

EPHEMERIDES

2 11.9

2 12.0

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
81758	2000 JZ ₅₉		2 11.9 343°90	1°5/11.2 18			503043	2015 FD ₁₅₂		2 12.0 206°91	1°6/10.4 17		
1 12	10 1.94	+16 16.9	1.250	2.126	15.8	18.6	1 12	10 0.23	+18 19.7	2.656	3.506	9.3	21.7
1 22	9 57.23	+16 32.7	1.180	2.114	11.3	18.3	1 22	9 54.75	+18 54.6	2.580	3.503	6.5	21.5
2 1	9 49.62	+16 56.6	1.133	2.104	6.1	18.0	2 1	9 47.81	+19 32.3	2.532	3.500	3.5	21.3
2 11	9 40.16	+17 22.0	1.109	2.095	1.5	17.6	2 11	9 40.01	+20 8.7	2.514	3.497	1.7	21.1
2 21	9 30.35	+17 41.7	1.111	2.087	5.9	17.9	2 21	9 32.08	+20 39.8	2.526	3.494	3.9	21.3
3 2	9 21.82	+17 50.2	1.137	2.081	11.4	18.2	3 2	9 24.76	+21 2.6	2.568	3.490	7.0	21.5
3 12	9 15.91	+17 44.6	1.185	2.075	16.2	18.4	3 12	9 18.75	+21 15.2	2.637	3.487	9.7	21.7
3 22	9 13.33	+17 24.7	1.252	2.071	20.3	18.7	3 22	9 14.48	+21 17.4	2.728	3.483	12.1	21.8
452337	2001 RB ₂₂		2 11.9 124°94	1°1/12.9 15			152885	2000 CG ₁₅		2 12.0 122°46	0°1/11.9 18		
1 12	10 6.23	+7 59.7	1.867	2.696	13.5	22.9	1 12	10 5.66	+10 25.2	1.620	2.465	14.5	20.2
1 22	9 59.25	+8 39.9	1.808	2.717	9.8	22.7	1 22	9 59.15	+11 26.7	1.563	2.482	10.3	20.0
2 1	9 50.28	+9 33.4	1.776	2.738	5.5	22.5	2 1	9 50.35	+12 41.7	1.531	2.498	5.5	19.8
2 11	9 40.21	+10 34.9	1.772	2.757	1.4	22.2	2 11	9 40.26	+14 2.9	1.527	2.513	0.5	19.4
2 21	9 30.11	+11 38.1	1.798	2.775	3.8	22.4	2 21	9 30.09	+15 21.7	1.552	2.528	4.5	19.8
3 2	9 21.07	+12 36.9	1.854	2.793	8.0	22.7	3 2	9 21.09	+16 30.8	1.605	2.542	9.2	20.1
3 12	9 13.97	+13 26.6	1.936	2.809	11.7	23.0	3 12	9 14.27	+17 25.3	1.684	2.556	13.2	20.3
3 22	9 9.31	+14 4.8	2.041	2.825	14.7	23.2	3 22	9 10.17	+18 3.4	1.784	2.569	16.5	20.6
381941	2010 CM ₂₀₃		2 11.9 292°22	1°7/10.7 17			292125	2006 RW ₇₁		2 12.0 142°17	2°3/14.4 17		
1 12	10 2.55	+18 21.1	2.173	3.026	10.9	20.6	1 12	9 58.32	+3 34.5	2.557	3.368	10.9	21.4
1 22	9 56.69	+18 41.1	2.091	3.015	7.7	20.3	1 22	9 53.40	+4 1.0	2.479	3.373	8.2	21.2
2 1	9 48.96	+19 4.1	2.036	3.004	4.2	20.1	2 1	9 47.09	+4 40.5	2.427	3.378	5.2	21.0
2 11	9 40.10	+19 25.5	2.009	2.993	1.7	19.9	2 11	9 39.96	+5 30.5	2.404	3.382	2.6	20.8
2 21	9 31.03	+19 41.1	2.012	2.983	4.5	20.1	2 21	9 32.70	+6 26.9	2.411	3.387	3.2	20.9
3 2	9 22.73	+19 47.8	2.044	2.972	8.1	20.3	3 2	9 26.04	+7 25.3	2.448	3.391	6.1	21.1
3 12	9 16.05	+19 43.9	2.102	2.961	11.5	20.5	3 12	9 20.61	+8 21.1	2.513	3.395	9.0	21.3
3 22	9 11.55	+19 29.3	2.182	2.951	14.3	20.7	3 22	9 16.84	+9 11.0	2.603	3.398	11.6	21.4
384254	2009 EY ₁₄		2 11.9 40°35	0°6/11.6 18			22308	1990 UO ₄		2 12.0 182°23	3°7/15.7 18		
1 12	10 0.50	+13 50.7	1.907	2.761	12.2	20.9	1 12	9 59.85	-0 41.4	2.375	3.168	12.2	19.0
1 22	9 55.23	+14 21.1	1.850	2.773	8.6	20.7	1 22	9 54.60	-0 20.6	2.291	3.169	9.5	18.8
2 1	9 48.13	+14 59.1	1.818	2.786	4.6	20.5	2 1	9 47.79	+0 17.4	2.231	3.169	6.5	18.6
2 11	9 40.02	+15 39.5	1.813	2.800	0.6	20.2	2 11	9 40.03	+1 10.5	2.200	3.168	4.1	18.5
2 21	9 31.87	+16 17.1	1.838	2.814	4.0	20.5	2 21	9 32.08	+2 14.7	2.198	3.168	4.2	18.5
3 2	9 24.66	+16 47.5	1.891	2.828	8.0	20.8	3 2	9 24.75	+3 25.0	2.226	3.167	6.8	18.6
3 12	9 19.20	+17 7.9	1.969	2.842	11.5	21.0	3 12	9 18.77	+4 35.5	2.282	3.165	9.7	18.8
3 22	9 15.97	+17 17.0	2.068	2.857	14.4	21.3	3 22	9 14.62	+5 41.5	2.362	3.163	12.4	19.0
309797	2009 BN ₃₈		2 11.9 267°51	1°3/11.1 18			261514	2005 WJ ₆₁		2 12.0 26°06	5°9/8.0 18		
1 12	10 3.93	+14 43.6	1.636	2.493	13.7	20.9	1 12	10 5.67	+27 37.1	1.640	2.506	13.2	20.0
1 22	9 58.26	+15 28.1	1.551	2.477	9.8	20.7	1 22	9 59.34	+28 32.5	1.586	2.510	9.7	19.8
2 1	9 50.07	+16 22.9	1.492	2.461	5.2	20.4	2 1	9 50.52	+29 22.8	1.556	2.513	6.8	19.7
2 11	9 40.22	+17 21.3	1.459	2.445	1.3	20.0	2 11	9 40.28	+29 59.2	1.553	2.517	6.1	19.6
2 21	9 29.92	+18 15.9	1.455	2.428	5.2	20.3	2 21	9 29.97	+30 15.4	1.576	2.521	8.4	19.8
3 2	9 20.51	+18 59.9	1.478	2.412	10.1	20.5	3 2	9 20.98	+30 9.1	1.626	2.525	11.8	20.0
3 12	9 13.21	+19 29.1	1.525	2.395	14.4	20.7	3 12	9 14.37	+29 41.4	1.698	2.530	15.0	20.2
3 22	9 8.75	+19 42.4	1.592	2.378	18.1	20.9	3 22	9 10.70	+28 56.1	1.789	2.535	17.8	20.4
459696	2013 NW ₂₀		2 11.9 15°46	6°4/14.6 18			274457	2008 SA ₆₂		2 12.0 209°57	2°9/14.8 17		
1 12	10 9.50	+1 26.3	1.581	2.391	16.5	19.9	1 12	9 59.61	+1 44.5	2.244	3.052	12.3	21.9
1 22	10 2.03	-0 0.2	1.508	2.392	13.0	19.6	1 22	9 54.54	+2 18.4	2.158	3.048	9.4	21.7
2 1	9 52.00	+1 11.2	1.458	2.394	9.4	19.4	2 1	9 47.80	+3 9.4	2.096	3.044	6.1	21.5
2 11	9 40.40	-2 4.1	1.434	2.397	6.7	19.3	2 11	9 40.03	+4 14.7	2.063	3.039	3.3	21.3
2 21	9 28.53	-2 38.4	1.439	2.400	7.2	19.3	2 21	9 32.03	+5 29.4	2.060	3.034	3.8	21.3
3 2	9 17.79	-2 56.0	1.471	2.403	10.3	19.5	3 2	9 24.66	+6 47.5	2.086	3.029	6.9	21.5
3 12	9 9.36	-3 1.5	1.527	2.406	13.9	19.7	3 12	9 18.69	+8 3.1	2.140	3.023	10.2	21.7
3 22	9 3.88	-3 0.4	1.605	2.410	17.1	19.9	3 22	9 14.66	+9 11.4	2.217	3.017	13.2	21.9
27372	Ujifusa		2 11.9 257°26	0°0/12.0 18			30911	1993 FY ₇₅		2 12.0 211°20	2°8/14.1 18		
1 12	10 0.65	+12 11.1	2.294	3.135	10.9	19.7	1 12	10 4.26	+4 13.2	1.849	2.669	14.0	20.2
1 22	9 55.27	+12 37.5	2.207	3.125	7.8	19.4	1 22	9 58.16	+4 31.5	1.763	2.663	10.6	19.9
2 1	9 48.19	+13 12.1	2.147	3.113	4.2	19.2	2 1	9 49.89	+5 7.2	1.702	2.656	6.6	19.7
2 11	9 40.04	+13 51.1	2.115	3.102	0.4	18.9	2 11	9 40.24	+5 57.1	1.668	2.648	3.2	19.4
2 21	9 31.65	+14 30.1	2.114	3.090	3.5	19.1	2 21	9 30.24	+6 56.3	1.664	2.640	4.3	19.5
3 2	9 23.91	+15 4.9	2.142	3.079	7.2	19.3	3 2	9 21.04	+7 58.2	1.688	2.631	8.3	19.7
3 12	9 17.60	+15 32.2	2.197	3.067	10.6	19.5	3 12	9 13.67	+8 56.7	1.738	2.621	12.3	19.9
3 22	9 13.26	+15 50.1	2.274	3.055	13.5	19.7	3 22	9 8.77	+9 47.0	1.811	2.610	15.7	20.1
467517	2007 FQ ₁₂		2 11.9 329°17	3°1/13.7 17			437498	2013 YA ₇₂		2 12.0 19°27	6°4/7.1 18		
1 12	10 1.54	+6 33.1	1.497	2.341	15.5	20.7	1 12	10 2.62	+29 23.5	1.733	2.601	12.5	20.0
1 22	9 56.62	+6 14.5	1.414	2.326	11.7	20.4	1 22	9 57.09	+30 28.4	1.685	2.607	9.4	19.8
2 1	9 49.20	+6 11.3	1.353	2.312	7.3	20.1	2 1	9 49.26	+31 26.8	1.662	2.614	6.9	19.7
2 11	9 40.15	+6 21.8	1.317	2.298	3.5	19.8	2 11	9 40.16	+32 10.0	1.665	2.622	6.6	19.7
2 21	9 30.67	+6 42.2	1.308	2.285	5.0	19.9	2 21	9 31.03	+32 32.3	1.695	2.630	8.7	19.8
3 2	9 22.12	+7 7.4	1.325	2.273	9.5	20.1	3 2	9 23.12	+32 31.2	1.750	2.639	11.7	20.0
3 12	9 15.70	+7 31.8	1.365	2.262	14.0	20.3	3 12	9 17.41	+32 8.1	1.827	2.648	14.6	20.2
3 22	9 12.15	+7 50.9	1.426	2.251	17.9	20.6	3 22	9 14.41	+31 26.4	1.923	2.658	17.1	20.4
467765	2009 VU ₆		2 11.9 20°28	2°6/13.8 18			409889	2006 SV ₃₉₃		2 12.0 144°80	1°9/13.8 18		
1 12	10 0.72	+6 5.3	1.605	2.446	14.8	21.4	1 12	10 2.69	+5 15.2	2.215	3.032	12.1	22.0
1 22	9 55.71	+6 11.2	1.539										

EPHEMERIDES

2 12.0

2 12.0

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
274285	2008 <i>QJ</i> ₈		2 12.0 138°82	0°8/11.4	18		210105	2006 <i>QW</i> ₁₂₃		2 12.0 210°86	3°4/14.6	18	
1 12	10 3.21	+15 0.5	2.103	2.950	11.5	21.2	1 12	10 3.63	+3 3.2	2.503	3.303	11.4	20.1
1 22	9 57.09	+15 24.3	2.034	2.955	8.1	21.0	1 22	9 57.20	+2 32.2	2.416	3.300	8.8	19.9
2 1	9 49.15	+15 53.9	1.991	2.959	4.3	20.7	2 1	9 49.17	+2 12.4	2.355	3.297	5.9	19.7
2 11	9 40.16	+16 24.7	1.978	2.964	0.8	20.5	2 11	9 40.19	+2 3.0	2.323	3.294	3.7	19.6
2 21	9 31.06	+16 52.3	1.994	2.968	4.0	20.7	2 21	9 31.01	+2 2.6	2.322	3.291	4.1	19.6
3 2	9 22.82	+17 12.8	2.039	2.972	7.8	21.0	3 2	9 22.46	+2 8.8	2.351	3.287	6.7	19.7
3 12	9 16.27	+17 24.1	2.110	2.976	11.2	21.2	3 12	9 15.28	+2 18.3	2.408	3.283	9.6	19.9
3 22	9 11.90	+17 25.3	2.204	2.980	14.0	21.4	3 22	9 9.96	+2 28.2	2.489	3.279	12.2	20.1
207991	1998 <i>EJ</i> ₁₄		2 12.0 341°06	3°4/10.1	18		258510	2002 <i>AA</i> ₁₂₆		2 12.0 14°02	2°3/10.3	18	
1 12	10 2.58	+19 6.0	1.204	2.084	16.0	19.7	1 12	9 55.30	+13 25.7	1.115	1.999	16.6	18.5
1 22	9 57.83	+19 50.2	1.139	2.074	11.4	19.4	1 22	9 52.52	+15 4.3	1.068	2.007	11.5	18.3
2 1	9 50.01	+20 41.0	1.095	2.066	6.3	19.1	2 1	9 47.03	+16 58.9	1.043	2.017	6.0	18.0
2 11	9 40.26	+21 28.7	1.075	2.058	3.5	18.9	2 11	9 39.98	+18 56.7	1.043	2.028	2.3	17.8
2 21	9 30.14	+22 4.3	1.081	2.051	7.3	19.1	2 21	9 32.81	+20 43.9	1.068	2.042	6.7	18.1
3 2	9 21.40	+22 21.3	1.110	2.045	12.5	19.3	3 2	9 27.00	+22 9.5	1.117	2.057	11.9	18.4
3 12	9 15.43	+22 17.6	1.161	2.040	17.3	19.6	3 12	9 23.72	+23 8.1	1.187	2.073	16.4	18.7
3 22	9 12.96	+21 54.4	1.228	2.037	21.2	19.8	3 22	9 23.51	+23 39.3	1.275	2.091	20.1	19.0
458189	2010 <i>OC</i> ₂₅		2 12.0 102°23	6°7/ 6.9	18		54871	2001 <i>OH</i> ₄₄		2 12.0 2°10	1°9/13.5	18	
1 12	10 9.05	+31 18.7	1.858	2.713	12.4	22.0	1 12	10 1.51	+7 39.6	2.190	3.019	11.8	18.4
1 22	10 1.43	+32 28.2	1.819	2.732	9.5	21.8	1 22	9 55.86	+7 34.6	2.112	3.019	8.7	18.2
2 1	9 51.50	+33 28.4	1.806	2.751	7.2	21.7	2 1	9 48.50	+7 40.0	2.060	3.019	5.2	18.0
2 11	9 40.37	+34 10.8	1.821	2.769	7.0	21.7	2 11	9 40.13	+7 53.6	2.036	3.019	2.1	17.8
2 21	9 29.35	+34 30.2	1.863	2.787	8.8	21.9	2 21	9 31.60	+8 12.3	2.042	3.019	3.5	17.9
3 2	9 19.72	+34 25.3	1.932	2.805	11.6	22.1	3 2	9 23.81	+8 32.4	2.077	3.019	7.0	18.1
3 12	9 12.44	+33 58.6	2.023	2.822	14.2	22.3	3 12	9 17.53	+8 50.5	2.138	3.019	10.4	18.3
3 22	9 7.99	+33 14.3	2.133	2.839	16.4	22.5	3 22	9 13.29	+9 4.0	2.223	3.020	13.3	18.5
310269	2011 <i>UV</i> ₄₈		2 12.0 71°37	2°0/13.3	18		233472	Moorcroft		2 12.0 116°35	0°8/11.3	18	
1 12	10 3.85	+7 9.6	1.449	2.294	15.9	21.1	1 12	10 1.15	+14 35.3	2.193	3.041	11.1	21.2
1 22	9 58.04	+7 30.1	1.392	2.307	11.6	20.8	1 22	9 55.61	+15 11.0	2.125	3.046	7.8	21.0
2 1	9 49.82	+8 7.7	1.358	2.320	6.8	20.6	2 1	9 48.35	+15 53.2	2.083	3.052	4.1	20.8
2 11	9 40.23	+8 57.5	1.349	2.333	2.3	20.4	2 11	9 40.12	+16 37.0	2.071	3.057	0.8	20.5
2 21	9 30.56	+9 52.7	1.368	2.347	4.5	20.5	2 21	9 31.77	+17 17.6	2.088	3.062	3.9	20.8
3 2	9 22.13	+10 45.9	1.414	2.360	9.2	20.8	3 2	9 24.21	+17 50.8	2.135	3.067	7.5	21.0
3 12	9 16.00	+11 31.3	1.484	2.374	13.5	21.1	3 12	9 18.21	+18 14.0	2.207	3.072	10.8	21.2
3 22	9 12.71	+12 5.1	1.574	2.387	17.1	21.4	3 22	9 14.25	+18 26.1	2.302	3.077	13.5	21.4
465665	2009 <i>SV</i> ₅₀		2 12.0 37°77	2°7/14.0	18		127117	2002 <i>GP</i> ₁₀₀		2 12.0 209°01	0°4/12.3	17	
1 12	9 59.69	+4 17.7	1.412	2.255	16.3	20.7	1 12	10 1.98	+11 16.0	2.443	3.277	10.6	20.8
1 22	9 55.05	+4 55.3	1.363	2.275	12.1	20.5	1 22	9 56.11	+11 38.6	2.358	3.271	7.6	20.6
2 1	9 48.17	+5 54.1	1.337	2.296	7.3	20.3	2 1	9 48.62	+12 9.3	2.301	3.265	4.2	20.4
2 11	9 40.07	+7 8.3	1.335	2.318	3.1	20.1	2 11	9 40.15	+12 44.5	2.273	3.259	0.6	20.1
2 21	9 31.97	+8 29.4	1.361	2.340	4.5	20.2	2 21	9 31.48	+13 20.4	2.275	3.252	3.2	20.3
3 2	9 25.08	+9 48.7	1.413	2.363	8.9	20.5	3 2	9 23.44	+13 53.1	2.308	3.244	6.8	20.5
3 12	9 20.36	+10 58.6	1.490	2.386	13.0	20.8	3 12	9 16.78	+14 19.4	2.368	3.237	10.0	20.7
3 22	9 18.29	+11 54.5	1.587	2.410	16.5	21.1	3 22	9 12.01	+14 37.7	2.451	3.228	12.7	20.8
135359	2001 <i>TX</i> ₁₀₉		2 12.0 153°53	1°2/13.3	18		7146	Konradin		2 12.0 145°60	3°9/15.8	18	
1 12	9 59.90	+7 57.1	2.731	3.554	9.9	20.3	1 12	9 59.86	-0 55.5	2.512	3.301	11.7	18.7
1 22	9 54.43	+8 14.4	2.656	3.560	7.2	20.1	1 22	9 54.51	-0 54.9	2.433	3.307	9.2	18.5
2 1	9 47.61	+8 40.7	2.607	3.566	4.2	19.9	2 1	9 47.71	-0 39.0	2.380	3.313	6.5	18.4
2 11	9 40.03	+9 13.2	2.588	3.571	1.5	19.7	2 11	9 40.07	-0 9.1	2.354	3.319	4.3	18.2
2 21	9 32.34	+9 48.8	2.599	3.576	2.8	19.8	2 21	9 32.29	+0 31.7	2.358	3.324	4.3	18.3
3 2	9 25.24	+10 24.0	2.641	3.581	5.9	20.0	3 2	9 25.13	+1 19.6	2.392	3.329	6.5	18.4
3 12	9 19.35	+10 55.5	2.712	3.586	8.7	20.2	3 12	9 19.25	+2 9.9	2.453	3.334	9.2	18.6
3 22	9 15.08	+11 21.3	2.806	3.590	11.1	20.4	3 22	9 15.11	+2 58.2	2.538	3.339	11.7	18.8
265632	2005 <i>SQ</i> ₂₂₂		2 12.0 147°67	3°8/ 8.1	18		419349	2009 <i>WO</i> ₁₉₈		2 12.0 119°95	4°6/ 7.5	18	
1 12	10 3.93	+23 48.0	2.412	3.265	10.0	21.5	1 12	10 3.65	+25 43.8	2.239	3.096	10.5	21.5
1 22	9 57.50	+25 5.6	2.356	3.277	7.2	21.4	1 22	9 57.40	+27 6.0	2.191	3.112	7.6	21.3
2 1	9 49.34	+26 22.4	2.328	3.288	4.6	21.2	2 1	9 49.32	+28 25.6	2.171	3.127	5.2	21.2
2 11	9 40.19	+27 31.8	2.330	3.298	3.9	21.2	2 11	9 40.21	+29 35.2	2.180	3.142	4.7	21.2
2 21	9 30.93	+28 28.2	2.363	3.308	5.9	21.3	2 21	9 31.04	+30 29.2	2.218	3.157	6.7	21.3
3 2	9 22.47	+29 8.0	2.424	3.317	8.7	21.5	3 2	9 22.79	+31 4.1	2.285	3.171	9.5	21.5
3 12	9 15.61	+29 30.4	2.512	3.325	11.3	21.7	3 12	9 16.26	+31 19.8	2.376	3.185	12.0	21.7
3 22	9 10.83	+29 36.5	2.620	3.333	13.5	21.9	3 22	9 11.95	+31 17.9	2.487	3.198	14.2	21.9
193185	2000 <i>QN</i> ₄₂		2 12.0 60°76	0°7/11.7	18		258857	2002 <i>PH</i> ₁₃₉		2 12.0 113°71	0°4/12.4	18	
1 12	10 11.20	+16 8.2	1.321	2.180	16.2	19.1	1 12	10 4.39	+9 56.3	2.115	2.947	12.0	22.4
1 22	10 3.32	+15 53.7	1.270	2.196	11.5	18.8	1 22	9 57.79	+10 42.4	2.060	2.972	8.6	22.2
2 1	9 52.64	+15 44.5	1.243	2.212	6.1	18.6	2 1	9 49.47	+11 38.7	2.031	2.996	4.7	22.0
2 11	9 40.49	+15 35.5	1.242	2.228	0.8	18.2	2 11	9 40.23	+12 40.0	2.033	3.019	0.7	21.8
2 21	9 28.48	+15 22.7	1.268	2.245	5.2	18.6	2 21	9 30.99	+13 40.5	2.064	3.041	3.5	22.0
3 2	9 18.19	+15 3.4	1.322	2.262	10.4	18.9	3 2	9 22.67	+14 35.1	2.126	3.063	7.3	22.3
3 12	9 10.74	+14 36.9	1.398	2.279	14.8	19.2	3 12	9 16.05	+15 20.3	2.215	3.083	10.6	22.5
3 22	9 6.62	+14 3.4	1.495	2.296	18.4	19.5	3 22	9 11.57	+15 54.0	2.327	3.103	13.4	22.8
362332	2010 <i>KW</i> ₃₄		2 12.0 138°02	7°6/18.7	18		57562	2001 <i>TS</i> ₄₈		2 12.0 120°38	6°9/18.1	18	
1 12	10 1.83	-9 48.1	1.934	2.686	16.0	20.6	1 12	10 1.33	-8 0.3	2.027	2.7		

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2 12.0

2 12.0

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
503490	2016 <i>ES</i> ₁₈₇		2 12.0 327°66	4°9/14.5	17		235042	2003 <i>FS</i> ₅₆		2 12.0 355°73	0°9/12.5	18	
1 12	10 2.13	+ 3 40.9	1.393	2.231	16.8	20.6	1 12	10 2.18	+ 9 52.1	1.212	2.075	17.1	20.6
1 22	9 57.24	+ 3 3.4	1.309	2.215	13.0	20.3	1 22	9 57.42	+10 19.4	1.147	2.073	12.4	20.3
2 1	9 49.67	+ 2 44.1	1.247	2.199	8.8	20.0	2 1	9 49.77	+11 4.5	1.103	2.071	6.9	20.0
2 11	9 40.30	+ 2 42.9	1.209	2.184	5.3	19.7	2 11	9 40.32	+12 1.2	1.084	2.070	1.3	19.6
2 21	9 30.41	+ 2 57.2	1.197	2.170	6.1	19.7	2 21	9 30.56	+13 0.8	1.090	2.069	5.2	19.9
3 2	9 21.47	+ 3 22.3	1.209	2.157	10.3	19.9	3 2	9 22.09	+13 54.6	1.121	2.069	10.8	20.2
3 12	9 14.81	+ 3 51.3	1.245	2.145	14.8	20.2	3 12	9 16.24	+14 36.0	1.174	2.070	15.8	20.5
3 22	9 11.22	+ 4 18.4	1.300	2.133	18.9	20.4	3 22	9 13.70	+15 1.8	1.245	2.071	20.0	20.8
173136	1995 <i>HP</i> ₁		2 12.0 150°97	0°7/12.7	18		211589	2003 <i>SV</i> ₂₃₂		2 12.0 178°51	0°3/12.2	18	
1 12	9 59.00	+ 8 36.6	2.306	3.139	11.1	20.4	1 12	10 3.82	+10 19.8	2.018	2.854	12.4	21.7
1 22	9 54.06	+ 9 24.7	2.230	3.142	8.0	20.2	1 22	9 57.67	+11 5.7	1.942	2.857	8.9	21.5
2 1	9 47.54	+10 24.4	2.181	3.144	4.5	20.0	2 1	9 49.58	+12 3.2	1.893	2.858	4.9	21.3
2 11	9 40.08	+11 31.3	2.161	3.147	1.0	19.7	2 11	9 40.30	+13 7.0	1.872	2.859	0.6	21.0
2 21	9 32.46	+12 40.0	2.171	3.149	3.2	19.9	2 21	9 30.80	+14 11.0	1.882	2.859	3.8	21.2
3 2	9 25.49	+13 45.3	2.211	3.151	6.8	20.1	3 2	9 22.12	+15 9.5	1.921	2.858	7.9	21.5
3 12	9 19.92	+14 42.6	2.279	3.153	10.1	20.3	3 12	9 15.15	+15 57.9	1.987	2.857	11.6	21.7
3 22	9 16.21	+15 29.2	2.369	3.155	12.9	20.5	3 22	9 10.47	+16 34.0	2.076	2.855	14.7	21.9
284960	2010 <i>EC</i> ₁₄₀		2 12.0 224°49	0°1/11.9	17		245146	2004 <i>RV</i> ₃₁₁		2 12.0 96°46	3°5/14.5	18	
1 12	9 59.85	+12 13.0	2.527	3.366	10.1	21.4	1 12	10 3.30	+ 2 42.6	1.517	2.345	16.2	20.5
1 22	9 54.59	+12 46.1	2.443	3.360	7.2	21.2	1 22	9 57.64	+ 3 4.9	1.454	2.356	12.2	20.3
2 1	9 47.82	+13 26.9	2.387	3.353	3.9	21.0	2 1	9 49.66	+ 3 48.9	1.414	2.367	7.8	20.1
2 11	9 40.12	+14 11.5	2.360	3.346	0.4	20.7	2 11	9 40.30	+ 4 50.7	1.400	2.378	4.0	19.9
2 21	9 32.22	+14 55.7	2.363	3.339	3.2	20.9	2 21	9 30.81	+ 6 3.3	1.413	2.389	4.8	20.0
3 2	9 24.92	+15 35.6	2.397	3.332	6.7	21.1	3 2	9 22.44	+ 7 18.5	1.453	2.400	9.0	20.2
3 12	9 18.91	+16 8.0	2.457	3.324	9.7	21.3	3 12	9 16.24	+ 8 28.6	1.518	2.411	13.1	20.5
3 22	9 14.68	+16 31.1	2.541	3.316	12.4	21.5	3 22	9 12.78	+ 9 27.9	1.605	2.421	16.7	20.7
357968	2006 <i>BV</i> ₇₃		2 12.0 34°99	3°0/10.0	18		148776	2001 <i>US</i> ₈		2 12.0 31°31	0°9/11.5	18	
1 12	10 2.46	+16 33.3	1.189	2.067	16.3	20.7	1 12	10 3.18	+14 41.7	1.473	2.336	14.6	19.7
1 22	9 57.58	+17 52.0	1.139	2.074	11.4	20.5	1 22	9 57.62	+15 6.6	1.416	2.344	10.3	19.5
2 1	9 49.79	+19 20.9	1.111	2.083	6.2	20.2	2 1	9 49.65	+15 40.1	1.383	2.353	5.5	19.2
2 11	9 40.30	+20 48.5	1.109	2.092	3.1	20.0	2 11	9 40.31	+16 15.8	1.375	2.362	0.9	18.9
2 21	9 30.68	+22 3.5	1.132	2.102	7.1	20.3	2 21	9 30.89	+16 47.4	1.395	2.371	5.0	19.2
3 2	9 22.55	+22 57.5	1.179	2.112	12.2	20.6	3 2	9 22.71	+17 9.8	1.442	2.381	9.7	19.5
3 12	9 17.15	+23 27.4	1.248	2.123	16.6	20.9	3 12	9 16.82	+17 19.9	1.511	2.392	13.9	19.8
3 22	9 15.07	+23 34.1	1.334	2.134	20.3	21.2	3 22	9 13.77	+17 17.1	1.601	2.403	17.3	20.0
50985	2000 <i>GB</i> ₉₄		2 12.0 229°04	3°3/ 8.8	18		246017	2006 <i>TB</i> ₇₈		2 12.0 154°78	0°5/11.5	17	
1 12	10 0.40	+21 9.1	2.191	3.051	10.6	18.7	1 12	9 58.57	+12 44.2	2.549	3.391	9.9	20.4
1 22	9 55.22	+22 22.0	2.123	3.049	7.5	18.5	1 22	9 53.66	+13 40.1	2.476	3.394	7.0	20.2
2 1	9 48.24	+23 37.3	2.082	3.048	4.5	18.3	2 1	9 47.30	+14 43.8	2.430	3.397	3.7	20.0
2 11	9 40.16	+24 48.4	2.071	3.046	3.4	18.2	2 11	9 40.09	+15 50.5	2.413	3.400	0.5	19.8
2 21	9 31.88	+25 48.9	2.088	3.044	5.7	18.4	2 21	9 32.73	+16 55.3	2.428	3.402	3.4	20.0
3 2	9 24.36	+26 34.3	2.134	3.042	8.9	18.6	3 2	9 25.97	+17 53.6	2.473	3.405	6.7	20.2
3 12	9 18.43	+27 2.5	2.205	3.041	11.9	18.8	3 12	9 20.48	+18 42.0	2.545	3.407	9.6	20.4
3 22	9 14.61	+27 14.0	2.297	3.039	14.5	18.9	3 22	9 16.72	+19 18.8	2.640	3.409	12.1	20.6
317496	2002 <i>SO</i> ₅₂		2 12.0 121°36	2°2/10.4	17		498577	2008 <i>NV</i> ₁		2 12.0 204°38	2°4/14.5	17	
1 12	10 7.07	+15 47.8	1.577	2.432	14.2	21.3	1 12	10 1.06	+ 3 22.4	2.741	3.544	10.5	23.1
1 22	10 0.25	+17 1.9	1.524	2.450	9.9	21.1	1 22	9 55.36	+ 3 39.9	2.649	3.538	7.9	22.9
2 1	9 51.02	+18 24.1	1.498	2.467	5.3	20.9	2 1	9 48.21	+ 4 9.7	2.583	3.531	5.1	22.7
2 11	9 40.42	+19 45.0	1.499	2.483	2.2	20.7	2 11	9 40.18	+ 4 49.7	2.546	3.523	2.7	22.5
2 21	9 29.77	+20 56.0	1.529	2.498	5.7	21.0	2 21	9 31.94	+ 5 36.5	2.541	3.515	3.3	22.6
3 2	9 20.39	+21 50.7	1.587	2.513	10.1	21.3	3 2	9 24.22	+ 6 26.4	2.566	3.505	6.0	22.7
3 12	9 13.35	+22 26.3	1.669	2.527	14.0	21.5	3 12	9 17.67	+ 7 15.2	2.620	3.496	8.9	22.9
3 22	9 9.18	+22 43.2	1.771	2.540	17.2	21.8	3 22	9 12.77	+ 7 59.6	2.698	3.485	11.4	23.1
6507	1982 <i>QD</i>		2 12.0 86°29	1°5/12.9	18		25811	Richardteo		2 12.0 83°45	0°5/11.6	18	
1 12	10 9.34	+ 8 47.2	1.384	2.227	16.6	17.5	1 12	10 1.73	+13 43.0	2.051	2.899	11.7	19.0
1 22	10 1.84	+ 9 1.1	1.339	2.254	12.0	17.3	1 22	9 56.10	+14 12.3	1.986	2.907	8.3	18.8
2 1	9 51.82	+ 9 30.0	1.317	2.280	6.8	17.1	2 1	9 48.68	+14 48.8	1.946	2.914	4.4	18.6
2 11	9 40.49	+10 8.3	1.322	2.307	1.9	16.8	2 11	9 40.22	+15 28.0	1.935	2.921	0.6	18.3
2 21	9 29.31	+10 49.4	1.354	2.332	4.6	17.1	2 21	9 31.67	+16 4.8	1.953	2.928	3.9	18.5
3 2	9 19.70	+11 26.9	1.414	2.357	9.5	17.4	3 2	9 23.98	+16 35.0	2.000	2.936	7.7	18.8
3 12	9 12.68	+11 56.2	1.498	2.382	13.8	17.8	3 12	9 17.95	+16 55.8	2.073	2.943	11.2	19.0
3 22	9 8.72	+12 14.9	1.602	2.406	17.3	18.0	3 22	9 14.08	+17 6.0	2.168	2.950	14.0	19.2
45725	2000 <i>GJ</i> ₇₇		2 12.0 166°21	2°2/10.2	18		146461	2001 <i>RX</i> ₅₆		2 12.0 45°37	0°2/11.9	18	
1 12	10 4.08	+18 20.9	2.043	2.896	11.5	19.2	1 12	10 2.22	+12 2.2	1.493	2.351	14.7	19.9
1 22	9 57.84	+19 8.5	1.975	2.899	8.1	19.0	1 22	9 56.89	+12 40.3	1.438	2.363	10.5	19.6
2 1	9 49.64	+20 0.0	1.934	2.902	4.4	18.7	2 1	9 49.24	+13 30.4	1.407	2.376	5.6	19.4
2 11	9 40.30	+20 49.3	1.922	2.905	2.2	18.6	2 11	9 40.28	+14 25.8	1.402	2.389	0.5	19.0
2 21	9 30.80	+21 30.8	1.940	2.907	5.0	18.8	2 21	9 31.26	+15 19.1	1.425	2.402	4.6	19.4
3 2	9 22.21	+22 0.2	1.987	2.909	8.7	19.0	3 2	9 23.43	+16 4.0	1.474	2.416	9.4	19.7
3 12	9 15.39	+22 15.7	2.059	2.910	12.0	19.2	3 12	9 17.82	+16 36.2	1.548	2.430	13.5	20.0
3 22	9 10.89	+22 17.3	2.152	2.911	14.8	19.4	3 22	9 14.94	+16 54.1	1.641	2.445	16.9	20.2
339005	2004 <i>GX</i> ₄₈		2 12.0 268°26	4°6/16.6	18		187412	2005 <i>VM</i> ₇₀		2 12.0 183°84	0°2/11.8	16	

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2 12.0

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
196476	Humfernandez 2 12.0 226°60 1°3/10.7 17						243446	2009 FX ₅₆ 2 12.0 289°02 10°5/19.7 18					
1 12	10 0.98	+14 32.8	2.417	3.262	10.3	20.5	1 12	10 2.72	-18 34.4	2.456	3.126	14.9	19.6
1 22	9 55.55	+15 42.2	2.330	3.251	7.3	20.3	1 22	9 56.94	-19 58.3	2.355	3.108	13.4	19.4
2 1	9 48.42	+16 59.7	2.271	3.239	3.9	20.1	2 1	9 49.29	-21 0.7	2.275	3.090	12.0	19.3
2 11	9 40.22	+18 19.8	2.242	3.227	1.3	19.9	2 11	9 40.35	-21 37.5	2.219	3.072	10.9	19.1
2 21	9 31.71	+19 36.4	2.244	3.214	4.1	20.1	2 21	9 30.92	-21 46.8	2.186	3.054	10.5	19.1
3 2	9 23.78	+20 44.0	2.276	3.201	7.6	20.3	3 2	9 21.94	-21 29.7	2.179	3.036	11.1	19.1
3 12	9 17.22	+21 38.9	2.336	3.187	10.8	20.4	3 12	9 14.29	-20 50.6	2.196	3.018	12.5	19.1
3 22	9 12.57	+22 19.4	2.418	3.172	13.5	20.6	3 22	9 8.64	-19 56.1	2.234	3.000	14.2	19.2
67030	1999 XJ ₁₆₆ 2 12.0 72°31 6°5/17.1 18						135146	2001 QJ ₂₁₂ 2 12.0 81°23 1°7/10.7 18 R					
1 12	10 4.12	- 5 0.9	1.955	2.730	15.1	18.8	1 12	10 2.91	+18 12.7	2.211	3.063	10.8	19.4
1 22	9 57.73	- 5 38.8	1.898	2.754	12.2	18.6	1 22	9 56.83	+18 36.0	2.149	3.072	7.6	19.2
2 1	9 49.51	- 5 55.5	1.864	2.779	9.2	18.5	2 1	9 49.04	+19 2.0	2.113	3.081	4.1	19.0
2 11	9 40.31	- 5 50.9	1.856	2.803	7.0	18.4	2 11	9 40.31	+19 26.1	2.106	3.090	1.7	18.9
2 21	9 31.09	- 5 27.5	1.875	2.826	6.7	18.4	2 21	9 31.53	+19 44.3	2.130	3.100	4.3	19.1
3 2	9 22.83	- 4 49.8	1.923	2.850	8.6	18.6	3 2	9 23.62	+19 53.6	2.182	3.109	7.7	19.3
3 12	9 16.34	- 4 4.1	1.996	2.874	11.1	18.8	3 12	9 17.33	+19 52.8	2.260	3.118	10.8	19.5
3 22	9 12.10	- 3 16.5	2.092	2.897	13.7	19.0	3 22	9 13.14	+19 41.8	2.360	3.127	13.5	19.7
200765	2001 XW ₃ 2 12.0 140°10 10°2/ 2.5 18						132114	2002 CE ₂₂₄ 2 12.0 218°02 1°1/11.2 18 R					
1 12	10 13.99	+42 20.4	1.996	2.823	12.9	20.4	1 12	10 5.69	+15 1.4	2.004	2.850	12.1	20.8
1 22	10 5.35	+44 14.9	1.967	2.839	11.1	20.3	1 22	9 59.15	+15 41.4	1.920	2.840	8.6	20.6
2 1	9 53.86	+45 50.6	1.964	2.854	10.2	20.3	2 1	9 50.48	+16 28.8	1.862	2.830	4.6	20.3
2 11	9 40.74	+46 57.5	1.987	2.868	10.7	20.4	2 11	9 40.46	+17 18.1	1.834	2.819	1.1	20.0
2 21	9 27.56	+47 30.1	2.036	2.881	12.2	20.5	2 21	9 30.12	+18 3.5	1.835	2.808	4.5	20.3
3 2	9 15.94	+47 28.5	2.107	2.893	14.1	20.6	3 2	9 20.57	+18 39.9	1.866	2.795	8.6	20.5
3 12	9 7.09	+46 57.3	2.199	2.904	15.9	20.8	3 12	9 12.81	+19 4.2	1.922	2.782	12.4	20.7
3 22	9 1.58	+46 3.6	2.307	2.914	17.5	21.0	3 22	9 7.48	+19 15.5	2.001	2.768	15.5	20.9
172392	2003 AA ₅₅ 2 12.0 338°12 4°8/ 6.9 18						502154	2015 BW ₃₆ 2 12.0 26°41 4°6/14.9 18					
1 12	9 59.85	+25 29.4	2.150	3.014	10.6	19.5	1 12	10 3.63	+ 2 12.8	1.892	2.704	14.1	20.9
1 22	9 54.95	+27 3.2	2.087	3.012	7.7	19.3	1 22	9 57.57	+ 1 29.6	1.820	2.709	10.9	20.7
2 1	9 48.15	+28 36.5	2.052	3.009	5.4	19.2	2 1	9 49.55	+ 1 1.5	1.773	2.715	7.5	20.6
2 11	9 40.20	+30 1.2	2.046	3.007	5.1	19.2	2 11	9 40.37	+ 0 48.1	1.753	2.722	4.9	20.4
2 21	9 32.02	+31 10.2	2.068	3.005	7.2	19.3	2 21	9 31.05	+ 0 47.8	1.760	2.728	5.3	20.4
3 2	9 24.61	+31 59.3	2.117	3.004	10.1	19.5	3 2	9 22.62	+ 0 57.2	1.796	2.735	8.2	20.6
3 12	9 18.85	+32 27.0	2.190	3.002	12.8	19.6	3 12	9 15.98	+ 1 11.8	1.858	2.743	11.5	20.8
3 22	9 15.32	+32 34.6	2.283	3.000	15.2	19.8	3 22	9 11.66	+ 1 27.3	1.942	2.751	14.5	21.1
415813	2001 PT ₆₅ 2 12.0 85°76 8°6/17.9 18						262438	2006 UK ₈₉ 2 12.0 56°67 6°1/ 7.2 18					
1 12	10 7.02	- 8 51.7	1.881	2.632	16.4	20.6	1 12	10 4.13	+24 38.3	1.475	2.348	14.0	19.5
1 22	9 59.92	-10 1.2	1.820	2.652	13.7	20.4	1 22	9 58.32	+26 36.2	1.446	2.374	10.1	19.3
2 1	9 50.78	-10 46.8	1.781	2.672	11.1	20.3	2 1	9 50.03	+28 30.7	1.441	2.401	6.8	19.2
2 11	9 40.46	-11 6.5	1.767	2.691	9.1	20.2	2 11	9 40.41	+30 9.5	1.464	2.428	6.4	19.2
2 21	9 30.04	-11 1.0	1.780	2.711	8.7	20.2	2 21	9 30.86	+31 23.7	1.513	2.455	9.0	19.5
3 2	9 20.62	-10 34.2	1.820	2.730	10.1	20.3	3 2	9 22.76	+32 9.0	1.588	2.482	12.4	19.7
3 12	9 13.14	- 9 53.0	1.885	2.749	12.4	20.5	3 12	9 17.12	+32 26.5	1.685	2.509	15.5	20.0
3 22	9 8.12	- 9 4.6	1.971	2.767	14.7	20.7	3 22	9 14.42	+32 19.9	1.799	2.536	18.1	20.2
397540	2007 TP ₂₈₈ 2 12.0 122°39 4°4/ 8.9 18						446141	2013 EZ ₇₉ 2 12.0 42°68 3°6/10.1 18					
1 12	10 7.32	+23 17.1	1.730	2.590	12.9	21.3	1 12	10 5.87	+19 9.8	1.097	1.977	17.2	20.3
1 22	10 0.37	+24 20.8	1.678	2.602	9.2	21.1	1 22	9 59.96	+20 3.1	1.061	1.996	12.0	20.1
2 1	9 51.08	+25 23.7	1.651	2.615	5.7	20.9	2 1	9 51.02	+21 0.6	1.046	2.017	6.6	19.8
2 11	9 40.49	+26 17.3	1.653	2.627	4.5	20.9	2 11	9 40.50	+21 51.6	1.056	2.038	3.7	19.7
2 21	9 29.85	+26 54.9	1.684	2.638	7.0	21.1	2 21	9 30.17	+22 27.0	1.091	2.060	7.4	20.0
3 2	9 20.47	+27 13.0	1.741	2.649	10.6	21.3	3 2	9 21.70	+22 42.1	1.150	2.083	12.3	20.3
3 12	9 13.35	+27 11.4	1.822	2.659	14.0	21.5	3 12	9 16.26	+22 36.6	1.229	2.106	16.7	20.7
3 22	9 9.02	+26 52.6	1.923	2.669	16.8	21.7	3 22	9 14.27	+22 13.0	1.327	2.130	20.2	21.0
104285	2000 EH ₁₅₆ 2 12.0 49°88 4°1/15.4 18						263789	2008 MA ₅ 2 12.0 186°96 10°0/19.7 18					
1 12	10 0.22	+ 0 28.5	2.121	2.925	13.1	18.9	1 12	10 6.23	-17 18.0	2.423	3.098	15.0	20.6
1 22	9 55.04	+ 0 23.4	2.043	2.927	10.2	18.7	1 22	9 59.32	-18 35.9	2.336	3.098	13.3	20.5
2 1	9 48.14	+ 0 35.0	1.988	2.928	7.0	18.5	2 1	9 50.52	-19 31.2	2.271	3.097	11.6	20.3
2 11	9 40.21	+ 1 1.7	1.961	2.930	4.5	18.4	2 11	9 40.49	-20 0.5	2.231	3.096	10.4	20.3
2 21	9 32.10	+ 1 40.6	1.962	2.931	4.7	18.4	2 21	9 30.10	-20 2.7	2.216	3.094	10.0	20.2
3 2	9 24.70	+ 2 26.8	1.992	2.933	7.4	18.6	3 2	9 20.31	-19 39.7	2.228	3.091	10.6	20.3
3 12	9 18.81	+ 3 15.1	2.048	2.935	10.5	18.8	3 12	9 12.01	-18 56.8	2.264	3.088	12.0	20.3
3 22	9 14.95	+ 4 0.8	2.127	2.936	13.4	19.0	3 22	9 5.80	-18 0.8	2.322	3.085	13.8	20.5
431550	2007 TQ ₄₄₂ 2 12.0 70°97 2°8/14.1 18						461779	2005 UM ₄₆₀ 2 12.0 198°28 5°5/16.8 16					
1 12	10 4.24	+ 5 20.0	2.182	2.997	12.3	21.0	1 12	10 2.05	- 4 40.2	2.364	3.133	12.9	21.9
1 22	9 57.63	+ 5 2.2	2.126	3.022	9.2	20.9	1 22	9 56.26	- 4 54.1	2.275	3.129	10.5	21.7
2 1	9 49.40	+ 4 56.1	2.095	3.046	5.8	20.7	2 1	9 48.81	- 4 49.7	2.210	3.126	7.9	21.6
2 11	9 40.33	+ 5 0.0	2.093	3.071	3.0	20.5	2 11	9 40.32	- 4 27.3	2.172	3.122	5.9	21.4
2 21	9 31.30	+ 5 11.1	2.121	3.095	3.8	20.6	2 21	9 31.58	- 3 48.9	2.162	3.117	5.7	21.4
3 2	9 23.18	+ 5 26.1	2.179	3.119	6.9	20.9	3 2	9 23.46	- 2 58.7	2.182	3.112	7.5	21.5
3 12	9 16.68	+ 5 41.5	2.263	3.143	9.9	21.1	3 12	9 16.72	- 2 2.1	2.229	3.106	10.2	21.7
3 22	9 12.23	+ 5 54.3	2.371	3.167	12.6	21.3	3 22	9 11.89	- 1 4.5	2.299	3.100	12.8	21.8
255941	2006 TT ₁₀ 2 12.0 150°51 0°7/11.5 18						413140	2002 AE ₁₅₆ 2 12.0 60°67 1°7/13.0 18					
1 12	10 4.60	+13 59.8	1.972	2.818	12.2	21.6	1 12	10 8.57	+ 9 34.4	1.598	2.437	15.0	21.1
1 22	9 58.22	+14 33.9	1.905	2.825	8.6	21.3	1 22	10 0.99	+ 9 21.9	1.557	2.469	10.8	20.9
2 1	9 49.87	+15 15.5	1.863	2.831	4.6	21.1	2 1	9 51.28	+ 9 20.8	1.539	2.502	6.2	20.7
2 11	9 40.39	+15 59											

EPHEMERIDES

2 12.0

2 12.1

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
97903	2000 <i>QM</i> ₇₉		2 12.0	82°89	2°0/13.4	18	250164	Hannsruder		2 12.1	130°61	0°7/12.7	18
1 12	10 3.31	+ 6 32.7	1.479	2.321	15.8	19.0	1 12	10 4.51	+ 9 49.0	2.108	2.940	12.1	21.3
1 22	9 57.76	+ 7 0.0	1.415	2.328	11.6	18.8	1 22	9 58.00	+10 16.4	2.045	2.956	8.7	21.1
2 1	9 49.81	+ 7 45.7	1.374	2.336	6.9	18.5	2 1	9 49.71	+10 53.8	2.007	2.971	4.8	20.9
2 11	9 40.42	+ 8 44.7	1.360	2.343	2.4	18.3	2 11	9 40.44	+11 37.0	1.999	2.985	1.0	20.6
2 21	9 30.86	+ 9 49.8	1.372	2.351	4.5	18.4	2 21	9 31.09	+12 21.2	2.021	2.998	3.5	20.8
3 2	9 22.43	+10 53.1	1.412	2.359	9.2	18.7	3 2	9 22.64	+13 1.7	2.073	3.011	7.3	21.1
3 12	9 16.23	+11 48.1	1.476	2.366	13.6	19.0	3 12	9 15.86	+13 35.0	2.152	3.024	10.7	21.3
3 22	9 12.86	+12 30.6	1.561	2.374	17.2	19.3	3 22	9 11.25	+13 59.1	2.253	3.035	13.6	21.6
278909	2008 <i>TG</i> ₁₄₇		2 12.1	77°87	0°2/12.2	18	56297	1999 <i>RT</i> ₄₂		2 12.1	199°42	2°0/13.8	18
1 12	10 0.92	+11 10.4	1.989	2.834	12.2	21.4	1 12	10 2.22	+ 6 45.8	2.755	3.568	10.1	18.9
1 22	9 55.62	+11 45.5	1.922	2.840	8.7	21.2	1 22	9 56.15	+ 6 33.0	2.669	3.566	7.5	18.7
2 1	9 48.48	+12 30.8	1.880	2.846	4.7	20.9	2 1	9 48.66	+ 6 28.6	2.610	3.564	4.6	18.5
2 11	9 40.29	+13 21.5	1.866	2.853	0.5	20.6	2 11	9 40.34	+ 6 31.3	2.581	3.561	2.2	18.4
2 21	9 31.96	+14 12.0	1.882	2.859	3.7	20.9	2 21	9 31.87	+ 6 38.9	2.583	3.558	3.1	18.4
3 2	9 24.48	+14 57.2	1.926	2.865	7.7	21.2	3 2	9 23.97	+ 6 48.8	2.616	3.555	6.0	18.6
3 12	9 18.65	+15 33.4	1.996	2.872	11.3	21.4	3 12	9 17.29	+ 6 58.6	2.677	3.552	8.8	18.8
3 22	9 15.01	+15 58.4	2.088	2.878	14.2	21.6	3 22	9 12.29	+ 7 6.0	2.762	3.548	11.2	19.0
268099	2004 <i>RU</i> ₃₀₇		2 12.1	170°02	0°3/11.8	18	373266	2012 <i>HB</i> ₁₁		2 12.1	224°76	5°7/ 6.9	17
1 12	10 2.84	+13 8.0	2.400	3.238	10.6	21.5	1 12	10 5.84	+29 34.2	2.200	3.054	10.8	21.3
1 22	9 56.74	+13 36.9	2.326	3.242	7.5	21.3	1 22	9 59.25	+30 42.2	2.130	3.045	8.2	21.1
2 1	9 49.02	+14 12.6	2.279	3.245	4.0	21.1	2 1	9 50.54	+31 45.6	2.087	3.036	6.1	21.0
2 11	9 40.35	+14 50.9	2.261	3.248	0.4	20.8	2 11	9 40.53	+32 36.8	2.073	3.026	5.9	21.0
2 21	9 31.54	+15 27.7	2.275	3.250	3.4	21.1	2 21	9 30.27	+33 9.8	2.087	3.015	7.8	21.0
3 2	9 23.45	+15 59.2	2.318	3.252	6.9	21.3	3 2	9 20.89	+33 21.7	2.129	3.005	10.5	21.2
3 12	9 16.81	+16 22.7	2.389	3.253	10.1	21.5	3 12	9 13.36	+33 12.9	2.194	2.993	13.2	21.4
3 22	9 12.10	+16 36.9	2.482	3.253	12.8	21.7	3 22	9 8.29	+32 45.9	2.279	2.982	15.6	21.5
334595	2002 <i>TV</i> ₂₃₃		2 12.1	129°92	2°0/13.8	17	467985	2012 <i>SM</i> ₁₄		2 12.1	178°31	3°1/15.1	17
1 12	10 2.29	+ 6 30.4	2.493	3.310	10.9	20.8	1 12	9 59.95	+ 1 38.9	2.665	3.463	10.9	21.9
1 22	9 56.24	+ 6 29.4	2.422	3.321	8.1	20.6	1 22	9 54.59	+ 1 42.6	2.581	3.464	8.3	21.7
2 1	9 48.70	+ 6 38.6	2.376	3.331	4.9	20.4	2 1	9 47.84	+ 1 59.2	2.523	3.465	5.6	21.6
2 11	9 40.32	+ 6 55.6	2.360	3.341	2.2	20.2	2 11	9 40.26	+ 2 27.2	2.494	3.465	3.4	21.4
2 21	9 31.86	+ 7 17.6	2.375	3.350	3.2	20.3	2 21	9 32.53	+ 3 3.7	2.495	3.465	3.7	21.4
3 2	9 24.09	+ 7 41.3	2.419	3.360	6.3	20.5	3 2	9 25.35	+ 3 45.2	2.526	3.465	6.1	21.6
3 12	9 17.70	+ 8 3.5	2.491	3.368	9.3	20.7	3 12	9 19.38	+ 4 27.5	2.584	3.465	8.8	21.8
3 22	9 13.12	+ 8 21.7	2.588	3.377	11.8	20.9	3 22	9 15.06	+ 5 7.2	2.668	3.464	11.3	21.9
401442	2013 <i>CM</i> ₁₃₁		2 12.1	240°83	0°6/12.5	17	191117	2002 <i>EG</i> ₉₀		2 12.1	223°73	1°5/10.9	17
1 12	10 5.27	+10 33.2	1.789	2.629	13.5	21.8	1 12	10 3.26	+16 53.3	2.105	2.956	11.3	20.4
1 22	9 59.08	+10 55.4	1.701	2.616	9.8	21.6	1 22	9 57.30	+17 25.9	2.029	2.951	8.0	20.1
2 1	9 50.56	+11 29.5	1.638	2.603	5.5	21.3	2 1	9 49.44	+18 3.4	1.978	2.946	4.3	19.9
2 11	9 40.53	+12 11.2	1.602	2.588	1.0	20.9	2 11	9 40.42	+18 40.7	1.956	2.941	1.5	19.7
2 21	9 30.07	+12 54.9	1.596	2.574	4.2	21.1	2 21	9 31.20	+19 12.8	1.965	2.936	4.4	19.9
3 2	9 20.43	+13 35.0	1.618	2.558	8.9	21.4	3 2	9 22.77	+19 35.7	2.001	2.930	8.2	20.1
3 12	9 12.72	+14 6.8	1.666	2.542	13.1	21.6	3 12	9 16.02	+19 47.1	2.064	2.924	11.6	20.3
3 22	9 7.63	+14 27.8	1.735	2.526	16.6	21.8	3 22	9 11.50	+19 46.7	2.149	2.918	14.5	20.5
283928	2004 <i>OZ</i> ₆		2 12.1	124°96	1°3/11.1	18	520062	2013 <i>WX</i> ₁₁₁		2 12.1	4°09	1°9/10.4	17
1 12	10 6.54	+14 28.2	1.767	2.616	13.3	21.6	1 12	9 59.68	+16 39.7	1.966	2.825	11.7	21.1
1 22	9 59.71	+15 26.1	1.712	2.633	9.3	21.4	1 22	9 54.85	+17 37.0	1.898	2.825	8.2	20.9
2 1	9 50.72	+16 32.1	1.682	2.650	4.9	21.2	2 1	9 48.14	+18 40.8	1.856	2.825	4.4	20.7
2 11	9 40.53	+17 38.9	1.681	2.667	1.3	20.9	2 11	9 40.30	+19 44.6	1.842	2.826	1.9	20.5
2 21	9 30.28	+18 39.3	1.710	2.682	4.8	21.2	2 21	9 32.27	+20 42.0	1.857	2.827	4.9	20.7
3 2	9 21.17	+19 27.9	1.767	2.697	9.0	21.5	3 2	9 25.07	+21 27.9	1.900	2.828	8.6	20.9
3 12	9 14.13	+20 1.5	1.850	2.711	12.7	21.8	3 12	9 19.56	+21 59.3	1.968	2.829	12.1	21.2
3 22	9 9.69	+20 19.8	1.954	2.724	15.7	22.0	3 22	9 16.26	+22 15.3	2.057	2.831	15.0	21.4
424302	2007 <i>TB</i> ₂₇₃		2 12.1	359°14	7°5/ 4.8	17	342867	2008 <i>YP</i> ₃₄		2 12.1	47°78	3°0/14.4	18
1 12	10 4.22	+35 35.8	2.142	2.993	11.2	20.6	1 12	10 1.38	+ 4 19.5	2.122	2.940	12.5	20.0
1 22	9 58.16	+36 54.1	2.091	2.993	9.0	20.5	1 22	9 55.85	+ 4 9.8	2.047	2.944	9.5	19.8
2 1	9 49.93	+38 2.2	2.065	2.993	7.7	20.4	2 1	9 48.60	+ 4 13.5	1.998	2.948	6.1	19.6
2 11	9 40.45	+38 52.1	2.067	2.992	7.9	20.4	2 11	9 40.34	+ 4 28.6	1.975	2.952	3.3	19.5
2 21	9 30.84	+39 18.5	2.095	2.992	9.5	20.5	2 21	9 31.93	+ 4 52.2	1.982	2.957	4.0	19.5
3 2	9 22.27	+39 19.8	2.148	2.993	11.7	20.7	3 2	9 24.28	+ 5 20.2	2.018	2.961	7.2	19.7
3 12	9 15.70	+38 57.4	2.223	2.993	14.0	20.8	3 12	9 18.18	+ 5 48.6	2.081	2.965	10.4	19.9
3 22	9 11.68	+38 15.4	2.317	2.993	16.0	21.0	3 22	9 14.13	+ 6 13.5	2.166	2.970	13.3	20.1
243436	2009 <i>DQ</i> ₅₇		2 12.1	28°20	0°1/11.9	18	261140	2005 <i>TM</i> ₆₁		2 12.1	44°56	0°8/11.5	18
1 12	9 59.31	+12 4.3	2.095	2.942	11.5	20.3	1 12	10 3.67	+14 29.1	1.681	2.536	13.5	20.4
1 22	9 54.44	+12 41.8	2.026	2.946	8.2	20.1	1 22	9 57.84	+14 54.1	1.616	2.540	9.6	20.2
2 1	9 47.84	+13 28.4	1.982	2.950	4.4	19.8	2 1	9 49.80	+15 26.9	1.576	2.545	5.1	19.9
2 11	9 40.25	+14 19.4	1.967	2.954	0.4	19.5	2 11	9 40.46	+16 2.2	1.563	2.549	0.8	19.6
2 21	9 32.52	+15 9.5	1.982	2.958	3.7	19.8	2 21	9 30.98	+16 34.0	1.578	2.554	4.6	19.9
3 2	9 25.55	+15 53.9	2.025	2.963	7.5	20.0	3 2	9 22.57	+16 57.7	1.621	2.559	9.0	20.2
3 12	9 20.14	+16 29.0	2.094	2.968	10.9	20.2	3 12	9 16.22	+17 10.3	1.689	2.564	13.0	20.4
3 22	9 16.76	+16 52.9	2.185	2.973	13.7	20.5	3 22	9 12.48	+17 11.0	1.777	2.569	16.3	20.7
17976	Schulman		2 12.1	342°23	4°0/ 9.9	18	418319	2008 <i>FB</i> ₁₀₄		2 12.1	136°98	6°0/ 6.1	18
1 12	10 6.51	+21 20.0	1.335	2.206	15.2	17.6	1 12						

EPHEMERIDES

2 12.1

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
467593	2007 <i>VK</i> ₁₃₁	2 12.1 142°74' 2°0/14.1 17											
1 12	10 0.06	+ 5 8.6	2.567	3.382	10.7	21.9	132213	2002 <i>ES</i> ₅₉	2 12.1 212°71' 0°7/12.6 18				
1 22	9 54.68	+ 5 25.4	2.492	3.389	8.0	21.7	1 12	10 4.98	+10 10.4	1.954	2.789	12.7	20.2
2 1	9 47.89	+ 5 53.6	2.443	3.396	4.9	21.5	1 22	9 58.68	+10 36.2	1.870	2.783	9.2	20.0
2 11	9 40.28	+ 6 30.8	2.423	3.403	2.3	21.3	2 1	9 50.28	+11 13.4	1.811	2.775	5.2	19.7
2 21	9 32.55	+ 7 13.3	2.434	3.410	3.2	21.4	2 11	9 40.56	+11 57.7	1.781	2.767	1.0	19.4
3 2	9 25.45	+ 7 57.3	2.475	3.416	6.1	21.6	2 21	9 30.52	+12 43.7	1.781	2.758	3.9	19.6
3 12	9 19.62	+ 8 38.9	2.543	3.422	9.0	21.8	3 2	9 21.29	+13 26.3	1.810	2.749	8.2	19.9
3 22	9 15.49	+ 9 15.1	2.636	3.428	11.5	22.0	3 12	9 13.82	+14 1.0	1.865	2.739	12.0	20.1
							3 22	9 8.75	+14 25.6	1.943	2.728	15.3	20.3
188029	2001 <i>UU</i> ₁₁₂	2 12.1 54°38' 11°9/22.9 18											
1 12	10 0.63	-19 42.4	1.867	2.557	18.5	20.2	337415	2001 <i>QH</i> ₂₈₁	2 12.1 88°44' 5°1/ 6.7 18				
1 22	9 55.69	-20 34.6	1.792	2.561	16.5	20.1	1 12	10 3.44	+29 3.2	2.470	3.323	9.8	20.7
2 1	9 48.67	-20 54.7	1.735	2.565	14.4	20.0	1 22	9 57.16	+30 25.1	2.436	3.351	7.3	20.6
2 11	9 40.36	-20 39.2	1.699	2.570	12.7	19.9	2 1	9 49.23	+31 41.3	2.430	3.378	5.4	20.5
2 21	9 31.77	-19 48.2	1.685	2.575	11.9	19.8	2 11	9 40.44	+32 45.1	2.454	3.404	5.3	20.5
3 2	9 24.00	-18 26.5	1.695	2.579	12.3	19.8	2 21	9 31.65	+33 32.0	2.507	3.431	6.9	20.7
3 12	9 18.04	-16 42.8	1.728	2.584	13.7	19.9	3 2	9 23.77	+33 59.7	2.588	3.457	9.1	20.9
3 22	9 14.48	-14 47.7	1.783	2.589	15.7	20.1	3 12	9 17.52	+34 8.6	2.693	3.482	11.3	21.1
							3 22	9 13.32	+34 1.0	2.818	3.507	13.1	21.2
449552	2014 <i>HT</i> ₁₇₁	2 12.1 287°90' 0°0/12.0 18											
1 12	10 4.16	+11 17.5	1.332	2.192	16.1	21.1	455800	2005 <i>SJ</i> ₁₂	2 12.1 86°90' 5°0/16.5 18				
1 22	9 58.76	+11 57.3	1.263	2.188	11.6	20.8	1 12	10 1.47	- 2 53.2	1.871	2.664	15.0	21.3
2 1	9 50.54	+12 52.8	1.216	2.184	6.3	20.5	1 22	9 56.03	- 2 36.6	1.808	2.683	11.8	21.1
2 11	9 40.56	+13 56.9	1.194	2.181	0.6	20.1	2 1	9 48.74	- 1 57.6	1.769	2.701	8.3	21.0
2 21	9 30.21	+15 0.8	1.199	2.177	5.2	20.4	2 11	9 40.41	- 0 58.6	1.756	2.720	5.5	20.8
3 2	9 21.05	+15 56.4	1.230	2.174	10.7	20.7	2 21	9 32.00	+ 0 15.3	1.770	2.738	5.4	20.9
3 12	9 14.40	+16 37.6	1.284	2.170	15.5	21.0	3 2	9 24.51	+ 1 36.9	1.814	2.755	7.9	21.1
3 22	9 10.96	+17 2.1	1.357	2.167	19.5	21.2	3 12	9 18.77	+ 2 58.7	1.883	2.773	11.1	21.3
							3 22	9 15.25	+ 4 14.5	1.976	2.790	14.1	21.5
221710	2007 <i>EP</i> ₃	2 12.1 70°23' 0°0/12.1 18											
1 12	10 2.98	+12 15.0	1.764	2.613	13.3	20.6	205219	2000 <i>OA</i> ₅₆	2 12.1 124°87' 0°9/12.7 18				
1 22	9 57.25	+12 41.3	1.699	2.620	9.4	20.4	1 12	10 7.70	+10 6.6	1.810	2.644	13.7	20.5
2 1	9 49.45	+13 17.5	1.660	2.627	5.1	20.1	1 22	10 0.47	+10 20.8	1.749	2.661	9.8	20.3
2 11	9 40.44	+13 58.3	1.648	2.635	0.5	19.8	2 1	9 51.14	+10 45.7	1.714	2.677	5.5	20.1
2 21	9 31.32	+14 38.2	1.665	2.642	4.1	20.1	2 11	9 40.64	+11 17.1	1.707	2.693	1.2	19.8
3 2	9 23.19	+15 12.0	1.709	2.649	8.5	20.4	2 21	9 30.11	+11 49.8	1.730	2.708	3.9	20.0
3 12	9 16.99	+15 36.2	1.779	2.657	12.3	20.6	3 2	9 20.69	+12 19.2	1.782	2.722	8.2	20.3
3 22	9 13.26	+15 49.2	1.870	2.664	15.5	20.8	3 12	9 13.31	+12 41.8	1.860	2.735	12.0	20.6
							3 22	9 8.47	+12 55.6	1.960	2.748	15.1	20.8
504672	2009 <i>CE</i> ₁₈	2 12.1 112°62' 2°0/13.9 17											
1 12	10 1.56	+ 6 16.5	2.505	3.322	10.9	21.7	41179	1999 <i>VW</i> ₁₉₂	2 12.1 84°28' 0°1/12.2 18				
1 22	9 55.72	+ 6 18.6	2.436	3.335	8.0	21.5	1 12	10 3.16	+12 28.7	1.949	2.794	12.4	19.0
2 1	9 48.44	+ 6 30.9	2.393	3.348	4.9	21.2	1 22	9 57.26	+12 43.6	1.880	2.798	8.8	18.8
2 11	9 40.35	+ 6 51.3	2.380	3.360	2.2	21.2	2 1	9 49.43	+13 6.8	1.835	2.802	4.8	18.6
2 21	9 32.19	+ 7 16.7	2.397	3.373	3.2	21.3	2 11	9 40.48	+13 34.0	1.819	2.806	0.5	18.2
3 2	9 24.72	+ 7 43.6	2.444	3.385	6.2	21.5	2 21	9 31.39	+14 0.9	1.832	2.810	3.8	18.5
3 12	9 18.61	+ 8 8.9	2.518	3.396	9.1	21.7	3 2	9 23.20	+14 23.3	1.874	2.814	7.9	18.8
3 22	9 14.26	+ 8 29.8	2.617	3.408	11.6	21.9	3 12	9 16.77	+14 38.1	1.942	2.817	11.5	19.0
							3 22	9 12.64	+14 43.8	2.031	2.821	14.6	19.2
216746	2005 <i>NR</i> ₃	2 12.1 87°44' 1°4/10.8 18											
1 12	10 1.07	+13 25.1	1.713	2.570	13.2	20.2	488753	2004 <i>SU</i> ₄₀	2 12.1 100°03' 14°2/ 3.8 17				
1 22	9 56.08	+14 45.4	1.644	2.570	9.3	19.9	1 12	10 28.09	+51 45.9	1.661	2.454	16.6	21.2
2 1	9 48.92	+16 17.8	1.601	2.570	4.9	19.7	1 22	10 15.75	+53 3.6	1.644	2.475	15.0	21.2
2 11	9 40.41	+17 54.1	1.585	2.571	1.4	19.4	2 1	9 59.46	+53 49.1	1.647	2.495	14.2	21.2
2 21	9 31.64	+19 25.3	1.599	2.571	5.1	19.7	2 11	9 41.42	+53 51.4	1.673	2.514	14.5	21.2
3 2	9 23.77	+20 43.7	1.640	2.571	9.5	20.0	2 21	9 24.27	+53 8.1	1.722	2.533	15.6	21.4
3 12	9 17.83	+21 44.2	1.706	2.572	13.4	20.2	3 2	9 10.25	+51 44.6	1.792	2.552	17.1	21.5
3 22	9 14.83	+22 25.2	1.793	2.572	16.6	20.4	3 12	9 0.60	+49 51.4	1.880	2.570	18.7	21.7
							3 22	8 55.49	+47 39.6	1.984	2.588	20.2	21.9
132799	2002 <i>PG</i> ₁₇₁	2 12.1 242°37' 1°4/10.9 18											
1 12	10 1.28	+16 3.3	2.096	2.949	11.3	20.6	334724	2003 <i>KG</i> ₄	2 12.1 215°09' 5°4/17.3 17				
1 22	9 55.90	+16 45.4	2.024	2.948	8.0	20.3	1 12	10 1.41	- 6 30.9	2.749	3.498	11.8	21.5
2 1	9 48.68	+17 33.4	1.978	2.947	4.2	20.1	1 22	9 55.70	- 6 45.7	2.650	3.489	9.7	21.4
2 11	9 40.38	+18 22.1	1.960	2.945	1.4	19.9	2 1	9 48.52	- 6 43.7	2.575	3.479	7.5	21.2
2 21	9 31.90	+19 6.0	1.973	2.944	4.4	20.1	2 11	9 40.40	- 6 24.7	2.528	3.469	5.8	21.1
3 2	9 24.21	+19 40.7	2.013	2.943	8.1	20.3	2 21	9 32.03	- 5 50.4	2.511	3.457	5.6	21.0
3 12	9 18.13	+20 3.5	2.080	2.942	11.5	20.5	3 2	9 24.13	- 5 4.0	2.522	3.445	7.0	21.1
3 22	9 14.21	+20 13.5	2.168	2.940	14.3	20.7	3 12	9 17.40	- 4 10.1	2.562	3.433	9.3	21.2
							3 22	9 12.33	- 3 13.7	2.626	3.420	11.5	21.4
448242	2008 <i>WX</i> ₄₈	2 12.1 27°78' 4°9/14.9 18											
1 12	10 1.22	+ 2 19.9	1.100	1.949	19.5	20.2	433446	2013 <i>TW</i> ₁₃₆	2 12.1 21°83' 15°4/31.5 18				
1 22	9 56.76	+ 2 15.7	1.048	1.959	14.9	20.0	1 12	10 19.30	+55 41.2	1.665	2.453	16.8	19.9
2 1	9 49.45	+ 2 38.9	1.015	1.970	9.8	19.7	1 22	10 9.91	+56 58.4	1.648	2.462	15.8	19.9
2 11	9 40.46	+ 3 26.1	1.004	1.982	5.4	19.5	2 1	9 56.49	+57 42.5	1.649	2.472	15.4	19.9
2 21	9 31.35	+ 4 29.7	1.018	1.995	6.1	19.6	2 11	9 41.14	+57 43.5	1.671	2.482	15.8	20.0
3 2	9 23.70	+ 5 39.8	1.056	2.009	10.7	19.9	2 21	9 26.47	+56 58.8	1.712	2.494	16.8	20.0
3 12	9 18.74	+ 6 46.3	1.115	2.024	15.4	20.2	3 2	9 14.72	+55 32.9	1.772	2.507	18.2	20.2
3 22	9 17.07	+ 7 41.8	1.194	2.040	19.4	20.5	3 12	9 7.16	+53 35.2	1.849	2.520	19.5	20.3
							3 22	9 3.96	+51 16.0	1.940	2.534	20.8	20.5
11016													

EPHEMERIDES

2 12.1

2 12.1

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
165683	2001 <i>OK</i> ₆₈		2 12.1 85°24	0°0/12.1 18			289170	2004 <i>VX</i> ₅₉		2 12.1 175°29	5°7/ 6.1 18		
1 12	10 0.50	+ 9 37.2	2.427	3.259	10.7	19.7	1 12	10 6.26	+33 2.9	2.678	3.521	9.5	21.0
1 22	9 55.00	+10 53.2	2.375	3.287	7.6	19.5	1 22	9 59.23	+34 7.1	2.621	3.524	7.4	20.9
2 1	9 48.06	+12 18.7	2.350	3.315	4.1	19.3	2 1	9 50.44	+35 3.9	2.592	3.527	5.9	20.8
2 11	9 40.36	+13 48.2	2.356	3.343	0.4	19.1	2 11	9 40.63	+35 47.4	2.592	3.528	5.9	20.8
2 21	9 32.63	+15 15.6	2.394	3.370	3.2	19.4	2 21	9 30.71	+36 13.2	2.621	3.529	7.3	20.9
3 2	9 25.64	+16 35.4	2.463	3.397	6.6	19.6	3 2	9 21.61	+36 19.6	2.677	3.530	9.4	21.0
3 12	9 20.03	+17 43.7	2.560	3.424	9.5	19.8	3 12	9 14.15	+36 7.4	2.758	3.530	11.5	21.1
3 22	9 16.22	+18 38.5	2.681	3.450	12.0	20.1	3 22	9 8.81	+35 39.1	2.860	3.529	13.3	21.3
350031	2010 <i>JU</i> ₁₅₀		2 12.1 173°77	3°4/ 8.5 18			166954	2003 <i>LY</i> ₁		2 12.1 121°41	11°5/23.9 18		
1 12	10 0.65	+23 29.4	2.532	3.388	9.5	21.1	1 12	10 4.37	-22 23.3	2.075	2.727	17.8	20.2
1 22	9 55.27	+24 31.5	2.466	3.389	6.8	20.9	1 22	9 58.13	-23 5.9	2.008	2.746	15.9	20.1
2 1	9 48.29	+25 33.6	2.428	3.390	4.3	20.8	2 1	9 49.93	-23 16.7	1.959	2.764	14.0	20.0
2 11	9 40.38	+26 29.9	2.419	3.390	3.5	20.7	2 11	9 40.58	-22 52.9	1.931	2.781	12.4	19.9
2 21	9 32.33	+27 15.6	2.441	3.391	5.5	20.8	2 21	9 31.08	-21 55.5	1.927	2.798	11.6	19.9
3 2	9 24.96	+27 47.2	2.491	3.391	8.2	21.0	3 2	9 22.47	-20 29.3	1.947	2.814	11.8	19.9
3 12	9 19.00	+28 3.6	2.566	3.391	10.8	21.2	3 12	9 15.64	-18 42.9	1.991	2.829	12.9	20.0
3 22	9 14.93	+28 5.3	2.663	3.391	13.0	21.3	3 22	9 11.14	-16 46.3	2.059	2.844	14.6	20.2
160526	1996 <i>RZ</i> ₄		2 12.1 125°94	3°0/14.3 18			102553	1999 <i>UJ</i> ₂₀		2 12.1 350°11	2°8/10.4 18		
1 12	10 4.66	+ 3 57.4	1.768	2.589	14.5	20.2	1 12	10 2.42	+17 43.1	1.254	2.130	15.7	19.8
1 22	9 58.42	+ 4 12.6	1.703	2.602	10.9	20.0	1 22	9 57.68	+18 28.0	1.190	2.125	11.1	19.5
2 1	9 50.10	+ 4 45.2	1.661	2.614	6.9	19.8	2 1	9 50.04	+19 20.9	1.149	2.120	6.1	19.2
2 11	9 40.57	+ 5 31.7	1.647	2.626	3.3	19.6	2 11	9 40.60	+20 12.8	1.132	2.116	2.8	19.0
2 21	9 30.92	+ 6 26.7	1.661	2.637	4.3	19.7	2 21	9 30.86	+20 54.8	1.141	2.113	6.7	19.2
3 2	9 22.27	+ 7 23.9	1.704	2.648	8.2	19.9	3 2	9 22.44	+21 20.2	1.174	2.111	11.8	19.5
3 12	9 15.55	+ 8 17.4	1.773	2.658	11.9	20.2	3 12	9 16.66	+21 26.3	1.229	2.110	16.4	19.8
3 22	9 11.31	+ 9 2.8	1.864	2.668	15.2	20.4	3 22	9 14.18	+21 13.8	1.302	2.109	20.3	20.0
102285	1999 <i>TP</i> ₆₃		2 12.1 110°80	2°3/13.9 18			10528	1990 <i>VX</i> ₃		2 12.1 354°87	3°3/10.4 18		
1 12	10 4.28	+ 5 12.8	1.834	2.658	14.0	20.4	1 12	10 1.55	+18 21.6	1.046	1.933	17.2	16.5
1 22	9 58.05	+ 5 39.0	1.773	2.676	10.3	20.2	1 22	9 57.43	+19 3.1	0.988	1.927	12.2	16.2
2 1	9 49.85	+ 6 21.1	1.737	2.694	6.3	20.0	2 1	9 50.04	+19 52.6	0.950	1.922	6.8	15.9
2 11	9 40.55	+ 7 14.8	1.729	2.711	2.6	19.8	2 11	9 40.61	+20 39.9	0.935	1.919	3.3	15.7
2 21	9 31.19	+ 8 14.4	1.751	2.728	3.9	20.0	2 21	9 30.87	+21 15.2	0.944	1.917	7.5	15.9
3 2	9 22.84	+ 9 13.7	1.801	2.744	7.8	20.2	3 2	9 22.68	+21 31.4	0.975	1.916	13.1	16.2
3 12	9 16.35	+10 7.2	1.877	2.760	11.5	20.5	3 12	9 17.50	+21 26.2	1.027	1.917	18.1	16.5
3 22	9 12.24	+10 51.2	1.976	2.775	14.6	20.7	3 22	9 16.01	+21 0.9	1.094	1.920	22.2	16.8
265756	2005 <i>VB</i> ₉₀		2 12.1 66°98	4°2/15.1 18			383374	2006 <i>SH</i> ₂₁₃		2 12.1 126°44	2°6/15.0 17		
1 12	10 3.85	+ 1 41.3	1.727	2.542	15.1	20.3	1 12	9 59.09	+ 1 57.0	2.806	3.604	10.4	21.7
1 22	9 57.77	+ 1 32.3	1.673	2.564	11.5	20.2	1 22	9 53.92	+ 2 15.6	2.733	3.617	7.9	21.5
2 1	9 49.69	+ 1 41.9	1.641	2.587	7.7	20.0	2 1	9 47.49	+ 2 46.7	2.687	3.630	5.2	21.4
2 11	9 40.53	+ 2 8.0	1.637	2.609	4.6	19.9	2 11	9 40.35	+ 3 28.1	2.669	3.643	3.0	21.2
2 21	9 31.38	+ 2 46.1	1.660	2.632	5.0	19.9	2 21	9 33.13	+ 4 16.6	2.682	3.655	3.3	21.3
3 2	9 23.31	+ 3 30.5	1.711	2.654	8.2	20.2	3 2	9 26.47	+ 5 8.3	2.726	3.666	5.7	21.5
3 12	9 17.18	+ 4 15.4	1.787	2.676	11.6	20.4	3 12	9 20.96	+ 5 59.1	2.798	3.678	8.2	21.6
3 22	9 13.49	+ 4 55.7	1.886	2.699	14.7	20.7	3 22	9 16.99	+ 6 45.7	2.894	3.689	10.6	21.8
11562	1993 <i>FU</i> ₃₃		2 12.1 358°19	3°0/ 9.9 18			398555	2011 <i>UJ</i> ₃₈₉		2 12.1 163°99	2°9/10.1 18		
1 12	10 2.34	+19 24.4	1.640	2.507	13.2	17.7	1 12	10 8.24	+20 7.8	1.802	2.656	12.8	21.5
1 22	9 57.08	+20 13.8	1.576	2.505	9.3	17.5	1 22	10 1.07	+20 48.8	1.737	2.661	9.1	21.2
2 1	9 49.49	+21 7.5	1.536	2.504	5.2	17.3	2 1	9 51.59	+21 32.1	1.698	2.665	5.1	21.0
2 11	9 40.53	+21 57.9	1.523	2.504	3.0	17.1	2 11	9 40.76	+22 10.6	1.688	2.669	2.9	20.9
2 21	9 31.36	+22 38.0	1.537	2.504	6.1	17.3	2 21	9 29.80	+22 38.3	1.707	2.672	5.8	21.1
3 2	9 23.26	+23 2.9	1.578	2.504	10.2	17.5	3 2	9 19.96	+22 51.5	1.754	2.675	9.7	21.3
3 12	9 17.26	+23 10.6	1.643	2.505	14.0	17.8	3 12	9 12.28	+22 49.3	1.826	2.677	13.3	21.5
3 22	9 13.97	+23 1.8	1.727	2.506	17.2	18.0	3 22	9 7.31	+22 32.8	1.918	2.678	16.4	21.7
382245	2012 <i>SU</i> ₅₁		2 12.1 91°51	5°3/17.6 18			249438	2009 <i>FT</i> ₄₅		2 12.1 347°80	8°0/ 3.8 18		
1 12	9 58.41	- 5 50.2	2.316	3.086	13.1	21.0	1 12	10 0.57	+33 22.6	1.864	2.729	11.9	19.4
1 22	9 53.69	- 5 36.2	2.239	3.093	10.6	20.9	1 22	9 55.93	+35 15.4	1.810	2.722	9.5	19.2
2 1	9 47.45	- 5 1.6	2.185	3.101	8.0	20.7	2 1	9 48.95	+37 0.5	1.782	2.717	8.1	19.1
2 11	9 40.32	- 4 7.7	2.157	3.109	5.8	20.6	2 11	9 40.50	+38 27.5	1.781	2.712	8.6	19.1
2 21	9 33.05	- 2 58.0	2.158	3.117	5.4	20.6	2 21	9 31.77	+39 28.6	1.806	2.708	10.5	19.2
3 2	9 26.43	- 1 38.1	2.188	3.124	7.2	20.7	3 2	9 24.03	+40 0.2	1.856	2.704	13.1	19.4
3 12	9 21.16	- 0 14.6	2.246	3.132	9.7	20.9	3 12	9 18.37	+40 3.2	1.925	2.701	15.6	19.5
3 22	9 17.70	+ 1 6.6	2.327	3.139	12.3	21.1	3 22	9 15.43	+39 41.3	2.012	2.699	17.8	19.7
330885	2009 <i>RG</i> ₄₈		2 12.1 74°24	0°7/12.6 18			400292	2007 <i>TM</i> ₇₉		2 12.1 164°12	0°3/12.3 18		
1 12	10 2.19	+ 9 54.2	1.809	2.652	13.3	21.2	1 12	10 5.47	+10 59.7	2.056	2.891	12.2	22.1
1 22	9 56.67	+10 21.9	1.744	2.661	9.5	21.0	1 22	9 58.85	+11 30.9	1.984	2.898	8.8	21.9
2 1	9 49.16	+11 1.4	1.705	2.670	5.3	20.7	2 1	9 50.31	+12 11.9	1.939	2.903	4.8	21.7
2 11	9 40.50	+11 48.1	1.692	2.678	1.1	20.4	2 11	9 40.64	+12 58.1	1.922	2.908	0.6	21.4
2 21	9 31.71	+12 36.3	1.709	2.687	3.9	20.7	2 21	9 30.81	+13 44.3	1.936	2.913	3.7	21.6
3 2	9 23.87	+13 20.4	1.754	2.696	8.1	20.9	3 2	9 21.83	+14 25.5	1.979	2.916	7.7	21.9
3 12	9 17.87	+13 56.2	1.824	2.705	11.9	21.2	3 12	9 14.60	+14 58.3	2.050	2.919	11.3	22.1
3 22	9 14.25	+14 21.2	1.916	2.713	15.0	21.4	3 22	9 9.63	+15 20.7	2.142	2.921	14.3	22.3
453013	2007 <i>QN</i> ₅		2 12.1 113°11	1°0/12.9 18			496915	2001 <i>SA</i> ₂₆₉		2 12.1 149°71	0°4/11.7 17		
1 12	10 5.12	+ 8 2.8	1.835	2.66									

EPHEMERIDES

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
179142	2001 <i>SN</i> ₃₂₇		2 12.1 151°00	1°0/11.3	18		104983	2000 <i>JY</i> ₇₃		2 12.1 237°96	1°1/11.0	17	
1 12	10 6.74	+16 21.9	2.453	3.291	10.4	20.7	1 12	10 0.50	+15 27.2	2.506	3.352	9.9	20.4
1 22	9 59.45	+16 40.4	2.385	3.302	7.3	20.5	1 22	9 55.21	+16 10.5	2.421	3.342	7.0	20.2
2 1	9 50.51	+17 2.3	2.345	3.312	3.9	20.3	2 1	9 48.33	+16 59.5	2.363	3.331	3.7	19.9
2 11	9 40.65	+17 23.6	2.336	3.321	1.0	20.1	2 11	9 40.47	+17 50.0	2.336	3.321	1.1	19.7
2 21	9 30.75	+17 40.7	2.358	3.330	3.7	20.3	2 21	9 32.38	+18 37.2	2.338	3.310	3.8	19.9
3 2	9 21.67	+17 50.9	2.411	3.338	7.1	20.5	3 2	9 24.87	+19 17.0	2.371	3.299	7.1	20.1
3 12	9 14.15	+17 52.7	2.491	3.345	10.1	20.8	3 12	9 18.68	+19 46.6	2.430	3.287	10.2	20.3
3 22	9 8.65	+17 46.0	2.595	3.352	12.6	20.9	3 22	9 14.33	+20 4.9	2.512	3.276	12.8	20.4
498546	2008 <i>GH</i> ₇₀		2 12.1 250°59	6°1/ 6.5	17		365884	2011 <i>UU</i> ₃₆₆		2 12.1 262°67	5°2/ 8.5	18	
1 12	10 4.76	+28 44.2	2.002	2.861	11.5	21.0	1 12	10 6.19	+23 39.6	1.523	2.391	13.9	20.6
1 22	9 58.77	+30 11.6	1.930	2.847	8.7	20.8	1 22	10 0.17	+24 51.1	1.455	2.383	10.1	20.4
2 1	9 50.46	+31 36.1	1.884	2.834	6.5	20.6	2 1	9 51.37	+26 3.9	1.411	2.374	6.4	20.1
2 11	9 40.67	+32 48.6	1.867	2.820	6.4	20.6	2 11	9 40.79	+27 7.6	1.394	2.366	5.3	20.0
2 21	9 30.50	+33 41.7	1.877	2.806	8.5	20.7	2 21	9 29.86	+27 53.5	1.403	2.357	8.2	20.2
3 2	9 21.21	+34 10.9	1.915	2.791	11.5	20.8	3 2	9 20.10	+28 16.2	1.439	2.348	12.3	20.4
3 12	9 13.87	+34 16.2	1.975	2.776	14.4	21.0	3 12	9 12.81	+28 14.9	1.496	2.340	16.1	20.6
3 22	9 9.16	+34 0.0	2.054	2.761	17.0	21.2	3 22	9 8.70	+27 52.4	1.572	2.331	19.4	20.8
153148	2000 <i>SH</i> ₂₄₈		2 12.1 191°83	0°5/12.5	18		461791	2005 <i>VM</i> ₆₇		2 12.1 166°54	3°7/ 9.3	18	
1 12	10 2.93	+10 44.2	2.066	2.904	12.1	20.8	1 12	10 4.55	+22 9.4	1.848	2.709	12.2	21.4
1 22	9 57.09	+11 7.1	1.989	2.903	8.7	20.6	1 22	9 58.48	+22 59.6	1.784	2.710	8.7	21.2
2 1	9 49.38	+11 39.9	1.937	2.902	4.8	20.4	2 1	9 50.22	+23 50.7	1.745	2.710	5.2	21.0
2 11	9 40.55	+12 18.5	1.915	2.901	0.8	20.1	2 11	9 40.67	+24 35.4	1.734	2.710	3.7	20.9
2 21	9 31.52	+12 58.2	1.922	2.899	3.6	20.3	2 21	9 30.96	+25 7.7	1.751	2.710	6.3	21.1
3 2	9 23.26	+13 34.4	1.958	2.897	7.6	20.5	3 2	9 22.27	+25 23.6	1.796	2.711	9.9	21.3
3 12	9 16.65	+14 3.4	2.020	2.895	11.2	20.7	3 12	9 15.57	+25 22.4	1.865	2.711	13.3	21.5
3 22	9 12.23	+14 23.0	2.105	2.892	14.2	20.9	3 22	9 11.44	+25 5.3	1.954	2.711	16.2	21.7
353097	2009 <i>EP</i> ₁₄		2 12.1 270°38	4°9/ 8.9	18		334248	2001 <i>TL</i> ₁₅₉		2 12.1 176°13	0°4/12.5	17	
1 12	10 8.76	+24 53.1	1.677	2.537	13.3	20.9	1 12	10 3.21	+10 36.9	2.306	3.138	11.2	22.2
1 22	10 1.90	+25 37.8	1.595	2.519	9.7	20.7	1 22	9 57.14	+11 8.4	2.229	3.141	8.0	22.0
2 1	9 52.28	+26 21.2	1.538	2.500	6.2	20.4	2 1	9 49.37	+11 49.1	2.179	3.143	4.4	21.8
2 11	9 40.86	+26 54.8	1.508	2.480	5.0	20.3	2 11	9 40.59	+12 35.0	2.158	3.144	0.7	21.5
2 21	9 28.98	+27 11.5	1.506	2.461	7.7	20.4	2 21	9 31.64	+13 21.5	2.168	3.145	3.3	21.7
3 2	9 18.18	+27 7.3	1.531	2.441	11.7	20.6	3 2	9 23.40	+14 4.2	2.208	3.145	7.0	21.9
3 12	9 9.73	+26 42.3	1.579	2.421	15.5	20.8	3 12	9 16.65	+14 39.4	2.275	3.144	10.3	22.1
3 22	9 4.39	+25 59.5	1.647	2.401	18.9	20.9	3 22	9 11.89	+15 5.3	2.366	3.143	13.1	22.3
76433	2000 <i>FM</i> ₂₄		2 12.1 27°79	4°5/ 7.9	18		413455	2005 <i>EY</i> ₁₄₆		2 12.1 274°59	4°3/ 9.2	17	
1 12	10 0.90	+23 40.2	1.919	2.785	11.6	18.7	1 12	10 7.29	+23 16.0	1.700	2.561	13.1	21.4
1 22	9 55.86	+25 4.8	1.862	2.789	8.3	18.6	1 22	10 0.84	+24 2.4	1.616	2.542	9.5	21.1
2 1	9 48.78	+26 29.8	1.830	2.792	5.4	18.4	2 1	9 51.72	+24 49.6	1.558	2.522	5.9	20.8
2 11	9 40.49	+27 46.7	1.827	2.796	4.7	18.3	2 11	9 40.84	+25 29.3	1.526	2.501	4.4	20.7
2 21	9 32.03	+28 48.5	1.852	2.800	7.1	18.5	2 21	9 29.50	+25 54.5	1.523	2.481	7.2	20.8
3 2	9 24.48	+29 30.4	1.904	2.804	10.3	18.7	3 2	9 19.14	+26 0.6	1.546	2.460	11.3	21.0
3 12	9 18.78	+29 51.2	1.979	2.808	13.3	18.9	3 12	9 11.01	+25 46.8	1.593	2.439	15.2	21.2
3 22	9 15.48	+29 52.4	2.074	2.813	15.9	19.1	3 22	9 5.89	+25 15.3	1.659	2.418	18.6	21.4
381691	2009 <i>CF</i> ₃₄		2 12.1 81°94	0°4/11.8	18		57694	2001 <i>UU</i> ₇₆		2 12.1 283°57	1°2/13.0	18	
1 12	10 5.88	+15 4.5	2.248	3.089	11.1	21.4	1 12	10 1.35	+ 8 20.1	1.767	2.608	13.6	19.1
1 22	9 58.82	+15 7.0	2.194	3.111	7.8	21.2	1 22	9 56.32	+ 8 51.5	1.683	2.598	10.0	18.9
2 1	9 50.14	+15 13.6	2.167	3.134	4.2	21.0	2 1	9 49.14	+ 9 37.8	1.624	2.588	5.8	18.6
2 11	9 40.62	+15 20.9	2.170	3.156	0.5	20.8	2 11	9 40.58	+10 34.8	1.592	2.577	1.5	18.3
2 21	9 31.18	+15 25.9	2.203	3.179	3.5	21.1	2 21	9 31.66	+11 36.2	1.589	2.567	4.0	18.4
3 2	9 22.69	+15 26.0	2.267	3.200	7.1	21.3	3 2	9 23.55	+12 35.4	1.613	2.557	8.5	18.7
3 12	9 15.88	+15 20.0	2.357	3.222	10.2	21.6	3 12	9 17.25	+13 26.6	1.662	2.547	12.6	18.9
3 22	9 11.16	+15 7.3	2.470	3.244	12.7	21.8	3 22	9 13.42	+14 6.3	1.733	2.537	16.2	19.1
116436	2003 <i>YK</i> ₁₅₈		2 12.1 82°13	4°0/ 9.0	18		293393	2007 <i>EP</i> ₅₃		2 12.1 240°21	4°5/16.2	17	
1 12	10 5.13	+24 43.4	2.064	2.921	11.3	19.2	1 12	10 0.13	- 1 58.2	2.121	2.914	13.5	20.7
1 22	9 58.60	+25 22.4	2.009	2.931	8.1	19.0	1 22	9 55.15	- 1 46.7	2.031	2.906	10.6	20.5
2 1	9 50.14	+25 58.9	1.980	2.942	5.1	18.9	2 1	9 48.39	- 1 15.3	1.965	2.899	7.6	20.3
2 11	9 40.63	+26 26.8	1.981	2.953	4.0	18.8	2 11	9 40.50	- 0 25.6	1.926	2.891	5.0	20.1
2 21	9 31.11	+26 41.5	2.010	2.963	6.2	19.0	2 21	9 32.33	+ 0 38.8	1.915	2.883	5.0	20.1
3 2	9 22.63	+26 40.8	2.067	2.974	9.2	19.2	3 2	9 24.79	+ 1 52.2	1.933	2.875	7.5	20.3
3 12	9 16.03	+26 24.7	2.149	2.984	12.2	19.4	3 12	9 18.73	+ 3 7.9	1.978	2.866	10.7	20.4
3 22	9 11.78	+25 55.2	2.251	2.995	14.7	19.6	3 22	9 14.71	+ 4 19.8	2.047	2.858	13.8	20.6
142349	2002 <i>RR</i> ₂₁₂		2 12.1 66°98	8°8/ 6.1	18		305599	2008 <i>YB</i> ₁₂₄		2 12.1 245°63	3°3/14.1	18	
1 12	10 9.48	+33 58.8	1.527	2.387	14.3	19.6	1 12	10 4.83	+ 4 47.2	1.639	2.467	15.2	20.6
1 22	10 2.27	+35 25.3	1.496	2.407	11.3	19.5	1 22	9 58.92	+ 4 42.5	1.556	2.459	11.5	20.3
2 1	9 52.28	+36 38.0	1.489	2.427	9.1	19.4	2 1	9 50.60	+ 4 54.8	1.496	2.451	7.3	20.1
2 11	9 40.84	+37 26.3	1.508	2.446	9.1	19.4	2 11	9 40.73	+ 5 21.9	1.463	2.442	3.7	19.8
2 21	9 29.57	+37 44.1	1.552	2.466	11.1	19.6	2 21	9 30.47	+ 5 59.6	1.457	2.433	4.8	19.9
3 2	9 20.02	+37 31.0	1.620	2.486	13.8	19.8	3 2	9 21.11	+ 6 42.0	1.479	2.424	9.0	20.1
3 12	9 13.30	+36 51.2	1.709	2.506	16.5	20.0	3 12	9 13.79	+ 7 23.1	1.526	2.415	13.3	20.3
3 22	9 9.84	+35 51.1	1.815	2.525	18.8	20.3	3 22	9 9.20	+ 7 58.0	1.594	2.406	17.0	20.5
269795	1999 <i>UL</i> ₂₁		2 12.1 5°40	8°8/19.9	18		385048	2012 <i>UZ</i> ₂₂		2 12.1 355°23	3°0/14.4	17	
1 12	9 58.87	-11 58.6	1.850	2									

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
467485	2006 <i>SL</i> ₃₂₅	2 12.1 177°01		5°1/ 6.3 17			443951	2003 <i>AX</i> ₁₅	2 12.1 344°42		4°6/ 9.1 18		
1 12	10 4.42	+33 22.7	2.995	3.836	8.6	22.3	1 12	10 1.86	+19 25.2	1.129	2.013	16.4	20.4
1 22	9 57.80	+34 13.5	2.936	3.838	6.7	22.2	1 22	9 57.63	+20 51.8	1.069	2.007	11.7	20.1
2 1	9 49.64	+34 57.3	2.905	3.840	5.4	22.1	2 1	9 50.21	+22 27.5	1.031	2.001	6.8	19.8
2 11	9 40.62	+35 29.1	2.904	3.841	5.3	22.1	2 11	9 40.74	+23 59.4	1.016	1.996	4.8	19.6
2 21	9 31.52	+35 45.6	2.932	3.841	6.6	22.2	2 21	9 30.87	+25 14.4	1.027	1.992	8.6	19.8
3 2	9 23.16	+35 45.3	2.988	3.841	8.5	22.3	3 2	9 22.41	+26 3.6	1.060	1.989	13.7	20.1
3 12	9 16.22	+35 28.8	3.068	3.841	10.4	22.4	3 12	9 16.84	+26 24.1	1.114	1.986	18.4	20.4
3 22	9 11.15	+34 58.3	3.170	3.840	12.1	22.6	3 22	9 14.90	+26 17.9	1.184	1.985	22.3	20.6
318858	2005 <i>TH</i> ₅₁	2 12.1 261°37		1°9/11.6 18			473067	2015 <i>HD</i> ₉₄	2 12.1 170°61		2°8/ 8.9 18		
1 12	10 20.21	+19 57.8	1.123	1.982	18.4	20.7	1 12	9 59.63	+22 18.7	2.775	3.629	8.8	21.0
1 22	10 10.90	+19 20.6	1.049	1.974	13.4	20.4	1 22	9 54.47	+23 11.4	2.708	3.630	6.3	20.8
2 1	9 57.49	+18 40.5	0.997	1.966	7.4	20.0	2 1	9 47.89	+24 4.5	2.668	3.631	3.8	20.7
2 11	9 41.45	+17 51.6	0.971	1.957	1.9	19.6	2 11	9 40.48	+24 53.3	2.658	3.632	2.9	20.6
2 21	9 25.00	+16 50.7	0.973	1.948	6.7	19.9	2 21	9 32.95	+25 33.7	2.678	3.633	4.7	20.7
3 2	9 10.50	+15 38.6	1.000	1.939	13.1	20.2	3 2	9 26.03	+26 2.5	2.728	3.634	7.3	20.9
3 12	8 59.75	+14 18.9	1.050	1.930	18.7	20.5	3 12	9 20.35	+26 18.4	2.803	3.634	9.8	21.1
3 22	8 53.53	+12 55.4	1.118	1.921	23.2	20.8	3 22	9 16.37	+26 21.6	2.901	3.634	11.9	21.2
61584	2000 <i>QR</i> ₈₃	2 12.1 202°96		2°5/14.6 18			328575	2009 <i>SB</i> ₃₅	2 12.1 221°58		0°9/11.4 17		
1 12	10 1.03	+ 2 40.2	2.483	3.287	11.4	19.9	1 12	10 4.07	+15 4.2	2.170	3.014	11.3	21.9
1 22	9 55.57	+ 3 13.4	2.393	3.282	8.6	19.7	1 22	9 57.94	+15 34.3	2.087	3.006	8.0	21.7
2 1	9 48.53	+ 4 1.5	2.328	3.277	5.5	19.5	2 1	9 49.90	+16 10.6	2.030	2.998	4.3	21.4
2 11	9 40.53	+ 5 1.7	2.293	3.271	2.8	19.3	2 11	9 40.70	+16 48.5	2.003	2.989	0.9	21.1
2 21	9 32.29	+ 6 9.8	2.288	3.264	3.4	19.3	2 21	9 31.24	+17 23.2	2.006	2.980	4.0	21.4
3 2	9 24.61	+ 7 20.6	2.314	3.256	6.5	19.5	3 2	9 22.51	+17 50.4	2.039	2.970	7.9	21.6
3 12	9 18.21	+ 8 28.8	2.369	3.248	9.6	19.7	3 12	9 15.40	+18 7.7	2.098	2.960	11.4	21.8
3 22	9 13.61	+ 9 30.4	2.447	3.239	12.3	19.8	3 22	9 10.47	+18 13.9	2.179	2.950	14.3	21.9
494712	2005 <i>NG</i> ₁₂₂	2 12.1 174°75		2°3/14.2 17			275345	2010 <i>XX</i> ₅₅	2 12.1 0°91		0°7/12.6 18		
1 12	10 3.16	+ 4 31.6	2.416	3.226	11.5	22.7	1 12	10 2.85	+11 19.3	1.618	2.469	14.1	20.5
1 22	9 57.03	+ 4 45.5	2.335	3.229	8.6	22.5	1 22	9 57.44	+11 25.0	1.548	2.468	10.2	20.3
2 1	9 49.30	+ 5 12.0	2.280	3.232	5.4	22.3	2 1	9 49.74	+11 41.6	1.501	2.468	5.7	20.0
2 11	9 40.61	+ 5 48.6	2.255	3.234	2.6	22.1	2 11	9 40.69	+12 4.8	1.482	2.468	1.1	19.7
2 21	9 31.74	+ 6 31.7	2.260	3.235	3.5	22.2	2 21	9 31.42	+12 29.6	1.489	2.468	4.2	19.9
3 2	9 23.54	+ 7 17.0	2.295	3.235	6.6	22.4	3 2	9 23.18	+12 51.3	1.524	2.469	8.9	20.2
3 12	9 16.73	+ 8 0.2	2.358	3.235	9.7	22.5	3 12	9 16.99	+13 5.9	1.584	2.470	13.0	20.4
3 22	9 11.81	+ 8 38.2	2.445	3.234	12.4	22.7	3 22	9 13.45	+13 11.3	1.664	2.472	16.5	20.7
348415	2005 <i>MG</i> ₄₅	2 12.1 210°62		1°2/10.8 17			331241	2011 <i>BD</i> ₁₀₃	2 12.1 107°80		2°6/10.2 18		
1 12	9 59.51	+15 50.6	2.697	3.543	9.3	21.1	1 12	10 4.71	+19 40.6	1.880	2.737	12.2	20.8
1 22	9 54.42	+16 40.8	2.617	3.538	6.5	20.9	1 22	9 58.52	+20 17.1	1.815	2.741	8.6	20.6
2 1	9 47.88	+17 36.2	2.566	3.534	3.5	20.7	2 1	9 50.23	+20 56.1	1.776	2.744	4.8	20.4
2 11	9 40.47	+18 32.5	2.544	3.529	1.2	20.5	2 11	9 40.73	+21 31.5	1.766	2.747	2.6	20.2
2 21	9 32.88	+19 25.0	2.553	3.523	3.6	20.7	2 21	9 31.11	+21 57.8	1.784	2.751	5.4	20.4
3 2	9 25.85	+20 9.9	2.592	3.518	6.7	20.9	3 2	9 22.48	+22 11.3	1.830	2.754	9.2	20.6
3 12	9 20.03	+20 44.5	2.659	3.512	9.6	21.1	3 12	9 15.80	+22 10.7	1.901	2.757	12.6	20.8
3 22	9 15.89	+21 7.7	2.748	3.506	12.0	21.2	3 22	9 11.60	+21 56.6	1.993	2.760	15.6	21.1
330119	2005 <i>YL</i>	2 12.1 121°05		2°2/13.8 18			128089	2003 <i>PG</i> ₃	2 12.1 279°24		1°7/13.3 18		
1 12	10 2.56	+ 6 15.8	1.936	2.764	13.2	21.0	1 12	10 3.49	+ 8 44.6	1.943	2.778	12.9	19.9
1 22	9 56.91	+ 6 23.0	1.863	2.768	9.8	20.8	1 22	9 57.64	+ 8 41.2	1.862	2.772	9.5	19.7
2 1	9 49.33	+ 6 44.0	1.814	2.771	6.0	20.6	2 1	9 49.78	+ 8 48.7	1.806	2.767	5.6	19.4
2 11	9 40.62	+ 7 15.7	1.793	2.774	2.6	20.4	2 11	9 40.70	+ 9 4.3	1.777	2.761	1.9	19.2
2 21	9 31.73	+ 7 53.8	1.800	2.778	3.9	20.5	2 21	9 31.36	+ 9 24.5	1.778	2.756	3.8	19.3
3 2	9 23.68	+ 8 33.4	1.837	2.781	7.6	20.7	3 2	9 22.83	+ 9 45.2	1.807	2.750	7.8	19.5
3 12	9 17.34	+ 9 9.8	1.899	2.784	11.3	20.9	3 12	9 16.04	+10 2.6	1.862	2.745	11.6	19.8
3 22	9 13.26	+ 9 39.4	1.984	2.787	14.4	21.1	3 22	9 11.55	+10 14.0	1.940	2.740	14.8	20.0
200802	2001 <i>XU</i> ₁₃₅	2 12.1 11°59		2°4/13.5 18			155541	1999 <i>TJ</i> ₂₅₀	2 12.1 195°49		1°1/11.2 17		
1 12	10 0.17	+ 6 56.7	1.066	1.932	18.7	20.1	1 12	10 4.36	+16 20.2	2.319	3.163	10.7	20.3
1 22	9 56.24	+ 7 11.6	1.010	1.935	13.8	19.8	1 22	9 57.99	+16 42.6	2.242	3.161	7.6	20.1
2 1	9 49.34	+ 7 49.5	0.973	1.938	8.2	19.5	2 1	9 49.87	+17 9.2	2.191	3.159	4.1	19.9
2 11	9 40.64	+ 8 44.8	0.959	1.943	2.9	19.3	2 11	9 40.72	+17 35.8	2.171	3.156	1.1	19.6
2 21	9 31.69	+ 9 48.7	0.968	1.949	5.3	19.4	2 21	9 31.40	+17 58.4	2.180	3.153	3.9	19.8
3 2	9 24.17	+10 51.3	1.002	1.956	10.9	19.7	3 2	9 22.82	+18 13.6	2.220	3.149	7.5	20.1
3 12	9 19.41	+11 43.8	1.057	1.965	16.1	20.1	3 12	9 15.80	+18 19.5	2.286	3.145	10.7	20.3
3 22	9 18.03	+12 21.3	1.129	1.974	20.4	20.4	3 22	9 10.83	+18 15.8	2.375	3.141	13.4	20.4
496517	2014 <i>UQ</i> ₁₉₈	2 12.1 75°03		2°4/13.7 18			40798	1999 <i>TV</i> ₃₇	2 12.1 6°98		1°1/12.8 18		
1 12	10 4.27	+ 6 43.8	1.681	2.515	14.6	20.9	1 12	10 4.03	+10 48.7	1.717	2.562	13.8	18.5
1 22	9 58.27	+ 6 43.8	1.617	2.525	10.8	20.7	1 22	9 58.17	+10 42.9	1.646	2.563	10.0	18.3
2 1	9 50.10	+ 6 58.4	1.577	2.536	6.5	20.5	2 1	9 50.11	+10 47.1	1.599	2.563	5.7	18.0
2 11	9 40.70	+ 7 24.4	1.564	2.546	2.7	20.3	2 11	9 40.75	+10 58.0	1.579	2.564	1.4	17.7
2 21	9 31.19	+ 7 57.2	1.579	2.557	4.2	20.4	2 21	9 31.21	+11 11.5	1.587	2.566	4.0	17.9
3 2	9 22.74	+ 8 31.4	1.622	2.568	8.4	20.7	3 2	9 22.66	+11 23.7	1.623	2.567	8.5	18.2
3 12	9 16.30	+ 9 2.1	1.691	2.578	12.3	20.9	3 12	9 16.09	+11 31.0	1.684	2.569	12.5	18.4
3 22	9 12.41	+ 9 25.8	1.780	2.589	15.6	21.2	3 22	9 12.08	+11 31.4	1.767	2.572	15.8	18.6
425058	2009 <i>QB</i> ₅₉	2 12.1 125°22		0°9/12.8 18			297291	1997 <i>XG</i> ₂	2 12.1 70°09		3°2/10.2 18		
1 12	10 2.98	+ 9 24.1	2.032	2.867	12.4	22.3	1 12	10 7.40	+18 33.9	1.349	2.2		

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
456760	2007 <i>TU</i> ₉₄		2 12.1 173°51	1°0/11.3	18		246745	2009 <i>BA</i> ₈₃		2 12.1 358°11	6°5/ 6.9	18	
1 12	10 5.48	+14 22.6	2.160	3.001	11.5	22.2	1 12	10 1.58	+28 46.9	1.679	2.550	12.7	19.5
1 22	9 58.88	+15 11.5	2.087	3.005	8.1	22.0	1 22	9 56.69	+29 59.6	1.623	2.547	9.5	19.3
2 1	9 50.40	+16 7.7	2.041	3.009	4.3	21.7	2 1	9 49.41	+31 7.3	1.591	2.545	7.0	19.2
2 11	9 40.78	+17 5.5	2.025	3.011	1.0	21.5	2 11	9 40.72	+32 0.8	1.586	2.544	6.8	19.1
2 21	9 30.98	+17 59.3	2.040	3.013	4.1	21.7	2 21	9 31.86	+32 33.0	1.607	2.543	9.0	19.3
3 2	9 21.99	+18 44.3	2.085	3.014	7.9	22.0	3 2	9 24.13	+32 40.7	1.652	2.544	12.1	19.4
3 12	9 14.67	+19 17.4	2.156	3.014	11.3	22.2	3 12	9 18.59	+32 24.4	1.720	2.545	15.2	19.6
3 22	9 9.56	+19 37.7	2.250	3.013	14.2	22.4	3 22	9 15.81	+31 47.6	1.805	2.547	17.9	19.8
240879	2006 <i>DD</i> ₃₀		2 12.1 30°48	1°3/12.9	18		249578	1995 <i>SS</i> ₂₄		2 12.1 180°18	1°2/11.2	18	
1 12	10 1.95	+ 7 55.9	1.250	2.108	17.1	20.2	1 12	10 5.00	+14 50.8	1.910	2.759	12.4	21.7
1 22	9 57.22	+ 8 34.8	1.191	2.113	12.4	19.9	1 22	9 58.75	+15 34.3	1.838	2.760	8.8	21.4
2 1	9 49.79	+ 9 34.0	1.154	2.120	7.1	19.7	2 1	9 50.42	+16 25.4	1.792	2.761	4.7	21.2
2 11	9 40.73	+10 46.5	1.141	2.126	1.8	19.3	2 11	9 40.83	+17 18.2	1.775	2.761	1.2	20.9
2 21	9 31.46	+12 3.1	1.154	2.134	4.9	19.6	2 21	9 31.02	+18 6.7	1.787	2.760	4.5	21.2
3 2	9 23.48	+13 14.2	1.193	2.142	10.2	19.9	3 2	9 22.11	+18 45.5	1.828	2.760	8.6	21.4
3 12	9 17.99	+14 12.4	1.254	2.150	15.0	20.2	3 12	9 15.06	+19 11.8	1.895	2.758	12.3	21.6
3 22	9 15.63	+14 53.8	1.334	2.159	19.0	20.5	3 22	9 10.45	+19 24.5	1.983	2.757	15.4	21.8
254646	2005 <i>JO</i> ₁₂₇		2 12.1 279°80	0°2/11.9	17		65156	2002 <i>CG</i> ₁₄₃		2 12.1 199°35	0°9/13.1	18	
1 12	10 2.89	+11 47.6	1.685	2.535	13.7	20.9	1 12	9 58.92	+ 8 39.5	2.717	3.544	9.8	20.5
1 22	9 57.66	+12 28.7	1.595	2.516	9.9	20.7	1 22	9 53.97	+ 9 7.9	2.635	3.543	7.1	20.3
2 1	9 50.03	+13 23.1	1.529	2.497	5.4	20.4	2 1	9 47.67	+ 9 45.6	2.579	3.541	4.1	20.1
2 11	9 40.78	+14 25.1	1.490	2.477	0.5	19.9	2 11	9 40.55	+10 29.5	2.553	3.538	1.1	19.8
2 21	9 31.02	+15 27.8	1.480	2.457	4.6	20.2	2 21	9 33.27	+11 15.8	2.558	3.536	2.8	20.0
3 2	9 22.03	+16 23.8	1.497	2.437	9.5	20.4	3 2	9 26.53	+12 0.7	2.593	3.533	5.9	20.2
3 12	9 14.99	+17 7.9	1.539	2.417	13.9	20.6	3 12	9 20.95	+12 40.7	2.655	3.530	8.8	20.4
3 22	9 10.66	+17 37.3	1.601	2.396	17.6	20.8	3 22	9 16.97	+13 13.6	2.742	3.527	11.3	20.5
296918	2010 <i>CJ</i> ₉₅		2 12.1 349°04	1°3/11.1	18		183255	2002 <i>TX</i> ₁₆₈		2 12.1 47°86	7°8/17.0	18	
1 12	10 1.72	+16 3.0	2.060	2.913	11.5	21.0	1 12	10 4.41	- 4 9.8	1.433	2.234	18.4	19.3
1 22	9 56.30	+16 36.9	1.989	2.912	8.1	20.8	1 22	9 58.61	- 4 57.9	1.378	2.251	14.8	19.1
2 1	9 49.03	+17 16.4	1.943	2.912	4.3	20.5	2 1	9 50.41	- 5 19.5	1.344	2.269	11.2	18.9
2 11	9 40.66	+17 56.6	1.926	2.911	1.3	20.3	2 11	9 40.84	- 5 13.7	1.333	2.287	8.3	18.8
2 21	9 32.12	+18 32.2	1.938	2.911	4.3	20.5	2 21	9 31.19	- 4 43.6	1.348	2.305	8.0	18.8
3 2	9 24.39	+18 59.3	1.979	2.910	8.1	20.8	3 2	9 22.77	- 3 55.7	1.388	2.325	10.3	19.0
3 12	9 18.32	+19 15.2	2.045	2.910	11.5	21.0	3 12	9 16.63	- 2 58.6	1.451	2.344	13.6	19.2
3 22	9 14.42	+19 19.2	2.133	2.910	14.4	21.2	3 22	9 13.33	- 2 0.8	1.536	2.363	16.7	19.5
54838	2001 <i>NO</i> ₂₁		2 12.1 46°47	3°3/14.5	18		258978	2002 <i>SL</i> ₆₇		2 12.1 151°63	8°6/15.4	17	
1 12	10 1.71	+ 3 19.4	1.413	2.250	16.7	18.6	1 12	10 14.53	- 1 50.5	1.299	2.100	19.8	21.2
1 22	9 56.63	+ 3 45.5	1.364	2.271	12.5	18.4	1 22	10 6.27	- 3 19.6	1.231	2.107	16.0	20.9
2 1	9 49.28	+ 4 33.4	1.338	2.293	7.8	18.2	2 1	9 54.81	- 4 26.1	1.184	2.112	11.9	20.7
2 11	9 40.68	+ 5 38.1	1.336	2.316	3.7	18.0	2 11	9 41.32	- 5 5.8	1.162	2.118	9.0	20.6
2 21	9 32.08	+ 6 51.9	1.361	2.339	4.7	18.1	2 21	9 27.46	- 5 18.5	1.166	2.122	9.2	20.6
3 2	9 24.73	+ 8 6.2	1.413	2.363	8.9	18.4	3 2	9 15.03	- 5 7.9	1.196	2.126	12.3	20.8
3 12	9 19.58	+ 9 13.4	1.489	2.386	13.0	18.7	3 12	9 5.47	- 4 42.1	1.249	2.129	16.2	21.0
3 22	9 17.13	+10 8.4	1.586	2.411	16.5	19.0	3 22	8 59.56	- 4 9.8	1.321	2.132	19.9	21.2
174710	2003 <i>UX</i> ₁₁₃		2 12.1 106°41	2°6/10.1	18		338379	2002 <i>YD</i> ₂₂		2 12.1 100°84	6°5/18.0	18	
1 12	10 4.52	+17 12.4	1.668	2.527	13.4	20.0	1 12	10 2.97	- 8 19.2	2.520	3.261	12.9	20.6
1 22	9 58.56	+18 26.8	1.613	2.540	9.4	19.8	1 22	9 56.84	- 8 59.5	2.451	3.279	10.8	20.5
2 1	9 50.33	+19 47.7	1.583	2.552	5.1	19.6	2 1	9 49.21	- 9 21.3	2.405	3.296	8.6	20.4
2 11	9 40.81	+21 6.4	1.582	2.564	2.6	19.4	2 11	9 40.72	- 9 24.0	2.386	3.313	6.9	20.3
2 21	9 31.17	+22 14.7	1.609	2.576	5.8	19.7	2 21	9 32.14	- 9 9.0	2.395	3.329	6.6	20.3
3 2	9 22.65	+23 6.6	1.664	2.588	9.9	19.9	3 2	9 24.24	- 8 39.3	2.432	3.346	7.7	20.4
3 12	9 16.25	+23 39.5	1.743	2.599	13.6	20.2	3 12	9 17.69	- 7 59.7	2.497	3.362	9.7	20.6
3 22	9 12.52	+23 53.9	1.842	2.610	16.6	20.4	3 22	9 12.96	- 7 15.5	2.585	3.377	11.7	20.7
90150	2002 <i>YP</i> ₁₇		2 12.1 21°65	1°8/10.9	18		379442	2010 <i>CD</i> ₈₀		2 12.1 30°96	0°6/11.7	18	
1 12	10 1.64	+15 20.2	1.306	2.178	15.5	18.9	1 12	10 1.45	+13 47.9	1.851	2.704	12.6	21.0
1 22	9 56.92	+16 8.8	1.253	2.185	10.9	18.7	1 22	9 56.22	+14 19.0	1.786	2.709	8.9	20.8
2 1	9 49.59	+17 7.4	1.222	2.193	5.8	18.4	2 1	9 49.04	+14 58.3	1.746	2.715	4.7	20.6
2 11	9 40.73	+18 7.5	1.216	2.202	1.8	18.2	2 11	9 40.72	+15 40.5	1.735	2.721	0.7	20.3
2 21	9 31.76	+19 0.3	1.237	2.211	5.8	18.4	2 21	9 32.27	+16 20.1	1.751	2.727	4.2	20.6
3 2	9 24.10	+19 39.1	1.282	2.221	10.7	18.7	3 2	9 24.74	+16 52.3	1.796	2.734	8.3	20.8
3 12	9 18.90	+20 0.4	1.350	2.233	15.1	19.0	3 12	9 19.00	+17 14.0	1.866	2.741	11.9	21.1
3 22	9 16.71	+20 4.0	1.437	2.245	18.7	19.3	3 22	9 15.59	+17 23.8	1.957	2.748	15.0	21.3
187304	2005 <i>UV</i>		2 12.1 192°66	1°8/10.6	16		271235	Bellay		2 12.1 199°27	0°5/11.7	18	
1 12	10 3.96	+17 24.1	2.163	3.012	11.1	21.0	1 12	10 2.07	+13 39.5	2.150	2.995	11.4	20.9
1 22	9 57.85	+18 7.1	2.088	3.011	7.9	20.7	1 22	9 56.50	+14 9.1	2.074	2.994	8.1	20.7
2 1	9 49.87	+18 54.7	2.041	3.009	4.3	20.5	2 1	9 49.15	+14 46.0	2.025	2.993	4.3	20.5
2 11	9 40.77	+19 41.4	2.023	3.006	1.8	20.3	2 11	9 40.73	+15 25.8	2.005	2.992	0.6	20.2
2 21	9 31.46	+20 22.0	2.035	3.004	4.6	20.5	2 21	9 32.13	+16 3.6	2.015	2.991	3.8	20.5
3 2	9 22.95	+20 52.3	2.076	3.001	8.2	20.7	3 2	9 24.28	+16 35.3	2.054	2.989	7.6	20.7
3 12	9 16.08	+21 9.9	2.143	2.997	11.5	20.9	3 12	9 18.01	+16 57.9	2.118	2.988	11.0	20.9
3 22	9 11.40	+21 14.7	2.231	2.993	14.3	21.1	3 22	9 13.83	+17 9.9	2.206	2.986	13.9	21.1
143600	2003 <i>FW</i> ₇₈		2 12.1 295°03	1°9/10.8	18		416249	2003 <i>DG</i> ₄		2 12.1 341°77	6°7/17.3	17	

EPHEMERIDES

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
21197	1994 <i>PS</i> ₇		2 12.1 120°01	0°9/12.9	18		466131	2012 <i>FE</i> ₂₅		2 12.1 249°31	7°9/6.7	16	
1 12	10 2.25	+ 9 29.0	2.098	2.933	12.0	19.6	1 12	10 14.78	+36 35.9	2.043	2.879	12.2	21.7
1 22	9 56.59	+ 9 53.8	2.029	2.941	8.7	19.4	1 22	10 5.94	+37 20.0	1.971	2.865	9.9	21.5
2 1	9 49.17	+10 29.2	1.986	2.949	4.9	19.2	2 1	9 54.43	+37 51.4	1.924	2.851	8.2	21.4
2 11	9 40.73	+11 11.3	1.971	2.957	1.1	18.9	2 11	9 41.33	+38 1.6	1.904	2.836	8.0	21.3
2 21	9 32.18	+11 55.3	1.986	2.964	3.4	19.1	2 21	9 28.05	+37 45.3	1.913	2.820	9.7	21.4
3 2	9 24.42	+12 36.4	2.031	2.972	7.3	19.3	3 2	9 16.08	+37 2.1	1.948	2.804	12.3	21.5
3 12	9 18.27	+13 10.9	2.102	2.979	10.7	19.6	3 12	9 6.59	+35 55.3	2.008	2.788	14.9	21.7
3 22	9 14.21	+13 36.4	2.195	2.986	13.6	19.8	3 22	9 0.20	+34 31.0	2.086	2.772	17.3	21.8
277580	2005 <i>YQ</i> ₂₁₆		2 12.1 150°67	0°3/11.9	18		178388	1997 <i>US</i> ₅		2 12.1 136°40	2°4/10.0	18	
1 12	10 3.54	+13 4.8	2.337	3.175	10.8	22.1	1 12	10 5.81	+19 52.8	2.370	3.216	10.4	21.2
1 22	9 57.36	+13 33.7	2.267	3.183	7.7	21.9	1 22	9 58.94	+20 40.6	2.312	3.232	7.3	21.0
2 1	9 49.54	+14 9.3	2.224	3.191	4.1	21.7	2 1	9 50.38	+21 29.9	2.282	3.248	4.1	20.8
2 11	9 40.78	+14 47.7	2.211	3.198	0.4	21.4	2 11	9 40.90	+22 15.2	2.283	3.263	2.4	20.7
2 21	9 31.90	+15 24.3	2.229	3.205	3.4	21.7	2 21	9 31.37	+22 51.8	2.314	3.277	4.7	20.9
3 2	9 23.78	+15 55.5	2.277	3.211	7.0	21.9	3 2	9 22.71	+23 16.6	2.375	3.290	7.8	21.1
3 12	9 17.16	+16 18.5	2.351	3.217	10.2	22.1	3 12	9 15.66	+23 28.4	2.463	3.303	10.7	21.3
3 22	9 12.52	+16 32.1	2.449	3.222	12.9	22.3	3 22	9 10.68	+23 27.6	2.572	3.314	13.1	21.5
98319	2000 <i>SQ</i> ₂₆₅		2 12.1 201°12	3°6/9.1	18		165797	2001 <i>RK</i> ₃₇		2 12.1 132°24	1°5/13.7	17	
1 12	10 7.00	+21 52.7	2.022	2.875	11.7	20.3	1 12	10 0.04	+ 6 35.4	2.525	3.346	10.7	21.0
1 22	10 0.24	+22 58.1	1.949	2.871	8.3	20.1	1 22	9 54.81	+ 7 2.3	2.452	3.355	7.8	20.8
2 1	9 51.29	+24 5.4	1.902	2.866	5.0	19.9	2 1	9 48.16	+ 7 40.3	2.406	3.363	4.7	20.6
2 11	9 40.98	+25 7.0	1.884	2.860	3.7	19.8	2 11	9 40.67	+ 8 26.1	2.388	3.371	1.8	20.4
2 21	9 30.38	+25 56.2	1.897	2.853	6.2	19.9	2 21	9 33.08	+ 9 15.8	2.402	3.379	3.0	20.6
3 2	9 20.67	+26 28.6	1.938	2.845	9.7	20.1	3 2	9 26.11	+10 5.2	2.445	3.387	6.1	20.8
3 12	9 12.84	+26 42.7	2.004	2.837	13.0	20.3	3 12	9 20.42	+10 50.4	2.516	3.394	9.1	21.0
3 22	9 7.52	+26 39.7	2.090	2.828	15.8	20.5	3 22	9 16.45	+11 28.5	2.611	3.401	11.7	21.2
428429	2007 <i>TZ</i> ₂₁₀		2 12.1 135°62	3°8/8.6	17		395713	2012 <i>TA</i> ₁₅₀		2 12.1 35°74	2°8/10.7	18	
1 12	10 4.77	+26 22.0	2.629	3.478	9.4	21.3	1 12	10 6.43	+17 37.1	1.164	2.038	16.8	21.0
1 22	9 58.12	+27 1.1	2.572	3.489	6.8	21.2	1 22	10 0.66	+18 20.4	1.110	2.043	11.9	20.7
2 1	9 49.89	+27 36.8	2.543	3.499	4.5	21.0	2 1	9 51.78	+19 11.2	1.079	2.049	6.5	20.4
2 11	9 40.82	+28 4.3	2.543	3.509	3.8	21.0	2 11	9 41.06	+19 59.9	1.072	2.056	2.8	20.2
2 21	9 31.71	+28 19.8	2.574	3.519	5.5	21.1	2 21	9 30.20	+20 37.3	1.090	2.063	6.8	20.5
3 2	9 23.43	+28 21.5	2.633	3.528	8.0	21.3	3 2	9 20.94	+20 57.4	1.133	2.070	12.1	20.8
3 12	9 16.65	+28 9.5	2.719	3.537	10.4	21.5	3 12	9 14.62	+20 58.2	1.197	2.077	16.8	21.1
3 22	9 11.83	+27 45.3	2.826	3.545	12.5	21.6	3 22	9 11.83	+20 41.1	1.279	2.085	20.6	21.3
333184	2012 <i>EU</i> ₈		2 12.1 158°84	1°5/13.4	18		384245	2009 <i>DF</i> ₁₁₆		2 12.1 68°98	1°1/11.3	18	
1 12	10 2.76	+ 7 21.7	1.887	2.720	13.3	21.4	1 12	10 3.38	+16 36.1	2.186	3.035	11.1	20.7
1 22	9 57.16	+ 7 48.8	1.813	2.723	9.7	21.2	1 22	9 57.31	+16 52.1	2.124	3.045	7.8	20.5
2 1	9 49.58	+ 8 30.1	1.765	2.725	5.7	21.0	2 1	9 49.53	+17 11.9	2.088	3.056	4.2	20.3
2 11	9 40.80	+ 9 21.3	1.743	2.728	1.9	20.7	2 11	9 40.82	+17 31.3	2.081	3.067	1.1	20.1
2 21	9 31.81	+10 17.1	1.751	2.730	3.8	20.8	2 21	9 32.05	+17 46.5	2.104	3.077	3.9	20.3
3 2	9 23.67	+11 11.4	1.788	2.732	7.9	21.1	3 2	9 24.15	+17 54.6	2.156	3.088	7.5	20.6
3 12	9 17.29	+11 59.2	1.851	2.733	11.7	21.3	3 12	9 17.88	+17 54.0	2.234	3.099	10.7	20.8
3 22	9 13.22	+12 37.1	1.936	2.735	14.9	21.5	3 22	9 13.70	+17 44.3	2.335	3.109	13.4	21.0
196387	2003 <i>GU</i> ₆		2 12.1 298°74	4°0/9.4	18		30193	Annikaurban		2 12.1 176°11	1°3/11.3	18	
1 12	10 3.89	+19 28.2	1.364	2.236	14.9	20.0	1 12	10 8.40	+15 55.8	1.745	2.594	13.4	19.2
1 22	9 58.84	+20 43.2	1.291	2.224	10.7	19.7	1 22	10 1.34	+16 25.0	1.675	2.597	9.5	18.9
2 1	9 50.86	+22 6.1	1.243	2.212	6.2	19.4	2 1	9 51.91	+17 0.5	1.630	2.598	5.1	18.7
2 11	9 40.95	+23 26.4	1.220	2.199	4.1	19.2	2 11	9 41.08	+17 36.3	1.614	2.600	1.3	18.4
2 21	9 30.55	+24 33.3	1.223	2.187	7.6	19.4	2 21	9 30.04	+18 6.6	1.627	2.600	4.9	18.6
3 2	9 21.29	+25 19.0	1.251	2.176	12.4	19.6	3 2	9 20.08	+18 26.7	1.668	2.600	9.3	18.9
3 12	9 14.56	+25 40.3	1.301	2.164	16.9	19.8	3 12	9 12.26	+18 34.5	1.734	2.599	13.2	19.1
3 22	9 11.15	+25 38.3	1.369	2.153	20.6	20.1	3 22	9 7.18	+18 29.8	1.822	2.598	16.5	19.4
100176	1994 <i>AD</i> ₅		2 12.1 206°32	0°6/11.6	18		156346	2001 <i>XY</i> ₁₆₉		2 12.1 46°79	1°9/13.5	18	
1 12	10 1.39	+13 53.5	2.274	3.119	10.8	20.3	1 12	10 2.64	+ 7 33.2	1.614	2.456	14.7	20.0
1 22	9 55.96	+14 26.1	2.198	3.117	7.7	20.1	1 22	9 57.24	+ 7 45.7	1.553	2.466	10.8	19.8
2 1	9 48.85	+15 5.6	2.148	3.115	4.1	19.9	2 1	9 49.66	+ 8 13.2	1.515	2.477	6.4	19.6
2 11	9 40.73	+15 47.6	2.127	3.113	0.6	19.6	2 11	9 40.84	+ 8 51.6	1.504	2.487	2.2	19.3
2 21	9 32.42	+16 27.5	2.136	3.111	3.6	19.9	2 21	9 31.90	+ 9 35.2	1.520	2.499	4.1	19.5
3 2	9 24.82	+17 1.2	2.175	3.109	7.3	20.1	3 2	9 24.02	+10 18.1	1.564	2.510	8.5	19.8
3 12	9 18.69	+17 25.8	2.240	3.107	10.6	20.3	3 12	9 18.17	+10 55.0	1.632	2.522	12.5	20.0
3 22	9 14.54	+17 40.0	2.327	3.104	13.3	20.5	3 22	9 14.88	+11 22.6	1.722	2.534	15.9	20.3
260013	2004 <i>FG</i> ₁₄₁		2 12.1 334°99	5°3/9.3	18		343573	2010 <i>FJ</i> ₈₅		2 12.1 5°09	0°2/12.0	18	
1 12	10 4.56	+23 59.8	1.274	2.152	15.4	19.8	1 12	9 59.13	+10 33.2	2.036	2.880	11.9	20.0
1 22	9 59.46	+24 39.2	1.204	2.136	11.2	19.5	1 22	9 54.53	+11 37.9	1.962	2.880	8.5	19.7
2 1	9 51.24	+25 18.1	1.155	2.122	7.0	19.3	2 1	9 48.15	+12 54.9	1.914	2.881	4.6	19.5
2 11	9 40.99	+25 46.7	1.131	2.108	5.4	19.1	2 11	9 40.68	+14 18.3	1.894	2.881	0.5	19.2
2 21	9 30.33	+25 56.8	1.133	2.095	8.5	19.3	2 21	9 33.00	+15 41.2	1.905	2.881	3.8	19.5
3 2	9 21.02	+25 44.0	1.158	2.083	13.1	19.5	3 2	9 26.03	+16 57.1	1.944	2.882	7.8	19.7
3 12	9 14.50	+25 8.5	1.204	2.072	17.6	19.7	3 12	9 20.62	+18 1.0	2.010	2.883	11.3	19.9
3 22	9 11.51	+24 13.9	1.267	2.063	21.4	19.9	3 22	9 17.30	+18 50.2	2.098	2.883	14.3	20.1
88823	2001 <i>SF</i> ₁₅₈		2 12.1 348°48	0°7/11.8	18		468503	2005 <i>LF</i> ₂₈		2 12.1 250°59	1°5/10.4	17	
1 12	10 7.11	+14 54.6	1.254	2.119	16.5	19							

EPHEMERIDES

2 12.1

2 12.2

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V		
170835	2004 <i>EH</i> ₁₀₈	2 12.1 169°52' 0.4"/12.5 17								40415	1999 <i>RB</i> ₁₃	2 12.2 193°72' 2.8"/14.6 18			
1 12	10 0.57	+11 2.3	2.507	3.342	10.3	21.2	1 12	10 2.14	+2 7.0	1.855	2.670	14.2	19.2		
1 22	9 55.24	+11 27.4	2.430	3.344	7.4	21.0	1 22	9 56.84	+2 55.1	1.773	2.669	10.8	19.0		
2 1	9 48.41	+12 0.5	2.381	3.345	4.1	20.8	2 1	9 49.50	+4 4.2	1.716	2.667	6.9	18.7		
2 11	9 40.71	+12 38.0	2.360	3.346	0.6	20.5	2 11	9 40.87	+5 30.2	1.686	2.665	3.3	18.5		
2 21	9 32.86	+13 16.2	2.370	3.347	3.0	20.7	2 21	9 31.95	+7 6.3	1.685	2.662	4.1	18.5		
3 2	9 25.64	+13 51.3	2.410	3.348	6.4	20.9	3 2	9 23.80	+8 44.3	1.714	2.659	8.0	18.8		
3 12	9 19.73	+14 20.1	2.477	3.349	9.5	21.1	3 12	9 17.38	+10 16.1	1.769	2.656	11.9	19.0		
3 22	9 15.59	+14 40.9	2.568	3.349	12.1	21.3	3 22	9 13.31	+11 36.2	1.848	2.652	15.3	19.2		
391409	2007 <i>DK</i> ₁₇	2 12.2 255°93' 1.5"/11.0 18								497450	2005 <i>YM</i> ₃₂	2 12.2 28°17' 1.3"/11.0 18			
1 12	10 4.40	+13 40.3	1.476	2.334	14.8	21.0	1 12	10 1.32	+14 35.8	1.878	2.732	12.3	21.0		
1 22	9 59.02	+14 49.1	1.396	2.322	10.6	20.7	1 22	9 56.23	+15 34.2	1.808	2.733	8.7	20.8		
2 1	9 50.92	+16 12.3	1.340	2.310	5.7	20.4	2 1	9 49.13	+16 41.5	1.764	2.733	4.6	20.5		
2 11	9 41.00	+17 41.5	1.311	2.297	1.6	20.1	2 11	9 40.83	+17 51.0	1.749	2.734	1.3	20.3		
2 21	9 30.55	+19 6.5	1.310	2.284	5.7	20.3	2 21	9 32.31	+18 55.8	1.762	2.735	4.6	20.5		
3 2	9 21.07	+20 18.2	1.336	2.270	10.9	20.6	3 2	9 24.64	+19 50.1	1.804	2.736	8.7	20.8		
3 12	9 13.88	+21 10.9	1.385	2.257	15.5	20.8	3 12	9 18.73	+20 30.0	1.870	2.736	12.3	21.0		
3 22	9 9.76	+21 42.8	1.454	2.243	19.4	21.0	3 22	9 15.16	+20 54.3	1.958	2.737	15.4	21.2		
285089	1993 <i>TT</i> ₂₃	2 12.2 103°32' 3.6"/9.7 18								93882	2000 <i>WA</i> ₁₃₀	2 12.2 48°29' 6.6"/16.8 18			
1 12	10 8.71	+20 57.3	1.614	2.473	13.8	20.6	1 12	10 3.11	-3 38.3	1.777	2.567	15.8	18.6		
1 22	10 1.54	+21 54.3	1.567	2.492	9.7	20.4	1 22	9 57.47	-4 18.5	1.709	2.576	12.7	18.4		
2 1	9 51.96	+22 52.4	1.545	2.511	5.6	20.2	2 1	9 49.79	-4 37.1	1.664	2.586	9.6	18.2		
2 11	9 41.08	+23 43.2	1.550	2.529	3.7	20.1	2 11	9 40.90	-4 33.7	1.644	2.597	7.1	18.1		
2 21	9 30.24	+24 20.0	1.585	2.547	6.5	20.3	2 21	9 31.84	-4 10.6	1.650	2.607	6.9	18.1		
3 2	9 20.77	+24 38.8	1.646	2.564	10.4	20.6	3 2	9 23.71	-3 32.5	1.684	2.618	9.0	18.2		
3 12	9 13.67	+24 39.4	1.731	2.581	14.0	20.8	3 12	9 17.43	-2 46.0	1.742	2.629	12.0	18.4		
3 22	9 9.46	+24 23.7	1.836	2.597	17.0	21.1	3 22	9 13.56	-1 57.7	1.823	2.640	14.9	18.6		
78541	2002 <i>RV</i> ₁₁₇	2 12.2 35°85' 6.8"/18.6 18								147566	2004 <i>FB</i> ₃₇	2 12.2 126°72' 2.5"/14.5 18			
1 12	9 58.26	-7 52.3	1.849	2.622	15.9	18.4	1 12	10 2.44	+2 53.5	2.070	2.882	13.0	20.0		
1 22	9 53.96	-7 46.3	1.782	2.634	13.0	18.2	1 22	9 56.74	+3 35.0	2.002	2.896	9.8	19.9		
2 1	9 47.84	-7 13.7	1.735	2.647	10.0	18.1	2 1	9 49.30	+4 33.5	1.959	2.910	6.2	19.7		
2 11	9 40.66	-6 15.6	1.714	2.660	7.5	17.9	2 11	9 40.85	+5 44.9	1.944	2.923	2.9	19.5		
2 21	9 33.35	-4 56.2	1.718	2.673	6.9	17.9	2 21	9 32.27	+7 3.4	1.960	2.936	3.7	19.5		
3 2	9 26.87	-3 22.9	1.750	2.687	8.5	18.0	3 2	9 24.51	+8 22.5	2.005	2.949	7.1	19.8		
3 12	9 22.05	-1 44.4	1.808	2.702	11.3	18.2	3 12	9 18.34	+9 36.2	2.078	2.960	10.6	20.0		
3 22	9 19.39	-0 8.8	1.890	2.717	14.1	18.5	3 22	9 14.27	+10 40.2	2.174	2.972	13.5	20.2		
506102	2016 <i>AT</i> ₁₇₁	2 12.2 38°05' 1.1"/11.5 18								111967	2002 <i>GC</i> ₈₁	2 12.2 185°86' 1.4"/11.0 18			
1 12	10 2.83	+13 22.1	1.325	2.191	15.7	20.5	1 12	10 5.14	+15 18.1	1.918	2.766	12.4	20.4		
1 22	9 57.77	+14 12.9	1.271	2.200	11.1	20.2	1 22	9 58.93	+16 9.4	1.845	2.767	8.8	20.1		
2 1	9 50.09	+15 16.1	1.240	2.210	5.9	20.0	2 1	9 50.61	+17 8.4	1.798	2.766	4.7	19.9		
2 11	9 40.91	+16 23.3	1.235	2.221	1.1	19.7	2 11	9 41.00	+18 8.6	1.780	2.765	1.4	19.7		
2 21	9 31.61	+17 25.5	1.256	2.232	5.4	20.0	2 21	9 31.15	+19 3.7	1.792	2.764	4.7	19.9		
3 2	9 23.62	+18 15.2	1.303	2.244	10.4	20.3	3 2	9 22.18	+19 48.0	1.832	2.761	8.8	20.1		
3 12	9 18.08	+18 48.2	1.373	2.256	14.8	20.6	3 12	9 15.07	+20 18.5	1.898	2.759	12.5	20.3		
3 22	9 15.55	+19 3.5	1.462	2.269	18.5	20.9	3 22	9 10.39	+20 34.4	1.985	2.755	15.5	20.5		
445071	2008 <i>SP</i> ₂₉₇	2 12.2 94°87' 0.7"/11.8 18								226766	2004 <i>RY</i> ₉₇	2 12.2 91°11' 1.9"/13.6 18			
1 12	10 10.59	+14 29.2	1.491	2.341	15.2	21.2	1 12	10 2.61	+7 11.7	1.896	2.728	13.2	20.5		
1 22	10 2.88	+14 48.2	1.442	2.364	10.7	20.9	1 22	9 57.04	+7 24.5	1.826	2.734	9.7	20.3		
2 1	9 52.68	+15 14.8	1.418	2.386	5.7	20.7	2 1	9 49.53	+7 50.6	1.780	2.740	5.8	20.1		
2 11	9 41.17	+15 43.0	1.421	2.407	0.8	20.4	2 11	9 40.88	+8 26.7	1.762	2.745	2.2	19.9		
2 21	9 29.77	+16 6.7	1.453	2.428	4.8	20.7	2 21	9 32.07	+9 7.9	1.773	2.751	3.8	20.0		
3 2	9 19.85	+16 21.6	1.512	2.449	9.6	21.1	3 2	9 24.13	+9 49.2	1.812	2.757	7.7	20.2		
3 12	9 12.46	+16 25.6	1.595	2.469	13.7	21.4	3 12	9 17.94	+10 25.9	1.877	2.762	11.4	20.5		
3 22	9 8.07	+16 18.5	1.700	2.489	17.0	21.6	3 22	9 14.02	+10 54.7	1.965	2.768	14.5	20.7		
221998	1998 <i>DL</i> ₂₉	2 12.2 262°29' 2.6"/14.2 17								130724	2000 <i>SH</i> ₂₁₈	2 12.2 106°72' 1.1"/11.3 18			
1 12	10 1.59	+4 49.1	1.923	2.748	13.4	20.9	1 12	10 5.98	+13 28.1	1.712	2.560	13.6	19.7		
1 22	9 56.41	+5 4.2	1.838	2.740	10.1	20.7	1 22	9 59.49	+14 31.9	1.660	2.582	9.6	19.5		
2 1	9 49.25	+5 35.2	1.777	2.732	6.3	20.4	2 1	9 50.85	+15 45.0	1.634	2.602	5.1	19.3		
2 11	9 40.84	+6 19.3	1.743	2.724	2.9	20.2	2 11	9 41.02	+16 59.8	1.636	2.622	1.1	19.0		
2 21	9 32.12	+7 11.9	1.739	2.716	4.0	20.2	2 21	9 31.16	+18 8.6	1.668	2.641	4.7	19.3		
3 2	9 24.12	+8 7.1	1.762	2.707	7.8	20.4	3 2	9 22.44	+19 5.4	1.728	2.660	9.0	19.6		
3 12	9 17.79	+8 59.3	1.812	2.699	11.6	20.7	3 12	9 15.80	+19 46.6	1.813	2.678	12.7	19.9		
3 22	9 13.73	+9 44.0	1.884	2.691	14.9	20.9	3 22	9 11.75	+20 11.6	1.920	2.696	15.8	20.1		
466672	2014 <i>WZ</i> ₁₉₃	2 12.2 108°55' 5.3"/8.4 18								83476	2001 <i>SL</i> ₈₁	2 12.2 148°89' 0.2"/12.0 17			
1 12	10 7.99	+27 23.6	1.834	2.692	12.4	21.4	1 12	10 3.22	+13 49.6	2.309	3.150	10.9	19.9		
1 22	10 0.99	+28 11.1	1.778	2.698	9.2	21.2	1 22	9 57.21	+13 59.5	2.235	3.152	7.7	19.7		
2 1	9 51.69	+28 53.6	1.748	2.704	6.2	21.1	2 1	9 49.53	+14 15.1	2.187	3.154	4.2	19.5		
2 11	9 41.09	+29 23.5	1.745	2.710	5.4	21.0	2 11	9 40.89	+14 33.0	2.169	3.156	0.4	19.2		
2 21	9 30.44	+29 35.4	1.770	2.716	7.6	21.2	2 21	9 32.11	+14 49.5	2.181	3.157	3.4	19.4		
3 2	9 21.01	+29 27.2	1.823	2.721	10.8	21.4	3 2	9 24.09	+15 1.7	2.223	3.159	7.0	19.7		
3 12	9 13.79	+28 59.9	1.899	2.727	13.9	21.6	3 12	9 17.57	+15 7.3	2.291	3.161	10.2	19.9		
3 22	9 9.33	+28 16.9	1.995	2.732	16.5	21.8	3 22	9 13.04	+15 5.3	2.382	3.162	13.0	20.0		
485853	2012 <i>EG</i> ₁₀	2 12.2 1.87 13.7/24.3 17								248305	2005 <i>MC</i> ₄₁	2 12.2 25°34' 3.6"/13.7 18			
1 12	9 57.86	-19 51.1	1.037	1.791	26.7	20.8	1 12	10 8.01	+7 41.3	1.356	2.199	16.9	18.8		
1 22	9 54.96	-19 37.8	0.966	1.790	23.6	20.6									

EPHEMERIDES

2 12.2

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
56857	2000 <i>QS</i> ₇₅		2 12.2 215°72		2°5/15.1 18		385865	2006 <i>RF</i> ₂₁		2 12.2 85°61		0°3/11.9 18	
1 12	9 58.32	+ 1 18.4	2.597	3.398	11.0	19.7	1 12	10 1.79	+13 6.1	2.547	3.385	10.1	21.7
1 22	9 53.68	+ 2 7.0	2.507	3.394	8.4	19.5	1 22	9 55.95	+13 38.1	2.496	3.412	7.1	21.6
2 1	9 47.62	+ 3 11.5	2.443	3.389	5.5	19.3	2 1	9 48.74	+14 16.0	2.472	3.438	3.8	21.4
2 11	9 40.69	+ 4 28.9	2.409	3.385	2.9	19.2	2 11	9 40.82	+14 55.7	2.478	3.464	0.4	21.2
2 21	9 33.56	+ 5 54.5	2.405	3.381	3.3	19.2	2 21	9 32.90	+15 33.3	2.514	3.490	3.1	21.4
3 2	9 26.94	+ 7 22.7	2.432	3.376	6.1	19.3	3 2	9 25.74	+16 5.5	2.581	3.515	6.3	21.7
3 12	9 21.49	+ 8 47.9	2.488	3.371	9.0	19.5	3 12	9 19.95	+16 30.0	2.675	3.540	9.1	21.9
3 22	9 17.67	+10 5.6	2.569	3.366	11.7	19.7	3 22	9 15.90	+16 45.5	2.793	3.565	11.5	22.1
143273	2003 <i>AB</i> ₁₅		2 12.2 336°71		2°2/10.7 18		62922	2000 <i>VV</i> ₁₂		2 12.2 273°67		0°1/12.0 18	
1 12	9 56.08	+14 39.3	1.152	2.036	16.2	18.3	1 12	9 59.95	+12 40.4	2.436	3.277	10.3	19.5
1 22	9 53.64	+15 42.6	1.070	2.008	11.6	18.0	1 22	9 54.92	+13 8.7	2.353	3.271	7.4	19.3
2 1	9 48.25	+17 3.7	1.009	1.982	6.3	17.6	2 1	9 48.33	+13 44.5	2.297	3.264	4.0	19.0
2 11	9 40.79	+18 33.2	0.972	1.957	2.2	17.3	2 11	9 40.79	+14 23.9	2.271	3.257	0.4	18.7
2 21	9 32.64	+19 59.3	0.959	1.935	6.9	17.5	2 21	9 33.05	+15 2.7	2.274	3.250	3.3	19.0
3 2	9 25.49	+21 10.3	0.969	1.913	12.7	17.7	3 2	9 25.91	+15 37.1	2.307	3.244	6.8	19.2
3 12	9 20.90	+21 58.4	1.000	1.894	18.1	17.9	3 12	9 20.10	+16 4.0	2.366	3.237	9.9	19.4
3 22	9 19.80	+22 20.7	1.046	1.877	22.6	18.1	3 22	9 16.11	+16 21.7	2.449	3.230	12.6	19.5
151061	2001 <i>VQ</i> ₁₉		2 12.2 68°79		4°9/15.9 18		496279	2012 <i>TC</i> ₂₉₁		2 12.2 126°03		3°3/15.5 17	
1 12	10 2.75	- 0 43.5	1.711	2.518	15.6	19.3	1 12	10 0.49	+ 0 56.2	2.707	3.500	10.8	21.6
1 22	9 57.20	- 0 46.7	1.650	2.534	12.1	19.1	1 22	9 55.07	+ 0 52.3	2.632	3.510	8.4	21.4
2 1	9 49.63	- 0 28.5	1.613	2.551	8.4	19.0	2 1	9 48.31	+ 1 1.2	2.582	3.519	5.7	21.3
2 11	9 40.90	+ 0 9.2	1.601	2.568	5.4	18.8	2 11	9 40.78	+ 1 21.6	2.561	3.529	3.6	21.1
2 21	9 32.09	+ 1 1.7	1.616	2.586	5.5	18.8	2 21	9 33.15	+ 1 50.9	2.569	3.538	3.8	21.1
3 2	9 24.29	+ 2 2.5	1.659	2.603	8.4	19.1	3 2	9 26.10	+ 2 25.7	2.608	3.547	6.0	21.3
3 12	9 18.39	+ 3 4.5	1.728	2.620	11.8	19.3	3 12	9 20.25	+ 3 2.3	2.675	3.555	8.6	21.5
3 22	9 14.91	+ 4 1.7	1.818	2.637	14.9	19.5	3 22	9 16.02	+ 3 37.2	2.766	3.564	10.9	21.7
288668	2004 <i>PK</i> ₆₇		2 12.2 198°54		1°8/13.6 18		163262	2002 <i>GW</i> ₆₃		2 12.2 16°36		0°6/12.5 18	
1 12	10 5.01	+ 6 7.4	1.962	2.785	13.2	21.9	1 12	10 0.50	+ 9 55.6	1.093	1.965	17.9	18.9
1 22	9 58.82	+ 6 40.3	1.878	2.781	9.8	21.6	1 22	9 56.50	+10 30.4	1.039	1.969	12.9	18.6
2 1	9 50.57	+ 7 28.8	1.819	2.777	5.9	21.4	2 1	9 49.59	+11 24.3	1.006	1.976	7.2	18.3
2 11	9 41.01	+ 8 28.7	1.789	2.772	2.1	21.1	2 11	9 40.93	+12 29.7	0.997	1.983	1.2	17.9
2 21	9 31.14	+ 9 34.5	1.788	2.766	3.8	21.2	2 21	9 32.08	+13 36.7	1.012	1.992	5.3	18.3
3 2	9 22.04	+10 39.7	1.817	2.759	7.9	21.5	3 2	9 24.68	+14 35.7	1.050	2.002	11.0	18.6
3 12	9 14.66	+11 38.8	1.873	2.751	11.7	21.7	3 12	9 19.99	+15 19.7	1.111	2.013	16.0	18.9
3 22	9 9.63	+12 27.7	1.951	2.743	15.0	21.9	3 22	9 18.61	+15 45.8	1.189	2.025	20.1	19.2
47820	2000 <i>EB</i> ₉₃		2 12.2 81°18		3°9/15.8 18		455817	2005 <i>SV</i> ₂₁₄		2 12.2 145°29		4°1/16.3 17	
1 12	9 59.72	- 0 20.8	2.123	2.924	13.2	18.6	1 12	10 2.83	- 2 19.7	2.600	3.374	11.8	22.4
1 22	9 54.83	- 0 2.3	2.051	2.933	10.2	18.5	1 22	9 56.75	- 2 12.9	2.525	3.388	9.3	22.3
2 1	9 48.28	+ 0 34.6	2.002	2.942	7.0	18.3	2 1	9 49.23	- 1 50.1	2.475	3.402	6.6	22.1
2 11	9 40.76	+ 1 27.4	1.981	2.951	4.3	18.1	2 11	9 40.88	- 1 13.0	2.453	3.414	4.5	22.0
2 21	9 33.10	+ 2 31.6	1.988	2.959	4.4	18.1	2 21	9 32.43	- 0 24.4	2.462	3.426	4.4	22.0
3 2	9 26.17	+ 3 41.7	2.025	2.968	7.1	18.3	3 2	9 24.61	+ 0 31.2	2.501	3.436	6.4	22.2
3 12	9 20.71	+ 4 51.3	2.088	2.977	10.2	18.5	3 12	9 18.10	+ 1 29.1	2.569	3.446	9.0	22.3
3 22	9 17.23	+ 5 55.5	2.175	2.986	13.0	18.7	3 22	9 13.31	+ 2 24.8	2.661	3.456	11.4	22.5
415041	2011 <i>YL</i> ₄₈		2 12.2 309°12		4°5/ 9.2 18		290164	2005 <i>RB</i> ₁₂		2 12.2 177°69		0°0/12.2 18	
1 12	10 5.78	+22 51.3	1.525	2.393	13.9	20.5	1 12	10 3.93	+11 59.1	2.275	3.110	11.2	22.0
1 22	9 59.92	+23 43.8	1.457	2.386	10.0	20.3	1 22	9 57.78	+12 31.0	2.198	3.112	8.0	21.8
2 1	9 51.35	+24 37.2	1.413	2.378	6.2	20.0	2 1	9 49.89	+13 11.2	2.148	3.114	4.4	21.6
2 11	9 41.11	+25 22.8	1.395	2.371	4.6	19.9	2 11	9 40.96	+13 55.4	2.128	3.115	0.5	21.3
2 21	9 30.56	+25 52.9	1.404	2.364	7.5	20.0	2 21	9 31.85	+14 38.9	2.139	3.115	3.5	21.6
3 2	9 21.19	+26 2.7	1.439	2.357	11.6	20.3	3 2	9 23.47	+15 17.4	2.179	3.115	7.2	21.8
3 12	9 14.24	+25 51.8	1.497	2.350	15.6	20.5	3 12	9 16.61	+15 47.7	2.246	3.114	10.5	22.0
3 22	9 10.36	+25 22.4	1.573	2.344	18.9	20.7	3 22	9 11.79	+16 8.1	2.337	3.112	13.3	22.2
296791	2009 <i>VV</i> ₁₈		2 12.2 106°54		3°2/ 9.7 18		483067	2015 <i>LP</i> ₁		2 12.2 346°61		15°9/25.6 17	
1 12	10 4.54	+21 17.3	1.926	2.785	11.9	20.9	1 12	9 59.57	-22 5.8	1.113	1.844	26.6	21.3
1 22	9 58.46	+22 2.8	1.864	2.789	8.4	20.7	1 22	9 56.15	-22 38.2	1.042	1.841	23.9	21.0
2 1	9 50.32	+22 49.5	1.827	2.793	4.9	20.5	2 1	9 49.61	-22 16.3	0.984	1.839	20.9	20.8
2 11	9 40.99	+23 30.9	1.819	2.798	3.3	20.4	2 11	9 40.96	-20 51.7	0.941	1.837	18.1	20.6
2 21	9 31.53	+24 1.4	1.840	2.802	5.8	20.5	2 21	9 31.74	-18 23.9	0.917	1.836	16.2	20.5
3 2	9 23.06	+24 17.3	1.888	2.806	9.3	20.7	3 2	9 23.74	-15 3.6	0.914	1.835	16.3	20.5
3 12	9 16.49	+24 17.5	1.961	2.810	12.6	21.0	3 12	9 18.52	-11 12.6	0.933	1.835	18.4	20.6
3 22	9 12.36	+24 3.2	2.055	2.814	15.4	21.2	3 22	9 16.94	- 7 15.6	0.973	1.835	21.6	20.8
200589	2001 <i>RQ</i> ₁₂		2 12.2 208°14		2°7/14.3 18		8599	Riparia		2 12.2 146°12		1°6/10.8 18	
1 12	10 5.57	+ 3 58.1	1.965	2.779	13.6	22.5	1 12	10 3.98	+16 53.2	2.074	2.924	11.5	18.9
1 22	9 59.25	+ 4 18.3	1.876	2.772	10.3	22.2	1 22	9 57.93	+17 32.7	2.007	2.929	8.1	18.7
2 1	9 50.83	+ 4 55.4	1.812	2.764	6.5	22.0	2 1	9 50.00	+18 17.1	1.967	2.935	4.4	18.5
2 11	9 41.06	+ 5 46.2	1.776	2.756	3.1	21.8	2 11	9 40.97	+19 0.8	1.955	2.940	1.6	18.3
2 21	9 30.92	+ 6 46.0	1.770	2.746	4.1	21.8	2 21	9 31.81	+19 38.6	1.973	2.944	4.5	18.5
3 2	9 21.52	+ 7 48.7	1.793	2.736	8.0	22.0	3 2	9 23.52	+20 6.5	2.021	2.949	8.2	18.7
3 12	9 13.83	+ 8 48.1	1.844	2.724	11.8	22.2	3 12	9 16.94	+20 22.1	2.094	2.953	11.5	19.0
3 22	9 8.51	+ 9 39.9	1.917	2.712	15.1	22.4	3 22	9 12.59	+20 25.3	2.188	2.956	14.3	19.2
39628	1994 <i>PJ</i> ₂₄		2 12.2 221°32		0°1/12.1 18 R		296973	2010 <i>EU</i> ₈₂		2 12.2 293°07		3°1/10.4 18	
1 12	10 1.31	+11 25.4	1.993	2.837	12.2	19.4							

EPHEMERIDES

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
128668	2004 <i>RP</i> ₆₀		2 12.2 241°30	0°6/11.8	18		362130	2009 <i>DO</i> ₄₀		2 12.2 291°49	0°6/11.8	18	
1 12	10 7.08	+13 39.0	1.676	2.525	13.9	20.8	1 12	10 3.42	+12 44.0	1.498	2.356	14.7	21.2
1 22	10 0.69	+14 5.5	1.592	2.513	10.0	20.6	1 22	9 58.33	+13 23.8	1.415	2.340	10.6	20.9
2 1	9 51.76	+14 41.7	1.532	2.500	5.4	20.3	2 1	9 50.59	+14 16.9	1.355	2.324	5.8	20.5
2 11	9 41.19	+15 22.1	1.500	2.486	0.7	19.9	2 11	9 41.10	+15 17.0	1.321	2.307	0.7	20.1
2 21	9 30.17	+16 0.3	1.496	2.472	4.7	20.1	2 21	9 31.08	+16 16.2	1.314	2.291	5.0	20.4
3 2	9 20.07	+16 30.8	1.521	2.458	9.6	20.4	3 2	9 21.98	+17 6.9	1.334	2.275	10.2	20.7
3 12	9 12.08	+16 49.8	1.570	2.443	13.9	20.6	3 12	9 15.08	+17 43.8	1.378	2.260	14.9	20.9
3 22	9 6.92	+16 55.9	1.640	2.428	17.6	20.8	3 22	9 11.16	+18 4.5	1.441	2.244	18.9	21.1
520731	2014 <i>QX</i> ₄₇₁		2 12.2 131°06	2°8/14.8	18		377100	2002 <i>WR</i> ₁₅		2 12.2 60°24	5°5/ 7.3	18	
1 12	10 2.36	+ 1 59.1	2.063	2.872	13.2	21.9	1 12	10 4.40	+27 10.8	1.940	2.801	11.7	20.1
1 22	9 56.73	+ 2 40.3	1.993	2.885	10.0	21.7	1 22	9 58.25	+28 37.3	1.911	2.831	8.6	20.0
2 1	9 49.33	+ 3 39.4	1.948	2.897	6.4	21.5	2 1	9 50.14	+29 58.3	1.908	2.862	6.0	19.9
2 11	9 40.91	+ 4 52.5	1.932	2.909	3.2	21.4	2 11	9 41.01	+31 5.6	1.934	2.892	5.7	19.9
2 21	9 32.35	+ 6 13.8	1.945	2.921	3.8	21.4	2 21	9 31.97	+31 53.5	1.987	2.923	7.6	20.1
3 2	9 24.59	+ 7 36.7	1.988	2.932	7.2	21.7	3 2	9 24.09	+32 19.3	2.068	2.953	10.4	20.3
3 12	9 18.43	+ 8 54.6	2.058	2.942	10.6	21.9	3 12	9 18.18	+32 23.9	2.172	2.983	12.9	20.5
3 22	9 14.36	+10 3.0	2.152	2.952	13.5	22.1	3 22	9 14.70	+32 10.2	2.295	3.013	15.1	20.7
165128	2000 <i>KU</i> ₄₃		2 12.2 227°68	3°3/14.5	18		451671	2013 <i>AT</i> ₈₉		2 12.2 356°97	2°2/11.2	18	
1 12	10 4.27	+ 3 13.2	1.747	2.566	14.8	20.6	1 12	10 5.80	+17 37.2	1.114	1.992	17.2	20.6
1 22	9 58.54	+ 3 26.5	1.660	2.558	11.2	20.3	1 22	10 0.45	+17 50.4	1.054	1.988	12.2	20.3
2 1	9 50.54	+ 3 58.7	1.598	2.549	7.3	20.1	2 1	9 51.84	+18 10.1	1.014	1.986	6.7	20.0
2 11	9 41.06	+ 4 47.3	1.562	2.540	3.7	19.8	2 11	9 41.23	+18 28.6	0.999	1.984	2.2	19.7
2 21	9 31.18	+ 5 47.3	1.554	2.530	4.6	19.9	2 21	9 30.34	+18 38.4	1.008	1.983	6.5	20.0
3 2	9 22.10	+ 6 51.8	1.575	2.520	8.6	20.1	3 2	9 21.03	+18 34.7	1.040	1.984	12.1	20.3
3 12	9 14.90	+ 7 54.1	1.621	2.509	12.7	20.3	3 12	9 14.72	+18 15.7	1.094	1.985	17.2	20.6
3 22	9 10.26	+ 8 48.6	1.689	2.498	16.3	20.5	3 22	9 12.07	+17 42.7	1.165	1.988	21.3	20.9
462275	2008 <i>EB</i> ₁₅₁		2 12.2 284°94	5°7/16.8	16		18812	Aliadler		2 12.2 191°22	3°6/14.8	18	
1 12	10 0.17	- 3 51.4	1.769	2.563	15.7	21.9	1 12	10 4.60	+ 2 24.2	1.852	2.665	14.3	18.0
1 22	9 55.65	- 3 38.7	1.675	2.548	12.6	21.7	1 22	9 58.60	+ 2 28.5	1.772	2.664	11.0	17.8
2 1	9 48.99	- 3 0.2	1.603	2.533	9.2	21.5	2 1	9 50.50	+ 2 50.7	1.715	2.662	7.2	17.5
2 11	9 40.90	- 1 56.6	1.556	2.518	6.3	21.3	2 11	9 41.08	+ 3 28.7	1.685	2.660	4.0	17.3
2 21	9 32.36	- 0 32.2	1.536	2.503	6.1	21.2	2 21	9 31.37	+ 4 18.0	1.684	2.658	4.6	17.4
3 2	9 24.50	+ 1 5.4	1.544	2.488	8.8	21.3	3 2	9 22.49	+ 5 12.9	1.712	2.655	8.2	17.6
3 12	9 18.37	+ 2 47.0	1.577	2.473	12.5	21.5	3 12	9 15.41	+ 6 7.2	1.765	2.652	11.9	17.8
3 22	9 14.66	+ 4 24.0	1.633	2.458	16.1	21.7	3 22	9 10.75	+ 6 55.8	1.841	2.648	15.2	18.0
448196	2008 <i>US</i> ₁₁₅		2 12.2 81°64	2°6/13.8	18		78276	2002 <i>PO</i> ₃₁		2 12.2 160°04	0°3/12.5	18	
1 12	10 7.18	+ 6 28.1	1.415	2.254	16.6	21.0	1 12	10 1.70	+11 0.5	2.350	3.186	10.9	19.8
1 22	10 0.64	+ 6 30.9	1.361	2.272	12.2	20.8	1 22	9 56.15	+11 27.1	2.276	3.189	7.8	19.6
2 1	9 51.59	+ 6 51.2	1.330	2.289	7.4	20.6	2 1	9 49.00	+12 2.2	2.228	3.192	4.3	19.3
2 11	9 41.16	+ 7 24.7	1.325	2.307	3.0	20.3	2 11	9 40.91	+12 42.1	2.209	3.195	0.7	19.1
2 21	9 30.70	+ 8 5.6	1.347	2.325	4.7	20.5	2 21	9 32.67	+13 22.5	2.220	3.198	3.2	19.3
3 2	9 21.58	+ 8 47.1	1.396	2.342	9.3	20.8	3 2	9 25.12	+13 59.3	2.261	3.200	6.8	19.5
3 12	9 14.89	+ 9 23.5	1.469	2.360	13.6	21.1	3 12	9 18.98	+14 29.4	2.330	3.202	10.0	19.7
3 22	9 11.15	+ 9 51.0	1.562	2.377	17.1	21.4	3 22	9 14.74	+14 50.7	2.421	3.204	12.7	19.9
278647	2008 <i>RV</i> ₃₆		2 12.2 119°72	0°5/12.6	18		281904	2011 <i>CX</i> ₄₉		2 12.2 357°48	4°0/15.4	18	
1 12	10 2.17	+10 23.1	2.130	2.967	11.8	21.4	1 12	9 57.97	+ 0 42.8	1.498	2.326	16.3	20.2
1 22	9 56.58	+10 49.7	2.061	2.974	8.5	21.2	1 22	9 54.23	+ 1 13.0	1.423	2.323	12.6	19.9
2 1	9 49.25	+11 26.0	2.017	2.982	4.7	21.0	2 1	9 48.24	+ 2 8.9	1.371	2.321	8.4	19.7
2 11	9 40.91	+12 8.0	2.002	2.988	0.9	20.7	2 11	9 40.85	+ 3 26.8	1.344	2.320	4.7	19.5
2 21	9 32.45	+12 51.1	2.017	2.995	3.4	20.9	2 21	9 33.15	+ 4 59.7	1.342	2.319	5.0	19.5
3 2	9 24.77	+13 30.5	2.062	3.002	7.2	21.2	3 2	9 26.37	+ 6 38.1	1.368	2.320	8.9	19.7
3 12	9 18.66	+14 2.8	2.132	3.008	10.6	21.4	3 12	9 21.56	+ 8 12.1	1.418	2.321	13.1	20.0
3 22	9 14.62	+14 25.7	2.226	3.015	13.5	21.6	3 22	9 19.37	+ 9 34.3	1.489	2.323	16.9	20.2
76253	2000 <i>ER</i> ₉₃		2 12.2 78°72	1°8/13.3	18		148819	2001 <i>UO</i> ₁₂₆		2 12.2 302°60	2°9/10.1	18	
1 12	10 7.38	+ 8 47.8	1.643	2.479	14.7	17.9	1 12	10 3.73	+19 13.6	1.679	2.542	13.1	20.0
1 22	10 0.51	+ 8 40.5	1.587	2.498	10.7	17.7	1 22	9 58.27	+20 3.2	1.605	2.533	9.3	19.8
2 1	9 51.43	+ 8 45.5	1.555	2.517	6.3	17.4	2 1	9 50.42	+20 57.6	1.557	2.525	5.2	19.5
2 11	9 41.14	+ 8 59.4	1.551	2.535	2.2	17.2	2 11	9 41.08	+21 49.4	1.536	2.517	3.0	19.3
2 21	9 30.86	+ 9 17.9	1.575	2.553	4.2	17.4	2 21	9 31.43	+22 31.5	1.542	2.509	6.0	19.5
3 2	9 21.80	+ 9 36.6	1.628	2.572	8.5	17.7	3 2	9 22.76	+22 58.5	1.576	2.502	10.2	19.7
3 12	9 14.89	+ 9 51.4	1.705	2.590	12.4	18.0	3 12	9 16.16	+23 8.3	1.633	2.494	14.1	20.0
3 22	9 10.65	+ 9 59.8	1.804	2.608	15.6	18.2	3 22	9 12.30	+23 1.3	1.710	2.487	17.4	20.2
12039	1997 <i>CB</i> ₂₂		2 12.2 238°95	1°6/10.9	18		132668	2002 <i>NA</i> ₆		2 12.2 154°46	0°4/12.5	18	
1 12	10 4.28	+17 18.1	2.101	2.951	11.4	17.4	1 12	10 1.51	+10 38.3	2.307	3.142	11.1	21.1
1 22	9 58.22	+17 44.7	2.022	2.944	8.1	17.1	1 22	9 56.04	+11 8.6	2.233	3.146	7.9	20.9
2 1	9 50.22	+18 15.5	1.969	2.937	4.4	16.9	2 1	9 48.96	+11 48.1	2.186	3.150	4.4	20.7
2 11	9 41.03	+18 45.7	1.946	2.930	1.6	16.7	2 11	9 40.91	+12 32.7	2.167	3.153	0.7	20.4
2 21	9 31.61	+19 10.5	1.952	2.923	4.4	16.9	2 21	9 32.72	+13 18.0	2.179	3.157	3.2	20.6
3 2	9 22.99	+19 26.2	1.987	2.916	8.2	17.1	3 2	9 25.22	+13 59.7	2.221	3.160	6.9	20.8
3 12	9 16.06	+19 30.9	2.047	2.908	11.7	17.3	3 12	9 19.16	+14 34.2	2.289	3.162	10.1	21.0
3 22	9 11.37	+19 24.3	2.130	2.901	14.6	17.5	3 22	9 15.02	+14 59.5	2.381	3.165	12.9	21.2
134759	2000 <i>CJ</i> ₃₃		2 12.2 106°85	1°5/10.9	18		17757	1998 <i>DG</i> ₁₅		2 12.2 180°07	2°2/14.2	18	
1 12	10 6.33	+ 4 7.6	1.024	1.876									

EPHEMERIDES

2 12.2

2 12.2

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
346747	2009 BX ₁₆		2 12.2 336°92	0°6/11.6	18		277510	2005 WU ₁₇₇		2 12.2 148°81	3°1/9.5	18	
1 12	9 58.05	+11 56.4	1.882	2.735	12.4	19.9	1 12	10 3.32	+20 27.2	1.984	2.842	11.6	20.6
1 22	9 54.01	+13 0.9	1.802	2.726	8.8	19.7	1 22	9 57.63	+21 29.1	1.920	2.845	8.2	20.4
2 1	9 48.03	+14 18.0	1.749	2.717	4.7	19.4	2 1	9 49.94	+22 33.8	1.881	2.848	4.8	20.2
2 11	9 40.83	+15 41.4	1.723	2.709	0.7	19.1	2 11	9 41.06	+23 34.2	1.872	2.850	3.2	20.1
2 21	9 33.34	+17 3.7	1.726	2.701	4.2	19.3	2 21	9 32.00	+24 23.9	1.891	2.852	5.7	20.2
3 2	9 26.57	+18 17.7	1.757	2.694	8.5	19.6	3 2	9 23.83	+24 58.6	1.939	2.854	9.2	20.4
3 12	9 21.44	+19 18.2	1.813	2.688	12.3	19.8	3 12	9 17.46	+25 16.3	2.011	2.856	12.5	20.6
3 22	9 18.55	+20 2.5	1.890	2.682	15.5	20.0	3 22	9 13.43	+25 17.7	2.104	2.858	15.3	20.8
241520	2009 FR ₄₇		2 12.2 40°13	1°1/13.3	18		275000	2009 TV ₂₉		2 12.2 166°06	0°2/12.1	16	
1 12	9 58.29	+ 6 14.7	2.078	2.910	12.3	20.5	1 12	10 4.27	+12 56.5	2.211	3.050	11.4	22.0
1 22	9 53.91	+ 7 21.2	2.008	2.917	8.9	20.3	1 22	9 58.07	+13 20.9	2.138	3.054	8.1	21.8
2 1	9 47.86	+ 8 43.1	1.963	2.924	5.2	20.1	2 1	9 50.09	+13 52.7	2.091	3.057	4.4	21.6
2 11	9 40.81	+10 15.1	1.947	2.932	1.5	19.9	2 11	9 41.07	+14 27.5	2.074	3.060	0.5	21.3
2 21	9 33.60	+11 50.3	1.961	2.940	3.3	20.0	2 21	9 31.91	+15 1.1	2.087	3.063	3.6	21.6
3 2	9 27.11	+13 21.6	2.005	2.948	7.2	20.3	3 2	9 23.52	+15 29.4	2.129	3.065	7.3	21.8
3 12	9 22.10	+14 42.9	2.075	2.957	10.6	20.5	3 12	9 16.71	+15 49.6	2.198	3.067	10.7	22.0
3 22	9 19.06	+15 50.6	2.169	2.965	13.6	20.7	3 22	9 12.00	+16 0.4	2.290	3.068	13.5	22.2
205797	2002 CE ₁₄₁		2 12.2 52°46	3°7/14.6	18		29070	4316 T-3		2 12.2 183°12	3°4/9.6	18	
1 12	10 4.25	+ 3 21.2	1.217	2.059	18.5	19.5	1 12	10 5.02	+20 43.8	1.813	2.672	12.5	19.4
1 22	9 58.78	+ 3 38.2	1.172	2.081	13.8	19.3	1 22	9 59.00	+21 40.4	1.747	2.673	8.9	19.1
2 1	9 50.66	+ 4 19.6	1.147	2.104	8.7	19.1	2 1	9 50.75	+22 39.7	1.706	2.673	5.2	18.9
2 11	9 41.11	+ 5 20.1	1.147	2.127	4.2	18.9	2 11	9 41.15	+23 34.1	1.694	2.672	3.4	18.8
2 21	9 31.59	+ 6 31.2	1.172	2.151	5.2	19.0	2 21	9 31.34	+24 16.9	1.710	2.672	6.1	19.0
3 2	9 23.56	+ 7 43.5	1.223	2.174	9.8	19.4	3 2	9 22.54	+24 43.5	1.754	2.672	9.9	19.2
3 12	9 18.09	+ 8 48.4	1.298	2.198	14.3	19.7	3 12	9 15.73	+24 52.6	1.822	2.671	13.4	19.4
3 22	9 15.69	+ 9 40.5	1.392	2.223	18.0	20.0	3 22	9 11.53	+24 44.9	1.910	2.670	16.4	19.6
14619	Plotkin		2 12.2 337°47	3°0/10.6	18		133422	2003 SL ₁₉₀		2 12.2 148°27	1°0/11.3	18	
1 12	10 6.62	+18 42.0	1.216	2.089	16.3	18.7	1 12	10 1.79	+14 36.9	2.198	3.045	11.1	20.1
1 22	10 0.95	+19 15.4	1.151	2.084	11.6	18.4	1 22	9 56.34	+15 20.3	2.128	3.049	7.8	19.9
2 1	9 52.11	+19 54.8	1.109	2.079	6.5	18.1	2 1	9 49.17	+16 10.5	2.084	3.052	4.2	19.7
2 11	9 41.29	+20 31.2	1.091	2.075	3.0	17.9	2 11	9 40.97	+17 2.4	2.069	3.055	1.0	19.5
2 21	9 30.14	+20 56.4	1.099	2.071	6.9	18.1	2 21	9 32.62	+17 50.8	2.085	3.058	3.9	19.7
3 2	9 20.43	+21 4.7	1.131	2.067	12.2	18.4	3 2	9 25.02	+18 31.3	2.129	3.061	7.6	19.9
3 12	9 13.58	+20 54.4	1.185	2.065	17.0	18.6	3 12	9 18.95	+19 0.8	2.200	3.064	10.8	20.1
3 22	9 10.31	+20 27.1	1.256	2.062	21.0	18.9	3 22	9 14.92	+19 18.2	2.292	3.066	13.6	20.3
456693	2007 RM ₂₀₇		2 12.2 124°45	0°4/11.9	18		256015	2006 UG ₂₃		2 12.2 29°15	3°1/14.1	18	
1 12	10 5.71	+12 17.0	1.806	2.650	13.3	22.0	1 12	10 2.45	+ 5 24.5	1.397	2.240	16.5	20.9
1 22	9 59.31	+13 4.3	1.746	2.665	9.4	21.8	1 22	9 57.43	+ 5 26.9	1.336	2.248	12.3	20.6
2 1	9 50.82	+14 1.6	1.712	2.679	5.0	21.5	2 1	9 49.97	+ 5 48.5	1.297	2.256	7.6	20.4
2 11	9 41.14	+15 2.7	1.706	2.693	0.6	21.2	2 11	9 41.07	+ 6 25.6	1.284	2.265	3.5	20.2
2 21	9 31.37	+16 1.0	1.730	2.706	4.2	21.5	2 21	9 32.00	+ 7 12.4	1.296	2.274	4.8	20.3
3 2	9 22.63	+16 50.7	1.782	2.719	8.5	21.8	3 2	9 24.10	+ 8 1.6	1.335	2.284	9.3	20.5
3 12	9 15.85	+17 28.1	1.861	2.731	12.2	22.1	3 12	9 18.46	+ 8 46.6	1.397	2.295	13.6	20.8
3 22	9 11.55	+17 51.8	1.960	2.742	15.3	22.3	3 22	9 15.67	+ 9 22.5	1.479	2.306	17.3	21.1
152470	2005 WJ		2 12.2 206°37	4°2/9.2	18		465977	2011 CX ₃₀		2 12.2 53°63	0°6/11.7	18	
1 12	10 8.42	+25 18.6	2.060	2.912	11.5	19.9	1 12	10 1.97	+12 23.0	1.629	2.484	13.9	21.3
1 22	10 1.22	+25 52.8	1.989	2.908	8.4	19.7	1 22	9 56.83	+13 17.6	1.573	2.497	9.8	21.1
2 1	9 51.87	+26 24.2	1.945	2.905	5.3	19.5	2 1	9 49.54	+14 23.5	1.541	2.510	5.2	20.9
2 11	9 41.26	+26 46.4	1.930	2.901	4.2	19.4	2 11	9 41.01	+15 33.7	1.537	2.524	0.7	20.6
2 21	9 30.49	+26 54.5	1.944	2.896	6.4	19.5	2 21	9 32.39	+16 40.5	1.561	2.537	4.5	20.9
3 2	9 20.72	+26 46.3	1.986	2.892	9.6	19.7	3 2	9 24.83	+17 37.2	1.612	2.551	9.0	21.2
3 12	9 12.91	+26 22.0	2.053	2.887	12.8	19.9	3 12	9 19.28	+18 19.7	1.688	2.565	12.9	21.4
3 22	9 7.62	+25 43.9	2.142	2.881	15.5	20.1	3 22	9 16.27	+18 46.4	1.785	2.580	16.1	21.7
187801	1999 HZ ₅		2 12.2 205°55	3°5/9.0	17		35824	1999 JF ₅₃		2 12.2 301°06	3°9/9.4	18	
1 12	10 6.58	+24 31.1	2.524	3.370	9.8	21.2	1 12	10 3.97	+19 19.7	1.439	2.309	14.5	18.2
1 22	9 59.65	+25 13.7	2.447	3.364	7.1	21.0	1 22	9 58.77	+20 38.9	1.372	2.303	10.3	18.0
2 1	9 50.95	+25 54.9	2.398	3.357	4.5	20.8	2 1	9 50.84	+22 5.1	1.330	2.298	5.9	17.7
2 11	9 41.17	+26 29.1	2.379	3.350	3.6	20.7	2 11	9 41.17	+23 28.1	1.313	2.293	4.0	17.6
2 21	9 31.19	+26 51.9	2.391	3.341	5.5	20.9	2 21	9 31.14	+24 37.7	1.324	2.288	7.3	17.7
3 2	9 21.95	+27 0.8	2.432	3.332	8.3	21.0	3 2	9 22.24	+25 26.7	1.360	2.283	11.8	18.0
3 12	9 14.27	+26 55.2	2.499	3.323	11.1	21.2	3 12	9 15.75	+25 52.0	1.419	2.278	16.0	18.2
3 22	9 8.66	+26 36.2	2.589	3.312	13.4	21.3	3 22	9 12.37	+25 54.9	1.496	2.273	19.5	18.4
72935	2002 AG ₁₅₄		2 12.2 272°65	0°3/12.0	18		258547	2002 CU ₂₈		2 12.2 343°82	5°0/7.7	18	
1 12	10 5.55	+12 42.3	1.638	2.487	14.1	19.2	1 12	10 0.11	+21 20.8	1.549	2.423	13.4	19.5
1 22	9 59.76	+13 9.8	1.546	2.467	10.2	18.9	1 22	9 55.92	+23 16.4	1.485	2.417	9.5	19.3
2 1	9 51.38	+13 48.9	1.478	2.446	5.6	18.5	2 1	9 49.25	+25 18.0	1.446	2.412	6.0	19.1
2 11	9 41.24	+14 34.2	1.438	2.424	0.6	18.1	2 11	9 41.00	+27 13.8	1.435	2.407	5.3	19.0
2 21	9 30.52	+15 19.2	1.425	2.402	4.7	18.4	2 21	9 32.39	+28 52.4	1.451	2.403	8.3	19.2
3 2	9 20.62	+15 57.6	1.440	2.380	9.8	18.6	3 2	9 24.75	+30 6.0	1.493	2.399	12.2	19.4
3 12	9 12.78	+16 24.7	1.480	2.358	14.3	18.8	3 12	9 19.28	+30 51.5	1.557	2.396	15.8	19.6
3 22	9 7.80	+16 38.4	1.540	2.335	18.2	19.0	3 22	9 16.65	+31 10.3	1.639	2.394	18.9	19.8
232599	2003 UY ₅₂		2 12.2 51°11	2°1/10.8	18		466219	2012 TA ₁		2 12.2 99°11	2°8/14.9	17	
1 12	10 5.63	+19 17.9	1.927	2.781	12.1	19.8	1 12	9 59.47	+ 2 25.9	2.337	3.146	11.8	21.3

EPHEMERIDES

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
375405	2008 <i>ST</i> ₂₆₂		2 12.2 208°75	0°6/12.7	17		12421	Zhenya		2 12.2 162°55	3°1/9.8	18	
1 12	10 1.69	+10 5.7	2.120	2.957	11.8	21.7	1 12	10 6.49	+20 18.2	1.871	2.726	12.3	18.5
1 22	9 56.35	+10 32.7	2.042	2.955	8.5	21.5	1 22	9 59.97	+21 12.2	1.807	2.731	8.7	18.3
2 1	9 49.21	+11 10.2	1.990	2.954	4.8	21.3	2 1	9 51.25	+22 8.8	1.768	2.734	5.0	18.0
2 11	9 41.00	+11 54.1	1.966	2.952	0.9	21.0	2 11	9 41.24	+23 0.7	1.759	2.738	3.1	17.9
2 21	9 32.58	+12 39.7	1.972	2.950	3.4	21.2	2 21	9 31.06	+23 41.6	1.778	2.741	5.8	18.1
3 2	9 24.88	+13 22.2	2.007	2.948	7.3	21.4	3 2	9 21.90	+24 7.2	1.826	2.743	9.6	18.3
3 12	9 18.73	+13 57.6	2.069	2.946	10.8	21.6	3 12	9 14.73	+24 16.0	1.898	2.745	13.0	18.5
3 22	9 14.66	+14 23.5	2.153	2.944	13.8	21.8	3 22	9 10.13	+24 9.2	1.991	2.747	15.9	18.8
166714	2002 <i>TP</i> ₂₀₅		2 12.2 135°74	3°6/15.6	18		429365	2010 <i>GW</i> ₁₆₀		2 12.2 228°08	1°6/10.5	17	
1 12	10 0.93	+ 0 23.5	2.487	3.281	11.7	19.9	1 12	10 0.97	+17 38.5	2.723	3.569	9.2	21.9
1 22	9 55.53	+ 0 25.1	2.410	3.289	9.0	19.7	1 22	9 55.60	+18 21.2	2.639	3.560	6.5	21.7
2 1	9 48.66	+ 0 41.3	2.359	3.296	6.2	19.5	2 1	9 48.74	+19 7.8	2.583	3.550	3.5	21.5
2 11	9 40.94	+ 1 10.5	2.336	3.304	3.9	19.4	2 11	9 40.97	+19 53.9	2.557	3.540	1.6	21.3
2 21	9 33.08	+ 1 49.7	2.342	3.311	4.0	19.4	2 21	9 33.00	+20 35.2	2.561	3.529	3.8	21.4
3 2	9 25.85	+ 2 34.8	2.378	3.318	6.4	19.6	3 2	9 25.56	+21 8.2	2.596	3.518	6.9	21.6
3 12	9 19.92	+ 3 21.4	2.442	3.325	9.2	19.8	3 12	9 19.36	+21 30.9	2.658	3.507	9.7	21.8
3 22	9 15.73	+ 4 5.5	2.530	3.331	11.7	19.9	3 22	9 14.86	+21 42.4	2.742	3.496	12.1	21.9
152072	2004 <i>RF</i> ₉		2 12.2 268°54	1°2/13.3	18		436634	2011 <i>PE</i> ₇		2 12.2 178°59	7°3/20.1	18	
1 12	10 0.45	+ 6 33.8	1.934	2.766	13.0	20.4	1 12	10 1.81	-15 25.5	3.141	3.820	11.8	21.3
1 22	9 55.72	+ 7 31.8	1.844	2.753	9.6	20.2	1 22	9 56.03	-16 10.2	3.052	3.822	10.3	21.2
2 1	9 49.01	+ 8 47.5	1.779	2.740	5.6	19.9	2 1	9 48.92	-16 37.0	2.985	3.823	8.8	21.1
2 11	9 40.99	+10 15.7	1.742	2.727	1.6	19.6	2 11	9 41.00	-16 44.6	2.944	3.823	7.7	21.0
2 21	9 32.60	+11 49.4	1.735	2.714	3.7	19.7	2 21	9 32.86	-16 33.1	2.930	3.823	7.3	21.0
3 2	9 24.85	+13 20.9	1.757	2.701	8.0	19.9	3 2	9 25.18	-16 4.6	2.944	3.823	7.8	21.0
3 12	9 18.72	+14 43.1	1.806	2.687	12.0	20.2	3 12	9 18.55	-15 22.9	2.984	3.822	9.1	21.1
3 22	9 14.84	+15 51.5	1.877	2.673	15.4	20.3	3 22	9 13.41	-14 32.9	3.049	3.821	10.6	21.2
31321	1998 <i>HD</i> ₃		2 12.2 334°25	2°9/9.8	18		133226	2003 <i>QE</i> ₉₃		2 12.2 235°13	3°2/9.7	18	
1 12	10 1.62	+20 53.0	2.116	2.975	11.0	18.7	1 12	10 6.29	+19 58.2	1.810	2.667	12.6	20.5
1 22	9 56.36	+21 35.5	2.044	2.970	7.8	18.5	1 22	10 0.07	+20 58.5	1.731	2.656	9.0	20.2
2 1	9 49.24	+22 20.0	1.999	2.965	4.5	18.3	2 1	9 51.45	+22 3.3	1.677	2.644	5.2	20.0
2 11	9 41.01	+23 0.5	1.982	2.961	2.9	18.1	2 11	9 41.29	+23 4.8	1.652	2.632	3.3	19.8
2 21	9 32.59	+23 32.0	1.994	2.957	5.3	18.3	2 21	9 30.73	+23 55.7	1.656	2.619	6.2	20.0
3 2	9 24.96	+23 50.8	2.034	2.953	8.7	18.5	3 2	9 21.07	+24 30.3	1.688	2.606	10.2	20.2
3 12	9 18.98	+23 55.3	2.099	2.950	11.8	18.7	3 12	9 13.42	+24 46.4	1.744	2.592	14.0	20.4
3 22	9 15.18	+23 45.9	2.186	2.947	14.6	18.9	3 22	9 8.48	+24 44.8	1.819	2.577	17.2	20.6
430468	2001 <i>RW</i> ₁₈		2 12.2 111°32	1°5/10.9	18		8391	Kring		2 12.2 44°39	0°5/11.8	18	
1 12	10 5.53	+18 44.9	2.593	3.435	9.8	21.5	1 12	10 0.63	+13 6.7	2.015	2.864	11.8	17.2
1 22	9 58.63	+18 59.6	2.534	3.453	6.9	21.3	1 22	9 55.61	+13 45.6	1.951	2.873	8.4	17.0
2 1	9 50.26	+19 15.7	2.504	3.470	3.7	21.1	2 1	9 48.81	+14 32.8	1.913	2.881	4.5	16.8
2 11	9 41.11	+19 29.4	2.504	3.487	1.5	21.0	2 11	9 40.99	+15 23.2	1.904	2.890	0.6	16.5
2 21	9 31.97	+19 37.6	2.535	3.504	3.7	21.2	2 21	9 33.05	+16 11.5	1.923	2.899	3.8	16.8
3 2	9 23.65	+19 38.3	2.596	3.521	6.8	21.4	3 2	9 25.94	+16 52.7	1.971	2.909	7.7	17.0
3 12	9 16.80	+19 30.7	2.685	3.537	9.5	21.6	3 12	9 20.46	+17 23.5	2.045	2.918	11.1	17.3
3 22	9 11.83	+19 14.8	2.797	3.552	11.8	21.8	3 22	9 17.09	+17 42.5	2.141	2.928	14.0	17.5
398718	2012 <i>XV</i> ₉₆		2 12.2 244°54	2°5/10.7	18		439906	2000 <i>WB</i> ₁₉₂		2 12.2 76°43	1°0/13.0	15	
1 12	10 8.25	+17 40.6	1.521	2.379	14.5	21.3	1 12	10 6.82	+ 7 12.5	1.513	2.350	15.7	21.5
1 22	10 1.80	+18 23.9	1.442	2.367	10.4	21.0	1 22	10 0.15	+ 8 14.9	1.473	2.385	11.3	21.3
2 1	9 52.52	+19 14.4	1.387	2.355	5.7	20.7	2 1	9 51.26	+ 9 33.7	1.458	2.421	6.3	21.1
2 11	9 41.39	+20 4.0	1.359	2.342	2.5	20.5	2 11	9 41.24	+11 1.0	1.470	2.455	1.5	20.9
2 21	9 32.97	+20 44.9	1.359	2.329	6.1	20.7	2 21	9 31.37	+12 27.8	1.511	2.489	4.2	21.2
3 2	9 19.24	+21 11.0	1.385	2.315	11.0	20.9	3 2	9 22.85	+13 46.0	1.580	2.522	8.8	21.5
3 12	9 11.09	+21 19.7	1.436	2.301	15.4	21.1	3 12	9 16.60	+14 50.2	1.674	2.555	12.8	21.8
3 22	9 6.12	+21 11.4	1.505	2.287	19.2	21.4	3 22	9 13.07	+15 37.9	1.790	2.587	16.0	22.1
508603	2017 <i>RW</i> ₁₆		2 12.2 178°38	4°6/17.5	17		136655	1995 <i>MQ</i> ₇		2 12.2 153°31	0°6/12.7	18	
1 12	9 59.95	- 6 0.8	3.203	3.950	10.3	22.4	1 12	10 4.14	+ 8 56.6	1.857	2.693	13.3	20.6
1 22	9 54.63	- 6 11.3	3.113	3.952	8.4	22.2	1 22	9 58.25	+ 9 46.2	1.787	2.700	9.6	20.3
2 1	9 48.11	- 6 7.5	3.049	3.953	6.5	22.1	2 1	9 50.32	+10 49.6	1.743	2.707	5.4	20.1
2 11	9 40.88	- 5 49.7	3.013	3.954	5.0	22.0	2 11	9 41.16	+12 1.1	1.727	2.713	1.0	19.8
2 21	9 33.51	- 5 19.6	3.006	3.954	4.7	22.0	2 21	9 31.80	+13 13.9	1.740	2.718	3.8	20.0
3 2	9 26.58	- 4 39.9	3.030	3.953	5.9	22.1	3 2	9 23.33	+14 21.4	1.782	2.723	8.1	20.3
3 12	9 20.63	- 3 54.3	3.081	3.953	7.8	22.2	3 12	9 16.69	+15 18.2	1.851	2.727	12.0	20.5
3 22	9 16.07	- 3 6.8	3.159	3.951	9.8	22.3	3 22	9 12.43	+16 1.7	1.942	2.731	15.2	20.8
283433	2000 <i>UB</i> ₁₁		2 12.2 93°69	6°6/18.2	18		151114	2001 <i>WS</i> ₃₃		2 12.2 80°78	1°2/11.2	18	
1 12	10 2.10	- 7 31.8	2.042	2.804	14.9	20.3	1 12	10 3.40	+14 32.4	1.755	2.609	13.1	20.1
1 22	9 56.57	- 7 40.8	1.976	2.822	12.3	20.2	1 22	9 57.76	+15 23.3	1.698	2.621	9.2	19.9
2 1	9 49.29	- 7 26.5	1.933	2.839	9.4	20.0	2 1	9 50.04	+16 22.5	1.665	2.634	4.9	19.6
2 11	9 41.01	- 6 49.4	1.914	2.856	7.2	19.9	2 11	9 41.12	+17 23.3	1.660	2.646	1.2	19.4
2 21	9 32.63	- 5 52.9	1.923	2.874	6.7	19.9	2 21	9 32.11	+18 18.8	1.685	2.658	4.6	19.7
3 2	9 25.07	- 4 42.6	1.960	2.890	8.3	20.0	3 2	9 24.13	+19 3.5	1.737	2.671	8.8	19.9
3 12	9 19.13	- 3 25.7	2.024	2.907	10.8	20.2	3 12	9 18.08	+19 34.2	1.813	2.683	12.5	20.2
3 22	9 15.29	- 2 9.2	2.111	2.923	13.3	20.4	3 22	9 14.51	+19 50.1	1.911	2.695	15.6	20.4
7497	Guangcaishiyue		2 12.2 120°32	1°2/11.3	18		166737	2002 <i>TD</i> ₂₈₀		2 12.2 91°24	2°6/10.2	18	
1 12	10 6.82	+15 22.1	1.852	2.699	12.8	18.0	1 12	10 4.55	+20 57.6				

EPHEMERIDES

2 12.2

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
327327	2005 <i>UP</i> ₉₄	2 12.2 108°79		2°5/10.4 18			120759	1997 <i>YY</i> ₁₇	2 12.2 168°44		0°0/12.3 18		
1 12	10 5.22	+19 14.9	1.854	2.710	12.4	21.3	1 12	10 4.51	+12 20.0	2.271	3.107	11.2	20.8
1 22	9 59.04	+19 53.1	1.790	2.715	8.7	21.1	1 22	9 58.22	+12 42.2	2.197	3.111	8.0	20.6
2 1	9 50.74	+20 34.3	1.753	2.720	4.9	20.9	2 1	9 50.21	+13 11.9	2.149	3.114	4.4	20.4
2 11	9 41.20	+21 12.3	1.743	2.725	2.5	20.8	2 11	9 41.17	+13 45.2	2.131	3.117	0.5	20.1
2 21	9 31.55	+21 41.3	1.762	2.730	5.3	20.9	2 21	9 31.98	+14 17.8	2.143	3.120	3.4	20.4
3 2	9 22.90	+21 57.6	1.809	2.734	9.2	21.2	3 2	9 23.55	+14 45.9	2.185	3.122	7.1	20.6
3 12	9 16.21	+21 59.7	1.881	2.739	12.7	21.4	3 12	9 16.66	+15 6.7	2.254	3.123	10.4	20.8
3 22	9 12.02	+21 48.2	1.974	2.743	15.6	21.6	3 22	9 11.81	+15 18.7	2.347	3.124	13.2	21.0
278761	2008 <i>SY</i> ₁₂₆	2 12.2 352°04		2°7/14.4 18			503076	2015 <i>FK</i> ₂₅₃	2 12.2 287°25		3°0/ 9.6 17		
1 12	10 0.93	+ 4 17.1	2.006	2.828	13.0	20.6	1 12	10 2.78	+21 21.0	2.241	3.096	10.6	21.4
1 22	9 55.88	+ 4 29.7	1.928	2.828	9.8	20.4	1 22	9 57.29	+22 5.6	2.150	3.073	7.6	21.1
2 1	9 49.01	+ 4 57.6	1.874	2.827	6.2	20.2	2 1	9 49.85	+22 52.5	2.085	3.050	4.5	20.9
2 11	9 41.02	+ 5 38.1	1.848	2.827	3.1	20.0	2 11	9 41.16	+23 35.9	2.049	3.027	3.0	20.8
2 21	9 32.82	+ 6 27.0	1.850	2.827	3.9	20.1	2 21	9 32.11	+24 10.4	2.042	3.003	5.4	20.9
3 2	9 25.35	+ 7 18.8	1.881	2.827	7.4	20.3	3 2	9 23.69	+24 32.0	2.064	2.979	8.8	21.0
3 12	9 19.47	+ 8 8.2	1.938	2.826	10.9	20.5	3 12	9 16.81	+24 38.9	2.111	2.956	12.0	21.2
3 22	9 15.71	+ 8 51.0	2.018	2.826	14.0	20.7	3 22	9 12.11	+24 31.2	2.180	2.932	14.9	21.4
429757	2011 <i>UV</i> ₂₇₁	2 12.2 7°04		19°9/ 4.2 16			459386	2012 <i>KJ</i> ₁₁	2 12.2 255°33		12°7/ 6.8 18		
1 12	10 26.46	+49 21.1	0.890	1.737	23.2	20.0	1 12	10 49.36	+40 10.6	1.461	2.261	18.1	20.4
1 22	10 17.19	+50 59.4	0.860	1.736	21.1	19.9	1 22	10 33.73	+41 42.1	1.357	2.224	15.4	20.1
2 1	10 1.51	+51 55.9	0.845	1.736	19.9	19.8	2 1	10 11.34	+42 54.8	1.277	2.185	13.1	19.9
2 11	9 42.37	+51 49.1	0.847	1.737	20.2	19.8	2 11	9 43.66	+43 23.0	1.226	2.143	12.9	19.8
2 21	9 23.95	+50 31.9	0.867	1.739	21.9	19.9	2 21	9 14.13	+42 47.5	1.205	2.097	15.5	19.8
3 2	9 9.91	+48 12.9	0.903	1.741	24.3	20.1	3 2	8 47.09	+41 6.5	1.214	2.048	19.6	19.9
3 12	9 2.02	+45 11.2	0.954	1.745	27.0	20.3	3 12	8 25.83	+38 36.1	1.247	1.995	23.9	20.0
3 22	9 0.12	+41 45.8	1.018	1.748	29.4	20.5	3 22	8 11.46	+35 38.7	1.299	1.939	27.8	20.1
116906	2004 <i>GV</i> ₁	2 12.2 326°96		0°1/12.2 18			47789	2000 <i>ED</i> ₂₆	2 12.2 141°68		1°8/10.6 18		
1 12	10 2.94	+11 34.1	1.141	2.011	17.4	19.5	1 12	10 6.00	+18 13.3	2.430	3.273	10.3	20.3
1 22	9 58.52	+12 2.1	1.069	1.999	12.7	19.2	1 22	9 59.15	+18 55.2	2.369	3.288	7.2	20.1
2 1	9 50.94	+12 47.3	1.018	1.988	7.0	18.9	2 1	9 50.65	+19 39.8	2.336	3.302	4.0	19.9
2 11	9 41.27	+13 42.8	0.991	1.978	0.8	18.4	2 11	9 41.25	+20 22.1	2.333	3.316	1.8	19.8
2 21	9 31.06	+14 39.6	0.989	1.968	5.6	18.7	2 21	9 31.78	+20 57.5	2.361	3.328	4.2	20.0
3 2	9 22.08	+15 28.5	1.010	1.959	11.7	19.0	3 2	9 23.13	+21 22.9	2.420	3.340	7.4	20.2
3 12	9 15.87	+16 2.8	1.053	1.951	17.0	19.3	3 12	9 16.02	+21 36.7	2.505	3.351	10.3	20.4
3 22	9 13.24	+16 19.6	1.113	1.944	21.5	19.5	3 22	9 10.93	+21 39.0	2.613	3.362	12.7	20.6
435351	2007 <i>VS</i> ₁₈₂	2 12.2 19°12		4°5/16.3 17			200832	2001 <i>XC</i> ₂₃₈	2 12.2 13°87		3°4/13.9 18		
1 12	9 58.92	- 1 30.2	2.072	2.870	13.5	21.3	1 12	10 5.43	+ 6 12.8	1.311	2.156	17.2	19.0
1 22	9 54.41	- 1 21.5	1.994	2.872	10.6	21.1	1 22	9 59.82	+ 5 55.3	1.245	2.157	12.9	18.7
2 1	9 48.19	- 0 53.3	1.940	2.875	7.5	20.9	2 1	9 51.44	+ 5 55.8	1.200	2.158	8.1	18.4
2 11	9 40.94	- 0 7.5	1.912	2.877	4.9	20.7	2 11	9 41.35	+ 6 11.9	1.179	2.160	3.8	18.2
2 21	9 33.51	+ 0 52.1	1.912	2.881	4.9	20.7	2 21	9 30.99	+ 6 38.7	1.185	2.163	5.2	18.3
3 2	9 26.77	+ 1 59.7	1.940	2.884	7.4	20.9	3 2	9 21.86	+ 7 9.9	1.216	2.166	10.0	18.6
3 12	9 21.50	+ 3 9.1	1.995	2.887	10.5	21.1	3 12	9 15.23	+ 7 39.3	1.271	2.169	14.7	18.8
3 22	9 18.24	+ 4 14.4	2.074	2.891	13.4	21.3	3 22	9 11.76	+ 8 2.0	1.344	2.173	18.6	19.1
150847	2001 <i>SL</i> ₆₉	2 12.2 107°19		1°2/13.3 18			233137	2005 <i>UU</i> ₁₀₉	2 12.2 324°78		4°3/14.6 18		
1 12	10 4.04	+ 7 26.5	2.143	2.967	12.2	20.4	1 12	10 5.32	+ 3 32.7	1.371	2.205	17.3	20.2
1 22	9 57.82	+ 8 4.1	2.086	2.991	8.9	20.3	1 22	9 59.72	+ 3 18.0	1.299	2.203	13.2	20.0
2 1	9 49.93	+ 8 53.5	2.055	3.015	5.1	20.1	2 1	9 51.40	+ 3 24.0	1.248	2.201	8.7	19.7
2 11	9 41.13	+ 9 50.5	2.053	3.038	1.5	19.9	2 11	9 41.36	+ 3 49.0	1.222	2.199	4.8	19.5
2 21	9 32.30	+10 49.8	2.082	3.060	3.3	20.0	2 21	9 30.94	+ 4 28.2	1.222	2.197	5.6	19.5
3 2	9 24.34	+11 46.0	2.140	3.081	7.0	20.3	3 2	9 21.65	+ 5 14.8	1.248	2.196	10.0	19.7
3 12	9 18.00	+12 35.0	2.226	3.102	10.2	20.6	3 12	9 14.74	+ 6 1.2	1.297	2.195	14.5	20.0
3 22	9 13.72	+13 14.2	2.335	3.122	13.0	20.8	3 22	9 10.92	+ 6 41.5	1.366	2.193	18.5	20.2
331118	2010 <i>UE</i> ₅₃	2 12.2 172°75		14°2/22.2 15 R			85813	1998 <i>WY</i> ₂₆	2 12.2 328°14		1°9/13.4 18		
1 12	10 6.61	-19 4.6	1.457	2.167	22.1	21.2	1 12	10 2.49	+ 8 19.3	1.504	2.352	15.2	19.7
1 22	10 0.71	-20 17.1	1.384	2.169	19.7	21.0	1 22	9 57.58	+ 8 23.9	1.426	2.342	11.3	19.4
2 1	9 51.98	-20 51.7	1.328	2.172	17.2	20.8	2 1	9 50.20	+ 8 43.8	1.370	2.333	6.7	19.1
2 11	9 41.38	-20 41.9	1.290	2.173	15.1	20.7	2 11	9 41.23	+ 9 15.3	1.339	2.324	2.3	18.8
2 21	9 30.27	-19 46.7	1.274	2.174	14.2	20.6	2 21	9 31.86	+ 9 53.2	1.336	2.315	4.4	18.9
3 2	9 20.21	-18 11.6	1.281	2.174	14.8	20.7	3 2	9 23.45	+10 31.2	1.359	2.307	9.3	19.2
3 12	9 12.56	-16 8.7	1.310	2.174	16.7	20.8	3 12	9 17.16	+11 3.7	1.405	2.300	13.8	19.4
3 22	9 8.11	-13 52.6	1.358	2.173	19.2	20.9	3 22	9 13.70	+11 26.7	1.472	2.293	17.7	19.7
223612	2004 <i>HE</i> ₆₀	2 12.2 249°30		0°4/12.5 17			266610	2008 <i>OK</i> ₃	2 12.2 239°80		0°0/12.3 17		
1 12	10 4.64	+11 16.2	2.084	2.920	12.0	20.9	1 12	10 1.86	+11 4.6	2.115	2.955	11.7	20.8
1 22	9 58.62	+11 34.8	1.990	2.904	8.7	20.7	1 22	9 56.59	+11 47.5	2.030	2.946	8.4	20.6
2 1	9 50.58	+12 3.0	1.922	2.887	4.9	20.4	2 1	9 49.45	+12 41.2	1.971	2.936	4.6	20.3
2 11	9 41.22	+12 37.0	1.883	2.870	0.8	20.1	2 11	9 41.14	+13 41.1	1.940	2.927	0.5	20.0
2 21	9 31.48	+13 12.1	1.874	2.852	3.7	20.3	2 21	9 32.52	+14 41.4	1.939	2.917	3.7	20.2
3 2	9 22.41	+13 43.9	1.894	2.833	7.8	20.5	3 2	9 24.58	+15 36.7	1.968	2.906	7.7	20.4
3 12	9 14.95	+14 8.7	1.941	2.815	11.6	20.7	3 12	9 18.17	+16 22.7	2.023	2.896	11.3	20.6
3 22	9 9.74	+14 24.3	2.010	2.796	14.9	20.9	3 22	9 13.87	+16 56.7	2.100	2.885	14.3	20.8
345970	2007 <i>TU</i> ₁₀₃	2 12.2 171°71		1°4/13.7 17			362154	2009 <i>DN</i> ₁₂₇	2 12.2 182°40		1°6/10.9 18		
1 12	10 0.35	+ 6 47.2	2.797	3.613	9.9	22.0	1 12	10 5.7					

EPHEMERIDES

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
463678	2014 <i>OP</i> ₉₈		2 12.2 65°96	2°3/14.2	18		205472	2001 <i>QS</i> ₁₅₂		2 12.2 92°49	3°1/ 9.8	18	
1 12	10 2.80	+ 3 14.0	1.563	2.392	15.8	21.1	1 12	10 6.69	+23 43.3	2.309	3.159	10.5	20.1
1 22	9 57.38	+ 4 17.7	1.515	2.419	11.6	20.9	1 22	9 59.70	+24 3.7	2.252	3.172	7.5	19.9
2 1	9 49.84	+ 5 42.5	1.490	2.447	7.1	20.7	2 1	9 50.98	+24 21.9	2.222	3.185	4.5	19.7
2 11	9 41.17	+ 7 21.6	1.492	2.474	2.8	20.5	2 11	9 41.35	+24 33.2	2.221	3.197	3.2	19.7
2 21	9 32.50	+ 9 5.7	1.522	2.501	4.1	20.7	2 21	9 31.73	+24 34.2	2.251	3.210	5.2	19.8
3 2	9 24.98	+10 45.5	1.581	2.528	8.4	21.0	3 2	9 23.07	+24 23.1	2.310	3.222	8.1	20.0
3 12	9 19.51	+12 13.4	1.666	2.555	12.3	21.3	3 12	9 16.12	+24 0.1	2.394	3.234	10.9	20.2
3 22	9 16.57	+13 24.9	1.772	2.582	15.6	21.6	3 22	9 11.32	+23 26.7	2.501	3.247	13.3	20.4
286595	2002 <i>CU</i> ₂₈₀		2 12.2 287°01	0°4/12.5	18		31500	Grutzik		2 12.2 245°14	2°2/13.7	18	
1 12	10 4.48	+11 3.0	1.486	2.338	15.1	21.1	1 12	10 5.69	+ 6 54.7	1.673	2.505	14.7	18.8
1 22	9 59.17	+11 27.0	1.401	2.322	11.0	20.8	1 22	9 59.76	+ 7 3.2	1.586	2.494	11.0	18.6
2 1	9 51.17	+12 5.1	1.339	2.305	6.2	20.5	2 1	9 51.39	+ 7 27.3	1.523	2.482	6.6	18.3
2 11	9 41.36	+12 52.2	1.302	2.289	0.9	20.1	2 11	9 41.43	+ 8 3.8	1.487	2.470	2.6	18.0
2 21	9 31.01	+13 41.4	1.294	2.272	4.7	20.3	2 21	9 31.02	+ 8 47.7	1.479	2.457	4.3	18.1
3 2	9 21.57	+14 25.7	1.311	2.256	10.0	20.6	3 2	9 21.44	+ 9 32.9	1.499	2.444	8.9	18.3
3 12	9 14.35	+14 59.4	1.353	2.239	14.8	20.8	3 12	9 13.87	+10 13.6	1.544	2.431	13.3	18.5
3 22	9 10.14	+15 19.7	1.414	2.223	18.9	21.1	3 22	9 9.02	+10 45.7	1.610	2.417	17.1	18.8
430170	2013 <i>TB</i> ₈₉		2 12.2 85°15	5°0/ 8.4	18		295301	2008 <i>GX</i> ₁₁₂		2 12.2 213°94	4°3/ 8.0	18	
1 12	10 6.44	+27 43.8	2.031	2.888	11.5	21.1	1 12	10 4.01	+23 27.6	2.155	3.011	10.9	20.8
1 22	9 59.85	+28 28.3	1.972	2.891	8.5	21.0	1 22	9 58.22	+24 55.1	2.083	3.005	7.9	20.6
2 1	9 51.18	+29 8.1	1.939	2.894	5.8	20.8	2 1	9 50.40	+26 24.2	2.038	2.998	5.1	20.5
2 11	9 41.33	+29 36.4	1.934	2.898	5.2	20.8	2 11	9 41.31	+27 46.8	2.023	2.991	4.4	20.4
2 21	9 31.41	+29 48.2	1.958	2.901	7.1	20.9	2 21	9 31.90	+28 55.7	2.037	2.983	6.7	20.5
3 2	9 22.53	+29 41.6	2.009	2.905	10.1	21.1	3 2	9 23.23	+29 46.0	2.080	2.975	9.8	20.7
3 12	9 15.61	+29 17.1	2.083	2.908	12.9	21.3	3 12	9 16.24	+30 15.9	2.147	2.966	12.8	20.9
3 22	9 11.18	+28 37.6	2.179	2.911	15.4	21.5	3 22	9 11.56	+30 26.4	2.234	2.957	15.3	21.0
310301	2011 <i>UK</i> ₉₅		2 12.2 73°93	0°2/12.3	16		108297	2001 <i>HK</i> ₆₅		2 12.2 226°01	2°5/10.5	18	
1 12	10 6.62	+10 59.7	1.442	2.292	15.6	21.7	1 12	10 9.29	+18 36.1	1.823	2.673	12.9	20.3
1 22	10 0.23	+11 37.2	1.396	2.316	11.1	21.4	1 22	10 2.26	+19 21.3	1.739	2.661	9.2	20.0
2 1	9 51.44	+12 27.4	1.373	2.340	6.0	21.2	2 1	9 52.73	+20 11.6	1.681	2.648	5.1	19.8
2 11	9 41.36	+13 23.5	1.377	2.363	0.7	20.9	2 11	9 41.58	+20 59.9	1.651	2.634	2.5	19.6
2 21	9 31.33	+14 17.8	1.409	2.387	4.5	21.2	2 21	9 30.00	+21 39.3	1.651	2.619	5.6	19.7
3 2	9 22.67	+15 3.9	1.468	2.410	9.3	21.6	3 2	9 19.31	+22 4.8	1.680	2.603	9.9	19.9
3 12	9 16.39	+15 37.6	1.551	2.433	13.5	21.9	3 12	9 10.69	+22 14.2	1.733	2.586	13.8	20.1
3 22	9 12.98	+15 57.3	1.654	2.456	16.9	22.1	3 22	9 4.85	+22 8.1	1.807	2.568	17.2	20.3
425442	Eberstadt		2 12.2 262°15	3°1/ 9.1	17		113984	2002 <i>UN</i> ₂₃		2 12.2 221°06	1°8/13.4	18	
1 12	10 2.24	+21 57.7	2.467	3.320	9.8	21.5	1 12	10 7.60	+ 7 47.5	1.703	2.534	14.5	20.4
1 22	9 56.77	+22 54.7	2.378	3.301	7.0	21.3	1 22	10 1.08	+ 7 59.9	1.617	2.525	10.8	20.1
2 1	9 49.53	+23 53.7	2.318	3.281	4.3	21.1	2 1	9 52.10	+ 8 27.0	1.555	2.515	6.4	19.9
2 11	9 41.16	+24 49.0	2.287	3.262	3.2	21.0	2 11	9 41.51	+ 9 5.1	1.521	2.505	2.2	19.6
2 21	9 32.48	+25 35.2	2.286	3.242	5.3	21.1	2 21	9 30.48	+ 9 48.9	1.516	2.494	4.3	19.7
3 2	9 24.37	+26 8.3	2.314	3.221	8.4	21.2	3 2	9 20.32	+10 32.4	1.539	2.482	8.9	19.9
3 12	9 17.66	+26 26.5	2.367	3.201	11.3	21.4	3 12	9 12.20	+11 10.3	1.587	2.469	13.3	20.1
3 22	9 12.93	+26 29.8	2.442	3.180	13.8	21.5	3 22	9 6.83	+11 39.0	1.657	2.456	17.0	20.3
341770	2007 <i>VX</i> ₃₃₄		2 12.2 120°03	0°1/12.1	17		384789	2012 <i>PU</i> _{A3}		2 12.2 104°30	1°5/11.0	18	
1 12	10 1.04	+12 11.1	2.623	3.459	9.9	21.8	1 12	10 4.28	+17 51.5	2.394	3.240	10.3	21.2
1 22	9 55.57	+12 45.4	2.558	3.472	7.0	21.7	1 22	9 57.95	+18 13.1	2.334	3.254	7.3	21.0
2 1	9 48.71	+13 26.5	2.520	3.486	3.8	21.5	2 1	9 50.03	+18 37.2	2.301	3.268	3.9	20.8
2 11	9 41.07	+14 10.6	2.512	3.499	0.4	21.2	2 11	9 41.25	+18 59.7	2.297	3.282	1.5	20.7
2 21	9 33.35	+14 53.6	2.535	3.512	3.0	21.5	2 21	9 32.45	+19 17.0	2.325	3.295	3.9	20.9
3 2	9 26.28	+15 31.9	2.588	3.524	6.2	21.7	3 2	9 24.45	+19 26.3	2.381	3.309	7.1	21.1
3 12	9 20.49	+16 2.9	2.669	3.536	9.1	21.9	3 12	9 17.99	+19 26.3	2.465	3.322	10.1	21.3
3 22	9 16.39	+16 24.9	2.773	3.548	11.5	22.1	3 22	9 13.48	+19 17.0	2.571	3.334	12.6	21.5
33567	Sulekhfrederic		2 12.2 224°79	0°8/11.4	18		239517	2007 <i>XD</i> ₂₃		2 12.2 230°65	3°5/ 8.7	18	
1 12	10 0.85	+15 4.4	2.723	3.564	9.4	20.4	1 12	10 1.56	+22 56.4	2.368	3.224	10.0	20.1
1 22	9 55.53	+15 40.7	2.638	3.556	6.6	20.2	1 22	9 56.27	+23 59.8	2.297	3.221	7.2	19.9
2 1	9 48.76	+16 22.4	2.580	3.547	3.6	19.9	2 1	9 49.25	+25 3.9	2.255	3.217	4.5	19.7
2 11	9 41.10	+17 5.4	2.553	3.538	0.9	19.7	2 11	9 41.19	+26 2.6	2.241	3.213	3.6	19.6
2 21	9 33.23	+17 45.9	2.556	3.529	3.4	19.9	2 21	9 32.92	+26 50.5	2.257	3.209	5.7	19.8
3 2	9 25.90	+18 20.2	2.589	3.519	6.5	20.1	3 2	9 25.35	+27 23.8	2.301	3.205	8.6	19.9
3 12	9 19.77	+18 45.9	2.650	3.509	9.4	20.3	3 12	9 19.27	+27 41.0	2.371	3.201	11.4	20.1
3 22	9 15.32	+19 1.8	2.734	3.499	11.9	20.4	3 22	9 15.19	+27 42.7	2.462	3.197	13.8	20.3
26634	Balasubramanian		2 12.2 155°62	0°2/12.4	18		393417	2001 <i>QB</i> ₁₇₉		2 12.2 144°94	3°1/ 9.9	18	
1 12	10 1.16	+11 24.8	2.694	3.526	9.8	19.6	1 12	10 10.19	+21 6.0	2.041	2.887	11.8	21.8
1 22	9 55.67	+11 53.2	2.620	3.532	7.0	19.4	1 22	10 2.41	+21 57.8	1.983	2.902	8.4	21.6
2 1	9 48.79	+12 28.7	2.573	3.538	3.8	19.3	2 1	9 52.56	+22 50.2	1.953	2.917	4.9	21.4
2 11	9 41.10	+13 8.1	2.556	3.543	0.5	19.0	2 11	9 41.55	+23 36.6	1.952	2.930	3.1	21.3
2 21	9 33.29	+13 47.4	2.571	3.548	2.9	19.2	2 21	9 30.49	+24 11.3	1.982	2.943	5.6	21.5
3 2	9 26.08	+14 23.2	2.615	3.552	6.1	19.4	3 2	9 20.51	+24 31.0	2.041	2.954	9.0	21.7
3 12	9 20.10	+14 52.8	2.688	3.557	8.9	19.6	3 12	9 12.50	+24 35.0	2.126	2.964	12.2	21.9
3 22	9 15.78	+15 14.3	2.784	3.560	11.4	19.8	3 22	9 7.00	+24 24.7	2.233	2.973	14.9	22.1
133912	2004 <i>RG</i> ₁₉₈		2 12.2 163°10	0°3/12.0	18		318079	2004 <i>GM</i> ₁₄		2 12.2 300°02	4°5/ 8.9	17	
1 12	10 8.44	+13 34.9	1.748	2.592	13.6	20.6	1 12	10 3.87	+22 5.8				

EPHEMERIDES

2 12.2

2 12.3

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
125265	2001 <i>UT</i> ₂₂₂		2 12.2 312°83	0°8/12.8	18		190136	2005 <i>QW</i> ₅₀		2 12.2 225°81	2°0/10.9	18	
1 12	10 2.33	+ 9 40.1	1.715	2.560	13.8	19.9	1 12	10 8.62	+16 45.2	1.670	2.522	13.7	21.3
1 22	9 57.23	+10 7.0	1.638	2.555	10.0	19.7	1 22	10 1.93	+17 29.5	1.589	2.512	9.8	21.0
2 1	9 49.94	+10 47.4	1.586	2.550	5.7	19.4	2 1	9 52.62	+18 21.4	1.533	2.501	5.4	20.8
2 11	9 41.28	+11 36.5	1.560	2.546	1.2	19.1	2 11	9 41.62	+19 13.5	1.505	2.490	2.0	20.5
2 21	9 32.33	+12 28.4	1.562	2.541	4.0	19.3	2 21	9 30.18	+19 58.5	1.506	2.477	5.5	20.7
3 2	9 24.24	+13 16.8	1.592	2.536	8.6	19.5	3 2	9 19.71	+20 30.5	1.535	2.464	10.2	20.9
3 12	9 18.04	+13 56.8	1.647	2.532	12.7	19.8	3 12	9 11.43	+20 46.8	1.588	2.450	14.4	21.2
3 22	9 14.35	+14 25.1	1.723	2.528	16.2	20.0	3 22	9 6.08	+20 47.1	1.662	2.436	17.9	21.4
116883	2004 <i>FW</i> ₁₂₀		2 12.2 202°20	1°0/13.5	18		350663	2001 <i>UF</i> ₂₂		2 12.2 81°94	3°4/14.3	18	
1 12	9 58.92	+ 7 14.6	3.162	3.978	8.9	20.9	1 12	10 8.13	+ 4 39.2	1.422	2.253	16.9	20.5
1 22	9 54.00	+ 7 55.6	3.072	3.973	6.5	20.7	1 22	10 1.37	+ 4 36.3	1.371	2.275	12.6	20.3
2 1	9 47.89	+ 8 46.0	3.010	3.968	3.8	20.5	2 1	9 52.13	+ 4 52.5	1.342	2.297	7.9	20.1
2 11	9 41.05	+ 9 42.8	2.978	3.962	1.2	20.3	2 11	9 41.54	+ 5 24.2	1.339	2.318	3.9	19.9
2 21	9 34.03	+10 42.5	2.978	3.956	2.5	20.4	2 21	9 30.96	+ 6 5.7	1.363	2.340	4.9	20.0
3 2	9 27.43	+11 41.3	3.009	3.949	5.2	20.6	3 2	9 21.76	+ 6 50.3	1.414	2.361	9.2	20.3
3 12	9 21.81	+12 35.6	3.070	3.942	7.9	20.8	3 12	9 14.97	+ 7 31.5	1.490	2.382	13.4	20.6
3 22	9 17.56	+13 23.0	3.155	3.934	10.1	20.9	3 22	9 11.12	+ 8 4.9	1.587	2.402	16.9	20.9
14936	1995 <i>BU</i> ₂		2 12.2 266°65	3°8/14.4	18		133029	2002 <i>XT</i> ₄₅		2 12.3 0°31	14°9/16.6	18	
1 12	10 6.73	+ 4 30.4	1.827	2.645	14.3	17.2	1 12	10 10.98	- 8 2.7	1.015	1.816	24.3	18.9
1 22	10 0.30	+ 3 56.0	1.740	2.635	10.9	17.0	1 22	10 4.66	-10 47.5	0.954	1.814	20.9	18.6
2 1	9 51.62	+ 3 35.0	1.676	2.625	7.2	16.7	2 1	9 54.56	-13 2.9	0.910	1.813	17.6	18.4
2 11	9 41.48	+ 3 26.8	1.640	2.615	4.1	16.5	2 11	9 41.87	-14 37.2	0.886	1.813	15.3	18.3
2 21	9 30.96	+ 3 29.3	1.632	2.605	4.9	16.6	2 21	9 28.45	-15 23.9	0.883	1.813	15.2	18.3
3 2	9 21.25	+ 3 39.3	1.653	2.595	8.5	16.7	3 2	9 16.49	-15 24.6	0.900	1.815	17.2	18.4
3 12	9 13.40	+ 3 52.4	1.700	2.585	12.4	17.0	3 12	9 7.82	-14 50.2	0.936	1.817	20.3	18.6
3 22	9 8.09	+ 4 4.5	1.769	2.575	15.8	17.2	3 22	9 3.40	-13 55.1	0.987	1.819	23.6	18.8
328562	2009 <i>RX</i> ₇₄		2 12.2 79°73	0°8/12.9	18		189248	2004 <i>RH</i> ₂₉₀		2 12.3 225°74	4°9/ 8.0	17	
1 12	10 1.88	+ 7 54.1	1.819	2.656	13.5	20.7	1 12	10 6.95	+27 40.6	2.234	3.085	10.8	21.0
1 22	9 56.65	+ 8 53.6	1.760	2.673	9.7	20.5	1 22	10 0.25	+28 34.1	2.160	3.076	8.0	20.8
2 1	9 49.48	+10 7.8	1.726	2.690	5.5	20.3	2 1	9 51.50	+29 24.1	2.113	3.067	5.6	20.6
2 11	9 41.22	+11 30.5	1.721	2.707	1.2	20.0	2 11	9 41.49	+30 3.7	2.096	3.057	5.0	20.6
2 21	9 32.87	+12 54.2	1.745	2.724	3.7	20.2	2 21	9 31.24	+30 27.6	2.107	3.047	7.0	20.7
3 2	9 25.44	+14 11.9	1.798	2.740	7.9	20.5	3 2	9 21.83	+30 33.1	2.146	3.036	9.8	20.8
3 12	9 19.80	+15 18.0	1.876	2.757	11.6	20.8	3 12	9 14.22	+30 20.0	2.210	3.025	12.6	21.0
3 22	9 16.45	+16 9.5	1.977	2.773	14.7	21.0	3 22	9 8.98	+29 50.8	2.295	3.013	15.1	21.1
202948	1999 <i>JU</i> ₄₁		2 12.2 286°95	1°8/11.0	18		270891	2002 <i>TV</i> ₂₃₆		2 12.3 61°44	1°2/12.9	18	
1 12	10 4.39	+15 15.8	1.480	2.342	14.6	20.4	1 12	10 9.88	+11 8.9	1.479	2.324	15.6	19.6
1 22	9 59.20	+16 7.2	1.396	2.324	10.5	20.1	1 22	10 2.44	+10 55.8	1.434	2.350	11.2	19.4
2 1	9 51.27	+17 10.1	1.336	2.305	5.7	19.8	2 1	9 52.62	+10 53.4	1.412	2.376	6.3	19.2
2 11	9 41.46	+18 17.0	1.302	2.287	1.8	19.5	2 11	9 41.60	+10 57.7	1.417	2.402	1.5	19.0
2 21	9 31.08	+19 18.9	1.295	2.269	5.8	19.7	2 21	9 30.73	+11 4.4	1.450	2.429	4.3	19.2
3 2	9 21.62	+20 8.0	1.315	2.250	10.9	19.9	3 2	9 21.33	+11 9.5	1.511	2.455	9.0	19.6
3 12	9 14.43	+20 39.7	1.357	2.232	15.6	20.2	3 12	9 14.38	+11 10.1	1.597	2.481	13.0	19.9
3 22	9 10.32	+20 52.7	1.419	2.214	19.5	20.4	3 22	9 10.32	+11 4.4	1.703	2.508	16.4	20.1
28456	2000 <i>AY</i> ₁₃₇		2 12.2 283°21	4°1/ 9.5	18		502881	2015 <i>DJ</i> ₂₁₄		2 12.3 267°39	3°3/ 9.6	17	
1 12	10 6.40	+22 33.9	1.696	2.558	13.1	17.7	1 12	10 5.35	+23 45.4	2.291	3.143	10.5	21.4
1 22	10 0.36	+23 20.6	1.616	2.542	9.4	17.5	1 22	9 58.97	+24 11.3	2.216	3.136	7.6	21.2
2 1	9 51.76	+24 8.9	1.562	2.526	5.7	17.2	2 1	9 50.73	+24 35.7	2.167	3.129	4.6	21.0
2 11	9 41.51	+24 50.6	1.534	2.511	4.1	17.1	2 11	9 41.40	+24 53.5	2.147	3.123	3.3	20.9
2 21	9 30.85	+25 18.7	1.535	2.495	6.9	17.2	2 21	9 31.90	+25 0.7	2.158	3.116	5.4	21.0
3 2	9 21.16	+25 28.7	1.562	2.479	10.9	17.4	3 2	9 23.22	+24 54.9	2.197	3.109	8.5	21.2
3 12	9 13.65	+25 19.6	1.613	2.464	14.8	17.6	3 12	9 16.18	+24 35.7	2.261	3.102	11.5	21.3
3 22	9 9.04	+24 53.0	1.683	2.448	18.1	17.8	3 22	9 11.33	+24 4.4	2.348	3.095	14.1	21.5
130464	2000 <i>QU</i> ₇₇		2 12.2 132°15	0°7/12.8	18		77030	2001 <i>CO</i> ₂₉		2 12.3 311°48	2°5/10.8	18	
1 12	10 6.85	+ 9 47.2	1.869	2.702	13.3	20.9	1 12	10 6.76	+18 37.8	1.472	2.336	14.6	19.6
1 22	10 0.13	+10 17.6	1.806	2.718	9.6	20.7	1 22	10 0.76	+19 4.2	1.400	2.328	10.4	19.3
2 1	9 51.37	+10 59.4	1.769	2.732	5.4	20.5	2 1	9 52.02	+19 35.2	1.351	2.320	5.8	19.0
2 11	9 41.46	+11 47.8	1.760	2.746	1.1	20.2	2 11	9 41.56	+20 3.8	1.329	2.313	2.5	18.8
2 21	9 31.44	+12 37.1	1.781	2.759	3.8	20.4	2 21	9 30.77	+20 23.2	1.334	2.305	6.0	19.0
3 2	9 22.43	+13 21.9	1.831	2.771	8.0	20.7	3 2	9 21.14	+20 28.9	1.365	2.298	10.8	19.3
3 12	9 15.32	+13 58.1	1.908	2.783	11.7	20.9	3 12	9 13.94	+20 19.1	1.419	2.291	15.1	19.5
3 22	9 10.65	+14 23.6	2.006	2.794	14.8	21.2	3 22	9 9.85	+19 54.8	1.492	2.285	18.8	19.7
52699	1998 <i>FO</i> ₅₆		2 12.2 238°75	3°0/ 9.4	18		28900	2000 <i>LH</i> ₁₂		2 12.3 141°27	5°2/16.9	18	
1 12	10 3.02	+23 7.3	2.601	3.452	9.4	19.3	1 12	10 3.46	- 4 14.5	2.347	3.115	13.0	18.7
1 22	9 57.17	+23 44.9	2.522	3.443	6.8	19.1	1 22	9 57.46	- 4 26.5	2.272	3.127	10.5	18.5
2 1	9 49.71	+24 22.2	2.472	3.434	4.1	18.9	2 1	9 49.86	- 4 20.4	2.220	3.138	7.8	18.4
2 11	9 41.27	+24 54.4	2.450	3.425	3.1	18.8	2 11	9 41.30	- 3 56.7	2.196	3.148	5.7	18.3
2 21	9 32.65	+25 17.4	2.459	3.416	5.0	18.9	2 21	9 32.60	- 3 18.2	2.201	3.158	5.4	18.3
3 2	9 24.68	+25 28.4	2.498	3.406	7.8	19.1	3 2	9 24.60	- 2 29.0	2.235	3.167	7.3	18.4
3 12	9 18.09	+25 26.6	2.562	3.396	10.5	19.3	3 12	9 18.01	- 1 34.5	2.297	3.175	9.8	18.6
3 22	9 13.39	+25 12.4	2.648	3.387	12.8	19.4	3 22	9 13.34	- 0 39.9	2.382	3.183	12.3	18.7
57353	2001 <i>QM</i> ₂₈₈		2 12.2 124°59	5°6/17.4	18		31071	1996 <i>VL</i> ₁₈		2 12.3 252°28	2°0/14.2	18	
1 12	10 0.78	- 5 23.0	2.385	3.1									

EPHEMERIDES

2 12.3

2 12.3

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
516155	2016 <i>DP</i>		2 12.3 202°97'	22.5°	2.9	18 C	296709	2009 <i>SV</i> ₃₂₀		2 12.3 72°30'	0°8'	11.7 18	
1 12	11 5.05	+38 24.1	0.666	1.510	29.2	21.5	1 12	10 4.46	+14 0.7	1.765	2.616	13.2	20.9
1 22	10 50.74	+43 24.4	0.619	1.510	24.9	21.2	1 22	9 58.51	+14 36.2	1.711	2.633	9.3	20.7
2 1	10 23.98	+48 16.1	0.591	1.505	22.5	21.0	2 1	9 50.52	+15 19.7	1.683	2.651	5.0	20.5
2 11	9 45.56	+51 49.9	0.584	1.493	23.7	21.0	2 11	9 41.41	+16 5.2	1.682	2.668	0.8	20.2
2 21	9 2.62	+53 13.2	0.597	1.475	28.1	21.2	2 21	9 32.26	+16 46.8	1.710	2.686	4.3	20.5
3 2	8 25.95	+52 28.0	0.627	1.450	33.7	21.4	3 2	9 24.19	+17 19.7	1.766	2.703	8.5	20.8
3 12	8 1.78	+50 20.8	0.668	1.419	39.0	21.6	3 12	9 18.08	+17 41.0	1.847	2.720	12.1	21.0
3 22	7 49.87	+47 37.3	0.713	1.382	43.7	21.9	3 22	9 14.41	+17 49.9	1.950	2.737	15.2	21.3
311604	2006 <i>KD</i> ₁₃₇		2 12.3 88°52'	0°6'	12.7 18		424152	2007 <i>GH</i> ₄₁		2 12.3 319°49'	4°2'	9.1 18	
1 12	10 6.88	+10 16.1	1.616	2.459	14.6	21.4	1 12	10 4.82	+23 35.0	1.843	2.705	12.2	21.0
1 22	10 0.29	+10 45.1	1.565	2.481	10.5	21.2	1 22	9 58.96	+24 27.6	1.777	2.702	8.8	20.8
2 1	9 51.49	+11 26.4	1.539	2.503	5.8	21.0	2 1	9 50.88	+25 19.9	1.737	2.700	5.5	20.6
2 11	9 41.49	+12 14.1	1.539	2.525	1.0	20.7	2 11	9 41.46	+26 4.6	1.724	2.698	4.3	20.5
2 21	9 31.50	+13 1.9	1.569	2.547	4.1	21.0	2 21	9 31.84	+26 35.3	1.740	2.696	6.7	20.7
3 2	9 22.74	+13 44.0	1.626	2.568	8.6	21.3	3 2	9 23.21	+26 48.3	1.782	2.694	10.2	20.9
3 12	9 16.14	+14 16.2	1.709	2.589	12.6	21.6	3 12	9 16.59	+26 43.0	1.849	2.692	13.5	21.1
3 22	9 12.20	+14 36.8	1.812	2.609	15.8	21.8	3 22	9 12.55	+26 21.1	1.935	2.690	16.4	21.3
272377	2005 <i>SH</i> ₂₂₀		2 12.3 117°12'	1°2'	11.3 18		265238	2004 <i>DO</i> ₅₁		2 12.3 19°12'	12°5'	8.3 18	
1 12	10 7.95	+16 50.1	2.292	3.131	11.0	21.2	1 12	10 28.92	+44 35.8	1.394	2.218	17.6	20.4
1 22	10 0.55	+17 11.8	2.236	3.153	7.7	21.0	1 22	10 16.71	+44 53.4	1.347	2.222	15.0	20.2
2 1	9 51.46	+17 36.6	2.208	3.174	4.1	20.8	2 1	10 0.51	+44 41.4	1.322	2.227	13.0	20.1
2 11	9 41.49	+18 0.1	2.210	3.195	1.2	20.6	2 11	9 42.50	+43 48.1	1.320	2.233	12.6	20.1
2 21	9 31.54	+18 18.5	2.243	3.215	3.9	20.8	2 21	9 25.32	+42 11.0	1.344	2.239	13.9	20.2
3 2	9 22.54	+18 29.1	2.306	3.234	7.3	21.1	3 2	9 11.22	+39 56.7	1.393	2.246	16.4	20.4
3 12	9 15.23	+18 30.5	2.397	3.253	10.4	21.3	3 12	9 1.46	+37 18.1	1.464	2.254	19.1	20.6
3 22	9 10.04	+18 22.8	2.510	3.270	12.9	21.5	3 22	8 56.24	+34 27.8	1.554	2.263	21.5	20.8
322270	2011 <i>ES</i> ₃₅		2 12.3 184°52'	0°0'	12.2 18		10249	Harz		2 12.3 96°08'	2°2'	10.7 18 R	
1 12	10 3.28	+12 15.5	2.110	2.951	11.7	20.8	1 12	10 5.30	+17 29.9	1.738	2.595	13.1	18.4
1 22	9 57.56	+12 41.4	2.034	2.951	8.4	20.6	1 22	9 59.24	+18 17.0	1.680	2.605	9.2	18.2
2 1	9 50.00	+13 15.9	1.985	2.951	4.6	20.3	2 1	9 50.99	+19 9.4	1.646	2.615	5.0	18.0
2 11	9 41.34	+13 54.5	1.964	2.950	0.5	20.0	2 11	9 41.48	+20 0.0	1.641	2.625	2.2	17.8
2 21	9 32.48	+14 32.7	1.973	2.950	3.6	20.3	2 21	9 31.87	+20 42.4	1.664	2.634	5.2	18.0
3 2	9 24.39	+15 5.9	2.011	2.949	7.5	20.5	3 2	9 23.33	+21 11.8	1.715	2.644	9.3	18.3
3 12	9 17.90	+15 30.9	2.075	2.948	11.0	20.7	3 12	9 16.83	+21 26.2	1.790	2.653	13.0	18.5
3 22	9 13.55	+15 46.0	2.162	2.947	14.0	20.9	3 22	9 12.91	+21 25.7	1.886	2.662	16.0	18.8
165883	2001 <i>ST</i> ₁₆₄		2 12.3 49°96'	5°6'	7.9 18		192307	1993 <i>RM</i> ₁₆		2 12.3 90°76'	0°9'	13.1 18	
1 12	10 5.78	+29 16.7	1.978	2.835	11.7	19.2	1 12	10 2.49	+8 38.1	2.157	2.988	11.9	20.8
1 22	9 59.37	+30 6.1	1.934	2.852	8.7	19.0	1 22	9 56.82	+9 12.2	2.099	3.009	8.6	20.6
2 1	9 50.93	+30 48.8	1.917	2.868	6.3	18.9	2 1	9 49.52	+9 57.1	2.067	3.029	4.9	20.4
2 11	9 41.43	+31 17.9	1.927	2.885	5.7	18.9	2 11	9 41.31	+10 48.7	2.064	3.049	1.2	20.2
2 21	9 31.99	+31 29.0	1.965	2.902	7.6	19.0	2 21	9 33.06	+11 41.9	2.091	3.069	3.2	20.4
3 2	9 23.70	+31 20.4	2.030	2.919	10.3	19.2	3 2	9 25.64	+12 31.7	2.147	3.089	6.9	20.6
3 12	9 17.43	+30 53.6	2.118	2.937	13.0	19.4	3 12	9 19.77	+13 14.4	2.231	3.108	10.1	20.9
3 22	9 13.63	+30 11.6	2.226	2.955	15.2	19.6	3 22	9 15.90	+13 47.4	2.337	3.127	12.9	21.1
82567	2001 <i>OT</i> ₈₁		2 12.3 77°46'	2°8'	14.6 18		172531	2003 <i>TW</i> ₅₇		2 12.3 184°99'	0°3'	11.9 18	
1 12	10 1.84	+4 9.6	2.174	2.989	12.4	19.1	1 12	10 4.71	+11 49.5	1.980	2.820	12.4	21.1
1 22	9 56.40	+4 10.1	2.104	3.000	9.3	18.9	1 22	9 58.72	+12 39.9	1.904	2.821	8.9	20.9
2 1	9 49.30	+4 24.3	2.060	3.010	6.0	18.7	2 1	9 50.71	+13 41.0	1.854	2.821	4.8	20.6
2 11	9 41.26	+4 49.7	2.043	3.021	3.1	18.6	2 11	9 41.46	+14 47.2	1.833	2.820	0.5	20.3
2 21	9 33.10	+5 22.9	2.056	3.031	3.8	18.6	2 21	9 31.96	+15 52.0	1.842	2.818	4.0	20.5
3 2	9 25.69	+5 59.6	2.098	3.042	6.9	18.8	3 2	9 23.25	+16 49.5	1.880	2.816	8.1	20.8
3 12	9 19.79	+6 35.4	2.166	3.052	10.0	19.1	3 12	9 16.27	+17 35.5	1.945	2.813	11.8	21.0
3 22	9 15.85	+7 6.8	2.258	3.063	12.8	19.3	3 22	9 11.61	+18 7.9	2.031	2.810	15.0	21.2
319637	2006 <i>SM</i> ₃₇₆		2 12.3 39°52'	0°2'	12.4 18		92903	2000 <i>RO</i> ₅		2 12.3 45°59'	7°3'	8.6 18	
1 12	10 1.47	+9 36.4	1.453	2.308	15.3	20.6	1 12	10 12.52	+29 44.7	1.333	2.199	15.7	17.7
1 22	9 56.81	+10 36.5	1.394	2.316	11.0	20.3	1 22	10 4.96	+30 27.5	1.286	2.207	11.8	17.5
2 1	9 49.77	+11 53.3	1.358	2.325	6.0	20.1	2 1	9 54.26	+31 0.6	1.261	2.216	8.4	17.3
2 11	9 41.32	+13 19.1	1.348	2.334	0.8	19.7	2 11	9 41.86	+31 13.7	1.262	2.225	7.4	17.3
2 21	9 32.69	+14 44.6	1.365	2.344	4.5	20.0	2 21	9 29.55	+31 0.9	1.289	2.234	9.8	17.4
3 2	9 25.17	+16 1.1	1.410	2.354	9.5	20.3	3 2	9 19.10	+30 21.6	1.340	2.244	13.5	17.7
3 12	9 19.81	+17 2.4	1.478	2.365	13.8	20.6	3 12	9 11.74	+29 19.9	1.413	2.254	17.0	17.9
3 22	9 17.20	+17 45.7	1.567	2.376	17.4	20.9	3 22	9 7.98	+28 2.1	1.504	2.265	20.1	18.2
27851	1994 <i>VG</i> ₂		2 12.3 39°03'	17°7'	1.0 18 R		400598	2009 <i>BY</i> ₄₇		2 12.3 79°14'	0°6'	12.6 18	
1 12	10 1.09	-26 43.8	1.249	1.931	26.4	17.1	1 12	10 6.86	+11 27.0	1.489	2.338	15.3	21.5
1 22	9 56.97	-28 8.8	1.202	1.949	24.2	17.0	1 22	10 0.65	+11 36.1	1.423	2.342	11.0	21.2
2 1	9 50.01	-28 44.1	1.167	1.968	21.8	16.9	2 1	9 51.89	+11 56.7	1.380	2.347	6.1	20.9
2 11	9 41.35	-28 22.9	1.147	1.988	19.7	16.8	2 11	9 41.61	+12 24.1	1.365	2.351	1.0	20.6
2 21	9 32.48	-27 5.0	1.143	2.008	18.2	16.7	2 21	9 31.12	+12 52.6	1.376	2.355	4.5	20.8
3 2	9 24.98	-24 57.9	1.158	2.030	17.7	16.8	3 2	9 21.82	+13 16.6	1.415	2.359	9.4	21.1
3 12	9 20.11	-22 16.8	1.193	2.052	18.4	16.9	3 12	9 14.84	+13 32.3	1.478	2.363	13.8	21.4
3 22	9 18.50	-19 19.4	1.247	2.075	19.9	17.1	3 22	9 10.80	+13 37.7	1.561	2.368	17.5	21.7
170373	2003 <i>SX</i> ₂₄₅		2 12.3 87°96'	0°8'	11.7 18		292462	2006 <i>SZ</i> ₃₇₃		2 12.3 256°34'	1°7'	14.0 17	
1 12	10 7.14	+13 41.4	1.597	2.448	14.3	20.							

EPHEMERIDES

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
57022	2000 <i>TK</i> ₆₄		2 12.3 152°19	4°2/ 6.8 18			24410	Juliewalker		2 12.3 256°66	0°6/12.7 18		
1 12	10 1.74	+28 8.3	2.986	3.836	8.4	19.4	1 12	10 4.51	+9 0.1	1.593	2.436	14.8	18.0
1 22	9 56.16	+29 25.3	2.930	3.843	6.2	19.2	1 22	9 59.16	+9 48.8	1.504	2.420	10.8	17.7
2 1	9 49.15	+30 39.2	2.902	3.851	4.6	19.1	2 1	9 51.24	+10 55.3	1.439	2.404	6.1	17.4
2 11	9 41.29	+31 44.5	2.905	3.858	4.4	19.1	2 11	9 41.60	+12 13.8	1.401	2.387	1.1	17.0
2 21	9 33.29	+32 36.7	2.938	3.864	5.9	19.2	2 21	9 31.38	+13 36.3	1.391	2.370	4.5	17.2
3 2	9 25.89	+33 13.3	3.000	3.870	8.0	19.4	3 2	9 21.96	+14 54.0	1.409	2.352	9.6	17.4
3 12	9 19.73	+33 33.6	3.087	3.876	10.0	19.5	3 12	9 14.58	+15 59.7	1.452	2.334	14.3	17.7
3 22	9 15.26	+33 38.6	3.195	3.882	11.8	19.7	3 22	9 10.05	+16 49.4	1.515	2.315	18.2	17.9
35325	Claudiaguarnieri		2 12.3 248°48	0°2/12.1 17			171303	2006 <i>HE</i> ₂₉		2 12.3 156°31	1°3/11.2 18		
1 12	10 0.66	+13 1.2	2.700	3.537	9.6	20.2	1 12	10 6.22	+15 5.4	1.996	2.840	12.1	21.4
1 22	9 55.48	+13 28.2	2.610	3.525	6.8	20.0	1 22	9 59.73	+15 56.0	1.929	2.849	8.6	21.2
2 1	9 48.82	+14 1.8	2.547	3.513	3.7	19.8	2 1	9 51.24	+16 53.6	1.889	2.856	4.6	21.0
2 11	9 41.27	+14 38.4	2.514	3.500	0.4	19.5	2 11	9 41.57	+17 52.1	1.878	2.863	1.3	20.7
2 21	9 33.49	+15 14.5	2.511	3.487	3.0	19.7	2 21	9 31.74	+18 45.3	1.897	2.869	4.4	21.0
3 2	9 26.22	+15 46.4	2.539	3.474	6.3	19.9	3 2	9 22.80	+19 28.3	1.945	2.875	8.3	21.2
3 12	9 20.13	+16 11.5	2.594	3.461	9.3	20.1	3 12	9 15.67	+19 58.2	2.019	2.879	11.9	21.4
3 22	9 15.72	+16 28.1	2.673	3.447	11.8	20.2	3 22	9 10.89	+20 14.3	2.116	2.883	14.8	21.7
322549	2011 <i>YX</i> ₃₇		2 12.3 107°05	1°4/13.4 18			146363	2001 <i>PA</i> ₂₆		2 12.3 177°15	1°1/11.3 18		
1 12	10 5.84	+7 48.9	1.829	2.660	13.7	20.8	1 12	10 4.23	+14 50.5	2.320	3.161	10.8	21.5
1 22	9 59.43	+8 13.4	1.771	2.679	10.0	20.6	1 22	9 58.15	+15 39.1	2.246	3.164	7.6	21.3
2 1	9 51.03	+8 51.1	1.737	2.697	5.8	20.4	2 1	9 50.33	+16 34.3	2.199	3.166	4.1	21.1
2 11	9 41.51	+9 37.6	1.731	2.716	1.8	20.2	2 11	9 41.47	+17 30.8	2.181	3.167	1.1	20.9
2 21	9 31.94	+10 27.3	1.755	2.733	3.7	20.4	2 21	9 32.42	+18 23.3	2.195	3.167	3.9	21.1
3 2	9 23.39	+11 14.6	1.808	2.751	7.8	20.6	3 2	9 24.07	+19 7.5	2.238	3.167	7.4	21.3
3 12	9 16.74	+11 54.9	1.886	2.767	11.5	20.9	3 12	9 17.23	+19 40.4	2.309	3.166	10.7	21.5
3 22	9 12.49	+12 25.6	1.987	2.784	14.6	21.1	3 22	9 12.40	+20 1.0	2.402	3.165	13.4	21.7
498320	2007 <i>VX</i> ₁₅₈		2 12.3 359°90	4°5/ 8.1 17			285522	2000 <i>FW</i> ₅		2 12.3 275°56	3°3/ 9.6 17		
1 12	10 1.75	+24 49.9	2.077	2.939	11.0	20.9	1 12	10 4.28	+22 31.2	2.134	2.990	11.0	20.8
1 22	9 56.63	+25 59.8	2.014	2.938	8.0	20.7	1 22	9 58.34	+23 9.4	2.064	2.987	7.9	20.6
2 1	9 49.57	+27 8.9	1.978	2.938	5.3	20.6	2 1	9 50.48	+23 47.8	2.021	2.985	4.7	20.4
2 11	9 41.36	+28 9.8	1.970	2.938	4.6	20.5	2 11	9 41.49	+24 20.4	2.007	2.983	3.3	20.3
2 21	9 32.96	+28 56.6	1.991	2.938	6.7	20.6	2 21	9 32.34	+24 42.5	2.022	2.981	5.6	20.4
3 2	9 25.39	+29 25.2	2.039	2.938	9.8	20.8	3 2	9 24.03	+24 50.8	2.064	2.979	8.8	20.6
3 12	9 19.55	+29 34.8	2.110	2.939	12.7	21.0	3 12	9 17.44	+24 44.6	2.132	2.977	11.9	20.8
3 22	9 15.96	+29 26.8	2.202	2.939	15.1	21.2	3 22	9 13.10	+24 24.9	2.222	2.975	14.6	21.0
433125	2012 <i>TS</i> ₁₇₄		2 12.3 34°03	4°7/16.5 17			148719	2001 <i>TO</i> ₅₁		2 12.3 148°45	2°2/10.2 18		
1 12	9 59.75	- 2 1.0	2.166	2.958	13.2	21.1	1 12	10 5.44	+19 5.1	2.492	3.336	10.0	20.9
1 22	9 55.02	- 2 2.0	2.088	2.961	10.5	20.9	1 22	9 58.85	+19 55.8	2.430	3.349	7.1	20.8
2 1	9 48.63	- 1 44.6	2.034	2.965	7.5	20.7	2 1	9 50.64	+20 48.8	2.395	3.361	3.9	20.6
2 11	9 41.25	- 1 9.9	2.006	2.968	5.1	20.6	2 11	9 41.51	+21 38.9	2.391	3.372	2.2	20.5
2 21	9 33.69	- 0 21.3	2.006	2.972	5.0	20.6	2 21	9 32.28	+22 21.4	2.418	3.382	4.4	20.7
3 2	9 26.80	+ 0 36.2	2.035	2.976	7.2	20.7	3 2	9 23.82	+22 52.7	2.475	3.392	7.5	20.9
3 12	9 21.34	+ 1 36.9	2.091	2.980	10.2	20.9	3 12	9 16.84	+23 11.5	2.559	3.401	10.3	21.1
3 22	9 17.81	+ 2 35.3	2.169	2.985	12.9	21.1	3 22	9 11.82	+23 17.7	2.666	3.409	12.7	21.2
166986	2003 <i>OO</i> ₂₈		2 12.3 182°89	0°9/11.6 18			429061	2009 <i>EP</i> ₅		2 12.3 134°96	3°0/ 9.6 18		
1 12	10 6.41	+14 22.1	1.993	2.835	12.2	21.1	1 12	10 3.82	+22 54.8	2.446	3.298	9.9	20.9
1 22	9 59.92	+15 2.3	1.918	2.836	8.7	20.9	1 22	9 57.77	+23 30.7	2.382	3.303	7.1	20.7
2 1	9 51.37	+15 50.2	1.870	2.837	4.7	20.6	2 1	9 50.08	+24 6.0	2.344	3.307	4.3	20.5
2 11	9 41.58	+16 40.2	1.850	2.836	1.0	20.4	2 11	9 41.45	+24 35.7	2.336	3.312	3.1	20.5
2 21	9 31.55	+17 26.5	1.861	2.835	4.2	20.6	2 21	9 32.74	+24 55.8	2.358	3.316	5.0	20.6
3 2	9 22.38	+18 4.3	1.901	2.833	8.3	20.8	3 2	9 24.79	+25 3.7	2.409	3.320	7.9	20.8
3 12	9 15.00	+18 30.4	1.967	2.831	11.9	21.1	3 12	9 18.36	+24 58.7	2.486	3.324	10.6	21.0
3 22	9 9.99	+18 43.8	2.055	2.828	15.0	21.3	3 22	9 13.90	+24 41.6	2.585	3.328	13.0	21.1
465147	2007 <i>CG</i> ₈		2 12.3 37°77	2°4/10.7 18			31051	1996 <i>RT</i> ₃		2 12.3 246°59	4°9/ 8.9 18		
1 12	10 3.27	+16 31.3	1.323	2.194	15.4	20.9	1 12	10 9.47	+26 56.1	1.905	2.759	12.2	18.7
1 22	9 58.17	+17 31.0	1.280	2.211	10.8	20.6	1 22	10 2.30	+27 31.2	1.834	2.752	9.0	18.5
2 1	9 50.52	+18 38.3	1.259	2.230	5.8	20.4	2 1	9 52.74	+28 2.0	1.788	2.745	6.0	18.3
2 11	9 41.47	+19 44.0	1.265	2.249	2.4	20.2	2 11	9 41.77	+28 21.3	1.771	2.738	5.0	18.3
2 21	9 32.43	+20 39.2	1.297	2.269	6.0	20.5	2 21	9 30.60	+28 23.9	1.782	2.731	7.2	18.4
3 2	9 24.78	+21 17.9	1.355	2.290	10.7	20.8	3 2	9 20.52	+28 7.5	1.821	2.724	10.5	18.5
3 12	9 19.59	+21 37.5	1.435	2.311	14.8	21.1	3 12	9 12.59	+27 33.1	1.884	2.716	13.8	18.7
3 22	9 17.35	+21 38.8	1.534	2.333	18.1	21.4	3 22	9 7.40	+26 43.8	1.967	2.709	16.6	18.9
234393	2001 <i>QA</i> ₂₄₆		2 12.3 125°19	1°4/11.4 18			22537	Meyerowitz		2 12.3 115°94	0°3/12.5 18		
1 12	10 9.66	+15 57.7	1.650	2.499	14.0	20.7	1 12	10 4.40	+11 42.3	1.967	2.807	12.5	18.6
1 22	10 2.38	+16 28.9	1.592	2.513	9.9	20.5	1 22	9 58.43	+12 0.1	1.898	2.814	8.9	18.3
2 1	9 52.73	+17 6.3	1.559	2.527	5.3	20.2	2 1	9 50.53	+12 26.8	1.855	2.821	4.9	18.1
2 11	9 41.73	+17 43.4	1.554	2.540	1.4	20.0	2 11	9 41.52	+12 58.4	1.841	2.827	0.7	17.8
2 21	9 30.68	+18 14.1	1.579	2.552	4.9	20.2	2 21	9 32.36	+13 30.0	1.855	2.833	3.7	18.0
3 2	9 20.87	+18 34.1	1.631	2.564	9.4	20.5	3 2	9 24.08	+13 57.5	1.899	2.839	7.7	18.3
3 12	9 13.34	+18 41.3	1.708	2.575	13.3	20.8	3 12	9 17.54	+14 17.5	1.968	2.845	11.3	18.5
3 22	9 8.63	+18 35.8	1.807	2.586	16.5	21.0	3 22	9 13.28	+14 28.3	2.060	2.851	14.4	18.8
153094	2000 <i>RB</i> ₉₃		2 12.3 84°23	6°2/17.2 18			252471	2001 <i>UC</i> ₁₆		2 12.3 45°97	8°6/19.3 18		
1 12	10 3.61	- 4 30.2	1.934	2.713	15.1	19.4	1 12	10 3.04	- 9 8.1				

EPHEMERIDES

2 12.3

2 12.3

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
240590	2004 <i>TV</i> ₂₁₅		2 12.3 226°73	1.4/11.3	18		83334	2001 <i>RW</i> ₁₃₁		2 12.3 249°06	0.2/12.1	17	
1 12	10 7.52	+15 36.9	1.749	2.599	13.3	21.5	1 12	10 3.44	+11 52.4	1.920	2.763	12.6	20.2
1 22	10 1.07	+16 13.8	1.668	2.590	9.5	21.2	1 22	9 57.99	+12 33.5	1.834	2.752	9.1	19.9
2 1	9 52.18	+16 58.5	1.612	2.580	5.2	20.9	2 1	9 50.45	+13 25.8	1.774	2.740	5.0	19.7
2 11	9 41.73	+17 44.8	1.584	2.570	1.4	20.6	2 11	9 41.55	+14 24.1	1.742	2.728	0.6	19.3
2 21	9 30.89	+18 26.0	1.586	2.559	4.9	20.9	2 21	9 32.29	+15 22.3	1.739	2.716	4.0	19.5
3 2	9 20.97	+18 56.9	1.615	2.547	9.5	21.1	3 2	9 23.75	+16 14.3	1.765	2.703	8.4	19.8
3 12	9 13.09	+19 14.1	1.669	2.535	13.6	21.3	3 12	9 16.93	+16 55.6	1.816	2.690	12.3	20.0
3 22	9 7.95	+19 17.3	1.744	2.523	17.0	21.5	3 22	9 12.48	+17 24.0	1.890	2.677	15.6	20.2
184067	2004 <i>GT</i> ₇		2 12.3 323°29	1.1/11.6	18		317729	2003 <i>QY</i> ₁₁₉		2 12.3 148°17	0.3/12.5	18	
1 12	10 3.08	+14 24.7	1.489	2.351	14.5	20.5	1 12	10 5.55	+12 22.9	2.281	3.115	11.2	20.9
1 22	9 58.17	+14 58.8	1.413	2.340	10.4	20.3	1 22	9 59.03	+12 26.6	2.208	3.120	8.1	20.7
2 1	9 50.69	+15 43.4	1.360	2.330	5.6	20.0	2 1	9 50.80	+12 36.9	2.162	3.126	4.5	20.4
2 11	9 41.56	+16 32.0	1.334	2.320	1.1	19.6	2 11	9 41.58	+12 50.6	2.145	3.131	0.7	20.2
2 21	9 32.04	+17 17.3	1.334	2.310	5.1	19.9	2 21	9 32.24	+13 4.3	2.159	3.136	3.3	20.4
3 2	9 23.51	+17 52.8	1.361	2.301	10.1	20.1	3 2	9 23.68	+13 15.0	2.203	3.141	7.0	20.6
3 12	9 17.19	+18 14.3	1.410	2.293	14.6	20.4	3 12	9 16.68	+13 20.4	2.273	3.145	10.2	20.8
3 22	9 13.78	+18 20.4	1.480	2.285	18.4	20.6	3 22	9 11.73	+13 19.1	2.368	3.149	13.0	21.0
191112	2002 <i>EE</i> ₇₂		2 12.3 249°66	2.5/14.5	18		314273	2005 <i>RT</i> ₃₉		2 12.3 126°20	17.2/3.8	17	
1 12	10 0.94	+ 3 46.9	2.088	2.905	12.7	20.3	1 12	10 30.25	+49 36.3	1.179	2.000	20.3	19.8
1 22	9 56.02	+ 4 15.5	2.000	2.897	9.6	20.0	1 22	10 19.07	+51 18.3	1.150	2.007	18.3	19.7
2 1	9 49.28	+ 5 0.6	1.936	2.889	6.1	19.8	2 1	10 2.42	+52 23.6	1.141	2.014	17.3	19.6
2 11	9 41.39	+ 5 59.2	1.901	2.880	2.9	19.6	2 11	9 42.90	+52 35.0	1.151	2.021	17.6	19.7
2 21	9 33.20	+ 7 6.2	1.895	2.872	3.7	19.6	2 21	9 24.02	+51 46.4	1.182	2.027	19.1	19.8
3 2	9 25.64	+ 8 15.9	1.917	2.863	7.3	19.8	3 2	9 8.96	+50 4.5	1.231	2.033	21.2	19.9
3 12	9 19.57	+ 9 22.0	1.967	2.854	10.9	20.0	3 12	8 59.38	+47 44.4	1.297	2.038	23.5	20.1
3 22	9 15.57	+10 20.1	2.040	2.845	14.0	20.2	3 22	8 55.35	+45 1.5	1.377	2.043	25.5	20.3
167176	2003 <i>SO</i> ₂₆₉		2 12.3 88°06	0.6/11.9	18		24990	1998 <i>MA</i> ₂₆		2 12.3 213°97	1.2/13.1	18	
1 12	10 6.11	+12 32.3	1.603	2.453	14.3	20.1	1 12	10 7.89	+ 9 13.8	1.709	2.543	14.3	18.9
1 22	9 59.86	+13 20.9	1.552	2.473	10.2	19.9	1 22	10 1.33	+ 9 29.5	1.626	2.537	10.5	18.6
2 1	9 51.35	+14 20.1	1.526	2.494	5.4	19.6	2 1	9 52.34	+ 9 58.4	1.567	2.530	6.1	18.4
2 11	9 41.62	+15 22.7	1.527	2.514	0.7	19.3	2 11	9 41.78	+10 36.4	1.536	2.522	1.6	18.0
2 21	9 31.86	+16 21.3	1.557	2.534	4.5	19.7	2 21	9 30.82	+11 18.1	1.535	2.513	4.2	18.2
3 2	9 23.30	+17 10.0	1.615	2.553	9.0	20.0	3 2	9 20.76	+11 57.5	1.561	2.504	8.9	18.5
3 12	9 16.91	+17 44.9	1.698	2.572	12.9	20.3	3 12	9 12.74	+12 30.0	1.613	2.494	13.2	18.7
3 22	9 13.19	+18 5.0	1.801	2.591	16.2	20.5	3 22	9 7.47	+12 52.4	1.687	2.483	16.8	18.9
246310	2007 <i>TM</i> ₁₅₃		2 12.3 125°69	0.4/12.6	18		36197	1999 <i>TZ</i> ₉₁		2 12.3 301°37	5.9/7.4	18	
1 12	10 6.98	+10 51.5	1.862	2.698	13.2	21.5	1 12	10 4.33	+26 48.4	1.754	2.619	12.5	17.9
1 22	10 0.28	+11 21.0	1.801	2.714	9.5	21.3	1 22	9 59.03	+28 4.7	1.675	2.598	9.4	17.6
2 1	9 51.54	+12 0.9	1.765	2.729	5.2	21.0	2 1	9 51.19	+29 20.2	1.620	2.577	6.6	17.4
2 11	9 41.64	+12 46.2	1.758	2.744	0.8	20.8	2 11	9 41.65	+30 25.3	1.593	2.556	6.2	17.3
2 21	9 31.67	+13 31.2	1.780	2.758	3.8	21.0	2 21	9 31.64	+31 11.8	1.593	2.535	8.6	17.4
3 2	9 22.71	+14 11.0	1.832	2.772	8.0	21.3	3 2	9 22.51	+31 34.6	1.619	2.514	12.1	17.6
3 12	9 15.66	+14 41.7	1.910	2.784	11.7	21.5	3 12	9 15.48	+31 32.7	1.667	2.493	15.5	17.7
3 22	9 11.06	+15 1.6	2.010	2.796	14.8	21.8	3 22	9 11.31	+31 8.6	1.733	2.473	18.5	17.9
123776	2001 <i>BF</i> ₇		2 12.3 77°93	0.3/12.5	18		5004	Bruch		2 12.3 29°14	2.6/10.9	18	
1 12	10 6.88	+12 11.2	1.913	2.752	12.8	19.9	1 12	10 6.88	+17 21.9	1.224	2.095	16.4	17.1
1 22	10 0.03	+12 21.0	1.862	2.777	9.1	19.7	1 22	10 1.14	+18 1.9	1.167	2.099	11.7	16.9
2 1	9 51.31	+12 38.6	1.837	2.803	5.0	19.5	2 1	9 52.37	+18 49.4	1.132	2.102	6.4	16.6
2 11	9 41.61	+13 0.1	1.841	2.828	0.7	19.2	2 11	9 41.78	+19 35.5	1.122	2.107	2.6	16.3
2 21	9 31.97	+13 21.1	1.875	2.852	3.7	19.5	2 21	9 30.99	+20 11.6	1.138	2.111	6.5	16.6
3 2	9 23.42	+13 37.9	1.937	2.877	7.6	19.8	3 2	9 21.68	+20 31.7	1.179	2.116	11.7	16.9
3 12	9 16.76	+13 47.9	2.026	2.901	11.1	20.0	3 12	9 15.17	+20 33.5	1.241	2.122	16.3	17.2
3 22	9 12.43	+13 50.0	2.137	2.925	14.0	20.3	3 22	9 12.08	+20 18.1	1.322	2.127	20.1	17.4
201319	2002 <i>TW</i> ₁₁₈		2 12.3 85°00	0.8/12.9	18		122250	2000 <i>OP</i> ₃₁		2 12.3 192°88	0.4/12.7	18	
1 12	10 4.00	+10 29.1	2.189	3.022	11.7	19.6	1 12	10 2.22	+ 9 16.7	2.250	3.082	11.5	20.5
1 22	9 57.91	+10 35.4	2.126	3.037	8.4	19.4	1 22	9 56.81	+10 11.3	2.169	3.080	8.3	20.3
2 1	9 50.16	+10 50.2	2.090	3.053	4.8	19.2	2 1	9 49.67	+11 17.9	2.114	3.078	4.6	20.1
2 11	9 41.49	+11 10.2	2.083	3.068	1.1	19.0	2 11	9 41.46	+12 31.7	2.089	3.075	0.8	19.8
2 21	9 32.77	+11 31.8	2.105	3.083	3.2	19.2	2 21	9 33.01	+13 46.7	2.094	3.072	3.3	20.0
3 2	9 24.89	+11 51.4	2.157	3.099	6.9	19.4	3 2	9 25.19	+14 57.1	2.130	3.068	7.1	20.2
3 12	9 18.59	+12 6.3	2.236	3.114	10.1	19.7	3 12	9 18.82	+15 58.3	2.193	3.064	10.6	20.4
3 22	9 14.32	+12 14.6	2.338	3.129	12.9	19.9	3 22	9 14.43	+16 47.3	2.279	3.060	13.5	20.6
306921	2001 <i>UE</i> ₂₉		2 12.3 14°85	9.4/7.3	17		280193	2002 <i>SY</i> ₄₈		2 12.3 133°80	0.3/12.5	18	
1 12	10 5.14	+29 26.6	0.977	1.867	17.8	19.4	1 12	10 5.81	+ 9 53.3	1.440	2.289	15.7	20.5
1 22	10 0.51	+30 51.7	0.939	1.872	13.5	19.2	1 22	10 0.02	+10 43.7	1.375	2.295	11.3	20.3
2 1	9 52.18	+32 7.4	0.921	1.878	10.1	19.0	2 1	9 51.65	+11 50.5	1.334	2.301	6.3	20.0
2 11	9 41.74	+32 58.3	0.924	1.886	9.6	19.0	2 11	9 41.70	+13 6.4	1.320	2.306	0.9	19.7
2 21	9 31.27	+33 14.6	0.950	1.895	12.4	19.2	2 21	9 31.49	+14 22.4	1.333	2.312	4.7	19.9
3 2	9 22.85	+32 54.1	0.996	1.905	16.4	19.5	3 2	9 22.45	+15 30.2	1.373	2.316	9.8	20.3
3 12	9 17.91	+32 1.4	1.060	1.917	20.3	19.8	3 12	9 15.74	+16 23.8	1.438	2.321	14.3	20.5
3 22	9 16.93	+30 44.4	1.140	1.930	23.6	20.0	3 22	9 12.00	+17 0.5	1.522	2.325	18.0	20.8
216740	2005 <i>JR</i> ₁₅₄		2 12.3 320°07	1.1/12.9	18		152173	2005 <i>OH</i> ₂₁		2 12.3 79°29	2.0/10.9	18	
1 12	10 2.63	+ 9 38.5	1.394	2.249									

EPHEMERIDES

2 12.3

2 12.3

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
410201	2007 <i>RE</i> ₁₉₁		2 12.3 230°97	0.4/12.6	17		156000	2001 <i>RR</i> ₂₇		2 12.3 165°91	0.5/12.6	18	
1 12	10 6.00	+10 37.8	1.840	2.678	13.3	22.4	1 12	10 6.65	+10 6.2	1.728	2.567	14.0	20.8
1 22	9 59.90	+11 7.3	1.752	2.667	9.7	22.2	1 22	10 0.32	+10 42.8	1.657	2.571	10.1	20.6
2 1	9 51.54	+11 48.8	1.690	2.655	5.4	21.9	2 1	9 51.72	+11 32.5	1.611	2.575	5.6	20.3
2 11	9 41.70	+12 37.7	1.656	2.643	0.9	21.5	2 11	9 41.74	+12 29.7	1.593	2.579	0.9	20.0
2 21	9 31.44	+13 28.2	1.652	2.630	4.0	21.8	2 21	9 31.51	+13 27.7	1.603	2.581	4.1	20.3
3 2	9 21.97	+14 14.3	1.676	2.616	8.6	22.0	3 2	9 22.26	+14 20.2	1.643	2.584	8.7	20.5
3 12	9 14.34	+14 51.4	1.726	2.602	12.7	22.2	3 12	9 15.03	+15 2.4	1.708	2.585	12.7	20.8
3 22	9 9.25	+15 17.0	1.797	2.587	16.2	22.4	3 22	9 10.41	+15 31.9	1.794	2.586	16.1	21.0
348890	2006 <i>SC</i> ₂₇₀		2 12.3 96°44	1.3/13.5	18		79486	1998 <i>FQ</i> ₁₀		2 12.3 21°01	5°5/17.9	18	
1 12	10 4.23	+ 5 45.5	1.933	2.756	13.4	21.2	1 12	9 58.54	- 5 50.6	2.169	2.942	13.8	19.5
1 22	9 58.22	+ 6 51.1	1.879	2.783	9.7	21.0	1 22	9 54.22	- 5 39.2	2.088	2.944	11.2	19.3
2 1	9 50.38	+ 8 12.2	1.851	2.810	5.7	20.8	2 1	9 48.27	- 5 5.9	2.030	2.947	8.4	19.2
2 11	9 41.54	+ 9 42.6	1.851	2.836	1.7	20.6	2 11	9 41.33	- 4 11.7	1.998	2.950	6.1	19.0
2 21	9 32.67	+11 14.9	1.882	2.861	3.5	20.8	2 21	9 34.19	- 3 0.2	1.993	2.953	5.7	19.0
3 2	9 24.75	+12 41.9	1.944	2.886	7.4	21.1	3 2	9 27.70	- 1 37.4	2.017	2.956	7.5	19.1
3 12	9 18.58	+13 57.9	2.032	2.910	11.0	21.3	3 12	9 22.60	- 0 10.2	2.068	2.959	10.2	19.3
3 22	9 14.63	+14 59.8	2.143	2.933	13.9	21.6	3 22	9 19.41	+ 1 14.6	2.143	2.963	12.9	19.5
347643	2001 <i>TP</i> ₂₉		2 12.3 80°91	4.7/16.9	18		463817	2014 <i>TY</i> ₂₀		2 12.3 115°33	1°0/11.5	18	
1 12	10 0.27	- 3 8.6	2.310	3.091	12.8	21.2	1 12	10 5.82	+14 45.5	1.925	2.771	12.5	22.2
1 22	9 55.28	- 3 8.5	2.238	3.103	10.2	21.1	1 22	9 59.46	+15 24.1	1.865	2.785	8.8	22.0
2 1	9 48.76	- 2 50.4	2.190	3.115	7.4	20.9	2 1	9 51.12	+16 9.4	1.832	2.800	4.7	21.8
2 11	9 41.36	- 2 15.5	2.169	3.127	5.2	20.8	2 11	9 41.67	+16 55.8	1.828	2.814	1.1	21.5
2 21	9 33.83	- 1 27.0	2.176	3.139	5.0	20.8	2 21	9 32.15	+17 37.7	1.853	2.827	4.2	21.8
3 2	9 26.98	- 0 29.5	2.212	3.150	6.9	20.9	3 2	9 23.61	+18 10.6	1.907	2.840	8.2	22.0
3 12	9 21.49	+ 0 31.2	2.275	3.162	9.6	21.1	3 12	9 16.92	+18 31.7	1.987	2.853	11.7	22.3
3 22	9 17.82	+ 1 30.3	2.363	3.174	12.1	21.3	3 22	9 12.59	+18 40.6	2.088	2.865	14.7	22.5
224449	2005 <i>VG</i> ₆		2 12.3 115°07	3°7/ 9.4	18		357177	2002 <i>EQ</i> ₃₄		2 12.3 10°62	5°2/ 9.3	18	
1 12	10 5.29	+22 14.0	1.885	2.744	12.1	20.3	1 12	10 2.29	+20 58.7	1.055	1.943	17.0	20.1
1 22	9 59.25	+23 7.2	1.824	2.749	8.6	20.1	1 22	9 58.22	+22 12.9	1.006	1.945	12.1	19.8
2 1	9 51.06	+24 1.1	1.788	2.753	5.2	19.9	2 1	9 50.91	+23 31.8	0.978	1.948	7.3	19.5
2 11	9 41.63	+24 48.5	1.781	2.757	3.8	19.8	2 11	9 41.66	+24 42.6	0.974	1.953	5.3	19.4
2 21	9 32.06	+25 23.4	1.802	2.761	6.2	20.0	2 21	9 32.21	+25 33.8	0.993	1.959	8.8	19.6
3 2	9 23.48	+25 41.9	1.851	2.765	9.7	20.2	3 2	9 24.37	+25 58.7	1.035	1.966	13.7	19.9
3 12	9 16.85	+25 43.1	1.924	2.769	13.0	20.4	3 12	9 19.53	+25 56.3	1.097	1.974	18.2	20.2
3 22	9 12.73	+25 28.5	2.017	2.773	15.8	20.6	3 22	9 18.27	+25 29.9	1.175	1.984	22.0	20.5
219403	2000 <i>SV</i> ₂₀₈		2 12.3 74°09	1°4/13.5	18		461980	2006 <i>VG</i> ₇₈		2 12.3 268°46	6°0/ 7.4	18	
1 12	10 3.60	+ 6 11.9	1.837	2.665	13.7	20.5	1 12	10 5.60	+26 49.3	1.736	2.600	12.7	21.0
1 22	9 57.79	+ 7 6.4	1.789	2.696	10.0	20.4	1 22	9 59.87	+28 13.5	1.668	2.591	9.5	20.8
2 1	9 50.14	+ 8 15.9	1.766	2.726	5.8	20.2	2 1	9 51.62	+29 36.1	1.626	2.582	6.7	20.6
2 11	9 41.52	+ 9 34.6	1.772	2.756	1.8	20.0	2 11	9 41.75	+30 47.1	1.611	2.572	6.3	20.6
2 21	9 32.91	+10 55.3	1.807	2.785	3.6	20.2	2 21	9 31.52	+31 38.3	1.623	2.563	8.6	20.7
3 2	9 25.33	+12 11.1	1.871	2.815	7.6	20.5	3 2	9 22.29	+32 4.8	1.661	2.553	12.0	20.9
3 12	9 19.56	+13 16.8	1.962	2.844	11.1	20.7	3 12	9 15.25	+32 6.5	1.721	2.543	15.3	21.1
3 22	9 16.04	+14 9.1	2.075	2.872	14.1	21.0	3 22	9 11.07	+31 46.0	1.800	2.534	18.2	21.2
148617	2001 <i>RA</i> ₁₁₈		2 12.3 18°93	2°2/11.0	18		287464	2003 <i>AZ</i> ₂₀		2 12.3 359°74	6°5/15.7	18	
1 12	10 5.02	+17 38.1	1.413	2.280	14.9	19.6	1 12	10 5.16	- 0 49.8	1.778	2.578	15.4	19.1
1 22	9 59.47	+18 5.0	1.355	2.284	10.5	19.3	1 22	9 59.24	- 2 3.3	1.701	2.576	12.3	18.8
2 1	9 51.33	+18 37.5	1.319	2.289	5.7	19.1	2 1	9 51.14	- 3 0.1	1.646	2.575	9.2	18.6
2 11	9 41.67	+19 8.5	1.310	2.295	2.2	18.8	2 11	9 41.69	- 3 38.5	1.618	2.574	6.8	18.5
2 21	9 31.87	+19 31.4	1.327	2.301	5.7	19.1	2 21	9 31.94	- 3 58.4	1.617	2.574	6.9	18.5
3 2	9 23.35	+19 41.6	1.371	2.308	10.4	19.4	3 2	9 23.04	- 4 2.3	1.642	2.575	9.3	18.7
3 12	9 17.25	+19 37.3	1.437	2.315	14.6	19.6	3 12	9 16.01	- 3 54.8	1.693	2.577	12.5	18.8
3 22	9 14.14	+19 18.9	1.522	2.323	18.1	19.9	3 22	9 11.46	- 3 41.4	1.765	2.580	15.5	19.0
250158	2002 <i>TD</i> ₄₂		2 12.3 74°16	5°0/ 8.9	18		196680	2003 <i>SB</i> ₆₃		2 12.3 148°44	2°1/14.1	18	
1 12	10 8.85	+24 37.2	1.593	2.455	13.7	20.6	1 12	10 2.95	+ 6 5.1	2.237	3.056	11.9	20.5
1 22	10 1.86	+25 37.4	1.554	2.478	9.9	20.4	1 22	9 57.27	+ 6 12.2	2.161	3.061	8.9	20.3
2 1	9 52.45	+26 34.5	1.539	2.501	6.3	20.2	2 1	9 49.90	+ 6 31.4	2.110	3.065	5.5	20.1
2 11	9 41.79	+27 19.7	1.552	2.523	5.1	20.2	2 11	9 41.54	+ 7 0.0	2.088	3.069	2.4	19.9
2 21	9 31.23	+27 46.7	1.593	2.546	7.5	20.4	2 21	9 33.01	+ 7 34.4	2.096	3.073	3.4	20.0
3 2	9 22.12	+27 52.8	1.660	2.568	11.0	20.6	3 2	9 25.19	+ 8 10.4	2.134	3.077	6.8	20.2
3 12	9 15.43	+27 39.0	1.750	2.590	14.3	20.9	3 12	9 18.85	+ 8 43.9	2.198	3.080	10.1	20.4
3 22	9 11.64	+27 8.5	1.859	2.612	17.0	21.1	3 22	9 14.48	+ 9 11.9	2.286	3.084	12.9	20.6
491096	2011 <i>ST</i> ₂₄		2 12.3 184°60	1°4/11.2	18		290988	2005 <i>XY</i> ₅₀		2 12.3 304°63	3°0/14.9	18	
1 12	10 7.42	+15 38.9	2.001	2.844	12.2	22.0	1 12	10 1.51	+ 3 34.3	2.594	3.399	10.9	20.2
1 22	10 0.68	+16 24.4	1.926	2.845	8.6	21.8	1 22	9 56.12	+ 3 14.4	2.505	3.392	8.4	20.0
2 1	9 51.85	+17 16.6	1.878	2.845	4.7	21.5	2 1	9 49.24	+ 3 5.4	2.441	3.386	5.6	19.8
2 11	9 41.74	+18 9.5	1.859	2.844	1.4	21.3	2 11	9 41.46	+ 3 6.3	2.406	3.379	3.3	19.7
2 21	9 31.38	+18 57.2	1.870	2.842	4.5	21.5	2 21	9 33.47	+ 3 15.2	2.401	3.373	3.7	19.7
3 2	9 21.88	+19 34.6	1.911	2.839	8.5	21.8	3 2	9 26.02	+ 3 29.5	2.426	3.366	6.3	19.8
3 12	9 14.21	+19 59.0	1.977	2.836	12.1	22.0	3 12	9 19.80	+ 3 46.0	2.478	3.360	9.1	20.0
3 22	9 8.94	+20 9.8	2.066	2.831	15.2	22.2	3 22	9 15.27	+ 4 1.6	2.554	3.354	11.7	20.2
285521	2000 <i>FT</i> ₅		2 12.3 11°15	4°6/ 8.9	18		209050	2003 <i>QA</i> ₁₁		2 12.3 156°05	3°6/ 9.8	18	
1 12	10 5.64	+25 49.2	1.918	2.777									

EPHEMERIDES

2 12.3

2 12.3

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
473661	2015 <i>XK</i> ₃₄₄	2 12.3 167°22		1.6°/13.5 18			246172	2007 <i>RL</i> ₁₆	2 12.3 153°77		3.1°/ 9.8 18		
1 12	10 6.38	+ 7 26.2	1.755	2.586	14.2	22.4	1 12	10 8.58	+21 4.2	2.081	2.929	11.6	21.4
1 22	10 0.11	+ 7 51.0	1.682	2.590	10.4	22.2	1 22	10 1.41	+21 57.3	2.020	2.940	8.2	21.2
2 1	9 51.62	+ 8 30.6	1.633	2.594	6.2	21.9	2 1	9 52.21	+22 51.5	1.985	2.949	4.8	21.0
2 11	9 41.77	+ 9 20.8	1.612	2.597	2.0	21.6	2 11	9 41.85	+23 40.2	1.980	2.958	3.1	21.0
2 21	9 31.67	+10 15.7	1.621	2.599	4.0	21.8	2 21	9 31.38	+24 17.8	2.006	2.966	5.5	21.1
3 2	9 22.51	+11 9.0	1.657	2.601	8.4	22.1	3 2	9 21.88	+24 40.6	2.060	2.973	8.9	21.3
3 12	9 15.31	+11 55.2	1.720	2.602	12.4	22.3	3 12	9 14.24	+24 47.8	2.140	2.979	12.1	21.6
3 22	9 10.67	+12 31.1	1.804	2.603	15.8	22.5	3 22	9 9.01	+24 40.3	2.241	2.984	14.7	21.8
406008	2006 <i>SP</i> ₃₉₈	2 12.3 94°37		5.3°/ 9.2 18			461942	2006 <i>SX</i> ₃₁₄	2 12.3 34°60		1.6°/13.4 18		
1 12	10 12.95	+27 37.9	1.776	2.627	13.1	21.3	1 12	10 1.97	+ 7 20.7	1.216	2.074	17.5	20.8
1 22	10 4.60	+28 12.3	1.731	2.647	9.6	21.1	1 22	9 57.38	+ 7 56.3	1.172	2.093	12.7	20.6
2 1	9 53.91	+28 40.2	1.711	2.667	6.4	21.0	2 1	9 50.21	+ 8 51.8	1.148	2.113	7.3	20.4
2 11	9 42.02	+28 54.2	1.720	2.686	5.3	21.0	2 11	9 41.62	+10 0.2	1.149	2.134	2.1	20.1
2 21	9 30.29	+28 50.0	1.757	2.705	7.4	21.1	2 21	9 33.01	+11 12.1	1.176	2.156	4.6	20.3
3 2	9 20.04	+28 26.5	1.822	2.723	10.6	21.3	3 2	9 25.80	+12 18.7	1.228	2.179	9.7	20.7
3 12	9 12.22	+27 46.1	1.911	2.741	13.7	21.6	3 12	9 21.06	+13 12.8	1.303	2.203	14.3	21.0
3 22	9 7.29	+26 52.4	2.021	2.759	16.3	21.8	3 22	9 19.27	+13 51.2	1.398	2.227	18.0	21.3
472765	2015 <i>FP</i> ₁₂₁	2 12.3 191°90		4.4°/17.9 17			310917	2003 <i>SL</i> ₁₀₁	2 12.3 89°14		5.7°/16.4 18		
1 12	9 58.85	- 6 37.9	2.938	3.688	11.1	21.4	1 12	10 6.17	- 1 58.1	1.647	2.444	16.5	20.2
1 22	9 54.12	- 6 6.3	2.844	3.687	9.0	21.2	1 22	9 59.90	- 2 14.6	1.588	2.464	13.0	20.0
2 1	9 48.12	- 5 16.8	2.775	3.685	6.8	21.1	2 1	9 51.45	- 2 8.3	1.551	2.483	9.3	19.8
2 11	9 41.35	- 4 10.7	2.734	3.683	4.9	20.9	2 11	9 41.77	- 1 40.4	1.540	2.503	6.3	19.7
2 21	9 34.41	- 2 51.2	2.723	3.680	4.5	20.9	2 21	9 32.00	- 0 55.1	1.556	2.521	6.1	19.7
3 2	9 27.93	- 1 22.9	2.743	3.677	6.0	21.0	3 2	9 23.33	+ 0 1.2	1.599	2.540	8.9	19.9
3 12	9 22.48	+ 0 8.6	2.792	3.674	8.2	21.1	3 12	9 16.70	+ 1 0.9	1.668	2.558	12.3	20.2
3 22	9 18.49	+ 1 38.0	2.867	3.670	10.4	21.3	3 22	9 12.67	+ 1 57.6	1.759	2.576	15.4	20.4
219688	2001 <i>WW</i> ₃₇	2 12.3 204°18		3.6°/ 8.9 18			233744	2008 <i>SA</i> ₂₉₈	2 12.3 94°08		0.6°/12.9 18		
1 12	10 5.36	+22 54.6	2.287	3.138	10.5	21.1	1 12	10 1.88	+ 9 49.5	2.035	2.873	12.2	20.5
1 22	9 59.14	+23 57.6	2.213	3.133	7.6	20.9	1 22	9 56.68	+10 20.0	1.962	2.876	8.8	20.3
2 1	9 51.01	+25 1.3	2.166	3.128	4.7	20.8	2 1	9 49.67	+11 1.8	1.915	2.879	5.0	20.0
2 11	9 41.70	+25 59.3	2.149	3.122	3.7	20.7	2 11	9 41.56	+11 50.3	1.895	2.881	1.0	19.7
2 21	9 32.14	+26 45.6	2.162	3.115	5.8	20.8	2 21	9 33.27	+12 40.6	1.905	2.884	3.5	19.9
3 2	9 23.32	+27 16.6	2.204	3.108	8.9	21.0	3 2	9 25.74	+13 27.3	1.944	2.886	7.4	20.2
3 12	9 16.12	+27 30.7	2.272	3.100	11.9	21.2	3 12	9 19.80	+14 6.4	2.009	2.889	11.0	20.4
3 22	9 11.10	+27 28.9	2.360	3.092	14.4	21.3	3 22	9 15.99	+14 35.3	2.096	2.891	14.0	20.6
221589	2006 <i>VT</i> ₁₅₀	2 12.3 176°27		2.4°/10.8 18			153168	2000 <i>TP</i> ₃₀	2 12.3 192°50		6.4°/ 7.2 18		
1 12	10 10.21	+17 26.6	1.556	2.410	14.5	21.6	1 12	10 7.11	+30 7.5	1.894	2.751	12.1	19.8
1 22	10 3.14	+18 12.6	1.489	2.413	10.3	21.3	1 22	10 0.71	+31 14.5	1.836	2.751	9.2	19.6
2 1	9 53.39	+19 4.8	1.447	2.415	5.6	21.1	2 1	9 51.97	+32 15.1	1.803	2.751	6.9	19.5
2 11	9 41.99	+19 55.5	1.432	2.416	2.4	20.9	2 11	9 41.85	+33 0.9	1.798	2.751	6.6	19.5
2 21	9 30.33	+20 36.9	1.446	2.416	5.8	21.1	2 21	9 31.56	+33 25.8	1.820	2.750	8.6	19.6
3 2	9 19.88	+21 3.7	1.487	2.416	10.4	21.3	3 2	9 22.38	+33 27.2	1.868	2.750	11.5	19.8
3 12	9 11.84	+21 13.7	1.552	2.415	14.6	21.6	3 12	9 15.33	+33 6.2	1.939	2.750	14.3	19.9
3 22	9 6.87	+21 7.7	1.638	2.413	18.1	21.8	3 22	9 11.00	+32 26.3	2.030	2.749	16.8	20.1
301070	2008 <i>UJ</i> ₁₇₀	2 12.3 16°98		0.5°/12.1 18			462066	2007 <i>ED</i> ₁₂₁	2 12.3 122°16		2.1°/10.7 18		
1 12	10 7.55	+14 6.3	1.276	2.139	16.4	20.2	1 12	10 8.67	+19 53.2	2.268	3.111	10.9	21.1
1 22	10 1.55	+14 16.3	1.214	2.140	11.8	19.9	1 22	10 1.21	+20 17.6	2.211	3.129	7.7	21.0
2 1	9 52.62	+14 36.2	1.173	2.142	6.4	19.6	2 1	9 52.00	+20 42.7	2.182	3.147	4.3	20.8
2 11	9 41.90	+15 0.1	1.157	2.144	0.8	19.2	2 11	9 41.85	+21 4.0	2.182	3.164	2.1	20.6
2 21	9 30.94	+15 21.2	1.168	2.146	5.2	19.5	2 21	9 31.71	+21 17.3	2.214	3.181	4.5	20.8
3 2	9 21.36	+15 34.2	1.205	2.149	10.7	19.8	3 2	9 22.54	+21 20.5	2.275	3.197	7.8	21.1
3 12	9 14.46	+15 35.8	1.264	2.152	15.5	20.1	3 12	9 15.11	+21 12.7	2.364	3.212	10.8	21.3
3 22	9 10.90	+15 25.3	1.342	2.156	19.4	20.4	3 22	9 9.87	+20 54.7	2.474	3.227	13.3	21.5
49690	1999 <i>TB</i> ₂₁₂	2 12.3 268°17		1.8°/11.3 18			495566	2014 <i>WH</i> ₃₄₅	2 12.3 139°07		5.0°/ 7.5 18		
1 12	10 8.24	+16 12.0	1.392	2.252	15.4	19.1	1 12	10 5.97	+25 57.6	2.105	2.960	11.2	22.1
1 22	10 2.17	+16 44.7	1.312	2.239	11.1	18.8	1 22	9 59.65	+27 28.3	2.053	2.972	8.2	21.9
2 1	9 53.08	+17 26.4	1.255	2.224	6.1	18.5	2 1	9 51.31	+28 56.7	2.028	2.983	5.6	21.8
2 11	9 41.97	+18 9.7	1.225	2.210	1.8	18.2	2 11	9 41.78	+30 14.5	2.032	2.993	5.2	21.8
2 21	9 30.31	+18 46.5	1.221	2.196	5.9	18.4	2 21	9 32.09	+31 15.0	2.066	3.003	7.3	21.9
3 2	9 19.75	+19 10.5	1.244	2.181	11.2	18.7	3 2	9 23.32	+31 54.4	2.127	3.012	10.1	22.1
3 12	9 11.73	+19 18.2	1.290	2.166	16.1	18.9	3 12	9 16.39	+32 12.4	2.212	3.021	12.8	22.3
3 22	9 7.06	+19 9.6	1.354	2.151	20.2	19.1	3 22	9 11.85	+32 11.1	2.317	3.029	15.1	22.5
319663	2006 <i>TS</i> ₃₅	2 12.3 120°98		8.1°/ 6.2 18			252479	2001 <i>UD</i> ₅₃	2 12.3 105°90		5.6°/ 7.4 18		
1 12	10 11.58	+35 13.1	1.857	2.704	12.8	20.4	1 12	10 7.16	+27 54.7	1.995	2.851	11.7	20.6
1 22	10 3.89	+36 24.3	1.813	2.714	10.2	20.2	1 22	10 0.50	+29 17.9	1.953	2.870	8.6	20.4
2 1	9 53.64	+37 23.1	1.794	2.724	8.4	20.1	2 1	9 51.74	+30 36.0	1.938	2.889	6.2	20.3
2 11	9 42.00	+38 0.6	1.802	2.734	8.3	20.1	2 11	9 41.82	+31 40.6	1.951	2.908	5.8	20.3
2 21	9 30.37	+38 11.3	1.837	2.744	10.1	20.3	2 21	9 31.87	+32 25.7	1.993	2.926	7.8	20.5
3 2	9 20.15	+37 54.4	1.897	2.753	12.5	20.4	3 2	9 23.02	+32 48.4	2.062	2.943	10.5	20.7
3 12	9 12.42	+37 13.3	1.979	2.762	15.0	20.6	3 12	9 16.19	+32 49.6	2.154	2.961	13.2	20.9
3 22	9 7.69	+36 13.2	2.079	2.770	17.2	20.8	3 22	9 11.86	+32 32.2	2.266	2.977	15.4	21.1
325310	2008 <i>HR</i> ₆₅	2 12.3 328°03		6.6°/ 7.4 18			310750	2002 <i>RF</i> ₅	2 12.3 250°63		1.5°/13.2 16		
1 12	10 5.23	+27 39.1	1.580	2.448	13.5	19.6	1 12	10					

EPHEMERIDES

2 12.3

2 12.3

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
185935	2000 <i>UK</i> ₁₀₈		2 12.3 110°51	5°7/ 6.9 18			346755	2009 <i>BF</i> ₃₅		2 12.3 243°89	1°5/10.9 17		
1 12	10 6.64	+29 16.8	2.151	3.004	11.0	20.2	1 12	10 1.65	+16 53.5	2.482	3.329	10.0	21.4
1 22	10 0.05	+30 40.5	2.109	3.022	8.3	20.1	1 22	9 56.38	+17 34.2	2.399	3.320	7.1	21.2
2 1	9 51.48	+31 58.3	2.094	3.041	6.2	20.0	2 1	9 49.48	+18 19.6	2.343	3.311	3.8	21.0
2 11	9 41.80	+33 2.2	2.107	3.058	5.9	20.0	2 11	9 41.60	+19 5.2	2.317	3.301	1.5	20.8
2 21	9 32.07	+33 46.7	2.150	3.076	7.8	20.2	2 21	9 33.48	+19 46.3	2.322	3.292	3.9	21.0
3 2	9 23.36	+34 9.3	2.220	3.093	10.3	20.3	3 2	9 25.96	+20 19.2	2.355	3.282	7.2	21.2
3 12	9 16.55	+34 10.7	2.313	3.109	12.7	20.5	3 12	9 19.77	+20 41.3	2.415	3.272	10.3	21.3
3 22	9 12.11	+33 53.9	2.426	3.125	14.8	20.7	3 22	9 15.43	+20 51.8	2.498	3.262	12.9	21.5
207627	2006 <i>SA</i> ₉₃		2 12.3 261°77	0°2/12.2 17			368806	2005 <i>YY</i> ₉₈		2 12.3 198°03	11°5/23.0 17		
1 12	10 1.16	+12 44.7	2.443	3.282	10.4	21.4	1 12	10 5.74	-24 32.3	2.533	3.146	15.7	21.1
1 22	9 56.03	+13 12.8	2.356	3.272	7.4	21.2	1 22	9 59.44	-25 48.4	2.445	3.143	14.4	20.9
2 1	9 49.29	+13 48.3	2.295	3.261	4.1	20.9	2 1	9 51.26	-26 39.3	2.375	3.139	13.1	20.8
2 11	9 41.55	+14 27.6	2.264	3.250	0.5	20.6	2 11	9 41.82	-27 1.0	2.326	3.135	12.0	20.7
2 21	9 33.57	+15 6.3	2.263	3.240	3.3	20.8	2 21	9 31.96	-26 52.0	2.300	3.130	11.5	20.7
3 2	9 26.17	+15 40.6	2.291	3.228	6.8	21.1	3 2	9 22.64	-26 13.8	2.298	3.124	11.7	20.7
3 12	9 20.08	+16 7.4	2.347	3.217	10.0	21.2	3 12	9 14.73	-25 11.8	2.320	3.118	12.6	20.7
3 22	9 15.82	+16 24.9	2.425	3.206	12.7	21.4	3 22	9 8.87	-23 53.1	2.363	3.112	13.9	20.8
429002	2009 <i>BP</i> ₄₆		2 12.3 283°97	0°8/13.3 17			131862	2002 <i>AA</i> ₁₅₁		2 12.3 57°96	0°1/12.4 18		
1 12	9 59.50	+ 6 12.1	2.353	3.176	11.3	21.1	1 12	10 7.08	+11 58.9	1.291	2.149	16.6	19.4
1 22	9 55.00	+ 7 28.6	2.250	3.155	8.3	20.8	1 22	10 1.00	+12 20.6	1.241	2.165	11.9	19.2
2 1	9 48.82	+ 9 1.9	2.174	3.134	4.8	20.6	2 1	9 52.21	+12 55.0	1.214	2.182	6.5	18.9
2 11	9 41.51	+10 47.1	2.127	3.113	1.2	20.3	2 11	9 41.91	+13 35.5	1.212	2.199	0.8	18.6
2 21	9 33.81	+12 37.6	2.113	3.091	3.2	20.4	2 21	9 31.60	+14 14.7	1.237	2.216	4.8	18.9
3 2	9 26.56	+14 26.1	2.129	3.070	7.0	20.6	3 2	9 22.75	+14 46.3	1.288	2.233	10.1	19.2
3 12	9 20.57	+16 5.7	2.174	3.048	10.5	20.8	3 12	9 16.49	+15 6.2	1.361	2.251	14.6	19.5
3 22	9 16.42	+17 32.1	2.243	3.026	13.6	20.9	3 22	9 13.37	+15 13.2	1.455	2.268	18.2	19.8
98253	2000 <i>SH</i> ₁₇₄		2 12.3 261°58	4°7/14.9 18			444136	2004 <i>VX</i> ₁		2 12.3 67°44	1°3/13.1 18		
1 12	10 6.71	+ 2 14.0	1.655	2.470	15.7	19.3	1 12	10 8.60	+ 9 26.7	1.344	2.192	16.7	20.5
1 22	10 0.68	+ 1 46.8	1.564	2.456	12.2	19.1	1 22	10 1.87	+ 9 39.5	1.300	2.217	12.1	20.3
2 1	9 52.15	+ 1 37.3	1.496	2.441	8.4	18.8	2 1	9 52.58	+10 6.8	1.278	2.242	6.8	20.1
2 11	9 41.92	+ 1 45.2	1.454	2.426	5.1	18.6	2 11	9 41.95	+10 43.2	1.282	2.267	1.7	19.8
2 21	9 31.16	+ 2 7.8	1.439	2.411	5.6	18.6	2 21	9 31.41	+11 22.0	1.313	2.292	4.5	20.1
3 2	9 21.18	+ 2 40.6	1.452	2.395	9.3	18.7	3 2	9 22.37	+11 56.8	1.371	2.317	9.5	20.4
3 12	9 13.19	+ 3 17.2	1.490	2.380	13.5	18.9	3 12	9 15.88	+12 23.1	1.452	2.342	13.8	20.7
3 22	9 7.98	+ 3 52.1	1.549	2.364	17.2	19.1	3 22	9 12.42	+12 38.4	1.554	2.366	17.3	21.0
408088	2012 <i>HP</i> ₅₇		2 12.3 67°00	12°5/ 2.4 18			383339	2006 <i>PX</i> ₁₀		2 12.3 136°40	0°7/12.9 17		
1 12	10 16.67	+47 45.0	1.774	2.589	14.7	20.1	1 12	10 6.47	+11 48.8	2.522	3.348	10.5	20.8
1 22	10 8.08	+49 9.6	1.741	2.594	13.2	20.0	1 22	9 59.59	+11 35.7	2.447	3.355	7.6	20.6
2 1	9 56.13	+50 9.9	1.731	2.600	12.6	20.0	2 1	9 51.13	+11 28.2	2.399	3.361	4.3	20.4
2 11	9 42.36	+50 35.4	1.743	2.605	12.9	20.0	2 11	9 41.79	+11 24.1	2.382	3.368	1.0	20.2
2 21	9 28.72	+50 21.6	1.779	2.611	14.2	20.1	2 21	9 32.35	+11 21.0	2.396	3.373	3.0	20.3
3 2	9 17.12	+49 30.2	1.836	2.616	16.0	20.3	3 2	9 23.65	+11 16.8	2.441	3.379	6.4	20.6
3 12	9 8.85	+48 8.2	1.911	2.622	17.8	20.4	3 12	9 16.38	+11 9.8	2.514	3.385	9.4	20.8
3 22	9 4.39	+46 24.0	2.002	2.628	19.5	20.6	3 22	9 11.00	+10 58.7	2.611	3.390	12.0	21.0
23373	2133 <i>T</i> ₋₂		2 12.3 137°75	0°8/12.9 18			12466	1997 <i>AS</i> ₁₂		2 12.3 286°58	3°7/ 9.4 18		
1 12	10 3.36	+ 9 28.7	2.078	2.912	12.2	19.7	1 12	10 3.65	+18 47.6	1.585	2.450	13.6	17.7
1 22	9 57.69	+ 9 57.2	2.007	2.918	8.8	19.5	1 22	9 58.74	+20 12.2	1.502	2.431	9.7	17.4
2 1	9 50.21	+10 36.6	1.962	2.925	5.0	19.3	2 1	9 51.19	+21 46.2	1.443	2.411	5.6	17.2
2 11	9 41.67	+11 22.9	1.946	2.931	1.1	19.0	2 11	9 41.83	+23 19.9	1.411	2.391	3.7	17.0
2 21	9 32.97	+12 10.9	1.959	2.937	3.4	19.2	2 21	9 31.88	+24 43.1	1.408	2.371	7.0	17.1
3 2	9 25.05	+12 55.8	2.001	2.943	7.3	19.5	3 2	9 22.76	+25 47.4	1.431	2.351	11.5	17.3
3 12	9 18.74	+13 33.5	2.070	2.948	10.8	19.7	3 12	9 15.76	+26 28.4	1.476	2.331	15.7	17.5
3 22	9 14.55	+14 1.6	2.162	2.954	13.8	19.9	3 22	9 11.72	+26 46.1	1.541	2.311	19.3	17.7
353926	1101 <i>T</i> ₋₃		2 12.3 52°78	1°1/12.8 18			457630	2009 <i>BV</i> ₁₂₉		2 12.3 23°72	2°2/11.4 16		
1 12	10 10.28	+11 24.7	1.148	2.007	18.2	20.1	1 12	10 7.48	+18 11.1	1.045	1.924	17.9	21.0
1 22	10 3.35	+11 15.2	1.106	2.029	13.1	19.8	1 22	10 1.74	+18 14.0	1.000	1.934	12.7	20.8
2 1	9 53.47	+11 19.0	1.085	2.052	7.3	19.6	2 1	9 52.76	+18 21.8	0.975	1.946	6.9	20.5
2 11	9 42.04	+11 30.8	1.089	2.075	1.6	19.3	2 11	9 41.98	+18 27.0	0.974	1.959	2.2	20.3
2 21	9 30.77	+11 44.8	1.118	2.098	5.0	19.6	2 21	9 31.25	+18 23.5	0.997	1.973	6.4	20.6
3 2	9 21.29	+11 55.7	1.173	2.122	10.5	19.9	3 2	9 22.36	+18 7.5	1.044	1.989	11.9	20.9
3 12	9 14.75	+11 59.6	1.251	2.146	15.2	20.3	3 12	9 16.60	+17 38.6	1.111	2.005	16.7	21.2
3 22	9 11.63	+11 54.8	1.347	2.170	18.9	20.6	3 22	9 14.46	+16 58.3	1.197	2.023	20.6	21.5
384994	2012 <i>TO</i> ₂₀₇		2 12.3 214°30	3°6/15.6 17			237433	1999 <i>NA</i> ₄₃		2 12.3 213°70	6°1/20.7 17		
1 12	10 1.01	+ 0 47.0	2.475	3.270	11.7	21.2	1 12	9 59.27	-15 8.7	3.597	4.274	10.4	21.8
1 22	9 55.85	+ 0 43.4	2.388	3.268	9.1	21.0	1 22	9 54.31	-15 17.5	3.492	4.264	9.1	21.7
2 1	9 49.17	+ 0 54.0	2.327	3.265	6.3	20.8	2 1	9 48.23	-15 9.4	3.410	4.254	7.6	21.6
2 11	9 41.55	+ 1 17.6	2.293	3.262	3.9	20.6	2 11	9 41.45	-14 43.9	3.354	4.243	6.5	21.5
2 21	9 33.73	+ 1 51.5	2.289	3.259	4.1	20.6	2 21	9 34.48	-14 2.0	3.326	4.232	6.1	21.4
3 2	9 26.47	+ 2 31.9	2.315	3.256	6.5	20.8	3 2	9 27.85	-13 6.1	3.326	4.220	6.6	21.4
3 12	9 20.48	+ 3 14.4	2.367	3.252	9.3	21.0	3 12	9 22.08	-12 0.1	3.355	4.207	7.8	21.5
3 22	9 16.23	+ 3 55.0	2.444	3.249	12.0	21.1	3 22	9 17.56	-10 48.4	3.409	4.194	9.3	21.6
163589	2002 <i>TG</i> ₁₉₂		2 12.3 10°18	7°2/ 9.8 18			367208	2007 <i>DN</i> ₁₄		2 12.3 147°19	2°0/10.7 18		
1 12	10 12.95	+31 51.2	1.317										

EPHEMERIDES

2 12.3

2 12.4

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
353605	2011 <i>UK</i> ₁		2 12.3 228°52	3°2/14.6	18		208037	1999 <i>RB</i> ₄₉		2 12.3 253°72	0°0/12.3	17	
1 12	10 6.10	+ 3 33.9	1.852	2.666	14.3	21.0	1 12	10 6.81	+14 15.3	2.719	3.547	9.8	20.2
1 22	10 0.02	+ 3 40.3	1.760	2.655	10.9	20.7	1 22	9 59.92	+14 6.5	2.620	3.531	7.0	20.0
2 1	9 51.70	+ 4 4.0	1.692	2.642	7.1	20.5	2 1	9 51.41	+14 1.2	2.550	3.514	3.9	19.7
2 11	9 41.89	+ 4 42.8	1.652	2.630	3.7	20.2	2 11	9 41.89	+13 57.0	2.510	3.497	0.5	19.4
2 21	9 31.63	+ 5 32.4	1.641	2.616	4.4	20.3	2 21	9 32.12	+13 51.6	2.503	3.479	3.0	19.6
3 2	9 22.09	+ 6 26.8	1.658	2.602	8.3	20.5	3 2	9 22.90	+13 43.0	2.527	3.461	6.4	19.8
3 12	9 14.34	+ 7 20.0	1.702	2.587	12.3	20.7	3 12	9 14.99	+13 29.8	2.579	3.443	9.4	20.0
3 22	9 9.08	+ 8 6.9	1.767	2.572	15.9	20.9	3 22	9 8.91	+13 11.4	2.656	3.425	12.1	20.1
418886	2008 <i>YV</i> ₁₀₄		2 12.3 32°03	2°6/ 9.8	18		110152	2001 <i>SA</i> ₁₅₇		2 12.3 29°64	3°9/15.8	18	
1 12	10 0.33	+17 36.0	1.907	2.768	11.9	20.3	1 12	10 0.58	+ 0 17.3	2.216	3.016	12.7	19.5
1 22	9 55.75	+18 57.3	1.847	2.775	8.3	20.1	1 22	9 55.69	+ 0 17.8	2.136	3.017	9.9	19.3
2 1	9 49.23	+20 24.9	1.813	2.782	4.6	19.9	2 1	9 49.16	+ 0 34.8	2.080	3.019	6.9	19.1
2 11	9 41.58	+21 50.8	1.808	2.789	2.7	19.8	2 11	9 41.63	+ 1 6.6	2.051	3.020	4.3	18.9
2 21	9 33.74	+23 7.5	1.831	2.796	5.4	20.0	2 21	9 33.90	+ 1 50.0	2.051	3.021	4.4	18.9
3 2	9 26.74	+24 9.0	1.883	2.804	9.1	20.2	3 2	9 26.82	+ 2 40.4	2.080	3.023	7.0	19.1
3 12	9 21.46	+24 52.3	1.959	2.813	12.4	20.4	3 12	9 21.14	+ 3 32.5	2.135	3.024	10.0	19.3
3 22	9 18.42	+25 17.1	2.055	2.821	15.2	20.7	3 22	9 17.37	+ 4 21.7	2.214	3.026	12.8	19.5
310899	2003 <i>SX</i> ₁₃		2 12.3 135°60	0°6/12.8	18		403208	2008 <i>TQ</i> ₃₂		2 12.4 200°73	0°2/12.5	18	
1 12	10 4.85	+ 9 11.3	1.774	2.612	13.7	21.3	1 12	10 6.93	+10 42.5	1.812	2.650	13.5	22.7
1 22	9 59.00	+ 9 56.4	1.707	2.621	9.9	21.1	1 22	10 0.62	+11 22.3	1.732	2.646	9.8	22.4
2 1	9 51.03	+10 55.3	1.665	2.629	5.6	20.9	2 1	9 52.03	+12 14.6	1.677	2.642	5.4	22.2
2 11	9 41.80	+12 2.2	1.652	2.638	1.1	20.6	2 11	9 42.00	+13 14.0	1.650	2.637	0.7	21.8
2 21	9 32.38	+13 10.3	1.667	2.645	3.9	20.8	2 21	9 31.62	+14 14.0	1.653	2.631	4.1	22.1
3 2	9 23.91	+14 13.0	1.711	2.653	8.3	21.1	3 2	9 22.08	+15 8.1	1.685	2.624	8.6	22.3
3 12	9 17.34	+15 5.0	1.781	2.660	12.2	21.3	3 12	9 14.46	+15 51.5	1.742	2.616	12.7	22.5
3 22	9 13.23	+15 43.6	1.872	2.666	15.5	21.5	3 22	9 9.40	+16 22.0	1.822	2.608	16.1	22.8
335837	2007 <i>LZ</i> ₃₃		2 12.3 214°64	4°5/16.6	17		481240	2005 <i>WT</i> ₁₂₀		2 12.4 79°29	11°9/ 6.4	16	
1 12	10 1.15	- 2 38.5	2.356	3.137	12.6	21.6	1 12	10 19.29	+34 45.2	1.024	1.893	19.1	20.9
1 22	9 56.06	- 2 30.4	2.265	3.132	10.0	21.4	1 22	10 10.44	+36 47.2	1.008	1.922	15.1	20.8
2 1	9 49.34	- 2 4.1	2.198	3.126	7.3	21.2	2 1	9 57.52	+38 27.3	1.013	1.951	12.4	20.7
2 11	9 41.61	- 1 20.9	2.159	3.120	4.9	21.1	2 11	9 42.61	+39 28.5	1.041	1.979	12.2	20.8
2 21	9 33.61	- 0 23.9	2.149	3.114	4.8	21.0	2 21	9 28.29	+39 43.3	1.091	2.007	14.5	21.0
3 2	9 26.18	+ 0 42.1	2.168	3.107	7.0	21.2	3 2	9 16.83	+39 14.5	1.163	2.034	17.7	21.3
3 12	9 20.07	+ 1 51.1	2.214	3.100	9.9	21.3	3 12	9 9.56	+38 12.0	1.253	2.061	20.7	21.6
3 22	9 15.80	+ 2 58.0	2.285	3.093	12.6	21.5	3 22	9 6.71	+36 46.7	1.357	2.087	23.3	21.9
66801	1999 <i>TF</i> ₂₇₀		2 12.3 222°31	3°9/15.6	18		463680	2014 <i>OX</i> ₁₂₆		2 12.4 76°35	0°7/11.9	18	
1 12	10 2.50	+ 0 32.4	2.268	3.064	12.6	19.6	1 12	10 6.81	+13 24.1	1.535	2.387	14.7	21.7
1 22	9 57.07	+ 0 30.4	2.178	3.058	9.8	19.4	1 22	10 0.52	+13 59.8	1.484	2.406	10.4	21.5
2 1	9 49.92	+ 0 44.3	2.113	3.051	6.8	19.2	2 1	9 51.89	+14 45.2	1.458	2.426	5.6	21.3
2 11	9 41.68	+ 1 12.7	2.075	3.044	4.3	19.0	2 11	9 41.97	+15 33.4	1.458	2.445	0.8	21.0
2 21	9 33.16	+ 1 52.7	2.067	3.037	4.4	19.0	2 21	9 32.03	+16 17.8	1.487	2.464	4.6	21.3
3 2	9 25.24	+ 2 39.9	2.087	3.029	7.1	19.1	3 2	9 23.36	+16 52.6	1.543	2.483	9.2	21.6
3 12	9 18.72	+ 3 29.3	2.135	3.021	10.2	19.3	3 12	9 16.95	+17 14.7	1.623	2.501	13.3	21.9
3 22	9 14.15	+ 4 16.2	2.207	3.012	13.1	19.5	3 22	9 13.31	+17 23.4	1.724	2.520	16.6	22.2
54650	2000 <i>SE</i> ₃₁₅		2 12.3 214°32	2°7/10.3	18		79360	Sila-Nunam		2 12.4 304°51	0°0/12.6	16	
1 12	10 7.47	+23 4.3	2.433	3.279	10.2	18.3	1 12	9 42.90	+12 56.9	42.610	43.441	0.7	21.8
1 22	10 0.43	+23 12.6	2.360	3.278	7.3	18.1	1 22	9 42.22	+13 0.2	42.529	43.441	0.5	21.7
2 1	9 51.65	+23 19.2	2.314	3.277	4.3	17.9	2 1	9 41.49	+13 3.7	42.476	43.441	0.3	21.7
2 11	9 41.88	+23 19.7	2.298	3.276	2.7	17.8	2 11	9 40.72	+13 7.5	42.454	43.440	0.0	21.6
2 21	9 32.02	+23 11.1	2.312	3.275	4.7	17.9	2 21	9 39.94	+13 11.4	42.463	43.440	0.2	21.7
3 2	9 23.00	+22 51.8	2.357	3.274	7.8	18.1	3 2	9 39.19	+13 15.1	42.501	43.440	0.4	21.7
3 12	9 15.58	+22 21.9	2.428	3.272	10.7	18.3	3 12	9 38.49	+13 18.6	42.569	43.440	0.6	21.8
3 22	9 10.27	+21 42.6	2.522	3.271	13.1	18.4	3 22	9 37.88	+13 21.7	42.663	43.440	0.8	21.8
471181	2010 <i>KM</i> ₃₅		2 12.3 274°92	2°6/15.4	16		177568	2004 <i>FS</i> ₁₁₉		2 12.4 115°62	0°6/11.8	17	
1 12	9 59.12	+ 0 39.0	2.606	3.402	11.1	21.7	1 12	10 1.98	+14 12.4	2.370	3.213	10.5	20.9
1 22	9 54.60	+ 1 31.9	2.497	3.380	8.6	21.5	1 22	9 56.58	+14 42.9	2.300	3.218	7.5	20.7
2 1	9 48.56	+ 2 42.4	2.414	3.358	5.7	21.3	2 1	9 49.60	+15 19.4	2.257	3.224	4.0	20.5
2 11	9 41.54	+ 4 7.8	2.361	3.336	3.0	21.1	2 11	9 41.70	+15 57.9	2.243	3.229	0.7	20.2
2 21	9 34.17	+ 5 43.5	2.338	3.314	3.3	21.1	2 21	9 33.67	+16 34.1	2.259	3.235	3.4	20.5
3 2	9 27.21	+ 7 23.4	2.347	3.291	6.2	21.2	3 2	9 26.33	+17 4.1	2.305	3.240	6.9	20.7
3 12	9 21.36	+ 9 1.2	2.384	3.268	9.3	21.4	3 12	9 20.40	+17 25.4	2.377	3.245	10.0	20.9
3 22	9 17.16	+10 31.7	2.448	3.245	12.2	21.5	3 22	9 16.35	+17 36.9	2.472	3.250	12.6	21.1
310430	1999 <i>XK</i> ₁₃₉		2 12.3 156°98	1°8/10.9	18		413068	2001 <i>SB</i> ₁₂₁		2 12.4 97°02	1°7/13.7	18	
1 12	10 6.81	+16 56.8	2.044	2.890	11.8	21.4	1 12	10 5.87	+ 7 6.3	1.966	2.791	13.1	21.8
1 22	10 0.21	+17 45.7	1.978	2.898	8.4	21.2	1 22	9 59.42	+ 7 25.1	1.911	2.815	9.6	21.6
2 1	9 51.64	+18 39.7	1.938	2.905	4.5	20.9	2 1	9 51.15	+ 7 56.5	1.880	2.838	5.7	21.4
2 11	9 41.90	+19 32.7	1.928	2.912	1.8	20.8	2 11	9 41.88	+ 8 36.7	1.878	2.861	2.1	21.2
2 21	9 32.01	+20 18.8	1.948	2.918	4.6	21.0	2 21	9 32.60	+ 9 20.8	1.906	2.884	3.5	21.3
3 2	9 23.01	+20 53.6	1.997	2.923	8.4	21.2	3 2	9 24.29	+10 3.8	1.963	2.906	7.3	21.6
3 12	9 15.79	+21 14.9	2.073	2.928	11.8	21.4	3 12	9 17.75	+10 41.3	2.046	2.928	10.8	21.9
3 22	9 10.91	+21 22.4	2.170	2.932	14.6	21.6	3 22	9 13.44	+11 10.7	2.153	2.949	13.7	22.1
96121	1127 <i>T</i> ₋₃		2 12.3 246°56	2°6/14.3	17		489968	2008 <i>SC</i> ₅₄		2 12.4 211°39	2°9/10.5	18	
1 12	10 4.32	+ 5 20.1	2.207	3.02									

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
205839	2002 <i>EL</i> ₂₂		2 12.4 309°97	5°4/ 9.2 18			286406	2001 <i>YF</i> ₉₅		2 12.4 113°91	2°5/13.9 18		
1 12	10 6.42	+23 15.0	1.313	2.186	15.3	19.9	1 12	10 10.41	+ 7 2.9	1.683	2.507	15.0	20.6
1 22	10 1.25	+24 11.5	1.232	2.163	11.2	19.6	1 22	10 2.94	+ 6 51.5	1.622	2.525	11.1	20.4
2 1	9 52.83	+25 10.9	1.174	2.139	7.1	19.3	2 1	9 53.19	+ 6 53.7	1.586	2.542	6.7	20.1
2 11	9 42.15	+26 2.3	1.140	2.116	5.5	19.2	2 11	9 42.16	+ 7 6.6	1.577	2.559	2.9	19.9
2 21	9 30.75	+26 35.9	1.133	2.093	8.7	19.3	2 21	9 31.08	+ 7 26.2	1.598	2.575	4.3	20.1
3 2	9 20.48	+26 44.9	1.149	2.071	13.5	19.5	3 2	9 21.18	+ 7 47.9	1.647	2.590	8.4	20.3
3 12	9 12.93	+26 28.1	1.186	2.049	18.1	19.7	3 12	9 13.46	+ 8 7.4	1.722	2.605	12.3	20.6
3 22	9 9.01	+25 48.6	1.240	2.029	22.2	19.9	3 22	9 8.44	+ 8 21.5	1.819	2.619	15.6	20.8
431492	2007 <i>TQ</i> ₇₀		2 12.4 81°06	6°1/ 6.4 18			447262	2005 <i>UC</i> ₃₂₅		2 12.4 176°15	0°1/12.3 18		
1 12	10 4.75	+31 14.1	2.233	3.086	10.7	20.6	1 12	10 7.41	+11 17.8	1.689	2.531	14.1	22.3
1 22	9 58.73	+32 32.9	2.192	3.103	8.2	20.4	1 22	10 1.03	+11 59.8	1.617	2.534	10.2	22.0
2 1	9 50.81	+33 44.5	2.178	3.120	6.4	20.4	2 1	9 52.29	+12 54.2	1.570	2.536	5.6	21.8
2 11	9 41.85	+34 41.5	2.193	3.137	6.3	20.4	2 11	9 42.08	+13 55.0	1.550	2.537	0.7	21.4
2 21	9 32.84	+35 19.0	2.235	3.153	7.9	20.5	2 21	9 31.58	+14 55.0	1.560	2.537	4.3	21.7
3 2	9 24.80	+35 34.9	2.305	3.170	10.3	20.7	3 2	9 22.07	+15 47.6	1.598	2.537	9.0	21.9
3 12	9 18.56	+35 30.0	2.397	3.186	12.5	20.9	3 12	9 14.63	+16 28.3	1.661	2.536	13.2	22.2
3 22	9 14.59	+35 7.2	2.509	3.203	14.5	21.0	3 22	9 9.90	+16 55.0	1.746	2.535	16.6	22.4
404462	2013 <i>GZ</i> ₁₂₀		2 12.4 127°08	0°4/12.0 18			500548	2012 <i>UB</i> ₃₆		2 12.4 128°12	2°2/10.1 17		
1 12	10 6.07	+12 31.5	1.918	2.759	12.7	21.7	1 12	10 2.38	+20 7.6	2.745	3.592	9.1	21.8
1 22	9 59.72	+13 13.8	1.856	2.773	9.0	21.5	1 22	9 56.70	+20 50.3	2.683	3.604	6.4	21.6
2 1	9 51.40	+14 5.3	1.820	2.787	4.9	21.2	2 1	9 49.61	+21 34.2	2.650	3.615	3.7	21.5
2 11	9 41.93	+15 0.2	1.813	2.800	0.6	20.9	2 11	9 41.73	+22 15.1	2.646	3.626	2.2	21.4
2 21	9 32.36	+15 52.6	1.836	2.813	4.0	21.2	2 21	9 33.78	+22 48.9	2.674	3.637	4.1	21.5
3 2	9 23.74	+16 37.2	1.888	2.825	8.1	21.5	3 2	9 26.48	+23 12.9	2.731	3.647	6.9	21.7
3 12	9 16.95	+17 10.7	1.966	2.836	11.7	21.7	3 12	9 20.47	+23 25.6	2.815	3.657	9.4	21.9
3 22	9 12.52	+17 31.6	2.066	2.847	14.7	22.0	3 22	9 16.16	+23 27.3	2.922	3.667	11.6	22.1
148072	1998 <i>WR</i> ₁₆		2 12.4 105°03	1°8/10.9 18			500303	2012 <i>QR</i> ₃₄		2 12.4 99°14	0°6/12.9 17		
1 12	10 6.42	+16 33.7	1.832	2.683	12.8	20.2	1 12	10 3.84	+11 7.6	2.299	3.132	11.2	21.9
1 22	10 0.03	+17 22.2	1.778	2.700	9.0	20.0	1 22	9 57.90	+11 13.4	2.230	3.142	8.1	21.7
2 1	9 51.57	+18 16.1	1.749	2.717	4.9	19.8	2 1	9 50.32	+11 26.8	2.188	3.151	4.5	21.5
2 11	9 41.95	+19 9.0	1.749	2.733	1.8	19.6	2 11	9 41.83	+11 44.7	2.174	3.160	1.0	21.2
2 21	9 32.28	+19 54.4	1.778	2.749	4.8	19.9	2 21	9 33.23	+12 3.7	2.191	3.169	3.1	21.4
3 2	9 23.67	+20 27.9	1.835	2.764	8.8	20.1	3 2	9 25.39	+12 20.7	2.237	3.178	6.7	21.7
3 12	9 17.02	+20 47.3	1.918	2.779	12.3	20.4	3 12	9 19.03	+12 32.8	2.311	3.187	9.9	21.9
3 22	9 12.84	+20 52.5	2.022	2.794	15.2	20.6	3 22	9 14.63	+12 38.4	2.407	3.196	12.6	22.1
308155	2005 <i>AK</i> ₄₄		2 12.4 22°77	1°4/11.3 18			270853	2002 <i>TG</i> ₃₇		2 12.4 169°88	2°9/14.5 18		
1 12	10 0.66	+12 7.2	1.165	2.038	16.9	20.1	1 12	10 7.24	+ 3 39.8	1.836	2.650	14.4	21.4
1 22	9 56.81	+13 30.4	1.113	2.045	12.0	19.8	1 22	10 0.73	+ 4 0.6	1.760	2.655	10.9	21.2
2 1	9 50.15	+15 11.1	1.082	2.053	6.4	19.5	2 1	9 52.06	+ 4 39.1	1.708	2.659	6.9	21.0
2 11	9 41.80	+16 58.2	1.076	2.062	1.5	19.2	2 11	9 42.06	+ 5 31.9	1.684	2.663	3.3	20.8
2 21	9 33.22	+18 38.8	1.095	2.072	6.0	19.5	2 21	9 31.80	+ 6 33.7	1.689	2.665	4.2	20.8
3 2	9 25.97	+20 2.1	1.140	2.083	11.4	19.9	3 2	9 22.42	+ 7 37.9	1.723	2.667	8.1	21.1
3 12	9 21.30	+21 1.8	1.206	2.094	16.1	20.2	3 12	9 14.91	+ 8 38.1	1.784	2.668	11.9	21.3
3 22	9 19.80	+21 36.7	1.290	2.107	19.9	20.5	3 22	9 9.88	+ 9 29.9	1.868	2.668	15.3	21.5
272835	2006 <i>BS</i> ₂		2 12.4 21°03	3°0/10.1 18			283129	2008 <i>WR</i> ₇₆		2 12.4 40°56	3°1/ 9.8 18		
1 12	9 58.86	+15 28.4	1.254	2.132	15.6	18.9	1 12	10 2.51	+19 52.6	1.853	2.715	12.1	20.4
1 22	9 55.34	+17 7.6	1.208	2.144	10.9	18.6	1 22	9 57.35	+20 52.5	1.796	2.723	8.6	20.2
2 1	9 49.26	+18 58.2	1.186	2.157	5.9	18.4	2 1	9 50.17	+21 55.5	1.765	2.732	4.9	20.0
2 11	9 41.68	+20 48.0	1.189	2.172	3.0	18.3	2 11	9 41.82	+22 54.5	1.761	2.741	3.1	19.9
2 21	9 33.98	+22 25.0	1.218	2.188	6.7	18.5	2 21	9 33.35	+23 42.8	1.786	2.750	5.7	20.1
3 2	9 27.55	+23 40.3	1.272	2.205	11.4	18.8	3 2	9 25.83	+24 16.1	1.839	2.760	9.3	20.3
3 12	9 23.48	+24 29.7	1.348	2.224	15.6	19.1	3 12	9 20.16	+24 32.4	1.915	2.770	12.6	20.6
3 22	9 22.33	+24 53.7	1.443	2.243	19.0	19.4	3 22	9 16.86	+24 32.4	2.013	2.780	15.4	20.8
333770	2011 <i>EA</i> ₂₆		2 12.4 250°99	0°8/13.2 18			420460	2012 <i>DO</i> ₇₄		2 12.4 137°07	7°3/ 6.6 18		
1 12	10 1.18	+ 7 48.1	2.188	3.018	11.8	21.1	1 12	10 10.50	+34 0.1	2.006	2.853	12.0	21.0
1 22	9 56.28	+ 8 40.6	2.097	3.005	8.6	20.9	1 22	10 3.06	+35 4.5	1.957	2.860	9.5	20.9
2 1	9 49.59	+ 9 47.2	2.031	2.992	5.0	20.6	2 1	9 53.29	+35 58.6	1.933	2.868	7.6	20.8
2 11	9 41.74	+11 3.6	1.994	2.979	1.2	20.3	2 11	9 42.20	+36 34.1	1.937	2.874	7.5	20.8
2 21	9 33.54	+12 23.8	1.987	2.966	3.3	20.5	2 21	9 31.07	+36 46.1	1.968	2.881	9.2	20.9
3 2	9 25.92	+13 41.4	2.011	2.952	7.3	20.7	3 2	9 21.18	+36 33.2	2.025	2.887	11.6	21.0
3 12	9 19.71	+14 50.8	2.061	2.938	10.9	20.9	3 12	9 13.53	+35 57.9	2.105	2.893	14.1	21.2
3 22	9 15.51	+15 48.4	2.134	2.924	14.0	21.1	3 22	9 8.64	+35 4.6	2.205	2.898	16.3	21.4
242127	2002 <i>XK</i> ₁₉		2 12.4 158°25	4°3/16.5 17			244042	2001 <i>SQ</i> ₃₃₃		2 12.4 260°19	3°7/ 9.1 18		
1 12	10 1.88	- 2 20.9	2.664	3.439	11.5	20.6	1 12	10 4.51	+24 31.6	2.274	3.128	10.5	20.3
1 22	9 56.38	- 2 30.8	2.582	3.444	9.1	20.5	1 22	9 58.57	+25 12.3	2.204	3.125	7.6	20.1
2 1	9 49.47	- 2 25.8	2.525	3.449	6.7	20.3	2 1	9 50.78	+25 51.5	2.161	3.121	4.8	20.0
2 11	9 41.71	- 2 6.7	2.496	3.453	4.7	20.2	2 11	9 41.91	+26 23.5	2.146	3.118	3.8	19.9
2 21	9 33.79	- 1 35.6	2.496	3.457	4.5	20.2	2 21	9 32.87	+26 43.8	2.161	3.114	5.8	20.0
3 2	9 26.43	- 0 56.1	2.526	3.461	6.4	20.3	3 2	9 24.63	+26 49.6	2.204	3.111	8.8	20.2
3 12	9 20.27	- 0 12.5	2.584	3.465	8.8	20.5	3 12	9 18.02	+26 40.2	2.272	3.107	11.6	20.4
3 22	9 15.77	+ 0 31.2	2.667	3.468	11.2	20.6	3 22	9 13.56	+26 17.0	2.361	3.103	14.1	20.5
205633	2001 <i>WS</i> ₂₃		2 12.4 279°08	0°3/12.1 17			258990	2002 <i>TA</i> ₃₇		2 12.4 61°04	2°8/14.4 18		
1 12	10 1.34	+13 1.0	2.322	3.164									

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
220587	2004 <i>JB</i> ₃₉		2 12.4 263°71	2°1/14.2	18		54469	2000 <i>OM</i> ₈		2 12.4 203°77	2°8/15.2	18	
1 12	10 2.51	+ 4 55.0	2.015	2.836	13.0	20.5	1 12	9 59.98	+ 2 3.7	2.565	3.367	11.1	19.5
1 22	9 57.43	+ 5 28.9	1.915	2.816	9.8	20.3	1 22	9 55.15	+ 2 24.0	2.479	3.365	8.5	19.3
2 1	9 50.33	+ 6 20.0	1.840	2.796	6.1	20.0	2 1	9 48.87	+ 2 58.4	2.418	3.362	5.6	19.1
2 11	9 41.88	+ 7 24.9	1.794	2.775	2.5	19.8	2 11	9 41.72	+ 3 44.7	2.385	3.360	3.1	18.9
2 21	9 32.97	+ 8 38.3	1.776	2.754	3.7	19.8	2 21	9 34.36	+ 4 39.2	2.382	3.357	3.4	18.9
3 2	9 24.62	+ 9 53.6	1.788	2.733	7.7	20.0	3 2	9 27.53	+ 5 37.7	2.410	3.353	6.1	19.1
3 12	9 17.80	+11 4.3	1.826	2.711	11.7	20.2	3 12	9 21.90	+ 6 35.2	2.465	3.350	9.0	19.3
3 22	9 13.19	+12 5.5	1.887	2.689	15.1	20.4	3 22	9 17.93	+ 7 28.1	2.544	3.346	11.6	19.5
305003	2007 <i>TW</i> ₂₈₉		2 12.4 84°37	4°6/ 9.3	18		283993	2004 <i>SG</i> ₄₄		2 12.4 65°68	4°6/15.4	18	
1 12	10 9.00	+22 55.3	1.528	2.391	14.2	20.5	1 12	10 6.86	+ 1 27.2	1.341	2.166	18.1	20.7
1 22	10 2.20	+24 1.0	1.485	2.411	10.1	20.3	1 22	10 0.73	+ 1 26.1	1.293	2.190	13.8	20.5
2 1	9 52.87	+25 6.1	1.466	2.430	6.2	20.1	2 1	9 52.11	+ 1 49.0	1.267	2.215	9.2	20.3
2 11	9 42.16	+26 0.9	1.474	2.449	4.7	20.1	2 11	9 42.11	+ 2 32.4	1.265	2.239	5.2	20.1
2 21	9 31.49	+26 38.3	1.510	2.468	7.4	20.3	2 21	9 32.13	+ 3 29.9	1.289	2.264	5.6	20.2
3 2	9 22.23	+26 54.6	1.573	2.486	11.2	20.6	3 2	9 23.53	+ 4 33.1	1.340	2.289	9.4	20.5
3 12	9 15.45	+26 50.0	1.658	2.504	14.7	20.8	3 12	9 17.38	+ 5 33.9	1.415	2.313	13.5	20.8
3 22	9 11.65	+26 27.6	1.762	2.522	17.6	21.1	3 22	9 14.16	+ 6 26.2	1.511	2.338	17.0	21.0
119788	2002 <i>AJ</i> ₈₁		2 12.4 149°94	2°2/10.2	18		102081	1999 <i>RB</i> ₁₄₉		2 12.4 145°05	0°4/12.1	18	
1 12	10 4.18	+17 47.0	2.342	3.189	10.5	20.1	1 12	10 7.39	+13 1.9	2.002	2.840	12.4	20.6
1 22	9 58.22	+18 55.9	2.278	3.199	7.4	19.9	1 22	10 0.65	+13 32.8	1.936	2.852	8.8	20.4
2 1	9 50.56	+20 9.0	2.242	3.208	4.1	19.8	2 1	9 51.94	+14 11.7	1.896	2.862	4.8	20.2
2 11	9 41.89	+21 20.4	2.235	3.217	2.2	19.6	2 11	9 42.10	+14 53.5	1.886	2.872	0.6	19.9
2 21	9 33.07	+22 24.1	2.260	3.225	4.6	19.8	2 21	9 32.13	+15 33.1	1.905	2.881	3.8	20.2
3 2	9 24.98	+23 15.6	2.314	3.232	7.8	20.0	3 2	9 23.08	+16 5.9	1.954	2.890	7.9	20.4
3 12	9 18.40	+23 52.5	2.395	3.239	10.8	20.2	3 12	9 15.83	+16 29.1	2.029	2.898	11.4	20.6
3 22	9 13.82	+24 14.5	2.498	3.245	13.3	20.4	3 22	9 10.91	+16 41.3	2.127	2.905	14.4	20.9
68653	2002 <i>CL</i> ₇₈		2 12.4 243°77	1°2/11.5	18		425972	2011 <i>HD</i> ₅₇		2 12.4 151°13	2°3/ 9.9	17	
1 12	10 6.89	+14 51.9	1.803	2.650	13.1	20.3	1 12	10 2.06	+18 45.5	2.484	3.333	9.9	21.5
1 22	10 0.75	+15 30.1	1.716	2.636	9.4	20.0	1 22	9 56.68	+19 51.5	2.417	3.339	7.0	21.4
2 1	9 52.22	+16 17.0	1.654	2.621	5.1	19.7	2 1	9 49.72	+21 0.9	2.379	3.345	3.9	21.2
2 11	9 42.12	+17 6.7	1.620	2.606	1.2	19.4	2 11	9 41.83	+22 8.1	2.370	3.350	2.3	21.1
2 21	9 31.57	+17 52.7	1.616	2.590	4.7	19.6	2 21	9 33.77	+23 7.8	2.392	3.356	4.5	21.2
3 2	9 21.82	+18 29.3	1.640	2.574	9.3	19.8	3 2	9 26.36	+23 55.9	2.444	3.360	7.6	21.4
3 12	9 13.99	+18 52.9	1.689	2.557	13.4	20.1	3 12	9 20.33	+24 29.9	2.522	3.365	10.4	21.6
3 22	9 8.81	+19 2.4	1.759	2.539	16.9	20.2	3 22	9 16.15	+24 49.8	2.622	3.369	12.8	21.8
457964	2009 <i>VM</i> ₇₉		2 12.4 257°99	5°9/16.5	18		230487	2002 <i>TT</i> ₈₆		2 12.4 309°95	4°1/ 9.2	18	
1 12	10 4.04	- 2 49.4	2.020	2.804	14.3	20.6	1 12	10 5.48	+24 48.3	2.077	2.933	11.2	19.9
1 22	9 58.43	- 3 22.0	1.929	2.795	11.6	20.4	1 22	9 59.40	+25 27.7	2.008	2.930	8.2	19.7
2 1	9 50.83	- 3 36.1	1.862	2.786	8.6	20.2	2 1	9 51.31	+26 5.3	1.966	2.927	5.2	19.5
2 11	9 41.94	- 3 31.3	1.822	2.777	6.3	20.0	2 11	9 42.03	+26 34.8	1.952	2.924	4.1	19.5
2 21	9 32.69	- 3 9.1	1.809	2.768	6.2	20.0	2 21	9 32.57	+26 51.3	1.967	2.921	6.2	19.6
3 2	9 24.09	- 2 33.4	1.824	2.759	8.4	20.1	3 2	9 24.01	+26 51.9	2.009	2.918	9.4	19.8
3 12	9 17.08	- 1 49.9	1.865	2.749	11.5	20.3	3 12	9 17.25	+26 36.4	2.076	2.915	12.4	20.0
3 22	9 12.29	- 1 4.4	1.928	2.740	14.5	20.4	3 22	9 12.85	+26 6.6	2.164	2.912	15.1	20.1
20351	Kaborchardt		2 12.4 144°50	1°8/13.9	18		201422	2002 <i>XE</i> ₉₀		2 12.4 53°99	3°4/ 9.0	18	
1 12	10 3.20	+ 6 19.3	2.154	2.976	12.3	19.3	1 12	10 1.21	+20 15.9	2.041	2.901	11.2	19.7
1 22	9 57.60	+ 6 38.6	2.080	2.982	9.1	19.1	1 22	9 56.35	+21 41.9	1.984	2.910	7.9	19.5
2 1	9 50.25	+ 7 10.9	2.032	2.988	5.5	18.9	2 1	9 49.63	+23 11.1	1.954	2.920	4.7	19.3
2 11	9 41.88	+ 7 52.7	2.012	2.994	2.2	18.7	2 11	9 41.82	+24 35.7	1.953	2.929	3.5	19.2
2 21	9 33.34	+ 8 39.7	2.021	2.999	3.4	18.7	2 21	9 33.84	+25 48.7	1.982	2.939	5.9	19.4
3 2	9 25.52	+ 9 27.0	2.060	3.004	7.0	19.0	3 2	9 26.68	+26 44.9	2.038	2.949	9.1	19.6
3 12	9 19.24	+10 10.2	2.126	3.009	10.3	19.2	3 12	9 21.18	+27 22.2	2.119	2.959	12.2	19.8
3 22	9 14.98	+10 45.9	2.216	3.013	13.3	19.4	3 22	9 17.85	+27 40.9	2.221	2.969	14.7	20.0
409840	2006 <i>QN</i> ₁₈₄		2 12.4 166°89	0°1/12.3	18		110193	2001 <i>SF</i> ₁₈₉		2 12.4 165°55	0°2/12.5	18	
1 12	10 5.97	+12 3.2	2.219	3.052	11.5	23.0	1 12	10 1.61	+11 20.1	2.649	3.480	9.9	20.7
1 22	9 59.55	+12 36.3	2.145	3.058	8.2	22.8	1 22	9 56.24	+11 51.4	2.573	3.484	7.1	20.5
2 1	9 51.32	+13 17.7	2.098	3.063	4.5	22.5	2 1	9 49.44	+12 30.2	2.523	3.487	3.9	20.3
2 11	9 42.02	+14 3.0	2.081	3.067	0.5	22.2	2 11	9 41.81	+13 13.0	2.504	3.490	0.6	20.0
2 21	9 32.54	+14 47.4	2.094	3.071	3.5	22.5	2 21	9 34.02	+13 56.0	2.516	3.493	2.9	20.2
3 2	9 23.82	+15 26.3	2.137	3.074	7.3	22.7	3 2	9 26.81	+14 35.2	2.557	3.495	6.1	20.4
3 12	9 16.69	+15 56.5	2.208	3.076	10.7	22.9	3 12	9 20.84	+15 7.8	2.627	3.497	9.1	20.6
3 22	9 11.66	+16 16.5	2.301	3.077	13.5	23.1	3 22	9 16.54	+15 32.0	2.720	3.499	11.6	20.8
148770	2001 <i>TD</i> ₂₄₀		2 12.4 172°43	1°1/11.4	18		419036	2009 <i>QF</i> ₆₄		2 12.4 91°70	2°2/11.1	18	
1 12	10 4.44	+14 47.0	2.191	3.034	11.3	20.7	1 12	10 9.99	+19 44.4	1.791	2.641	13.0	20.6
1 22	9 58.52	+15 34.7	2.118	3.037	8.0	20.5	1 22	10 2.69	+19 51.8	1.726	2.648	9.3	20.4
2 1	9 50.78	+16 29.3	2.072	3.039	4.3	20.3	2 1	9 53.12	+20 0.4	1.688	2.654	5.2	20.2
2 11	9 41.95	+17 25.4	2.056	3.041	1.1	20.0	2 11	9 42.26	+20 4.8	1.677	2.661	2.2	20.0
2 21	9 32.93	+18 17.5	2.070	3.043	4.0	20.3	2 21	9 31.33	+20 0.9	1.696	2.667	5.1	20.2
3 2	9 24.65	+19 1.0	2.113	3.044	7.7	20.5	3 2	9 21.55	+19 46.4	1.744	2.673	9.1	20.5
3 12	9 17.94	+19 32.7	2.183	3.044	11.0	20.7	3 12	9 13.93	+19 20.9	1.816	2.680	12.8	20.7
3 22	9 13.34	+19 51.8	2.275	3.044	13.8	20.9	3 22	9 9.01	+18 45.7	1.910	2.686	15.9	20.9
381257	2007 <i>TF</i> ₁₅₆		2 12.4 63°61	3°1/10.0	18		146416	2001 <i>QC</i> ₂₁₅		2 12.4 122°87	0°8/11.8	18	
1 12	10 6.27	+22 12.2	2.044	2.898	11.5	20.6</							

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
58234	1993 <i>FY</i> ₅₀		2 12.4 164°82		0°6/12.9 18		150982	2001 <i>TV</i> ₂₂₅		2 12.4 57°15		0°2/12.3 18	
1 12	10 3.42	+10 9.1	2.143	2.977	11.8	20.0	1 12	10 3.31	+9 9.7	1.516	2.364	15.1	19.8
1 22	9 57.80	+10 35.1	2.068	2.980	8.6	19.8	1 22	9 58.06	+10 36.6	1.473	2.392	10.7	19.6
2 1	9 50.40	+11 11.2	2.019	2.982	4.8	19.6	2 1	9 50.61	+12 18.7	1.454	2.421	5.8	19.4
2 11	9 41.93	+11 53.5	1.998	2.984	1.0	19.3	2 11	9 41.98	+14 6.8	1.463	2.450	0.7	19.1
2 21	9 33.27	+12 37.2	2.008	2.986	3.3	19.5	2 21	9 33.35	+15 50.7	1.501	2.479	4.4	19.4
3 2	9 25.35	+13 17.7	2.046	2.988	7.2	19.8	3 2	9 25.91	+17 21.6	1.567	2.508	9.0	19.8
3 12	9 18.97	+13 51.1	2.112	2.989	10.7	20.0	3 12	9 20.59	+18 34.1	1.657	2.537	13.0	20.1
3 22	9 14.67	+14 15.3	2.200	2.990	13.6	20.2	3 22	9 17.85	+19 26.4	1.769	2.565	16.2	20.4
200623	2001 <i>SO</i> ₁₀₁		2 12.4 218°44		1°3/11.6 18		212459	2006 <i>QK</i> ₂₆		2 12.4 112°82		0°9/13.3 17	
1 12	10 8.37	+15 6.2	1.679	2.528	13.8	21.4	1 12	10 1.39	+8 58.9	2.398	3.226	10.9	20.8
1 22	10 1.88	+15 40.9	1.600	2.521	9.9	21.2	1 22	9 56.19	+9 21.6	2.325	3.233	7.9	20.6
2 1	9 52.87	+16 24.0	1.547	2.514	5.4	20.9	2 1	9 49.46	+9 54.0	2.278	3.239	4.6	20.4
2 11	9 42.26	+17 9.2	1.521	2.507	1.3	20.6	2 11	9 41.84	+10 32.8	2.261	3.246	1.3	20.2
2 21	9 31.27	+17 49.9	1.524	2.498	4.9	20.8	2 21	9 34.09	+11 13.9	2.273	3.252	3.0	20.3
3 2	9 21.24	+18 20.4	1.555	2.489	9.6	21.1	3 2	9 26.98	+11 53.3	2.316	3.258	6.4	20.6
3 12	9 13.34	+18 37.5	1.610	2.480	13.8	21.3	3 12	9 21.22	+12 27.5	2.385	3.264	9.5	20.8
3 22	9 8.27	+18 40.6	1.687	2.470	17.3	21.5	3 22	9 17.27	+12 54.0	2.478	3.270	12.2	21.0
143255	2002 <i>YV</i> ₃₅		2 12.4 109°88		0°8/11.7 18		431870	2008 <i>SA</i> ₁₄₃		2 12.4 86°62		4°1/ 8.9 18	
1 12	10 6.32	+13 31.3	2.129	2.967	11.7	20.6	1 12	10 5.32	+24 17.9	2.081	2.937	11.2	21.3
1 22	9 59.71	+14 24.6	2.077	2.993	8.3	20.4	1 22	9 59.18	+25 12.6	2.030	2.952	8.1	21.2
2 1	9 51.35	+15 25.0	2.052	3.018	4.4	20.2	2 1	9 51.14	+26 5.6	2.005	2.966	5.1	21.0
2 11	9 42.05	+16 26.7	2.057	3.043	0.9	20.0	2 11	9 42.05	+26 50.1	2.010	2.980	4.1	21.0
2 21	9 32.72	+17 24.0	2.092	3.066	3.8	20.3	2 21	9 32.92	+27 21.1	2.043	2.995	6.2	21.1
3 2	9 24.32	+18 12.2	2.157	3.089	7.5	20.6	3 2	9 24.76	+27 35.7	2.104	3.009	9.2	21.3
3 12	9 17.61	+18 48.4	2.249	3.111	10.7	20.8	3 12	9 18.40	+27 33.5	2.189	3.023	12.1	21.5
3 22	9 13.06	+19 11.8	2.364	3.132	13.4	21.0	3 22	9 14.33	+27 16.3	2.296	3.037	14.5	21.7
320664	2008 <i>CS</i> ₁₇₅		2 12.4 352°78		4°1/10.4 18		472741	2015 <i>FR</i> ₉₄		2 12.4 229°84		1°6/13.9 17	
1 12	10 12.14	+23 56.6	1.528	2.387	14.4	20.4	1 12	10 2.03	+7 3.7	2.822	3.637	9.9	22.1
1 22	10 4.65	+24 5.0	1.462	2.385	10.4	20.2	1 22	9 56.54	+7 7.2	2.729	3.627	7.3	21.9
2 1	9 54.37	+24 10.1	1.420	2.384	6.3	19.9	2 1	9 49.64	+7 19.5	2.662	3.616	4.5	21.7
2 11	9 42.44	+24 5.0	1.405	2.383	4.1	19.8	2 11	9 41.88	+7 38.9	2.624	3.606	1.9	21.5
2 21	9 30.38	+23 44.9	1.418	2.382	6.8	20.0	2 21	9 33.90	+8 2.6	2.618	3.595	2.8	21.6
3 2	9 19.72	+23 8.2	1.458	2.382	11.0	20.2	3 2	9 26.39	+8 27.6	2.642	3.584	5.8	21.7
3 12	9 11.68	+22 16.7	1.521	2.382	15.0	20.4	3 12	9 20.01	+8 51.0	2.694	3.572	8.6	21.9
3 22	9 6.86	+21 13.7	1.605	2.382	18.3	20.7	3 22	9 15.21	+9 10.4	2.771	3.560	11.1	22.1
498976	2009 <i>BX</i> ₁₄₃		2 12.4 143°46		0°7/11.5 17		207759	2007 <i>TZ</i> ₂		2 12.4 64°19		2°0/10.4 18	
1 12	10 0.55	+12 56.2	2.597	3.436	9.9	21.4	1 12	10 0.91	+16 26.5	2.137	2.990	11.1	20.1
1 22	9 55.55	+14 1.9	2.526	3.442	7.0	21.2	1 22	9 56.09	+17 38.3	2.070	2.994	7.8	19.9
2 1	9 49.10	+15 15.3	2.482	3.449	3.7	21.0	2 1	9 49.50	+18 56.6	2.031	2.999	4.2	19.7
2 11	9 41.79	+16 31.4	2.469	3.455	0.8	20.8	2 11	9 41.86	+20 14.8	2.020	3.003	2.0	19.6
2 21	9 34.32	+17 44.8	2.488	3.462	3.4	21.0	2 21	9 34.02	+21 26.4	2.039	3.007	4.6	19.7
3 2	9 27.42	+18 50.8	2.537	3.467	6.6	21.2	3 2	9 26.91	+22 26.0	2.087	3.012	8.2	20.0
3 12	9 21.77	+19 45.9	2.613	3.473	9.5	21.4	3 12	9 21.34	+23 10.4	2.161	3.016	11.4	20.2
3 22	9 17.80	+20 28.3	2.713	3.478	11.9	21.6	3 22	9 17.81	+23 38.7	2.256	3.021	14.1	20.4
81984	2000 <i>QV</i> ₁₁₉		2 12.4 188°50		4°7/18.5 18		328709	2009 <i>TT</i> ₉		2 12.4 144°72		1°2/11.4 18	
1 12	9 59.25	- 8 0.8	3.131	3.868	10.7	19.9	1 12	10 5.79	+16 3.8	2.266	3.108	11.0	21.3
1 22	9 54.44	- 7 44.6	3.037	3.867	8.8	19.7	1 22	9 59.38	+16 37.3	2.200	3.118	7.8	21.1
2 1	9 48.44	- 7 11.6	2.967	3.865	6.8	19.6	2 1	9 51.23	+17 15.6	2.161	3.128	4.2	20.9
2 11	9 41.71	- 6 22.4	2.925	3.863	5.2	19.5	2 11	9 42.08	+17 53.7	2.152	3.137	1.2	20.7
2 21	9 34.82	- 5 19.6	2.912	3.861	4.8	19.5	2 21	9 32.82	+18 27.2	2.173	3.145	3.9	20.9
3 2	9 28.34	- 4 6.8	2.930	3.858	5.9	19.5	3 2	9 24.37	+18 52.5	2.223	3.153	7.4	21.2
3 12	9 22.85	- 2 49.0	2.977	3.855	7.9	19.7	3 12	9 17.50	+19 7.3	2.301	3.161	10.6	21.4
3 22	9 18.73	- 1 30.8	3.050	3.851	9.9	19.8	3 22	9 12.71	+19 11.3	2.401	3.168	13.3	21.6
106495	2000 <i>WD</i> ₃₁		2 12.4 85°67		5°6/ 7.4 18		85582	1998 <i>DW</i> ₂₄		2 12.4 206°76		3°1/14.8 17	
1 12	10 5.28	+26 39.5	1.885	2.746	12.0	19.8	1 12	10 5.52	+3 28.9	2.333	3.135	12.1	20.4
1 22	9 59.39	+28 11.2	1.841	2.762	8.8	19.6	1 22	9 59.24	+3 16.0	2.244	3.130	9.2	20.2
2 1	9 51.34	+29 39.3	1.823	2.777	6.2	19.5	2 1	9 51.21	+3 15.5	2.180	3.125	6.1	20.0
2 11	9 42.07	+30 54.9	1.832	2.792	5.8	19.5	2 11	9 42.09	+3 26.4	2.145	3.119	3.5	19.9
2 21	9 32.70	+31 50.9	1.871	2.807	7.9	19.7	2 21	9 32.70	+3 46.0	2.140	3.112	4.0	19.9
3 2	9 24.39	+32 23.8	1.935	2.822	10.8	19.9	3 2	9 23.93	+4 11.0	2.165	3.105	6.9	20.1
3 12	9 18.09	+32 33.8	2.023	2.837	13.7	20.1	3 12	9 16.59	+4 37.3	2.217	3.098	10.1	20.2
3 22	9 14.33	+32 23.6	2.130	2.852	16.0	20.3	3 22	9 11.22	+5 1.6	2.294	3.089	12.9	20.4
316935	2001 <i>BO</i> ₅		2 12.4 351°25		5°5/13.5 17		304897	2007 <i>RG</i> ₂₂₅		2 12.4 47°69		1°6/13.4 18	
1 12	10 18.05	+ 9 1.1	0.962	1.815	21.3	19.6	1 12	10 5.00	+8 14.6	1.326	2.177	16.7	21.2
1 22	10 10.03	+ 7 6.7	0.897	1.812	16.2	19.2	1 22	9 59.63	+8 33.0	1.270	2.188	12.2	21.0
2 1	9 57.84	+ 5 21.1	0.851	1.810	10.5	18.9	2 1	9 51.64	+9 8.7	1.236	2.200	7.1	20.7
2 11	9 42.92	+ 3 48.0	0.829	1.808	5.8	18.6	2 11	9 42.14	+9 56.2	1.228	2.213	2.1	20.4
2 21	9 27.48	+ 2 31.0	0.832	1.807	7.8	18.7	2 21	9 32.50	+10 48.2	1.245	2.225	4.5	20.6
3 2	9 13.93	+ 1 31.1	0.859	1.806	13.5	19.0	3 2	9 24.14	+11 37.3	1.289	2.238	9.6	20.9
3 12	9 4.15	+ 0 45.4	0.907	1.807	19.0	19.3	3 12	9 18.21	+12 17.3	1.356	2.252	14.1	21.2
3 22	8 58.96	+ 0 9.2	0.972	1.807	23.7	19.6	3 22	9 15.27	+12 44.9	1.443	2.265	17.9	21.5
337875	2001 <i>WJ</i> ₅₂		2 12.4 83°84		3°1/15.3 17		119671	2001 <i>XO</i> ₇₇		2 12.4 286°42		0°4/12.7 18	
1 12	10 0.56	+ 2 5.2	2.329	3.134	12.0	21.0							

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
494187	2016 <i>GM</i> ₂₄₇		2 12.4 77°33'	0°1/12.3 18			47196	1999 <i>TZ</i> ₁₈₀		2 12.4 104°41'	2°4/13.9 18		
1 12	10 3.74	+12 18.3	1.931	2.775	12.5	21.2	1 12	10 6.80	+5 33.4	1.409	2.245	16.7	19.1
1 22	9 58.15	+12 45.2	1.866	2.783	8.9	21.0	1 22	10 0.84	+6 0.1	1.349	2.258	12.4	18.9
2 1	9 50.64	+13 21.0	1.826	2.792	4.9	20.8	2 1	9 52.32	+6 46.8	1.311	2.270	7.5	18.6
2 11	9 42.02	+14 1.1	1.814	2.800	0.6	20.4	2 11	9 42.27	+7 48.5	1.299	2.282	2.9	18.4
2 21	9 33.26	+14 40.2	1.831	2.809	3.7	20.7	2 21	9 32.05	+8 57.4	1.314	2.294	4.5	18.5
3 2	9 25.39	+15 13.7	1.877	2.818	7.8	21.0	3 2	9 23.04	+10 5.1	1.357	2.305	9.3	18.8
3 12	9 19.25	+15 38.2	1.949	2.826	11.4	21.2	3 12	9 16.40	+11 4.4	1.423	2.316	13.8	19.1
3 22	9 15.37	+15 52.1	2.043	2.835	14.4	21.4	3 22	9 12.71	+11 51.0	1.510	2.327	17.5	19.3
130676	2000 <i>SH</i> ₁₁₇		2 12.4 143°21'	0°0/12.4 18			20477	Anastroda		2 12.4 200°30'	0°4/12.6 18		
1 12	10 6.53	+11 6.1	1.868	2.706	13.2	20.8	1 12	10 7.69	+11 39.8	1.842	2.680	13.3	18.9
1 22	10 0.20	+11 50.0	1.802	2.717	9.4	20.6	1 22	10 1.17	+11 54.5	1.763	2.677	9.6	18.7
2 1	9 51.79	+12 44.9	1.762	2.727	5.2	20.3	2 1	9 52.43	+12 19.0	1.709	2.674	5.4	18.4
2 11	9 42.17	+13 45.2	1.750	2.737	0.6	20.0	2 11	9 42.30	+12 48.9	1.684	2.670	0.9	18.1
2 21	9 32.38	+14 44.5	1.768	2.746	3.9	20.3	2 21	9 31.87	+13 19.2	1.688	2.666	3.9	18.3
3 2	9 23.53	+15 37.0	1.816	2.754	8.2	20.6	3 2	9 22.33	+13 45.4	1.721	2.662	8.4	18.6
3 12	9 16.54	+16 18.4	1.889	2.762	11.9	20.8	3 12	9 14.70	+14 3.7	1.780	2.656	12.3	18.8
3 22	9 11.98	+16 46.9	1.984	2.769	15.1	21.0	3 22	9 9.60	+14 12.5	1.860	2.651	15.7	19.0
33666	1999 <i>JO</i> ₉₄		2 12.4 196°09'	3°2/ 8.7 18			262558	2006 <i>VP</i> ₂₆		2 12.4 181°73'	6°4/ 6.5 17		
1 12	10 1.30	+21 45.5	2.538	3.392	9.5	19.4	1 12	10 8.53	+31 12.5	2.151	3.000	11.2	21.0
1 22	9 56.23	+23 6.0	2.468	3.390	6.8	19.2	1 22	10 1.71	+32 33.1	2.093	3.001	8.6	20.9
2 1	9 49.56	+24 28.5	2.426	3.389	4.2	19.1	2 1	9 52.68	+33 47.4	2.061	3.002	6.7	20.8
2 11	9 41.89	+25 46.9	2.414	3.387	3.3	19.0	2 11	9 42.32	+34 47.0	2.057	3.002	6.6	20.8
2 21	9 34.00	+26 55.2	2.433	3.385	5.3	19.1	2 21	9 31.75	+35 25.8	2.083	3.001	8.4	20.9
3 2	9 26.70	+27 49.2	2.481	3.383	8.1	19.3	3 2	9 22.13	+35 41.1	2.134	3.000	11.0	21.0
3 12	9 20.74	+28 26.9	2.554	3.380	10.8	19.5	3 12	9 14.46	+35 33.8	2.210	2.998	13.5	21.2
3 22	9 16.62	+28 48.2	2.649	3.377	13.1	19.6	3 22	9 9.34	+35 7.0	2.304	2.995	15.7	21.4
500588	2012 <i>UU</i> ₉₇		2 12.4 102°84'	1°8/14.0 17			88759	2001 <i>SF</i> ₆₅		2 12.4 323°21'	7°3/19.3 18		
1 12	10 1.25	+6 28.6	2.342	3.163	11.4	21.7	1 12	9 58.73	-9 46.2	2.093	2.845	14.9	18.9
1 22	9 56.14	+6 43.9	2.266	3.168	8.4	21.6	1 22	9 54.66	-9 54.3	2.000	2.834	12.6	18.7
2 1	9 49.47	+7 10.7	2.216	3.172	5.1	21.4	2 1	9 48.83	-9 37.7	1.928	2.824	10.1	18.5
2 11	9 41.88	+7 46.3	2.194	3.176	2.1	21.2	2 11	9 41.85	-8 55.7	1.881	2.815	8.0	18.4
2 21	9 34.13	+8 26.8	2.203	3.181	3.2	21.2	2 21	9 34.54	-7 50.5	1.860	2.805	7.3	18.3
3 2	9 27.02	+9 8.1	2.241	3.185	6.4	21.5	3 2	9 27.82	-6 27.2	1.867	2.796	8.6	18.4
3 12	9 21.28	+9 46.1	2.305	3.189	9.6	21.7	3 12	9 22.53	-4 53.5	1.899	2.787	11.1	18.5
3 22	9 17.36	+10 17.8	2.394	3.193	12.3	21.9	3 22	9 19.24	-3 17.4	1.954	2.779	13.8	18.7
81763	2000 <i>JW</i> ₆₂		2 12.4 302°25'	0°6/12.0 18			111791	2002 <i>CJ</i> ₂₃₉		2 12.4 231°96'	1°4/13.5 18		
1 12	10 6.01	+14 29.2	1.594	2.449	14.2	18.9	1 12	10 5.50	+7 51.0	1.842	2.673	13.6	20.3
1 22	10 0.37	+14 40.5	1.510	2.433	10.2	18.6	1 22	9 59.70	+8 15.9	1.754	2.662	10.1	20.1
2 1	9 52.15	+15 0.0	1.449	2.417	5.6	18.3	2 1	9 51.68	+8 55.4	1.691	2.652	5.9	19.8
2 11	9 42.24	+15 22.9	1.415	2.401	0.8	17.9	2 11	9 42.22	+9 45.5	1.656	2.640	1.8	19.5
2 21	9 31.87	+15 43.4	1.409	2.386	4.7	18.1	2 21	9 32.34	+10 40.6	1.649	2.628	3.9	19.6
3 2	9 22.41	+15 56.7	1.429	2.371	9.6	18.4	3 2	9 23.20	+11 34.6	1.672	2.616	8.3	19.9
3 12	9 15.07	+15 59.7	1.474	2.356	14.1	18.6	3 12	9 15.85	+12 21.9	1.720	2.603	12.4	20.1
3 22	9 10.61	+15 51.2	1.539	2.341	17.9	18.8	3 22	9 10.98	+12 59.1	1.791	2.589	15.9	20.3
425431	2010 <i>DJ</i> ₄₅		2 12.4 340°70'	0°8/11.8 18			137182	1999 <i>JG</i> ₄₀		2 12.4 311°51'	0°1/12.5 18		
1 12	10 5.09	+15 41.0	2.003	2.850	12.0	20.6	1 12	10 1.04	+11 28.2	1.967	2.813	12.3	19.3
1 22	9 59.13	+15 49.5	1.928	2.848	8.5	20.4	1 22	9 56.45	+11 57.1	1.874	2.792	8.9	19.1
2 1	9 51.21	+16 3.1	1.879	2.846	4.6	20.1	2 1	9 49.88	+12 36.9	1.806	2.772	5.0	18.8
2 11	9 42.11	+16 17.5	1.858	2.844	0.9	19.9	2 11	9 42.00	+13 23.5	1.766	2.752	0.7	18.5
2 21	9 32.81	+16 28.8	1.866	2.842	4.0	20.1	2 21	9 33.71	+14 11.4	1.754	2.732	3.7	18.7
3 2	9 24.37	+16 33.6	1.904	2.841	8.0	20.3	3 2	9 26.05	+14 55.3	1.771	2.713	8.0	18.9
3 12	9 17.66	+16 29.9	1.967	2.839	11.5	20.5	3 12	9 19.96	+15 30.6	1.813	2.694	11.9	19.1
3 22	9 13.23	+16 17.3	2.052	2.838	14.6	20.7	3 22	9 16.11	+15 54.8	1.876	2.675	15.3	19.2
34630	2000 <i>UX</i> ₁₀₇		2 12.4 185°12'	4°6/ 8.0 18			125451	2001 <i>VW</i> ₁₂₅		2 12.4 150°97'	1°2/13.2 18		
1 12	10 4.72	+25 1.1	2.112	2.969	11.1	18.5	1 12	10 6.26	+8 56.8	1.516	2.359	15.4	21.1
1 22	9 58.94	+26 19.8	2.048	2.969	8.1	18.3	1 22	10 0.45	+9 20.0	1.447	2.362	11.2	20.9
2 1	9 51.14	+27 37.8	2.011	2.969	5.4	18.1	2 1	9 52.13	+9 58.6	1.400	2.364	6.5	20.6
2 11	9 42.10	+28 47.3	2.003	2.968	4.8	18.1	2 11	9 42.27	+10 47.4	1.380	2.366	1.6	20.3
2 21	9 32.83	+29 41.8	2.023	2.967	6.9	18.2	2 21	9 32.12	+11 39.8	1.388	2.368	4.3	20.5
3 2	9 24.39	+30 17.2	2.072	2.966	9.9	18.4	3 2	9 23.04	+12 28.8	1.423	2.369	9.2	20.8
3 12	9 17.69	+30 32.4	2.145	2.965	12.8	18.6	3 12	9 16.16	+13 8.9	1.483	2.371	13.7	21.0
3 22	9 13.32	+30 29.0	2.237	2.963	15.2	18.7	3 22	9 12.14	+13 37.0	1.563	2.372	17.4	21.3
377839	2006 <i>BQ</i> ₁₄₂		2 12.4 330°53'	0°2/12.3 18			330029	2005 <i>UH</i> ₁₇₂		2 12.4 122°01'	2°9/14.7 18		
1 12	10 0.91	+11 22.8	1.667	2.520	13.7	20.3	1 12	10 3.33	+3 53.2	1.935	2.753	13.6	21.3
1 22	9 56.55	+12 7.9	1.588	2.510	9.9	20.0	1 22	9 57.90	+4 5.4	1.862	2.759	10.3	21.1
2 1	9 49.97	+13 6.5	1.534	2.501	5.4	19.8	2 1	9 50.56	+4 33.8	1.813	2.764	6.6	20.9
2 11	9 41.97	+14 12.7	1.506	2.493	0.6	19.4	2 11	9 42.07	+5 15.4	1.791	2.769	3.3	20.7
2 21	9 33.61	+15 19.2	1.506	2.485	4.3	19.6	2 21	9 33.37	+6 5.6	1.798	2.774	4.0	20.8
3 2	9 26.07	+16 19.0	1.534	2.477	9.0	19.9	3 2	9 25.48	+6 58.9	1.833	2.779	7.5	21.0
3 12	9 20.41	+17 6.5	1.586	2.470	13.2	20.1	3 12	9 19.26	+7 49.7	1.895	2.784	11.1	21.2
3 22	9 17.28	+17 38.9	1.658	2.463	16.7	20.3	3 22	9 15.25	+8 33.7	1.980	2.789	14.2	21.4
99338	2001 <i>XB</i> ₂₄		2 12.4 96°87'	6°6/ 6.9 18			208216	2000 <i>SK</i> ₁₀₃		2 12.4 151°32'	3°2/ 9.1 18		
1 12	10 6.45	+29 28.1	1.829	2.689	12.3	18.8	1 12	10 4.43					

EPHEMERIDES

2 12.4

2 12.4

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
496274	2012 <i>TN</i> ₁₂₁	2 12.4 186°24		1°8/14.2 17			193825	2001 <i>QT</i> ₂₇	2 12.4 152°95		0°8/11.9 18		
1 12	10 1.61	+ 5 52.7	2.677	3.489	10.4	22.1	1 12	10 9.07	+13 58.4	1.785	2.628	13.4	20.4
1 22	9 56.28	+ 6 7.4	2.593	3.489	7.7	21.9	1 22	10 2.13	+14 31.2	1.719	2.636	9.6	20.2
2 1	9 49.54	+ 6 32.8	2.535	3.488	4.8	21.7	2 1	9 52.94	+15 12.2	1.678	2.644	5.2	20.0
2 11	9 41.95	+ 7 6.4	2.507	3.487	2.1	21.6	2 11	9 42.41	+15 55.5	1.665	2.651	0.9	19.7
2 21	9 34.17	+ 7 45.0	2.509	3.486	2.9	21.6	2 21	9 31.72	+16 35.2	1.682	2.658	4.3	19.9
3 2	9 26.93	+ 8 25.0	2.541	3.484	5.9	21.8	3 2	9 22.06	+17 6.4	1.728	2.664	8.7	20.2
3 12	9 20.88	+ 9 2.6	2.602	3.482	8.8	22.0	3 12	9 14.45	+17 25.9	1.800	2.669	12.6	20.5
3 22	9 16.47	+ 9 35.1	2.687	3.480	11.3	22.2	3 22	9 9.46	+17 33.2	1.893	2.673	15.8	20.7
67523	2000 <i>RV</i> ₇₉	2 12.4 294°38		0°5/12.8 18			120755	1997 <i>WH</i> ₃₉	2 12.4 11°46		1°3/11.7 18		
1 12	10 4.06	+11 1.6	1.776	2.620	13.4	19.5	1 12	10 3.23	+14 7.7	1.129	2.003	17.2	18.9
1 22	9 58.68	+11 19.6	1.695	2.612	9.8	19.3	1 22	9 58.86	+14 48.0	1.072	2.005	12.3	18.6
2 1	9 51.11	+11 48.7	1.640	2.605	5.5	19.0	2 1	9 51.47	+15 41.5	1.037	2.008	6.6	18.3
2 11	9 42.16	+12 24.7	1.611	2.597	1.0	18.7	2 11	9 42.25	+16 39.4	1.026	2.012	1.4	18.0
2 21	9 32.87	+13 2.3	1.611	2.590	3.9	18.9	2 21	9 32.76	+17 32.1	1.040	2.017	5.9	18.3
3 2	9 24.41	+13 36.2	1.639	2.583	8.4	19.1	3 2	9 24.69	+18 11.6	1.077	2.023	11.5	18.6
3 12	9 17.80	+14 2.1	1.692	2.575	12.5	19.3	3 12	9 19.37	+18 33.4	1.136	2.030	16.4	18.9
3 22	9 13.68	+14 17.7	1.766	2.568	15.9	19.5	3 22	9 17.42	+18 36.5	1.212	2.038	20.4	19.2
351600	2005 <i>VT</i> ₃₂	2 12.4 178°09		2°7/10.5 18			271120	2003 <i>ST</i> ₁₅	2 12.4 216°61		2°1/14.6 17		
1 12	10 8.42	+17 57.4	1.695	2.549	13.5	21.3	1 12	10 1.80	+ 4 4.5	2.522	3.330	11.1	21.8
1 22	10 1.88	+18 57.0	1.627	2.551	9.6	21.0	1 22	9 56.57	+ 4 32.8	2.429	3.322	8.4	21.6
2 1	9 52.89	+20 2.7	1.585	2.552	5.3	20.8	2 1	9 49.79	+ 5 14.6	2.363	3.313	5.3	21.4
2 11	9 42.38	+21 6.4	1.571	2.553	2.7	20.6	2 11	9 42.03	+ 6 7.2	2.325	3.304	2.5	21.2
2 21	9 31.60	+22 0.3	1.585	2.553	5.8	20.8	2 21	9 34.00	+ 7 6.6	2.318	3.295	3.2	21.2
3 2	9 21.87	+22 38.9	1.628	2.552	10.0	21.0	3 2	9 26.49	+ 8 8.2	2.341	3.285	6.3	21.4
3 12	9 14.29	+22 59.6	1.694	2.551	13.9	21.3	3 12	9 20.21	+ 9 7.1	2.393	3.274	9.4	21.6
3 22	9 9.51	+23 3.0	1.781	2.549	17.1	21.5	3 22	9 15.68	+ 9 59.5	2.469	3.263	12.2	21.8
217052	2001 <i>QK</i> ₂₄₃	2 12.4 95°68		4°5/ 9.6 18			409169	2003 <i>UK</i> ₂₁₆	2 12.4 191°08		4°2/15.9 17		
1 12	10 11.48	+25 44.2	1.807	2.660	12.8	19.9	1 12	10 5.38	- 0 43.9	2.182	2.969	13.3	22.3
1 22	10 3.77	+26 13.1	1.754	2.673	9.3	19.7	1 22	9 59.29	- 0 41.3	2.094	2.968	10.4	22.1
2 1	9 53.74	+26 37.7	1.726	2.685	6.0	19.5	2 1	9 51.34	- 0 20.9	2.031	2.966	7.3	21.9
2 11	9 42.47	+26 51.2	1.727	2.698	4.6	19.4	2 11	9 42.23	+ 0 15.8	1.996	2.963	4.7	21.8
2 21	9 31.24	+26 49.0	1.756	2.711	6.8	19.6	2 21	9 32.83	+ 1 5.5	1.990	2.959	4.7	21.8
3 2	9 21.32	+26 29.5	1.813	2.723	10.1	19.8	3 2	9 24.09	+ 2 3.2	2.014	2.954	7.4	21.9
3 12	9 13.68	+25 54.1	1.895	2.735	13.4	20.0	3 12	9 16.85	+ 3 3.0	2.066	2.949	10.6	22.1
3 22	9 8.82	+25 5.9	1.997	2.747	16.1	20.3	3 22	9 11.71	+ 3 59.9	2.141	2.943	13.5	22.3
149248	2002 <i>SY</i> ₄₄	2 12.4 236°30		0°9/11.9 18			466839	2015 <i>BF</i> ₂₄₄	2 12.4 266°74		1°8/13.8 17		
1 12	10 7.91	+13 51.5	1.441	2.296	15.3	20.3	1 12	10 3.61	+ 7 42.5	2.111	2.938	12.3	21.2
1 22	10 1.88	+14 25.6	1.367	2.290	11.0	20.1	1 22	9 58.10	+ 7 44.4	2.024	2.929	9.1	21.0
2 1	9 53.05	+15 11.0	1.316	2.284	6.0	19.8	2 1	9 50.71	+ 7 57.7	1.962	2.920	5.5	20.7
2 11	9 42.42	+16 0.9	1.292	2.278	1.0	19.4	2 11	9 42.15	+ 8 19.7	1.928	2.911	2.1	20.5
2 21	9 31.36	+16 47.3	1.295	2.272	5.2	19.7	2 21	9 33.30	+ 8 46.9	1.924	2.902	3.5	20.6
3 2	9 21.40	+17 23.8	1.325	2.265	10.4	19.9	3 2	9 25.11	+ 9 15.2	1.949	2.893	7.2	20.8
3 12	9 13.85	+17 46.0	1.378	2.258	15.0	20.2	3 12	9 18.46	+ 9 40.6	2.000	2.884	10.8	21.0
3 22	9 9.45	+17 52.8	1.450	2.250	18.9	20.4	3 22	9 13.91	+10 0.2	2.074	2.875	13.9	21.2
429901	2012 <i>TO</i> ₉₆	2 12.4 29°16		6°4/18.9 18			145002	2005 <i>EY</i> ₂₀₄	2 12.4 236°50		1°9/11.0 18		
1 12	9 59.65	- 8 45.0	2.309	3.059	13.7	21.1	1 12	10 7.43	+17 31.0	1.959	2.807	12.2	21.0
1 22	9 55.11	- 8 50.7	2.225	3.060	11.4	21.0	1 22	10 1.04	+18 5.6	1.874	2.795	8.7	20.8
2 1	9 48.99	- 8 34.6	2.163	3.061	9.0	20.8	2 1	9 52.42	+18 45.3	1.815	2.782	4.8	20.5
2 11	9 41.89	- 7 56.7	2.127	3.062	7.0	20.7	2 11	9 42.38	+19 24.3	1.785	2.769	1.9	20.3
2 21	9 34.58	- 6 59.5	2.118	3.064	6.5	20.7	2 21	9 31.96	+19 57.0	1.785	2.756	4.8	20.5
3 2	9 27.86	- 5 47.8	2.137	3.065	7.8	20.7	3 2	9 22.34	+20 18.9	1.813	2.741	8.9	20.7
3 12	9 22.47	- 4 28.0	2.182	3.066	10.1	20.9	3 12	9 14.54	+20 27.6	1.867	2.727	12.7	20.9
3 22	9 18.90	- 3 6.7	2.252	3.068	12.5	21.0	3 22	9 9.23	+20 22.9	1.942	2.712	15.8	21.1
171973	2001 <i>TO</i> ₁₂₂	2 12.4 88°27		10°6/25.3 18			423621	2005 <i>WU</i> ₁₅₂	2 12.4 97°82		0°7/11.9 18		
1 12	10 2.06	-24 23.7	2.569	3.188	15.3	20.0	1 12	10 4.84	+13 57.9	1.891	2.738	12.6	21.8
1 22	9 56.75	-25 16.3	2.500	3.204	13.9	19.9	1 22	9 59.00	+14 32.0	1.828	2.748	9.0	21.6
2 1	9 49.85	-25 42.7	2.448	3.220	12.5	19.8	2 1	9 51.18	+15 13.8	1.790	2.757	4.8	21.4
2 11	9 42.00	-25 40.3	2.417	3.235	11.3	19.8	2 11	9 42.20	+15 58.1	1.781	2.767	0.8	21.1
2 21	9 33.97	-25 9.3	2.409	3.251	10.6	19.7	2 21	9 33.10	+16 39.1	1.801	2.777	4.1	21.4
3 2	9 26.57	-24 12.7	2.425	3.266	10.7	19.8	3 2	9 24.92	+17 12.3	1.849	2.786	8.2	21.6
3 12	9 20.54	-22 56.1	2.465	3.281	11.4	19.8	3 12	9 18.56	+17 34.5	1.923	2.795	11.8	21.9
3 22	9 16.37	-21 26.9	2.527	3.296	12.6	20.0	3 22	9 14.54	+17 44.7	2.019	2.805	14.8	22.1
254737	2005 <i>OY</i> ₁₅	2 12.4 90°92		1°8/13.7 18			493878	2015 <i>XR</i> ₁₁₀	2 12.4 264°56		1°3/11.5 18		
1 12	10 4.94	+ 7 39.1	1.757	2.590	14.1	20.9	1 12	10 4.76	+13 10.0	1.486	2.343	14.9	20.9
1 22	9 59.20	+ 7 47.5	1.687	2.596	10.4	20.7	1 22	9 59.63	+14 13.2	1.408	2.333	10.6	20.7
2 1	9 51.34	+ 8 9.6	1.641	2.601	6.2	20.4	2 1	9 51.85	+15 30.7	1.355	2.324	5.8	20.4
2 11	9 42.20	+ 8 41.8	1.623	2.606	2.2	20.2	2 11	9 42.32	+16 54.4	1.328	2.314	1.3	20.0
2 21	9 32.86	+ 9 19.3	1.633	2.612	3.9	20.3	2 21	9 32.30	+18 14.9	1.329	2.304	5.3	20.3
3 2	9 24.45	+ 9 56.8	1.671	2.617	8.1	20.6	3 2	9 23.23	+19 23.4	1.357	2.294	10.4	20.5
3 12	9 17.94	+10 29.4	1.735	2.623	12.0	20.8	3 12	9 16.38	+20 14.1	1.408	2.284	15.0	20.8
3 22	9 13.88	+10 54.0	1.820	2.628	15.3	21.0	3 22	9 12.51	+20 45.1	1.478	2.274	18.8	21.0
130751	2000 <i>SH</i> ₂₇₄	2 12.4 144°61		2°2/14.1 18			47797	2000 <i>EQ</i> ₄₀	2 12.4 296°16		1°9/14.2 18		
1 12	10 5.47	+ 5 11.8	1.812	2.634	14.2	20.5	1 12	10 0.55	+ 5 13.6	2.			

EPHEMERIDES

2 12.4

2 12.4

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
165659	Michaelhicks		2 12.4 115°53	3°1/ 8.4 18			431173	2006 <i>RF</i> ₉₁		2 12.4 228°06	0°3/12.1 17		
1 12	10 3.30	+22 35.7	2.930	3.776	8.6	20.6	1 12	10 2.11	+13 18.6	2.902	3.735	9.1	22.3
1 22	9 57.41	+24 4.0	2.881	3.799	6.1	20.5	1 22	9 56.65	+13 47.4	2.810	3.723	6.5	22.1
2 1	9 50.14	+25 32.1	2.862	3.822	3.9	20.4	2 1	9 49.79	+14 22.1	2.745	3.710	3.6	21.9
2 11	9 42.07	+26 54.2	2.875	3.844	3.2	20.3	2 11	9 42.06	+14 59.5	2.710	3.697	0.5	21.6
2 21	9 33.91	+28 5.4	2.920	3.865	4.9	20.5	2 21	9 34.10	+15 35.9	2.707	3.683	2.9	21.8
3 2	9 26.36	+29 2.3	2.994	3.886	7.3	20.7	3 2	9 26.60	+16 8.2	2.735	3.669	6.0	22.0
3 12	9 20.05	+29 43.5	3.096	3.907	9.5	20.8	3 12	9 20.21	+16 33.7	2.790	3.654	8.8	22.1
3 22	9 15.39	+30 9.5	3.220	3.926	11.4	21.0	3 22	9 15.39	+16 51.0	2.870	3.639	11.3	22.3
212999	4330 <i>T</i> ₋₃		2 12.4 106°93	0°4/12.8 18			376754	1999 <i>VV</i> ₄₁		2 12.4 209°55	0°9/11.7 17		
1 12	10 1.04	+10 16.8	2.574	3.405	10.2	20.7	1 12	10 4.55	+15 1.7	2.344	3.185	10.7	21.9
1 22	9 55.88	+10 53.3	2.508	3.419	7.3	20.5	1 22	9 58.62	+15 30.6	2.263	3.180	7.6	21.7
2 1	9 49.33	+11 38.2	2.469	3.432	4.1	20.3	2 1	9 50.95	+16 5.3	2.208	3.174	4.1	21.5
2 11	9 41.97	+12 27.7	2.460	3.446	0.7	20.1	2 11	9 42.21	+16 41.5	2.183	3.169	0.9	21.2
2 21	9 34.53	+13 17.6	2.481	3.459	2.8	20.3	2 21	9 33.24	+17 14.7	2.188	3.162	3.7	21.4
3 2	9 27.71	+14 3.8	2.532	3.472	6.1	20.5	3 2	9 24.93	+17 41.3	2.223	3.156	7.2	21.7
3 12	9 22.15	+14 43.1	2.611	3.485	9.0	20.7	3 12	9 18.08	+17 58.5	2.284	3.148	10.5	21.9
3 22	9 18.26	+15 13.6	2.714	3.497	11.5	20.9	3 22	9 13.23	+18 5.5	2.369	3.141	13.3	22.0
433574	2013 <i>YC</i> ₂₈		2 12.4 39°19	5°3/16.1 18			70110	1999 <i>LK</i>		2 12.4 229°58	3°6/ 9.0 18		
1 12	10 4.58	- 0 44.4	1.987	2.781	14.2	20.0	1 12	10 6.76	+20 59.3	2.117	2.967	11.3	20.2
1 22	9 58.71	- 1 29.4	1.919	2.793	11.2	19.8	1 22	10 0.57	+22 23.6	2.031	2.952	8.1	20.0
2 1	9 50.99	- 1 57.6	1.875	2.805	8.1	19.7	2 1	9 52.21	+23 52.4	1.974	2.937	4.9	19.7
2 11	9 42.20	- 2 8.8	1.858	2.818	5.7	19.6	2 11	9 42.39	+25 17.9	1.946	2.920	3.7	19.6
2 21	9 33.26	- 2 4.7	1.869	2.831	5.7	19.6	2 21	9 32.10	+26 32.2	1.948	2.903	6.2	19.7
3 2	9 25.16	- 1 48.8	1.908	2.844	8.0	19.7	3 2	9 22.47	+27 29.4	1.980	2.885	9.7	19.9
3 12	9 18.72	- 1 26.0	1.972	2.858	10.9	19.9	3 12	9 14.53	+28 6.9	2.037	2.866	13.0	20.1
3 22	9 14.47	- 1 0.9	2.060	2.872	13.6	20.1	3 22	9 8.97	+28 25.0	2.114	2.846	15.9	20.3
95718	2003 <i>BX</i> ₂₆		2 12.4 317°37	2°7/13.7 18			393427	2001 <i>SK</i> ₁₂₃		2 12.4 126°64	7°0/19.2 18		
1 12	10 4.77	+ 7 59.0	1.209	2.064	17.7	19.0	1 12	10 4.77	-10 23.8	1.775	2.526	17.3	21.3
1 22	10 0.14	+ 7 44.5	1.126	2.045	13.3	18.7	1 22	9 59.08	- 9 45.1	1.703	2.541	14.2	21.1
2 1	9 52.38	+ 7 47.3	1.063	2.026	8.2	18.3	2 1	9 51.29	- 8 34.3	1.651	2.555	10.9	20.9
2 11	9 42.42	+ 8 5.0	1.025	2.008	3.2	18.0	2 11	9 42.26	- 6 53.2	1.625	2.569	8.0	20.8
2 21	9 31.73	+ 8 32.5	1.011	1.991	5.3	18.1	2 21	9 33.03	- 4 48.1	1.627	2.583	7.1	20.7
3 2	9 22.06	+ 9 3.2	1.022	1.974	11.0	18.3	3 2	9 24.73	- 2 28.9	1.658	2.595	8.9	20.9
3 12	9 14.98	+ 9 30.1	1.054	1.959	16.4	18.6	3 12	9 18.30	- 0 7.6	1.716	2.607	11.9	21.1
3 22	9 11.41	+ 9 48.2	1.104	1.944	21.1	18.8	3 22	9 14.31	+ 2 5.9	1.799	2.618	15.0	21.3
380660	2005 <i>EV</i> ₅₄		2 12.4 58°47	2°5/10.6 18			375988	2009 <i>WG</i> ₂₆₄		2 12.4 45°62	0°8/13.0 18		
1 12	10 6.13	+20 24.3	2.028	2.881	11.6	21.0	1 12	10 4.07	+10 34.5	1.977	2.814	12.5	20.6
1 22	9 59.87	+20 47.1	1.963	2.885	8.3	20.8	1 22	9 58.44	+10 43.8	1.903	2.816	9.1	20.4
2 1	9 51.64	+21 11.0	1.924	2.890	4.7	20.6	2 1	9 50.90	+11 2.9	1.855	2.818	5.2	20.1
2 11	9 42.28	+21 30.8	1.913	2.894	2.5	20.5	2 11	9 42.22	+11 28.1	1.835	2.821	1.2	19.8
2 21	9 32.82	+21 42.2	1.931	2.899	4.9	20.7	2 21	9 33.34	+11 55.2	1.844	2.823	3.5	20.0
3 2	9 24.28	+21 42.3	1.978	2.903	8.5	20.9	3 2	9 25.27	+12 20.0	1.882	2.825	7.5	20.3
3 12	9 17.55	+21 30.3	2.051	2.908	11.8	21.1	3 12	9 18.89	+12 38.9	1.945	2.827	11.2	20.5
3 22	9 13.14	+21 6.9	2.145	2.913	14.6	21.3	3 22	9 14.73	+12 50.0	2.031	2.830	14.3	20.7
371767	2007 <i>GE</i> ₆₁		2 12.4 165°79	2°1/14.2 16			48112	2001 <i>FV</i> ₇₄		2 12.4 303°89	2°3/14.1 18		
1 12	10 3.34	+ 5 54.7	2.163	2.983	12.3	21.3	1 12	10 2.35	+ 5 20.5	1.552	2.389	15.4	19.0
1 22	9 57.79	+ 6 7.3	2.085	2.985	9.2	21.1	1 22	9 57.76	+ 5 50.7	1.471	2.380	11.6	18.7
2 1	9 50.50	+ 6 32.7	2.032	2.987	5.6	20.9	2 1	9 50.77	+ 6 41.2	1.412	2.371	7.1	18.4
2 11	9 42.15	+ 7 8.3	2.008	2.989	2.4	20.7	2 11	9 42.22	+ 7 47.7	1.379	2.362	2.8	18.2
2 21	9 33.58	+ 7 49.9	2.013	2.990	3.4	20.7	2 21	9 33.23	+ 9 3.5	1.374	2.354	4.3	18.2
3 2	9 25.73	+ 8 32.9	2.047	2.992	7.0	21.0	3 2	9 25.09	+10 20.1	1.396	2.345	9.0	18.5
3 12	9 19.37	+ 9 12.8	2.109	2.993	10.3	21.2	3 12	9 18.94	+11 29.7	1.442	2.337	13.5	18.7
3 22	9 15.04	+ 9 46.3	2.193	2.994	13.3	21.4	3 22	9 15.50	+12 26.9	1.509	2.329	17.4	18.9
522633	2016 <i>FV</i> ₆₇		2 12.4 152°21	2°7/ 9.9 17			341543	2007 <i>TA</i> ₄₅₃		2 12.4 270°46	3°7/15.8 17		
1 12	10 3.24	+19 35.1	2.237	3.089	10.7	21.8	1 12	10 0.85	+ 0 28.8	2.373	3.170	12.1	20.9
1 22	9 57.74	+20 37.8	2.171	3.093	7.6	21.6	1 22	9 56.02	+ 0 31.4	2.277	3.157	9.4	20.7
2 1	9 50.47	+21 43.6	2.132	3.097	4.3	21.4	2 1	9 49.56	+ 0 49.6	2.206	3.144	6.5	20.5
2 11	9 42.14	+22 46.4	2.122	3.101	2.7	21.3	2 11	9 42.06	+ 1 22.1	2.162	3.131	4.1	20.3
2 21	9 33.63	+23 40.4	2.142	3.105	5.0	21.4	2 21	9 34.25	+ 2 5.9	2.148	3.118	4.2	20.3
3 2	9 25.86	+24 21.4	2.191	3.108	8.3	21.6	3 2	9 26.96	+ 2 56.8	2.162	3.105	6.8	20.4
3 12	9 19.64	+24 47.1	2.266	3.111	11.3	21.8	3 12	9 20.95	+ 3 49.7	2.204	3.092	9.8	20.6
3 22	9 15.49	+24 57.7	2.362	3.113	13.9	22.0	3 22	9 16.75	+ 4 40.1	2.269	3.078	12.6	20.8
160726	2000 <i>QS</i> ₁₇₉		2 12.4 145°92	1°1/11.5 18			384174	2009 <i>BK</i> ₄₄		2 12.4 55°20	0°4/12.8 18		
1 12	10 6.19	+13 35.0	1.736	2.584	13.5	20.1	1 12	10 4.18	+11 57.6	2.104	2.943	11.9	20.9
1 22	10 0.18	+14 34.5	1.671	2.592	9.6	19.9	1 22	9 58.37	+12 1.7	2.037	2.951	8.5	20.7
2 1	9 51.93	+15 44.2	1.631	2.599	5.2	19.7	2 1	9 50.79	+12 13.4	1.996	2.961	4.8	20.5
2 11	9 42.33	+16 56.8	1.620	2.606	1.2	19.4	2 11	9 42.21	+12 29.4	1.984	2.970	0.8	20.2
2 21	9 32.52	+18 4.8	1.637	2.612	4.6	19.7	2 21	9 33.52	+12 45.9	2.001	2.979	3.3	20.4
3 2	9 23.69	+19 1.7	1.683	2.618	9.0	19.9	3 2	9 25.66	+12 59.6	2.047	2.989	7.1	20.7
3 12	9 16.85	+19 43.4	1.754	2.623	12.9	20.2	3 12	9 19.41	+13 7.8	2.119	2.998	10.5	20.9
3 22	9 12.60	+20 8.9	1.847	2.628	16.1	20.4	3 22	9 15.26	+13 9.0	2.214	3.008	13.4	21.1
5070	2001 <i>OB</i> ₆		2 12.4 77°85	3°8/16.0 18			505176	2012 <i>TG</i> ₄₈		2 12.4 85°05	5°8/18.5 18		
1 12	10 0.89	- 0 8.4	2.213	3.010	12.8	19.2	1 12	9 59.					

EPHEMERIDES

2 12.4

2 12.5

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
12634	LOFAR		2 12.4 260°23	1°4/11.5	18		189433	1998 QR₄₉		2 12.4 139°97	1°0/11.7	18	
1 12	10 6.35	+15 20.6	1.738	2.590	13.3	19.5	1 12	10 7.88	+13 1.2	1.723	2.567	13.8	20.6
1 22	10 0.52	+15 57.6	1.653	2.575	9.6	19.3	1 22	10 1.38	+14 1.4	1.661	2.580	9.8	20.4
2 1	9 52.27	+16 43.1	1.593	2.561	5.2	19.0	2 1	9 52.60	+15 12.1	1.625	2.592	5.3	20.2
2 11	9 42.43	+17 31.0	1.560	2.546	1.4	18.7	2 11	9 42.49	+16 25.9	1.617	2.603	1.0	19.9
2 21	9 32.13	+18 14.7	1.556	2.530	4.9	18.9	2 21	9 32.20	+17 35.2	1.639	2.613	4.6	20.2
3 2	9 22.65	+18 48.5	1.580	2.515	9.5	19.1	3 2	9 22.96	+18 33.4	1.689	2.623	9.0	20.4
3 12	9 15.15	+19 8.7	1.628	2.499	13.6	19.3	3 12	9 15.78	+19 16.4	1.764	2.632	12.9	20.7
3 22	9 10.34	+19 14.4	1.697	2.483	17.2	19.5	3 22	9 11.23	+19 43.4	1.861	2.640	16.1	20.9
200856	2001 YF₆₂		2 12.4 76°11	2°1/11.1	18		450965	2008 NW₃		2 12.4 191°19	2°4/14.1	18	
1 12	10 9.32	+16 0.2	1.379	2.238	15.7	20.5	1 12	10 8.14	+ 5 30.7	1.825	2.644	14.2	22.7
1 22	10 2.57	+16 54.3	1.338	2.264	11.0	20.3	1 22	10 1.58	+ 5 44.1	1.744	2.643	10.7	22.5
2 1	9 53.23	+17 55.7	1.320	2.289	5.9	20.1	2 1	9 52.76	+ 6 13.4	1.686	2.641	6.6	22.2
2 11	9 42.52	+18 55.4	1.329	2.314	2.1	19.9	2 11	9 42.52	+ 6 55.2	1.657	2.638	2.9	22.0
2 21	9 31.88	+19 45.4	1.366	2.339	5.7	20.2	2 21	9 31.94	+ 7 44.6	1.657	2.635	4.1	22.1
3 2	9 22.76	+20 20.0	1.429	2.364	10.3	20.5	3 2	9 22.20	+ 8 35.7	1.686	2.630	8.2	22.3
3 12	9 16.21	+20 37.1	1.516	2.388	14.4	20.8	3 12	9 14.34	+ 9 22.8	1.741	2.625	12.2	22.5
3 22	9 12.70	+20 37.7	1.622	2.412	17.7	21.1	3 22	9 9.01	+10 1.9	1.819	2.618	15.7	22.7
170	Maria		2 12.4 40°55	4°1/14.5	18		178947	2001 QG₁₂₄		2 12.5 177°03	0°6/11.9	18	
1 12	10 8.89	+ 5 5.3	1.598	2.421	15.7	13.2	1 12	10 4.24	+12 34.2	2.228	3.066	11.3	21.0
1 22	10 2.21	+ 4 19.4	1.527	2.426	12.0	13.0	1 22	9 58.47	+13 27.4	2.152	3.068	8.1	20.8
2 1	9 53.10	+ 3 47.9	1.480	2.430	7.8	12.7	2 1	9 50.92	+14 29.7	2.104	3.069	4.4	20.5
2 11	9 42.52	+ 3 30.2	1.459	2.435	4.4	12.5	2 11	9 42.28	+15 35.7	2.084	3.071	0.7	20.3
2 21	9 31.71	+ 3 24.4	1.466	2.440	5.2	12.6	2 21	9 33.41	+16 39.6	2.096	3.071	3.7	20.5
3 2	9 21.97	+ 3 26.9	1.501	2.445	9.0	12.8	3 2	9 25.23	+17 36.2	2.137	3.071	7.4	20.7
3 12	9 14.40	+ 3 33.3	1.561	2.451	13.0	13.1	3 12	9 18.56	+18 21.7	2.205	3.070	10.8	20.9
3 22	9 9.63	+ 3 39.4	1.642	2.456	16.4	13.3	3 22	9 13.94	+18 54.5	2.296	3.069	13.6	21.1
343155	2009 HY₃₉		2 12.4 52°85	0°6/13.0	18		184670	2005 SP₆₁		2 12.5 176°89	2°5/14.8	18	
1 12	10 0.36	+ 9 23.9	2.238	3.073	11.4	20.8	1 12	10 3.49	+ 3 25.2	2.358	3.163	11.9	21.3
1 22	9 55.63	+10 1.2	2.167	3.079	8.2	20.6	1 22	9 57.83	+ 3 48.7	2.276	3.166	9.0	21.1
2 1	9 49.30	+10 49.3	2.123	3.086	4.6	20.4	2 1	9 50.53	+ 4 26.6	2.219	3.167	5.7	20.9
2 11	9 42.03	+11 43.8	2.107	3.093	1.0	20.1	2 11	9 42.23	+ 5 16.1	2.191	3.169	2.9	20.7
2 21	9 34.61	+12 39.9	2.121	3.100	3.1	20.3	2 21	9 33.71	+ 6 13.0	2.193	3.169	3.4	20.7
3 2	9 27.86	+13 32.5	2.164	3.107	6.8	20.5	3 2	9 25.82	+ 7 12.3	2.225	3.169	6.6	20.9
3 12	9 22.51	+14 17.7	2.234	3.114	10.0	20.8	3 12	9 19.30	+ 8 9.2	2.286	3.168	9.7	21.1
3 22	9 19.05	+14 52.9	2.327	3.121	12.8	21.0	3 22	9 14.66	+ 8 59.7	2.370	3.167	12.5	21.3
466831	2015 BT₂₁₂		2 12.4 9°57	1°7/13.8	18		120137	2003 GW₁₄		2 12.5 169°54	3°4/9.1	18	
1 12	10 1.82	+ 6 59.4	1.814	2.649	13.6	20.8	1 12	10 3.77	+19 56.6	2.056	2.912	11.4	19.9
1 22	9 57.01	+ 7 24.8	1.740	2.650	10.1	20.6	1 22	9 58.34	+21 26.8	1.990	2.914	8.1	19.7
2 1	9 50.20	+ 8 5.2	1.690	2.650	6.0	20.3	2 1	9 50.92	+23 1.4	1.951	2.916	4.8	19.5
2 11	9 42.16	+ 8 56.7	1.668	2.651	2.1	20.1	2 11	9 42.28	+24 32.3	1.942	2.918	3.5	19.4
2 21	9 33.87	+ 9 53.6	1.673	2.653	3.7	20.2	2 21	9 33.37	+25 51.8	1.962	2.919	5.9	19.6
3 2	9 26.40	+10 49.8	1.707	2.654	7.9	20.4	3 2	9 25.24	+26 54.3	2.011	2.920	9.3	19.8
3 12	9 20.66	+11 39.7	1.766	2.656	11.7	20.7	3 12	9 18.79	+27 37.1	2.084	2.921	12.5	20.0
3 22	9 17.22	+12 19.5	1.847	2.658	15.0	20.9	3 22	9 14.61	+28 0.7	2.179	2.921	15.1	20.2
331232	2011 BT₈₃		2 12.4 212°49	2°9/15.1	18		258408	2001 XH₁₃₅		2 12.5 105°85	2°3/10.6	18	
1 12	10 1.55	+ 2 9.4	2.047	2.858	13.2	21.0	1 12	10 4.72	+17 29.9	1.870	2.725	12.4	20.8
1 22	9 56.68	+ 2 42.5	1.964	2.856	10.1	20.8	1 22	9 59.02	+18 28.5	1.810	2.734	8.7	20.6
2 1	9 49.98	+ 3 33.8	1.905	2.853	6.6	20.6	2 1	9 51.27	+19 32.4	1.775	2.743	4.8	20.3
2 11	9 42.14	+ 4 40.3	1.873	2.851	3.4	20.4	2 11	9 42.32	+20 34.8	1.769	2.752	2.3	20.2
2 21	9 34.03	+ 5 56.5	1.871	2.848	3.8	20.4	2 21	9 33.22	+21 28.9	1.792	2.761	5.1	20.4
3 2	9 26.58	+ 7 16.1	1.898	2.845	7.2	20.6	3 2	9 25.05	+22 9.6	1.843	2.769	8.9	20.6
3 12	9 20.65	+ 8 32.3	1.952	2.842	10.8	20.8	3 12	9 18.74	+22 34.6	1.919	2.778	12.4	20.9
3 22	9 16.79	+ 9 40.1	2.029	2.838	13.9	21.0	3 22	9 14.83	+22 43.7	2.016	2.786	15.3	21.1
240875	2006 DW₁₃		2 12.4 320°48	0°9/11.9	18		256339	2006 XM₃₀		2 12.5 39°47	2°3/10.8	18	
1 12	10 6.21	+14 16.2	1.305	2.168	16.1	20.1	1 12	10 3.33	+15 52.2	1.456	2.321	14.6	20.0
1 22	10 0.92	+14 37.0	1.232	2.159	11.6	19.8	1 22	9 58.41	+16 58.3	1.403	2.332	10.3	19.7
2 1	9 52.68	+15 8.8	1.181	2.150	6.4	19.5	2 1	9 51.07	+18 13.3	1.374	2.343	5.6	19.5
2 11	9 42.51	+15 45.0	1.156	2.142	1.0	19.1	2 11	9 42.30	+19 28.3	1.371	2.355	2.3	19.3
2 21	9 31.88	+16 18.2	1.156	2.134	5.3	19.4	2 21	9 33.40	+20 34.4	1.396	2.368	5.7	19.6
3 2	9 22.42	+16 41.9	1.182	2.126	10.9	19.7	3 2	9 25.67	+21 24.8	1.446	2.381	10.2	19.8
3 12	9 15.51	+16 52.1	1.230	2.119	15.8	19.9	3 12	9 20.18	+21 56.3	1.521	2.394	14.3	20.1
3 22	9 11.92	+16 47.8	1.297	2.113	19.9	20.2	3 22	9 17.49	+22 8.6	1.614	2.408	17.6	20.4
42079	2001 AD₇		2 12.4 189°20	3°9/9.2	18		46770	1998 HY₅		2 12.5 111°57	1°8/13.7	18	
1 12	10 6.97	+21 39.5	1.879	2.735	12.3	19.7	1 12	10 6.23	+ 6 19.4	1.393	2.233	16.7	19.4
1 22	10 0.79	+22 55.6	1.811	2.734	8.8	19.5	1 22	10 0.58	+ 7 0.4	1.331	2.243	12.3	19.1
2 1	9 52.33	+24 14.5	1.770	2.733	5.4	19.3	2 1	9 52.32	+ 8 1.8	1.291	2.252	7.3	18.8
2 11	9 42.46	+25 27.5	1.757	2.731	4.0	19.2	2 11	9 42.47	+ 9 17.5	1.277	2.261	2.3	18.6
2 21	9 32.29	+26 27.1	1.773	2.729	6.6	19.3	2 21	9 32.39	+10 38.8	1.290	2.270	4.5	18.7
3 2	9 23.03	+27 8.2	1.817	2.726	10.2	19.5	3 2	9 23.49	+11 56.4	1.330	2.278	9.5	19.0
3 12	9 15.74	+27 29.0	1.886	2.723	13.5	19.7	3 12	9 16.94	+13 2.8	1.394	2.286	14.1	19.3
3 22	9 11.03	+27 30.7	1.974	2.719	16.4	19.9	3 22	9 13.37	+13 53.7	1.479	2.294	17.9	19.6
518581	2007 PB₅₁		2 12.4 111°44	1°3/11.4	17		350689	2001 VB₂₇		2 12.5 72°33	0°5/12.7	18	
1 12	10 5.46	+17 10.4	2.135	2.982	11.4	21.7	1 12	10					

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
149598	2004 <i>CP</i> ₁₁₀		2 12.5 245°24	1°8/11.3	18		61799	2000 <i>QC</i> ₁₈₄		2 12.5 128°93	1°6/11.2	18	
1 12	10 5.57	+13 42.4	1.323	2.186	16.0	20.3	1 12	10 8.82	+15 50.7	1.995	2.837	12.3	19.9
1 22	10 0.40	+14 53.8	1.257	2.185	11.4	20.0	1 22	10 1.76	+16 43.4	1.939	2.856	8.6	19.7
2 1	9 52.37	+16 19.8	1.214	2.184	6.2	19.7	2 1	9 52.72	+17 41.8	1.909	2.875	4.7	19.5
2 11	9 42.51	+17 50.6	1.197	2.183	1.8	19.4	2 11	9 42.58	+18 39.5	1.909	2.893	1.6	19.3
2 21	9 32.25	+19 15.4	1.207	2.182	5.9	19.7	2 21	9 32.36	+19 30.4	1.939	2.911	4.5	19.5
3 2	9 23.17	+20 24.7	1.243	2.180	11.2	20.0	3 2	9 23.15	+20 9.9	1.999	2.927	8.3	19.8
3 12	9 16.58	+21 13.0	1.301	2.179	15.9	20.2	3 12	9 15.80	+20 35.8	2.085	2.942	11.7	20.1
3 22	9 13.21	+21 39.4	1.378	2.178	19.7	20.5	3 22	9 10.83	+20 47.8	2.193	2.956	14.5	20.3
154388	2003 <i>AH</i> ₁₇		2 12.5 99°35	3°4/10.1	18		495873	2004 <i>RA</i> ₉₁		2 12.5 83°70	3°6/15.6	18	
1 12	10 9.53	+18 34.6	1.481	2.340	14.8	19.6	1 12	10 5.05	+0 51.9	2.053	2.852	13.6	21.6
1 22	10 2.75	+19 53.4	1.436	2.362	10.4	19.4	1 22	9 58.92	+1 2.8	1.999	2.882	10.4	21.5
2 1	9 53.39	+21 17.0	1.416	2.384	5.9	19.2	2 1	9 51.09	+1 30.8	1.970	2.911	7.0	21.3
2 11	9 42.62	+22 35.1	1.424	2.405	3.4	19.1	2 11	9 42.36	+2 13.0	1.969	2.940	4.1	21.2
2 21	9 31.82	+23 38.7	1.460	2.425	6.5	19.3	2 21	9 33.63	+3 5.1	1.996	2.969	4.2	21.2
3 2	9 22.42	+24 22.3	1.522	2.445	10.8	19.6	3 2	9 25.81	+4 1.5	2.054	2.997	7.0	21.5
3 12	9 15.50	+24 44.5	1.609	2.464	14.6	19.9	3 12	9 19.63	+4 56.7	2.138	3.024	10.1	21.7
3 22	9 11.57	+24 46.9	1.714	2.483	17.7	20.2	3 22	9 15.53	+5 46.4	2.246	3.051	12.9	21.9
349966	2010 <i>ER</i> ₇		2 12.5 200°57	5°0/18.4	17		503831	2017 <i>KR</i> ₂₆		2 12.5 150°39	12°3/26.2	18	
1 12	9 59.61	-7 31.6	2.988	3.730	11.1	21.5	1 12	10 5.47	-27 51.8	2.421	3.009	16.8	21.0
1 22	9 54.86	-7 29.8	2.894	3.727	9.2	21.4	1 22	9 59.46	-28 58.3	2.345	3.017	15.5	20.9
2 1	9 48.84	-7 11.2	2.824	3.723	7.1	21.2	2 1	9 51.56	-29 36.0	2.285	3.025	14.2	20.8
2 11	9 42.04	-6 36.3	2.781	3.719	5.5	21.1	2 11	9 42.44	-29 41.1	2.245	3.033	13.1	20.7
2 21	9 35.05	-5 47.2	2.767	3.715	5.1	21.1	2 21	9 33.02	-29 12.6	2.226	3.040	12.4	20.7
3 2	9 28.49	-4 47.3	2.783	3.710	6.3	21.2	3 2	9 24.25	-28 12.8	2.230	3.046	12.4	20.7
3 12	9 22.94	-3 41.2	2.827	3.705	8.2	21.3	3 12	9 17.03	-26 48.0	2.257	3.052	13.0	20.8
3 22	9 18.83	-2 33.6	2.896	3.700	10.3	21.4	3 22	9 11.95	-25 6.5	2.304	3.057	14.1	20.8
209150	2003 <i>TT</i> ₂₁		2 12.5 193°67	2°2/10.8	18		447187	2005 <i>SM</i> ₁₀₈		2 12.5 118°78	1°0/13.1	18	
1 12	10 7.00	+17 18.9	1.790	2.642	12.9	20.9	1 12	10 8.55	+9 1.8	1.556	2.395	15.3	21.9
1 22	10 0.84	+18 8.2	1.718	2.641	9.2	20.7	1 22	10 1.98	+9 31.3	1.497	2.409	11.1	21.7
2 1	9 52.39	+19 3.8	1.672	2.640	5.1	20.4	2 1	9 53.00	+10 15.3	1.461	2.424	6.3	21.4
2 11	9 42.52	+19 58.5	1.654	2.638	2.2	20.3	2 11	9 42.63	+11 8.2	1.452	2.438	1.5	21.1
2 21	9 32.37	+20 45.6	1.665	2.635	5.2	20.4	2 21	9 32.11	+12 3.1	1.472	2.451	4.2	21.4
3 2	9 23.15	+21 19.8	1.704	2.633	9.4	20.7	3 2	9 22.78	+12 53.3	1.520	2.464	8.9	21.7
3 12	9 15.92	+21 38.5	1.768	2.629	13.2	20.9	3 12	9 15.68	+13 33.7	1.592	2.476	13.1	21.9
3 22	9 11.31	+21 41.7	1.853	2.626	16.4	21.1	3 22	9 11.39	+14 1.8	1.686	2.488	16.6	22.2
358095	2006 <i>KG</i> ₉		2 12.5 261°41	2°6/10.6	17		285702	2000 <i>SS</i> ₂₁₆		2 12.5 126°58	4°1/9.4	18	
1 12	10 6.84	+17 55.1	1.674	2.531	13.5	21.5	1 12	10 8.40	+21 41.7	1.710	2.567	13.2	20.6
1 22	10 1.03	+18 47.3	1.591	2.515	9.7	21.2	1 22	10 1.85	+22 54.3	1.656	2.579	9.4	20.4
2 1	9 52.66	+19 46.8	1.532	2.499	5.4	21.0	2 1	9 52.92	+24 8.4	1.627	2.591	5.7	20.2
2 11	9 42.58	+20 45.9	1.500	2.483	2.6	20.7	2 11	9 42.61	+25 15.1	1.627	2.602	4.2	20.1
2 21	9 31.99	+21 36.8	1.497	2.467	5.8	20.9	2 21	9 32.17	+26 6.7	1.655	2.613	6.8	20.3
3 2	9 22.27	+22 13.3	1.522	2.450	10.3	21.1	3 2	9 22.88	+26 38.8	1.711	2.623	10.5	20.5
3 12	9 14.63	+22 32.2	1.570	2.433	14.5	21.3	3 12	9 15.79	+26 50.3	1.790	2.633	13.9	20.8
3 22	9 9.83	+22 33.4	1.638	2.415	18.0	21.5	3 22	9 11.45	+26 43.3	1.889	2.642	16.8	21.0
370729	2004 <i>RV</i> ₇₄		2 12.5 133°07	5°3/8.1	18		205863	2002 <i>EO</i> ₈₈		2 12.5 286°15	1°0/11.8	18	
1 12	10 9.00	+29 6.4	2.192	3.041	11.0	21.0	1 12	10 4.71	+13 18.1	1.520	2.376	14.6	19.9
1 22	10 1.89	+29 56.7	2.138	3.051	8.3	20.8	1 22	9 59.67	+14 4.9	1.436	2.360	10.5	19.6
2 1	9 52.78	+30 41.2	2.111	3.060	5.9	20.7	2 1	9 51.99	+15 4.7	1.376	2.344	5.8	19.3
2 11	9 42.56	+31 13.3	2.112	3.070	5.4	20.7	2 11	9 42.53	+16 11.0	1.342	2.328	1.1	18.9
2 21	9 32.29	+31 28.2	2.143	3.079	7.1	20.8	2 21	9 32.51	+17 15.3	1.335	2.312	5.1	19.2
3 2	9 23.05	+31 24.3	2.201	3.087	9.8	21.0	3 2	9 23.35	+18 9.8	1.355	2.296	10.2	19.4
3 12	9 15.71	+31 2.3	2.284	3.095	12.4	21.2	3 12	9 16.35	+18 49.2	1.399	2.280	14.8	19.6
3 22	9 10.76	+30 25.2	2.387	3.103	14.6	21.4	3 22	9 12.29	+19 11.3	1.463	2.264	18.8	19.9
340702	2006 <i>SU</i> ₃₂		2 12.5 192°61	3°7/9.1	17		426168	2012 <i>JT</i> ₁		2 12.5 280°00	2°5/14.5	17	
1 12	10 5.46	+25 32.6	2.540	3.388	9.7	20.7	1 12	10 2.39	+4 27.3	1.880	2.704	13.7	21.4
1 22	9 59.21	+26 8.1	2.470	3.387	7.1	20.5	1 22	9 57.59	+4 52.1	1.784	2.685	10.4	21.2
2 1	9 51.28	+26 41.2	2.428	3.386	4.6	20.4	2 1	9 50.68	+5 34.8	1.712	2.666	6.6	20.9
2 11	9 42.38	+27 6.9	2.416	3.385	3.7	20.3	2 11	9 42.35	+6 32.5	1.667	2.648	3.0	20.6
2 21	9 33.35	+27 21.2	2.433	3.384	5.5	20.4	2 21	9 33.55	+7 39.9	1.650	2.629	3.9	20.6
3 2	9 25.06	+27 21.8	2.480	3.382	8.1	20.6	3 2	9 25.37	+8 50.4	1.662	2.609	8.0	20.8
3 12	9 18.26	+27 8.7	2.552	3.380	10.7	20.8	3 12	9 18.81	+9 57.3	1.700	2.590	12.1	21.0
3 22	9 13.45	+26 42.9	2.646	3.378	13.0	20.9	3 22	9 14.57	+10 55.3	1.760	2.571	15.6	21.2
427387	2014 <i>XM</i> ₃₉		2 12.5 65°38	8°5/5.2	15		496237	2012 <i>FP</i> ₅₃		2 12.5 235°91	5°5/7.5	17	
1 12	10 7.86	+34 2.1	1.712	2.570	13.2	20.5	1 12	10 8.36	+29 18.6	2.260	3.109	10.8	21.9
1 22	10 1.60	+35 50.0	1.683	2.590	10.5	20.4	1 22	10 1.67	+30 21.6	2.183	3.095	8.2	21.7
2 1	9 52.79	+37 25.7	1.678	2.611	8.7	20.3	2 1	9 52.84	+31 20.3	2.133	3.080	6.0	21.6
2 11	9 42.58	+38 38.6	1.700	2.631	8.9	20.4	2 11	9 42.65	+32 7.6	2.111	3.066	5.7	21.5
2 21	9 32.35	+39 22.2	1.748	2.652	10.7	20.5	2 21	9 32.13	+32 37.5	2.119	3.050	7.5	21.6
3 2	9 23.49	+39 34.8	1.820	2.672	13.2	20.7	3 2	9 22.40	+32 47.0	2.154	3.034	10.2	21.7
3 12	9 17.07	+39 19.5	1.913	2.692	15.6	20.9	3 12	9 14.44	+32 36.2	2.214	3.017	13.0	21.9
3 22	9 13.59	+38 41.5	2.023	2.713	17.7	21.1	3 22	9 8.90	+32 7.5	2.294	3.000	15.4	22.0
383394	2006 <i>TP</i> ₃₃		2 12.5 202°18	4°9/7.0	17		223609	2004 <i>HF</i> ₂₆		2 12.5 255°38	0°9/13.2	17	
1 12	10 5.12	+31 10.4	2.847	3.691	8.9	21.5</							

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
1745	Ferguson		2 12.5	78°07'	1°6/11.2	18	409036	2003 NV ₁₂		2 12.5	208°99'	3°5/9.7	17
1 12	10 3.73	+16 4.0	1.952	2.804	12.1	16.3	1 12	10 9.45	+22 8.8	2.107	2.954	11.5	22.2
1 22	9 58.30	+16 48.1	1.887	2.809	8.5	16.1	1 22	10 2.46	+22 59.9	2.029	2.947	8.3	22.0
2 1	9 50.92	+17 38.4	1.847	2.815	4.6	15.9	2 1	9 53.29	+23 52.1	1.977	2.939	5.0	21.7
2 11	9 42.40	+18 29.1	1.836	2.821	1.6	15.7	2 11	9 42.77	+24 38.6	1.955	2.931	3.5	21.6
2 21	9 33.70	+19 14.4	1.854	2.827	4.5	15.9	2 21	9 31.92	+25 13.6	1.963	2.921	5.8	21.8
3 2	9 25.87	+19 49.4	1.900	2.833	8.3	16.1	3 2	9 21.90	+25 33.0	1.999	2.911	9.3	21.9
3 12	9 19.77	+20 11.5	1.972	2.839	11.8	16.4	3 12	9 13.69	+25 35.9	2.062	2.899	12.6	22.1
3 22	9 15.94	+20 20.2	2.065	2.844	14.7	16.6	3 22	9 7.93	+25 23.4	2.146	2.887	15.4	22.3
296184	2009 BZ ₁₅₇		2 12.5	201°04'	0°7/13.2	18	338138	2002 QF ₁₀₈		2 12.5	68°44'	0°4/12.7	17
1 12	10 0.36	+ 8 49.8	2.573	3.400	10.3	21.0	1 12	10 9.00	+10 26.5	1.194	2.050	17.8	21.0
1 22	9 55.57	+ 9 30.0	2.490	3.398	7.5	20.8	1 22	10 2.68	+11 0.7	1.150	2.072	12.8	20.7
2 1	9 49.32	+10 20.4	2.435	3.396	4.3	20.6	2 1	9 53.51	+11 50.7	1.128	2.095	7.1	20.5
2 11	9 42.19	+11 17.4	2.409	3.394	1.0	20.3	2 11	9 42.78	+12 48.6	1.131	2.117	1.1	20.2
2 21	9 34.85	+12 16.5	2.413	3.392	2.8	20.5	2 21	9 32.08	+13 45.5	1.161	2.140	4.9	20.5
3 2	9 28.05	+13 13.1	2.448	3.389	6.2	20.7	3 2	9 23.00	+14 33.6	1.216	2.163	10.3	20.9
3 12	9 22.46	+14 3.4	2.510	3.386	9.2	20.9	3 12	9 16.69	+15 7.8	1.294	2.185	15.0	21.2
3 22	9 18.53	+14 44.7	2.596	3.384	11.8	21.0	3 22	9 13.66	+15 26.6	1.391	2.207	18.8	21.5
422109	2014 QE ₄₀₉		2 12.5	110°98'	2°7/10.4	18	142245	2002 RL ₁₀₀		2 12.5	97°99'	4°1/16.3	18
1 12	10 7.66	+19 44.1	1.943	2.794	12.1	21.2	1 12	10 4.96	- 1 39.9	1.951	2.742	14.5	20.7
1 22	10 1.02	+20 30.2	1.889	2.811	8.6	21.0	1 22	9 59.00	- 1 6.6	1.893	2.768	11.3	20.5
2 1	9 52.37	+21 18.3	1.861	2.826	4.9	20.8	2 1	9 51.24	- 0 12.3	1.858	2.794	7.7	20.3
2 11	9 42.59	+22 2.2	1.861	2.842	2.7	20.7	2 11	9 42.48	+ 0 59.5	1.851	2.820	4.7	20.2
2 21	9 32.76	+22 36.2	1.891	2.857	5.2	20.9	2 21	9 33.67	+ 2 22.9	1.873	2.844	4.6	20.2
3 2	9 23.96	+22 56.6	1.949	2.871	8.8	21.1	3 2	9 25.76	+ 3 50.8	1.924	2.868	7.4	20.4
3 12	9 17.08	+23 2.4	2.033	2.885	12.1	21.4	3 12	9 19.57	+ 5 15.8	2.003	2.892	10.6	20.7
3 22	9 12.60	+22 54.3	2.138	2.899	14.8	21.6	3 22	9 15.55	+ 6 32.4	2.106	2.915	13.5	20.9
431595	2007 VA ₁₇₂		2 12.5	104°91'	3°4/15.6	17	307462	2002 VP ₁₀₂		2 12.5	56°19'	2°9/10.3	18
1 12	10 2.01	+ 1 26.2	2.365	3.165	12.0	20.7	1 12	10 5.36	+20 45.1	1.926	2.783	12.0	20.4
1 22	9 56.77	+ 1 24.7	2.290	3.172	9.3	20.5	1 22	9 59.37	+21 24.5	1.878	2.801	8.5	20.2
2 1	9 49.99	+ 1 37.6	2.239	3.179	6.3	20.3	2 1	9 51.46	+22 4.9	1.855	2.821	4.9	20.0
2 11	9 42.29	+ 2 3.3	2.216	3.186	3.8	20.2	2 11	9 42.51	+22 40.1	1.860	2.840	2.9	19.9
2 21	9 34.44	+ 2 38.7	2.222	3.193	4.0	20.2	2 21	9 33.55	+23 5.2	1.894	2.859	5.3	20.1
3 2	9 27.22	+ 3 19.8	2.257	3.200	6.5	20.4	3 2	9 25.63	+23 17.0	1.956	2.879	8.8	20.3
3 12	9 21.35	+ 4 2.1	2.320	3.207	9.4	20.6	3 12	9 19.58	+23 14.7	2.043	2.898	11.9	20.6
3 22	9 17.29	+ 4 41.5	2.407	3.214	12.1	20.8	3 22	9 15.86	+22 59.3	2.151	2.918	14.6	20.8
25446	1999 XF ₂		2 12.5	131°94'	0°8/11.9	18	145720	1993 OX ₇		2 12.5	109°06'	0°8/11.8	18
1 12	10 8.64	+12 43.9	1.554	2.401	14.8	19.1	1 12	10 6.71	+13 22.5	2.207	3.042	11.5	20.7
1 22	10 2.14	+13 34.0	1.494	2.413	10.6	18.9	1 22	10 0.09	+14 18.6	2.155	3.070	8.1	20.6
2 1	9 53.17	+14 35.7	1.458	2.425	5.7	18.6	2 1	9 51.78	+15 21.6	2.131	3.097	4.3	20.4
2 11	9 42.73	+15 41.5	1.449	2.435	0.9	18.3	2 11	9 42.55	+16 25.9	2.137	3.123	0.9	20.2
2 21	9 32.10	+16 43.3	1.469	2.446	4.7	18.6	2 21	9 33.30	+17 25.8	2.174	3.148	3.7	20.4
3 2	9 22.65	+17 34.5	1.517	2.455	9.5	18.9	3 2	9 24.94	+18 16.5	2.241	3.173	7.3	20.7
3 12	9 15.47	+18 11.0	1.589	2.464	13.7	19.2	3 12	9 18.21	+18 55.4	2.336	3.196	10.4	20.9
3 22	9 11.15	+18 31.6	1.682	2.472	17.1	19.4	3 22	9 13.56	+19 21.5	2.453	3.219	13.0	21.1
77785	2001 QM ₃₆		2 12.5	159°63'	0°7/13.0	18	492429	2014 MX ₁₄		2 12.5	263°28'	2°0/11.0	17
1 12	10 5.17	+11 14.2	2.470	3.298	10.7	19.2	1 12	10 7.23	+14 56.0	1.678	2.529	13.8	22.7
1 22	9 58.97	+11 14.4	2.393	3.301	7.7	19.0	1 22	10 1.50	+16 4.6	1.582	2.504	9.9	22.4
2 1	9 51.18	+11 21.4	2.342	3.304	4.4	18.8	2 1	9 53.10	+17 26.3	1.510	2.478	5.5	22.1
2 11	9 42.46	+11 32.5	2.322	3.307	1.0	18.6	2 11	9 42.79	+18 53.2	1.466	2.451	2.0	21.8
2 21	9 33.59	+11 44.9	2.332	3.310	3.0	18.7	2 21	9 31.71	+20 16.1	1.451	2.423	5.6	22.0
3 2	9 25.40	+11 55.6	2.372	3.312	6.4	19.0	3 2	9 21.29	+21 26.2	1.465	2.394	10.5	22.2
3 12	9 18.60	+12 2.2	2.440	3.314	9.5	19.2	3 12	9 12.86	+22 18.0	1.502	2.365	15.0	22.4
3 22	9 13.67	+12 3.4	2.532	3.316	12.2	19.4	3 22	9 7.32	+22 49.8	1.560	2.335	18.9	22.6
65423	2002 TL ₈₉		2 12.5	10°40'	7°2/17.9	18	4910	Kawasato		2 12.5	158°97'	1°3/13.7	18
1 12	9 59.19	- 4 55.8	1.540	2.340	17.3	18.1	1 12	10 5.80	+ 7 2.1	2.362	3.177	11.5	18.5
1 22	9 55.43	- 5 21.4	1.472	2.344	14.1	17.9	1 22	9 59.48	+ 7 35.5	2.288	3.187	8.5	18.3
2 1	9 49.50	- 5 20.3	1.425	2.349	10.8	17.7	2 1	9 51.50	+ 8 20.6	2.239	3.196	5.0	18.1
2 11	9 42.25	- 4 52.4	1.401	2.355	8.0	17.6	2 11	9 42.53	+ 9 13.7	2.220	3.204	1.7	17.9
2 21	9 34.75	- 4 1.1	1.402	2.363	7.4	17.5	2 21	9 33.39	+10 10.1	2.233	3.211	3.1	18.0
3 2	9 28.17	- 2 53.2	1.429	2.372	9.5	17.7	3 2	9 24.94	+11 5.1	2.276	3.217	6.6	18.2
3 12	9 23.48	- 1 37.7	1.479	2.382	12.7	17.9	3 12	9 17.94	+11 54.3	2.347	3.222	9.8	18.4
3 22	9 21.29	- 0 22.9	1.551	2.393	15.9	18.1	3 22	9 12.88	+12 34.9	2.443	3.227	12.6	18.6
266787	2009 SJ ₂₆₀		2 12.5	101°00'	3°6/9.8	18	344503	2002 QS ₁₄₁		2 12.5	119°70'	2°4/14.4	18
1 12	10 7.54	+22 26.8	1.902	2.757	12.2	20.4	1 12	10 6.44	+ 5 49.7	2.500	3.307	11.2	21.4
1 22	10 1.03	+23 11.7	1.846	2.768	8.7	20.2	1 22	9 59.78	+ 5 33.9	2.430	3.321	8.4	21.2
2 1	9 52.42	+23 56.4	1.816	2.780	5.2	20.0	2 1	9 51.59	+ 5 28.0	2.386	3.336	5.3	21.0
2 11	9 42.62	+24 34.1	1.815	2.791	3.6	20.0	2 11	9 42.54	+ 5 30.4	2.371	3.350	2.7	20.9
2 21	9 32.75	+24 59.4	1.842	2.802	6.0	20.1	2 21	9 33.41	+ 5 38.9	2.388	3.363	3.3	21.0
3 2	9 23.94	+25 9.2	1.897	2.813	9.4	20.4	3 2	9 24.98	+ 5 50.6	2.435	3.376	6.2	21.2
3 12	9 17.10	+25 2.8	1.977	2.823	12.6	20.6	3 12	9 17.97	+ 6 2.6	2.511	3.389	9.1	21.4
3 22	9 12.76	+24 42.0	2.077	2.834	15.4	20.8	3 22	9 12.80	+ 6 12.3	2.610	3.401	11.7	21.6
412999	1999 TL ₁₂₉		2 12.5	142°36'	3°7/15.9	18	90192	2003 AZ ₄₁		2 12.5	332°52'	1°8/14.3	18
1 12	10 5.21	- 0 15.9	2.153	2.944	13.3	22.2	1 12	9 58.17	+ 4 11.8	1.914	2.743	13.3	18.5
1 22													

EPHEMERIDES

2 12.5

2 12.5

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
433114	2012 <i>TQ</i> ₁₃₆		2 12.5 102°84	3°1/ 9.9 17			46006	2001 <i>CB</i> ₁₁		2 12.5 302°94	2°3/11.0 18		
1 12	10 5.41	+22 46.3	2.303	3.154	10.5	21.2	1 12	10 5.29	+16 48.3	1.462	2.326	14.7	19.3
1 22	9 59.30	+23 17.2	2.237	3.157	7.5	21.0	1 22	10 0.22	+17 32.9	1.382	2.310	10.5	19.0
2 1	9 51.42	+23 47.4	2.198	3.161	4.5	20.8	2 1	9 52.40	+18 26.5	1.325	2.294	5.8	18.7
2 11	9 42.53	+24 11.9	2.188	3.164	3.1	20.7	2 11	9 42.72	+19 21.5	1.294	2.278	2.3	18.4
2 21	9 33.53	+24 26.5	2.207	3.168	5.1	20.8	2 21	9 32.50	+20 9.6	1.289	2.262	5.9	18.6
3 2	9 25.34	+24 28.8	2.256	3.171	8.2	21.0	3 2	9 23.24	+20 43.7	1.311	2.247	10.9	18.8
3 12	9 18.75	+24 18.1	2.330	3.174	11.1	21.2	3 12	9 16.27	+21 0.3	1.356	2.232	15.5	19.1
3 22	9 14.25	+23 55.4	2.426	3.178	13.5	21.4	3 22	9 12.39	+20 58.9	1.420	2.218	19.4	19.3
265325	2004 <i>NS</i> ₂₄		2 12.5 197°59	0°4/12.2 17			83917	2001 <i>VB</i> ₁₁		2 12.5 188°54	2°9/14.9 17 R		
1 12	10 6.85	+14 10.0	2.432	3.265	10.6	20.8	1 12	10 2.74	+ 3 39.4	2.423	3.229	11.6	19.6
1 22	10 0.26	+14 23.8	2.349	3.262	7.6	20.6	1 22	9 57.33	+ 3 31.5	2.340	3.229	8.8	19.4
2 1	9 51.96	+14 42.9	2.293	3.258	4.2	20.3	2 1	9 50.35	+ 3 35.8	2.283	3.229	5.8	19.2
2 11	9 42.61	+15 3.8	2.267	3.254	0.6	20.0	2 11	9 42.43	+ 3 50.9	2.253	3.228	3.2	19.0
2 21	9 33.05	+15 22.9	2.273	3.249	3.3	20.3	2 21	9 34.30	+ 4 14.0	2.254	3.228	3.6	19.1
3 2	9 24.16	+15 37.1	2.308	3.243	6.9	20.5	3 2	9 26.77	+ 4 41.8	2.284	3.227	6.4	19.2
3 12	9 16.72	+15 44.1	2.372	3.237	10.1	20.7	3 12	9 20.55	+ 5 10.3	2.342	3.227	9.4	19.4
3 22	9 11.26	+15 43.2	2.458	3.230	12.8	20.9	3 22	9 16.14	+ 5 36.3	2.423	3.226	12.1	19.6
135797	2002 <i>RA</i> ₁₀₁		2 12.5 88°98	2°2/11.0 18			463528	2013 <i>RX</i> ₁₀		2 12.5 100°04	1°6/11.4 18		
1 12	10 9.10	+17 54.3	1.749	2.600	13.3	19.6	1 12	10 6.04	+16 56.8	1.906	2.757	12.4	21.3
1 22	10 2.12	+18 33.6	1.702	2.624	9.3	19.4	1 22	10 0.02	+17 23.8	1.838	2.760	8.8	21.1
2 1	9 53.00	+19 16.6	1.680	2.647	5.1	19.2	2 1	9 51.94	+17 55.7	1.796	2.763	4.8	20.9
2 11	9 42.73	+19 56.7	1.687	2.670	2.2	19.0	2 11	9 42.64	+18 27.0	1.782	2.767	1.6	20.7
2 21	9 32.51	+20 28.0	1.723	2.693	5.0	19.3	2 21	9 33.16	+18 52.6	1.797	2.770	4.5	20.9
3 2	9 23.49	+20 46.9	1.786	2.715	9.0	19.5	3 2	9 24.61	+19 8.7	1.840	2.773	8.5	21.1
3 12	9 16.60	+20 51.9	1.875	2.737	12.5	19.8	3 12	9 17.90	+19 13.1	1.909	2.777	12.1	21.3
3 22	9 12.30	+20 43.8	1.985	2.758	15.4	20.0	3 22	9 13.59	+19 5.8	1.999	2.780	15.1	21.6
224521	2005 <i>WY</i> ₇₂		2 12.5 25°47	8°1/17.9 18			363633	2004 <i>RT</i> ₁₆₅		2 12.5 129°84	1°0/11.4 18		
1 12	10 4.47	- 6 38.8	1.726	2.500	16.8	19.6	1 12	10 3.65	+13 33.9	2.465	3.302	10.4	21.3
1 22	9 59.08	- 7 33.8	1.653	2.504	13.9	19.4	1 22	9 57.92	+14 44.9	2.403	3.319	7.3	21.1
2 1	9 51.51	- 8 5.1	1.600	2.508	11.0	19.2	2 1	9 50.64	+16 3.1	2.368	3.335	3.9	20.9
2 11	9 42.57	- 8 10.7	1.572	2.512	8.7	19.1	2 11	9 42.47	+17 22.8	2.365	3.350	1.0	20.8
2 21	9 33.32	- 7 51.9	1.570	2.516	8.2	19.1	2 21	9 34.16	+18 38.2	2.392	3.365	3.6	21.0
3 2	9 24.93	- 7 12.9	1.593	2.521	10.0	19.2	3 2	9 26.53	+19 44.4	2.451	3.379	6.9	21.2
3 12	9 18.40	- 6 21.1	1.641	2.527	12.7	19.3	3 12	9 20.27	+20 38.1	2.537	3.392	9.9	21.4
3 22	9 14.37	- 5 24.1	1.711	2.532	15.6	19.5	3 22	9 15.85	+21 18.1	2.646	3.405	12.3	21.6
42977	1999 <i>TH</i> ₂₁₆		2 12.5 167°26	0°3/12.8 18			32760	1981 <i>ER</i> ₂₈		2 12.5 150°64	5°2/ 8.5 18		
1 12	10 6.12	+10 15.9	2.126	2.955	12.1	20.6	1 12	10 10.81	+29 6.6	2.157	3.003	11.3	19.0
1 22	9 59.90	+10 53.8	2.051	2.961	8.7	20.4	1 22	10 3.28	+29 48.9	2.099	3.010	8.5	18.8
2 1	9 51.82	+11 42.3	2.003	2.966	4.9	20.2	2 1	9 53.66	+30 25.0	2.067	3.016	6.0	18.6
2 11	9 42.60	+12 36.7	1.984	2.970	0.8	19.9	2 11	9 42.86	+30 48.4	2.063	3.022	5.3	18.6
2 21	9 33.17	+13 31.7	1.995	2.973	3.4	20.1	2 21	9 32.01	+30 54.7	2.089	3.028	7.1	18.7
3 2	9 24.51	+14 22.0	2.036	2.976	7.4	20.3	3 2	9 22.22	+30 42.1	2.143	3.033	9.8	18.9
3 12	9 17.45	+15 3.6	2.105	2.977	10.9	20.6	3 12	9 14.41	+30 11.9	2.222	3.037	12.6	19.1
3 22	9 12.56	+15 34.5	2.196	2.979	13.9	20.8	3 22	9 9.08	+29 27.2	2.322	3.042	14.9	19.3
431583	2007 <i>VO</i> ₇₂		2 12.5 85°95	5°1/ 7.6 18			39473	1978 <i>VW</i> ₃		2 12.5 6°28	4°3/15.2 18		
1 12	10 4.75	+28 28.8	2.304	3.157	10.4	21.0	1 12	10 5.23	+ 2 33.2	1.503	2.327	16.5	18.9
1 22	9 58.86	+29 35.8	2.257	3.172	7.7	20.8	1 22	9 59.88	+ 2 24.7	1.430	2.327	12.7	18.7
2 1	9 51.18	+30 38.1	2.236	3.186	5.6	20.7	2 1	9 52.06	+ 2 36.9	1.378	2.327	8.5	18.4
2 11	9 42.51	+31 29.1	2.245	3.201	5.2	20.7	2 11	9 42.68	+ 3 7.7	1.352	2.328	4.8	18.2
2 21	9 33.77	+32 3.8	2.282	3.215	6.9	20.8	2 21	9 32.95	+ 3 52.7	1.353	2.328	5.2	18.2
3 2	9 25.91	+32 19.9	2.347	3.230	9.4	21.0	3 2	9 24.21	+ 4 45.1	1.380	2.328	9.2	18.4
3 12	9 19.72	+32 17.5	2.436	3.244	11.8	21.2	3 12	9 17.60	+ 5 37.4	1.431	2.329	13.4	18.7
3 22	9 15.67	+31 58.9	2.545	3.258	13.9	21.4	3 22	9 13.79	+ 6 23.8	1.503	2.330	17.1	18.9
66605	1999 <i>RF</i> ₁₉₄		2 12.5 198°30	1°3/11.6 18			209040	2003 <i>OD</i> ₁₃		2 12.5 127°54	0°2/12.7 18		
1 12	10 9.84	+16 45.6	2.064	2.904	12.0	19.2	1 12	10 7.98	+11 13.8	1.882	2.717	13.2	21.3
1 22	10 2.67	+17 6.5	1.984	2.901	8.6	19.0	1 22	10 1.32	+11 43.8	1.820	2.733	9.5	21.1
2 1	9 53.40	+17 31.7	1.931	2.897	4.7	18.7	2 1	9 52.61	+12 23.8	1.783	2.748	5.2	20.9
2 11	9 42.82	+17 56.3	1.907	2.892	1.4	18.5	2 11	9 42.74	+13 8.8	1.776	2.762	0.8	20.6
2 21	9 31.99	+18 15.8	1.914	2.887	4.3	18.7	2 21	9 32.76	+13 53.2	1.797	2.775	3.7	20.8
3 2	9 22.00	+18 26.5	1.950	2.881	8.2	18.9	3 2	9 23.76	+14 32.0	1.848	2.788	7.9	21.1
3 12	9 13.83	+18 26.6	2.013	2.874	11.8	19.1	3 12	9 16.65	+15 1.5	1.926	2.801	11.6	21.4
3 22	9 8.06	+18 16.1	2.098	2.866	14.9	19.3	3 22	9 11.96	+15 20.2	2.025	2.812	14.7	21.6
375311	2008 <i>RM</i> ₂₆		2 12.5 319°32	3°1/15.3 18			453913	2011 <i>US</i> ₃₈₉		2 12.5 72°07	1°9/13.6 18		
1 12	10 0.53	+ 1 45.2	1.884	2.700	14.0	20.3	1 12	10 9.21	+ 8 46.0	1.452	2.293	16.1	20.6
1 22	9 56.17	+ 2 22.3	1.801	2.695	10.7	20.1	1 22	10 2.54	+ 8 41.3	1.399	2.311	11.8	20.4
2 1	9 49.88	+ 3 20.0	1.741	2.690	7.0	19.9	2 1	9 53.38	+ 8 50.6	1.368	2.329	6.9	20.1
2 11	9 42.36	+ 4 34.7	1.708	2.686	3.6	19.7	2 11	9 42.84	+ 9 10.0	1.363	2.348	2.3	19.9
2 21	9 34.53	+ 6 0.6	1.704	2.681	4.0	19.7	2 21	9 32.26	+ 9 34.3	1.387	2.366	4.3	20.1
3 2	9 27.39	+ 7 30.2	1.728	2.677	7.6	19.9	3 2	9 23.01	+ 9 58.1	1.437	2.384	9.0	20.4
3 12	9 21.84	+ 8 55.8	1.779	2.673	11.4	20.1	3 12	9 16.13	+10 17.0	1.512	2.402	13.3	20.7
3 22	9 18.50	+10 11.6	1.852	2.669	14.7	20.3	3 22	9 12.16	+10 28.1	1.607	2.420	16.8	20.9
295295	2008 <i>GJ</i> ₁₀₆		2 12.5 306°98	2°3/14.1 18			135463	2001 <i>VL</i> ₈₃		2 12.5 36°29	0°5/12.8 18		
1 12	10 3.20	+ 6 18.2	1.643										

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
231952	2001 OS ₁₅		2 12.5 111°60	2°8/10.8 18			456213	2006 KS ₁₉		2 12.5 237°90	5°8/16.7 17		
1 12	10 12.24	+19 9.3	1.612	2.464	14.2	20.7	1 12	10 6.49	- 3 36.8	2.093	2.867	14.2	21.9
1 22	10 4.57	+19 50.3	1.562	2.484	10.0	20.5	1 22	10 0.43	- 3 57.0	1.991	2.850	11.6	21.7
2 1	9 54.45	+20 34.1	1.537	2.503	5.6	20.3	2 1	9 52.30	- 3 57.8	1.913	2.833	8.6	21.5
2 11	9 42.98	+21 13.1	1.540	2.522	2.8	20.1	2 11	9 42.76	- 3 38.9	1.860	2.815	6.3	21.3
2 21	9 31.53	+21 41.0	1.571	2.540	5.7	20.4	2 21	9 32.72	- 3 2.0	1.837	2.796	6.1	21.2
3 2	9 21.45	+21 54.0	1.631	2.557	9.9	20.6	3 2	9 23.21	- 2 11.4	1.842	2.777	8.4	21.3
3 12	9 13.77	+21 51.4	1.715	2.574	13.7	20.9	3 12	9 15.24	- 1 13.3	1.874	2.756	11.6	21.5
3 22	9 9.02	+21 34.7	1.820	2.590	16.7	21.2	3 22	9 9.49	- 0 13.8	1.929	2.735	14.7	21.6
293835	2007 RO ₂₀₆		2 12.5 38°41	2°2/14.5 18			498005	2007 ET ₉₉		2 12.5 243°50	4°4/ 8.4 17		
1 12	10 0.49	+ 4 35.8	1.948	2.773	13.2	20.4	1 12	10 9.82	+28 22.7	2.670	3.510	9.6	22.9
1 22	9 56.00	+ 5 10.8	1.879	2.781	9.9	20.2	1 22	10 2.52	+29 5.3	2.580	3.489	7.2	22.7
2 1	9 49.71	+ 6 2.3	1.834	2.789	6.1	20.0	2 1	9 53.31	+29 44.1	2.517	3.467	5.1	22.5
2 11	9 42.37	+ 7 6.2	1.816	2.798	2.6	19.8	2 11	9 42.89	+30 13.4	2.484	3.444	4.5	22.5
2 21	9 34.84	+ 8 16.7	1.827	2.806	3.5	19.9	2 21	9 32.13	+30 28.8	2.483	3.420	6.2	22.5
3 2	9 28.07	+ 9 27.5	1.867	2.815	7.2	20.1	3 2	9 22.02	+30 27.7	2.510	3.396	8.7	22.6
3 12	9 22.87	+10 32.5	1.933	2.824	10.8	20.4	3 12	9 13.42	+30 10.2	2.564	3.371	11.3	22.8
3 22	9 19.76	+11 27.6	2.022	2.834	13.9	20.6	3 22	9 6.92	+29 38.1	2.640	3.345	13.6	22.9
453049	2007 TO ₁₄₇		2 12.5 81°82	1°6/11.4 18			84142	2002 RV ₅₈		2 12.5 94°29	1°5/13.9 18		
1 12	10 7.54	+14 56.3	1.528	2.383	14.6	21.1	1 12	10 1.50	+ 6 25.7	2.205	3.029	11.9	19.1
1 22	10 1.30	+15 52.8	1.480	2.404	10.3	20.9	1 22	9 56.55	+ 7 2.8	2.135	3.038	8.8	19.0
2 1	9 52.69	+16 57.8	1.457	2.425	5.6	20.7	2 1	9 49.97	+ 7 53.0	2.090	3.048	5.2	18.8
2 11	9 42.76	+18 3.1	1.461	2.446	1.7	20.5	2 11	9 42.43	+ 8 52.5	2.074	3.058	1.9	18.5
2 21	9 32.80	+19 0.7	1.493	2.467	5.1	20.8	2 21	9 34.74	+ 9 56.0	2.088	3.067	3.1	18.6
3 2	9 24.11	+19 44.8	1.552	2.487	9.6	21.1	3 2	9 27.73	+10 58.2	2.131	3.077	6.7	18.9
3 12	9 17.70	+20 12.4	1.636	2.507	13.5	21.3	3 12	9 22.16	+11 54.3	2.202	3.086	10.0	19.1
3 22	9 14.08	+20 23.6	1.740	2.527	16.7	21.6	3 22	9 18.50	+12 41.0	2.296	3.095	12.8	19.3
344508	2002 RQ ₇₈		2 12.5 153°08	0°8/13.1 18			325928	2010 VQ ₁₃		2 12.5 112°30	8°1/18.8 18		
1 12	10 9.10	+ 9 13.9	1.721	2.554	14.3	22.2	1 12	10 3.84	- 8 52.7	1.841	2.599	16.5	20.2
1 22	10 2.35	+ 9 45.2	1.653	2.563	10.4	22.0	1 22	9 58.59	- 9 26.1	1.763	2.602	13.8	20.0
2 1	9 53.29	+10 30.0	1.610	2.572	6.0	21.8	2 1	9 51.25	- 9 34.0	1.706	2.604	11.0	19.8
2 11	9 42.86	+11 23.0	1.594	2.580	1.3	21.5	2 11	9 42.62	- 9 15.2	1.673	2.607	8.7	19.7
2 21	9 32.20	+12 17.8	1.608	2.587	3.9	21.7	2 21	9 33.67	- 8 31.5	1.666	2.610	8.1	19.7
3 2	9 22.57	+13 8.2	1.651	2.593	8.5	21.9	3 2	9 25.51	- 7 28.1	1.686	2.613	9.6	19.8
3 12	9 14.99	+13 49.4	1.719	2.599	12.6	22.2	3 12	9 19.08	- 6 12.9	1.731	2.615	12.2	19.9
3 22	9 10.06	+14 18.8	1.810	2.603	16.0	22.4	3 22	9 15.02	- 4 54.1	1.798	2.618	15.0	20.1
269140	2007 UA ₂₁		2 12.5 31°94	5°2/16.8 18			34037	2000 OZ ₂₇		2 12.5 202°99	0°5/12.9 18		
1 12	10 0.85	- 1 57.3	1.781	2.583	15.3	20.1	1 12	10 2.65	+ 8 17.8	2.094	2.925	12.2	18.8
1 22	9 56.33	- 2 2.2	1.718	2.597	12.1	19.9	1 22	9 57.57	+ 9 21.8	2.012	2.922	8.9	18.5
2 1	9 49.92	- 1 45.4	1.678	2.611	8.6	19.7	2 1	9 50.64	+10 40.2	1.956	2.919	5.0	18.3
2 11	9 42.41	- 1 8.5	1.663	2.627	5.8	19.6	2 11	9 42.53	+12 7.6	1.929	2.915	1.0	18.0
2 21	9 34.76	- 0 15.8	1.675	2.643	5.5	19.6	2 21	9 34.13	+13 37.2	1.933	2.911	3.4	18.2
3 2	9 27.98	+ 0 46.6	1.714	2.659	8.0	19.8	3 2	9 26.37	+15 1.9	1.966	2.907	7.5	18.4
3 12	9 22.91	+ 1 51.5	1.779	2.676	11.2	20.0	3 12	9 20.13	+16 16.1	2.027	2.902	11.1	18.6
3 22	9 20.06	+ 2 52.6	1.866	2.694	14.2	20.2	3 22	9 15.97	+17 16.3	2.110	2.897	14.2	18.8
309309	2007 RQ ₂₈₄		2 12.5 86°46	3°6/ 9.9 18			414824	2010 UG ₃₆		2 12.5 62°76	0°9/13.1 18		
1 12	10 7.69	+19 31.6	1.527	2.389	14.2	21.0	1 12	10 6.68	+10 21.3	1.606	2.449	14.7	21.1
1 22	10 1.52	+20 42.6	1.479	2.406	10.1	20.8	1 22	10 0.63	+10 29.8	1.548	2.464	10.6	20.9
2 1	9 52.87	+21 57.5	1.455	2.422	5.8	20.6	2 1	9 52.33	+10 50.1	1.515	2.479	6.0	20.6
2 11	9 42.80	+23 6.8	1.458	2.438	3.6	20.5	2 11	9 42.75	+11 17.6	1.508	2.494	1.4	20.4
2 21	9 32.65	+24 2.1	1.490	2.454	6.5	20.7	2 21	9 33.09	+11 47.1	1.530	2.509	4.0	20.6
3 2	9 23.78	+24 38.4	1.547	2.470	10.6	21.0	3 2	9 24.56	+12 13.5	1.579	2.525	8.5	20.9
3 12	9 17.25	+24 54.2	1.629	2.485	14.4	21.2	3 12	9 18.14	+12 33.0	1.653	2.540	12.5	21.2
3 22	9 13.61	+24 51.0	1.729	2.501	17.4	21.5	3 22	9 14.35	+12 43.3	1.748	2.555	15.9	21.4
101948	1999 RT ₂₆		2 12.5 109°06	1°1/11.7 18			363204	2001 UK ₁₃₅		2 12.5 140°65	0°8/13.4 18		
1 12	10 7.52	+14 15.0	1.765	2.611	13.4	20.5	1 12	10 5.25	+ 8 41.1	2.522	3.341	10.8	22.1
1 22	10 1.09	+15 2.5	1.709	2.629	9.5	20.3	1 22	9 59.00	+ 9 12.0	2.454	3.357	7.8	21.9
2 1	9 52.53	+15 58.1	1.679	2.646	5.1	20.1	2 1	9 51.24	+ 9 52.4	2.412	3.371	4.5	21.7
2 11	9 42.75	+16 55.2	1.677	2.663	1.2	19.8	2 11	9 42.61	+10 38.6	2.401	3.386	1.2	21.5
2 21	9 32.90	+17 47.1	1.705	2.680	4.4	20.1	2 21	9 33.87	+11 26.5	2.421	3.399	2.9	21.7
3 2	9 24.11	+18 28.6	1.761	2.695	8.7	20.4	3 2	9 25.82	+12 12.0	2.471	3.411	6.2	21.9
3 12	9 17.33	+18 56.6	1.842	2.711	12.4	20.6	3 12	9 19.12	+12 51.5	2.550	3.423	9.2	22.1
3 22	9 13.08	+19 10.5	1.944	2.726	15.4	20.9	3 22	9 14.24	+13 22.9	2.654	3.434	11.8	22.3
465755	2009 WG ₅₀		2 12.5 39°39	14°5/29.2 16			280236	2002 VQ ₃₄		2 12.5 102°45	4°8/ 9.3 18		
1 12	10 14.54	+52 2.5	1.696	2.501	15.7	19.9	1 12	10 11.14	+22 21.6	1.466	2.328	14.8	20.3
1 22	10 7.41	+54 6.3	1.680	2.511	14.8	19.8	1 22	10 4.07	+23 39.5	1.423	2.347	10.6	20.1
2 1	9 56.45	+55 40.7	1.685	2.521	14.6	19.9	2 1	9 54.29	+24 57.5	1.404	2.367	6.5	19.9
2 11	9 43.28	+56 34.8	1.712	2.531	15.2	19.9	2 11	9 43.02	+26 5.2	1.412	2.386	4.9	19.9
2 21	9 30.06	+56 44.2	1.758	2.541	16.4	20.0	2 21	9 31.72	+26 54.1	1.447	2.404	7.6	20.1
3 2	9 18.97	+56 11.0	1.823	2.552	17.9	20.2	3 2	9 21.91	+27 19.8	1.509	2.422	11.6	20.3
3 12	9 11.51	+55 2.7	1.903	2.564	19.3	20.3	3 12	9 14.70	+27 22.6	1.594	2.439	15.2	20.6
3 22	9 8.19	+53 28.2	1.996	2.575	20.6	20.5	3 22	9 10.63	+27 5.6	1.698	2.456	18.2	20.8
110933	2001 UC ₁₅₂		2 12.5 170°58	1°0/11.7 18			219446	2000 VM ₂₄		2 12.5 173°29	2°6/14.9 18		
1 12	10 4.73	+14 11.4											

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
170342	2003 <i>SM</i> ₁₅₅		2 12.5 203°90	0°0/12.5 17			413557	2005 <i>SJ</i> ₂₅₅		2 12.5 113°30	0°7/13.1 18		
1 12	10 7.24	+11 55.2	2.059	2.893	12.3	21.4	1 12	10 5.79	+9 54.3	1.982	2.815	12.7	21.6
1 22	10 0.87	+12 25.4	1.976	2.888	8.8	21.2	1 22	9 59.71	+10 18.2	1.918	2.829	9.2	21.4
2 1	9 52.48	+13 5.0	1.918	2.882	4.9	20.9	2 1	9 51.75	+10 52.6	1.880	2.842	5.2	21.2
2 11	9 42.80	+13 49.6	1.890	2.876	0.7	20.6	2 11	9 42.71	+11 33.4	1.870	2.856	1.2	20.9
2 21	9 32.79	+14 33.8	1.891	2.869	3.7	20.8	2 21	9 33.55	+12 15.5	1.890	2.869	3.4	21.1
3 2	9 23.53	+15 12.7	1.923	2.861	7.8	21.1	3 2	9 25.27	+12 54.1	1.939	2.881	7.4	21.4
3 12	9 15.94	+15 42.7	1.981	2.852	11.5	21.3	3 12	9 18.72	+13 25.5	2.014	2.894	11.0	21.6
3 22	9 10.64	+16 1.9	2.062	2.843	14.7	21.5	3 22	9 14.39	+13 47.3	2.112	2.906	14.0	21.8
21286	1996 <i>UB</i> ₁		2 12.5 84°08	4°9/ 9.7 18			434311	2004 <i>FV</i> ₁₄₁		2 12.5 322°67	7°1/18.4 16		
1 12	10 11.27	+22 0.8	1.277	2.145	16.1	18.0	1 12	9 59.20	- 7 9.3	1.909	2.682	15.4	20.6
1 22	10 4.44	+23 7.2	1.233	2.161	11.5	17.7	1 22	9 55.37	- 7 23.8	1.810	2.662	12.9	20.4
2 1	9 54.59	+24 14.5	1.212	2.178	6.9	17.5	2 1	9 49.57	- 7 13.8	1.732	2.643	10.1	20.2
2 11	9 43.06	+25 11.5	1.217	2.194	4.9	17.4	2 11	9 42.45	- 6 38.2	1.679	2.623	7.8	20.0
2 21	9 31.53	+25 49.3	1.248	2.210	7.9	17.7	2 21	9 34.87	- 5 39.2	1.651	2.605	7.2	19.9
3 2	9 21.66	+26 3.7	1.305	2.226	12.3	18.0	3 2	9 27.85	- 4 21.8	1.650	2.587	9.0	20.0
3 12	9 14.68	+25 55.1	1.383	2.241	16.3	18.2	3 12	9 22.35	- 2 53.9	1.674	2.569	11.9	20.1
3 22	9 11.13	+25 27.2	1.479	2.257	19.6	18.5	3 22	9 19.04	- 1 23.9	1.721	2.553	15.0	20.2
164671	1996 <i>XC</i> ₁₂		2 12.5 85°69	1°5/13.5 18			465678	2009 <i>SY</i> ₁₉₄		2 12.5 96°32	1°0/13.3 18		
1 12	10 8.35	+ 9 5.3	1.570	2.408	15.2	19.9	1 12	10 4.58	+ 9 6.8	1.893	2.728	13.1	22.3
1 22	10 1.88	+ 9 7.0	1.510	2.422	11.1	19.7	1 22	9 58.96	+ 9 28.9	1.826	2.737	9.6	22.1
2 1	9 53.05	+ 9 21.9	1.474	2.435	6.5	19.5	2 1	9 51.39	+10 3.1	1.784	2.746	5.5	21.9
2 11	9 42.86	+ 9 45.8	1.464	2.449	2.0	19.2	2 11	9 42.67	+10 44.9	1.770	2.755	1.4	21.6
2 21	9 32.56	+10 13.6	1.483	2.462	4.1	19.4	2 21	9 33.79	+11 29.4	1.785	2.764	3.5	21.8
3 2	9 23.43	+10 40.3	1.529	2.475	8.7	19.7	3 2	9 25.77	+12 11.2	1.828	2.773	7.6	22.1
3 12	9 16.50	+11 1.3	1.600	2.488	12.8	20.0	3 12	9 19.51	+12 46.0	1.898	2.782	11.3	22.3
3 22	9 12.32	+11 14.2	1.693	2.501	16.3	20.2	3 22	9 15.52	+13 11.3	1.989	2.790	14.5	22.5
281751	2009 <i>AR</i> ₄₇		2 12.5 126°40	1°6/10.9 18			185929	2000 <i>TH</i> ₅₉		2 12.5 212°52	2°8/ 9.6 18		
1 12	10 2.38	+16 21.1	2.503	3.348	10.0	21.1	1 12	10 4.54	+20 0.7	2.402	3.250	10.2	20.5
1 22	9 57.05	+17 19.9	2.439	3.359	7.0	20.9	1 22	9 58.83	+21 12.8	2.322	3.243	7.3	20.3
2 1	9 50.21	+18 23.6	2.403	3.370	3.8	20.7	2 1	9 51.32	+22 28.8	2.270	3.235	4.3	20.1
2 11	9 42.48	+19 27.0	2.397	3.381	1.6	20.5	2 11	9 42.67	+23 42.1	2.249	3.226	2.9	20.0
2 21	9 34.62	+20 24.9	2.421	3.391	3.9	20.7	2 21	9 33.72	+24 46.7	2.258	3.217	5.1	20.1
3 2	9 27.41	+21 13.3	2.476	3.401	7.0	20.9	3 2	9 25.36	+25 37.9	2.296	3.207	8.3	20.3
3 12	9 21.54	+21 49.6	2.557	3.411	9.9	21.1	3 12	9 18.44	+26 13.3	2.360	3.196	11.2	20.5
3 22	9 17.46	+22 13.0	2.661	3.420	12.3	21.3	3 22	9 13.52	+26 32.6	2.447	3.185	13.8	20.6
152356	2005 <i>UO</i> ₁₂₁		2 12.5 258°82	0°6/12.0 18			501725	2014 <i>UC</i> ₅₄		2 12.5 255°66	9°2/ 4.5 17		
1 12	10 4.89	+13 41.8	1.841	2.688	12.9	20.5	1 12	10 11.25	+37 27.6	1.866	2.710	12.9	20.6
1 22	9 59.35	+14 12.7	1.765	2.685	9.2	20.3	1 22	10 4.38	+38 56.5	1.803	2.698	10.7	20.4
2 1	9 51.69	+14 52.3	1.714	2.681	5.0	20.0	2 1	9 54.66	+40 13.7	1.766	2.685	9.3	20.3
2 11	9 42.70	+15 35.6	1.691	2.678	0.8	19.7	2 11	9 43.13	+41 8.3	1.755	2.672	9.6	20.3
2 21	9 33.42	+16 16.6	1.697	2.674	4.1	20.0	2 21	9 31.22	+41 33.3	1.769	2.660	11.4	20.4
3 2	9 24.99	+16 50.2	1.731	2.670	8.5	20.2	3 2	9 20.48	+41 26.3	1.808	2.646	13.9	20.5
3 12	9 18.37	+17 13.1	1.791	2.667	12.3	20.4	3 12	9 12.22	+40 50.0	1.867	2.633	16.4	20.6
3 22	9 14.18	+17 23.6	1.872	2.663	15.6	20.6	3 22	9 7.14	+39 50.0	1.944	2.619	18.7	20.8
292593	2006 <i>TY</i> ₁₀₁		2 12.5 169°71	0°8/11.7 17			445864	2012 <i>TH</i> ₆₆		2 12.5 61°37	4°0/10.4 18		
1 12	10 2.19	+15 4.9	2.746	3.584	9.4	21.6	1 12	10 10.00	+20 8.3	1.198	2.069	16.7	20.9
1 22	9 56.83	+15 36.5	2.671	3.587	6.6	21.4	1 22	10 3.68	+21 0.2	1.151	2.081	11.9	20.6
2 1	9 50.06	+16 12.9	2.623	3.589	3.6	21.2	2 1	9 54.25	+21 55.5	1.126	2.094	6.8	20.4
2 11	9 42.47	+16 50.3	2.605	3.591	0.8	21.0	2 11	9 43.06	+22 43.9	1.127	2.108	4.0	20.2
2 21	9 34.72	+17 25.1	2.618	3.592	3.2	21.2	2 21	9 31.82	+23 16.5	1.153	2.121	7.4	20.5
3 2	9 27.55	+17 53.9	2.661	3.594	6.2	21.4	3 2	9 22.25	+23 28.5	1.204	2.135	12.2	20.8
3 12	9 21.57	+18 14.7	2.732	3.595	9.0	21.6	3 12	9 15.62	+23 19.6	1.277	2.149	16.5	21.1
3 22	9 17.25	+18 26.2	2.826	3.595	11.4	21.7	3 22	9 12.48	+22 52.5	1.367	2.163	20.1	21.4
470923	2009 <i>EE</i> ₅		2 12.5 49°33	1°5/11.1 18			460148	2014 <i>PF</i> ₆₃		2 12.5 172°91	0°5/12.1 18		
1 12	10 1.01	+14 54.1	2.137	2.987	11.2	21.0	1 12	10 6.81	+12 35.3	2.036	2.873	12.3	22.2
1 22	9 56.33	+16 0.5	2.070	2.992	7.9	20.8	1 22	10 0.54	+13 21.0	1.962	2.877	8.8	22.0
2 1	9 49.91	+17 14.7	2.029	2.997	4.3	20.6	2 1	9 52.28	+14 16.1	1.914	2.880	4.8	21.7
2 11	9 42.45	+18 30.3	2.018	3.003	1.5	20.4	2 11	9 42.80	+15 15.1	1.896	2.882	0.7	21.4
2 21	9 34.80	+19 41.0	2.036	3.008	4.2	20.6	2 21	9 33.08	+16 12.0	1.908	2.884	3.9	21.7
3 2	9 27.86	+20 41.4	2.083	3.014	7.8	20.8	3 2	9 24.17	+17 1.4	1.949	2.885	7.9	21.9
3 12	9 22.42	+21 27.8	2.157	3.020	11.1	21.1	3 12	9 16.96	+17 39.6	2.017	2.885	11.5	22.1
3 22	9 18.99	+21 59.1	2.252	3.025	13.8	21.3	3 22	9 12.02	+18 5.0	2.107	2.884	14.5	22.3
297603	2001 <i>SW</i> ₂₁₉		2 12.5 193°07	3°4/10.2 18			453255	2008 <i>SD</i> ₁₃₆		2 12.5 288°62	3°8/14.6 18		
1 12	10 11.05	+21 10.1	1.817	2.667	12.9	21.5	1 12	10 6.34	+ 4 43.7	1.379	2.215	17.1	20.7
1 22	10 3.85	+21 56.5	1.745	2.665	9.3	21.3	1 22	10 1.10	+ 4 31.9	1.294	2.200	13.1	20.4
2 1	9 54.20	+22 44.7	1.699	2.663	5.5	21.0	2 1	9 53.00	+ 4 39.6	1.230	2.185	8.5	20.1
2 11	9 43.04	+23 27.4	1.682	2.660	3.4	20.9	2 11	9 42.94	+ 5 5.3	1.191	2.171	4.3	19.8
2 21	9 31.60	+23 57.9	1.693	2.656	6.1	21.0	2 21	9 32.23	+ 5 44.3	1.178	2.156	5.3	19.9
3 2	9 21.18	+24 12.3	1.734	2.652	10.0	21.3	3 2	9 22.42	+ 6 30.0	1.191	2.142	10.1	20.1
3 12	9 12.90	+24 9.5	1.799	2.646	13.6	21.5	3 12	9 14.93	+ 7 14.9	1.228	2.127	15.0	20.3
3 22	9 7.39	+23 51.1	1.884	2.640	16.7	21.7	3 22	9 10.61	+ 7 52.8	1.283	2.113	19.3	20.5
456312	2006 <i>SM</i> ₂₃₈		2 12.5 52°16	3°2/10.6 18			108913	2001 <i>PQ</i> ₁₂		2 12.5 148°92	6°1/ 7.9 18		
1 12	10 8.14	+19 33.6	1.40										

EPHEMERIDES

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
520786	2014 <i>SR</i> ₃₅₇		2 12.5 77°11	0°9/13.3	18		190154	2005 <i>TL</i> ₈₃		2 12.5 189°08	1°6/11.5	18	
1 12	10 2.35	+ 7 10.9	1.761	2.597	13.9	21.0	1 12	10 11.34	+16 31.0	1.800	2.644	13.3	21.2
1 22	9 57.55	+ 8 12.3	1.692	2.603	10.1	20.8	1 22	10 4.04	+17 0.3	1.725	2.643	9.5	20.9
2 1	9 50.70	+ 9 30.7	1.647	2.610	5.8	20.5	2 1	9 54.33	+17 35.3	1.676	2.642	5.2	20.7
2 11	9 42.60	+10 59.9	1.631	2.616	1.4	20.2	2 11	9 43.13	+18 9.9	1.655	2.640	1.6	20.4
2 21	9 34.26	+12 32.1	1.643	2.623	3.7	20.4	2 21	9 31.63	+18 38.4	1.664	2.637	4.8	20.6
3 2	9 26.77	+13 59.1	1.684	2.630	8.1	20.7	3 2	9 21.13	+18 56.3	1.702	2.633	9.2	20.9
3 12	9 21.06	+15 14.3	1.751	2.636	12.1	20.9	3 12	9 12.72	+19 1.5	1.765	2.629	13.1	21.1
3 22	9 17.71	+16 14.1	1.840	2.643	15.4	21.2	3 22	9 7.04	+18 54.1	1.850	2.623	16.4	21.3
394803	2008 <i>RQ</i> ₅₁		2 12.5 122°01	3°1/14.7	18		462936	2011 <i>BS</i> ₈₄		2 12.5 94°52	1°8/11.0	18	
1 12	10 7.75	+ 3 30.7	1.643	2.461	15.6	21.7	1 12	10 4.65	+15 32.6	1.889	2.740	12.5	21.2
1 22	10 1.41	+ 3 50.8	1.580	2.477	11.7	21.5	1 22	9 59.04	+16 37.2	1.833	2.755	8.8	21.0
2 1	9 52.81	+ 4 30.1	1.540	2.492	7.4	21.3	2 1	9 51.45	+17 48.9	1.803	2.770	4.7	20.8
2 11	9 42.88	+ 5 24.8	1.527	2.506	3.6	21.1	2 11	9 42.72	+19 0.6	1.801	2.785	1.8	20.6
2 21	9 32.79	+ 6 28.6	1.543	2.520	4.4	21.1	2 21	9 33.87	+20 5.3	1.829	2.800	4.7	20.9
3 2	9 23.76	+ 7 34.3	1.587	2.533	8.4	21.4	3 2	9 25.96	+20 57.6	1.885	2.815	8.5	21.1
3 12	9 16.80	+ 8 35.1	1.656	2.546	12.4	21.7	3 12	9 19.84	+21 34.5	1.967	2.829	12.0	21.4
3 22	9 12.47	+ 9 26.3	1.748	2.558	15.8	21.9	3 22	9 16.05	+21 55.4	2.070	2.843	14.9	21.6
284094	2005 <i>MK</i> ₃₄		2 12.5 195°75	2°0/ 9.9	17		209109	2003 <i>SY</i> ₁₁₉		2 12.5 189°64	0°2/12.7	18	
1 12	10 1.29	+17 11.5	2.837	3.680	9.0	21.3	1 12	10 6.86	+11 11.8	1.860	2.697	13.2	21.6
1 22	9 56.28	+18 39.5	2.759	3.678	6.3	21.1	1 22	10 0.76	+11 42.5	1.783	2.697	9.6	21.3
2 1	9 49.83	+20 12.9	2.710	3.675	3.5	20.9	2 1	9 52.49	+12 24.2	1.731	2.696	5.3	21.1
2 11	9 42.49	+21 46.0	2.692	3.673	2.0	20.8	2 11	9 42.88	+13 12.1	1.708	2.694	0.8	20.7
2 21	9 34.89	+23 13.2	2.707	3.669	4.1	21.0	2 21	9 32.98	+14 0.2	1.714	2.692	3.8	21.0
3 2	9 27.76	+24 29.5	2.753	3.666	6.9	21.1	3 2	9 23.91	+14 43.1	1.748	2.689	8.2	21.2
3 12	9 21.75	+25 31.9	2.826	3.662	9.6	21.3	3 12	9 16.69	+15 16.5	1.809	2.686	12.2	21.5
3 22	9 17.35	+26 19.2	2.923	3.658	11.8	21.5	3 22	9 11.91	+15 38.4	1.892	2.682	15.5	21.7
200784	2001 <i>XF</i> ₆₅		2 12.5 30°57	1°9/11.4	18		182317	2001 <i>OM</i> ₈₈		2 12.5 175°17	0°2/12.7	18	
1 12	10 4.33	+14 31.6	1.106	1.981	17.4	19.3	1 12	10 5.18	+10 56.3	2.032	2.867	12.3	21.3
1 22	9 59.75	+15 26.9	1.058	1.991	12.4	19.1	1 22	9 59.39	+11 31.0	1.956	2.869	8.9	21.0
2 1	9 52.16	+16 34.9	1.032	2.003	6.7	18.8	2 1	9 51.67	+12 16.1	1.906	2.871	5.0	20.8
2 11	9 42.81	+17 45.4	1.030	2.016	1.9	18.5	2 11	9 42.77	+13 7.0	1.885	2.872	0.8	20.5
2 21	9 33.32	+18 47.7	1.053	2.029	6.1	18.8	2 21	9 33.63	+13 58.3	1.894	2.872	3.5	20.7
3 2	9 25.35	+19 33.6	1.099	2.043	11.6	19.2	3 2	9 25.25	+14 44.6	1.932	2.873	7.6	21.0
3 12	9 20.18	+19 59.2	1.167	2.058	16.3	19.5	3 12	9 18.53	+15 22.0	1.997	2.872	11.2	21.2
3 22	9 18.35	+20 4.4	1.253	2.074	20.2	19.8	3 22	9 14.02	+15 48.3	2.083	2.872	14.3	21.4
357149	2002 <i>CB</i> ₃		2 12.5 10°46	4°2/10.3	18		186055	2001 <i>ST</i> ₆₄		2 12.5 88°38	5°6/17.8	18	
1 12	10 4.47	+20 0.1	1.051	1.935	17.3	19.9	1 12	10 4.59	- 5 40.6	1.976	2.746	15.1	20.5
1 22	10 0.12	+20 50.7	1.000	1.937	12.4	19.6	1 22	9 58.80	- 5 24.5	1.918	2.773	12.1	20.4
2 1	9 52.48	+21 46.6	0.970	1.940	7.2	19.3	2 1	9 51.23	- 4 45.0	1.883	2.801	8.9	20.2
2 11	9 42.86	+22 36.5	0.963	1.945	4.3	19.1	2 11	9 42.69	- 3 44.3	1.874	2.828	6.3	20.1
2 21	9 33.02	+23 10.6	0.980	1.951	7.9	19.4	2 21	9 34.11	- 2 27.3	1.893	2.854	5.7	20.1
3 2	9 24.79	+23 22.7	1.020	1.958	13.0	19.7	3 2	9 26.42	- 1 0.9	1.941	2.880	7.7	20.3
3 12	9 19.57	+23 11.8	1.080	1.966	17.7	20.0	3 12	9 20.40	+ 0 27.2	2.017	2.906	10.5	20.5
3 22	9 17.96	+22 40.3	1.157	1.976	21.6	20.2	3 22	9 16.52	+ 1 50.4	2.116	2.931	13.2	20.7
132452	2002 <i>HA</i> ₂		2 12.5 244°82	4°2/ 9.3	18		106935	2000 <i>YB</i> ₆₆		2 12.5 100°48	0°9/13.2	18	
1 12	10 6.60	+21 14.2	1.650	2.512	13.4	20.1	1 12	10 9.85	+ 9 42.6	1.767	2.599	14.1	20.0
1 22	10 0.96	+22 31.1	1.578	2.504	9.6	19.8	1 22	10 2.66	+10 0.8	1.715	2.624	10.2	19.8
2 1	9 52.76	+23 52.5	1.532	2.497	5.9	19.6	2 1	9 53.39	+10 30.4	1.688	2.649	5.8	19.6
2 11	9 42.91	+25 8.7	1.513	2.489	4.3	19.5	2 11	9 42.98	+11 6.6	1.688	2.674	1.4	19.4
2 21	9 32.64	+26 11.0	1.522	2.481	7.1	19.6	2 21	9 32.59	+11 44.1	1.719	2.698	3.7	19.6
3 2	9 23.34	+26 53.0	1.557	2.472	11.1	19.8	3 2	9 23.35	+12 17.9	1.778	2.721	8.0	19.9
3 12	9 16.20	+27 12.7	1.616	2.464	14.9	20.0	3 12	9 16.16	+12 44.3	1.864	2.743	11.7	20.2
3 22	9 11.92	+27 11.2	1.694	2.455	18.2	20.2	3 22	9 11.50	+13 1.3	1.972	2.765	14.8	20.4
123480	2000 <i>WE</i> ₁₆₂		2 12.5 146°99	4°3/ 7.9	18		482389	2012 <i>AT</i> ₁₈		2 12.5 37°82	5°2/ 8.1	17	
1 12	10 5.56	+25 13.0	2.456	3.306	10.0	20.3	1 12	10 3.34	+11 15.8	0.936	1.815	19.5	19.9
1 22	9 59.47	+26 38.9	2.400	3.317	7.3	20.1	1 22	9 59.81	+15 18.6	0.881	1.819	13.6	19.6
2 1	9 51.63	+28 3.4	2.372	3.327	4.9	20.0	2 1	9 52.63	+19 56.2	0.851	1.823	7.4	19.3
2 11	9 42.75	+29 19.4	2.374	3.337	4.4	20.0	2 11	9 42.95	+24 39.2	0.849	1.828	5.6	19.2
2 21	9 33.68	+30 21.3	2.407	3.346	6.2	20.1	2 21	9 32.56	+28 54.5	0.874	1.833	10.9	19.5
3 2	9 25.36	+31 5.4	2.468	3.354	8.8	20.3	3 2	9 23.60	+32 18.0	0.924	1.839	16.8	19.8
3 12	9 18.56	+31 30.8	2.555	3.362	11.3	20.5	3 12	9 17.90	+34 41.5	0.994	1.845	21.8	20.2
3 22	9 13.79	+31 38.8	2.662	3.370	13.5	20.6	3 22	9 16.35	+36 9.5	1.079	1.851	25.8	20.5
359198	2009 <i>DU</i> ₃₃		2 12.5 270°69	3°2/10.3	16		53378	1999 <i>JO</i> ₈₇		2 12.5 229°43	0°8/13.3	18	
1 12	10 7.53	+19 45.4	1.675	2.533	13.4	21.1	1 12	10 0.64	+ 8 11.8	2.397	3.225	11.0	18.9
1 22	10 1.66	+20 34.3	1.592	2.517	9.6	20.8	1 22	9 55.97	+ 8 57.7	2.314	3.221	8.0	18.7
2 1	9 53.19	+21 28.3	1.533	2.500	5.6	20.6	2 1	9 49.72	+ 9 55.3	2.256	3.217	4.6	18.5
2 11	9 42.99	+22 19.5	1.502	2.483	3.2	20.4	2 11	9 42.51	+11 0.7	2.228	3.214	1.2	18.2
2 21	9 32.27	+23 0.4	1.499	2.465	6.2	20.5	2 21	9 35.06	+12 8.8	2.231	3.210	3.0	18.4
3 2	9 22.44	+23 25.3	1.523	2.448	10.6	20.7	3 2	9 28.17	+13 14.5	2.263	3.206	6.5	18.6
3 12	9 14.72	+23 31.9	1.570	2.430	14.7	20.9	3 12	9 22.55	+14 13.0	2.323	3.202	9.7	18.8
3 22	9 9.88	+23 20.9	1.638	2.412	18.2	21.1	3 22	9 18.72	+15 1.5	2.406	3.198	12.5	19.0
397882	2008 <i>UM</i> ₁₂₃		2 12.5 121°18	0°1/12.5	18		362140	2009 <i>DH</i> ₈₄		2 12.5 146°54	0°1/12.4	18	
1 12	10 10.00	+12 24.0	1.668										

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2 12.6

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
145323	2005 <i>LR</i> ₂₂		2 12.5 284°49	2°6/14.7	18		422962	2003 <i>BB</i> ₇₇		2 12.6 286°48	2°4/13.5	17	
1 12	10 2.72	+ 4 49.5	2.279	3.093	11.9	19.9	1 12	10 15.88	+ 9 55.3	1.913	2.730	13.8	20.3
1 22	9 57.57	+ 4 45.4	2.183	3.078	9.1	19.6	1 22	10 7.56	+ 9 2.4	1.799	2.698	10.4	20.0
2 1	9 50.67	+ 4 53.7	2.113	3.063	5.9	19.4	2 1	9 56.53	+ 8 14.3	1.710	2.666	6.4	19.7
2 11	9 42.65	+ 5 12.8	2.070	3.048	3.0	19.2	2 11	9 43.55	+ 7 30.4	1.652	2.634	2.7	19.4
2 21	9 34.29	+ 5 39.8	2.057	3.033	3.6	19.2	2 21	9 29.77	+ 6 49.8	1.625	2.601	4.4	19.4
3 2	9 26.48	+ 6 10.9	2.073	3.018	6.8	19.4	3 2	9 16.61	+ 6 11.8	1.629	2.567	8.9	19.6
3 12	9 20.03	+ 6 42.0	2.115	3.002	10.2	19.6	3 12	9 5.35	+ 5 35.0	1.661	2.534	13.3	19.8
3 22	9 15.50	+ 7 9.4	2.182	2.987	13.2	19.7	3 22	8 56.87	+ 4 58.4	1.716	2.499	17.1	20.0
354080	2001 <i>VX</i> ₆₀		2 12.5 57°55	4°5/15.2	18		182546	2001 <i>TE</i> ₈₂		2 12.6 150°77	3°0/15.2	18	
1 12	10 7.46	+ 2 59.7	1.283	2.116	18.3	20.4	1 12	10 5.13	+ 2 42.1	2.264	3.065	12.4	20.6
1 22	10 1.61	+ 2 43.9	1.229	2.131	14.0	20.2	1 22	9 59.15	+ 2 51.2	2.188	3.074	9.5	20.5
2 1	9 53.07	+ 2 50.6	1.196	2.147	9.2	20.0	2 1	9 51.48	+ 3 14.8	2.138	3.083	6.2	20.3
2 11	9 42.97	+ 3 17.3	1.187	2.164	5.1	19.8	2 11	9 42.81	+ 3 50.8	2.116	3.091	3.4	20.1
2 21	9 32.74	+ 3 58.4	1.204	2.180	5.6	19.8	2 21	9 33.95	+ 4 35.3	2.124	3.098	3.7	20.1
3 2	9 23.88	+ 4 46.4	1.247	2.197	9.8	20.1	3 2	9 25.80	+ 5 23.7	2.161	3.105	6.7	20.3
3 12	9 17.53	+ 5 33.6	1.313	2.214	14.1	20.4	3 12	9 19.11	+ 6 11.2	2.227	3.111	9.9	20.5
3 22	9 14.26	+ 6 13.9	1.399	2.232	17.8	20.7	3 22	9 14.38	+ 6 53.9	2.316	3.116	12.7	20.7
87113	2000 <i>LN</i> ₂₅		2 12.5 215°72	2°3/10.6	18		237429	1999 <i>GH</i> ₅₈		2 12.6 237°15	7°6/19.2	18	
1 12	10 5.34	+18 0.8	2.073	2.923	11.5	19.9	1 12	10 4.23	-10 23.9	1.983	2.726	15.9	20.7
1 22	9 59.59	+18 56.5	1.996	2.917	8.2	19.7	1 22	9 58.98	-10 21.9	1.882	2.712	13.5	20.5
2 1	9 51.83	+19 57.4	1.945	2.911	4.6	19.5	2 1	9 51.63	- 9 52.2	1.802	2.697	10.7	20.3
2 11	9 42.81	+20 57.3	1.923	2.905	2.3	19.3	2 11	9 42.85	- 8 53.6	1.746	2.681	8.4	20.1
2 21	9 33.48	+21 49.9	1.930	2.898	4.9	19.5	2 21	9 33.58	- 7 28.7	1.718	2.665	7.6	20.1
3 2	9 24.89	+22 30.2	1.967	2.890	8.6	19.7	3 2	9 24.87	- 5 43.5	1.718	2.648	9.2	20.1
3 12	9 17.97	+22 55.6	2.029	2.883	12.1	19.9	3 12	9 17.75	- 3 47.4	1.744	2.630	12.1	20.2
3 22	9 13.32	+23 5.7	2.112	2.874	15.0	20.0	3 22	9 12.91	- 1 50.0	1.795	2.612	15.1	20.4
466574	2014 <i>UD</i> ₂₄		2 12.5 45°94	5°8/ 8.4	18		123467	2000 <i>WZ</i> ₁₄₆		2 12.6 40°72	2°3/10.5	18	
1 12	10 6.10	+24 54.4	1.466	2.336	14.2	20.5	1 12	10 2.04	+15 6.1	1.633	2.493	13.5	18.6
1 22	10 0.51	+26 17.9	1.428	2.355	10.3	20.3	1 22	9 57.51	+16 39.3	1.575	2.502	9.5	18.4
2 1	9 52.38	+27 38.6	1.415	2.376	6.9	20.1	2 1	9 50.78	+18 22.8	1.543	2.512	5.2	18.2
2 11	9 42.86	+28 46.0	1.428	2.396	5.9	20.1	2 11	9 42.72	+20 7.1	1.538	2.522	2.4	18.0
2 21	9 33.35	+29 32.1	1.468	2.417	8.4	20.3	2 21	9 34.44	+21 42.5	1.562	2.532	5.6	18.2
3 2	9 25.22	+29 53.3	1.532	2.439	11.9	20.6	3 2	9 27.12	+23 1.1	1.614	2.543	9.8	18.5
3 12	9 19.52	+29 50.4	1.619	2.461	15.2	20.8	3 12	9 21.76	+23 58.7	1.689	2.553	13.5	18.8
3 22	9 16.74	+29 26.8	1.724	2.483	18.0	21.1	3 22	9 18.93	+24 34.5	1.785	2.565	16.7	19.0
347595	2001 <i>QL</i> ₃₅		2 12.5 141°71	0°3/12.9	18		146591	2001 <i>TH</i> ₁₄₃		2 12.6 71°12	0°7/12.0	18	
1 12	10 5.26	+10 3.4	2.372	3.197	11.1	21.7	1 12	10 4.20	+12 52.9	1.723	2.573	13.5	20.0
1 22	9 59.15	+10 45.8	2.304	3.212	8.0	21.5	1 22	9 58.96	+13 40.8	1.656	2.577	9.6	19.8
2 1	9 51.42	+11 37.7	2.263	3.225	4.5	21.3	2 1	9 51.55	+14 39.4	1.614	2.582	5.2	19.5
2 11	9 42.75	+12 34.6	2.252	3.238	0.8	21.0	2 11	9 42.83	+15 42.4	1.600	2.586	0.9	19.2
2 21	9 33.96	+13 31.7	2.272	3.250	3.1	21.3	2 21	9 33.87	+16 42.6	1.614	2.591	4.3	19.5
3 2	9 25.87	+14 24.1	2.323	3.261	6.6	21.5	3 2	9 25.84	+17 33.8	1.656	2.596	8.7	19.8
3 12	9 19.23	+15 8.4	2.401	3.272	9.8	21.7	3 12	9 19.72	+18 11.8	1.723	2.600	12.7	20.0
3 22	9 14.50	+15 42.4	2.503	3.282	12.5	21.9	3 22	9 16.09	+18 35.0	1.811	2.605	15.9	20.2
457194	2008 <i>HN</i> ₁₃		2 12.6 261°14	4°4/15.9	17		151793	2003 <i>FB</i> ₄₂		2 12.6 330°55	6°3/ 8.9	18	
1 12	10 3.30	- 0 6.8	1.909	2.711	14.4	21.9	1 12	10 10.91	+28 52.0	1.614	2.473	13.8	19.4
1 22	9 58.28	- 0 2.5	1.816	2.698	11.3	21.6	1 22	10 4.09	+29 27.9	1.548	2.466	10.4	19.2
2 1	9 51.19	+ 0 21.8	1.747	2.686	7.9	21.4	2 1	9 54.49	+29 57.1	1.506	2.460	7.3	19.0
2 11	9 42.75	+ 1 4.7	1.704	2.673	4.9	21.2	2 11	9 43.24	+30 10.9	1.490	2.454	6.3	18.9
2 21	9 33.89	+ 2 2.4	1.689	2.661	4.9	21.2	2 21	9 31.76	+30 3.6	1.502	2.449	8.5	19.0
3 2	9 25.66	+ 3 9.0	1.702	2.648	8.0	21.3	3 2	9 21.59	+29 33.0	1.539	2.444	12.0	19.2
3 12	9 19.04	+ 4 17.6	1.742	2.634	11.7	21.5	3 12	9 13.93	+28 41.5	1.600	2.439	15.5	19.4
3 22	9 14.71	+ 5 21.9	1.804	2.621	15.1	21.7	3 22	9 9.41	+27 33.5	1.679	2.435	18.5	19.6
81254	2000 <i>FR</i> ₃₅		2 12.6 241°57	2°7/10.4	18		118134	3533 <i>T</i> ₋₃		2 12.6 68°01	0°3/12.4	18	
1 12	10 6.00	+18 54.2	1.943	2.796	12.1	19.7	1 12	10 7.92	+12 25.2	1.413	2.266	15.7	20.0
1 22	10 0.23	+19 48.7	1.863	2.785	8.6	19.5	1 22	10 1.76	+12 59.0	1.365	2.286	11.2	19.8
2 1	9 52.27	+20 48.2	1.808	2.775	4.9	19.2	2 1	9 53.09	+13 44.2	1.340	2.307	6.1	19.5
2 11	9 42.90	+21 46.0	1.782	2.763	2.7	19.0	2 11	9 43.03	+14 33.9	1.341	2.327	0.8	19.2
2 21	9 33.16	+22 35.3	1.785	2.752	5.4	19.2	2 21	9 32.96	+15 20.7	1.370	2.348	4.6	19.5
3 2	9 24.20	+23 10.9	1.817	2.740	9.3	19.4	3 2	9 24.24	+15 58.4	1.425	2.368	9.5	19.9
3 12	9 17.03	+23 30.4	1.873	2.728	12.9	19.6	3 12	9 17.91	+16 23.3	1.505	2.389	13.7	20.2
3 22	9 12.30	+23 33.6	1.951	2.715	16.0	19.8	3 22	9 14.49	+16 34.3	1.604	2.409	17.2	20.4
467063	2016 <i>DC</i> ₁₅		2 12.6 260°77	0°1/12.5	17		451867	2014 <i>HP</i> ₁₇		2 12.6 208°97	3°2/10.4	18	
1 12	10 8.40	+13 27.9	2.091	2.926	12.0	21.2	1 12	10 10.79	+19 58.9	1.784	2.634	13.1	21.8
1 22	10 1.86	+13 33.4	1.992	2.906	8.8	20.9	1 22	10 3.82	+20 49.5	1.707	2.628	9.4	21.6
2 1	9 53.17	+13 45.5	1.920	2.884	4.9	20.6	2 1	9 54.33	+21 43.8	1.656	2.621	5.4	21.3
2 11	9 43.05	+14 0.7	1.876	2.862	0.7	20.3	2 11	9 43.24	+22 34.2	1.634	2.614	3.2	21.2
2 21	9 32.47	+14 15.1	1.862	2.840	3.7	20.5	2 21	9 31.77	+23 13.6	1.640	2.605	6.0	21.3
3 2	9 22.53	+14 25.0	1.878	2.817	7.9	20.7	3 2	9 21.25	+23 37.1	1.675	2.596	10.1	21.5
3 12	9 14.23	+14 27.8	1.921	2.793	11.8	20.9	3 12	9 12.85	+23 43.1	1.735	2.586	13.9	21.8
3 22	9 8.26	+14 22.1	1.986	2.769	15.1	21.0	3 22	9 7.26	+23 32.5	1.815	2.575	17.1	22.0
205456	2001 <i>QV</i> ₁₀		2 12.6 94°11	0°0/12.6	18		23287	2000 <i>YL</i> ₁₂₀		2 12.6 295°46	1°6/11.5	18	
1 12	10 3.09	+11 37.0	2.378										

EPHEMERIDES

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
65835	1996 XJ ₁₁		2 12.6 196°64	0°1/12.5 18			378766	2008 RP ₁₂₆		2 12.6 123°42	1°0/13.6 18		
1 12	10 6.30	+11 13.5	1.935	2.772	12.8	20.5	1 12	10 2.80	+7 44.0	2.277	3.102	11.6	21.8
1 22	10 0.36	+11 55.9	1.856	2.769	9.2	20.3	1 22	9 57.51	+8 23.6	2.207	3.113	8.4	21.6
2 1	9 52.32	+12 49.8	1.802	2.767	5.1	20.0	2 1	9 50.60	+9 15.1	2.164	3.124	4.9	21.4
2 11	9 42.97	+13 49.7	1.777	2.763	0.7	19.7	2 11	9 42.74	+10 14.2	2.149	3.134	1.4	21.1
2 21	9 33.29	+14 49.4	1.781	2.759	3.8	19.9	2 21	9 34.73	+11 15.9	2.165	3.144	3.0	21.3
3 2	9 24.38	+15 43.1	1.815	2.754	8.1	20.2	3 2	9 27.41	+12 15.1	2.211	3.154	6.6	21.5
3 12	9 17.22	+16 26.2	1.875	2.749	12.0	20.4	3 12	9 21.51	+13 7.3	2.284	3.164	9.9	21.7
3 22	9 12.42	+16 56.5	1.957	2.743	15.2	20.6	3 22	9 17.50	+13 49.8	2.381	3.173	12.6	21.9
340436	2006 FG ₅₄		2 12.6 207°88	3°5/ 8.9 17			51174	2000 HH ₆₉		2 12.6 36°46	5°6/ 7.7 18		
1 12	10 5.15	+24 31.4	2.685	3.532	9.3	22.1	1 12	10 5.02	+27 56.9	1.979	2.838	11.6	19.0
1 22	9 59.13	+25 21.3	2.610	3.527	6.8	21.9	1 22	9 59.46	+29 6.3	1.923	2.842	8.6	18.8
2 1	9 51.48	+26 10.2	2.562	3.520	4.4	21.8	2 1	9 51.81	+30 11.7	1.894	2.847	6.2	18.6
2 11	9 42.84	+26 53.0	2.544	3.513	3.5	21.7	2 11	9 42.91	+31 5.1	1.892	2.851	5.7	18.6
2 21	9 33.98	+27 25.2	2.557	3.506	5.3	21.8	2 21	9 33.86	+31 40.6	1.918	2.856	7.7	18.7
3 2	9 25.75	+27 44.0	2.598	3.498	7.9	22.0	3 2	9 25.76	+31 55.1	1.971	2.861	10.5	18.9
3 12	9 18.87	+27 48.5	2.666	3.490	10.4	22.1	3 12	9 19.56	+31 48.8	2.047	2.866	13.3	19.1
3 22	9 13.85	+27 39.4	2.756	3.481	12.7	22.3	3 22	9 15.80	+31 24.1	2.142	2.872	15.7	19.3
318985	2005 UB ₃₅₅		2 12.6 219°63	5°3/ 8.1 18			82075	2000 YW ₁₃₄		2 12.6 34°51	0°1/10.8 18		
1 12	10 9.58	+28 43.8	2.206	3.053	11.0	20.3	1 12	9 43.67	+19 6.4	45.286	46.130	0.6	21.2
1 22	10 2.64	+29 37.3	2.133	3.045	8.3	20.1	1 22	9 43.03	+19 10.8	45.216	46.136	0.4	21.2
2 1	9 53.55	+30 26.4	2.087	3.037	6.0	20.0	2 1	9 42.33	+19 15.3	45.175	46.141	0.2	21.2
2 11	9 43.13	+31 3.8	2.070	3.028	5.4	19.9	2 11	9 41.60	+19 19.8	45.164	46.147	0.1	21.1
2 21	9 32.45	+31 24.3	2.081	3.018	7.2	20.0	2 21	9 40.86	+19 24.0	45.184	46.153	0.2	21.2
3 2	9 22.64	+31 25.2	2.121	3.008	10.0	20.2	3 2	9 40.15	+19 27.9	45.234	46.159	0.4	21.2
3 12	9 14.68	+31 6.8	2.185	2.997	12.8	20.3	3 12	9 39.49	+19 31.3	45.313	46.165	0.6	21.2
3 22	9 9.17	+30 31.8	2.270	2.986	15.3	20.5	3 22	9 38.90	+19 34.2	45.417	46.171	0.8	21.2
226062	2002 GN ₁₆₉		2 12.6 337°17	1°2/13.4 18			424007	2006 WU ₈₀		2 12.6 272°93	6°8/17.2 18		
1 12	10 4.08	+9 42.6	1.697	2.540	14.0	19.9	1 12	10 4.68	-4 14.4	1.790	2.574	15.9	21.1
1 22	9 58.97	+9 48.2	1.620	2.534	10.3	19.6	1 22	9 59.39	-4 47.4	1.703	2.566	13.0	20.9
2 1	9 51.62	+10 6.1	1.566	2.529	6.0	19.4	2 1	9 51.90	-4 58.4	1.638	2.559	9.9	20.7
2 11	9 42.88	+10 32.5	1.538	2.523	1.7	19.1	2 11	9 42.95	-4 46.5	1.598	2.551	7.3	20.5
2 21	9 33.81	+11 2.7	1.539	2.519	3.9	19.2	2 21	9 33.57	-4 13.5	1.585	2.543	7.0	20.4
3 2	9 25.59	+11 31.5	1.567	2.515	8.4	19.5	3 2	9 24.91	-3 24.1	1.598	2.535	9.2	20.6
3 12	9 19.27	+11 54.5	1.620	2.511	12.5	19.7	3 12	9 18.02	-2 25.4	1.637	2.527	12.5	20.7
3 22	9 15.48	+12 8.8	1.694	2.507	16.1	19.9	3 22	9 13.57	-1 24.7	1.698	2.520	15.7	20.9
58791	1998 FH ₈₂		2 12.6 43°29	8°1/ 7.3 18			115157	2003 SG ₇₃		2 12.6 121°51	0°3/12.3 18		
1 12	10 10.23	+32 33.3	1.529	2.389	14.3	17.6	1 12	10 4.32	+12 55.6	2.135	2.975	11.6	19.8
1 22	10 3.57	+33 39.6	1.489	2.402	11.1	17.5	1 22	9 58.70	+13 24.3	2.066	2.981	8.3	19.6
2 1	9 54.14	+34 34.7	1.472	2.415	8.7	17.3	2 1	9 51.30	+14 0.8	2.022	2.988	4.6	19.4
2 11	9 43.20	+35 8.5	1.481	2.429	8.3	17.4	2 11	9 42.86	+14 40.6	2.007	2.994	0.6	19.1
2 21	9 32.31	+35 15.0	1.516	2.443	10.3	17.5	2 21	9 34.24	+15 18.9	2.022	3.000	3.5	19.4
3 2	9 22.99	+34 53.3	1.575	2.458	13.2	17.7	3 2	9 26.39	+15 51.6	2.067	3.006	7.3	19.6
3 12	9 16.35	+34 6.9	1.656	2.472	16.1	17.9	3 12	9 20.12	+16 15.5	2.137	3.011	10.7	19.8
3 22	9 12.88	+33 1.5	1.755	2.488	18.6	18.2	3 22	9 15.92	+16 29.2	2.231	3.017	13.6	20.0
76182	2000 EB ₃₉		2 12.6 42°64	3°6/ 9.9 18			257665	1999 VA ₅₁		2 12.6 134°78	3°9/15.4 18		
1 12	10 7.06	+23 11.4	1.923	2.779	12.0	19.2	1 12	10 6.44	+1 45.2	1.844	2.651	14.6	20.6
1 22	10 0.82	+23 42.4	1.863	2.785	8.6	19.0	1 22	10 0.42	+1 43.9	1.772	2.660	11.3	20.4
2 1	9 52.50	+24 12.4	1.828	2.791	5.3	18.8	2 1	9 52.33	+2 0.7	1.724	2.668	7.5	20.2
2 11	9 42.99	+24 35.2	1.821	2.797	3.6	18.7	2 11	9 43.01	+2 33.4	1.703	2.677	4.4	20.0
2 21	9 33.37	+24 45.9	1.843	2.804	5.9	18.8	2 21	9 33.47	+3 18.0	1.711	2.684	4.6	20.0
3 2	9 24.78	+24 42.1	1.892	2.810	9.3	19.0	3 2	9 24.80	+4 8.7	1.747	2.692	7.9	20.2
3 12	9 18.12	+24 23.4	1.967	2.817	12.5	19.3	3 12	9 17.93	+4 59.5	1.809	2.699	11.5	20.4
3 22	9 13.91	+23 51.6	2.062	2.824	15.3	19.5	3 22	9 13.44	+5 45.4	1.894	2.705	14.7	20.7
463503	2013 QA ₅₈		2 12.6 200°85	1°9/11.0 16			111444	2001 XZ ₂₃₅		2 12.6 345°90	0°7/13.2 18		
1 12	10 6.30	+17 43.0	2.166	3.012	11.3	22.2	1 12	10 2.83	+10 33.2	2.229	3.063	11.4	19.8
1 22	10 0.19	+18 20.7	2.089	3.009	8.0	22.0	1 22	9 57.62	+10 43.6	2.150	3.061	8.3	19.6
2 1	9 52.16	+19 2.7	2.039	3.006	4.4	21.7	2 1	9 50.72	+11 2.8	2.097	3.060	4.7	19.3
2 11	9 42.95	+19 43.7	2.018	3.002	1.9	21.5	2 11	9 42.78	+11 27.6	2.073	3.059	1.1	19.1
2 21	9 33.50	+20 18.5	2.027	2.998	4.4	21.7	2 21	9 34.64	+11 54.2	2.078	3.058	3.1	19.2
3 2	9 24.80	+20 43.2	2.066	2.993	8.1	21.9	3 2	9 27.17	+12 19.0	2.113	3.057	6.8	19.5
3 12	9 17.72	+20 55.5	2.130	2.988	11.4	22.1	3 12	9 21.15	+12 38.5	2.174	3.056	10.2	19.7
3 22	9 12.84	+20 55.4	2.217	2.983	14.2	22.3	3 22	9 17.08	+12 50.9	2.258	3.055	13.1	19.9
151220	2001 YU ₆₈		2 12.6 100°84	0°6/12.1 18			339507	2005 GO ₉₇		2 12.6 264°67	0°7/13.2 17		
1 12	10 6.31	+13 37.4	1.943	2.786	12.5	20.0	1 12	10 1.48	+9 7.3	2.243	3.075	11.4	21.0
1 22	10 0.17	+14 9.8	1.884	2.802	8.9	19.8	1 22	9 56.71	+9 44.8	2.159	3.069	8.3	20.8
2 1	9 52.09	+14 49.8	1.851	2.817	4.8	19.6	2 1	9 50.25	+10 33.7	2.101	3.063	4.8	20.6
2 11	9 42.93	+15 32.2	1.846	2.833	0.8	19.3	2 11	9 42.72	+11 30.2	2.071	3.057	1.1	20.3
2 21	9 33.68	+16 11.6	1.871	2.848	3.9	19.6	2 21	9 34.93	+12 29.1	2.071	3.051	3.1	20.4
3 2	9 25.37	+16 43.6	1.925	2.862	7.8	19.9	3 2	9 27.73	+13 25.4	2.101	3.044	6.9	20.6
3 12	9 18.86	+17 5.3	2.004	2.877	11.4	20.1	3 12	9 21.92	+14 14.4	2.157	3.038	10.3	20.8
3 22	9 14.63	+17 15.6	2.106	2.891	14.3	20.3	3 22	9 18.02	+14 53.4	2.237	3.031	13.3	21.0
253325	2003 EJ ₂₉		2 12.6 25°67	6°0/18.3 18			283317	2049 T-3		2 12.6 170°98	0°8/13.5 17		
1 12	9 57.92	-7 19.7	1.245	2.051	20.3	19.1	1 12	10 1.44	+8 49.5	3.335	4.150	8.5	22.8

EPHEMERIDES

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
409859	2006 SA ₁₃₁		2 12.6 158°33	0°0/12.6 18			368801	2005 YT ₆₂		2 12.6 25°23	0°5/12.9 18		
1 12	10 6.29	+11 30.9	2.026	2.861	12.4	22.6	1 12	10 4.69	+10 57.5	1.755	2.599	13.6	21.5
1 22	10 0.21	+12 4.2	1.954	2.867	8.9	22.3	1 22	9 59.30	+11 13.6	1.685	2.601	9.9	21.3
2 1	9 52.18	+12 47.2	1.908	2.873	4.9	22.1	2 1	9 51.77	+11 40.7	1.639	2.604	5.6	21.0
2 11	9 42.99	+13 35.1	1.891	2.877	0.7	21.8	2 11	9 42.96	+12 14.3	1.620	2.606	1.1	20.7
2 21	9 33.59	+14 22.6	1.904	2.882	3.6	22.0	2 21	9 33.92	+12 49.3	1.630	2.609	3.8	20.9
3 2	9 25.01	+15 4.6	1.946	2.886	7.6	22.3	3 2	9 25.78	+13 20.5	1.667	2.613	8.2	21.2
3 12	9 18.11	+15 37.4	2.015	2.889	11.2	22.5	3 12	9 19.50	+13 44.0	1.730	2.616	12.1	21.4
3 22	9 13.45	+15 59.3	2.106	2.892	14.3	22.7	3 22	9 15.68	+13 57.6	1.814	2.620	15.5	21.6
58419	1996 BD ₄		2 12.6 3°29	20°7/18.5 18			237421	1998 XS ₆₁		2 12.6 55°92	5°0/ 9.5 18		
1 12	10 8.93	-16 9.1	1.009	1.773	26.8	16.9	1 12	10 8.16	+21 15.1	1.217	2.091	16.3	19.8
1 22	10 3.85	-20 2.9	0.955	1.770	24.5	16.7	1 22	10 2.44	+22 33.8	1.174	2.105	11.6	19.6
2 1	9 55.00	-23 21.2	0.918	1.769	22.4	16.5	2 1	9 53.70	+23 55.2	1.153	2.119	7.0	19.4
2 11	9 43.45	-25 47.8	0.899	1.771	21.1	16.4	2 11	9 43.23	+25 7.2	1.157	2.134	5.0	19.3
2 21	9 30.96	-27 12.4	0.896	1.774	20.8	16.4	2 21	9 32.67	+25 59.7	1.186	2.149	8.2	19.5
3 2	9 19.75	-27 34.5	0.911	1.780	21.6	16.5	3 2	9 23.71	+26 27.1	1.241	2.164	12.6	19.8
3 12	9 11.74	-27 4.7	0.941	1.787	23.1	16.6	3 12	9 17.58	+26 29.4	1.316	2.179	16.7	20.1
3 22	9 8.02	-25 59.3	0.984	1.797	25.0	16.8	3 22	9 14.84	+26 9.6	1.409	2.195	20.1	20.4
5344	Ryabov		2 12.6 81°65	2°0/14.3 18 R			205001	1996 VS ₂₇		2 12.6 243°53	0°6/11.9 17		
1 12	10 3.89	+ 5 18.6	1.834	2.659	13.9	17.4	1 12	10 2.54	+13 58.4	2.464	3.303	10.3	21.4
1 22	9 58.53	+ 5 54.0	1.774	2.676	10.3	17.2	1 22	9 57.37	+14 33.5	2.378	3.294	7.4	21.2
2 1	9 51.25	+ 6 45.5	1.737	2.694	6.3	17.0	2 1	9 50.59	+15 15.4	2.319	3.285	4.0	21.0
2 11	9 42.86	+ 7 48.7	1.729	2.711	2.5	16.8	2 11	9 42.80	+15 59.9	2.290	3.276	0.7	20.7
2 21	9 34.35	+ 8 57.3	1.749	2.728	3.6	16.9	2 21	9 34.76	+16 42.6	2.291	3.266	3.4	20.9
3 2	9 26.75	+10 4.6	1.798	2.745	7.5	17.2	3 2	9 27.27	+17 19.5	2.321	3.257	6.8	21.1
3 12	9 20.91	+11 5.0	1.873	2.762	11.2	17.5	3 12	9 21.09	+17 47.6	2.379	3.247	10.0	21.3
3 22	9 17.33	+11 54.6	1.971	2.779	14.3	17.7	3 22	9 16.73	+18 5.4	2.460	3.237	12.7	21.5
150235	1998 XO ₁₈		2 12.6 76°77	3°9/ 9.8 18			415754	2000 QU ₁₂₂		2 12.6 181°89	1°0/11.8 18		
1 12	10 7.66	+20 58.0	1.616	2.477	13.7	20.0	1 12	10 9.81	+15 19.4	2.173	3.008	11.7	21.9
1 22	10 1.47	+22 4.8	1.570	2.496	9.7	19.8	1 22	10 2.66	+15 48.6	2.095	3.009	8.3	21.7
2 1	9 52.93	+23 13.2	1.550	2.515	5.7	19.6	2 1	9 53.54	+16 23.4	2.045	3.010	4.6	21.4
2 11	9 43.09	+24 14.5	1.556	2.534	3.9	19.5	2 11	9 43.22	+16 58.9	2.024	3.010	1.1	21.2
2 21	9 33.21	+25 1.4	1.591	2.553	6.5	19.7	2 21	9 32.66	+17 30.4	2.035	3.009	3.9	21.4
3 2	9 24.56	+25 29.4	1.652	2.571	10.3	20.0	3 2	9 22.90	+17 53.9	2.075	3.007	7.8	21.6
3 12	9 18.15	+25 37.8	1.737	2.590	13.8	20.3	3 12	9 14.84	+18 7.2	2.143	3.004	11.2	21.8
3 22	9 14.49	+25 28.4	1.842	2.608	16.7	20.5	3 22	9 9.04	+18 9.6	2.233	3.000	14.1	22.0
202505	2006 BK ₁₄₉		2 12.6 349°27	2°5/14.2 18			309336	2007 TO ₅		2 12.6 152°73	0°9/13.3 18		
1 12	10 2.85	+ 5 33.2	1.259	2.108	17.5	19.8	1 12	10 7.08	+ 8 45.4	1.923	2.752	13.2	21.8
1 22	9 58.67	+ 6 0.9	1.189	2.104	13.1	19.6	1 22	10 0.84	+ 9 17.3	1.852	2.760	9.6	21.6
2 1	9 51.71	+ 6 52.1	1.140	2.101	8.1	19.3	2 1	9 52.57	+10 1.9	1.807	2.768	5.6	21.3
2 11	9 42.95	+ 8 1.7	1.115	2.098	3.1	19.0	2 11	9 43.08	+10 54.5	1.790	2.775	1.4	21.1
2 21	9 33.75	+ 9 21.4	1.116	2.096	4.7	19.1	2 21	9 33.39	+11 49.4	1.803	2.782	3.6	21.2
3 2	9 25.64	+10 40.9	1.141	2.095	10.0	19.3	3 2	9 24.55	+12 41.0	1.845	2.788	7.7	21.5
3 12	9 19.92	+11 51.1	1.190	2.094	15.0	19.6	3 12	9 17.49	+13 24.6	1.913	2.793	11.5	21.7
3 22	9 17.34	+12 46.2	1.258	2.094	19.2	19.9	3 22	9 12.78	+13 57.5	2.004	2.797	14.6	22.0
93776	2000 WW ₂₆		2 12.6 352°07	8°4/ 5.5 18			338081	2002 PC ₁₁₄		2 12.6 91°88	0°4/12.8 18		
1 12	10 3.58	+30 31.5	1.488	2.361	13.9	18.5	1 12	10 7.84	+ 9 32.5	1.331	2.180	16.7	21.3
1 22	9 59.17	+32 22.6	1.434	2.356	10.8	18.3	1 22	10 1.95	+10 21.3	1.276	2.195	12.1	21.1
2 1	9 51.96	+34 7.9	1.405	2.351	8.7	18.2	2 1	9 53.37	+11 27.1	1.244	2.210	6.8	20.8
2 11	9 42.98	+35 34.9	1.401	2.348	8.8	18.2	2 11	9 43.20	+12 42.1	1.238	2.225	1.1	20.5
2 21	9 33.64	+36 33.8	1.422	2.345	11.1	18.3	2 21	9 32.87	+13 57.0	1.259	2.239	4.6	20.8
3 2	9 25.49	+37 0.0	1.466	2.343	14.3	18.5	3 2	9 23.85	+15 3.0	1.307	2.253	9.9	21.1
3 12	9 19.81	+36 54.5	1.530	2.342	17.4	18.7	3 12	9 17.33	+15 54.3	1.378	2.267	14.5	21.4
3 22	9 17.26	+36 21.8	1.611	2.342	20.1	18.9	3 22	9 13.89	+16 28.4	1.470	2.280	18.2	21.7
464987	2006 BM ₇₃		2 12.6 9°36	2°0/10.9 18			108982	2001 PN ₄₉		2 12.6 269°05	8°3/18.6 18		
1 12	10 3.47	+16 30.3	1.789	2.646	12.7	20.8	1 12	10 4.01	- 8 44.6	1.834	2.593	16.5	19.7
1 22	9 58.46	+17 25.4	1.721	2.646	9.0	20.6	1 22	9 58.93	- 9 22.6	1.745	2.584	13.9	19.5
2 1	9 51.33	+18 27.6	1.679	2.647	5.0	20.4	2 1	9 51.68	- 9 35.7	1.677	2.575	11.2	19.3
2 11	9 42.89	+19 30.2	1.664	2.648	2.0	20.2	2 11	9 42.98	- 9 22.0	1.633	2.567	8.9	19.1
2 21	9 34.20	+20 26.1	1.677	2.649	5.0	20.4	2 21	9 33.83	- 8 42.4	1.614	2.558	8.3	19.1
3 2	9 26.38	+21 9.6	1.718	2.650	9.1	20.6	3 2	9 25.35	- 7 41.5	1.622	2.549	9.9	19.1
3 12	9 20.42	+21 37.6	1.784	2.651	12.8	20.8	3 12	9 18.58	- 6 27.2	1.655	2.540	12.6	19.3
3 22	9 16.89	+21 49.4	1.870	2.653	15.9	21.0	3 22	9 14.21	- 5 7.8	1.709	2.531	15.6	19.4
36380	2000 OL ₂₇		2 12.6 125°78	2°3/10.5 18			370745	2004 RT ₁₅₉		2 12.6 188°12	1°1/11.7 17		
1 12	10 6.10	+18 31.2	2.187	3.034	11.1	19.3	1 12	10 8.17	+16 54.4	2.502	3.337	10.3	20.9
1 22	9 59.93	+19 27.2	2.128	3.049	7.9	19.1	1 22	10 1.29	+17 9.6	2.422	3.336	7.3	20.7
2 1	9 51.97	+20 26.6	2.097	3.063	4.4	18.9	2 1	9 52.70	+17 27.8	2.370	3.335	4.0	20.5
2 11	9 42.97	+21 23.3	2.096	3.077	2.3	18.8	2 11	9 43.10	+17 45.3	2.348	3.333	1.1	20.2
2 21	9 33.87	+22 11.6	2.124	3.090	4.7	19.0	2 21	9 33.32	+17 58.6	2.357	3.330	3.6	20.4
3 2	9 25.60	+22 47.7	2.182	3.103	8.0	19.2	3 2	9 24.23	+18 5.0	2.397	3.327	7.0	20.6
3 12	9 18.98	+23 9.5	2.265	3.115	11.1	19.4	3 12	9 16.61	+18 2.9	2.465	3.324	10.0	20.8
3 22	9 14.49	+23 17.3	2.371	3.127	13.7	19.6	3 22	9 10.95	+17 52.2	2.556	3.319	12.6	21.0
301682	2010 FX ₅₆		2 12.6 244°21	0°2/12.4 18			23262	Thiagoolson		2 12.6 99°33	2°4/10.8 18		
1 12	10 7.04	+11 29.3	1.760	2.600	13.7	21.5	1 12	10 5.91	+16 16.3	1.558	2.417	14.2	18.7

EPHEMERIDES

2 12.6

2 12.6

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
458826	2011 <i>UD</i> ₁₀		2 12.6 137°61	0°9/11.9 18			314106	2005 <i>EO</i> ₇₉		2 12.6 305°29	4°0/ 7.9 17		
1 12	10 9.11	+14 16.1	1.860	2.701	13.0	22.3	1 12	10 1.45	+27 22.3	2.827	3.679	8.7	20.3
1 22	10 2.31	+14 51.5	1.797	2.714	9.3	22.1	1 22	9 56.55	+28 12.9	2.749	3.665	6.5	20.1
2 1	9 53.37	+15 34.3	1.759	2.725	5.1	21.8	2 1	9 50.13	+29 1.2	2.698	3.651	4.6	20.0
2 11	9 43.20	+16 19.0	1.751	2.737	1.0	21.6	2 11	9 42.79	+29 42.2	2.676	3.637	4.1	19.9
2 21	9 32.89	+16 59.6	1.772	2.747	4.2	21.8	2 21	9 35.22	+30 11.8	2.684	3.623	5.7	20.0
3 2	9 23.58	+17 31.4	1.822	2.757	8.4	22.1	3 2	9 28.19	+30 27.4	2.719	3.609	8.0	20.1
3 12	9 16.22	+17 51.6	1.898	2.767	12.1	22.3	3 12	9 22.40	+30 28.2	2.780	3.595	10.3	20.3
3 22	9 11.35	+17 59.6	1.996	2.775	15.2	22.6	3 22	9 18.32	+30 14.8	2.863	3.581	12.4	20.4
373140	2012 <i>AH</i> ₁₇		2 12.6 234°07	3°7/11.7 15			145354	2005 <i>MY</i> ₂₁		2 12.6 177°98	0°3/12.3 18		
1 12	10 24.95	+23 15.6	1.130	1.985	18.6	20.0	1 12	10 1.66	+12 54.7	2.945	3.777	9.0	21.1
1 22	10 15.08	+22 49.6	1.060	1.982	13.7	19.7	1 22	9 56.49	+13 28.4	2.866	3.778	6.4	21.0
2 1	10 1.00	+22 17.1	1.012	1.977	8.0	19.4	2 1	9 50.02	+14 8.0	2.814	3.779	3.5	20.8
2 11	9 44.30	+21 30.0	0.990	1.973	3.7	19.1	2 11	9 42.77	+14 50.2	2.793	3.779	0.5	20.5
2 21	9 27.28	+20 24.4	0.996	1.968	7.3	19.3	2 21	9 35.37	+15 31.4	2.803	3.780	2.7	20.7
3 2	9 12.37	+19 2.1	1.028	1.964	13.2	19.6	3 2	9 28.46	+16 8.3	2.844	3.780	5.7	20.9
3 12	9 1.36	+17 28.5	1.083	1.959	18.6	19.9	3 12	9 22.63	+16 38.4	2.913	3.779	8.4	21.1
3 22	8 54.93	+15 49.7	1.156	1.953	23.0	20.2	3 22	9 18.32	+17 0.0	3.006	3.778	10.7	21.3
472887	2015 <i>FS</i> ₃₂₁		2 12.6 255°92	0°2/12.8 17			105125	2000 <i>LO</i> ₃₆		2 12.6 224°40	4°6/16.8 18		
1 12	10 0.79	+10 4.7	2.796	3.623	9.6	21.9	1 12	10 3.16	- 2 39.9	2.169	2.951	13.5	20.4
1 22	9 56.04	+10 54.0	2.696	3.605	6.9	21.7	1 22	9 58.03	- 2 24.2	2.075	2.943	10.8	20.2
2 1	9 49.85	+11 53.1	2.623	3.586	3.9	21.4	2 1	9 51.08	- 1 48.2	2.005	2.934	7.7	20.0
2 11	9 42.73	+12 58.2	2.580	3.567	0.6	21.1	2 11	9 42.95	- 0 53.1	1.961	2.924	5.1	19.8
2 21	9 35.30	+14 4.8	2.569	3.547	2.8	21.3	2 21	9 34.46	+ 0 17.1	1.947	2.914	4.9	19.8
3 2	9 28.27	+15 8.5	2.589	3.527	6.0	21.5	3 2	9 26.55	+ 1 36.8	1.961	2.904	7.4	19.9
3 12	9 22.30	+16 5.2	2.636	3.507	9.0	21.6	3 12	9 20.05	+ 2 59.0	2.004	2.893	10.6	20.1
3 22	9 17.90	+16 52.3	2.708	3.486	11.6	21.8	3 22	9 15.57	+ 4 17.5	2.070	2.882	13.6	20.3
22472	1997 <i>CT</i> ₂₈		2 12.6 242°79	0°1/12.7 18			322727	2000 <i>SS</i> ₅₈		2 12.6 154°32	0°3/12.9 17		
1 12	10 4.78	+10 18.3	1.787	2.628	13.5	19.2	1 12	10 5.09	+10 47.6	2.536	3.361	10.5	22.5
1 22	9 59.51	+11 5.7	1.704	2.619	9.8	19.0	1 22	9 59.05	+11 18.9	2.463	3.371	7.6	22.3
2 1	9 52.01	+12 7.2	1.644	2.609	5.5	18.7	2 1	9 51.47	+11 58.2	2.417	3.380	4.2	22.1
2 11	9 43.04	+13 17.1	1.613	2.599	0.8	18.3	2 11	9 42.99	+12 41.9	2.402	3.388	0.7	21.9
2 21	9 33.65	+14 28.4	1.611	2.589	4.0	18.6	2 21	9 34.36	+13 25.9	2.417	3.395	2.9	22.1
3 2	9 25.01	+15 34.0	1.637	2.579	8.6	18.8	3 2	9 26.38	+14 6.0	2.464	3.402	6.3	22.3
3 12	9 18.18	+16 28.2	1.688	2.568	12.7	19.0	3 12	9 19.73	+14 39.4	2.538	3.409	9.3	22.5
3 22	9 13.84	+17 8.1	1.761	2.557	16.2	19.2	3 22	9 14.89	+15 4.0	2.636	3.414	11.9	22.7
90965	1997 <i>WC</i> ₂₃		2 12.6 85°21	5°2/ 9.4 18			233077	2005 <i>NE</i> ₂₆		2 12.6 184°00	2°2/ 9.9 17		
1 12	10 10.77	+24 1.8	1.446	2.309	14.8	19.0	1 12	10 1.95	+20 6.4	2.978	3.823	8.5	21.2
1 22	10 4.01	+25 2.2	1.397	2.322	10.7	18.8	1 22	9 56.75	+21 0.9	2.904	3.823	6.1	21.0
2 1	9 54.47	+26 1.0	1.373	2.335	6.8	18.6	2 1	9 50.18	+21 57.4	2.858	3.823	3.5	20.8
2 11	9 43.36	+26 48.4	1.375	2.348	5.3	18.6	2 11	9 42.81	+22 51.5	2.844	3.822	2.2	20.7
2 21	9 32.19	+27 16.7	1.404	2.361	7.9	18.8	2 21	9 35.26	+23 39.0	2.860	3.821	4.0	20.9
3 2	9 22.49	+27 22.5	1.459	2.373	11.8	19.0	3 2	9 28.21	+24 16.6	2.906	3.819	6.6	21.0
3 12	9 15.42	+27 6.6	1.536	2.386	15.5	19.3	3 12	9 22.28	+24 42.7	2.979	3.817	9.1	21.2
3 22	9 11.53	+26 32.5	1.633	2.398	18.5	19.5	3 22	9 17.91	+24 56.7	3.075	3.815	11.2	21.3
497653	2006 <i>RV</i> ₅₈		2 12.6 161°94	0°1/12.7 17			411418	2010 <i>VA</i> ₁₉₈		2 12.6 96°18	2°3/14.2 18		
1 12	10 2.01	+11 29.3	2.856	3.685	9.4	22.5	1 12	10 7.81	+ 6 35.6	1.853	2.675	13.9	20.9
1 22	9 56.74	+11 59.6	2.780	3.690	6.7	22.4	1 22	10 1.31	+ 6 35.4	1.792	2.694	10.3	20.7
2 1	9 50.15	+12 36.7	2.731	3.694	3.7	22.2	2 1	9 52.80	+ 6 48.7	1.756	2.712	6.3	20.5
2 11	9 42.78	+13 17.4	2.712	3.698	0.6	21.9	2 11	9 43.18	+ 7 12.2	1.748	2.730	2.7	20.3
2 21	9 35.26	+13 58.0	2.724	3.702	2.7	22.1	2 21	9 33.47	+ 7 41.8	1.770	2.748	3.8	20.4
3 2	9 28.26	+14 35.3	2.767	3.705	5.7	22.3	3 2	9 24.76	+ 8 12.8	1.820	2.765	7.6	20.7
3 12	9 22.40	+15 6.4	2.838	3.708	8.5	22.5	3 12	9 17.90	+ 8 40.7	1.896	2.782	11.2	20.9
3 22	9 18.08	+15 29.7	2.933	3.711	10.8	22.7	3 22	9 13.42	+ 9 2.5	1.995	2.799	14.3	21.1
295811	2008 <i>UM</i> ₃₂₁		2 12.6 358°41	4°1/14.8 18			471563	2012 <i>PO</i> ₃₉		2 12.6 59°83	2°2/14.3 18		
1 12	10 5.40	+ 4 38.4	1.211	2.055	18.4	19.9	1 12	10 4.41	+ 6 31.8	2.044	2.866	12.8	20.5
1 22	10 0.58	+ 4 20.0	1.143	2.053	14.0	19.7	1 22	9 58.84	+ 6 27.4	1.973	2.874	9.5	20.3
2 1	9 52.83	+ 4 23.1	1.096	2.052	9.1	19.4	2 1	9 51.45	+ 6 35.2	1.926	2.881	5.9	20.1
2 11	9 43.19	+ 4 45.6	1.072	2.051	4.7	19.1	2 11	9 42.99	+ 6 52.7	1.908	2.889	2.6	19.9
2 21	9 33.12	+ 5 22.4	1.073	2.051	5.6	19.2	2 21	9 34.37	+ 7 16.6	1.918	2.896	3.6	20.0
3 2	9 24.25	+ 6 6.1	1.098	2.052	10.3	19.4	3 2	9 26.53	+ 7 42.7	1.958	2.904	7.1	20.2
3 12	9 17.94	+ 6 48.8	1.146	2.053	15.2	19.7	3 12	9 20.28	+ 8 7.0	2.024	2.912	10.5	20.4
3 22	9 14.93	+ 7 24.1	1.213	2.055	19.4	20.0	3 22	9 16.15	+ 8 26.4	2.113	2.920	13.5	20.6
463329	2012 <i>KT</i> ₄₅		2 12.6 174°91	4°3/16.9 17			417001	2005 <i>TT</i> ₁₇₉		2 12.6 130°58	5°4/17.2 18		
1 12	10 2.21	- 2 45.9	2.340	3.119	12.8	21.6	1 12	10 5.86	- 3 57.4	2.200	2.970	13.8	21.4
1 22	9 57.15	- 2 27.9	2.256	3.121	10.1	21.4	1 22	9 59.76	- 4 14.9	2.128	2.983	11.1	21.2
2 1	9 50.49	- 1 51.2	2.195	3.123	7.3	21.2	2 1	9 51.93	- 4 13.7	2.078	2.996	8.2	21.0
2 11	9 42.84	- 0 57.4	2.161	3.124	4.8	21.1	2 11	9 43.07	- 3 54.1	2.056	3.009	5.9	20.9
2 21	9 34.95	+ 0 9.7	2.157	3.124	4.6	21.0	2 21	9 34.03	- 3 18.8	2.062	3.020	5.6	20.9
3 2	9 27.65	+ 1 24.8	2.183	3.125	6.8	21.2	3 2	9 25.73	- 2 32.1	2.098	3.032	7.5	21.1
3 12	9 21.68	+ 2 41.7	2.236	3.125	9.7	21.4	3 12	9 18.95	- 1 39.8	2.160	3.042	10.2	21.2
3 22	9 17.53	+ 3 55.0	2.314	3.124	12.4	21.5	3 22	9 14.19	- 0 47.2	2.246	3.052	12.8	21.4
386600	2009 <i>FX</i> ₆₈		2 12.6 20°47	9°8/23.4 18			503402	2016 <i>CG</i> ₂₂₇		2 12.6 292°13	6°0/ 8.5 17		
1 12	9 58.05	-17 4.0	1.762	2.481									

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
129962	Williamverts		2 12.6 165°95	3°1/14.9	18		116861	2004 FR ₉₀		2 12.6 247°94	3°6/ 8.9	18	
1 12	10 6.51	+ 3 14.4	1.973	2.782	13.7	20.7	1 12	10 3.05	+23 35.5	2.486	3.339	9.8	20.1
1 22	10 0.45	+ 3 23.4	1.896	2.787	10.4	20.5	1 22	9 57.84	+24 36.9	2.410	3.331	7.1	19.9
2 1	9 52.40	+ 3 48.7	1.843	2.791	6.8	20.3	2 1	9 50.93	+25 38.8	2.362	3.323	4.5	19.8
2 11	9 43.14	+ 4 27.8	1.818	2.794	3.5	20.1	2 11	9 42.97	+26 35.3	2.344	3.314	3.7	19.7
2 21	9 33.62	+ 5 16.2	1.821	2.797	4.0	20.1	2 21	9 34.75	+27 21.2	2.355	3.306	5.5	19.8
3 2	9 24.89	+ 6 8.6	1.855	2.800	7.5	20.3	3 2	9 27.14	+27 52.8	2.394	3.297	8.3	20.0
3 12	9 17.84	+ 6 59.3	1.915	2.801	11.1	20.5	3 12	9 20.93	+28 8.6	2.459	3.289	11.0	20.1
3 22	9 13.04	+ 7 44.0	1.997	2.802	14.3	20.7	3 22	9 16.63	+28 9.2	2.546	3.280	13.4	20.3
263994	2009 MJ ₉		2 12.6 133°15	1°7/10.9	18		213594	2002 PA ₂₀		2 12.6 181°88	0°9/13.3	16	
1 12	10 5.08	+15 35.9	2.330	3.171	10.8	21.6	1 12	10 6.46	+ 9 9.8	2.052	2.880	12.5	21.6
1 22	9 59.17	+16 48.4	2.268	3.186	7.6	21.4	1 22	10 0.40	+ 9 35.8	1.973	2.881	9.2	21.4
2 1	9 51.59	+18 6.9	2.235	3.201	4.1	21.2	2 1	9 52.39	+10 13.4	1.920	2.881	5.3	21.2
2 11	9 43.02	+19 25.2	2.232	3.216	1.7	21.1	2 11	9 43.18	+10 58.4	1.896	2.881	1.3	20.9
2 21	9 34.30	+20 37.1	2.260	3.229	4.1	21.3	2 21	9 33.70	+11 46.0	1.901	2.880	3.4	21.0
3 2	9 26.31	+21 37.9	2.318	3.242	7.5	21.5	3 2	9 24.97	+12 30.9	1.936	2.879	7.4	21.3
3 12	9 19.81	+22 24.5	2.403	3.255	10.5	21.7	3 12	9 17.88	+13 9.0	1.998	2.877	11.1	21.5
3 22	9 15.28	+22 56.2	2.511	3.266	13.0	21.9	3 22	9 13.00	+13 37.5	2.083	2.874	14.2	21.7
290255	2005 SL ₁₁₃		2 12.6 315°55	0°2/12.5	18		237673	2001 SY ₃₄₈		2 12.6 178°03	2°3/10.6	18	
1 12	10 4.48	+12 32.7	1.572	2.426	14.4	20.4	1 12	10 5.23	+20 21.1	2.471	3.318	10.0	20.4
1 22	9 59.56	+12 55.8	1.491	2.413	10.4	20.1	1 22	9 59.26	+20 49.9	2.399	3.318	7.1	20.2
2 1	9 52.15	+13 30.5	1.433	2.400	5.8	19.8	2 1	9 51.65	+21 20.0	2.354	3.319	4.1	20.0
2 11	9 43.13	+14 11.4	1.402	2.388	0.8	19.5	2 11	9 43.07	+21 46.7	2.339	3.319	2.3	19.9
2 21	9 33.65	+14 52.3	1.398	2.377	4.4	19.7	2 21	9 34.33	+22 6.3	2.353	3.319	4.3	20.0
3 2	9 25.04	+15 26.9	1.421	2.365	9.4	20.0	3 2	9 26.29	+22 15.8	2.397	3.319	7.4	20.2
3 12	9 18.48	+15 50.8	1.467	2.354	13.8	20.2	3 12	9 19.68	+22 14.2	2.468	3.319	10.3	20.4
3 22	9 14.69	+16 1.8	1.534	2.344	17.6	20.4	3 22	9 15.01	+22 1.6	2.561	3.318	12.8	20.6
343110	2009 DV ₁₂₃		2 12.6 24°95	2°1/14.3	18		82905	2001 QS ₉₈		2 12.6 82°70	1°4/13.8	18	
1 12	10 2.15	+ 6 23.3	2.009	2.837	12.8	20.4	1 12	10 4.52	+ 8 36.2	2.215	3.041	11.8	18.8
1 22	9 57.28	+ 6 30.6	1.938	2.841	9.5	20.2	1 22	9 58.81	+ 8 36.8	2.144	3.049	8.7	18.6
2 1	9 50.62	+ 6 51.1	1.890	2.847	5.9	20.0	2 1	9 51.42	+ 8 47.3	2.099	3.057	5.2	18.4
2 11	9 42.89	+ 7 21.9	1.871	2.852	2.5	19.8	2 11	9 43.04	+ 9 4.8	2.082	3.065	1.8	18.1
2 21	9 34.97	+ 7 58.7	1.880	2.858	3.5	19.9	2 21	9 34.52	+ 9 26.1	2.094	3.073	3.2	18.3
3 2	9 27.80	+ 8 37.1	1.917	2.865	7.1	20.1	3 2	9 26.73	+ 9 47.5	2.137	3.081	6.7	18.5
3 12	9 22.20	+ 9 12.3	1.980	2.871	10.6	20.3	3 12	9 20.44	+10 5.7	2.206	3.089	10.0	18.7
3 22	9 18.66	+ 9 41.0	2.067	2.878	13.6	20.6	3 22	9 16.13	+10 18.5	2.298	3.097	12.8	18.9
158955	2004 RO ₁₅₂		2 12.6 127°85	4°5/16.1	18		462629	2009 QX ₅₃		2 12.6 41°09	4°5/10.1	18	
1 12	10 7.37	- 0 37.9	1.807	2.603	15.3	20.2	1 12	10 9.30	+23 40.9	1.472	2.337	14.5	20.6
1 22	10 1.11	- 0 29.8	1.740	2.618	11.9	20.0	1 22	10 2.81	+24 14.5	1.428	2.354	10.4	20.4
2 1	9 52.77	- 0 0.7	1.696	2.633	8.2	19.8	2 1	9 53.77	+24 45.9	1.408	2.372	6.4	20.2
2 11	9 43.20	+ 0 47.1	1.679	2.648	5.1	19.7	2 11	9 43.36	+25 7.2	1.413	2.390	4.5	20.1
2 21	9 33.45	+ 1 48.6	1.690	2.661	5.0	19.7	2 21	9 33.02	+25 12.8	1.446	2.408	7.0	20.3
3 2	9 24.64	+ 2 57.3	1.730	2.674	8.0	19.9	3 2	9 24.13	+25 0.5	1.505	2.427	10.9	20.6
3 12	9 17.69	+ 4 5.9	1.797	2.686	11.6	20.1	3 12	9 17.74	+24 31.1	1.587	2.447	14.5	20.9
3 22	9 13.16	+ 5 8.6	1.886	2.698	14.7	20.4	3 22	9 14.33	+23 47.6	1.688	2.467	17.5	21.1
434539	2005 TM ₂		2 12.6 122°25	12°7/23.6	18		237243	2008 WW ₃₆		2 12.6 156°94	0°5/13.1	17	
1 12	10 5.68	-19 3.1	1.278	2.004	23.9	21.4	1 12	10 3.62	+10 19.8	2.345	3.175	11.1	21.5
1 22	10 0.76	-19 5.3	1.209	2.013	21.0	21.0	1 22	9 58.16	+10 45.1	2.269	3.179	8.0	21.4
2 1	9 52.93	-18 19.0	1.155	2.022	17.6	21.0	2 1	9 51.07	+11 19.5	2.220	3.182	4.6	21.1
2 11	9 43.24	-16 40.1	1.121	2.031	14.5	20.8	2 11	9 43.01	+11 59.4	2.200	3.186	0.9	20.9
2 21	9 33.15	-14 12.4	1.108	2.039	12.8	20.7	2 21	9 34.76	+12 40.4	2.210	3.189	3.0	21.0
3 2	9 24.27	-11 8.6	1.120	2.046	13.4	20.8	3 2	9 27.17	+13 18.5	2.250	3.191	6.6	21.3
3 12	9 17.93	- 7 47.9	1.157	2.054	15.9	20.9	3 12	9 20.97	+13 50.1	2.317	3.194	9.8	21.5
3 22	9 14.87	- 4 29.9	1.215	2.060	19.2	21.2	3 22	9 16.65	+14 13.3	2.407	3.196	12.6	21.7
210111	2006 QO ₁₆₅		2 12.6 115°62	0°0/12.6	17		186194	2001 VH ₉₁		2 12.6 118°30	5°0/17.4	18	
1 12	10 4.70	+13 5.7	2.445	3.279	10.6	20.5	1 12	10 3.04	- 4 6.9	2.010	2.790	14.5	20.5
1 22	9 58.81	+13 15.7	2.374	3.286	7.6	20.3	1 22	9 57.94	- 3 44.6	1.936	2.800	11.6	20.3
2 1	9 51.36	+13 31.6	2.330	3.294	4.2	20.1	2 1	9 51.02	- 2 59.6	1.885	2.810	8.4	20.1
2 11	9 43.00	+13 50.1	2.315	3.301	0.6	19.8	2 11	9 43.01	- 1 54.0	1.860	2.820	5.7	20.0
2 21	9 34.53	+14 8.0	2.331	3.309	3.0	20.0	2 21	9 34.79	- 0 32.5	1.864	2.830	5.2	19.9
3 2	9 26.74	+14 22.2	2.377	3.316	6.5	20.3	3 2	9 27.33	+ 0 58.0	1.896	2.840	7.5	20.1
3 12	9 20.36	+14 30.5	2.450	3.323	9.5	20.5	3 12	9 21.43	+ 2 29.6	1.956	2.849	10.6	20.3
3 22	9 15.82	+14 31.6	2.546	3.330	12.1	20.7	3 22	9 17.62	+ 3 55.8	2.040	2.857	13.6	20.5
404322	2013 FN ₁₀		2 12.6 267°67	0°5/12.9	18		88221	2001 AP ₄₂		2 12.6 93°15	4°4/ 9.6	18	
1 12	10 6.15	+10 14.0	1.646	2.489	14.4	21.1	1 12	10 9.35	+22 22.7	1.569	2.430	14.0	19.2
1 22	10 0.74	+10 42.3	1.558	2.473	10.6	20.8	1 22	10 2.87	+23 26.0	1.519	2.443	10.0	19.0
2 1	9 52.84	+11 24.7	1.493	2.457	6.0	20.5	2 1	9 53.86	+24 29.8	1.493	2.457	6.1	18.8
2 11	9 43.25	+12 16.5	1.454	2.440	1.2	20.1	2 11	9 43.41	+25 24.9	1.495	2.470	4.5	18.7
2 21	9 33.11	+13 11.1	1.444	2.424	4.2	20.3	2 21	9 32.85	+26 4.0	1.524	2.483	7.1	18.9
3 2	9 23.74	+14 1.8	1.462	2.407	9.2	20.5	3 2	9 23.59	+26 22.8	1.580	2.496	10.9	19.2
3 12	9 16.35	+14 42.8	1.504	2.390	13.7	20.8	3 12	9 16.70	+26 21.1	1.659	2.509	14.5	19.4
3 22	9 11.69	+15 11.1	1.567	2.372	17.5	21.0	3 22	9 12.72	+26 1.4	1.757	2.521	17.5	19.6
385962	2006 VK ₁₄₁		2 12.6 250°34	3°9/16.4	17		280189	2002 SN ₁₇		2 12.6 249°87	3°4/15.9	17	
1 12	10 1.50	- 1 5.2	2.682	3.464	11.2	21.2	1 12	10 1.36	+ 0 43.6	2.215	3.016	12.7	

EPHEMERIDES

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
426337	2012 VV ₁₀₀		2 12.6 276°35	4°2/17.1	18		149920	2005 SH ₁₁₂		2 12.6 138°70	0°1/12.7	18	
1 12	10 0.02	- 2 59.6	2.365	3.146	12.6	20.6	1 12	10 8.72	+13 11.8	1.910	2.748	12.9	20.1
1 22	9 55.66	- 2 36.9	2.274	3.141	10.0	20.4	1 22	10 2.08	+13 13.8	1.838	2.752	9.3	19.8
2 1	9 49.73	- 1 55.0	2.208	3.136	7.2	20.2	2 1	9 53.35	+13 22.8	1.792	2.757	5.2	19.6
2 11	9 42.83	- 0 55.6	2.169	3.131	4.8	20.1	2 11	9 43.37	+13 35.1	1.774	2.761	0.8	19.3
2 21	9 35.67	+ 0 17.5	2.158	3.126	4.5	20.0	2 21	9 33.21	+13 46.8	1.786	2.764	3.7	19.5
3 2	9 29.03	+ 1 38.9	2.177	3.121	6.7	20.2	3 2	9 23.97	+13 54.2	1.827	2.768	7.9	19.8
3 12	9 23.65	+ 3 2.2	2.224	3.116	9.5	20.3	3 12	9 16.59	+13 54.9	1.894	2.771	11.7	20.0
3 22	9 20.03	+ 4 21.8	2.296	3.111	12.3	20.5	3 22	9 11.64	+13 48.0	1.983	2.775	14.8	20.2
364411	2006 VA ₁₇₁		2 12.6 162°92	2°0/14.4	18		244641	2003 FU ₁₃		2 12.6 317°21	2°9/10.9	18	
1 12	10 5.67	+ 5 25.2	2.254	3.065	12.1	22.3	1 12	10 5.99	+17 28.1	1.233	2.105	16.2	20.3
1 22	9 59.67	+ 5 44.9	2.176	3.072	9.1	22.1	1 22	10 1.31	+18 12.2	1.158	2.089	11.7	20.0
2 1	9 51.93	+ 6 17.7	2.125	3.078	5.6	21.9	2 1	9 53.45	+19 6.0	1.104	2.074	6.6	19.7
2 11	9 43.14	+ 7 0.6	2.102	3.083	2.4	21.7	2 11	9 43.43	+20 0.4	1.076	2.059	2.9	19.4
2 21	9 34.16	+ 7 49.3	2.109	3.087	3.3	21.8	2 21	9 32.78	+20 45.7	1.072	2.046	6.7	19.6
3 2	9 25.86	+ 8 38.9	2.147	3.091	6.7	22.0	3 2	9 23.27	+21 14.2	1.093	2.032	12.2	19.9
3 12	9 19.03	+ 9 25.0	2.212	3.094	10.0	22.2	3 12	9 16.43	+21 22.2	1.135	2.020	17.2	20.1
3 22	9 14.19	+10 4.2	2.301	3.096	12.9	22.4	3 22	9 13.11	+21 10.1	1.195	2.008	21.4	20.3
502514	2015 BK ₄₂₆		2 12.6 180°46	0°6/12.2	17		98219	2000 SK ₁₄₂		2 12.6 74°44	2°1/11.4	18	
1 12	10 6.33	+15 4.1	2.243	3.083	11.2	21.7	1 12	10 10.26	+17 31.8	1.440	2.298	15.2	19.0
1 22	10 0.16	+15 13.5	2.167	3.083	8.0	21.5	1 22	10 3.63	+17 57.9	1.385	2.309	10.8	18.8
2 1	9 52.21	+15 27.7	2.118	3.083	4.4	21.3	2 1	9 54.34	+18 29.3	1.353	2.321	6.0	18.6
2 11	9 43.19	+15 43.2	2.097	3.083	0.8	21.0	2 11	9 43.52	+18 58.7	1.348	2.333	2.1	18.3
2 21	9 33.99	+15 56.2	2.107	3.083	3.5	21.2	2 21	9 32.61	+19 19.8	1.371	2.344	5.5	18.6
3 2	9 25.53	+16 3.7	2.146	3.083	7.2	21.4	3 2	9 23.05	+19 28.3	1.420	2.356	10.2	18.9
3 12	9 18.63	+16 3.7	2.212	3.083	10.5	21.6	3 12	9 15.99	+19 22.6	1.492	2.368	14.4	19.2
3 22	9 13.80	+15 55.6	2.301	3.082	13.3	21.8	3 22	9 11.99	+19 3.7	1.585	2.380	17.8	19.4
411272	2010 RM ₁₆₀		2 12.6 126°81	0°0/12.6	18		361700	2007 VA ₁₆₅		2 12.6 276°98	3°8/ 9.9	18	
1 12	10 8.94	+12 23.6	2.161	2.991	11.9	22.8	1 12	10 7.25	+20 22.1	1.642	2.502	13.5	20.9
1 22	10 1.93	+12 44.4	2.099	3.009	8.5	22.6	1 22	10 1.72	+21 25.5	1.557	2.482	9.8	20.7
2 1	9 53.13	+13 12.5	2.064	3.027	4.7	22.4	2 1	9 53.50	+22 34.8	1.496	2.462	5.8	20.4
2 11	9 43.32	+13 43.8	2.058	3.044	0.7	22.1	2 11	9 43.44	+23 41.2	1.462	2.441	3.8	20.2
2 21	9 33.43	+14 13.8	2.083	3.061	3.4	22.4	2 21	9 32.78	+24 36.0	1.457	2.420	6.8	20.3
3 2	9 24.44	+14 38.9	2.139	3.077	7.2	22.6	3 2	9 22.94	+25 12.7	1.477	2.399	11.1	20.5
3 12	9 17.14	+14 56.3	2.221	3.091	10.5	22.9	3 12	9 15.22	+25 28.3	1.522	2.377	15.3	20.7
3 22	9 12.01	+15 5.0	2.327	3.106	13.3	23.1	3 22	9 10.44	+25 23.5	1.585	2.356	18.8	20.9
228391	2000 YT ₁₂₇		2 12.6 6°68	1°3/11.8	18		367600	2009 SH ₃₄₁		2 12.6 144°68	1°3/11.5	18	
1 12	10 6.63	+16 37.9	1.636	2.492	13.8	19.7	1 12	10 5.86	+15 40.6	2.318	3.158	10.8	22.6
1 22	10 0.89	+16 48.2	1.569	2.492	9.8	19.5	1 22	9 59.77	+16 24.6	2.252	3.169	7.7	22.4
2 1	9 52.79	+17 3.8	1.526	2.493	5.4	19.2	2 1	9 51.98	+17 14.0	2.213	3.179	4.2	22.2
2 11	9 43.28	+17 19.4	1.509	2.495	1.4	19.0	2 11	9 43.19	+18 3.7	2.204	3.189	1.3	22.0
2 21	9 33.56	+17 30.1	1.521	2.497	4.7	19.2	2 21	9 34.26	+18 48.6	2.225	3.198	3.8	22.2
3 2	9 24.90	+17 32.0	1.560	2.499	9.1	19.5	3 2	9 26.07	+19 24.9	2.276	3.206	7.3	22.4
3 12	9 18.33	+17 23.3	1.623	2.502	13.2	19.7	3 12	9 19.40	+19 50.0	2.354	3.214	10.4	22.7
3 22	9 14.46	+17 3.9	1.707	2.506	16.5	19.9	3 22	9 14.71	+20 3.3	2.455	3.221	13.0	22.9
380932	2006 HQ ₇₃		2 12.6 195°05	4°7/17.0	17		412638	2014 OL ₁₈₀		2 12.6 123°79	1°5/11.5	18	
1 12	10 1.73	- 2 54.6	2.240	3.022	13.2	21.0	1 12	10 9.35	+16 21.1	1.950	2.792	12.5	21.2
1 22	9 56.93	- 2 48.2	2.155	3.021	10.5	20.8	1 22	10 2.43	+16 56.8	1.891	2.809	8.8	21.0
2 1	9 50.46	- 2 22.7	2.094	3.020	7.6	20.7	2 1	9 53.49	+17 37.6	1.859	2.825	4.8	20.8
2 11	9 42.96	- 1 39.4	2.059	3.019	5.2	20.5	2 11	9 43.41	+18 17.7	1.856	2.841	1.5	20.6
2 21	9 35.20	- 0 41.6	2.053	3.018	4.9	20.5	2 21	9 33.25	+18 51.7	1.883	2.855	4.4	20.8
3 2	9 28.03	+ 0 25.5	2.076	3.017	7.1	20.6	3 2	9 24.09	+19 15.6	1.938	2.870	8.2	21.1
3 12	9 22.24	+ 1 35.8	2.126	3.016	10.0	20.8	3 12	9 16.83	+19 27.5	2.020	2.883	11.7	21.3
3 22	9 18.33	+ 2 43.7	2.200	3.015	12.8	21.0	3 22	9 11.97	+19 27.2	2.124	2.896	14.6	21.6
219376	2000 SB ₅₁		2 12.6 80°67	1°3/13.5	18		203245	2001 OU ₁₀₆		2 12.6 95°95	0°5/13.1	18	
1 12	10 7.51	+ 9 51.8	1.835	2.668	13.5	20.0	1 12	10 5.25	+10 59.3	2.490	3.316	10.6	19.8
1 22	10 1.23	+ 9 46.5	1.767	2.677	9.9	19.8	1 22	9 59.12	+11 10.6	2.430	3.338	7.7	19.6
2 1	9 52.87	+ 9 51.4	1.724	2.685	5.8	19.6	2 1	9 51.53	+11 29.1	2.397	3.359	4.3	19.4
2 11	9 43.30	+10 3.4	1.709	2.694	1.7	19.3	2 11	9 43.13	+11 51.6	2.394	3.379	0.9	19.2
2 21	9 33.56	+10 18.8	1.723	2.702	3.6	19.5	2 21	9 34.69	+12 14.8	2.421	3.400	2.8	19.4
3 2	9 24.77	+10 33.4	1.766	2.711	7.8	19.8	3 2	9 26.99	+12 35.6	2.479	3.420	6.1	19.6
3 12	9 17.86	+10 44.1	1.834	2.719	11.6	20.0	3 12	9 20.68	+12 51.4	2.564	3.440	9.1	19.8
3 22	9 13.37	+10 48.4	1.925	2.728	14.8	20.2	3 22	9 16.17	+13 0.7	2.674	3.459	11.6	20.0
220586	2004 JL ₃₆		2 12.6 191°60	0°4/13.0	18		10923	1998 BM ₁₂		2 12.6 9°92	0°3/12.8	18	R
1 12	10 4.51	+ 9 50.2	2.343	3.170	11.2	21.4	1 12	10 2.10	+11 19.7	1.709	2.559	13.6	17.6
1 22	9 58.87	+10 29.3	2.260	3.168	8.1	21.2	1 22	9 57.57	+11 42.2	1.641	2.561	9.8	17.4
2 1	9 51.52	+11 18.8	2.204	3.166	4.6	21.0	2 1	9 50.95	+12 16.0	1.598	2.564	5.5	17.1
2 11	9 43.11	+12 14.4	2.178	3.164	0.9	20.7	2 11	9 43.07	+12 56.3	1.582	2.568	0.9	16.8
2 21	9 34.45	+13 11.4	2.182	3.160	3.1	20.9	2 21	9 34.99	+13 37.3	1.593	2.572	3.8	17.0
3 2	9 26.39	+14 4.8	2.216	3.156	6.8	21.1	3 2	9 27.78	+14 13.6	1.631	2.578	8.2	17.3
3 12	9 19.73	+14 50.5	2.278	3.152	10.1	21.3	3 12	9 22.41	+14 41.0	1.695	2.584	12.2	17.5
3 22	9 14.99	+15 26.2	2.363	3.147	13.0	21.5	3 22	9 19.42	+14 57.2	1.779	2.591	15.5	17.8
145456	2005 SA ₅		2 12.6 220°87	8°0/20.5	18		12033	Anselmo		2 12.6 314°00	0°6/12.1	18	
1 12	10 2.50	-14 39.3	2.700	3.394	13.2	19.7	1 12	10 1.73	+13 36.5	2.190	3.035	11.2	

EPHEMERIDES

2 12.6

2 12.7

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
165313	2000 <i>US</i> ₅₄		2 12.6 147°56	2°8/10.4	18		175399	2006 <i>OM</i> ₇		2 12.7 269°85	0°2/12.8	18	
1 12	10 8.56	+18 47.8	1.877	2.727	12.6	20.5	1 12	10 6.88	+11 32.2	1.701	2.544	14.0	20.8
1 22	10 2.07	+19 51.4	1.815	2.736	8.9	20.3	1 22	10 1.28	+11 55.9	1.610	2.526	10.2	20.5
2 1	9 53.40	+20 59.3	1.780	2.746	5.1	20.1	2 1	9 53.21	+12 31.5	1.543	2.508	5.8	20.2
2 11	9 43.44	+22 3.9	1.773	2.754	2.8	19.9	2 11	9 43.47	+13 14.5	1.503	2.489	0.9	19.8
2 21	9 33.27	+22 58.3	1.796	2.762	5.5	20.1	2 21	9 33.16	+13 58.7	1.492	2.471	4.2	20.0
3 2	9 24.08	+23 37.4	1.848	2.769	9.3	20.4	3 2	9 23.60	+14 38.2	1.508	2.452	9.1	20.2
3 12	9 16.84	+23 59.4	1.924	2.775	12.7	20.6	3 12	9 15.97	+15 8.0	1.550	2.432	13.5	20.5
3 22	9 12.11	+24 4.7	2.022	2.781	15.6	20.8	3 22	9 11.04	+15 25.7	1.612	2.413	17.3	20.7
16025	1999 <i>CA</i> ₁₀₄		2 12.6 233°92	4°0/15.5	18		49519	1999 <i>CU</i> ₃₃		2 12.7 144°45	0°1/12.6	18	
1 12	10 6.88	+1 12.3	1.861	2.664	14.6	18.6	1 12	10 5.27	+13 7.7	2.402	3.236	10.7	19.3
1 22	10 1.06	+1 15.3	1.767	2.651	11.4	18.4	1 22	9 59.32	+13 19.7	2.328	3.241	7.7	19.1
2 1	9 52.99	+1 37.4	1.695	2.638	7.8	18.1	2 1	9 51.75	+13 37.9	2.281	3.245	4.3	18.9
2 11	9 43.40	+2 17.2	1.651	2.623	4.6	17.9	2 11	9 43.22	+13 58.7	2.264	3.250	0.6	18.6
2 21	9 33.31	+3 10.9	1.635	2.608	4.8	17.9	2 21	9 34.55	+14 18.8	2.277	3.254	3.1	18.9
3 2	9 23.87	+4 12.5	1.648	2.593	8.3	18.0	3 2	9 26.57	+14 35.0	2.319	3.258	6.6	19.1
3 12	9 16.14	+5 15.1	1.687	2.576	12.2	18.2	3 12	9 20.01	+14 44.9	2.389	3.262	9.8	19.3
3 22	9 10.86	+6 12.8	1.748	2.559	15.7	18.4	3 22	9 15.34	+14 47.2	2.483	3.266	12.4	19.5
209705	2005 <i>EU</i> ₅₈		2 12.6 303°60	1°8/13.8	17		368804	2005 <i>YC</i> ₈₉		2 12.7 123°33	0°6/13.1	18	
1 12	10 3.48	+7 1.3	1.463	2.307	15.8	20.3	1 12	10 5.97	+10 56.1	1.944	2.781	12.8	21.3
1 22	9 59.19	+7 26.7	1.368	2.281	11.9	20.0	1 22	10 0.14	+11 7.7	1.872	2.784	9.3	21.1
2 1	9 52.22	+8 12.1	1.294	2.256	7.2	19.7	2 1	9 52.33	+11 29.1	1.824	2.787	5.3	20.9
2 11	9 43.32	+9 14.0	1.246	2.231	2.4	19.3	2 11	9 43.32	+11 56.2	1.804	2.790	1.1	20.6
2 21	9 33.66	+10 25.3	1.225	2.205	4.5	19.3	2 21	9 34.09	+12 24.8	1.813	2.792	3.5	20.8
3 2	9 24.70	+11 37.6	1.230	2.181	9.8	19.6	3 2	9 25.69	+12 50.4	1.852	2.795	7.6	21.0
3 12	9 17.80	+12 42.4	1.258	2.156	14.9	19.8	3 12	9 19.01	+13 9.5	1.916	2.798	11.3	21.2
3 22	9 13.87	+13 33.9	1.307	2.132	19.2	20.0	3 22	9 14.62	+13 20.2	2.002	2.800	14.5	21.5
51079	2000 <i>GG</i> ₁₆₆		2 12.6 133°32	1°5/11.3	18		467640	2008 <i>RQ</i> ₁₂₈		2 12.7 106°86	3°9/15.9	18	
1 12	10 3.92	+16 34.3	2.319	3.164	10.6	19.5	1 12	10 3.74	+0 38.4	2.138	2.936	13.2	21.9
1 22	9 58.43	+17 14.5	2.250	3.170	7.5	19.3	1 22	9 58.38	+0 37.0	2.064	2.944	10.2	21.7
2 1	9 51.28	+17 45.4	2.208	3.175	4.1	19.1	2 1	9 51.28	+0 52.2	2.014	2.953	7.0	21.5
2 11	9 43.14	+18 44.1	2.196	3.180	1.5	18.9	2 11	9 43.16	+1 22.2	1.992	2.961	4.3	21.3
2 21	9 34.83	+19 24.0	2.213	3.185	3.9	19.1	2 21	9 34.85	+2 3.6	1.998	2.970	4.4	21.4
3 2	9 27.23	+19 55.1	2.260	3.190	7.3	19.3	3 2	9 27.26	+2 51.7	2.034	2.978	7.0	21.5
3 12	9 21.09	+20 15.2	2.333	3.195	10.4	19.5	3 12	9 21.15	+3 41.0	2.096	2.986	10.1	21.7
3 22	9 16.89	+20 23.5	2.429	3.199	13.0	19.7	3 22	9 17.04	+4 27.2	2.182	2.994	13.0	21.9
15054	1998 <i>YS</i> ₅		2 12.6 90°21	2°8/9.9	18		414808	2010 <i>TF</i> ₁₆		2 12.7 283°67	0°2/12.8	18	
1 12	10 3.32	+19 16.1	2.145	2.998	11.1	17.3	1 12	10 7.51	+12 16.5	1.632	2.478	14.3	20.7
1 22	9 58.14	+20 28.7	2.086	3.009	7.8	17.1	1 22	10 1.71	+12 24.7	1.550	2.468	10.4	20.5
2 1	9 51.16	+21 44.9	2.054	3.019	4.5	17.0	2 1	9 53.41	+12 43.0	1.492	2.457	5.9	20.2
2 11	9 43.12	+22 57.8	2.051	3.030	2.9	16.9	2 11	9 43.49	+13 7.1	1.461	2.447	0.9	19.8
2 21	9 34.92	+24 1.1	2.078	3.040	5.2	17.0	2 21	9 33.14	+13 31.7	1.458	2.437	4.2	20.0
3 2	9 27.50	+24 50.2	2.133	3.051	8.4	17.2	3 2	9 23.69	+13 51.8	1.482	2.427	9.1	20.3
3 12	9 21.66	+25 22.8	2.214	3.061	11.5	17.5	3 12	9 16.29	+14 3.7	1.531	2.416	13.5	20.5
3 22	9 17.90	+25 38.9	2.317	3.071	14.0	17.7	3 22	9 11.67	+14 5.4	1.601	2.406	17.2	20.7
128374	2004 <i>JW</i> ₂₆		2 12.6 269°31	1°6/13.7	18		331824	2003 <i>SU</i> ₄₂₄		2 12.7 65°64	0°6/13.2	17	
1 12	10 7.26	+8 1.0	1.493	2.332	15.8	20.8	1 12	10 3.59	+9 52.9	1.965	2.802	12.6	21.2
1 22	10 1.83	+8 17.8	1.403	2.315	11.8	20.5	1 22	9 58.43	+10 20.3	1.894	2.807	9.2	20.9
2 1	9 53.64	+8 51.8	1.336	2.297	7.0	20.2	2 1	9 51.37	+10 59.1	1.848	2.811	5.2	20.7
2 11	9 43.53	+9 39.2	1.294	2.279	2.2	19.8	2 11	9 43.18	+11 44.8	1.830	2.816	1.1	20.4
2 21	9 32.75	+10 33.6	1.281	2.260	4.4	19.9	2 21	9 34.78	+12 32.3	1.841	2.820	3.4	20.6
3 2	9 22.77	+11 27.4	1.294	2.242	9.7	20.1	3 2	9 27.16	+13 16.4	1.880	2.825	7.5	20.9
3 12	9 14.96	+12 14.0	1.331	2.223	14.6	20.4	3 12	9 21.18	+13 52.8	1.946	2.830	11.1	21.1
3 22	9 10.16	+12 48.8	1.388	2.204	18.8	20.6	3 22	9 17.37	+14 19.0	2.034	2.835	14.2	21.3
56605	2000 <i>JG</i> ₅₇		2 12.6 191°03	1°1/13.6	18		318618	2005 <i>JK</i> ₉₂		2 12.7 310°58	1°1/13.5	17	
1 12	10 4.75	+7 58.7	2.206	3.030	11.9	19.7	1 12	10 4.41	+9 59.3	1.987	2.823	12.6	20.4
1 22	9 59.14	+8 29.6	2.124	3.028	8.8	19.5	1 22	9 59.12	+9 58.5	1.899	2.810	9.3	20.2
2 1	9 51.74	+9 12.7	2.068	3.027	5.2	19.3	2 1	9 51.83	+10 7.6	1.836	2.797	5.4	19.9
2 11	9 43.22	+10 4.1	2.040	3.025	1.5	19.1	2 11	9 43.26	+10 23.6	1.800	2.785	1.6	19.6
2 21	9 34.44	+10 59.0	2.043	3.022	3.2	19.2	2 21	9 34.34	+10 43.0	1.793	2.773	3.5	19.7
3 2	9 26.31	+11 52.2	2.075	3.019	7.0	19.4	3 2	9 26.10	+11 1.8	1.815	2.761	7.6	19.9
3 12	9 19.65	+12 39.2	2.135	3.015	10.4	19.6	3 12	9 19.47	+11 16.3	1.863	2.750	11.4	20.1
3 22	9 15.01	+13 17.1	2.218	3.011	13.4	19.8	3 22	9 15.07	+11 24.2	1.933	2.738	14.7	20.3
212051	2005 <i>EP</i> ₁₁		2 12.7 21°50	0°4/12.4	18		165371	2000 <i>WZ</i> ₁₁₀		2 12.7 56°74	1°4/13.4	18	
1 12	10 3.42	+11 20.5	1.232	2.097	16.8	20.1	1 12	10 8.50	+9 46.1	1.398	2.245	16.3	19.8
1 22	9 59.12	+12 9.7	1.175	2.102	12.1	19.8	1 22	10 2.43	+9 45.3	1.339	2.255	11.9	19.5
2 1	9 52.04	+13 15.4	1.139	2.108	6.7	19.5	2 1	9 53.75	+9 58.3	1.303	2.266	6.9	19.3
2 11	9 43.28	+14 29.3	1.128	2.115	0.9	19.1	2 11	9 43.53	+10 20.6	1.292	2.277	1.9	19.0
2 21	9 34.25	+15 41.5	1.143	2.123	5.0	19.4	2 21	9 33.15	+10 46.8	1.308	2.288	4.3	19.2
3 2	9 26.46	+16 43.0	1.183	2.131	10.5	19.8	3 2	9 24.02	+11 11.1	1.351	2.300	9.3	19.5
3 12	9 21.16	+17 27.8	1.246	2.140	15.2	20.1	3 12	9 17.30	+11 29.0	1.418	2.312	13.8	19.8
3 22	9 18.97	+17 53.7	1.327	2.150	19.1	20.3	3 22	9 13.56	+11 37.9	1.505	2.323	17.5	20.0
232780	2004 <i>PD</i> ₉₈		2 12.7 142°03	2°9/9.9	18		416672	2004 <i>VT</i> ₄₀		2 12.7 147°14	3°7/9.5	18	
1 12	10 7.73	+22 2.1	2.423	3.268	10.3	21.7	1 12						

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
23861	Benjaminisong 2 12.7 192°29 0°4/12.3 18						205551	2001 SB ₂₁₈ 2 12.7 142°17 0°7/12.0 17					
1 12	10 4.41	+13 12.4	2.056	2.898	11.9	18.9	1 12	10 3.37	+14 18.9	2.441	3.280	10.4	21.2
1 22	9 58.99	+13 40.1	1.981	2.898	8.6	18.7	1 22	9 57.99	+14 51.6	2.369	3.285	7.4	21.0
2 1	9 51.69	+14 15.8	1.932	2.898	4.7	18.4	2 1	9 51.04	+15 30.2	2.324	3.290	4.0	20.8
2 11	9 43.24	+14 55.1	1.912	2.898	0.7	18.1	2 11	9 43.17	+16 10.6	2.308	3.294	0.8	20.5
2 21	9 34.56	+15 32.9	1.920	2.898	3.6	18.4	2 21	9 35.13	+16 48.6	2.323	3.298	3.3	20.7
3 2	9 26.63	+16 4.8	1.958	2.897	7.6	18.6	3 2	9 27.73	+17 20.4	2.367	3.302	6.7	21.0
3 12	9 20.31	+16 27.6	2.021	2.897	11.1	18.8	3 12	9 21.70	+17 43.5	2.438	3.306	9.8	21.2
3 22	9 16.14	+16 39.7	2.107	2.897	14.1	19.0	3 22	9 17.48	+17 56.5	2.532	3.310	12.4	21.4
144604	2004 FW ₄₈ 2 12.7 166°54 1°7/13.9 18						500662	2012 VJ ₂₇ 2 12.7 104°40 1°2/11.5 17					
1 12	10 5.08	+ 7 2.9	1.780	2.611	14.0	20.4	1 12	10 4.26	+16 38.6	2.472	3.314	10.2	21.8
1 22	9 59.69	+ 7 23.3	1.705	2.612	10.4	20.2	1 22	9 58.56	+17 5.5	2.407	3.325	7.2	21.6
2 1	9 52.17	+ 7 58.9	1.654	2.613	6.3	20.0	2 1	9 51.32	+17 36.2	2.369	3.336	3.9	21.5
2 11	9 43.32	+ 8 45.5	1.630	2.613	2.2	19.7	2 11	9 43.21	+18 6.6	2.361	3.346	1.2	21.3
2 21	9 34.17	+ 9 37.8	1.634	2.614	3.7	19.8	2 21	9 34.99	+18 32.7	2.384	3.357	3.6	21.5
3 2	9 25.86	+10 29.7	1.667	2.614	8.0	20.1	3 2	9 27.48	+18 51.5	2.435	3.367	6.8	21.7
3 12	9 19.37	+11 15.6	1.725	2.615	12.0	20.3	3 12	9 21.35	+19 1.2	2.514	3.377	9.7	21.9
3 22	9 15.29	+11 51.9	1.806	2.615	15.4	20.5	3 22	9 17.06	+19 1.2	2.616	3.387	12.2	22.1
360148	2013 CZ ₅₄ 2 12.7 287°94 8°6/ 8.9 18						427036	2014 SM ₃₃₆ 2 12.7 95°66 0°7/12.1 18					
1 12	10 22.42	+34 35.0	1.504	2.346	15.5	19.9	1 12	10 6.97	+13 11.2	1.858	2.700	13.0	21.9
1 22	10 13.00	+34 59.5	1.426	2.329	12.3	19.6	1 22	10 0.82	+13 55.3	1.804	2.721	9.2	21.7
2 1	9 59.89	+35 8.9	1.372	2.311	9.5	19.4	2 1	9 52.67	+14 47.9	1.775	2.741	5.0	21.5
2 11	9 44.45	+34 52.0	1.343	2.294	8.7	19.3	2 11	9 43.41	+15 43.1	1.775	2.761	0.9	21.2
2 21	9 28.65	+34 2.3	1.342	2.276	10.7	19.4	2 21	9 34.08	+16 34.6	1.804	2.780	4.0	21.5
3 2	9 14.59	+32 40.1	1.368	2.258	14.2	19.6	3 2	9 25.75	+17 17.3	1.862	2.799	8.1	21.8
3 12	9 3.87	+30 52.2	1.416	2.241	17.9	19.7	3 12	9 19.27	+17 48.1	1.946	2.818	11.7	22.0
3 22	8 57.20	+28 47.7	1.484	2.223	21.2	19.9	3 22	9 15.16	+18 5.9	2.051	2.836	14.6	22.2
330037	2005 UF ₂₃₃ 2 12.7 96°31 0°6/12.2 18						341568	2007 UC ₄₉ 2 12.7 71°11 5°3/17.9 18					
1 12	10 4.68	+12 46.4	1.847	2.693	12.9	21.4	1 12	10 1.20	- 5 10.1	2.257	3.027	13.4	20.9
1 22	9 59.32	+13 30.6	1.781	2.699	9.2	21.2	1 22	9 56.54	- 5 8.6	2.180	3.034	10.9	20.7
2 1	9 51.91	+14 24.7	1.739	2.706	5.1	21.0	2 1	9 50.29	- 4 46.9	2.126	3.042	8.2	20.5
2 11	9 43.28	+15 22.9	1.726	2.712	0.8	20.7	2 11	9 43.07	- 4 6.1	2.098	3.049	5.9	20.4
2 21	9 34.44	+16 18.7	1.741	2.718	4.0	20.9	2 21	9 35.67	- 3 9.4	2.098	3.057	5.4	20.4
3 2	9 26.47	+17 6.4	1.785	2.725	8.2	21.2	3 2	9 28.88	- 2 1.7	2.126	3.064	7.2	20.5
3 12	9 20.29	+17 42.3	1.855	2.731	11.9	21.4	3 12	9 23.46	- 0 49.4	2.182	3.072	9.8	20.7
3 22	9 16.45	+18 4.7	1.946	2.737	15.1	21.7	3 22	9 19.87	+ 0 21.8	2.261	3.080	12.4	20.9
362085	2009 BX ₁₂₈ 2 12.7 80°72 4°5/ 9.9 18						490104	2008 UQ ₃₅ 2 12.7 174°43 1°1/11.7 17					
1 12	10 11.17	+22 43.1	1.477	2.339	14.7	20.7	1 12	10 4.67	+15 14.8	2.195	3.039	11.2	21.9
1 22	10 4.26	+23 36.4	1.432	2.356	10.5	20.5	1 22	9 59.10	+15 50.3	2.122	3.040	8.0	21.7
2 1	9 54.69	+24 29.1	1.410	2.374	6.4	20.3	2 1	9 51.73	+16 32.0	2.074	3.041	4.4	21.5
2 11	9 43.67	+25 12.2	1.416	2.392	4.5	20.2	2 11	9 43.29	+17 15.0	2.056	3.041	1.1	21.2
2 21	9 32.65	+25 38.6	1.448	2.409	7.2	20.4	2 21	9 34.63	+17 54.3	2.067	3.042	3.8	21.4
3 2	9 23.08	+25 44.9	1.507	2.426	11.1	20.7	3 2	9 26.68	+18 25.8	2.108	3.042	7.5	21.7
3 12	9 16.07	+25 31.7	1.589	2.444	14.8	21.0	3 12	9 20.27	+18 46.8	2.175	3.042	10.8	21.9
3 22	9 12.13	+25 1.7	1.691	2.460	17.8	21.2	3 22	9 15.92	+18 56.3	2.264	3.042	13.6	22.1
435805	2008 VH ₅₆ 2 12.7 18°59 20°4/24.1 17						206250	2002 XS ₄₆ 2 12.7 26°59 7°1/17.3 18					
1 12	10 8.14	-21 49.5	1.075	1.799	27.7	20.2	1 12	10 5.47	- 4 15.2	1.849	2.629	15.6	19.7
1 22	10 3.28	-24 30.4	1.018	1.801	25.4	20.0	1 22	9 59.86	- 5 16.8	1.780	2.638	12.8	19.5
2 1	9 54.81	-26 27.5	0.975	1.803	23.2	19.8	2 1	9 52.22	- 5 58.2	1.733	2.647	9.8	19.3
2 11	9 43.76	-27 28.1	0.946	1.805	21.4	19.7	2 11	9 43.36	- 6 18.1	1.711	2.657	7.6	19.2
2 21	9 31.87	-27 25.8	0.933	1.808	20.5	19.7	2 21	9 34.27	- 6 17.3	1.717	2.668	7.2	19.2
3 2	9 21.21	-26 23.0	0.938	1.811	20.7	19.7	3 2	9 26.02	- 5 59.3	1.749	2.679	9.1	19.4
3 12	9 13.64	-24 33.0	0.958	1.815	22.0	19.8	3 12	9 19.52	- 5 29.9	1.806	2.691	11.8	19.5
3 22	9 10.17	-22 14.1	0.994	1.820	24.0	19.9	3 22	9 15.35	- 4 55.3	1.885	2.703	14.5	19.8
143240	2002 YC ₂₄ 2 12.7 270°16 2°3/14.6 17						294283	2007 UD ₁₁₂ 2 12.7 318°47 2°5/11.1 18					
1 12	10 3.49	+ 5 44.5	2.330	3.145	11.7	19.6	1 12	10 6.92	+17 23.2	1.467	2.329	14.7	20.8
1 22	9 58.19	+ 5 41.0	2.241	3.137	8.8	19.4	1 22	10 1.50	+18 8.3	1.397	2.324	10.5	20.5
2 1	9 51.22	+ 5 49.0	2.178	3.130	5.6	19.2	2 1	9 53.38	+19 0.8	1.351	2.320	5.9	20.2
2 11	9 43.19	+ 6 6.5	2.143	3.122	2.7	19.0	2 11	9 43.55	+19 52.8	1.332	2.316	2.5	20.0
2 21	9 34.89	+ 6 30.7	2.138	3.115	3.4	19.0	2 21	9 33.34	+20 36.3	1.339	2.312	5.8	20.2
3 2	9 27.17	+ 6 57.9	2.162	3.107	6.6	19.2	3 2	9 24.22	+21 5.2	1.373	2.308	10.6	20.5
3 12	9 20.80	+ 7 24.3	2.213	3.100	9.8	19.4	3 12	9 17.42	+21 16.7	1.430	2.304	14.9	20.7
3 22	9 16.31	+ 7 46.8	2.288	3.092	12.7	19.6	3 22	9 13.64	+21 10.9	1.506	2.301	18.6	21.0
135364	2001 TL ₁₂₃ 2 12.7 199°02 3°1/15.5 18						389792	2011 UY ₇₉ 2 12.7 63°08 3°6/ 9.1 18					
1 12	10 2.94	+ 2 20.8	2.494	3.293	11.5	20.3	1 12	10 3.76	+25 25.7	2.584	3.435	9.5	21.0
1 22	9 57.68	+ 2 17.9	2.408	3.291	8.8	20.1	1 22	9 58.24	+26 7.1	2.524	3.442	6.9	20.8
2 1	9 50.88	+ 2 28.0	2.348	3.290	6.0	19.9	2 1	9 51.16	+26 46.4	2.492	3.449	4.5	20.7
2 11	9 43.14	+ 2 49.8	2.315	3.288	3.5	19.7	2 11	9 43.20	+27 18.5	2.488	3.457	3.7	20.6
2 21	9 35.18	+ 3 20.4	2.313	3.286	3.7	19.8	2 21	9 35.14	+27 39.5	2.514	3.464	5.4	20.7
3 2	9 27.76	+ 3 56.2	2.340	3.283	6.3	19.9	3 2	9 27.79	+27 47.3	2.569	3.471	7.9	20.9
3 12	9 21.60	+ 4 33.2	2.395	3.281	9.2	20.1	3 12	9 21.85	+27 41.2	2.649	3.479	10.3	21.1
3 22	9 17.18	+ 5 7.7	2.474	3.278	11.8	20.3	3 22	9 17.76	+27 22.4	2.751	3.486	12.5	21.3
400543	2008 UX ₂₂₈ 2 12.7 184°33 4°8/ 9.1 18						190348	1998 VE ₂₈ 2 12.7 110°17 3°6/16.2 18					
1 12	10 10.99	+24 6.0	1.794	2.648	12.9	22.0	1 12	10 4.70	- 0 1.5	2.492	3.277	11.9	19.7
1 22	10 4.07	+25 12.5	1.729	2.648	9.4	21.8	1 22	9 58.81	- 0 3.3	2.426	3.297	9.3	19.5
2 1	9 54.66	+26 18.8	1.689	2.648	6.0	21.6	2 1	9 51.44	+ 0 9.5	2.384	3.318	6.4	19.4
2 11	9 43.70	+27 16.0											

EPHEMERIDES

2 12.7

2 12.7

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
139870	2001 <i>RP</i> ₇₃		2 12.7 297°09	5°2/17.2	18		190098	2004 <i>TF</i> ₂₂₇		2 12.7 156°43	0°6/13.2	18	
1 12	10 1.50	- 3 25.4	2.197	2.978	13.4	19.6	1 12	10 5.21	+10 23.9	2.179	3.010	11.8	21.2
1 22	9 56.92	- 3 33.8	2.105	2.968	10.9	19.4	1 22	9 59.48	+10 45.5	2.105	3.014	8.6	21.0
2 1	9 50.60	- 3 23.3	2.035	2.958	8.1	19.2	2 1	9 51.96	+11 16.8	2.056	3.018	4.9	20.8
2 11	9 43.16	- 2 54.1	1.992	2.948	5.7	19.0	2 11	9 43.39	+11 53.7	2.036	3.022	1.0	20.5
2 21	9 35.39	- 2 8.9	1.976	2.939	5.4	19.0	2 21	9 34.61	+12 32.0	2.046	3.025	3.2	20.7
3 2	9 28.16	- 1 12.0	1.989	2.929	7.5	19.1	3 2	9 26.54	+13 7.2	2.086	3.028	7.0	20.9
3 12	9 22.30	- 0 9.5	2.029	2.920	10.4	19.2	3 12	9 20.01	+13 35.8	2.152	3.031	10.4	21.1
3 22	9 18.37	+ 0 52.8	2.091	2.911	13.2	19.4	3 22	9 15.51	+13 55.8	2.242	3.033	13.3	21.3
95418	2002 <i>CD</i> ₂₂₄		2 12.7 49°31	0°4/12.9	18		82151	2001 <i>FB</i> ₁₆₅		2 12.7 154°98	11°8/22.6	18	
1 12	10 3.67	+10 5.3	1.752	2.595	13.6	19.8	1 12	10 5.98	-17 16.8	1.346	2.077	22.7	19.4
1 22	9 58.69	+10 43.7	1.685	2.601	9.9	19.6	1 22	10 1.02	-17 16.6	1.271	2.082	19.7	19.2
2 1	9 51.62	+11 34.9	1.643	2.607	5.6	19.3	2 1	9 53.24	-16 31.1	1.212	2.086	16.4	19.0
2 11	9 43.30	+12 33.7	1.627	2.614	1.0	19.0	2 11	9 43.60	-14 56.5	1.173	2.090	13.4	18.8
2 21	9 34.76	+13 33.4	1.641	2.620	3.8	19.2	2 21	9 33.48	-12 36.6	1.157	2.093	11.8	18.7
3 2	9 27.10	+14 27.8	1.682	2.627	8.2	19.5	3 2	9 24.44	- 9 42.9	1.167	2.096	12.7	18.8
3 12	9 21.26	+15 12.0	1.748	2.634	12.1	19.7	3 12	9 17.81	- 6 33.5	1.201	2.098	15.5	19.0
3 22	9 17.80	+15 43.3	1.837	2.641	15.3	20.0	3 22	9 14.35	- 3 26.3	1.257	2.100	18.8	19.2
501476	2014 <i>BV</i> ₅₂		2 12.7 21°35	0°4/12.9	17		105178	2000 <i>ON</i> ₂₇		2 12.7 124°90	0°7/13.3	18	
1 12	10 6.62	+12 41.1	2.203	3.037	11.6	20.6	1 12	10 5.17	+ 9 20.2	2.046	2.877	12.5	19.5
1 22	10 0.43	+12 31.4	2.127	3.039	8.4	20.4	1 22	9 59.50	+ 9 52.4	1.978	2.887	9.0	19.3
2 1	9 52.46	+12 27.8	2.077	3.040	4.7	20.2	2 1	9 51.99	+10 35.9	1.936	2.898	5.2	19.1
2 11	9 43.42	+12 27.5	2.056	3.042	0.9	19.9	2 11	9 43.39	+11 26.3	1.922	2.907	1.2	18.8
2 21	9 34.22	+12 27.7	2.065	3.044	3.2	20.1	2 21	9 34.63	+12 18.4	1.938	2.917	3.3	19.0
3 2	9 25.78	+12 25.8	2.104	3.046	7.0	20.4	3 2	9 26.65	+13 6.9	1.983	2.926	7.2	19.2
3 12	9 18.90	+12 19.6	2.170	3.048	10.3	20.6	3 12	9 20.29	+13 47.7	2.054	2.935	10.8	19.5
3 22	9 14.09	+12 8.0	2.258	3.051	13.2	20.8	3 22	9 16.07	+14 18.3	2.149	2.943	13.7	19.7
101151	1998 <i>RB</i> ₇₂		2 12.7 126°41	1°1/13.6	18		283240	2010 <i>VJ</i> ₄₅		2 12.7 141°53	1°8/11.1	18	
1 12	10 5.40	+ 7 50.2	1.832	2.663	13.7	20.0	1 12	10 7.64	+17 21.7	2.242	3.083	11.1	21.8
1 22	9 59.84	+ 8 28.1	1.763	2.672	10.0	19.8	1 22	10 1.14	+18 9.3	2.179	3.097	7.9	21.6
2 1	9 52.23	+ 9 20.4	1.720	2.680	5.8	19.6	2 1	9 52.85	+19 1.0	2.144	3.109	4.3	21.4
2 11	9 43.40	+10 22.2	1.704	2.688	1.6	19.3	2 11	9 43.51	+19 51.2	2.138	3.121	1.8	21.2
2 21	9 34.35	+11 27.2	1.717	2.696	3.6	19.5	2 21	9 34.05	+20 34.7	2.163	3.132	4.3	21.4
3 2	9 26.16	+12 29.0	1.759	2.704	7.8	19.7	3 2	9 25.40	+21 7.6	2.217	3.143	7.7	21.7
3 12	9 19.76	+13 22.1	1.827	2.711	11.7	20.0	3 12	9 18.37	+21 27.7	2.298	3.152	10.8	21.9
3 22	9 15.70	+14 3.4	1.917	2.718	14.9	20.2	3 22	9 13.45	+21 35.1	2.402	3.162	13.4	22.1
427594	2003 <i>SD</i> ₁₂₂		2 12.7 136°05	0°3/12.4	18		364359	2006 <i>UY</i> ₂₅₉		2 12.7 187°19	0°1/12.6	18	
1 12	10 6.90	+13 56.2	2.223	3.059	11.4	21.0	1 12	10 6.54	+11 56.4	1.861	2.701	13.1	21.4
1 22	10 0.61	+14 8.0	2.152	3.066	8.2	20.8	1 22	10 0.73	+12 26.5	1.786	2.701	9.4	21.1
2 1	9 52.54	+14 25.8	2.108	3.073	4.5	20.6	2 1	9 52.79	+13 6.8	1.736	2.701	5.3	20.9
2 11	9 43.44	+14 45.7	2.093	3.079	0.6	20.3	2 11	9 43.53	+13 52.4	1.714	2.700	0.8	20.6
2 21	9 34.20	+15 3.9	2.108	3.086	3.4	20.5	2 21	9 33.98	+14 37.6	1.721	2.699	3.8	20.8
3 2	9 25.73	+15 17.2	2.153	3.092	7.1	20.7	3 2	9 25.27	+15 16.9	1.756	2.698	8.2	21.0
3 12	9 18.85	+15 23.3	2.225	3.097	10.4	21.0	3 12	9 18.36	+15 46.6	1.818	2.696	12.0	21.3
3 22	9 14.03	+15 21.3	2.320	3.103	13.2	21.2	3 22	9 13.86	+16 4.6	1.901	2.694	15.3	21.5
428416	2007 <i>TV</i> ₁₂₈		2 12.7 66°95	5°8/ 7.5	18		487392	2014 <i>QA</i> ₃₁₂		2 12.7 153°12	0°4/12.4	18	
1 12	10 6.74	+30 23.8	2.169	3.021	11.0	20.8	1 12	10 6.48	+11 17.9	1.778	2.619	13.6	21.8
1 22	10 0.69	+31 23.1	2.116	3.028	8.4	20.6	1 22	10 0.74	+12 13.7	1.709	2.625	9.8	21.6
2 1	9 52.65	+32 16.1	2.089	3.035	6.3	20.5	2 1	9 52.81	+13 21.9	1.665	2.630	5.4	21.3
2 11	9 43.47	+32 55.9	2.091	3.042	6.0	20.5	2 11	9 43.54	+14 36.1	1.649	2.635	0.8	21.0
2 21	9 34.18	+33 17.5	2.120	3.049	7.6	20.6	2 21	9 34.00	+15 48.7	1.662	2.640	4.1	21.3
3 2	9 25.84	+33 18.7	2.176	3.056	10.1	20.8	3 2	9 25.35	+16 52.9	1.704	2.644	8.5	21.6
3 12	9 19.32	+33 0.5	2.256	3.063	12.6	20.9	3 12	9 18.58	+17 43.9	1.772	2.648	12.5	21.8
3 22	9 15.12	+32 25.6	2.355	3.071	14.8	21.1	3 22	9 14.30	+18 19.6	1.861	2.651	15.7	22.0
162628	2000 <i>SO</i> ₁₃₈		2 12.7 184°58	2°5/11.0	18		307167	2002 <i>EZ</i> ₉		2 12.7 49°24	17°5/10.1	16	
1 12	10 11.29	+19 20.4	1.828	2.675	13.0	20.6	1 12	10 40.64	+47 11.2	0.871	1.709	24.3	19.4
1 22	10 4.18	+19 52.0	1.756	2.676	9.3	20.4	1 22	10 27.26	+47 47.3	0.841	1.722	21.0	19.2
2 1	9 54.71	+20 26.4	1.710	2.675	5.3	20.1	2 1	10 7.73	+47 39.6	0.828	1.736	18.4	19.1
2 11	9 43.79	+20 57.4	1.693	2.675	2.5	20.0	2 11	9 45.59	+46 29.3	0.834	1.750	17.5	19.1
2 21	9 32.61	+21 19.1	1.704	2.674	5.3	20.1	2 21	9 25.17	+44 14.6	0.861	1.765	18.7	19.3
3 2	9 22.44	+21 27.9	1.745	2.672	9.3	20.4	3 2	9 9.76	+41 10.5	0.909	1.781	21.4	19.5
3 12	9 14.35	+21 22.5	1.811	2.669	13.1	20.6	3 12	9 0.63	+37 39.7	0.975	1.796	24.4	19.8
3 22	9 8.94	+21 3.7	1.898	2.666	16.2	20.8	3 22	8 57.39	+34 1.7	1.057	1.813	27.1	20.0
73794	1995 <i>FE</i> ₅		2 12.7 213°58	1°4/11.4	18		253049	2002 <i>TD</i>		2 12.7 97°90	3°2/10.3	18	
1 12	10 4.06	+16 10.2	2.215	3.061	11.0	19.6	1 12	10 11.39	+21 19.2	1.936	2.783	12.4	21.8
1 22	9 58.70	+16 49.6	2.140	3.059	7.9	19.4	1 22	10 3.88	+22 7.7	1.893	2.812	8.8	21.6
2 1	9 51.56	+17 34.5	2.091	3.057	4.3	19.2	2 1	9 54.34	+22 56.1	1.877	2.840	5.1	21.5
2 11	9 43.33	+18 20.0	2.070	3.055	1.4	19.0	2 11	9 43.74	+23 37.8	1.889	2.867	3.3	21.4
2 21	9 34.86	+19 1.1	2.080	3.053	4.0	19.2	2 21	9 33.21	+24 7.3	1.932	2.894	5.5	21.6
3 2	9 27.08	+19 33.5	2.119	3.051	7.6	19.4	3 2	9 23.85	+24 21.7	2.003	2.920	8.9	21.8
3 12	9 20.81	+19 54.6	2.183	3.048	10.9	19.6	3 12	9 16.52	+24 20.8	2.099	2.945	12.1	22.1
3 22	9 16.57	+20 3.5	2.271	3.046	13.7	19.8	3 22	9 11.68	+24 6.2	2.217	2.969	14.6	22.3
350649	2001 <i>TN</i> ₂₀₁		2 12.7 96°15	5°5/ 8.9	18		430482	2001 <i>SJ</i> ₂₄₀		2 12.7 155°52	4°0/17.6	17	
1 12	10 10.08	+23 47.1	1.442										

EPHEMERIDES

2 12.7

2 12.7

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
422281	2014 <i>SP</i> ₁₅₄		2 12.7 198°25	0°4/12.9	17		160101	2000 <i>RM</i> ₂₃		2 12.7 163°80	2°2/14.6	18	
1 12	10 7.45	+10 44.1	2.043	2.874	12.5	22.1	1 12	10 7.44	+ 4 38.2	2.109	2.918	12.9	20.6
1 22	10 1.27	+11 11.4	1.961	2.871	9.1	21.9	1 22	10 1.14	+ 5 2.2	2.032	2.925	9.7	20.4
2 1	9 53.07	+11 49.2	1.904	2.867	5.1	21.6	2 1	9 52.95	+ 5 41.0	1.980	2.932	6.1	20.2
2 11	9 43.59	+12 33.1	1.876	2.863	0.9	21.3	2 11	9 43.61	+ 6 31.4	1.957	2.937	2.7	20.0
2 21	9 33.79	+13 17.9	1.879	2.857	3.5	21.5	2 21	9 34.04	+ 7 28.4	1.964	2.942	3.5	20.0
3 2	9 24.73	+13 58.8	1.911	2.852	7.6	21.7	3 2	9 25.21	+ 8 26.7	2.002	2.946	7.1	20.3
3 12	9 17.32	+14 31.6	1.969	2.845	11.4	21.9	3 12	9 17.98	+ 9 20.9	2.066	2.949	10.6	20.5
3 22	9 12.18	+14 54.2	2.051	2.838	14.5	22.1	3 22	9 12.90	+10 7.2	2.155	2.951	13.6	20.7
56980	2000 <i>SS</i> ₁₇₇		2 12.7 243°16	3°2/ 9.7	18		2522	Triglav		2 12.7 355°75	3°7/15.5	18	
1 12	10 5.76	+24 2.8	2.645	3.491	9.5	19.2	1 12	10 3.77	+ 2 25.9	2.047	2.855	13.3	16.0
1 22	9 59.75	+24 35.2	2.564	3.481	6.9	19.0	1 22	9 58.60	+ 2 11.4	1.966	2.854	10.3	15.8
2 1	9 52.10	+25 6.6	2.511	3.471	4.3	18.8	2 1	9 51.58	+ 2 11.9	1.910	2.853	7.0	15.6
2 11	9 43.44	+25 32.2	2.488	3.461	3.2	18.7	2 11	9 43.41	+ 2 26.3	1.880	2.852	4.2	15.4
2 21	9 34.57	+25 48.1	2.495	3.450	5.0	18.8	2 21	9 34.99	+ 2 51.7	1.879	2.852	4.3	15.4
3 2	9 26.31	+25 51.9	2.531	3.439	7.7	18.9	3 2	9 27.25	+ 3 24.0	1.906	2.852	7.3	15.6
3 12	9 19.44	+25 42.7	2.593	3.428	10.4	19.1	3 12	9 21.04	+ 3 58.3	1.960	2.852	10.6	15.8
3 22	9 14.43	+25 21.5	2.678	3.417	12.7	19.3	3 22	9 16.92	+ 4 30.2	2.037	2.852	13.6	16.0
460304	2014 <i>QF</i> ₃₇₃		2 12.7 237°57	4°3/ 9.4	18		467005	2016 <i>CK</i> ₈₁		2 12.7 40°37	3°8/10.3	18	
1 12	10 7.98	+21 58.6	1.725	2.584	13.1	21.5	1 12	10 8.37	+21 17.0	1.544	2.406	14.1	21.7
1 22	10 2.10	+23 9.0	1.652	2.575	9.4	21.3	1 22	10 2.39	+22 1.5	1.484	2.410	10.1	21.4
2 1	9 53.72	+24 22.5	1.604	2.567	5.8	21.0	2 1	9 53.84	+22 47.8	1.448	2.414	6.0	21.2
2 11	9 43.70	+25 30.3	1.583	2.558	4.3	20.9	2 11	9 43.75	+23 27.9	1.440	2.419	3.8	21.1
2 21	9 33.26	+26 24.0	1.591	2.549	7.0	21.1	2 21	9 33.46	+23 54.8	1.458	2.423	6.5	21.2
3 2	9 23.74	+26 58.1	1.626	2.539	10.8	21.3	3 2	9 24.37	+24 4.3	1.503	2.428	10.7	21.5
3 12	9 16.32	+27 10.9	1.684	2.529	14.5	21.5	3 12	9 17.60	+23 55.6	1.571	2.433	14.5	21.7
3 22	9 11.69	+27 3.7	1.762	2.519	17.7	21.7	3 22	9 13.75	+23 30.5	1.659	2.439	17.7	22.0
456765	2007 <i>TL</i> ₁₀₅		2 12.7 103°51	1°6/13.8	18		159182	2005 <i>UB</i> ₂₇		2 12.7 82°57	3°7/10.5	18	
1 12	10 7.10	+ 7 20.8	1.654	2.486	14.8	21.8	1 12	10 11.79	+20 3.2	1.344	2.206	15.8	19.9
1 22	10 1.19	+ 7 47.6	1.592	2.500	10.9	21.6	1 22	10 4.93	+20 56.6	1.299	2.225	11.2	19.7
2 1	9 53.05	+ 8 29.8	1.554	2.514	6.5	21.4	2 1	9 55.22	+21 52.9	1.277	2.243	6.5	19.5
2 11	9 43.59	+ 9 22.8	1.543	2.527	2.1	21.1	2 11	9 43.94	+22 42.3	1.281	2.262	3.7	19.4
2 21	9 33.97	+10 20.0	1.560	2.540	3.8	21.2	2 21	9 32.65	+23 17.1	1.312	2.280	6.8	19.6
3 2	9 25.38	+11 14.9	1.606	2.553	8.3	21.5	3 2	9 22.92	+23 32.6	1.370	2.298	11.3	19.9
3 12	9 18.79	+12 1.9	1.677	2.565	12.3	21.8	3 12	9 15.90	+23 28.4	1.450	2.315	15.3	20.2
3 22	9 14.79	+12 37.8	1.769	2.577	15.7	22.1	3 22	9 12.13	+23 7.1	1.549	2.332	18.6	20.4
413487	2005 <i>NG</i> ₅		2 12.7 163°02	2°1/10.8	18		299329	2005 <i>QE</i> ₁₇₂		2 12.7 219°58	3°2/16.3	17	
1 12	10 5.13	+16 4.6	1.935	2.785	12.2	21.7	1 12	10 0.67	- 0 30.0	2.933	3.715	10.4	21.0
1 22	9 59.70	+17 18.7	1.866	2.788	8.7	21.5	1 22	9 55.98	- 0 14.1	2.837	3.708	8.1	20.9
2 1	9 52.23	+18 40.7	1.824	2.791	4.8	21.2	2 1	9 49.99	+ 0 15.5	2.767	3.700	5.7	20.7
2 11	9 43.48	+20 3.1	1.810	2.793	2.1	21.1	2 11	9 43.19	+ 0 57.5	2.725	3.692	3.6	20.6
2 21	9 34.46	+21 18.4	1.826	2.795	4.9	21.3	2 21	9 36.16	+ 1 49.0	2.714	3.684	3.5	20.5
3 2	9 26.23	+22 20.3	1.871	2.797	8.8	21.5	3 2	9 29.55	+ 2 46.1	2.733	3.675	5.6	20.7
3 12	9 19.75	+23 5.4	1.941	2.799	12.3	21.7	3 12	9 23.94	+ 3 44.7	2.780	3.666	8.1	20.8
3 22	9 15.59	+23 32.9	2.032	2.800	15.3	21.9	3 22	9 19.78	+ 4 40.8	2.853	3.657	10.5	21.0
241449	2008 <i>YJ</i> ₆₇		2 12.7 359°21	4°6/ 7.6	16		431188	2006 <i>SH</i> ₇₈		2 12.7 111°85	4°1/17.6	18	
1 12	10 2.25	+22 46.7	2.054	2.915	11.2	19.7	1 12	10 1.70	- 4 19.3	2.856	3.617	11.1	21.4
1 22	9 57.70	+24 43.9	1.990	2.914	8.1	19.5	1 22	9 56.61	- 4 3.4	2.785	3.637	8.9	21.2
2 1	9 51.15	+26 44.0	1.954	2.914	5.3	19.3	2 1	9 50.27	- 3 31.6	2.739	3.656	6.5	21.1
2 11	9 43.34	+28 37.6	1.947	2.913	4.8	19.3	2 11	9 43.22	- 2 45.5	2.721	3.675	4.6	21.0
2 21	9 35.18	+30 16.1	1.970	2.913	7.1	19.4	2 21	9 36.08	- 1 48.2	2.733	3.694	4.2	21.0
3 2	9 27.72	+31 33.2	2.021	2.914	10.2	19.6	3 2	9 29.48	- 0 43.7	2.775	3.712	5.8	21.1
3 12	9 21.89	+32 26.6	2.096	2.914	13.1	19.8	3 12	9 23.98	+ 0 23.0	2.846	3.730	8.0	21.3
3 22	9 18.31	+32 56.9	2.191	2.915	15.6	20.0	3 22	9 19.97	+ 1 27.8	2.942	3.747	10.1	21.5
223250	2003 <i>FJ</i> ₆₇		2 12.7 231°31	6°0/ 7.4	18		245903	2006 <i>QH</i> ₁₀₆		2 12.7 239°66	2°2/14.5	18	
1 12	10 9.36	+30 23.5	2.160	3.008	11.2	20.3	1 12	10 5.72	+ 4 46.2	2.010	2.825	13.3	21.1
1 22	10 2.77	+31 27.5	2.089	2.999	8.6	20.1	1 22	10 0.20	+ 5 12.9	1.914	2.810	10.0	20.9
2 1	9 53.96	+32 26.1	2.044	2.989	6.5	19.9	2 1	9 52.60	+ 5 56.2	1.841	2.794	6.3	20.6
2 11	9 43.75	+33 11.6	2.028	2.979	6.2	19.9	2 11	9 43.61	+ 6 53.1	1.797	2.778	2.7	20.4
2 21	9 33.24	+33 38.2	2.040	2.968	8.0	20.0	2 21	9 34.14	+ 7 58.4	1.782	2.761	3.7	20.4
3 2	9 23.59	+33 43.0	2.079	2.957	10.7	20.1	3 2	9 25.25	+ 9 5.9	1.797	2.743	7.6	20.6
3 12	9 15.82	+33 26.4	2.142	2.946	13.4	20.3	3 12	9 17.93	+10 9.5	1.839	2.725	11.5	20.8
3 22	9 10.55	+32 51.4	2.225	2.934	15.8	20.4	3 22	9 12.84	+11 4.4	1.904	2.706	15.0	21.0
295708	2008 <i>UC</i> ₁₁		2 12.7 342°64	3°8/10.7	18		468665	2008 <i>XX</i> ₃₀		2 12.7 257°35	4°2/ 9.0	17	
1 12	10 10.44	+20 35.9	1.293	2.160	16.0	20.4	1 12	10 5.86	+24 48.0	2.150	3.004	11.0	21.1
1 22	10 4.34	+21 10.3	1.229	2.157	11.5	20.1	1 22	10 0.16	+25 41.6	2.080	3.000	8.0	20.9
2 1	9 55.11	+21 47.9	1.188	2.155	6.7	19.8	2 1	9 52.47	+26 34.2	2.036	2.995	5.3	20.8
2 11	9 43.94	+22 19.5	1.172	2.153	3.8	19.7	2 11	9 43.58	+27 19.1	2.021	2.991	4.3	20.7
2 21	9 32.42	+22 37.4	1.182	2.151	7.0	19.8	2 21	9 34.43	+27 50.9	2.035	2.986	6.3	20.8
3 2	9 22.29	+22 36.8	1.217	2.150	11.9	20.1	3 2	9 26.08	+28 6.1	2.076	2.981	9.3	21.0
3 12	9 14.93	+22 17.2	1.275	2.149	16.4	20.4	3 12	9 19.42	+28 3.9	2.142	2.976	12.3	21.2
3 22	9 11.04	+21 40.9	1.350	2.148	20.2	20.6	3 22	9 15.01	+27 45.8	2.229	2.972	14.8	21.3
503477	2016 <i>EJ</i> ₁₅₉		2 12.7 247°23	6°6/ 6.5	17		53857	2000 <i>FQ</i> ₂₁		2 12.7 157°59	0°0/12.7	18	
1 12	10 7.50	+30 3.7	2.008	2.863</									

EPHEMERIDES

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
459298	2012 GZ ₁₉		2 12.7 242°51	6°7/ 6.9	18		7738	Heyman		2 12.7 227°07	3°6/10.1	18	
1 12	10 9.64	+31 31.7	2.018	2.868	11.8	21.5	1 12	10 9.73	+20 9.6	1.742	2.596	13.2	18.0
1 22	10 3.15	+32 42.2	1.950	2.859	9.2	21.3	1 22	10 3.42	+21 14.3	1.664	2.586	9.5	17.8
2 1	9 54.26	+33 46.3	1.907	2.849	7.1	21.2	2 1	9 54.54	+22 23.9	1.610	2.575	5.6	17.5
2 11	9 43.85	+34 35.4	1.892	2.838	6.9	21.2	2 11	9 43.97	+23 30.1	1.585	2.563	3.6	17.4
2 21	9 33.12	+35 3.1	1.905	2.828	8.8	21.3	2 21	9 32.92	+24 24.6	1.588	2.551	6.4	17.5
3 2	9 23.33	+35 6.4	1.944	2.817	11.5	21.4	3 2	9 22.75	+25 1.5	1.619	2.538	10.5	17.7
3 12	9 15.57	+34 46.3	2.006	2.806	14.3	21.6	3 12	9 14.66	+25 18.4	1.674	2.524	14.4	17.9
3 22	9 10.50	+34 6.2	2.087	2.795	16.7	21.7	3 22	9 9.39	+25 16.4	1.749	2.510	17.7	18.1
125296	2001 VS ₂₇		2 12.7 46°79	0°3/12.9	18		419955	2011 BV ₉₆		2 12.7 299°79	0°9/13.3	17	
1 12	10 7.16	+10 35.4	1.139	2.001	18.1	19.1	1 12	10 7.04	+11 8.0	1.799	2.638	13.5	20.9
1 22	10 1.82	+11 10.4	1.096	2.020	13.0	18.9	1 22	10 1.30	+11 2.2	1.712	2.625	9.9	20.6
2 1	9 53.60	+12 1.7	1.073	2.041	7.2	18.6	2 1	9 53.29	+11 5.9	1.649	2.612	5.8	20.3
2 11	9 43.75	+13 1.5	1.075	2.062	1.2	18.3	2 11	9 43.78	+11 15.8	1.613	2.599	1.4	20.0
2 21	9 33.88	+14 0.2	1.103	2.083	4.9	18.6	2 21	9 33.86	+11 28.2	1.606	2.586	3.8	20.1
3 2	9 25.56	+14 49.7	1.155	2.105	10.4	19.0	3 2	9 24.70	+11 38.9	1.627	2.573	8.3	20.4
3 12	9 19.97	+15 24.7	1.230	2.128	15.1	19.3	3 12	9 17.39	+11 44.6	1.674	2.561	12.4	20.6
3 22	9 17.63	+15 43.2	1.324	2.151	19.0	19.6	3 22	9 12.59	+11 43.2	1.742	2.548	16.0	20.8
118311	1998 VU ₃₆		2 12.7 118°91	3°7/10.1	18		466424	2013 TR ₂₉		2 12.7 155°53	4°7/17.4	16	
1 12	10 10.19	+19 42.7	1.557	2.415	14.3	19.9	1 12	10 3.26	- 3 57.3	2.409	3.178	12.7	22.0
1 22	10 3.64	+20 56.6	1.505	2.429	10.2	19.7	1 22	9 58.03	- 3 49.4	2.328	3.185	10.2	21.8
2 1	9 54.52	+22 14.5	1.477	2.443	5.9	19.5	2 1	9 51.22	- 3 23.0	2.270	3.190	7.5	21.6
2 11	9 43.90	+23 26.7	1.477	2.456	3.7	19.3	2 11	9 43.47	- 2 39.5	2.239	3.196	5.2	21.5
2 21	9 33.12	+24 24.8	1.505	2.469	6.6	19.5	2 21	9 35.51	- 1 41.9	2.238	3.201	4.8	21.5
3 2	9 23.59	+25 3.1	1.560	2.481	10.7	19.8	3 2	9 28.13	- 0 35.1	2.266	3.205	6.8	21.6
3 12	9 16.41	+25 20.3	1.639	2.493	14.4	20.1	3 12	9 22.05	+ 0 35.0	2.322	3.209	9.4	21.8
3 22	9 12.16	+25 18.2	1.737	2.504	17.6	20.3	3 22	9 17.77	+ 1 43.3	2.403	3.213	12.0	22.0
341214	2007 RT ₁₂₆		2 12.7 91°69	0°5/13.2	17		319782	2006 UV ₂₈₆		2 12.7 50°55	3°6/10.4	18	
1 12	10 3.39	+10 11.3	2.223	3.055	11.5	21.6	1 12	10 7.88	+19 54.6	1.409	2.275	15.0	20.1
1 22	9 58.16	+10 39.3	2.154	3.065	8.3	21.4	1 22	10 2.04	+20 51.5	1.367	2.295	10.6	19.9
2 1	9 51.27	+11 16.9	2.112	3.074	4.7	21.2	2 1	9 53.64	+21 51.3	1.348	2.315	6.1	19.6
2 11	9 43.41	+12 0.2	2.098	3.084	1.0	20.9	2 11	9 43.82	+22 45.0	1.355	2.336	3.6	19.5
2 21	9 35.40	+12 44.6	2.114	3.093	3.1	21.1	2 21	9 34.00	+23 24.7	1.390	2.357	6.5	19.8
3 2	9 28.10	+13 25.6	2.159	3.102	6.7	21.3	3 2	9 25.57	+23 46.1	1.450	2.378	10.7	20.1
3 12	9 22.25	+13 59.6	2.231	3.112	10.0	21.6	3 12	9 19.59	+23 48.1	1.533	2.400	14.6	20.3
3 22	9 18.33	+14 24.4	2.327	3.121	12.8	21.8	3 22	9 16.55	+23 32.7	1.635	2.421	17.7	20.6
203431	2001 YW ₂		2 12.7 137°94	2°6/10.7	18		51978	2001 RQ ₁₂₆		2 12.7 25°88	4°6/ 9.1	18	
1 12	10 8.28	+17 2.3	1.692	2.544	13.6	20.2	1 12	10 6.22	+25 39.7	1.955	2.813	11.8	18.4
1 22	10 2.16	+18 15.9	1.631	2.554	9.6	19.9	1 22	10 0.50	+26 26.2	1.897	2.817	8.6	18.2
2 1	9 53.68	+19 36.7	1.596	2.563	5.4	19.7	2 1	9 52.69	+27 10.0	1.864	2.822	5.7	18.1
2 11	9 43.78	+20 56.0	1.590	2.572	2.6	19.5	2 11	9 43.69	+27 44.4	1.858	2.827	4.7	18.0
2 21	9 33.65	+22 5.5	1.612	2.580	5.6	19.7	2 21	9 34.54	+28 4.1	1.881	2.833	6.7	18.1
3 2	9 24.55	+22 58.7	1.662	2.588	9.8	20.0	3 2	9 26.36	+28 6.2	1.931	2.838	9.8	18.3
3 12	9 17.54	+23 33.0	1.737	2.595	13.5	20.3	3 12	9 20.07	+27 50.7	2.005	2.844	12.8	18.5
3 22	9 13.22	+23 48.4	1.832	2.602	16.7	20.5	3 22	9 16.18	+27 19.8	2.100	2.851	15.4	18.7
308224	2005 EL ₂₁₀		2 12.7 50°03	1°0/13.3	18		162008	1993 TW ₃		2 12.7 288°43	3°0/10.9	18	
1 12	10 6.29	+ 9 9.2	1.323	2.175	16.7	20.5	1 12	10 9.65	+19 18.5	1.461	2.322	14.8	20.4
1 22	10 0.98	+ 9 37.6	1.272	2.191	12.1	20.3	1 22	10 3.63	+19 52.2	1.388	2.314	10.7	20.1
2 1	9 53.08	+10 22.4	1.243	2.207	6.9	20.0	2 1	9 54.74	+20 30.5	1.339	2.306	6.1	19.8
2 11	9 43.69	+11 17.3	1.239	2.224	1.6	19.9	2 11	9 44.02	+21 5.5	1.316	2.298	3.0	19.6
2 21	9 34.18	+12 14.3	1.261	2.242	4.3	19.9	2 21	9 32.88	+21 29.9	1.320	2.290	6.2	19.8
3 2	9 25.97	+13 5.8	1.310	2.260	9.4	20.3	3 2	9 22.85	+21 38.7	1.350	2.283	10.9	20.0
3 12	9 20.16	+13 46.2	1.382	2.278	13.9	20.6	3 12	9 15.27	+21 30.3	1.403	2.275	15.3	20.3
3 22	9 17.29	+14 12.5	1.474	2.296	17.6	20.9	3 22	9 10.85	+21 5.8	1.476	2.268	19.0	20.5
199509	2006 DV ₁₂₂		2 12.7 258°47	7°8/ 5.5	18		366379	2000 SG ₃₁₄		2 12.7 141°34	4°3/16.9	18	
1 12	10 9.37	+35 39.2	2.104	2.948	11.6	19.8	1 12	10 5.68	- 2 36.2	2.571	3.339	12.0	21.5
1 22	10 2.95	+36 54.4	2.041	2.939	9.4	19.6	1 22	9 59.61	- 2 41.8	2.495	3.353	9.6	21.3
2 1	9 54.15	+37 59.9	2.005	2.931	8.0	19.5	2 1	9 52.04	- 2 31.8	2.444	3.366	6.9	21.2
2 11	9 43.87	+38 47.1	1.995	2.922	8.1	19.5	2 11	9 43.59	- 2 6.9	2.422	3.379	4.8	21.1
2 21	9 33.31	+39 10.3	2.013	2.913	9.7	19.6	2 21	9 34.99	- 1 29.9	2.429	3.391	4.6	21.1
3 2	9 23.72	+39 6.9	2.055	2.904	12.0	19.7	3 2	9 27.01	- 0 44.6	2.466	3.402	6.4	21.2
3 12	9 16.20	+38 38.9	2.120	2.895	14.4	19.9	3 12	9 20.32	+ 0 4.4	2.532	3.413	9.0	21.4
3 22	9 11.35	+37 50.3	2.203	2.886	16.5	20.0	3 22	9 15.37	+ 0 52.6	2.622	3.423	11.4	21.6
207064	2004 XS ₉₉		2 12.7 111°52	1°3/11.8	18		206905	2004 HQ ₇₁		2 12.7 294°54	7°4/ 6.2	17	
1 12	10 9.26	+14 37.1	1.721	2.566	13.7	21.1	1 12	10 10.22	+36 16.0	2.233	3.073	11.2	19.8
1 22	10 2.69	+15 25.2	1.666	2.585	9.7	20.9	1 22	10 3.45	+37 8.2	2.163	3.059	9.1	19.6
2 1	9 53.89	+16 21.1	1.636	2.602	5.3	20.7	2 1	9 54.40	+37 50.0	2.119	3.044	7.6	19.5
2 11	9 43.83	+17 18.2	1.634	2.620	1.4	20.4	2 11	9 43.96	+38 14.2	2.102	3.030	7.6	19.5
2 21	9 33.66	+18 9.5	1.662	2.636	4.5	20.7	2 21	9 33.27	+38 15.6	2.112	3.016	9.1	19.5
3 2	9 24.59	+18 49.6	1.717	2.652	8.8	21.0	3 2	9 23.53	+37 52.7	2.148	3.002	11.4	19.6
3 12	9 17.59	+19 15.7	1.798	2.668	12.6	21.3	3 12	9 15.79	+37 7.5	2.207	2.988	13.7	19.8
3 22	9 13.29	+19 27.2	1.901	2.683	15.7	21.5	3 22	9 10.63	+36 3.9	2.285	2.974	15.9	19.9
206264	2002 XQ ₁₁₃		2 12.7 64°31	5°0/ 8.9	18		465113	2006 VS ₇₀		2 12.7 79°29	2°8/10.6	18	
1 12	10 10.10	+27 54.4	2.026	2.876	11.7	19.3	1 12	10 8.24	+18 39.2	1.675	2.531	13.5	

EPHEMERIDES

2 12.7

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
413901	2006 <i>WS</i> ₇		2 12.7 40°21	0°1/12.8	18		182427	2001 <i>RS</i> ₁₂₀		2 12.7 63°85	0°3/12.5	18	
1 12	10 4.44	+10 29.9	1.397	2.251	15.8	21.0	1 12	10 5.23	+11 45.8	1.640	2.488	14.2	20.2
1 22	9 59.62	+11 13.0	1.343	2.265	11.4	20.8	1 22	9 59.97	+12 29.4	1.580	2.499	10.2	19.9
2 1	9 52.35	+12 11.0	1.313	2.279	6.3	20.6	2 1	9 52.50	+13 24.9	1.543	2.509	5.6	19.7
2 11	9 43.65	+13 16.7	1.308	2.294	1.0	20.2	2 11	9 43.70	+14 25.9	1.533	2.520	0.8	19.4
2 21	9 34.80	+14 21.9	1.330	2.310	4.3	20.5	2 21	9 34.72	+15 25.2	1.552	2.530	4.1	19.6
3 2	9 27.13	+15 18.8	1.378	2.326	9.3	20.8	3 2	9 26.72	+16 16.5	1.598	2.541	8.7	19.9
3 12	9 21.69	+16 2.1	1.450	2.342	13.7	21.1	3 12	9 20.72	+16 55.1	1.669	2.552	12.7	20.2
3 22	9 19.04	+16 29.7	1.542	2.359	17.2	21.4	3 22	9 17.26	+17 19.4	1.761	2.563	16.0	20.4
177484	2004 <i>EK</i> ₁₉		2 12.7 169°28	3°7/10.2	18		521017	2015 <i>CK</i> ₆₈		2 12.7 212°08	1°9/10.9	17	
1 12	10 10.50	+22 48.6	1.880	2.731	12.5	20.3	1 12	10 4.05	+17 46.4	2.396	3.242	10.3	21.5
1 22	10 3.64	+23 24.2	1.813	2.733	9.0	20.1	1 22	9 58.69	+18 31.2	2.319	3.238	7.3	21.3
2 1	9 54.49	+23 59.4	1.772	2.735	5.5	19.9	2 1	9 51.65	+19 20.2	2.269	3.234	4.1	21.1
2 11	9 43.98	+24 27.5	1.760	2.736	3.7	19.8	2 11	9 43.58	+20 8.5	2.248	3.231	1.9	20.9
2 21	9 33.27	+24 42.9	1.776	2.737	6.0	19.9	2 21	9 35.26	+20 51.1	2.257	3.226	4.1	21.1
3 2	9 23.59	+24 42.8	1.820	2.738	9.6	20.1	3 2	9 27.57	+21 24.0	2.296	3.222	7.4	21.3
3 12	9 15.95	+24 26.7	1.890	2.739	13.0	20.3	3 12	9 21.27	+21 45.1	2.361	3.217	10.5	21.5
3 22	9 10.93	+23 56.5	1.980	2.739	15.9	20.5	3 22	9 16.88	+21 53.7	2.448	3.213	13.1	21.6
124638	2001 <i>SG</i> ₆₆		2 12.7 116°06	1°7/14.0	18		282337	2002 <i>VC</i> ₃		2 12.7 143°15	3°3/15.8	17	
1 12	10 7.96	+ 6 8.7	1.643	2.470	15.2	20.3	1 12	10 3.85	+ 1 32.8	2.489	3.282	11.7	21.1
1 22	10 1.87	+ 6 46.7	1.582	2.486	11.2	20.1	1 22	9 58.39	+ 1 30.5	2.410	3.289	9.0	20.9
2 1	9 53.51	+ 7 42.0	1.544	2.502	6.7	19.8	2 1	9 51.42	+ 1 41.8	2.356	3.296	6.1	20.7
2 11	9 43.83	+ 8 49.3	1.534	2.517	2.3	19.6	2 11	9 43.54	+ 2 5.2	2.331	3.302	3.7	20.6
2 21	9 33.98	+10 1.3	1.552	2.532	3.9	19.7	2 21	9 35.48	+ 2 37.9	2.336	3.308	3.8	20.6
3 2	9 25.16	+11 10.7	1.599	2.546	8.3	20.0	3 2	9 28.01	+ 3 16.2	2.370	3.313	6.2	20.8
3 12	9 18.39	+12 11.0	1.672	2.560	12.4	20.3	3 12	9 21.82	+ 3 55.6	2.432	3.318	9.1	20.9
3 22	9 14.22	+12 58.7	1.766	2.573	15.8	20.5	3 22	9 17.37	+ 4 32.7	2.518	3.323	11.7	21.1
462293	2008 <i>FZ</i> ₇₂		2 12.7 333°42	1°0/12.1	17		301021	Sofiarodriguez		2 12.7 227°99	1°6/11.8	18	
1 12	10 2.44	+12 42.9	1.387	2.250	15.4	21.1	1 12	10 11.47	+16 24.2	1.613	2.462	14.3	21.2
1 22	9 58.52	+13 34.3	1.311	2.238	11.1	20.8	1 22	10 4.75	+16 48.2	1.534	2.454	10.3	20.9
2 1	9 51.95	+14 40.8	1.257	2.226	6.1	20.5	2 1	9 55.32	+17 18.9	1.479	2.446	5.7	20.7
2 11	9 43.63	+15 54.9	1.229	2.216	1.1	20.1	2 11	9 44.16	+17 49.9	1.452	2.437	1.7	20.4
2 21	9 34.80	+17 7.5	1.228	2.206	5.1	20.4	2 21	9 32.54	+18 15.0	1.453	2.428	5.0	20.6
3 2	9 26.91	+18 9.7	1.252	2.197	10.3	20.7	3 2	9 21.92	+18 29.2	1.482	2.418	9.8	20.8
3 12	9 21.22	+18 55.4	1.298	2.188	15.1	20.9	3 12	9 13.55	+18 30.2	1.535	2.408	14.2	21.0
3 22	9 18.50	+19 22.0	1.364	2.181	19.1	21.1	3 22	9 8.16	+18 17.8	1.609	2.397	17.9	21.3
89658	2001 <i>XX</i> ₂₆₁		2 12.7 190°91	0°0/12.8	18		186888	2004 <i>JL</i> ₃₃		2 12.7 242°94	0°2/12.6	17	
1 12	10 7.82	+10 40.4	1.859	2.694	13.3	21.0	1 12	10 5.08	+11 34.8	1.986	2.825	12.4	21.1
1 22	10 1.77	+11 26.8	1.781	2.693	9.7	20.7	1 22	9 59.76	+12 16.3	1.900	2.815	9.0	20.8
2 1	9 53.51	+12 25.8	1.727	2.691	5.4	20.5	2 1	9 52.40	+13 9.1	1.839	2.804	5.0	20.6
2 11	9 43.85	+13 31.7	1.703	2.689	0.8	20.1	2 11	9 43.71	+14 7.9	1.807	2.793	0.7	20.2
2 21	9 33.84	+14 37.8	1.707	2.686	3.9	20.4	2 21	9 34.63	+15 7.0	1.804	2.782	3.7	20.5
3 2	9 24.62	+15 37.6	1.741	2.682	8.3	20.6	3 2	9 26.21	+16 0.3	1.830	2.770	8.0	20.7
3 12	9 17.22	+16 26.2	1.801	2.677	12.3	20.9	3 12	9 19.41	+16 43.4	1.882	2.758	11.8	20.9
3 22	9 12.28	+17 1.0	1.883	2.672	15.6	21.1	3 22	9 14.87	+17 13.8	1.956	2.746	15.0	21.1
60309	1999 <i>XZ</i> ₂₀₆		2 12.7 211°92	3°8/10.0	18		149818	2005 <i>MD</i> ₄₉		2 12.7 177°35	2°2/14.4	18	
1 12	10 11.47	+21 17.7	1.752	2.603	13.2	18.7	1 12	10 6.21	+ 6 5.1	1.932	2.753	13.5	20.5
1 22	10 4.64	+22 16.7	1.676	2.597	9.6	18.4	1 22	10 0.49	+ 6 13.1	1.854	2.754	10.1	20.3
2 1	9 55.21	+23 18.6	1.626	2.589	5.8	18.2	2 1	9 52.75	+ 6 35.2	1.800	2.755	6.3	20.1
2 11	9 44.12	+24 15.2	1.604	2.581	3.8	18.0	2 11	9 43.76	+ 7 8.5	1.774	2.756	2.7	19.8
2 21	9 32.59	+24 58.7	1.610	2.572	6.5	18.2	2 21	9 34.48	+ 7 48.5	1.777	2.756	3.7	19.9
3 2	9 22.02	+25 24.1	1.645	2.562	10.5	18.4	3 2	9 25.98	+ 8 30.2	1.809	2.756	7.5	20.1
3 12	9 13.61	+25 29.8	1.704	2.551	14.3	18.6	3 12	9 19.16	+ 9 8.6	1.867	2.755	11.3	20.4
3 22	9 8.07	+25 17.4	1.783	2.540	17.5	18.8	3 22	9 14.62	+ 9 40.2	1.948	2.755	14.5	20.6
309352	2007 <i>TN</i> ₅₃		2 12.7 324°47	3°0/10.8	18		161499	2004 <i>PE</i> ₈₂		2 12.7 315°78	0°9/12.1	18	
1 12	10 7.96	+18 47.0	1.500	2.361	14.5	20.7	1 12	10 6.76	+15 4.2	1.707	2.558	13.5	19.9
1 22	10 2.29	+19 34.9	1.433	2.359	10.4	20.4	1 22	10 1.18	+15 21.1	1.630	2.551	9.8	19.6
2 1	9 53.94	+20 28.3	1.390	2.358	5.9	20.1	2 1	9 53.25	+15 45.3	1.577	2.544	5.4	19.4
2 11	9 43.93	+21 19.2	1.374	2.356	3.0	20.0	2 11	9 43.84	+16 11.7	1.551	2.537	1.1	19.0
2 21	9 33.57	+21 59.5	1.384	2.354	6.1	20.1	2 21	9 34.08	+16 34.8	1.553	2.530	4.4	19.3
3 2	9 24.33	+22 23.8	1.422	2.353	10.6	20.4	3 2	9 25.22	+16 50.2	1.583	2.524	8.9	19.5
3 12	9 17.41	+22 29.8	1.482	2.351	14.8	20.6	3 12	9 18.33	+16 55.0	1.637	2.518	13.0	19.7
3 22	9 13.47	+22 18.5	1.562	2.350	18.3	20.9	3 22	9 14.06	+16 48.2	1.713	2.512	16.5	20.0
367731	2010 <i>US</i> ₆₂		2 12.7 174°34	6°2/ 7.2	18		210017	2006 <i>KO</i> ₃₂		2 12.7 244°56	0°3/12.9	18	
1 12	10 8.71	+28 40.1	1.934	2.789	12.0	21.2	1 12	10 7.12	+10 31.9	1.806	2.643	13.6	21.5
1 22	10 2.49	+30 8.2	1.876	2.791	9.1	21.0	1 22	10 1.44	+11 4.3	1.716	2.629	9.9	21.2
2 1	9 53.92	+31 32.3	1.844	2.792	6.7	20.9	2 1	9 53.44	+11 49.5	1.652	2.615	5.7	20.9
2 11	9 43.92	+32 43.0	1.840	2.793	6.4	20.8	2 11	9 43.88	+12 42.8	1.615	2.601	1.0	20.6
2 21	9 33.63	+33 33.2	1.864	2.794	8.4	21.0	2 21	9 33.83	+13 38.1	1.607	2.586	3.9	20.8
3 2	9 24.31	+33 59.1	1.914	2.794	11.3	21.1	3 2	9 24.50	+14 28.9	1.628	2.571	8.5	21.0
3 12	9 17.02	+34 0.9	1.988	2.794	14.1	21.3	3 12	9 16.97	+15 10.2	1.674	2.555	12.8	21.2
3 22	9 12.38	+33 41.7	2.080	2.794	16.6	21.5	3 22	9 11.98	+15 39.1	1.742	2.539	16.4	21.4
276302	2002 <i>TN</i> ₁₂₂		2 12.7 123°86	2°2/14.3	18		207869	2007 <i>VY</i> ₂₀₁		2 12.7 216°77	0°8/13.5	17	
1 12	10 8.68	+ 6 24.9	1.974	2.790									

EPHEMERIDES

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
429834	2012 <i>PW</i> ₃₃		2 12.7 120°57	2°5/14.9	18		416462	2003 <i>WC</i> ₅₂		2 12.7 310°13	2°8/14.4	18	
1 12	10 4.69	+ 4 35.3	2.339	3.147	11.8	21.0	1 12	10 6.21	+ 6 16.5	1.516	2.351	15.8	20.4
1 22	9 59.05	+ 4 34.2	2.265	3.156	9.0	20.8	1 22	10 1.03	+ 6 10.3	1.436	2.343	11.9	20.2
2 1	9 51.80	+ 4 45.5	2.216	3.165	5.8	20.6	2 1	9 53.29	+ 6 20.8	1.377	2.334	7.5	19.9
2 11	9 43.61	+ 5 6.9	2.196	3.174	2.9	20.4	2 11	9 43.88	+ 6 45.3	1.345	2.326	3.3	19.6
2 21	9 35.25	+ 5 35.4	2.206	3.182	3.4	20.5	2 21	9 34.00	+ 7 19.4	1.339	2.318	4.5	19.7
3 2	9 27.56	+ 6 7.1	2.245	3.190	6.4	20.7	3 2	9 25.00	+ 7 57.0	1.360	2.310	9.1	19.9
3 12	9 21.25	+ 6 38.1	2.312	3.198	9.5	20.9	3 12	9 18.10	+ 8 32.0	1.405	2.303	13.6	20.1
3 22	9 16.81	+ 7 5.3	2.402	3.205	12.2	21.1	3 22	9 14.03	+ 8 59.8	1.471	2.296	17.5	20.4
33168	1998 <i>ED</i> ₁₀		2 12.7 239°21	0°0/12.8	18		165853	2001 <i>SD</i> ₂₀		2 12.7 128°02	3°5/ 9.6	18	
1 12	10 3.65	+12 24.0	2.660	3.491	9.9	19.4	1 12	10 6.18	+23 53.6	2.367	3.216	10.3	20.0
1 22	9 58.29	+12 43.9	2.570	3.480	7.2	19.2	1 22	10 0.20	+24 34.6	2.303	3.222	7.4	19.8
2 1	9 51.40	+13 10.4	2.506	3.469	4.0	19.0	2 1	9 52.47	+25 14.4	2.267	3.227	4.7	19.6
2 11	9 43.56	+13 40.5	2.472	3.458	0.6	18.7	2 11	9 43.73	+25 47.7	2.259	3.232	3.5	19.6
2 21	9 35.46	+14 10.6	2.468	3.446	2.9	18.8	2 21	9 34.85	+26 10.1	2.281	3.237	5.4	19.7
3 2	9 27.87	+14 37.3	2.495	3.435	6.2	19.0	3 2	9 26.75	+26 18.8	2.332	3.241	8.2	19.9
3 12	9 21.47	+14 57.9	2.550	3.423	9.2	19.2	3 12	9 20.20	+26 13.3	2.408	3.246	11.0	20.1
3 22	9 16.76	+15 10.7	2.628	3.410	11.8	19.4	3 22	9 15.69	+25 54.7	2.506	3.250	13.3	20.2
184595	2005 <i>QC</i> ₁₄₄		2 12.7 224°28	2°0/10.9	18		433509	2013 <i>WE</i> ₅₄		2 12.7 61°95	0°1/12.9	18	
1 12	10 6.18	+16 56.2	2.072	2.918	11.7	21.0	1 12	10 6.31	+12 41.2	2.022	2.861	12.3	20.8
1 22	10 0.51	+17 51.4	1.990	2.910	8.3	20.8	1 22	10 0.38	+12 47.5	1.958	2.872	8.8	20.6
2 1	9 52.80	+18 53.2	1.935	2.901	4.6	20.5	2 1	9 52.59	+13 1.0	1.920	2.884	4.9	20.4
2 11	9 43.78	+19 55.3	1.909	2.892	2.0	20.3	2 11	9 43.75	+13 18.3	1.909	2.896	0.8	20.1
2 21	9 34.40	+20 51.3	1.913	2.883	4.7	20.5	2 21	9 34.79	+13 35.3	1.929	2.908	3.4	20.4
3 2	9 25.72	+21 35.9	1.945	2.872	8.5	20.7	3 2	9 26.70	+13 48.5	1.977	2.920	7.3	20.6
3 12	9 18.66	+22 6.1	2.004	2.862	12.0	20.9	3 12	9 20.30	+13 55.3	2.051	2.932	10.8	20.9
3 22	9 13.87	+22 21.1	2.084	2.851	15.0	21.1	3 22	9 16.07	+13 54.4	2.148	2.944	13.7	21.1
412181	2013 <i>GO</i> ₉₆		2 12.7 183°57	5°1/17.4	18		8540	Ardeberg		2 12.8 62°15	2°3/10.8	18	
1 12	10 5.03	- 4 27.7	2.114	2.885	14.2	21.5	1 12	10 5.67	+18 49.6	2.020	2.872	11.7	17.8
1 22	9 59.55	- 4 12.4	2.028	2.886	11.4	21.3	1 22	9 59.90	+19 31.8	1.971	2.893	8.3	17.7
2 1	9 52.21	- 3 35.0	1.964	2.886	8.4	21.1	2 1	9 52.30	+20 16.7	1.948	2.914	4.6	17.5
2 11	9 43.69	- 2 37.0	1.928	2.886	5.8	21.0	2 11	9 43.70	+20 58.4	1.953	2.935	2.3	17.4
2 21	9 34.86	- 1 22.2	1.920	2.884	5.3	21.0	2 21	9 35.07	+21 32.0	1.988	2.957	4.7	17.6
3 2	9 26.67	+ 0 3.1	1.942	2.882	7.6	21.1	3 2	9 27.38	+21 53.8	2.051	2.978	8.1	17.8
3 12	9 19.98	+ 1 31.6	1.991	2.880	10.6	21.3	3 12	9 21.42	+22 2.3	2.140	3.000	11.3	18.0
3 22	9 15.36	+ 2 56.5	2.064	2.877	13.6	21.5	3 22	9 17.64	+21 58.0	2.250	3.021	13.9	18.3
205	Martha		2 12.7 113°88	5°1/17.2	18 R		122718	2000 <i>SH</i> ₃₇		2 12.8 186°00	5°2/ 8.9	18	
1 12	10 3.13	- 3 11.3	2.027	2.811	14.3	13.8	1 12	10 10.57	+27 29.9	1.922	2.774	12.2	19.9
1 22	9 58.21	- 3 10.2	1.948	2.814	11.4	13.6	1 22	10 3.74	+28 13.2	1.858	2.774	9.1	19.7
2 1	9 51.46	- 2 48.4	1.892	2.818	8.3	13.4	2 1	9 54.58	+28 52.0	1.819	2.773	6.2	19.5
2 11	9 43.57	- 2 6.9	1.861	2.821	5.7	13.3	2 11	9 44.06	+29 19.0	1.808	2.773	5.3	19.4
2 21	9 35.43	- 1 9.4	1.859	2.824	5.4	13.3	2 21	9 33.35	+29 28.7	1.826	2.773	7.3	19.6
3 2	9 27.97	- 0 1.4	1.885	2.828	7.6	13.4	3 2	9 23.71	+29 18.7	1.871	2.772	10.4	19.7
3 12	9 22.03	+ 1 10.2	1.938	2.831	10.7	13.6	3 12	9 16.14	+28 50.1	1.941	2.772	13.5	19.9
3 22	9 18.17	+ 2 19.2	2.014	2.834	13.6	13.8	3 22	9 11.23	+28 5.6	2.030	2.771	16.2	20.1
21134	1993 <i>FE</i> ₁₃		2 12.7 87°56	3°4/10.1	18		40818	1999 <i>TR</i> ₈₀		2 12.8 206°69	0°4/13.1	18	
1 12	10 6.69	+21 5.6	1.886	2.741	12.2	19.0	1 12	10 7.07	+10 10.4	2.096	2.924	12.3	20.6
1 22	10 0.88	+21 57.8	1.826	2.749	8.7	18.8	1 22	10 1.09	+10 46.7	2.010	2.918	8.9	20.3
2 1	9 52.96	+22 51.8	1.792	2.756	5.2	18.6	2 1	9 53.11	+11 34.3	1.950	2.912	5.1	20.1
2 11	9 43.79	+23 40.6	1.785	2.763	3.4	18.5	2 11	9 43.86	+12 28.8	1.919	2.905	1.0	19.8
2 21	9 34.46	+24 18.0	1.808	2.771	5.8	18.7	2 21	9 34.26	+13 24.8	1.918	2.897	3.4	20.0
3 2	9 26.08	+24 40.1	1.858	2.778	9.3	18.9	3 2	9 25.32	+14 16.6	1.947	2.888	7.5	20.2
3 12	9 19.59	+24 45.5	1.933	2.785	12.6	19.1	3 12	9 17.96	+14 59.9	2.003	2.878	11.2	20.4
3 22	9 15.53	+24 35.3	2.028	2.792	15.4	19.3	3 22	9 12.80	+15 32.2	2.082	2.868	14.4	20.6
406497	2007 <i>VO</i> ₆₈		2 12.7 356°75	1°5/11.9	18		189250	2004 <i>SK</i> ₂₃		2 12.8 168°24	1°6/14.3	18	
1 12	10 4.93	+14 47.9	1.254	2.122	16.3	20.6	1 12	10 4.40	+ 6 14.9	2.391	3.205	11.4	21.0
1 22	10 0.43	+15 23.1	1.190	2.119	11.7	20.3	1 22	9 58.88	+ 6 39.7	2.312	3.209	8.5	20.8
2 1	9 53.05	+16 9.7	1.147	2.117	6.4	20.0	2 1	9 51.75	+ 7 16.5	2.258	3.213	5.2	20.6
2 11	9 43.84	+17 0.0	1.129	2.115	1.6	19.7	2 11	9 43.64	+ 8 2.2	2.233	3.216	2.0	20.4
2 21	9 34.25	+17 45.3	1.137	2.115	5.5	20.0	2 21	9 35.32	+ 8 52.7	2.239	3.218	3.0	20.5
3 2	9 25.86	+18 18.5	1.170	2.115	10.9	20.2	3 2	9 27.61	+ 9 43.4	2.275	3.220	6.3	20.7
3 12	9 19.99	+18 35.4	1.224	2.116	15.7	20.5	3 12	9 21.23	+10 29.9	2.339	3.221	9.5	20.9
3 22	9 17.34	+18 35.1	1.297	2.118	19.6	20.8	3 22	9 16.70	+11 9.2	2.427	3.222	12.3	21.1
135286	2001 <i>SL</i> ₁₄₉		2 12.7 215°08	4°8/17.7	18		218045	2002 <i>CM</i> ₆₈		2 12.8 71°08	0°5/12.3	18	
1 12	10 1.90	- 4 54.8	2.706	3.465	11.7	20.6	1 12	10 6.07	+12 19.7	1.732	2.578	13.7	20.4
1 22	9 57.01	- 4 56.5	2.611	3.460	9.5	20.4	1 22	10 0.40	+13 7.2	1.681	2.599	9.7	20.2
2 1	9 50.69	- 4 41.5	2.541	3.454	7.2	20.2	2 1	9 52.66	+14 4.7	1.655	2.621	5.3	20.0
2 11	9 43.46	- 4 10.3	2.498	3.447	5.2	20.1	2 11	9 43.77	+15 5.8	1.657	2.643	0.8	19.7
2 21	9 35.98	- 3 25.1	2.483	3.440	4.9	20.1	2 21	9 34.82	+16 3.7	1.687	2.665	4.0	20.0
3 2	9 28.96	- 2 29.6	2.499	3.433	6.4	20.2	3 2	9 26.90	+16 52.7	1.746	2.687	8.3	20.3
3 12	9 23.04	- 1 28.8	2.542	3.426	8.8	20.3	3 12	9 20.91	+17 29.1	1.830	2.708	12.0	20.6
3 22	9 18.72	- 0 27.4	2.610	3.418	11.2	20.4	3 22	9 17.33	+17 51.4	1.935	2.729	15.0	20.8
226047	2002 <i>GL</i> ₈₅		2 12.7 295°55	1°7/11.4	18		198919	2005 <i>UT</i> ₁₄₂		2 12.8 243°93	2°1/14.1	18	
1 12	10 4.27	+15 40.8	1.897	2.748	12.4	20.1	1 12						

EPHEMERIDES

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
429747	2011 <i>SM</i> ₆₁		2 12.8 256°45	1°0/13.6	17		355261	2007 <i>OY</i> ₄		2 12.8 212°80	2°7/10.9	18	
1 12	10 5.82	+10 11.5	2.468	3.291	10.8	21.5	1 12	10 10.83	+19 11.5	1.734	2.584	13.4	20.9
1 22	9 59.93	+10 6.2	2.376	3.281	8.0	21.3	1 22	10 4.15	+19 49.2	1.658	2.579	9.6	20.7
2 1	9 52.36	+10 8.4	2.310	3.270	4.7	21.1	2 1	9 54.96	+20 30.8	1.608	2.574	5.5	20.4
2 11	9 43.75	+10 15.7	2.274	3.258	1.4	20.8	2 11	9 44.19	+21 9.4	1.586	2.568	2.7	20.2
2 21	9 34.85	+10 25.5	2.268	3.247	2.9	20.9	2 21	9 33.04	+21 38.5	1.593	2.562	5.6	20.4
3 2	9 26.52	+10 34.9	2.293	3.236	6.4	21.1	3 2	9 22.88	+21 53.6	1.627	2.555	9.8	20.6
3 12	9 19.51	+10 41.3	2.345	3.224	9.7	21.3	3 12	9 14.84	+21 52.8	1.686	2.548	13.7	20.9
3 22	9 14.35	+10 42.9	2.421	3.212	12.5	21.5	3 22	9 9.60	+21 37.2	1.766	2.540	17.0	21.1
242378	2004 <i>DL</i> ₄₀		2 12.8 215°01	1°9/14.6	18		474223	2001 <i>CC</i> ₃₂		2 12.8 327°46	17°9/ 7.1	18	
1 12	10 1.65	+ 4 51.6	2.352	3.166	11.6	20.7	1 12	11 27.56	+25 9.8	0.572	1.398	34.7	19.8
1 22	9 56.98	+ 5 24.7	2.268	3.165	8.7	20.5	1 22	11 13.40	+18 5.7	0.448	1.349	29.5	19.1
2 1	9 50.73	+ 6 11.8	2.210	3.163	5.4	20.3	2 1	10 43.82	+ 6 36.0	0.348	1.301	21.3	18.2
2 11	9 43.50	+ 7 9.6	2.180	3.161	2.3	20.1	2 11	9 53.42	-10 50.1	0.291	1.255	19.9	17.7
2 21	9 36.02	+ 8 13.5	2.180	3.159	3.1	20.1	2 21	8 43.77	-29 26.6	0.294	1.212	35.9	18.1
3 2	9 29.10	+ 9 18.4	2.210	3.156	6.4	20.3	3 2	7 32.06	-41 20.0	0.347	1.173	50.9	18.8
3 12	9 23.46	+10 19.2	2.267	3.154	9.6	20.5	3 12	6 36.26	-46 50.7	0.423	1.138	59.6	19.4
3 22	9 19.62	+11 12.1	2.348	3.152	12.4	20.7	3 22	5 58.65	-49 21.2	0.502	1.110	63.8	19.9
399549	2003 <i>QO</i> ₄₅		2 12.8 138°10	0°0/12.7	18		327882	2007 <i>AE</i> ₃₁		2 12.8 201°69	0°8/12.2	17	
1 12	10 9.01	+11 48.1	1.967	2.800	12.8	22.2	1 12	10 8.67	+15 14.4	2.236	3.072	11.4	21.5
1 22	10 2.39	+12 19.3	1.902	2.814	9.2	22.0	1 22	10 2.09	+15 28.9	2.154	3.068	8.1	21.3
2 1	9 53.76	+12 59.8	1.863	2.826	5.1	21.7	2 1	9 53.62	+15 48.5	2.099	3.064	4.5	21.0
2 11	9 43.96	+13 44.7	1.852	2.839	0.8	21.4	2 11	9 43.98	+16 9.1	2.074	3.060	0.9	20.8
2 21	9 34.01	+14 28.5	1.872	2.850	3.6	21.7	2 21	9 34.08	+16 26.8	2.079	3.055	3.6	21.0
3 2	9 24.96	+15 6.3	1.921	2.861	7.7	21.9	3 2	9 24.91	+16 38.2	2.114	3.049	7.4	21.2
3 12	9 17.70	+15 34.7	1.996	2.871	11.3	22.2	3 12	9 17.32	+16 41.3	2.176	3.043	10.8	21.4
3 22	9 12.78	+15 52.3	2.095	2.880	14.3	22.4	3 22	9 11.87	+16 35.3	2.261	3.037	13.7	21.6
329601	2003 <i>FD</i> ₆₆		2 12.8 275°36	0°6/13.3	17		190143	2005 <i>SD</i> ₁₃₀		2 12.8 179°23	2°3/11.1	18	
1 12	10 4.42	+ 9 24.8	1.895	2.731	13.1	21.3	1 12	10 11.17	+17 32.8	1.794	2.640	13.2	21.4
1 22	9 59.44	+ 9 59.1	1.802	2.713	9.6	21.1	1 22	10 4.27	+18 22.4	1.723	2.642	9.5	21.2
2 1	9 52.33	+10 47.0	1.733	2.696	5.6	20.8	2 1	9 54.98	+19 17.8	1.678	2.644	5.3	21.0
2 11	9 43.77	+11 44.4	1.692	2.678	1.2	20.5	2 11	9 44.19	+20 11.7	1.661	2.644	2.3	20.8
2 21	9 34.73	+12 45.2	1.681	2.660	3.6	20.6	2 21	9 33.10	+20 57.2	1.674	2.644	5.2	21.0
3 2	9 26.32	+13 43.1	1.697	2.642	8.1	20.8	3 2	9 22.99	+21 29.2	1.715	2.643	9.4	21.2
3 12	9 19.54	+14 32.7	1.740	2.624	12.2	21.0	3 12	9 14.92	+21 45.4	1.782	2.641	13.2	21.4
3 22	9 15.10	+15 10.5	1.804	2.606	15.7	21.2	3 22	9 9.56	+21 46.1	1.870	2.638	16.4	21.6
314844	2006 <i>UT</i> ₁₈₃		2 12.8 89°68	2°7/10.5	18		488302	2016 <i>UE</i> ₅₆		2 12.8 342°70	20°8/27.3	17	
1 12	10 6.53	+17 18.9	1.723	2.578	13.2	20.6	1 12	10 4.69	-25 7.7	1.104	1.809	28.1	20.9
1 22	10 0.86	+18 37.9	1.672	2.595	9.3	20.4	1 22	10 0.96	-27 20.4	1.041	1.805	26.2	20.8
2 1	9 52.99	+20 3.0	1.645	2.612	5.2	20.2	2 1	9 53.76	-28 46.3	0.989	1.802	24.1	20.6
2 11	9 43.85	+21 25.7	1.647	2.629	2.8	20.1	2 11	9 44.07	-29 13.3	0.951	1.799	22.2	20.4
2 21	9 34.57	+22 37.7	1.678	2.645	5.6	20.3	2 21	9 33.47	-28 34.8	0.927	1.797	21.0	20.3
3 2	9 26.31	+23 33.0	1.737	2.662	9.5	20.6	3 2	9 23.96	-26 52.8	0.920	1.795	20.9	20.3
3 12	9 20.06	+24 9.2	1.820	2.678	13.0	20.8	3 12	9 17.36	-24 20.6	0.930	1.794	21.9	20.4
3 22	9 16.33	+24 26.4	1.923	2.693	16.0	21.0	3 22	9 14.71	-21 17.8	0.955	1.793	23.8	20.5
295448	2008 <i>OO</i> ₂₁		2 12.8 107°12	0°2/12.6	18		519906	2013 <i>PF</i> ₈₂		2 12.8 236°10	1°7/14.1	17	
1 12	10 5.43	+12 23.6	2.080	2.918	12.0	21.5	1 12	10 4.62	+ 6 51.4	1.990	2.815	13.0	22.2
1 22	9 59.77	+12 51.7	2.014	2.928	8.6	21.3	1 22	9 59.40	+ 7 13.9	1.905	2.809	9.7	22.0
2 1	9 52.29	+13 28.3	1.973	2.937	4.8	21.1	2 1	9 52.22	+ 7 50.5	1.845	2.802	5.9	21.7
2 11	9 43.74	+14 8.7	1.960	2.947	0.7	20.8	2 11	9 43.78	+ 8 37.7	1.813	2.796	2.1	21.5
2 21	9 35.04	+14 48.0	1.978	2.956	3.4	21.1	2 21	9 34.99	+ 9 30.6	1.810	2.789	3.4	21.5
3 2	9 27.13	+15 21.9	2.024	2.965	7.3	21.3	3 2	9 26.87	+10 23.7	1.835	2.782	7.4	21.8
3 12	9 20.82	+15 47.1	2.097	2.974	10.7	21.6	3 12	9 20.34	+11 11.6	1.888	2.775	11.2	22.0
3 22	9 16.63	+16 2.0	2.193	2.982	13.6	21.8	3 22	9 16.00	+11 50.7	1.962	2.768	14.5	22.2
336005	2007 <i>TM</i> ₃₇₉		2 12.8 162°88	2°9/15.8	17		444334	2005 <i>WB</i> ₇₂		2 12.8 45°29	0°0/12.8	17	
1 12	10 2.44	+ 1 23.3	2.596	3.389	11.2	21.8	1 12	10 6.38	+ 9 50.5	1.038	1.904	19.0	20.7
1 22	9 57.40	+ 1 39.2	2.513	3.393	8.7	21.6	1 22	10 1.48	+10 49.5	1.000	1.927	13.7	20.5
2 1	9 50.91	+ 2 9.2	2.456	3.397	5.8	21.5	2 1	9 53.56	+12 7.8	0.983	1.951	7.6	20.3
2 11	9 43.54	+ 2 51.2	2.428	3.400	3.4	21.3	2 11	9 43.96	+13 34.8	0.990	1.976	1.1	19.9
2 21	9 35.99	+ 3 41.8	2.429	3.403	3.4	21.3	2 21	9 34.37	+14 58.4	1.021	2.002	5.2	20.3
3 2	9 28.96	+ 4 36.7	2.461	3.405	5.9	21.5	3 2	9 26.45	+16 8.5	1.077	2.027	10.9	20.7
3 12	9 23.12	+ 5 31.5	2.520	3.407	8.8	21.7	3 12	9 21.38	+16 58.9	1.154	2.054	15.8	21.0
3 22	9 18.93	+ 6 22.1	2.605	3.409	11.3	21.8	3 22	9 19.66	+17 28.2	1.250	2.080	19.7	21.4
4470	Sergeev-Censkij		2 12.8 180°12	0°4/12.4	18		426151	2012 <i>HM</i> ₄₆		2 12.8 230°43	6°6/ 6.0	17	
1 12	10 2.79	+13 4.6	2.842	3.673	9.3	18.3	1 12	10 8.88	+32 37.6	2.317	3.162	10.7	21.9
1 22	9 57.57	+13 38.9	2.762	3.674	6.7	18.1	1 22	10 2.52	+33 59.8	2.247	3.150	8.4	21.7
2 1	9 50.97	+14 19.4	2.711	3.675	3.7	17.9	2 1	9 53.99	+35 16.0	2.204	3.138	6.8	21.6
2 11	9 43.56	+15 2.4	2.689	3.675	0.6	17.7	2 11	9 44.06	+36 18.2	2.189	3.125	6.8	21.6
2 21	9 35.96	+15 44.3	2.698	3.675	2.8	17.9	2 21	9 33.75	+37 0.1	2.202	3.112	8.5	21.7
3 2	9 28.87	+16 21.5	2.738	3.674	5.9	18.1	3 2	9 24.20	+37 18.7	2.242	3.098	10.9	21.8
3 12	9 22.90	+16 51.5	2.806	3.673	8.7	18.3	3 12	9 16.40	+37 14.2	2.305	3.084	13.3	21.9
3 22	9 18.50	+17 12.7	2.898	3.672	11.0	18.4	3 22	9 11.01	+36 49.6	2.388	3.069	15.4	22.1
388337	2006 <i>TK</i> ₁₂		2 12.8 206°93	4°6/ 7.6	18		309272	2007 <i>RW</i> ₁₁₉		2 12.8 206°91	0°5/12.4	18	
1 12	10 6.06	+29 47.3	2.892	3.									

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
456981	2008 <i>BM</i> ₃₄		2 12.8	8°87	1.7°/12.3	16	341693	2007 <i>VH</i> ₁₄₁		2 12.8	52°86	5°3°/17.4	18
1 12	10 13.57	+19 41.2	1.135	2.003	17.6	20.7	1 12	10 2.92	- 3 20.7	2.083	2.864	14.0	20.2
1 22	10 6.76	+18 57.9	1.077	2.005	12.7	20.4	1 22	9 57.98	- 3 34.0	2.014	2.878	11.3	20.0
2 1	9 56.58	+18 13.9	1.040	2.008	7.1	20.1	2 1	9 51.33	- 3 27.8	1.969	2.891	8.3	19.9
2 11	9 44.44	+17 24.8	1.028	2.013	1.8	19.8	2 11	9 43.67	- 3 2.9	1.949	2.905	5.9	19.7
2 21	9 32.19	+16 28.3	1.041	2.020	5.7	20.1	2 21	9 35.84	- 2 22.5	1.957	2.919	5.5	19.7
3 2	9 21.69	+15 24.6	1.080	2.027	11.3	20.4	3 2	9 28.74	- 1 31.2	1.994	2.934	7.4	19.9
3 12	9 14.33	+14 15.3	1.141	2.036	16.2	20.7	3 12	9 23.13	+ 0 35.2	2.056	2.948	10.2	20.1
3 22	9 10.68	+13 2.6	1.221	2.047	20.3	21.0	3 22	9 19.51	+ 0 20.1	2.142	2.963	12.9	20.3
122336	2000 <i>QS</i> ₃₄		2 12.8	347°73	9°5°/ 8.8	18	498880	2008 <i>YP</i> ₁₀₈		2 12.8	49°58	2°3°/10.6	18
1 12	10 25.50	+39 14.5	1.649	2.477	15.1	18.7	1 12	10 2.78	+17 17.0	2.039	2.893	11.5	21.2
1 22	10 14.85	+39 29.7	1.587	2.474	12.4	18.5	1 22	9 58.01	+18 24.8	1.977	2.901	8.2	21.0
2 1	10 0.85	+39 24.8	1.549	2.471	10.2	18.4	2 1	9 51.40	+19 38.3	1.941	2.908	4.6	20.8
2 11	9 45.07	+38 50.1	1.537	2.469	9.6	18.3	2 11	9 43.68	+20 50.8	1.934	2.916	2.3	20.6
2 21	9 29.47	+37 41.6	1.553	2.467	11.1	18.4	2 21	9 35.77	+21 55.6	1.956	2.925	4.8	20.8
3 2	9 15.95	+36 2.4	1.595	2.465	13.7	18.6	3 2	9 28.62	+22 47.6	2.007	2.933	8.3	21.0
3 12	9 5.79	+34 0.2	1.662	2.464	16.7	18.8	3 12	9 23.07	+23 23.9	2.082	2.941	11.6	21.2
3 22	8 59.48	+31 44.6	1.749	2.463	19.3	18.9	3 22	9 19.64	+23 44.0	2.180	2.950	14.3	21.5
148923	2001 <i>XH</i> ₇₃		2 12.8	113°19	0°4°/12.4	18	118105	2309 <i>T</i> ₋₃		2 12.8	122°34	5°1°/ 8.9	18
1 12	10 6.08	+12 28.8	1.934	2.774	12.7	20.3	1 12	10 10.76	+27 55.2	2.089	2.937	11.5	20.0
1 22	10 0.36	+13 8.3	1.870	2.785	9.1	20.1	1 22	10 3.67	+28 40.7	2.034	2.947	8.6	19.9
2 1	9 52.68	+13 57.1	1.831	2.796	5.0	19.9	2 1	9 54.49	+29 21.3	2.005	2.958	5.9	19.7
2 11	9 43.85	+14 49.9	1.820	2.806	0.8	19.6	2 11	9 44.14	+29 50.0	2.006	2.968	5.1	19.7
2 21	9 34.84	+15 40.7	1.839	2.816	3.7	19.8	2 21	9 33.73	+30 2.2	2.035	2.978	6.9	19.8
3 2	9 26.70	+16 24.3	1.886	2.826	7.8	20.1	3 2	9 24.35	+29 55.9	2.091	2.987	9.7	20.0
3 12	9 20.28	+16 57.2	1.960	2.836	11.4	20.3	3 12	9 16.94	+29 32.0	2.173	2.996	12.5	20.2
3 22	9 16.14	+17 17.8	2.056	2.845	14.4	20.5	3 22	9 11.98	+28 53.2	2.275	3.005	14.9	20.4
502622	2015 <i>CF</i> ₂₆		2 12.8	2°27	0°1°/12.7	18	122229	2000 <i>OC</i> ₂		2 12.8	154°88	1°8°/14.3	18
1 12	10 3.04	+12 23.7	1.635	2.488	13.9	20.9	1 12	10 7.45	+ 5 35.5	1.941	2.758	13.6	20.8
1 22	9 58.53	+12 45.0	1.566	2.487	10.1	20.7	1 22	10 1.37	+ 6 10.3	1.868	2.766	10.1	20.6
2 1	9 51.81	+13 17.0	1.520	2.487	5.6	20.4	2 1	9 53.29	+ 7 0.8	1.819	2.775	6.2	20.4
2 11	9 43.73	+13 54.7	1.501	2.488	0.8	20.1	2 11	9 43.98	+ 8 2.7	1.799	2.782	2.4	20.2
2 21	9 35.38	+14 32.0	1.510	2.489	4.0	20.3	2 21	9 34.42	+ 9 10.2	1.809	2.788	3.5	20.3
3 2	9 27.94	+15 3.7	1.545	2.491	8.6	20.6	3 2	9 25.67	+10 16.9	1.849	2.794	7.5	20.5
3 12	9 22.40	+15 25.5	1.604	2.494	12.7	20.9	3 12	9 18.64	+11 17.0	1.915	2.799	11.2	20.7
3 22	9 19.38	+15 35.6	1.685	2.498	16.1	21.1	3 22	9 13.91	+12 6.8	2.004	2.804	14.4	21.0
214859	2006 <i>YN</i> ₇		2 12.8	108°15	3°9°/16.2	18	466555	2014 <i>SR</i> ₃₂₀		2 12.8	24°27	1°6°/13.8	18
1 12	10 5.38	- 0 7.8	1.941	2.738	14.3	20.7	1 12	10 3.30	+ 7 39.9	1.346	2.197	16.5	20.7
1 22	9 59.81	+ 0 11.3	1.875	2.755	11.1	20.6	1 22	9 58.98	+ 8 6.1	1.288	2.205	12.1	20.5
2 1	9 52.35	+ 0 50.1	1.832	2.771	7.6	20.4	2 1	9 52.15	+ 8 50.8	1.251	2.214	7.2	20.2
2 11	9 43.80	+ 1 45.7	1.816	2.787	4.5	20.2	2 11	9 43.81	+ 9 48.3	1.240	2.224	2.2	20.0
2 21	9 35.09	+ 2 53.1	1.829	2.802	4.4	20.2	2 21	9 35.25	+10 50.9	1.254	2.235	4.2	20.1
3 2	9 27.20	+ 4 5.9	1.871	2.817	7.4	20.4	3 2	9 27.81	+11 50.4	1.295	2.247	9.2	20.4
3 12	9 20.98	+ 5 17.2	1.940	2.832	10.7	20.7	3 12	9 22.61	+12 40.2	1.359	2.260	13.7	20.7
3 22	9 16.94	+ 6 21.7	2.032	2.846	13.7	20.9	3 22	9 20.24	+13 16.2	1.443	2.273	17.5	21.0
69123	2003 <i>EP</i> ₃₉		2 12.8	241°06	7°0°/ 6.3	18	325094	2008 <i>DE</i> ₆₄		2 12.8	343°14	0°5°/13.2	18
1 12	10 8.53	+31 33.7	2.020	2.871	11.7	19.5	1 12	10 2.83	+ 8 27.9	1.528	2.375	15.1	20.9
1 22	10 2.48	+33 0.6	1.953	2.862	9.2	19.3	1 22	9 58.58	+ 9 27.2	1.454	2.371	11.0	20.7
2 1	9 54.05	+34 21.8	1.913	2.852	7.3	19.2	2 1	9 51.96	+10 45.1	1.404	2.368	6.3	20.4
2 11	9 44.08	+35 28.2	1.900	2.843	7.2	19.2	2 11	9 43.80	+12 15.1	1.379	2.365	1.2	20.0
2 21	9 33.73	+36 12.6	1.915	2.833	9.1	19.3	2 21	9 35.23	+13 48.0	1.383	2.363	4.1	20.2
3 2	9 24.27	+36 31.4	1.956	2.822	11.8	19.4	3 2	9 27.55	+15 14.6	1.414	2.361	9.1	20.5
3 12	9 16.78	+36 25.2	2.020	2.812	14.5	19.6	3 12	9 21.85	+16 27.4	1.469	2.359	13.6	20.8
3 22	9 11.95	+35 57.2	2.102	2.801	16.8	19.7	3 22	9 18.83	+17 22.4	1.544	2.358	17.3	21.0
205499	2001 <i>RD</i> ₁₇		2 12.8	49°51	11°0°/ 5.8	18	365728	2010 <i>VH</i> ₁₉₉		2 12.8	89°05	8°0°/19.5	18
1 12	10 21.57	+46 55.7	1.958	2.764	13.9	19.2	1 12	10 8.19	-10 5.6	1.955	2.693	16.3	20.3
1 22	10 11.55	+47 41.3	1.933	2.785	12.2	19.1	1 22	10 1.77	-10 43.0	1.897	2.720	13.6	20.1
2 1	9 58.76	+48 3.6	1.931	2.807	11.1	19.1	2 1	9 53.42	-10 55.2	1.860	2.747	10.9	20.0
2 11	9 44.73	+47 55.1	1.954	2.829	11.1	19.1	2 11	9 43.99	-10 41.5	1.848	2.773	8.7	19.9
2 21	9 31.20	+47 13.4	2.001	2.851	12.2	19.2	2 21	9 34.46	-10 4.3	1.863	2.799	8.0	19.9
3 2	9 19.74	+46 1.2	2.073	2.873	13.8	19.4	3 2	9 25.85	- 9 8.6	1.905	2.824	9.2	20.1
3 12	9 11.34	+44 25.4	2.166	2.895	15.5	19.5	3 12	9 19.01	- 8 1.9	1.973	2.849	11.4	20.2
3 22	9 6.33	+42 33.5	2.277	2.918	17.0	19.7	3 22	9 14.43	- 6 51.7	2.064	2.873	13.7	20.5
63888	2001 <i>SJ</i> ₃		2 12.8	4°14	2°4°/10.9	18	342994	2009 <i>BC</i> ₆₂		2 12.8	203°81	0°3°/12.4	18
1 12	10 4.51	+19 10.4	1.950	2.806	11.9	18.6	1 12	10 2.02	+11 48.1	2.462	3.297	10.5	21.3
1 22	9 59.33	+19 46.0	1.882	2.806	8.5	18.4	1 22	9 57.24	+12 39.9	2.382	3.295	7.5	21.1
2 1	9 52.16	+20 24.8	1.840	2.806	4.8	18.2	2 1	9 50.91	+13 40.7	2.328	3.293	4.1	20.9
2 11	9 43.78	+21 1.2	1.825	2.807	2.4	18.0	2 11	9 43.62	+14 46.0	2.305	3.291	0.6	20.6
2 21	9 35.20	+21 29.8	1.839	2.808	4.9	18.2	2 21	9 36.09	+15 50.5	2.311	3.289	3.1	20.8
3 2	9 27.45	+21 46.7	1.880	2.809	8.6	18.4	3 2	9 29.11	+16 49.4	2.348	3.286	6.6	21.0
3 12	9 21.43	+21 50.1	1.947	2.811	12.0	18.6	3 12	9 23.38	+17 39.0	2.412	3.283	9.7	21.2
3 22	9 17.69	+21 40.1	2.034	2.813	14.9	18.8	3 22	9 19.41	+18 17.0	2.500	3.281	12.4	21.4
52443	1994 <i>TW</i>		2 12.8	106°17	6°8°/ 8.0	18	461720	2005 <i>SF</i> ₁₇₅		2 12.8	89°95	3°7°/10.4	18
1 12	10 14.00	+31 24.4</											

EPHEMERIDES

2 12.8

2 12.8

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
18800	Terresadodge 2 12.8 165°55' 1.9°/11.1 18						12217	1982 <i>JD</i> ₂ 2 12.8 306°59' 2.1°/11.5 18					
1 12	10 5.85	+16 56.6	2.109	2.955	11.5	18.9	1 12	10 6.71	+14 45.6	1.248	2.114	16.5	18.0
1 22	10 0.18	+17 49.1	2.039	2.959	8.2	18.7	1 22	10 1.92	+15 45.6	1.178	2.107	11.9	17.7
2 1	9 52.61	+18 47.2	1.995	2.961	4.5	18.5	2 1	9 54.07	+16 59.6	1.130	2.100	6.6	17.4
2 11	9 43.89	+19 44.9	1.980	2.964	1.9	18.3	2 11	9 44.18	+18 18.1	1.107	2.093	2.1	17.1
2 21	9 34.92	+20 36.2	1.995	2.966	4.5	18.5	2 21	9 33.72	+19 30.2	1.110	2.086	6.1	17.3
3 2	9 26.72	+21 16.6	2.039	2.967	8.1	18.7	3 2	9 24.41	+20 26.7	1.138	2.079	11.6	17.6
3 12	9 20.13	+21 43.2	2.109	2.969	11.4	18.9	3 12	9 17.70	+21 2.2	1.188	2.073	16.6	17.8
3 22	9 15.70	+21 55.6	2.201	2.970	14.2	19.1	3 22	9 14.38	+21 16.0	1.256	2.067	20.7	18.1
118527	2000 <i>EY</i> ₃₃ 2 12.8 86°58' 4.1°/ 9.8 18						246050	2006 <i>UM</i> ₂₃₆ 2 12.8 173°82' 0°5'/12.2 17					
1 12	10 10.73	+19 14.0	1.400	2.261	15.3	19.1	1 12	10 3.11	+13 57.3	2.843	3.676	9.3	21.5
1 22	10 4.19	+20 50.9	1.361	2.287	10.9	18.9	1 22	9 57.82	+14 29.2	2.766	3.679	6.6	21.3
2 1	9 54.96	+22 31.8	1.346	2.312	6.3	18.8	2 1	9 51.16	+15 6.4	2.716	3.680	3.6	21.1
2 11	9 44.24	+24 5.1	1.359	2.337	4.2	18.7	2 11	9 43.69	+15 45.6	2.696	3.682	0.7	20.9
2 21	9 33.50	+25 20.4	1.399	2.362	7.2	18.9	2 21	9 36.04	+16 23.0	2.707	3.683	2.9	21.1
3 2	9 24.20	+26 12.0	1.466	2.386	11.3	19.2	3 2	9 28.92	+16 55.3	2.748	3.684	5.9	21.3
3 12	9 17.47	+26 38.6	1.556	2.409	15.1	19.5	3 12	9 22.93	+17 20.2	2.818	3.684	8.7	21.5
3 22	9 13.83	+26 42.8	1.665	2.432	18.2	19.8	3 22	9 18.51	+17 36.4	2.911	3.684	11.0	21.6
485848	2012 <i>EC</i> ₂ 2 12.8 55°02' 6°8'/18.7 17						96165	1981 <i>EL</i> ₁₄ 2 12.8 100°42' 2°6'/10.9 18					
1 12	10 2.92	-10 5.0	1.007	1.810	24.3	20.7	1 12	10 8.57	+20 49.4	2.063	2.911	11.6	19.3
1 22	9 59.39	- 8 21.0	0.943	1.820	19.6	20.5	1 22	10 2.12	+21 11.1	1.995	2.915	8.3	19.1
2 1	9 52.68	- 5 38.6	0.897	1.830	14.2	20.2	2 1	9 53.68	+21 33.6	1.954	2.919	4.8	18.9
2 11	9 43.93	- 2 3.6	0.873	1.841	8.8	19.9	2 11	9 44.08	+21 51.6	1.942	2.922	2.6	18.8
2 21	9 34.75	+ 2 5.3	0.875	1.852	7.0	19.9	2 21	9 34.32	+22 0.8	1.958	2.926	4.9	18.9
3 2	9 26.92	+ 6 20.7	0.904	1.863	11.1	20.1	3 2	9 25.46	+21 58.5	2.004	2.929	8.4	19.1
3 12	9 21.91	+10 15.6	0.958	1.875	16.5	20.5	3 12	9 18.39	+21 43.9	2.075	2.933	11.7	19.3
3 22	9 20.46	+13 33.1	1.033	1.887	21.2	20.8	3 22	9 13.63	+21 18.0	2.169	2.937	14.5	19.5
167291	2003 <i>UX</i> ₁₉₉ 2 12.8 44°12' 1°7'/11.7 18						501279	2013 <i>WA</i> ₄₃ 2 12.8 87°81' 5°2'/ 7.9 18					
1 12	10 6.66	+14 49.5	1.321	2.184	15.9	19.8	1 12	10 5.82	+27 51.1	2.174	3.028	10.9	20.7
1 22	10 1.43	+15 37.1	1.269	2.197	11.3	19.5	1 22	10 0.21	+29 0.2	2.117	3.033	8.1	20.5
2 1	9 53.51	+16 34.8	1.241	2.210	6.2	19.3	2 1	9 52.64	+30 5.7	2.087	3.038	5.8	20.4
2 11	9 44.03	+17 34.4	1.238	2.223	1.7	19.0	2 11	9 43.92	+31 0.2	2.084	3.043	5.4	20.4
2 21	9 34.40	+18 27.2	1.261	2.237	5.4	19.3	2 21	9 35.01	+31 38.4	2.111	3.047	7.2	20.5
3 2	9 26.09	+19 6.3	1.310	2.252	10.3	19.6	3 2	9 26.95	+31 57.0	2.164	3.052	9.8	20.6
3 12	9 20.22	+19 28.5	1.382	2.267	14.7	19.9	3 12	9 20.60	+31 56.0	2.241	3.057	12.5	20.8
3 22	9 17.39	+19 33.3	1.474	2.282	18.3	20.2	3 22	9 16.50	+31 37.4	2.339	3.061	14.7	21.0
248870	2006 <i>UR</i> ₇₁ 2 12.8 99°41' 0°8'/12.2 17						353323	2010 <i>LH</i> ₂₉ 2 12.8 261°39' 8°4'/ 4.4 18					
1 12	10 6.61	+15 48.8	2.349	3.188	10.8	20.5	1 12	10 8.29	+27 57.0	1.569	2.434	13.8	20.2
1 22	10 0.49	+15 55.8	2.277	3.192	7.7	20.3	1 22	10 3.13	+30 50.4	1.499	2.417	10.6	20.0
2 1	9 52.68	+16 6.7	2.232	3.197	4.2	20.0	2 1	9 54.87	+33 47.0	1.455	2.401	8.5	19.8
2 11	9 43.90	+16 18.1	2.215	3.201	0.9	19.8	2 11	9 44.33	+36 30.0	1.441	2.384	9.0	19.8
2 21	9 34.97	+16 26.7	2.230	3.206	3.4	20.0	2 21	9 32.86	+38 44.4	1.454	2.366	11.8	19.9
3 2	9 26.78	+16 29.6	2.274	3.210	6.9	20.2	3 2	9 22.16	+40 20.8	1.492	2.348	15.3	20.1
3 12	9 20.07	+16 25.4	2.345	3.215	10.0	20.4	3 12	9 13.84	+41 17.6	1.550	2.330	18.7	20.2
3 22	9 15.32	+16 13.4	2.439	3.219	12.7	20.6	3 22	9 8.92	+41 39.1	1.625	2.312	21.5	20.4
495223	2013 <i>GN</i> ₄₇ 2 12.8 256°71' 1°1'/12.0 17						140431	2001 <i>TU</i> ₁₀₁ 2 12.8 177°43' 3°2'/16.1 18					
1 12	10 7.92	+14 16.3	1.719	2.566	13.7	22.0	1 12	10 2.02	+ 0 29.7	2.589	3.379	11.4	20.5
1 22	10 2.20	+14 54.2	1.631	2.551	9.9	21.7	1 22	9 57.15	+ 0 42.8	2.504	3.380	8.8	20.3
2 1	9 54.00	+15 42.1	1.569	2.536	5.5	21.4	2 1	9 50.84	+ 1 10.5	2.444	3.381	6.1	20.2
2 11	9 44.14	+16 34.0	1.534	2.520	1.2	21.1	2 11	9 43.65	+ 1 51.0	2.412	3.381	3.7	20.0
2 21	9 33.75	+17 23.0	1.528	2.504	4.6	21.3	2 21	9 36.24	+ 2 41.1	2.410	3.382	3.6	20.0
3 2	9 24.13	+18 2.9	1.549	2.488	9.3	21.5	3 2	9 29.34	+ 3 36.5	2.437	3.382	6.0	20.2
3 12	9 16.46	+18 29.6	1.596	2.471	13.6	21.8	3 12	9 23.61	+ 4 32.5	2.493	3.381	8.8	20.3
3 22	9 11.50	+18 41.7	1.663	2.454	17.3	22.0	3 22	9 19.53	+ 5 25.2	2.573	3.381	11.4	20.5
166251	2002 <i>GU</i> ₂₃ 2 12.8 292°31' 0°3'/12.9 18						265597	2005 <i>RL</i> ₂₀ 2 12.8 135°04' 0°8'/13.4 18					
1 12	10 6.84	+11 21.5	1.495	2.344	15.2	20.2	1 12	10 10.02	+10 52.8	2.200	3.023	12.0	21.0
1 22	10 1.72	+11 41.8	1.407	2.325	11.2	19.9	1 22	10 2.95	+10 51.3	2.130	3.035	8.7	20.8
2 1	9 53.87	+12 15.7	1.342	2.307	6.4	19.5	2 1	9 54.07	+10 57.6	2.087	3.047	5.0	20.6
2 11	9 44.13	+12 58.3	1.302	2.289	1.1	19.1	2 11	9 44.14	+11 8.7	2.074	3.059	1.2	20.4
2 21	9 33.76	+13 42.9	1.291	2.270	4.5	19.3	2 21	9 34.09	+11 21.1	2.091	3.070	3.2	20.6
3 2	9 24.20	+14 22.7	1.305	2.252	9.8	19.6	3 2	9 24.87	+11 31.9	2.139	3.081	6.9	20.8
3 12	9 16.79	+14 52.2	1.344	2.234	14.6	19.8	3 12	9 17.30	+11 38.4	2.214	3.091	10.3	21.0
3 22	9 12.36	+15 8.5	1.402	2.216	18.7	20.0	3 22	9 11.87	+11 39.2	2.313	3.100	13.1	21.2
289116	2004 <i>TQ</i> ₃₅₄ 2 12.8 115°07' 3°5'/10.2 18						167117	2003 <i>SF</i> ₉₀ 2 12.8 148°73' 1°0'/12.1 18					
1 12	10 11.67	+20 52.2	1.792	2.642	13.1	21.1	1 12	10 9.26	+14 26.5	1.961	2.800	12.6	21.4
1 22	10 4.46	+21 54.4	1.744	2.664	9.3	21.0	1 22	10 2.66	+15 3.4	1.895	2.810	9.0	21.2
2 1	9 54.98	+22 58.0	1.721	2.684	5.5	20.8	2 1	9 54.01	+15 47.4	1.854	2.819	4.9	21.0
2 11	9 44.25	+23 54.7	1.727	2.705	3.6	20.7	2 11	9 44.14	+16 33.2	1.842	2.828	1.1	20.7
2 21	9 33.47	+24 38.2	1.762	2.724	6.0	20.9	2 21	9 34.08	+17 15.1	1.860	2.836	4.0	21.0
3 2	9 23.87	+25 4.2	1.826	2.742	9.6	21.1	3 2	9 24.92	+17 48.3	1.907	2.843	8.1	21.2
3 12	9 16.41	+25 12.3	1.914	2.760	13.0	21.4	3 12	9 17.57	+18 10.1	1.981	2.849	11.7	21.5
3 22	9 11.61	+25 3.9	2.023	2.777	15.8	21.6	3 22	9 12.60	+18 19.7	2.077	2.855	14.7	21.7
93675	2000 <i>VR</i> ₅ 2 12.8 334°63' 8°5'/ 6.9 18						406169	2006 <i>WX</i> ₅₀ 2 12.8 83°04' 2°4'/14.5 18					
1 12	10 9.06	+32 47.1	1.525	2.388	14.2	18.5	1 12	10 7.49	+ 5 36.4	1.739	2.562	14.7	21.8
1 22	10 3.41	+33 55.5	1.463	2.376	11.3	18.3	1 22	10 1.44	+ 5 48.6	1.682	2.583	10.9	21.6
2 1	9 54.77	+34 54.7	1.423	2.366	9.0	18.1	2 1	9 53.3					

EPHEMERIDES

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
120605	1995 VX ₇		2 12.8 344°71	0°6/12.3	18		435358	2007 VK ₂₃₇		2 12.8 24°22	0°4/13.1	18	
1 12	10 5.08	+13 25.2	1.901	2.746	12.6	20.3	1 12	10 3.03	+10 58.0	1.804	2.648	13.2	20.7
1 22	9 59.80	+13 58.7	1.828	2.746	9.1	20.1	1 22	9 58.32	+11 20.6	1.740	2.657	9.6	20.5
2 1	9 52.49	+14 41.0	1.779	2.746	5.0	19.9	2 1	9 51.64	+11 54.1	1.701	2.666	5.4	20.2
2 11	9 43.92	+15 27.0	1.759	2.745	0.8	19.6	2 11	9 43.81	+12 33.7	1.689	2.675	1.0	19.9
2 21	9 35.08	+16 11.0	1.767	2.745	3.9	19.8	2 21	9 35.80	+13 14.2	1.706	2.685	3.5	20.1
3 2	9 27.04	+16 47.9	1.804	2.745	8.1	20.0	3 2	9 28.66	+13 50.5	1.750	2.696	7.8	20.4
3 12	9 20.72	+17 14.1	1.867	2.744	11.8	20.3	3 12	9 23.26	+14 18.4	1.819	2.707	11.5	20.7
3 22	9 16.70	+17 28.1	1.951	2.744	15.0	20.5	3 22	9 20.12	+14 35.9	1.910	2.719	14.7	20.9
327933	2007 DW ₇₈		2 12.8 154°85	1°8/11.5	18		435886	2008 YL ₁₆₀		2 12.8 50°29	1°9/14.8	17	
1 12	10 7.75	+17 24.3	1.973	2.820	12.2	21.3	1 12	10 0.85	+3 44.8	2.188	3.003	12.3	20.9
1 22	10 1.63	+17 55.1	1.903	2.823	8.7	21.0	1 22	9 56.53	+4 40.0	2.113	3.010	9.2	20.7
2 1	9 53.47	+18 30.4	1.859	2.826	4.8	20.8	2 1	9 50.58	+5 51.6	2.063	3.016	5.7	20.5
2 11	9 44.07	+19 4.8	1.844	2.828	1.8	20.6	2 11	9 43.65	+7 15.5	2.042	3.023	2.4	20.3
2 21	9 34.46	+19 32.9	1.858	2.830	4.5	20.8	2 21	9 36.50	+8 45.5	2.050	3.030	3.1	20.4
3 2	9 25.72	+19 50.9	1.900	2.832	8.3	21.0	3 2	9 29.98	+10 15.0	2.089	3.037	6.6	20.6
3 12	9 18.75	+19 56.8	1.969	2.834	11.9	21.3	3 12	9 24.82	+11 37.8	2.155	3.044	9.9	20.8
3 22	9 14.14	+19 50.5	2.059	2.836	14.8	21.5	3 22	9 21.52	+12 49.6	2.245	3.051	12.8	21.0
187805	1999 RR ₃₂		2 12.8 146°24	0°0/12.8	18		333877	1997 TM ₉		2 12.8 67°42	4°9/17.3	18	
1 12	10 10.35	+10 57.1	1.637	2.475	14.7	21.4	1 12	10 2.43	-3 6.7	2.135	2.917	13.7	20.5
1 22	10 3.76	+11 38.7	1.572	2.485	10.6	21.1	1 22	9 57.69	-3 5.8	2.058	2.923	11.0	20.3
2 1	9 54.75	+12 33.1	1.531	2.495	5.9	20.9	2 1	9 51.24	-2 45.4	2.004	2.929	8.0	20.1
2 11	9 44.28	+13 33.9	1.518	2.504	0.9	20.5	2 11	9 43.75	-2 6.5	1.977	2.936	5.5	20.0
2 21	9 33.56	+14 33.9	1.534	2.513	4.1	20.8	2 21	9 36.05	-1 12.6	1.977	2.942	5.1	20.0
3 2	9 23.90	+15 26.3	1.578	2.520	8.9	21.1	3 2	9 28.99	-0 8.9	2.007	2.949	7.2	20.1
3 12	9 16.38	+16 6.5	1.648	2.527	13.0	21.4	3 12	9 23.37	+0 58.3	2.062	2.956	10.1	20.3
3 22	9 11.61	+16 32.6	1.739	2.533	16.5	21.6	3 22	9 19.70	+2 3.2	2.142	2.962	12.9	20.5
29153	1988 SY ₂		2 12.8 120°19	3°0/15.8	18		278856	2008 TZ ₂₂		2 12.8 32°34	0°1/12.9	18	R
1 12	10 5.27	+0 42.8	2.273	3.065	12.7	19.5	1 12	10 3.93	+11 9.3	1.976	2.816	12.5	20.8
1 22	9 59.52	+1 16.9	2.206	3.085	9.7	19.3	1 22	9 58.92	+11 43.8	1.902	2.816	9.0	20.6
2 1	9 52.16	+2 7.8	2.163	3.105	6.4	19.1	2 1	9 51.98	+12 29.0	1.853	2.818	5.1	20.3
2 11	9 43.87	+3 12.2	2.150	3.123	3.6	19.0	2 11	9 43.88	+13 20.0	1.832	2.819	0.8	20.0
2 21	9 35.45	+4 25.4	2.167	3.141	3.6	19.0	2 21	9 35.51	+14 11.4	1.841	2.820	3.5	20.2
3 2	9 27.75	+5 41.3	2.214	3.159	6.5	19.2	3 2	9 27.89	+14 57.8	1.878	2.821	7.6	20.5
3 12	9 21.48	+6 54.3	2.289	3.176	9.5	19.4	3 12	9 21.88	+15 35.0	1.941	2.822	11.2	20.7
3 22	9 17.12	+7 59.9	2.389	3.192	12.3	19.6	3 22	9 18.05	+16 0.7	2.026	2.824	14.3	20.9
489500	2007 LY ₁₁		2 12.8 122°11	5°0/9.1	18		242136	2003 AX ₂₀		2 12.8 17°63	3°1/10.2	18	
1 12	10 9.65	+22 33.3	1.533	2.394	14.2	21.2	1 12	10 3.50	+20 5.5	1.852	2.712	12.2	20.0
1 22	10 3.52	+23 59.7	1.479	2.403	10.3	21.0	1 22	9 58.73	+21 0.7	1.791	2.716	8.7	19.8
2 1	9 54.71	+25 27.8	1.450	2.412	6.5	20.8	2 1	9 51.90	+21 59.0	1.755	2.721	5.1	19.6
2 11	9 44.28	+26 46.8	1.448	2.420	5.1	20.7	2 11	9 43.86	+22 53.5	1.747	2.726	3.2	19.5
2 21	9 33.62	+27 47.5	1.473	2.428	7.8	20.9	2 21	9 35.62	+23 37.9	1.767	2.732	5.6	19.7
3 2	9 24.17	+28 24.5	1.525	2.436	11.6	21.2	3 2	9 28.26	+24 7.4	1.814	2.738	9.2	19.9
3 12	9 17.11	+28 37.1	1.600	2.444	15.2	21.4	3 12	9 22.70	+24 20.3	1.886	2.745	12.6	20.1
3 22	9 13.06	+28 27.8	1.693	2.451	18.3	21.6	3 22	9 19.47	+24 17.0	1.978	2.752	15.4	20.3
415853	2001 SM ₁₀₃		2 12.8 120°78	0°6/13.3	18		61409	2000 QW ₁₁		2 12.8 154°52	0°2/13.0	18	
1 12	10 8.31	+10 21.9	2.274	3.097	11.6	22.3	1 12	10 6.31	+11 7.3	2.083	2.916	12.2	19.9
1 22	10 1.66	+10 43.3	2.213	3.118	8.4	22.1	1 22	10 0.50	+11 34.0	2.010	2.921	8.8	19.7
2 1	9 53.32	+11 13.3	2.178	3.139	4.8	21.9	2 1	9 52.82	+12 10.2	1.963	2.926	5.0	19.5
2 11	9 44.05	+11 48.2	2.172	3.158	1.0	21.6	2 11	9 44.01	+12 51.7	1.944	2.930	0.9	19.2
2 21	9 34.70	+12 23.6	2.198	3.177	3.0	21.8	2 21	9 34.97	+13 33.6	1.955	2.934	3.3	19.4
3 2	9 26.16	+12 55.8	2.254	3.195	6.6	22.1	3 2	9 26.69	+14 11.2	1.995	2.937	7.3	19.7
3 12	9 19.18	+13 21.5	2.337	3.212	9.9	22.3	3 12	9 20.02	+14 40.9	2.062	2.941	10.8	19.9
3 22	9 14.21	+13 39.1	2.444	3.229	12.6	22.5	3 22	9 15.48	+15 0.8	2.152	2.943	13.8	20.1
331226	2011 BJ ₇₄		2 12.8 128°29	2°6/15.1	18		271771	2004 SR ₅₅		2 12.8 147°26	1°6/14.1	18	
1 12	10 4.22	+3 34.1	2.085	2.896	13.0	21.3	1 12	10 5.19	+7 7.0	2.160	2.981	12.3	21.3
1 22	9 58.98	+3 54.2	2.011	2.903	9.8	21.1	1 22	9 59.64	+7 24.6	2.085	2.986	9.1	21.1
2 1	9 51.96	+4 30.1	1.961	2.910	6.3	20.9	2 1	9 52.32	+7 54.2	2.035	2.992	5.5	20.9
2 11	9 43.85	+5 18.6	1.939	2.917	3.1	20.7	2 11	9 43.93	+8 32.8	2.014	2.996	2.0	20.6
2 21	9 35.53	+6 15.1	1.946	2.923	3.6	20.7	2 21	9 35.33	+9 15.9	2.022	3.001	3.2	20.7
3 2	9 27.92	+7 14.2	1.982	2.929	6.9	20.9	3 2	9 27.43	+9 59.0	2.059	3.005	6.8	21.0
3 12	9 21.81	+8 10.4	2.045	2.935	10.3	21.2	3 12	9 21.02	+10 37.6	2.124	3.009	10.2	21.2
3 22	9 17.75	+8 59.6	2.132	2.941	13.3	21.4	3 22	9 16.64	+11 8.9	2.212	3.013	13.2	21.4
190063	2004 RS ₃₁₈		2 12.8 287°93	3°0/14.9	17		319743	2006 UA ₁₃₇		2 12.8 40°92	3°7/10.8	18	
1 12	10 4.90	+4 34.9	1.846	2.667	14.0	20.2	1 12	10 9.97	+21 10.9	1.339	2.206	15.6	19.6
1 22	9 59.82	+4 34.0	1.757	2.654	10.7	19.9	1 22	10 3.74	+21 42.9	1.295	2.223	11.1	19.4
2 1	9 52.60	+4 48.9	1.690	2.642	6.9	19.7	2 1	9 54.77	+22 15.9	1.274	2.240	6.5	19.2
2 11	9 43.98	+5 17.6	1.651	2.630	3.5	19.4	2 11	9 44.30	+22 41.6	1.278	2.258	3.7	19.1
2 21	9 34.91	+5 56.1	1.640	2.617	4.1	19.4	2 21	9 33.86	+22 53.5	1.309	2.277	6.6	19.3
3 2	9 26.51	+6 39.4	1.656	2.605	7.9	19.6	3 2	9 24.93	+22 48.5	1.365	2.297	11.0	19.6
3 12	9 19.79	+7 21.6	1.699	2.593	11.9	19.8	3 12	9 18.63	+22 26.8	1.444	2.317	14.9	19.9
3 22	9 15.42	+7 58.3	1.763	2.580	15.4	20.0	3 22	9 15.46	+21 50.7	1.542	2.337	18.2	20.1
132883	2002 RV ₁₃₈		2 12.8 96°39	5°3/7.8	18		346175	2007 VV ₃₃₄		2 12.8 16°90	4°5/8.5	18	
1 12	10 6.87	+28 24.2	2.204	3.056	10.9	19.4	1 12	10 4.14	+25 2.9	2.125	2.983	11.0	20.3
1 22	10 0.89												

EPHEMERIDES

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
138257	2000 <i>FR</i> ₇₀		2 12.8 62°00	4.4/16.2	18		131900	2002 <i>BG</i> ₁		2 12.8 348°64	2°8/11.2	18	
1 12	10 4.75	- 0 1.6	1.555	2.368	16.6	20.5	1 12	10 4.67	+16 58.0	1.141	2.017	16.9	19.0
1 22	9 59.74	+ 0 16.4	1.495	2.384	12.8	20.3	1 22	10 0.64	+17 45.6	1.076	2.010	12.1	18.7
2 1	9 52.51	+ 0 58.2	1.458	2.401	8.7	20.1	2 1	9 53.45	+18 43.7	1.033	2.004	6.8	18.4
2 11	9 43.98	+ 2 0.3	1.446	2.418	5.1	19.9	2 11	9 44.21	+19 42.6	1.014	1.999	2.8	18.1
2 21	9 35.28	+ 3 16.4	1.460	2.436	5.0	20.0	2 21	9 34.48	+20 32.2	1.020	1.994	6.7	18.3
3 2	9 27.59	+ 4 38.1	1.503	2.453	8.4	20.2	3 2	9 26.03	+21 4.3	1.049	1.991	12.1	18.6
3 12	9 21.90	+ 5 56.9	1.570	2.471	12.2	20.5	3 12	9 20.32	+21 15.3	1.098	1.990	17.1	18.9
3 22	9 18.76	+ 7 6.3	1.659	2.488	15.6	20.7	3 22	9 18.09	+21 5.4	1.166	1.989	21.2	19.2
14545	1997 <i>SK</i> ₂₅		2 12.8 106°99	2°1/14.9	18		416260	2003 <i>FQ</i> ₃		2 12.8 307°41	5°4/ 8.0	18	
1 12	10 2.61	+ 4 4.4	2.251	3.063	12.1	18.6	1 12	10 4.43	+23 18.2	1.645	2.511	13.1	20.3
1 22	9 57.74	+ 4 37.8	2.178	3.072	9.1	18.4	1 22	9 59.93	+25 0.4	1.572	2.498	9.6	20.1
2 1	9 51.25	+ 5 26.0	2.130	3.081	5.7	18.2	2 1	9 52.88	+26 46.9	1.524	2.485	6.4	19.9
2 11	9 43.79	+ 6 25.4	2.110	3.090	2.6	18.1	2 11	9 44.13	+28 26.7	1.503	2.472	5.6	19.8
2 21	9 36.14	+ 7 31.2	2.120	3.098	3.2	18.1	2 21	9 34.84	+29 49.5	1.510	2.459	8.3	19.9
3 2	9 29.14	+ 8 38.0	2.159	3.107	6.4	18.3	3 2	9 26.40	+30 48.1	1.543	2.447	12.0	20.1
3 12	9 23.51	+ 9 40.5	2.226	3.115	9.7	18.5	3 12	9 20.01	+31 19.8	1.598	2.434	15.6	20.3
3 22	9 19.74	+10 34.8	2.317	3.123	12.5	18.7	3 22	9 16.45	+31 26.1	1.671	2.423	18.7	20.5
274383	2008 <i>RU</i> ₁₀₀		2 12.8 213°16	1°4/13.9	18		289060	2004 <i>TO</i> ₁₉₉		2 12.8 209°88	5°6/ 7.7	18	
1 12	10 5.09	+ 7 56.5	2.163	2.987	12.1	21.0	1 12	10 9.59	+30 13.8	2.310	3.155	10.7	20.6
1 22	9 59.64	+ 8 11.3	2.080	2.983	9.0	20.8	1 22	10 2.96	+31 13.8	2.242	3.150	8.2	20.4
2 1	9 52.38	+ 8 37.6	2.022	2.980	5.4	20.5	2 1	9 54.27	+32 8.5	2.200	3.144	6.1	20.3
2 11	9 43.97	+ 9 12.4	1.992	2.976	1.8	20.3	2 11	9 44.32	+32 50.8	2.187	3.138	5.8	20.2
2 21	9 35.29	+ 9 51.5	1.992	2.972	3.2	20.4	2 21	9 34.11	+33 15.7	2.203	3.132	7.4	20.3
3 2	9 27.24	+10 30.3	2.022	2.967	6.9	20.6	3 2	9 24.72	+33 20.4	2.247	3.125	10.0	20.5
3 12	9 20.68	+11 4.7	2.078	2.963	10.5	20.8	3 12	9 17.08	+33 5.3	2.315	3.117	12.5	20.6
3 22	9 16.15	+11 31.7	2.157	2.958	13.5	21.0	3 22	9 11.77	+32 33.2	2.403	3.109	14.8	20.8
375811	2009 <i>TZ</i> ₄₅		2 12.8 191°38	1°5/14.1	17		318601	2005 <i>JX</i> ₄₅		2 12.8 138°41	3°7/ 8.2	17	
1 12	10 5.98	+ 7 33.6	2.250	3.069	11.9	21.9	1 12	10 3.77	+22 14.7	2.494	3.345	9.8	20.5
1 22	10 0.20	+ 7 46.0	2.167	3.067	8.8	21.7	1 22	9 58.63	+24 0.5	2.432	3.351	7.0	20.4
2 1	9 52.66	+ 8 9.7	2.110	3.066	5.3	21.5	2 1	9 51.81	+25 48.2	2.398	3.358	4.5	20.2
2 11	9 44.02	+ 8 41.7	2.081	3.064	1.9	21.3	2 11	9 43.93	+27 30.5	2.396	3.364	3.9	20.2
2 21	9 35.12	+ 9 18.1	2.082	3.062	3.1	21.3	2 21	9 35.79	+29 0.4	2.424	3.370	5.8	20.3
3 2	9 26.85	+ 9 54.7	2.114	3.059	6.7	21.6	3 2	9 28.24	+30 13.2	2.482	3.375	8.5	20.5
3 12	9 20.03	+10 27.5	2.172	3.055	10.1	21.8	3 12	9 22.04	+31 6.6	2.566	3.381	11.1	20.7
3 22	9 15.20	+10 53.7	2.255	3.052	13.1	22.0	3 22	9 17.73	+31 40.8	2.671	3.386	13.3	20.9
376433	2012 <i>HZ</i> ₁₅		2 12.8 172°76	1°0/13.8	16		104028	2000 <i>DT</i> ₁₁₃		2 12.8 155°08	0°1/12.7	17	
1 12	10 4.69	+ 7 44.0	2.256	3.078	11.8	22.1	1 12	10 6.93	+13 22.7	2.301	3.134	11.2	20.0
1 22	9 59.27	+ 8 20.6	2.177	3.080	8.7	21.9	1 22	10 0.82	+13 32.4	2.226	3.138	8.0	19.8
2 1	9 52.14	+ 9 9.3	2.124	3.083	5.1	21.7	2 1	9 52.98	+13 48.2	2.178	3.141	4.5	19.6
2 11	9 43.94	+10 6.3	2.100	3.084	1.5	21.5	2 11	9 44.11	+14 6.6	2.158	3.145	0.7	19.3
2 21	9 35.51	+11 6.5	2.106	3.086	3.0	21.6	2 21	9 35.06	+14 24.1	2.169	3.147	3.2	19.5
3 2	9 27.70	+12 4.8	2.142	3.086	6.7	21.8	3 2	9 26.73	+14 37.5	2.210	3.150	6.8	19.7
3 12	9 21.31	+12 56.5	2.206	3.087	10.1	22.0	3 12	9 19.88	+14 44.3	2.278	3.153	10.1	19.9
3 22	9 16.87	+13 38.6	2.293	3.087	13.0	22.2	3 22	9 15.02	+14 43.6	2.370	3.155	12.9	20.1
366025	2012 <i>BC</i> ₁₃₆		2 12.8 169°61	2°7/10.8	18		409493	6824 <i>P-L</i>		2 12.8 103°62	1°0/13.8	18	
1 12	10 7.70	+18 10.5	1.718	2.572	13.3	21.2	1 12	10 7.71	+ 7 33.7	2.112	2.931	12.6	21.5
1 22	10 1.93	+19 4.7	1.650	2.573	9.5	21.0	1 22	10 1.33	+ 8 15.4	2.058	2.960	9.2	21.3
2 1	9 53.80	+20 4.7	1.608	2.574	5.4	20.7	2 1	9 53.21	+ 9 9.0	2.029	2.987	5.3	21.2
2 11	9 44.22	+21 2.8	1.593	2.575	2.7	20.6	2 11	9 44.14	+10 10.0	2.030	3.014	1.5	20.9
2 21	9 34.33	+21 51.9	1.607	2.576	5.5	20.7	2 21	9 35.02	+11 12.6	2.061	3.040	3.1	21.1
3 2	9 25.41	+22 26.3	1.648	2.576	9.6	21.0	3 2	9 26.77	+12 11.6	2.122	3.065	6.8	21.4
3 12	9 18.51	+22 43.8	1.713	2.576	13.4	21.2	3 12	9 20.16	+13 2.5	2.211	3.090	10.2	21.6
3 22	9 14.26	+22 44.6	1.799	2.577	16.6	21.4	3 22	9 15.63	+13 42.8	2.323	3.114	13.0	21.9
63539	2001 <i>PH</i> ₃₉		2 12.8 149°72	4°8/ 8.2	18		309181	2007 <i>CF</i> ₂₀		2 12.8 322°12	3°2/15.4	17	
1 12	10 8.23	+25 43.1	2.144	2.995	11.2	19.5	1 12	10 2.87	+ 3 15.1	2.331	3.137	11.9	20.0
1 22	10 1.98	+27 5.0	2.087	3.003	8.2	19.4	1 22	9 57.99	+ 3 0.3	2.240	3.127	9.2	19.8
2 1	9 53.70	+28 25.1	2.057	3.012	5.6	19.2	2 1	9 51.47	+ 2 58.1	2.173	3.118	6.2	19.6
2 11	9 44.20	+29 35.5	2.056	3.019	5.0	19.2	2 11	9 43.89	+ 3 7.6	2.135	3.108	3.6	19.5
2 21	9 34.49	+30 29.7	2.085	3.026	6.9	19.3	2 21	9 36.01	+ 3 26.3	2.125	3.099	3.8	19.4
3 2	9 25.63	+31 4.1	2.142	3.033	9.8	19.5	3 2	9 28.67	+ 3 50.8	2.144	3.090	6.6	19.6
3 12	9 18.55	+31 18.0	2.223	3.039	12.5	19.7	3 12	9 22.63	+ 4 17.3	2.190	3.081	9.7	19.8
3 22	9 13.78	+31 13.3	2.324	3.044	14.9	19.9	3 22	9 18.42	+ 4 42.1	2.260	3.073	12.6	20.0
272708	2005 <i>YP</i> ₂₆		2 12.8 83°73	1°0/13.6	18		203875	2002 <i>XG</i> ₈₅		2 12.8 5°59	8°4/ 5.7	18	
1 12	10 5.99	+ 9 8.0	1.859	2.692	13.4	21.1	1 12	10 5.57	+33 40.3	1.684	2.546	13.1	18.5
1 22	10 0.41	+ 9 26.8	1.793	2.702	9.8	20.9	1 22	10 0.66	+35 8.3	1.636	2.547	10.5	18.4
2 1	9 52.83	+ 9 57.6	1.752	2.713	5.7	20.6	2 1	9 53.18	+36 26.5	1.612	2.548	8.7	18.3
2 11	9 44.08	+10 36.3	1.738	2.723	1.6	20.4	2 11	9 44.16	+37 24.7	1.613	2.550	8.7	18.3
2 21	9 35.14	+11 17.7	1.753	2.733	3.5	20.5	2 21	9 34.92	+37 56.0	1.640	2.553	10.6	18.4
3 2	9 27.07	+11 56.7	1.797	2.743	7.6	20.8	3 2	9 26.84	+37 57.8	1.690	2.557	13.3	18.5
3 12	9 20.77	+12 29.0	1.866	2.753	11.3	21.1	3 12	9 21.05	+37 31.9	1.761	2.562	15.9	18.7
3 22	9 16.77	+12 52.1	1.958	2.763	14.5	21.3	3 22	9 18.14	+36 43.2	1.850	2.567	18.3	18.9
73624	3481 <i>T-3</i>		2 12.8 73°57	3°3/10.8	18		242805	2006 <i>BP</i> ₈₈		2 12.8 284°17	0°5/12.5	17	
1 12	10 10.28	+19 41.6	1.469	2.329	14.8	19.3							

EPHEMERIDES

2 12.8

2 12.8

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
92379	2000 <i>HO</i> ₆₈		2 12.8 179°76	3°3/10.3	18		500841	2013 <i>HE</i> ₃₀		2 12.8 232°42	3°0/14.9	17	
1 12	10 10.66	+20 17.1	1.874	2.722	12.6	20.6	1 12	10 7.37	+ 4 25.2	1.835	2.651	14.3	22.3
1 22	10 3.95	+21 16.1	1.804	2.724	9.1	20.4	1 22	10 1.66	+ 4 27.9	1.747	2.642	10.9	22.1
2 1	9 54.92	+22 18.4	1.761	2.725	5.3	20.1	2 1	9 53.72	+ 4 47.0	1.682	2.633	7.0	21.9
2 11	9 44.45	+23 16.3	1.747	2.726	3.3	20.0	2 11	9 44.31	+ 5 20.0	1.645	2.623	3.5	21.6
2 21	9 33.68	+24 2.8	1.762	2.725	5.8	20.2	2 21	9 34.46	+ 6 2.9	1.636	2.613	4.1	21.6
3 2	9 23.84	+24 33.1	1.805	2.724	9.6	20.4	3 2	9 25.31	+ 6 50.0	1.656	2.603	8.0	21.8
3 12	9 15.99	+24 45.7	1.874	2.722	13.1	20.6	3 12	9 17.92	+ 7 35.7	1.701	2.592	12.0	22.0
3 22	9 10.75	+24 41.5	1.963	2.720	16.1	20.8	3 22	9 12.96	+ 8 15.2	1.769	2.581	15.5	22.3
306848	2001 <i>SU</i> ₉₃		2 12.8 72°95	1°9/14.0	18		221072	2005 <i>SN</i>		2 12.8 295°98	0°8/13.4	18	
1 12	10 9.36	+ 7 2.2	1.337	2.177	17.2	21.0	1 12	10 6.94	+10 39.0	1.690	2.531	14.2	20.0
1 22	10 3.26	+ 7 25.5	1.288	2.199	12.7	20.8	1 22	10 1.52	+10 44.4	1.605	2.519	10.4	19.7
2 1	9 54.55	+ 8 7.2	1.261	2.221	7.5	20.6	2 1	9 53.70	+11 1.2	1.543	2.506	6.1	19.4
2 11	9 44.38	+ 9 1.4	1.260	2.244	2.5	20.3	2 11	9 44.32	+11 25.7	1.508	2.494	1.5	19.1
2 21	9 34.14	+10 0.5	1.285	2.266	4.3	20.5	2 21	9 34.46	+11 53.0	1.502	2.482	3.9	19.2
3 2	9 25.26	+10 56.5	1.337	2.288	9.2	20.8	3 2	9 25.40	+12 18.0	1.523	2.470	8.6	19.5
3 12	9 18.83	+11 43.3	1.414	2.309	13.7	21.2	3 12	9 18.26	+12 36.5	1.568	2.458	12.9	19.7
3 22	9 15.39	+12 17.2	1.510	2.331	17.3	21.4	3 22	9 13.75	+12 45.9	1.635	2.446	16.6	19.9
391405	2007 <i>CR</i> ₂₈		2 12.8 245°92	0°8/13.3	18		436985	2012 <i>TP</i> ₂₀₆		2 12.8 63°72	3°3/10.1	18	
1 12	10 9.61	+10 2.9	1.526	2.367	15.4	21.5	1 12	10 6.96	+23 33.3	2.292	3.142	10.6	21.0
1 22	10 3.69	+10 21.9	1.441	2.355	11.4	21.3	1 22	10 0.91	+24 3.3	2.227	3.145	7.7	20.8
2 1	9 55.03	+10 55.4	1.379	2.343	6.6	20.9	2 1	9 53.07	+24 32.1	2.188	3.149	4.7	20.6
2 11	9 44.50	+11 38.6	1.344	2.330	1.5	20.6	2 11	9 44.18	+24 54.6	2.178	3.153	3.3	20.5
2 21	9 33.38	+12 25.1	1.337	2.317	4.3	20.7	2 21	9 35.16	+25 6.6	2.198	3.157	5.2	20.6
3 2	9 23.14	+13 8.1	1.356	2.303	9.5	21.0	3 2	9 26.95	+25 5.7	2.246	3.161	8.2	20.8
3 12	9 15.07	+13 41.9	1.401	2.289	14.3	21.2	3 12	9 20.33	+24 51.5	2.320	3.164	11.1	21.0
3 22	9 10.00	+14 3.6	1.465	2.274	18.3	21.5	3 22	9 15.81	+24 25.0	2.416	3.168	13.5	21.2
256863	2008 <i>CT</i> ₂₁₅		2 12.8 114°15	4°8/17.7	18		101642	1999 <i>CK</i> ₅₁		2 12.8 299°43	2°3/11.1	17	
1 12	10 4.74	- 4 51.0	2.065	2.836	14.5	20.4	1 12	10 7.49	+19 15.8	2.126	2.973	11.4	19.6
1 22	9 59.36	- 4 16.7	1.995	2.854	11.6	20.2	1 22	10 1.74	+19 42.2	2.019	2.938	8.3	19.3
2 1	9 52.21	- 3 19.3	1.948	2.871	8.4	20.0	2 1	9 53.80	+20 12.2	1.938	2.903	4.8	19.1
2 11	9 44.02	- 2 1.3	1.927	2.887	5.6	19.9	2 11	9 44.34	+20 40.5	1.885	2.868	2.3	18.8
2 21	9 35.67	- 0 28.3	1.936	2.903	5.0	19.9	2 21	9 34.29	+21 2.0	1.863	2.832	4.8	18.9
3 2	9 28.06	+ 1 12.6	1.975	2.919	7.2	20.0	3 2	9 24.76	+21 12.5	1.869	2.797	8.7	19.1
3 12	9 22.01	+ 2 53.4	2.042	2.934	10.3	20.2	3 12	9 16.79	+21 9.9	1.900	2.761	12.4	19.2
3 22	9 18.00	+ 4 27.3	2.133	2.948	13.1	20.5	3 22	9 11.12	+20 54.0	1.954	2.725	15.7	19.4
450971	2008 <i>RD</i> ₄₃		2 12.8 113°62	0°3/13.0	18		81728	2000 <i>JS</i> ₃₆		2 12.8 187°74	3°8/16.4	18	
1 12	10 8.34	+10 12.4	1.471	2.316	15.7	21.9	1 12	10 3.57	- 0 22.9	2.536	3.320	11.7	19.0
1 22	10 2.58	+10 50.9	1.407	2.324	11.4	21.7	1 22	9 58.36	- 0 29.1	2.450	3.320	9.2	18.9
2 1	9 54.26	+11 44.4	1.367	2.332	6.4	21.4	2 1	9 51.63	- 0 20.7	2.388	3.319	6.5	18.7
2 11	9 44.36	+12 46.3	1.353	2.339	1.1	21.1	2 11	9 43.97	+ 0 1.2	2.354	3.318	4.3	18.5
2 21	9 34.19	+13 48.8	1.367	2.347	4.3	21.3	2 21	9 36.07	+ 0 34.2	2.349	3.317	4.1	18.5
3 2	9 25.13	+14 44.3	1.408	2.354	9.3	21.6	3 2	9 28.69	+ 1 14.5	2.374	3.316	6.3	18.7
3 12	9 18.33	+15 27.5	1.473	2.361	13.8	21.9	3 12	9 22.53	+ 1 57.8	2.427	3.314	9.1	18.8
3 22	9 14.41	+15 55.8	1.559	2.368	17.4	22.2	3 22	9 18.07	+ 2 40.0	2.504	3.312	11.6	19.0
66289	1999 <i>JW</i> ₂₂		2 12.8 279°68	2°8/11.0	18		172006	2001 <i>UT</i> ₅₁		2 12.8 130°41	4°2/ 8.6	18	
1 12	10 8.60	+18 2.0	1.508	2.367	14.6	19.0	1 12	10 6.22	+26 48.6	2.520	3.368	9.8	20.4
1 22	10 3.05	+18 47.9	1.428	2.353	10.5	18.7	1 22	10 0.30	+27 40.7	2.461	3.376	7.2	20.2
2 1	9 54.70	+19 41.1	1.372	2.339	6.0	18.4	2 1	9 52.70	+28 29.8	2.430	3.383	5.0	20.1
2 11	9 44.47	+20 33.8	1.342	2.325	2.8	18.2	2 11	9 44.13	+29 10.1	2.427	3.390	4.3	20.1
2 21	9 33.67	+21 17.6	1.339	2.310	6.0	18.3	2 21	9 35.43	+29 37.5	2.455	3.397	5.9	20.2
3 2	9 23.82	+21 46.2	1.363	2.296	10.8	18.6	3 2	9 27.47	+29 49.4	2.510	3.404	8.4	20.3
3 12	9 16.24	+21 56.5	1.410	2.282	15.3	18.8	3 12	9 21.00	+29 45.6	2.591	3.411	10.8	20.5
3 22	9 11.74	+21 48.7	1.476	2.268	19.0	19.0	3 22	9 16.49	+29 27.5	2.693	3.417	13.0	20.7
425018	2009 <i>EE</i> ₁₉		2 12.8 311°73	0°9/12.1	17		425495	2010 <i>GF</i> ₆₇		2 12.8 8°28	1°2/13.9	18	
1 12	10 4.86	+15 18.9	2.154	2.998	11.4	21.1	1 12	9 59.82	+ 5 48.2	1.619	2.459	14.7	19.4
1 22	9 59.55	+15 38.7	2.073	2.991	8.2	20.8	1 22	9 56.33	+ 6 54.6	1.548	2.460	10.9	19.2
2 1	9 52.38	+16 4.3	2.018	2.984	4.5	20.6	2 1	9 50.75	+ 8 21.4	1.502	2.463	6.4	18.9
2 11	9 44.07	+16 31.3	1.992	2.978	1.0	20.3	2 11	9 43.84	+10 2.3	1.482	2.466	1.9	18.6
2 21	9 35.50	+16 55.5	1.995	2.972	3.7	20.5	2 21	9 36.64	+11 48.4	1.490	2.471	3.7	18.8
3 2	9 27.60	+17 13.2	2.027	2.966	7.5	20.7	3 2	9 30.25	+13 30.1	1.525	2.476	8.3	19.1
3 12	9 21.23	+17 21.7	2.086	2.960	10.9	20.9	3 12	9 25.64	+14 59.4	1.586	2.482	12.4	19.3
3 22	9 16.94	+17 20.2	2.166	2.954	13.9	21.1	3 22	9 23.41	+16 11.3	1.669	2.489	16.0	19.6
380414	2003 <i>AK</i> ₉₁		2 12.8 356°97	0°9/11.9	17		369643	2011 <i>EX</i> ₇₇		2 12.8 32°84	4°2/16.6	18	
1 12	10 0.03	+10 49.4	1.807	2.657	13.0	20.1	1 12	10 1.76	- 1 10.7	1.700	2.507	15.7	20.4
1 22	9 56.37	+12 20.4	1.733	2.654	9.3	19.8	1 22	9 57.60	- 0 38.0	1.629	2.514	12.2	20.2
2 1	9 50.73	+14 6.7	1.685	2.652	5.1	19.6	2 1	9 51.40	+ 0 19.0	1.581	2.521	8.4	20.0
2 11	9 43.83	+16 0.5	1.664	2.650	1.0	19.3	2 11	9 43.95	+ 1 37.1	1.558	2.529	5.0	19.8
2 21	9 36.58	+17 52.6	1.673	2.649	4.2	19.5	2 21	9 36.24	+ 3 9.8	1.562	2.537	4.7	19.8
3 2	9 30.04	+19 34.0	1.710	2.649	8.6	19.8	3 2	9 29.34	+ 4 48.6	1.595	2.546	7.9	20.0
3 12	9 25.13	+20 58.3	1.773	2.650	12.4	20.0	3 12	9 24.19	+ 6 24.5	1.653	2.555	11.6	20.2
3 22	9 22.46	+22 2.5	1.858	2.651	15.6	20.2	3 22	9 21.35	+ 7 50.4	1.734	2.564	15.0	20.5
503790	2016 <i>YV</i> ₇		2 12.8 217°40	12°9/23.4	17		133848	2003 <i>YB</i> ₇₈		2 12.8 113°09			

EPHEMERIDES

2 12.8

2 12.9

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
347397	2012 <i>SD</i> ₆		2 12.8 124°78	0°3/13.2	17		168511	1999 <i>TH</i> ₉₈		2 12.8 144°98	4°3/ 9.3	18	
1 12	10 3.73	+10 40.2	2.671	3.497	10.0	21.8	1 12	10 8.99	+22 29.6	1.867	2.720	12.4	20.1
1 22	9 58.33	+11 8.3	2.602	3.510	7.2	21.6	1 22	10 2.76	+23 48.1	1.808	2.729	9.0	19.9
2 1	9 51.55	+11 44.1	2.561	3.522	4.1	21.4	2 1	9 54.28	+25 7.7	1.776	2.737	5.6	19.7
2 11	9 43.96	+12 24.1	2.549	3.534	0.8	21.2	2 11	9 44.43	+26 20.0	1.772	2.744	4.3	19.6
2 21	9 36.24	+13 4.6	2.567	3.546	2.6	21.4	2 21	9 34.35	+27 17.5	1.797	2.751	6.7	19.8
3 2	9 29.12	+13 42.0	2.617	3.558	5.8	21.6	3 2	9 25.24	+27 55.4	1.850	2.758	10.1	20.0
3 12	9 23.21	+14 13.2	2.694	3.569	8.7	21.8	3 12	9 18.10	+28 12.6	1.927	2.764	13.3	20.2
3 22	9 18.94	+14 36.6	2.795	3.580	11.1	22.0	3 22	9 13.53	+28 10.7	2.024	2.769	16.1	20.4
317331	2002 <i>JD</i> ₆₇		2 12.8 282°88	1°7/11.7	18		405090	2001 <i>XK</i> ₃₂		2 12.8 68°50	0°3/13.1	18	
1 12	10 7.20	+15 13.6	1.558	2.413	14.4	21.1	1 12	10 6.47	+10 56.9	1.698	2.540	14.0	21.2
1 22	10 1.98	+15 57.5	1.474	2.397	10.4	20.8	1 22	10 0.92	+11 24.9	1.638	2.553	10.1	21.0
2 1	9 54.10	+16 51.9	1.413	2.381	5.8	20.5	2 1	9 53.22	+12 4.4	1.602	2.566	5.7	20.7
2 11	9 44.41	+17 49.8	1.379	2.364	1.7	20.2	2 11	9 44.26	+12 50.1	1.593	2.579	1.0	20.4
2 21	9 34.13	+18 43.2	1.373	2.348	5.2	20.4	2 21	9 35.13	+13 36.0	1.613	2.593	3.8	20.7
3 2	9 24.68	+19 25.2	1.393	2.331	10.1	20.6	3 2	9 27.00	+14 16.4	1.661	2.606	8.2	21.0
3 12	9 17.35	+19 51.4	1.437	2.315	14.7	20.8	3 12	9 20.80	+14 47.2	1.733	2.619	12.1	21.2
3 22	9 12.93	+20 0.5	1.501	2.299	18.5	21.0	3 22	9 17.08	+15 6.3	1.828	2.632	15.4	21.5
365225	2009 <i>HC</i> ₉₀		2 12.8 298°44	0°4/12.6	16		167593	2004 <i>BJ</i> ₁₀₇		2 12.8 348°47	3°4/ 9.5	18	
1 12	10 5.76	+12 13.4	1.503	2.355	15.0	21.3	1 12	10 3.64	+21 3.6	2.124	2.980	11.1	19.7
1 22	10 0.97	+12 50.0	1.419	2.340	10.9	21.0	1 22	9 58.77	+22 15.6	2.056	2.979	7.9	19.5
2 1	9 53.55	+13 40.5	1.358	2.324	6.1	20.7	2 1	9 52.01	+23 30.5	2.015	2.979	4.9	19.3
2 11	9 44.32	+14 38.7	1.323	2.309	0.9	20.3	2 11	9 44.08	+24 41.3	2.002	2.978	3.5	19.2
2 21	9 34.52	+15 37.0	1.315	2.294	4.6	20.5	2 21	9 35.88	+25 41.5	2.019	2.978	5.7	19.3
3 2	9 25.54	+16 27.7	1.334	2.279	9.8	20.8	3 2	9 28.39	+26 26.2	2.064	2.977	8.9	19.5
3 12	9 18.67	+17 5.4	1.377	2.265	14.5	21.0	3 12	9 22.48	+26 53.4	2.133	2.977	12.0	19.7
3 22	9 14.71	+17 27.3	1.439	2.250	18.5	21.2	3 22	9 18.70	+27 3.3	2.224	2.977	14.6	19.9
158091	2000 <i>WH</i> ₅₆		2 12.8 100°53	4°6/15.8	18		298783	2004 <i>PD</i> ₄₅		2 12.9 149°87	1°8/11.6	18	
1 12	10 15.18	+ 1 5.2	1.943	2.727	14.8	19.1	1 12	10 10.94	+16 29.2	1.794	2.638	13.3	21.5
1 22	10 6.72	+ 0 29.0	1.887	2.759	11.5	19.0	1 22	10 4.13	+17 11.6	1.729	2.647	9.5	21.3
2 1	9 56.26	+ 0 9.1	1.856	2.790	7.9	18.8	2 1	9 55.04	+18 0.0	1.690	2.656	5.3	21.1
2 11	9 44.70	+ 0 4.7	1.853	2.819	5.0	18.7	2 11	9 44.57	+18 48.0	1.679	2.664	1.8	20.9
2 21	9 33.16	+ 0 13.4	1.881	2.848	5.1	18.8	2 21	9 33.89	+19 29.0	1.698	2.671	4.8	21.1
3 2	9 22.72	+ 0 31.4	1.939	2.876	7.8	19.0	3 2	9 24.22	+19 58.3	1.745	2.677	8.9	21.4
3 12	9 14.26	+ 0 53.7	2.024	2.903	11.0	19.2	3 12	9 16.59	+20 13.6	1.818	2.683	12.7	21.6
3 22	9 8.26	+ 1 16.0	2.133	2.929	13.8	19.5	3 22	9 11.57	+20 14.7	1.912	2.688	15.8	21.8
204986	1995 <i>UB</i> ₂₂		2 12.8 257°04	1°2/11.8	17		299345	2005 <i>SE</i> ₁₅₃		2 12.9 135°28	3°8/ 8.9	18	
1 12	10 4.20	+15 57.0	2.493	3.333	10.2	21.3	1 12	10 4.92	+26 6.6	2.725	3.573	9.2	21.1
1 22	9 58.94	+16 29.1	2.404	3.321	7.3	21.0	1 22	9 59.30	+26 52.7	2.663	3.578	6.7	20.9
2 1	9 52.02	+17 6.3	2.342	3.308	4.0	20.8	2 1	9 52.14	+27 36.5	2.628	3.583	4.5	20.8
2 11	9 44.06	+17 44.7	2.310	3.295	1.2	20.6	2 11	9 44.11	+28 12.9	2.622	3.587	3.8	20.7
2 21	9 35.80	+18 19.7	2.308	3.282	3.6	20.7	2 21	9 35.93	+28 38.1	2.646	3.592	5.4	20.8
3 2	9 28.08	+18 47.8	2.335	3.268	6.9	20.9	3 2	9 28.41	+28 49.6	2.699	3.596	7.7	21.0
3 12	9 21.66	+19 6.4	2.390	3.255	10.1	21.1	3 12	9 22.22	+28 47.1	2.778	3.601	10.1	21.2
3 22	9 17.05	+19 14.4	2.467	3.241	12.7	21.3	3 22	9 17.82	+28 31.5	2.878	3.605	12.2	21.3
165421	2000 <i>YL</i> ₅₃		2 12.8 29°27	4°7/15.2	18		69610	1998 <i>FD</i> ₄₃		2 12.9 294°83	1°5/13.8	18	
1 12	10 9.53	+ 4 13.3	1.350	2.180	17.7	18.9	1 12	10 5.64	+ 8 0.0	1.500	2.342	15.6	19.3
1 22	10 3.60	+ 3 27.3	1.285	2.186	13.6	18.6	1 22	10 0.89	+ 8 21.8	1.414	2.327	11.6	19.0
2 1	9 54.91	+ 2 59.4	1.242	2.192	9.1	18.4	2 1	9 53.53	+ 9 1.0	1.351	2.312	7.0	18.7
2 11	9 44.53	+ 2 49.2	1.223	2.199	5.2	18.2	2 11	9 44.38	+ 9 53.5	1.313	2.298	2.1	18.3
2 21	9 33.84	+ 2 53.8	1.231	2.206	5.7	18.2	2 21	9 34.64	+10 52.7	1.302	2.283	4.2	18.4
3 2	9 24.35	+ 3 8.6	1.264	2.214	9.7	18.5	3 2	9 25.70	+11 51.0	1.318	2.269	9.3	18.7
3 12	9 17.28	+ 3 27.4	1.321	2.222	14.1	18.7	3 12	9 18.83	+12 41.3	1.359	2.255	14.1	18.9
3 22	9 13.30	+ 3 44.8	1.398	2.231	17.8	19.0	3 22	9 14.83	+13 19.2	1.419	2.241	18.2	19.2
425027	2009 <i>FN</i> ₇₁		2 12.8 279°50	5°2/ 6.9	17		369577	2011 <i>BV</i> ₈₉		2 12.9 102°84	0°3/12.6	18	
1 12	10 4.30	+28 43.3	2.462	3.314	9.9	20.9	1 12	10 4.82	+11 33.1	1.903	2.744	12.8	21.1
1 22	9 59.22	+30 2.8	2.384	3.297	7.5	20.7	1 22	9 59.66	+12 21.6	1.834	2.750	9.2	20.9
2 1	9 52.28	+31 20.0	2.332	3.279	5.6	20.6	2 1	9 52.53	+13 21.2	1.791	2.756	5.1	20.7
2 11	9 44.11	+32 28.1	2.310	3.262	5.4	20.5	2 11	9 44.19	+14 26.1	1.776	2.762	0.8	20.4
2 21	9 35.57	+33 21.1	2.317	3.244	7.2	20.6	2 21	9 35.61	+15 29.9	1.790	2.768	3.7	20.6
3 2	9 27.59	+33 55.0	2.350	3.227	9.6	20.7	3 2	9 27.83	+16 26.5	1.833	2.774	7.9	20.9
3 12	9 21.06	+34 8.9	2.408	3.209	12.2	20.9	3 12	9 21.75	+17 11.6	1.901	2.780	11.6	21.1
3 22	9 16.58	+34 4.0	2.486	3.191	14.4	21.0	3 22	9 17.92	+17 43.0	1.992	2.786	14.7	21.3
372522	2009 <i>SF</i> ₃₄₂		2 12.8 93°63	2°7/15.0	18		111120	2001 <i>VV</i> ₈₈		2 12.9 143°62	2°1/10.8	18	
1 12	10 4.86	+ 4 2.9	1.905	2.721	13.8	21.4	1 12	10 5.36	+15 45.7	2.044	2.890	11.8	19.3
1 22	9 59.64	+ 4 17.5	1.833	2.729	10.5	21.2	1 22	10 0.00	+17 10.3	1.978	2.898	8.4	19.1
2 1	9 52.47	+ 4 48.4	1.786	2.736	6.7	20.9	2 1	9 52.71	+18 42.8	1.938	2.904	4.6	18.9
2 11	9 44.13	+ 5 32.5	1.765	2.744	3.3	20.7	2 11	9 44.22	+20 15.6	1.928	2.911	2.1	18.7
2 21	9 35.57	+ 6 25.1	1.773	2.751	3.8	20.8	2 21	9 35.47	+21 41.2	1.948	2.917	4.8	18.9
3 2	9 27.79	+ 7 20.3	1.810	2.759	7.4	21.0	3 2	9 27.46	+22 53.2	1.998	2.923	8.5	19.1
3 12	9 21.67	+ 8 12.5	1.873	2.766	11.0	21.3	3 12	9 21.07	+23 47.9	2.073	2.928	11.8	19.3
3 22	9 17.76	+ 8 57.3	1.959	2.773	14.2	21.5	3 22	9 16.88	+24 24.5	2.171	2.933	14.6	19.5
241715	2000 <i>TP</i> ₆₃		2 12.8 94°23	3°6/15.6	18		483165	2015 <i>PR</i> ₃₄		2 12.9 289°98	15°7/19.2	18	
1 12	10 7.59	+ 2 18.1	2.014	2.									

EPHEMERIDES

2 12.9

2 12.9

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
337362	2001 <i>PS</i> ₃₁		2 12.9 109°45'	5°9/18.5	18		405021	2001 <i>QN</i> ₄₈		2 12.9 102°56'	0°3/12.6	18	
1 12	10 6.20	- 7 27.9	2.652	3.389	12.5	20.9	1 12	10 9.75	+12 50.4	2.105	2.936	12.1	21.4
1 22	10 0.12	- 8 4.8	2.580	3.407	10.3	20.8	1 22	10 2.83	+13 18.7	2.053	2.963	8.7	21.2
2 1	9 52.59	- 8 24.7	2.532	3.424	8.1	20.7	2 1	9 54.13	+13 54.2	2.027	2.990	4.8	21.0
2 11	9 44.19	- 8 26.9	2.511	3.441	6.4	20.6	2 11	9 44.45	+14 32.1	2.030	3.016	0.7	20.8
2 21	9 35.65	- 8 12.9	2.518	3.458	6.0	20.6	2 21	9 34.77	+15 7.8	2.064	3.041	3.4	21.0
3 2	9 27.70	- 7 45.5	2.555	3.474	7.1	20.7	3 2	9 26.02	+15 37.1	2.127	3.066	7.2	21.3
3 12	9 21.01	- 7 9.2	2.619	3.490	9.1	20.8	3 12	9 19.00	+15 57.7	2.218	3.090	10.5	21.5
3 22	9 16.02	- 6 28.5	2.707	3.505	11.1	21.0	3 22	9 14.15	+16 8.4	2.332	3.113	13.2	21.8
23956	1998 <i>VD</i> ₉		2 12.9 149°00'	6°3/19.5	18		379381	2009 <i>XN</i> ₁₀		2 12.9 253°40'	3°1/15.3	17	
1 12	10 3.09	- 9 27.5	2.457	3.192	13.4	18.3	1 12	10 5.06	+ 3 24.7	2.089	2.898	13.1	20.9
1 22	9 58.09	- 9 32.1	2.373	3.198	11.2	18.2	1 22	9 59.81	+ 3 24.8	1.999	2.889	10.0	20.7
2 1	9 51.54	- 9 15.7	2.313	3.204	8.9	18.0	2 1	9 52.65	+ 3 40.0	1.932	2.879	6.6	20.4
2 11	9 44.05	- 8 38.4	2.278	3.209	6.9	17.9	2 11	9 44.25	+ 4 8.3	1.893	2.869	3.6	20.2
2 21	9 36.33	- 7 42.4	2.271	3.214	6.3	17.9	2 21	9 35.49	+ 4 46.5	1.883	2.859	3.9	20.2
3 2	9 29.16	- 6 32.2	2.292	3.219	7.4	18.0	3 2	9 27.32	+ 5 29.8	1.902	2.849	7.2	20.4
3 12	9 23.27	- 5 14.0	2.341	3.223	9.6	18.1	3 12	9 20.64	+ 6 13.2	1.948	2.839	10.7	20.6
3 22	9 19.12	- 3 54.0	2.415	3.227	11.9	18.3	3 22	9 16.04	+ 6 52.2	2.017	2.829	13.9	20.8
260196	2004 <i>RS</i> ₁₅₉		2 12.9 210°89'	1°2/13.8	17		15148	Michaelmaryott		2 12.9 162°70'	2°7/11.2	18	
1 12	10 7.93	+ 9 25.8	2.196	3.019	12.0	20.5	1 12	10 12.16	+18 38.6	1.638	2.488	14.1	19.5
1 22	10 1.72	+ 9 24.4	2.111	3.015	8.9	20.3	1 22	10 5.26	+19 17.8	1.572	2.492	10.1	19.2
2 1	9 53.64	+ 9 32.1	2.052	3.010	5.3	20.1	2 1	9 55.79	+20 1.4	1.531	2.496	5.7	19.0
2 11	9 44.39	+ 9 46.5	2.021	3.005	1.7	19.8	2 11	9 44.75	+20 42.0	1.517	2.500	2.7	18.8
2 21	9 34.84	+10 4.0	2.020	3.000	3.2	19.9	2 21	9 33.44	+21 12.9	1.532	2.503	5.6	19.0
3 2	9 25.96	+10 21.3	2.050	2.994	7.0	20.2	3 2	9 23.26	+21 29.4	1.575	2.505	9.9	19.2
3 12	9 18.60	+10 35.0	2.106	2.988	10.5	20.4	3 12	9 15.34	+21 30.1	1.642	2.507	13.9	19.5
3 22	9 13.34	+10 43.1	2.186	2.981	13.5	20.6	3 22	9 10.32	+21 15.8	1.730	2.508	17.2	19.7
110879	2001 <i>UL</i> ₉₉		2 12.9 94°97'	0°4/12.6	18		105973	2000 <i>SE</i> ₂₆₄		2 12.9 345°44'	3°1/15.9	18	
1 12	10 6.63	+12 18.9	1.830	2.671	13.2	21.0	1 12	10 0.73	+ 1 27.7	2.116	2.923	13.0	19.0
1 22	10 0.96	+12 58.4	1.768	2.684	9.5	20.8	1 22	9 56.64	+ 1 54.9	2.032	2.920	10.0	18.8
2 1	9 53.24	+13 47.7	1.732	2.697	5.2	20.6	2 1	9 50.84	+ 2 40.0	1.971	2.916	6.7	18.6
2 11	9 44.31	+14 41.2	1.724	2.710	0.8	20.3	2 11	9 43.96	+ 3 40.4	1.938	2.913	3.7	18.4
2 21	9 35.23	+15 32.7	1.744	2.722	3.8	20.5	2 21	9 36.80	+ 4 51.3	1.934	2.911	3.7	18.4
3 2	9 27.06	+16 16.8	1.793	2.735	8.0	20.8	3 2	9 30.23	+ 6 6.7	1.959	2.908	6.8	18.6
3 12	9 20.71	+16 49.7	1.868	2.747	11.8	21.1	3 12	9 25.04	+ 7 20.3	2.010	2.906	10.2	18.8
3 22	9 16.73	+17 9.9	1.965	2.759	14.9	21.3	3 22	9 21.77	+ 8 26.8	2.085	2.905	13.2	19.0
221960	1995 <i>SZ</i> ₉		2 12.9 124°03'	0°6/12.3	18		310428	1999 <i>WV</i> ₁₈		2 12.9 101°27'	1°9/11.5	18	
1 12	10 6.47	+13 39.8	2.036	2.876	12.1	21.1	1 12	10 9.34	+16 14.9	1.714	2.562	13.6	21.3
1 22	10 0.72	+14 12.5	1.968	2.884	8.7	20.9	1 22	10 2.98	+17 4.3	1.660	2.580	9.7	21.1
2 1	9 53.07	+14 52.9	1.926	2.891	4.8	20.6	2 1	9 54.39	+18 0.0	1.631	2.597	5.3	20.9
2 11	9 44.29	+15 36.1	1.912	2.899	0.9	20.4	2 11	9 44.51	+18 55.0	1.630	2.614	1.9	20.7
2 21	9 35.32	+16 16.7	1.929	2.906	3.7	20.6	2 21	9 34.53	+19 42.4	1.658	2.631	4.8	20.9
3 2	9 27.15	+16 50.3	1.974	2.913	7.6	20.8	3 2	9 25.63	+20 17.3	1.714	2.647	9.0	21.2
3 12	9 20.64	+17 13.8	2.045	2.919	11.1	21.1	3 12	9 18.80	+20 37.2	1.795	2.662	12.7	21.4
3 22	9 16.31	+17 26.0	2.139	2.926	14.0	21.3	3 22	9 14.57	+20 42.1	1.896	2.678	15.8	21.7
120831	1998 <i>HN</i> ₁₃₀		2 12.9 4°99'	7°4/ 8.4	18		202898	1995 <i>FK</i> ₁₄		2 12.9 233°97'	0°3/12.6	17	
1 12	10 11.37	+30 57.1	1.523	2.384	14.4	19.4	1 12	10 3.64	+12 10.9	2.189	3.027	11.5	20.2
1 22	10 4.96	+31 45.0	1.468	2.384	11.0	19.2	1 22	9 58.68	+12 50.7	2.110	3.025	8.3	20.0
2 1	9 55.68	+32 24.0	1.436	2.384	8.2	19.0	2 1	9 51.96	+13 39.8	2.058	3.023	4.6	19.8
2 11	9 44.71	+32 44.5	1.429	2.385	7.5	19.0	2 11	9 44.14	+14 33.3	2.034	3.020	0.7	19.5
2 21	9 33.59	+32 40.2	1.448	2.387	9.6	19.1	2 21	9 36.06	+15 26.2	2.040	3.018	3.4	19.7
3 2	9 23.88	+32 9.4	1.492	2.389	12.8	19.3	3 2	9 28.62	+16 13.5	2.075	3.016	7.2	19.9
3 12	9 16.79	+31 15.3	1.558	2.392	16.1	19.5	3 12	9 22.61	+16 51.3	2.137	3.013	10.6	20.1
3 22	9 12.93	+30 2.9	1.643	2.396	18.9	19.7	3 22	9 18.60	+17 17.7	2.222	3.011	13.5	20.3
377138	2003 <i>NU</i> ₂		2 12.9 208°55'	2°4/15.1	17		30114	2000 <i>FY</i> ₂₆		2 12.9 13°66'	0°0/12.9	18	
1 12	10 5.41	+ 4 13.5	2.503	3.305	11.4	21.3	1 12	10 5.76	+10 44.0	1.196	2.058	17.4	18.8
1 22	9 59.76	+ 4 18.7	2.411	3.299	8.6	21.1	1 22	10 1.26	+11 25.4	1.134	2.059	12.6	18.5
2 1	9 52.50	+ 4 36.0	2.346	3.293	5.6	20.9	2 1	9 53.80	+12 24.6	1.093	2.061	7.1	18.2
2 11	9 44.21	+ 5 3.7	2.309	3.286	2.9	20.7	2 11	9 44.46	+13 33.9	1.077	2.063	1.1	17.8
2 21	9 35.64	+ 5 38.6	2.302	3.278	3.3	20.7	2 21	9 34.73	+14 43.6	1.086	2.066	4.9	18.1
3 2	9 27.59	+ 6 16.9	2.326	3.270	6.2	20.9	3 2	9 26.23	+15 44.2	1.120	2.070	10.6	18.4
3 12	9 20.80	+ 6 54.5	2.378	3.262	9.3	21.1	3 12	9 20.31	+16 29.0	1.176	2.074	15.6	18.7
3 22	9 15.79	+ 7 28.1	2.454	3.253	12.1	21.2	3 22	9 17.66	+16 55.5	1.251	2.079	19.8	19.0
221247	2005 <i>UT</i> ₂₄₅		2 12.9 75°61'	7°9/ 6.4	18		408459	2013 <i>HR</i> ₅₂		2 12.9 69°52'	0°6/12.5	18	
1 12	10 10.49	+32 43.2	1.770	2.624	13.0	19.9	1 12	10 10.54	+14 13.8	1.464	2.314	15.4	21.0
1 22	10 3.96	+34 18.4	1.737	2.645	10.2	19.8	1 22	10 4.15	+14 27.0	1.406	2.326	11.1	20.8
2 1	9 54.96	+35 43.0	1.730	2.666	8.2	19.7	2 1	9 55.16	+14 48.8	1.371	2.337	6.1	20.5
2 11	9 44.58	+36 47.3	1.750	2.688	8.1	19.7	2 11	9 44.65	+15 13.5	1.363	2.349	1.0	20.2
2 21	9 34.18	+37 25.0	1.796	2.709	9.9	19.9	2 21	9 34.00	+15 35.0	1.382	2.361	4.5	20.5
3 2	9 25.08	+37 34.3	1.867	2.730	12.4	20.1	3 2	9 24.60	+15 48.8	1.429	2.372	9.4	20.8
3 12	9 18.31	+37 17.6	1.960	2.751	14.9	20.3	3 12	9 17.57	+15 52.0	1.499	2.384	13.7	21.1
3 22	9 14.39	+36 39.9	2.070	2.771	17.0	20.5	3 22	9 13.49	+15 44.0	1.590	2.396	17.3	21.3
8708	1994 <i>DD</i>		2 12.9 13°23'	0°3/12.7	18		292776	2006 <i>UM</i> ₂₁₁		2 12.9 173°94'	1°4/11.3	17	
1 12	10 3.64	+11 43.5	1.409	2.267	15.4								

EPHEMERIDES

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2 12.9

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
225640	2001 <i>FP</i> ₈₄		2 12.9 78°33'	1.3°/11.8	18		361628	2007 <i>TO</i> ₁₅₇		2 12.9 232°35'	5.1°/16.8	17	
1 12	10 5.74	+15 35.9	1.972	2.819	12.2	20.4	1 12	10 6.69	- 2 23.1	1.921	2.706	14.9	21.6
1 22	10 0.27	+16 13.3	1.906	2.826	8.7	20.1	1 22	10 1.21	- 2 21.3	1.825	2.693	12.0	21.4
2 1	9 52.86	+16 57.0	1.866	2.833	4.8	19.9	2 1	9 53.56	- 1 57.9	1.751	2.681	8.6	21.1
2 11	9 44.29	+17 41.5	1.854	2.840	1.4	19.7	2 11	9 44.45	- 1 13.4	1.704	2.667	5.8	20.9
2 21	9 35.53	+18 21.4	1.872	2.847	4.1	19.9	2 21	9 34.83	- 0 11.3	1.685	2.653	5.5	20.9
3 2	9 27.60	+18 52.3	1.918	2.854	8.0	20.2	3 2	9 25.81	+ 1 2.4	1.695	2.639	8.2	21.0
3 12	9 21.37	+19 11.3	1.989	2.861	11.5	20.4	3 12	9 18.40	+ 2 20.2	1.731	2.623	11.8	21.2
3 22	9 17.37	+19 17.7	2.083	2.868	14.4	20.6	3 22	9 13.32	+ 3 35.0	1.791	2.607	15.2	21.4
125261	2001 <i>UG</i> ₂₂₀		2 12.9 318°27'	2.8°/11.3	18		291950	2006 <i>QM</i> ₄₁		2 12.9 179°16'	3.1°/15.4	18	
1 12	10 9.36	+18 12.1	1.336	2.200	15.7	20.0	1 12	10 6.85	+ 2 30.2	2.140	2.940	13.1	22.3
1 22	10 3.79	+18 49.3	1.267	2.194	11.4	19.7	1 22	10 0.99	+ 2 43.0	2.057	2.942	10.0	22.1
2 1	9 55.22	+19 33.1	1.220	2.188	6.4	19.4	2 1	9 53.27	+ 3 11.8	1.999	2.944	6.6	21.8
2 11	9 44.70	+20 15.2	1.199	2.183	2.8	19.2	2 11	9 44.38	+ 3 54.2	1.969	2.944	3.6	21.7
2 21	9 33.74	+20 47.5	1.205	2.178	6.2	19.4	2 21	9 35.21	+ 4 46.1	1.968	2.944	3.8	21.7
3 2	9 23.96	+21 3.8	1.235	2.173	11.3	19.6	3 2	9 26.69	+ 5 42.4	1.998	2.943	7.0	21.9
3 12	9 16.76	+21 2.0	1.289	2.168	15.9	19.9	3 12	9 19.68	+ 6 37.5	2.054	2.942	10.4	22.1
3 22	9 12.87	+20 43.0	1.361	2.164	19.8	20.1	3 22	9 14.76	+ 7 26.9	2.135	2.940	13.5	22.3
320676	2008 <i>CL</i> ₁₉₄		2 12.9 275°87'	0.3°/13.1	18		125293	2001 <i>VV</i> ₂₅		2 12.9 193°76'	0.9°/12.1	18	
1 12	10 4.59	+ 9 33.1	1.818	2.656	13.4	20.9	1 12	10 6.87	+14 22.7	2.071	2.911	11.9	20.4
1 22	9 59.82	+10 21.9	1.725	2.638	9.9	20.6	1 22	10 1.09	+14 58.8	1.994	2.910	8.6	20.2
2 1	9 52.83	+11 26.1	1.657	2.621	5.7	20.3	2 1	9 53.36	+15 42.5	1.943	2.908	4.7	20.0
2 11	9 44.32	+12 40.4	1.617	2.603	1.1	20.0	2 11	9 44.40	+16 28.4	1.921	2.906	1.0	19.7
2 21	9 35.29	+13 57.9	1.605	2.585	3.8	20.4	2 21	9 35.17	+17 11.4	1.928	2.904	3.8	19.9
3 2	9 26.87	+15 11.0	1.622	2.567	8.4	20.1	3 2	9 26.66	+17 46.7	1.965	2.901	7.8	20.1
3 12	9 20.14	+16 13.4	1.665	2.548	12.7	20.6	3 12	9 19.78	+18 11.1	2.027	2.898	11.3	20.3
3 22	9 15.83	+17 1.4	1.729	2.530	16.3	20.8	3 22	9 15.09	+18 23.6	2.113	2.895	14.3	20.5
236788	2007 <i>PM</i> ₃₅		2 12.9 226°27'	0°/12.9	18		19393	Davidthompson		2 12.9 4°65'	1°/13.6	18	
1 12	10 8.01	+10 49.1	1.803	2.639	13.6	21.8	1 12	10 4.73	+ 7 55.5	1.406	2.253	16.2	18.9
1 22	10 2.24	+11 30.6	1.717	2.630	9.9	21.5	1 22	10 0.22	+ 8 38.6	1.336	2.252	11.9	18.6
2 1	9 54.16	+12 25.2	1.656	2.620	5.6	21.2	2 1	9 53.13	+ 9 41.1	1.289	2.252	7.0	18.3
2 11	9 44.54	+13 27.4	1.623	2.609	0.9	20.9	2 11	9 44.39	+10 56.7	1.268	2.253	1.8	18.0
2 21	9 34.44	+14 30.7	1.619	2.598	3.9	21.1	2 21	9 35.25	+12 16.8	1.273	2.254	4.2	18.2
3 2	9 25.06	+15 28.1	1.644	2.586	8.6	21.3	3 2	9 27.10	+13 32.1	1.304	2.255	9.4	18.5
3 12	9 17.52	+16 14.6	1.695	2.574	12.7	21.6	3 12	9 21.14	+14 35.3	1.360	2.256	14.1	18.7
3 22	9 12.51	+16 47.4	1.767	2.560	16.3	21.8	3 22	9 18.06	+15 22.2	1.435	2.258	18.0	19.0
285784	2000 <i>WW</i> ₂₉		2 12.9 74°93'	1.3°/11.9	18		13798	Cecchini		2 12.9 235°17'	2.2°/10.9	18	
1 12	10 10.05	+14 20.1	1.439	2.292	15.5	20.7	1 12	10 5.83	+18 37.8	2.238	3.085	10.9	19.2
1 22	10 3.71	+15 6.6	1.393	2.315	11.0	20.5	1 22	10 0.28	+19 17.9	2.160	3.079	7.8	19.0
2 1	9 54.86	+16 2.2	1.371	2.338	6.0	20.3	2 1	9 52.88	+20 1.8	2.108	3.073	4.4	18.7
2 11	9 44.61	+16 59.3	1.375	2.361	1.4	20.1	2 11	9 44.33	+20 44.1	2.084	3.067	2.2	18.6
2 21	9 34.34	+17 49.8	1.407	2.383	4.9	20.3	2 21	9 35.50	+21 19.8	2.091	3.060	4.5	18.7
3 2	9 25.40	+18 27.9	1.466	2.406	9.6	20.7	3 2	9 27.34	+21 45.0	2.127	3.053	7.9	18.9
3 12	9 18.86	+18 50.6	1.549	2.428	13.7	21.0	3 12	9 20.70	+21 57.4	2.188	3.046	11.1	19.1
3 22	9 15.21	+18 57.7	1.653	2.450	17.1	21.2	3 22	9 16.12	+21 57.0	2.272	3.039	13.9	19.3
340763	2006 <i>SH</i> ₃₂₃		2 12.9 75°24'	0.1°/12.9	17		290104	2005 <i>QR</i> ₁₁₄		2 12.9 91°90'	1.1°/13.8	18	
1 12	10 2.69	+11 6.7	2.344	3.179	11.0	21.4	1 12	10 6.04	+ 7 47.0	1.871	2.700	13.5	21.0
1 22	9 57.88	+11 41.4	2.268	3.180	7.9	21.2	1 22	10 0.48	+ 8 24.1	1.811	2.718	9.9	20.8
2 1	9 51.47	+12 25.2	2.218	3.181	4.4	21.0	2 1	9 52.97	+ 9 14.9	1.775	2.735	5.8	20.6
2 11	9 44.08	+13 14.0	2.197	3.183	0.8	20.8	2 11	9 44.34	+10 14.4	1.768	2.752	1.7	20.3
2 21	9 36.48	+14 3.2	2.205	3.184	3.0	20.9	2 21	9 35.57	+11 16.7	1.789	2.769	3.4	20.5
3 2	9 29.47	+14 48.3	2.243	3.186	6.6	21.2	3 2	9 27.69	+12 15.4	1.839	2.786	7.5	20.8
3 12	9 23.80	+15 25.6	2.308	3.187	9.8	21.4	3 12	9 21.55	+13 5.8	1.916	2.802	11.1	21.0
3 22	9 19.95	+15 53.1	2.397	3.188	12.6	21.6	3 22	9 17.66	+13 44.9	2.015	2.818	14.2	21.3
226811	2004 <i>RB</i> ₂₂₅		2 12.9 106°68'	1.4°/11.7	18		410289	2007 <i>TJ</i> ₂₂₇		2 12.9 334°37'	4.5°/10.2	18	
1 12	10 7.57	+16 14.0	2.038	2.881	12.0	21.0	1 12	10 9.16	+22 10.6	1.397	2.264	15.0	20.7
1 22	10 1.48	+16 47.7	1.977	2.894	8.5	20.8	1 22	10 3.58	+22 58.8	1.331	2.258	10.9	20.5
2 1	9 53.49	+17 26.4	1.941	2.907	4.7	20.6	2 1	9 55.07	+23 49.1	1.289	2.254	6.7	20.2
2 11	9 44.40	+18 5.0	1.935	2.920	1.5	20.4	2 11	9 44.71	+24 32.0	1.272	2.249	4.5	20.1
2 21	9 35.18	+18 38.4	1.958	2.932	4.1	20.6	2 21	9 33.96	+24 59.3	1.281	2.245	7.4	20.2
3 2	9 26.84	+19 2.5	2.010	2.944	7.8	20.8	3 2	9 24.42	+25 6.1	1.315	2.241	11.8	20.5
3 12	9 20.22	+19 15.4	2.089	2.956	11.2	21.0	3 12	9 17.42	+24 51.6	1.372	2.238	16.0	20.7
3 22	9 15.81	+19 16.5	2.189	2.968	14.0	21.3	3 22	9 13.65	+24 18.4	1.447	2.235	19.5	20.9
28144	1998 <i>TN</i> ₁₃		2 12.9 177°29'	1.5°/13.9	18		119373	2001 <i>SS</i> ₃₀₈		2 12.9 357°52'	4.1°/16.3	18	
1 12	10 9.01	+ 7 19.3	1.772	2.597	14.3	20.4	1 12	10 1.48	- 0 48.2	1.506	2.323	16.8	19.0
1 22	10 2.86	+ 7 46.2	1.695	2.600	10.6	20.2	1 22	9 57.76	- 0 3.2	1.430	2.321	13.1	18.8
2 1	9 54.43	+ 8 28.3	1.643	2.601	6.4	19.9	2 1	9 51.71	+ 1 10.2	1.374	2.320	8.9	18.5
2 11	9 44.57	+ 9 21.4	1.618	2.602	2.1	19.7	2 11	9 44.17	+ 2 48.3	1.344	2.319	5.0	18.3
2 21	9 34.37	+10 19.3	1.623	2.603	3.7	19.8	2 21	9 36.23	+ 4 43.0	1.341	2.318	4.8	18.3
3 2	9 25.01	+11 15.6	1.656	2.602	8.2	20.0	3 2	9 29.11	+ 6 43.4	1.365	2.319	8.6	18.5
3 12	9 17.55	+12 4.8	1.715	2.601	12.2	20.3	3 12	9 23.93	+ 8 38.4	1.414	2.320	13.0	18.7
3 22	9 12.62	+12 43.2	1.797	2.599	15.7	20.5	3 22	9 21.34	+10 19.3	1.485	2.321	16.8	19.0
471449	2011 <i>UX</i> ₁₅₃		2 12.9 214°70'	7.4°/22.2	17		136797	1997 <i>CF</i> ₁		2 12.9 34°51'	3.5°/10.5	18	
1 12	10 2.99	-19 2.9	3.442	4.083									

EPHEMERIDES

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
110083	2001 <i>SV</i> ₁₁₅		2 12.9 250°70	9°4/ 4.3 17			389153	2009 <i>BR</i> ₃₇		2 12.9 62°50	1°1/11.9 18		
1 12	10 21.80	+43 29.1	2.335	3.141	12.0	20.7	1 12	10 5.01	+14 47.9	2.029	2.874	11.9	21.5
1 22	10 12.28	+44 34.3	2.258	3.117	10.4	20.6	1 22	9 59.63	+15 28.3	1.974	2.893	8.5	21.3
2 1	9 59.82	+45 23.9	2.207	3.093	9.5	20.5	2 1	9 52.47	+16 15.2	1.946	2.912	4.6	21.1
2 11	9 45.48	+45 48.6	2.183	3.068	9.7	20.5	2 11	9 44.29	+17 3.1	1.945	2.931	1.2	20.8
2 21	9 30.72	+45 42.7	2.186	3.042	11.0	20.5	2 21	9 36.03	+17 46.7	1.975	2.950	3.8	21.1
3 2	9 17.15	+45 5.0	2.215	3.015	13.0	20.6	3 2	9 28.63	+18 21.7	2.032	2.969	7.5	21.3
3 12	9 6.08	+43 59.4	2.266	2.988	15.1	20.7	3 12	9 22.86	+18 45.4	2.116	2.989	10.9	21.6
3 22	8 58.25	+42 32.2	2.335	2.959	17.0	20.8	3 22	9 19.19	+18 56.9	2.222	3.008	13.6	21.8
317844	2003 <i>SU</i> ₄₂₆		2 12.9 72°88	0°3/12.6 17			147223	2002 <i>XB</i> ₂₉		2 12.9 163°09	1°1/11.9 18		
1 12	10 5.51	+12 50.5	1.974	2.816	12.4	21.1	1 12	10 7.43	+14 31.2	2.060	2.899	12.0	20.2
1 22	10 0.13	+13 17.9	1.905	2.821	8.9	20.9	1 22	10 1.48	+15 14.4	1.988	2.904	8.6	20.0
2 1	9 52.81	+13 53.8	1.861	2.826	5.0	20.6	2 1	9 53.58	+16 5.0	1.943	2.908	4.7	19.8
2 11	9 44.33	+14 33.5	1.845	2.831	0.8	20.3	2 11	9 44.49	+16 57.5	1.926	2.912	1.2	19.5
2 21	9 35.65	+15 12.0	1.858	2.836	3.6	20.5	2 21	9 35.15	+17 46.2	1.940	2.915	3.9	19.7
3 2	9 27.75	+15 44.6	1.899	2.841	7.6	20.8	3 2	9 26.59	+18 26.3	1.983	2.918	7.8	20.0
3 12	9 21.52	+16 8.0	1.967	2.846	11.2	21.0	3 12	9 19.69	+18 54.6	2.052	2.920	11.3	20.2
3 22	9 17.49	+16 20.5	2.057	2.852	14.3	21.2	3 22	9 15.00	+19 10.2	2.143	2.922	14.3	20.4
16658	1993 <i>UD</i> ₁		2 12.9 196°63	3°2/10.3 18			239918	2000 <i>TC</i> ₄₀		2 12.9 159°74	4°2/ 7.9 18		
1 12	10 9.78	+19 54.7	1.886	2.736	12.5	19.8	1 12	10 6.74	+30 1.3	3.174	4.013	8.3	21.4
1 22	10 3.44	+20 57.2	1.813	2.733	9.0	19.6	1 22	10 0.48	+30 49.3	3.115	4.020	6.3	21.3
2 1	9 54.79	+22 4.0	1.766	2.730	5.3	19.4	2 1	9 52.82	+31 32.8	3.083	4.027	4.6	21.2
2 11	9 44.67	+23 7.1	1.747	2.726	3.3	19.2	2 11	9 44.35	+32 7.1	3.082	4.033	4.3	21.2
2 21	9 34.19	+23 59.5	1.758	2.722	5.8	19.4	2 21	9 35.77	+32 29.0	3.111	4.038	5.6	21.2
3 2	9 24.57	+24 35.9	1.797	2.717	9.6	19.6	3 2	9 27.79	+32 36.7	3.169	4.043	7.5	21.4
3 12	9 16.86	+24 54.3	1.861	2.711	13.2	19.8	3 12	9 21.05	+32 30.1	3.253	4.048	9.4	21.5
3 22	9 11.72	+24 55.2	1.946	2.705	16.2	20.0	3 22	9 15.96	+32 10.6	3.359	4.052	11.1	21.7
165758	2001 <i>QR</i> ₂₁₇		2 12.9 97°99	2°3/10.9 18			325017	2008 <i>CO</i> ₁₇		2 12.9 260°81	2°5/15.1 18		
1 12	10 7.05	+20 1.2	2.292	3.138	10.7	20.0	1 12	10 3.69	+ 2 45.5	1.822	2.638	14.4	20.9
1 22	10 0.99	+20 28.3	2.229	3.147	7.7	19.8	1 22	9 59.12	+ 3 35.8	1.732	2.628	11.0	20.7
2 1	9 53.19	+20 56.9	2.192	3.156	4.4	19.6	2 1	9 52.43	+ 4 47.8	1.666	2.618	7.0	20.4
2 11	9 44.40	+21 22.1	2.184	3.165	2.3	19.5	2 11	9 44.33	+ 6 17.6	1.627	2.607	3.2	20.2
2 21	9 35.49	+21 39.8	2.207	3.174	4.4	19.6	2 21	9 35.76	+ 7 58.1	1.617	2.597	3.8	20.2
3 2	9 27.37	+21 47.3	2.258	3.183	7.6	19.8	3 2	9 27.83	+ 9 40.8	1.636	2.586	7.9	20.4
3 12	9 20.82	+21 43.4	2.336	3.192	10.6	20.0	3 12	9 21.55	+11 17.0	1.681	2.575	12.0	20.6
3 22	9 16.29	+21 28.6	2.436	3.201	13.1	20.2	3 22	9 17.59	+12 40.7	1.750	2.564	15.6	20.8
407264	2010 <i>BM</i> ₆₁		2 12.9 231°32	10°5/21.2 17			354951	2006 <i>FA</i> ₁		2 12.9 345°67	3°7/10.7 18		
1 12	10 7.95	-17 32.9	2.141	2.822	16.6	21.8	1 12	10 10.68	+20 39.4	1.423	2.285	15.1	20.9
1 22	10 2.11	-18 23.0	2.039	2.807	14.8	21.6	1 22	10 4.58	+21 19.9	1.359	2.284	10.9	20.6
2 1	9 54.11	-18 46.6	1.956	2.792	12.8	21.4	2 1	9 55.61	+22 3.4	1.318	2.284	6.4	20.4
2 11	9 44.60	-18 39.8	1.896	2.775	11.2	21.3	2 11	9 44.84	+22 41.4	1.302	2.283	3.7	20.2
2 21	9 34.48	-18 1.7	1.861	2.758	10.5	21.2	2 21	9 33.73	+23 6.2	1.314	2.282	6.7	20.4
3 2	9 24.85	-16 55.0	1.851	2.740	11.2	21.2	3 2	9 23.87	+23 13.1	1.352	2.282	11.2	20.6
3 12	9 16.74	-15 26.7	1.867	2.721	12.9	21.3	3 12	9 16.52	+23 1.2	1.412	2.281	15.4	20.9
3 22	9 10.88	-13 45.7	1.905	2.701	15.2	21.4	3 22	9 12.38	+22 32.4	1.492	2.281	19.0	21.1
383790	2007 <i>WX</i> ₁₈		2 12.9 268°25	4°2/ 8.7 17			332547	2008 <i>QV</i> ₃₀		2 12.9 150°78	3°7/16.7 18		
1 12	10 4.45	+24 33.5	2.288	3.142	10.4	20.8	1 12	10 3.77	- 1 26.8	2.444	3.225	12.2	21.2
1 22	9 59.32	+25 41.7	2.220	3.140	7.6	20.7	1 22	9 58.59	- 1 5.7	2.364	3.233	9.6	21.0
2 1	9 52.36	+26 49.7	2.180	3.138	5.0	20.5	2 1	9 51.87	- 0 27.5	2.308	3.240	6.7	20.9
2 11	9 44.28	+27 50.7	2.168	3.136	4.3	20.4	2 11	9 44.21	+ 0 25.8	2.283	3.247	4.2	20.7
2 21	9 35.95	+28 39.0	2.186	3.134	6.2	20.6	2 21	9 36.36	+ 1 30.3	2.281	3.253	4.0	20.7
3 2	9 28.30	+29 10.8	2.231	3.132	9.0	20.7	3 2	9 29.07	+ 2 40.9	2.315	3.259	6.3	20.9
3 12	9 22.18	+29 24.8	2.301	3.130	11.7	20.9	3 12	9 23.06	+ 3 52.1	2.375	3.264	9.1	21.1
3 22	9 18.11	+29 21.9	2.392	3.128	14.1	21.1	3 22	9 18.79	+ 4 59.0	2.461	3.269	11.8	21.2
357368	2003 <i>SC</i> ₁₆₇		2 12.9 191°66	2°0/11.3 18			184484	2005 <i>OQ</i> ₁₅		2 12.9 145°71	3°5/16.1 18		
1 12	10 10.99	+18 13.0	2.152	2.991	11.6	21.5	1 12	10 4.60	+ 0 5.5	2.019	2.816	13.9	20.9
1 22	10 4.02	+18 47.4	2.074	2.989	8.3	21.2	1 22	9 59.46	+ 0 39.8	1.942	2.823	10.7	20.7
2 1	9 55.01	+19 25.3	2.022	2.987	4.7	21.0	2 1	9 52.46	+ 1 34.0	1.888	2.829	7.2	20.5
2 11	9 44.72	+20 1.4	2.001	2.984	2.0	20.8	2 11	9 44.32	+ 2 45.1	1.862	2.835	4.1	20.3
2 21	9 34.14	+20 30.6	2.009	2.979	4.5	21.0	2 21	9 35.91	+ 4 7.7	1.865	2.841	4.0	20.3
3 2	9 24.34	+20 49.0	2.048	2.975	8.2	21.2	3 2	9 28.21	+ 5 34.6	1.898	2.846	7.1	20.5
3 12	9 16.26	+20 54.9	2.113	2.969	11.6	21.4	3 12	9 22.04	+ 6 58.9	1.958	2.851	10.6	20.7
3 22	9 10.48	+20 48.4	2.201	2.963	14.4	21.6	3 22	9 17.98	+ 8 14.8	2.042	2.855	13.7	20.9
309417	2007 <i>TD</i> ₃₅₉		2 12.9 263°44	4°4/10.0 18			197530	2004 <i>EH</i> ₃₂		2 12.9 217°30	2°3/14.5 18		
1 12	10 10.16	+22 17.2	1.574	2.434	14.0	20.4	1 12	10 9.20	+ 5 35.8	1.782	2.601	14.5	21.2
1 22	10 4.13	+23 10.3	1.502	2.425	10.2	20.2	1 22	10 3.14	+ 5 54.2	1.694	2.593	11.0	21.0
2 1	9 55.35	+24 5.3	1.454	2.417	6.3	19.9	2 1	9 54.71	+ 6 29.4	1.629	2.584	6.8	20.7
2 11	9 44.79	+24 53.7	1.432	2.409	4.4	19.8	2 11	9 44.71	+ 7 18.1	1.592	2.574	2.8	20.5
2 21	9 33.79	+25 27.3	1.438	2.400	7.1	19.9	2 21	9 34.21	+ 8 14.9	1.584	2.563	3.9	20.5
3 2	9 23.84	+25 41.3	1.471	2.392	11.2	20.1	3 2	9 24.43	+ 9 13.4	1.605	2.552	8.3	20.7
3 12	9 16.20	+25 34.6	1.527	2.383	15.2	20.3	3 12	9 16.50	+10 7.3	1.651	2.539	12.5	21.0
3 22	9 11.60	+25 9.2	1.601	2.374	18.6	20.6	3 22	9 11.12	+10 52.0	1.720	2.526	16.2	21.2
66659	1999 <i>TJ</i> ₁		2 12.9 72°48	3°5/10.7 18			44583	1999 <i>JT</i> ₁₁		2 12.9 27°67	17°3/27.8 18		
1 12	10 10.14	+20 41.8	1										

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
307600	2003 <i>QO</i> ₂₃		2 12.9 136°35	0°4/13.3	18		35892	1999 <i>JV</i> ₈₂		2 12.9 195°62	0°8/13.7	18	
1 12	10 7.13	+ 6 38.0	1.978	2.798	13.2	20.8	1 12	10 4.43	+ 7 35.1	2.307	3.128	11.6	18.7
1 22	10 1.30	+ 8 12.4	1.908	2.812	9.6	20.6	1 22	9 59.23	+ 8 27.0	2.223	3.126	8.5	18.5
2 1	9 53.50	+10 3.8	1.866	2.826	5.5	20.4	2 1	9 52.32	+ 9 32.1	2.164	3.123	5.0	18.3
2 11	9 44.49	+12 4.9	1.853	2.839	1.1	20.1	2 11	9 44.33	+10 45.9	2.135	3.120	1.3	18.0
2 21	9 35.23	+14 6.5	1.872	2.851	3.5	20.3	2 21	9 36.03	+12 2.8	2.136	3.116	3.0	18.1
3 2	9 26.74	+15 59.9	1.922	2.862	7.7	20.6	3 2	9 28.30	+13 16.9	2.168	3.112	6.7	18.3
3 12	9 19.91	+17 38.4	2.000	2.873	11.4	20.8	3 12	9 21.92	+14 23.2	2.228	3.107	10.1	18.6
3 22	9 15.32	+18 58.5	2.102	2.883	14.4	21.0	3 22	9 17.43	+15 18.3	2.311	3.102	13.0	18.7
415487	2014 <i>OO</i> ₂₈₇		2 12.9 230°82	5°0/ 9.2	18		203273	2001 <i>RL</i> ₁₅		2 12.9 52°72	1°6/11.9	18	
1 12	10 9.77	+23 29.2	1.683	2.541	13.4	20.5	1 12	10 12.79	+19 17.0	1.964	2.806	12.4	19.6
1 22	10 3.77	+24 43.1	1.612	2.534	9.8	20.3	1 22	10 5.14	+19 5.3	1.909	2.825	8.9	19.5
2 1	9 55.13	+25 58.7	1.566	2.526	6.3	20.1	2 1	9 55.50	+18 54.3	1.880	2.845	5.0	19.3
2 11	9 44.78	+27 6.5	1.547	2.518	5.0	20.0	2 11	9 44.81	+18 40.1	1.881	2.865	1.7	19.1
2 21	9 33.98	+27 57.9	1.556	2.510	7.5	20.1	2 21	9 34.18	+18 20.0	1.911	2.885	4.1	19.3
3 2	9 24.15	+28 27.5	1.592	2.502	11.3	20.3	3 2	9 24.69	+17 52.7	1.972	2.906	7.9	19.5
3 12	9 16.50	+28 34.1	1.651	2.493	15.0	20.5	3 12	9 17.17	+17 18.1	2.058	2.927	11.3	19.8
3 22	9 11.76	+28 19.7	1.730	2.484	18.1	20.7	3 22	9 12.10	+16 37.1	2.168	2.947	14.1	20.0
302083	2000 <i>XP</i> ₅₃		2 12.9 113°83	3°9/ 9.9	18		339595	2005 <i>NQ</i> ₂₂		2 12.9 253°75	0°7/13.4	18	
1 12	10 9.92	+20 49.3	1.694	2.549	13.4	21.6	1 12	10 8.75	+ 9 33.6	1.439	2.282	16.0	21.2
1 22	10 3.56	+22 2.8	1.642	2.564	9.6	21.4	1 22	10 3.29	+10 2.1	1.356	2.271	11.8	20.9
2 1	9 54.83	+23 18.7	1.615	2.578	5.8	21.2	2 1	9 55.01	+10 47.4	1.297	2.260	6.9	20.5
2 11	9 44.71	+24 28.1	1.615	2.592	3.9	21.1	2 11	9 44.80	+11 44.1	1.263	2.248	1.5	20.2
2 21	9 34.42	+25 23.2	1.645	2.606	6.5	21.3	2 21	9 33.97	+12 44.7	1.256	2.236	4.4	20.3
3 2	9 25.26	+25 59.2	1.702	2.619	10.2	21.5	3 2	9 24.05	+13 41.0	1.276	2.224	9.8	20.6
3 12	9 18.25	+26 14.7	1.783	2.632	13.7	21.7	3 12	9 16.37	+14 26.6	1.320	2.212	14.8	20.9
3 22	9 13.96	+26 11.5	1.884	2.644	16.6	22.0	3 22	9 11.79	+14 57.8	1.384	2.199	18.9	21.1
70251	1999 <i>RK</i> ₈₄		2 12.9 14°42	3°6/15.4	18		144491	2004 <i>EF</i> ₆₅		2 12.9 241°31	3°1/ 9.3	18	
1 12	10 4.76	+ 2 57.5	1.443	2.272	16.8	18.8	1 12	10 3.22	+20 25.4	2.467	3.317	9.9	19.3
1 22	10 0.18	+ 3 11.7	1.372	2.273	12.9	18.5	1 22	9 58.40	+21 50.7	2.389	3.310	7.1	19.1
2 1	9 53.11	+ 3 48.6	1.323	2.275	8.4	18.3	2 1	9 51.88	+23 20.0	2.339	3.302	4.3	18.9
2 11	9 44.45	+ 4 44.7	1.298	2.277	4.3	18.0	2 11	9 44.27	+24 46.8	2.319	3.293	3.2	18.8
2 21	9 35.42	+ 5 53.7	1.300	2.279	4.7	18.1	2 21	9 36.33	+26 4.6	2.329	3.285	5.2	19.0
3 2	9 27.34	+ 7 7.0	1.329	2.282	9.0	18.3	3 2	9 28.91	+27 8.4	2.369	3.277	8.2	19.1
3 12	9 21.37	+ 8 16.3	1.381	2.284	13.4	18.6	3 12	9 22.80	+27 55.4	2.434	3.268	11.0	19.3
3 22	9 18.19	+ 9 15.3	1.455	2.288	17.2	18.8	3 22	9 18.55	+28 25.1	2.522	3.259	13.4	19.5
221108	2005 <i>SO</i> ₁₅₂		2 12.9 106°50	6°9/19.3	18		114572	2003 <i>BC</i> ₆₈		2 12.9 279°59	0°1/12.9	18	
1 12	10 4.57	- 8 46.6	2.023	2.773	15.4	20.1	1 12	10 2.62	+11 19.5	2.380	3.214	10.8	20.1
1 22	9 59.42	- 8 55.0	1.949	2.785	12.8	19.9	1 22	9 57.97	+11 59.3	2.286	3.198	7.8	19.9
2 1	9 52.43	- 8 38.7	1.897	2.796	10.0	19.8	2 1	9 51.65	+12 48.9	2.218	3.182	4.4	19.6
2 11	9 44.32	- 7 58.0	1.870	2.807	7.7	19.7	2 11	9 44.24	+13 44.1	2.179	3.166	0.7	19.3
2 21	9 35.99	- 6 55.9	1.870	2.819	7.0	19.6	2 21	9 36.48	+14 40.2	2.171	3.149	3.1	19.5
3 2	9 28.38	- 5 38.2	1.898	2.829	8.4	19.7	3 2	9 29.20	+15 32.3	2.191	3.133	6.8	19.7
3 12	9 22.34	- 4 12.5	1.952	2.840	10.9	19.9	3 12	9 23.19	+16 16.4	2.239	3.116	10.1	19.9
3 22	9 18.39	- 2 46.5	2.030	2.850	13.5	20.1	3 22	9 19.01	+16 49.9	2.310	3.099	13.1	20.0
88062	2000 <i>VX</i> ₄₅		2 12.9 135°07	1°8/14.5	18		15027	1998 <i>UF</i> ₈		2 12.9 315°93	6°2/ 9.0	18	
1 12	10 5.83	+ 6 0.3	2.250	3.063	12.1	20.6	1 12	10 9.35	+24 20.7	1.281	2.153	15.8	16.9
1 22	10 0.14	+ 6 20.1	2.178	3.074	9.0	20.4	1 22	10 4.08	+25 34.1	1.216	2.144	11.6	16.6
2 1	9 52.76	+ 6 52.4	2.131	3.085	5.5	20.2	2 1	9 55.57	+26 48.7	1.174	2.136	7.7	16.3
2 11	9 44.37	+ 7 34.2	2.114	3.095	2.3	20.0	2 11	9 44.91	+27 52.5	1.156	2.128	6.3	16.2
2 21	9 35.81	+ 8 21.0	2.126	3.105	3.1	20.1	2 21	9 33.73	+28 34.8	1.164	2.120	9.2	16.4
3 2	9 27.94	+ 9 8.2	2.168	3.114	6.5	20.3	3 2	9 23.83	+28 49.6	1.196	2.113	13.6	16.6
3 12	9 21.52	+ 9 51.5	2.238	3.123	9.8	20.6	3 12	9 16.72	+28 36.8	1.249	2.106	17.8	16.8
3 22	9 17.04	+10 27.7	2.331	3.131	12.6	20.8	3 22	9 13.17	+28 0.0	1.318	2.100	21.4	17.1
307409	2002 <i>TO</i> ₁₇₀		2 12.9 146°20	2°2/15.1	16		412745	2014 <i>OX</i> ₃₆₂		2 12.9 211°11	0°4/12.7	18	
1 12	10 5.13	+ 4 17.7	2.854	3.651	10.2	21.6	1 12	10 9.44	+12 39.5	1.755	2.595	13.8	21.8
1 22	9 59.34	+ 4 21.1	2.777	3.662	7.7	21.5	1 22	10 3.31	+13 9.1	1.676	2.590	10.0	21.5
2 1	9 52.20	+ 4 34.8	2.727	3.673	5.0	21.3	2 1	9 54.81	+13 49.1	1.621	2.585	5.6	21.3
2 11	9 44.28	+ 4 57.1	2.706	3.682	2.6	21.2	2 11	9 44.77	+14 34.1	1.593	2.580	0.9	20.9
2 21	9 36.22	+ 5 25.2	2.716	3.692	2.9	21.2	2 21	9 34.33	+15 18.0	1.595	2.573	4.1	21.1
3 2	9 28.69	+ 5 56.1	2.757	3.701	5.4	21.4	3 2	9 24.73	+15 55.0	1.625	2.567	8.7	21.4
3 12	9 22.30	+ 6 26.4	2.827	3.709	8.1	21.6	3 12	9 17.08	+16 21.2	1.681	2.559	12.9	21.6
3 22	9 17.47	+ 6 53.6	2.922	3.717	10.5	21.7	3 22	9 12.04	+16 34.8	1.758	2.552	16.3	21.8
1332	Marconia		2 12.9 129°33	0°8/12.1	18		225129	2008 <i>FR</i> ₅₅		2 12.9 214°45	4°0/16.4	16	
1 12	10 4.94	+14 41.2	2.484	3.321	10.3	15.8	1 12	10 4.71	- 0 34.7	2.102	2.893	13.6	21.6
1 22	9 59.40	+15 12.9	2.416	3.330	7.4	15.7	1 22	9 59.59	- 0 20.5	2.012	2.888	10.7	21.4
2 1	9 52.31	+15 50.2	2.374	3.339	4.0	15.5	2 1	9 52.60	+ 0 12.8	1.946	2.882	7.4	21.2
2 11	9 44.31	+16 28.8	2.362	3.348	0.9	15.2	2 11	9 44.41	+ 1 3.4	1.908	2.877	4.6	21.0
2 21	9 36.16	+17 4.5	2.380	3.356	3.2	15.4	2 21	9 35.86	+ 2 7.4	1.898	2.870	4.4	21.0
3 2	9 28.66	+17 33.9	2.428	3.364	6.6	15.7	3 2	9 27.90	+ 3 18.8	1.918	2.864	7.2	21.1
3 12	9 22.50	+17 54.5	2.504	3.372	9.6	15.9	3 12	9 21.40	+ 4 31.3	1.964	2.857	10.6	21.3
3 22	9 18.14	+18 5.4	2.603	3.379	12.1	16.0	3 22	9 16.96	+ 5 39.0	2.034	2.849	13.7	21.5
430146	2013 <i>TT</i> ₄₈		2 12.9 69°91	0°7/13.4	18		138072	2000 <i>DY</i> ₅₄		2 12.9 337°68	0°4/12.7	18	
1 12	10 4.88	+ 9 47.6	1.962	2.797	12.8								

EPHEMERIDES

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
30829	Wolfwacker		2 12.9 195°90	0°1/12.8 18			419778	2010 VZ ₁₇₀		2 12.9 110°25	1°7/14.4 18		
1 12	10 10.38	+12 22.7	1.806	2.642	13.6	18.8	1 12	10 8.24	+ 6 22.3	2.112	2.925	12.8	22.0
1 22	10 3.91	+12 45.4	1.727	2.640	9.9	18.5	1 22	10 1.87	+ 6 44.9	2.052	2.949	9.4	21.8
2 1	9 55.10	+13 18.0	1.674	2.637	5.6	18.3	2 1	9 53.73	+ 7 20.1	2.017	2.972	5.7	21.6
2 11	9 44.82	+13 55.5	1.648	2.634	0.9	17.9	2 11	9 44.60	+ 8 4.3	2.012	2.994	2.2	21.5
2 21	9 34.18	+14 32.2	1.652	2.630	3.9	18.1	2 21	9 35.38	+ 8 52.8	2.036	3.015	3.2	21.6
3 2	9 24.39	+15 3.1	1.684	2.626	8.4	18.4	3 2	9 27.01	+ 9 40.5	2.091	3.036	6.8	21.8
3 12	9 16.53	+15 24.5	1.743	2.621	12.5	18.6	3 12	9 20.25	+10 23.1	2.173	3.056	10.1	22.1
3 22	9 11.25	+15 34.7	1.823	2.615	15.9	18.9	3 22	9 15.60	+10 57.7	2.279	3.076	13.0	22.3
16681	1994 EV ₇		2 12.9 83°79	10°4/11.1 18 R			334112	2001 QD ₂₆₉		2 12.9 89°98	0°9/12.3 18		
1 12	10 38.76	+36 14.8	1.021	1.864	21.1	16.7	1 12	10 10.68	+16 35.9	2.489	3.319	10.5	20.7
1 22	10 25.72	+36 11.0	0.970	1.872	16.7	16.5	1 22	10 3.32	+16 38.0	2.434	3.345	7.5	20.5
2 1	10 7.57	+35 40.6	0.938	1.880	12.5	16.3	2 1	9 54.42	+16 42.7	2.407	3.370	4.1	20.3
2 11	9 46.78	+34 29.3	0.931	1.888	10.4	16.2	2 11	9 44.71	+16 46.7	2.410	3.396	1.0	20.1
2 21	9 26.63	+32 34.0	0.951	1.896	12.4	16.3	2 21	9 35.03	+16 47.2	2.445	3.420	3.2	20.3
3 2	9 10.06	+30 4.4	0.995	1.904	16.5	16.6	3 2	9 26.21	+16 42.3	2.511	3.445	6.5	20.6
3 12	8 58.70	+27 16.7	1.062	1.912	20.8	16.9	3 12	9 18.93	+16 30.9	2.605	3.469	9.4	20.8
3 22	8 52.75	+24 25.5	1.147	1.920	24.5	17.2	3 22	9 13.59	+16 12.9	2.723	3.492	11.8	21.0
266821	2009 TK ₂₂		2 12.9 167°53	2°0/14.6 18			125627	2001 XY ₅₈		2 12.9 91°63	1°2/13.7 18		
1 12	10 5.12	+ 5 32.0	2.074	2.891	12.8	20.7	1 12	10 11.01	+ 8 24.5	1.538	2.371	15.7	20.6
1 22	9 59.84	+ 5 55.8	1.995	2.894	9.6	20.5	1 22	10 4.32	+ 8 49.8	1.487	2.396	11.5	20.4
2 1	9 52.71	+ 6 34.0	1.942	2.895	6.0	20.3	2 1	9 55.25	+ 9 29.8	1.460	2.420	6.7	20.1
2 11	9 44.44	+ 7 23.4	1.916	2.897	2.5	20.1	2 11	9 44.86	+10 19.1	1.459	2.444	1.9	19.9
2 21	9 35.89	+ 8 19.0	1.919	2.899	3.3	20.2	2 21	9 34.42	+11 10.8	1.487	2.467	3.9	20.1
3 2	9 28.02	+ 9 15.5	1.952	2.900	7.0	20.4	3 2	9 25.21	+11 58.5	1.543	2.490	8.5	20.4
3 12	9 21.68	+10 7.5	2.012	2.901	10.6	20.6	3 12	9 18.24	+12 37.2	1.624	2.512	12.7	20.7
3 22	9 17.41	+10 51.4	2.095	2.901	13.6	20.8	3 22	9 14.04	+13 4.4	1.726	2.534	16.1	21.0
10899	1997 WN ₁₃		2 12.9 41°24	0°9/13.5 18			335997	2007 TL ₃₅₅		2 12.9 84°26	2°8/10.0 18		
1 12	10 6.68	+ 9 12.7	1.169	2.027	18.0	17.9	1 12	10 4.88	+19 47.4	2.271	3.120	10.7	20.6
1 22	10 1.79	+ 9 43.3	1.121	2.042	13.1	17.7	1 22	9 59.49	+20 58.6	2.221	3.141	7.6	20.5
2 1	9 54.05	+10 32.2	1.093	2.058	7.5	17.4	2 1	9 52.43	+22 12.1	2.197	3.161	4.4	20.3
2 11	9 44.65	+11 32.2	1.090	2.075	1.7	17.1	2 11	9 44.40	+23 21.5	2.203	3.181	2.9	20.2
2 21	9 35.11	+12 34.2	1.112	2.093	4.6	17.3	2 21	9 36.27	+24 21.0	2.240	3.201	4.9	20.4
3 2	9 26.97	+13 29.4	1.159	2.111	10.1	17.7	3 2	9 28.91	+25 6.6	2.305	3.221	8.0	20.6
3 12	9 21.44	+14 11.6	1.228	2.130	14.8	18.0	3 12	9 23.05	+25 36.3	2.396	3.241	10.8	20.8
3 22	9 19.09	+14 37.9	1.317	2.149	18.8	18.3	3 22	9 19.16	+25 50.6	2.509	3.260	13.1	21.0
138705	2000 SU ₉₀		2 12.9 123°62	7°7/21.1 18			467225	2016 EY ₁₆₃		2 12.9 22°77	1°5/13.8 18		
1 12	10 4.06	-14 46.2	2.736	3.425	13.2	19.3	1 12	10 9.68	+10 14.5	1.568	2.408	15.2	20.4
1 22	9 58.75	-15 27.7	2.656	3.434	11.4	19.2	1 22	10 3.55	+ 9 55.4	1.499	2.410	11.2	20.2
2 1	9 51.98	-15 48.9	2.597	3.443	9.7	19.1	2 1	9 54.95	+ 9 47.2	1.452	2.414	6.6	19.9
2 11	9 44.31	-15 48.5	2.563	3.451	8.3	19.0	2 11	9 44.84	+ 9 46.9	1.433	2.417	2.1	19.6
2 21	9 36.42	-15 27.1	2.556	3.460	7.7	19.0	2 21	9 34.45	+ 9 50.9	1.441	2.421	4.0	19.8
3 2	9 29.04	-14 47.4	2.575	3.468	8.2	19.0	3 2	9 25.11	+ 9 55.2	1.476	2.425	8.7	20.1
3 12	9 22.84	-13 54.2	2.621	3.476	9.6	19.1	3 12	9 17.93	+ 9 56.1	1.537	2.430	12.9	20.3
3 22	9 18.27	-12 53.1	2.690	3.484	11.3	19.3	3 22	9 13.52	+ 9 51.5	1.618	2.435	16.5	20.6
373939	2003 UR ₃₂₉		2 12.9 70°67	2°9/15.3 17			316852	2000 GH ₁₄₅		2 12.9 346°17	8°1/20.2 18		
1 12	10 4.26	+ 3 32.3	1.992	2.805	13.4	20.9	1 12	10 2.24	-10 44.3	1.653	2.411	18.0	20.7
1 22	9 59.25	+ 3 42.4	1.917	2.810	10.2	20.7	1 22	9 58.24	-10 33.3	1.570	2.409	15.2	20.5
2 1	9 52.39	+ 4 8.5	1.866	2.814	6.6	20.5	2 1	9 52.03	- 9 49.1	1.507	2.407	12.0	20.3
2 11	9 44.38	+ 4 47.9	1.842	2.819	3.4	20.3	2 11	9 44.38	- 8 31.2	1.466	2.405	9.2	20.2
2 21	9 36.13	+ 5 36.3	1.847	2.824	3.8	20.3	2 21	9 36.31	- 6 43.7	1.451	2.404	8.1	20.1
3 2	9 28.60	+ 6 28.4	1.880	2.829	7.1	20.6	3 2	9 29.00	- 4 35.6	1.463	2.403	9.6	20.2
3 12	9 22.63	+ 7 18.5	1.940	2.834	10.6	20.8	3 12	9 23.49	- 2 18.7	1.500	2.402	12.6	20.3
3 22	9 18.76	+ 8 2.6	2.023	2.839	13.7	21.0	3 22	9 20.45	- 0 4.8	1.561	2.401	15.9	20.5
424272	2007 TB ₅₅		2 12.9 50°88	4°2/16.7 17			126446	2002 CO ₁₆		2 12.9 130°57	0°3/12.7 18		
1 12	10 2.89	- 0 41.4	2.123	2.916	13.4	21.0	1 12	10 11.79	+13 24.6	1.620	2.462	14.6	19.8
1 22	9 58.16	- 0 40.3	2.048	2.924	10.5	20.9	1 22	10 5.00	+13 37.7	1.555	2.470	10.6	19.6
2 1	9 51.73	- 0 21.3	1.997	2.931	7.4	20.7	2 1	9 55.73	+13 59.6	1.513	2.478	5.9	19.3
2 11	9 44.27	+ 0 13.9	1.972	2.939	4.8	20.5	2 11	9 44.97	+14 25.0	1.500	2.486	0.9	19.0
2 21	9 36.60	+ 1 1.8	1.976	2.947	4.5	20.5	2 21	9 33.99	+14 48.5	1.514	2.493	4.2	19.3
3 2	9 29.59	+ 1 57.4	2.009	2.955	7.0	20.7	3 2	9 24.12	+15 5.5	1.557	2.500	8.9	19.6
3 12	9 24.02	+ 2 54.9	2.068	2.963	10.0	20.9	3 12	9 16.45	+15 13.0	1.625	2.506	13.1	19.8
3 22	9 20.38	+ 3 49.2	2.151	2.971	12.9	21.1	3 22	9 11.59	+15 10.0	1.714	2.513	16.5	20.1
170832	2004 EF ₇₅		2 12.9 32°50	5°9/18.2 18			53276	1999 FO ₃₂		2 12.9 85°17	5°2/ 9.2 18		
1 12	10 1.98	- 5 2.3	1.925	2.705	15.1	19.4	1 12	10 10.24	+25 53.3	1.770	2.626	12.9	18.1
1 22	9 57.66	- 5 6.6	1.854	2.714	12.2	19.2	1 22	10 3.81	+26 47.8	1.716	2.635	9.5	17.9
2 1	9 51.50	- 4 48.0	1.805	2.723	9.2	19.1	2 1	9 55.02	+27 39.2	1.687	2.644	6.3	17.7
2 11	9 44.24	- 4 7.4	1.780	2.733	6.6	18.9	2 11	9 44.85	+28 19.4	1.685	2.653	5.2	17.7
2 21	9 36.76	- 3 8.4	1.783	2.744	6.0	18.9	2 21	9 34.55	+28 42.4	1.712	2.662	7.3	17.8
3 2	9 30.00	- 1 57.0	1.813	2.755	7.9	19.1	3 2	9 25.39	+28 45.1	1.765	2.671	10.6	18.0
3 12	9 24.80	- 0 40.6	1.869	2.766	10.8	19.2	3 12	9 18.38	+28 28.1	1.842	2.680	13.8	18.3
3 22	9 21.68	+ 0 33.9	1.948	2.778	13.6	19.5	3 22	9 14.09	+27 54.2	1.939	2.689	16.5	18.5
306124	2010 JT ₈₇		2 12.9 258°96	0°6/13.4 18			50910	2000 GX ₅₃		2 12.9 56°87	5°6/17.4 18		
1 12	10 6.60	+ 8 50.4	1.611	2.450	14.8	21.1	1 12	10 4.27	- 3 9.3	1.584	2.383		

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
236666	2006 <i>MJ</i> ₇		2 12.9 197°00		1°1/11.7 17		263653	2008 <i>GT</i> ₉₅		2 12.9 15°26		1°1/12.2 18	
1 12	10 3.57	+14 50.0	2.521	3.360	10.1	21.2	1 12	10 1.90	+12 14.1	1.170	2.041	17.0	19.6
1 22	9 58.54	+15 42.6	2.442	3.358	7.2	21.0	1 22	9 58.51	+13 16.4	1.116	2.047	12.2	19.3
2 1	9 51.93	+16 41.7	2.391	3.356	4.0	20.8	2 1	9 52.34	+14 35.1	1.084	2.054	6.7	19.0
2 11	9 44.36	+17 42.6	2.369	3.354	1.2	20.6	2 11	9 44.46	+16 0.8	1.076	2.063	1.3	18.7
2 21	9 36.53	+18 40.3	2.377	3.351	3.5	20.7	2 21	9 36.30	+17 22.2	1.094	2.073	5.3	19.0
3 2	9 29.25	+19 30.2	2.416	3.348	6.8	20.9	3 2	9 29.38	+18 29.6	1.135	2.084	10.7	19.3
3 12	9 23.23	+20 9.4	2.482	3.345	9.8	21.1	3 12	9 24.91	+19 16.9	1.199	2.096	15.5	19.7
3 22	9 18.97	+20 36.4	2.571	3.341	12.4	21.3	3 22	9 23.52	+19 42.3	1.281	2.110	19.4	19.9
74910	1999 <i>TX</i> ₁₃₉		2 12.9 220°04		3°0/10.6 18		83927	2001 <i>VD</i> ₄₈		2 12.9 156°07		5°7/ 7.3 18	
1 12	10 10.27	+20 16.4	2.022	2.867	12.0	20.6	1 12	10 8.75	+28 53.0	2.216	3.065	10.9	19.6
1 22	10 3.78	+21 4.2	1.940	2.858	8.6	20.4	1 22	10 2.54	+30 19.7	2.161	3.072	8.3	19.5
2 1	9 55.05	+21 55.2	1.885	2.848	5.1	20.2	2 1	9 54.28	+31 42.3	2.132	3.078	6.2	19.4
2 11	9 44.89	+22 42.7	1.858	2.838	3.0	20.0	2 11	9 44.77	+32 52.6	2.133	3.084	5.9	19.4
2 21	9 34.32	+23 20.6	1.862	2.827	5.4	20.1	2 21	9 35.01	+33 44.5	2.162	3.089	7.6	19.5
3 2	9 24.52	+23 44.3	1.894	2.815	9.1	20.3	3 2	9 26.09	+34 14.6	2.219	3.094	10.2	19.6
3 12	9 16.51	+23 52.1	1.952	2.802	12.6	20.5	3 12	9 18.93	+34 22.9	2.299	3.098	12.7	19.8
3 22	9 10.96	+23 44.5	2.031	2.789	15.6	20.7	3 22	9 14.09	+34 11.8	2.400	3.102	14.9	20.0
242649	2005 <i>NT</i> ₉₉		2 12.9 216°96		4°8/17.8 18		505376	2013 <i>HV</i> ₁₀₄		2 12.9 336°86		3°2/ 9.7 17	
1 12	10 3.47	- 4 49.1	2.844	3.598	11.3	20.7	1 12	10 2.99	+23 47.8	2.645	3.496	9.3	21.2
1 22	9 58.32	- 5 6.7	2.748	3.592	9.2	20.6	1 22	9 58.11	+24 24.4	2.570	3.489	6.7	21.1
2 1	9 51.77	- 5 9.3	2.677	3.586	7.1	20.4	2 1	9 51.69	+25 0.4	2.522	3.482	4.3	20.9
2 11	9 44.34	- 4 56.9	2.633	3.579	5.3	20.3	2 11	9 44.34	+25 31.2	2.503	3.476	3.2	20.8
2 21	9 36.64	- 4 31.1	2.618	3.572	4.9	20.3	2 21	9 36.79	+25 52.9	2.514	3.470	4.9	20.9
3 2	9 29.37	- 3 54.7	2.633	3.564	6.4	20.4	3 2	9 29.83	+26 2.9	2.553	3.464	7.5	21.1
3 12	9 23.15	- 3 11.8	2.676	3.556	8.5	20.5	3 12	9 24.14	+26 0.0	2.618	3.459	10.1	21.2
3 22	9 18.46	- 2 26.6	2.743	3.548	10.8	20.6	3 22	9 20.19	+25 44.8	2.705	3.454	12.3	21.4
265715	2005 <i>UC</i> ₂₉₅		2 12.9 349°55		3°1/10.9 18		112781	2002 <i>PR</i> ₁₆₀		2 12.9 197°39		0°9/12.2 18	
1 12	10 6.88	+19 38.9	1.534	2.397	14.1	20.4	1 12	10 4.75	+14 1.1	2.215	3.055	11.3	20.4
1 22	10 1.74	+20 17.1	1.466	2.393	10.2	20.2	1 22	9 59.55	+14 41.9	2.138	3.054	8.1	20.2
2 1	9 54.04	+20 59.4	1.422	2.389	5.9	19.9	2 1	9 52.58	+15 30.2	2.087	3.053	4.5	20.0
2 11	9 44.73	+21 38.3	1.404	2.386	3.1	19.7	2 11	9 44.50	+16 21.1	2.066	3.051	1.0	19.7
2 21	9 35.08	+22 6.8	1.413	2.383	6.0	19.9	2 21	9 36.17	+17 9.6	2.074	3.050	3.6	19.9
3 2	9 26.48	+22 20.0	1.449	2.381	10.3	20.1	3 2	9 28.49	+17 50.9	2.111	3.048	7.3	20.2
3 12	9 20.07	+22 16.2	1.507	2.380	14.4	20.4	3 12	9 22.26	+18 21.8	2.175	3.047	10.6	20.4
3 22	9 16.53	+21 56.2	1.585	2.379	17.8	20.6	3 22	9 18.03	+18 40.8	2.262	3.045	13.5	20.6
74457	1999 <i>CC</i> ₃₁		2 12.9 86°72		1°4/11.9 18		128322	2004 <i>EH</i> ₆₀		2 12.9 250°47		0°2/12.8 18	
1 12	10 7.85	+17 2.3	2.165	3.007	11.4	18.7	1 12	10 10.99	+12 46.2	1.508	2.354	15.3	20.0
1 22	10 1.64	+17 20.5	2.103	3.020	8.1	18.5	1 22	10 4.86	+13 2.3	1.426	2.343	11.2	19.7
2 1	9 53.65	+17 42.3	2.067	3.033	4.5	18.3	2 1	9 55.92	+13 29.4	1.367	2.332	6.4	19.4
2 11	9 44.64	+18 3.4	2.060	3.045	1.4	18.1	2 11	9 45.09	+14 2.4	1.334	2.320	1.0	19.0
2 21	9 35.52	+18 19.6	2.084	3.058	3.8	18.3	2 21	9 33.69	+14 34.8	1.329	2.308	4.5	19.2
3 2	9 27.25	+18 28.0	2.136	3.071	7.4	18.5	3 2	9 23.22	+15 0.8	1.351	2.296	9.8	19.5
3 12	9 20.62	+18 26.9	2.215	3.083	10.6	18.7	3 12	9 15.01	+15 16.0	1.398	2.283	14.5	19.7
3 22	9 16.09	+18 16.2	2.317	3.095	13.3	19.0	3 22	9 9.86	+15 18.9	1.464	2.270	18.5	20.0
341432	2007 <i>TA</i> ₂₃₀		2 12.9 172°61		3°7/16.6 18		223628	2004 <i>JF</i> ₃₀		2 12.9 215°65		5°0/17.3 17 R	
1 12	10 3.63	- 0 47.3	2.591	3.372	11.6	21.2	1 12	10 5.38	- 3 30.4	2.285	3.056	13.3	20.9
1 22	9 58.49	- 0 47.1	2.506	3.374	9.1	21.0	1 22	10 0.01	- 3 33.5	2.191	3.049	10.7	20.7
2 1	9 51.88	- 0 32.1	2.446	3.376	6.5	20.9	2 1	9 52.87	- 3 18.0	2.120	3.041	7.9	20.5
2 11	9 44.36	- 0 3.4	2.413	3.377	4.2	20.7	2 11	9 44.57	- 2 44.3	2.076	3.033	5.5	20.3
2 21	9 36.61	+ 0 36.1	2.410	3.378	4.0	20.7	2 21	9 35.90	- 1 55.1	2.061	3.024	5.2	20.3
3 2	9 29.38	+ 1 22.7	2.437	3.379	6.1	20.9	3 2	9 27.77	- 0 55.0	2.075	3.015	7.2	20.4
3 12	9 23.34	+ 2 11.8	2.492	3.379	8.8	21.0	3 12	9 20.98	+ 0 10.2	2.117	3.005	10.1	20.6
3 22	9 18.95	+ 2 59.3	2.571	3.380	11.3	21.2	3 22	9 16.12	+ 1 14.8	2.182	2.994	13.0	20.7
371251	2006 <i>BV</i> ₁₇₁		2 12.9 163°19		0°4/12.6 18		11659	1997 <i>EX</i> ₄₁		2 12.9 258°12		1°6/14.2 18	
1 12	10 4.49	+11 40.1	2.032	2.871	12.2	20.6	1 12	10 5.13	+ 7 15.2	1.959	2.785	13.1	18.1
1 22	9 59.47	+12 31.3	1.957	2.872	8.8	20.3	1 22	9 59.99	+ 7 31.4	1.880	2.784	9.8	17.8
2 1	9 52.56	+13 33.2	1.908	2.873	4.9	20.1	2 1	9 52.89	+ 8 1.1	1.825	2.782	5.9	17.6
2 11	9 44.48	+14 40.4	1.888	2.874	0.8	19.8	2 11	9 44.57	+ 8 40.8	1.798	2.781	2.2	17.3
2 21	9 36.12	+15 46.7	1.897	2.875	3.6	20.0	2 21	9 35.94	+ 9 25.8	1.799	2.779	3.4	17.4
3 2	9 28.45	+16 46.1	1.936	2.876	7.6	20.3	3 2	9 28.01	+10 10.9	1.830	2.778	7.3	17.7
3 12	9 22.35	+17 34.3	2.000	2.877	11.2	20.5	3 12	9 21.69	+10 51.2	1.886	2.776	11.1	17.9
3 22	9 18.37	+18 9.0	2.087	2.878	14.2	20.7	3 22	9 17.56	+11 23.4	1.965	2.774	14.3	18.1
268086	2004 <i>RD</i> ₁₅₈		2 12.9 247°32		1°0/12.2 17		102945	1999 <i>XT</i> ₅₂		2 12.9 191°97		0°4/13.3 18	
1 12	10 9.89	+16 6.8	2.124	2.962	11.8	20.8	1 12	10 8.33	+10 31.2	2.087	2.914	12.4	20.2
1 22	10 3.38	+16 17.2	2.034	2.948	8.5	20.6	1 22	10 2.21	+10 58.6	2.005	2.913	9.0	19.9
2 1	9 54.79	+16 32.2	1.970	2.935	4.8	20.3	2 1	9 54.12	+11 36.3	1.949	2.911	5.2	19.7
2 11	9 44.86	+16 47.6	1.935	2.921	1.1	20.0	2 11	9 44.78	+12 20.3	1.922	2.908	1.0	19.4
2 21	9 34.54	+16 59.3	1.931	2.907	3.8	20.2	2 21	9 35.12	+13 5.4	1.926	2.905	3.3	19.6
3 2	9 24.92	+17 3.9	1.956	2.892	7.8	20.4	3 2	9 26.17	+13 46.7	1.958	2.901	7.4	19.8
3 12	9 16.94	+16 59.5	2.008	2.877	11.5	20.6	3 12	9 18.81	+14 20.3	2.018	2.896	11.1	20.0
3 22	9 11.25	+16 45.6	2.082	2.862	14.6	20.8	3 22	9 13.66	+14 43.9	2.101	2.890	14.2	20.2
339481	2005 <i>EA</i> ₃₂₇		2 12.9 268°87		5°3/ 8.4 17		254019	2004 <i>FW</i> ₈₁		2 12.9 223°54		0°9/13.6 18	
1 12	10 8.55	+28 33.7	2.167										

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
66859	1999 VQ ₃₀		2 12.9 61°12'	7.8/19.6	18		52766	1998 MC ₃₈		2 12.9 184°71'	0°3/13.2	18	
1 12	10 4.53	- 9 30.5	1.940	2.689	16.0	19.2	1 12	10 8.95	+ 9 18.0	1.915	2.742	13.3	19.8
1 22	9 59.53	-10 2.4	1.869	2.700	13.5	19.0	1 22	10 2.84	+10 13.6	1.835	2.743	9.7	19.5
2 1	9 52.62	-10 9.5	1.819	2.711	10.8	18.8	2 1	9 54.56	+11 23.3	1.781	2.743	5.5	19.3
2 11	9 44.53	- 9 51.0	1.793	2.723	8.6	18.7	2 11	9 44.89	+12 41.4	1.756	2.742	1.0	19.0
2 21	9 36.20	- 9 8.8	1.793	2.734	7.8	18.7	2 21	9 34.85	+14 0.7	1.761	2.740	3.6	19.2
3 2	9 28.62	- 8 7.9	1.820	2.746	9.1	18.8	3 2	9 25.56	+15 14.0	1.796	2.737	8.0	19.4
3 12	9 22.66	- 6 55.8	1.872	2.758	11.4	19.0	3 12	9 18.01	+16 15.9	1.857	2.733	11.9	19.7
3 22	9 18.87	- 5 40.2	1.947	2.769	13.9	19.2	3 22	9 12.85	+17 3.5	1.941	2.729	15.3	19.9
299256	2005 NS ₁₁		2 12.9 177°26'	4°6/ 7.2	17		355263	2007 PZ ₆		2 12.9 208°21'	1°7/12.1	18	
1 12	10 5.25	+29 10.2	2.909	3.753	8.8	20.7	1 12	10 20.82	+19 25.5	1.879	2.709	13.4	20.7
1 22	9 59.69	+30 24.0	2.847	3.755	6.6	20.5	1 22	10 11.43	+19 11.9	1.793	2.703	9.8	20.5
2 1	9 52.58	+31 34.3	2.812	3.756	5.0	20.4	2 1	9 59.38	+18 57.8	1.734	2.697	5.6	20.2
2 11	9 44.52	+32 35.5	2.808	3.757	4.7	20.4	2 11	9 45.69	+18 38.5	1.705	2.690	1.8	19.9
2 21	9 36.24	+33 23.0	2.833	3.758	6.2	20.5	2 21	9 31.67	+18 10.9	1.708	2.682	4.6	20.1
3 2	9 28.53	+33 54.1	2.887	3.758	8.2	20.7	3 2	9 18.75	+17 33.5	1.743	2.674	9.0	20.3
3 12	9 22.07	+34 8.1	2.966	3.757	10.3	20.8	3 12	9 8.10	+16 47.1	1.804	2.665	13.0	20.6
3 22	9 17.36	+34 6.4	3.066	3.756	12.2	20.9	3 22	9 0.41	+15 53.6	1.889	2.655	16.4	20.8
170762	2004 CJ ₄₂		2 12.9 33°45'	2°1/11.5	18		323901	2005 TZ ₁₁		2 12.9 151°71'	0°3/13.2	18	
1 12	10 5.22	+14 51.6	1.370	2.234	15.5	19.7	1 12	10 6.71	+10 18.5	2.324	3.149	11.4	22.0
1 22	10 0.64	+15 58.3	1.315	2.242	11.0	19.4	1 22	10 0.82	+10 53.2	2.252	3.158	8.2	21.8
2 1	9 53.45	+17 16.1	1.283	2.251	6.1	19.2	2 1	9 53.25	+11 37.2	2.206	3.167	4.7	21.6
2 11	9 44.68	+18 35.9	1.276	2.261	2.1	18.9	2 11	9 44.66	+12 26.7	2.189	3.175	0.9	21.4
2 21	9 35.66	+19 47.8	1.296	2.271	5.6	19.2	2 21	9 35.88	+13 16.6	2.203	3.182	3.0	21.5
3 2	9 27.79	+20 44.2	1.343	2.282	10.4	19.5	3 2	9 27.77	+14 2.6	2.247	3.189	6.6	21.8
3 12	9 22.22	+21 20.9	1.412	2.293	14.6	19.8	3 12	9 21.10	+14 41.0	2.319	3.195	9.9	22.0
3 22	9 19.56	+21 37.3	1.500	2.305	18.2	20.0	3 22	9 16.35	+15 9.6	2.415	3.201	12.7	22.2
56758	2000 OU ₁₇		2 12.9 192°63'	0°7/13.5	18		184105	2004 HP ₂₄		2 12.9 266°21'	7°3/ 6.4	18	
1 12	10 9.25	+10 42.9	2.321	3.143	11.5	19.8	1 12	10 9.32	+31 1.8	1.852	2.706	12.5	20.0
1 22	10 2.68	+10 45.4	2.237	3.141	8.4	19.6	1 22	10 3.53	+32 32.7	1.782	2.693	9.8	19.8
2 1	9 54.31	+10 55.7	2.179	3.139	4.9	19.4	2 1	9 55.13	+33 58.8	1.738	2.679	7.7	19.7
2 11	9 44.81	+11 10.9	2.151	3.136	1.2	19.1	2 11	9 45.02	+35 9.8	1.721	2.666	7.6	19.7
2 21	9 35.05	+11 27.8	2.153	3.133	3.0	19.3	2 21	9 34.41	+35 57.5	1.731	2.652	9.6	19.7
3 2	9 25.95	+11 43.0	2.186	3.129	6.7	19.5	3 2	9 24.71	+36 17.7	1.766	2.638	12.5	19.9
3 12	9 18.33	+11 53.8	2.247	3.124	10.1	19.7	3 12	9 17.12	+36 10.8	1.824	2.624	15.5	20.0
3 22	9 12.74	+11 58.4	2.331	3.119	13.0	19.9	3 22	9 12.39	+35 40.3	1.899	2.610	18.0	20.2
284206	2006 BA ₁₉₆		2 12.9 120°33'	1°2/13.8	18		236029	2005 GA ₁₅₂		2 12.9 132°05'	1°3/11.7	18	
1 12	10 10.55	+ 8 8.3	1.778	2.603	14.3	21.5	1 12	10 5.66	+16 28.6	2.464	3.303	10.3	21.0
1 22	10 3.86	+ 8 35.0	1.717	2.622	10.5	21.3	1 22	10 0.01	+17 0.7	2.395	3.311	7.3	20.8
2 1	9 55.02	+ 9 15.2	1.681	2.640	6.2	21.1	2 1	9 52.76	+17 37.0	2.354	3.319	4.1	20.6
2 11	9 44.93	+10 4.2	1.673	2.658	1.8	20.9	2 11	9 44.59	+18 13.1	2.342	3.327	1.3	20.4
2 21	9 34.70	+10 55.9	1.695	2.675	3.6	21.0	2 21	9 36.26	+18 45.0	2.361	3.334	3.5	20.6
3 2	9 25.48	+11 44.6	1.746	2.691	7.9	21.3	3 2	9 28.60	+19 9.3	2.409	3.341	6.8	20.8
3 12	9 18.22	+12 25.5	1.823	2.707	11.7	21.6	3 12	9 22.31	+19 23.8	2.484	3.348	9.8	21.0
3 22	9 13.46	+12 55.9	1.922	2.721	15.0	21.8	3 22	9 17.86	+19 27.9	2.583	3.355	12.3	21.2
11721	1998 HE ₁₀₀		2 12.9 151°26'	2°7/15.7	18		165830	2001 RV ₁₂₈		2 12.9 87°16'	1°4/11.6	18	
1 12	10 4.51	+ 2 4.6	2.403	3.200	11.9	19.0	1 12	10 5.48	+16 22.7	2.310	3.152	10.8	20.7
1 22	9 59.20	+ 2 28.3	2.325	3.208	9.1	18.8	1 22	9 59.90	+17 2.0	2.252	3.169	7.6	20.5
2 1	9 52.32	+ 3 6.9	2.272	3.215	6.0	18.6	2 1	9 52.70	+17 45.7	2.221	3.187	4.2	20.3
2 11	9 44.49	+ 3 57.9	2.247	3.222	3.2	18.4	2 11	9 44.58	+18 29.0	2.220	3.204	1.4	20.2
2 21	9 36.45	+ 4 57.1	2.252	3.228	3.4	18.4	2 21	9 36.36	+19 7.3	2.248	3.221	3.7	20.4
3 2	9 29.00	+ 5 59.6	2.288	3.234	6.2	18.6	3 2	9 28.89	+19 37.0	2.306	3.238	7.1	20.6
3 12	9 22.85	+ 7 0.3	2.351	3.239	9.3	18.8	3 12	9 22.89	+19 55.8	2.390	3.255	10.1	20.8
3 22	9 18.49	+ 7 55.1	2.439	3.244	12.0	19.0	3 22	9 18.81	+20 3.3	2.498	3.271	12.6	21.0
82507	2001 OQ ₄₈		2 12.9 357°73'	2°3/11.8	18		162660	2000 SJ ₂₄₈		2 12.9 232°34'	0°7/12.4	17	
1 12	10 11.65	+19 15.5	1.519	2.374	14.7	17.8	1 12	10 8.72	+12 37.9	1.873	2.711	13.1	21.4
1 22	10 5.15	+19 19.6	1.450	2.373	10.6	17.6	1 22	10 2.85	+13 23.9	1.784	2.698	9.5	21.1
2 1	9 55.96	+19 25.9	1.405	2.372	6.0	17.3	2 1	9 54.68	+14 21.4	1.720	2.685	5.3	20.9
2 11	9 45.11	+19 28.6	1.387	2.371	2.3	17.0	2 11	9 44.95	+15 24.4	1.685	2.671	0.9	20.5
2 21	9 33.98	+19 22.7	1.397	2.371	5.3	17.2	2 21	9 34.71	+16 26.3	1.679	2.656	4.1	20.7
3 2	9 24.05	+19 5.3	1.433	2.371	10.0	17.5	3 2	9 25.15	+17 20.6	1.702	2.641	8.6	21.0
3 12	9 16.50	+18 35.7	1.494	2.372	14.2	17.8	3 12	9 17.35	+18 2.5	1.751	2.624	12.7	21.2
3 22	9 11.97	+17 55.4	1.575	2.373	17.8	18.0	3 22	9 12.04	+18 30.0	1.821	2.607	16.2	21.4
312810	2011 BZ ₁₂₅		2 12.9 196°15'	0°4/12.6	17	R	132973	2002 TZ ₁₆₄		2 12.9 182°63'	4°5/ 8.4	18	
1 12	10 7.32	+13 18.8	2.306	3.138	11.2	21.7	1 12	10 6.37	+26 28.9	2.433	3.282	10.1	19.9
1 22	10 1.35	+13 45.2	2.224	3.136	8.1	21.5	1 22	10 0.70	+27 35.1	2.367	3.282	7.5	19.7
2 1	9 53.59	+14 18.7	2.169	3.133	4.5	21.3	2 1	9 53.24	+28 39.3	2.329	3.282	5.2	19.5
2 11	9 44.72	+14 55.2	2.143	3.129	0.7	21.0	2 11	9 44.69	+29 35.0	2.320	3.282	4.6	19.5
2 21	9 35.58	+15 30.3	2.148	3.125	3.3	21.2	2 21	9 35.91	+30 17.1	2.340	3.281	6.3	19.6
3 2	9 27.07	+16 0.0	2.183	3.121	7.0	21.4	3 2	9 27.81	+30 42.2	2.389	3.281	8.9	19.8
3 12	9 20.03	+16 21.3	2.244	3.116	10.3	21.6	3 12	9 21.20	+30 49.6	2.463	3.280	11.4	19.9
3 22	9 14.98	+16 33.0	2.329	3.111	13.2	21.8	3 22	9 16.63	+30 40.7	2.557	3.278	13.6	20.1
385055	2012 UY ₄₂		2 12.9 243°82'	0°8/12.2	17		72231	2001 AC ₁₆		2 12.9 40°00'	0°4/13.2	18	
1 12	10 4.24	+14 26.5	2.328	3.168	10.8	21.5	1 12	10 6.17	+ 9 56.8	1.288	2.142	16	

EPHEMERIDES

2 12.9

2 12.9

2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
212985	2009 <i>DZ</i> ₅		2 12.9 228°44	2°4/10.4	18		490665	2010 <i>HH</i> ₁₀₃		2 12.9 265°17	5°3/9.3	18	
1 12	10 3.60	+18 35.8	2.371	3.219	10.3	20.2	1 12	10 10.94	+24 2.2	1.568	2.428	14.1	22.0
1 22	9 58.73	+19 40.7	2.295	3.216	7.4	20.0	1 22	10 4.97	+25 9.5	1.490	2.412	10.4	21.7
2 1	9 52.16	+20 50.1	2.247	3.212	4.2	19.8	2 1	9 56.09	+26 18.5	1.437	2.397	6.8	21.5
2 11	9 44.52	+21 58.2	2.229	3.209	2.4	19.6	2 11	9 45.25	+27 19.0	1.410	2.381	5.4	21.4
2 21	9 36.62	+22 59.2	2.240	3.205	4.6	19.8	2 21	9 33.80	+28 2.1	1.410	2.365	8.0	21.5
3 2	9 29.29	+23 48.4	2.280	3.201	7.8	20.0	3 2	9 23.32	+28 21.9	1.437	2.349	12.1	21.7
3 12	9 23.34	+24 23.3	2.347	3.198	10.8	20.2	3 12	9 15.19	+28 17.3	1.486	2.333	16.0	21.9
3 22	9 19.28	+24 43.1	2.436	3.194	13.3	20.3	3 22	9 10.23	+27 51.1	1.554	2.316	19.5	22.1
372333	2009 <i>CS</i> ₂₄		2 12.9 285°68	0°6/12.5	17		336546	2009 <i>BP</i> ₉₇		2 12.9 104°96	2°2/11.2	18	
1 12	10 6.84	+15 5.6	2.289	3.127	11.1	20.4	1 12	10 9.16	+20 27.4	2.325	3.167	10.7	20.5
1 22	10 1.00	+15 13.8	2.211	3.125	7.9	20.2	1 22	10 2.56	+20 43.5	2.261	3.177	7.7	20.3
2 1	9 53.40	+15 26.9	2.159	3.123	4.4	19.9	2 1	9 54.22	+21 0.2	2.223	3.187	4.4	20.1
2 11	9 44.74	+15 41.2	2.136	3.122	0.8	19.7	2 11	9 44.88	+21 13.1	2.215	3.196	2.2	20.0
2 21	9 35.86	+15 53.2	2.143	3.120	3.3	19.9	2 21	9 35.45	+21 18.7	2.237	3.206	4.3	20.2
3 2	9 27.66	+16 0.0	2.180	3.119	7.0	20.1	3 2	9 26.83	+21 14.5	2.289	3.215	7.5	20.4
3 12	9 20.94	+15 59.4	2.243	3.117	10.3	20.3	3 12	9 19.81	+21 0.1	2.367	3.224	10.5	20.6
3 22	9 16.21	+15 50.9	2.330	3.116	13.1	20.5	3 22	9 14.85	+20 35.9	2.469	3.233	13.0	20.8
365126	2009 <i>DE</i> ₉		2 12.9 272°35	2°9/15.0	17		102772	1999 <i>VT</i> ₁₄₂		2 12.9 229°05	0°2/12.8	18	
1 12	10 6.53	+4 3.9	1.750	2.569	14.8	21.7	1 12	10 8.70	+12 20.3	1.911	2.747	13.0	21.1
1 22	10 1.47	+4 20.6	1.650	2.547	11.3	21.4	1 22	10 2.76	+12 49.7	1.825	2.738	9.4	20.8
2 1	9 54.02	+4 56.4	1.572	2.524	7.3	21.1	2 1	9 54.60	+13 29.2	1.764	2.727	5.3	20.5
2 11	9 44.89	+5 48.8	1.521	2.501	3.5	20.8	2 11	9 44.98	+14 13.9	1.730	2.717	0.9	20.2
2 21	9 35.08	+6 53.0	1.498	2.477	4.2	20.8	2 21	9 34.92	+14 58.2	1.727	2.705	3.8	20.4
3 2	9 25.84	+8 1.9	1.503	2.453	8.5	21.0	3 2	9 25.58	+15 36.7	1.752	2.693	8.2	20.6
3 12	9 18.32	+9 8.2	1.534	2.429	12.9	21.2	3 12	9 17.97	+16 5.4	1.804	2.681	12.2	20.9
3 22	9 13.34	+10 6.1	1.587	2.404	16.8	21.4	3 22	9 12.78	+16 22.4	1.877	2.668	15.6	21.1
170137	2003 <i>AP</i> ₆₅		2 12.9 19°73	7°9/5.2	18		53313	1999 <i>JF</i> ₂		2 12.9 294°60	2°3/15.2	18	
1 12	10 6.24	+34 8.7	1.956	2.810	11.9	19.2	1 12	10 2.05	+3 46.1	2.203	3.015	12.3	19.2
1 22	10 1.09	+35 45.2	1.909	2.814	9.6	19.1	1 22	9 57.70	+4 16.6	2.113	3.007	9.4	19.0
2 1	9 53.64	+37 12.5	1.887	2.818	8.1	19.0	2 1	9 51.64	+5 3.0	2.048	2.998	6.0	18.8
2 11	9 44.78	+38 21.6	1.892	2.822	8.2	19.0	2 11	9 44.48	+6 2.3	2.010	2.989	2.8	18.6
2 21	9 35.68	+39 5.7	1.924	2.827	9.9	19.1	2 21	9 36.98	+7 9.8	2.002	2.981	3.3	18.6
3 2	9 27.56	+39 22.4	1.980	2.832	12.3	19.3	3 2	9 30.02	+8 19.9	2.023	2.972	6.7	18.8
3 12	9 21.45	+39 12.8	2.057	2.838	14.6	19.5	3 12	9 24.40	+9 26.7	2.071	2.964	10.1	19.0
3 22	9 17.92	+38 40.8	2.152	2.844	16.7	19.6	3 22	9 20.66	+10 25.7	2.143	2.955	13.2	19.2
422743	2001 <i>SU</i> ₁₁₁		2 12.9 109°52	2°7/15.6	18		171027	2005 <i>EN</i> ₅₇		2 12.9 10°84	0°1/12.9	18	
1 12	10 8.35	+2 14.7	2.528	3.315	11.7	22.6	1 12	10 8.11	+12 26.2	1.377	2.232	16.0	20.2
1 22	10 1.73	+2 32.4	2.469	3.347	8.9	22.5	1 22	10 2.80	+12 41.7	1.311	2.232	11.6	19.9
2 1	9 53.65	+3 3.3	2.435	3.377	5.8	22.2	2 1	9 54.76	+13 9.2	1.267	2.233	6.6	19.7
2 11	9 44.77	+3 44.8	2.432	3.406	3.1	22.2	2 11	9 45.00	+13 43.0	1.249	2.235	1.1	19.3
2 21	9 35.84	+4 33.2	2.459	3.434	3.3	22.3	2 21	9 34.90	+14 16.5	1.257	2.237	4.5	19.5
3 2	9 27.64	+5 24.1	2.518	3.461	5.9	22.5	3 2	9 25.93	+14 43.5	1.291	2.240	9.7	19.8
3 12	9 20.82	+6 13.3	2.606	3.488	8.7	22.7	3 12	9 19.31	+14 59.7	1.349	2.242	14.4	20.1
3 22	9 15.78	+6 57.3	2.718	3.513	11.2	22.9	3 22	9 15.73	+15 3.4	1.426	2.246	18.2	20.4
466682	2014 <i>WD</i> ₂₄₅		2 12.9 58°05	8°0/7.9	18		87802	2000 <i>SO</i> ₁₃₂		2 12.9 224°72	3°8/15.5	18	
1 12	10 13.20	+31 34.9	1.502	2.360	14.7	21.3	1 12	10 8.73	+2 44.8	2.111	2.910	13.3	19.6
1 22	10 6.20	+32 49.1	1.471	2.384	11.3	21.1	1 22	10 2.54	+2 18.3	2.021	2.903	10.3	19.4
2 1	9 56.43	+33 52.2	1.464	2.408	8.6	21.0	2 1	9 54.38	+2 5.4	1.956	2.897	7.0	19.2
2 11	9 45.22	+34 33.9	1.483	2.432	8.1	21.1	2 11	9 44.94	+2 5.4	1.919	2.890	4.2	19.0
2 21	9 34.13	+34 48.4	1.528	2.457	10.0	21.2	2 21	9 35.13	+2 16.4	1.911	2.883	4.4	19.0
3 2	9 24.66	+34 34.6	1.597	2.481	12.9	21.4	3 2	9 25.96	+2 34.8	1.933	2.876	7.4	19.2
3 12	9 17.90	+33 56.1	1.688	2.506	15.8	21.7	3 12	9 18.33	+2 56.5	1.982	2.869	10.8	19.4
3 22	9 14.30	+32 58.6	1.797	2.531	18.2	21.9	3 22	9 12.86	+3 17.6	2.053	2.861	13.8	19.5
464973	2005 <i>YW</i> ₁₅		2 12.9 27°51	3°2/10.5	18		225206	2008 <i>LP</i>		2 12.9 173°47	5°3/7.8	16	
1 12	10 3.29	+16 46.2	1.377	2.247	15.0	20.4	1 12	10 9.74	+29 4.4	2.356	3.201	10.5	21.6
1 22	9 59.24	+18 13.1	1.329	2.259	10.6	20.2	1 22	10 3.19	+30 13.2	2.295	3.204	8.0	21.4
2 1	9 52.68	+19 48.7	1.304	2.273	6.0	19.9	2 1	9 54.68	+31 17.5	2.260	3.206	5.9	21.3
2 11	9 44.63	+21 22.5	1.305	2.287	3.2	19.8	2 11	9 44.98	+32 10.4	2.255	3.208	5.4	21.2
2 21	9 36.39	+22 44.1	1.333	2.303	6.3	20.0	2 21	9 35.05	+32 46.5	2.279	3.210	7.1	21.3
3 2	9 29.30	+23 45.9	1.387	2.319	10.7	20.3	3 2	9 25.91	+33 3.0	2.331	3.211	9.6	21.5
3 12	9 24.44	+24 24.4	1.463	2.336	14.7	20.6	3 12	9 18.47	+33 0.0	2.408	3.211	12.1	21.7
3 22	9 22.38	+24 40.2	1.558	2.354	18.0	20.9	3 22	9 13.25	+32 39.8	2.505	3.211	14.3	21.8
196333	2003 <i>FS</i> ₆₀		2 12.9 354°66	1°3/12.1	18		185041	2006 <i>QR</i> ₁₄₄		2 12.9 62°51	4°0/10.4	18	
1 12	10 5.58	+12 54.3	1.236	2.100	16.7	19.6	1 12	10 11.74	+21 13.8	1.501	2.360	14.7	19.5
1 22	10 1.27	+13 53.1	1.171	2.098	12.1	19.3	1 22	10 4.91	+22 11.4	1.467	2.391	10.4	19.3
2 1	9 54.03	+15 7.9	1.127	2.096	6.7	19.0	2 1	9 55.64	+23 9.4	1.458	2.422	6.2	19.1
2 11	9 44.89	+16 29.7	1.109	2.095	1.5	18.6	2 11	9 45.11	+23 58.9	1.475	2.453	4.0	19.1
2 21	9 35.27	+17 47.6	1.116	2.094	5.5	18.9	2 21	9 34.70	+24 33.2	1.520	2.484	6.5	19.3
3 2	9 26.81	+18 52.0	1.148	2.094	11.0	19.2	3 2	9 25.73	+24 48.6	1.592	2.515	10.4	19.6
3 12	9 20.84	+19 36.9	1.203	2.094	15.9	19.5	3 12	9 19.19	+24 45.4	1.687	2.545	13.9	19.9
3 22	9 18.12	+20 0.5	1.276	2.095	20.0	19.7	3 22	9 15.53	+24 25.9	1.802	2.576	16.8	20.1
360771	2005 <i>CZ</i> ₁₄		2 12.9 264°26	0°9/12.4	16		135517	2001 <i>YZ</i> ₂₀		2 12.9 102°52	1°5/11.8	18	
1 12	10 9.43	+14 17.3	1.728	2.572	13.7	21.6	1 12						

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
406214	2007 <i>AP</i> ₃		2 12.9 71°50	4.7/ 9.0	18		321072	2008 <i>SX</i> ₆₃		2 12.9 49°94	15°6/27.2	18	
1 12	10 7.47	+21 50.9	1.639	2.500	13.5	20.1	1 12	10 3.28	-23 19.0	1.068	1.791	27.9	20.2
1 22	10 1.97	+23 29.7	1.595	2.519	9.7	20.0	1 22	9 59.98	-23 35.3	1.005	1.798	25.0	20.0
2 1	9 54.12	+25 10.1	1.576	2.538	6.1	19.8	2 1	9 53.48	-22 53.2	0.954	1.806	21.7	19.8
2 11	9 44.89	+26 41.6	1.585	2.557	4.8	19.7	2 11	9 44.86	-21 5.1	0.918	1.814	18.4	19.7
2 21	9 35.52	+27 55.4	1.622	2.577	7.3	19.9	2 21	9 35.73	-18 12.8	0.901	1.823	16.1	19.5
3 2	9 27.27	+28 46.1	1.686	2.596	10.8	20.2	3 2	9 27.88	-14 30.0	0.906	1.832	15.8	19.6
3 12	9 21.14	+29 12.6	1.773	2.615	14.1	20.4	3 12	9 22.84	-10 21.3	0.933	1.841	17.7	19.7
3 22	9 17.70	+29 17.2	1.880	2.634	16.8	20.7	3 22	9 21.37	- 6 13.0	0.981	1.850	20.8	19.9
73692	Gürtler		2 12.9 140°39	1°2/12.1	18		95963	2004 <i>KE</i> ₄		2 12.9 282°21	10°4/31.5	18	
1 12	10 11.50	+15 54.1	1.970	2.808	12.6	19.8	1 12	10 9.09	+37 21.2	1.814	2.663	13.0	18.5
1 22	10 4.49	+16 17.6	1.905	2.819	9.0	19.6	1 22	10 3.97	+40 14.4	1.753	2.644	11.1	18.3
2 1	9 55.41	+16 46.4	1.865	2.830	5.0	19.3	2 1	9 55.77	+42 59.7	1.718	2.625	10.4	18.2
2 11	9 45.11	+17 15.2	1.855	2.840	1.3	19.1	2 11	9 45.28	+45 22.2	1.711	2.607	11.3	18.2
2 21	9 34.65	+17 39.2	1.874	2.850	4.0	19.3	2 21	9 33.84	+47 10.6	1.730	2.588	13.4	18.3
3 2	9 25.13	+17 54.7	1.923	2.859	8.0	19.6	3 2	9 23.11	+48 19.2	1.772	2.569	15.9	18.5
3 12	9 17.48	+17 59.8	1.999	2.867	11.6	19.8	3 12	9 14.69	+48 49.0	1.833	2.549	18.3	18.6
3 22	9 12.23	+17 54.0	2.096	2.875	14.6	20.0	3 22	9 9.62	+48 45.4	1.908	2.530	20.4	18.7
296861	2009 <i>WU</i> ₂₄₁		2 12.9 76°34	1°6/14.4	18		306239	2011 <i>QS</i> ₆₈		2 12.9 205°92	3°6/17.4	17	
1 12	10 4.59	+ 6 30.3	1.912	2.738	13.4	20.9	1 12	10 1.96	- 3 9.0	3.140	3.902	10.2	22.1
1 22	9 59.63	+ 6 58.8	1.841	2.744	10.0	20.7	1 22	9 57.21	- 2 52.1	3.042	3.896	8.2	21.9
2 1	9 52.74	+ 7 42.0	1.793	2.750	6.0	20.4	2 1	9 51.22	- 2 20.8	2.969	3.890	5.9	21.8
2 11	9 44.67	+ 8 36.1	1.774	2.757	2.2	20.2	2 11	9 44.46	- 1 36.3	2.925	3.883	4.0	21.6
2 21	9 36.36	+ 9 35.4	1.783	2.763	3.4	20.3	2 21	9 37.48	- 0 41.1	2.911	3.876	3.7	21.6
3 2	9 28.80	+10 34.0	1.820	2.769	7.3	20.5	3 2	9 30.87	+ 0 21.1	2.928	3.868	5.4	21.7
3 12	9 22.88	+11 26.3	1.884	2.775	11.0	20.8	3 12	9 25.18	+ 1 26.0	2.974	3.860	7.6	21.8
3 22	9 19.13	+12 8.9	1.971	2.781	14.2	21.0	3 22	9 20.84	+ 2 29.6	3.046	3.851	9.8	22.0
134028	Mikelfitzgibbon		2 12.9 25°87	5°2/ 9.7	18		341229	2007 <i>RJ</i> ₁₅₃		2 12.9 231°22	0°9/13.8	17	
1 12	10 10.04	+23 6.8	1.383	2.249	15.2	19.9	1 12	10 4.99	+ 8 58.9	2.392	3.214	11.2	21.8
1 22	10 4.31	+24 10.0	1.325	2.251	11.1	19.7	1 22	9 59.71	+ 9 19.1	2.302	3.206	8.2	21.6
2 1	9 55.65	+25 14.3	1.290	2.253	7.0	19.4	2 1	9 52.75	+ 9 49.3	2.239	3.197	4.9	21.4
2 11	9 45.17	+26 9.1	1.281	2.255	5.2	19.3	2 11	9 44.73	+10 26.5	2.204	3.188	1.4	21.1
2 21	9 34.39	+26 45.8	1.298	2.258	7.9	19.5	2 21	9 36.39	+11 6.7	2.199	3.179	2.9	21.2
3 2	9 24.90	+26 59.2	1.340	2.261	12.1	19.7	3 2	9 28.60	+11 45.7	2.225	3.170	6.5	21.4
3 12	9 17.99	+26 49.3	1.405	2.264	16.1	20.0	3 12	9 22.10	+12 19.8	2.278	3.160	9.8	21.6
3 22	9 14.34	+26 19.0	1.487	2.267	19.5	20.2	3 22	9 17.45	+12 46.4	2.354	3.150	12.7	21.8
103924	2000 <i>DC</i> ₆₃		2 12.9 99°86	1°8/11.6	18		92524	2000 <i>ON</i> ₁		2 12.9 308°44	5°1/15.9	18	
1 12	10 8.82	+18 35.2	2.137	2.981	11.5	19.4	1 12	10 7.28	+ 1 32.4	1.412	2.233	17.5	19.5
1 22	10 2.48	+18 52.1	2.070	2.987	8.2	19.2	1 22	10 2.29	+ 1 11.5	1.333	2.226	13.8	19.3
2 1	9 54.25	+19 11.4	2.029	2.994	4.6	19.0	2 1	9 54.59	+ 1 12.5	1.274	2.219	9.5	19.0
2 11	9 44.92	+19 28.5	2.017	3.001	1.8	18.8	2 11	9 45.07	+ 1 35.0	1.240	2.212	5.8	18.7
2 21	9 35.45	+19 39.4	2.035	3.007	4.2	19.0	2 21	9 34.99	+ 2 15.1	1.231	2.206	5.8	18.7
3 2	9 26.82	+19 41.3	2.082	3.014	7.7	19.2	3 2	9 25.80	+ 3 6.3	1.248	2.199	9.7	18.9
3 12	9 19.86	+19 32.8	2.155	3.020	11.0	19.5	3 12	9 18.81	+ 4 0.3	1.289	2.193	14.1	19.2
3 22	9 15.10	+19 14.3	2.251	3.026	13.8	19.7	3 22	9 14.79	+ 4 50.1	1.350	2.187	18.1	19.4
156521	2002 <i>CQ</i> ₂₂₈		2 12.9 29°35	4°3/16.8	18		413106	2001 <i>UV</i> ₁₇₆		2 12.9 62°32	1°8/14.3	18	
1 12	10 2.17	- 1 23.6	1.609	2.418	16.3	19.6	1 12	10 6.89	+ 6 45.8	1.615	2.447	15.2	21.0
1 22	9 58.18	- 0 48.4	1.539	2.425	12.8	19.4	1 22	10 1.43	+ 7 7.1	1.559	2.466	11.2	20.8
2 1	9 52.04	+ 0 12.8	1.491	2.432	8.8	19.2	2 1	9 53.79	+ 7 44.3	1.528	2.486	6.8	20.6
2 11	9 44.58	+ 1 36.6	1.469	2.440	5.2	19.0	2 11	9 44.89	+ 8 32.9	1.522	2.505	2.5	20.4
2 21	9 36.83	+ 3 15.8	1.473	2.449	4.8	19.0	2 21	9 35.87	+ 9 26.6	1.545	2.525	3.7	20.5
3 2	9 29.92	+ 5 1.2	1.505	2.458	8.1	19.2	3 2	9 27.90	+10 18.9	1.595	2.545	8.0	20.8
3 12	9 24.84	+ 6 43.0	1.562	2.467	12.0	19.5	3 12	9 21.90	+11 4.2	1.671	2.565	12.0	21.1
3 22	9 22.16	+ 8 13.6	1.642	2.477	15.5	19.7	3 22	9 18.42	+11 39.0	1.768	2.585	15.3	21.3
492748	2014 <i>QD</i> ₁₃₇		2 12.9 241°06	0°1/13.1	17		197522	2004 <i>DS</i> ₂₂		2 12.9 346°51	0°7/12.4	18	
1 12	10 8.43	+10 36.8	1.820	2.655	13.6	22.7	1 12	10 2.48	+12 58.5	1.726	2.579	13.3	19.1
1 22	10 2.73	+11 15.4	1.729	2.641	10.0	22.4	1 22	9 58.42	+13 38.6	1.649	2.571	9.6	18.9
2 1	9 54.69	+12 7.3	1.662	2.625	5.7	22.2	2 1	9 52.22	+14 29.7	1.597	2.564	5.4	18.6
2 11	9 45.05	+13 7.5	1.624	2.610	1.0	21.8	2 11	9 44.65	+15 26.2	1.571	2.558	1.0	18.3
2 21	9 34.86	+14 9.3	1.614	2.593	3.8	22.0	2 21	9 36.73	+16 21.4	1.574	2.552	4.1	18.5
3 2	9 25.33	+15 6.2	1.634	2.576	8.5	22.2	3 2	9 29.56	+17 8.9	1.603	2.547	8.5	18.7
3 12	9 17.59	+15 52.7	1.679	2.559	12.8	22.4	3 12	9 24.15	+17 44.3	1.657	2.544	12.6	19.0
3 22	9 12.36	+16 25.9	1.745	2.541	16.4	22.6	3 22	9 21.13	+18 5.3	1.732	2.540	16.0	19.2
272405	2005 <i>TX</i> ₂₅		2 12.9 161°34	1°3/11.8	18		447425	2006 <i>CZ</i> ₄₈		2 12.9 42°73	1°2/13.7	15	
1 12	10 7.79	+15 58.2	2.340	3.177	10.9	22.1	1 12	10 8.70	+ 9 25.3	1.117	1.975	18.6	21.6
1 22	10 1.66	+16 39.1	2.269	3.184	7.8	21.9	1 22	10 3.40	+ 9 38.4	1.071	1.992	13.6	21.3
2 1	9 53.78	+17 25.1	2.225	3.190	4.3	21.7	2 1	9 55.12	+10 9.3	1.046	2.010	7.9	21.1
2 11	9 44.86	+18 11.4	2.210	3.195	1.4	21.5	2 11	9 45.13	+10 51.5	1.044	2.029	2.1	20.8
2 21	9 35.74	+18 53.1	2.227	3.200	3.8	21.7	2 21	9 35.03	+11 36.9	1.067	2.049	4.6	21.0
3 2	9 27.31	+19 26.2	2.273	3.204	7.2	21.9	3 2	9 26.47	+12 17.7	1.116	2.069	10.2	21.4
3 12	9 20.36	+19 48.3	2.346	3.207	10.4	22.1	3 12	9 20.67	+12 47.9	1.186	2.090	15.1	21.7
3 22	9 15.40	+19 58.7	2.442	3.210	13.0	22.3	3 22	9 18.17	+13 4.7	1.275	2.111	19.0	22.0
136081	2003 <i>AH</i> ₅₇		2 12.9 65°05	1°4/13.9	18 R		508577	2017 <i>OT</i> ₃		2 12.9 77°43	0°8/13.7	18	
1 12	10 10.43	+10 12.7	2.180	3.001	12.2								

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2020	α_{2000}	δ_{2000}	Δ	r	β	V	2020	α_{2000}	δ_{2000}	Δ	r	β	V
232600	2003 <i>UC</i> ₅₄		2 12.9 37°14'	1°1/13.6	18		119396	2001 <i>TJ</i> ₄₀		2 12.9 95°66'	11°1/21.7	18	
1 12	10 9.33	+11 8.7	1.608	2.449	14.8	19.4	1 12	10 7.57	-17 0.1	1.970	2.663	17.5	19.0
1 22	10 3.15	+10 50.8	1.554	2.467	10.8	19.2	1 22	10 1.94	-18 17.5	1.894	2.668	15.5	18.9
2 1	9 54.73	+10 42.8	1.524	2.486	6.2	19.0	2 1	9 54.19	-19 7.8	1.836	2.672	13.5	18.7
2 11	9 45.05	+10 41.5	1.520	2.505	1.7	18.7	2 11	9 45.03	-19 26.9	1.801	2.677	11.9	18.6
2 21	9 35.33	+10 43.1	1.544	2.525	3.7	18.9	2 21	9 35.47	-19 14.0	1.789	2.681	11.2	18.6
3 2	9 26.75	+10 44.1	1.596	2.545	8.2	19.2	3 2	9 26.59	-18 32.1	1.802	2.686	11.7	18.6
3 12	9 20.27	+10 41.5	1.673	2.566	12.1	19.5	3 12	9 19.39	-17 28.0	1.838	2.690	13.2	18.7
3 22	9 16.39	+10 33.4	1.772	2.587	15.4	19.8	3 22	9 14.54	-16 10.6	1.896	2.695	15.1	18.9
16923	1998 <i>FB</i> ₆₁		2 12.9 146°08'	0°0/12.9	18 R		122133	2000 <i>JW</i> ₃₄		2 12.9 189°68'	1°6/14.2	18	
1 12	10 3.97	+12 2.8	2.820	3.647	9.5	19.1	1 12	10 9.57	+ 7 16.9	1.915	2.735	13.6	20.6
1 22	9 58.69	+12 30.6	2.746	3.655	6.9	18.9	1 22	10 3.33	+ 7 37.5	1.833	2.734	10.1	20.4
2 1	9 52.05	+13 4.8	2.700	3.662	3.8	18.7	2 1	9 54.94	+ 8 12.2	1.776	2.733	6.1	20.1
2 11	9 44.61	+13 42.2	2.683	3.669	0.6	18.5	2 11	9 45.16	+ 8 57.0	1.747	2.731	2.1	19.8
2 21	9 37.02	+14 19.2	2.698	3.676	2.6	18.7	2 21	9 35.01	+ 9 47.0	1.748	2.728	3.5	19.9
3 2	9 29.96	+14 52.5	2.743	3.683	5.7	18.9	3 2	9 25.61	+10 36.3	1.778	2.724	7.7	20.2
3 12	9 24.03	+15 19.5	2.816	3.689	8.4	19.1	3 12	9 17.96	+11 20.0	1.835	2.719	11.6	20.4
3 22	9 19.67	+15 38.7	2.913	3.694	10.8	19.2	3 22	9 12.69	+11 54.5	1.914	2.714	15.0	20.6
455233	2001 <i>SB</i> ₁₃₇		2 12.9 143°01'	0°2/12.8	18		207589	2006 <i>QQ</i> ₅₄		2 12.9 155°95'	0°3/13.3	18	
1 12	10 11.49	+12 8.0	1.876	2.708	13.4	22.7	1 12	10 2.82	+ 9 39.8	2.524	3.350	10.5	20.6
1 22	10 4.59	+12 41.5	1.811	2.721	9.6	22.5	1 22	9 58.06	+10 27.6	2.446	3.353	7.6	20.4
2 1	9 55.54	+13 24.6	1.771	2.734	5.4	22.3	2 1	9 51.80	+11 25.4	2.395	3.356	4.4	20.2
2 11	9 45.21	+14 11.8	1.760	2.746	0.9	22.0	2 11	9 44.62	+12 29.0	2.373	3.359	0.9	19.9
2 21	9 34.68	+14 57.4	1.779	2.757	3.7	22.2	2 21	9 37.23	+13 33.6	2.382	3.362	2.8	20.1
3 2	9 25.11	+15 36.1	1.827	2.767	8.0	22.5	3 2	9 30.37	+14 34.5	2.422	3.364	6.2	20.3
3 12	9 17.43	+16 4.4	1.902	2.776	11.8	22.7	3 12	9 24.73	+15 27.5	2.489	3.366	9.2	20.5
3 22	9 12.23	+16 21.0	1.999	2.785	14.9	23.0	3 22	9 20.77	+16 10.2	2.580	3.368	11.9	20.7
227455	2005 <i>WO</i> ₉₉		2 12.9 66°91'	1°4/14.1	18		384204	2009 <i>BS</i> ₁₇₂		2 12.9 247°43'	0°3/12.8	17	
1 12	10 5.88	+ 7 51.7	1.799	2.630	13.9	20.5	1 12	10 5.72	+13 41.4	2.417	3.251	10.7	20.8
1 22	10 0.67	+ 8 11.7	1.729	2.636	10.2	20.3	1 22	10 0.21	+13 55.1	2.334	3.246	7.7	20.6
2 1	9 53.39	+ 8 45.5	1.684	2.643	6.1	20.0	2 1	9 53.04	+14 14.8	2.277	3.241	4.3	20.4
2 11	9 44.86	+ 9 29.1	1.666	2.650	2.0	19.8	2 11	9 44.84	+14 37.0	2.250	3.236	0.7	20.1
2 21	9 36.07	+10 17.2	1.676	2.657	3.5	19.9	2 21	9 36.40	+14 58.2	2.252	3.231	3.1	20.3
3 2	9 28.12	+11 3.9	1.715	2.663	7.7	20.1	3 2	9 28.54	+15 15.1	2.285	3.225	6.6	20.5
3 12	9 21.94	+11 44.3	1.779	2.670	11.6	20.4	3 12	9 22.04	+15 25.2	2.345	3.220	9.8	20.7
3 22	9 18.10	+12 15.0	1.865	2.677	14.9	20.6	3 22	9 17.40	+15 27.2	2.428	3.215	12.6	20.9
317025	2001 <i>QP</i> ₂₂₇		2 12.9 217°54'	2°4/14.6	16		467524	2007 <i>HY</i> ₈₃		2 12.9 161°87'	0°4/12.6	18	
1 12	10 9.70	+ 6 35.6	2.057	2.871	13.1	21.0	1 12	10 4.23	+11 6.0	2.404	3.234	10.8	21.4
1 22	10 3.31	+ 6 22.2	1.969	2.865	9.9	20.8	1 22	9 59.15	+12 11.2	2.328	3.239	7.8	21.2
2 1	9 54.87	+ 6 20.4	1.906	2.858	6.2	20.6	2 1	9 52.44	+13 26.4	2.279	3.243	4.3	21.0
2 11	9 45.12	+ 6 28.3	1.871	2.851	2.8	20.3	2 11	9 44.74	+14 46.5	2.260	3.247	0.7	20.8
2 21	9 34.98	+ 6 43.0	1.866	2.844	3.7	20.4	2 21	9 36.79	+16 5.5	2.273	3.250	3.2	21.0
3 2	9 25.53	+ 7 0.8	1.891	2.836	7.3	20.6	3 2	9 29.41	+17 17.9	2.315	3.253	6.7	21.2
3 12	9 17.70	+ 7 17.9	1.942	2.828	11.0	20.8	3 12	9 23.34	+18 19.4	2.386	3.255	9.9	21.4
3 22	9 12.12	+ 7 31.2	2.017	2.819	14.2	21.0	3 22	9 19.08	+19 7.9	2.480	3.258	12.6	21.6
33917	Kellyconnor		2 12.9 88°29'	4°5/16.2	18		369297	2009 <i>SW</i> ₂₀		2 12.9 205°73'	0°1/13.1	13 C	
1 12	10 7.44	+ 0 19.9	1.499	2.311	17.1	18.6	1 12	10 6.24	+10 39.5	2.422	3.247	11.0	22.4
1 22	10 2.06	+ 0 31.0	1.436	2.324	13.3	18.4	1 22	10 0.63	+11 20.4	2.334	3.241	8.0	22.2
2 1	9 54.27	+ 1 6.2	1.394	2.337	9.0	18.2	2 1	9 53.31	+12 11.0	2.273	3.234	4.5	21.9
2 11	9 45.02	+ 2 2.5	1.377	2.350	5.2	18.0	2 11	9 44.90	+13 7.2	2.241	3.227	0.8	21.6
2 21	9 35.51	+ 3 13.7	1.387	2.363	5.1	18.0	2 21	9 36.17	+14 4.2	2.240	3.219	3.0	21.8
3 2	9 27.03	+ 4 31.4	1.425	2.375	8.7	18.2	3 2	9 27.97	+14 57.1	2.270	3.211	6.6	22.0
3 12	9 20.66	+ 5 46.8	1.487	2.388	12.8	18.5	3 12	9 21.10	+15 41.9	2.328	3.201	10.0	22.2
3 22	9 17.01	+ 6 53.5	1.571	2.400	16.4	18.8	3 22	9 16.09	+16 16.5	2.409	3.191	12.8	22.4
146484	2001 <i>RX</i> ₁₃₆		2 12.9 120°90'	7°5/ 7.9	18		455195	2000 <i>SR</i> ₁₇₈		2 13.0 155°23'	3°8/17.3	17	
1 12	10 14.30	+32 53.8	1.798	2.645	13.2	19.7	1 12	10 5.51	- 2 59.3	2.941	3.699	10.9	23.2
1 22	10 6.96	+33 48.5	1.743	2.648	10.3	19.5	1 22	9 59.74	- 2 49.9	2.859	3.711	8.7	23.0
2 1	9 56.98	+34 33.3	1.712	2.651	8.0	19.3	2 1	9 52.65	- 2 25.8	2.802	3.721	6.3	22.9
2 11	9 45.46	+34 59.3	1.708	2.654	7.6	19.3	2 11	9 44.77	- 1 48.4	2.774	3.731	4.3	22.8
2 21	9 33.81	+35 1.0	1.732	2.657	9.3	19.4	2 21	9 36.72	- 1 0.3	2.777	3.740	4.0	22.7
3 2	9 23.44	+34 36.8	1.781	2.660	12.1	19.6	3 2	9 29.16	- 0 5.2	2.810	3.748	5.7	22.9
3 12	9 15.49	+33 49.6	1.853	2.662	14.9	19.8	3 12	9 22.69	+ 0 52.5	2.873	3.755	8.0	23.0
3 22	9 10.53	+32 44.3	1.944	2.665	17.4	20.0	3 22	9 17.73	+ 1 48.8	2.962	3.762	10.2	23.2
340739	2006 <i>SL</i> ₁₉₄		2 12.9 190°95'	1°5/11.5	17		349047	2006 <i>VJ</i> ₁₄₂		2 13.0 215°83'	4°3/17.8	17	
1 12	10 5.66	+17 48.5	2.607	3.447	9.8	21.2	1 12	10 2.72	- 4 12.7	2.924	3.681	11.0	21.8
1 22	10 0.05	+18 15.9	2.530	3.446	7.0	21.0	1 22	9 57.86	- 4 14.9	2.827	3.675	8.9	21.7
2 1	9 52.88	+18 46.3	2.480	3.445	3.9	20.8	2 1	9 51.66	- 4 2.0	2.754	3.667	6.7	21.5
2 11	9 44.77	+19 15.9	2.460	3.444	1.5	20.6	2 11	9 44.62	- 3 34.7	2.709	3.660	4.8	21.4
2 21	9 36.47	+19 40.7	2.470	3.442	3.6	20.8	2 21	9 37.32	- 2 54.8	2.693	3.652	4.4	21.4
3 2	9 28.76	+19 57.7	2.511	3.440	6.7	21.0	3 2	9 30.42	- 2 5.8	2.708	3.644	6.0	21.4
3 12	9 22.33	+20 5.2	2.578	3.438	9.6	21.2	3 12	9 24.52	- 1 11.8	2.750	3.635	8.2	21.6
3 22	9 17.68	+20 2.7	2.669	3.436	12.0	21.3	3 22	9 20.08	- 0 17.2	2.818	3.626	10.5	21.7
264754	2002 <i>DU</i> ₉		2 12.9 5°28'	11°1/ 3.2	18		367802	2011 <i>AT</i> ₂₉		2 13.0 99°32'	2°2/11.5</		