0
2 1	9 6.72	+25 53.7	1.095	2.074	4.2	19.4	2 1	9 6.31	+13 38.2	1.642	2.625	1.7	17.7
2 11	8 55.38	+26 30.6	1.094	2.062	7.3	19.5	2 11	8 57.04	+14 22.4	1.647	2.625	3.5	17.8
2 21	8 45.19	+26 47.0	1.116	2.050	12.3	19.7	2 21	8 48.56	+15 4.6	1.679	2.626	7.8	18.1
3 2	8 37.77	+26 41.3	1.161	2.039	17.1	20.0	3 2	8 41.87	+15 40.6	1.738	2.626	11.8	18.3
3 12	8 34.10	+26 15.9	1.223	2.029	21.3	20.2	3 12	8 37.67	+16 7.6	1.819	2.626	15.2	18.5
43688	2002 JN ₇₀		2 3.2 311°50	4°0/ 5.3	18		54024	2000 GS ₁₀₀		2 3.3 194°41	1°5/ 4.3	18	
1 2	9 28.38	+ 6 43.2	1.465	2.291	16.7	19.2	1 2	9 28.81	+10 54.5	1.929	2.752	13.4	19.0
1 12	9 23.44	+ 6 32.1	1.385	2.284	12.9	19.0	1 12	9 23.18	+11 8.3	1.849	2.751	10.0	18.8
1 22	9 15.85	+ 6 39.5	1.327	2.276	8.6	18.7	1 22	9 15.46	+11 34.1	1.794	2.750	6.0	18.5
2 1	9 6.43	+ 7 4.3	1.293	2.269	4.6	18.4	2 1	9 6.35	+12 8.8	1.767	2.749	2.1	18.3
2 11	8 56.46	+ 7 42.5	1.286	2.261	5.0	18.4	2 11	8 56.91	+12 48.0	1.769	2.747	3.4	18.4
2 21	8 47.36	+ 8 28.1	1.305	2.255	9.3	18.7	2 21	8 48.19	+13 26.9	1.799	2.745	7.5	18.6
3 2	8 40.36	+ 9 14.8	1.349	2.248	13.8	18.9	3 2	8 41.16	+14 1.7	1.857	2.743	11.3	18.8
3 12	8 36.33	+ 9 56.9	1.413	2.242	17.7	19.1	3 12	8 36.48	+14 29.3	1.937	2.740	14.6	19.0
171263	2006 DV ₈₄		2 3.2 253°11	3°1/ 5.1	18		75364	1999 XZ ₇₄		2 3.3 217°44	2°4/ 1.6	18	R
1 2	9 28.50	+ 6 56.9	1.596	2.418	15.8	20.5	1 2	9 29.98	+20 26.2	1.855	2.699	12.9	19.0
1 12	9 23.38	+ 7 12.2											

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
257646	1999 <i>TQ</i> ₃₀₈		2 3.3 325°39	3.4/ 5.3	18		973	Aralia		2 3.3 43°03	4.9/31.3	18	
1 2	9 26.82	+ 6 27.4	1.499	2.325	16.4	20.8	1 2	9 32.55	+31 13.9	2.105	2.946	11.7	14.8
1 12	9 22.25	+ 6 41.8	1.421	2.320	12.6	20.5	1 12	9 25.74	+31 38.9	2.046	2.954	8.8	14.6
1 22	9 15.15	+ 7 16.8	1.364	2.315	8.2	20.3	1 22	9 16.80	+31 57.7	2.013	2.962	6.1	14.5
2 1	9 6.32	+ 8 9.8	1.333	2.311	4.1	20.0	2 1	9 6.62	+32 4.6	2.008	2.971	4.9	14.4
2 11	8 57.00	+ 9 14.9	1.329	2.306	4.5	20.0	2 11	8 56.36	+31 55.7	2.032	2.979	6.4	14.5
2 21	8 48.51	+10 24.9	1.352	2.302	8.9	20.3	2 21	8 47.14	+31 30.3	2.083	2.988	9.2	14.7
3 2	8 42.05	+11 32.2	1.399	2.299	13.3	20.5	3 2	8 39.89	+30 49.9	2.161	2.997	12.0	14.9
3 12	8 38.42	+12 30.9	1.468	2.295	17.2	20.7	3 12	8 35.15	+29 57.6	2.259	3.007	14.4	15.1
452592	2005 <i>JJ</i> ₁₇₇		2 3.3 208°64	2.6/ 1.3	18		236154	2005 <i>UM</i> ₂₄₅		2 3.3 13°99	2.7/ 2.1	18	
1 2	9 33.85	+20 38.7	2.072	2.905	12.2	22.7	1 2	9 32.35	+21 12.6	1.225	2.088	17.0	20.1
1 12	9 26.96	+21 48.9	1.986	2.897	8.9	22.5	1 12	9 26.72	+21 40.1	1.164	2.089	12.3	19.9
1 22	9 17.70	+23 5.2	1.926	2.887	5.2	22.3	1 22	9 17.85	+22 12.5	1.125	2.091	7.1	19.6
2 1	9 6.81	+24 20.4	1.897	2.876	2.6	22.1	2 1	9 6.86	+22 42.1	1.111	2.093	2.8	19.3
2 11	8 55.37	+25 27.4	1.898	2.864	5.0	22.2	2 11	8 55.50	+23 1.0	1.122	2.096	6.0	19.5
2 21	8 44.58	+26 20.4	1.930	2.851	8.8	22.4	2 21	8 45.54	+23 5.0	1.159	2.099	11.2	19.8
3 2	8 35.54	+26 56.8	1.988	2.836	12.4	22.6	3 2	8 38.42	+22 53.0	1.217	2.103	16.0	20.1
3 12	8 29.04	+27 16.8	2.069	2.820	15.5	22.8	3 12	8 34.90	+22 26.9	1.295	2.107	19.9	20.4
502325	2015 <i>BO</i> ₁₆₅		2 3.3 231°82	0.2/ 3.1	17		18596	Superbus		2 3.3 355°65	0.4/ 3.0	18	
1 2	9 27.95	+16 3.7	2.240	3.072	11.5	21.8	1 2	9 27.00	+14 46.2	1.250	2.109	16.9	18.9
1 12	9 22.36	+16 21.2	2.157	3.067	8.3	21.6	1 12	9 22.80	+15 27.6	1.183	2.106	12.4	18.6
1 22	9 14.91	+16 45.0	2.100	3.061	4.7	21.3	1 22	9 15.63	+16 23.9	1.138	2.104	7.0	18.3
2 1	9 6.26	+17 11.9	2.072	3.056	0.9	21.0	2 1	9 6.46	+17 28.3	1.117	2.102	1.3	17.9
2 11	8 57.31	+17 37.8	2.073	3.051	3.1	21.2	2 11	8 56.80	+18 31.8	1.123	2.101	4.7	18.2
2 21	8 48.99	+17 59.4	2.105	3.045	6.9	21.4	2 21	8 48.24	+19 26.2	1.153	2.101	10.3	18.5
3 2	8 42.14	+18 14.3	2.163	3.039	10.4	21.7	3 2	8 42.16	+20 6.2	1.206	2.102	15.3	18.8
3 12	8 37.38	+18 21.2	2.244	3.033	13.3	21.8	3 12	8 39.39	+20 29.5	1.278	2.103	19.4	19.0
158991	2004 <i>SK</i> ₁₅		2 3.3 166°52	2.2/ 1.7	18		414853	2010 <i>VD</i> ₈₀		2 3.3 290°76	3.9/31.7	18	
1 2	9 32.81	+20 28.4	2.046	2.881	12.3	21.3	1 2	9 29.85	+24 6.0	1.682	2.535	13.6	21.3
1 12	9 26.02	+21 25.0	1.975	2.888	8.8	21.1	1 12	9 24.42	+25 4.8	1.608	2.527	9.9	21.1
1 22	9 17.04	+22 26.1	1.932	2.893	5.1	20.9	1 22	9 16.39	+26 6.5	1.558	2.520	6.1	20.8
2 1	9 6.66	+23 25.3	1.917	2.898	2.2	20.7	2 1	9 6.60	+27 3.1	1.536	2.512	3.9	20.7
2 11	8 55.98	+24 16.2	1.934	2.902	4.6	20.8	2 11	8 56.34	+27 46.8	1.542	2.505	6.3	20.8
2 21	8 46.12	+24 54.7	1.979	2.905	8.3	21.1	2 21	8 46.98	+28 13.0	1.575	2.497	10.3	21.0
3 2	8 38.06	+25 18.7	2.052	2.907	11.8	21.3	3 2	8 39.74	+28 20.1	1.631	2.490	14.1	21.2
3 12	8 32.48	+25 28.6	2.146	2.908	14.7	21.5	3 12	8 35.40	+28 9.6	1.708	2.483	17.4	21.5
373350	2012 <i>KU</i> ₃		2 3.3 290°75	5.1/ 6.9	18		401045	2011 <i>SC</i> ₂₇₃		2 3.3 102°41	2.1/ 2.0	18	
1 2	9 25.62	+ 1 0.7	1.846	2.640	15.1	21.2	1 2	9 33.12	+19 20.1	1.638	2.482	14.4	21.6
1 12	9 21.00	+ 1 4.3	1.759	2.633	12.0	21.0	1 12	9 26.46	+20 12.3	1.585	2.502	10.3	21.4
1 22	9 14.29	+ 1 28.9	1.695	2.626	8.7	20.7	1 22	9 17.34	+21 10.1	1.557	2.521	5.8	21.1
2 1	9 6.16	+ 2 14.0	1.657	2.620	5.7	20.5	2 1	9 6.75	+22 6.3	1.557	2.540	2.1	20.9
2 11	8 57.61	+ 3 16.0	1.646	2.613	5.4	20.5	2 11	8 56.01	+22 53.8	1.586	2.558	4.8	21.2
2 21	8 49.69	+ 4 28.9	1.663	2.607	8.1	20.7	2 21	8 46.44	+23 27.9	1.643	2.576	9.1	21.4
3 2	8 43.38	+ 5 45.8	1.706	2.600	11.7	20.8	3 2	8 39.09	+23 46.9	1.725	2.594	13.0	21.7
3 12	8 39.39	+ 7 0.0	1.772	2.594	15.0	21.0	3 12	8 34.60	+23 51.4	1.828	2.610	16.1	22.0
81062	2000 <i>EB</i> ₇₀		2 3.3 52°09	1.2/ 2.6	18		372513	2009 <i>SG</i> ₂₈₈		2 3.3 124°00	1.9/ 2.1	18	
1 2	9 31.12	+18 7.0	1.444	2.296	15.5	18.9	1 2	9 30.49	+20 44.1	1.943	2.785	12.5	21.2
1 12	9 25.19	+18 32.0	1.393	2.312	11.2	18.6	1 12	9 24.39	+21 10.9	1.874	2.789	9.0	21.0
1 22	9 16.66	+19 3.9	1.365	2.329	6.2	18.4	1 22	9 16.14	+21 41.0	1.830	2.793	5.2	20.8
2 1	9 6.58	+19 36.7	1.363	2.347	1.5	18.1	2 1	9 6.53	+22 9.4	1.814	2.797	1.9	20.6
2 11	8 56.39	+20 4.1	1.388	2.365	4.5	18.4	2 11	8 56.68	+22 31.0	1.828	2.800	4.3	20.7
2 21	8 47.48	+20 21.8	1.441	2.383	9.3	18.7	2 21	8 47.71	+22 42.7	1.871	2.804	8.2	21.0
3 2	8 40.93	+20 28.0	1.517	2.401	13.5	19.0	3 2	8 40.58	+22 43.2	1.939	2.808	11.7	21.2
3 12	8 37.38	+20 22.5	1.614	2.420	16.9	19.3	3 12	8 35.91	+22 32.8	2.029	2.811	14.8	21.4
36813	2000 <i>SS</i> ₇₀		2 3.3 156°08	0.2/ 3.1	18		160764	2000 <i>SJ</i> ₁₂₅		2 3.3 106°14	1.2/ 4.1	18	
1 2	9 25.33	+15 33.9	3.050	3.872	9.0	20.2	1 2	9 31.53	+10 34.1	1.778	2.600	14.4	20.6
1 12	9 20.02	+16 4.1	2.974	3.880	6.5	20.0	1 12	9 25.08	+11 14.3	1.721	2.623	10.6	20.4
1 22	9 13.40	+16 39.5	2.926	3.886	3.7	19.8	1 22	9 16.48	+12 7.9	1.689	2.646	6.2	20.2
2 1	9 5.98	+17 17.1	2.908	3.893	0.7	19.6	2 1	9 6.59	+13 10.0	1.686	2.668	1.9	20.0
2 11	8 58.39	+17 53.8	2.922	3.898	2.4	19.7	2 11	8 56.55	+14 14.0	1.711	2.690	3.4	20.1
2 21	8 51.28	+18 26.7	2.966	3.904	5.3	20.0	2 21	8 47.52	+15 14.1	1.766	2.711	7.7	20.5
3 2	8 45.22	+18 53.9	3.040	3.909	7.9	20.1	3 2	8 40.42	+16 5.7	1.848	2.731	11.5	20.7
3 12	8 40.67	+19 13.9	3.138	3.913	10.2	20.3	3 12	8 35.85	+16 46.2	1.952	2.750	14.7	21.0
52774	1998 <i>QC</i> ₁₄		2 3.3 100°39	2.7/ 5.3	18		489660	2007 <i>UQ</i> ₉₇		2 3.3 158°77	0.8/ 2.5	17	
1 2	9 30.50	+ 6 16.8	1.977	2.780	13.9	20.4	1 2	9 26.79	+18 4.8	2.827	3.655	9.5	22.5
1 12	9 24.10	+ 6 41.0	1.921	2.808	10.5	20.2	1 12	9 21.17	+18 36.5	2.753	3.661	6.8	22.3
1 22	9 15.82	+ 7 20.5	1.889	2.835	6.7	20.0	1 22	9 14.11	+19 12.3	2.706	3.667	3.8	22.1
2 1	9 6.43	+ 8 12.0	1.885	2.861	3.3	19.9	2 1	9 6.15	+19 48.6	2.689	3.673	1.0	21.9
2 11	8 56.95	+ 9 10.4	1.912	2.887	3.6	20.0	2 11	8 58.00	+20 22.0	2.704	3.678	2.9	22.1
2 21	8 48.36	+10 10.2	1.967	2.912	7.0	20.2	2 21	8 50.39	+20 49.6	2.749	3.682	5.9	22.3
3 2	8 41.50	+11 6.6	2.051	2.936	10.4	20.5	3 2	8 43.97	+21 9.7	2.822	3.686	8.6	22.5
3 12	8 36.89	+11 55.8	2.158	2.959	13.4	20.7	3 12	8 39.22	+21 21.4	2.920	3.690	11.0	22.6
244025	2001 <i>SV</i> ₁₆₂		2 3.3 105°82	1.4/ 2.5	18		132370	2002 <i>GK</i> ₇₂		2 3.3 19°40	0.3/ 3.5	18	
1 2	9 33.85	+18 6.1	1.546	2.389	15.1	21.0	1 2	9 26.61	+13 29.5	1.800	2.638	13	

EPHEMERIDES

2 3.3

2 3.3

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
348581	2005 <i>WV</i> ₈₈		2 3.3	56°77	5°6/31.2	18	285592	2000 <i>QY</i> ₁₁₁		2 3.3	151°12	0°3/ 3.5	18
1 2	9 32.80	+25 54.6	1.262	2.126	16.4	20.3	1 2	9 32.24	+13 52.9	1.982	2.806	13.1	22.0
1 12	9 27.01	+27 11.2	1.213	2.136	12.0	20.1	1 12	9 25.57	+14 19.6	1.912	2.817	9.5	21.8
1 22	9 17.98	+28 28.0	1.186	2.147	7.7	19.9	1 22	9 16.80	+14 55.4	1.867	2.826	5.5	21.6
2 1	9 6.91	+29 33.2	1.185	2.158	5.7	19.8	2 1	9 6.72	+15 36.2	1.851	2.835	1.2	21.3
2 11	8 55.58	+30 17.3	1.210	2.169	8.2	20.0	2 11	8 56.38	+16 16.9	1.865	2.843	3.3	21.4
2 21	8 45.75	+30 35.6	1.259	2.180	12.5	20.2	2 21	8 46.89	+16 53.1	1.909	2.850	7.5	21.7
3 2	8 38.82	+30 29.2	1.330	2.191	16.5	20.5	3 2	8 39.18	+17 21.7	1.981	2.857	11.2	22.0
3 12	8 35.49	+30 2.0	1.419	2.203	19.9	20.8	3 12	8 33.87	+17 41.2	2.075	2.863	14.3	22.2
503009	2015 <i>FN</i> ₁₀₆		2 3.3	335°85	4°0/ 6.4	18	408722	2014 <i>OE</i> ₂₈		2 3.3	264°93	0°8/ 2.8	17
1 2	9 24.47	+ 2 56.6	2.283	3.076	12.6	20.7	1 2	9 30.51	+15 53.4	1.566	2.410	14.9	21.9
1 12	9 19.80	+ 2 55.0	2.199	3.074	9.9	20.5	1 12	9 25.13	+16 37.1	1.478	2.394	10.9	21.6
1 22	9 13.46	+ 3 8.7	2.139	3.072	7.0	20.3	1 22	9 16.97	+17 33.2	1.413	2.377	6.2	21.3
2 1	9 6.05	+ 3 36.9	2.106	3.071	4.5	20.1	2 1	9 6.81	+18 35.5	1.375	2.360	1.3	20.9
2 11	8 58.35	+ 4 16.8	2.101	3.069	4.3	20.1	2 11	8 55.93	+19 36.2	1.366	2.343	4.5	21.1
2 21	8 51.21	+ 5 4.3	2.126	3.068	6.7	20.3	2 21	8 45.81	+20 28.3	1.383	2.325	9.7	21.4
3 2	8 45.36	+ 5 55.0	2.178	3.067	9.7	20.5	3 2	8 37.78	+21 7.0	1.426	2.307	14.4	21.6
3 12	8 41.39	+ 6 44.2	2.253	3.066	12.5	20.6	3 12	8 32.79	+21 30.5	1.488	2.289	18.4	21.8
450368	2005 <i>CK</i> ₆₂		2 3.3	4°00	4°8/ 1.9	18	145334	2005 <i>LP</i> ₄₉		2 3.3	144°21	1°7/ 4.6	18
1 2	9 22.33	+25 34.3	0.737	1.640	20.3	19.2	1 2	9 29.06	+ 9 11.9	2.178	2.989	12.5	20.6
1 12	9 20.57	+25 30.2	0.693	1.637	14.9	18.9	1 12	9 23.12	+ 9 37.4	2.105	3.000	9.3	20.4
1 22	9 14.74	+25 22.9	0.667	1.637	9.0	18.6	1 22	9 15.36	+10 15.1	2.058	3.010	5.7	20.2
2 1	9 6.32	+25 3.8	0.659	1.641	4.9	18.4	2 1	9 6.46	+11 1.8	2.039	3.020	2.3	20.0
2 11	8 57.65	+24 26.8	0.672	1.648	8.0	18.6	2 11	8 57.33	+11 53.1	2.051	3.029	3.1	20.1
2 21	8 50.94	+23 31.0	0.704	1.658	13.7	18.9	2 21	8 48.89	+12 44.3	2.093	3.037	6.7	20.3
3 2	8 47.77	+22 19.8	0.754	1.672	19.1	19.3	3 2	8 41.97	+13 31.3	2.163	3.045	10.1	20.5
3 12	8 48.78	+20 57.8	0.819	1.689	23.5	19.6	3 12	8 37.15	+14 11.1	2.256	3.052	13.0	20.8
454294	2014 <i>JB</i> ₂₃		2 3.3	171°21	3°8/31.7	18	376971	2002 <i>KA</i> ₁		2 3.3	191°14	1°1/ 2.6	18
1 2	9 32.74	+23 22.7	1.732	2.579	13.6	21.2	1 2	9 35.57	+18 9.2	1.977	2.805	12.9	22.1
1 12	9 26.40	+24 37.6	1.666	2.582	9.9	21.0	1 12	9 28.16	+18 40.9	1.895	2.804	9.4	21.8
1 22	9 17.47	+25 56.0	1.625	2.585	6.0	20.8	1 22	9 18.39	+19 18.4	1.840	2.801	5.3	21.6
2 1	9 6.83	+27 9.0	1.611	2.587	3.8	20.7	2 1	9 7.06	+19 56.5	1.814	2.798	1.3	21.3
2 11	8 55.78	+28 8.5	1.628	2.589	6.2	20.8	2 11	8 55.32	+20 29.9	1.819	2.793	4.0	21.5
2 21	8 45.70	+28 49.3	1.671	2.590	10.1	21.0	2 21	8 44.40	+20 54.3	1.853	2.787	8.2	21.7
3 2	8 37.77	+29 9.9	1.740	2.590	13.8	21.3	3 2	8 35.38	+21 7.8	1.915	2.780	12.0	22.0
3 12	8 32.74	+29 11.9	1.828	2.590	16.9	21.5	3 12	8 28.97	+21 10.2	2.000	2.772	15.3	22.2
1033	<i>Simona</i>		2 3.3	75°16	4°2/ 6.7	18	67930	2000 <i>WP</i> ₁₂₂		2 3.3	133°30	0°8/ 3.9	18
1 2	9 25.22	+ 1 51.3	2.126	2.916	13.5	15.8	1 2	9 32.15	+12 9.5	2.095	2.912	12.7	20.4
1 12	9 20.36	+ 2 1.7	2.055	2.928	10.6	15.7	1 12	9 25.35	+12 36.0	2.031	2.931	9.3	20.2
1 22	9 13.77	+ 2 29.9	2.008	2.940	7.5	15.5	1 22	9 16.61	+13 12.4	1.991	2.948	5.5	20.0
2 1	9 6.11	+ 3 14.2	1.987	2.951	4.8	15.3	2 1	9 6.69	+13 54.8	1.981	2.964	1.5	19.7
2 11	8 58.25	+ 4 10.8	1.995	2.963	4.5	15.4	2 11	8 56.62	+14 38.5	2.002	2.980	3.1	19.9
2 21	8 51.05	+ 5 14.7	2.032	2.975	6.9	15.5	2 21	8 47.37	+15 19.2	2.053	2.995	7.0	20.2
3 2	8 45.28	+ 6 20.3	2.097	2.987	10.0	15.7	3 2	8 39.82	+15 53.5	2.132	3.008	10.5	20.4
3 12	8 41.50	+ 7 22.6	2.185	2.999	12.8	15.9	3 12	8 34.53	+16 19.5	2.234	3.021	13.4	20.6
246846	2010 <i>EY</i> ₁₂₆		2 3.3	35°96	4°6/ 6.6	18	275925	2001 <i>TN</i> ₂₂₉		2 3.3	77°95	0°5/ 3.0	18
1 2	9 25.63	+ 2 25.5	2.016	2.811	14.0	20.0	1 2	9 34.02	+17 52.3	1.756	2.592	13.9	20.1
1 12	9 20.77	+ 2 13.2	1.941	2.816	11.0	19.8	1 12	9 26.87	+17 54.2	1.702	2.614	10.0	19.9
1 22	9 14.06	+ 2 17.9	1.890	2.822	7.8	19.6	1 22	9 17.50	+18 1.1	1.674	2.636	5.6	19.7
2 1	9 6.18	+ 2 39.0	1.864	2.827	5.2	19.4	2 1	9 6.85	+18 8.7	1.673	2.657	1.1	19.4
2 11	8 58.04	+ 3 13.8	1.867	2.833	5.0	19.4	2 11	8 56.19	+18 13.3	1.702	2.679	3.7	19.6
2 21	8 50.57	+ 3 58.0	1.898	2.839	7.4	19.6	2 21	8 46.68	+18 12.2	1.760	2.700	8.0	19.9
3 2	8 44.62	+ 4 46.4	1.955	2.845	10.6	19.8	3 2	8 39.28	+18 4.2	1.843	2.722	11.8	20.2
3 12	8 40.77	+ 5 34.1	2.035	2.852	13.5	20.0	3 12	8 34.55	+17 49.4	1.949	2.742	14.9	20.5
345555	2006 <i>RT</i> ₃₂		2 3.3	149°55	7°1/12.7	18	229827	2008 <i>UC</i> ₅₆		2 3.3	167°22	0°2/ 3.1	18
1 2	9 24.31	-17 8.2	3.519	4.154	11.3	22.4	1 2	9 27.98	+15 45.4	2.191	3.023	11.7	21.0
1 12	9 19.17	-17 21.6	3.436	4.166	10.0	22.3	1 12	9 22.42	+16 9.9	2.115	3.025	8.5	21.2
1 22	9 12.91	-17 16.5	3.374	4.177	8.7	22.2	1 22	9 15.00	+16 41.5	2.065	3.026	4.8	20.8
2 1	9 5.95	-16 51.9	3.336	4.187	7.6	22.2	2 1	9 6.41	+17 16.3	2.043	3.027	0.9	20.5
2 11	8 58.84	-16 8.7	3.326	4.197	7.1	22.1	2 11	8 57.55	+17 50.0	2.051	3.028	3.1	20.7
2 21	8 52.12	-15 9.2	3.342	4.206	7.4	22.2	2 21	8 49.36	+18 18.8	2.089	3.029	7.0	20.9
3 2	8 46.31	-13 57.3	3.387	4.214	8.3	22.2	3 2	8 42.69	+18 40.3	2.154	3.030	10.4	21.1
3 12	8 41.80	-12 37.7	3.456	4.222	9.5	22.3	3 12	8 38.12	+18 53.0	2.241	3.031	13.3	21.3
104552	2000 <i>GZ</i> ₆₃		2 3.3	4°67	5°0/ 6.8	18	189769	2002 <i>CT</i> ₇₁		2 3.3	205°96	2°0/ 1.9	18
1 2	9 24.46	+ 1 38.1	1.846	2.645	14.9	19.0	1 2	9 31.88	+22 17.1	2.242	3.078	11.3	20.3
1 12	9 20.11	+ 1 31.7	1.769	2.645	11.8	18.8	1 12	9 25.25	+22 35.9	2.162	3.074	8.2	20.1
1 22	9 13.78	+ 1 45.0	1.713	2.646	8.5	18.6	1 22	9 16.62	+22 56.0	2.108	3.070	4.8	19.9
2 1	9 6.15	+ 2 17.4	1.684	2.646	5.7	18.4	2 1	9 6.71	+23 12.9	2.084	3.065	2.1	19.7
2 11	8 58.19	+ 3 5.7	1.681	2.648	5.4	18.4	2 11	8 56.53	+23 22.6	2.090	3.060	4.1	19.8
2 21	8 50.92	+ 4 4.4	1.706	2.650	7.9	18.5	2 21	8 47.08	+23 22.8	2.126	3.055	7.6	20.0
3 2	8 45.25	+ 5 7.3	1.757	2.652	11.3	18.7	3 2	8 39.28	+23 12.5	2.189	3.049	10.9	20.2
3 12	8 41.83	+ 6 8.5	1.830	2.655	14.4	18.9	3 12	8 33.75	+22 52.6	2.274	3.043	13.7	20.4
201820	2003 <i>YO</i> ₂₅		2 3.3	71°59	5°4/29.4	18	45616	2000 <i>DN</i> ₆₆		2 3.3	52°19	0°7/ 2.8	18
1 2	9 28.06	+29 21.8	2.079	2.928	11.5	19.4	1 2	9 27.83	+17 9.0	1.981			

EPHEMERIDES

2 3.3

2 3.3

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
115542	2003 <i>UZ</i> ₆₃		2 3.3 160°51	2°3/ 5.4	18		380349	2002 <i>RH</i> ₁₅₁		2 3.3 125°43	0°1/ 3.4	18	
1 2	9 25.54	+ 6 11.8	2.375	3.177	11.9	19.8	1 2	9 29.62	+15 56.6	2.429	3.253	10.9	21.1
1 12	9 20.54	+ 6 48.0	2.294	3.181	9.0	19.6	1 12	9 23.37	+16 2.0	2.358	3.264	7.9	20.9
1 22	9 13.91	+ 7 38.5	2.238	3.184	5.8	19.4	1 22	9 15.46	+16 12.5	2.315	3.274	4.5	20.7
2 1	9 6.23	+ 8 40.5	2.211	3.187	2.8	19.2	2 1	9 6.55	+16 25.3	2.300	3.285	0.9	20.4
2 11	8 58.28	+ 9 49.4	2.214	3.190	3.1	19.3	2 11	8 57.50	+16 37.4	2.317	3.295	2.8	20.6
2 21	8 50.88	+11 0.3	2.247	3.193	6.2	19.5	2 21	8 49.14	+16 46.3	2.364	3.304	6.3	20.8
3 2	8 44.76	+12 8.2	2.309	3.195	9.4	19.7	3 2	8 42.22	+16 50.4	2.439	3.314	9.4	21.1
3 12	8 40.49	+13 9.2	2.396	3.197	12.2	19.9	3 12	8 37.25	+16 48.6	2.538	3.323	12.0	21.3
246864	6379 <i>P-L</i>		2 3.3 158°63	0°6/ 3.7	18		327272	2005 <i>SY</i> ₂₁₁		2 3.3 202°54	1°3/ 4.2	18	
1 2	9 30.86	+13 12.9	2.098	2.920	12.5	21.9	1 2	9 28.36	+11 26.2	1.950	2.775	13.2	21.5
1 12	9 24.53	+13 37.1	2.025	2.928	9.2	21.7	1 12	9 22.93	+11 44.3	1.871	2.774	9.8	21.3
1 22	9 16.22	+14 10.7	1.976	2.935	5.3	21.5	1 22	9 15.43	+12 14.2	1.816	2.772	5.9	21.1
2 1	9 6.67	+14 49.7	1.957	2.941	1.3	21.2	2 1	9 6.58	+12 52.3	1.788	2.771	1.9	20.8
2 11	8 56.86	+15 29.7	1.968	2.946	3.1	21.3	2 11	8 57.38	+13 34.3	1.790	2.769	3.3	20.9
2 21	8 47.79	+16 6.3	2.009	2.951	7.1	21.6	2 21	8 48.89	+14 15.2	1.821	2.767	7.4	21.1
3 2	8 40.36	+16 36.4	2.077	2.955	10.7	21.8	3 2	8 42.05	+14 51.1	1.879	2.764	11.2	21.4
3 12	8 35.19	+16 58.2	2.169	2.958	13.7	22.0	3 12	8 37.52	+15 19.3	1.959	2.762	14.4	21.6
45857	2000 <i>TH</i> ₆₁		2 3.3 271°96	7°0/28.6	18		140365	2001 <i>TL</i> ₂₇		2 3.3 71°25	2°4/ 1.5	18	
1 2	9 30.83	+32 52.6	1.917	2.765	12.4	17.9	1 2	9 28.42	+23 6.5	2.244	3.086	11.1	19.2
1 12	9 25.21	+34 26.2	1.845	2.751	9.7	17.7	1 12	9 22.73	+23 38.0	2.178	3.093	8.0	19.0
1 22	9 16.96	+35 55.9	1.797	2.738	7.5	17.5	1 22	9 15.19	+24 10.5	2.138	3.099	4.7	18.8
2 1	9 6.86	+37 12.1	1.777	2.724	7.1	17.4	2 1	9 6.52	+24 39.3	2.127	3.106	2.5	18.7
2 11	8 56.18	+38 6.4	1.785	2.710	8.9	17.5	2 11	8 57.66	+25 0.1	2.145	3.112	4.3	18.8
2 21	8 46.29	+38 34.8	1.818	2.696	11.8	17.7	2 21	8 49.57	+25 10.3	2.193	3.119	7.6	19.0
3 2	8 38.47	+38 37.2	1.875	2.682	14.7	17.8	3 2	8 43.05	+25 9.0	2.266	3.126	10.6	19.2
3 12	8 33.55	+38 17.0	1.950	2.668	17.3	18.0	3 12	8 38.67	+24 56.7	2.362	3.132	13.3	19.4
319829	2006 <i>VT</i> ₁₂₂		2 3.3 358°14	2°5/ 2.0	18		205576	2001 <i>TL</i> ₄₆		2 3.3 92°51	1°8/ 5.2	18	
1 2	9 28.29	+20 46.1	1.318	2.182	15.9	20.4	1 2	9 25.14	+ 5 56.0	2.417	3.218	11.7	19.8
1 12	9 23.69	+21 15.5	1.253	2.179	11.5	20.1	1 12	9 20.21	+ 7 4.4	2.345	3.232	8.8	19.6
1 22	9 16.15	+21 50.6	1.210	2.176	6.6	19.8	1 22	9 13.71	+ 8 27.8	2.298	3.246	5.5	19.4
2 1	9 6.69	+22 24.1	1.192	2.175	2.6	19.5	2 1	9 6.24	+10 2.2	2.282	3.261	2.4	19.2
2 11	8 56.83	+22 48.8	1.201	2.175	5.6	19.7	2 11	8 58.55	+11 41.7	2.297	3.275	2.8	19.3
2 21	8 48.15	+22 59.9	1.234	2.175	10.6	20.0	2 21	8 51.43	+13 19.9	2.343	3.288	6.0	19.5
3 2	8 41.95	+22 55.7	1.290	2.177	15.1	20.3	3 2	8 45.58	+14 51.5	2.419	3.302	9.1	19.7
3 12	8 39.02	+22 36.9	1.365	2.180	19.0	20.5	3 12	8 41.51	+16 12.4	2.520	3.316	11.8	19.9
399568	2003 <i>SQ</i> ₁₇₂		2 3.3 138°56	0°4/ 3.6	18		28721	2000 <i>GW</i> ₁₀₇		2 3.3 246°96	6°9/ 8.4	18	
1 2	9 31.29	+13 26.9	1.945	2.771	13.2	22.2	1 2	9 26.31	- 4 10.0	1.889	2.654	15.8	17.8
1 12	9 24.93	+13 58.4	1.878	2.783	9.6	22.0	1 12	9 21.54	- 4 17.1	1.802	2.649	13.1	17.6
1 22	9 16.48	+14 39.8	1.836	2.795	5.5	21.8	1 22	9 14.70	- 3 59.9	1.736	2.644	10.1	17.4
2 1	9 6.73	+15 26.6	1.822	2.806	1.2	21.5	2 1	9 6.46	- 3 17.7	1.694	2.638	7.6	17.2
2 11	8 56.75	+16 13.6	1.838	2.816	3.3	21.7	2 11	8 57.78	- 2 13.1	1.680	2.633	7.0	17.1
2 21	8 47.61	+16 56.0	1.884	2.826	7.5	22.0	2 21	8 49.71	- 0 51.6	1.694	2.627	8.8	17.2
3 2	8 40.26	+17 30.3	1.957	2.835	11.2	22.2	3 2	8 43.23	+ 0 39.0	1.733	2.622	11.8	17.4
3 12	8 35.31	+17 54.7	2.053	2.844	14.3	22.4	3 12	8 39.05	+ 2 10.7	1.796	2.616	14.9	17.6
169170	2001 <i>QQ</i> ₂₃₁		2 3.3 124°48	4°4/ 7.2	18		244738	2003 <i>SL</i> ₂₆		2 3.3 170°28	2°3/ 4.9	18	
1 2	9 24.88	+ 0 11.7	2.448	3.223	12.4	20.5	1 2	9 29.98	+ 7 50.1	2.022	2.830	13.4	21.1
1 12	9 19.99	+ 0 15.8	2.369	3.230	9.9	20.4	1 12	9 24.00	+ 8 10.2	1.943	2.835	10.1	20.9
1 22	9 13.57	+ 0 36.3	2.314	3.236	7.2	20.2	1 22	9 16.00	+ 8 44.6	1.889	2.838	6.4	20.6
2 1	9 6.17	+ 1 12.3	2.286	3.243	4.9	20.1	2 1	9 6.69	+ 9 30.5	1.862	2.841	2.9	20.4
2 11	8 58.56	+ 2 1.0	2.287	3.249	4.6	20.1	2 11	8 57.06	+10 23.3	1.866	2.843	3.5	20.5
2 21	8 51.49	+ 2 58.3	2.318	3.255	6.5	20.2	2 21	8 48.13	+11 17.9	1.900	2.844	7.2	20.7
3 2	8 45.65	+ 3 59.3	2.376	3.261	9.2	20.4	3 2	8 40.82	+12 9.4	1.960	2.845	10.8	20.9
3 12	8 41.56	+ 4 59.4	2.459	3.267	11.7	20.5	3 12	8 35.77	+12 54.2	2.045	2.845	14.0	21.1
140955	2001 <i>VF</i> ₁₀₁		2 3.3 133°40	2°7/ 5.5	18		313800	2004 <i>BS</i> ₁₂		2 3.3 11°74	0°5/ 3.1	18	
1 2	9 26.12	+ 6 41.0	2.537	3.337	11.3	20.0	1 2	9 31.51	+17 32.0	1.464	2.313	15.5	21.0
1 12	9 20.83	+ 6 38.1	2.459	3.343	8.6	19.9	1 12	9 25.72	+17 34.4	1.397	2.314	11.3	20.7
1 22	9 14.02	+ 6 46.5	2.405	3.348	5.7	19.7	1 22	9 17.20	+17 43.7	1.352	2.316	6.4	20.5
2 1	9 6.27	+ 7 4.7	2.380	3.353	3.1	19.5	2 1	9 6.93	+17 55.3	1.333	2.318	1.2	20.1
2 11	8 58.31	+ 7 30.1	2.386	3.359	3.3	19.5	2 11	8 56.33	+18 4.2	1.342	2.320	4.3	20.3
2 21	8 50.91	+ 7 59.7	2.421	3.364	6.0	19.7	2 21	8 46.85	+18 6.8	1.377	2.323	9.3	20.6
3 2	8 44.73	+ 8 30.2	2.484	3.368	8.9	19.9	3 2	8 39.70	+18 1.0	1.437	2.326	13.8	20.9
3 12	8 40.30	+ 8 58.7	2.571	3.373	11.4	20.1	3 12	8 35.63	+17 46.5	1.517	2.329	17.5	21.2
135470	2001 <i>WZ</i> ₁₀		2 3.3 141°49	6°6/27.2	18		206841	2004 <i>ED</i> ₈₁		2 3.3 343°11	5°5/30.2	18	
1 2	9 30.91	+39 42.5	2.825	3.647	9.6	20.4	1 2	9 25.36	+27 13.9	1.655	2.518	13.3	18.9
1 12	9 24.50	+41 2.3	2.776	3.656	7.9	20.3	1 12	9 21.35	+28 36.4	1.584	2.506	9.9	18.6
1 22	9 16.19	+42 12.8	2.755	3.666	6.7	20.2	1 22	9 14.79	+30 0.0	1.538	2.495	6.7	18.4
2 1	9 6.68	+43 7.8	2.763	3.674	6.7	20.2	2 1	9 6.49	+31 15.4	1.518	2.485	5.5	18.3
2 11	8 56.93	+43 43.0	2.798	3.683	7.8	20.3	2 11	8 57.69	+32 13.9	1.525	2.476	7.8	18.4
2 21	8 47.92	+43 57.1	2.860	3.691	9.5	20.4	2 21	8 49.75	+32 50.1	1.558	2.468	11.3	18.6
3 2	8 40.49	+43 51.0	2.946	3.699	11.2	20.6	3 2	8 43.86	+33 2.6	1.613	2.461	14.8	18.8
3 12	8 35.23	+43 27.9	3.052	3.706	12.8	20.7	3 12	8 40.83	+32 53.2	1.688	2.455	17.8	19.0
341649	2007 <i>VK</i> ₄₉		2 3.3 189°68	1°2/ 4.3	17		340701	2006 <i>SA</i> ₂₇		2 3.3 192°59	2°3/ 5.4	17	
1 2	9 26.72</												

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
55039	2001 QK ₅₄		2 3.3	75°67'	4.8/31.9	18	392778	2012 TU ₁₀₅		2 3.3	121°27'	3°5'/5.2	18 R
1 2	9 36.75	+28 59.2	1.689	2.534	14.0	18.7	1 2	9 30.96	+7 18.4	1.338	2.168	17.8	21.3
1 12	9 29.16	+29 23.8	1.635	2.547	10.3	18.5	1 12	9 25.52	+7 20.4	1.269	2.170	13.6	21.1
1 22	9 18.95	+29 43.0	1.606	2.560	6.7	18.3	1 22	9 17.22	+7 42.9	1.220	2.172	8.8	20.8
2 1	9 7.23	+29 49.7	1.604	2.574	4.8	18.2	2 1	9 6.99	+8 23.1	1.196	2.174	4.3	20.6
2 11	8 55.47	+29 39.5	1.630	2.587	6.7	18.3	2 11	8 56.28	+9 15.4	1.198	2.176	4.9	20.6
2 21	8 45.08	+29 11.5	1.684	2.601	10.2	18.6	2 21	8 46.63	+10 12.3	1.227	2.177	9.6	20.9
3 2	8 37.16	+28 27.8	1.763	2.614	13.6	18.8	3 2	8 39.37	+11 6.7	1.280	2.179	14.3	21.1
3 12	8 32.28	+27 32.4	1.862	2.627	16.5	19.0	3 12	8 35.32	+11 53.1	1.352	2.181	18.4	21.4
85869	1999 BK ₁₀		2 3.3	46°88'	1°0'/2.9	18	399509	2002 VT ₆		2 3.3	97°48'	1°1'/4.0	18
1 2	9 33.75	+18 27.9	1.329	2.182	16.5	18.4	1 2	9 32.17	+12 3.5	1.914	2.735	13.6	21.4
1 12	9 27.50	+18 34.6	1.268	2.188	12.0	18.1	1 12	9 25.44	+12 19.9	1.859	2.761	9.9	21.2
1 22	9 18.26	+18 47.8	1.229	2.194	6.8	17.9	1 22	9 16.72	+12 46.5	1.829	2.786	5.8	21.0
2 1	9 7.13	+19 2.1	1.216	2.200	1.5	17.5	2 1	9 6.84	+13 19.6	1.828	2.810	1.7	20.8
2 11	8 55.72	+19 11.5	1.230	2.207	4.7	17.8	2 11	8 56.88	+13 54.6	1.856	2.834	3.2	20.9
2 21	8 45.65	+19 12.3	1.269	2.214	10.0	18.1	2 21	8 47.90	+14 27.3	1.914	2.858	7.2	21.2
3 2	8 38.21	+19 3.0	1.333	2.221	14.7	18.4	3 2	8 40.76	+14 54.4	1.999	2.880	10.8	21.5
3 12	8 34.14	+18 43.9	1.416	2.229	18.5	18.6	3 12	8 36.01	+15 14.2	2.107	2.902	13.8	21.7
215915	2005 JG ₃₉		2 3.3	156°09'	4°6'/7.0	18	245687	2006 BQ ₁₂₉		2 3.3	340°93'	0°1'/3.3	17
1 2	9 29.12	+0 7.1	2.459	3.225	12.6	21.2	1 2	9 27.74	+15 1.5	1.181	2.043	17.5	20.6
1 12	9 23.03	+0 0.6	2.379	3.234	10.0	21.1	1 12	9 23.62	+15 24.4	1.110	2.034	12.9	20.3
1 22	9 15.31	+0 10.1	2.324	3.243	7.3	20.9	1 22	9 16.34	+16 1.7	1.061	2.026	7.4	20.0
2 1	9 6.56	+0 34.9	2.297	3.252	5.1	20.8	2 1	9 6.85	+16 47.5	1.035	2.019	1.4	19.6
2 11	8 57.58	+1 12.7	2.300	3.259	4.8	20.8	2 11	8 56.75	+17 33.6	1.034	2.013	4.8	19.8
2 21	8 49.18	+1 59.6	2.332	3.266	6.8	20.9	2 21	8 47.76	+18 12.6	1.057	2.008	10.7	20.1
3 2	8 42.11	+2 51.3	2.393	3.272	9.4	21.1	3 2	8 41.38	+18 39.3	1.102	2.003	16.0	20.4
3 12	8 36.90	+3 43.2	2.479	3.277	11.9	21.3	3 12	8 38.53	+18 51.5	1.166	2.000	20.4	20.6
96229	1993 TE ₃₀		2 3.3	93°08'	0°2'/3.2	18	468669	2009 AT ₁₁		2 3.3	152°06'	2°4'/1.0	17
1 2	9 32.43	+14 32.1	1.572	2.410	15.2	20.3	1 2	9 26.28	+21 2.6	2.412	3.252	10.5	21.0
1 12	9 26.04	+15 12.7	1.519	2.431	11.0	20.1	1 12	9 21.20	+22 17.3	2.340	3.255	7.5	20.9
1 22	9 17.22	+16 4.1	1.490	2.452	6.2	19.9	1 22	9 14.38	+23 36.3	2.296	3.258	4.4	20.7
2 1	9 6.92	+17 0.0	1.488	2.472	1.1	19.6	2 1	9 6.43	+24 53.7	2.282	3.261	2.4	20.5
2 11	8 56.49	+17 53.6	1.514	2.492	3.9	19.8	2 11	8 58.18	+26 3.6	2.299	3.263	4.4	20.7
2 21	8 47.21	+18 38.9	1.569	2.512	8.6	20.2	2 21	8 50.50	+27 1.5	2.345	3.266	7.5	20.9
3 2	8 40.13	+19 12.7	1.649	2.531	12.7	20.5	3 2	8 44.19	+27 45.0	2.418	3.268	10.4	21.1
3 12	8 35.89	+19 33.7	1.751	2.550	16.1	20.7	3 12	8 39.84	+28 13.5	2.514	3.270	12.9	21.2
109759	2001 RJ ₇₂		2 3.3	82°91'	1°7'/4.7	18	55805	1994 PE ₁₅		2 3.3	271°84'	0°3'/3.2	18
1 2	9 26.89	+9 42.7	2.335	3.148	11.7	19.7	1 2	9 33.03	+16 40.2	1.470	2.315	15.7	19.8
1 12	9 21.43	+9 52.7	2.271	3.167	8.7	19.6	1 12	9 27.08	+16 49.2	1.387	2.303	11.5	19.5
1 22	9 14.37	+10 13.0	2.233	3.185	5.4	19.4	1 22	9 18.18	+17 6.8	1.327	2.290	6.6	19.2
2 1	9 6.37	+10 41.1	2.223	3.203	2.2	19.2	2 1	9 7.21	+17 28.4	1.293	2.277	1.3	18.8
2 11	8 58.25	+11 13.5	2.243	3.221	2.9	19.3	2 11	8 55.60	+17 48.1	1.286	2.264	4.4	19.0
2 21	8 50.81	+11 46.7	2.294	3.239	6.1	19.5	2 21	8 44.93	+18 1.1	1.307	2.251	9.8	19.3
3 2	8 44.75	+12 17.5	2.371	3.256	9.2	19.8	3 2	8 36.59	+18 4.8	1.351	2.238	14.6	19.5
3 12	8 40.57	+12 43.4	2.473	3.274	11.9	20.0	3 12	8 31.49	+17 58.2	1.416	2.225	18.7	19.7
204312	2004 RG ₃₀		2 3.3	100°99'	0°4'/3.1	18	4925	Zhoushan		2 3.3	84°24'	3°6'/6.2	18 R
1 2	9 32.35	+14 51.6	1.576	2.414	15.1	20.7	1 2	9 27.75	+4 1.5	2.294	3.085	12.6	16.9
1 12	9 26.03	+15 37.5	1.521	2.433	10.9	20.5	1 12	9 22.03	+3 58.2	2.234	3.109	9.8	16.7
1 22	9 17.24	+16 34.2	1.489	2.452	6.2	20.3	1 22	9 14.72	+4 9.1	2.197	3.133	6.7	16.6
2 1	9 6.94	+17 35.1	1.485	2.470	1.1	20.0	2 1	9 6.48	+4 32.6	2.189	3.156	4.1	16.5
2 11	8 56.46	+18 32.9	1.510	2.487	4.0	20.2	2 11	8 58.14	+5 5.8	2.211	3.180	4.0	16.5
2 21	8 47.10	+19 21.7	1.562	2.504	8.7	20.6	2 21	8 50.51	+5 44.8	2.261	3.203	6.4	16.7
3 2	8 39.95	+19 57.9	1.640	2.521	12.9	20.8	3 2	8 44.30	+6 25.6	2.340	3.225	9.3	16.9
3 12	8 35.64	+20 20.5	1.740	2.537	16.2	21.1	3 12	8 39.99	+7 4.3	2.443	3.248	11.9	17.1
382207	2012 PY ₁₄		2 3.3	85°24'	4°0'/6.9	18	109430	2001 QT ₁₉₅		2 3.3	145°22'	5°1'/6.9	18
1 2	9 24.53	+1 6.9	2.276	3.059	12.9	20.5	1 2	9 29.91	+0 18.9	2.291	3.061	13.3	20.3
1 12	9 19.85	+1 28.8	2.200	3.069	10.2	20.3	1 12	9 23.70	-0 3.7	2.215	3.071	10.6	20.1
1 22	9 13.55	+2 8.5	2.148	3.078	7.2	20.1	1 22	9 15.74	-0 10.1	2.162	3.081	7.8	20.0
2 1	9 6.24	+3 4.1	2.123	3.087	4.6	20.0	2 1	9 6.69	-0 0.5	2.138	3.091	5.5	19.8
2 11	8 58.70	+4 11.8	2.128	3.096	4.3	20.0	2 11	8 57.41	+0 23.4	2.142	3.100	5.3	19.8
2 21	8 51.75	+5 26.2	2.162	3.105	6.6	20.1	2 21	8 48.78	+0 57.9	2.176	3.108	7.3	20.0
3 2	8 46.11	+6 41.9	2.224	3.114	9.5	20.3	3 2	8 41.58	+1 38.8	2.238	3.116	10.0	20.2
3 12	8 42.33	+7 53.6	2.311	3.123	12.2	20.5	3 12	8 36.38	+2 21.3	2.323	3.123	12.6	20.3
196626	2003 RH ₁₁		2 3.3	225°56'	2°6'/5.3	18	76239	2000 EF ₈₂		2 3.3	282°71'	0°3'/3.6	18
1 2	9 27.88	+7 14.9	2.462	3.262	11.6	20.8	1 2	9 25.41	+12 38.0	2.122	2.951	12.1	19.2
1 12	9 22.27	+7 13.5	2.367	3.252	8.9	20.6	1 12	9 20.75	+13 27.6	2.039	2.946	8.9	19.0
1 22	9 14.96	+7 23.4	2.298	3.242	5.8	20.4	1 22	9 14.21	+14 28.8	1.981	2.942	5.1	18.8
2 1	9 6.52	+7 43.4	2.257	3.231	3.1	20.2	2 1	9 6.43	+15 37.2	1.953	2.937	1.1	18.5
2 11	8 57.73	+8 10.6	2.246	3.220	3.4	20.2	2 11	8 58.28	+16 47.1	1.954	2.932	3.1	18.6
2 21	8 49.43	+8 42.0	2.266	3.209	6.3	20.4	2 21	8 50.71	+17 52.8	1.984	2.927	7.1	18.8
3 2	8 42.39	+9 14.1	2.314	3.197	9.5	20.6	3 2	8 44.59	+18 49.9	2.042	2.923	10.7	19.1
3 12	8 37.20	+9 43.7	2.386	3.184	12.3	20.7	3 12	8 40.55	+19 35.6	2.122	2.918	13.7	19.2
498517	2008 ED ₁₂		2 3.3	272°76'	2°4'/1.8	17	302313	2002 AK ₉		2 3.3	323°72'	3°1'/1.5	18
1 2	9 30.27	+20 59.7	1.827	2.673	13.0	22.1	1 2	9 27.54	+19 24.9	1.272	2.137	16.3	19.6
1 12	9 24.70	+21 43.0	1.739	2.656									

EPHEMERIDES

2 3.3

2 3.3

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
117847	2005 <i>JK</i> ₁₃₉		2 3.3 298°05	7°0/ 6.4	18		468608	2007 <i>WN</i> ₁₂		2 3.3 66°59	2°0/ 1.6	18	
1 2	9 29.80	+ 1 31.4	1.592	2.391	16.9	19.6	1 2	9 26.02	+19 45.5	2.195	3.038	11.3	20.7
1 12	9 24.56	+ 0 35.0	1.498	2.372	13.7	19.3	1 12	9 21.10	+20 49.7	2.129	3.045	8.1	20.5
1 22	9 16.71	- 0 3.4	1.426	2.354	10.3	19.1	1 22	9 14.36	+21 58.9	2.090	3.054	4.6	20.3
2 1	9 6.96	- 0 20.9	1.378	2.335	7.5	18.9	2 1	9 6.47	+23 7.5	2.081	3.062	2.0	20.2
2 11	8 56.48	- 0 17.6	1.357	2.317	7.4	18.8	2 11	8 58.32	+24 9.3	2.101	3.070	4.2	20.3
2 21	8 46.64	+ 0 3.6	1.362	2.299	10.2	18.9	2 21	8 50.86	+25 0.0	2.150	3.078	7.6	20.5
3 2	8 38.71	+ 0 37.4	1.391	2.281	14.0	19.1	3 2	8 44.88	+25 37.0	2.225	3.086	10.7	20.8
3 12	8 33.62	+ 1 16.8	1.440	2.264	17.7	19.3	3 12	8 40.99	+25 59.8	2.323	3.095	13.4	21.0
492064	2013 <i>HL</i> ₁₀₁		2 3.3 70°90	1°5/ 2.5	17		165863	2001 <i>SF</i> ₈₀		2 3.3 47°61	0°9/ 2.9	18	
1 2	9 33.18	+18 8.0	1.498	2.344	15.3	21.5	1 2	9 32.92	+19 31.7	1.809	2.648	13.4	19.2
1 12	9 26.62	+18 51.2	1.454	2.372	11.0	21.3	1 12	9 26.02	+19 28.2	1.763	2.676	9.6	19.0
1 22	9 17.55	+19 41.2	1.435	2.399	6.1	21.1	1 22	9 17.05	+19 27.9	1.742	2.705	5.4	18.8
2 1	9 7.04	+20 30.7	1.442	2.425	1.7	20.8	2 1	9 6.96	+19 26.8	1.750	2.734	1.3	18.6
2 11	8 56.51	+21 12.8	1.477	2.452	4.6	21.1	2 11	8 56.94	+19 21.6	1.787	2.763	3.7	18.8
2 21	8 47.30	+21 43.0	1.540	2.479	9.1	21.4	2 21	8 48.10	+19 10.6	1.852	2.792	7.7	19.1
3 2	8 40.45	+21 59.4	1.628	2.505	13.1	21.7	3 2	8 41.29	+18 53.0	1.944	2.822	11.3	19.4
3 12	8 36.54	+22 2.3	1.736	2.531	16.4	22.0	3 12	8 37.00	+18 29.4	2.058	2.851	14.2	19.6
129688	1998 <i>SK</i> ₁₄		2 3.3 90°60	8°5/29.1	18		285989	2001 <i>SG</i> ₂		2 3.3 141°82	0°1/ 3.2	18	
1 2	9 43.12	+44 7.0	2.265	3.069	12.3	19.7	1 2	9 22.85	+16 7.4	3.832	4.652	7.4	21.7
1 12	9 33.37	+44 54.1	2.232	3.096	10.3	19.7	1 12	9 18.12	+16 27.6	3.757	4.661	5.3	21.6
1 22	9 21.16	+45 24.4	2.225	3.122	8.8	19.6	1 22	9 12.40	+16 51.4	3.710	4.670	3.0	21.4
2 1	9 7.70	+45 30.9	2.245	3.147	8.5	19.6	2 1	9 6.08	+17 16.6	3.694	4.678	0.6	21.2
2 11	8 54.48	+45 10.7	2.292	3.172	9.5	19.7	2 11	8 59.65	+17 41.2	3.709	4.686	1.9	21.3
2 21	8 42.85	+44 25.2	2.366	3.197	11.2	19.9	2 21	8 53.58	+18 3.1	3.756	4.694	4.3	21.5
3 2	8 33.80	+43 19.1	2.464	3.221	13.0	20.1	3 2	8 48.32	+18 20.9	3.832	4.702	6.4	21.7
3 12	8 27.80	+41 58.5	2.582	3.245	14.7	20.2	3 12	8 44.23	+18 33.6	3.934	4.709	8.3	21.8
136817	1997 <i>JR</i> ₅		2 3.3 112°00	4°2/30.9	18		350	Ornamenta		2 3.3 47°47	8°1/26.6	18	
1 2	9 31.66	+24 29.7	1.953	2.797	12.4	19.9	1 2	9 29.48	+35 52.3	1.939	2.785	12.4	12.8
1 12	9 25.37	+26 7.0	1.902	2.816	9.0	19.7	1 12	9 24.19	+38 4.9	1.899	2.798	9.9	12.6
1 22	9 16.85	+27 45.3	1.877	2.835	5.6	19.6	1 22	9 16.37	+40 8.6	1.886	2.812	8.3	12.6
2 1	9 6.93	+29 16.0	1.882	2.853	4.2	19.5	2 1	9 6.89	+41 52.8	1.900	2.826	8.4	12.6
2 11	8 56.77	+30 31.2	1.918	2.871	6.2	19.7	2 11	8 57.03	+43 9.6	1.942	2.840	10.0	12.7
2 21	8 47.52	+31 26.4	1.981	2.888	9.5	19.9	2 21	8 48.11	+43 56.0	2.009	2.854	12.3	12.9
3 2	8 40.19	+32 0.4	2.070	2.904	12.5	20.1	3 2	8 41.29	+44 13.3	2.097	2.869	14.6	13.1
3 12	8 35.42	+32 15.0	2.180	2.920	15.1	20.4	3 12	8 37.30	+44 6.0	2.203	2.884	16.5	13.3
15691	Maslov		2 3.3 106°58	0°6/ 2.9	18		413841	2006 <i>SY</i> ₁₁₆		2 3.3 119°28	2°8/ 1.6	18	
1 2	9 34.46	+16 34.4	1.742	2.575	14.2	18.8	1 2	9 31.93	+22 19.0	1.799	2.644	13.2	22.1
1 12	9 27.32	+17 3.3	1.688	2.598	10.2	18.6	1 12	9 25.69	+23 2.7	1.736	2.652	9.6	21.8
1 22	9 17.89	+17 39.4	1.658	2.620	5.7	18.3	1 22	9 17.09	+23 49.1	1.698	2.660	5.6	21.6
2 1	9 7.12	+18 17.3	1.657	2.642	1.1	18.1	2 1	9 7.01	+24 31.5	1.688	2.668	2.8	21.5
2 11	8 56.25	+18 51.3	1.686	2.663	3.8	18.3	2 11	8 56.70	+25 3.9	1.707	2.675	5.1	21.6
2 21	8 46.50	+19 17.4	1.744	2.683	8.2	18.6	2 21	8 47.37	+25 22.6	1.754	2.682	9.0	21.9
3 2	8 38.87	+19 33.4	1.827	2.702	12.0	18.9	3 2	8 40.06	+25 26.5	1.826	2.689	12.6	22.1
3 12	8 33.95	+19 38.9	1.933	2.721	15.2	19.1	3 12	8 35.45	+25 16.6	1.920	2.696	15.7	22.3
285815	2001 <i>AJ</i> ₁₂		2 3.3 26°79	0°7/ 3.7	18		454331	2014 <i>KQ</i> ₈₀		2 3.3 224°74	0°2/ 3.5	17	
1 2	9 29.47	+13 57.4	1.244	2.098	17.3	20.1	1 2	9 32.39	+13 59.7	1.755	2.585	14.2	22.8
1 12	9 24.50	+14 6.7	1.187	2.106	12.7	19.8	1 12	9 26.23	+14 27.3	1.668	2.576	10.5	22.5
1 22	9 16.62	+14 29.2	1.151	2.114	7.4	19.6	1 22	9 17.56	+15 6.2	1.605	2.565	6.1	22.2
2 1	9 6.90	+15 0.0	1.139	2.123	1.7	19.2	2 1	9 7.15	+15 51.9	1.570	2.554	1.3	21.9
2 11	8 56.90	+15 32.5	1.153	2.133	4.3	19.4	2 11	8 56.17	+16 38.5	1.564	2.543	3.7	22.0
2 21	8 48.17	+16 0.8	1.193	2.143	9.7	19.8	2 21	8 45.93	+17 20.3	1.587	2.530	8.5	22.3
3 2	8 41.98	+16 20.6	1.255	2.155	14.5	20.1	3 2	8 37.61	+17 53.4	1.636	2.517	12.9	22.5
3 12	8 39.04	+16 29.9	1.337	2.167	18.5	20.4	3 12	8 32.03	+18 15.5	1.707	2.503	16.5	22.7
145121	2005 <i>GC</i> ₁₃₆		2 3.3 150°10	5°3/ 7.9	18		401004	2011 <i>QX</i> ₆₁		2 3.3 199°92	1°3/ 4.1	18	
1 2	9 28.14	- 2 41.1	2.320	3.077	13.5	20.9	1 2	9 32.73	+11 52.5	1.877	2.697	13.8	22.3
1 12	9 22.44	- 2 32.2	2.242	3.087	10.9	20.8	1 12	9 26.25	+12 4.1	1.793	2.694	10.3	22.1
1 22	9 15.05	- 2 3.8	2.186	3.097	8.2	20.6	1 22	9 17.46	+12 27.0	1.734	2.690	6.2	21.8
2 1	9 6.59	- 1 16.6	2.158	3.106	5.9	20.5	2 1	9 7.11	+12 57.9	1.702	2.685	1.9	21.5
2 11	8 57.88	- 0 13.7	2.159	3.115	5.4	20.5	2 11	8 56.34	+13 32.3	1.701	2.679	3.5	21.6
2 21	8 49.78	+ 0 59.9	2.190	3.123	7.2	20.6	2 21	8 46.32	+14 5.6	1.729	2.673	7.9	21.9
3 2	8 43.05	+ 2 18.3	2.248	3.130	9.8	20.8	3 2	8 38.11	+14 34.0	1.784	2.666	11.9	22.1
3 12	8 38.24	+ 3 35.7	2.332	3.136	12.4	21.0	3 12	8 32.45	+14 55.0	1.861	2.658	15.3	22.3
376566	2013 <i>PY</i> ₁₂		2 3.3 184°54	1°3/ 4.4	16		424384	2007 <i>WV</i> ₄₈		2 3.3 49°17	4°0/ 6.5	18	
1 2	9 28.76	+10 55.5	2.442	3.254	11.3	22.5	1 2	9 25.29	+ 3 3.9	2.206	2.999	13.0	21.2
1 12	9 22.88	+11 10.6	2.358	3.254	8.4	22.3	1 12	9 20.49	+ 2 59.6	2.129	3.005	10.2	21.0
1 22	9 15.31	+11 35.2	2.300	3.254	5.1	22.1	1 22	9 13.99	+ 3 10.8	2.077	3.010	7.1	20.8
2 1	9 6.65	+12 6.7	2.271	3.253	1.8	21.9	2 1	9 6.42	+ 3 36.7	2.051	3.016	4.6	20.7
2 11	8 57.71	+12 41.6	2.274	3.251	2.8	21.9	2 11	8 58.61	+ 4 14.2	2.054	3.022	4.4	20.7
2 21	8 49.33	+13 16.3	2.306	3.249	6.2	22.2	2 21	8 51.41	+ 4 59.3	2.085	3.028	6.8	20.8
3 2	8 42.29	+13 47.7	2.367	3.247	9.5	22.4	3 2	8 45.58	+ 5 47.5	2.144	3.034	9.8	21.0
3 12	8 37.14	+14 13.5	2.452	3.243	12.2	22.5	3 12	8 41.68	+ 6 34.1	2.226	3.040	12.6	21.2
99265	2001 <i>OQ</i> ₆₂		2 3.3 192°21	0°4/ 3.7	17		424335	2007 <i>UE</i> ₁₀₂		2 3.3 19°64	4°6/ 6.8	18	
1 2	9 26.55	+13 35.9	2.697	3.517	10.1	21.0	1 2	9 25.43	+ 1 48.3	2.191	2.978	13.2	

EPHEMERIDES

2 3.3

2 3.4

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
273413	2006 <i>WO</i> ₄		2 3.3 147°27'	4.1/ 6.4	18		520973	2014 <i>YN</i> ₆₃		2 3.4 214°69'	6.5/28.4	17	
1 2	9 31.01	+ 2 26.6	2.470	3.243	12.3	20.9	1 2	9 31.02	+37 46.3	2.563	3.392	10.3	21.4
1 12	9 24.39	+ 2 9.5	2.394	3.256	9.7	20.7	1 12	9 24.77	+38 49.2	2.500	3.389	8.3	21.2
1 22	9 16.12	+ 2 6.1	2.342	3.269	6.9	20.5	1 22	9 16.50	+39 43.7	2.464	3.386	6.8	21.1
2 1	9 6.83	+ 2 15.9	2.320	3.280	4.6	20.4	2 1	9 6.93	+40 23.4	2.455	3.383	6.6	21.1
2 11	8 57.35	+ 2 36.9	2.328	3.291	4.5	20.4	2 11	8 57.10	+40 43.8	2.475	3.380	7.8	21.2
2 21	8 48.50	+ 3 6.0	2.366	3.301	6.6	20.6	2 21	8 48.05	+40 43.3	2.521	3.377	9.7	21.3
3 2	8 41.01	+ 3 39.4	2.433	3.310	9.3	20.7	3 2	8 40.67	+40 23.0	2.592	3.373	11.8	21.4
3 12	8 35.42	+ 4 13.4	2.525	3.318	11.9	20.9	3 12	8 35.60	+39 46.0	2.683	3.370	13.7	21.6
43036	1999 <i>VF</i> ₃₇		2 3.3 162°04'	5.4/ 7.3	18		229135	2004 <i>RO</i> ₂₁₉		2 3.4 132°01'	2.6/ 5.0	18	
1 2	9 30.37	- 1 4.9	2.271	3.033	13.6	19.7	1 2	9 30.25	+ 8 42.8	2.178	2.985	12.6	20.3
1 12	9 24.11	- 1 23.9	2.191	3.041	11.0	19.5	1 12	9 24.05	+ 8 28.9	2.103	2.993	9.6	20.1
1 22	9 16.04	- 1 25.6	2.134	3.047	8.2	19.3	1 22	9 16.01	+ 8 25.7	2.054	3.001	6.1	19.9
2 1	9 6.83	- 1 9.7	2.104	3.053	6.0	19.2	2 1	9 6.84	+ 8 32.0	2.033	3.009	3.0	19.7
2 11	8 57.33	- 0 38.2	2.104	3.058	5.6	19.2	2 11	8 57.45	+ 8 45.0	2.042	3.017	3.5	19.8
2 21	8 48.46	+ 0 5.1	2.133	3.063	7.5	19.3	2 21	8 48.77	+ 9 1.7	2.081	3.024	6.8	20.0
3 2	8 41.04	+ 0 55.4	2.189	3.066	10.2	19.5	3 2	8 41.64	+ 9 19.1	2.147	3.031	10.1	20.2
3 12	8 35.64	+ 1 47.6	2.270	3.069	12.8	19.7	3 12	8 36.61	+ 9 34.3	2.237	3.038	13.0	20.4
346838	2009 <i>DB</i> ₅₀		2 3.3 344°42'	0.1/ 3.5	17		245870	2006 <i>PQ</i> ₂₈		2 3.4 122°98'	6.4/27.1	18	
1 2	9 25.15	+14 13.9	2.099	2.933	12.0	20.7	1 2	9 30.50	+37 55.4	2.763	3.590	9.7	21.0
1 12	9 20.56	+14 42.4	2.019	2.930	8.8	20.5	1 12	9 24.31	+39 31.5	2.719	3.604	7.8	20.9
1 22	9 14.12	+15 20.0	1.965	2.926	5.0	20.2	1 22	9 16.21	+40 59.3	2.702	3.618	6.6	20.8
2 1	9 6.46	+16 3.0	1.938	2.923	1.0	19.9	2 1	9 6.88	+42 12.1	2.714	3.632	6.6	20.9
2 11	8 58.50	+16 46.6	1.941	2.920	3.1	20.1	2 11	8 57.27	+43 4.9	2.756	3.645	7.7	21.0
2 21	8 51.16	+17 26.4	1.973	2.917	7.0	20.3	2 21	8 48.35	+43 35.9	2.824	3.657	9.5	21.1
3 2	8 45.29	+17 59.1	2.031	2.915	10.6	20.5	3 2	8 40.98	+43 45.9	2.916	3.670	11.3	21.2
3 12	8 41.52	+18 22.5	2.112	2.913	13.6	20.7	3 12	8 35.77	+43 37.6	3.028	3.682	12.9	21.4
291733	2006 <i>JY</i> ₄₄		2 3.3 288°95'	0.5/ 3.1	17		56945	2000 <i>RG</i> ₈₈		2 3.4 240°47'	1.6/ 4.4	18	
1 2	9 29.19	+15 8.9	1.493	2.340	15.3	21.4	1 2	9 28.76	+10 54.5	1.986	2.808	13.1	19.5
1 12	9 24.33	+15 48.8	1.407	2.324	11.3	21.1	1 12	9 23.29	+11 4.7	1.900	2.800	9.8	19.3
1 22	9 16.68	+16 42.0	1.344	2.307	6.5	20.8	1 22	9 15.75	+11 26.5	1.838	2.793	6.0	19.0
2 1	9 7.01	+17 42.8	1.307	2.291	1.2	20.4	2 1	9 6.81	+11 57.1	1.804	2.786	2.2	18.8
2 11	8 56.63	+18 43.5	1.297	2.275	4.4	20.5	2 11	8 57.48	+12 32.6	1.800	2.778	3.3	18.8
2 21	8 47.02	+19 36.7	1.314	2.258	9.7	20.8	2 21	8 48.78	+13 8.4	1.824	2.770	7.3	19.1
3 2	8 39.55	+19 17.2	1.355	2.242	14.6	21.0	3 2	8 41.70	+13 40.7	1.875	2.762	11.2	19.3
3 12	8 35.16	+20 42.6	1.416	2.226	18.6	21.2	3 12	8 36.91	+14 6.5	1.949	2.753	14.5	19.5
296913	2010 <i>CY</i> ₇₇		2 3.3 211°72'	0.3/ 3.1	17		35017	1981 <i>EG</i> ₇		2 3.4 288°47'	1.1/ 3.9	18	
1 2	9 27.13	+16 16.5	2.794	3.618	9.7	22.1	1 2	9 32.15	+13 43.0	1.483	2.323	15.8	19.2
1 12	9 21.61	+16 41.4	2.705	3.611	7.0	21.9	1 12	9 26.33	+13 37.5	1.405	2.317	11.8	19.0
1 22	9 14.57	+17 11.5	2.644	3.604	4.0	21.7	1 22	9 17.71	+13 42.9	1.350	2.311	7.0	18.7
2 1	9 6.54	+17 43.9	2.612	3.597	0.8	21.4	2 1	9 7.21	+13 55.7	1.321	2.304	1.9	18.4
2 11	8 58.25	+18 15.2	2.612	3.588	2.7	21.5	2 11	8 56.20	+14 11.5	1.319	2.298	4.0	18.5
2 21	8 50.43	+18 42.5	2.642	3.580	5.9	21.7	2 21	8 46.16	+14 25.7	1.344	2.292	9.2	18.8
3 2	8 43.75	+19 3.5	2.701	3.571	8.8	21.9	3 2	8 38.37	+14 35.0	1.394	2.286	13.9	19.0
3 12	8 38.75	+19 17.1	2.784	3.561	11.3	22.1	3 12	8 33.66	+14 37.2	1.464	2.281	17.8	19.2
306081	2010 <i>GG</i> ₁₄₀		2 3.3 260°48'	3.0/ 5.1	18		466912	2015 <i>FL</i> ₂		2 3.4 107°05'	5.7/29.9	18	
1 2	9 29.25	+ 7 20.0	1.598	2.420	15.8	21.2	1 2	9 30.78	+32 32.1	2.182	3.024	11.4	20.7
1 12	9 24.14	+ 7 35.0	1.510	2.408	12.1	20.9	1 12	9 24.73	+33 32.8	2.121	3.026	8.7	20.5
1 22	9 16.46	+ 8 8.9	1.444	2.395	7.8	20.6	1 22	9 16.51	+34 27.8	2.086	3.029	6.4	20.4
2 1	9 6.96	+ 8 59.1	1.404	2.382	3.7	20.4	2 1	9 6.94	+35 10.3	2.079	3.032	5.8	20.4
2 11	8 56.83	+10 0.4	1.392	2.369	4.3	20.4	2 11	8 57.13	+35 34.9	2.101	3.034	7.3	20.5
2 21	8 47.40	+11 5.9	1.407	2.356	8.8	20.6	2 21	8 48.18	+35 39.4	2.150	3.037	9.8	20.6
3 2	8 39.91	+12 8.8	1.448	2.342	13.3	20.8	3 2	8 41.07	+35 24.7	2.223	3.040	12.4	20.8
3 12	8 35.23	+13 3.5	1.510	2.329	17.3	21.0	3 12	8 36.42	+34 53.5	2.316	3.042	14.7	21.0
280864	2005 <i>UT</i> ₄₂₅		2 3.3 222°90'	2.8/ 4.9	18		364234	2006 <i>SO</i> ₁₄₇		2 3.4 219°84'	2.0/ 2.0	13 C	
1 2	9 32.13	+ 7 59.4	1.772	2.585	14.9	21.3	1 2	9 32.19	+20 47.9	2.027	2.864	12.3	22.5
1 12	9 26.00	+ 8 3.6	1.682	2.575	11.3	21.1	1 12	9 25.83	+21 22.8	1.943	2.856	8.9	22.2
1 22	9 17.42	+ 8 23.1	1.615	2.565	7.3	20.8	1 22	9 17.22	+22 1.7	1.885	2.847	5.1	22.0
2 1	9 7.14	+ 8 56.0	1.576	2.554	3.4	20.6	2 1	9 7.10	+22 39.1	1.856	2.838	2.1	21.8
2 11	8 56.29	+ 9 38.0	1.566	2.542	4.1	20.6	2 11	8 56.57	+23 9.5	1.857	2.828	4.4	21.9
2 21	8 46.12	+10 23.9	1.584	2.529	8.3	20.8	2 21	8 46.75	+23 29.3	1.887	2.818	8.3	22.1
3 2	8 37.80	+11 8.4	1.628	2.516	12.5	21.0	3 2	8 38.70	+23 36.7	1.944	2.807	12.0	22.3
3 12	8 32.14	+11 47.2	1.695	2.502	16.2	21.2	3 12	8 33.14	+23 31.8	2.023	2.796	15.1	22.5
190461	2000 <i>CP</i> ₃₉		2 3.3 312°88'	0.4/ 3.6	18		469245	2016 <i>JG</i> ₁₉		2 3.4 180°10'	1.4/ 4.8	18	
1 2	9 27.77	+12 15.1	1.277	2.128	17.2	19.8	1 2	9 24.66	+ 8 41.2	2.911	3.715	9.9	21.5
1 12	9 23.55	+13 2.5	1.200	2.118	12.7	19.5	1 12	9 19.74	+ 9 17.5	2.826	3.716	7.4	21.3
1 22	9 16.33	+14 9.4	1.145	2.108	7.4	19.2	1 22	9 13.48	+10 3.9	2.766	3.717	4.6	21.2
2 1	9 6.95	+15 29.7	1.114	2.098	1.6	18.8	2 1	9 6.36	+10 58.0	2.737	3.717	1.8	21.0
2 11	8 56.87	+16 53.6	1.109	2.089	4.5	18.9	2 11	8 59.00	+11 56.2	2.739	3.717	2.4	21.0
2 21	8 47.72	+18 11.3	1.130	2.080	10.3	19.2	2 21	8 52.06	+12 54.6	2.772	3.716	5.3	21.2
3 2	8 40.97	+19 15.3	1.175	2.072	15.5	19.5	3 2	8 46.16	+13 49.7	2.835	3.715	8.0	21.4
3 12	8 37.59	+20 1.5	1.238	2.064	19.9	19.7	3 12	8 41.76	+14 38.8	2.922	3.714	10.5	21.5
150231	1998 <i>WV</i> ₂₈		2 3.4 47°73'	2.7/ 4.9	18		26313	1998 <i>TK</i> ₃₄		2 3.4 207°65'	2.5/ 4.9	18	
1 2	9 29												

EPHEMERIDES

2 3.4

2 3.4

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
377320	2004 <i>JD</i> ₁₇		2 3.4	3°67	20°5/13.7	18	282163	2001 <i>SK</i> ₂₀₇		2 3.4	191°95	0°1/	3.5 18
1 2	9 30.40	-19 58.4	1.131	1.845	27.1	20.4	1 2	9 32.70	+14 11.3	1.905	2.732	13.4	22.5
1 12	9 25.86	-22 36.4	1.073	1.844	25.0	20.2	1 12	9 26.24	+14 42.2	1.824	2.730	9.8	22.2
1 22	9 17.85	-24 32.8	1.028	1.844	23.0	20.1	1 22	9 17.48	+15 23.1	1.768	2.728	5.7	22.0
2 1	9 7.30	-25 34.6	0.998	1.844	21.4	20.0	2 1	9 7.19	+16 9.5	1.741	2.725	1.1	21.6
2 11	8 55.87	-25 34.7	0.984	1.845	20.6	19.9	2 11	8 56.49	+16 55.8	1.743	2.721	3.5	21.8
2 21	8 45.46	-24 35.0	0.986	1.846	20.8	19.9	2 21	8 46.54	+17 37.0	1.775	2.716	7.9	22.1
3 2	8 37.84	-22 46.2	1.005	1.848	22.1	20.0	3 2	8 38.40	+18 9.6	1.834	2.711	11.9	22.3
3 12	8 34.13	-20 25.7	1.040	1.850	23.9	20.1	3 12	8 32.80	+18 31.8	1.915	2.704	15.2	22.5
266674	2009 <i>AN</i> ₁₀		2 3.4	359°66	1°0/	2.7 18	39447	3412 <i>T</i> ₋₃		2 3.4	143°34	3°5/	6.2 18
1 2	9 26.04	+17 31.4	1.773	2.621	13.2	20.4	1 2	9 27.30	+ 3 34.6	2.247	3.038	12.8	19.9
1 12	9 21.50	+18 3.0	1.701	2.620	9.6	20.2	1 12	9 21.94	+ 3 46.0	2.170	3.045	10.0	19.7
1 22	9 14.78	+18 42.2	1.654	2.618	5.4	19.9	1 22	9 14.85	+ 4 12.9	2.117	3.053	6.8	19.6
2 1	9 6.64	+19 23.8	1.634	2.618	1.3	19.6	2 1	9 6.67	+ 4 53.9	2.091	3.060	4.1	19.4
2 11	8 58.18	+20 2.2	1.642	2.618	3.9	19.8	2 11	8 58.24	+ 5 45.3	2.096	3.067	4.0	19.4
2 21	8 50.52	+20 32.7	1.677	2.619	8.2	20.1	2 21	8 50.42	+ 6 42.5	2.130	3.073	6.7	19.6
3 2	8 44.65	+20 52.4	1.738	2.621	12.1	20.3	3 2	8 44.00	+ 7 40.5	2.192	3.079	9.8	19.8
3 12	8 41.25	+21 0.3	1.820	2.623	15.4	20.5	3 12	8 39.53	+ 8 35.0	2.278	3.084	12.6	20.0
179265	2001 <i>UJ</i> ₁₆₆		2 3.4	187°59	0°5/	3.0 18	123701	2000 <i>YQ</i> ₁₀₈		2 3.4	300°80	4°6/	30.6 18
1 2	9 30.47	+16 33.4	2.181	3.010	11.8	21.5	1 2	9 27.66	+25 18.1	1.837	2.691	12.6	18.9
1 12	9 24.34	+16 57.9	2.101	3.010	8.6	21.3	1 12	9 22.93	+26 47.4	1.758	2.677	9.3	18.7
1 22	9 16.27	+17 28.8	2.048	3.009	4.9	21.1	1 22	9 15.76	+28 20.5	1.705	2.663	6.0	18.5
2 1	9 6.92	+18 2.1	2.023	3.007	1.0	20.8	2 1	9 6.89	+29 48.4	1.680	2.650	4.7	18.3
2 11	8 57.27	+18 33.4	2.029	3.005	3.3	20.9	2 11	8 57.44	+31 2.4	1.683	2.636	6.9	18.5
2 21	8 48.30	+18 59.0	2.064	3.003	7.2	21.2	2 21	8 48.67	+31 56.5	1.713	2.623	10.5	18.6
3 2	8 40.90	+19 16.6	2.127	3.000	10.7	21.4	3 2	8 41.77	+32 28.2	1.768	2.610	13.9	18.8
3 12	8 35.70	+19 25.1	2.213	2.997	13.6	21.6	3 12	8 37.55	+32 38.6	1.842	2.598	17.0	19.0
53444	1999 <i>XV</i> ₉₀		2 3.4	292°91	4°3/	5.2 18	35170	1993 <i>TM</i>		2 3.4	96°26	4°7/	31.8 18
1 2	9 30.99	+ 7 39.7	1.356	2.186	17.6	18.7	1 2	9 35.11	+26 3.3	1.529	2.381	14.8	18.1
1 12	9 25.84	+ 7 11.8	1.268	2.169	13.7	18.4	1 12	9 28.33	+26 58.6	1.477	2.394	10.8	17.9
1 22	9 17.66	+ 7 0.9	1.201	2.152	9.1	18.1	1 22	9 18.74	+27 52.8	1.449	2.407	6.8	17.7
2 1	9 7.26	+ 7 7.0	1.159	2.134	4.9	17.8	2 1	9 7.42	+28 37.0	1.447	2.420	4.7	17.6
2 11	8 56.05	+ 7 27.1	1.142	2.118	5.5	17.8	2 11	8 55.93	+29 3.9	1.473	2.433	6.9	17.8
2 21	8 45.63	+ 7 56.3	1.151	2.101	10.2	18.0	2 21	8 45.77	+29 10.7	1.526	2.446	10.8	18.0
3 2	8 37.51	+ 8 28.7	1.184	2.084	15.2	18.2	3 2	8 38.14	+28 57.9	1.602	2.458	14.5	18.3
3 12	8 32.71	+ 8 58.5	1.236	2.068	19.6	18.4	3 12	8 33.70	+28 28.8	1.698	2.470	17.6	18.5
109385	2001 <i>QH</i> ₁₆₈		2 3.4	274°88	0°7/	3.8 18	519296	2011 <i>CX</i> ₁₂₀		2 3.4	130°24	2°2/	5.0 16
1 2	9 28.59	+14 5.6	2.197	3.023	11.9	19.8	1 2	9 27.17	+ 7 58.0	2.041	2.855	13.1	21.6
1 12	9 22.99	+14 5.3	2.111	3.016	8.7	19.6	1 12	9 22.02	+ 8 20.7	1.965	2.860	9.9	21.4
1 22	9 15.50	+14 12.4	2.050	3.009	5.1	19.4	1 22	9 14.97	+ 8 57.5	1.914	2.864	6.2	21.2
2 1	9 6.78	+14 24.1	2.018	3.001	1.3	19.1	2 1	9 6.70	+ 9 45.6	1.890	2.869	2.8	21.0
2 11	8 57.73	+14 37.3	2.016	2.994	3.0	19.2	2 11	8 58.15	+10 40.5	1.896	2.873	3.3	21.0
2 21	8 49.31	+14 49.2	2.043	2.987	6.8	19.4	2 21	8 50.27	+11 36.8	1.930	2.877	6.9	21.2
3 2	8 42.37	+14 57.2	2.097	2.979	10.4	19.6	3 2	8 43.92	+12 29.8	1.992	2.881	10.5	21.5
3 12	8 37.53	+14 59.8	2.175	2.972	13.4	19.8	3 12	8 39.71	+13 15.8	2.078	2.885	13.6	21.7
463896	2014 <i>UM</i> ₁₀₀		2 3.4	90°13	6°3/	29.9 18	465617	2009 <i>EK</i> ₁		2 3.4	83°49	21°4/	5.4 16
1 2	9 32.28	+31 2.1	1.780	2.629	13.2	21.4	1 2	11 0.52	+48 19.7	0.282	1.166	44.1	20.7
1 12	9 26.17	+32 20.7	1.726	2.637	10.0	21.2	1 12	10 30.93	+49 5.0	0.285	1.202	35.2	20.5
1 22	9 17.48	+33 34.4	1.698	2.645	7.2	21.1	1 22	9 51.97	+48 29.4	0.295	1.238	27.0	20.4
2 1	9 7.16	+34 34.0	1.697	2.653	6.4	21.1	2 1	9 12.82	+46 1.7	0.318	1.273	21.9	20.5
2 11	8 56.57	+35 12.4	1.723	2.661	8.2	21.2	2 11	8 42.84	+42 7.6	0.355	1.307	22.2	20.8
2 21	8 47.08	+35 26.7	1.775	2.669	11.2	21.4	2 21	8 24.96	+37 43.0	0.407	1.338	25.9	21.3
3 2	8 39.81	+35 18.0	1.851	2.677	14.1	21.6	3 2	8 17.70	+33 28.2	0.471	1.368	30.4	21.8
3 12	8 35.46	+34 50.0	1.947	2.685	16.7	21.8	3 12	8 18.39	+29 39.5	0.545	1.396	34.2	22.2
511560	2014 <i>VR</i> ₂₂		2 3.4	192°37	5°1/	7.2 18	243160	2007 <i>TB</i> ₇₅		2 3.4	125°53	3°6/	31.7 18
1 2	9 28.76	- 0 18.6	2.277	3.045	13.4	21.7	1 2	9 30.31	+27 4.4	2.339	3.179	10.8	20.6
1 12	9 23.04	- 0 31.2	2.188	3.044	10.8	21.5	1 12	9 24.15	+27 41.0	2.273	3.184	7.9	20.5
1 22	9 15.51	- 0 26.7	2.123	3.042	8.0	21.3	1 22	9 16.11	+28 15.6	2.234	3.190	5.0	20.3
2 1	9 6.79	- 0 5.0	2.085	3.039	5.7	21.2	2 1	9 6.92	+28 43.1	2.224	3.195	3.6	20.2
2 11	8 57.72	+ 0 31.7	2.077	3.035	5.3	21.1	2 11	8 57.55	+28 59.1	2.243	3.200	5.2	20.3
2 21	8 49.20	+ 1 19.7	2.097	3.031	7.4	21.3	2 21	8 48.95	+29 1.7	2.292	3.205	8.0	20.5
3 2	8 42.05	+ 2 14.0	2.145	3.027	10.2	21.4	3 2	8 41.96	+28 50.6	2.366	3.210	10.8	20.7
3 12	8 36.89	+ 3 9.3	2.218	3.021	13.0	21.6	3 12	8 37.16	+28 27.4	2.463	3.214	13.3	20.9
4519	Voronezh		2 3.4	141°06	1°1/	4.0 18	397925	2008 <i>WA</i> ₂₀		2 3.4	155°42	3°5/	5.5 18
1 2	9 31.44	+11 26.7	1.460	2.296	16.3	17.1	1 2	9 31.82	+ 6 11.9	1.757	2.565	15.2	22.1
1 12	9 25.75	+11 57.6	1.391	2.300	12.0	16.9	1 12	9 25.62	+ 6 11.9	1.683	2.571	11.6	21.9
1 22	9 17.35	+12 44.3	1.345	2.305	7.1	16.6	1 22	9 17.13	+ 6 28.6	1.632	2.577	7.7	21.7
2 1	9 7.16	+13 41.9	1.326	2.309	2.0	16.3	2 1	9 7.14	+ 7 0.0	1.608	2.583	4.1	21.5
2 11	8 56.56	+14 43.0	1.334	2.313	4.0	16.4	2 11	8 56.82	+ 7 42.0	1.613	2.588	4.4	21.5
2 21	8 46.98	+15 40.3	1.369	2.316	9.1	16.7	2 21	8 47.35	+ 8 29.1	1.647	2.592	8.1	21.7
3 2	8 39.66	+16 28.4	1.429	2.320	13.7	17.0	3 2	8 39.76	+ 9 16.1	1.706	2.596	11.9	22.0
3 12	8 35.36	+17 4.2	1.509	2.323	17.5	17.2	3 12	8 34.75	+ 9 58.4	1.789	2.599	15.3	22.2
24965	Akayu		2 3.4	65°38	2°1/	1.8 18	324576	2006 <i>WH</i> ₁₉₄		2 3.4	75°93	6°4/	29.4 17
1 2	9 28.51	+21 10.5	2.042	2.885	11.9	18.5	1 2	9 31.24	+29 5.5	1.669			

EPHEMERIDES

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
15645	4163 <i>P-L</i>		2 3.4 179°46	1.8/ 4.8	18		64774	2001 <i>XU</i> ₁₈₂		2 3.4 221°55	1.1/ 2.4	18	
1 2	9 26.55	+ 9 34.7	2.236	3.052	12.1	19.1	1 2	9 25.30	+17 51.6	2.667	3.499	9.8	19.4
1 12	9 21.46	+ 9 45.3	2.156	3.052	9.0	18.9	1 12	9 20.42	+18 39.1	2.584	3.495	7.1	19.2
1 22	9 14.62	+10 7.1	2.100	3.052	5.6	18.7	1 22	9 13.99	+19 32.2	2.528	3.490	4.0	19.0
2 1	9 6.65	+10 37.8	2.072	3.052	2.4	18.5	2 1	9 6.56	+20 26.8	2.502	3.485	1.2	18.8
2 11	8 58.40	+11 13.8	2.075	3.052	3.1	18.5	2 11	8 58.84	+21 18.4	2.507	3.480	3.1	18.9
2 21	8 50.75	+11 51.1	2.106	3.052	6.5	18.7	2 21	8 51.59	+22 3.3	2.542	3.475	6.3	19.1
3 2	8 44.49	+12 26.2	2.165	3.052	9.9	18.9	3 2	8 45.53	+22 38.9	2.605	3.470	9.2	19.3
3 12	8 40.20	+12 56.1	2.247	3.052	12.8	19.1	3 12	8 41.18	+23 4.1	2.691	3.465	11.7	19.5
429014	2009 <i>BC</i> ₁₀₅		2 3.4 263°11	1.9/ 5.1	17		288604	2004 <i>LJ</i> ₅		2 3.4 253°80	6°8/ 7.2	17	
1 2	9 24.48	+ 7 28.9	2.461	3.268	11.4	21.5	1 2	9 30.73	- 2 43.6	2.268	3.020	13.9	20.4
1 12	9 19.92	+ 8 2.0	2.367	3.258	8.6	21.3	1 12	9 24.66	- 3 34.9	2.162	3.001	11.6	20.2
1 22	9 13.75	+ 8 48.4	2.298	3.247	5.5	21.1	1 22	9 16.59	- 4 10.1	2.080	2.981	9.1	20.0
2 1	9 6.49	+ 9 45.5	2.258	3.236	2.5	20.9	2 1	9 7.10	- 4 27.1	2.024	2.960	7.2	19.8
2 11	8 58.89	+10 49.2	2.248	3.225	2.9	20.9	2 11	8 57.05	- 4 25.6	1.997	2.939	6.9	19.8
2 21	8 51.73	+11 54.9	2.268	3.214	6.1	21.1	2 21	8 47.41	- 4 7.4	1.998	2.918	8.6	19.8
3 2	8 45.75	+12 57.9	2.317	3.203	9.3	21.3	3 2	8 39.11	- 3 36.6	2.026	2.895	11.3	19.9
3 12	8 41.54	+13 54.5	2.390	3.192	12.2	21.4	3 12	8 32.88	- 2 58.3	2.078	2.873	14.0	20.1
466950	2016 <i>AR</i> ₁₂₇		2 3.4 354°54	3°7/31.4	18		55521	2001 <i>VG</i> ₄₉		2 3.4 312°17	8°2/ 7.6	18	
1 2	9 27.24	+20 58.2	1.647	2.502	13.7	20.8	1 2	9 28.66	- 2 37.9	1.698	2.475	16.9	18.1
1 12	9 22.70	+22 41.7	1.579	2.501	9.9	20.5	1 12	9 23.58	- 3 38.9	1.612	2.465	14.1	17.9
1 22	9 15.65	+24 33.4	1.537	2.500	5.9	20.3	1 22	9 16.13	- 4 19.0	1.547	2.456	11.1	17.7
2 1	9 6.89	+26 23.5	1.522	2.499	3.7	20.1	2 1	9 7.02	- 4 34.9	1.506	2.447	8.7	17.5
2 11	8 57.63	+28 1.5	1.536	2.499	6.3	20.3	2 11	8 57.37	- 4 26.5	1.491	2.438	8.3	17.5
2 21	8 49.19	+29 19.7	1.577	2.498	10.4	20.5	2 21	8 48.37	- 3 56.8	1.502	2.429	10.3	17.6
3 2	8 42.75	+30 14.6	1.642	2.498	14.2	20.8	3 2	8 41.17	- 3 11.8	1.537	2.421	13.3	17.7
3 12	8 39.11	+30 46.4	1.727	2.499	17.3	21.0	3 12	8 36.56	- 2 18.9	1.593	2.413	16.5	17.9
410008	2006 <i>WG</i> ₇₃		2 3.4 158°21	0°4/ 3.1	18		458850	2011 <i>UH</i> ₇₅		2 3.4 147°37	1°0/ 2.7	18	
1 2	9 30.55	+15 57.0	1.997	2.829	12.7	21.8	1 2	9 32.76	+17 2.0	1.972	2.803	12.8	22.4
1 12	9 24.54	+16 27.1	1.924	2.834	9.2	21.6	1 12	9 26.13	+17 46.2	1.906	2.815	9.3	22.2
1 22	9 16.44	+17 4.9	1.877	2.838	5.2	21.4	1 22	9 17.35	+18 37.4	1.864	2.826	5.2	21.9
2 1	9 7.02	+17 45.9	1.858	2.842	1.0	21.1	2 1	9 7.22	+19 30.1	1.852	2.836	1.2	21.7
2 11	8 57.31	+18 25.0	1.869	2.846	3.4	21.3	2 11	8 56.84	+20 18.6	1.870	2.845	3.8	21.9
2 21	8 48.38	+18 57.8	1.909	2.849	7.5	21.5	2 21	8 47.32	+20 58.1	1.918	2.854	7.8	22.1
3 2	8 41.16	+19 21.7	1.976	2.852	11.2	21.7	3 2	8 39.60	+21 26.2	1.993	2.862	11.5	22.4
3 12	8 36.29	+19 35.5	2.065	2.854	14.3	22.0	3 12	8 34.34	+21 42.2	2.090	2.868	14.5	22.6
236982	2008 <i>OY</i> ₁₂		2 3.4 185°95	0°8/ 4.0	18		265363	2004 <i>RZ</i> ₁₂₅		2 3.4 4°63	1°0/ 3.9	18	
1 2	9 27.20	+11 31.5	2.139	2.962	12.3	20.7	1 2	9 27.82	+13 0.8	1.618	2.458	14.7	20.5
1 12	9 22.04	+12 10.3	2.059	2.962	9.0	20.5	1 12	9 22.94	+13 11.7	1.547	2.458	10.9	20.3
1 22	9 15.01	+13 0.9	2.004	2.962	5.3	20.3	1 22	9 15.70	+13 34.2	1.498	2.459	6.4	20.0
2 1	9 6.76	+13 59.2	1.978	2.961	1.5	20.0	2 1	9 6.92	+14 4.8	1.476	2.459	1.8	19.7
2 11	8 58.17	+15 0.0	1.982	2.960	3.0	20.1	2 11	8 57.78	+14 38.3	1.482	2.461	3.6	19.9
2 21	8 50.20	+15 58.3	2.015	2.959	6.9	20.4	2 21	8 49.53	+15 9.6	1.514	2.463	8.3	20.1
3 2	8 43.69	+16 49.7	2.076	2.958	10.5	20.6	3 2	8 43.22	+15 34.8	1.572	2.465	12.5	20.4
3 12	8 39.28	+17 31.4	2.160	2.956	13.5	20.8	3 12	8 39.58	+15 51.4	1.651	2.468	16.1	20.6
138816	2000 <i>TG</i> ₆₅		2 3.4 8°62	1°0/ 3.9	18		368602	2004 <i>RV</i> ₁₉₆		2 3.4 127°07	5°1/ 7.5	18	
1 2	9 24.53	+13 0.5	1.609	2.455	14.5	18.7	1 2	9 27.83	- 1 0.7	2.310	3.076	13.3	21.5
1 12	9 20.50	+13 9.2	1.544	2.458	10.7	18.5	1 12	9 22.26	- 1 10.7	2.236	3.089	10.7	21.4
1 22	9 14.26	+13 29.5	1.502	2.463	6.3	18.2	1 22	9 15.03	- 1 3.3	2.185	3.101	7.9	21.2
2 1	9 6.61	+13 57.8	1.486	2.469	1.8	17.9	2 1	9 6.77	- 0 38.7	2.162	3.113	5.7	21.1
2 11	8 58.70	+14 29.1	1.497	2.477	3.5	18.1	2 11	8 58.29	+ 0 0.6	2.167	3.124	5.3	21.1
2 21	8 51.68	+14 58.6	1.535	2.485	8.0	18.4	2 21	8 50.44	+ 0 50.5	2.202	3.135	7.1	21.2
3 2	8 46.52	+15 22.4	1.597	2.495	12.1	18.6	3 2	8 43.96	+ 1 46.1	2.264	3.146	9.7	21.4
3 12	8 43.87	+15 37.9	1.681	2.506	15.5	18.9	3 12	8 39.38	+ 2 42.4	2.350	3.156	12.3	21.6
245995	2006 <i>SN</i> ₃₀₁		2 3.4 72°42	3°3/31.9	18		292846	2006 <i>UP</i> ₃₂₇		2 3.4 350°42	3°9/ 5.3	18	
1 2	9 30.34	+20 26.8	1.602	2.453	14.3	20.0	1 2	9 28.86	+ 7 44.5	1.523	2.350	16.2	19.8
1 12	9 24.73	+22 1.5	1.555	2.475	10.2	19.8	1 12	9 23.83	+ 7 14.8	1.447	2.345	12.4	19.6
1 22	9 16.66	+23 41.9	1.533	2.496	5.9	19.6	1 22	9 16.28	+ 7 0.5	1.393	2.342	8.3	19.3
2 1	9 7.07	+25 18.1	1.539	2.518	3.3	19.5	2 1	9 7.05	+ 7 0.9	1.364	2.339	4.5	19.1
2 11	8 57.28	+26 40.9	1.574	2.539	5.8	19.7	2 11	8 57.38	+ 7 13.5	1.362	2.337	4.9	19.1
2 21	8 48.59	+27 44.2	1.636	2.561	9.8	19.9	2 21	8 48.59	+ 7 33.8	1.386	2.335	8.9	19.4
3 2	8 42.06	+28 25.9	1.723	2.582	13.5	20.2	3 2	8 41.84	+ 7 57.2	1.435	2.334	13.1	19.6
3 12	8 38.33	+28 47.2	1.830	2.603	16.4	20.5	3 12	8 37.90	+ 8 19.0	1.505	2.334	16.8	19.8
141299	2001 <i>YO</i> ₉₉		2 3.4 136°62	0°7/ 4.0	18		8558	Hack		2 3.4 129°65	0°1/ 3.3	18	
1 2	9 26.20	+12 44.8	2.582	3.401	10.5	20.5	1 2	9 27.07	+15 24.3	2.766	3.588	9.8	20.0
1 12	9 20.99	+13 1.8	2.505	3.407	7.7	20.3	1 12	9 21.51	+15 51.1	2.697	3.602	7.1	19.9
1 22	9 14.27	+13 26.5	2.455	3.412	4.5	20.1	1 22	9 14.52	+16 23.5	2.655	3.614	4.0	19.7
2 1	9 6.60	+13 56.3	2.433	3.417	1.3	19.9	2 1	9 6.67	+16 58.4	2.642	3.627	0.8	19.4
2 11	8 58.73	+14 27.7	2.443	3.421	2.5	20.0	2 11	8 58.67	+17 32.2	2.662	3.639	2.5	19.6
2 21	8 51.41	+14 57.7	2.482	3.426	5.8	20.2	2 21	8 51.22	+18 2.2	2.711	3.650	5.6	19.8
3 2	8 45.32	+15 23.6	2.550	3.430	8.8	20.4	3 2	8 44.98	+18 26.1	2.790	3.662	8.4	20.0
3 12	8 40.95	+15 43.5	2.642	3.434	11.4	20.6	3 12	8 40.39	+18 42.8	2.892	3.672	10.8	20.2
108593	2001 <i>MV</i> ₁₃		2 3.4 86°94	2°7/ 1.0	18		465679	2009 <i>SC</i> ₂₀₃		2 3.4 130°81	1°0/ 4.2	18	
1 2	9 27.25	+21 56.0	2.197	3.041	11.2	19.4	1 2	9 27.87	+11 16.1	1.992	2.816		

EPHEMERIDES

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
200365	2000 QX ₃₈		2 3.4 149°66	1.4/ 4.7	18		105188	2000 OR ₃₃		2 3.4 199°29	2.4/ 5.9	18	
1 2	9 25.03	+ 9 13.6	2.546	3.357	10.9	20.3	1 2	9 24.64	+ 4 54.4	2.772	3.563	10.7	20.3
1 12	9 20.20	+ 9 45.5	2.466	3.361	8.1	20.2	1 12	9 19.87	+ 5 29.2	2.681	3.560	8.2	20.2
1 22	9 13.86	+10 28.4	2.412	3.364	5.0	20.0	1 22	9 13.68	+ 6 17.2	2.616	3.557	5.4	20.0
2 1	9 6.56	+11 19.5	2.387	3.368	1.9	19.8	2 1	9 6.56	+ 7 16.4	2.580	3.553	2.9	19.8
2 11	8 59.02	+12 14.8	2.393	3.371	2.6	19.8	2 11	8 59.18	+ 8 23.0	2.575	3.549	2.9	19.8
2 21	8 51.99	+13 10.0	2.428	3.374	5.8	20.0	2 21	8 52.21	+ 9 32.7	2.601	3.545	5.5	20.0
3 2	8 46.15	+14 1.5	2.492	3.376	8.9	20.2	3 2	8 46.30	+10 41.2	2.656	3.541	8.3	20.1
3 12	8 42.01	+14 46.3	2.581	3.379	11.5	20.4	3 12	8 41.95	+11 44.7	2.737	3.536	10.9	20.3
40773	1999 TZ ₁₉		2 3.4 178°19	0°2/ 3.2	18		343675	2010 OU ₈₀		2 3.4 259°28	4°9/ 7.4	15	
1 2	9 30.85	+14 52.0	2.047	2.875	12.6	20.3	1 2	9 25.13	- 0 35.3	2.452	3.222	12.5	21.6
1 12	9 24.77	+15 30.6	1.970	2.877	9.1	20.1	1 12	9 20.41	- 0 44.3	2.358	3.213	10.1	21.4
1 22	9 16.62	+16 18.2	1.918	2.878	5.2	19.8	1 22	9 14.07	- 0 36.9	2.286	3.204	7.6	21.3
2 1	9 7.12	+17 10.3	1.895	2.879	1.0	19.5	2 1	9 6.65	- 0 13.2	2.242	3.194	5.4	21.1
2 11	8 57.27	+18 1.2	1.902	2.879	3.4	19.7	2 11	8 58.89	+ 0 25.0	2.227	3.185	5.1	21.1
2 21	8 48.13	+18 46.1	1.939	2.879	7.5	20.0	2 21	8 51.58	+ 1 14.0	2.240	3.175	6.9	21.2
3 2	8 40.65	+19 21.8	2.003	2.878	11.1	20.2	3 2	8 45.46	+ 2 9.4	2.281	3.165	9.5	21.3
3 12	8 35.48	+19 46.6	2.090	2.876	14.2	20.4	3 12	8 41.10	+ 3 6.1	2.346	3.156	12.1	21.5
150989	2001 UL ₄		2 3.4 81°05	0°9/ 4.0	18		299047	2005 BU ₁₈		2 3.4 51°83	0°3/ 3.2	18	
1 2	9 30.40	+11 59.0	1.806	2.634	14.0	20.4	1 2	9 29.92	+14 34.7	1.356	2.206	16.4	20.7
1 12	9 24.40	+12 25.2	1.752	2.657	10.2	20.2	1 12	9 24.74	+15 16.1	1.301	2.218	11.9	20.4
1 22	9 16.33	+13 2.7	1.722	2.680	6.0	20.0	1 22	9 16.83	+16 10.6	1.267	2.231	6.8	20.2
2 1	9 7.04	+13 47.4	1.719	2.702	1.7	19.7	2 1	9 7.20	+17 11.2	1.259	2.244	1.3	19.8
2 11	8 57.63	+14 33.6	1.746	2.725	3.3	19.9	2 11	8 57.31	+18 9.7	1.279	2.257	4.3	20.1
2 21	8 49.19	+15 16.5	1.801	2.747	7.5	20.2	2 21	8 48.60	+18 59.3	1.324	2.271	9.5	20.4
3 2	8 42.60	+15 52.3	1.883	2.769	11.2	20.5	3 2	8 42.27	+19 35.6	1.394	2.285	14.0	20.7
3 12	8 38.45	+16 18.8	1.988	2.790	14.3	20.7	3 12	8 39.02	+19 57.2	1.483	2.299	17.7	21.0
306072	2010 GV ₁₀₇		2 3.4 231°55	0°7/ 3.8	17		464150	2014 YN ₅		2 3.4 221°25	3°7/ 30.9	18	
1 2	9 31.86	+13 0.7	1.854	2.680	13.7	22.2	1 2	9 28.31	+24 35.9	2.278	3.121	10.9	20.4
1 12	9 25.82	+13 22.3	1.763	2.668	10.2	21.9	1 12	9 22.98	+25 58.9	2.201	3.115	7.9	20.2
1 22	9 17.39	+13 55.3	1.697	2.656	6.0	21.6	1 22	9 15.66	+27 24.6	2.152	3.109	5.0	20.0
2 1	9 7.30	+14 35.7	1.659	2.643	1.5	21.3	2 1	9 6.98	+28 45.9	2.132	3.103	3.7	20.0
2 11	8 56.66	+15 18.5	1.650	2.629	3.5	21.4	2 11	8 57.89	+29 56.0	2.142	3.096	5.6	20.1
2 21	8 46.68	+15 58.5	1.671	2.614	8.1	21.7	2 21	8 49.37	+30 50.3	2.181	3.090	8.6	20.2
3 2	8 38.49	+16 31.6	1.717	2.599	12.3	21.9	3 2	8 42.36	+31 26.6	2.247	3.083	11.6	20.4
3 12	8 32.87	+16 55.4	1.786	2.584	15.9	22.1	3 12	8 37.53	+31 45.4	2.333	3.075	14.2	20.6
160098	2000 QX ₁₆₉		2 3.4 119°50	0°3/ 3.6	18		268533	2006 AT ₁₉		2 3.4 56°73	3°1/ 1.3	18	
1 2	9 33.93	+14 48.2	1.676	2.509	14.7	20.1	1 2	9 29.70	+22 50.9	1.803	2.652	13.0	20.3
1 12	9 27.20	+14 58.6	1.613	2.521	10.7	19.9	1 12	9 24.18	+23 41.9	1.741	2.659	9.4	20.0
1 22	9 18.05	+15 18.0	1.573	2.533	6.2	19.7	1 22	9 16.37	+24 35.5	1.703	2.665	5.6	19.8
2 1	9 7.40	+15 42.1	1.561	2.545	1.3	19.4	2 1	9 7.11	+25 24.9	1.694	2.672	3.1	19.7
2 11	8 56.53	+16 6.0	1.578	2.556	3.7	19.6	2 11	8 57.59	+26 3.6	1.712	2.679	5.3	19.8
2 21	8 46.72	+16 25.5	1.623	2.567	8.3	19.9	2 21	8 48.99	+26 27.8	1.759	2.685	9.1	20.1
3 2	8 39.02	+16 38.0	1.694	2.577	12.4	20.1	3 2	8 42.34	+26 36.1	1.830	2.692	12.6	20.3
3 12	8 34.10	+16 42.3	1.787	2.587	15.8	20.4	3 12	8 38.28	+26 29.6	1.922	2.699	15.6	20.5
6377	Cagney		2 3.4 269°95	1°2/ 2.4	18		462230	2008 AH ₁₇		2 3.4 321°39	1°8/ 1.9	17	
1 2	9 27.57	+15 25.9	1.896	2.735	13.0	16.9	1 2	9 24.83	+13 38.1	1.392	2.246	15.8	21.5
1 12	9 22.76	+16 43.3	1.805	2.719	9.4	16.7	1 12	9 21.46	+15 35.7	1.306	2.228	11.5	21.2
1 22	9 15.68	+18 13.9	1.740	2.703	5.3	16.4	1 22	9 15.28	+17 57.3	1.244	2.210	6.5	20.9
2 1	9 6.98	+19 51.1	1.703	2.687	1.4	16.1	2 1	9 6.98	+20 32.7	1.209	2.193	1.9	20.5
2 11	8 57.68	+21 26.6	1.696	2.670	4.2	16.3	2 11	8 57.84	+23 7.5	1.203	2.177	5.6	20.7
2 21	8 48.91	+22 52.6	1.718	2.654	8.6	16.5	2 21	8 49.35	+25 27.4	1.223	2.161	11.1	21.0
3 2	8 41.78	+24 3.6	1.766	2.637	12.6	16.7	3 2	8 42.98	+27 22.3	1.268	2.146	16.0	21.2
3 12	8 37.11	+24 57.1	1.837	2.620	16.0	16.9	3 12	8 39.78	+28 47.9	1.332	2.132	20.1	21.5
60161	1999 UZ ₂₅		2 3.4 97°32	1°8/ 4.4	18		52675	1998 DJ ₉		2 3.4 14°83	5°1/ 30.5	18	
1 2	9 34.09	+10 47.9	1.399	2.231	17.0	19.6	1 2	9 29.60	+30 32.6	2.173	3.018	11.3	18.3
1 12	9 27.59	+11 0.5	1.343	2.249	12.6	19.3	1 12	9 23.93	+31 26.1	2.109	3.019	8.5	18.1
1 22	9 18.37	+11 28.6	1.309	2.266	7.6	19.1	1 22	9 16.16	+32 15.6	2.071	3.020	6.0	18.0
2 1	9 7.47	+12 7.8	1.301	2.283	2.6	18.8	2 1	9 7.08	+32 54.6	2.061	3.021	5.1	17.9
2 11	8 56.36	+12 51.6	1.321	2.300	4.1	19.0	2 11	8 57.75	+33 17.9	2.080	3.022	6.6	18.0
2 21	8 46.52	+13 33.9	1.367	2.316	9.0	19.3	2 21	8 49.24	+33 23.1	2.125	3.024	9.3	18.2
3 2	8 39.11	+14 9.7	1.439	2.331	13.5	19.6	3 2	8 42.48	+33 10.6	2.196	3.026	12.1	18.3
3 12	8 34.81	+14 36.0	1.531	2.347	17.2	19.9	3 12	8 38.10	+32 42.6	2.287	3.027	14.5	18.5
491186	2011 UD ₅₉		2 3.4 164°03	4°3/ 31.7	18		468290	2015 DT ₁₅₉		2 3.4 184°59	1°2/ 2.4	18	
1 2	9 34.28	+25 21.8	1.729	2.575	13.6	21.8	1 2	9 26.09	+17 11.1	2.318	3.153	11.0	21.0
1 12	9 27.68	+26 22.6	1.664	2.579	10.0	21.6	1 12	9 21.20	+18 9.7	2.241	3.153	7.9	20.8
1 22	9 18.44	+27 24.1	1.624	2.583	6.3	21.4	1 22	9 14.56	+19 15.4	2.191	3.153	4.5	20.6
2 1	9 7.50	+28 17.9	1.612	2.586	4.3	21.3	2 1	9 6.77	+20 23.4	2.170	3.153	1.3	20.4
2 11	8 56.21	+28 56.6	1.629	2.588	6.5	21.4	2 11	8 58.68	+21 27.9	2.179	3.153	3.5	20.5
2 21	8 45.96	+29 16.4	1.673	2.591	10.2	21.6	2 21	8 51.15	+22 24.2	2.218	3.153	7.0	20.7
3 2	8 37.93	+29 16.9	1.742	2.592	13.8	21.9	3 2	8 44.99	+23 9.2	2.285	3.152	10.2	20.9
3 12	8 32.84	+29 0.4	1.831	2.593	16.8	22.1	3 12	8 40.79	+23 41.4	2.374	3.152	13.0	21.1
203125	2000 SN ₂₃₇		2 3.4 80°33	3°1/ 1.5	18		263974	2009 KG ₂		2 3.4 204°54	1°2/ 2.4	18	
1 2	9 32.31	+20 41.0	1.468	2.321	15.2	19.9	1 2	9 30.22	+17 54.3	2.343	3.172	11.1	21.3
1 12	9 26.35	+21 49.4											

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
103581	2000 CO_4		2 3.4 74°90	3.4/ 4.9	18		52790	1998 QD_{48}		2 3.4 69°05	3.2/ 5.1	18	
1 2	9 33.95	+ 9 6.5	1.320	2.151	17.9	19.2	1 2	9 32.58	+ 7 56.8	1.288	2.120	18.3	18.9
1 12	9 27.69	+ 8 43.0	1.259	2.162	13.6	19.0	1 12	9 26.63	+ 8 2.1	1.238	2.141	13.7	18.7
1 22	9 18.54	+ 8 36.0	1.220	2.173	8.6	18.7	1 22	9 17.89	+ 8 27.2	1.208	2.161	8.7	18.5
2 1	9 7.57	+ 8 43.6	1.206	2.184	4.1	18.5	2 1	9 7.47	+ 9 8.3	1.203	2.182	4.0	18.3
2 11	8 56.32	+ 9 1.8	1.219	2.196	4.9	18.6	2 11	8 56.90	+ 9 58.8	1.225	2.203	4.6	18.4
2 21	8 46.33	+ 9 25.2	1.257	2.207	9.5	18.8	2 21	8 47.67	+10 51.2	1.273	2.224	9.3	18.7
3 2	8 38.86	+ 9 48.8	1.320	2.218	14.1	19.1	3 2	8 40.94	+11 39.4	1.345	2.244	13.8	19.0
3 12	8 34.64	+10 8.3	1.403	2.229	18.0	19.4	3 12	8 37.37	+12 18.6	1.438	2.265	17.5	19.3
401709	2013 HH_{69}		2 3.4 109°61	2.4/ 2.0	18		56484	2000 GH_{124}		2 3.4 147°08	1.7/ 4.6	18	
1 2	9 33.02	+21 0.5	1.688	2.533	14.0	21.2	1 2	9 30.92	+ 8 53.9	1.739	2.558	14.8	18.7
1 12	9 26.65	+21 37.6	1.626	2.543	10.1	20.9	1 12	9 25.08	+ 9 33.5	1.668	2.567	11.1	18.4
1 22	9 17.81	+22 18.4	1.589	2.552	5.8	20.7	1 22	9 16.94	+10 29.6	1.621	2.575	6.8	18.2
2 1	9 7.42	+22 56.7	1.580	2.561	2.4	20.5	2 1	9 7.31	+11 37.7	1.601	2.582	2.5	18.0
2 11	8 56.80	+23 26.1	1.599	2.571	4.9	20.7	2 11	8 57.33	+12 51.0	1.610	2.589	3.5	18.0
2 21	8 47.24	+23 42.8	1.646	2.579	9.1	20.9	2 21	8 48.19	+14 2.8	1.648	2.595	7.9	18.3
3 2	8 39.83	+23 45.8	1.718	2.588	12.9	21.2	3 2	8 40.94	+15 7.0	1.713	2.601	12.0	18.6
3 12	8 35.23	+23 35.7	1.811	2.597	16.1	21.4	3 12	8 36.27	+16 0.0	1.801	2.606	15.5	18.8
297828	2002 AS_{163}		2 3.4 29°88	1.1/ 3.9	18		297234	1960 SP		2 3.4 72°32	0.2/ 3.3	18	
1 2	9 30.66	+13 56.4	1.042	1.905	19.3	19.8	1 2	9 34.16	+15 23.8	1.405	2.248	16.4	21.5
1 12	9 25.70	+13 50.5	0.996	1.919	14.1	19.5	1 12	9 27.58	+15 49.5	1.359	2.273	11.8	21.3
1 22	9 17.52	+13 58.9	0.971	1.935	8.3	19.2	1 22	9 18.34	+16 25.4	1.335	2.298	6.7	21.0
2 1	9 7.37	+14 16.9	0.968	1.952	2.2	18.9	2 1	9 7.56	+17 5.2	1.338	2.322	1.3	20.7
2 11	8 57.09	+14 37.9	0.989	1.970	4.6	19.1	2 11	8 56.73	+17 42.3	1.368	2.347	4.1	21.0
2 21	8 48.40	+14 56.0	1.035	1.989	10.4	19.5	2 21	8 47.26	+18 11.5	1.426	2.371	9.1	21.4
3 2	8 42.63	+15 7.1	1.102	2.009	15.4	19.9	3 2	8 40.26	+18 30.1	1.508	2.395	13.4	21.7
3 12	8 40.42	+15 9.1	1.188	2.030	19.6	20.2	3 12	8 36.32	+18 37.3	1.611	2.418	16.9	21.9
164859	1999 TA_{218}		2 3.4 63°89	3.9/ 5.8	18		308167	2005 BW_{20}		2 3.4 49°17	0.8/ 2.9	18	
1 2	9 29.48	+ 5 38.6	1.516	2.335	16.6	20.0	1 2	9 30.01	+15 53.2	1.465	2.314	15.5	21.2
1 12	9 24.19	+ 5 37.9	1.452	2.346	12.8	19.8	1 12	9 24.80	+16 35.7	1.401	2.318	11.3	21.0
1 22	9 16.46	+ 5 56.7	1.411	2.357	8.5	19.6	1 22	9 16.93	+17 29.6	1.359	2.323	6.4	20.7
2 1	9 7.18	+ 6 33.0	1.394	2.368	4.6	19.4	2 1	9 7.32	+18 28.1	1.344	2.328	1.3	20.4
2 11	8 57.63	+ 7 21.7	1.405	2.380	4.8	19.4	2 11	8 57.34	+19 23.5	1.356	2.333	4.4	20.6
2 21	8 49.06	+ 8 16.4	1.443	2.392	8.6	19.7	2 21	8 48.40	+20 9.3	1.395	2.339	9.4	20.9
3 2	8 42.57	+ 9 10.5	1.505	2.403	12.7	19.9	3 2	8 41.69	+20 41.7	1.458	2.344	13.8	21.2
3 12	8 38.83	+ 9 58.8	1.590	2.415	16.2	20.2	3 12	8 37.97	+20 59.4	1.541	2.350	17.5	21.4
94643	2001 WJ_{39}		2 3.4 88°15	2.6/ 4.9	18		408439	2013 HA_{16}		2 3.4 181°52	3.5/ 31.8	18	
1 2	9 30.70	+ 8 22.0	1.471	2.299	16.6	19.7	1 2	9 32.43	+25 23.5	2.243	3.080	11.3	21.2
1 12	9 25.15	+ 8 39.4	1.408	2.310	12.5	19.5	1 12	9 25.91	+26 17.0	2.171	3.081	8.2	21.0
1 22	9 17.05	+ 9 14.9	1.367	2.321	7.8	19.3	1 22	9 17.32	+27 10.7	2.125	3.082	5.2	20.8
2 1	9 7.30	+10 4.8	1.352	2.332	3.3	19.0	2 1	9 7.39	+27 58.3	2.109	3.082	3.5	20.7
2 11	8 57.25	+11 2.7	1.364	2.342	4.1	19.1	2 11	8 57.15	+28 34.5	2.123	3.081	5.3	20.8
2 21	8 48.25	+12 1.4	1.403	2.353	8.7	19.4	2 21	8 47.65	+28 56.1	2.166	3.080	8.4	21.0
3 2	8 41.43	+12 55.0	1.468	2.363	13.1	19.7	3 2	8 39.83	+29 2.0	2.236	3.078	11.4	21.2
3 12	8 37.50	+13 39.0	1.553	2.374	16.8	19.9	3 12	8 34.33	+28 53.8	2.327	3.075	14.1	21.4
406692	2008 EL_{167}		2 3.4 330°58	0.2/ 3.6	18		125885	2001 XE_{208}		2 3.4 171°10	3.9/ 5.9	18	
1 2	9 25.70	+11 31.1	1.510	2.354	15.4	20.4	1 2	9 31.02	+ 4 33.8	1.794	2.595	15.2	20.0
1 12	9 21.74	+12 38.0	1.432	2.346	11.4	20.1	1 12	9 25.12	+ 4 36.6	1.715	2.598	11.8	19.8
1 22	9 15.25	+14 3.9	1.376	2.338	6.6	19.8	1 22	9 16.98	+ 4 57.6	1.660	2.601	8.0	19.5
2 1	9 6.98	+15 42.4	1.346	2.330	1.4	19.5	2 1	9 7.34	+ 5 35.0	1.632	2.603	4.6	19.3
2 11	8 58.15	+17 23.9	1.345	2.324	4.0	19.6	2 11	8 57.31	+ 6 24.8	1.632	2.605	4.6	19.3
2 21	8 50.08	+18 58.9	1.370	2.317	9.1	19.9	2 21	8 48.05	+ 7 21.4	1.660	2.605	8.0	19.5
3 2	8 43.99	+20 19.9	1.420	2.312	13.7	20.2	3 2	8 40.60	+ 8 18.8	1.716	2.606	11.8	19.8
3 12	8 40.73	+21 22.6	1.492	2.306	17.6	20.4	3 12	8 35.65	+ 9 11.7	1.793	2.606	15.2	20.0
200408	2000 SH_{83}		2 3.4 118°12	0.9/ 2.8	18		316569	2011 MD_4		2 3.4 214°63	2.1/ 4.6	18	
1 2	9 32.87	+16 40.7	1.728	2.565	14.1	20.9	1 2	9 32.91	+10 1.4	1.763	2.581	14.7	21.8
1 12	9 26.43	+17 22.8	1.668	2.580	10.2	20.7	1 12	9 26.66	+10 6.1	1.676	2.574	11.1	21.6
1 22	9 17.65	+18 13.0	1.633	2.595	5.7	20.5	1 22	9 17.95	+10 24.2	1.614	2.567	6.9	21.3
2 1	9 7.41	+19 5.4	1.626	2.610	1.3	20.2	2 1	9 7.55	+10 53.1	1.578	2.559	2.8	21.0
2 11	8 56.96	+19 53.2	1.648	2.624	4.0	20.4	2 11	8 56.63	+11 28.5	1.572	2.550	3.8	21.1
2 21	8 47.52	+20 31.8	1.698	2.637	8.4	20.7	2 21	8 46.45	+12 5.3	1.595	2.541	8.2	21.3
3 2	8 40.13	+20 58.2	1.775	2.650	12.3	21.0	3 2	8 38.16	+12 39.2	1.644	2.531	12.4	21.5
3 12	8 35.42	+21 11.9	1.873	2.662	15.5	21.2	3 12	8 32.54	+13 6.6	1.715	2.520	16.1	21.7
419103	2009 SF_{167}		2 3.4 129°03	5.1/ 7.5	18		97825	2000 OK_{58}		2 3.4 114°15	1.5/ 2.5	18	
1 2	9 30.17	- 1 9.7	2.508	3.263	12.6	22.0	1 2	9 32.81	+17 29.8	1.687	2.527	14.2	20.3
1 12	9 23.83	- 1 32.4	2.436	3.281	10.2	21.9	1 12	9 26.46	+18 23.8	1.629	2.543	10.2	20.0
1 22	9 15.93	- 1 39.4	2.389	3.299	7.6	21.7	1 22	9 17.71	+19 25.7	1.596	2.559	5.8	19.8
2 1	9 7.06	- 1 30.5	2.369	3.316	5.6	21.6	2 1	9 7.47	+20 28.6	1.591	2.575	1.6	19.6
2 11	8 58.03	- 1 7.7	2.379	3.332	5.3	21.6	2 11	8 57.00	+21 25.1	1.615	2.589	4.4	19.8
2 21	8 49.62	- 0 34.1	2.419	3.347	6.9	21.8	2 21	8 47.57	+22 10.0	1.667	2.604	8.7	20.1
3 2	8 42.53	+ 0 6.2	2.487	3.362	9.3	21.9	3 2	8 40.23	+22 40.4	1.745	2.618	12.6	20.3
3 12	8 37.28	+ 0 48.8	2.580	3.376	11.6	22.1	3 12	8 35.65	+22 56.3	1.844	2.631	15.8	20.6
467884	2011 EQ_6		2 3.4 287°72	0.4/ 3.7	17		522491	2016 EW_{230}		2 3.4 232°53	3.2/ 5.7	17	
1 2	9 29.03	+14 25.8	1.897	2.730	13.2	21.6	1 2	9 28.55	+ 6 2.2	2.285	3.083	12.4	21.7
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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
179836	2002 <i>TN</i> ₁₉₈		2 3.4 95°01'	2°9'	1.9	18	421702	2014 <i>PL</i> ₁₁		2 3.4 80°90'	1°0'	4.1	18
1 2	9 36.95	+23 52.8	1.788	2.627	13.6	20.3	1 2	9 29.18	+10 34.3	1.603	2.435	15.3	20.7
1 12	9 29.24	+24 11.8	1.735	2.647	9.8	20.2	1 12	9 23.92	+11 23.6	1.542	2.448	11.2	20.5
1 22	9 19.16	+24 30.3	1.708	2.668	5.8	20.0	1 22	9 16.32	+12 28.9	1.504	2.462	6.6	20.2
2 1	9 7.74	+24 42.5	1.709	2.688	2.9	19.8	2 1	9 7.24	+13 44.3	1.493	2.476	1.9	20.0
2 11	8 56.29	+24 43.9	1.739	2.708	5.0	20.0	2 11	8 57.89	+15 2.3	1.511	2.490	3.6	20.1
2 21	8 46.08	+24 32.8	1.799	2.727	8.8	20.3	2 21	8 49.49	+16 15.2	1.556	2.504	8.2	20.4
3 2	8 38.11	+24 9.9	1.884	2.746	12.3	20.5	3 2	8 43.08	+17 17.6	1.628	2.517	12.4	20.7
3 12	8 32.94	+23 37.0	1.991	2.764	15.3	20.7	3 12	8 39.33	+18 6.2	1.721	2.531	15.9	21.0
226015	2002 <i>EB</i> ₈₄		2 3.4 308°17'	0°2'	3.6	18	287469	2003 <i>AC</i> ₃₇		2 3.4 26°76'	2°2'	1.7	18
1 2	9 27.08	+13 50.3	1.727	2.567	13.9	20.5	1 2	9 25.29	+18 24.2	1.718	2.571	13.4	19.7
1 12	9 22.56	+14 20.4	1.638	2.550	10.3	20.3	1 12	9 21.08	+19 42.8	1.662	2.582	9.6	19.5
1 22	9 15.68	+15 2.9	1.572	2.533	6.0	20.0	1 22	9 14.69	+21 9.4	1.630	2.594	5.4	19.3
2 1	9 7.13	+15 53.3	1.532	2.517	1.3	19.6	2 1	9 6.92	+22 36.2	1.625	2.607	2.2	19.1
2 11	8 58.01	+16 45.7	1.521	2.500	3.7	19.7	2 11	8 58.89	+23 55.1	1.650	2.621	4.8	19.3
2 21	8 49.53	+17 34.1	1.538	2.484	8.4	20.0	2 21	8 51.72	+24 59.8	1.702	2.635	8.8	19.6
3 2	8 42.82	+18 13.7	1.580	2.469	12.7	20.2	3 2	8 46.37	+25 46.9	1.778	2.650	12.5	19.8
3 12	8 38.71	+18 41.8	1.643	2.453	16.5	20.4	3 12	8 43.50	+26 15.8	1.876	2.666	15.5	20.0
146675	2001 <i>UV</i> ₂₁₄		2 3.4 232°64'	2°0'	1.9	17	493399	2014 <i>WE</i> ₁₇₄		2 3.4 133°35'	3°7'	31.3	18
1 2	9 30.40	+20 21.9	2.132	2.969	11.8	21.0	1 2	9 30.60	+24 3.5	2.105	2.947	11.7	21.2
1 12	9 24.60	+21 8.8	2.045	2.958	8.5	20.8	1 12	9 24.67	+25 26.8	2.045	2.959	8.5	21.0
1 22	9 16.68	+22 0.6	1.985	2.947	4.9	20.6	1 22	9 16.66	+26 52.0	2.011	2.969	5.3	20.8
2 1	9 7.31	+22 52.1	1.953	2.935	2.1	20.3	2 1	9 7.31	+28 11.5	2.007	2.980	3.7	20.7
2 11	8 57.49	+23 37.2	1.952	2.922	4.3	20.5	2 11	8 57.67	+29 18.4	2.033	2.990	5.6	20.9
2 21	8 48.28	+24 11.8	1.980	2.909	8.1	20.7	2 21	8 48.80	+30 8.3	2.088	2.999	8.8	21.1
3 2	8 40.68	+24 33.4	2.034	2.896	11.6	20.9	3 2	8 41.65	+30 39.7	2.169	3.008	11.8	21.3
3 12	8 35.38	+24 41.6	2.111	2.882	14.6	21.0	3 12	8 36.85	+30 53.6	2.271	3.017	14.4	21.5
290162	2005 <i>RC</i> ₅		2 3.4 149°46'	0°2'	3.3	18	229264	2005 <i>AR</i> ₃₁		2 3.4 52°63'	0°5'	3.8	18
1 2	9 28.73	+14 34.7	1.860	2.695	13.3	21.0	1 2	9 27.43	+13 14.1	1.967	2.799	12.8	20.4
1 12	9 23.46	+15 15.2	1.786	2.697	9.7	20.7	1 12	9 22.38	+13 41.1	1.895	2.803	9.4	20.1
1 22	9 16.02	+16 6.0	1.737	2.699	5.5	20.5	1 22	9 15.35	+14 18.3	1.847	2.807	5.5	19.9
2 1	9 7.17	+17 2.2	1.716	2.700	1.1	20.2	2 1	9 7.06	+15 1.8	1.828	2.811	1.3	19.6
2 11	8 57.97	+17 57.7	1.724	2.702	3.5	20.4	2 11	8 58.48	+15 46.6	1.837	2.816	3.1	19.8
2 21	8 49.53	+18 47.0	1.760	2.703	7.8	20.6	2 21	8 50.63	+16 28.0	1.875	2.820	7.2	20.0
3 2	8 42.83	+19 26.3	1.823	2.704	11.7	20.9	3 2	8 44.39	+17 2.3	1.940	2.825	10.9	20.3
3 12	8 38.55	+19 53.6	1.908	2.706	15.0	21.1	3 12	8 40.38	+17 27.4	2.027	2.830	14.0	20.5
134300	2109 <i>P-L</i>		2 3.4 134°10'	1°8'	4.6	18	367518	2009 <i>PU</i> ₂		2 3.4 246°39'	5°8'	7.3	17
1 2	9 31.78	+9 45.4	1.812	2.630	14.4	20.2	1 2	9 29.19	-1 4.7	2.181	2.947	13.9	21.5
1 12	9 25.58	+10 4.9	1.743	2.641	10.7	20.0	1 12	9 23.68	-1 24.4	2.077	2.930	11.4	21.3
1 22	9 17.18	+10 38.2	1.699	2.653	6.6	19.8	1 22	9 16.17	-1 26.2	1.997	2.912	8.6	21.1
2 1	9 7.39	+11 21.6	1.683	2.664	2.5	19.5	2 1	9 7.26	-1 9.1	1.943	2.893	6.3	20.9
2 11	8 57.33	+12 9.9	1.696	2.674	3.5	19.6	2 11	8 57.81	-0 34.5	1.918	2.874	5.9	20.9
2 21	8 48.15	+12 57.9	1.737	2.684	7.6	19.9	2 21	8 48.80	+0 13.9	1.921	2.854	8.0	21.0
3 2	8 40.82	+13 40.9	1.806	2.693	11.5	20.1	3 2	8 41.16	+1 10.9	1.952	2.834	11.0	21.1
3 12	8 35.99	+14 15.8	1.897	2.701	14.8	20.4	3 12	8 35.61	+2 10.8	2.006	2.813	14.0	21.3
315930	2008 <i>SG</i> ₂₂₁		2 3.4 291°01'	2°3'	5.8	17	256296	2006 <i>WC</i> ₁₃₅		2 3.4 51°80'	2°0'	1.9	18
1 2	9 22.34	+5 53.0	3.058	3.853	9.7	20.4	1 2	9 28.44	+15 28.0	1.425	2.276	15.7	19.4
1 12	9 18.18	+6 6.1	2.960	3.841	7.4	20.2	1 12	9 23.63	+17 18.8	1.377	2.297	11.2	19.2
1 22	9 12.75	+6 29.9	2.888	3.829	5.0	20.0	1 22	9 16.25	+19 22.7	1.354	2.319	6.2	19.0
2 1	9 6.51	+7 3.0	2.845	3.817	2.7	19.9	2 1	9 7.25	+21 28.5	1.358	2.341	2.1	18.8
2 11	9 0.01	+7 42.9	2.832	3.806	2.8	19.9	2 11	8 58.00	+23 24.2	1.390	2.363	5.2	19.0
2 21	8 53.86	+8 26.5	2.850	3.794	5.1	20.0	2 21	8 49.87	+25 0.7	1.450	2.385	9.9	19.3
3 2	8 48.62	+9 10.8	2.896	3.783	7.7	20.1	3 2	8 43.98	+26 13.3	1.534	2.408	14.0	19.6
3 12	8 44.75	+9 52.7	2.967	3.771	10.0	20.3	3 12	8 40.99	+27 1.9	1.639	2.431	17.3	19.9
307885	2004 <i>BE</i> ₁₁₂		2 3.4 268°59'	0°8'	3.9	18	234445	2001 <i>SS</i> ₁₃₃		2 3.4 213°22'	5°2'	8.4	17
1 2	9 28.31	+11 48.5	1.747	2.579	14.2	20.3	1 2	9 24.94	-3 41.1	2.690	3.437	12.1	21.1
1 12	9 23.38	+12 25.4	1.662	2.569	10.5	20.0	1 12	9 20.19	-3 40.1	2.595	3.432	9.9	20.9
1 22	9 16.10	+13 16.7	1.600	2.560	6.2	19.7	1 22	9 13.98	-3 21.8	2.524	3.427	7.6	20.7
2 1	9 7.21	+14 17.9	1.566	2.550	1.6	19.4	2 1	9 6.80	-2 46.2	2.480	3.421	5.8	20.6
2 11	8 57.80	+15 22.8	1.561	2.540	3.5	19.5	2 11	8 59.33	-1 55.3	2.465	3.415	5.3	20.6
2 21	8 49.06	+16 24.6	1.583	2.530	8.2	19.8	2 21	8 52.27	-0 52.9	2.479	3.409	6.7	20.6
3 2	8 42.10	+17 18.2	1.632	2.520	12.5	20.0	3 2	8 46.29	+0 16.5	2.522	3.402	8.9	20.8
3 12	8 37.72	+18 0.0	1.702	2.510	16.1	20.2	3 12	8 41.92	+1 27.6	2.589	3.395	11.2	20.9
246702	2009 <i>AU</i> ₃₂		2 3.4 197°83'	0°7'	2.7	17	388798	2008 <i>BU</i> ₂		2 3.4 120°80'	9°7'	29.4	17
1 2	9 26.10	+14 21.8	2.596	3.420	10.3	21.0	1 2	10 16.67	+25 5.1	1.136	1.940	22.0	21.1
1 12	9 21.13	+15 44.0	2.512	3.418	7.5	20.8	1 12	10 0.41	+29 48.0	1.102	1.992	16.2	20.9
1 22	9 14.54	+17 15.9	2.455	3.416	4.2	20.6	1 22	9 38.12	+34 26.2	1.099	2.038	11.2	20.7
2 1	9 6.87	+18 52.4	2.430	3.414	0.9	20.3	2 1	9 11.68	+38 21.4	1.131	2.080	9.9	20.8
2 11	8 58.86	+20 27.2	2.437	3.411	3.1	20.5	2 11	8 44.71	+41 7.1	1.199	2.118	13.0	21.1
2 21	8 51.28	+21 54.8	2.475	3.408	6.4	20.7	2 21	8 21.02	+42 40.7	1.298	2.150	17.3	21.4
3 2	8 44.88	+23 11.1	2.542	3.405	9.5	20.9	3 2	8 3.13	+43 17.1	1.419	2.178	20.9	21.8
3 12	8 40.23	+24 13.8	2.633	3.402	12.1	21.1	3 12	7 51.77	+43 16.2	1.557	2.201	23.6	22.1
406064	2006 <i>UZ</i> ₇₇		2 3.4 66°30'	2°6'	2.0	18	51812	2001 <i>OE</i> ₇		2 3.4 173°28'	1°0'	4.2	18
1 2	9 33.94	+21 28.3	1.549	2.398	14.8	21.3	1 2	9 28.43	+12 37.4	2.592	3.407	10.6	18.8

EPHEMERIDES

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
444675	2007 <i>DS</i> ₄₂		2 3.4 335°85	0°2/ 3.6 18			38646	2000 <i>OX</i> ₄		2 3.4 130°12	3°1/ 6.1 18		
1 2	9 26.06	+13 28.9	1.047	1.915	18.8	20.2	1 2	9 27.64	+3 51.2	2.184	2.977	13.1	19.1
1 12	9 22.93	+13 59.6	0.975	1.901	14.0	19.8	1 12	9 22.33	+4 25.1	2.110	2.989	10.1	18.9
1 22	9 16.39	+14 50.0	0.922	1.888	8.2	19.5	1 22	9 15.27	+5 15.9	2.060	3.000	6.7	18.8
2 1	9 7.38	+15 53.9	0.892	1.876	1.7	19.0	2 1	9 7.08	+6 20.9	2.038	3.011	3.7	18.6
2 11	8 57.56	+17 1.5	0.885	1.866	5.0	19.2	2 11	8 58.65	+7 35.2	2.047	3.021	3.7	18.6
2 21	8 48.80	+18 2.7	0.902	1.856	11.4	19.5	2 21	8 50.86	+8 53.0	2.085	3.031	6.6	18.8
3 2	8 42.82	+18 49.6	0.939	1.848	17.2	19.8	3 2	8 44.49	+10 8.7	2.152	3.040	9.9	19.0
3 12	8 40.67	+19 18.5	0.993	1.841	22.1	20.1	3 12	8 40.12	+11 17.6	2.243	3.049	12.7	19.2
102093	1999 <i>RH</i> ₁₅₅		2 3.4 282°55	0°0/ 3.3 18			214560	2006 <i>QG</i> ₅		2 3.4 45°09	2°9/ 5.9 18		
1 2	9 28.82	+16 21.0	2.442	3.269	10.8	19.2	1 2	9 24.97	+5 27.2	2.177	2.981	12.7	20.3
1 12	9 23.22	+16 23.9	2.342	3.249	7.9	19.0	1 12	9 20.44	+5 48.2	2.101	2.987	9.8	20.1
1 22	9 15.82	+16 31.8	2.269	3.229	4.6	18.7	1 22	9 14.20	+6 24.3	2.049	2.992	6.5	19.9
2 1	9 7.20	+16 42.1	2.224	3.208	0.9	18.4	2 1	9 6.87	+7 13.4	2.024	2.998	3.5	19.7
2 11	8 58.18	+16 51.9	2.210	3.188	2.9	18.5	2 11	8 59.29	+8 11.2	2.029	3.004	3.5	19.8
2 21	8 49.64	+16 58.4	2.226	3.167	6.5	18.7	2 21	8 52.31	+9 12.8	2.063	3.010	6.5	20.0
3 2	8 42.42	+16 59.8	2.269	3.146	9.9	18.9	3 2	8 46.69	+10 13.1	2.124	3.017	9.8	20.2
3 12	8 37.13	+16 55.1	2.337	3.125	12.8	19.1	3 12	8 43.00	+11 7.9	2.210	3.023	12.7	20.4
377162	2003 <i>SK</i> ₃₃₁		2 3.4 158°65	7°0/27.9 18			175968	2000 <i>LB</i> ₁₃		2 3.4 222°17	1°6/ 4.7 18		
1 2	9 33.27	+38 34.6	2.482	3.308	10.7	21.1	1 2	9 28.80	+9 34.0	2.297	3.107	12.0	20.5
1 12	9 26.61	+39 53.3	2.428	3.313	8.7	21.0	1 12	9 23.26	+9 56.7	2.203	3.097	9.0	20.3
1 22	9 17.78	+41 2.7	2.401	3.318	7.3	20.9	1 22	9 15.87	+10 31.2	2.135	3.087	5.6	20.0
2 1	9 7.58	+41 55.6	2.402	3.323	7.1	20.9	2 1	9 7.22	+11 15.0	2.095	3.076	2.2	19.8
2 11	8 57.09	+42 26.9	2.431	3.327	8.3	21.0	2 11	8 58.17	+12 3.9	2.086	3.064	3.0	19.8
2 21	8 47.44	+42 35.2	2.486	3.331	10.3	21.1	2 21	8 49.63	+12 53.6	2.107	3.052	6.6	20.0
3 2	8 39.59	+42 21.7	2.565	3.334	12.3	21.3	3 2	8 42.43	+13 39.9	2.157	3.039	10.1	20.2
3 12	8 34.19	+41 50.1	2.664	3.337	14.1	21.4	3 12	8 37.23	+14 19.7	2.230	3.026	13.1	20.4
88180	2000 <i>XY</i> ₃₅		2 3.4 106°76	2°2/ 4.8 18			432225	2009 <i>FQ</i> ₇₈		2 3.5 295°97	5°7/28.3 17		
1 2	9 32.67	+10 23.6	2.092	2.903	13.0	19.9	1 2	9 27.69	+29 40.7	2.256	3.102	10.9	20.0
1 12	9 25.92	+10 4.3	2.025	2.918	9.7	19.7	1 12	9 22.89	+31 40.3	2.174	3.084	8.3	19.8
1 22	9 17.26	+9 54.5	1.982	2.933	6.1	19.5	1 22	9 15.89	+33 41.0	2.120	3.065	6.2	19.6
2 1	9 7.46	+9 52.7	1.969	2.948	2.7	19.3	2 1	9 7.26	+35 33.9	2.095	3.046	5.9	19.6
2 11	8 57.51	+9 56.5	1.986	2.962	3.4	19.4	2 11	8 57.98	+37 10.3	2.100	3.027	7.7	19.7
2 21	8 48.39	+10 3.0	2.032	2.976	6.9	19.6	2 21	8 49.14	+38 24.5	2.133	3.008	10.4	19.8
3 2	8 40.93	+10 9.8	2.106	2.990	10.3	19.9	3 2	8 41.82	+39 14.3	2.191	2.990	13.2	19.9
3 12	8 35.71	+10 14.4	2.204	3.003	13.2	20.1	3 12	8 36.85	+39 41.1	2.268	2.971	15.5	20.1
178899	2001 <i>OF</i> ₇₁		2 3.4 117°90	11°1/29.2 18			179791	2002 <i>TM</i> ₁₉		2 3.5 119°77	2°3/ 5.0 18		
1 2	9 55.46	+50 17.3	2.027	2.805	14.5	19.8	1 2	9 29.76	+8 14.2	1.841	2.656	14.3	21.2
1 12	9 42.98	+51 0.0	1.984	2.817	12.7	19.7	1 12	9 24.14	+8 32.3	1.771	2.666	10.7	20.9
1 22	9 27.05	+51 18.5	1.963	2.829	11.4	19.6	1 22	9 16.40	+9 5.3	1.725	2.676	6.8	20.7
2 1	9 9.35	+51 3.4	1.969	2.841	11.1	19.6	2 1	9 7.32	+9 50.2	1.706	2.685	3.0	20.5
2 11	8 52.10	+50 11.1	2.001	2.852	12.0	19.7	2 11	8 57.97	+10 41.9	1.717	2.694	3.6	20.6
2 21	8 37.25	+48 45.2	2.059	2.863	13.6	19.8	2 21	8 49.42	+11 35.0	1.756	2.703	7.5	20.8
3 2	8 26.07	+46 54.0	2.140	2.874	15.4	20.0	3 2	8 42.63	+12 24.4	1.822	2.712	11.3	21.1
3 12	8 19.00	+44 47.2	2.240	2.884	17.1	20.2	3 12	8 38.23	+13 6.4	1.910	2.720	14.5	21.3
208196	2000 <i>QM</i> ₂₄₆		2 3.4 174°95	0°1/ 3.4 18			242469	2004 <i>SN</i> ₄₅		2 3.5 180°55	0°3/ 3.3 18		
1 2	9 26.36	+15 13.7	2.845	3.668	9.6	21.3	1 2	9 29.99	+16 12.9	2.197	3.026	11.8	20.7
1 12	9 21.12	+15 43.3	2.765	3.670	6.9	21.1	1 12	9 24.11	+16 32.8	2.119	3.026	8.6	20.5
1 22	9 14.47	+16 18.7	2.711	3.671	4.0	21.0	1 22	9 16.32	+16 59.2	2.066	3.027	4.9	20.3
2 1	9 6.91	+16 57.1	2.688	3.672	0.8	20.7	2 1	9 7.31	+17 28.4	2.042	3.027	1.0	20.0
2 11	8 59.14	+17 34.9	2.696	3.673	2.5	20.9	2 11	8 58.01	+17 56.1	2.049	3.027	3.1	20.2
2 21	8 51.84	+18 9.0	2.734	3.674	5.6	21.1	2 21	8 49.39	+18 18.9	2.086	3.026	7.0	20.4
3 2	8 45.65	+18 37.1	2.801	3.674	8.4	21.2	3 2	8 42.30	+18 34.5	2.149	3.025	10.4	20.6
3 12	8 41.06	+18 57.9	2.893	3.674	10.8	21.4	3 12	8 37.34	+18 41.7	2.236	3.024	13.4	20.8
33937	2000 <i>LZ</i> ₃₁		2 3.4 120°31	3°0/ 5.5 18			419101	2009 <i>SX</i> ₁₆₀		2 3.5 47°88	1°1/ 4.1 18		
1 2	9 30.97	+6 44.1	2.209	3.007	12.8	18.6	1 2	9 30.07	+13 6.2	1.760	2.592	14.1	21.4
1 12	9 24.63	+6 34.9	2.140	3.023	9.8	18.4	1 12	9 24.48	+13 9.1	1.689	2.596	10.4	21.2
1 22	9 16.51	+6 38.0	2.096	3.039	6.4	18.2	1 22	9 16.64	+13 22.2	1.642	2.601	6.2	20.9
2 1	9 7.32	+6 52.0	2.081	3.054	3.5	18.1	2 1	9 7.38	+13 42.2	1.622	2.605	1.8	20.7
2 11	8 57.95	+7 14.2	2.096	3.069	3.7	18.1	2 11	8 57.83	+14 4.9	1.631	2.610	3.4	20.8
2 21	8 49.32	+7 41.0	2.141	3.083	6.7	18.3	2 21	8 49.14	+14 26.2	1.668	2.615	7.8	21.1
3 2	8 42.22	+8 8.8	2.213	3.097	9.8	18.5	3 2	8 42.32	+14 42.8	1.731	2.620	11.8	21.3
3 12	8 37.18	+8 34.5	2.310	3.110	12.6	18.7	3 12	8 38.02	+14 52.7	1.815	2.625	15.2	21.5
336745	2010 <i>FN</i> ₂₉		2 3.4 44°06	3°9/ 6.6 18			220564	2004 <i>HX</i> ₁₉		2 3.5 245°11	0°7/ 3.9 18		
1 2	9 25.34	+2 57.6	2.050	2.847	13.7	20.7	1 2	9 29.33	+12 46.8	1.967	2.794	13.0	21.2
1 12	9 20.79	+3 9.1	1.975	2.853	10.7	20.5	1 12	9 23.93	+13 11.7	1.879	2.784	9.6	20.9
1 22	9 14.43	+3 38.3	1.923	2.860	7.4	20.3	1 22	9 16.38	+13 47.7	1.814	2.773	5.7	20.7
2 1	9 6.92	+4 23.4	1.898	2.866	4.5	20.2	2 1	9 7.35	+14 31.1	1.778	2.762	1.5	20.4
2 11	8 59.14	+5 20.6	1.902	2.873	4.3	20.2	2 11	8 57.86	+15 17.0	1.772	2.750	3.2	20.5
2 21	8 52.00	+6 24.5	1.934	2.880	7.0	20.3	2 21	8 48.98	+16 0.4	1.794	2.739	7.5	20.7
3 2	8 46.32	+7 29.6	1.993	2.887	10.2	20.6	3 2	8 41.72	+16 37.3	1.843	2.727	11.5	20.9
3 12	8 42.67	+8 30.6	2.076	2.895	13.2	20.8	3 12	8 36.80	+17 5.1	1.914	2.714	14.9	21.1
493057	2014 <i>SO</i> ₂₈₁		2 3.4 107°73	1°7/ 2.3 18			502141	2015 <i>BN</i> ₂₆		2 3.5 343°75	0°5/ 3.8 17		
1 2	9 31.39	+19 10.2	1.921	2.760	12.8	22.0	1 2	9 27.67	+13 55.1	2.003	2.834	12	

EPHEMERIDES

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
68532	2001 <i>VU</i> ₉₂		2 3.5 75°71	3°1/31.9	18		307853	2003 <i>YL</i> ₁₅₄		2 3.5 2°41	7°9/30.9	18	
1 2	9 28.94	+20 15.3	1.743	2.592	13.4	18.8	1 2	9 35.98	+33 35.3	1.343	2.200	16.1	19.5
1 12	9 23.79	+21 50.1	1.686	2.604	9.6	18.5	1 12	9 29.69	+34 20.2	1.286	2.199	12.5	19.3
1 22	9 16.31	+23 31.6	1.653	2.616	5.6	18.3	1 22	9 19.98	+34 55.1	1.251	2.198	9.2	19.1
2 1	9 7.33	+25 10.8	1.649	2.628	3.1	18.2	2 1	9 8.10	+35 9.5	1.241	2.199	8.0	19.0
2 11	8 58.03	+26 38.6	1.675	2.640	5.6	18.4	2 11	8 55.93	+34 56.2	1.255	2.200	9.8	19.1
2 21	8 49.60	+27 48.6	1.728	2.652	9.4	18.6	2 21	8 45.37	+34 14.5	1.294	2.202	13.3	19.3
3 2	8 43.11	+28 37.9	1.806	2.664	13.0	18.9	3 2	8 37.84	+33 8.7	1.355	2.204	17.0	19.6
3 12	8 39.25	+29 6.8	1.905	2.676	16.0	19.1	3 12	8 34.06	+31 45.6	1.433	2.208	20.1	19.8
231138	2005 <i>TA</i> ₁₀₄		2 3.5 153°83	1°5/4.3	18		357354	2003 <i>RJ</i> ₃		2 3.5 191°26	2°2/2.2	18	
1 2	9 34.62	+11 23.0	1.771	2.590	14.6	20.9	1 2	9 34.15	+21 9.1	1.820	2.659	13.4	21.1
1 12	9 27.75	+11 31.2	1.699	2.599	10.8	20.7	1 12	9 27.54	+21 39.7	1.745	2.658	9.7	20.9
1 22	9 18.52	+11 51.2	1.652	2.607	6.5	20.5	1 22	9 18.47	+22 13.7	1.695	2.657	5.6	20.6
2 1	9 7.78	+12 19.7	1.633	2.614	2.2	20.2	2 1	9 7.80	+22 45.4	1.674	2.655	2.3	20.4
2 11	8 56.72	+12 52.0	1.643	2.621	3.6	20.3	2 11	8 56.75	+23 9.1	1.682	2.653	4.7	20.6
2 21	8 46.60	+13 23.5	1.682	2.627	7.9	20.6	2 21	8 46.61	+23 21.1	1.718	2.650	8.8	20.8
3 2	8 38.45	+13 50.4	1.748	2.632	12.0	20.8	3 2	8 38.48	+23 20.1	1.780	2.647	12.7	21.0
3 12	8 32.97	+14 10.3	1.836	2.636	15.4	21.1	3 12	8 33.09	+23 7.0	1.863	2.644	15.9	21.2
282225	2001 <i>YB</i> ₁₆₂		2 3.5 18°46	3°5/31.8	18		200792	2001 <i>XH</i> ₉₂		2 3.5 105°25	4°3/31.8	18	
1 2	9 25.13	+18 27.7	1.320	2.185	15.8	19.7	1 2	9 35.67	+24 34.4	1.613	2.460	14.4	21.2
1 12	9 21.59	+20 24.7	1.265	2.192	11.3	19.4	1 12	9 28.72	+25 47.7	1.565	2.481	10.5	21.0
1 22	9 15.29	+22 34.1	1.234	2.200	6.5	19.2	1 22	9 19.11	+27 1.4	1.542	2.501	6.5	20.8
2 1	9 7.16	+24 43.5	1.229	2.209	3.5	19.0	2 1	9 7.90	+28 6.4	1.547	2.521	4.3	20.7
2 11	8 58.60	+26 39.6	1.251	2.219	6.6	19.2	2 11	8 56.53	+28 54.8	1.581	2.540	6.6	20.9
2 21	8 51.10	+28 12.7	1.299	2.230	11.2	19.5	2 21	8 46.41	+29 22.8	1.641	2.559	10.3	21.2
3 2	8 45.92	+29 18.1	1.370	2.243	15.4	19.8	3 2	8 38.68	+29 30.3	1.726	2.577	13.8	21.4
3 12	8 43.82	+29 56.3	1.460	2.255	18.9	20.1	3 12	8 33.99	+29 20.0	1.831	2.594	16.8	21.7
382313	2013 <i>RS</i> ₆₀		2 3.5 227°34	6°2/8.3	17		290095	2005 <i>QN</i> ₁₀₆		2 3.5 227°22	0°5/3.9	17	
1 2	9 27.23	-3 45.9	2.203	2.959	14.2	21.3	1 2	9 24.99	+11 55.3	2.788	3.604	9.9	20.8
1 12	9 22.18	-3 56.5	2.110	2.951	11.7	21.1	1 12	9 20.26	+12 40.8	2.696	3.596	7.3	20.6
1 22	9 15.29	-3 46.6	2.038	2.943	9.1	20.9	1 22	9 14.07	+13 35.6	2.631	3.588	4.3	20.4
2 1	9 7.15	-3 15.7	1.993	2.935	6.9	20.7	2 1	9 6.91	+14 36.6	2.596	3.580	1.1	20.1
2 11	8 58.59	-2 25.5	1.975	2.926	6.3	20.7	2 11	8 59.44	+15 39.4	2.593	3.571	2.4	20.2
2 21	8 50.53	-1 20.5	1.986	2.916	8.0	20.8	2 21	8 52.37	+16 40.1	2.620	3.562	5.6	20.4
3 2	8 43.82	-0 6.5	2.024	2.907	10.6	20.9	3 2	8 46.37	+17 35.0	2.676	3.553	8.6	20.6
3 12	8 39.11	+1 9.9	2.086	2.897	13.4	21.1	3 12	8 41.94	+18 21.7	2.757	3.544	11.1	20.7
154648	2004 <i>DN</i> ₃		2 3.5 168°62	11°3/11.9	18		432171	2009 <i>BG</i> ₁₈₉		2 3.5 297°20	0°7/2.9	17	
1 2	9 29.69	-13 0.0	1.276	2.020	23.1	19.4	1 2	9 27.43	+17 38.6	2.225	3.061	11.4	21.5
1 12	9 25.03	-12 48.4	1.200	2.022	20.0	19.1	1 12	9 22.37	+18 0.4	2.136	3.047	8.3	21.2
1 22	9 17.38	-11 50.7	1.140	2.024	16.4	18.9	1 22	9 15.41	+18 27.9	2.072	3.034	4.7	21.0
2 1	9 7.61	-10 2.8	1.100	2.025	13.0	18.7	2 1	9 7.19	+18 57.4	2.037	3.021	1.1	20.7
2 11	8 57.18	-7 28.9	1.084	2.026	11.3	18.6	2 11	8 58.59	+19 24.7	2.032	3.008	3.3	20.9
2 21	8 47.71	-4 22.0	1.093	2.027	12.5	18.7	2 21	8 50.55	+19 46.3	2.056	2.996	7.1	21.1
3 2	8 40.64	-1 0.7	1.127	2.027	15.8	18.9	3 2	8 43.95	+19 59.7	2.106	2.983	10.6	21.3
3 12	8 36.91	+2 16.0	1.183	2.027	19.5	19.1	3 12	8 39.42	+20 3.9	2.180	2.970	13.6	21.4
401809	3195 <i>T</i> ₂		2 3.5 172°53	1°1/2.5	14	18	212576	2006 <i>SK</i> ₁₁₅		2 3.5 144°26	0°7/4.1	17	
1 2	9 32.56	+18 19.0	2.551	3.373	10.6	23.3	1 2	9 27.12	+12 50.5	2.573	3.391	10.6	21.3
1 12	9 25.76	+18 59.8	2.473	3.379	7.6	23.2	1 12	9 21.78	+13 4.6	2.496	3.396	7.8	21.1
1 22	9 17.20	+19 45.2	2.423	3.383	4.3	23.0	1 22	9 14.91	+13 26.3	2.445	3.401	4.6	20.9
2 1	9 7.51	+20 30.8	2.404	3.387	1.3	22.7	2 1	9 7.07	+13 52.9	2.423	3.406	1.3	20.7
2 11	8 57.56	+21 12.2	2.416	3.389	3.3	22.9	2 11	8 59.03	+14 21.2	2.432	3.410	2.5	20.8
2 21	8 48.22	+21 45.9	2.460	3.391	6.6	23.1	2 21	8 51.54	+14 48.2	2.471	3.415	5.8	21.0
3 2	8 40.27	+22 9.9	2.532	3.391	9.7	23.3	3 2	8 45.29	+15 11.3	2.538	3.419	8.9	21.2
3 12	8 34.31	+22 23.7	2.628	3.390	12.3	23.5	3 12	8 40.78	+15 28.6	2.629	3.422	11.5	21.4
463611	2013 <i>SR</i> ₇₆		2 3.5 186°30	0°9/2.7	18		163535	2002 <i>TM</i> ₅₅		2 3.5 2°55	1°7/4.8	18	
1 2	9 28.61	+16 57.2	2.589	3.415	10.3	21.6	1 2	9 25.18	+9 3.1	1.894	2.719	13.5	19.3
1 12	9 22.94	+17 45.8	2.508	3.415	7.4	21.4	1 12	9 20.89	+9 37.2	1.817	2.719	10.1	19.1
1 22	9 15.61	+18 40.5	2.453	3.414	4.2	21.2	1 22	9 14.62	+10 26.3	1.764	2.719	6.3	18.9
2 1	9 7.20	+19 37.1	2.429	3.412	1.1	21.0	2 1	9 7.03	+11 27.0	1.738	2.719	2.4	18.6
2 11	8 58.49	+20 30.9	2.436	3.410	3.1	21.1	2 11	8 59.11	+12 33.7	1.741	2.720	3.2	18.7
2 21	8 50.30	+21 18.1	2.474	3.408	6.4	21.3	2 21	8 51.85	+13 40.1	1.772	2.721	7.2	18.9
3 2	8 43.36	+21 55.8	2.540	3.404	9.5	21.5	3 2	8 46.16	+14 41.0	1.829	2.722	11.0	19.2
3 12	8 38.26	+22 22.9	2.630	3.400	12.0	21.7	3 12	8 42.69	+15 32.4	1.909	2.724	14.3	19.4
492892	2014 <i>QD</i> ₄₁₃		2 3.5 209°65	0°3/3.3	18		127677	2003 <i>EW</i> ₇		2 3.5 49°11	4°6/5.9	18	
1 2	9 31.79	+15 9.9	1.943	2.772	13.1	22.6	1 2	9 30.44	+5 28.6	1.233	2.063	19.0	19.6
1 12	9 25.75	+15 46.9	1.858	2.766	9.6	22.4	1 12	9 25.35	+5 19.7	1.176	2.075	14.7	19.4
1 22	9 17.44	+16 33.4	1.799	2.760	5.5	22.1	1 22	9 17.38	+5 33.9	1.140	2.088	9.8	19.1
2 1	9 7.59	+17 24.8	1.768	2.752	1.1	21.8	2 1	9 7.60	+6 9.3	1.127	2.101	5.4	18.9
2 11	8 57.28	+18 15.2	1.767	2.744	3.5	22.0	2 11	8 57.51	+6 59.9	1.140	2.115	5.5	19.0
2 21	8 47.65	+18 59.3	1.795	2.736	7.9	22.2	2 21	8 48.65	+7 58.0	1.177	2.129	9.7	19.2
3 2	8 39.75	+19 33.7	1.850	2.726	11.8	22.4	3 2	8 42.28	+8 55.7	1.238	2.143	14.3	19.5
3 12	8 34.31	+19 56.6	1.928	2.716	15.2	22.6	3 12	8 39.13	+9 46.4	1.320	2.158	18.2	19.8
289532	2005 <i>EJ</i> ₂₀₃		2 3.5 166°65	1°9/2.2	18		169747	2002 <i>OY</i> ₂₄		2 3.5 243°95	0°9/2.8	18	
1 2	9 31.51	+22 1.3	2.225	3.061	11.4	20.7	1 2	9 29.39	+18 18.0	2.151	2.987		

EPHEMERIDES

2 3.5

2 3.5

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
237724	2001 <i>WH</i> ₁₉		2 3.5 198°26	4.4/ 7.3	17		461714	2005 <i>ST</i> ₁₁₇		2 3.5 83°26	7.3/30.2	18	
1 2	9 25.76	- 0 0.6	2.708	3.474	11.5	20.6	1 2	9 37.48	+35 20.6	1.815	2.653	13.5	21.0
1 12	9 20.78	- 0 9.2	2.618	3.472	9.3	20.4	1 12	9 29.93	+36 19.5	1.773	2.672	10.5	20.8
1 22	9 14.35	- 0 3.3	2.552	3.469	6.9	20.2	1 22	9 19.75	+37 7.9	1.755	2.691	8.0	20.7
2 1	9 6.97	+ 0 16.8	2.514	3.467	4.9	20.1	2 1	9 8.05	+37 37.3	1.765	2.710	7.3	20.7
2 11	8 59.33	+ 0 49.3	2.505	3.464	4.6	20.1	2 11	8 56.33	+37 42.6	1.802	2.728	8.8	20.9
2 21	8 52.12	+ 1 30.9	2.526	3.460	6.3	20.2	2 21	8 45.99	+37 23.2	1.865	2.747	11.3	21.0
3 2	8 46.00	+ 2 17.9	2.575	3.457	8.7	20.3	3 2	8 38.13	+36 42.4	1.951	2.765	14.0	21.3
3 12	8 41.49	+ 3 6.1	2.649	3.453	11.1	20.5	3 12	8 33.31	+35 45.3	2.058	2.783	16.3	21.5
354957	2006 <i>GU</i> ₁₅		2 3.5 199°50	1.0/ 2.8	18		285427	1999 <i>VL</i> ₁₀₃		2 3.5 147°11	1.0/ 2.8	18	
1 2	9 31.97	+17 4.2	1.988	2.820	12.7	21.9	1 2	9 32.38	+17 30.2	2.021	2.852	12.6	21.6
1 12	9 25.83	+17 46.2	1.907	2.817	9.2	21.7	1 12	9 25.95	+18 8.5	1.953	2.862	9.1	21.4
1 22	9 17.47	+18 36.1	1.851	2.813	5.3	21.4	1 22	9 17.44	+18 53.2	1.910	2.872	5.1	21.2
2 1	9 7.62	+19 28.4	1.824	2.808	1.3	21.1	2 1	9 7.61	+19 39.0	1.897	2.880	1.3	21.0
2 11	8 57.35	+20 17.3	1.827	2.803	3.8	21.3	2 11	8 57.53	+20 20.7	1.913	2.889	3.7	21.2
2 21	8 47.78	+20 58.0	1.860	2.797	8.0	21.5	2 21	8 48.26	+20 53.9	1.960	2.896	7.6	21.4
3 2	8 39.94	+21 27.3	1.919	2.790	11.7	21.8	3 2	8 40.75	+21 16.4	2.033	2.903	11.2	21.6
3 12	8 34.53	+21 44.4	2.001	2.783	14.9	22.0	3 12	8 35.60	+21 27.7	2.129	2.909	14.2	21.9
204714	2006 <i>GR</i> ₁₉		2 3.5 159°56	1.7/ 2.0	18		306967	2001 <i>VA</i> ₂₄		2 3.5 109°31	6.0/ 8.5	18	
1 2	9 28.59	+20 28.5	2.601	3.434	10.0	21.6	1 2	9 26.34	- 4 9.0	2.522	3.268	12.8	20.1
1 12	9 22.89	+21 9.7	2.529	3.439	7.2	21.4	1 12	9 21.25	- 4 36.5	2.443	3.276	10.6	20.0
1 22	9 15.56	+21 54.0	2.483	3.445	4.1	21.2	1 22	9 14.63	- 4 46.7	2.387	3.283	8.3	19.8
2 1	9 7.22	+22 37.0	2.468	3.449	1.7	21.1	2 1	9 7.05	- 4 39.1	2.358	3.291	6.5	19.7
2 11	8 58.65	+23 14.7	2.483	3.454	3.5	21.2	2 11	8 59.24	- 4 14.8	2.356	3.298	6.1	19.7
2 21	8 50.67	+23 43.8	2.529	3.457	6.6	21.4	2 21	8 51.94	- 3 37.0	2.383	3.305	7.3	19.8
3 2	8 43.99	+24 2.7	2.602	3.461	9.5	21.6	3 2	8 45.86	- 2 50.0	2.438	3.313	9.4	20.0
3 12	8 39.16	+24 11.1	2.699	3.464	11.9	21.8	3 12	8 41.49	- 1 58.8	2.516	3.320	11.6	20.1
256027	2006 <i>UF</i> ₃₈		2 3.5 93°28	0°/ 3.4	18		299458	2006 <i>BK</i> ₇₁		2 3.5 199°05	2°/ 1.5	18	
1 2	9 30.75	+14 51.4	1.736	2.572	14.1	21.2	1 2	9 33.69	+22 9.4	1.921	2.760	12.8	21.2
1 12	9 24.99	+15 20.0	1.672	2.583	10.2	21.0	1 12	9 27.22	+23 5.4	1.844	2.757	9.3	20.9
1 22	9 16.96	+15 58.3	1.632	2.594	5.9	20.8	1 22	9 18.33	+24 5.2	1.792	2.753	5.5	20.7
2 1	9 7.51	+16 41.2	1.620	2.605	1.2	20.5	2 1	9 7.83	+25 2.0	1.769	2.748	2.9	20.5
2 11	8 57.81	+17 23.2	1.637	2.615	3.6	20.7	2 11	8 56.87	+25 48.9	1.776	2.743	5.2	20.7
2 21	8 49.04	+17 59.2	1.682	2.626	8.0	21.0	2 21	8 46.70	+26 21.4	1.812	2.736	9.0	20.9
3 2	8 42.19	+18 25.9	1.752	2.636	12.0	21.2	3 2	8 38.43	+26 37.6	1.873	2.730	12.7	21.1
3 12	8 37.93	+18 42.0	1.845	2.646	15.3	21.5	3 12	8 32.81	+26 38.3	1.956	2.722	15.8	21.3
241675	2000 <i>QE</i> ₇₇		2 3.5 141°49	1°3/ 4.6	18		81401	2000 <i>GB</i> ₈₅		2 3.5 257°68	0°/ 3.0	18	
1 2	9 28.82	+ 9 40.5	2.504	3.311	11.2	22.3	1 2	9 28.21	+13 57.7	1.891	2.725	13.2	19.9
1 12	9 23.01	+10 12.3	2.432	3.324	8.3	22.1	1 12	9 23.30	+15 6.7	1.802	2.712	9.6	19.7
1 22	9 15.61	+10 54.6	2.385	3.337	5.1	21.9	1 22	9 16.15	+16 29.4	1.738	2.699	5.5	19.4
2 1	9 7.23	+11 44.4	2.369	3.350	1.9	21.7	2 1	9 7.40	+17 59.9	1.702	2.686	1.1	19.1
2 11	8 58.65	+12 37.4	2.383	3.361	2.7	21.8	2 11	8 58.09	+19 30.4	1.696	2.673	3.8	19.2
2 21	8 50.65	+13 29.5	2.428	3.372	5.9	22.0	2 21	8 49.33	+20 53.5	1.719	2.659	8.2	19.5
3 2	8 43.96	+14 17.2	2.502	3.382	9.0	22.2	3 2	8 42.21	+22 3.4	1.769	2.645	12.3	19.7
3 12	8 39.09	+14 57.9	2.601	3.392	11.6	22.4	3 12	8 37.53	+22 57.4	1.840	2.631	15.7	19.9
393880	2005 <i>TO</i> ₅₅		2 3.5 118°98	2°/ 5.2	18		494694	2004 <i>RS</i> ₉₆		2 3.5 184°18	4°/ 7.6	17	
1 2	9 32.80	+ 7 40.5	1.542	2.361	16.4	21.3	1 2	9 27.57	- 1 9.6	2.779	3.534	11.5	22.8
1 12	9 26.66	+ 7 51.1	1.477	2.373	12.4	21.1	1 12	9 22.06	- 1 7.6	2.688	3.534	9.3	22.6
1 22	9 18.00	+ 8 19.5	1.435	2.386	7.9	20.8	1 22	9 15.08	- 0 50.4	2.621	3.534	6.9	22.4
2 1	9 7.73	+ 9 2.3	1.419	2.398	3.6	20.6	2 1	9 7.15	- 0 18.3	2.583	3.533	4.9	22.3
2 11	8 57.16	+ 9 54.0	1.432	2.409	4.2	20.7	2 11	8 58.95	+ 0 26.5	2.574	3.531	4.6	22.3
2 21	8 47.62	+10 48.0	1.472	2.420	8.5	20.9	2 21	8 51.18	+ 1 20.4	2.596	3.529	6.2	22.4
3 2	8 40.23	+11 38.5	1.537	2.430	12.8	21.2	3 2	8 44.51	+ 2 19.3	2.647	3.526	8.6	22.5
3 12	8 35.70	+12 21.0	1.625	2.440	16.4	21.5	3 12	8 39.45	+ 3 18.7	2.723	3.522	11.0	22.7
56679	2000 <i>LB</i> ₈		2 3.5 277°60	2°7/ 4.8	18		46631	1994 <i>TQ</i> ₃		2 3.5 137°80	6°/ 30.3	18	
1 2	9 31.75	+ 9 52.4	1.481	2.311	16.4	18.8	1 2	9 36.66	+33 31.6	1.910	2.748	12.9	17.8
1 12	9 26.30	+ 9 42.1	1.395	2.299	12.5	18.5	1 12	9 29.38	+34 32.0	1.854	2.756	9.9	17.6
1 22	9 18.04	+ 9 46.6	1.332	2.286	7.9	18.2	1 22	9 19.51	+35 24.7	1.823	2.764	7.4	17.4
2 1	9 7.79	+10 4.1	1.294	2.274	3.4	17.9	2 1	9 8.04	+36 1.4	1.820	2.771	6.6	17.4
2 11	8 56.87	+10 30.5	1.283	2.261	4.4	17.9	2 11	8 56.36	+36 16.2	1.846	2.778	8.2	17.5
2 21	8 46.75	+11 0.6	1.299	2.248	9.3	18.1	2 21	8 45.84	+36 7.6	1.898	2.785	10.9	17.7
3 2	8 38.79	+11 29.4	1.339	2.236	14.0	18.4	3 2	8 37.60	+35 37.5	1.974	2.791	13.7	17.9
3 12	8 33.90	+11 52.7	1.400	2.223	18.2	18.6	3 12	8 32.31	+34 50.5	2.070	2.797	16.2	18.1
74695	1999 <i>RA</i> ₁₃₉		2 3.5 108°58	2°8/ 5.0	18		245433	2005 <i>JF</i> ₁₁₉		2 3.5 340°22	2°4/ 1.6	18	
1 2	9 33.31	+ 8 23.5	1.407	2.233	17.3	19.5	1 2	9 26.68	+20 36.2	1.982	2.829	12.1	20.4
1 12	9 27.22	+ 8 31.2	1.345	2.246	13.0	19.3	1 12	9 22.03	+21 33.7	1.907	2.825	8.7	20.2
1 22	9 18.39	+ 8 57.1	1.305	2.257	8.2	19.0	1 22	9 15.31	+22 36.6	1.858	2.821	5.1	19.9
2 1	9 7.82	+ 9 37.7	1.290	2.269	3.6	18.8	2 1	9 7.21	+23 38.9	1.837	2.818	2.4	19.7
2 11	8 56.93	+10 27.1	1.302	2.280	4.4	18.8	2 11	8 58.75	+24 34.0	1.845	2.814	4.6	19.9
2 21	8 47.17	+11 18.4	1.342	2.291	9.0	19.1	2 21	8 50.97	+25 17.1	1.881	2.812	8.3	20.1
3 2	8 39.77	+12 5.6	1.406	2.302	13.5	19.4	3 2	8 44.82	+25 45.5	1.943	2.809	11.8	20.3
3 12	8 35.45	+12 44.2	1.491	2.312	17.4	19.7	3 12	8 40.98	+25 58.9	2.026	2.807	14.8	20.5
52867	1998 <i>SD</i> ₂₅		2 3.5 186°19	3°7/ 1.2	18		500377	2012 <i>TB</i> ₅₉		2 3.5 87°60	4°1/ 6.9	18	
1 2	9 35.58												

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
227574	2005 YR ₂₂₃	2	3.5 232°16	3°0/31.9 17			374106	2004 RP ₃₅₆	2	3.5 118°55	2°7/ 5.7 18		
1 2	9 29.62	+23 12.6	2.296	3.135	11.0	20.8	1 2	9 28.08	+ 6 1.8	2.198	2.998	12.8	22.1
1 12	9 24.03	+24 17.9	2.211	3.124	8.0	20.6	1 12	9 22.67	+ 6 19.3	2.126	3.011	9.7	22.0
1 22	9 16.43	+25 26.5	2.153	3.112	4.9	20.3	1 22	9 15.52	+ 6 51.1	2.080	3.023	6.4	21.8
2 1	9 7.46	+26 32.3	2.124	3.100	3.0	20.2	2 1	9 7.28	+ 7 34.8	2.061	3.036	3.3	21.6
2 11	8 58.03	+27 29.1	2.126	3.087	5.0	20.3	2 11	8 58.82	+ 8 26.3	2.072	3.047	3.4	21.6
2 21	8 49.15	+28 12.5	2.157	3.074	8.2	20.5	2 21	8 51.02	+ 9 20.9	2.113	3.059	6.5	21.8
3 2	8 41.76	+28 40.3	2.214	3.061	11.4	20.7	3 2	8 44.65	+10 14.1	2.181	3.070	9.7	22.1
3 12	8 36.54	+28 52.8	2.294	3.047	14.1	20.8	3 12	8 40.28	+11 2.0	2.274	3.080	12.6	22.3
128776	2004 RZ ₁₉₆	2	3.5 221°81	2°0/ 4.9 17			195781	2002 PL ₁₆₂	2	3.5 60°89	1°0/ 2.8 18		
1 2	9 29.77	+ 9 19.6	2.380	3.186	11.7	20.8	1 2	9 30.17	+18 20.7	1.926	2.765	12.8	20.5
1 12	9 23.92	+ 9 18.9	2.286	3.177	8.9	20.6	1 12	9 24.34	+18 42.2	1.869	2.782	9.2	20.3
1 22	9 16.27	+ 9 28.3	2.218	3.167	5.6	20.4	1 22	9 16.50	+19 8.6	1.837	2.799	5.2	20.1
2 1	9 7.42	+ 9 46.2	2.179	3.157	2.5	20.2	2 1	9 7.47	+19 35.5	1.833	2.817	1.3	19.8
2 11	8 58.20	+10 9.8	2.170	3.146	3.1	20.2	2 11	8 58.30	+19 58.3	1.858	2.834	3.6	20.1
2 21	8 49.50	+10 35.9	2.191	3.135	6.4	20.4	2 21	8 50.05	+20 13.7	1.912	2.852	7.5	20.3
3 2	8 42.12	+11 1.1	2.241	3.124	9.8	20.6	3 2	8 43.58	+20 20.0	1.992	2.869	11.1	20.6
3 12	8 36.69	+11 23.0	2.314	3.111	12.7	20.7	3 12	8 39.46	+20 17.0	2.094	2.887	14.0	20.8
109279	2001 QF ₁₁₈	2	3.5 249°45	1°0/ 2.9 18			377293	2004 FF ₅₈	2	3.5 9°06	7°4/30.7 18		
1 2	9 33.51	+18 59.6	1.981	2.814	12.7	20.1	1 2	9 32.23	+33 59.6	1.510	2.366	14.7	19.9
1 12	9 27.03	+19 8.7	1.891	2.801	9.3	19.8	1 12	9 26.62	+34 41.3	1.458	2.369	11.4	19.7
1 22	9 18.22	+19 22.0	1.825	2.787	5.3	19.6	1 22	9 18.10	+35 13.2	1.428	2.374	8.5	19.5
2 1	9 7.83	+19 35.4	1.788	2.772	1.3	19.3	2 1	9 7.80	+35 26.5	1.423	2.379	7.5	19.5
2 11	8 56.97	+19 44.5	1.781	2.757	3.8	19.4	2 11	8 57.35	+35 15.6	1.444	2.386	9.1	19.6
2 21	8 46.80	+19 46.5	1.804	2.742	8.0	19.6	2 21	8 48.28	+34 39.6	1.490	2.394	12.2	19.8
3 2	8 38.41	+19 39.6	1.853	2.727	11.9	19.8	3 2	8 41.82	+33 41.9	1.558	2.403	15.4	20.0
3 12	8 32.55	+19 23.9	1.924	2.711	15.3	20.0	3 12	8 38.58	+32 27.9	1.645	2.413	18.2	20.2
348512	2005 TT ₁₉₆	2	3.5 54°01	3°6/ 1.3 18			144479	2004 EW ₅₇	2	3.5 156°54	3°4/ 6.9 18		
1 2	9 30.81	+19 51.3	1.253	2.115	16.7	20.1	1 2	9 24.95	+ 1 43.7	2.651	3.429	11.5	20.4
1 12	9 25.88	+21 22.2	1.198	2.123	12.0	19.9	1 12	9 20.23	+ 2 10.8	2.567	3.433	9.0	20.2
1 22	9 17.85	+23 2.8	1.166	2.131	7.0	19.6	1 22	9 14.08	+ 2 53.2	2.507	3.436	6.3	20.1
2 1	9 7.77	+24 41.6	1.159	2.139	3.6	19.4	2 1	9 6.99	+ 3 49.3	2.475	3.440	3.9	19.9
2 11	8 57.26	+26 6.5	1.179	2.148	6.7	19.6	2 11	8 59.67	+ 4 55.5	2.474	3.443	3.7	19.9
2 21	8 48.00	+27 9.2	1.224	2.157	11.6	19.9	2 21	8 52.81	+ 6 7.4	2.503	3.446	5.8	20.0
3 2	8 41.39	+27 46.9	1.292	2.166	16.0	20.2	3 2	8 47.05	+ 7 20.2	2.562	3.449	8.5	20.2
3 12	8 38.24	+28 0.8	1.378	2.176	19.7	20.5	3 12	8 42.91	+ 8 29.5	2.645	3.452	11.0	20.4
370480	2003 KY ₃₀	2	3.5 191°61	3°6/ 6.4 16			496676	2016 CY ₁₀₆	2	3.5 199°31	3°7/ 6.3 18		
1 2	9 27.64	+ 3 14.7	2.366	3.151	12.4	22.0	1 2	9 28.26	+ 3 36.4	1.968	2.765	14.2	21.4
1 12	9 22.35	+ 3 22.4	2.278	3.150	9.7	21.8	1 12	9 23.11	+ 3 53.2	1.883	2.763	11.1	21.2
1 22	9 15.35	+ 3 45.3	2.215	3.148	6.8	21.6	1 22	9 15.93	+ 4 28.4	1.822	2.761	7.6	21.0
2 1	9 7.24	+ 4 22.1	2.179	3.146	4.1	21.5	2 1	9 7.39	+ 5 20.3	1.788	2.758	4.4	20.8
2 11	8 58.81	+ 5 9.7	2.174	3.144	4.0	21.4	2 11	8 58.46	+ 6 24.5	1.783	2.755	4.3	20.7
2 21	8 50.90	+ 6 4.0	2.198	3.140	6.5	21.6	2 21	8 50.14	+ 7 35.2	1.806	2.752	7.4	20.9
3 2	8 44.27	+ 7 0.1	2.250	3.137	9.6	21.8	3 2	8 43.37	+ 8 46.2	1.857	2.748	11.0	21.1
3 12	8 39.52	+ 7 53.8	2.327	3.133	12.4	22.0	3 12	8 38.83	+ 9 52.1	1.931	2.745	14.2	21.3
359244	2009 FO ₁	2	3.5 247°61	3°3/ 5.8 18			517189	2013 TG ₁₆₃	2	3.5 161°29	2°9/ 1.2 16		
1 2	9 28.27	+ 5 5.5	1.722	2.533	15.3	20.4	1 2	9 31.79	+25 11.0	2.545	3.378	10.2	22.1
1 12	9 23.41	+ 5 31.9	1.636	2.526	11.8	20.2	1 12	9 25.26	+25 47.4	2.476	3.384	7.4	22.0
1 22	9 16.23	+ 6 18.7	1.573	2.519	7.8	19.9	1 22	9 16.97	+26 23.2	2.433	3.390	4.6	21.8
2 1	9 7.45	+ 7 23.5	1.536	2.511	4.1	19.7	2 1	9 7.58	+26 53.6	2.421	3.395	2.9	21.7
2 11	8 58.15	+ 8 40.7	1.527	2.504	4.2	19.7	2 11	8 57.99	+27 14.7	2.439	3.400	4.5	21.8
2 21	8 49.50	+10 3.0	1.547	2.496	8.1	19.9	2 21	8 49.09	+27 24.2	2.487	3.404	7.3	22.0
3 2	8 42.61	+11 22.9	1.592	2.488	12.3	20.1	3 2	8 41.67	+27 21.4	2.562	3.408	10.1	22.2
3 12	8 38.26	+12 34.4	1.661	2.480	15.9	20.3	3 12	8 36.27	+27 7.4	2.661	3.411	12.4	22.3
40748	1999 TO ₅	2	3.5 152°91	2°4/ 1.8 18			380236	2001 TY ₁₆	2	3.5 38°54	10°1/28.9 18		
1 2	9 33.73	+21 49.6	2.057	2.892	12.2	19.7	1 2	9 40.33	+45 5.9	1.867	2.683	14.1	19.8
1 12	9 26.96	+22 33.1	1.990	2.901	8.8	19.5	1 12	9 32.14	+45 56.4	1.832	2.700	11.9	19.7
1 22	9 18.05	+23 19.1	1.949	2.910	5.2	19.3	1 22	9 21.04	+46 27.8	1.820	2.718	10.4	19.6
2 1	9 7.79	+24 1.9	1.938	2.918	2.5	19.1	2 1	9 8.37	+46 31.8	1.833	2.735	10.1	19.7
2 11	8 57.27	+24 36.0	1.957	2.925	4.5	19.3	2 11	8 55.87	+46 4.6	1.872	2.754	11.2	19.8
2 21	8 47.61	+24 57.8	2.004	2.931	8.2	19.5	2 21	8 45.11	+45 8.1	1.934	2.772	13.0	19.9
3 2	8 39.75	+25 6.3	2.079	2.937	11.5	19.7	3 2	8 37.21	+43 47.9	2.019	2.791	15.0	20.1
3 12	8 34.34	+25 2.0	2.176	2.942	14.4	19.9	3 12	8 32.68	+42 11.2	2.123	2.811	16.9	20.3
400354	2007 VV ₁₀₉	2	3.5 169°93	6°1/ 7.9 18			44154	1998 HZ ₁₂₂	2	3.5 310°37	3°7/ 6.1 18		
1 2	9 31.06	- 3 9.7	2.265	3.014	14.0	22.4	1 2	9 25.99	+ 4 31.3	1.792	2.602	14.8	19.2
1 12	9 24.84	- 3 30.7	2.181	3.020	11.5	22.2	1 12	9 21.69	+ 4 48.3	1.704	2.592	11.5	18.9
1 22	9 16.79	- 3 32.9	2.121	3.024	8.8	22.0	1 22	9 15.23	+ 5 24.9	1.639	2.582	7.8	18.7
2 1	9 7.54	- 3 15.6	2.087	3.028	6.7	21.9	2 1	9 7.28	+ 6 19.2	1.600	2.573	4.4	18.5
2 11	8 57.97	- 2 40.6	2.082	3.031	6.2	21.9	2 11	8 58.84	+ 7 26.7	1.588	2.563	4.3	18.4
2 21	8 48.98	- 1 51.7	2.106	3.033	7.8	22.0	2 21	8 51.01	+ 8 40.9	1.605	2.554	7.8	18.6
3 2	8 41.43	- 0 54.2	2.158	3.034	10.4	22.1	3 2	8 44.80	+ 9 54.9	1.648	2.545	11.8	18.8
3 12	8 35.91	+ 0 6.3	2.234	3.034	13.0	22.3	3 12	8 40.97	+11 2.7	1.713	2.537	15.3	19.0
163522	2002 TD ₂₂	2	3.5 186°85	0°1/ 3.6 18			206790	2004 DD ₁₃	2	3.5 240°64	3°2/ 6.6 18		
1 2	9 27.54	+14 31.4	2.473	3.297	10.8	20.6	1 2	9 24.81	+ 2 52.0	2.530	3.316	11.7	20.1
1 12	9 22.23												

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
123543	2000 XG ₂₂		2 3.5 44°74	0°7/ 3.9 18			456334	2006 SN ₃₆₆		2 3.5 25°93	3°5/ 1.9 16		
1 2	9 31.61	+14 50.1	1.660	2.497	14.6	19.4	1 2	9 30.34	+22 20.2	1.144	2.014	17.3	20.9
1 12	9 25.66	+14 43.0	1.598	2.508	10.7	19.2	1 12	9 25.51	+22 56.1	1.102	2.030	12.5	20.7
1 22	9 17.39	+14 44.2	1.560	2.520	6.2	19.0	1 22	9 17.56	+23 35.1	1.081	2.047	7.3	20.5
2 1	9 7.70	+14 50.4	1.549	2.532	1.5	18.7	2 1	9 7.77	+24 8.6	1.085	2.066	3.5	20.3
2 11	8 57.82	+14 57.9	1.566	2.545	3.5	18.8	2 11	8 57.88	+24 29.0	1.113	2.086	6.3	20.5
2 21	8 48.97	+15 3.2	1.611	2.558	8.0	19.1	2 21	8 49.56	+24 32.4	1.166	2.107	11.1	20.8
3 2	8 42.16	+15 4.1	1.681	2.571	12.0	19.4	3 2	8 44.04	+24 18.7	1.240	2.129	15.5	21.2
3 12	8 38.00	+14 59.0	1.774	2.585	15.4	19.7	3 12	8 41.93	+23 50.2	1.333	2.152	19.1	21.5
82741	2001 QN ₁		2 3.5 82°70	0°2/ 3.3 18			67273	2000 FZ ₃₂		2 3.5 172°94	4°3/ 30.8 18		
1 2	9 28.08	+15 22.9	2.277	3.105	11.4	20.3	1 2	9 31.62	+26 19.4	2.175	3.015	11.4	19.5
1 12	9 22.61	+15 54.3	2.217	3.124	8.2	20.1	1 12	9 25.57	+27 42.6	2.107	3.018	8.4	19.3
1 22	9 15.46	+16 32.5	2.182	3.143	4.7	19.9	1 22	9 17.37	+29 6.3	2.067	3.021	5.5	19.1
2 1	9 7.30	+17 13.6	2.177	3.161	0.9	19.6	2 1	9 7.75	+30 22.9	2.056	3.023	4.3	19.1
2 11	8 59.00	+17 53.2	2.202	3.180	2.9	19.8	2 11	8 57.75	+31 25.5	2.075	3.024	6.1	19.2
2 21	8 51.41	+18 27.7	2.257	3.198	6.5	20.1	2 21	8 48.45	+32 10.0	2.122	3.025	9.1	19.3
3 2	8 45.28	+18 54.4	2.339	3.216	9.6	20.3	3 2	8 40.85	+32 35.0	2.195	3.025	12.1	19.5
3 12	8 41.11	+19 12.2	2.445	3.234	12.3	20.5	3 12	8 35.63	+32 42.1	2.290	3.025	14.6	19.7
240593	2004 TJ ₂₇₈		2 3.5 231°00	4°5/ 31.7 18			420004	2011 CP ₄₉		2 3.5 75°20	0°4/ 3.8 18		
1 2	9 33.40	+24 57.4	1.649	2.498	14.0	20.4	1 2	9 30.58	+14 33.1	1.829	2.662	13.6	21.6
1 12	9 27.44	+26 4.2	1.576	2.492	10.3	20.1	1 12	9 24.84	+14 43.4	1.761	2.670	10.0	21.4
1 22	9 18.68	+27 13.4	1.526	2.485	6.5	19.9	1 22	9 16.93	+15 2.5	1.717	2.677	5.8	21.2
2 1	9 8.01	+28 16.1	1.505	2.478	4.5	19.7	2 1	9 7.65	+15 26.5	1.701	2.685	1.3	20.9
2 11	8 56.79	+29 3.9	1.511	2.471	6.8	19.9	2 11	8 58.13	+15 51.0	1.713	2.692	3.3	21.0
2 21	8 46.50	+29 31.7	1.544	2.463	10.7	20.1	2 21	8 49.46	+16 12.1	1.754	2.700	7.6	21.3
3 2	8 38.44	+29 38.4	1.602	2.455	14.6	20.3	3 2	8 42.62	+16 27.0	1.821	2.707	11.5	21.6
3 12	8 33.44	+29 26.1	1.678	2.447	17.9	20.5	3 12	8 38.23	+16 34.1	1.911	2.715	14.7	21.8
503106	2015 FS ₃₁₆		2 3.5 230°40	1°2/ 2.4 17			520939	2014 XM ₄₃		2 3.5 256°82	3°1/ 31.9 17		
1 2	9 26.23	+18 38.8	2.634	3.467	9.9	21.5	1 2	9 27.83	+22 58.6	2.193	3.037	11.2	20.9
1 12	9 21.28	+19 20.8	2.550	3.461	7.2	21.4	1 12	9 22.79	+24 5.9	2.117	3.032	8.1	20.7
1 22	9 14.74	+20 7.7	2.494	3.456	4.1	21.1	1 22	9 15.78	+25 16.7	2.067	3.027	4.9	20.5
2 1	9 7.17	+20 55.4	2.467	3.450	1.3	20.9	2 1	9 7.43	+26 24.5	2.046	3.022	3.1	20.4
2 11	8 59.32	+21 39.7	2.471	3.444	3.2	21.1	2 11	8 58.71	+27 23.1	2.055	3.017	5.0	20.5
2 21	8 51.94	+22 17.0	2.505	3.438	6.4	21.3	2 21	8 50.60	+28 8.0	2.092	3.012	8.3	20.7
3 2	8 45.77	+22 45.1	2.567	3.432	9.3	21.4	3 2	8 44.01	+28 37.0	2.156	3.007	11.4	20.9
3 12	8 41.34	+23 3.0	2.652	3.426	11.9	21.6	3 12	8 39.61	+28 50.3	2.241	3.002	14.2	21.0
280763	2005 RU ₂		2 3.5 110°41	3°0/ 5.4 17			454675	2014 QZ ₃₈₇		2 3.5 358°03	3°4/ 2.2 18		
1 2	9 33.79	+ 6 50.9	1.606	2.418	16.2	20.6	1 2	9 33.73	+23 47.3	1.241	2.104	16.8	20.2
1 12	9 27.25	+ 7 6.0	1.547	2.439	12.2	20.4	1 12	9 28.12	+23 54.4	1.177	2.101	12.3	19.9
1 22	9 18.31	+ 7 38.9	1.511	2.459	7.8	20.2	1 22	9 19.21	+24 1.8	1.134	2.099	7.3	19.6
2 1	9 7.90	+ 8 26.2	1.501	2.478	3.8	20.0	2 1	9 8.15	+24 2.3	1.116	2.097	3.4	19.4
2 11	8 57.29	+ 9 22.1	1.520	2.497	4.1	20.1	2 11	8 56.70	+23 50.2	1.124	2.097	6.1	19.5
2 21	8 47.74	+10 20.2	1.568	2.515	8.2	20.4	2 21	8 46.63	+23 22.9	1.157	2.098	11.2	19.8
3 2	8 40.30	+11 14.6	1.641	2.532	12.2	20.6	3 2	8 39.41	+22 41.4	1.212	2.099	15.9	20.1
3 12	8 35.62	+12 1.0	1.737	2.549	15.7	20.9	3 12	8 35.80	+21 48.7	1.286	2.102	19.8	20.4
19131	1988 CY ₃		2 3.5 84°48	4°6/ 6.9 18			159006	2004 SH ₅₄		2 3.5 186°34	3°5/ 31.9 18		
1 2	9 28.78	+ 2 1.5	1.953	2.742	14.6	18.6	1 2	9 34.97	+24 31.4	2.087	2.923	12.1	20.9
1 12	9 23.33	+ 1 55.1	1.888	2.759	11.5	18.4	1 12	9 28.03	+25 30.1	2.013	2.923	8.8	20.6
1 22	9 15.96	+ 2 6.8	1.845	2.776	8.1	18.2	1 22	9 18.80	+26 30.1	1.965	2.922	5.5	20.4
2 1	9 7.42	+ 2 35.6	1.829	2.792	5.3	18.1	2 1	9 8.06	+27 24.4	1.946	2.921	3.5	20.3
2 11	8 58.69	+ 3 18.0	1.842	2.809	5.0	18.1	2 11	8 56.92	+28 6.8	1.958	2.918	5.5	20.4
2 21	8 50.72	+ 4 9.1	1.883	2.825	7.5	18.3	2 21	8 46.56	+28 33.3	1.999	2.915	8.9	20.6
3 2	8 44.37	+ 5 3.5	1.950	2.841	10.6	18.5	3 2	8 38.03	+28 43.2	2.066	2.910	12.2	20.8
3 12	8 40.21	+ 5 55.9	2.041	2.857	13.5	18.7	3 12	8 32.04	+28 37.6	2.155	2.905	15.0	21.0
32403	2000 QK ₂₄₉		2 3.5 287°77	1°3/ 2.4 18			402636	2006 TS ₉₉		2 3.5 112°34	1°2/ 2.7 18		
1 2	9 26.49	+18 19.9	2.302	3.139	11.0	18.8	1 2	9 32.15	+17 56.0	1.890	2.726	13.1	21.9
1 12	9 21.68	+19 3.1	2.218	3.131	8.0	18.6	1 12	9 25.90	+18 35.9	1.830	2.742	9.4	21.7
1 22	9 15.07	+19 52.3	2.161	3.124	4.5	18.3	1 22	9 17.49	+19 21.9	1.795	2.757	5.3	21.5
2 1	9 7.26	+20 42.9	2.133	3.116	1.4	18.1	2 1	9 7.77	+20 8.5	1.788	2.772	1.5	21.3
2 11	8 59.11	+21 30.0	2.134	3.108	3.5	18.2	2 11	8 57.85	+20 50.0	1.811	2.786	3.9	21.5
2 21	8 51.50	+22 9.5	2.165	3.101	7.1	18.5	2 21	8 48.84	+21 22.2	1.863	2.800	7.9	21.7
3 2	8 45.26	+22 38.6	2.223	3.093	10.4	18.6	3 2	8 41.69	+21 42.8	1.941	2.813	11.5	22.0
3 12	8 41.01	+22 56.2	2.303	3.085	13.2	18.8	3 12	8 37.02	+21 51.5	2.041	2.827	14.6	22.2
59054	1998 UY ₅		2 3.5 106°77	2°8/ 1.5 18			422979	2003 PX ₁₀		2 3.5 203°07	2°7/ 31.9 17		
1 2	9 33.89	+22 19.7	1.998	2.835	12.4	20.2	1 2	9 29.60	+23 47.8	2.677	3.511	9.8	21.9
1 12	9 27.02	+23 15.3	1.947	2.859	8.9	20.0	1 12	9 23.77	+24 46.6	2.596	3.505	7.1	21.7
1 22	9 18.05	+24 12.7	1.923	2.883	5.3	19.9	1 22	9 16.22	+25 47.1	2.542	3.500	4.3	21.5
2 1	9 7.84	+25 5.4	1.928	2.906	2.8	19.7	2 1	9 7.53	+26 44.3	2.518	3.493	2.7	21.4
2 11	8 57.52	+25 47.4	1.963	2.929	4.8	19.9	2 11	8 58.50	+27 33.1	2.526	3.486	4.4	21.5
2 21	8 48.19	+26 15.5	2.027	2.950	8.3	20.2	2 21	8 49.96	+28 10.3	2.563	3.478	7.2	21.7
3 2	8 40.74	+26 28.8	2.117	2.971	11.5	20.4	3 2	8 42.72	+28 34.0	2.628	3.470	10.0	21.8
3 12	8 35.76	+26 28.2	2.229	2.992	14.2	20.6	3 12	8 37.35	+28 44.6	2.716	3.461	12.3	22.0
243263	2007 YB ₄₉		2 3.5 115°08	4°5/ 29.6 18			104059	2000 EZ ₁₇		2 3.5 228°88	1°6/ 2.2 18		
1 2	9 27.78	+27 39.1	2.481	3.324	10.1	19.8	1 2	9 29.30	+16 50.9	1.977	2.814	12.6	20.1
1 12	9 22.63	+29											

EPHEMERIDES

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
457090	2008 <i>ET</i> ₁₂₃		2 3.5 312°16	1.4°/ 2.9	17		171336	2006 <i>JT</i> ₅₄		2 3.5 263°84	2.8°/ 5.2	18	
1 2	9 34.19	+20 19.1	1.534	2.381	15.0	21.4	1 2	9 30.77	+ 8 0.8	1.764	2.580	14.8	21.1
1 12	9 28.08	+20 14.3	1.452	2.368	11.0	21.2	1 12	9 25.38	+ 8 6.6	1.665	2.560	11.4	20.8
1 22	9 19.10	+20 12.6	1.393	2.356	6.4	20.9	1 22	9 17.53	+ 8 28.2	1.590	2.540	7.3	20.6
2 1	9 8.16	+20 9.1	1.361	2.344	1.7	20.5	2 1	9 7.89	+ 9 3.8	1.541	2.519	3.5	20.3
2 11	8 56.69	+19 59.5	1.356	2.333	4.5	20.7	2 11	8 57.56	+ 9 49.4	1.521	2.498	4.0	20.3
2 21	8 46.19	+19 40.9	1.379	2.322	9.5	21.0	2 21	8 47.77	+10 39.5	1.529	2.477	8.3	20.5
3 2	8 37.99	+19 12.9	1.426	2.311	14.1	21.2	3 2	8 39.72	+11 28.4	1.563	2.455	12.7	20.7
3 12	8 32.95	+18 36.3	1.494	2.301	18.0	21.4	3 12	8 34.29	+12 11.4	1.619	2.433	16.5	20.9
11777	Hargrave		2 3.5 226°34	1.0°/ 2.9	18		461690	2005 <i>NG</i> ₁₂₅		2 3.5 160°16	0.2°/ 3.4	18	
1 2	9 32.64	+17 33.2	1.986	2.817	12.7	20.3	1 2	9 34.65	+17 18.2	2.160	2.984	12.1	21.7
1 12	9 26.46	+18 6.7	1.897	2.807	9.3	20.0	1 12	9 27.53	+17 17.5	2.085	2.990	8.8	21.5
1 22	9 17.98	+18 47.3	1.834	2.795	5.3	19.8	1 22	9 18.40	+17 21.1	2.035	2.995	5.1	21.2
2 1	9 7.93	+19 30.1	1.799	2.783	1.3	19.5	2 1	9 8.01	+17 25.8	2.015	3.000	1.0	21.0
2 11	8 57.37	+20 9.6	1.794	2.770	3.8	19.6	2 11	8 57.40	+17 28.4	2.026	3.004	3.1	21.1
2 21	8 47.46	+20 41.2	1.819	2.756	8.1	19.9	2 21	8 47.58	+17 26.7	2.068	3.008	7.1	21.4
3 2	8 39.27	+21 2.2	1.870	2.742	11.9	20.1	3 2	8 39.47	+17 19.2	2.137	3.011	10.6	21.6
3 12	8 33.55	+21 11.5	1.944	2.727	15.3	20.3	3 12	8 33.65	+17 5.6	2.229	3.013	13.5	21.8
145604	2006 <i>QD</i> ₂₅		2 3.5 213°56	0.1°/ 3.4	18		262574	2006 <i>VH</i> ₆₀		2 3.5 170°69	0.4°/ 3.2	18	
1 2	9 33.62	+16 13.4	2.121	2.945	12.3	20.8	1 2	9 30.75	+15 31.5	2.125	2.953	12.2	21.6
1 12	9 26.97	+16 24.9	2.032	2.937	9.0	20.6	1 12	9 24.83	+16 9.2	2.049	2.956	8.8	21.4
1 22	9 18.18	+16 42.7	1.969	2.929	5.2	20.3	1 22	9 16.92	+16 54.9	1.999	2.959	5.1	21.2
2 1	9 7.96	+17 3.2	1.935	2.920	1.0	20.0	2 1	9 7.73	+17 44.1	1.977	2.962	1.0	20.9
2 11	8 57.32	+17 22.4	1.932	2.910	3.2	20.2	2 11	8 58.22	+18 31.7	1.986	2.963	3.3	21.1
2 21	8 47.34	+17 36.9	1.959	2.899	7.4	20.4	2 21	8 49.39	+19 13.1	2.025	2.965	7.2	21.3
3 2	8 39.01	+17 44.5	2.014	2.888	11.1	20.6	3 2	8 42.15	+19 45.4	2.091	2.966	10.7	21.5
3 12	8 33.01	+17 44.4	2.091	2.876	14.3	20.8	3 12	8 37.11	+20 7.0	2.180	2.966	13.7	21.7
451418	2011 <i>QN</i> ₅₆		2 3.5 81°10	0.7°/ 3.9	16		403568	2010 <i>NJ</i> ₆		2 3.5 178°45	1.2°/ 4.3	18	
1 2	9 34.05	+12 48.4	1.487	2.321	16.1	22.0	1 2	9 32.49	+12 17.1	1.934	2.754	13.5	21.2
1 12	9 27.54	+13 12.7	1.437	2.345	11.8	21.8	1 12	9 26.22	+12 24.5	1.855	2.756	10.0	21.0
1 22	9 18.52	+13 49.5	1.410	2.370	6.9	21.5	1 22	9 17.78	+12 42.1	1.801	2.757	6.0	20.8
2 1	9 8.00	+14 33.6	1.410	2.394	1.7	21.3	2 1	9 7.91	+13 6.9	1.775	2.758	1.9	20.5
2 11	8 57.38	+15 18.3	1.439	2.418	3.7	21.5	2 11	8 57.70	+13 34.6	1.779	2.758	3.3	20.6
2 21	8 48.00	+15 58.1	1.494	2.441	8.6	21.8	2 21	8 48.24	+14 1.3	1.812	2.757	7.5	20.8
3 2	8 40.93	+16 29.1	1.575	2.464	12.8	22.1	3 2	8 40.53	+14 23.6	1.872	2.756	11.3	21.1
3 12	8 36.76	+16 49.4	1.678	2.487	16.2	22.4	3 12	8 35.24	+14 39.3	1.955	2.755	14.6	21.3
231830	2000 <i>LW</i> ₁		2 3.5 219°54	11°1/13.0	18		180008	2002 <i>YZ</i> ₁₈		2 3.5 97°05	1°5/ 4.6	18	
1 2	9 30.58	-23 30.6	2.831	3.415	14.6	21.7	1 2	9 31.70	+10 38.0	1.868	2.687	13.9	20.3
1 12	9 24.54	-24 39.9	2.732	3.403	13.5	21.6	1 12	9 25.51	+10 54.3	1.809	2.708	10.3	20.1
1 22	9 16.74	-25 26.6	2.651	3.390	12.4	21.5	1 22	9 17.27	+11 22.7	1.774	2.728	6.2	19.9
2 1	9 7.68	-25 46.4	2.591	3.377	11.5	21.4	2 1	9 7.79	+11 59.7	1.767	2.748	2.2	19.7
2 11	8 58.11	-25 37.4	2.555	3.362	11.1	21.4	2 11	8 58.15	+12 40.3	1.789	2.768	3.3	19.8
2 21	8 48.88	-25 0.5	2.542	3.347	11.3	21.3	2 21	8 49.43	+13 19.8	1.841	2.787	7.3	20.1
3 2	8 40.80	-23 59.6	2.553	3.331	12.1	21.4	3 2	8 42.51	+13 54.5	1.919	2.806	10.9	20.3
3 12	8 34.51	-22 40.8	2.586	3.315	13.3	21.4	3 12	8 37.98	+14 21.7	2.020	2.824	14.0	20.6
26796	1978 <i>VO</i> ₆		2 3.5 162°77	1°6/ 4.4	18		415884	2001 <i>TU</i>		2 3.5 124°79	10°2/14.6	18	
1 2	9 33.51	+11 13.9	1.636	2.461	15.3	18.8	1 2	9 31.18	-21 54.2	2.753	3.353	14.7	22.3
1 12	9 27.25	+11 22.6	1.563	2.466	11.4	18.5	1 12	9 24.74	-22 45.8	2.687	3.376	13.4	22.2
1 22	9 18.47	+11 44.5	1.513	2.469	6.9	18.3	1 22	9 16.70	-23 13.0	2.639	3.399	12.0	22.1
2 1	9 8.03	+12 16.0	1.490	2.472	2.4	18.0	2 1	9 7.67	-23 12.9	2.613	3.420	10.8	22.0
2 11	8 57.20	+12 52.3	1.496	2.475	3.7	18.1	2 11	8 58.44	-22 45.4	2.611	3.441	10.2	22.0
2 21	8 47.29	+13 27.9	1.530	2.477	8.4	18.4	2 21	8 49.80	-21 53.2	2.634	3.461	10.3	22.1
3 2	8 39.45	+13 58.6	1.590	2.479	12.7	18.6	3 2	8 42.45	-20 41.4	2.682	3.480	11.1	22.1
3 12	8 34.41	+14 21.5	1.671	2.480	16.3	18.9	3 12	8 36.93	-19 16.6	2.754	3.498	12.2	22.3
296239	2009 <i>CY</i> ₅₉		2 3.5 275°75	0°5/ 3.8	16		399483	2002 <i>SN</i> ₂₉		2 3.5 101°69	2°3/ 5.3	18	
1 2	9 30.70	+13 43.5	1.669	2.504	14.6	21.5	1 2	9 31.88	+ 7 26.1	2.033	2.836	13.6	22.3
1 12	9 25.43	+14 3.7	1.578	2.487	10.8	21.2	1 12	9 25.45	+ 7 50.4	1.976	2.864	10.2	22.1
1 22	9 17.58	+14 35.8	1.510	2.470	6.4	20.9	1 22	9 17.15	+ 8 28.6	1.944	2.892	6.4	21.9
2 1	9 7.88	+15 15.8	1.469	2.453	1.5	20.6	2 1	9 7.76	+ 9 17.3	1.941	2.918	2.9	21.8
2 11	8 57.53	+15 58.1	1.456	2.436	3.7	20.7	2 11	8 58.26	+10 11.8	1.967	2.944	3.3	21.8
2 21	8 47.85	+16 37.0	1.472	2.418	8.7	20.9	2 21	8 49.61	+11 6.7	2.024	2.969	6.8	22.1
3 2	8 40.08	+17 8.1	1.512	2.400	13.2	21.2	3 2	8 42.63	+11 57.8	2.108	2.994	10.2	22.4
3 12	8 35.09	+17 28.7	1.573	2.383	17.1	21.4	3 12	8 37.87	+12 41.6	2.217	3.017	13.1	22.6
104000	2000 <i>DM</i> ₉₉		2 3.5 92°76	6°1/31.8	18		323465	2004 <i>KM</i> ₁₂		2 3.5 200°17	3°8/ 6.9	17	
1 2	9 39.27	+29 24.4	1.390	2.242	16.0	19.4	1 2	9 28.24	+ 1 32.9	2.666	3.436	11.6	22.3
1 12	9 31.88	+30 10.3	1.338	2.252	12.0	19.2	1 12	9 22.70	+ 1 41.5	2.571	3.432	9.2	22.1
1 22	9 21.23	+30 50.8	1.308	2.262	8.1	19.0	1 22	9 15.60	+ 2 4.7	2.501	3.426	6.6	22.0
2 1	9 8.59	+31 15.8	1.304	2.272	6.1	18.9	2 1	9 7.47	+ 2 41.6	2.459	3.420	4.3	21.8
2 11	8 55.77	+31 18.5	1.327	2.282	8.2	19.1	2 11	8 59.00	+ 3 29.8	2.447	3.413	4.0	21.8
2 21	8 44.54	+30 57.2	1.375	2.292	12.0	19.3	2 21	8 50.97	+ 4 25.2	2.466	3.405	6.1	21.9
3 2	8 36.26	+30 15.0	1.447	2.301	15.8	19.6	3 2	8 44.07	+ 5 23.8	2.514	3.396	8.9	22.1
3 12	8 31.61	+29 17.0	1.537	2.310	19.1	19.8	3 12	8 38.85	+ 6 21.1	2.588	3.387	11.4	22.2
427313	2014 <i>WQ</i> ₂₈₆		2 3.5 92°41	0°4/ 3.9	18		268101	2004 <i>RA</i> ₃₂₁		2 3.5 58°96	1°7/ 4.6	18	
1 2	9 28.31	+12 24.6	1.859	2.690	13.5	20.5	1 2	9 29.77					

EPHEMERIDES

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
16111	1999 <i>XT</i> ₄		2 3.5 212°07	1.4/ 2.5	18		209615	2005 <i>AY</i> ₁₃		2 3.5 333°90	0.7/ 3.9	18	
1 2	9 31.59	+18 8.1	1.995	2.830	12.6	19.0	1 2	9 29.73	+13 59.3	1.322	2.172	16.7	20.1
1 12	9 25.67	+18 54.1	1.912	2.824	9.1	18.8	1 12	9 25.12	+14 6.8	1.247	2.163	12.4	19.8
1 22	9 17.54	+19 47.3	1.855	2.817	5.2	18.5	1 22	9 17.55	+14 27.3	1.193	2.155	7.3	19.5
2 1	9 7.89	+20 42.2	1.826	2.810	1.6	18.3	2 1	9 7.94	+14 56.7	1.164	2.148	1.8	19.1
2 11	8 57.79	+21 32.5	1.828	2.802	4.0	18.4	2 11	8 57.73	+15 28.6	1.161	2.141	4.2	19.3
2 21	8 48.36	+22 13.5	1.858	2.793	8.1	18.6	2 21	8 48.49	+15 57.2	1.183	2.134	9.7	19.5
3 2	8 40.62	+22 42.1	1.915	2.784	11.8	18.9	3 2	8 41.63	+16 17.9	1.229	2.129	14.7	19.8
3 12	8 35.32	+22 57.6	1.994	2.775	15.0	19.0	3 12	8 38.01	+16 28.1	1.294	2.124	19.0	20.1
51714	2001 <i>KG</i> ₃₀		2 3.5 264°14	7.6/ 9.2	18		317156	2001 <i>VT</i> ₇₁		2 3.5 142°95	3.9/ 1.2	18	
1 2	9 27.08	- 6 46.4	2.216	2.954	14.6	19.7	1 2	9 36.38	+27 34.8	2.049	2.885	12.2	20.5
1 12	9 22.14	- 7 26.5	2.130	2.951	12.4	19.5	1 12	9 28.96	+28 0.9	1.984	2.892	9.0	20.3
1 22	9 15.39	- 7 46.0	2.064	2.948	10.1	19.4	1 22	9 19.29	+28 23.6	1.945	2.899	5.8	20.1
2 1	9 7.44	- 7 43.1	2.024	2.945	8.2	19.2	2 1	9 8.24	+28 37.2	1.934	2.906	3.9	20.0
2 11	8 59.12	- 7 18.4	2.010	2.942	7.7	19.2	2 11	8 57.01	+28 37.4	1.954	2.912	5.6	20.1
2 21	8 51.31	- 6 34.9	2.023	2.938	8.8	19.3	2 21	8 46.79	+28 22.5	2.002	2.918	8.8	20.3
3 2	8 44.85	- 5 37.9	2.062	2.935	11.0	19.4	3 2	8 38.56	+27 53.3	2.076	2.924	12.0	20.5
3 12	8 40.37	- 4 33.7	2.125	2.932	13.3	19.5	3 12	8 32.94	+27 12.6	2.173	2.929	14.7	20.7
223725	2004 <i>RJ</i> ₁₁₄		2 3.5 150°96	1.2/ 2.6	18		296187	2009 <i>BD</i> ₁₆₀		2 3.5 263°87	0.1/ 3.6	17	
1 2	9 29.51	+17 43.5	2.208	3.041	11.6	21.0	1 2	9 28.65	+15 42.5	2.367	3.194	11.1	20.8
1 12	9 23.87	+18 30.0	2.136	3.047	8.4	20.8	1 12	9 23.16	+15 48.8	2.285	3.191	8.1	20.6
1 22	9 16.35	+19 22.8	2.091	3.053	4.7	20.6	1 22	9 15.92	+16 0.9	2.228	3.188	4.7	20.4
2 1	9 7.62	+20 16.7	2.075	3.058	1.3	20.4	2 1	9 7.57	+16 16.0	2.201	3.185	1.0	20.1
2 11	8 58.62	+21 6.6	2.089	3.063	3.5	20.6	2 11	8 58.95	+16 30.9	2.204	3.182	2.8	20.2
2 21	8 50.29	+21 48.2	2.133	3.068	7.2	20.8	2 21	8 50.92	+16 42.8	2.236	3.179	6.4	20.4
3 2	8 43.48	+22 18.8	2.204	3.072	10.5	21.0	3 2	8 44.27	+16 49.7	2.296	3.176	9.7	20.6
3 12	8 38.78	+22 37.7	2.297	3.076	13.3	21.2	3 12	8 39.56	+16 50.3	2.380	3.173	12.5	20.8
93165	2000 <i>SE</i> ₉₃		2 3.5 350°45	0.6/ 3.8	18		89504	2001 <i>XV</i> ₅₀		2 3.5 34°39	1.5/ 4.7	18	
1 2	9 33.33	+16 51.3	1.450	2.296	15.8	18.5	1 2	9 26.72	+10 41.8	2.099	2.921	12.5	19.7
1 12	9 27.44	+16 16.5	1.375	2.290	11.7	18.2	1 12	9 21.87	+10 52.0	2.027	2.928	9.3	19.5
1 22	9 18.72	+15 46.8	1.323	2.285	6.8	17.9	1 22	9 15.22	+11 13.0	1.980	2.934	5.7	19.3
2 1	9 8.14	+15 19.8	1.297	2.281	1.6	17.6	2 1	9 7.43	+11 42.2	1.960	2.941	2.1	19.1
2 11	8 57.14	+14 52.9	1.298	2.277	4.0	17.7	2 11	8 59.41	+12 15.8	1.970	2.948	3.0	19.1
2 21	8 47.21	+14 24.5	1.326	2.275	9.2	18.0	2 21	8 52.05	+12 49.8	2.008	2.956	6.6	19.4
3 2	8 39.63	+13 53.6	1.378	2.273	13.8	18.3	3 2	8 46.17	+13 20.6	2.073	2.964	10.1	19.6
3 12	8 35.17	+13 19.7	1.451	2.272	17.7	18.5	3 12	8 42.32	+13 45.4	2.162	2.971	13.0	19.8
429025	2009 <i>BN</i> ₁₅₆		2 3.5 7°49	4.4/ 7.9	17		335228	2005 <i>GH</i> ₁₀₁		2 3.5 156°34	4.9/ 30.7	17	
1 2	9 24.36	- 1 51.6	2.047	2.823	14.4	20.5	1 2	9 31.19	+30 35.1	2.290	3.130	11.0	20.7
1 12	9 20.27	- 0 51.0	1.962	2.824	11.5	20.3	1 12	9 25.19	+31 26.2	2.225	3.132	8.3	20.5
1 22	9 14.36	+ 0 34.7	1.899	2.825	8.3	20.1	1 22	9 17.15	+32 13.2	2.185	3.133	5.8	20.3
2 1	9 7.23	+ 2 22.6	1.864	2.827	5.3	19.9	2 1	9 7.83	+32 50.1	2.174	3.134	4.9	20.3
2 11	8 59.76	+ 4 26.7	1.859	2.828	4.6	19.9	2 11	8 58.26	+33 11.8	2.192	3.135	6.4	20.4
2 21	8 52.84	+ 6 38.5	1.883	2.831	7.0	20.1	2 21	8 49.46	+33 16.2	2.238	3.136	9.0	20.5
3 2	8 47.32	+ 8 48.9	1.937	2.833	10.4	20.3	3 2	8 42.36	+33 3.6	2.309	3.137	11.6	20.7
3 12	8 43.83	+10 50.1	2.016	2.836	13.5	20.5	3 12	8 37.55	+32 36.1	2.402	3.138	14.0	20.9
495929	2005 <i>YB</i> ₂₅₅		2 3.5 67°16	0.5/ 3.8	18		90760	1993 <i>SN</i> ₁₀		2 3.5 112°61	0.8/ 3.1	18	
1 2	9 35.60	+15 48.3	1.751	2.581	14.3	21.0	1 2	9 34.82	+16 52.3	1.728	2.562	14.2	20.6
1 12	9 28.32	+15 34.2	1.700	2.606	10.4	20.8	1 12	9 27.98	+17 25.3	1.670	2.581	10.3	20.4
1 22	9 18.83	+15 26.5	1.672	2.632	6.0	20.6	1 22	9 18.79	+18 5.5	1.638	2.599	5.8	20.2
2 1	9 8.11	+15 22.3	1.673	2.657	1.4	20.3	2 1	9 8.18	+18 47.5	1.633	2.617	1.3	19.9
2 11	8 57.39	+15 18.3	1.704	2.683	3.4	20.5	2 11	8 57.39	+19 25.2	1.658	2.635	3.9	20.2
2 21	8 47.83	+15 12.0	1.764	2.708	7.7	20.8	2 21	8 47.67	+19 54.3	1.711	2.651	8.3	20.5
3 2	8 40.37	+15 2.1	1.850	2.733	11.5	21.1	3 2	8 40.04	+20 12.4	1.791	2.667	12.1	20.7
3 12	8 35.54	+14 47.9	1.958	2.758	14.6	21.4	3 12	8 35.12	+20 19.1	1.892	2.683	15.4	21.0
428984	2009 <i>AC</i> ₄		2 3.5 144°33	4.7/ 30.7	18		17428	Charleroi		2 3.5 286°13	2.5/ 5.9	18	
1 2	9 30.57	+30 9.2	2.371	3.210	10.6	21.3	1 2	9 23.85	+ 6 1.8	3.101	3.893	9.6	17.4
1 12	9 24.66	+31 4.0	2.307	3.214	8.0	21.1	1 12	9 19.39	+ 5 58.6	3.005	3.883	7.4	17.3
1 22	9 16.80	+31 55.3	2.269	3.217	5.6	21.0	1 22	9 13.67	+ 6 5.0	2.934	3.873	5.0	17.1
2 1	9 7.72	+32 36.9	2.260	3.220	4.7	20.9	2 1	9 7.13	+ 6 20.0	2.892	3.863	2.9	16.9
2 11	8 58.40	+33 4.2	2.280	3.223	6.2	21.0	2 11	9 0.35	+ 6 41.9	2.881	3.853	2.9	16.9
2 21	8 49.81	+33 14.7	2.329	3.226	8.7	21.2	2 21	8 53.92	+ 7 8.0	2.899	3.843	5.1	17.1
3 2	8 42.84	+33 8.4	2.403	3.229	11.3	21.3	3 2	8 48.40	+ 7 35.9	2.947	3.833	7.6	17.2
3 12	8 38.07	+32 47.3	2.498	3.232	13.5	21.5	3 12	8 44.25	+ 8 2.9	3.019	3.823	9.9	17.4
62140	2000 <i>SG</i> ₁₂		2 3.5 140°30	1.3/ 2.6	18		169961	2002 <i>TZ</i> ₁₁₆		2 3.5 177°44	3.3/ 6.2	18	
1 2	9 33.80	+17 40.3	1.988	2.817	12.8	20.2	1 2	9 27.87	+ 4 24.9	2.610	3.395	11.4	20.1
1 12	9 27.08	+18 28.1	1.923	2.832	9.2	20.0	1 12	9 22.43	+ 4 16.7	2.524	3.396	8.9	20.0
1 22	9 18.22	+19 22.5	1.885	2.846	5.2	19.8	1 22	9 15.45	+ 4 20.6	2.464	3.397	6.1	19.8
2 1	9 8.01	+20 17.5	1.876	2.859	1.5	19.5	2 1	9 7.50	+ 4 35.8	2.431	3.398	3.8	19.6
2 11	8 57.57	+21 7.2	1.897	2.871	3.8	19.7	2 11	8 59.29	+ 5 0.2	2.429	3.398	3.7	19.6
2 21	8 47.99	+21 47.1	1.948	2.882	7.8	20.0	2 21	8 51.56	+ 5 30.7	2.457	3.398	6.0	19.8
3 2	8 40.22	+22 14.8	2.026	2.893	11.4	20.2	3 2	8 45.02	+ 6 3.9	2.514	3.398	8.8	20.0
3 12	8 34.90	+22 30.0	2.126	2.902	14.3	20.5	3 12	8 40.18	+ 6 36.5	2.595	3.397	11.3	20.1
283927	2004 <i>NW</i> ₁₄		2 3.5 133°30	0.3/ 3.3	18		210752	2000 <i>VV</i> ₄₇		2 3.5 43°83	5.0/ 31.9	18	
1 2	9 33.09	+14 15.4	1.840	2.668	13.8	21.5	1 2	9 32.35	+23 58.9	1.191</			

EPHEMERIDES

2 3.5

2 3.6

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
272597	2005 <i>VD</i> ₁₀₉		2 3.5 141°01'	1.4/ 2.5	18		206102	2002 <i>RF</i> ₁₈₅		2 3.6 102°75'	2.2/ 5.1	18	
1 2	9 31.08	+18 48.1	2.195	3.027	11.7	22.0	1 2	9 29.15	+9 11.3	2.254	3.064	12.2	20.0
1 12	9 25.00	+19 26.6	2.126	3.037	8.4	21.8	1 12	9 23.50	+9 5.4	2.181	3.073	9.2	19.8
1 22	9 17.01	+20 9.9	2.084	3.046	4.8	21.6	1 22	9 16.12	+9 9.9	2.133	3.082	5.8	19.7
2 1	9 7.82	+20 53.2	2.071	3.055	1.5	21.4	2 1	9 7.66	+9 23.2	2.113	3.091	2.7	19.5
2 11	8 58.40	+21 31.5	2.089	3.063	3.6	21.6	2 11	8 58.99	+9 42.4	2.124	3.100	3.2	19.5
2 21	8 49.70	+22 1.2	2.136	3.071	7.2	21.8	2 21	8 50.97	+10 4.3	2.163	3.109	6.4	19.7
3 2	8 42.60	+22 20.3	2.210	3.078	10.5	22.0	3 2	8 44.39	+10 25.8	2.230	3.117	9.6	19.9
3 12	8 37.67	+22 28.3	2.308	3.085	13.3	22.2	3 12	8 39.78	+10 44.1	2.322	3.126	12.4	20.1
96869	1999 <i>SD</i> ₁₉		2 3.5 38°43'	3.5/31.8	18		4848	Tutenchamun		2 3.6 40°33'	0.0/ 3.5	18	
1 2	9 28.55	+22 32.3	1.807	2.658	12.9	18.6	1 2	9 26.41	+14 7.4	1.997	2.831	12.5	16.5
1 12	9 23.63	+23 49.6	1.743	2.662	9.3	18.4	1 12	9 21.77	+14 49.4	1.930	2.840	9.1	16.3
1 22	9 16.43	+25 11.3	1.705	2.666	5.6	18.1	1 22	9 15.22	+15 41.1	1.889	2.850	5.2	16.1
2 1	9 7.72	+26 29.1	1.694	2.671	3.5	18.0	2 1	9 7.48	+16 38.0	1.875	2.859	1.1	15.8
2 11	8 58.66	+27 35.4	1.713	2.676	5.7	18.2	2 11	8 59.49	+17 34.4	1.891	2.869	3.1	16.0
2 21	8 50.42	+28 24.7	1.758	2.681	9.4	18.4	2 21	8 52.21	+18 25.2	1.935	2.879	7.1	16.3
3 2	8 44.04	+28 55.0	1.829	2.686	12.9	18.6	3 2	8 46.49	+19 6.8	2.006	2.890	10.7	16.5
3 12	8 40.23	+29 6.8	1.920	2.692	15.8	18.8	3 12	8 42.92	+19 37.2	2.100	2.901	13.7	16.7
105460	2000 <i>QV</i> ₂₀₁		2 3.5 111°73'	3.1/ 1.9	18		103952	2000 <i>DA</i> ₇₄		2 3.6 173°46'	2.6/ 1.7	18	
1 2	9 36.21	+22 57.3	1.623	2.467	14.5	20.0	1 2	9 31.41	+24 15.5	2.367	3.203	10.8	20.1
1 12	9 29.23	+23 33.1	1.565	2.480	10.5	19.8	1 12	9 25.20	+24 41.4	2.293	3.204	7.9	19.9
1 22	9 19.60	+24 10.5	1.531	2.492	6.2	19.6	1 22	9 17.12	+25 7.3	2.246	3.205	4.7	19.7
2 1	9 8.36	+24 42.4	1.525	2.505	3.1	19.4	2 1	9 7.87	+25 28.5	2.228	3.206	2.6	19.6
2 11	8 56.92	+25 2.7	1.548	2.517	5.4	19.6	2 11	8 58.38	+25 41.2	2.241	3.206	4.3	19.7
2 21	8 46.68	+25 8.2	1.598	2.529	9.6	19.9	2 21	8 49.61	+25 43.1	2.283	3.207	7.4	19.9
3 2	8 38.77	+24 58.7	1.673	2.540	13.4	20.1	3 2	8 42.38	+25 33.5	2.351	3.207	10.5	20.1
3 12	8 33.88	+24 36.1	1.769	2.551	16.6	20.4	3 12	8 37.26	+25 13.4	2.443	3.207	13.0	20.2
489289	2006 <i>SJ</i> ₂₀₄		2 3.5 124°62'	0°/ 3.5	17		102417	1999 <i>TN</i> ₁₈₄		2 3.6 101°68'	7°/ 8.2	18	
1 2	9 27.03	+14 39.7	2.745	3.566	9.9	21.9	1 2	9 31.74	- 3 22.7	1.719	2.486	17.1	19.8
1 12	9 21.73	+15 8.1	2.674	3.578	7.2	21.7	1 12	9 25.84	- 4 13.8	1.650	2.497	14.2	19.6
1 22	9 15.01	+15 42.8	2.631	3.590	4.1	21.5	1 22	9 17.66	- 4 42.1	1.601	2.507	11.1	19.4
2 1	9 7.41	+16 20.7	2.617	3.601	0.9	21.3	2 1	9 8.00	- 4 45.3	1.578	2.517	8.6	19.3
2 11	8 59.64	+16 58.1	2.635	3.612	2.4	21.5	2 11	8 58.01	- 4 24.7	1.580	2.527	8.0	19.3
2 21	8 52.41	+17 32.0	2.682	3.623	5.6	21.7	2 21	8 48.85	- 3 44.5	1.609	2.536	9.8	19.4
3 2	8 46.34	+18 0.0	2.759	3.634	8.4	21.9	3 2	8 41.56	- 2 51.4	1.663	2.546	12.6	19.6
3 12	8 41.92	+18 20.7	2.859	3.644	10.8	22.1	3 12	8 36.84	- 1 52.8	1.740	2.555	15.5	19.8
27562	2000 <i>KJ</i> ₅₄		2 3.6 99°34'	2.9/ 6.3	18		238753	2005 <i>HY</i> ₇		2 3.6 246°38'	0°5/ 4.0	17	
1 2	9 25.73	+ 3 51.9	2.341	3.134	12.3	18.2	1 2	9 26.58	+12 23.7	2.628	3.445	10.4	21.3
1 12	9 21.01	+ 4 25.3	2.266	3.144	9.5	18.0	1 12	9 21.65	+12 59.6	2.530	3.431	7.7	21.1
1 22	9 14.69	+ 5 14.6	2.214	3.153	6.4	17.8	1 22	9 15.12	+13 44.9	2.459	3.416	4.6	20.9
2 1	9 7.36	+ 6 17.2	2.191	3.163	3.6	17.6	2 1	9 7.49	+14 36.4	2.417	3.401	1.2	20.6
2 11	8 59.79	+ 7 28.7	2.198	3.172	3.4	17.6	2 11	8 59.50	+15 30.2	2.407	3.385	2.5	20.7
2 21	8 52.77	+ 8 43.8	2.235	3.182	6.2	17.8	2 21	8 51.90	+16 21.9	2.426	3.369	6.0	20.9
3 2	8 47.03	+ 9 57.4	2.300	3.191	9.2	18.0	3 2	8 45.43	+17 8.3	2.475	3.353	9.1	21.1
3 12	8 43.10	+11 4.9	2.390	3.200	12.0	18.2	3 12	8 40.67	+17 46.8	2.547	3.337	11.9	21.3
331424	2012 <i>FK</i> ₇₈		2 3.6 290°74'	6°8/ 7.9	18		325979	2010 <i>VY</i> ₁₆₂		2 3.6 65°29'	1°0/ 4.2	18	
1 2	9 27.39	- 2 7.3	1.823	2.600	15.9	20.0	1 2	9 30.74	+12 51.5	1.691	2.523	14.6	21.1
1 12	9 22.78	- 2 30.5	1.731	2.588	13.1	19.8	1 12	9 25.18	+13 1.2	1.623	2.530	10.7	20.8
1 22	9 15.99	- 2 31.6	1.661	2.576	10.1	19.6	1 22	9 17.30	+13 22.1	1.578	2.536	6.4	20.6
2 1	9 7.67	- 2 9.3	1.615	2.564	7.5	19.4	2 1	9 7.94	+13 50.5	1.560	2.543	1.8	20.3
2 11	8 58.80	- 1 25.3	1.596	2.552	6.9	19.4	2 11	8 58.28	+14 21.5	1.571	2.550	3.5	20.4
2 21	8 50.50	- 0 24.2	1.604	2.540	9.0	19.5	2 21	8 49.52	+14 50.4	1.609	2.557	8.0	20.7
3 2	8 43.80	+ 0 47.1	1.637	2.529	12.2	19.6	3 2	8 42.69	+15 13.7	1.673	2.564	12.0	21.0
3 12	8 39.47	+ 2 1.1	1.693	2.517	15.4	19.8	3 12	8 38.47	+15 28.9	1.759	2.571	15.5	21.2
372636	2009 <i>VD</i> ₈₉		2 3.6 75°18'	2.2/ 4.9	18		342980	2009 <i>BN</i> ₄₂		2 3.6 163°13'	0°0/ 3.5	18	
1 2	9 29.44	+ 9 43.7	1.921	2.739	13.6	21.2	1 2	9 26.09	+13 34.3	2.358	3.184	11.2	20.8
1 12	9 24.01	+ 9 43.0	1.846	2.744	10.3	21.0	1 12	9 21.37	+14 19.7	2.279	3.185	8.1	20.6
1 22	9 16.53	+ 9 54.5	1.796	2.748	6.4	20.8	1 22	9 14.96	+15 14.5	2.226	3.185	4.7	20.4
2 1	9 7.75	+10 15.8	1.773	2.752	2.8	20.5	2 1	9 7.45	+16 14.5	2.201	3.186	1.0	20.1
2 11	8 58.67	+10 43.4	1.779	2.757	3.4	20.6	2 11	8 59.66	+17 15.0	2.208	3.186	2.8	20.2
2 21	8 50.32	+11 13.1	1.813	2.761	7.2	20.8	2 21	8 52.39	+18 11.1	2.244	3.186	6.4	20.5
3 2	8 43.64	+11 41.0	1.874	2.765	10.9	21.1	3 2	8 46.43	+18 59.3	2.307	3.187	9.7	20.7
3 12	8 39.26	+12 4.0	1.958	2.770	14.1	21.3	3 12	8 42.33	+19 37.4	2.395	3.187	12.5	20.9
415855	2001 <i>SA</i> ₁₁₇		2 3.6 181°67'	1°0/ 2.9	18		277151	2005 <i>MM</i> ₁₈		2 3.6 137°46'	1°2/ 4.3	18	
1 2	9 33.72	+19 2.2	2.157	2.986	12.0	21.4	1 2	9 34.81	+11 25.9	1.722	2.542	14.9	21.8
1 12	9 26.98	+19 15.4	2.079	2.987	8.7	21.2	1 12	9 28.05	+11 49.3	1.656	2.557	11.0	21.6
1 22	9 18.19	+19 32.3	2.027	2.987	5.0	20.9	1 22	9 18.92	+12 25.4	1.614	2.570	6.6	21.4
2 1	9 8.09	+19 48.9	2.004	2.987	1.3	20.7	2 1	9 8.28	+13 10.1	1.600	2.583	2.0	21.1
2 11	8 57.70	+20 1.3	2.011	2.987	3.5	20.8	2 11	8 57.36	+13 57.5	1.616	2.594	3.5	21.2
2 21	8 48.06	+20 6.8	2.049	2.986	7.3	21.1	2 21	8 47.42	+14 42.2	1.660	2.605	8.0	21.5
3 2	8 40.10	+20 4.0	2.113	2.984	10.8	21.3	3 2	8 39.50	+15 20.0	1.731	2.616	12.1	21.8
3 12	8 34.44	+19 52.8	2.201	2.982	13.8	21.5	3 12	8 34.28	+15 48.3	1.824	2.625	15.5	22.1
237220	2008 <i>UR</i> ₃₅₆		2 3.6 113°54'	0°9/ 4.3	18		488462	1996 <i>TD</i> ₁		2 3.6 200°67'	6°7/ 10.7	17	
1 2	9 28.15	+11 50.6	2.298	3.116	11.7	21.1</							

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
87919	2000 SZ ₃₁₆		2 3.6 132°01	2°8/ 5.7 18			397434	2007 DE ₃₅		2 3.6 247°90	1°9/ 2.6 18		
1 2	9 28.68	+ 6 41.9	2.647	3.439	11.1	19.5	1 2	9 34.71	+19 29.5	1.465	2.313	15.6	21.5
1 12	9 22.96	+ 6 23.7	2.567	3.446	8.5	19.3	1 12	9 28.64	+19 56.9	1.389	2.306	11.4	21.2
1 22	9 15.75	+ 6 15.6	2.514	3.453	5.7	19.1	1 22	9 19.59	+20 30.9	1.336	2.299	6.6	20.9
2 1	9 7.61	+ 6 16.8	2.489	3.460	3.3	19.0	2 1	9 8.48	+21 5.1	1.309	2.292	2.1	20.6
2 11	8 59.27	+ 6 25.3	2.495	3.466	3.4	19.0	2 11	8 56.79	+21 32.3	1.309	2.284	5.0	20.8
2 21	8 51.47	+ 6 38.8	2.531	3.473	5.8	19.2	2 21	8 46.11	+21 47.7	1.337	2.277	10.1	21.1
3 2	8 44.87	+ 6 54.6	2.595	3.479	8.6	19.4	3 2	8 37.84	+21 49.0	1.388	2.269	14.7	21.3
3 12	8 39.97	+ 7 10.1	2.685	3.485	11.1	19.5	3 12	8 32.83	+21 36.9	1.460	2.261	18.6	21.5
459346	2012 HR ₅₃		2 3.6 261°03	1°9/ 2.2 18			454992	2015 TY ₂₃₃		2 3.6 108°79	0°5/ 3.8 18		
1 2	9 29.59	+19 9.1	1.846	2.689	13.0	21.4	1 2	9 37.04	+14 55.3	1.517	2.351	15.9	21.2
1 12	9 24.38	+19 59.8	1.770	2.686	9.4	21.2	1 12	9 29.86	+14 56.6	1.458	2.366	11.6	21.0
1 22	9 16.90	+20 57.4	1.719	2.682	5.4	21.0	1 22	9 20.01	+15 7.1	1.422	2.381	6.8	20.8
2 1	9 7.88	+21 55.7	1.697	2.679	2.0	20.7	2 1	9 8.52	+15 22.6	1.412	2.396	1.6	20.5
2 11	8 58.45	+22 48.0	1.703	2.675	4.4	20.9	2 11	8 56.84	+15 38.1	1.432	2.411	3.8	20.6
2 21	8 49.77	+23 29.1	1.737	2.672	8.6	21.1	2 21	8 46.38	+15 49.6	1.479	2.425	8.7	21.0
3 2	8 42.88	+23 56.2	1.797	2.668	12.4	21.3	3 2	8 38.30	+15 54.7	1.552	2.438	13.1	21.3
3 12	8 38.50	+24 8.6	1.878	2.665	15.6	21.6	3 12	8 33.27	+15 52.4	1.646	2.451	16.7	21.5
344392	2001 YG ₄₄		2 3.6 121°19	7°7/ 9.7 17			155490	1998 XF ₂₇		2 3.6 60°86	12°5/ 24.9 18		
1 2	9 28.91	- 9 47.6	2.674	3.375	13.2	20.5	1 2	9 36.92	+37 21.6	1.213	2.071	17.4	18.3
1 12	9 23.18	-10 47.0	2.595	3.384	11.4	20.4	1 12	9 31.19	+40 51.9	1.194	2.095	14.3	18.2
1 22	9 15.92	-11 28.2	2.538	3.392	9.6	20.3	1 22	9 21.39	+44 3.3	1.200	2.120	12.6	18.2
2 1	9 7.66	-11 49.0	2.506	3.399	8.2	20.2	2 1	9 8.86	+46 35.9	1.230	2.144	13.0	18.3
2 11	8 59.13	-11 49.4	2.502	3.407	7.7	20.2	2 11	8 55.82	+48 17.3	1.285	2.169	15.1	18.5
2 21	8 51.09	-11 31.3	2.526	3.415	8.5	20.3	2 21	8 44.60	+49 6.6	1.360	2.194	17.7	18.7
3 2	8 44.23	-10 58.4	2.575	3.422	10.0	20.4	3 2	8 36.98	+49 10.9	1.453	2.218	20.2	18.9
3 12	8 39.07	-10 15.8	2.648	3.429	11.7	20.5	3 12	8 33.76	+48 40.9	1.560	2.243	22.2	19.2
503531	2016 FF ₂₁		2 3.6 268°82	1°9/ 2.1 18			31423	1999 BR ₂		2 3.6 329°50	5°1/ 31.5 18		
1 2	9 28.71	+19 16.0	1.965	2.807	12.4	21.0	1 2	9 32.18	+24 47.6	1.386	2.246	15.5	18.1
1 12	9 23.64	+20 9.2	1.887	2.803	9.0	20.8	1 12	9 27.00	+26 6.3	1.321	2.243	11.4	17.9
1 22	9 16.44	+21 9.0	1.835	2.798	5.2	20.6	1 22	9 18.71	+27 28.5	1.280	2.240	7.3	17.6
2 1	9 7.79	+22 9.5	1.811	2.793	2.0	20.4	2 1	9 8.31	+28 43.4	1.264	2.238	5.1	17.5
2 11	8 58.74	+23 4.2	1.816	2.788	4.3	20.5	2 11	8 57.34	+29 40.7	1.275	2.236	7.7	17.6
2 21	8 50.36	+23 48.1	1.850	2.783	8.2	20.7	2 21	8 47.49	+30 14.2	1.312	2.234	12.0	17.9
3 2	8 43.64	+24 18.3	1.909	2.779	11.9	20.9	3 2	8 40.20	+30 22.9	1.370	2.232	16.1	18.1
3 12	8 39.29	+24 34.1	1.990	2.774	14.9	21.1	3 12	8 36.32	+30 9.5	1.447	2.230	19.6	18.3
83974	2002 AV ₁₈₁		2 3.6 142°54	0°8/ 3.1 18			431487	2007 TT ₅₁		2 3.6 106°22	4°5/ 7.3 17		
1 2	9 34.03	+18 26.3	2.263	3.087	11.6	19.9	1 2	9 26.50	+ 0 39.8	2.379	3.155	12.7	21.3
1 12	9 27.04	+18 36.5	2.193	3.099	8.4	19.7	1 12	9 21.56	+ 0 35.6	2.302	3.163	10.1	21.2
1 22	9 18.15	+18 50.3	2.149	3.109	4.8	19.5	1 22	9 15.03	+ 0 47.6	2.248	3.171	7.3	21.0
2 1	9 8.11	+19 4.1	2.136	3.119	1.1	19.3	2 1	9 7.49	+ 1 15.0	2.221	3.179	5.0	20.9
2 11	8 57.90	+19 14.5	2.153	3.129	3.2	19.5	2 11	8 59.72	+ 1 55.3	2.224	3.186	4.7	20.9
2 21	8 48.48	+19 18.9	2.201	3.138	6.9	19.7	2 21	8 52.49	+ 2 44.5	2.255	3.194	6.6	21.0
3 2	8 40.68	+19 16.2	2.276	3.146	10.2	19.9	3 2	8 46.54	+ 3 38.0	2.314	3.201	9.3	21.2
3 12	8 35.07	+19 6.1	2.375	3.154	12.9	20.1	3 12	8 42.38	+ 4 31.2	2.397	3.209	11.9	21.3
105618	2000 RX ₁₀₂		2 3.6 62°75	0°1/ 3.6 18			284847	2009 BD ₉₂		2 3.6 245°05	0°7/ 4.2 16		
1 2	9 30.63	+16 32.8	2.330	3.156	11.3	19.2	1 2	9 25.77	+11 21.6	2.471	3.289	11.0	21.5
1 12	9 24.56	+16 25.2	2.255	3.160	8.2	19.0	1 12	9 21.11	+12 3.2	2.382	3.283	8.1	21.3
1 22	9 16.74	+16 22.1	2.206	3.165	4.7	18.8	1 22	9 14.83	+12 55.5	2.319	3.276	4.8	21.1
2 1	9 7.83	+16 21.0	2.186	3.170	1.0	18.6	2 1	9 7.46	+13 55.2	2.283	3.269	1.4	20.9
2 11	8 58.73	+16 19.3	2.196	3.175	2.8	18.7	2 11	8 59.76	+14 57.6	2.286	3.262	2.6	20.9
2 21	8 50.31	+16 14.9	2.237	3.180	6.4	19.0	2 21	8 52.51	+15 58.2	2.310	3.254	6.1	21.2
3 2	8 43.37	+16 6.5	2.305	3.184	9.7	19.2	3 2	8 46.46	+16 52.8	2.365	3.247	9.3	21.3
3 12	8 38.44	+15 53.3	2.397	3.190	12.5	19.4	3 12	8 42.19	+17 38.8	2.444	3.240	12.1	21.5
228200	4088 T- ₃		2 3.6 101°19	2°6/ 5.7 18			419676	2010 TQ ₁₇₃		2 3.6 91°17	2°0/ 2.2 18		
1 2	9 28.80	+ 5 59.4	2.106	2.908	13.2	21.0	1 2	9 31.40	+19 6.4	1.734	2.578	13.7	21.6
1 12	9 23.32	+ 6 28.7	2.042	2.927	10.0	20.8	1 12	9 25.64	+20 1.4	1.676	2.592	9.9	21.4
1 22	9 16.05	+ 7 13.0	2.001	2.946	6.5	20.6	1 22	9 17.56	+21 2.6	1.643	2.606	5.6	21.2
2 1	9 7.69	+ 8 9.5	1.989	2.965	3.2	20.5	2 1	9 8.02	+22 3.2	1.637	2.619	2.1	21.0
2 11	8 59.14	+ 9 13.1	2.007	2.983	3.4	20.5	2 11	8 58.24	+22 56.2	1.660	2.633	4.6	21.2
2 21	8 51.30	+10 18.6	2.054	3.001	6.6	20.7	2 21	8 49.43	+23 36.6	1.711	2.646	8.7	21.5
3 2	8 44.98	+11 20.7	2.129	3.018	9.9	21.0	3 2	8 42.59	+24 2.1	1.788	2.659	12.4	21.7
3 12	8 40.71	+12 15.8	2.228	3.035	12.8	21.2	3 12	8 38.39	+24 12.7	1.886	2.672	15.5	22.0
462081	2007 FU ₂₅		2 3.6 25°93	2°6/ 5.2 18			257125	2008 GX ₁₀₁		2 3.6 346°83	1°7/ 2.5 18		
1 2	9 26.80	+ 8 0.2	1.445	2.279	16.5	20.6	1 2	9 29.06	+18 3.0	1.607	2.456	14.3	20.2
1 12	9 22.59	+ 8 22.8	1.383	2.287	12.5	20.3	1 12	9 24.25	+18 52.1	1.535	2.453	10.4	19.9
1 22	9 15.93	+ 9 4.5	1.342	2.296	7.8	20.1	1 22	9 16.93	+19 50.2	1.487	2.451	5.9	19.7
2 1	9 7.69	+10 1.6	1.327	2.306	3.4	19.9	2 1	9 7.92	+20 50.5	1.466	2.449	1.9	19.4
2 11	8 59.13	+11 7.3	1.338	2.317	4.0	19.9	2 11	8 58.47	+21 45.5	1.473	2.448	4.6	19.6
2 21	8 51.53	+12 14.0	1.376	2.329	8.5	20.2	2 21	8 49.88	+22 29.2	1.506	2.446	9.2	19.8
3 2	8 45.98	+13 14.8	1.438	2.341	12.8	20.5	3 2	8 43.31	+22 58.2	1.565	2.445	13.3	20.1
3 12	8 43.17	+14 5.1	1.522	2.353	16.5	20.8	3 12	8 39.51	+23 11.7	1.644	2.445	16.9	20.3
283149	2008 YX ₁₃₉		2 3.6 113°12	1°0/ 2.7 18			14708	Slaven		2 3.6 114°58	1°2/ 4.3 18		
1 2	9 27.39	+16 55.5	2.387	3.218	10.9	20.7	1 2	9 34.47	+10 52.6	1.656	2.478	15.3	18.6
1 12	9 22.25	+17 50.0											

EPHEMERIDES

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
11047	1990 <i>QL</i> ₁		2 3.6 64°71	2°2/ 5.5	18		132271	2002 <i>ED</i> ₁₄₁		2 3.6 207°41	0°9/ 2.9	18	
1 2	9 26.98	+ 6 57.0	2.096	2.905	13.0	17.8	1 2	9 32.35	+16 38.1	2.111	2.939	12.2	21.0
1 12	9 22.00	+ 7 30.4	2.037	2.928	9.8	17.6	1 12	9 26.19	+17 20.8	2.025	2.933	8.9	20.8
1 22	9 15.29	+ 8 18.3	2.002	2.951	6.2	17.4	1 22	9 17.89	+18 11.4	1.965	2.925	5.1	20.5
2 1	9 7.55	+ 9 17.1	1.996	2.973	2.9	17.3	2 1	9 8.15	+19 4.9	1.934	2.917	1.2	20.2
2 11	8 59.66	+10 21.8	2.019	2.996	3.1	17.3	2 11	8 57.95	+19 55.8	1.933	2.909	3.5	20.4
2 21	8 52.49	+11 27.0	2.071	3.019	6.4	17.6	2 21	8 48.36	+20 39.2	1.962	2.899	7.6	20.6
3 2	8 46.80	+12 27.8	2.151	3.042	9.7	17.8	3 2	8 40.36	+21 11.9	2.019	2.889	11.3	20.8
3 12	8 43.11	+13 20.7	2.255	3.064	12.6	18.0	3 12	8 34.68	+21 32.8	2.098	2.878	14.4	21.0
143125	2002 <i>XY</i> ₃₁		2 3.6 107°35	1°7/ 2.5	18		209003	2003 <i>BQ</i> ₂₀		2 3.6 311°06	3°6/ 1.1	17	
1 2	9 32.55	+19 32.8	1.798	2.638	13.5	19.9	1 2	9 29.56	+25 57.8	2.141	2.985	11.4	19.5
1 12	9 26.42	+20 5.7	1.734	2.648	9.7	19.6	1 12	9 24.21	+26 33.5	2.058	2.972	8.4	19.3
1 22	9 18.00	+20 43.4	1.695	2.657	5.6	19.4	1 22	9 16.76	+27 8.9	2.001	2.958	5.3	19.1
2 1	9 8.13	+21 20.4	1.684	2.667	1.9	19.2	2 1	9 7.91	+27 38.4	1.971	2.945	3.6	19.0
2 11	8 58.01	+21 51.0	1.702	2.676	4.2	19.4	2 11	8 58.66	+27 57.1	1.971	2.932	5.3	19.0
2 21	8 48.84	+22 11.4	1.748	2.685	8.4	19.6	2 21	8 50.09	+28 1.9	1.999	2.919	8.6	19.2
3 2	8 41.62	+22 19.7	1.820	2.694	12.1	19.9	3 2	8 43.14	+27 52.1	2.052	2.907	11.8	19.4
3 12	8 37.02	+22 16.2	1.914	2.702	15.3	20.1	3 12	8 38.52	+27 28.9	2.127	2.895	14.6	19.6
426353	2013 <i>LW</i> ₃₁		2 3.6 192°99	2°8/ 6.2	18		7420	<i>Buffon</i>		2 3.6 162°34	0°2/ 3.4	18	
1 2	9 28.38	+ 4 13.0	2.545	3.330	11.7	22.5	1 2	9 31.99	+14 57.6	1.956	2.784	13.1	19.1
1 12	9 22.92	+ 4 40.0	2.453	3.327	9.0	22.3	1 12	9 25.92	+15 32.0	1.882	2.789	9.5	18.9
1 22	9 15.85	+ 5 21.6	2.387	3.324	6.1	22.1	1 22	9 17.71	+16 15.4	1.834	2.794	5.5	18.7
2 1	9 7.69	+ 6 15.7	2.350	3.321	3.4	21.9	2 1	9 8.10	+17 3.2	1.814	2.798	1.1	18.4
2 11	8 59.21	+ 7 18.7	2.343	3.316	3.3	21.9	2 11	8 58.16	+17 49.7	1.824	2.802	3.4	18.6
2 21	8 51.18	+ 8 26.0	2.367	3.311	6.0	22.0	2 21	8 48.99	+18 30.3	1.863	2.805	7.6	18.8
3 2	8 44.34	+ 9 32.8	2.421	3.305	9.1	22.2	3 2	8 41.54	+19 1.7	1.929	2.807	11.3	19.1
3 12	8 39.26	+10 35.1	2.499	3.299	11.8	22.4	3 12	8 36.50	+19 22.4	2.018	2.809	14.5	19.3
341904	2008 <i>HJ</i> ₇₀		2 3.6 212°18	1°7/ 2.7	18		311881	2006 <i>WK</i> ₁₈₅		2 3.6 18°58	21°8/ 12.5	18	
1 2	9 34.86	+18 22.4	1.493	2.337	15.5	21.3	1 2	9 33.16	-17 22.9	0.975	1.719	28.8	19.7
1 12	9 28.71	+19 1.5	1.418	2.334	11.3	21.0	1 12	9 28.50	-20 36.0	0.925	1.721	26.5	19.5
1 22	9 19.62	+19 49.1	1.366	2.329	6.5	20.7	1 22	9 20.00	-23 6.8	0.887	1.723	24.2	19.4
2 1	9 8.52	+20 38.5	1.341	2.324	1.9	20.4	2 1	9 8.68	-24 39.6	0.865	1.727	22.5	19.2
2 11	8 56.85	+21 21.7	1.344	2.319	4.9	20.6	2 11	8 56.39	-25 5.6	0.858	1.731	21.8	19.2
2 21	8 46.15	+21 53.0	1.374	2.313	9.9	20.9	2 21	8 45.31	-24 26.8	0.867	1.736	22.2	19.3
3 2	8 37.81	+22 9.5	1.428	2.307	14.5	21.1	3 2	8 37.36	-22 54.8	0.891	1.741	23.6	19.4
3 12	8 32.68	+22 11.2	1.502	2.300	18.3	21.3	3 12	8 33.72	-20 48.6	0.929	1.748	25.5	19.5
91424	1999 <i>PT</i> ₁		2 3.6 229°41	1°1/ 2.9	18		12820	<i>Robinwilliams</i>		2 3.6 111°70	0°4/ 3.3	18	
1 2	9 34.32	+19 58.2	2.226	3.054	11.7	19.3	1 2	9 28.30	+15 41.9	2.142	2.974	11.9	17.7
1 12	9 27.47	+19 58.9	2.138	3.046	8.5	19.1	1 12	9 23.09	+16 16.9	2.070	2.979	8.7	17.5
1 22	9 18.54	+20 1.7	2.077	3.037	4.9	18.8	1 22	9 16.02	+16 59.7	2.022	2.983	4.9	17.3
2 1	9 8.26	+20 3.3	2.044	3.028	1.3	18.5	2 1	9 7.74	+17 45.8	2.004	2.988	1.0	17.0
2 11	8 57.63	+20 0.3	2.043	3.018	3.5	18.7	2 11	8 59.19	+18 30.5	2.015	2.992	3.1	17.2
2 21	8 47.69	+19 50.5	2.071	3.008	7.3	18.9	2 21	8 51.31	+19 9.4	2.055	2.997	7.0	17.5
3 2	8 39.38	+19 33.3	2.128	2.998	10.8	19.1	3 2	8 44.93	+19 39.6	2.122	3.001	10.4	17.7
3 12	8 33.35	+19 8.9	2.208	2.987	13.8	19.3	3 12	8 40.65	+19 59.5	2.213	3.005	13.4	17.9
245068	2004 <i>GY</i> ₃₉		2 3.6 296°95	2°2/ 5.1	17		144180	2004 <i>BP</i> ₁₁₄		2 3.6 334°43	1°4/ 4.3	18	
1 2	9 27.61	+ 9 23.3	2.279	3.091	12.0	20.7	1 2	9 30.40	+13 17.8	2.008	2.833	12.9	19.2
1 12	9 22.53	+ 9 17.5	2.190	3.084	9.1	20.5	1 12	9 24.73	+12 58.4	1.925	2.828	9.6	19.0
1 22	9 15.68	+ 9 22.0	2.127	3.076	5.8	20.2	1 22	9 17.02	+12 46.5	1.866	2.822	5.8	18.8
2 1	9 7.66	+ 9 35.3	2.091	3.069	2.7	20.0	2 1	9 7.97	+12 40.2	1.835	2.817	2.0	18.5
2 11	8 59.31	+ 9 54.8	2.085	3.062	3.2	20.0	2 11	8 58.57	+12 37.1	1.834	2.812	3.2	18.6
2 21	8 51.49	+10 17.1	2.108	3.054	6.5	20.2	2 21	8 49.86	+12 34.7	1.861	2.808	7.2	18.8
3 2	8 45.02	+10 39.2	2.158	3.047	9.8	20.4	3 2	8 42.78	+12 30.8	1.915	2.804	10.9	19.0
3 12	8 40.48	+10 58.2	2.233	3.040	12.8	20.6	3 12	8 37.97	+12 23.8	1.992	2.800	14.1	19.2
465572	2008 <i>WZ</i> ₁₃₀		2 3.6 53°29	4°9/ 6.8	18		346769	2009 <i>BY</i> ₈₄		2 3.6 210°07	0°4/ 3.9	17	
1 2	9 28.85	+ 2 30.8	1.981	2.771	14.3	20.2	1 2	9 26.20	+12 30.5	2.646	3.464	10.3	21.8
1 12	9 23.48	+ 2 1.2	1.912	2.783	11.3	20.0	1 12	9 21.34	+13 12.1	2.559	3.460	7.6	21.6
1 22	9 16.22	+ 1 48.1	1.867	2.796	8.1	19.9	1 22	9 14.94	+14 2.8	2.498	3.455	4.5	21.4
2 1	9 7.77	+ 1 51.3	1.848	2.808	5.5	19.7	2 1	9 7.53	+14 59.2	2.467	3.451	1.1	21.1
2 11	8 59.09	+ 2 8.8	1.857	2.821	5.2	19.7	2 11	8 59.81	+15 57.2	2.467	3.446	2.5	21.2
2 21	8 51.15	+ 2 36.9	1.894	2.834	7.6	19.9	2 21	8 52.54	+16 52.4	2.497	3.440	5.8	21.4
3 2	8 44.79	+ 3 10.9	1.957	2.847	10.6	20.1	3 2	8 46.40	+17 41.6	2.556	3.435	8.9	21.6
3 12	8 40.59	+ 3 46.0	2.044	2.860	13.5	20.3	3 12	8 41.94	+18 22.3	2.640	3.429	11.5	21.8
238926	2006 <i>AT</i> ₇₆		2 3.6 289°94	0°2/ 3.7	18		128563	2004 <i>PS</i> ₉₀		2 3.6 122°32	4°9/ 31.0	18	
1 2	9 29.45	+12 23.4	1.449	2.291	16.0	20.1	1 2	9 35.29	+31 19.7	2.332	3.164	11.1	19.8
1 12	9 24.79	+13 16.5	1.373	2.286	11.8	19.8	1 12	9 28.03	+32 5.5	2.279	3.181	8.3	19.7
1 22	9 17.38	+14 26.9	1.319	2.280	6.9	19.5	1 22	9 18.76	+32 45.7	2.252	3.197	5.9	19.6
2 1	9 8.07	+15 48.5	1.291	2.275	1.5	19.1	2 1	9 8.31	+33 14.3	2.254	3.212	4.9	19.5
2 11	8 58.15	+17 12.4	1.291	2.270	4.1	19.3	2 11	8 57.74	+33 27.1	2.286	3.227	6.3	19.6
2 21	8 49.07	+18 29.5	1.317	2.265	9.4	19.6	2 21	8 48.11	+33 22.6	2.346	3.241	8.7	19.8
3 2	8 42.15	+19 33.4	1.368	2.260	14.1	19.9	3 2	8 40.30	+33 1.9	2.433	3.255	11.3	20.0
3 12	8 38.24	+20 20.6	1.440	2.255	18.1	20.1	3 12	8 34.85	+32 27.7	2.541	3.268	13.5	20.2
203475	2002 <i>AY</i> ₂₉		2 3.6 327°67	5°3/ 31.4	18		253332	2003 <i>FR</i> ₄		2 3.6 347°85	18°0/ 14.7	16	
1 2	9 32.03	+25 20.2	1.400	2.260	15.4								

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
122766	2000 <i>SG</i> ₇₁		2 3.6 158°13	2°8/ 1.7 18			165931	2001 <i>TF</i> ₂₁₂		2 3.6 356°88	2°4/ 5.1 18		
1 2	9 31.54	+22 46.0	2.008	2.850	12.2	20.2	1 2	9 28.71	+ 9 19.4	2.156	2.969	12.6	19.5
1 12	9 25.63	+23 28.5	1.938	2.852	8.9	20.0	1 12	9 23.38	+ 9 5.1	2.075	2.968	9.5	19.3
1 22	9 17.55	+24 13.3	1.894	2.854	5.3	19.8	1 22	9 16.20	+ 9 1.3	2.018	2.967	6.1	19.1
2 1	9 8.09	+24 54.5	1.878	2.857	2.8	19.6	2 1	9 7.83	+ 9 6.6	1.990	2.967	2.9	18.9
2 11	8 58.32	+25 26.4	1.891	2.859	4.8	19.8	2 11	8 59.17	+ 9 18.4	1.990	2.967	3.4	18.9
2 21	8 49.35	+25 45.6	1.933	2.860	8.4	20.0	2 21	8 51.13	+ 9 33.9	2.020	2.967	6.7	19.1
3 2	8 42.15	+25 50.8	2.001	2.862	11.8	20.2	3 2	8 44.55	+ 9 49.8	2.077	2.967	10.1	19.3
3 12	8 37.37	+25 42.7	2.090	2.863	14.7	20.4	3 12	8 40.02	+10 3.5	2.158	2.967	13.1	19.5
372732	2009 <i>YD</i> ₂₀		2 3.6 71°52	1°9/ 2.2 18			332720	2009 <i>ST</i> ₂₁₃		2 3.6 40°76	4°1/ 6.4 18		
1 2	9 29.67	+19 21.4	1.919	2.761	12.7	20.5	1 2	9 27.29	+ 3 55.5	1.656	2.466	15.8	20.4
1 12	9 24.20	+20 12.7	1.863	2.778	9.1	20.3	1 12	9 22.71	+ 4 4.0	1.590	2.477	12.3	20.2
1 22	9 16.68	+21 9.2	1.832	2.794	5.2	20.1	1 22	9 15.95	+ 4 32.9	1.546	2.487	8.4	20.0
2 1	9 7.89	+22 4.8	1.829	2.811	2.0	19.9	2 1	9 7.79	+ 5 19.8	1.528	2.499	4.9	19.8
2 11	8 58.92	+22 53.5	1.856	2.828	4.2	20.1	2 11	8 59.35	+ 6 20.0	1.537	2.510	4.7	19.8
2 21	8 50.81	+23 31.0	1.911	2.845	8.0	20.3	2 21	8 51.74	+ 7 26.7	1.573	2.522	7.9	20.1
3 2	8 44.46	+23 55.0	1.991	2.861	11.4	20.6	3 2	8 45.93	+ 8 33.3	1.635	2.535	11.7	20.3
3 12	8 40.47	+24 5.6	2.094	2.878	14.3	20.8	3 12	8 42.59	+ 9 33.8	1.719	2.547	15.1	20.5
454932	2015 <i>TG</i> ₁₅₉		2 3.6 203°91	4°0/ 1.3 18			340807	2006 <i>TO</i> ₁₀₅		2 3.6 190°01	2°1/ 1.6 17		
1 2	9 37.51	+24 20.7	1.622	2.466	14.5	22.5	1 2	9 27.85	+22 33.8	2.784	3.618	9.4	21.5
1 12	9 30.57	+25 14.5	1.548	2.462	10.7	22.3	1 12	9 22.50	+23 15.4	2.707	3.617	6.8	21.4
1 22	9 20.68	+26 10.5	1.498	2.457	6.6	22.0	1 22	9 15.61	+23 58.9	2.657	3.616	4.0	21.2
2 1	9 8.79	+27 0.0	1.475	2.451	4.1	21.9	2 1	9 7.72	+24 40.0	2.636	3.615	2.1	21.0
2 11	8 56.34	+27 35.1	1.482	2.445	6.4	22.0	2 11	8 59.58	+25 14.7	2.647	3.613	3.7	21.2
2 21	8 44.90	+27 51.2	1.515	2.438	10.6	22.2	2 21	8 51.94	+25 40.3	2.687	3.611	6.5	21.3
3 2	8 35.84	+27 47.9	1.573	2.430	14.6	22.4	3 2	8 45.51	+25 55.2	2.755	3.608	9.2	21.5
3 12	8 30.01	+27 27.4	1.651	2.422	18.0	22.6	3 12	8 40.80	+25 59.3	2.846	3.606	11.5	21.7
459905	2014 <i>MH</i> ₁₂		2 3.6 120°32	1°5/ 2.6 18			430603	2002 <i>TH</i> ₃₃₈		2 3.6 78°87	4°4/ 31.2 18		
1 2	9 31.60	+17 4.2	1.713	2.553	14.0	21.3	1 2	9 30.61	+28 9.1	2.132	2.976	11.5	21.2
1 12	9 25.88	+18 5.3	1.650	2.564	10.1	21.1	1 12	9 24.89	+29 5.2	2.072	2.983	8.5	21.0
1 22	9 17.79	+19 15.4	1.611	2.573	5.7	20.8	1 22	9 17.11	+29 59.1	2.038	2.991	5.7	20.9
2 1	9 8.16	+20 27.6	1.600	2.583	1.7	20.6	2 1	9 8.04	+30 44.2	2.032	2.998	4.5	20.8
2 11	8 58.19	+21 34.2	1.618	2.592	4.3	20.8	2 11	8 58.73	+31 15.2	2.054	3.005	6.1	20.9
2 21	8 49.14	+22 29.1	1.664	2.601	8.7	21.1	2 21	8 50.23	+31 29.3	2.105	3.012	8.9	21.1
3 2	8 42.06	+23 8.9	1.736	2.610	12.6	21.3	3 2	8 43.47	+31 26.3	2.181	3.020	11.8	21.3
3 12	8 37.65	+23 32.9	1.829	2.618	15.9	21.6	3 12	8 39.06	+31 8.2	2.278	3.027	14.3	21.5
35798	1999 <i>JJ</i> ₃₂		2 3.6 165°70	0°5/ 3.9 18			58598	1997 <i>TX</i> ₁₁		2 3.6 249°27	0°6/ 3.9 18		
1 2	9 32.29	+12 53.1	2.072	2.891	12.8	20.0	1 2	9 31.42	+12 25.0	1.666	2.497	14.8	19.5
1 12	9 26.04	+13 26.8	1.996	2.897	9.4	19.8	1 12	9 26.05	+12 58.9	1.577	2.484	11.0	19.3
1 22	9 17.76	+14 10.8	1.945	2.902	5.5	19.6	1 22	9 18.10	+13 47.2	1.512	2.471	6.5	19.0
2 1	9 8.15	+15 0.9	1.923	2.907	1.3	19.3	2 1	9 8.30	+14 45.4	1.473	2.457	1.7	18.6
2 11	8 58.21	+15 52.0	1.932	2.911	3.1	19.5	2 11	8 57.85	+15 46.9	1.463	2.443	3.7	18.7
2 21	8 48.98	+16 39.0	1.971	2.914	7.1	19.7	2 21	8 48.07	+16 44.8	1.482	2.428	8.7	19.0
3 2	8 41.38	+17 18.5	2.037	2.916	10.8	19.9	3 2	8 40.19	+17 33.9	1.526	2.413	13.2	19.2
3 12	8 36.05	+17 48.3	2.127	2.917	13.9	20.2	3 12	8 35.09	+18 10.9	1.591	2.398	17.1	19.4
500268	2012 <i>LH</i> ₁₄		2 3.6 229°37	0°9/ 2.8 17			210776	2001 <i>BV</i> ₂₁		2 3.6 14°89	6°3/ 6.1 18		
1 2	9 28.57	+15 49.1	2.370	3.198	11.1	22.3	1 2	9 29.51	+ 5 43.0	1.088	1.929	20.3	18.9
1 12	9 23.32	+16 52.9	2.279	3.187	8.1	22.1	1 12	9 25.17	+ 4 40.6	1.032	1.934	15.9	18.7
1 22	9 16.23	+18 5.9	2.214	3.175	4.6	21.8	1 22	9 17.70	+ 3 59.7	0.994	1.941	11.1	18.4
2 1	9 7.85	+19 23.0	2.179	3.163	1.1	21.6	2 1	9 8.20	+ 3 42.2	0.979	1.949	7.1	18.2
2 11	8 59.02	+20 38.4	2.175	3.150	3.3	21.7	2 11	8 58.32	+ 3 45.9	0.987	1.959	7.0	18.2
2 21	8 50.64	+21 46.5	2.202	3.137	7.0	21.9	2 21	8 49.72	+ 4 5.5	1.018	1.970	10.8	18.5
3 2	8 43.57	+22 43.6	2.256	3.124	10.4	22.1	3 2	8 43.80	+ 4 33.9	1.071	1.982	15.4	18.8
3 12	8 38.47	+23 27.6	2.335	3.109	13.3	22.3	3 12	8 41.31	+ 5 3.7	1.143	1.996	19.4	19.1
131050	2000 <i>YF</i> ₄₈		2 3.6 95°19	1°1/ 4.3 18			355790	2008 <i>SZ</i> ₆₅		2 3.6 67°35	2°4/ 2.4 17		
1 2	9 33.34	+11 29.8	1.693	2.517	14.9	19.9	1 2	9 37.13	+20 0.2	1.297	2.148	17.0	20.8
1 12	9 26.94	+11 57.7	1.638	2.541	11.0	19.7	1 12	9 30.14	+20 41.9	1.258	2.177	12.2	20.6
1 22	9 18.27	+12 38.2	1.607	2.564	6.5	19.5	1 22	9 20.24	+21 28.5	1.243	2.206	6.9	20.4
2 1	9 8.24	+13 26.6	1.604	2.586	1.9	19.2	2 1	9 8.68	+22 11.9	1.253	2.235	2.5	20.2
2 11	8 58.07	+14 17.1	1.629	2.609	3.4	19.4	2 11	8 57.17	+22 44.4	1.290	2.264	5.3	20.5
2 21	8 48.93	+15 4.0	1.684	2.630	7.8	19.7	2 21	8 47.25	+23 2.1	1.354	2.292	10.1	20.8
3 2	8 41.82	+15 43.2	1.765	2.651	11.7	20.0	3 2	8 40.10	+23 4.2	1.441	2.321	14.3	21.1
3 12	8 37.32	+16 12.5	1.868	2.672	15.0	20.2	3 12	8 36.28	+22 52.3	1.548	2.349	17.8	21.4
78487	2002 <i>RO</i> ₅₉		2 3.6 92°96	4°9/ 31.0 18 R			272195	2005 <i>QS</i> ₇		2 3.6 203°18	0°2/ 3.8 18		
1 2	9 32.45	+30 27.1	2.210	3.049	11.3	19.8	1 2	9 33.65	+13 25.7	1.735	2.562	14.5	21.3
1 12	9 26.12	+31 15.3	2.154	3.061	8.5	19.7	1 12	9 27.51	+14 1.8	1.653	2.558	10.7	21.0
1 22	9 17.75	+31 58.8	2.124	3.072	5.9	19.5	1 22	9 18.86	+14 50.4	1.594	2.554	6.2	20.7
2 1	9 8.13	+32 31.6	2.122	3.083	4.9	19.5	2 1	9 8.47	+15 46.5	1.564	2.548	1.4	20.4
2 11	8 58.35	+32 48.9	2.150	3.094	6.3	19.6	2 11	8 57.54	+16 43.5	1.563	2.542	3.6	20.5
2 21	8 49.47	+32 48.9	2.205	3.105	9.0	19.8	2 21	8 47.36	+17 35.2	1.591	2.535	8.4	20.8
3 2	8 42.37	+32 32.2	2.286	3.116	11.6	20.0	3 2	8 39.12	+18 17.2	1.645	2.527	12.7	21.0
3 12	8 37.63	+32 1.4	2.388	3.127	14.0	20.2	3 12	8 33.62	+18 47.1	1.720	2.518	16.4	21.3
209475	2004 <i>HT</i> ₂		2 3.6 347°93	4°4/ 6.4 18			210170	2006 <i>TN</i> ₂₀		2 3.6 242°46	1°9/ 1.9 17		
1 2	9 25.89	+ 4 19.4	1.822	2.631	14.7	19.6	1 2	9 27.94	+2				

EPHEMERIDES

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
93042	2000 <i>SD</i> ₄		2 3.6 29° 00'	2.7° / 2.2 18			495976	2007 <i>TE</i> ₆₅		2 3.6 350° 09'	3° 1' / 5.4 18		
1 2	9 30.79	+19 46.8	1.153	2.019	17.5	18.4	1 2	9 28.46	+ 7 33.1	1.409	2.241	17.0	21.1
1 12	9 26.07	+20 34.0	1.104	2.030	12.7	18.1	1 12	9 24.07	+ 7 41.9	1.335	2.238	13.0	20.8
1 22	9 18.19	+21 29.1	1.075	2.041	7.3	17.8	1 22	9 17.01	+ 8 10.6	1.283	2.235	8.4	20.6
2 1	9 8.31	+22 22.8	1.071	2.054	2.8	17.6	2 1	9 8.14	+ 8 56.5	1.255	2.233	4.0	20.3
2 11	8 58.15	+23 6.0	1.092	2.067	5.9	17.8	2 11	8 58.75	+ 9 53.8	1.253	2.232	4.4	20.3
2 21	8 49.41	+23 32.7	1.138	2.081	11.1	18.2	2 21	8 50.23	+10 55.1	1.278	2.231	9.0	20.6
3 2	8 43.45	+23 40.8	1.206	2.096	15.7	18.5	3 2	8 43.85	+11 53.4	1.327	2.230	13.6	20.8
3 12	8 40.95	+23 31.6	1.292	2.112	19.6	18.8	3 12	8 40.41	+12 42.9	1.396	2.230	17.6	21.1
375041	2007 <i>HL</i> ₈₇		2 3.6 243° 10'	0° 4' / 3.9 17			425399	2010 <i>CO</i> ₈₅		2 3.6 250° 09'	0° 0' / 3.5 17		
1 2	9 28.63	+13 13.8	2.180	3.004	12.0	21.3	1 2	9 27.74	+14 34.8	2.336	3.162	11.3	21.5
1 12	9 23.45	+13 42.8	2.090	2.994	8.9	21.1	1 12	9 22.71	+15 5.0	2.247	3.153	8.2	21.3
1 22	9 16.34	+14 21.7	2.026	2.985	5.2	20.8	1 22	9 15.89	+15 43.5	2.184	3.144	4.8	21.1
2 1	9 7.93	+15 6.9	1.991	2.975	1.3	20.5	2 1	9 7.88	+16 26.7	2.150	3.134	1.0	20.8
2 11	8 59.10	+15 53.8	1.985	2.964	2.9	20.7	2 11	8 59.49	+17 10.2	2.146	3.124	2.8	20.9
2 21	8 50.81	+16 37.8	2.009	2.954	6.9	20.9	2 21	8 51.61	+17 50.0	2.171	3.114	6.6	21.1
3 2	8 43.95	+17 15.3	2.061	2.943	10.5	21.1	3 2	8 45.05	+18 22.8	2.224	3.104	10.0	21.3
3 12	8 39.17	+17 44.0	2.135	2.932	13.6	21.3	3 12	8 40.44	+18 46.8	2.301	3.094	12.9	21.5
317038	2001 <i>RF</i> ₅₅		2 3.6 158° 98'	3° 9' / 1.3 18			29472	Hurvíněk		2 3.6 40° 68'	3° 2' / 5.6 18		
1 2	9 35.17	+26 26.9	1.907	2.747	12.8	20.8	1 2	9 28.67	+ 7 4.0	1.481	2.307	16.6	18.8
1 12	9 28.40	+27 0.3	1.839	2.750	9.4	20.5	1 12	9 23.93	+ 7 13.7	1.420	2.320	12.6	18.5
1 22	9 19.22	+27 32.1	1.796	2.753	6.0	20.3	1 22	9 16.77	+ 7 42.3	1.382	2.332	8.1	18.3
2 1	9 8.52	+27 55.7	1.782	2.755	3.9	20.2	2 1	9 8.07	+ 8 26.9	1.368	2.345	4.0	18.1
2 11	8 57.55	+28 6.0	1.796	2.757	5.8	20.3	2 11	8 59.09	+ 9 21.6	1.381	2.359	4.2	18.1
2 21	8 47.55	+28 0.6	1.839	2.759	9.2	20.5	2 21	8 51.09	+10 19.5	1.422	2.373	8.4	18.4
3 2	8 39.59	+27 39.7	1.907	2.761	12.6	20.8	3 2	8 45.14	+11 14.2	1.486	2.388	12.5	18.7
3 12	8 34.33	+27 5.8	1.997	2.762	15.5	21.0	3 12	8 41.91	+12 0.9	1.573	2.403	16.2	19.0
282029	1993 <i>OH</i> ₃		2 3.6 205° 60'	1° 4' / 4.3 18			159961	2006 <i>AL</i> ₇₄		2 3.6 24° 17'	1° 2' / 2.9 18		
1 2	9 34.17	+12 22.7	1.742	2.566	14.6	20.7	1 2	9 29.41	+17 56.2	1.569	2.418	14.6	19.7
1 12	9 27.82	+12 22.8	1.661	2.563	10.9	20.4	1 12	9 24.48	+18 25.8	1.507	2.425	10.6	19.5
1 22	9 18.99	+12 33.8	1.603	2.559	6.6	20.2	1 22	9 17.09	+19 3.0	1.468	2.432	6.0	19.2
2 1	9 8.50	+12 52.7	1.572	2.554	2.1	19.9	2 1	9 8.14	+19 41.9	1.455	2.439	1.6	19.0
2 11	8 57.54	+13 15.2	1.571	2.550	3.6	20.0	2 11	8 58.90	+20 16.4	1.471	2.447	4.2	19.2
2 21	8 47.38	+13 37.1	1.598	2.544	8.1	20.2	2 21	8 50.65	+20 41.6	1.513	2.456	8.8	19.4
3 2	8 39.17	+13 54.9	1.651	2.538	12.4	20.5	3 2	8 44.46	+20 54.9	1.579	2.466	12.9	19.7
3 12	8 33.66	+14 6.3	1.726	2.532	16.0	20.7	3 12	8 41.02	+20 55.9	1.667	2.475	16.3	20.0
216544	2001 <i>SP</i> ₁₂₀		2 3.6 186° 94'	0° 7' / 4.2 17			332635	2008 <i>UB</i> ₁₈		2 3.6 190° 07'	1° 3' / 2.7 18		
1 2	9 30.86	+12 37.2	2.293	3.109	11.8	22.0	1 2	9 29.52	+18 39.5	2.164	2.999	11.7	21.5
1 12	9 24.90	+12 57.9	2.210	3.109	8.7	21.8	1 12	9 24.08	+19 14.1	2.088	2.999	8.5	21.3
1 22	9 17.10	+13 27.8	2.152	3.108	5.2	21.6	1 22	9 16.70	+19 53.9	2.037	2.999	4.8	21.0
2 1	9 8.08	+14 3.5	2.123	3.106	1.5	21.3	2 1	9 8.06	+20 34.5	2.015	2.998	1.5	20.8
2 11	8 58.74	+14 41.2	2.126	3.104	2.8	21.4	2 11	8 59.11	+21 10.9	2.023	2.997	3.6	21.0
2 21	8 49.98	+15 16.9	2.158	3.102	6.5	21.6	2 21	8 50.81	+21 39.4	2.059	2.996	7.3	21.2
3 2	8 42.65	+15 47.3	2.218	3.098	10.0	21.8	3 2	8 44.04	+21 57.6	2.123	2.995	10.7	21.4
3 12	8 37.36	+16 10.5	2.302	3.094	12.9	22.0	3 12	8 39.43	+22 4.8	2.210	2.994	13.6	21.6
152556	1980 <i>FK</i> ₄		2 3.6 350° 83'	4° 7' / 6.7 18			214070	2004 <i>GF</i> ₉		2 3.6 296° 09'	8° 0' / 9.8 17		
1 2	9 24.05	+ 3 26.4	1.394	2.219	17.5	19.2	1 2	9 25.63	- 8 41.5	2.313	3.039	14.4	19.9
1 12	9 20.88	+ 3 36.7	1.317	2.211	13.8	18.9	1 12	9 21.24	- 9 16.2	2.214	3.024	12.4	19.8
1 22	9 15.18	+ 4 12.0	1.260	2.204	9.5	18.6	1 22	9 15.10	- 9 29.9	2.136	3.009	10.3	19.6
2 1	9 7.74	+ 5 11.1	1.227	2.199	5.6	18.4	2 1	9 7.74	- 9 20.3	2.082	2.994	8.6	19.5
2 11	8 59.76	+ 6 28.3	1.219	2.194	5.3	18.4	2 11	8 59.94	- 8 47.7	2.054	2.997	8.0	19.4
2 21	8 52.56	+ 7 55.0	1.237	2.191	9.0	18.6	2 21	8 52.54	- 7 55.0	2.053	2.964	8.9	19.4
3 2	8 47.36	+ 9 21.8	1.279	2.189	13.5	18.8	3 2	8 46.36	- 6 47.2	2.078	2.950	10.9	19.5
3 12	8 44.96	+10 40.7	1.342	2.189	17.5	19.1	3 12	8 42.06	- 5 31.1	2.126	2.935	13.3	19.6
39009	2000 <i>UZ</i> ₄₂		2 3.6 137° 86'	1° 0' / 4.4 18			153338	2001 <i>OY</i> ₇₀		2 3.6 173° 55'	2° 3' / 2.2 18		
1 2	9 29.38	+11 31.7	2.110	2.930	12.5	19.9	1 2	9 35.38	+20 39.3	1.797	2.634	13.6	20.2
1 12	9 23.91	+11 55.4	2.036	2.936	9.3	19.7	1 12	9 28.68	+21 23.6	1.725	2.638	9.9	19.9
1 22	9 16.55	+12 29.9	1.987	2.943	5.6	19.5	1 22	9 19.49	+22 12.5	1.679	2.640	5.7	19.7
2 1	9 7.99	+13 11.8	1.966	2.949	1.7	19.2	2 1	9 8.66	+22 59.5	1.661	2.642	2.4	19.5
2 11	8 59.15	+13 56.5	1.976	2.955	2.9	19.3	2 11	8 57.45	+23 38.0	1.672	2.643	4.8	19.6
2 21	8 50.97	+14 39.6	2.014	2.960	6.8	19.6	2 21	8 47.14	+24 3.7	1.712	2.644	8.9	19.9
3 2	8 44.32	+15 17.3	2.080	2.965	10.3	19.8	3 2	8 38.86	+24 14.8	1.778	2.644	12.8	20.1
3 12	8 39.78	+15 47.1	2.169	2.970	13.3	20.0	3 12	8 33.36	+24 11.9	1.865	2.643	16.0	20.3
300270	2007 <i>JZ</i> ₁₆		2 3.6 193° 49'	3° 8' / 1.1 18			376606	2013 <i>PF</i> ₃₅		2 3.6 204° 03'	1° 4' / 2.8 18		
1 2	9 34.32	+23 27.9	1.757	2.601	13.6	21.6	1 2	9 33.09	+19 56.0	1.978	2.814	12.6	20.6
1 12	9 28.08	+24 36.5	1.685	2.599	9.9	21.4	1 12	9 26.81	+20 9.8	1.901	2.812	9.2	20.4
1 22	9 19.22	+25 48.5	1.638	2.597	6.1	21.1	1 22	9 18.33	+20 27.0	1.849	2.810	5.3	20.1
2 1	9 8.58	+26 55.8	1.619	2.595	3.8	21.0	2 1	9 8.42	+20 43.4	1.825	2.808	1.6	19.9
2 11	8 57.45	+27 50.3	1.629	2.592	6.1	21.1	2 11	8 58.18	+20 54.5	1.831	2.806	3.8	20.0
2 21	8 47.20	+28 26.8	1.667	2.588	9.9	21.3	2 21	8 48.73	+20 57.5	1.866	2.804	7.9	20.3
3 2	8 39.02	+28 43.7	1.730	2.584	13.7	21.5	3 2	8 41.08	+20 51.1	1.928	2.802	11.6	20.5
3 12	8 33.72	+28 42.5	1.813	2.579	16.8	21.7	3 12	8 35.88	+20 35.3	2.012	2.799	14.7	20.7
252529	2001 <i>VK</i> ₈		2 3.6 111° 90'	4° 1' / 6.6 18			391801	2008 <i>RD</i> ₁₀₇		2 3.6 182° 32'	3° 9' / 1.0 18		
1 2	9 30.96	+ 3 18.6	2.105	2.892	13.7	2							

EPHEMERIDES

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
505928	2015 <i>FV</i>		2 3.6 256°75	9°5/24.5	17		466418	2013 <i>TY</i> ₆		2 3.6 162°90	2°0/ 5.1	18	
1 2	9 41.14	+51 26.6	2.745	3.520	11.2	21.4	1 2	9 29.64	+9 23.0	2.140	2.952	12.7	21.4
1 12	9 32.93	+52 34.1	2.682	3.504	10.1	21.3	1 12	9 24.13	+9 26.6	2.061	2.954	9.6	21.2
1 22	9 21.96	+53 25.4	2.644	3.488	9.5	21.3	1 22	9 16.73	+9 41.6	2.006	2.956	6.0	20.9
2 1	9 9.20	+53 53.0	2.631	3.472	9.7	21.2	2 1	9 8.12	+10 5.9	1.979	2.958	2.6	20.7
2 11	8 56.04	+53 52.4	2.643	3.455	10.6	21.3	2 11	8 59.20	+10 36.0	1.982	2.960	3.2	20.8
2 21	8 43.97	+53 23.2	2.678	3.438	12.0	21.3	2 21	8 50.92	+11 8.2	2.015	2.961	6.7	21.0
3 2	8 34.20	+52 28.4	2.735	3.421	13.4	21.4	3 2	8 44.12	+11 38.6	2.074	2.963	10.2	21.2
3 12	8 27.48	+51 13.5	2.809	3.403	14.8	21.5	3 12	8 39.41	+12 4.5	2.157	2.964	13.2	21.4
117838	2005 <i>JY</i> ₆₈		2 3.6 177°27	2°0/ 1.5	18		317487	2002 <i>RW</i> ₂₉₀		2 3.6 226°97	4°2/31.7	18	
1 2	9 27.32	+21 1.8	2.934	3.765	9.1	20.5	1 2	9 33.13	+25 18.5	1.839	2.684	13.0	20.8
1 12	9 22.12	+22 7.5	2.857	3.766	6.5	20.4	1 12	9 27.21	+26 21.6	1.764	2.678	9.6	20.6
1 22	9 15.45	+23 16.6	2.808	3.768	3.8	20.2	1 22	9 18.75	+27 26.3	1.713	2.671	6.1	20.4
2 1	9 7.81	+24 24.4	2.790	3.768	2.0	20.0	2 1	9 8.58	+28 24.8	1.691	2.664	4.2	20.2
2 11	8 59.89	+25 26.4	2.803	3.769	3.6	20.2	2 11	8 57.90	+29 9.7	1.697	2.656	6.3	20.4
2 21	8 52.41	+26 19.0	2.848	3.769	6.3	20.3	2 21	8 48.03	+29 36.4	1.731	2.648	9.9	20.5
3 2	8 46.02	+26 59.9	2.920	3.769	8.9	20.5	3 2	8 40.14	+29 43.8	1.790	2.640	13.4	20.8
3 12	8 41.24	+27 28.5	3.017	3.768	11.1	20.7	3 12	8 35.01	+29 33.5	1.869	2.632	16.5	20.9
110536	2001 <i>TB</i> ₉₁		2 3.6 15°68	0°6/ 3.9	18		145650	4242 <i>P-L</i>		2 3.6 40°34	4°8/ 6.6	16	
1 2	9 30.70	+13 57.1	1.700	2.536	14.4	19.5	1 2	9 31.26	+3 25.7	1.159	1.985	20.2	20.0
1 12	9 25.31	+14 8.1	1.627	2.536	10.6	19.2	1 12	9 25.91	+3 39.7	1.128	2.023	15.5	19.8
1 22	9 17.57	+14 29.3	1.577	2.537	6.2	19.0	1 22	9 17.85	+4 20.5	1.116	2.061	10.3	19.7
2 1	9 8.28	+14 57.0	1.554	2.538	1.6	18.7	2 1	9 8.32	+5 23.4	1.128	2.101	5.8	19.5
2 11	8 58.62	+15 26.2	1.560	2.539	3.5	18.8	2 11	8 58.87	+6 39.8	1.165	2.141	5.4	19.6
2 21	8 49.80	+15 52.3	1.593	2.541	8.1	19.1	2 21	8 50.93	+7 59.8	1.228	2.181	9.2	20.0
3 2	8 42.89	+16 11.9	1.652	2.542	12.2	19.3	3 2	8 45.53	+9 14.7	1.315	2.222	13.4	20.3
3 12	8 38.59	+16 23.0	1.732	2.544	15.7	19.6	3 12	8 43.18	+10 18.3	1.422	2.262	17.0	20.6
463461	2013 <i>PS</i> ₁₉		2 3.6 216°06	0°5/ 3.3	16		321267	2009 <i>DL</i> ₁₀₆		2 3.6 331°84	2°4/ 1.9	18	
1 2	9 30.17	+15 25.0	2.365	3.189	11.2	22.3	1 2	9 28.72	+22 8.8	2.146	2.989	11.5	20.3
1 12	9 24.50	+16 8.5	2.275	3.180	8.2	22.1	1 12	9 23.58	+22 43.3	2.070	2.984	8.3	20.1
1 22	9 16.97	+17 0.4	2.211	3.170	4.7	21.8	1 22	9 16.46	+23 20.5	2.019	2.980	4.9	19.9
2 1	9 8.16	+17 56.2	2.176	3.160	1.0	21.5	2 1	9 8.07	+23 55.3	1.996	2.976	2.4	19.7
2 11	8 58.94	+18 50.9	2.172	3.149	3.1	21.7	2 11	8 59.35	+24 22.9	2.003	2.973	4.3	19.9
2 21	8 50.21	+19 40.1	2.199	3.138	6.8	21.9	2 21	8 51.31	+24 39.8	2.038	2.969	7.8	20.1
3 2	8 42.83	+20 20.4	2.254	3.126	10.2	22.1	3 2	8 44.82	+24 44.7	2.100	2.966	11.1	20.3
3 12	8 37.45	+20 50.0	2.332	3.113	13.1	22.3	3 12	8 40.52	+24 37.6	2.183	2.963	13.9	20.4
349852	2009 <i>DN</i> ₇		2 3.6 332°76	2°0/ 5.4	18		179058	2001 <i>SU</i> ₇₅		2 3.6 221°77	0°7/ 3.3	18	
1 2	9 25.23	+7 27.0	2.207	3.018	12.4	20.9	1 2	9 33.98	+18 3.7	2.002	2.832	12.7	20.5
1 12	9 20.94	+8 0.0	2.122	3.015	9.4	20.7	1 12	9 27.49	+18 10.8	1.918	2.826	9.3	20.3
1 22	9 14.91	+8 47.5	2.062	3.011	6.0	20.4	1 22	9 18.77	+18 22.6	1.859	2.819	5.4	20.0
2 1	9 7.72	+9 46.7	2.029	3.008	2.7	20.2	2 1	9 8.57	+18 35.3	1.829	2.813	1.2	19.7
2 11	9 0.19	+10 52.8	2.027	3.005	3.0	20.2	2 11	8 57.97	+18 45.0	1.828	2.805	3.5	19.9
2 21	8 53.18	+12 0.6	2.053	3.002	6.4	20.4	2 21	8 48.11	+18 48.6	1.857	2.798	7.7	20.1
3 2	8 47.49	+13 5.1	2.107	2.999	9.9	20.6	3 2	8 40.00	+18 44.5	1.913	2.790	11.5	20.3
3 12	8 43.71	+14 2.1	2.185	2.997	12.9	20.8	3 12	8 34.34	+18 32.3	1.992	2.781	14.7	20.5
409009	2002 <i>XH</i> ₁₁₇		2 3.6 62°02	1°9/ 2.5	18		205292	2000 <i>SQ</i> ₂₂₉		2 3.6 66°06	2°2/ 4.9	18	
1 2	9 32.19	+18 43.3	1.522	2.370	15.1	21.3	1 2	9 32.28	+9 24.3	1.394	2.226	17.1	20.0
1 12	9 26.44	+19 31.5	1.472	2.390	10.8	21.1	1 12	9 26.62	+9 40.7	1.342	2.246	12.8	19.7
1 22	9 18.18	+20 26.5	1.446	2.410	6.1	20.9	1 22	9 18.34	+10 14.4	1.311	2.266	7.9	19.5
2 1	9 8.40	+21 21.0	1.447	2.430	2.1	20.7	2 1	9 8.46	+11 1.1	1.305	2.286	3.1	19.3
2 11	8 58.45	+22 7.7	1.476	2.451	4.7	20.9	2 11	8 58.40	+11 53.9	1.327	2.307	4.0	19.4
2 21	8 49.67	+22 41.5	1.532	2.471	9.1	21.2	2 21	8 49.52	+12 46.0	1.376	2.327	8.7	19.7
3 2	8 43.12	+23 0.5	1.613	2.492	13.1	21.5	3 2	8 42.93	+13 31.9	1.449	2.347	13.1	20.0
3 12	8 39.42	+23 4.8	1.714	2.512	16.4	21.8	3 12	8 39.30	+14 7.7	1.544	2.368	16.7	20.3
108324	2001 <i>KB</i>		2 3.6 119°67	2°9/ 1.1	18		122677	2000 <i>RG</i> ₁₀₄		2 3.6 73°76	2°6/ 5.1	18	
1 2	9 29.56	+23 24.1	2.353	3.191	10.8	20.0	1 2	9 33.80	+9 51.6	1.826	2.640	14.4	19.8
1 12	9 23.98	+24 25.7	2.290	3.203	7.8	19.8	1 12	9 27.16	+9 30.3	1.768	2.662	10.8	19.6
1 22	9 16.59	+25 28.8	2.255	3.214	4.7	19.6	1 22	9 18.43	+9 20.5	1.734	2.684	6.8	19.4
2 1	9 8.06	+26 27.8	2.249	3.225	2.9	19.5	2 1	9 8.47	+9 20.6	1.728	2.706	3.2	19.3
2 11	8 59.30	+27 17.2	2.274	3.235	4.6	19.6	2 11	8 58.39	+9 27.6	1.751	2.728	3.7	19.3
2 21	8 51.22	+27 53.8	2.327	3.246	7.6	19.8	2 21	8 49.30	+9 38.1	1.803	2.749	7.4	19.6
3 2	8 44.62	+28 15.8	2.407	3.256	10.5	20.0	3 2	8 42.09	+9 49.0	1.882	2.771	11.0	19.9
3 12	8 40.06	+28 23.9	2.510	3.266	12.9	20.2	3 12	8 37.34	+9 57.5	1.983	2.792	14.1	20.1
299379	2005 <i>UR</i> ₅₀₀		2 3.6 20°07	4°0/30.9	17		26535	2000 <i>DG</i> ₃		2 3.6 160°65	1°2/ 2.6	18	
1 2	9 27.58	+27 44.0	2.433	3.276	10.3	20.0	1 2	9 30.53	+16 42.1	2.226	3.054	11.7	18.1
1 12	9 22.61	+28 46.0	2.366	3.277	7.6	19.8	1 12	9 24.79	+17 49.4	2.152	3.061	8.4	17.9
1 22	9 15.84	+29 47.0	2.326	3.279	5.1	19.6	1 22	9 17.13	+19 4.6	2.106	3.067	4.8	17.7
2 1	9 7.92	+30 40.9	2.315	3.281	4.1	19.6	2 1	9 8.22	+20 22.0	2.089	3.072	1.4	17.4
2 11	8 59.71	+31 22.8	2.333	3.283	5.6	19.7	2 11	8 58.97	+21 35.2	2.103	3.077	3.6	17.6
2 21	8 52.13	+31 49.6	2.380	3.285	8.2	19.8	2 21	8 50.34	+22 39.0	2.147	3.081	7.3	17.8
3 2	8 45.97	+32 0.4	2.452	3.287	10.8	20.0	3 2	8 43.21	+23 30.0	2.219	3.084	10.6	18.0
3 12	8 41.83	+31 56.2	2.546	3.289	13.1	20.2	3 12	8 38.19	+24 6.9	2.315	3.087	13.4	18.2
419839	2010 <i>XK</i> ₈₄		2 3.6 137°85	5°1/ 6.9	18		200638	2001 <i>SF</i> ₂₂₈		2 3.6 191°29	1°5/ 4.7	18	
1 2	9 31.47	+1 45.9	2.043	2.824	14.3	21.0	1 2	9 33.07	+9 54.5	2.018	2.828	13.4	22.2

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2 3.6

2 3.7

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
131738	2001 YF ₁₁₄	2	3.6	79°38	7.2/ 7.5	18	457087	2008 EV ₁₁₇	2	3.6	297°03	0.7/ 3.3	17
1 2	9 34.79	- 0 12.5	1.495	2.282	18.3	18.8	1 2	9 31.50	+17 10.7	1.626	2.469	14.5	21.9
1 12	9 28.27	- 1 3.2	1.439	2.304	14.8	18.6	1 12	9 26.23	+17 27.6	1.540	2.454	10.7	21.7
1 22	9 19.24	- 1 30.5	1.404	2.325	11.0	18.5	1 22	9 18.32	+17 52.6	1.477	2.439	6.2	21.4
2 1	9 8.65	- 1 33.1	1.394	2.347	7.9	18.3	2 1	9 8.55	+18 21.0	1.441	2.425	1.4	21.0
2 11	8 57.87	- 1 13.4	1.410	2.368	7.4	18.4	2 11	8 58.18	+18 47.2	1.432	2.410	4.0	21.2
2 21	8 48.22	- 0 36.4	1.453	2.389	9.8	18.5	2 21	8 48.56	+19 6.3	1.451	2.396	9.0	21.4
3 2	8 40.78	+ 0 10.6	1.520	2.409	13.1	18.8	3 2	8 40.94	+19 15.4	1.495	2.382	13.5	21.6
3 12	8 36.22	+ 1 0.4	1.609	2.430	16.3	19.0	3 12	8 36.20	+19 13.5	1.560	2.368	17.3	21.8
457228	2008 KM ₃₃	2	3.6	318°93	9.7/ 9.4	16	116830	2004 FU ₂₆	2	3.6	285°80	6.6/ 9.4	18
1 2	9 26.01	- 6 29.6	1.556	2.324	18.6	21.1	1 2	9 25.25	- 6 20.3	2.403	3.141	13.6	19.8
1 12	9 22.30	- 7 15.5	1.462	2.305	15.9	20.9	1 12	9 20.95	- 6 30.4	2.299	3.123	11.5	19.6
1 22	9 16.10	- 7 34.0	1.388	2.286	13.0	20.7	1 22	9 14.97	- 6 19.9	2.216	3.106	9.2	19.4
2 1	9 8.07	- 7 20.7	1.336	2.268	10.6	20.5	2 1	9 7.81	- 5 47.8	2.159	3.088	7.3	19.3
2 11	8 59.30	- 6 35.3	1.307	2.250	9.8	20.4	2 11	9 0.22	- 4 55.3	2.129	3.070	6.7	19.2
2 21	8 51.08	- 5 22.2	1.303	2.233	11.3	20.4	2 21	8 53.00	- 3 46.2	2.127	3.052	7.9	19.2
3 2	8 44.66	- 3 49.8	1.322	2.217	14.3	20.5	3 2	8 46.93	- 2 25.9	2.152	3.034	10.2	19.3
3 12	8 40.96	- 2 8.8	1.363	2.201	17.7	20.7	3 12	8 42.65	- 1 1.0	2.202	3.016	12.7	19.5
1052	Belgica	2	3.6	78°51	2.1/ 2.5	18	346399	2008 SO ₁₂₀	2	3.7	178°36	0.7/ 4.2	18
1 2	9 33.85	+17 46.3	1.316	2.168	16.7	15.1	1 2	9 28.61	+12 36.6	2.218	3.039	11.9	21.4
1 12	9 28.04	+18 48.4	1.265	2.184	12.1	14.9	1 12	9 23.38	+12 59.5	2.138	3.040	8.8	21.2
1 22	9 19.29	+20 0.4	1.237	2.201	6.9	14.7	1 22	9 16.33	+13 31.8	2.083	3.040	5.2	20.9
2 1	9 8.69	+21 13.1	1.235	2.218	2.2	14.4	2 1	9 8.10	+14 10.5	2.058	3.041	1.5	20.7
2 11	8 57.83	+22 16.9	1.260	2.234	5.2	14.6	2 11	8 59.55	+14 51.1	2.062	3.041	2.8	20.8
2 21	8 48.28	+23 5.0	1.311	2.251	10.2	15.0	2 21	8 51.60	+15 29.7	2.095	3.041	6.6	21.0
3 2	8 41.30	+23 34.6	1.385	2.267	14.7	15.3	3 2	8 45.07	+16 2.9	2.156	3.040	10.0	21.2
3 12	8 37.60	+23 46.2	1.480	2.283	18.3	15.6	3 12	8 40.56	+16 28.3	2.240	3.040	13.0	21.4
313803	2004 BK ₁₇	2	3.6	303°64	9.4/27.6	18	413629	2005 UD ₃₆₇	2	3.7	30°02	8.9/28.9	18
1 2	9 33.70	+36 25.0	1.577	2.426	14.5	19.4	1 2	9 32.67	+34 56.6	1.471	2.326	15.0	20.1
1 12	9 28.40	+38 13.7	1.512	2.414	11.8	19.2	1 12	9 27.39	+36 34.0	1.428	2.336	11.9	19.9
1 22	9 19.80	+39 54.8	1.472	2.402	9.8	19.1	1 22	9 19.01	+38 1.5	1.409	2.347	9.4	19.8
2 1	9 8.86	+41 15.4	1.456	2.390	9.7	19.0	2 1	9 8.68	+39 7.2	1.415	2.358	9.0	19.8
2 11	8 57.19	+42 5.3	1.466	2.378	11.6	19.1	2 11	8 58.05	+39 43.0	1.446	2.370	10.8	20.0
2 21	8 46.57	+42 20.4	1.499	2.367	14.5	19.3	2 21	8 48.79	+39 46.7	1.500	2.382	13.6	20.1
3 2	8 38.60	+42 2.5	1.553	2.355	17.5	19.4	3 2	8 42.23	+39 21.2	1.576	2.395	16.5	20.4
3 12	8 34.22	+41 17.5	1.624	2.345	20.2	19.6	3 12	8 39.06	+38 32.5	1.669	2.408	19.0	20.6
31602	1999 GG	2	3.6	198°10	0°0/ 3.7	18	86749	2000 GF ₆₀	2	3.7	157°70	3.9/ 1.3	18
1 2	9 27.63	+14 40.9	2.704	3.524	10.1	19.4	1 2	9 36.50	+24 40.9	1.743	2.585	13.8	20.3
1 12	9 22.40	+15 5.7	2.619	3.522	7.4	19.3	1 12	9 29.62	+25 34.4	1.678	2.591	10.1	20.0
1 22	9 15.65	+15 37.1	2.560	3.519	4.3	19.1	1 22	9 20.11	+26 28.6	1.639	2.597	6.2	19.8
2 1	9 7.91	+16 12.1	2.532	3.516	0.9	18.8	2 1	9 8.91	+27 15.9	1.627	2.602	3.9	19.7
2 11	8 59.91	+16 47.3	2.534	3.512	2.5	18.9	2 11	8 57.37	+27 49.3	1.644	2.607	6.0	19.8
2 21	8 52.37	+17 19.3	2.567	3.509	5.8	19.1	2 21	8 46.86	+28 5.0	1.689	2.611	9.8	20.1
3 2	8 45.99	+17 45.7	2.628	3.505	8.7	19.3	3 2	8 38.55	+28 2.7	1.759	2.614	13.4	20.3
3 12	8 41.29	+18 4.9	2.713	3.500	11.3	19.5	3 12	8 33.18	+27 44.7	1.850	2.617	16.5	20.5
177546	2004 FB ₆₆	2	3.6	279°77	7.7/28.8	18	173464	2000 QX ₁₅₄	2	3.7	122°67	4.0/ 6.4	18
1 2	9 34.72	+34 30.9	1.840	2.683	13.1	19.6	1 2	9 31.71	+ 3 25.8	2.717	3.488	11.4	20.1
1 12	9 28.80	+35 56.3	1.759	2.660	10.4	19.4	1 12	9 25.20	+ 2 46.3	2.639	3.500	9.0	19.9
1 22	9 19.91	+37 16.7	1.702	2.638	8.2	19.2	1 22	9 17.19	+ 2 17.9	2.587	3.512	6.4	19.8
2 1	9 8.89	+38 21.7	1.672	2.615	7.8	19.2	2 1	9 8.26	+ 2 0.6	2.565	3.523	4.3	19.7
2 11	8 57.10	+39 2.7	1.669	2.592	9.6	19.2	2 11	8 59.15	+ 1 53.5	2.573	3.535	4.2	19.7
2 21	8 46.10	+39 15.2	1.692	2.569	12.6	19.3	2 21	8 50.59	+ 1 54.8	2.613	3.546	6.2	19.8
3 2	8 37.30	+38 59.9	1.737	2.546	15.7	19.5	3 2	8 43.26	+ 2 2.0	2.681	3.556	8.6	20.0
3 12	8 31.68	+38 21.2	1.801	2.522	18.4	19.6	3 12	8 37.65	+ 2 12.2	2.774	3.567	10.9	20.2
150160	1997 OF ₂	2	3.6	172°45	0.8/ 4.2	18	128294	2003 WM ₉₅	2	3.7	122°26	0.5/ 3.3	18
1 2	9 31.66	+12 38.9	2.252	3.067	12.0	20.6	1 2	9 28.83	+15 53.4	2.289	3.117	11.4	19.9
1 12	9 25.53	+12 55.4	2.172	3.071	8.9	20.4	1 12	9 23.45	+16 29.0	2.218	3.126	8.3	19.7
1 22	9 17.53	+13 20.8	2.118	3.074	5.3	20.2	1 22	9 16.33	+17 11.6	2.174	3.134	4.7	19.5
2 1	9 8.32	+13 52.0	2.093	3.076	1.5	19.9	2 1	9 8.09	+17 57.0	2.158	3.143	1.0	19.2
2 11	8 58.82	+14 25.1	2.099	3.077	2.8	20.0	2 11	8 59.62	+18 40.7	2.173	3.151	3.0	19.4
2 21	8 49.94	+14 56.4	2.135	3.078	6.6	20.3	2 21	8 51.79	+19 18.6	2.218	3.158	6.6	19.6
3 2	8 42.54	+15 22.7	2.198	3.079	10.0	20.5	3 2	8 45.37	+19 48.0	2.290	3.166	9.9	19.8
3 12	8 37.23	+15 42.2	2.286	3.079	13.0	20.7	3 12	8 40.94	+20 7.8	2.385	3.173	12.6	20.0
140852	2001 UT ₂₁₅	2	3.6	233°51	5.0/29.8	17	57691	2001 UH ₇₄	2	3.7	16°49	0.7/ 3.2	18
1 2	9 30.56	+32 32.1	2.687	3.521	9.7	20.5	1 2	9 27.15	+16 36.2	1.903	2.744	12.8	18.9
1 12	9 24.78	+33 34.6	2.611	3.511	7.5	20.4	1 12	9 22.56	+17 8.0	1.834	2.748	9.3	18.7
1 22	9 17.14	+34 33.1	2.561	3.501	5.6	20.2	1 22	9 15.95	+17 47.5	1.790	2.753	5.3	18.5
2 1	9 8.26	+35 21.8	2.541	3.491	5.1	20.2	2 1	9 8.04	+18 30.1	1.774	2.758	1.2	18.2
2 11	8 59.01	+35 55.8	2.550	3.480	6.4	20.2	2 11	8 59.84	+19 10.4	1.786	2.764	3.5	18.4
2 21	8 50.32	+36 12.5	2.587	3.469	8.6	20.4	2 21	8 52.39	+19 44.0	1.826	2.770	7.5	18.7
3 2	8 43.04	+36 11.8	2.650	3.457	10.9	20.5	3 2	8 46.59	+20 7.9	1.892	2.776	11.2	18.9
3 12	8 37.80	+35 55.3	2.734	3.445	13.0	20.6	3 12	8 43.06	+20 20.8	1.981	2.784	14.3	19.1
317086	2001 SX ₃₂₂	2	3.6	164°00	0°0/ 3.6	18	264418	2000 QR ₉₄	2	3.7	132°07	0.3/ 3.4	18
1 2	9 32.49	+15 18.3	2.274	3.095	11.7	21.3	1 2	9 30.17	+14 39.8	2.370	3.191	11.3	21.2
1 12	9 26.10	+15 33.6	2										

EPHEMERIDES

2 3.7

2 3.7

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
242347	2004 <i>BO</i> ₂		2 3.7 331 ^o 07	0 ^o 7/ 3.1 18			321845	2010 <i>RX</i> ₁₁₁		2 3.7 109 ^o 45	0 ^o 0/ 3.5 18		
1 2	9 26.84	+15 57.3	1.966	2.805	12.5	20.2	1 2	9 31.33	+14 23.0	1.757	2.590	14.1	21.7
1 12	9 22.39	+16 42.3	1.886	2.799	9.1	19.9	1 12	9 25.72	+14 55.7	1.690	2.599	10.3	21.5
1 22	9 15.91	+17 36.7	1.830	2.792	5.2	19.7	1 22	9 17.83	+15 38.7	1.647	2.607	5.9	21.2
2 1	9 8.05	+18 35.4	1.802	2.787	1.2	19.4	2 1	9 8.48	+16 27.2	1.631	2.615	1.3	20.9
2 11	8 59.79	+19 32.5	1.804	2.781	3.5	19.5	2 11	8 58.82	+17 15.2	1.644	2.623	3.5	21.1
2 21	8 52.15	+20 22.6	1.834	2.776	7.6	19.8	2 21	8 50.01	+17 57.3	1.686	2.631	7.9	21.4
3 2	8 46.07	+21 2.0	1.890	2.771	11.4	20.0	3 2	8 43.08	+18 29.9	1.753	2.638	11.9	21.6
3 12	8 42.23	+21 28.8	1.968	2.766	14.6	20.2	3 12	8 38.70	+18 51.2	1.843	2.645	15.2	21.9
410202	2007 <i>RF</i> ₂₀₀		2 3.7 165 ^o 85	3 ^o 3/ 5.9 18			172024	2001 <i>UF</i> ₂₁₄		2 3.7 181 ^o 47	0 ^o 8/ 3.0 18		
1 2	9 31.22	+ 5 30.3	1.852	2.655	14.7	22.1	1 2	9 27.95	+17 25.1	2.663	3.490	10.0	21.0
1 12	9 25.56	+ 5 42.6	1.774	2.659	11.3	21.9	1 12	9 22.69	+17 57.9	2.583	3.490	7.2	20.8
1 22	9 17.72	+ 6 12.3	1.719	2.662	7.5	21.6	1 22	9 15.87	+18 35.8	2.530	3.491	4.1	20.6
2 1	9 8.43	+ 6 57.0	1.691	2.665	4.0	21.4	2 1	9 8.05	+19 15.1	2.507	3.491	1.0	20.4
2 11	8 58.76	+ 7 52.4	1.692	2.668	4.1	21.4	2 11	8 59.97	+19 52.1	2.514	3.490	2.8	20.5
2 21	8 49.81	+ 8 52.6	1.722	2.669	7.6	21.7	2 21	8 52.40	+20 23.5	2.552	3.489	6.0	20.7
3 2	8 42.57	+ 9 51.8	1.779	2.671	11.4	21.9	3 2	8 46.03	+20 47.1	2.618	3.488	9.0	20.9
3 12	8 37.73	+10 45.1	1.859	2.672	14.7	22.1	3 12	8 41.39	+21 1.9	2.708	3.487	11.5	21.1
246101	2007 <i>ED</i> ₁₄₅		2 3.7 154 ^o 47	0 ^o 5/ 3.9 18			456532	2007 <i>AX</i> ₂₇		2 3.7 60 ^o 32	3 ^o 9/ 31.6 18		
1 2	9 33.53	+12 23.4	1.775	2.599	14.4	21.8	1 2	9 30.23	+20 42.4	1.580	2.432	14.4	20.0
1 12	9 27.32	+13 4.4	1.704	2.608	10.6	21.6	1 12	9 25.19	+22 40.0	1.531	2.451	10.3	19.8
1 22	9 18.76	+13 58.1	1.657	2.615	6.2	21.4	1 22	9 17.62	+24 44.1	1.508	2.470	6.2	19.6
2 1	9 8.66	+14 59.5	1.639	2.622	1.5	21.1	2 1	9 8.44	+26 43.5	1.513	2.489	3.9	19.5
2 11	8 58.19	+16 1.9	1.650	2.629	3.4	21.2	2 11	8 58.94	+28 27.4	1.547	2.509	6.4	19.7
2 21	8 48.56	+16 59.2	1.690	2.634	8.0	21.5	2 21	8 50.45	+29 48.5	1.608	2.528	10.3	20.0
3 2	8 40.84	+17 47.0	1.756	2.639	12.0	21.8	3 2	8 44.07	+30 44.3	1.693	2.548	13.9	20.3
3 12	8 35.72	+18 22.7	1.845	2.643	15.4	22.0	3 12	8 40.52	+31 16.0	1.799	2.567	16.8	20.5
240807	2005 <i>YF</i> ₂₀₄		2 3.7 318 ^o 07	0 ^o 5/ 3.4 18			234372	2001 <i>OA</i> ₁₁₃		2 3.7 158 ^o 19	1 ^o 5/ 5.1 18		
1 2	9 29.86	+14 54.3	1.310	2.163	16.7	20.7	1 2	9 27.63	+ 9 23.7	2.826	3.628	10.2	21.1
1 12	9 25.49	+15 32.3	1.233	2.152	12.3	20.4	1 12	9 22.32	+ 9 38.9	2.746	3.634	7.6	20.9
1 22	9 18.11	+16 25.1	1.179	2.142	7.2	20.0	1 22	9 15.60	+10 3.2	2.691	3.640	4.8	20.8
2 1	9 8.57	+17 26.5	1.149	2.133	1.5	19.6	2 1	9 7.99	+10 34.5	2.667	3.646	2.0	20.6
2 11	8 58.34	+18 27.7	1.145	2.124	4.5	19.8	2 11	9 0.18	+11 9.8	2.673	3.651	2.5	20.6
2 21	8 49.02	+19 20.7	1.166	2.115	10.2	20.1	2 21	8 52.83	+11 46.1	2.710	3.655	5.3	20.8
3 2	8 42.07	+19 59.9	1.211	2.107	15.2	20.4	3 2	8 46.58	+12 20.3	2.777	3.660	8.1	21.0
3 12	8 38.44	+20 23.0	1.275	2.099	19.5	20.6	3 12	8 41.90	+12 50.2	2.868	3.663	10.5	21.2
201920	2004 <i>CD</i> ₆		2 3.7 37 ^o 21	3 ^o 6/ 1.3 18			457585	2009 <i>AF</i> ₂₀		2 3.7 343 ^o 42	1 ^o 4/ 2.9 18		
1 2	9 29.86	+23 22.5	1.613	2.468	14.0	19.4	1 2	9 27.98	+16 38.0	1.188	2.053	17.3	21.1
1 12	9 24.73	+24 21.6	1.569	2.489	10.1	19.2	1 12	9 24.33	+17 22.6	1.118	2.044	12.7	20.8
1 22	9 17.22	+25 22.2	1.549	2.511	6.1	19.0	1 22	9 17.52	+18 21.2	1.069	2.035	7.3	20.5
2 1	9 8.30	+26 16.6	1.557	2.534	3.6	18.9	2 1	9 8.48	+19 26.2	1.044	2.028	1.8	20.2
2 11	8 59.27	+26 57.9	1.592	2.557	5.8	19.1	2 11	8 58.78	+20 27.7	1.044	2.022	5.2	20.4
2 21	8 51.34	+27 22.3	1.653	2.581	9.5	19.4	2 21	8 50.11	+21 17.3	1.068	2.017	10.9	20.6
3 2	8 45.51	+27 29.1	1.739	2.605	13.0	19.6	3 2	8 43.99	+21 49.8	1.115	2.013	16.0	20.9
3 12	8 42.37	+27 20.0	1.845	2.630	15.9	19.9	3 12	8 41.35	+22 3.6	1.179	2.010	20.4	21.2
238683	2005 <i>EX</i> ₂₂₆		2 3.7 39 ^o 83	2 ^o 9/ 5.9 18			318115	2004 <i>JD</i> ₂₅		2 3.7 246 ^o 21	0 ^o 2/ 3.5 17		
1 2	9 26.50	+ 5 34.5	1.992	2.800	13.7	20.8	1 2	9 29.87	+14 35.8	2.014	2.843	12.7	21.4
1 12	9 21.99	+ 5 56.3	1.917	2.805	10.5	20.6	1 12	9 24.63	+15 17.2	1.924	2.831	9.3	21.2
1 22	9 15.59	+ 6 34.7	1.865	2.810	6.9	20.4	1 22	9 17.26	+16 9.1	1.859	2.819	5.4	20.9
2 1	9 7.98	+ 7 27.2	1.840	2.815	3.6	20.2	2 1	9 8.39	+17 6.8	1.822	2.807	1.1	20.6
2 11	9 0.06	+ 8 29.1	1.844	2.821	3.6	20.2	2 11	8 59.02	+18 4.7	1.816	2.794	3.3	20.8
2 21	8 52.78	+ 9 34.7	1.877	2.826	6.9	20.4	2 21	8 50.21	+18 57.1	1.838	2.781	7.6	21.0
3 2	8 46.99	+10 38.5	1.937	2.832	10.4	20.7	3 2	8 42.96	+19 40.1	1.887	2.767	11.5	21.2
3 12	8 43.30	+11 35.9	2.020	2.838	13.5	20.9	3 12	8 38.00	+20 11.4	1.959	2.753	14.8	21.4
361579	2007 <i>RY</i> ₁₇₄		2 3.7 78 ^o 63	4 ^o 0/ 1.4 18			431553	2007 <i>TC</i> ₄₄₅		2 3.7 77 ^o 28	8 ^o 5/ 27.7 18		
1 2	9 35.51	+23 55.7	1.513	2.363	15.0	20.7	1 2	9 35.51	+42 3.0	2.218	3.039	12.0	20.8
1 12	9 28.97	+24 54.6	1.467	2.384	10.9	20.5	1 12	9 28.79	+43 16.4	2.172	3.047	10.0	20.7
1 22	9 19.72	+25 54.4	1.445	2.405	6.6	20.3	1 22	9 19.59	+44 16.6	2.151	3.055	8.7	20.6
2 1	9 8.85	+26 46.5	1.450	2.426	4.0	20.2	2 1	9 8.85	+44 55.8	2.156	3.063	8.6	20.6
2 11	8 57.84	+27 23.4	1.482	2.447	6.3	20.4	2 11	8 57.90	+45 9.2	2.188	3.071	9.7	20.7
2 21	8 48.14	+27 41.5	1.542	2.467	10.2	20.7	2 21	8 48.04	+44 56.1	2.244	3.079	11.6	20.8
3 2	8 40.89	+27 40.8	1.625	2.488	13.9	20.9	3 2	8 40.34	+44 19.2	2.323	3.087	13.6	21.0
3 12	8 36.71	+27 23.8	1.728	2.508	17.0	21.2	3 12	8 35.43	+43 23.4	2.421	3.095	15.3	21.1
5850	Masaharu		2 3.7 101 ^o 82	0 ^o 6/ 3.3 18			431507	2007 <i>TB</i> ₁₆₆		2 3.7 85 ^o 26	7 ^o 2/ 28.2 18		
1 2	9 35.68	+15 1.8	1.402	2.243	16.6	17.6	1 2	9 34.38	+38 44.6	2.367	3.193	11.1	20.9
1 12	9 29.21	+15 47.2	1.349	2.261	12.0	17.3	1 12	9 27.68	+40 8.3	2.334	3.218	9.0	20.8
1 22	9 19.94	+16 44.5	1.318	2.280	6.9	17.1	1 22	9 18.83	+41 21.1	2.326	3.242	7.5	20.7
2 1	9 8.92	+17 46.3	1.314	2.298	1.4	16.8	2 1	9 8.68	+42 15.8	2.347	3.266	7.3	20.8
2 11	8 57.66	+18 44.4	1.338	2.316	4.2	17.0	2 11	8 58.40	+42 47.8	2.395	3.289	8.5	20.9
2 21	8 47.67	+19 32.2	1.389	2.333	9.4	17.4	2 21	8 49.09	+42 55.9	2.469	3.313	10.3	21.0
3 2	8 40.14	+20 6.1	1.464	2.349	13.8	17.7	3 2	8 41.69	+42 42.1	2.567	3.336	12.3	21.2
3 12	8 35.77	+20 25.2	1.560	2.365	17.4	18.0	3 12	8 36.77	+42 10.5	2.684	3.358	14.0	21.4
342872	2008 <i>YQ</i> ₄₀		2 3.7 249 ^o 29	1 ^o 2/ 2.9 17									

EPHEMERIDES

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
399574	2003 <i>SC</i> ₂₄₆		2 3.7 120°68	3°3/ 1.7 18			285888	2001 <i>PO</i> ₂₉		2 3.7 109°76	1°4/ 4.7 18		
1 2	9 36.22	+23 45.8	1.844	2.683	13.3	21.6	1 2	9 32.75	+10 49.8	2.171	2.981	12.6	21.3
1 12	9 29.17	+24 29.9	1.787	2.699	9.6	21.4	1 12	9 26.23	+11 4.2	2.111	3.005	9.3	21.1
1 22	9 19.76	+25 14.6	1.756	2.715	5.8	21.3	1 22	9 17.91	+11 28.8	2.075	3.028	5.7	20.9
2 1	9 8.89	+25 53.3	1.752	2.730	3.3	21.1	2 1	9 8.51	+12 0.4	2.069	3.050	2.0	20.7
2 11	8 57.85	+26 20.2	1.779	2.744	5.3	21.3	2 11	8 58.99	+12 35.0	2.094	3.072	2.9	20.8
2 21	8 47.86	+26 32.2	1.833	2.758	8.9	21.5	2 21	8 50.25	+13 8.8	2.148	3.093	6.5	21.1
3 2	8 39.95	+26 28.9	1.914	2.771	12.4	21.8	3 2	8 43.11	+13 38.6	2.231	3.114	9.8	21.3
3 12	8 34.76	+26 12.2	2.016	2.784	15.3	22.0	3 12	8 38.08	+14 2.1	2.338	3.134	12.6	21.6
256311	2006 <i>WR</i> ₁₈₉		2 3.7 157°62	6°9/ 9.1 18			79075	3704 <i>T</i> ₋₃		2 3.7 179°40	0°1/ 3.6 18		
1 2	9 29.97	- 5 54.2	2.255	2.991	14.4	20.5	1 2	9 33.04	+14 54.1	2.032	2.856	12.8	21.2
1 12	9 24.34	- 6 15.6	2.174	2.998	12.1	20.3	1 12	9 26.80	+15 23.0	1.953	2.858	9.4	21.0
1 22	9 16.90	- 6 16.2	2.115	3.004	9.6	20.1	1 22	9 18.43	+16 0.6	1.900	2.859	5.4	20.7
2 1	9 8.30	- 5 55.0	2.081	3.010	7.5	20.0	2 1	9 8.66	+16 42.6	1.876	2.860	1.1	20.4
2 11	8 59.38	- 5 13.7	2.076	3.016	6.9	20.0	2 11	8 58.52	+17 23.8	1.881	2.859	3.2	20.6
2 21	8 51.04	- 4 16.4	2.099	3.020	8.2	20.1	2 21	8 49.08	+17 59.7	1.917	2.859	7.4	20.8
3 2	8 44.08	- 3 8.6	2.149	3.024	10.4	20.2	3 2	8 41.32	+18 27.4	1.979	2.857	11.1	21.1
3 12	8 39.10	- 1 56.9	2.223	3.028	12.9	20.4	3 12	8 35.90	+18 45.3	2.065	2.855	14.3	21.3
417900	2007 <i>RE</i> ₁₀₂		2 3.7 109°01	2°8/ 1.8 18			282926	2007 <i>PN</i> ₁₈		2 3.7 96°31	0°6/ 3.9 18		
1 2	9 33.95	+25 31.9	2.346	3.179	11.0	20.5	1 2	9 35.36	+14 29.1	1.565	2.398	15.5	20.4
1 12	9 27.11	+25 48.7	2.282	3.190	8.0	20.4	1 12	9 28.79	+14 30.6	1.503	2.411	11.4	20.2
1 22	9 18.41	+26 3.9	2.244	3.201	4.9	20.2	1 22	9 19.65	+14 41.7	1.464	2.424	6.7	20.0
2 1	9 8.61	+26 13.1	2.236	3.212	2.9	20.1	2 1	9 8.91	+14 58.4	1.452	2.436	1.7	19.7
2 11	8 58.67	+26 12.7	2.259	3.223	4.4	20.2	2 11	8 57.94	+15 15.9	1.469	2.449	3.6	19.8
2 21	8 49.57	+26 1.4	2.311	3.234	7.4	20.4	2 21	8 48.07	+15 30.2	1.514	2.461	8.4	20.1
3 2	8 42.11	+25 39.1	2.390	3.244	10.4	20.6	3 2	8 40.42	+15 38.4	1.584	2.473	12.7	20.4
3 12	8 36.83	+25 7.5	2.492	3.254	12.9	20.8	3 12	8 35.67	+15 39.2	1.675	2.484	16.2	20.7
222272	2000 <i>RD</i> ₅₇		2 3.7 26°16	2°2/ 5.0 18			47106	1999 <i>CU</i> ₂₀		2 3.7 193°31	1°6/ 2.8 18		
1 2	9 29.43	+ 9 42.7	1.713	2.538	14.7	20.4	1 2	9 35.52	+20 53.9	2.064	2.895	12.4	18.5
1 12	9 24.39	+ 9 45.1	1.641	2.542	11.1	20.2	1 12	9 28.58	+21 1.9	1.985	2.893	9.0	18.3
1 22	9 17.11	+10 1.4	1.592	2.545	7.0	20.0	1 22	9 19.43	+21 12.0	1.931	2.892	5.2	18.1
2 1	9 8.36	+10 28.9	1.569	2.549	2.9	19.7	2 1	9 8.87	+21 19.9	1.907	2.890	1.7	17.8
2 11	8 59.26	+11 3.3	1.574	2.552	3.6	19.8	2 11	8 58.00	+21 21.6	1.913	2.887	3.8	18.0
2 21	8 50.97	+11 39.6	1.607	2.557	7.8	20.0	2 21	8 47.93	+21 15.0	1.949	2.884	7.7	18.2
3 2	8 44.49	+12 13.3	1.665	2.561	11.8	20.3	3 2	8 39.65	+20 59.2	2.011	2.881	11.3	18.4
3 12	8 40.51	+12 40.8	1.746	2.566	15.2	20.5	3 12	8 33.83	+20 34.9	2.097	2.877	14.4	18.6
423639	2005 <i>XW</i> ₁₆		2 3.7 13°13	5°0/31.3 18			170303	2003 <i>SU</i> ₁₇		2 3.7 160°25	0°0/ 3.5 18		
1 2	9 27.84	+24 25.1	1.419	2.284	14.9	20.3	1 2	9 33.38	+14 42.3	1.979	2.804	13.1	21.8
1 12	9 23.81	+25 53.1	1.363	2.287	10.9	20.1	1 12	9 27.04	+15 8.5	1.906	2.810	9.6	21.6
1 22	9 16.99	+27 24.5	1.331	2.292	6.9	19.8	1 22	9 18.55	+15 43.3	1.857	2.816	5.5	21.3
2 1	9 8.35	+28 48.6	1.325	2.298	5.0	19.7	2 1	9 8.69	+16 22.6	1.837	2.821	1.2	21.0
2 11	8 59.30	+29 55.6	1.344	2.304	7.5	19.9	2 11	8 58.50	+17 1.2	1.848	2.826	3.2	21.2
2 21	8 51.31	+30 39.4	1.389	2.312	11.4	20.1	2 21	8 49.08	+17 34.8	1.887	2.830	7.4	21.5
3 2	8 45.63	+30 58.4	1.457	2.320	15.2	20.4	3 2	8 41.40	+18 0.4	1.954	2.833	11.2	21.7
3 12	8 43.01	+30 54.7	1.543	2.329	18.4	20.6	3 12	8 36.10	+18 16.6	2.044	2.836	14.3	21.9
407292	2010 <i>JY</i> ₂₈		2 3.7 216°63	1°8/ 2.3 18			503662	2016 <i>GH</i> ₂₄₀		2 3.7 175°33	6°0/ 11.2 17		
1 2	9 32.62	+18 13.4	1.987	2.820	12.7	22.0	1 2	9 25.24	-11 21.7	3.325	4.009	11.1	22.5
1 12	9 26.71	+19 15.9	1.901	2.811	9.2	21.8	1 12	9 20.47	-11 18.0	3.232	4.011	9.6	22.4
1 22	9 18.50	+20 26.9	1.841	2.802	5.3	21.5	1 22	9 14.52	-10 56.7	3.162	4.013	7.9	22.3
2 1	9 8.69	+21 40.0	1.809	2.792	1.9	21.2	2 1	9 7.80	-10 17.2	3.117	4.014	6.6	22.2
2 11	8 58.32	+22 47.9	1.809	2.781	4.3	21.4	2 11	9 0.88	- 9 21.0	3.100	4.015	6.0	22.1
2 21	8 48.55	+23 44.7	1.837	2.769	8.4	21.6	2 21	8 54.30	- 8 11.2	3.113	4.016	6.5	22.2
3 2	8 40.47	+24 27.0	1.892	2.757	12.2	21.8	3 2	8 48.61	- 6 51.7	3.155	4.016	7.9	22.3
3 12	8 34.86	+24 53.7	1.969	2.744	15.4	22.0	3 12	8 44.22	- 5 27.7	3.223	4.016	9.6	22.4
429388	2010 <i>OD</i> ₁₂₃		2 3.7 289°14	0°8/ 3.0 17			134454	1998 <i>SG</i> ₁₀₉		2 3.7 97°67	1°0/ 4.3 18		
1 2	9 28.02	+17 23.2	2.223	3.057	11.5	21.6	1 2	9 34.03	+12 10.7	1.911	2.730	13.7	20.8
1 12	9 23.09	+17 53.7	2.136	3.047	8.3	21.3	1 12	9 27.33	+12 28.6	1.856	2.756	10.1	20.6
1 22	9 16.28	+18 30.8	2.074	3.036	4.8	21.1	1 22	9 18.60	+12 56.7	1.826	2.782	6.0	20.4
2 1	9 8.19	+19 10.2	2.041	3.025	1.2	20.8	2 1	9 8.67	+13 31.3	1.824	2.807	1.8	20.2
2 11	8 59.71	+19 47.4	2.038	3.014	3.3	21.0	2 11	8 58.63	+14 7.4	1.852	2.831	3.1	20.3
2 21	8 51.78	+20 18.4	2.064	3.004	7.1	21.2	2 21	8 49.55	+14 41.0	1.910	2.855	7.1	20.6
3 2	8 45.25	+20 40.5	2.116	2.993	10.5	21.4	3 2	8 42.30	+15 8.7	1.995	2.879	10.7	20.9
3 12	8 40.79	+20 52.4	2.192	2.983	13.5	21.6	3 12	8 37.43	+15 28.7	2.103	2.901	13.7	21.1
27483	2000 <i>GN</i> ₉₃		2 3.7 268°47	4°3/31.0 18			281070	2006 <i>OY</i> ₁₀		2 3.7 177°66	15°7/ 17.6 16		
1 2	9 29.54	+27 5.9	2.174	3.018	11.3	18.2	1 2	9 42.83	-34 10.4	2.351	2.831	19.2	23.8
1 12	9 24.32	+28 14.4	2.103	3.015	8.4	18.0	1 12	9 34.19	-35 42.7	2.272	2.837	18.2	23.7
1 22	9 17.03	+29 22.8	2.058	3.012	5.6	17.8	1 22	9 22.89	-36 43.1	2.206	2.841	17.3	23.6
2 1	9 8.35	+30 24.2	2.041	3.008	4.3	17.7	2 1	9 9.67	-37 4.1	2.157	2.844	16.4	23.5
2 11	8 59.29	+31 12.4	2.053	3.005	6.1	17.8	2 11	8 55.73	-36 41.6	2.127	2.844	15.8	23.5
2 21	8 50.90	+31 43.6	2.094	3.001	9.0	18.0	2 21	8 42.44	-35 36.6	2.117	2.842	15.8	23.5
3 2	8 44.13	+31 56.8	2.159	2.998	11.9	18.2	3 2	8 31.04	-33 55.1	2.129	2.838	16.2	23.5
3 12	8 39.64	+31 53.0	2.246	2.994	14.5	18.4	3 12	8 22.42	-31 47.0	2.160	2.832	17.0	23.5
10968	Sterken		2 3.7 300°84	0°7/ 3.2 18			5727	1988 <i>BB</i> ₄		2 3.7 332°82	3°7/ 5.4 18		
1 2	9 27.50	+16 36.3	2.173	3.008	11.7	18.9	1 2	9 31.80	+ 8 32.4	1.			

EPHEMERIDES

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
364756	2007 <i>WG</i> ₁		2 3.7 60°11	0°6/ 3.4	18		240104	2002 <i>CA</i> ₁₈₃		2 3.7 131°83	1°3/ 2.8	18	
1 2	9 33.13	+16 4.1	1.406	2.252	16.2	21.5	1 2	9 32.91	+16 32.8	1.739	2.575	14.1	20.7
1 12	9 27.33	+16 33.1	1.355	2.271	11.7	21.3	1 12	9 26.96	+17 34.3	1.674	2.586	10.2	20.4
1 22	9 18.86	+17 12.0	1.326	2.289	6.7	21.0	1 22	9 18.62	+18 45.4	1.635	2.597	5.8	20.2
2 1	9 8.75	+17 54.6	1.324	2.308	1.4	20.7	2 1	9 8.75	+19 59.1	1.624	2.607	1.6	19.9
2 11	8 58.46	+18 33.8	1.348	2.327	4.1	21.0	2 11	8 58.54	+21 7.6	1.642	2.617	4.1	20.1
2 21	8 49.41	+19 4.3	1.400	2.346	9.1	21.3	2 21	8 49.22	+22 4.8	1.688	2.626	8.5	20.4
3 2	8 42.72	+19 23.2	1.476	2.365	13.4	21.6	3 2	8 41.86	+22 47.2	1.761	2.635	12.4	20.7
3 12	8 39.05	+19 29.7	1.572	2.384	17.0	21.9	3 12	8 37.16	+23 13.9	1.855	2.643	15.7	20.9
277318	2005 <i>SR</i> ₂₁₅		2 3.7 178°57	2°8/ 2.0	18		141767	2002 <i>NL</i> ₁		2 3.7 273°05	0°0/ 3.5	18	
1 2	9 37.35	+22 14.5	1.851	2.686	13.4	21.4	1 2	9 30.96	+14 22.1	1.680	2.516	14.5	20.4
1 12	9 30.18	+22 56.6	1.779	2.689	9.8	21.1	1 12	9 25.86	+14 54.2	1.591	2.501	10.7	20.2
1 22	9 20.48	+23 41.6	1.731	2.691	5.8	20.9	1 22	9 18.19	+15 38.5	1.525	2.485	6.3	19.9
2 1	9 9.12	+24 22.8	1.712	2.691	2.8	20.7	2 1	9 8.70	+16 30.3	1.485	2.470	1.4	19.5
2 11	8 57.37	+24 53.8	1.723	2.691	5.0	20.9	2 11	8 58.55	+17 23.1	1.475	2.454	3.7	19.6
2 21	8 46.53	+25 10.8	1.763	2.690	9.0	21.1	2 21	8 49.05	+18 10.7	1.492	2.437	8.7	19.9
3 2	8 37.74	+25 12.8	1.828	2.689	12.7	21.3	3 2	8 41.42	+18 48.4	1.534	2.421	13.2	20.1
3 12	8 31.75	+25 1.1	1.916	2.686	15.9	21.5	3 12	8 36.55	+19 13.8	1.597	2.405	17.0	20.3
363892	2005 <i>SQ</i> ₁₀₈		2 3.7 152°61	4°8/ 7.7	18		400246	2007 <i>PN</i> ₂₃		2 3.7 86°00	3°1/ 5.5	17	
1 2	9 29.09	- 0 39.2	2.313	3.078	13.3	22.0	1 2	9 37.16	+ 7 54.5	1.677	2.484	15.8	21.1
1 12	9 23.65	- 0 34.3	2.233	3.086	10.7	21.9	1 12	9 29.71	+ 7 41.1	1.628	2.516	11.9	20.9
1 22	9 16.50	- 0 11.5	2.176	3.094	7.8	21.7	1 22	9 20.00	+ 7 42.4	1.601	2.548	7.7	20.7
2 1	9 8.25	+ 0 28.6	2.146	3.101	5.4	21.6	2 1	9 9.01	+ 7 56.3	1.603	2.579	3.8	20.5
2 11	8 59.72	+ 1 22.9	2.146	3.107	4.9	21.5	2 11	8 57.99	+ 8 18.6	1.633	2.609	4.1	20.6
2 21	8 51.75	+ 2 26.8	2.175	3.113	6.9	21.7	2 21	8 48.14	+ 8 45.1	1.692	2.638	7.8	20.9
3 2	8 45.11	+ 3 34.8	2.232	3.119	9.6	21.8	3 2	8 40.42	+ 9 11.3	1.778	2.667	11.6	21.2
3 12	8 40.37	+ 4 41.8	2.314	3.124	12.3	22.0	3 12	8 35.37	+ 9 34.0	1.887	2.695	14.7	21.5
261193	2005 <i>TD</i> ₁₅₂		2 3.7 342°51	0°9/ 4.2	18		454160	2013 <i>EZ</i> ₁₁₈		2 3.7 323°26	4°5/ 6.0	17	
1 2	9 28.99	+12 34.9	1.663	2.499	14.6	21.3	1 2	9 28.30	+ 5 47.0	1.297	2.128	18.2	20.9
1 12	9 24.24	+12 54.5	1.586	2.495	10.8	21.1	1 12	9 24.37	+ 5 37.1	1.215	2.115	14.2	20.7
1 22	9 17.13	+13 26.8	1.533	2.492	6.5	20.8	1 22	9 17.54	+ 5 49.5	1.153	2.102	9.7	20.4
2 1	9 8.42	+14 7.8	1.506	2.489	1.8	20.5	2 1	9 8.59	+ 6 23.5	1.115	2.089	5.4	20.1
2 11	8 59.27	+14 51.9	1.507	2.486	3.4	20.6	2 11	8 58.88	+ 7 14.6	1.101	2.078	5.4	20.0
2 21	8 50.89	+15 33.6	1.535	2.484	8.1	20.9	2 21	8 49.97	+ 8 15.5	1.113	2.067	9.8	20.2
3 2	8 44.38	+16 8.4	1.588	2.482	12.4	21.1	3 2	8 43.29	+ 9 18.0	1.147	2.056	14.8	20.5
3 12	8 40.47	+16 33.4	1.664	2.481	16.0	21.3	3 12	8 39.81	+10 14.7	1.202	2.047	19.2	20.7
33716	1999 <i>LF</i> ₂₆		2 3.7 215°71	1°7/ 2.2	18		271275	2003 <i>UN</i> ₂₀₁		2 3.7 110°95	4°0/ 7.2	18	
1 2	9 30.07	+19 8.0	2.307	3.140	11.2	19.0	1 2	9 28.31	+ 1 31.7	2.407	3.182	12.5	21.3
1 12	9 24.57	+20 2.4	2.223	3.133	8.1	18.8	1 12	9 22.97	+ 1 36.9	2.336	3.199	9.9	21.1
1 22	9 17.15	+21 2.8	2.164	3.125	4.7	18.6	1 22	9 16.06	+ 1 57.7	2.289	3.215	7.0	21.0
2 1	9 8.42	+22 3.8	2.135	3.117	1.8	18.3	2 1	9 8.18	+ 2 33.0	2.271	3.232	4.6	20.8
2 11	8 59.28	+23 0.0	2.137	3.109	3.8	18.5	2 11	9 0.11	+ 3 19.5	2.281	3.247	4.2	20.8
2 21	8 50.68	+23 46.7	2.169	3.100	7.4	18.7	2 21	8 52.63	+ 4 13.2	2.322	3.263	6.3	21.0
3 2	8 43.48	+24 21.1	2.228	3.091	10.7	18.9	3 2	8 46.44	+ 5 9.3	2.390	3.278	9.0	21.2
3 12	8 38.37	+24 42.5	2.309	3.081	13.5	19.0	3 12	8 42.05	+ 6 3.6	2.484	3.292	11.6	21.4
18309	1981 <i>EV</i> ₁₃		2 3.7 222°90	3°4/ 6.9	18		462653	2009 <i>SW</i> ₂₄₀		2 3.7 165°08	4°6/ 7.8	17	
1 2	9 26.06	+ 2 24.7	2.865	3.640	10.8	19.2	1 2	9 29.58	- 1 9.1	2.691	3.444	11.9	22.1
1 12	9 21.27	+ 2 29.1	2.768	3.632	8.5	19.0	1 12	9 23.82	- 1 15.1	2.606	3.451	9.6	21.9
1 22	9 15.08	+ 2 46.4	2.696	3.624	6.0	18.8	1 22	9 16.54	- 1 5.6	2.546	3.457	7.2	21.7
2 1	9 7.97	+ 3 15.8	2.653	3.615	3.9	18.7	2 1	9 8.30	- 0 41.2	2.513	3.462	5.1	21.6
2 11	9 0.56	+ 3 55.1	2.639	3.606	3.7	18.6	2 11	8 59.80	- 0 3.7	2.511	3.467	4.7	21.6
2 21	8 53.52	+ 4 41.1	2.656	3.597	5.6	18.8	2 21	8 51.77	+ 0 43.3	2.538	3.470	6.4	21.7
3 2	8 47.48	+ 5 30.1	2.702	3.588	8.2	18.9	3 2	8 44.90	+ 1 35.8	2.594	3.474	8.7	21.9
3 12	8 42.94	+ 6 18.5	2.773	3.578	10.6	19.1	3 12	8 39.71	+ 2 29.4	2.676	3.476	11.1	22.0
368821	2006 <i>BW</i> ₅₂		2 3.7 115°85	0°2/ 3.5	18		5232	<i>Jordaens</i>		2 3.7 247°02	2°8/ 6.1	18	R
1 2	9 29.00	+13 2.9	2.205	3.028	12.0	20.6	1 2	9 27.22	+ 4 55.0	2.323	3.118	12.3	17.2
1 12	9 23.69	+14 13.5	2.138	3.042	8.7	20.5	1 12	9 22.46	+ 5 20.7	2.226	3.106	9.6	17.0
1 22	9 16.57	+15 34.9	2.096	3.056	5.0	20.3	1 22	9 15.93	+ 6 1.9	2.153	3.094	6.4	16.8
2 1	9 8.29	+17 1.5	2.085	3.069	1.0	20.0	2 1	9 8.19	+ 6 56.9	2.108	3.081	3.5	16.6
2 11	8 59.74	+18 26.7	2.105	3.082	3.0	20.2	2 11	9 0.03	+ 8 1.7	2.094	3.069	3.4	16.6
2 21	8 51.83	+19 44.8	2.155	3.095	6.8	20.4	2 21	8 52.29	+ 9 11.2	2.109	3.056	6.4	16.7
3 2	8 45.36	+20 51.3	2.233	3.108	10.1	20.7	3 2	8 45.80	+10 20.3	2.152	3.042	9.8	16.9
3 12	8 40.92	+21 44.3	2.335	3.120	13.0	20.9	3 12	8 41.18	+11 24.2	2.219	3.028	12.8	17.1
217062	2001 <i>RS</i> ₁₂₃		2 3.7 139°21	0°7/ 4.2	18		200363	2000 <i>QD</i> ₂		2 3.7 75°69	8°8/ 10.7	18	
1 2	9 30.37	+12 10.9	1.964	2.788	13.2	21.1	1 2	9 29.94	-10 20.5	1.075	1.851	24.8	19.8
1 12	9 24.87	+12 43.0	1.891	2.794	9.7	20.9	1 12	9 25.81	- 9 6.5	1.009	1.861	20.7	19.6
1 22	9 17.33	+13 26.5	1.843	2.800	5.8	20.6	1 22	9 18.42	- 6 57.1	0.958	1.871	15.8	19.3
2 1	9 8.46	+14 17.3	1.823	2.806	1.6	20.3	2 1	9 8.77	- 3 52.6	0.929	1.881	11.1	19.1
2 11	8 59.28	+15 10.1	1.833	2.812	3.1	20.5	2 11	8 58.50	- 0 6.2	0.926	1.891	8.8	19.0
2 21	8 50.81	+15 59.6	1.872	2.818	7.2	20.7	2 21	8 49.40	+ 3 59.2	0.949	1.901	11.3	19.2
3 2	8 43.98	+16 41.9	1.937	2.823	10.9	21.0	3 2	8 43.01	+ 7 57.9	0.998	1.912	15.9	19.5
3 12	8 39.44	+17 14.5	2.026	2.827	14.1	21.2	3 12	8 40.25	+11 30.2	1.069	1.922	20.5	19.8
205951	2002 <i>JK</i> ₁₀₄		2 3.7 305°81	1°2/ 3.0	18		431144	2006 <i>QD</i> ₆₉		2 3.7 90°87	0°1/ 3.6	17	
1 2	9 29.98	+16 23.7	1.440	2.290	15.6	20.3	1 2	9 27.73	+14 56.1				

EPHEMERIDES

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
505868	2015 <i>DN</i> ₉₂		2 3.7 174°54	0°3/ 4.0 18			325204	2008 <i>FT</i> ₁₃₆		2 3.7 21°33	12°6/25.8 18		
1 2	9 26.81	+12 15.1	2.560	3.377	10.7	21.6	1 2	9 43.76	+49 23.5	1.755	2.560	15.3	20.1
1 12	9 21.96	+13 4.6	2.478	3.379	7.8	21.4	1 12	9 35.87	+50 54.6	1.713	2.560	13.7	20.0
1 22	9 15.54	+14 3.9	2.423	3.380	4.6	21.2	1 22	9 24.15	+52 3.7	1.692	2.561	12.7	19.9
2 1	9 8.09	+15 9.2	2.397	3.381	1.1	20.9	2 1	9 9.99	+52 39.2	1.695	2.562	12.9	19.9
2 11	9 0.35	+16 15.7	2.403	3.381	2.5	21.0	2 11	8 55.52	+52 34.5	1.720	2.563	14.0	20.0
2 21	8 53.08	+17 18.8	2.439	3.382	5.9	21.2	2 21	8 42.89	+51 50.7	1.767	2.564	15.8	20.1
3 2	8 46.99	+18 14.8	2.503	3.382	9.0	21.4	3 2	8 33.69	+50 34.0	1.834	2.566	17.7	20.3
3 12	8 42.63	+19 1.3	2.592	3.382	11.7	21.6	3 12	8 28.63	+48 53.7	1.916	2.567	19.5	20.4
455443	2003 <i>SZ</i> ₁₆₀		2 3.7 134°48	0°0/ 3.7 18			12086	Joshualevine		2 3.7 281°46	3°5/ 5.7 18		
1 2	9 33.27	+14 4.3	1.972	2.795	13.2	22.5	1 2	9 30.07	+ 6 33.6	1.598	2.416	16.0	19.0
1 12	9 26.92	+14 39.2	1.905	2.809	9.6	22.3	1 12	9 25.23	+ 6 34.9	1.510	2.404	12.4	18.7
1 22	9 18.48	+15 23.5	1.864	2.823	5.6	22.1	1 22	9 17.85	+ 6 54.6	1.445	2.392	8.2	18.5
2 1	9 8.73	+16 12.5	1.852	2.836	1.2	21.8	2 1	9 8.67	+ 7 31.3	1.404	2.380	4.3	18.2
2 11	8 58.73	+17 0.8	1.870	2.848	3.2	21.9	2 11	8 58.85	+ 8 20.5	1.391	2.368	4.5	18.2
2 21	8 49.54	+17 43.5	1.917	2.860	7.3	22.2	2 21	8 49.69	+ 9 16.1	1.405	2.356	8.6	18.4
3 2	8 42.09	+18 17.5	1.991	2.870	11.0	22.5	3 2	8 42.42	+10 11.7	1.445	2.344	13.0	18.6
3 12	8 37.01	+18 41.1	2.089	2.881	14.1	22.7	3 12	8 37.89	+11 1.6	1.505	2.332	16.9	18.8
27133	1998 <i>XQ</i> ₉		2 3.7 163°86	2°2/ 5.2 18			280875	2005 <i>VA</i> ₇₆		2 3.7 137°75	0°6/ 4.1 18		
1 2	9 34.00	+ 8 18.5	1.999	2.803	13.8	19.7	1 2	9 34.22	+12 6.6	1.706	2.531	14.8	21.7
1 12	9 27.47	+ 8 33.4	1.922	2.811	10.4	19.5	1 12	9 27.90	+12 45.9	1.640	2.543	10.9	21.5
1 22	9 18.83	+ 9 2.0	1.869	2.817	6.6	19.3	1 22	9 19.18	+13 38.3	1.598	2.555	6.4	21.2
2 1	9 8.82	+ 9 41.5	1.845	2.823	2.9	19.1	2 1	9 8.91	+14 38.7	1.583	2.567	1.7	21.0
2 11	8 58.46	+10 27.4	1.850	2.828	3.4	19.1	2 11	8 58.32	+15 40.2	1.598	2.578	3.4	21.1
2 21	8 48.83	+11 15.0	1.886	2.832	7.2	19.4	2 21	8 48.65	+16 36.7	1.642	2.587	8.1	21.4
3 2	8 40.88	+11 59.6	1.949	2.835	10.9	19.6	3 2	8 40.97	+17 23.6	1.712	2.597	12.2	21.7
3 12	8 35.27	+12 37.8	2.036	2.836	14.1	19.8	3 12	8 35.98	+17 58.5	1.804	2.605	15.6	21.9
216546	2001 <i>SH</i> ₂₉₂		2 3.7 94°47	2°2/ 4.9 18			130636	2000 <i>SC</i> ₆₄		2 3.7 140°95	4°5/31.9 18		
1 2	9 31.86	+10 7.2	1.790	2.610	14.4	20.2	1 2	9 36.36	+26 19.5	1.747	2.590	13.7	20.2
1 12	9 26.09	+10 0.6	1.718	2.616	10.9	19.9	1 12	9 29.58	+27 17.5	1.687	2.599	10.1	20.0
1 22	9 18.09	+10 6.2	1.669	2.621	6.8	19.7	1 22	9 20.19	+28 14.7	1.651	2.607	6.5	19.8
2 1	9 8.66	+10 21.8	1.648	2.627	2.9	19.5	2 1	9 9.13	+29 2.9	1.643	2.615	4.5	19.7
2 11	8 58.92	+10 43.8	1.655	2.633	3.6	19.5	2 11	8 57.76	+29 35.2	1.664	2.622	6.5	19.8
2 21	8 49.99	+11 8.1	1.690	2.638	7.6	19.8	2 21	8 47.46	+29 48.3	1.713	2.629	10.0	20.0
3 2	8 42.88	+11 30.8	1.752	2.644	11.5	20.0	3 2	8 39.38	+29 42.2	1.786	2.635	13.5	20.2
3 12	8 38.25	+11 48.9	1.836	2.649	14.9	20.3	3 12	8 34.23	+29 19.7	1.879	2.641	16.5	20.5
211809	2004 <i>DO</i> ₃₄		2 3.7 22°40	0°7/ 3.2 18			493185	2014 <i>UV</i> ₁₅		2 3.7 172°58	3°9/ 1.1 18		
1 2	9 28.54	+16 56.9	1.969	2.807	12.6	20.6	1 2	9 35.74	+26 42.2	2.120	2.955	11.9	21.4
1 12	9 23.58	+17 23.0	1.898	2.810	9.1	20.3	1 12	9 28.78	+27 24.3	2.051	2.959	8.8	21.2
1 22	9 16.60	+17 55.9	1.852	2.814	5.2	20.1	1 22	9 19.60	+28 4.9	2.007	2.961	5.6	21.0
2 1	9 8.34	+18 31.4	1.834	2.818	1.2	19.8	2 1	9 9.00	+28 37.7	1.992	2.963	3.9	20.9
2 11	8 59.79	+19 4.6	1.845	2.822	3.4	20.0	2 11	8 58.09	+28 57.6	2.007	2.965	5.6	21.0
2 21	8 51.97	+19 31.4	1.884	2.827	7.4	20.3	2 21	8 48.04	+29 1.9	2.051	2.966	8.7	21.2
3 2	8 45.77	+19 49.3	1.950	2.832	11.0	20.5	3 2	8 39.83	+28 50.6	2.121	2.966	11.9	21.4
3 12	8 41.83	+19 57.0	2.038	2.837	14.1	20.7	3 12	8 34.12	+28 25.7	2.213	2.966	14.5	21.6
158277	2001 <i>UC</i> ₁₅		2 3.7 93°37	1°1/ 3.0 17			419152	2009 <i>SC</i> ₃₂₅		2 3.7 122°31	2°4/ 5.3 18		
1 2	9 36.72	+17 7.5	1.566	2.403	15.3	20.9	1 2	9 30.24	+ 8 43.9	1.946	2.759	13.7	21.6
1 12	9 29.69	+17 48.4	1.518	2.429	11.0	20.7	1 12	9 24.80	+ 8 44.0	1.869	2.763	10.4	21.4
1 22	9 20.13	+18 36.9	1.494	2.456	6.3	20.5	1 22	9 17.32	+ 8 57.1	1.817	2.766	6.6	21.2
2 1	9 9.08	+19 26.3	1.497	2.481	1.6	20.3	2 1	9 8.51	+ 9 21.0	1.791	2.769	3.1	21.0
2 11	8 57.93	+20 9.7	1.530	2.506	4.2	20.5	2 11	8 59.38	+ 9 52.2	1.795	2.773	3.5	21.0
2 21	8 48.03	+20 42.4	1.590	2.531	8.7	20.8	2 21	8 50.94	+10 26.2	1.828	2.776	7.2	21.3
3 2	8 40.44	+21 2.2	1.676	2.554	12.8	21.1	3 2	8 44.13	+10 59.0	1.887	2.779	10.8	21.5
3 12	8 35.77	+21 9.1	1.784	2.577	16.0	21.4	3 12	8 39.59	+11 27.2	1.969	2.782	14.0	21.7
203309	2001 <i>SO</i> ₃₂₅		2 3.7 109°04	1°3/ 2.8 18			496696	2016 <i>ER</i> ₁₂₄		2 3.7 249°57	0°5/ 4.0 16		
1 2	9 30.59	+19 54.6	2.278	3.111	11.2	20.5	1 2	9 31.07	+14 13.3	1.900	2.729	13.3	21.6
1 12	9 24.82	+20 12.1	2.205	3.115	8.1	20.4	1 12	9 25.51	+14 22.7	1.821	2.727	9.8	21.4
1 22	9 17.22	+20 32.8	2.157	3.118	4.7	20.1	1 22	9 17.78	+14 40.9	1.767	2.725	5.8	21.2
2 1	9 8.47	+20 52.7	2.139	3.122	1.5	19.9	2 1	9 8.62	+15 4.7	1.740	2.724	1.4	20.9
2 11	8 59.47	+21 8.2	2.150	3.125	3.4	20.1	2 11	8 59.08	+15 29.6	1.742	2.722	3.2	21.0
2 21	8 51.16	+21 16.4	2.192	3.128	6.9	20.3	2 21	8 50.27	+15 51.7	1.773	2.720	7.5	21.3
3 2	8 44.35	+21 16.0	2.260	3.132	10.2	20.5	3 2	8 43.18	+16 8.0	1.831	2.718	11.4	21.5
3 12	8 39.61	+21 6.8	2.351	3.135	12.9	20.7	3 12	8 38.48	+16 16.7	1.911	2.716	14.7	21.7
422550	2014 <i>TH</i> ₃₂		2 3.7 114°65	2°5/ 2.1 18			380388	2002 <i>VX</i> ₁₃₈		2 3.7 64°34	7°8/29.2 18		
1 2	9 34.29	+22 14.2	1.983	2.820	12.5	21.6	1 2	9 36.17	+38 58.2	2.061	2.890	12.4	20.8
1 12	9 27.67	+22 51.8	1.924	2.836	9.1	21.4	1 12	9 29.22	+40 0.4	2.020	2.907	10.0	20.7
1 22	9 18.90	+23 31.3	1.891	2.851	5.3	21.2	1 22	9 19.84	+40 50.4	2.004	2.924	8.3	20.6
2 1	9 8.82	+24 6.9	1.886	2.866	2.6	21.0	2 1	9 9.03	+41 20.7	2.014	2.941	7.9	20.6
2 11	8 58.56	+24 33.5	1.911	2.880	4.5	21.2	2 11	8 58.13	+41 26.6	2.051	2.958	9.1	20.7
2 21	8 49.24	+24 47.9	1.965	2.894	8.1	21.4	2 21	8 48.44	+41 7.6	2.115	2.975	11.2	20.9
3 2	8 41.77	+24 49.4	2.045	2.908	11.5	21.7	3 2	8 40.96	+40 26.8	2.201	2.992	13.4	21.1
3 12	8 36.77	+24 38.8	2.148	2.921	14.3	21.9	3 12	8 36.29	+39 29.0	2.307	3.009	15.3	21.3
258529	2002 <i>BQ</i> ₄		2 3.7 26°20	10°7/28.5 18			30972	1995 <i>DE</i> ₈		2 3.7 355°86	1°0/ 4.3 18		
1 2	9 36.96	+40 46.2	1.479	2.322	15.7	19.3	1 2	9 28.79	+11 43.9	1.59			

EPHEMERIDES

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
492613	2014 <i>OY</i> ₂₂₈		2 3.7 184°84	0°6/ 4.2 18			110475	2001 <i>TD</i> ₅₆		2 3.7 139°07	0°2/ 3.9 18		
1 2	9 32.06	+12 23.7	2.159	2.975	12.4	22.4	1 2	9 27.84	+13 53.2	2.459	3.281	10.9	20.6
1 12	9 26.03	+12 55.1	2.077	2.976	9.2	22.2	1 12	9 22.74	+14 19.9	2.382	3.285	8.0	20.4
1 22	9 18.01	+13 36.9	2.020	2.976	5.4	21.9	1 22	9 16.02	+14 54.3	2.331	3.289	4.7	20.2
2 1	9 8.68	+14 25.4	1.991	2.975	1.5	21.7	2 1	9 8.26	+15 33.3	2.310	3.293	1.1	20.0
2 11	8 58.97	+15 15.6	1.994	2.973	2.9	21.8	2 11	9 0.26	+16 12.7	2.318	3.297	2.6	20.1
2 21	8 49.86	+16 2.9	2.026	2.970	6.9	22.0	2 21	8 52.80	+16 49.1	2.357	3.301	6.1	20.3
3 2	8 42.28	+16 43.6	2.087	2.967	10.5	22.2	3 2	8 46.61	+17 19.6	2.424	3.305	9.2	20.5
3 12	8 36.87	+17 15.2	2.171	2.963	13.6	22.4	3 12	8 42.24	+17 42.3	2.514	3.308	11.9	20.7
451233	2010 <i>EL</i> ₃₃		2 3.7 345°07	2°8/ 2.5 18			461691	2005 <i>QH</i> ₄		2 3.7 122°00	0°6/ 4.2 18		
1 2	9 35.26	+21 32.5	1.315	2.170	16.5	21.1	1 2	9 31.57	+12 21.7	2.404	3.216	11.5	22.0
1 12	9 29.44	+21 55.5	1.248	2.168	12.1	20.8	1 12	9 25.34	+12 55.8	2.341	3.238	8.4	21.9
1 22	9 20.41	+22 22.7	1.202	2.166	7.1	20.5	1 22	9 17.46	+13 38.5	2.304	3.259	4.9	21.7
2 1	9 9.23	+22 46.9	1.182	2.164	2.9	20.2	2 1	9 8.56	+14 26.3	2.296	3.279	1.3	21.5
2 11	8 57.55	+23 0.7	1.189	2.163	5.6	20.4	2 11	8 59.51	+15 14.7	2.320	3.299	2.6	21.6
2 21	8 47.10	+23 0.2	1.221	2.162	10.7	20.7	2 21	8 51.13	+15 59.8	2.375	3.318	6.1	21.9
3 2	8 39.31	+22 44.3	1.276	2.161	15.4	21.0	3 2	8 44.15	+16 38.4	2.458	3.336	9.2	22.1
3 12	8 35.03	+22 14.9	1.350	2.160	19.4	21.2	3 12	8 39.11	+17 8.8	2.566	3.353	11.9	22.3
69207	3004 <i>T</i> -2		2 3.7 59°11	0°0/ 3.7 18			467699	2008 <i>WL</i> ₇₈		2 3.7 90°91	3°4/ 31.9 18		
1 2	9 32.60	+13 53.1	1.356	2.201	16.8	19.4	1 2	9 30.35	+24 17.7	2.191	3.032	11.3	21.1
1 12	9 27.03	+14 28.0	1.307	2.221	12.2	19.1	1 12	9 24.76	+25 23.1	2.135	3.048	8.2	20.9
1 22	9 18.76	+15 15.9	1.280	2.241	7.1	18.9	1 22	9 17.25	+26 29.4	2.106	3.064	5.1	20.8
2 1	9 8.84	+16 10.3	1.278	2.262	1.5	18.6	2 1	9 8.54	+27 30.1	2.106	3.080	3.4	20.7
2 11	8 58.74	+17 3.5	1.304	2.283	4.0	18.8	2 11	8 59.63	+28 19.7	2.136	3.096	5.1	20.8
2 21	8 49.88	+17 49.1	1.356	2.304	9.1	19.2	2 21	8 51.47	+28 54.4	2.194	3.111	8.1	21.0
3 2	8 43.42	+18 22.8	1.432	2.326	13.5	19.5	3 2	8 44.93	+29 13.3	2.279	3.127	11.0	21.3
3 12	8 39.98	+18 43.1	1.529	2.347	17.1	19.8	3 12	8 40.57	+29 17.1	2.385	3.142	13.5	21.5
464700	2002 <i>JE</i> ₁₁₄		2 3.7 316°00	7°7/ 29.2 18			299276	2005 <i>NF</i> ₁₂₃		2 3.7 201°47	4°0/ 7.8 17		
1 2	9 31.48	+32 47.8	1.630	2.484	13.9	20.4	1 2	9 26.35	- 1 2.7	3.290	4.039	10.0	22.1
1 12	9 26.73	+34 12.9	1.550	2.461	10.9	20.2	1 12	9 21.35	- 1 10.4	3.193	4.034	8.1	21.9
1 22	9 18.95	+35 34.7	1.495	2.438	8.4	20.0	1 22	9 15.12	- 1 5.6	3.121	4.029	6.1	21.8
2 1	9 8.96	+36 42.1	1.465	2.416	7.8	19.9	2 1	9 8.09	- 0 48.6	3.077	4.023	4.5	21.7
2 11	8 58.19	+37 25.7	1.461	2.394	9.8	20.0	2 11	9 0.82	- 0 20.7	3.063	4.017	4.1	21.6
2 21	8 48.26	+37 40.3	1.482	2.373	13.1	20.1	2 21	8 53.87	+ 0 15.6	3.079	4.010	5.4	21.7
3 2	8 40.63	+37 26.0	1.524	2.353	16.5	20.3	3 2	8 47.79	+ 0 57.4	3.125	4.003	7.5	21.8
3 12	8 36.31	+36 47.0	1.584	2.333	19.6	20.4	3 12	8 43.02	+ 1 41.0	3.196	3.995	9.5	22.0
149594	2004 <i>CR</i> ₈₀		2 3.7 160°16	2°0/ 2.2 18			393983	2005 <i>UD</i> ₃₇₇		2 3.7 227°28	1°9/ 2.7 18		
1 2	9 32.58	+20 31.9	2.259	3.090	11.4	19.9	1 2	9 35.80	+19 26.4	1.639	2.479	14.6	21.6
1 12	9 26.33	+21 19.4	2.188	3.097	8.3	19.7	1 12	9 29.47	+19 59.6	1.558	2.471	10.7	21.3
1 22	9 18.15	+22 10.6	2.143	3.104	4.8	19.5	1 22	9 20.36	+20 39.3	1.500	2.462	6.2	21.0
2 1	9 8.72	+23 0.3	2.129	3.109	2.0	19.3	2 1	9 9.30	+21 19.3	1.469	2.452	2.1	20.7
2 11	8 59.00	+23 43.2	2.144	3.115	4.0	19.5	2 11	8 57.63	+21 52.7	1.467	2.442	4.7	20.9
2 21	8 49.97	+24 15.6	2.190	3.119	7.4	19.7	2 21	8 46.81	+22 14.5	1.493	2.431	9.4	21.1
3 2	8 42.50	+24 35.6	2.263	3.123	10.6	19.9	3 2	8 38.14	+22 22.5	1.544	2.420	13.8	21.4
3 12	8 37.20	+24 43.2	2.358	3.126	13.3	20.1	3 12	8 32.49	+22 16.8	1.616	2.408	17.5	21.6
54675	2000 <i>XZ</i> ₂₅		2 3.7 39°72	2°1/ 2.7 18			185187	2006 <i>SN</i> ₃₉₁		2 3.7 36°19	7°1/ 9.0 18		
1 2	9 33.91	+21 30.6	1.559	2.407	14.8	17.5	1 2	9 26.81	- 3 35.8	1.468	2.254	18.7	19.6
1 12	9 27.78	+21 40.7	1.504	2.421	10.7	17.3	1 12	9 22.78	- 3 30.4	1.403	2.265	15.3	19.4
1 22	9 19.11	+21 53.1	1.473	2.436	6.2	17.1	1 22	9 16.37	- 2 54.6	1.359	2.277	11.5	19.2
2 1	9 8.91	+22 2.5	1.469	2.451	2.3	16.8	2 1	9 8.40	- 1 49.0	1.337	2.289	8.3	19.0
2 11	8 58.58	+22 4.0	1.493	2.467	4.6	17.0	2 11	9 0.09	- 0 18.8	1.341	2.302	7.2	19.0
2 21	8 49.45	+21 55.2	1.543	2.483	9.0	17.3	2 21	8 52.67	+ 1 26.9	1.371	2.316	9.3	19.1
3 2	8 42.58	+21 35.8	1.619	2.500	12.9	17.6	3 2	8 47.21	+ 3 17.4	1.426	2.330	12.8	19.4
3 12	8 38.60	+21 6.7	1.715	2.517	16.2	17.9	3 12	8 44.40	+ 5 3.0	1.503	2.344	16.2	19.6
382338	2013 <i>TA</i> ₃₉		2 3.7 92°89	0°5/ 4.1 18			503689	2016 <i>HR</i> ₁₈		2 3.7 202°59	1°4/ 2.7 18		
1 2	9 29.47	+13 11.8	2.128	2.951	12.3	21.9	1 2	9 29.62	+18 38.3	2.138	2.974	11.8	21.9
1 12	9 24.06	+13 34.4	2.060	2.963	9.0	21.7	1 12	9 24.33	+19 16.6	2.061	2.973	8.6	21.7
1 22	9 16.81	+14 6.0	2.018	2.975	5.3	21.5	1 22	9 17.08	+20 0.4	2.010	2.972	4.9	21.5
2 1	9 8.42	+14 43.2	2.004	2.987	1.4	21.3	2 1	9 8.55	+20 45.2	1.988	2.971	1.5	21.3
2 11	8 59.81	+15 21.4	2.019	2.999	2.8	21.4	2 11	8 59.68	+21 25.6	1.995	2.970	3.6	21.4
2 21	8 51.90	+15 56.8	2.065	3.010	6.6	21.7	2 21	8 51.45	+21 57.8	2.031	2.968	7.4	21.6
3 2	8 45.51	+16 26.0	2.137	3.022	10.1	21.9	3 2	8 44.76	+22 19.2	2.094	2.967	10.8	21.8
3 12	8 41.20	+16 47.2	2.233	3.033	13.0	22.1	3 12	8 40.23	+22 29.1	2.180	2.965	13.7	22.0
235015	2003 <i>EC</i> ₁₁		2 3.7 293°10	4°3/ 6.1 18			365564	2010 <i>TD</i> ₅₀		2 3.7 145°98	0°3/ 3.5 18		
1 2	9 29.42	+ 4 59.7	1.424	2.245	17.4	19.8	1 2	9 31.99	+15 14.9	2.012	2.839	12.8	22.1
1 12	9 25.09	+ 5 3.6	1.335	2.228	13.7	19.6	1 12	9 26.07	+15 52.1	1.941	2.847	9.3	21.9
1 22	9 17.96	+ 5 30.3	1.266	2.212	9.3	19.3	1 22	9 18.08	+16 37.8	1.895	2.855	5.3	21.7
2 1	9 8.76	+ 6 18.8	1.222	2.196	5.2	19.0	2 1	9 8.77	+17 27.4	1.879	2.863	1.1	21.4
2 11	8 58.76	+ 7 24.4	1.203	2.179	5.1	18.9	2 11	8 59.15	+18 15.3	1.892	2.870	3.3	21.6
2 21	8 49.42	+ 8 39.2	1.211	2.163	9.4	19.1	2 21	8 50.28	+18 56.9	1.934	2.876	7.3	21.9
3 2	8 42.12	+ 9 54.9	1.243	2.147	14.2	19.3	3 2	8 43.08	+19 29.0	2.004	2.882	11.0	22.1
3 12	8 37.87	+11 3.7	1.295	2.132	18.6	19.6	3 12	8 38.18	+19 50.2	2.096	2.887	14.0	22.3
455339	2002 <i>RF</i> ₄		2 3.7 220°53	2°7/ 5.4 17			171999	2001 <i>UQ</i> ₂₁		2 3.7 181°48	1°5/ 4.9 17		
1 2	9 33.39	+ 8 15.3	2.187	2.986	12.9	22.1	1 2	9 29.22	+11 1				

EPHEMERIDES

2 3.7

2 3.7

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
191336	2003 <i>QS</i> ₇		2 3.7 133°15	0°2/ 3.9 18			516207	2016 <i>TQ</i> ₉		2 3.7 112°11	17°5/16.3 18		
1 2	9 29.71	+14 1.5	2.355	3.176	11.4	20.9	1 2	9 32.72	-20 59.4	1.218	1.912	26.4	20.8
1 12	9 24.13	+14 30.9	2.284	3.186	8.3	20.7	1 12	9 27.78	-22 21.9	1.159	1.922	24.0	20.7
1 22	9 16.85	+15 8.1	2.239	3.197	4.8	20.5	1 22	9 19.61	-22 58.3	1.112	1.931	21.4	20.5
2 1	9 8.49	+15 49.6	2.222	3.206	1.1	20.2	2 1	9 9.19	-22 39.0	1.081	1.940	19.1	20.4
2 11	8 59.90	+16 31.1	2.237	3.216	2.7	20.4	2 11	8 58.13	-21 21.5	1.068	1.949	17.7	20.3
2 21	8 51.94	+17 8.8	2.281	3.225	6.3	20.6	2 21	8 48.17	-19 12.3	1.075	1.958	17.6	20.3
3 2	8 45.35	+17 39.9	2.354	3.233	9.5	20.8	3 2	8 40.85	-16 26.1	1.102	1.966	19.0	20.4
3 12	8 40.69	+18 2.6	2.450	3.241	12.2	21.0	3 12	8 37.10	-13 22.1	1.148	1.974	21.2	20.6
378709	2008 <i>PP</i> ₁₄		2 3.7 189°50	1°4/ 2.7 17			246749	2009 <i>BB</i> ₁₂₉		2 3.7 164°65	5°4/30.3 17		
1 2	9 32.93	+20 33.0	2.510	3.336	10.6	21.3	1 2	9 35.58	+36 14.4	2.795	3.616	9.8	21.1
1 12	9 26.45	+20 51.2	2.428	3.335	7.7	21.1	1 12	9 28.32	+36 48.8	2.731	3.619	7.7	20.9
1 22	9 18.20	+21 11.7	2.373	3.333	4.4	20.9	1 22	9 19.23	+37 15.3	2.694	3.623	6.0	20.8
2 1	9 8.79	+21 30.8	2.349	3.331	1.6	20.7	2 1	9 9.03	+37 28.7	2.685	3.625	5.4	20.8
2 11	8 59.11	+21 44.9	2.355	3.328	3.3	20.8	2 11	8 58.69	+37 25.8	2.707	3.628	6.5	20.9
2 21	8 50.04	+21 51.6	2.392	3.325	6.6	21.0	2 21	8 49.14	+37 5.7	2.757	3.630	8.4	21.0
3 2	8 42.38	+21 49.6	2.457	3.321	9.7	21.2	3 2	8 41.18	+36 29.7	2.833	3.632	10.5	21.1
3 12	8 36.71	+21 39.0	2.546	3.317	12.4	21.4	3 12	8 35.36	+35 40.7	2.931	3.634	12.4	21.3
453780	2011 <i>KH</i> ₆		2 3.7 179°58	0°8/ 4.2 18			171893	2001 <i>RS</i> ₆₇		2 3.7 171°99	2°9/ 1.4 18		
1 2	9 34.64	+12 12.1	1.944	2.760	13.6	23.1	1 2	9 31.52	+25 46.4	2.679	3.511	9.8	20.6
1 12	9 28.11	+12 40.5	1.864	2.763	10.1	22.9	1 12	9 25.37	+26 16.1	2.606	3.513	7.2	20.4
1 22	9 19.34	+13 20.5	1.809	2.764	6.0	22.7	1 22	9 17.55	+26 44.8	2.560	3.515	4.5	20.3
2 1	9 9.06	+14 7.8	1.782	2.765	1.7	22.4	2 1	9 8.68	+27 8.2	2.543	3.517	2.9	20.2
2 11	8 58.37	+14 57.2	1.786	2.765	3.2	22.5	2 11	8 59.59	+27 22.7	2.557	3.518	4.3	20.3
2 21	8 48.39	+15 43.6	1.819	2.763	7.5	22.7	2 21	8 51.12	+27 26.3	2.601	3.519	7.0	20.4
3 2	8 40.17	+16 22.7	1.880	2.761	11.4	23.0	3 2	8 44.00	+27 18.4	2.673	3.520	9.6	20.6
3 12	8 34.40	+16 52.4	1.964	2.758	14.7	23.2	3 12	8 38.79	+27 0.0	2.767	3.520	11.9	20.8
197592	2004 <i>HH</i> ₃₈		2 3.7 186°23	2°2/ 2.2 18			96430	1998 <i>FL</i> ₅₅		2 3.7 343°92	2°7/ 5.4 18		
1 2	9 34.65	+19 12.6	1.818	2.654	13.5	20.6	1 2	9 28.37	+7 26.6	1.397	2.229	17.1	19.2
1 12	9 28.36	+20 13.1	1.743	2.654	9.8	20.4	1 12	9 24.23	+7 52.1	1.322	2.225	13.0	18.9
1 22	9 19.59	+21 20.9	1.692	2.654	5.7	20.1	1 22	9 17.40	+8 39.2	1.268	2.222	8.3	18.6
2 1	9 9.13	+22 28.8	1.671	2.652	2.3	19.9	2 1	9 8.71	+9 44.5	1.239	2.218	3.7	18.3
2 11	8 58.19	+23 29.5	1.679	2.650	4.7	20.0	2 11	8 59.45	+11 0.8	1.236	2.216	4.1	18.4
2 21	8 48.03	+24 17.1	1.716	2.648	8.9	20.3	2 21	8 51.02	+12 19.4	1.260	2.214	9.0	18.6
3 2	8 39.80	+24 48.7	1.778	2.644	12.8	20.5	3 2	8 44.70	+13 32.3	1.308	2.212	13.7	18.9
3 12	8 34.29	+25 4.4	1.863	2.639	16.1	20.7	3 12	8 41.34	+14 33.4	1.376	2.211	17.8	19.1
88508	2001 <i>QM</i> ₁₄₄		2 3.7 115°68	3°2/ 1.7 18			285912	2001 <i>QD</i> ₁₅₅		2 3.7 125°68	2°0/ 5.3 18		
1 2	9 34.36	+20 58.7	1.580	2.426	14.7	19.7	1 2	9 31.56	+8 29.1	2.199	3.003	12.7	21.3
1 12	9 28.30	+22 9.2	1.522	2.438	10.6	19.5	1 12	9 25.51	+8 45.1	2.131	3.019	9.5	21.2
1 22	9 19.57	+23 25.4	1.488	2.450	6.3	19.3	1 22	9 17.67	+9 13.1	2.088	3.036	6.0	21.0
2 1	9 9.12	+24 38.3	1.482	2.461	3.2	19.1	2 1	9 8.71	+9 50.6	2.073	3.051	2.7	20.8
2 11	8 58.33	+25 39.4	1.504	2.473	5.6	19.3	2 11	8 59.54	+10 33.6	2.089	3.066	3.0	20.8
2 21	8 48.60	+26 23.2	1.554	2.483	9.8	19.6	2 21	8 51.07	+11 17.6	2.134	3.081	6.4	21.1
3 2	8 41.13	+26 47.7	1.628	2.494	13.7	19.8	3 2	8 44.10	+11 58.8	2.208	3.094	9.7	21.3
3 12	8 36.62	+26 53.9	1.723	2.504	17.0	20.1	3 12	8 39.18	+12 34.2	2.306	3.107	12.6	21.5
409666	2006 <i>VA</i> ₁₉		2 3.7 236°72	5°8/30.7 18			39851	1998 <i>CU</i> ₃		2 3.7 349°52	1°4/ 3.0 18		
1 2	9 34.84	+30 16.3	1.882	2.725	12.8	20.9	1 2	9 30.36	+17 41.6	1.243	2.103	17.0	18.5
1 12	9 28.63	+31 22.1	1.809	2.717	9.8	20.7	1 12	9 26.01	+18 10.7	1.175	2.098	12.4	18.2
1 22	9 19.80	+32 24.9	1.762	2.710	6.9	20.5	1 22	9 18.56	+18 50.2	1.128	2.093	7.2	17.9
2 1	9 9.19	+33 16.1	1.741	2.701	5.8	20.4	2 1	9 8.97	+19 33.3	1.105	2.089	1.9	17.5
2 11	8 58.07	+33 48.5	1.749	2.693	7.6	20.5	2 11	8 58.80	+20 12.0	1.108	2.086	4.9	17.7
2 21	8 47.83	+33 58.7	1.784	2.684	10.7	20.7	2 21	8 49.72	+20 39.7	1.136	2.084	10.5	18.0
3 2	8 39.65	+33 46.9	1.843	2.675	13.9	20.9	3 2	8 43.17	+20 53.0	1.186	2.083	15.4	18.3
3 12	8 34.34	+33 16.4	1.922	2.666	16.7	21.0	3 12	8 40.02	+20 51.0	1.256	2.083	19.6	18.6
233839	2008 <i>UW</i> ₂₈₈		2 3.7 280°08	1°6/ 2.5 17			258068	2001 <i>OW</i> ₆₉		2 3.7 143°27	0°8/ 4.5 18		
1 2	9 29.31	+19 4.0	2.065	2.904	12.0	21.4	1 2	9 29.96	+9 59.9	2.161	2.973	12.5	20.2
1 12	9 24.20	+19 45.2	1.988	2.901	8.7	21.2	1 12	9 24.49	+10 57.9	2.087	2.983	9.3	20.0
1 22	9 17.06	+20 32.3	1.936	2.898	5.0	21.0	1 22	9 17.16	+12 9.2	2.038	2.993	5.6	19.8
2 1	9 8.57	+21 20.0	1.912	2.895	1.7	20.7	2 1	9 8.62	+13 29.3	2.019	3.002	1.7	19.5
2 11	8 59.72	+22 2.8	1.918	2.892	3.9	20.9	2 11	8 59.76	+14 51.8	2.031	3.010	2.8	19.6
2 21	8 51.52	+22 36.6	1.952	2.888	7.7	21.1	2 21	8 51.52	+16 10.8	2.073	3.018	6.7	19.9
3 2	8 44.89	+22 58.6	2.013	2.885	11.2	21.3	3 2	8 44.74	+17 21.2	2.143	3.025	10.2	20.1
3 12	8 40.50	+23 8.4	2.096	2.882	14.2	21.5	3 12	8 40.03	+18 19.9	2.238	3.032	13.2	20.3
344554	2002 <i>WG</i> ₁₉		2 3.7 87°95	5°0/ 6.5 18			413676	2005 <i>WW</i> ₇₆		2 3.7 31°71	2°9/ 1.9 18		
1 2	9 32.52	+3 53.1	1.390	2.203	18.2	20.8	1 2	9 30.92	+21 44.1	1.685	2.534	13.8	21.0
1 12	9 27.10	+3 41.2	1.324	2.211	14.2	20.5	1 12	9 25.70	+22 31.7	1.621	2.539	10.0	20.8
1 22	9 18.96	+3 51.9	1.278	2.219	9.8	20.3	1 22	9 18.05	+23 23.3	1.581	2.543	5.9	20.6
2 1	9 9.01	+4 24.1	1.257	2.227	5.9	20.1	2 1	9 8.82	+24 12.1	1.568	2.548	2.9	20.4
2 11	8 58.64	+5 13.1	1.262	2.235	5.6	20.1	2 11	8 59.25	+24 51.2	1.583	2.553	5.2	20.6
2 21	8 49.28	+6 11.9	1.294	2.243	9.3	20.3	2 21	8 50.61	+25 16.3	1.626	2.559	9.2	20.8
3 2	8 42.17	+7 12.8	1.350	2.251	13.6	20.6	3 2	8 43.98	+25 25.6	1.693	2.565	13.0	21.0
3 12	8 38.09	+8 9.0	1.426	2.259	17.4	20.9	3 12	8 40.06	+25 19.8	1.781	2.571	16.2	21.3
373338	2012 <i>JW</i> ₃₇		2 3.7 151°56	0°0/ 3.6 16			203494	2002 <i>AO</i> ₉₈		2 3.7 95°68	0°2/ 3.6 18		
1 2	9 29.86	+14 25.2	2.425	3.245	11.1	22.0	1 2	9 36.43	+15 57.7				

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
144902	2004 <i>XO</i> ₁₂		2 3.7 297°86	3°2/ 1.7 18			197900	2004 <i>RH</i> ₃₆		2 3.7 232°40	2°5/ 2.1 18		
1 2	9 31.26	+20 21.9	1.480	2.333	15.1	19.9	1 2	9 35.15	+20 47.9	1.820	2.657	13.5	21.4
1 12	9 26.42	+21 32.3	1.407	2.327	11.0	19.7	1 12	9 28.90	+21 36.7	1.732	2.644	9.9	21.1
1 22	9 18.72	+22 51.5	1.357	2.321	6.5	19.4	1 22	9 20.04	+22 31.3	1.670	2.631	5.8	20.9
2 1	9 9.02	+24 10.5	1.334	2.314	3.2	19.2	2 1	9 9.33	+23 25.1	1.636	2.616	2.6	20.6
2 11	8 58.70	+25 19.7	1.338	2.308	5.9	19.3	2 11	8 57.97	+24 10.9	1.631	2.601	5.0	20.8
2 21	8 49.27	+26 11.7	1.369	2.302	10.5	19.6	2 21	8 47.30	+24 43.3	1.655	2.586	9.2	21.0
3 2	8 42.07	+26 43.2	1.423	2.297	14.9	19.8	3 2	8 38.56	+25 0.1	1.704	2.569	13.3	21.2
3 12	8 37.99	+26 54.3	1.497	2.291	18.6	20.0	3 12	8 32.61	+25 1.3	1.775	2.552	16.7	21.4
83908	2001 <i>UT</i> ₁₈₆		2 3.7 311°14	5°0/ 7.5 17			459445	2012 <i>UC</i> ₁₇₀		2 3.7 120°60	8°2/ 25.4 18		
1 2	9 26.91	+ 0 35.4	2.216	2.995	13.4	19.7	1 2	9 35.80	+46 5.7	2.818	3.618	10.3	21.2
1 12	9 22.30	+ 0 20.5	2.128	2.989	10.8	19.5	1 12	9 28.89	+47 38.1	2.784	3.633	8.9	21.1
1 22	9 15.93	+ 0 22.4	2.062	2.984	8.0	19.3	1 22	9 19.76	+48 57.1	2.776	3.648	8.2	21.1
2 1	9 8.37	+ 0 41.2	2.023	2.979	5.6	19.1	2 1	9 9.21	+49 55.8	2.795	3.663	8.3	21.1
2 11	9 0.45	+ 1 14.7	2.012	2.974	5.1	19.1	2 11	8 58.36	+50 30.2	2.840	3.677	9.3	21.2
2 21	8 53.03	+ 1 59.2	2.029	2.969	7.2	19.2	2 21	8 48.33	+50 39.4	2.910	3.691	10.6	21.3
3 2	8 46.91	+ 2 50.0	2.073	2.964	10.1	19.4	3 2	8 40.14	+50 25.6	3.002	3.705	12.0	21.5
3 12	8 42.71	+ 3 41.9	2.141	2.959	12.9	19.6	3 12	8 34.43	+49 52.9	3.112	3.718	13.3	21.6
497518	2006 <i>BH</i> ₁₁₈		2 3.7 286°47	2°7/ 6.0 17			168058	2006 <i>BL</i> ₁₉₉		2 3.7 312°99	1°3/ 4.4 18		
1 2	9 26.75	+ 5 0.2	1.995	2.799	13.7	21.3	1 2	9 29.84	+11 47.5	1.324	2.169	17.1	20.2
1 12	9 22.46	+ 5 43.6	1.900	2.786	10.6	21.1	1 12	9 25.60	+12 4.1	1.241	2.154	12.8	19.9
1 22	9 16.16	+ 6 46.6	1.828	2.773	7.0	20.8	1 22	9 18.39	+12 37.8	1.180	2.140	7.8	19.6
2 1	9 8.45	+ 8 6.3	1.784	2.759	3.5	20.6	2 1	9 8.99	+13 24.6	1.142	2.125	2.4	19.2
2 11	9 0.21	+ 9 37.2	1.769	2.746	3.5	20.6	2 11	8 58.82	+14 17.7	1.131	2.112	4.1	19.3
2 21	8 52.45	+11 12.1	1.783	2.733	7.1	20.8	2 21	8 49.44	+15 9.5	1.146	2.099	9.7	19.5
3 2	8 46.12	+12 43.9	1.825	2.719	11.0	21.0	3 2	8 42.34	+15 53.5	1.183	2.086	15.0	19.8
3 12	8 41.93	+14 6.8	1.890	2.706	14.4	21.2	3 12	8 38.50	+16 25.5	1.240	2.074	19.4	20.0
109684	2001 <i>RJ</i> ₃₀		2 3.7 182°64	1°5/ 2.7 18			239896	2000 <i>SD</i> ₅₂		2 3.7 209°45	3°2/ 5.7 18		
1 2	9 32.47	+19 5.2	2.127	2.959	12.0	21.0	1 2	9 32.03	+ 6 39.2	1.769	2.578	15.1	20.9
1 12	9 26.43	+19 41.4	2.050	2.960	8.7	20.8	1 12	9 26.45	+ 6 44.2	1.685	2.574	11.6	20.7
1 22	9 18.34	+20 22.7	1.999	2.960	5.0	20.6	1 22	9 18.52	+ 7 5.8	1.624	2.569	7.6	20.4
2 1	9 8.90	+21 4.1	1.977	2.960	1.6	20.3	2 1	9 8.98	+ 7 42.3	1.589	2.565	3.9	20.2
2 11	8 59.11	+21 40.5	1.985	2.959	3.7	20.5	2 11	8 58.93	+ 8 29.4	1.583	2.559	4.1	20.2
2 21	8 50.00	+22 8.0	2.022	2.958	7.5	20.7	2 21	8 49.57	+ 9 21.4	1.605	2.554	7.9	20.4
3 2	8 42.51	+22 24.5	2.087	2.956	11.0	20.9	3 2	8 41.98	+10 12.7	1.654	2.548	12.0	20.6
3 12	8 37.29	+22 29.7	2.174	2.954	14.0	21.1	3 12	8 36.93	+10 58.6	1.725	2.541	15.6	20.9
173845	2001 <i>TP</i> ₁₂₃		2 3.7 112°59	1°2/ 4.6 18			103498	2000 <i>AW</i> ₂₄₃		2 3.7 350°17	2°1/ 2.3 18		
1 2	9 29.95	+12 9.5	2.417	3.231	11.3	20.1	1 2	9 24.50	+15 7.1	1.212	2.077	16.9	18.2
1 12	9 24.27	+12 7.2	2.342	3.238	8.4	19.9	1 12	9 21.84	+16 42.2	1.143	2.069	12.3	17.9
1 22	9 16.93	+12 12.8	2.292	3.246	5.1	19.7	1 22	9 16.23	+18 37.3	1.095	2.061	7.0	17.6
2 1	9 8.57	+12 24.0	2.272	3.254	1.8	19.5	2 1	9 8.52	+20 42.1	1.072	2.055	2.2	17.3
2 11	9 0.00	+12 38.1	2.282	3.261	2.6	19.5	2 11	9 0.12	+22 42.8	1.075	2.051	5.6	17.5
2 21	8 52.03	+12 52.5	2.322	3.268	6.0	19.8	2 21	8 52.62	+24 26.9	1.103	2.047	11.2	17.8
3 2	8 45.40	+13 4.6	2.390	3.275	9.1	20.0	3 2	8 47.47	+25 46.3	1.153	2.045	16.1	18.0
3 12	8 40.64	+13 12.7	2.483	3.282	11.9	20.2	3 12	8 45.63	+26 38.5	1.221	2.044	20.3	18.3
123557	2000 <i>XJ</i> ₃₂		2 3.7 87°22	2°6/ 2.0 18			363044	1999 <i>TY</i> ₂₄₃		2 3.8 139°18	2°8/ 6.3 18		
1 2	9 34.72	+23 3.1	2.002	2.838	12.5	19.7	1 2	9 29.61	+ 4 46.4	2.673	3.456	11.3	22.3
1 12	9 27.93	+23 36.0	1.951	2.862	9.0	19.5	1 12	9 23.87	+ 4 55.1	2.598	3.470	8.7	22.2
1 22	9 19.08	+24 9.5	1.926	2.886	5.3	19.4	1 22	9 16.66	+ 5 16.0	2.548	3.484	5.9	22.0
2 1	9 9.03	+24 38.1	1.930	2.909	2.7	19.2	2 1	9 8.53	+ 5 47.6	2.528	3.497	3.4	21.9
2 11	8 58.90	+24 57.3	1.963	2.932	4.5	19.4	2 11	9 0.21	+ 6 26.9	2.538	3.510	3.3	21.9
2 21	8 49.77	+25 4.4	2.026	2.954	8.0	19.6	2 21	8 52.41	+ 7 10.5	2.579	3.522	5.7	22.0
3 2	8 42.51	+24 59.2	2.115	2.976	11.2	19.9	3 2	8 45.81	+ 7 54.7	2.648	3.533	8.4	22.2
3 12	8 37.68	+24 42.8	2.226	2.998	13.9	20.1	3 12	8 40.87	+ 8 36.2	2.744	3.544	10.8	22.4
417539	2006 <i>TH</i> ₁₂₅		2 3.7 130°97	4°2/ 31.8 18			171302	2006 <i>HQ</i> ₂₃		2 3.8 89°20	5°9/ 31.2 18		
1 2	9 34.53	+26 16.9	1.937	2.778	12.6	22.1	1 2	9 38.40	+29 0.8	1.636	2.480	14.4	20.3
1 12	9 28.10	+27 14.8	1.877	2.788	9.3	21.9	1 12	9 31.11	+30 17.5	1.597	2.507	10.7	20.1
1 22	9 19.34	+28 12.0	1.843	2.798	6.0	21.7	1 22	9 21.11	+31 29.3	1.583	2.533	7.3	19.9
2 1	9 9.12	+29 1.0	1.836	2.807	4.2	21.6	2 1	9 9.52	+32 26.7	1.596	2.559	5.9	19.9
2 11	8 58.62	+29 35.9	1.859	2.816	6.0	21.8	2 11	8 57.85	+33 2.6	1.637	2.585	7.7	20.1
2 21	8 49.05	+29 53.2	1.910	2.825	9.3	22.0	2 21	8 47.54	+33 14.6	1.705	2.610	10.9	20.3
3 2	8 41.44	+29 52.8	1.986	2.833	12.5	22.2	3 2	8 39.72	+33 4.6	1.797	2.634	14.0	20.6
3 12	8 36.44	+29 36.8	2.084	2.841	15.2	22.4	3 12	8 34.99	+32 36.6	1.909	2.658	16.7	20.8
320723	2008 <i>DM</i> ₈₃		2 3.7 24°07	4°1/ 6.1 18			52014	2002 <i>NZ</i> ₁₃		2 3.8 236°24	0°4/ 4.0 18		
1 2	9 27.09	+ 5 49.9	1.167	2.007	19.2	20.5	1 2	9 32.44	+13 39.6	1.892	2.718	13.5	20.2
1 12	9 23.41	+ 5 55.6	1.114	2.019	14.8	20.3	1 12	9 26.72	+13 59.8	1.803	2.707	10.0	20.0
1 22	9 16.91	+ 6 26.0	1.081	2.033	9.7	20.0	1 22	9 18.68	+14 30.4	1.738	2.697	5.9	19.7
2 1	9 8.60	+ 7 17.9	1.071	2.047	5.1	19.8	2 1	9 9.05	+15 7.6	1.702	2.685	1.5	19.4
2 11	8 59.99	+ 8 23.9	1.085	2.063	5.0	19.9	2 11	8 58.87	+15 46.5	1.694	2.673	3.3	19.5
2 21	8 52.55	+ 9 34.9	1.124	2.080	9.4	20.2	2 21	8 49.33	+16 22.2	1.716	2.661	7.8	19.8
3 2	8 47.51	+10 42.2	1.186	2.099	14.1	20.5	3 2	8 41.49	+16 51.0	1.764	2.648	11.9	20.0
3 12	8 45.57	+11 39.1	1.268	2.118	18.0	20.8	3 12	8 36.13	+17 10.6	1.834	2.635	15.4	20.2
266766	2009 <i>SA</i> ₁₃₄		2 3.7 122°44	0°2/ 3.6 18			92404	2000 <i>JB</i> ₂₉		2 3.8 226°46	1°2/ 4.5 18		
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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
117701	2005 <i>EC</i> ₂₉₃		2 3.8 275°83	4.5/31.7	18		372956	2011 <i>BX</i> ₈₉		2 3.8 89°92	0°0/	3.7 18	
1 2	9 32.11	+24 28.4	1.632	2.483	14.0	19.9	1 2	9 30.18	+14 6.8	1.897	2.728	13.3	21.1
1 12	9 26.91	+25 44.4	1.559	2.476	10.3	19.7	1 12	9 24.88	+14 39.7	1.829	2.736	9.7	20.9
1 22	9 18.97	+27 4.2	1.510	2.469	6.6	19.5	1 22	9 17.49	+15 22.6	1.785	2.745	5.6	20.7
2 1	9 9.13	+28 18.6	1.488	2.462	4.5	19.3	2 1	9 8.78	+16 10.9	1.769	2.753	1.3	20.4
2 11	8 58.69	+29 18.5	1.494	2.454	6.8	19.4	2 11	8 59.77	+16 59.0	1.783	2.762	3.2	20.6
2 21	8 49.09	+29 58.2	1.527	2.447	10.7	19.6	2 21	8 51.52	+17 42.1	1.825	2.770	7.4	20.9
3 2	8 41.63	+30 15.6	1.583	2.440	14.6	19.9	3 2	8 44.98	+18 16.4	1.893	2.779	11.2	21.1
3 12	8 37.16	+30 12.4	1.659	2.432	17.9	20.1	3 12	8 40.76	+18 40.2	1.984	2.787	14.3	21.3
27117	1998 <i>WQ</i> ₃		2 3.8 237°86	5°3/	6.8 18		13266	1998 <i>QY</i> ₃₀		2 3.8 146°09	0°1/	3.7 18 R	
1 2	9 31.88	+ 2 1.4	2.002	2.784	14.5	17.9	1 2	9 30.18	+15 14.3	2.227	3.053	11.8	18.9
1 12	9 26.15	+ 1 26.9	1.910	2.775	11.6	17.7	1 12	9 24.65	+15 37.7	2.152	3.058	8.6	18.7
1 22	9 18.29	+ 1 8.5	1.841	2.766	8.5	17.5	1 22	9 17.27	+16 8.4	2.103	3.062	5.0	18.5
2 1	9 8.96	+ 1 6.7	1.798	2.757	5.9	17.3	2 1	9 8.73	+16 42.7	2.082	3.066	1.1	18.2
2 11	8 59.12	+ 1 20.5	1.784	2.747	5.6	17.3	2 11	8 59.90	+17 16.3	2.092	3.070	2.9	18.3
2 21	8 49.84	+ 1 46.5	1.799	2.737	8.1	17.4	2 21	8 51.71	+17 45.7	2.131	3.074	6.6	18.6
3 2	8 42.10	+ 2 20.3	1.839	2.726	11.3	17.6	3 2	8 44.98	+18 8.1	2.197	3.078	10.0	18.8
3 12	8 36.62	+ 2 56.8	1.904	2.716	14.5	17.8	3 12	8 40.31	+18 22.0	2.287	3.081	12.9	19.0
424310	2007 <i>TG</i> ₃₂₄		2 3.8 17°11	4°3/	6.8 18		110528	2001 <i>TE</i> ₈₆		2 3.8 285°62	2°4/	5.5 17	
1 2	9 28.01	+ 3 16.7	2.142	2.933	13.4	20.7	1 2	9 28.04	+ 8 14.9	2.260	3.068	12.2	19.6
1 12	9 23.12	+ 2 59.1	2.061	2.934	10.6	20.5	1 12	9 23.22	+ 8 17.8	2.159	3.049	9.4	19.4
1 22	9 16.41	+ 2 56.6	2.004	2.935	7.5	20.3	1 22	9 16.55	+ 8 32.7	2.082	3.030	6.1	19.2
2 1	9 8.52	+ 3 8.9	1.973	2.937	4.9	20.1	2 1	9 8.60	+ 8 58.1	2.033	3.010	2.9	18.9
2 11	9 0.32	+ 3 33.7	1.971	2.939	4.6	20.1	2 11	9 0.16	+ 9 31.0	2.014	2.991	3.2	18.9
2 21	8 52.70	+ 4 7.3	1.997	2.940	7.0	20.3	2 21	8 52.15	+10 7.6	2.024	2.971	6.6	19.1
3 2	8 46.47	+ 4 45.5	2.051	2.943	10.1	20.5	3 2	8 45.42	+10 44.1	2.061	2.952	10.1	19.3
3 12	8 42.23	+ 5 23.7	2.127	2.945	13.0	20.6	3 12	8 40.65	+11 16.8	2.122	2.932	13.2	19.4
79147	1992 <i>RG</i> ₃		2 3.8 202°73	3°2/	6.6 18		170853	2004 <i>FJ</i> ₁₀₉		2 3.8 342°94	4°9/	7.9 18	
1 2	9 29.21	+ 3 10.4	2.531	3.310	11.9	20.7	1 2	9 25.76	- 0 34.5	2.208	2.983	13.5	19.8
1 12	9 23.82	+ 3 34.1	2.436	3.304	9.3	20.5	1 12	9 21.49	- 0 30.0	2.122	2.981	10.9	19.6
1 22	9 16.77	+ 4 12.9	2.365	3.298	6.4	20.4	1 22	9 15.49	- 0 6.6	2.058	2.979	8.1	19.4
2 1	9 8.61	+ 5 5.5	2.324	3.292	3.8	20.2	2 1	9 8.35	+ 0 35.1	2.021	2.977	5.6	19.2
2 11	9 0.08	+ 6 8.1	2.312	3.284	3.6	20.1	2 11	9 0.87	+ 1 32.2	2.012	2.975	5.0	19.2
2 21	8 51.97	+ 7 16.3	2.332	3.276	6.1	20.3	2 21	8 53.88	+ 2 39.8	2.032	2.974	7.0	19.3
3 2	8 45.03	+ 8 25.2	2.381	3.267	9.1	20.5	3 2	8 48.19	+ 3 52.3	2.079	2.973	9.9	19.5
3 12	8 39.86	+ 9 30.3	2.455	3.257	11.9	20.6	3 12	8 44.39	+ 5 3.8	2.150	2.972	12.7	19.7
4876	Strabo		2 3.8 49°98	0°7/	4.2 18		324475	2006 <i>UB</i> ₉₂		2 3.8 41°64	5°3/	31.9 18	
1 2	9 29.07	+12 55.8	2.026	2.852	12.7	17.4	1 2	9 33.57	+26 32.2	1.399	2.257	15.5	20.3
1 12	9 24.00	+13 15.8	1.950	2.854	9.4	17.1	1 12	9 28.00	+27 32.8	1.351	2.271	11.4	20.1
1 22	9 16.96	+13 45.8	1.898	2.856	5.6	16.9	1 22	9 19.51	+28 32.0	1.327	2.285	7.4	19.9
2 1	9 8.65	+14 22.4	1.875	2.858	1.5	16.6	2 1	9 9.23	+29 20.3	1.328	2.300	5.3	19.9
2 11	9 0.02	+15 0.9	1.881	2.860	2.9	16.8	2 11	8 58.73	+29 49.9	1.355	2.315	7.4	20.0
2 21	8 52.05	+15 37.1	1.915	2.862	7.0	17.0	2 21	8 49.56	+29 57.4	1.408	2.331	11.2	20.3
3 2	8 45.63	+16 7.4	1.977	2.865	10.6	17.2	3 2	8 42.94	+29 43.6	1.484	2.347	15.0	20.5
3 12	8 41.39	+16 29.6	2.061	2.867	13.7	17.4	3 12	8 39.55	+29 12.0	1.578	2.363	18.1	20.8
310987	2003 <i>WP</i> ₁₀		2 3.8 111°88	3°2/	5.8 18		24700	1990 <i>VN</i> ₅		2 3.8 134°79	5°9/	29.9 18	
1 2	9 34.38	+ 6 48.3	1.908	2.708	14.4	21.5	1 2	9 34.48	+30 16.0	1.991	2.831	12.3	18.5
1 12	9 27.75	+ 6 42.7	1.845	2.729	11.0	21.3	1 12	9 28.20	+31 52.4	1.936	2.842	9.3	18.3
1 22	9 19.05	+ 6 51.3	1.805	2.749	7.2	21.1	1 22	9 19.51	+33 25.4	1.908	2.853	6.8	18.2
2 1	9 9.10	+ 7 12.5	1.794	2.768	3.8	20.9	2 1	9 9.24	+34 45.9	1.909	2.863	6.0	18.2
2 11	8 58.95	+ 7 42.4	1.812	2.787	3.9	21.0	2 11	8 58.60	+35 46.3	1.938	2.873	7.7	18.3
2 21	8 49.69	+ 8 16.8	1.859	2.805	7.3	21.2	2 21	8 48.84	+36 23.1	1.995	2.882	10.5	18.5
3 2	8 42.20	+ 8 51.3	1.934	2.823	10.8	21.5	3 2	8 41.06	+36 36.4	2.076	2.891	13.2	18.7
3 12	8 37.09	+ 9 22.2	2.032	2.839	13.8	21.7	3 12	8 35.95	+36 29.2	2.177	2.899	15.6	18.9
426201	2012 <i>KN</i> ₁₀		2 3.8 41°98	2°6/	1.8 18		337908	2001 <i>XH</i> ₉₄		2 3.8 115°91	2°2/	1.9 18	
1 2	9 30.06	+20 44.1	1.851	2.696	12.9	20.9	1 2	9 29.45	+22 19.5	2.584	3.418	10.1	20.9
1 12	9 24.99	+21 45.0	1.782	2.698	9.4	20.6	1 12	9 23.91	+23 1.3	2.520	3.430	7.3	20.7
1 22	9 17.65	+22 51.4	1.737	2.699	5.5	20.4	1 22	9 16.76	+23 44.8	2.482	3.441	4.3	20.5
2 1	9 8.82	+23 56.5	1.720	2.700	2.7	20.2	2 1	9 8.61	+24 25.4	2.474	3.453	2.2	20.4
2 11	8 59.60	+24 53.2	1.733	2.702	4.9	20.4	2 11	9 0.27	+24 59.2	2.497	3.464	3.8	20.5
2 21	8 51.14	+25 36.4	1.773	2.704	8.7	20.6	2 21	8 52.54	+25 23.2	2.549	3.475	6.7	20.7
3 2	8 44.47	+26 3.6	1.838	2.705	12.4	20.8	3 2	8 46.14	+25 36.1	2.629	3.486	9.4	20.9
3 12	8 40.29	+26 14.8	1.925	2.707	15.4	21.0	3 12	8 41.57	+25 38.1	2.732	3.497	11.8	21.1
205596	2001 <i>TK</i> ₂₂₈		2 3.8 162°51	1°6/	5.1 17		235022	2003 <i>EM</i> ₄₄		2 3.8 346°88	3°1/	5.2 18	
1 2	9 30.26	+10 19.2	2.883	3.683	10.1	21.1	1 2	9 32.75	+ 9 37.9	1.313	2.148	17.8	20.1
1 12	9 24.29	+10 11.4	2.801	3.688	7.6	20.9	1 12	9 27.59	+ 9 18.6	1.240	2.145	13.6	19.8
1 22	9 16.90	+10 10.9	2.745	3.693	4.8	20.7	1 22	9 19.45	+ 9 15.5	1.189	2.143	8.7	19.5
2 1	9 8.63	+10 16.3	2.719	3.697	2.1	20.6	2 1	9 9.27	+ 9 27.0	1.162	2.141	4.0	19.2
2 11	9 0.14	+10 25.6	2.724	3.701	2.5	20.6	2 11	8 58.52	+ 9 48.7	1.161	2.139	4.6	19.3
2 21	8 52.14	+10 36.6	2.760	3.704	5.3	20.8	2 21	8 48.78	+10 15.3	1.186	2.138	9.5	19.5
3 2	8 45.27	+10 47.1	2.826	3.707	8.0	21.0	3 2	8 41.42	+10 41.4	1.234	2.137	14.4	19.8
3 12	8 39.99	+10 55.5	2.917	3.710	10.4	21.1	3 12	8 37.32	+11 2.4	1.302	2.137	18.6	20.1
104116	2000 <i>EF</i> ₅₂		2 3.8 126°57	0°2/	3.6 18		122491	2000 <i>QV</i> ₁₇₅		2 3.8 126°19	0°7/	4.2 18	
1 2	9 29.70	+15 4											

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
383809	2008 AC ₆		2 3.8 17 ^o 16	2.4/ 1.9	18		285661	2000 SO ₆₅		2 3.8 145 ^o 28	3.9/ 1.4	18	
1 2	9 27.48	+20 24.4	1.849	2.698	12.8	20.2	1 2	9 36.75	+25 1.5	1.777	2.617	13.6	21.0
1 12	9 23.06	+21 18.5	1.785	2.703	9.2	20.0	1 12	9 29.90	+25 51.6	1.714	2.626	10.0	20.8
1 22	9 16.51	+22 17.9	1.745	2.708	5.4	19.8	1 22	9 20.50	+26 41.9	1.676	2.634	6.2	20.6
2 1	9 8.58	+23 16.2	1.733	2.714	2.4	19.6	2 1	9 9.47	+27 24.9	1.666	2.641	3.9	20.5
2 11	9 0.35	+24 7.0	1.750	2.721	4.6	19.8	2 11	8 58.13	+27 54.1	1.686	2.648	5.9	20.6
2 21	8 52.90	+24 45.5	1.794	2.728	8.4	20.0	2 21	8 47.82	+28 6.0	1.733	2.654	9.6	20.8
3 2	8 47.16	+25 9.3	1.863	2.736	11.9	20.3	3 2	8 39.67	+28 0.6	1.805	2.660	13.1	21.1
3 12	8 43.80	+25 18.2	1.954	2.744	14.9	20.5	3 12	8 34.37	+27 40.1	1.898	2.665	16.1	21.3
2507	Bobone		2 3.8 272 ^o 90	0.4/ 3.5	18		459296	2012 GA ₁₇		2 3.8 316 ^o 69	2.5/ 2.1	16	
1 2	9 28.30	+14 9.8	1.981	2.813	12.7	16.2	1 2	9 27.82	+18 12.4	1.466	2.322	15.1	20.4
1 12	9 23.63	+15 4.8	1.896	2.805	9.3	15.9	1 12	9 24.11	+19 20.8	1.377	2.298	11.1	20.1
1 22	9 16.88	+16 11.6	1.836	2.796	5.4	15.7	1 22	9 17.57	+20 42.7	1.310	2.275	6.5	19.8
2 1	9 8.69	+17 25.0	1.804	2.788	1.2	15.4	2 1	9 8.92	+22 10.1	1.269	2.252	2.5	19.5
2 11	9 0.02	+18 38.3	1.802	2.780	3.3	15.5	2 11	8 59.40	+23 33.0	1.256	2.229	5.5	19.6
2 21	8 51.91	+19 45.5	1.828	2.771	7.6	15.8	2 21	8 50.50	+24 42.4	1.268	2.208	10.6	19.8
3 2	8 45.34	+20 41.7	1.881	2.763	11.4	16.0	3 2	8 43.67	+25 32.4	1.304	2.187	15.3	20.0
3 12	8 41.02	+21 24.5	1.957	2.754	14.7	16.2	3 12	8 39.94	+26 1.2	1.359	2.166	19.4	20.2
104489	2000 GT ₂₈		2 3.8 338 ^o 68	0.4/ 3.6	18		165851	2001 SP ₁₈		2 3.8 160 ^o 61	1.7/ 2.3	18	
1 2	9 29.44	+15 57.4	1.356	2.210	16.2	19.1	1 2	9 29.72	+21 15.1	2.691	3.521	9.8	20.7
1 12	9 25.21	+16 14.6	1.280	2.199	12.0	18.8	1 12	9 24.09	+21 48.8	2.617	3.526	7.1	20.5
1 22	9 18.11	+16 43.1	1.226	2.189	7.0	18.5	1 22	9 16.88	+22 24.8	2.570	3.530	4.1	20.4
2 1	9 8.99	+17 17.7	1.196	2.180	1.5	18.1	2 1	9 8.66	+22 59.2	2.553	3.534	1.8	20.2
2 11	8 59.25	+17 51.7	1.193	2.172	4.2	18.2	2 11	9 0.22	+23 28.0	2.567	3.538	3.4	20.3
2 21	8 50.43	+18 19.1	1.215	2.165	9.7	18.5	2 21	8 52.33	+23 48.7	2.611	3.541	6.4	20.5
3 2	8 43.87	+18 35.9	1.260	2.159	14.6	18.8	3 2	8 45.69	+23 59.7	2.683	3.544	9.1	20.7
3 12	8 40.47	+18 40.2	1.325	2.153	18.7	19.0	3 12	8 40.83	+24 0.9	2.779	3.546	11.5	20.9
366816	2005 ET ₁₃₇		2 3.8 289 ^o 01	5.8/ 8.3	17		381604	2008 VF ₇₇		2 3.8 51 ^o 53	4.2/ 31.4	18	
1 2	9 28.36	- 3 5.7	1.705	2.480	16.9	20.7	1 2	9 29.72	+25 32.6	1.984	2.831	12.1	20.5
1 12	9 24.17	- 2 24.6	1.593	2.452	13.9	20.5	1 12	9 24.66	+26 47.5	1.922	2.837	8.9	20.3
1 22	9 17.49	- 1 11.4	1.501	2.423	10.4	20.2	1 22	9 17.43	+28 3.2	1.887	2.843	5.7	20.1
2 1	9 8.89	+ 0 34.5	1.435	2.394	7.0	19.9	2 1	9 8.81	+29 12.2	1.879	2.850	4.2	20.0
2 11	8 59.38	+ 2 48.5	1.396	2.365	6.0	19.8	2 11	8 59.85	+30 7.9	1.900	2.856	6.0	20.1
2 21	8 50.19	+ 5 20.7	1.387	2.335	8.9	19.9	2 21	8 51.66	+30 45.8	1.949	2.863	9.2	20.3
3 2	8 42.59	+ 7 58.8	1.405	2.305	13.2	20.0	3 2	8 45.22	+31 4.9	2.023	2.870	12.3	20.6
3 12	8 37.60	+10 30.4	1.447	2.276	17.4	20.2	3 12	8 41.18	+31 6.3	2.118	2.876	14.9	20.8
54896	2001 OP ₇₀		2 3.8 109 ^o 14	3.8/ 2.2	18 R		48268	2002 AK ₁		2 3.8 159 ^o 89	1.5/ 2.4	18	
1 2	9 42.01	+27 36.4	1.819	2.651	13.7	18.0	1 2	9 30.65	+17 39.5	2.291	3.120	11.4	18.9
1 12	9 33.56	+27 34.4	1.751	2.658	10.2	17.8	1 12	9 25.03	+18 47.3	2.218	3.127	8.2	18.7
1 22	9 22.50	+27 27.3	1.709	2.664	6.4	17.6	1 22	9 17.55	+20 2.1	2.172	3.132	4.7	18.5
2 1	9 9.89	+27 9.6	1.695	2.670	3.8	17.4	2 1	9 8.83	+21 18.2	2.155	3.138	1.6	18.3
2 11	8 57.13	+26 37.8	1.712	2.677	5.5	17.6	2 11	8 59.78	+22 29.4	2.170	3.142	3.6	18.4
2 21	8 45.62	+25 51.7	1.757	2.683	9.2	17.8	2 21	8 51.32	+23 30.7	2.214	3.146	7.2	18.6
3 2	8 36.47	+24 53.7	1.829	2.689	12.8	18.0	3 2	8 44.30	+24 19.0	2.287	3.150	10.4	18.9
3 12	8 30.32	+23 47.5	1.924	2.694	15.8	18.2	3 12	8 39.33	+24 53.3	2.382	3.153	13.1	19.0
127121	2002 GZ ₁₀₁		2 3.8 67 ^o 33	4.1/ 31.7	18		11083	Caracas		2 3.8 60 ^o 92	2.4/ 2.6	18	
1 2	9 30.81	+24 58.7	1.874	2.722	12.7	19.6	1 2	9 35.38	+20 38.7	1.371	2.222	16.2	17.9
1 12	9 25.53	+26 10.5	1.813	2.729	9.3	19.4	1 12	9 29.32	+21 8.0	1.314	2.233	11.8	17.7
1 22	9 17.96	+27 23.6	1.778	2.736	5.9	19.2	1 22	9 20.31	+21 42.2	1.281	2.244	6.8	17.4
2 1	9 8.91	+28 30.2	1.771	2.743	4.1	19.1	2 1	9 9.45	+22 14.0	1.273	2.255	2.6	17.2
2 11	8 59.53	+29 23.2	1.792	2.750	6.1	19.2	2 11	8 58.31	+22 36.5	1.292	2.266	5.2	17.4
2 21	8 50.99	+29 58.4	1.840	2.757	9.4	19.5	2 21	8 48.47	+22 45.6	1.337	2.278	10.0	17.7
3 2	8 44.32	+30 14.5	1.914	2.765	12.7	19.7	3 2	8 41.17	+22 40.1	1.406	2.289	14.4	18.0
3 12	8 40.18	+30 12.9	2.008	2.772	15.5	19.9	3 12	8 37.13	+22 21.4	1.495	2.301	18.0	18.2
77694	2001 NT ₁₈		2 3.8 64 ^o 56	3.5/ 5.9	18 R		229581	2006 BW ₈₉		2 3.8 123 ^o 48	0.3/ 3.5	18	
1 2	9 31.53	+ 6 29.0	2.104	2.903	13.3	18.1	1 2	9 29.83	+15 4.9	2.160	2.987	12.0	20.5
1 12	9 25.56	+ 5 58.5	2.038	2.919	10.3	17.9	1 12	9 24.45	+15 46.1	2.090	2.996	8.7	20.4
1 22	9 17.76	+ 5 40.4	1.996	2.935	6.9	17.8	1 22	9 17.20	+16 35.5	2.045	3.005	5.0	20.1
2 1	9 8.85	+ 5 34.1	1.982	2.952	4.1	17.6	2 1	9 8.76	+17 28.8	2.030	3.014	1.1	19.8
2 11	8 59.75	+ 5 37.5	1.997	2.968	4.1	17.6	2 11	9 0.05	+18 20.5	2.045	3.023	3.0	20.0
2 21	8 51.41	+ 5 47.9	2.041	2.985	6.9	17.8	2 21	8 52.00	+19 6.3	2.089	3.031	6.8	20.2
3 2	8 44.61	+ 6 2.0	2.112	3.001	10.0	18.1	3 2	8 45.45	+19 43.0	2.160	3.039	10.3	20.4
3 12	8 39.92	+ 6 16.3	2.207	3.018	12.8	18.3	3 12	8 40.99	+20 8.9	2.255	3.047	13.2	20.7
112745	2002 PK ₁₃₂		2 3.8 103 ^o 29	0.4/ 4.0	18		333047	2011 SL ₁₄₄		2 3.8 45 ^o 26	2.0/ 4.9	17	
1 2	9 31.96	+14 49.1	2.287	3.107	11.7	19.7	1 2	9 30.75	+ 9 15.7	1.208	2.051	18.5	20.7
1 12	9 25.78	+14 53.1	2.221	3.122	8.5	19.5	1 12	9 25.99	+ 9 47.1	1.161	2.071	13.8	20.5
1 22	9 17.85	+15 3.5	2.180	3.138	5.0	19.3	1 22	9 18.38	+10 38.8	1.134	2.092	8.4	20.3
2 1	9 8.86	+15 17.4	2.169	3.152	1.2	19.0	2 1	9 9.03	+11 45.1	1.131	2.113	3.1	20.0
2 11	8 59.71	+15 31.6	2.188	3.167	2.7	19.2	2 11	8 59.46	+12 56.9	1.155	2.135	4.1	20.1
2 21	8 51.29	+15 43.3	2.237	3.181	6.3	19.4	2 21	8 51.17	+14 5.5	1.204	2.158	9.2	20.5
3 2	8 44.35	+15 50.5	2.314	3.195	9.6	19.7	3 2	8 45.37	+15 3.9	1.276	2.181	13.9	20.8
3 12	8 39.44	+15 52.0	2.415	3.209	12.3	19.9	3 12	8 42.71	+15 48.2	1.369	2.204	17.8	21.1
426906	2013 WK ₇₅		2 3.8 264 ^o 54	0.3/ 3.5	18		84304	2002 TB ₄₀		2 3.8 33 ^o 20	4.5/ 7.3	18	
1 2	9 29.13	+15 54.3	2.173	3.004	11.8	21.3	1 2	9 26.64	+ 1 35.7				

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
11955	Russrobb		2 3.8 236°41	2°5/ 5.4	18		265649	2005 TK ₁₀₅		2 3.8 42°35	7°5/31.2	18	
1 2	9 31.09	+ 8 9.8	1.696	2.514	15.2	19.2	1 2	9 38.24	+33 56.0	1.497	2.345	15.3	19.5
1 12	9 25.90	+ 8 23.3	1.613	2.509	11.6	18.9	1 12	9 31.32	+34 41.8	1.454	2.361	11.8	19.3
1 22	9 18.30	+ 8 53.3	1.553	2.503	7.4	18.7	1 22	9 21.38	+35 17.2	1.434	2.378	8.7	19.2
2 1	9 9.04	+ 9 37.2	1.519	2.497	3.3	18.4	2 1	9 9.71	+35 32.9	1.440	2.395	7.5	19.1
2 11	8 59.26	+10 30.1	1.513	2.491	3.8	18.4	2 11	8 58.00	+35 23.4	1.472	2.413	9.1	19.3
2 21	8 50.16	+11 25.7	1.535	2.485	8.1	18.7	2 21	8 47.88	+34 48.6	1.529	2.431	12.1	19.5
3 2	8 42.89	+12 18.4	1.583	2.479	12.3	18.9	3 2	8 40.52	+33 52.6	1.609	2.449	15.2	19.7
3 12	8 38.23	+13 3.4	1.654	2.472	16.0	19.1	3 12	8 36.52	+32 41.1	1.708	2.468	17.9	20.0
284128	2005 UM ₃₆₅		2 3.8 293°82	0°3/ 3.6	18		61443	2000 QW ₂₄		2 3.8 223°34	0°5/ 4.1	18	
1 2	9 31.90	+14 26.3	1.378	2.224	16.5	21.3	1 2	9 33.94	+13 21.0	1.937	2.758	13.4	20.1
1 12	9 26.97	+15 7.7	1.305	2.220	12.1	21.0	1 12	9 27.83	+13 41.7	1.846	2.748	10.0	19.9
1 22	9 19.13	+16 3.8	1.254	2.216	7.1	20.7	1 22	9 19.39	+14 13.0	1.780	2.737	5.9	19.6
2 1	9 9.25	+17 8.0	1.228	2.212	1.5	20.4	2 1	9 9.33	+14 51.0	1.742	2.725	1.5	19.3
2 11	8 58.75	+18 11.9	1.229	2.208	4.3	20.5	2 11	8 58.72	+15 30.8	1.733	2.713	3.2	19.4
2 21	8 49.19	+19 7.7	1.257	2.205	9.7	20.8	2 21	8 48.71	+16 7.5	1.754	2.699	7.7	19.6
3 2	8 41.93	+19 50.0	1.309	2.201	14.6	21.1	3 2	8 40.40	+16 37.5	1.803	2.685	11.8	19.8
3 12	8 37.87	+20 16.5	1.380	2.198	18.6	21.4	3 12	8 34.56	+16 58.5	1.873	2.671	15.2	20.0
179964	2002 XT ₈		2 3.8 130°18	1°4/ 4.8	18		100996	1998 QB ₄₁		2 3.8 120°24	1°6/ 4.9	18	
1 2	9 31.99	+10 28.1	2.070	2.883	13.0	21.0	1 2	9 31.78	+ 9 54.7	1.871	2.688	14.0	20.1
1 12	9 26.01	+10 50.4	2.001	2.896	9.7	20.9	1 12	9 26.06	+10 18.7	1.803	2.700	10.5	19.9
1 22	9 18.10	+11 24.4	1.957	2.910	5.9	20.6	1 22	9 18.22	+10 56.1	1.759	2.712	6.4	19.7
2 1	9 8.96	+12 6.6	1.941	2.922	2.1	20.4	2 1	9 9.04	+11 43.3	1.742	2.723	2.4	19.4
2 11	8 59.58	+12 52.4	1.955	2.934	2.9	20.5	2 11	8 59.57	+12 35.0	1.755	2.734	3.2	19.5
2 21	8 50.92	+13 37.1	1.999	2.946	6.8	20.8	2 21	8 50.89	+13 25.9	1.797	2.745	7.2	19.8
3 2	8 43.86	+14 16.9	2.071	2.957	10.3	21.0	3 2	8 43.94	+14 11.4	1.865	2.755	11.1	20.0
3 12	8 38.98	+14 49.2	2.166	2.967	13.3	21.2	3 12	8 39.35	+14 48.4	1.957	2.765	14.3	20.3
383605	2007 HW ₇₆		2 3.8 252°05	4°7/31.0	17		54017	2000 GP ₉₈		2 3.8 242°16	2°2/ 4.9	18	
1 2	9 31.73	+27 36.4	2.106	2.948	11.7	21.0	1 2	9 32.88	+ 9 54.2	1.500	2.328	16.3	19.5
1 12	9 26.21	+28 45.9	2.027	2.937	8.7	20.8	1 12	9 27.48	+ 9 59.4	1.422	2.324	12.4	19.2
1 22	9 18.43	+29 55.4	1.974	2.926	5.9	20.6	1 22	9 19.35	+10 20.4	1.365	2.320	7.8	19.0
2 1	9 9.09	+30 57.5	1.949	2.915	4.7	20.5	2 1	9 9.34	+10 54.5	1.335	2.315	3.1	18.7
2 11	8 59.24	+31 45.6	1.954	2.903	6.4	20.6	2 11	8 58.75	+11 36.3	1.331	2.310	4.0	18.7
2 21	8 50.04	+32 15.4	1.986	2.892	9.5	20.7	2 21	8 49.00	+12 19.7	1.355	2.306	8.8	19.0
3 2	8 42.53	+32 25.8	2.043	2.880	12.6	20.9	3 2	8 41.36	+12 59.3	1.404	2.301	13.4	19.2
3 12	8 37.47	+32 18.3	2.121	2.868	15.3	21.1	3 12	8 36.68	+13 30.8	1.473	2.296	17.4	19.5
135690	2002 OO ₁₈		2 3.8 164°51	3°0/ 5.9	18 R		307759	2003 UN ₄₀₁		2 3.8 251°47	4°4/ 6.4	18	
1 2	9 31.14	+ 6 21.0	1.931	2.734	14.2	20.2	1 2	9 31.01	+ 4 22.1	1.656	2.462	16.0	21.5
1 12	9 25.61	+ 6 32.2	1.852	2.738	10.9	20.0	1 12	9 25.91	+ 4 15.0	1.572	2.456	12.6	21.3
1 22	9 17.98	+ 6 59.2	1.797	2.741	7.2	19.8	1 22	9 18.37	+ 4 27.0	1.510	2.450	8.7	21.0
2 1	9 8.98	+ 7 39.9	1.769	2.744	3.7	19.6	2 1	9 9.12	+ 4 57.5	1.473	2.444	5.2	20.8
2 11	8 59.59	+ 8 29.9	1.770	2.746	3.8	19.6	2 11	8 59.33	+ 5 42.7	1.464	2.437	5.0	20.8
2 21	8 50.89	+ 9 24.0	1.800	2.748	7.3	19.8	2 21	8 50.22	+ 6 37.0	1.483	2.431	8.5	21.0
3 2	8 43.80	+10 17.0	1.858	2.750	11.0	20.0	3 2	8 42.95	+ 7 33.9	1.526	2.424	12.5	21.2
3 12	8 39.02	+11 4.4	1.938	2.751	14.2	20.2	3 12	8 38.33	+ 8 27.4	1.592	2.418	16.2	21.4
82134	2001 FL ₁₁₉		2 3.8 180°26	0°3/ 3.9	18		490672	2010 JU ₄₃		2 3.8 265°77	0°3/ 4.0	17	
1 2	9 36.62	+14 34.1	1.808	2.631	14.2	19.7	1 2	9 31.96	+12 48.8	1.655	2.486	14.9	22.7
1 12	9 29.77	+14 48.6	1.730	2.633	10.5	19.5	1 12	9 26.83	+13 26.4	1.560	2.467	11.1	22.4
1 22	9 20.47	+15 12.3	1.676	2.634	6.1	19.2	1 22	9 19.05	+14 18.8	1.488	2.448	6.6	22.1
2 1	9 9.54	+15 41.0	1.651	2.634	1.4	18.9	2 1	9 9.31	+15 21.5	1.444	2.428	1.6	21.7
2 11	8 58.18	+16 9.6	1.655	2.634	3.4	19.0	2 11	8 58.78	+16 27.6	1.428	2.407	3.7	21.8
2 21	8 47.66	+16 34.0	1.689	2.633	8.0	19.3	2 21	8 48.82	+17 29.7	1.440	2.387	8.8	22.1
3 2	8 39.07	+16 51.0	1.749	2.631	12.1	19.5	3 2	8 40.73	+18 22.1	1.477	2.365	13.5	22.3
3 12	8 33.18	+16 59.4	1.832	2.628	15.6	19.8	3 12	8 35.45	+19 1.4	1.535	2.344	17.5	22.5
250163	2002 TM ₆₇		2 3.8 112°75	3°0/ 1.8	18		401677	2013 GU ₁₃₂		2 3.8 324°15	0°6/ 3.2	17	
1 2	9 35.52	+23 11.9	1.999	2.835	12.5	21.5	1 2	9 24.99	+16 54.8	2.845	3.674	9.4	21.5
1 12	9 28.65	+23 59.5	1.945	2.855	9.1	21.3	1 12	9 20.67	+17 26.2	2.760	3.668	6.8	21.3
1 22	9 19.63	+24 48.2	1.917	2.875	5.4	21.1	1 22	9 14.96	+18 2.9	2.701	3.662	3.9	21.1
2 1	9 9.32	+25 31.7	1.917	2.895	3.0	21.0	2 1	9 8.33	+18 41.7	2.672	3.656	0.9	20.9
2 11	8 58.84	+26 4.4	1.948	2.914	4.9	21.2	2 11	9 1.44	+19 19.1	2.673	3.650	2.6	21.0
2 21	8 49.33	+26 23.3	2.007	2.932	8.3	21.4	2 21	8 54.96	+19 52.1	2.704	3.645	5.6	21.2
3 2	8 41.70	+26 27.8	2.093	2.949	11.5	21.7	3 2	8 49.52	+20 18.2	2.764	3.639	8.4	21.4
3 12	8 36.56	+26 19.0	2.201	2.966	14.2	21.9	3 12	8 45.62	+20 36.2	2.847	3.634	10.8	21.6
281314	2007 TB ₄₃		2 3.8 182°69	3°9/ 7.3	18		281134	2007 CM ₄₇		2 3.8 340°91	3°2/ 6.0	18	
1 2	9 27.03	+ 1 27.8	2.471	3.247	12.2	20.9	1 2	9 26.35	+ 5 33.5	1.553	2.375	16.1	19.6
1 12	9 22.26	+ 1 38.8	2.384	3.247	9.7	20.7	1 12	9 22.63	+ 6 0.6	1.472	2.368	12.5	19.4
1 22	9 15.91	+ 2 5.6	2.321	3.247	6.9	20.5	1 22	9 16.52	+ 6 49.7	1.412	2.361	8.2	19.1
2 1	9 8.51	+ 2 47.3	2.285	3.247	4.5	20.3	2 1	9 8.73	+ 7 58.1	1.378	2.355	4.2	18.8
2 11	9 0.82	+ 3 40.7	2.279	3.247	4.1	20.3	2 11	9 0.40	+ 9 19.5	1.371	2.349	4.1	18.8
2 21	8 53.59	+ 4 41.7	2.303	3.246	6.2	20.5	2 21	8 52.76	+10 45.8	1.390	2.344	8.3	19.0
3 2	8 47.53	+ 5 45.4	2.355	3.245	9.0	20.6	3 2	8 46.95	+12 8.6	1.435	2.340	12.7	19.3
3 12	8 43.21	+ 6 47.1	2.432	3.244	11.7	20.8	3 12	8 43.77	+13 21.5	1.501	2.336	16.5	19.5
248709	2006 OC ₁₀		2 3.8 229°95	2°3/ 5.1	17		303380	2004 XW ₇		2 3.8 42°66	2°6/ 2.1	18	
1 2	9 34.60	+ 9 42.3	2.088	2.893	13.2	20.7	1 2	9 31.14	+18 32.2	1.387	2.242	15.9	20.4
1 12	9 28.14	+ 9 30.2</											

EPHEMERIDES

2 3.8

2 3.8

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
251068	2006 <i>SN</i> ₃₅		2 3.8 78°68	2.3/ 5.3	18		380057	2013 <i>RF</i> ₈₁		2 3.8 111°24	0°5/ 4.2	18	
1 2	9 31.41	+ 8 35.1	1.661	2.481	15.4	20.9	1 2	9 30.29	+13 20.8	2.100	2.923	12.5	21.2
1 12	9 25.96	+ 8 51.6	1.599	2.497	11.6	20.7	1 12	9 24.84	+13 43.3	2.029	2.932	9.2	21.0
1 22	9 18.23	+ 9 23.9	1.560	2.512	7.3	20.5	1 22	9 17.49	+14 14.9	1.983	2.940	5.4	20.8
2 1	9 9.08	+10 8.6	1.548	2.527	3.1	20.3	2 1	9 8.94	+14 52.1	1.965	2.949	1.4	20.5
2 11	8 59.65	+11 0.2	1.564	2.542	3.6	20.3	2 11	9 0.12	+15 30.4	1.978	2.957	2.8	20.6
2 21	8 51.14	+11 52.5	1.607	2.557	7.7	20.6	2 21	8 51.98	+16 5.7	2.019	2.965	6.7	20.9
3 2	8 44.54	+12 40.5	1.677	2.573	11.7	20.9	3 2	8 45.38	+16 34.7	2.088	2.973	10.3	21.1
3 12	8 40.50	+13 20.2	1.769	2.587	15.1	21.1	3 12	8 40.91	+16 55.5	2.180	2.981	13.3	21.3
2221	Chilton		2 3.8 167°32	6°5/ 8.4	18		87497	2000 <i>QX</i> ₁₆₅		2 3.8 256°43	0°8/ 4.2	18	
1 2	9 31.08	- 3 24.1	2.181	2.932	14.4	17.7	1 2	9 33.51	+14 26.6	1.917	2.742	13.4	19.6
1 12	9 25.39	- 3 55.7	2.098	2.935	11.9	17.6	1 12	9 27.46	+14 18.4	1.832	2.735	9.9	19.3
1 22	9 17.81	- 4 8.2	2.038	2.939	9.3	17.4	1 22	9 19.15	+14 17.8	1.771	2.729	5.9	19.1
2 1	9 8.99	- 4 0.6	2.003	2.941	7.1	17.3	2 1	9 9.33	+14 21.9	1.738	2.722	1.7	18.8
2 11	8 59.81	- 3 34.1	1.997	2.944	6.6	17.2	2 11	8 59.08	+14 27.6	1.735	2.715	3.2	18.9
2 21	8 51.20	- 2 52.2	2.019	2.945	8.1	17.3	2 21	8 49.53	+14 31.8	1.761	2.708	7.5	19.1
3 2	8 44.01	- 2 0.2	2.068	2.947	10.6	17.5	3 2	8 41.72	+14 32.1	1.813	2.700	11.5	19.4
3 12	8 38.88	- 1 3.8	2.140	2.948	13.2	17.7	3 12	8 36.37	+14 27.0	1.889	2.693	14.9	19.6
335938	2007 <i>TL</i> ₅₄		2 3.8 84°17	1°0/ 2.9	18		37200	2000 <i>WC</i> ₉₃		2 3.8 185°04	3°6/ 31.9	18	
1 2	9 29.14	+17 59.3	2.241	3.074	11.4	21.3	1 2	9 31.52	+24 46.1	2.120	2.961	11.7	19.2
1 12	9 23.94	+18 32.2	2.171	3.081	8.3	21.1	1 12	9 25.94	+25 48.4	2.049	2.961	8.6	19.0
1 22	9 16.93	+19 10.6	2.126	3.087	4.7	20.9	1 22	9 18.23	+26 52.3	2.003	2.961	5.4	18.8
2 1	9 8.78	+19 50.0	2.109	3.093	1.3	20.7	2 1	9 9.12	+27 50.9	1.987	2.960	3.6	18.7
2 11	9 0.38	+20 26.1	2.123	3.099	3.3	20.8	2 11	8 59.63	+28 38.2	2.000	2.959	5.4	18.8
2 21	8 52.61	+20 55.1	2.166	3.105	6.8	21.1	2 21	8 50.84	+29 10.1	2.041	2.958	8.6	19.0
3 2	8 46.30	+21 14.7	2.236	3.111	10.1	21.3	3 2	8 43.70	+29 25.3	2.108	2.957	11.8	19.2
3 12	8 42.01	+21 24.2	2.329	3.118	12.9	21.5	3 12	8 38.89	+29 24.7	2.197	2.956	14.5	19.4
211442	2003 <i>AR</i> ₅₂		2 3.8 353°66	0°5/ 3.5	18		48035	2001 <i>DM</i> ₆₇		2 3.8 273°41	1°1/ 4.5	18	
1 2	9 31.41	+18 12.4	1.864	2.702	13.1	19.4	1 2	9 31.51	+12 2.1	1.722	2.550	14.5	20.0
1 12	9 25.92	+18 4.8	1.787	2.699	9.6	19.1	1 12	9 26.38	+12 20.8	1.628	2.532	10.9	19.8
1 22	9 18.22	+18 1.5	1.734	2.695	5.6	18.9	1 22	9 18.75	+12 52.7	1.557	2.514	6.6	19.5
2 1	9 9.09	+17 59.3	1.709	2.693	1.2	18.6	2 1	9 9.30	+13 34.7	1.513	2.496	2.0	19.1
2 11	8 59.62	+17 54.8	1.713	2.691	3.4	18.7	2 11	8 59.16	+14 21.1	1.498	2.478	3.5	19.2
2 21	8 50.95	+17 45.5	1.744	2.690	7.7	19.0	2 21	8 49.60	+15 6.3	1.510	2.459	8.3	19.4
3 2	8 44.06	+17 30.1	1.802	2.689	11.5	19.2	3 2	8 41.83	+15 45.4	1.548	2.440	12.8	19.6
3 12	8 39.62	+17 8.3	1.882	2.689	14.8	19.4	3 12	8 36.73	+16 15.0	1.608	2.421	16.6	19.8
466306	2013 <i>QC</i> ₄₃		2 3.8 93°77	1°5/ 2.9	18		66144	1998 <i>SJ</i> ₁₇₁		2 3.8 146°51	1°2/ 4.8	18	
1 2	9 32.65	+19 38.3	1.904	2.742	12.9	21.6	1 2	9 32.17	+10 38.4	2.224	3.033	12.4	20.6
1 12	9 26.79	+19 58.6	1.832	2.744	9.4	21.4	1 12	9 26.10	+11 1.8	2.150	3.044	9.2	20.4
1 22	9 18.71	+20 23.2	1.784	2.746	5.4	21.2	1 22	9 18.19	+11 35.9	2.102	3.055	5.6	20.2
2 1	9 9.20	+20 47.3	1.764	2.747	1.7	20.9	2 1	9 9.11	+12 17.7	2.083	3.065	2.0	20.0
2 11	8 59.36	+21 6.3	1.774	2.749	3.9	21.1	2 11	8 59.77	+13 2.7	2.095	3.074	2.8	20.0
2 21	8 50.33	+21 16.6	1.812	2.751	7.9	21.3	2 21	8 51.08	+13 46.6	2.137	3.083	6.4	20.3
3 2	8 43.11	+21 16.7	1.876	2.753	11.7	21.6	3 2	8 43.87	+14 25.9	2.207	3.091	9.9	20.5
3 12	8 38.36	+21 6.6	1.962	2.755	14.8	21.8	3 12	8 38.73	+14 57.9	2.301	3.098	12.8	20.7
325520	2009 <i>RH</i> ₆₅		2 3.8 236°83	0°3/ 4.0	18		496003	2007 <i>VN</i> ₂₃₃		2 3.8 152°31	5°0/ 29.7	18	
1 2	9 30.41	+13 34.5	2.084	2.908	12.5	21.6	1 2	9 31.83	+33 38.1	2.876	3.704	9.3	22.0
1 12	9 25.11	+14 3.2	1.995	2.899	9.2	21.3	1 12	9 25.74	+34 43.5	2.817	3.712	7.2	21.8
1 22	9 17.76	+14 41.8	1.932	2.890	5.5	21.1	1 22	9 17.94	+35 43.7	2.786	3.720	5.5	21.7
2 1	9 9.01	+15 26.8	1.896	2.880	1.3	20.8	2 1	9 9.05	+36 33.2	2.784	3.727	5.0	21.7
2 11	8 59.80	+16 13.2	1.891	2.870	3.0	20.9	2 11	8 59.92	+37 7.7	2.811	3.734	6.2	21.8
2 21	8 51.15	+16 56.2	1.915	2.860	7.1	21.1	2 21	8 51.39	+37 25.3	2.868	3.740	8.1	21.9
3 2	8 44.00	+17 32.1	1.966	2.849	10.9	21.3	3 2	8 44.23	+37 26.0	2.949	3.746	10.2	22.1
3 12	8 39.04	+17 58.6	2.040	2.839	14.1	21.5	3 12	8 38.99	+37 11.8	3.053	3.752	12.0	22.2
201029	2002 <i>CM</i> ₂₉₂		2 3.8 73°33	0°0/ 3.6	18		422327	2014 <i>SG</i> ₂₀₇		2 3.8 245°82	4°5/ 6.9	18	
1 2	9 36.32	+15 16.3	1.397	2.237	16.6	20.4	1 2	9 29.39	+ 2 28.5	1.913	2.705	14.7	20.7
1 12	9 29.77	+15 33.0	1.348	2.260	12.1	20.1	1 12	9 24.49	+ 2 30.2	1.823	2.697	11.7	20.5
1 22	9 20.49	+15 59.9	1.322	2.283	7.0	19.9	1 22	9 17.47	+ 2 51.0	1.757	2.689	8.3	20.2
2 1	9 9.57	+16 31.4	1.321	2.305	1.5	19.6	2 1	9 8.99	+ 3 30.0	1.716	2.682	5.2	20.0
2 11	8 58.54	+17 1.1	1.348	2.328	3.9	19.8	2 11	9 0.02	+ 4 23.9	1.703	2.674	4.8	20.0
2 21	8 48.83	+17 24.3	1.403	2.350	8.9	20.2	2 21	8 51.60	+ 5 27.4	1.719	2.665	7.7	20.2
3 2	8 41.58	+17 38.2	1.482	2.372	13.3	20.5	3 2	8 44.73	+ 6 34.1	1.762	2.657	11.3	20.3
3 12	8 37.42	+17 41.7	1.581	2.394	16.9	20.8	3 12	8 40.13	+ 7 38.1	1.827	2.648	14.6	20.5
26839	1991 <i>RC</i> ₁₀		2 3.8 93°99	2°9/ 1.8	18	R	207785	2007 <i>TD</i> ₁₃₀		2 3.8 13°73	0°4/ 3.5	18	
1 2	9 32.69	+24 51.5	2.236	3.072	11.3	18.4	1 2	9 28.35	+15 54.9	2.035	2.870	12.3	20.8
1 12	9 26.51	+25 18.9	2.172	3.082	8.3	18.2	1 12	9 23.55	+16 22.0	1.961	2.871	9.0	20.6
1 22	9 18.40	+25 45.6	2.134	3.091	5.1	18.0	1 22	9 16.82	+16 56.8	1.912	2.873	5.2	20.3
2 1	9 9.11	+26 7.0	2.124	3.101	2.9	17.9	2 1	9 8.82	+17 35.2	1.891	2.875	1.1	20.0
2 11	8 59.63	+26 18.8	2.145	3.110	4.6	18.0	2 11	9 0.51	+18 12.4	1.899	2.878	3.1	20.2
2 21	8 50.95	+26 18.9	2.195	3.119	7.7	18.2	2 21	8 52.87	+18 44.3	1.936	2.881	7.1	20.5
3 2	8 43.91	+26 6.9	2.271	3.128	10.7	18.4	3 2	8 46.76	+19 7.8	1.999	2.884	10.7	20.7
3 12	8 39.07	+25 44.0	2.370	3.137	13.3	18.6	3 12	8 42.81	+19 21.6	2.085	2.887	13.7	20.9
155973	2001 <i>QJ</i> ₂₃₅		2 3.8 165°23	2°3/ 5.4	18		192503	1998 <i>KO</i> ₃₂		2 3.8 221°50	0°2/ 3.6	17	
1 2	9 34.05	+ 7 50.6	1.987	2.789	13.9	21.1	1 2	9 29.98	+15 8.5	2.715			

EPHEMERIDES

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
379827	2011 LN ₇		2 3.8 60°53	5°1/30.7 18			76376	2000 EO ₁₈₄		2 3.8 52°47	5°7/30.6 18		
1 2	9 30.67	+28 31.1	2.017	2.863	12.0	20.0	1 2	9 32.75	+31 17.6	2.024	2.866	12.1	19.2
1 12	9 25.37	+29 50.2	1.965	2.876	8.9	19.9	1 12	9 26.95	+32 18.2	1.964	2.871	9.2	19.1
1 22	9 17.90	+31 7.1	1.938	2.889	6.2	19.7	1 22	9 18.86	+33 14.1	1.930	2.875	6.6	18.9
2 1	9 9.06	+32 14.0	1.939	2.901	5.1	19.7	2 1	9 9.31	+33 57.9	1.923	2.880	5.7	18.9
2 11	8 59.95	+33 4.4	1.969	2.914	6.8	19.8	2 11	8 59.47	+34 23.7	1.944	2.885	7.2	19.0
2 21	8 51.67	+33 34.8	2.026	2.927	9.6	20.0	2 21	8 50.52	+34 29.2	1.992	2.889	9.9	19.1
3 2	8 45.19	+33 45.1	2.108	2.941	12.4	20.2	3 2	8 43.47	+34 14.9	2.065	2.894	12.7	19.3
3 12	8 41.14	+33 37.3	2.210	2.954	14.8	20.4	3 12	8 38.97	+33 43.8	2.158	2.899	15.2	19.5
275208	2009 WY ₁₇₆		2 3.8 335°75	5°6/30.9 18			290467	2005 TY ₁₇₂		2 3.8 122°07	1°5/ 2.7 18		
1 2	9 31.46	+28 18.1	1.718	2.570	13.4	20.6	1 2	9 33.78	+19 35.0	2.354	3.180	11.2	21.7
1 12	9 26.40	+29 29.1	1.651	2.565	10.1	20.4	1 12	9 27.16	+20 9.9	2.294	3.200	8.1	21.5
1 22	9 18.73	+30 39.1	1.607	2.560	6.9	20.2	1 22	9 18.75	+20 48.1	2.260	3.220	4.6	21.3
2 1	9 9.28	+31 39.3	1.591	2.556	5.6	20.1	2 1	9 9.26	+21 25.1	2.256	3.239	1.6	21.1
2 11	8 59.36	+32 21.8	1.601	2.552	7.5	20.2	2 11	8 59.63	+21 56.6	2.284	3.257	3.4	21.3
2 21	8 50.31	+32 42.3	1.638	2.548	10.9	20.4	2 21	8 50.74	+22 19.5	2.341	3.275	6.8	21.5
3 2	8 43.36	+32 40.5	1.699	2.545	14.3	20.6	3 2	8 43.39	+22 32.4	2.427	3.292	9.8	21.8
3 12	8 39.27	+32 18.8	1.779	2.542	17.2	20.8	3 12	8 38.12	+22 35.2	2.536	3.308	12.4	22.0
2630	Hermod		2 3.8 92°18	0°7/ 3.3 18			248926	2006 WZ ₂		2 3.8 33°40	33°8/ 2.4 18		
1 2	9 29.90	+17 2.9	2.271	3.100	11.4	16.8	1 2	15 57.45	+78 14.6	0.499	1.206	52.2	17.6
1 12	9 24.44	+17 30.1	2.205	3.113	8.3	16.7	1 12	14 37.07	+81 12.2	0.497	1.238	48.6	17.6
1 22	9 17.21	+18 3.1	2.164	3.125	4.7	16.5	1 22	11 44.31	+81 50.4	0.498	1.275	44.5	17.5
2 1	9 8.91	+18 37.7	2.153	3.137	1.1	16.2	2 1	9 26.84	+76 57.2	0.506	1.315	40.3	17.5
2 11	9 0.39	+19 9.8	2.172	3.149	3.0	16.4	2 11	8 35.63	+68 52.1	0.527	1.357	36.7	17.6
2 21	8 52.55	+19 36.0	2.220	3.160	6.6	16.6	2 21	8 18.93	+59 48.7	0.566	1.402	34.5	17.7
3 2	8 46.15	+19 54.0	2.295	3.172	9.8	16.8	3 2	8 16.28	+50 57.3	0.624	1.447	33.8	18.0
3 12	8 41.76	+20 3.0	2.394	3.184	12.5	17.1	3 12	8 20.52	+42 57.3	0.703	1.493	34.2	18.3
432514	2010 FT ₃₀		2 3.8 312°76	4°0/ 7.1 17			307621	2003 SW ₃₇		2 3.8 164°46	2°1/ 2.4 18		
1 2	9 26.65	+ 2 12.9	2.241	3.027	13.0	21.2	1 2	9 34.09	+19 46.3	1.878	2.714	13.2	21.4
1 12	9 22.19	+ 2 18.6	2.155	3.025	10.3	21.0	1 12	9 27.94	+20 35.9	1.807	2.719	9.6	21.2
1 22	9 16.00	+ 2 41.0	2.091	3.022	7.3	20.8	1 22	9 19.47	+21 31.2	1.762	2.723	5.6	21.0
2 1	9 8.66	+ 3 19.0	2.055	3.019	4.7	20.7	2 1	9 9.47	+22 25.7	1.745	2.726	2.2	20.7
2 11	9 0.98	+ 4 9.6	2.048	3.017	4.3	20.6	2 11	8 59.08	+23 13.1	1.757	2.729	4.4	20.9
2 21	8 53.79	+ 5 8.2	2.069	3.014	6.7	20.8	2 21	8 49.51	+23 48.4	1.798	2.732	8.4	21.1
3 2	8 47.89	+ 6 9.7	2.118	3.012	9.7	21.0	3 2	8 41.79	+24 9.6	1.865	2.733	12.2	21.4
3 12	8 43.87	+ 7 9.1	2.190	3.009	12.6	21.1	3 12	8 36.64	+24 16.6	1.954	2.735	15.3	21.6
413868	2006 UE ₁₄₂		2 3.8 133°84	2°0/ 2.5 18			296230	2009 CG ₄₄		2 3.8 295°46	2°7/ 6.1 17		
1 2	9 34.16	+20 36.9	1.968	2.803	12.7	22.1	1 2	9 26.14	+ 5 38.9	2.307	3.107	12.3	20.7
1 12	9 27.81	+21 13.6	1.902	2.813	9.2	21.9	1 12	9 21.86	+ 5 57.9	2.210	3.094	9.5	20.5
1 22	9 19.29	+21 53.9	1.862	2.822	5.3	21.6	1 22	9 15.85	+ 6 31.7	2.138	3.080	6.3	20.3
2 1	9 9.39	+22 32.4	1.850	2.832	2.1	21.4	2 1	9 8.66	+ 7 18.5	2.093	3.067	3.4	20.1
2 11	8 59.22	+23 3.6	1.868	2.840	4.2	21.6	2 11	9 1.06	+ 8 14.7	2.078	3.053	3.3	20.0
2 21	8 49.90	+23 23.9	1.915	2.849	8.0	21.8	2 21	8 53.88	+ 9 15.7	2.092	3.040	6.3	20.2
3 2	8 42.39	+23 31.8	1.989	2.857	11.5	22.1	3 2	8 47.91	+10 16.4	2.133	3.027	9.7	20.4
3 12	8 37.34	+23 27.8	2.084	2.864	14.5	22.3	3 12	8 43.78	+11 12.6	2.199	3.014	12.7	20.6
366749	2004 PR		2 3.8 141°53	5°8/ 7.6 15			94594	2001 VU ₆₃		2 3.8 323°91	5°6/31.8 18		
1 2	9 34.05	- 1 26.3	2.436	3.185	13.2	21.1	1 2	9 34.67	+26 31.2	1.347	2.206	16.0	18.9
1 12	9 27.32	- 2 15.8	2.358	3.196	10.8	21.0	1 12	9 29.32	+27 34.3	1.281	2.200	11.9	18.7
1 22	9 18.86	- 2 50.3	2.303	3.206	8.2	20.8	1 22	9 20.68	+28 38.4	1.237	2.195	7.8	18.4
2 1	9 9.29	- 3 8.4	2.276	3.216	6.3	20.7	2 1	9 9.79	+29 32.6	1.218	2.190	5.6	18.3
2 11	8 59.45	- 3 10.8	2.280	3.226	5.9	20.7	2 11	8 58.28	+30 7.5	1.226	2.186	8.0	18.4
2 21	8 50.20	- 2 59.7	2.312	3.235	7.5	20.8	2 21	8 47.95	+30 18.0	1.258	2.182	12.2	18.6
3 2	8 42.32	- 2 38.6	2.373	3.243	9.8	21.0	3 2	8 40.29	+30 4.3	1.313	2.178	16.4	18.9
3 12	8 36.36	- 2 12.0	2.458	3.251	12.1	21.1	3 12	8 36.20	+29 30.0	1.385	2.174	20.0	19.1
429302	2010 DU ₁₆		2 3.8 276°89	0°0/ 3.7 17			194366	2001 UW ₁₈₃		2 3.8 141°04	1°9/ 2.5 18		
1 2	9 27.36	+13 53.6	2.336	3.161	11.3	21.4	1 2	9 35.68	+18 43.7	1.917	2.747	13.2	21.5
1 12	9 22.74	+14 31.8	2.245	3.150	8.3	21.2	1 12	9 28.98	+19 42.2	1.853	2.762	9.5	21.3
1 22	9 16.36	+15 19.5	2.179	3.138	4.9	21.0	1 22	9 20.00	+20 47.1	1.816	2.776	5.5	21.1
2 1	9 8.76	+16 12.9	2.142	3.126	1.1	20.7	2 1	9 9.58	+21 51.4	1.807	2.789	2.0	20.8
2 11	9 0.76	+17 7.3	2.136	3.115	2.8	20.8	2 11	8 58.86	+22 48.5	1.829	2.801	4.2	21.0
2 21	8 53.22	+17 58.0	2.159	3.103	6.5	21.0	2 21	8 49.00	+23 33.5	1.880	2.812	8.2	21.3
3 2	8 46.95	+18 41.5	2.209	3.091	9.9	21.2	3 2	8 41.03	+24 4.0	1.957	2.823	11.8	21.5
3 12	8 42.57	+19 15.3	2.283	3.080	12.9	21.4	3 12	8 35.60	+24 19.9	2.057	2.832	14.8	21.8
5061	McIntosh		2 3.8 37°88	4°3/ 6.9 18			372975	2011 CT ₃₃		2 3.8 194°78	0°3/ 3.6 18		
1 2	9 28.20	+ 3 2.1	2.099	2.890	13.6	17.4	1 2	9 28.85	+13 1.6	1.959	2.787	13.0	20.4
1 12	9 23.35	+ 2 47.8	2.022	2.894	10.8	17.2	1 12	9 24.08	+14 11.4	1.880	2.787	9.5	20.2
1 22	9 16.68	+ 2 49.4	1.967	2.899	7.6	17.0	1 22	9 17.24	+15 34.4	1.827	2.786	5.5	20.0
2 1	9 8.82	+ 3 6.3	1.939	2.903	4.9	16.9	2 1	9 8.98	+17 4.9	1.802	2.786	1.2	19.7
2 11	9 0.66	+ 3 36.0	1.940	2.908	4.6	16.9	2 11	9 0.29	+18 35.3	1.807	2.785	3.3	19.8
2 21	8 53.10	+ 4 14.4	1.969	2.913	7.0	17.0	2 21	8 52.19	+19 58.7	1.841	2.784	7.5	20.1
3 2	8 46.96	+ 4 57.1	2.024	2.918	10.1	17.2	3 2	8 45.66	+21 9.6	1.903	2.783	11.4	20.3
3 12	8 42.84	+ 5 39.2	2.104	2.923	13.0	17.4	3 12	8 41.38	+22 5.3	1.987	2.782	14.6	20.5
282868	2007 EQ ₁		2 3.8 276°18	2°3/ 2.5 17			223764	2004 RL ₂₅₅		2 3.8 147°25	4°8/30.7 18		
1 2	9 35.20	+22 29.8	1.992	2.827	12.6	20.8	1 2	9 33.05	+29 16.6	2.268	3.105	11.2	20.4
1 12	9 28.88	+22 46.1	1.895	2.805	9.3</								

EPHEMERIDES

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
120271	2004 <i>HM</i> ₃		2 3.8 174°38'	4.8/ 8.0	18		125820	2001 <i>XO</i> ₁₇₀		2 3.8 292°24'	0.9/ 3.3	18	
1 2	9 29.41	- 1 17.7	2.411	3.170	13.0	20.3	1 2	9 31.49	+15 46.3	1.439	2.286	15.8	19.7
1 12	9 24.07	- 1 13.8	2.324	3.173	10.5	20.1	1 12	9 26.88	+16 27.8	1.351	2.267	11.7	19.4
1 22	9 17.05	- 0 52.2	2.261	3.175	7.8	19.9	1 22	9 19.32	+17 23.0	1.285	2.248	6.8	19.1
2 1	9 8.93	- 0 13.2	2.225	3.177	5.5	19.8	2 1	9 9.56	+18 25.8	1.244	2.228	1.6	18.7
2 11	9 0.48	+ 0 40.3	2.218	3.178	5.0	19.8	2 11	8 58.94	+19 27.8	1.231	2.209	4.5	18.9
2 21	8 52.53	+ 1 44.0	2.241	3.179	6.8	19.9	2 21	8 49.01	+20 21.2	1.244	2.191	10.0	19.1
3 2	8 45.82	+ 2 52.7	2.293	3.179	9.4	20.0	3 2	8 41.24	+21 0.6	1.281	2.172	15.0	19.4
3 12	8 40.94	+ 4 1.0	2.369	3.178	12.1	20.2	3 12	8 36.66	+21 23.6	1.338	2.153	19.2	19.6
341438	2007 <i>TU</i> ₂₃₆		2 3.8 49°06'	6.7/ 9.8	18		295955	2008 <i>XL</i> ₅₅		2 3.8 118°86'	0.5/ 4.2	18	
1 2	9 26.39	- 5 58.9	2.181	2.926	14.6	20.8	1 2	9 35.18	+13 7.0	1.794	2.616	14.3	21.4
1 12	9 22.01	- 6 8.2	2.102	2.932	12.2	20.7	1 12	9 28.62	+13 33.3	1.732	2.634	10.5	21.2
1 22	9 15.91	- 5 55.3	2.045	2.938	9.7	20.5	1 22	9 19.80	+14 10.3	1.695	2.652	6.2	20.9
2 1	9 8.68	- 5 19.9	2.013	2.945	7.5	20.4	2 1	9 9.57	+14 53.4	1.685	2.669	1.6	20.7
2 11	9 1.15	- 4 24.1	2.007	2.951	6.7	20.4	2 11	8 59.12	+15 36.9	1.706	2.685	3.2	20.8
2 21	8 54.18	- 3 12.7	2.029	2.958	7.9	20.5	2 21	8 49.60	+16 16.1	1.755	2.701	7.6	21.1
3 2	8 48.53	+ 1 52.0	2.079	2.965	10.2	20.6	3 2	8 42.01	+16 47.3	1.832	2.716	11.5	21.4
3 12	8 44.79	- 0 28.7	2.152	2.972	12.7	20.8	3 12	8 36.98	+17 8.7	1.930	2.730	14.8	21.6
190346	1998 <i>UG</i> ₃₃		2 3.8 117°32'	4.2/ 1.2	17		376431	2012 <i>HZ</i> ₁₀		2 3.8 228°24'	5.9/ 29.7	17	
1 2	9 39.27	+25 2.8	1.765	2.602	13.8	20.6	1 2	9 35.32	+33 47.2	2.401	3.231	10.9	21.6
1 12	9 31.70	+26 8.6	1.716	2.625	10.1	20.4	1 12	9 28.78	+34 55.7	2.323	3.219	8.5	21.5
1 22	9 21.59	+27 13.9	1.692	2.648	6.3	20.2	1 22	9 19.99	+35 59.2	2.271	3.206	6.5	21.3
2 1	9 9.94	+28 10.5	1.696	2.669	4.2	20.2	2 1	9 9.65	+36 50.5	2.248	3.193	6.0	21.2
2 11	8 58.12	+28 51.3	1.730	2.690	6.1	20.3	2 11	8 58.82	+37 23.7	2.254	3.179	7.4	21.3
2 21	8 47.48	+29 13.2	1.793	2.710	9.6	20.6	2 21	8 48.64	+37 35.9	2.288	3.164	9.8	21.4
3 2	8 39.10	+29 16.1	1.881	2.729	13.0	20.8	3 2	8 40.14	+37 27.3	2.346	3.149	12.3	21.6
3 12	8 33.62	+29 2.8	1.990	2.747	15.8	21.0	3 12	8 34.05	+37 0.9	2.426	3.133	14.5	21.7
418272	2008 <i>ES</i> ₅₈		2 3.8 210°68'	0.3/ 3.6	16		290911	2005 <i>WT</i> ₁₀₅		2 3.8 130°47'	4.2/ 7.3	18	
1 2	9 34.35	+16 43.4	2.139	2.962	12.3	21.6	1 2	9 28.30	+ 1 23.3	1.990	2.776	14.4	20.4
1 12	9 27.94	+16 54.8	2.052	2.956	9.0	21.4	1 12	9 23.57	+ 1 47.7	1.909	2.780	11.4	20.2
1 22	9 19.41	+17 12.1	1.991	2.950	5.2	21.2	1 22	9 16.90	+ 2 32.5	1.852	2.783	8.0	20.0
2 1	9 9.48	+17 31.6	1.959	2.943	1.2	20.9	2 1	9 8.95	+ 3 35.8	1.821	2.787	5.0	19.8
2 11	8 59.14	+17 49.4	1.957	2.935	3.1	21.0	2 11	9 0.63	+ 4 53.1	1.820	2.790	4.5	19.8
2 21	8 49.44	+18 2.2	1.985	2.927	7.2	21.2	2 21	8 52.91	+ 6 17.9	1.847	2.794	7.2	20.0
3 2	8 41.34	+18 8.0	2.041	2.918	10.8	21.5	3 2	8 46.67	+ 7 43.3	1.901	2.797	10.5	20.2
3 12	8 35.52	+18 5.8	2.120	2.909	14.0	21.6	3 12	8 42.57	+ 9 3.2	1.980	2.800	13.7	20.4
350607	2001 <i>SA</i> ₁₇		2 3.8 95°49'	4.3/ 1.7	18		388660	2007 <i>TF</i> ₂₉₀		2 3.8 89°07'	3.3/ 31.9	18	
1 2	9 38.46	+24 52.5	1.467	2.315	15.5	20.7	1 2	9 31.30	+24 58.2	2.433	3.269	10.5	21.1
1 12	9 31.52	+25 39.4	1.415	2.330	11.4	20.5	1 12	9 25.40	+26 4.8	2.386	3.295	7.7	20.9
1 22	9 21.65	+26 26.2	1.387	2.346	7.0	20.3	1 22	9 17.77	+27 11.0	2.366	3.321	4.8	20.8
2 1	9 9.97	+27 4.4	1.385	2.361	4.3	20.2	2 1	9 9.11	+28 11.1	2.375	3.347	3.3	20.7
2 11	8 58.08	+27 26.8	1.411	2.376	6.5	20.3	2 11	9 0.30	+29 0.0	2.415	3.372	4.8	20.9
2 21	8 47.54	+27 30.1	1.463	2.390	10.5	20.6	2 21	8 52.22	+29 34.7	2.484	3.397	7.5	21.1
3 2	8 39.61	+27 15.1	1.539	2.404	14.4	20.9	3 2	8 45.62	+29 54.3	2.580	3.421	10.1	21.3
3 12	8 34.95	+26 44.8	1.635	2.418	17.7	21.1	3 12	8 41.02	+29 59.9	2.699	3.445	12.3	21.5
297394	2000 <i>QZ</i> ₁₁₅		2 3.8 91°00'	0.7/ 4.2	17		289694	2005 <i>GG</i> ₁₇₅		2 3.8 183°07'	4.3/ 31.1	17	
1 2	9 35.58	+12 49.1	1.604	2.431	15.5	21.4	1 2	9 31.78	+29 41.7	2.562	3.396	10.1	21.3
1 12	9 29.00	+13 14.8	1.552	2.456	11.3	21.2	1 12	9 25.87	+30 31.6	2.492	3.396	7.6	21.2
1 22	9 20.02	+13 52.4	1.523	2.480	6.7	21.0	1 22	9 18.13	+31 18.5	2.449	3.396	5.3	21.0
2 1	9 9.59	+14 36.7	1.521	2.504	1.8	20.7	2 1	9 9.21	+31 57.0	2.435	3.396	4.3	21.0
2 11	8 59.01	+15 21.6	1.548	2.528	3.4	20.9	2 11	9 0.00	+32 22.6	2.450	3.395	5.6	21.1
2 21	8 49.55	+16 1.6	1.604	2.551	8.1	21.2	2 21	8 51.43	+32 32.9	2.495	3.395	8.1	21.2
3 2	8 42.23	+16 33.2	1.685	2.573	12.1	21.5	3 2	8 44.32	+32 27.8	2.565	3.394	10.6	21.4
3 12	8 37.67	+16 54.4	1.788	2.595	15.5	21.8	3 12	8 39.25	+32 8.8	2.658	3.392	12.8	21.5
368740	2005 <i>UN</i> ₃₀₂		2 3.8 44°35'	4.7/ 31.4	18		285549	2000 <i>JA</i> ₅		2 3.8 239°24'	0.8/ 4.3	18	
1 2	9 31.01	+25 3.2	1.648	2.501	13.8	20.3	1 2	9 33.44	+12 25.9	1.709	2.535	14.7	21.9
1 12	9 26.02	+26 26.4	1.591	2.509	10.1	20.1	1 12	9 27.82	+12 51.0	1.620	2.524	11.0	21.6
1 22	9 18.48	+27 51.4	1.560	2.518	6.5	19.9	1 22	9 19.63	+13 29.3	1.554	2.511	6.6	21.4
2 1	9 9.29	+29 8.8	1.555	2.527	4.7	19.8	2 1	9 9.60	+14 17.0	1.515	2.498	1.8	21.0
2 11	8 59.72	+30 10.1	1.578	2.536	6.8	19.9	2 11	8 58.92	+15 8.1	1.505	2.485	3.5	21.1
2 21	8 51.12	+30 50.4	1.628	2.545	10.4	20.1	2 21	8 48.89	+15 56.4	1.524	2.471	8.4	21.4
3 2	8 44.61	+31 8.5	1.701	2.555	13.9	20.4	3 2	8 40.72	+16 37.2	1.568	2.456	12.8	21.6
3 12	8 40.92	+31 6.4	1.795	2.565	16.8	20.6	3 12	8 35.29	+17 7.3	1.634	2.442	16.7	21.8
400172	2006 <i>WZ</i> ₁₈		2 3.8 83°74'	0.1/ 3.8	18 R		145758	1997 <i>CL</i> ₇		2 3.8 46°49'	0.3/ 3.7	18	
1 2	9 34.10	+15 23.2	1.741	2.572	14.3	21.3	1 2	9 36.22	+16 39.1	1.099	1.956	18.9	19.6
1 12	9 27.84	+15 43.4	1.685	2.592	10.4	21.1	1 12	9 30.37	+16 42.6	1.050	1.970	13.9	19.4
1 22	9 19.33	+16 12.1	1.653	2.613	6.0	20.8	1 22	9 21.17	+16 56.4	1.022	1.986	8.0	19.1
2 1	9 9.45	+16 44.4	1.648	2.633	1.3	20.6	2 1	9 9.90	+17 14.6	1.017	2.002	1.7	18.8
2 11	8 59.41	+17 15.3	1.673	2.652	3.4	20.8	2 11	8 58.41	+17 30.3	1.038	2.018	4.6	19.0
2 21	8 50.37	+17 40.4	1.727	2.672	7.8	21.1	2 21	8 48.51	+17 38.6	1.084	2.035	10.4	19.4
3 2	8 43.30	+17 57.2	1.806	2.691	11.6	21.3	3 2	8 41.58	+17 37.2	1.152	2.053	15.4	19.7
3 12	8 38.81	+18 4.5	1.908	2.710	14.8	21.6	3 12	8 38.30	+17 25.5	1.238	2.070	19.5	20.0
468899	2013 <i>YW</i> ₁₀₉		2 3.8 172°66'	3.4/ 31.1	17		328953	2010 <i>VT</i> ₁₁₁		2 3.8 1°41'	3.8/ 1.5	18	
1 2	9 28.74	+23 53.3	2.571	3.408	10.0	20.9	1 2	9 29.53					

EPHEMERIDES

2 3.8

2 3.9

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
456554	2007 <i>BV</i> ₆₁		2 3.8	38°05	0°2/ 3.7	16	205561	2001 <i>SW</i> ₂₈₈		2 3.8	0°86	1°7/ 2.8	18
1 2	9 36.56	+16 31.8	1.142	1.995	18.6	20.6	1 2	9 31.49	+21 3.5	2.137	2.973	11.8	19.8
1 12	9 30.09	+16 33.9	1.112	2.031	13.4	20.4	1 12	9 25.83	+21 17.7	2.062	2.973	8.6	19.6
1 22	9 20.69	+16 45.5	1.104	2.067	7.7	20.2	1 22	9 18.18	+21 34.3	2.012	2.973	5.0	19.4
2 1	9 9.74	+17 0.8	1.121	2.105	1.7	20.0	2 1	9 9.26	+21 49.1	1.991	2.973	1.8	19.2
2 11	8 58.99	+17 13.7	1.163	2.143	4.2	20.3	2 11	9 0.05	+21 58.3	1.999	2.973	3.7	19.3
2 21	8 49.99	+17 20.2	1.231	2.181	9.5	20.7	2 21	8 51.56	+21 59.3	2.036	2.973	7.4	19.5
3 2	8 43.81	+17 18.3	1.322	2.220	14.0	21.0	3 2	8 44.67	+21 50.9	2.100	2.974	10.7	19.8
3 12	8 40.94	+17 7.8	1.433	2.260	17.6	21.4	3 12	8 39.99	+21 33.3	2.187	2.974	13.6	20.0
134363	1994 <i>VG</i> ₃		2 3.8	83°15	4°7/31.9	17	287295	2002 <i>TC</i> ₂₀₄		2 3.8	72°51	0°0/ 3.7	18
1 2	9 38.42	+27 3.9	1.774	2.613	13.7	20.2	1 2	9 31.78	+12 45.9	1.603	2.436	15.2	20.7
1 12	9 30.96	+28 9.9	1.737	2.647	10.0	20.1	1 12	9 26.35	+13 42.8	1.550	2.458	11.1	20.5
1 22	9 21.09	+29 12.6	1.726	2.680	6.5	19.9	1 22	9 18.57	+14 52.8	1.521	2.480	6.4	20.3
2 1	9 9.85	+30 3.8	1.743	2.712	4.7	19.9	2 1	9 9.34	+16 9.4	1.518	2.502	1.4	20.0
2 11	8 58.61	+30 37.6	1.789	2.744	6.5	20.0	2 11	8 59.89	+17 24.7	1.545	2.524	3.5	20.2
2 21	8 48.63	+30 51.5	1.863	2.775	9.7	20.3	2 21	8 51.44	+18 31.6	1.600	2.546	8.1	20.5
3 2	8 40.92	+30 46.5	1.962	2.805	12.8	20.6	3 2	8 45.00	+19 25.6	1.680	2.568	12.2	20.8
3 12	8 36.03	+30 25.8	2.082	2.835	15.3	20.8	3 12	8 41.21	+20 4.6	1.783	2.589	15.5	21.1
241210	2007 <i>TF</i> ₄₃		2 3.8	25°13	1°3/ 2.8	18	179145	2001 <i>SZ</i> ₃₄₇		2 3.8	223°34	2°0/ 5.3	16
1 2	9 28.95	+18 34.2	2.148	2.985	11.7	20.6	1 2	9 31.34	+ 8 41.6	2.254	3.057	12.4	21.5
1 12	9 23.97	+19 9.7	2.075	2.987	8.5	20.4	1 12	9 25.71	+ 8 54.4	2.159	3.047	9.4	21.3
1 22	9 17.10	+19 50.6	2.027	2.989	4.9	20.2	1 22	9 18.16	+ 9 19.3	2.088	3.036	6.0	21.1
2 1	9 9.00	+20 32.4	2.007	2.991	1.5	20.0	2 1	9 9.28	+ 9 54.4	2.046	3.024	2.7	20.8
2 11	9 0.59	+21 10.2	2.018	2.993	3.5	20.1	2 11	8 59.94	+10 35.9	2.034	3.012	3.1	20.8
2 21	8 52.83	+21 40.1	2.056	2.995	7.2	20.4	2 21	8 51.08	+11 19.6	2.052	2.999	6.6	21.0
3 2	8 46.56	+21 59.7	2.122	2.997	10.6	20.6	3 2	8 43.58	+12 1.4	2.099	2.986	10.1	21.2
3 12	8 42.39	+22 8.3	2.210	3.000	13.4	20.8	3 12	8 38.10	+12 38.0	2.169	2.972	13.3	21.4
466995	2016 <i>CR</i> ₁₈		2 3.8	272°96	1°6/ 2.9	17	60493	2000 <i>DC</i> ₈₃		2 3.8	52°08	2°0/ 2.6	18
1 2	9 32.62	+18 16.0	1.737	2.576	13.9	21.3	1 2	9 32.09	+18 34.0	1.465	2.315	15.4	18.5
1 12	9 27.29	+18 54.2	1.645	2.558	10.2	21.1	1 12	9 26.88	+19 24.4	1.409	2.327	11.2	18.3
1 22	9 19.37	+19 40.9	1.578	2.540	5.9	20.8	1 22	9 19.02	+20 22.9	1.376	2.340	6.4	18.0
2 1	9 9.57	+20 30.2	1.538	2.521	1.8	20.5	2 1	9 9.46	+21 21.7	1.370	2.353	2.2	17.8
2 11	8 59.08	+21 15.5	1.526	2.502	4.3	20.6	2 11	8 59.60	+22 13.0	1.391	2.366	4.8	18.0
2 21	8 49.20	+21 51.0	1.543	2.483	9.0	20.8	2 21	8 50.84	+22 51.0	1.439	2.380	9.4	18.3
3 2	8 41.20	+22 13.3	1.584	2.463	13.3	21.0	3 2	8 44.32	+23 13.2	1.510	2.393	13.6	18.6
3 12	8 35.95	+22 21.5	1.647	2.444	17.0	21.2	3 12	8 40.74	+23 19.4	1.603	2.407	17.1	18.8
491964	2013 <i>DR</i> ₅		2 3.8	71°74	0°5/ 4.1	18	498197	2007 <i>TN</i> ₃₃₄		2 3.9	155°41	5°2/ 29.5	17
1 2	9 35.41	+14 10.4	1.389	2.228	16.8	21.0	1 2	9 33.35	+35 42.2	3.016	3.838	9.1	22.6
1 12	9 29.28	+14 19.9	1.333	2.244	12.3	20.8	1 12	9 26.83	+36 40.0	2.958	3.846	7.2	22.5
1 22	9 20.37	+14 40.9	1.300	2.260	7.2	20.6	1 22	9 18.62	+37 31.3	2.927	3.854	5.6	22.4
2 1	9 9.74	+15 8.6	1.292	2.276	1.8	20.3	2 1	9 9.35	+38 10.9	2.926	3.862	5.3	22.4
2 11	8 58.86	+15 36.9	1.312	2.292	3.8	20.4	2 11	8 59.87	+38 34.9	2.954	3.868	6.3	22.5
2 21	8 49.22	+16 0.9	1.359	2.308	8.9	20.8	2 21	8 51.01	+38 42.0	3.011	3.875	8.1	22.6
3 2	8 41.99	+16 17.0	1.430	2.324	13.4	21.1	3 2	8 43.54	+38 32.6	3.093	3.881	10.0	22.7
3 12	8 37.86	+16 23.7	1.522	2.340	17.2	21.4	3 12	8 37.98	+38 8.9	3.197	3.886	11.7	22.9
408190	2013 <i>EG</i> ₁₉		2 3.8	255°25	1°5/ 2.9	17	473401	2015 <i>VP</i> ₇₄		2 3.9	101°25	2°1/ 2.5	16
1 2	9 34.04	+18 22.7	1.765	2.602	13.8	21.7	1 2	9 36.13	+18 29.8	1.630	2.468	14.7	21.6
1 12	9 28.29	+18 59.4	1.674	2.586	10.2	21.4	1 12	9 29.52	+19 36.3	1.580	2.492	10.6	21.4
1 22	9 19.93	+19 44.1	1.607	2.569	5.9	21.1	1 22	9 20.41	+20 49.7	1.554	2.516	6.1	21.2
2 1	9 9.70	+20 31.0	1.568	2.551	1.8	20.8	2 1	9 9.76	+22 1.9	1.556	2.539	2.2	21.0
2 11	8 58.77	+21 13.5	1.557	2.533	4.3	21.0	2 11	8 58.92	+23 5.0	1.588	2.561	4.7	21.3
2 21	8 48.48	+21 46.2	1.575	2.514	8.9	21.2	2 21	8 49.19	+23 53.4	1.648	2.583	9.0	21.5
3 2	8 40.07	+22 5.9	1.619	2.495	13.2	21.4	3 2	8 41.66	+24 24.9	1.733	2.604	12.8	21.8
3 12	8 34.43	+22 11.9	1.683	2.476	16.9	21.6	3 12	8 36.96	+24 39.9	1.840	2.624	16.0	22.1
335900	2007 <i>RR</i> ₂₄₇		2 3.8	107°47	1°9/ 5.2	18	459579	2013 <i>GG</i> ₁₁₂		2 3.9	279°01	2°0/ 2.8	16
1 2	9 32.23	+10 11.8	2.435	3.238	11.6	20.7	1 2	9 33.98	+19 48.5	1.622	2.466	14.5	21.4
1 12	9 25.98	+ 9 56.6	2.364	3.252	8.7	20.5	1 12	9 28.44	+20 18.3	1.534	2.449	10.7	21.1
1 22	9 18.09	+ 9 50.0	2.319	3.267	5.5	20.3	1 22	9 20.11	+20 54.6	1.470	2.432	6.3	20.8
2 1	9 9.21	+ 9 50.4	2.303	3.281	2.5	20.2	2 1	9 9.77	+21 31.4	1.432	2.415	2.2	20.5
2 11	9 0.15	+ 9 55.7	2.318	3.295	2.9	20.2	2 11	8 58.72	+22 1.8	1.422	2.397	4.7	20.7
2 21	8 51.74	+10 3.5	2.363	3.309	5.9	20.4	2 21	8 48.40	+22 20.8	1.440	2.380	9.5	20.9
3 2	8 44.71	+10 11.3	2.437	3.322	9.0	20.6	3 2	8 40.16	+22 25.9	1.482	2.362	14.0	21.1
3 12	8 39.56	+10 17.1	2.536	3.335	11.6	20.8	3 12	8 34.90	+22 17.2	1.545	2.345	17.8	21.3
84542	2002 <i>UB</i> ₂₇		2 3.8	355°33	1°3/ 4.6	18	352726	2008 <i>SJ</i> ₂₈₇		2 3.9	201°22	1°7/ 4.9	18
1 2	9 31.24	+12 10.6	1.580	2.414	15.3	19.7	1 2	9 35.02	+10 24.8	1.897	2.709	14.1	22.3
1 12	9 26.19	+12 19.2	1.506	2.413	11.4	19.4	1 12	9 28.68	+10 37.2	1.810	2.705	10.6	22.0
1 22	9 18.63	+12 40.8	1.454	2.412	6.9	19.1	1 22	9 20.00	+11 2.2	1.748	2.700	6.6	21.8
2 1	9 9.38	+13 11.7	1.429	2.411	2.2	18.8	2 1	9 9.72	+11 36.9	1.713	2.694	2.5	21.5
2 11	8 59.67	+13 46.7	1.431	2.411	3.5	18.9	2 11	8 58.92	+12 16.8	1.708	2.687	3.3	21.5
2 21	8 50.81	+14 20.6	1.460	2.411	8.3	19.2	2 21	8 48.79	+12 57.1	1.733	2.680	7.6	21.8
3 2	8 43.93	+14 48.9	1.514	2.411	12.7	19.5	3 2	8 40.39	+13 33.3	1.785	2.671	11.6	22.0
3 12	8 39.79	+15 8.6	1.590	2.411	16.4	19.7	3 12	8 34.49	+14 2.4	1.859	2.662	15.1	22.2
302060	2000 <i>UV</i> ₈₅		2 3.8	52°67	4°5/ 6.6	18	37818	1998 <i>BC</i> ₅		2 3.9	92°86	1°8/ 4.9	18
1 2	9 30.53												

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
258865	2002 <i>PN</i> ₁₆₄		2 3.9 85°33'	0.7/ 3.4	18		231217	2005 <i>WW</i> ₁₂₆		2 3.9 133°83'	1.9/ 2.6	18	
1 2	9 36.39	+16 41.3	1.779	2.608	14.1	21.2	1 2	9 35.64	+18 15.6	1.674	2.511	14.5	20.6
1 12	9 29.38	+17 11.8	1.732	2.639	10.2	21.1	1 12	9 29.28	+19 15.5	1.612	2.524	10.5	20.4
1 22	9 20.18	+17 49.0	1.709	2.669	5.8	20.9	1 22	9 20.38	+20 23.3	1.575	2.536	6.0	20.2
2 1	9 9.70	+18 27.6	1.715	2.699	1.3	20.6	2 1	9 9.83	+21 31.4	1.565	2.548	2.1	19.9
2 11	8 59.17	+19 2.1	1.751	2.728	3.5	20.8	2 11	8 58.94	+22 32.1	1.585	2.559	4.5	20.1
2 21	8 49.74	+19 28.5	1.816	2.757	7.7	21.1	2 21	8 49.02	+23 19.5	1.633	2.569	8.9	20.4
3 2	8 42.34	+19 44.7	1.907	2.785	11.4	21.4	3 2	8 41.21	+23 51.0	1.706	2.578	12.9	20.7
3 12	8 37.53	+19 50.5	2.020	2.813	14.5	21.7	3 12	8 36.22	+24 6.4	1.801	2.587	16.2	20.9
351923	2006 <i>SQ</i> ₃₈₉		2 3.9 155°88'	2.5/ 1.3	18		168480	1999 <i>RJ</i> ₈₁		2 3.9 200°32'	2.3/ 2.5	18	
1 2	9 28.49	+23 9.0	2.848	3.681	9.3	21.1	1 2	9 35.34	+20 59.3	1.806	2.644	13.5	20.4
1 12	9 23.31	+24 8.3	2.777	3.686	6.7	21.0	1 12	9 29.04	+21 31.7	1.730	2.642	9.9	20.1
1 22	9 16.61	+25 9.3	2.734	3.691	4.1	20.8	1 22	9 20.27	+22 8.2	1.679	2.639	5.8	19.9
2 1	9 8.93	+26 7.4	2.721	3.696	2.5	20.7	2 1	9 9.82	+22 42.8	1.655	2.636	2.4	19.7
2 11	9 0.99	+26 58.1	2.739	3.701	3.9	20.8	2 11	8 58.94	+23 9.6	1.661	2.633	4.6	19.8
2 21	8 53.52	+27 38.3	2.787	3.705	6.5	21.0	2 21	8 48.89	+23 24.6	1.695	2.629	8.7	20.0
3 2	8 47.22	+28 6.2	2.862	3.709	9.1	21.1	3 2	8 40.80	+23 26.3	1.754	2.625	12.6	20.3
3 12	8 42.58	+28 21.8	2.961	3.712	11.3	21.3	3 12	8 35.44	+23 15.2	1.835	2.621	15.9	20.5
54523	2000 <i>QV</i> ₂		2 3.9 3°05'	0.5/ 3.5	18		312772	2010 <i>UA</i> ₇₆		2 3.9 301°31'	5.0/ 6.3	18	
1 2	9 30.78	+17 39.8	2.105	2.937	12.1	17.5	1 2	9 31.79	+ 4 50.8	1.678	2.484	15.9	20.3
1 12	9 25.31	+17 44.1	2.028	2.937	8.8	17.3	1 12	9 26.63	+ 4 11.0	1.587	2.470	12.6	20.0
1 22	9 17.90	+17 53.2	1.977	2.937	5.1	17.0	1 22	9 18.98	+ 3 46.8	1.519	2.456	8.9	19.8
2 1	9 9.23	+18 3.9	1.954	2.938	1.2	16.8	2 1	9 9.56	+ 3 39.2	1.475	2.442	5.7	19.5
2 11	9 0.26	+18 12.6	1.960	2.938	3.1	16.9	2 11	8 59.51	+ 3 46.7	1.459	2.429	5.5	19.5
2 21	8 51.99	+18 16.5	1.995	2.939	7.0	17.2	2 21	8 50.06	+ 4 6.0	1.470	2.416	8.8	19.6
3 2	8 45.28	+18 13.9	2.057	2.940	10.5	17.4	3 2	8 42.42	+ 4 32.4	1.506	2.403	12.8	19.8
3 12	8 40.74	+18 4.1	2.143	2.942	13.5	17.6	3 12	8 37.42	+ 5 0.5	1.564	2.390	16.4	20.0
282809	2006 <i>RB</i> ₃		2 3.9 215°09'	0.7/ 4.3	17		148990	2001 <i>YX</i> ₉₂		2 3.9 30°17'	0.8/ 3.4	18	
1 2	9 31.64	+14 24.9	2.461	3.277	11.1	20.4	1 2	9 32.68	+17 39.2	1.554	2.399	15.0	20.1
1 12	9 25.70	+14 16.5	2.375	3.274	8.2	20.2	1 12	9 27.24	+17 53.2	1.490	2.404	10.9	19.9
1 22	9 18.03	+14 13.9	2.316	3.272	4.9	20.0	1 22	9 19.23	+18 14.2	1.448	2.410	6.3	19.6
2 1	9 9.27	+14 14.9	2.286	3.269	1.4	19.8	2 1	9 9.58	+18 37.4	1.433	2.417	1.5	19.3
2 11	9 0.21	+14 17.1	2.287	3.266	2.6	19.8	2 11	8 59.60	+18 57.3	1.445	2.423	3.9	19.5
2 21	8 51.72	+14 18.3	2.319	3.264	6.1	20.1	2 21	8 50.61	+19 9.8	1.484	2.430	8.7	19.8
3 2	8 44.56	+14 16.6	2.378	3.261	9.3	20.3	3 2	8 43.76	+19 12.5	1.549	2.438	12.9	20.0
3 12	8 39.29	+14 11.0	2.462	3.257	12.1	20.4	3 12	8 39.75	+19 5.1	1.634	2.446	16.5	20.3
409916	2006 <i>TF</i> ₈₁		2 3.9 148°18'	0.1/ 3.8	18		442675	2012 <i>TT</i> ₃₀₆		2 3.9 79°48'	3.0/ 2.2	17	
1 2	9 33.72	+15 29.2	2.058	2.881	12.7	22.0	1 2	9 36.65	+19 52.1	1.296	2.148	16.9	21.2
1 12	9 27.45	+15 50.3	1.986	2.890	9.3	21.8	1 12	9 30.41	+20 59.4	1.251	2.169	12.2	21.0
1 22	9 19.14	+16 18.8	1.939	2.898	5.4	21.6	1 22	9 21.14	+22 13.5	1.228	2.191	7.1	20.8
2 1	9 9.52	+16 50.7	1.921	2.905	1.2	21.3	2 1	9 10.00	+23 24.5	1.231	2.213	3.1	20.6
2 11	8 59.61	+17 21.5	1.933	2.912	3.1	21.5	2 11	8 58.65	+24 22.6	1.262	2.234	5.8	20.8
2 21	8 50.45	+17 47.3	1.975	2.918	7.1	21.7	2 21	8 48.73	+25 2.1	1.318	2.255	10.5	21.1
3 2	8 42.95	+18 5.5	2.044	2.924	10.7	22.0	3 2	8 41.49	+25 21.4	1.398	2.276	14.8	21.4
3 12	8 37.73	+18 15.0	2.137	2.929	13.8	22.2	3 12	8 37.62	+25 22.1	1.498	2.296	18.4	21.7
119613	2001 <i>WT</i> ₃₂		2 3.9 62°26'	0.8/ 4.4	18		25120	<i>Yvetteleung</i>		2 3.9 140°54'	1.2/ 4.7	18	
1 2	9 30.15	+11 59.1	1.767	2.596	14.2	19.8	1 2	9 32.96	+11 14.4	2.050	2.864	13.1	19.6
1 12	9 25.16	+12 28.1	1.695	2.600	10.5	19.6	1 12	9 26.88	+11 31.8	1.978	2.875	9.7	19.4
1 22	9 17.95	+13 9.9	1.646	2.604	6.3	19.3	1 22	9 18.82	+12 0.1	1.931	2.885	5.9	19.2
2 1	9 9.27	+14 0.2	1.625	2.608	1.8	19.1	2 1	9 9.48	+12 36.0	1.913	2.894	2.0	19.0
2 11	9 0.21	+14 53.4	1.632	2.612	3.2	19.2	2 11	8 59.85	+13 15.1	1.924	2.904	2.9	19.0
2 21	8 51.92	+15 43.6	1.668	2.617	7.6	19.4	2 21	8 50.96	+13 53.1	1.966	2.912	6.8	19.3
3 2	8 45.38	+16 26.3	1.729	2.621	11.7	19.7	3 2	8 43.67	+14 26.3	2.034	2.920	10.5	19.5
3 12	8 41.30	+16 58.6	1.813	2.626	15.1	19.9	3 12	8 38.61	+14 52.2	2.126	2.928	13.5	19.8
473654	2015 <i>XD</i> ₃₃₅		2 3.9 128°61'	3.5/ 5.9	18		340690	2006 <i>RH</i> ₁₂₂		2 3.9 116°83'	1.2/ 4.9	17	
1 2	9 32.60	+ 6 13.6	1.627	2.438	16.0	21.1	1 2	9 27.88	+10 24.3	2.709	3.515	10.4	21.9
1 12	9 27.06	+ 6 17.5	1.555	2.445	12.4	20.8	1 12	9 22.80	+10 47.7	2.637	3.529	7.8	21.7
1 22	9 19.10	+ 6 39.6	1.505	2.451	8.2	20.6	1 22	9 16.29	+11 20.1	2.591	3.542	4.8	21.5
2 1	9 9.54	+ 7 17.7	1.482	2.457	4.3	20.4	2 1	9 8.90	+11 58.9	2.574	3.555	1.8	21.3
2 11	8 59.56	+ 8 7.0	1.486	2.462	4.3	20.4	2 11	9 1.31	+12 40.7	2.588	3.567	2.3	21.4
2 21	8 50.42	+ 9 1.4	1.518	2.468	8.1	20.6	2 21	8 54.23	+13 22.1	2.633	3.580	5.3	21.6
3 2	8 43.22	+ 9 54.7	1.576	2.473	12.2	20.9	3 2	8 48.29	+14 0.0	2.706	3.592	8.2	21.8
3 12	8 38.70	+10 42.0	1.656	2.478	15.8	21.1	3 12	8 43.95	+14 32.1	2.805	3.603	10.7	22.0
485386	2011 <i>JA</i> ₁₇		2 3.9 231°49'	2.2/ 2.5	18		369335	2009 <i>SS</i> ₂₇₉		2 3.9 63°22'	2.5/ 2.2	18	
1 2	9 34.25	+18 10.2	1.506	2.351	15.4	21.6	1 2	9 32.52	+20 47.3	1.722	2.566	13.8	20.9
1 12	9 28.76	+19 13.8	1.428	2.343	11.3	21.3	1 12	9 26.85	+21 36.6	1.670	2.586	9.9	20.7
1 22	9 20.36	+20 28.6	1.373	2.336	6.6	21.0	1 22	9 18.87	+22 29.9	1.644	2.605	5.8	20.5
2 1	9 9.87	+21 46.3	1.345	2.327	2.4	20.7	2 1	9 9.49	+23 20.6	1.644	2.625	2.6	20.4
2 11	8 58.66	+22 57.6	1.344	2.318	5.2	20.9	2 11	8 59.92	+24 2.0	1.674	2.645	4.7	20.5
2 21	8 48.28	+23 54.6	1.371	2.309	10.1	21.2	2 21	8 51.36	+24 30.2	1.730	2.665	8.6	20.8
3 2	8 40.11	+24 33.1	1.423	2.299	14.7	21.4	3 2	8 44.80	+24 43.5	1.813	2.685	12.3	21.1
3 12	8 35.10	+24 52.7	1.494	2.289	18.5	21.6	3 12	8 40.84	+24 42.6	1.916	2.704	15.3	21.3
285418	1999 <i>VM</i> ₄₆		2 3.9 165°67'	6.8/ 6.6	18		125835	2001 <i>XJ</i> ₁₈₀		2 3.9 20°58'	0.6/ 3.5	18	
1 2	9 37.87	+ 3 17.7	1.095	1.915	21.6	20.3	1 2	9 29.09	+13 44.2	1.17			

EPHEMERIDES

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
518599	2007 <i>VH</i> ₃₃₉		2 3.9 262°82	4.2/ 6.9	17		85013	2004 <i>BO</i> ₃₆		2 3.9 113°98	0.8/ 3.3	18	
1 2	9 28.33	+ 2 40.5	2.395	3.176	12.4	21.4	1 2	9 29.54	+17 10.8	2.254	3.085	11.5	20.3
1 12	9 23.40	+ 2 23.9	2.304	3.170	9.9	21.3	1 12	9 24.36	+17 42.2	2.180	3.088	8.3	20.1
1 22	9 16.78	+ 2 21.4	2.236	3.164	7.1	21.1	1 22	9 17.37	+18 19.8	2.131	3.092	4.8	19.9
2 1	9 9.04	+ 2 32.7	2.196	3.157	4.7	20.9	2 1	9 9.21	+18 59.3	2.111	3.095	1.2	19.6
2 11	9 0.94	+ 2 55.9	2.185	3.151	4.4	20.9	2 11	9 0.76	+19 36.3	2.121	3.098	3.1	19.8
2 21	8 53.30	+ 3 27.9	2.203	3.144	6.6	21.0	2 21	8 52.92	+20 7.0	2.161	3.101	6.7	20.0
3 2	8 46.87	+ 4 4.9	2.248	3.138	9.4	21.2	3 2	8 46.50	+20 29.0	2.227	3.105	10.1	20.2
3 12	8 42.26	+ 4 42.6	2.318	3.131	12.2	21.3	3 12	8 42.09	+20 41.1	2.317	3.108	12.9	20.4
149927	2005 <i>SB</i> ₁₂₅		2 3.9 163°08	0.8/ 4.5	18		169914	2002 <i>SD</i> ₄		2 3.9 85°64	1.2/ 4.6	18	
1 2	9 31.07	+11 40.3	2.241	3.055	12.1	20.9	1 2	9 34.06	+12 20.9	1.693	2.518	14.9	19.8
1 12	9 25.44	+12 10.6	2.163	3.060	9.0	20.7	1 12	9 27.96	+12 26.2	1.631	2.534	11.0	19.6
1 22	9 17.98	+12 51.3	2.110	3.065	5.4	20.5	1 22	9 19.55	+12 42.8	1.594	2.550	6.6	19.3
2 1	9 9.31	+13 38.9	2.087	3.069	1.6	20.2	2 1	9 9.70	+13 7.0	1.583	2.565	2.1	19.1
2 11	9 0.33	+14 28.9	2.093	3.073	2.7	20.3	2 11	8 59.62	+13 34.3	1.601	2.581	3.3	19.2
2 21	8 51.94	+15 16.8	2.130	3.076	6.5	20.6	2 21	8 50.50	+14 0.2	1.647	2.596	7.7	19.5
3 2	8 44.97	+15 58.7	2.195	3.079	9.9	20.8	3 2	8 43.36	+14 21.1	1.720	2.611	11.7	19.8
3 12	8 40.02	+16 32.4	2.284	3.081	12.8	21.0	3 12	8 38.83	+14 35.0	1.814	2.626	15.1	20.0
249035	2007 <i>TQ</i> ₁₇		2 3.9 46°92	8.1/10.9	18		165272	2000 <i>SP</i> ₂₆₄		2 3.9 200°71	1.3/ 2.9	18	
1 2	9 26.98	- 9 13.4	2.123	2.848	15.5	19.9	1 2	9 34.55	+17 53.3	2.027	2.855	12.7	21.5
1 12	9 22.53	- 9 41.5	2.049	2.858	13.3	19.7	1 12	9 28.31	+18 37.9	1.944	2.851	9.2	21.2
1 22	9 16.31	- 9 45.7	1.995	2.868	10.9	19.6	1 22	9 19.83	+19 29.7	1.886	2.846	5.3	21.0
2 1	9 8.94	- 9 24.5	1.965	2.878	8.9	19.5	2 1	9 9.80	+20 23.3	1.858	2.841	1.6	20.7
2 11	9 1.27	- 8 39.3	1.962	2.889	8.1	19.4	2 11	8 59.29	+21 12.5	1.859	2.834	3.8	20.9
2 21	8 54.19	- 7 34.5	1.984	2.899	9.0	19.5	2 21	8 49.43	+21 52.6	1.890	2.827	7.9	21.1
3 2	8 48.50	- 6 16.3	2.033	2.910	10.9	19.6	3 2	8 41.24	+22 20.6	1.949	2.819	11.6	21.3
3 12	8 44.78	- 4 52.2	2.105	2.921	13.1	19.8	3 12	8 35.47	+22 35.8	2.029	2.810	14.8	21.5
412909	2014 <i>QV</i> ₁₂₀		2 3.9 154°88	0.3/ 3.7	18		519542	2012 <i>PA</i> ₄₅		2 3.9 166°34	3.7/ 6.9	17	
1 2	9 33.34	+15 7.5	1.972	2.798	13.1	21.5	1 2	9 28.67	+ 2 50.7	2.563	3.340	11.8	21.8
1 12	9 27.31	+15 43.6	1.900	2.805	9.5	21.3	1 12	9 23.51	+ 2 45.0	2.478	3.343	9.3	21.6
1 22	9 19.14	+16 28.6	1.852	2.811	5.5	21.0	1 22	9 16.80	+ 2 52.8	2.418	3.346	6.6	21.4
2 1	9 9.59	+17 17.7	1.833	2.817	1.2	20.7	2 1	9 9.08	+ 3 13.3	2.386	3.348	4.2	21.3
2 11	8 59.69	+18 5.4	1.845	2.823	3.2	20.9	2 11	9 1.09	+ 3 44.4	2.383	3.350	4.0	21.3
2 21	8 50.53	+18 46.8	1.885	2.828	7.4	21.2	2 21	8 53.57	+ 4 22.7	2.410	3.352	6.1	21.4
3 2	8 43.08	+19 18.7	1.953	2.832	11.2	21.4	3 2	8 47.21	+ 5 4.4	2.466	3.353	8.8	21.6
3 12	8 37.98	+19 39.6	2.043	2.836	14.3	21.6	3 12	8 42.55	+ 5 45.6	2.546	3.355	11.3	21.8
158337	2001 <i>WD</i> ₇₀		2 3.9 192°57	2.1/ 2.5	18		393272	2013 <i>WT</i> ₆₆		2 3.9 88°94	2.2/ 1.9	18	
1 2	9 35.07	+19 25.6	1.772	2.609	13.8	21.1	1 2	9 29.55	+20 6.6	2.193	3.031	11.5	20.5
1 12	9 28.93	+20 16.1	1.696	2.608	10.1	20.9	1 12	9 24.42	+21 12.6	2.131	3.044	8.3	20.3
1 22	9 20.26	+21 13.5	1.645	2.606	5.9	20.6	1 22	9 17.42	+22 23.3	2.096	3.057	4.8	20.1
2 1	9 9.87	+22 10.9	1.622	2.604	2.2	20.4	2 1	9 9.23	+23 32.7	2.089	3.070	2.2	20.0
2 11	8 58.97	+23 1.3	1.628	2.601	4.6	20.5	2 11	9 0.78	+24 34.7	2.113	3.082	4.1	20.1
2 21	8 48.87	+23 39.3	1.662	2.597	8.9	20.8	2 21	8 53.00	+25 25.0	2.166	3.095	7.5	20.4
3 2	8 40.74	+24 2.2	1.722	2.593	12.9	21.0	3 2	8 46.71	+26 1.0	2.245	3.108	10.6	20.6
3 12	8 35.35	+24 10.1	1.804	2.588	16.2	21.2	3 12	8 42.51	+26 22.5	2.347	3.120	13.3	20.8
303995	2006 <i>BO</i> ₁₆₈		2 3.9 195°50	1.0/ 3.3	18		102048	1999 <i>RJ</i> ₁₂₁		2 3.9 156°49	0.4/ 4.2	18	
1 2	9 36.32	+18 9.1	1.789	2.621	13.9	20.8	1 2	9 33.05	+12 46.1	1.956	2.777	13.4	20.9
1 12	9 29.76	+18 27.7	1.711	2.619	10.2	20.5	1 12	9 27.13	+13 21.8	1.882	2.784	9.9	20.7
1 22	9 20.70	+18 52.3	1.657	2.617	5.9	20.3	1 22	9 19.08	+14 8.7	1.833	2.790	5.8	20.5
2 1	9 9.96	+19 18.1	1.631	2.614	1.5	19.9	2 1	9 9.63	+15 2.3	1.813	2.796	1.5	20.2
2 11	8 58.77	+19 39.7	1.634	2.611	3.8	20.1	2 11	8 59.82	+15 56.9	1.822	2.801	3.1	20.3
2 21	8 48.41	+19 53.3	1.666	2.607	8.3	20.4	2 21	8 50.73	+16 47.3	1.861	2.806	7.3	20.6
3 2	8 40.03	+19 56.8	1.725	2.603	12.4	20.6	3 2	8 43.32	+17 29.4	1.927	2.810	11.1	20.9
3 12	8 34.38	+19 50.0	1.805	2.598	15.9	20.8	3 12	8 38.27	+18 1.1	2.015	2.813	14.3	21.1
34381	2000 <i>RW</i> ₅₅		2 3.9 138°93	2.6/ 1.9	18		220590	2004 <i>KE</i> ₁₅		2 3.9 197°77	2.1/ 5.7	18	
1 2	9 32.43	+24 40.2	2.455	3.288	10.6	19.2	1 2	9 29.82	+ 6 46.8	2.337	3.134	12.2	21.1
1 12	9 26.33	+25 0.9	2.383	3.291	7.7	19.0	1 12	9 24.56	+ 7 21.3	2.247	3.131	9.3	20.9
1 22	9 18.44	+25 21.2	2.337	3.294	4.7	18.8	1 22	9 17.52	+ 8 10.1	2.182	3.127	6.0	20.6
2 1	9 9.42	+25 36.7	2.320	3.297	2.6	18.7	2 1	9 9.28	+ 9 10.5	2.146	3.123	2.8	20.4
2 11	9 0.19	+25 43.8	2.333	3.299	4.2	18.8	2 11	9 0.65	+10 18.1	2.140	3.118	3.0	20.4
2 21	8 51.62	+25 40.6	2.376	3.302	7.1	19.0	2 21	8 52.49	+11 27.7	2.165	3.113	6.3	20.6
3 2	8 44.53	+25 26.7	2.447	3.304	10.0	19.2	3 2	8 45.61	+12 34.3	2.219	3.107	9.6	20.8
3 12	8 39.46	+25 2.8	2.540	3.307	12.5	19.4	3 12	8 40.64	+13 33.9	2.297	3.100	12.6	21.0
456912	2007 <i>VO</i> ₃₃₅		2 3.9 11°49	0.2/ 3.7	18		373320	2012 <i>JK</i> ₁₅		2 3.9 321°00	3.2/ 1.8	17	
1 2	9 25.49	+10 39.0	1.234	2.086	17.6	20.0	1 2	9 31.90	+22 47.6	1.782	2.628	13.3	21.3
1 12	9 22.54	+12 15.0	1.171	2.089	12.9	19.7	1 12	9 26.64	+23 37.0	1.709	2.625	9.7	21.1
1 22	9 16.79	+14 15.2	1.130	2.093	7.5	19.4	1 22	9 18.94	+24 29.8	1.661	2.622	5.9	20.9
2 1	9 9.11	+16 29.9	1.114	2.098	1.6	19.1	2 1	9 9.62	+25 19.2	1.641	2.619	3.2	20.7
2 11	9 0.89	+18 45.4	1.125	2.105	4.4	19.3	2 11	8 59.86	+25 58.3	1.649	2.616	5.3	20.8
2 21	8 53.63	+20 48.3	1.162	2.112	10.0	19.6	2 21	8 50.90	+26 22.7	1.684	2.614	9.2	21.0
3 2	8 48.62	+22 29.2	1.222	2.121	14.9	19.9	3 2	8 43.86	+26 30.8	1.744	2.611	12.9	21.3
3 12	8 46.72	+23 43.9	1.302	2.131	19.0	20.2	3 12	8 39.46	+26 23.3	1.825	2.609	16.1	21.5
520064	2013 <i>WZ</i> ₁₁₁		2 3.9 149°91	1.0/ 3.1	17		453364	2009 <i>BE</i> ₂₃		2 3.9 305°59	3.0/ 2.7	18	
1 2	9 29.24	+17 25.3	2.347	3.177	11.1	21.8	1 2	9 38.21	+23 3				

EPHEMERIDES

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
472635	2015 <i>DN</i> ₂₀₇		2 3.9 287°96	0°3/ 4.2 16			247676	2002 <i>YW</i> ₃₁		2 3.9 318°69	0°5/ 4.1 17		
1 2	9 26.93	+12 33.7	2.351	3.173	11.3	21.9	1 2	9 37.86	+17 35.8	1.961	2.784	13.2	19.0
1 12	9 22.55	+13 17.1	2.255	3.157	8.4	21.6	1 12	9 30.85	+16 49.7	1.859	2.762	9.9	18.7
1 22	9 16.41	+14 11.5	2.184	3.141	5.0	21.4	1 22	9 21.39	+16 4.6	1.783	2.740	5.9	18.4
2 1	9 9.04	+15 13.2	2.142	3.125	1.3	21.1	2 1	9 10.23	+15 18.8	1.735	2.719	1.5	18.1
2 11	9 1.23	+16 17.2	2.130	3.109	2.7	21.2	2 11	8 58.49	+14 31.3	1.718	2.698	3.2	18.2
2 21	8 53.82	+17 18.6	2.148	3.093	6.4	21.4	2 21	8 47.42	+13 41.5	1.732	2.677	7.7	18.4
3 2	8 47.63	+18 13.2	2.193	3.077	9.9	21.6	3 2	8 38.14	+12 50.1	1.773	2.657	11.9	18.6
3 12	8 43.31	+18 57.9	2.263	3.062	12.9	21.8	3 12	8 31.45	+11 57.4	1.837	2.637	15.4	18.8
333862	1995 <i>WF</i> ₁		2 3.9 52°13	0°4/ 3.7 17			412091	2013 <i>FY</i> ₁₉		2 3.9 209°65	2°1/ 2.5 18		
1 2	9 35.44	+15 14.6	1.107	1.962	19.0	21.1	1 2	9 33.65	+19 28.0	1.830	2.667	13.4	21.7
1 12	9 29.73	+15 45.4	1.067	1.986	13.8	20.8	1 12	9 27.88	+20 16.6	1.752	2.664	9.8	21.5
1 22	9 20.83	+16 29.1	1.047	2.010	7.9	20.6	1 22	9 19.69	+21 11.7	1.698	2.659	5.7	21.2
2 1	9 10.03	+17 18.1	1.051	2.035	1.7	20.3	2 1	9 9.84	+22 7.2	1.673	2.655	2.2	21.0
2 11	8 59.12	+18 3.6	1.080	2.060	4.5	20.5	2 11	8 59.49	+22 56.2	1.676	2.649	4.5	21.1
2 21	8 49.80	+18 38.8	1.135	2.085	10.1	20.9	2 21	8 49.87	+23 33.5	1.708	2.644	8.7	21.4
3 2	8 43.36	+19 0.4	1.212	2.111	15.0	21.3	3 2	8 42.10	+23 56.4	1.766	2.638	12.6	21.6
3 12	8 40.41	+19 7.7	1.309	2.137	18.9	21.6	3 12	8 36.96	+24 4.7	1.846	2.631	15.9	21.8
457074	2008 <i>EE</i> ₆₉		2 3.9 12°81	19°9/ 28.7 16			220575	2004 <i>HF</i> ₆₂		2 3.9 219°29	7°0/ 8.6 18		
1 2	9 56.75	+58 51.6	1.140	1.933	22.6	20.4	1 2	9 31.00	- 4 15.7	2.129	2.877	14.8	20.6
1 12	9 47.50	+60 0.9	1.115	1.939	21.1	20.3	1 12	9 25.61	- 4 53.0	2.038	2.871	12.4	20.4
1 22	9 31.67	+60 28.2	1.106	1.946	20.1	20.3	1 22	9 18.24	- 5 10.7	1.969	2.865	9.8	20.2
2 1	9 12.38	+59 57.2	1.114	1.955	20.0	20.3	2 1	9 9.50	- 5 7.1	1.925	2.859	7.7	20.1
2 11	8 54.05	+58 23.1	1.139	1.967	20.7	20.4	2 11	9 0.29	- 4 42.8	1.908	2.852	7.1	20.0
2 21	8 40.20	+55 54.5	1.181	1.979	22.0	20.5	2 21	8 51.58	- 4 1.0	1.920	2.845	8.6	20.1
3 2	8 32.33	+52 47.6	1.240	1.994	23.6	20.7	3 2	8 44.27	- 3 7.1	1.957	2.837	11.1	20.2
3 12	8 30.27	+49 19.4	1.315	2.010	25.2	20.9	3 12	8 39.06	- 2 7.3	2.019	2.829	13.8	20.4
387803	2004 <i>CV</i> ₂₅		2 3.9 50°98	0°3/ 3.7 18			397156	2005 <i>XS</i> ₄₃		2 3.9 151°42	0°8/ 4.4 18		
1 2	9 33.65	+16 47.8	1.786	2.620	13.8	20.4	1 2	9 35.49	+12 47.7	1.659	2.484	15.1	22.2
1 12	9 27.45	+16 53.5	1.737	2.646	10.0	20.3	1 12	9 29.23	+13 5.6	1.588	2.491	11.2	22.0
1 22	9 19.15	+17 5.4	1.713	2.673	5.8	20.1	1 22	9 20.44	+13 35.5	1.540	2.497	6.7	21.7
2 1	9 9.63	+17 19.6	1.716	2.700	1.3	19.8	2 1	9 10.00	+14 13.2	1.520	2.503	1.9	21.4
2 11	9 0.05	+17 31.8	1.748	2.727	3.3	20.0	2 11	8 59.16	+14 52.8	1.528	2.508	3.4	21.6
2 21	8 51.52	+17 39.1	1.809	2.754	7.4	20.3	2 21	8 49.21	+15 29.2	1.565	2.513	8.2	21.8
3 2	8 44.90	+17 39.6	1.896	2.782	11.1	20.6	3 2	8 41.31	+15 58.5	1.628	2.517	12.4	22.1
3 12	8 40.75	+17 32.9	2.005	2.809	14.1	20.9	3 12	8 36.17	+16 18.2	1.713	2.520	16.0	22.3
326981	2004 <i>OH</i> ₈		2 3.9 160°62	0°9/ 3.1 18			456553	2007 <i>BS</i> ₅₈		2 3.9 27°35	1°3/ 4.4 18		
1 2	9 31.15	+16 53.4	2.466	3.289	10.8	21.9	1 2	9 35.56	+14 46.3	1.473	2.309	16.1	19.8
1 12	9 25.41	+17 40.1	2.391	3.296	7.9	21.7	1 12	9 29.40	+14 12.6	1.408	2.317	11.9	19.6
1 22	9 17.96	+18 33.0	2.343	3.302	4.5	21.5	1 22	9 20.55	+13 46.8	1.367	2.325	7.2	19.3
2 1	9 9.39	+19 27.7	2.325	3.308	1.2	21.3	2 1	9 10.01	+13 26.9	1.352	2.334	2.3	19.1
2 11	9 0.53	+20 19.5	2.337	3.313	3.0	21.5	2 11	8 59.19	+13 10.1	1.364	2.344	3.7	19.2
2 21	8 52.22	+21 4.2	2.381	3.318	6.4	21.7	2 21	8 49.50	+12 54.0	1.404	2.354	8.6	19.5
3 2	8 45.25	+21 39.2	2.452	3.321	9.6	21.9	3 2	8 42.10	+12 36.8	1.468	2.365	13.0	19.8
3 12	8 40.18	+22 3.5	2.547	3.325	12.2	22.1	3 12	8 37.68	+12 17.1	1.554	2.376	16.7	20.0
200775	2001 <i>XE</i> ₃₇		2 3.9 146°06	3°0/ 2.2 18			225195	2008 <i>JY</i> ₁₃		2 3.9 218°19	1°3/ 4.9 18		
1 2	9 37.96	+22 47.2	1.763	2.599	13.9	20.2	1 2	9 30.07	+10 20.9	2.034	2.851	13.1	21.2
1 12	9 30.94	+23 26.1	1.698	2.609	10.1	20.0	1 12	9 24.99	+10 49.1	1.949	2.847	9.8	21.0
1 22	9 21.38	+24 7.1	1.658	2.617	6.1	19.8	1 22	9 17.89	+11 30.3	1.889	2.843	6.0	20.7
2 1	9 10.18	+24 43.2	1.646	2.625	3.0	19.6	2 1	9 9.42	+12 21.0	1.857	2.838	2.1	20.5
2 11	8 58.67	+25 8.5	1.664	2.633	5.1	19.7	2 11	9 0.52	+13 16.5	1.854	2.833	3.0	20.5
2 21	8 48.18	+25 19.3	1.710	2.640	9.1	20.0	2 21	8 52.20	+14 11.3	1.880	2.828	7.0	20.7
3 2	8 39.84	+25 15.2	1.782	2.646	12.8	20.2	3 2	8 45.37	+15 0.8	1.934	2.823	10.7	21.0
3 12	8 34.34	+24 57.6	1.875	2.651	16.0	20.4	3 12	8 40.72	+15 41.8	2.010	2.818	14.0	21.2
327890	2007 <i>BP</i> ₃₈		2 3.9 45°09	0°4/ 3.6 18			416193	2002 <i>TE</i> ₁₃₅		2 3.9 103°32	3°7/ 6.6 18		
1 2	9 28.66	+11 35.0	1.551	2.388	15.4	19.9	1 2	9 29.14	+ 4 27.3	2.220	3.012	12.9	20.4
1 12	9 24.37	+13 8.1	1.489	2.400	11.2	19.7	1 12	9 24.08	+ 4 16.9	2.138	3.014	10.1	20.2
1 22	9 17.66	+14 58.9	1.451	2.412	6.5	19.4	1 22	9 17.25	+ 4 20.7	2.081	3.016	7.0	20.0
2 1	9 9.35	+16 59.1	1.440	2.424	1.4	19.1	2 1	9 9.26	+ 4 37.7	2.051	3.018	4.3	19.8
2 11	9 0.64	+18 57.9	1.458	2.436	3.8	19.3	2 11	9 0.96	+ 5 5.6	2.049	3.020	4.1	19.8
2 21	8 52.78	+20 45.3	1.504	2.449	8.7	19.6	2 21	8 53.21	+ 5 40.5	2.077	3.022	6.6	20.0
3 2	8 46.85	+22 14.5	1.576	2.462	12.9	19.9	3 2	8 46.82	+ 6 18.4	2.132	3.024	9.7	20.2
3 12	8 43.59	+23 22.5	1.669	2.476	16.4	20.2	3 12	8 42.37	+ 6 55.1	2.211	3.026	12.6	20.4
304799	2007 <i>PK</i> ₁₀		2 3.9 135°10	0°0/ 3.7 18			51225	2000 <i>JW</i> ₂₄		2 3.9 356°90	13°6/ 11.0 18		
1 2	9 34.74	+14 11.3	1.947	2.769	13.4	21.6	1 2	9 27.32	-10 22.3	1.308	2.069	21.9	17.2
1 12	9 28.31	+14 46.1	1.881	2.784	9.8	21.4	1 12	9 23.87	-12 5.6	1.238	2.063	19.3	17.0
1 22	9 19.73	+15 30.3	1.840	2.798	5.7	21.2	1 22	9 17.63	-13 17.3	1.185	2.060	16.6	16.8
2 1	9 9.80	+16 19.2	1.827	2.811	1.3	20.9	2 1	9 9.42	-13 49.9	1.151	2.057	14.5	16.7
2 11	8 59.60	+17 7.2	1.845	2.824	3.1	21.1	2 11	9 0.53	-13 40.3	1.138	2.056	13.6	16.6
2 21	8 50.22	+17 49.4	1.892	2.836	7.3	21.4	2 21	8 52.44	-12 51.9	1.146	2.056	14.5	16.7
3 2	8 42.60	+18 22.7	1.967	2.847	11.1	21.6	3 2	8 46.48	-11 33.5	1.175	2.058	16.6	16.8
3 12	8 37.38	+18 45.4	2.064	2.857	14.2	21.9	3 12	8 43.60	- 9 57.9	1.222	2.061	19.3	17.0
144409	2004 <i>EC</i> ₉		2 3.9 354°80	5°8/ 7.7 18			466204	2012 <i>PW</i> ₈		2 3.9 113°44	2°9/ 6.1 18		
1 2	9 28.12	+ 0 30.3	1.553	2.352	17.2	19.5	1 2	9 29.89					

EPHEMERIDES

2 3.9

2 3.9

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
333425	2003 <i>NE</i> ₁		2 3.9 251°01	3:7/31.3	16		304821	2007 <i>RB</i>		2 3.9 143°78	0°8/ 3.3	18	
1 2	9 32.05	+25 9.9	2.479	3.313	10.4	21.5	1 2	9 34.73	+16 13.7	1.970	2.796	13.1	22.0
1 12	9 26.44	+26 29.9	2.383	3.291	7.7	21.3	1 12	9 28.36	+16 58.2	1.902	2.808	9.5	21.8
1 22	9 18.80	+27 53.1	2.314	3.268	5.0	21.1	1 22	9 19.83	+17 50.7	1.860	2.819	5.5	21.5
2 1	9 9.67	+29 12.8	2.276	3.245	3.7	21.0	2 1	9 9.91	+18 45.8	1.846	2.830	1.3	21.3
2 11	8 59.93	+30 22.5	2.268	3.221	5.4	21.1	2 11	8 59.68	+19 37.5	1.863	2.840	3.5	21.5
2 21	8 50.55	+31 17.3	2.290	3.197	8.4	21.2	2 21	8 50.25	+20 20.9	1.910	2.849	7.6	21.7
3 2	8 42.48	+31 54.6	2.339	3.171	11.3	21.4	3 2	8 42.57	+20 53.1	1.983	2.858	11.2	22.0
3 12	8 36.50	+32 14.7	2.410	3.146	13.9	21.5	3 12	8 37.29	+21 13.1	2.079	2.866	14.3	22.2
57025	2000 <i>UO</i> ₂₄		2 3.9 207°49	4°9/29.5	18		185864	2000 <i>HJ</i> ₉		2 3.9 248°50	6°6/ 8.6	17	
1 2	9 30.85	+33 28.2	2.998	3.826	9.0	19.6	1 2	9 30.15	- 3 38.4	2.127	2.880	14.7	21.3
1 12	9 25.21	+34 35.7	2.926	3.821	7.0	19.5	1 12	9 25.09	- 3 58.0	2.026	2.865	12.2	21.1
1 22	9 17.88	+35 39.1	2.881	3.815	5.3	19.3	1 22	9 18.03	- 3 57.3	1.947	2.850	9.5	20.8
2 1	9 9.42	+36 32.8	2.866	3.809	4.9	19.3	2 1	9 9.54	- 3 34.9	1.893	2.834	7.2	20.7
2 11	9 0.63	+37 12.6	2.881	3.803	6.1	19.4	2 11	9 0.48	- 2 52.1	1.867	2.818	6.6	20.6
2 21	8 52.31	+37 35.9	2.924	3.796	8.0	19.5	2 21	8 51.84	- 1 52.7	1.869	2.801	8.3	20.7
3 2	8 45.23	+37 42.5	2.993	3.789	10.1	19.6	3 2	8 44.55	- 0 42.5	1.898	2.783	11.1	20.8
3 12	8 39.97	+37 33.8	3.083	3.781	11.9	19.8	3 12	8 39.35	+ 0 31.5	1.951	2.766	14.0	21.0
88882	2001 <i>ST</i> ₂₇₉		2 3.9 132°91	1°4/ 2.9	18		293858	2007 <i>RA</i> ₂₄₃		2 3.9 182°62	10°5/12.0	18	
1 2	9 33.01	+18 32.0	1.999	2.831	12.6	19.8	1 2	9 31.94	-12 26.3	1.418	2.151	21.6	20.8
1 12	9 27.09	+19 7.4	1.930	2.840	9.2	19.6	1 12	9 27.15	-12 14.3	1.337	2.152	18.7	20.6
1 22	9 19.07	+19 48.4	1.887	2.848	5.3	19.4	1 22	9 19.54	-11 20.8	1.272	2.152	15.3	20.3
2 1	9 9.71	+20 29.8	1.872	2.855	1.6	19.1	2 1	9 9.91	- 9 41.9	1.229	2.152	12.1	20.1
2 11	9 0.04	+21 6.4	1.887	2.863	3.7	19.3	2 11	8 59.60	- 7 21.4	1.210	2.152	10.5	20.0
2 21	8 51.15	+21 34.2	1.931	2.870	7.6	19.6	2 21	8 50.08	- 4 30.4	1.218	2.151	11.6	20.1
3 2	8 43.96	+21 51.0	2.002	2.876	11.2	19.8	3 2	8 42.70	- 1 24.8	1.251	2.149	14.7	20.3
3 12	8 39.12	+21 56.4	2.095	2.883	14.2	20.0	3 12	8 38.38	+ 1 38.3	1.308	2.147	18.3	20.5
387513	1999 <i>RN</i> ₃₇		2 3.9 107°32	13°3/30.7	17		247475	2002 <i>JF</i> ₁₀₄		2 3.9 180°01	2°9/ 1.9	18	
1 2	10 5.79	+50 2.7	1.543	2.327	18.0	20.2	1 2	9 33.97	+21 31.2	1.918	2.755	12.9	20.8
1 12	9 52.00	+50 58.2	1.508	2.348	15.6	20.1	1 12	9 28.04	+22 32.7	1.845	2.757	9.4	20.6
1 22	9 33.61	+51 24.0	1.495	2.368	13.9	20.0	1 22	9 19.77	+23 39.1	1.798	2.758	5.6	20.3
2 1	9 12.90	+51 6.6	1.506	2.388	13.3	20.1	2 1	9 9.93	+24 43.1	1.779	2.758	2.9	20.2
2 11	8 52.94	+50 1.7	1.542	2.407	14.2	20.2	2 11	8 59.64	+25 37.7	1.790	2.758	5.0	20.3
2 21	8 36.32	+48 15.9	1.603	2.425	16.0	20.3	2 21	8 50.10	+26 18.1	1.829	2.757	8.7	20.5
3 2	8 24.50	+46 1.5	1.686	2.442	18.1	20.5	3 2	8 42.38	+26 42.0	1.894	2.755	12.3	20.7
3 12	8 17.74	+43 32.2	1.787	2.459	20.1	20.7	3 12	8 37.21	+26 49.8	1.981	2.754	15.4	20.9
107256	2001 <i>BY</i> ₆₂		2 3.9 22°21	2°5/ 5.1	18		503732	2016 <i>LV</i> ₁₆		2 3.9 345°70	0°8/ 3.3	17	
1 2	9 32.13	+10 59.2	1.237	2.080	18.1	19.1	1 2	9 27.89	+15 11.4	2.085	2.918	12.2	21.2
1 12	9 27.32	+10 41.6	1.176	2.086	13.7	18.8	1 12	9 23.41	+16 10.4	2.007	2.917	8.9	20.9
1 22	9 19.55	+10 39.6	1.137	2.094	8.5	18.6	1 22	9 16.99	+17 19.5	1.955	2.916	5.1	20.7
2 1	9 9.85	+10 50.7	1.121	2.102	3.5	18.3	2 1	9 9.28	+18 33.3	1.931	2.915	1.2	20.4
2 11	8 59.76	+11 10.2	1.131	2.111	4.3	18.4	2 11	9 1.18	+19 45.5	1.936	2.914	3.3	20.6
2 21	8 50.83	+11 32.4	1.166	2.121	9.4	18.7	2 21	8 53.64	+20 50.4	1.971	2.913	7.2	20.8
3 2	8 44.38	+11 52.4	1.224	2.131	14.2	19.0	3 2	8 47.56	+21 43.8	2.033	2.912	10.8	21.0
3 12	8 41.15	+12 6.3	1.302	2.143	18.2	19.3	3 12	8 43.57	+22 23.7	2.117	2.912	13.8	21.2
257666	1999 <i>VC</i> ₆₂		2 3.9 108°50	2°2/ 5.3	18		453378	2009 <i>BP</i> ₁₁₇		2 3.9 340°02	2°9/ 2.3	18	
1 2	9 33.31	+ 8 54.3	1.770	2.584	14.8	20.0	1 2	9 32.13	+20 7.1	1.393	2.248	15.8	21.1
1 12	9 27.41	+ 9 6.5	1.704	2.598	11.2	19.8	1 12	9 27.38	+21 1.1	1.324	2.244	11.5	20.9
1 22	9 19.29	+ 9 33.2	1.662	2.613	7.0	19.6	1 22	9 19.67	+22 3.3	1.277	2.241	6.8	20.6
2 1	9 9.76	+10 11.1	1.648	2.627	3.0	19.4	2 1	9 9.94	+23 5.3	1.256	2.238	2.9	20.3
2 11	8 59.96	+10 55.5	1.662	2.640	3.4	19.4	2 11	8 59.61	+23 58.2	1.262	2.235	5.6	20.5
2 21	8 51.01	+11 40.9	1.705	2.654	7.5	19.7	2 21	8 50.26	+24 35.4	1.293	2.232	10.4	20.8
3 2	8 43.90	+12 22.7	1.774	2.667	11.3	20.0	3 2	8 43.26	+24 53.8	1.348	2.230	14.9	21.0
3 12	8 39.28	+12 57.3	1.866	2.679	14.7	20.2	3 12	8 39.47	+24 54.0	1.422	2.229	18.7	21.3
42650	1998 <i>FZ</i> ₇₆		2 3.9 263°15	1°8/ 2.8	18		527	<i>Euryanthe</i>		2 3.9 165°08	1°0/ 3.1	18	
1 2	9 32.82	+18 15.2	1.696	2.537	14.1	19.7	1 2	9 30.68	+16 36.8	2.288	3.115	11.4	15.4
1 12	9 27.56	+19 3.1	1.609	2.523	10.4	19.4	1 12	9 25.26	+17 31.0	2.212	3.119	8.3	15.2
1 22	9 19.68	+20 0.3	1.547	2.509	6.0	19.1	1 22	9 17.99	+18 32.7	2.162	3.122	4.8	15.0
2 1	9 9.93	+21 0.3	1.511	2.494	2.0	18.8	2 1	9 9.51	+19 36.8	2.142	3.126	1.3	14.7
2 11	8 59.49	+21 55.5	1.504	2.479	4.5	19.0	2 11	9 0.68	+20 37.9	2.153	3.129	3.2	14.9
2 21	8 49.71	+22 39.9	1.525	2.464	9.1	19.2	2 21	8 52.43	+21 31.1	2.193	3.131	6.9	15.1
3 2	8 41.84	+23 9.6	1.571	2.449	13.5	19.4	3 2	8 45.58	+22 13.4	2.262	3.133	10.2	15.3
3 12	8 36.78	+23 23.6	1.638	2.434	17.1	19.6	3 12	8 40.75	+22 43.4	2.353	3.134	13.0	15.5
156281	2001 <i>VC</i> ₁₂₁		2 3.9 8°23	9°4/28.3	18		241072	2006 <i>TV</i> ₁₂		2 3.9 180°97	7°0/11.4	17	
1 2	9 30.19	+33 37.0	1.319	2.184	15.8	19.3	1 2	9 27.21	-12 2.6	3.043	3.723	12.1	21.2
1 12	9 26.34	+35 36.8	1.272	2.186	12.5	19.1	1 12	9 22.35	-12 26.5	2.952	3.724	10.5	21.1
1 22	9 19.20	+37 29.5	1.247	2.189	10.0	18.9	1 22	9 16.15	-12 32.1	2.882	3.724	8.9	21.0
2 1	9 9.81	+39 1.0	1.247	2.192	9.6	18.9	2 1	9 9.07	-12 18.2	2.837	3.724	7.6	20.9
2 11	8 59.89	+40 0.2	1.271	2.197	11.7	19.0	2 11	9 1.72	-11 45.1	2.820	3.724	7.0	20.8
2 21	8 51.23	+40 23.1	1.317	2.203	14.8	19.2	2 21	8 54.73	-10 55.6	2.830	3.723	7.5	20.9
3 2	8 45.32	+40 11.6	1.384	2.211	18.0	19.5	3 2	8 48.70	- 9 53.5	2.867	3.722	8.8	20.9
3 12	8 42.98	+39 31.9	1.466	2.219	20.7	19.7	3 12	8 44.10	- 8 43.8	2.930	3.720	10.5	21.1
72903	2001 <i>KO</i> ₇₁		2 3.9 74°65	5°3/ 8.4	18		267215	2000 <i>UQ</i> ₆₈		2 3.9 87°88	0°4/ 3.6	18	
1 2	9 29.55	- 1 34.0	2.107	2.872	14.4	18.5	1 2	9 35.12	+16 28.3				

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
244078	2001 <i>TE</i> ₂₃₁		2 3.9 37°86	2°0/ 5.2 18			498670	2008 <i>SD</i> ₁₇₁		2 3.9 199°54	0°5/ 4.3 17		
1 2	9 28.98	+ 7 27.2	1.088	1.935	19.8	19.3	1 2	9 31.50	+14 8.6	2.056	2.881	12.6	21.5
1 12	9 25.20	+ 8 28.2	1.040	1.951	14.9	19.1	1 12	9 26.00	+14 17.6	1.977	2.880	9.3	21.3
1 22	9 18.39	+ 9 55.9	1.011	1.969	9.2	18.8	1 22	9 18.50	+14 34.9	1.922	2.880	5.5	21.1
2 1	9 9.62	+11 42.5	1.005	1.987	3.3	18.5	2 1	9 9.67	+14 57.3	1.896	2.879	1.5	20.8
2 11	9 0.51	+13 35.3	1.025	2.006	4.1	18.6	2 11	9 0.49	+15 20.8	1.899	2.879	2.9	20.9
2 21	8 52.67	+15 21.7	1.070	2.026	9.8	19.0	2 21	8 51.96	+15 41.9	1.931	2.878	6.9	21.1
3 2	8 47.41	+16 52.0	1.138	2.047	14.8	19.4	3 2	8 44.99	+15 57.7	1.990	2.877	10.6	21.4
3 12	8 45.45	+18 1.1	1.225	2.068	19.0	19.7	3 12	8 40.23	+16 6.6	2.072	2.876	13.7	21.6
381645	2008 <i>YA</i> ₁₄₀		2 3.9 61°14	1°1/ 2.9 18			206195	2002 <i>UW</i> ₈		2 3.9 64°12	4°0/ 7.5 18		
1 2	9 28.24	+16 14.1	2.114	2.948	12.0	20.6	1 2	9 28.24	+ 1 4.7	2.071	2.854	14.1	19.8
1 12	9 23.59	+17 16.3	2.045	2.955	8.7	20.4	1 12	9 23.43	+ 1 33.0	2.010	2.878	11.0	19.6
1 22	9 17.06	+18 27.0	2.001	2.963	5.0	20.2	1 22	9 16.88	+ 2 20.3	1.972	2.902	7.7	19.4
2 1	9 9.30	+19 40.7	1.987	2.970	1.4	19.9	2 1	9 9.27	+ 3 24.4	1.961	2.926	4.8	19.3
2 11	9 1.22	+20 51.0	2.002	2.978	3.4	20.1	2 11	9 1.48	+ 4 40.2	1.979	2.950	4.2	19.3
2 21	8 53.76	+21 52.6	2.046	2.985	7.2	20.4	2 21	8 54.37	+ 6 1.7	2.026	2.973	6.6	19.5
3 2	8 47.77	+22 42.0	2.117	2.993	10.6	20.6	3 2	8 48.71	+ 7 22.6	2.101	2.997	9.7	19.7
3 12	8 43.85	+23 17.5	2.212	3.001	13.5	20.8	3 12	8 45.03	+ 8 37.5	2.201	3.021	12.5	20.0
121078	1999 <i>FP</i> ₃		2 3.9 2°24	14°8/17.3 18			127813	2003 <i>FG</i> ₈₆		2 3.9 248°65	0°3/ 4.1 18		
1 2	9 22.36	-19 21.2	1.165	1.891	25.8	18.8	1 2	9 34.72	+14 22.0	1.643	2.475	15.0	20.5
1 12	9 20.50	-19 37.0	1.094	1.888	23.3	18.6	1 12	9 28.97	+14 37.3	1.556	2.463	11.1	20.2
1 22	9 15.80	-19 0.2	1.036	1.887	20.3	18.4	1 22	9 20.53	+15 3.5	1.492	2.451	6.6	19.9
2 1	9 9.07	-17 22.9	0.994	1.888	17.4	18.2	2 1	9 10.19	+15 36.6	1.455	2.438	1.6	19.6
2 11	9 1.70	-14 45.6	0.971	1.890	15.3	18.1	2 11	8 59.17	+16 10.7	1.446	2.425	3.6	19.7
2 21	8 55.22	-11 19.1	0.970	1.893	15.0	18.1	2 21	8 48.87	+16 40.8	1.465	2.412	8.6	19.9
3 2	8 51.03	- 7 23.3	0.992	1.898	16.8	18.2	3 2	8 40.54	+17 3.0	1.509	2.399	13.2	20.2
3 12	8 50.05	- 3 22.5	1.035	1.905	19.7	18.4	3 12	8 35.08	+17 15.1	1.575	2.385	17.1	20.4
522630	2016 <i>FM</i> ₆₇		2 3.9 140°53	2°0/ 1.7 17			491613	2012 <i>TT</i> ₅₄		2 3.9 89°13	2°0/ 3.0 18		
1 2	9 29.14	+22 22.0	3.203	4.029	8.5	22.1	1 2	9 39.26	+19 46.5	1.355	2.200	16.7	21.1
1 12	9 23.67	+23 14.4	3.136	4.042	6.1	22.0	1 12	9 32.31	+20 12.1	1.303	2.217	12.2	20.8
1 22	9 16.87	+24 8.1	3.098	4.056	3.7	21.8	1 22	9 22.35	+20 43.3	1.273	2.235	7.0	20.6
2 1	9 9.24	+24 59.5	3.091	4.068	2.0	21.7	2 1	9 10.55	+21 12.7	1.270	2.252	2.3	20.3
2 11	9 1.41	+25 44.6	3.115	4.080	3.3	21.8	2 11	8 58.54	+21 33.6	1.294	2.270	4.9	20.6
2 21	8 54.03	+26 21.0	3.171	4.091	5.7	22.0	2 21	8 47.94	+21 42.0	1.345	2.286	9.8	20.9
3 2	8 47.69	+26 47.1	3.254	4.102	8.0	22.2	3 2	8 40.01	+21 36.9	1.420	2.303	14.3	21.2
3 12	8 42.85	+27 2.6	3.362	4.113	10.0	22.4	3 12	8 35.44	+21 19.6	1.515	2.319	17.9	21.5
316780	1999 <i>TU</i> ₁₄₈		2 3.9 147°70	0°5/ 3.5 18			37	<i>Fides</i>		2 3.9 45°82	1°8/ 2.9 18		
1 2	9 33.95	+15 41.3	2.016	2.841	12.8	21.5	1 2	9 33.29	+19 5.0	1.472	2.321	15.4	10.7
1 12	9 27.77	+16 20.8	1.946	2.851	9.4	21.3	1 12	9 27.79	+19 35.4	1.420	2.337	11.2	10.5
1 22	9 19.50	+17 8.5	1.901	2.861	5.4	21.1	1 22	9 19.67	+20 12.1	1.390	2.353	6.4	10.3
2 1	9 9.87	+17 59.4	1.885	2.869	1.2	20.8	2 1	9 9.93	+20 48.5	1.386	2.369	2.0	10.1
2 11	8 59.92	+18 48.0	1.900	2.877	3.3	21.0	2 11	8 59.97	+21 18.3	1.410	2.386	4.5	10.3
2 21	8 50.72	+19 29.6	1.944	2.885	7.3	21.3	2 21	8 51.17	+21 36.9	1.460	2.404	9.1	10.6
3 2	8 43.21	+20 1.1	2.015	2.892	11.0	21.5	3 2	8 44.62	+21 42.6	1.535	2.421	13.2	10.8
3 12	8 38.02	+20 21.3	2.109	2.898	14.0	21.7	3 12	8 40.99	+21 35.6	1.631	2.439	16.6	11.1
165107	2000 <i>HE</i> ₆₃		2 3.9 330°47	5°4/30.8 18			22345	1992 <i>SP</i> ₂		2 3.9 111°96	7°1/10.1 18		
1 2	9 32.17	+30 16.8	2.037	2.880	12.0	19.5	1 2	9 30.02	- 7 11.2	2.112	2.846	15.4	18.4
1 12	9 26.74	+31 18.5	1.969	2.877	9.1	19.3	1 12	9 24.78	- 7 17.7	2.040	2.861	12.9	18.3
1 22	9 19.01	+32 17.1	1.926	2.874	6.5	19.1	1 22	9 17.71	- 7 0.4	1.989	2.876	10.2	18.1
2 1	9 9.77	+33 5.0	1.912	2.871	5.4	19.0	2 1	9 9.48	- 6 18.9	1.963	2.891	8.0	18.0
2 11	9 0.14	+33 36.2	1.925	2.869	7.0	19.1	2 11	9 0.98	- 5 15.9	1.965	2.906	7.1	18.0
2 21	8 51.29	+33 47.6	1.965	2.866	9.8	19.3	2 21	8 53.12	- 3 56.7	1.994	2.920	8.2	18.1
3 2	8 44.26	+33 39.2	2.030	2.864	12.7	19.5	3 2	8 46.71	- 2 28.2	2.051	2.934	10.5	18.3
3 12	8 39.74	+33 13.5	2.115	2.862	15.3	19.7	3 12	8 42.34	- 0 57.9	2.132	2.947	13.0	18.5
503152	2015 <i>GY</i> ₂₈		2 3.9 298°10	3°3/ 6.7 17			86908	2000 <i>HD</i> ₄₈		2 3.9 224°61	0°7/ 4.4 18		
1 2	9 27.12	+ 4 5.7	2.348	3.139	12.4	21.1	1 2	9 31.51	+12 37.9	1.867	2.693	13.7	20.2
1 12	9 22.60	+ 4 15.9	2.262	3.138	9.6	20.9	1 12	9 26.23	+13 0.1	1.786	2.689	10.2	20.0
1 22	9 16.44	+ 4 40.9	2.200	3.136	6.6	20.7	1 22	9 18.74	+13 33.8	1.729	2.686	6.1	19.7
2 1	9 9.17	+ 5 19.3	2.166	3.135	3.9	20.5	2 1	9 9.75	+14 15.2	1.700	2.683	1.7	19.4
2 11	9 1.59	+ 6 7.7	2.161	3.134	3.7	20.5	2 11	9 0.30	+14 59.2	1.699	2.679	3.1	19.5
2 21	8 54.47	+ 7 2.1	2.185	3.133	6.2	20.7	2 21	8 51.52	+15 40.7	1.727	2.675	7.5	19.8
3 2	8 48.59	+ 7 57.6	2.237	3.131	9.3	20.8	3 2	8 44.43	+16 15.6	1.782	2.671	11.5	20.0
3 12	8 44.50	+ 8 50.1	2.314	3.130	12.1	21.0	3 12	8 39.73	+16 41.3	1.859	2.667	14.9	20.2
518072	2015 <i>XS</i> ₃₉₉		2 3.9 18°61	0°2/ 3.8 18			215242	2001 <i>DD</i> ₇₀		2 3.9 280°94	2°8/ 2.5 18		
1 2	9 31.57	+15 26.4	1.565	2.406	15.1	21.2	1 2	9 37.03	+22 44.1	1.721	2.560	14.0	20.0
1 12	9 26.56	+15 49.1	1.496	2.408	11.1	21.0	1 12	9 30.81	+23 5.6	1.623	2.535	10.4	19.7
1 22	9 19.01	+16 22.0	1.449	2.411	6.4	20.7	1 22	9 21.70	+23 29.8	1.549	2.509	6.3	19.4
2 1	9 9.79	+17 0.2	1.429	2.413	1.4	20.4	2 1	9 10.49	+23 50.3	1.503	2.483	2.9	19.2
2 11	9 0.15	+17 37.5	1.437	2.417	3.7	20.6	2 11	8 58.45	+24 1.0	1.485	2.457	5.2	19.2
2 21	8 51.41	+18 8.7	1.472	2.420	8.5	20.8	2 21	8 47.06	+23 57.8	1.496	2.430	9.7	19.4
3 2	8 44.70	+18 30.1	1.532	2.424	12.9	21.1	3 2	8 37.72	+23 39.7	1.531	2.404	14.1	19.6
3 12	8 40.76	+18 40.2	1.612	2.428	16.5	21.3	3 12	8 31.40	+23 8.0	1.588	2.376	17.9	19.8
454517	2014 <i>OK</i> ₂₁₅		2 3.9 254°08	3°0/ 2.0 17			217945	2001 <i>TG</i> ₂₁₂		2 3.9 231°90	7°9/ 9.7 17		
1 2	9 34.54	+20 32.7	1.638	2.482	14.4	22.3	1 2	9 30.73	- 8 13.7	2.263	2		

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
70851	1999 VW ₁₁₃		2 3.9 114°67	2°3/ 2.7	18		82077	2001 AG ₄₄		2 3.9 83°75	13°8/ 1.2	18	
1 2	9 36.87	+21 18.2	1.728	2.566	14.0	19.5	1 2	10 2.33	+44 50.2	1.089	1.914	21.4	18.4
1 12	9 30.17	+21 44.2	1.666	2.577	10.2	19.3	1 12	9 50.67	+45 31.3	1.044	1.923	18.0	18.2
1 22	9 20.99	+22 13.2	1.628	2.588	6.0	19.1	1 22	9 33.46	+45 42.9	1.018	1.931	15.0	18.1
2 1	9 10.24	+22 39.3	1.617	2.598	2.4	18.9	2 1	9 13.10	+45 7.6	1.014	1.940	13.8	18.1
2 11	8 59.23	+22 56.9	1.636	2.609	4.5	19.0	2 11	8 53.18	+43 38.7	1.034	1.949	15.0	18.2
2 21	8 49.26	+23 2.9	1.682	2.619	8.7	19.3	2 21	8 36.83	+41 24.5	1.077	1.958	17.8	18.3
3 2	8 41.40	+22 56.3	1.755	2.628	12.5	19.6	3 2	8 25.84	+38 41.2	1.140	1.966	21.1	18.6
3 12	8 36.32	+22 38.3	1.849	2.637	15.7	19.8	3 12	8 20.48	+35 45.7	1.222	1.975	24.1	18.8
101555	1999 AO ₅		2 3.9 26°12	3°4/ 2.6	18		245025	2004 EL ₁₀		2 3.9 286°94	2°3/ 2.4	18	
1 2	9 37.95	+24 53.9	1.425	2.275	15.8	18.1	1 2	9 31.96	+22 42.0	2.259	3.094	11.3	20.5
1 12	9 31.38	+24 55.5	1.365	2.281	11.6	17.9	1 12	9 26.26	+23 4.3	2.181	3.091	8.2	20.3
1 22	9 21.83	+24 55.5	1.328	2.289	7.0	17.6	1 22	9 18.63	+23 28.0	2.129	3.088	4.9	20.1
2 1	9 10.45	+24 47.6	1.317	2.297	3.5	17.4	2 1	9 9.75	+23 48.6	2.106	3.086	2.3	19.9
2 11	8 58.83	+24 27.1	1.334	2.305	5.6	17.6	2 11	9 0.55	+24 2.1	2.113	3.083	4.0	20.0
2 21	8 48.56	+23 52.8	1.376	2.314	10.1	17.9	2 21	8 52.01	+24 5.7	2.148	3.080	7.4	20.2
3 2	8 40.89	+23 6.1	1.444	2.324	14.3	18.1	3 2	8 45.00	+23 58.6	2.211	3.078	10.6	20.4
3 12	8 36.51	+22 10.2	1.531	2.335	17.8	18.4	3 12	8 40.12	+23 41.1	2.296	3.075	13.3	20.6
426714	2013 TO ₄₂		2 3.9 180°66	0°8/ 3.3	16		18723	1998 JO ₁		2 3.9 199°88	0°7/ 3.3	18	
1 2	9 32.74	+18 3.8	2.517	3.339	10.7	22.0	1 2	9 28.61	+17 31.5	2.877	3.700	9.5	18.8
1 12	9 26.60	+18 24.7	2.436	3.340	7.8	21.8	1 12	9 23.48	+18 1.4	2.792	3.697	6.9	18.6
1 22	9 18.72	+18 49.9	2.382	3.340	4.5	21.6	1 22	9 16.89	+18 36.0	2.735	3.694	4.0	18.4
2 1	9 9.73	+19 16.0	2.357	3.341	1.2	21.4	2 1	9 9.34	+19 11.9	2.707	3.690	1.0	18.2
2 11	9 0.44	+19 39.0	2.364	3.340	2.9	21.5	2 11	9 1.52	+19 45.8	2.710	3.686	2.6	18.3
2 21	8 51.71	+19 56.3	2.401	3.339	6.3	21.7	2 21	8 54.13	+20 14.7	2.744	3.682	5.6	18.5
3 2	8 44.33	+20 6.0	2.466	3.338	9.4	21.9	3 2	8 47.82	+20 36.5	2.806	3.678	8.4	18.6
3 12	8 38.87	+20 7.5	2.556	3.335	12.1	22.1	3 12	8 43.09	+20 50.1	2.893	3.673	10.8	18.8
13510	1989 OL		2 3.9 197°44	6°6/29.9	18		88378	2001 PH ₃₀		2 3.9 147°01	4°5/ 1.1	18	
1 2	9 36.71	+33 26.6	2.040	2.875	12.3	18.5	1 2	9 38.48	+25 56.2	1.749	2.588	13.8	20.4
1 12	9 30.18	+34 43.1	1.974	2.873	9.6	18.3	1 12	9 31.51	+26 59.6	1.688	2.598	10.2	20.2
1 22	9 21.10	+35 54.0	1.933	2.870	7.3	18.2	1 22	9 21.87	+28 2.9	1.652	2.607	6.6	20.0
2 1	9 10.31	+36 50.6	1.921	2.867	6.7	18.1	2 1	9 10.51	+28 57.5	1.645	2.616	4.5	19.9
2 11	8 59.05	+37 26.0	1.936	2.864	8.2	18.2	2 11	8 58.80	+29 36.1	1.666	2.624	6.5	20.0
2 21	8 48.64	+37 37.4	1.978	2.860	10.8	18.3	2 21	8 48.12	+29 54.9	1.715	2.631	10.0	20.2
3 2	8 40.25	+37 25.6	2.045	2.855	13.6	18.5	3 2	8 39.68	+29 53.8	1.789	2.638	13.5	20.5
3 12	8 34.64	+36 54.2	2.131	2.850	16.0	18.7	3 12	8 34.18	+29 35.7	1.884	2.644	16.5	20.7
112234	2002 LB		2 3.9 157°44	1°4/ 4.9	18		380215	2001 QP ₄₇		2 3.9 111°72	1°1/ 3.1	18	
1 2	9 31.83	+ 9 48.9	1.809	2.627	14.4	20.3	1 2	9 34.01	+20 12.6	2.590	3.412	10.4	21.2
1 12	9 26.47	+10 24.9	1.733	2.631	10.8	20.1	1 12	9 27.34	+20 20.0	2.525	3.429	7.5	21.0
1 22	9 18.88	+11 16.0	1.682	2.635	6.6	19.8	1 22	9 19.06	+20 29.3	2.487	3.446	4.4	20.9
2 1	9 9.79	+12 18.1	1.657	2.639	2.3	19.6	2 1	9 9.82	+20 37.3	2.479	3.462	1.4	20.7
2 11	9 0.28	+13 25.0	1.662	2.642	3.2	19.6	2 11	9 0.46	+20 41.0	2.503	3.478	2.9	20.8
2 21	8 51.48	+14 30.2	1.695	2.644	7.5	19.9	2 21	8 51.79	+20 38.7	2.558	3.494	6.1	21.0
3 2	8 44.41	+15 28.5	1.756	2.647	11.5	20.1	3 2	8 44.53	+20 29.5	2.640	3.509	9.0	21.2
3 12	8 39.79	+16 16.0	1.839	2.649	15.0	20.4	3 12	8 39.16	+20 13.6	2.748	3.524	11.4	21.4
142983	2002 VO ₈₇		2 3.9 25°61	10°8/28.0	18		50841	2000 FG ₄₄		2 3.9 150°71	6°4/30.3	18	
1 2	9 37.64	+40 5.2	1.491	2.334	15.6	19.8	1 2	9 38.27	+34 6.6	2.113	2.944	12.1	19.1
1 12	9 31.70	+41 43.6	1.447	2.338	13.0	19.6	1 12	9 31.11	+35 10.2	2.056	2.952	9.4	18.9
1 22	9 22.28	+43 7.2	1.425	2.343	11.1	19.5	1 22	9 21.53	+36 6.6	2.024	2.959	7.2	18.8
2 1	9 10.58	+44 3.3	1.427	2.348	10.9	19.5	2 1	9 10.42	+36 47.9	2.020	2.966	6.4	18.8
2 11	8 58.48	+44 23.9	1.453	2.354	12.5	19.6	2 11	8 59.02	+37 8.4	2.044	2.972	7.8	18.9
2 21	8 47.88	+44 7.9	1.502	2.360	15.0	19.8	2 21	8 48.59	+37 6.3	2.096	2.978	10.3	19.0
3 2	8 40.27	+43 19.7	1.571	2.367	17.6	20.0	3 2	8 40.21	+36 43.2	2.173	2.983	12.9	19.2
3 12	8 36.41	+42 7.3	1.656	2.374	20.0	20.2	3 12	8 34.53	+36 3.0	2.270	2.988	15.2	19.4
282801	2006 QN ₉₁		2 3.9 140°44	3°0/ 7.1	18		28583	Mehrotra		2 3.9 292°29	3°6/ 1.6	18	
1 2	9 27.31	+ 2 24.8	2.883	3.655	10.8	21.4	1 2	9 32.34	+22 29.4	1.667	2.515	13.9	19.0
1 12	9 22.43	+ 2 53.0	2.803	3.666	8.4	21.2	1 12	9 27.43	+23 27.8	1.577	2.494	10.3	18.7
1 22	9 16.22	+ 3 34.8	2.747	3.676	5.9	21.1	1 22	9 19.77	+24 32.3	1.512	2.473	6.3	18.4
2 1	9 9.16	+ 4 28.5	2.720	3.686	3.5	20.9	2 1	9 10.10	+25 35.1	1.474	2.452	3.6	18.2
2 11	9 1.88	+ 5 30.7	2.725	3.695	3.2	20.9	2 11	8 59.64	+26 27.9	1.463	2.431	5.9	18.3
2 21	8 55.03	+ 6 37.4	2.760	3.704	5.2	21.1	2 21	8 49.82	+27 4.4	1.480	2.410	10.2	18.5
3 2	8 49.19	+ 7 44.5	2.824	3.713	7.8	21.3	3 2	8 41.97	+27 21.7	1.520	2.389	14.4	18.7
3 12	8 44.82	+ 8 48.1	2.915	3.721	10.1	21.4	3 12	8 37.05	+27 20.2	1.581	2.368	18.0	18.9
373456	2000 EE ₆₂		2 3.9 274°21	11°4/25.9	17		466186	2012 KC ₂₈		2 3.9 185°17	1°8/ 5.3	18	
1 2	9 53.61	+50 2.7	2.158	2.935	13.7	21.2	1 2	9 30.08	+ 9 6.9	2.236	3.044	12.3	21.8
1 12	9 43.50	+51 16.3	2.072	2.902	12.3	21.0	1 12	9 24.87	+ 9 25.9	2.153	3.044	9.3	21.6
1 22	9 29.36	+52 11.6	2.010	2.868	11.5	20.9	1 22	9 17.83	+ 9 57.0	2.094	3.043	5.9	21.4
2 1	9 12.31	+52 36.6	1.972	2.834	11.6	20.8	2 1	9 9.58	+10 37.6	2.064	3.043	2.5	21.2
2 11	8 54.38	+52 23.0	1.961	2.798	12.8	20.9	2 11	9 0.98	+11 23.8	2.063	3.042	2.9	21.2
2 21	8 37.81	+51 29.6	1.973	2.762	14.7	20.9	2 21	8 52.91	+12 11.0	2.092	3.041	6.4	21.4
3 2	8 24.50	+50 1.4	2.007	2.725	16.8	21.0	3 2	8 46.21	+12 55.2	2.149	3.039	9.8	21.6
3 12	8 15.46	+48 7.7	2.060	2.687	18.9	21.1	3 12	8 41.49	+13 33.1	2.231	3.037	12.8	21.8
341727	2007 VF ₂₂₈		2 3.9 163°79	4°6/ 8.2	17		372510	2009 SF ₂₈₄		2 3.9 107°11	3°6/ 1.4	18	
1 2	9 29.06	- 1 46.4	2.967	3.712	11.1	21.5	1 2	9 32.98	+24 12.1	1.935	2.777	12.6	21.4
1 12	9 23.68	- 2 5.4	2.881										

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
340825	2006 <i>UL</i> ₁₄₈		2 3.9 197°14	5°1/30.2	17		37870	1998 <i>FJ</i> ₂₃		2 3.9 14°63	1°7/ 3.1	18	
1 2	9 34.19	+34 42.8	2.902	3.724	9.4	21.6	1 2	9 30.98	+17 44.8	1.183	2.045	17.5	17.8
1 12	9 27.67	+35 28.9	2.830	3.722	7.3	21.4	1 12	9 26.79	+18 24.0	1.124	2.048	12.8	17.6
1 22	9 19.36	+36 9.0	2.786	3.718	5.6	21.3	1 22	9 19.45	+19 14.1	1.087	2.052	7.4	17.3
2 1	9 9.93	+36 37.9	2.771	3.714	5.1	21.3	2 1	9 10.02	+20 7.3	1.073	2.057	2.1	17.0
2 11	9 0.22	+36 51.8	2.786	3.710	6.2	21.4	2 11	9 0.11	+20 54.6	1.085	2.063	5.1	17.2
2 21	8 51.13	+36 49.2	2.829	3.705	8.1	21.5	2 21	8 51.41	+21 28.9	1.121	2.070	10.5	17.5
3 2	8 43.44	+36 30.5	2.899	3.700	10.2	21.6	3 2	8 45.31	+21 46.7	1.180	2.078	15.4	17.8
3 12	8 37.73	+35 57.8	2.990	3.695	12.1	21.7	3 12	8 42.61	+21 47.7	1.257	2.086	19.5	18.1
496018	2008 <i>NU</i>		2 3.9 197°60	1°5/ 5.4	17 C		261295	2005 <i>UK</i> ₁₇₃		2 3.9 193°08	1°9/ 2.5	16	
1 2	9 30.89	+ 9 9.0	3.409	4.196	9.0	23.8	1 2	9 33.03	+20 25.5	2.202	3.033	11.7	21.5
1 12	9 24.90	+ 9 18.1	3.311	4.191	6.8	23.6	1 12	9 27.12	+21 4.4	2.123	3.032	8.5	21.3
1 22	9 17.63	+ 9 34.7	3.240	4.185	4.3	23.4	1 22	9 19.20	+21 47.3	2.070	3.030	5.0	21.1
2 1	9 9.53	+ 9 57.3	3.201	4.178	1.9	23.3	2 1	9 9.93	+22 29.3	2.046	3.028	2.0	20.9
2 11	9 1.15	+10 23.6	3.193	4.170	2.2	23.3	2 11	9 0.29	+23 5.2	2.053	3.025	3.9	21.0
2 21	8 53.11	+10 51.3	3.218	4.162	4.6	23.4	2 21	8 51.28	+23 31.3	2.088	3.021	7.5	21.2
3 2	8 45.96	+11 18.0	3.274	4.152	7.1	23.6	3 2	8 43.81	+23 45.6	2.151	3.018	10.8	21.4
3 12	8 40.17	+11 41.8	3.356	4.142	9.4	23.7	3 12	8 38.55	+23 48.0	2.237	3.013	13.7	21.6
81295	2000 <i>GU</i>		2 3.9 78°39	1°8/ 5.1	18		357371	2003 <i>SH</i> ₁₉₃		2 3.9 177°12	0°2/ 4.1	18	
1 2	9 31.54	+ 9 36.9	1.683	2.505	15.1	20.0	1 2	9 35.25	+14 47.6	1.840	2.665	13.9	21.0
1 12	9 26.31	+ 9 58.5	1.618	2.517	11.3	19.7	1 12	9 28.98	+14 58.1	1.762	2.666	10.3	20.8
1 22	9 18.80	+10 35.1	1.575	2.528	7.0	19.5	1 22	9 20.38	+15 17.2	1.709	2.667	6.1	20.6
2 1	9 9.82	+11 23.1	1.559	2.540	2.7	19.3	2 1	9 10.22	+15 41.0	1.684	2.668	1.5	20.3
2 11	9 0.51	+12 16.6	1.572	2.551	3.4	19.3	2 11	8 59.65	+16 5.1	1.689	2.668	3.2	20.4
2 21	8 52.05	+13 9.7	1.612	2.563	7.7	19.6	2 21	8 49.87	+16 25.4	1.722	2.668	7.7	20.7
3 2	8 45.46	+13 57.2	1.678	2.574	11.7	19.9	3 2	8 41.93	+16 38.9	1.782	2.668	11.7	20.9
3 12	8 41.39	+14 35.5	1.767	2.585	15.1	20.1	3 12	8 36.54	+16 44.4	1.865	2.666	15.1	21.1
454105	2013 <i>CT</i> ₈		2 3.9 207°07	1°8/ 4.9	18		110992	2001 <i>UJ</i> ₂₀₄		2 3.9 76°42	0°3/ 3.8	18	
1 2	9 35.45	+11 8.4	1.736	2.554	14.9	21.0	1 2	9 32.80	+15 52.1	1.758	2.592	14.0	20.4
1 12	9 29.29	+11 5.3	1.653	2.550	11.2	20.7	1 12	9 27.21	+16 12.8	1.691	2.600	10.3	20.2
1 22	9 20.63	+11 14.1	1.593	2.546	7.0	20.5	1 22	9 19.32	+16 41.9	1.648	2.608	6.0	19.9
2 1	9 10.27	+11 32.4	1.561	2.542	2.7	20.2	2 1	9 9.96	+17 14.8	1.632	2.616	1.3	19.6
2 11	8 59.38	+11 56.0	1.558	2.537	3.5	20.2	2 11	9 0.29	+17 46.2	1.645	2.624	3.4	19.8
2 21	8 49.24	+12 20.7	1.583	2.531	8.0	20.5	2 21	8 51.47	+18 11.7	1.686	2.632	7.8	20.1
3 2	8 41.00	+12 42.5	1.634	2.525	12.2	20.7	3 2	8 44.52	+18 28.5	1.753	2.640	11.8	20.3
3 12	8 35.44	+12 58.5	1.708	2.519	15.9	20.9	3 12	8 40.12	+18 35.3	1.842	2.648	15.1	20.6
269936	2000 <i>RK</i> ₂₇		2 3.9 110°14	2°9/ 6.3	18		36192	1999 <i>TC</i> ₈₉		2 3.9 290°05	5°1/31.5	18 R	
1 2	9 32.22	+ 5 25.6	2.326	3.113	12.6	21.1	1 2	9 34.07	+28 13.1	1.884	2.728	12.8	18.2
1 12	9 26.16	+ 5 32.6	2.262	3.137	9.7	21.0	1 12	9 28.51	+29 7.4	1.795	2.706	9.7	18.0
1 22	9 18.44	+ 5 52.9	2.222	3.160	6.4	20.8	1 22	9 20.32	+30 1.1	1.731	2.683	6.6	17.7
2 1	9 9.70	+ 6 24.6	2.211	3.182	3.6	20.7	2 1	9 10.25	+30 46.5	1.694	2.661	5.1	17.6
2 11	9 0.81	+ 7 4.3	2.230	3.204	3.4	20.7	2 11	8 59.49	+31 16.3	1.685	2.639	6.9	17.7
2 21	8 52.58	+ 7 47.8	2.280	3.225	6.1	20.9	2 21	8 49.39	+31 26.3	1.703	2.616	10.3	17.8
3 2	8 45.75	+ 8 31.3	2.358	3.245	9.1	21.1	3 2	8 41.20	+31 15.8	1.746	2.593	13.9	18.0
3 12	8 40.84	+ 9 11.2	2.460	3.265	11.8	21.3	3 12	8 35.80	+30 47.0	1.809	2.571	17.0	18.1
455479	2003 <i>UL</i> ₂₁₀		2 3.9 116°23	1°1/ 3.2	18		356299	2010 <i>FN</i> ₈₈		2 3.9 258°34	3°3/ 2.2	18	
1 2	9 34.71	+17 0.0	1.825	2.656	13.7	21.8	1 2	9 37.41	+23 0.8	1.642	2.484	14.5	21.2
1 12	9 28.48	+17 43.6	1.764	2.673	9.9	21.6	1 12	9 31.15	+23 35.3	1.555	2.468	10.7	20.9
1 22	9 19.99	+18 34.8	1.728	2.689	5.7	21.4	1 22	9 21.95	+24 13.0	1.492	2.452	6.5	20.6
2 1	9 10.08	+19 27.7	1.720	2.704	1.5	21.1	2 1	9 10.64	+24 46.8	1.456	2.435	3.3	20.4
2 11	8 59.91	+20 16.0	1.742	2.719	3.7	21.3	2 11	8 58.60	+25 9.5	1.448	2.417	5.6	20.5
2 21	8 50.64	+20 55.0	1.793	2.733	7.9	21.6	2 21	8 47.34	+25 16.7	1.467	2.400	10.1	20.7
3 2	8 43.26	+21 21.9	1.870	2.747	11.7	21.9	3 2	8 38.26	+25 7.0	1.512	2.382	14.4	20.9
3 12	8 38.41	+21 36.1	1.969	2.760	14.8	22.1	3 12	8 32.31	+24 42.1	1.576	2.363	18.1	21.1
463186	2012 <i>BQ</i> ₁₁₉		2 3.9 59°03	0°1/ 3.9	18		74064	1998 <i>KZ</i> ₄₁		2 3.9 161°97	2°4/ 2.3	18	
1 2	9 36.09	+16 10.4	1.454	2.293	16.1	21.8	1 2	9 35.55	+21 26.6	2.045	2.877	12.4	20.7
1 12	9 29.76	+16 15.6	1.403	2.314	11.8	21.6	1 12	9 29.04	+22 9.7	1.974	2.883	9.0	20.5
1 22	9 20.80	+16 29.2	1.375	2.335	6.8	21.3	1 22	9 20.34	+22 56.0	1.929	2.888	5.3	20.3
2 1	9 10.26	+16 46.4	1.373	2.357	1.5	21.1	2 1	9 10.21	+23 39.8	1.913	2.893	2.5	20.1
2 11	8 59.58	+17 2.1	1.399	2.378	3.7	21.3	2 11	8 59.74	+24 15.3	1.928	2.898	4.4	20.2
2 21	8 50.15	+17 12.2	1.452	2.400	8.6	21.6	2 21	8 50.05	+24 38.9	1.971	2.901	8.0	20.5
3 2	8 43.07	+17 14.6	1.530	2.422	12.9	21.9	3 2	8 42.12	+24 49.1	2.041	2.904	11.5	20.7
3 12	8 38.95	+17 8.6	1.629	2.444	16.4	22.2	3 12	8 36.62	+24 46.3	2.134	2.907	14.4	20.9
16941	1998 <i>GR</i> ₇		2 3.9 50°11	5°9/30.6	18		284351	2006 <i>RJ</i> ₉₈		2 3.9 194°94	2°7/ 1.5	18	
1 2	9 32.17	+26 46.0	1.554	2.409	14.4	16.3	1 2	9 29.15	+22 36.1	2.496	3.332	10.3	20.3
1 12	9 27.12	+28 33.7	1.511	2.428	10.6	16.1	1 12	9 24.16	+23 38.1	2.421	3.331	7.5	20.1
1 22	9 19.39	+30 20.5	1.493	2.447	7.2	15.9	1 22	9 17.43	+24 43.0	2.372	3.330	4.5	19.9
2 1	9 9.96	+31 55.3	1.502	2.467	5.9	15.9	2 1	9 9.54	+25 45.4	2.352	3.329	2.7	19.8
2 11	9 0.23	+33 8.8	1.538	2.487	8.0	16.1	2 11	9 1.31	+26 40.2	2.363	3.327	4.3	19.9
2 21	8 51.60	+33 56.0	1.600	2.507	11.3	16.3	2 21	8 53.58	+27 23.3	2.404	3.326	7.2	20.0
3 2	8 45.23	+34 16.9	1.686	2.528	14.5	16.6	3 2	8 47.15	+27 52.8	2.471	3.324	10.1	20.2
3 12	8 41.81	+34 14.7	1.790	2.548	17.3	16.8	3 12	8 42.62	+28 8.4	2.561	3.322	12.6	20.4
423828	2006 <i>MF</i> ₆		2 3.9 182°44	1°4/ 2.7	17		265410	2004 <i>TA</i> ₁₁₅		2 3.9 169°56	0°6/ 4.5	18	
1 2	9 28.89	+18 9.3	2.416	3.247	10.8	21.2	1 2	9 30.07	+10 53.2	2.56			

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
169949	2002 <i>TG</i> ₆₅		2 3.9 142°35	3°4/	1.3 18		136385	2004 <i>FR</i> ₁₄₈		2 3.9 48°39	7°7/	11.6 18	
1 2	9 33.14	+26 33.2	2.422	3.256	10.7	20.7	1 2	9 26.36	-10 33.6	2.312	3.024	14.7	19.3
1 12	9 27.02	+27 10.3	2.355	3.262	7.9	20.5	1 12	9 22.14	-10 42.9	2.231	3.030	12.7	19.2
1 22	9 19.05	+27 46.0	2.313	3.267	5.0	20.3	1 22	9 16.26	-10 28.4	2.170	3.035	10.5	19.1
2 1	9 9.91	+28 15.3	2.301	3.273	3.4	20.2	2 1	9 9.31	-9 48.9	2.133	3.041	8.6	18.9
2 11	9 0.53	+28 33.9	2.320	3.278	4.9	20.3	2 11	9 2.06	-8 46.3	2.122	3.048	7.7	18.9
2 21	8 51.85	+28 39.6	2.367	3.283	7.6	20.5	2 21	8 55.31	-7 25.0	2.139	3.054	8.4	19.0
3 2	8 44.68	+28 31.9	2.441	3.288	10.4	20.7	3 2	8 49.80	-5 51.5	2.182	3.060	10.2	19.1
3 12	8 39.60	+28 12.1	2.538	3.293	12.8	20.9	3 12	8 46.10	-4 13.1	2.250	3.067	12.4	19.2
238340	2004 <i>BC</i> ₇₉		2 3.9 4°45	0°7/	3.5 18		459412	2012 <i>MR</i> ₅		2 3.9 252°16	0°0/	3.9 17	
1 2	9 28.70	+16 24.4	1.809	2.649	13.4	20.5	1 2	9 29.90	+12 44.0	2.211	3.031	12.0	21.4
1 12	9 24.26	+16 57.6	1.736	2.649	9.8	20.3	1 12	9 24.99	+13 44.8	2.113	3.015	8.9	21.1
1 22	9 17.66	+17 39.4	1.688	2.650	5.6	20.0	1 22	9 18.09	+14 58.4	2.040	2.998	5.2	20.9
2 1	9 9.61	+18 25.0	1.667	2.651	1.3	19.7	2 1	9 9.78	+16 20.2	1.997	2.981	1.2	20.5
2 11	9 1.20	+19 8.5	1.674	2.653	3.5	19.9	2 11	9 0.90	+17 43.9	1.985	2.963	3.0	20.7
2 21	8 53.50	+19 45.1	1.709	2.655	7.8	20.1	2 21	8 52.42	+19 3.2	2.002	2.945	7.0	20.9
3 2	8 47.50	+20 11.3	1.770	2.657	11.7	20.4	3 2	8 45.26	+20 12.9	2.048	2.927	10.7	21.1
3 12	8 43.89	+20 25.8	1.852	2.661	15.0	20.6	3 12	8 40.15	+21 9.8	2.117	2.908	13.9	21.2
51991	2001 <i>SQ</i> ₃₃₉		2 3.9 359°22	7°2/	7.8 18		165085	2000 <i>GZ</i> ₃₈		2 3.9 155°94	8°4/	27.4 18	
1 2	9 28.85	-0 13.3	1.683	2.472	16.5	17.5	1 2	9 39.88	+45 25.6	2.591	3.390	11.1	20.2
1 12	9 24.47	-1 15.7	1.606	2.469	13.6	17.3	1 12	9 32.24	+46 30.4	2.542	3.395	9.5	20.1
1 22	9 17.83	-1 58.9	1.549	2.467	10.4	17.1	1 22	9 22.20	+47 21.3	2.517	3.400	8.5	20.0
2 1	9 9.67	-2 20.2	1.517	2.466	7.9	16.9	2 1	9 10.69	+47 51.3	2.519	3.404	8.5	20.1
2 11	9 1.05	-2 20.2	1.511	2.466	7.4	16.9	2 11	8 58.94	+47 56.3	2.548	3.408	9.4	20.1
2 21	8 53.11	-2 1.7	1.531	2.467	9.4	17.0	2 21	8 48.21	+47 36.0	2.603	3.412	10.9	20.2
3 2	8 46.89	-1 30.0	1.575	2.469	12.4	17.2	3 2	8 39.53	+46 52.8	2.680	3.415	12.6	20.4
3 12	8 43.13	-0 51.8	1.641	2.472	15.5	17.4	3 12	8 33.54	+45 51.8	2.776	3.418	14.1	20.5
179099	2001 <i>SH</i> ₂₀₂		2 3.9 191°33	1°3/	4.9 18		283899	2004 <i>CU</i> ₉₈		2 3.9 1°70	4°3/	7.7 18	
1 2	9 31.41	+10 38.9	2.023	2.838	13.2	21.1	1 2	9 25.11	+0 28.9	1.774	2.569	15.6	19.3
1 12	9 26.05	+11 2.2	1.941	2.838	9.9	20.8	1 12	9 21.68	+1 10.6	1.693	2.568	12.4	19.1
1 22	9 18.64	+11 37.8	1.883	2.837	6.1	20.6	1 22	9 16.20	+2 17.2	1.634	2.567	8.7	18.9
2 1	9 9.85	+12 22.5	1.854	2.835	2.1	20.4	2 1	9 9.33	+3 46.5	1.601	2.567	5.3	18.7
2 11	9 0.66	+13 11.4	1.853	2.833	2.9	20.4	2 11	9 2.03	+5 32.2	1.595	2.569	4.6	18.7
2 21	8 52.07	+13 59.7	1.883	2.831	7.0	20.6	2 21	8 55.33	+7 25.9	1.618	2.570	7.5	18.8
3 2	8 45.02	+14 43.0	1.939	2.828	10.7	20.9	3 2	8 50.18	+9 18.3	1.668	2.573	11.2	19.1
3 12	8 40.18	+15 18.3	2.019	2.826	13.9	21.1	3 12	8 47.27	+11 1.8	1.741	2.576	14.6	19.3
462007	2006 <i>WL</i> ₂₀₂		2 3.9 132°66	5°2/	7.3 18		297473	2000 <i>TX</i> ₂₁		2 3.9 35°96	7°6/	31.2 18	
1 2	9 33.13	+1 42.0	1.981	2.760	14.7	21.5	1 2	9 35.53	+29 36.8	1.130	1.998	17.7	19.6
1 12	9 27.23	+1 11.4	1.905	2.768	11.8	21.3	1 12	9 30.30	+30 55.9	1.093	2.014	13.4	19.4
1 22	9 19.28	+0 57.8	1.852	2.776	8.6	21.1	1 22	9 21.51	+32 9.3	1.076	2.031	9.3	19.2
2 1	9 10.01	+1 1.4	1.825	2.783	5.9	21.0	2 1	9 10.55	+33 4.2	1.084	2.049	7.6	19.2
2 11	9 0.38	+1 20.4	1.827	2.790	5.5	21.0	2 11	8 59.40	+33 31.0	1.115	2.067	9.8	19.4
2 21	8 51.44	+1 50.9	1.857	2.797	7.8	21.1	2 21	8 49.96	+33 27.3	1.170	2.087	13.6	19.6
3 2	8 44.10	+2 28.3	1.915	2.803	10.9	21.3	3 2	8 43.65	+32 56.4	1.245	2.107	17.3	19.9
3 12	8 39.01	+3 7.3	1.995	2.809	13.8	21.5	3 12	8 41.11	+32 4.3	1.338	2.128	20.5	20.2
106606	2000 <i>WR</i> ₁₁₅		2 3.9 110°44	2°2/	2.9 18		503328	2016 <i>BN</i> ₈		2 3.9 255°38	1°3/	3.3 17	
1 2	9 37.88	+19 28.0	1.327	2.175	16.9	18.9	1 2	9 35.64	+19 50.7	2.033	2.863	12.6	21.5
1 12	9 31.61	+20 4.8	1.267	2.184	12.3	18.6	1 12	9 29.26	+19 57.3	1.942	2.850	9.2	21.2
1 22	9 22.19	+20 48.8	1.229	2.192	7.2	18.4	1 22	9 20.60	+20 7.1	1.877	2.836	5.4	21.0
2 1	9 10.71	+21 32.2	1.217	2.200	2.5	18.1	2 1	9 10.36	+20 16.1	1.839	2.823	1.6	20.7
2 11	8 58.81	+22 6.9	1.232	2.208	5.2	18.3	2 11	8 59.63	+20 20.2	1.832	2.809	3.6	20.8
2 21	8 48.17	+22 27.5	1.273	2.215	10.3	18.6	2 21	8 49.56	+20 16.6	1.855	2.794	7.7	21.0
3 2	8 40.18	+22 32.3	1.338	2.222	14.9	18.9	3 2	8 41.18	+20 4.1	1.904	2.780	11.6	21.2
3 12	8 35.63	+22 22.2	1.423	2.229	18.7	19.2	3 12	8 35.26	+19 42.8	1.976	2.765	14.8	21.4
279625	2011 <i>EQ</i> ₄₅		2 3.9 222°69	1°5/	2.9 18		462699	2009 <i>VA</i> ₇₆		2 3.9 60°68	0°0/	3.9 18	
1 2	9 30.92	+18 33.4	2.028	2.864	12.3	21.1	1 2	9 36.56	+17 7.8	1.734	2.565	14.3	20.5
1 12	9 25.73	+19 12.7	1.952	2.863	9.0	20.8	1 12	9 29.81	+16 56.8	1.677	2.584	10.5	20.3
1 22	9 18.47	+19 58.1	1.901	2.862	5.2	20.6	1 22	9 20.77	+16 51.3	1.643	2.603	6.1	20.1
2 1	9 9.83	+20 44.7	1.878	2.861	1.7	20.4	2 1	9 10.35	+16 47.9	1.638	2.622	1.4	19.9
2 11	9 0.80	+21 26.9	1.885	2.860	3.7	20.5	2 11	8 59.81	+16 43.1	1.662	2.641	3.3	20.0
2 21	8 52.44	+22 0.3	1.921	2.859	7.6	20.7	2 21	8 50.34	+16 34.6	1.714	2.661	7.7	20.3
3 2	8 45.67	+22 22.2	1.982	2.858	11.2	21.0	3 2	8 42.92	+16 21.2	1.793	2.680	11.6	20.6
3 12	8 41.17	+22 32.1	2.067	2.857	14.2	21.2	3 12	8 38.14	+16 2.4	1.894	2.699	14.8	20.9
453071	2007 <i>UE</i> ₆₈		2 3.9 93°51	0°2/	4.1 18		102899	1999 <i>XN</i> ₁₁		2 3.9 106°49	4°6/	1.3 18	
1 2	9 34.86	+13 48.8	1.659	2.488	15.0	21.7	1 2	9 36.69	+26 19.6	1.680	2.525	14.1	19.1
1 12	9 28.72	+14 16.1	1.601	2.507	11.0	21.5	1 12	9 30.30	+27 12.6	1.622	2.534	10.4	18.9
1 22	9 20.20	+14 54.2	1.567	2.526	6.4	21.3	1 22	9 21.24	+28 4.7	1.588	2.544	6.7	18.7
2 1	9 10.22	+15 38.0	1.560	2.544	1.6	21.0	2 1	9 10.49	+28 47.8	1.581	2.553	4.6	18.6
2 11	9 0.00	+16 21.7	1.583	2.562	3.4	21.2	2 11	8 59.44	+29 15.1	1.602	2.562	6.5	18.8
2 21	8 50.78	+16 59.8	1.633	2.580	7.9	21.5	2 21	8 49.46	+29 23.3	1.650	2.571	10.1	19.0
3 2	8 43.59	+17 28.9	1.710	2.598	12.0	21.8	3 2	8 41.73	+29 12.7	1.723	2.579	13.6	19.2
3 12	8 39.07	+17 47.5	1.808	2.615	15.3	22.0	3 12	8 36.94	+28 45.9	1.817	2.588	16.6	19.4
50561	2000 <i>EB</i> ₃₀		2 3.9 107°33	0°5/	3.6 18		95007	2002 <i>AR</i>		2 3.9 53°09	1°8/	3.0 18	
1 2	9 32.55	+13 34.2	1.917	2.741	13.4	19.0	1 2	9 34.54	+17 22.7	1.209	2.064		

EPHEMERIDES

2 3.9

2 3.9

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
28981	2001 LY ₃		2 3.9 113°07'	1.4/ 2.9	18		128252	2003 SG ₂₄₉		2 3.9 103°06'	0.3/ 4.3	18	
1 2	9 34.54	+18 19.1	2.257	3.081	11.7	19.2	1 2	9 30.16	+13 21.2	2.131	2.954	12.3	20.1
1 12	9 27.99	+19 7.0	2.200	3.105	8.4	19.1	1 12	9 25.01	+13 50.5	2.059	2.962	9.1	19.9
1 22	9 19.59	+19 59.6	2.170	3.130	4.8	18.9	1 22	9 17.99	+14 29.2	2.012	2.970	5.3	19.7
2 1	9 10.09	+20 51.8	2.170	3.153	1.6	18.7	2 1	9 9.77	+15 13.6	1.994	2.977	1.4	19.5
2 11	9 0.42	+21 38.5	2.201	3.175	3.4	18.9	2 11	9 1.26	+15 58.8	2.005	2.985	2.8	19.6
2 21	8 51.51	+22 15.9	2.262	3.197	6.9	19.1	2 21	8 53.39	+16 40.6	2.045	2.992	6.6	19.8
3 2	8 44.19	+22 42.1	2.351	3.218	10.0	19.3	3 2	8 46.99	+17 15.4	2.113	2.999	10.1	20.1
3 12	8 38.98	+22 56.7	2.464	3.238	12.7	19.6	3 12	8 42.65	+17 41.2	2.204	3.006	13.1	20.3
497591	2006 HS ₁₂₃		2 3.9 220°07'	1.0/ 3.1	17		192746	1999 TT ₂₃₇		2 3.9 254°09'	5.3/ 8.5	17	
1 2	9 30.32	+17 49.0	2.378	3.206	11.0	22.3	1 2	9 29.14	- 2 33.4	2.366	3.120	13.3	21.1
1 12	9 25.07	+18 25.2	2.293	3.200	8.0	22.1	1 12	9 24.31	- 2 29.5	2.258	3.101	11.0	20.9
1 22	9 18.02	+19 7.2	2.235	3.195	4.6	21.9	1 22	9 17.67	- 2 6.2	2.172	3.081	8.4	20.7
2 1	9 9.75	+19 51.0	2.206	3.189	1.3	21.6	2 1	9 9.73	- 1 23.2	2.112	3.060	6.1	20.5
2 11	9 1.12	+20 31.8	2.207	3.183	3.2	21.7	2 11	9 1.27	- 0 22.6	2.081	3.039	5.4	20.4
2 21	8 53.00	+21 5.9	2.238	3.176	6.7	22.0	2 21	8 53.14	+ 0 51.3	2.080	3.017	7.2	20.5
3 2	8 46.21	+21 30.6	2.296	3.169	10.0	22.2	3 2	8 46.17	+ 2 12.6	2.107	2.995	10.0	20.6
3 12	8 41.37	+21 45.0	2.378	3.162	12.8	22.3	3 12	8 41.05	+ 3 35.1	2.158	2.972	12.9	20.8
522609	2016 FC ₂₃		2 3.9 186°11'	2.0/ 2.5	17		188639	2005 QP ₁₁₄		2 3.9 35°79'	4.2/ 7.1	18	
1 2	9 31.93	+20 44.5	2.211	3.044	11.5	21.7	1 2	9 28.93	+ 2 48.8	1.713	2.514	15.8	20.4
1 12	9 26.34	+21 24.5	2.134	3.044	8.4	21.5	1 12	9 24.51	+ 3 4.6	1.637	2.517	12.4	20.2
1 22	9 18.79	+22 8.4	2.084	3.044	4.9	21.3	1 22	9 17.88	+ 3 42.0	1.584	2.521	8.6	20.0
2 1	9 9.94	+22 51.1	2.062	3.043	2.1	21.1	2 1	9 9.78	+ 4 38.9	1.556	2.525	5.1	19.8
2 11	9 0.74	+23 27.4	2.071	3.042	3.9	21.3	2 11	9 1.25	+ 5 50.5	1.555	2.529	4.6	19.8
2 21	8 52.17	+23 53.8	2.108	3.041	7.4	21.5	2 21	8 53.42	+ 7 9.6	1.582	2.533	7.8	20.0
3 2	8 45.11	+24 8.4	2.173	3.040	10.7	21.7	3 2	8 47.28	+ 8 28.8	1.636	2.538	11.6	20.2
3 12	8 40.21	+24 10.9	2.260	3.038	13.5	21.9	3 12	8 43.56	+ 9 41.8	1.712	2.542	15.0	20.4
1274	Delportia		2 3.9 293°65'	0.8/ 3.6	18		188094	2001 XK ₂₁₉		2 3.9 164°73'	1.9/ 2.6	18	
1 2	9 35.30	+17 21.0	1.345	2.193	16.7	15.1	1 2	9 33.09	+19 56.8	2.076	2.909	12.2	20.7
1 12	9 29.98	+17 33.2	1.264	2.180	12.4	14.8	1 12	9 27.28	+20 38.4	2.002	2.912	8.9	20.5
1 22	9 21.47	+17 54.6	1.204	2.167	7.3	14.4	1 22	9 19.38	+21 24.8	1.955	2.915	5.2	20.3
2 1	9 10.65	+18 19.8	1.170	2.154	1.8	14.0	2 1	9 10.12	+22 10.4	1.936	2.918	2.0	20.1
2 11	8 59.03	+18 42.1	1.162	2.141	4.5	14.2	2 11	9 0.50	+22 49.9	1.947	2.920	4.0	20.2
2 21	8 48.31	+18 56.0	1.180	2.129	10.1	14.5	2 21	8 51.57	+23 19.2	1.987	2.922	7.7	20.5
3 2	8 40.03	+18 58.5	1.222	2.116	15.2	14.7	3 2	8 44.29	+23 36.3	2.054	2.923	11.1	20.7
3 12	8 35.19	+18 48.9	1.283	2.104	19.6	15.0	3 12	8 39.29	+23 40.9	2.143	2.925	14.1	20.9
218619	2005 QG ₈₅		2 3.9 152°91'	4.4/ 31.9	18		404280	2013 EL ₉₁		2 3.9 344°59'	3.5/ 5.6	18	
1 2	9 37.07	+28 45.4	2.183	3.015	11.7	20.4	1 2	9 31.17	+ 8 37.5	1.265	2.103	18.2	20.6
1 12	9 30.10	+29 26.5	2.117	3.022	8.8	20.2	1 12	9 26.88	+ 8 22.3	1.192	2.096	14.0	20.3
1 22	9 20.95	+30 4.3	2.078	3.028	5.9	20.1	1 22	9 19.61	+ 8 25.7	1.138	2.091	9.1	20.0
2 1	9 10.43	+30 32.6	2.068	3.034	4.4	20.0	2 1	9 10.23	+ 8 46.0	1.108	2.086	4.4	19.7
2 11	8 59.66	+30 46.6	2.087	3.040	5.9	20.1	2 11	9 0.19	+ 9 18.7	1.104	2.083	4.7	19.7
2 21	8 49.74	+30 44.0	2.135	3.045	8.7	20.3	2 21	8 51.08	+ 9 57.5	1.124	2.079	9.6	20.0
3 2	8 41.64	+30 25.5	2.209	3.049	11.6	20.5	3 2	8 44.30	+10 35.7	1.168	2.077	14.5	20.2
3 12	8 36.00	+29 53.4	2.306	3.053	14.2	20.6	3 12	8 40.77	+11 7.8	1.231	2.075	18.8	20.5
172828	2005 AQ ₉		2 3.9 15°87'	4.1/ 6.1	18		432917	2011 RX ₁₅		2 3.9 269°02'	1.8/ 5.3	17	
1 2	9 29.88	+ 7 3.3	1.194	2.032	19.0	19.6	1 2	9 30.51	+10 17.6	2.431	3.238	11.5	21.4
1 12	9 25.89	+ 6 50.2	1.132	2.036	14.7	19.3	1 12	9 25.20	+10 10.2	2.333	3.223	8.7	21.2
1 22	9 18.94	+ 6 58.7	1.090	2.041	9.7	19.1	1 22	9 18.12	+10 11.8	2.259	3.208	5.5	20.9
2 1	9 10.02	+ 7 27.2	1.071	2.047	5.1	18.8	2 1	9 9.83	+10 20.8	2.214	3.193	2.4	20.7
2 11	9 0.62	+ 8 10.1	1.076	2.054	5.0	18.8	2 11	9 1.13	+10 34.9	2.200	3.178	2.8	20.7
2 21	8 52.30	+ 9 0.1	1.106	2.062	9.6	19.1	2 21	8 52.85	+10 51.2	2.215	3.163	6.1	20.9
3 2	8 46.39	+ 9 49.5	1.159	2.072	14.3	19.4	3 2	8 45.81	+11 7.0	2.259	3.147	9.4	21.1
3 12	8 43.69	+10 32.1	1.232	2.082	18.5	19.7	3 12	8 40.62	+11 19.8	2.326	3.132	12.4	21.3
155072	2005 SS ₇₃		2 3.9 115°51'	0.3/ 3.8	18		417765	2007 DK ₉₂		2 3.9 14°95'	6.0/ 1.6	18	
1 2	9 31.86	+15 1.2	1.945	2.774	13.1	20.7	1 2	9 40.81	+31 33.0	1.546	2.390	15.1	20.0
1 12	9 26.40	+15 38.4	1.877	2.783	9.6	20.5	1 12	9 33.54	+31 47.0	1.484	2.392	11.5	19.8
1 22	9 18.85	+16 24.6	1.833	2.792	5.5	20.3	1 22	9 23.21	+31 52.5	1.445	2.395	8.0	19.6
2 1	9 9.96	+17 15.2	1.817	2.801	1.3	20.0	2 1	9 11.01	+31 41.8	1.433	2.399	6.0	19.5
2 11	9 0.76	+18 4.4	1.830	2.809	3.2	20.2	2 11	8 58.58	+31 10.1	1.447	2.403	7.6	19.6
2 21	8 52.28	+18 47.4	1.873	2.817	7.3	20.4	2 21	8 47.55	+30 17.3	1.489	2.407	11.1	19.8
3 2	8 45.48	+19 20.8	1.942	2.825	11.0	20.7	3 2	8 39.22	+29 7.2	1.554	2.412	14.7	20.0
3 12	8 40.98	+19 43.1	2.034	2.833	14.1	20.9	3 12	8 34.25	+27 45.0	1.640	2.418	17.9	20.2
291179	2006 AJ ₄₄		2 3.9 75°20'	1.4/ 3.1	18		96617	1999 CC ₃₂		2 3.9 272°21'	5.8/ 31.4	18	
1 2	9 33.06	+19 6.8	1.901	2.737	13.0	20.8	1 2	9 38.61	+28 34.7	1.699	2.540	14.1	18.3
1 12	9 27.34	+19 28.8	1.832	2.743	9.5	20.6	1 12	9 32.33	+29 38.1	1.605	2.513	10.7	18.0
1 22	9 19.42	+19 55.6	1.788	2.749	5.5	20.4	1 22	9 22.88	+30 41.7	1.534	2.486	7.4	17.7
2 1	9 10.11	+20 22.6	1.772	2.755	1.7	20.2	2 1	9 11.04	+31 36.0	1.491	2.457	5.8	17.6
2 11	9 0.49	+20 44.7	1.785	2.761	3.7	20.3	2 11	8 58.21	+32 11.6	1.476	2.428	7.9	17.6
2 21	8 51.68	+20 58.6	1.826	2.767	7.8	20.6	2 21	8 46.03	+32 23.1	1.488	2.398	11.7	17.8
3 2	8 44.65	+21 2.4	1.894	2.773	11.4	20.8	3 2	8 36.07	+32 9.9	1.524	2.368	15.7	17.9
3 12	8 40.05	+20 55.9	1.984	2.779	14.6	21.0	3 12	8 29.41	+31 35.3	1.579	2.337	19.2	18.1
144510	2004 EM ₇₅		2 3.9 251°11'	0.1/ 3.9	17		275773	2001 PU ₃₈		2 3.9 145°48'	5.2/ 29.9	16	
1 2	9 28.55	+14 40.0	2.541	3.362	10.6	21.0	1 2	9 35.14	+				