

EPHEMERIDES

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
182569 2001 TN_{149} 1 18.0 119°16' 1.8/18.9 18 12 13 8 22.90 +13 29.3 1.980 2.768 14.5 20.9 12 23 8 18.02 +13 47.2 1.903 2.777 11.3 20.7 1 2 8 10.86 +14 16.9 1.848 2.786 7.5 20.5 1 12 8 2.09 +14 56.2 1.821 2.794 3.6 20.3 1 22 7 52.65 +15 41.3 1.823 2.803 2.3 20.2 2 1 7 43.63 +16 28.2 1.854 2.811 5.9 20.5 2 11 7 36.04 +17 13.2 1.913 2.819 9.7 20.7 2 21 7 30.62 +17 53.7 1.997 2.826 13.0 20.9							183231 2002 TJ_{70} 1 18.0 119°32' 2.9/19.5 18 12 13 8 21.40 +11 2.5 2.460 3.230 12.5 20.2 12 23 8 16.40 +10 48.6 2.380 3.240 9.8 20.1 1 2 8 9.60 +10 44.3 2.323 3.250 6.9 19.9 1 12 8 1.57 +10 49.1 2.295 3.260 4.0 19.7 1 22 7 53.06 +11 1.6 2.296 3.269 3.0 19.7 2 1 7 44.89 +11 20.0 2.327 3.279 5.3 19.9 2 11 7 37.86 +11 41.7 2.388 3.288 8.3 20.0 2 21 7 32.55 +12 4.6 2.474 3.296 11.0 20.2						
421348 2013 TY_{97} 1 18.0 31°40' 0.9/18.4 18 12 13 8 21.62 +16 50.1 1.936 2.736 14.3 20.9 12 23 8 17.17 +17 1.0 1.855 2.739 11.0 20.7 1 2 8 10.38 +17 20.8 1.798 2.741 7.2 20.5 1 12 8 1.93 +17 47.1 1.767 2.744 3.0 20.2 1 22 7 52.76 +18 16.6 1.765 2.746 1.8 20.2 2 1 7 44.00 +18 45.7 1.792 2.749 6.0 20.4 2 11 7 36.70 +19 11.8 1.846 2.752 9.9 20.7 2 21 7 31.61 +19 33.1 1.924 2.755 13.4 20.9							453791 2011 QY_{48} 1 18.0 107°59' 1.6/18.8 17 12 13 8 27.16 +14 1.6 1.798 2.585 15.8 22.1 12 23 8 21.32 +14 26.9 1.733 2.608 12.2 21.9 1 2 8 12.97 +15 4.6 1.692 2.630 8.0 21.7 1 12 8 2.89 +15 51.2 1.677 2.652 3.6 21.5 1 22 7 52.19 +16 42.2 1.692 2.672 2.2 21.4 2 1 7 42.11 +17 32.9 1.736 2.692 6.3 21.7 2 11 7 33.76 +18 19.4 1.809 2.712 10.3 22.0 2 21 7 27.88 +18 59.4 1.905 2.731 13.7 22.3						
18499 Showalter 1 18.0 121°57' 0.6/18.3 18 12 13 8 27.99 +16 43.7 2.138 2.920 13.8 20.6 12 23 8 21.59 +17 10.1 2.071 2.944 10.5 20.4 1 2 8 12.96 +17 44.8 2.028 2.967 6.8 20.2 1 12 8 2.84 +18 24.3 2.013 2.989 2.7 20.0 1 22 7 52.19 +19 4.8 2.029 3.011 1.7 19.9 2 1 7 42.08 +19 42.7 2.077 3.031 5.6 20.2 2 11 7 33.49 +20 15.5 2.153 3.050 9.2 20.5 2 21 7 27.08 +20 42.0 2.255 3.069 12.3 20.7							131508 2001 SE_{318} 1 18.0 336°38' 4.8/16.4 18 12 13 8 26.86 +29 1.8 1.331 2.162 17.9 19.7 12 23 8 22.58 +29 46.3 1.258 2.157 13.9 19.5 1 2 8 14.55 +30 32.0 1.206 2.153 9.4 19.2 1 12 8 3.71 +31 10.3 1.177 2.149 5.4 19.0 1 22 7 51.60 +31 33.1 1.174 2.145 5.8 19.0 2 1 7 40.18 +31 35.7 1.197 2.142 10.0 19.2 2 11 7 31.26 +31 18.5 1.244 2.140 14.6 19.4 2 21 7 25.94 +30 45.7 1.310 2.137 18.6 19.7						
207634 2006 SN_{350} 1 18.0 134°72' 2.9/16.4 18 12 13 8 23.15 +29 9.4 2.571 3.370 11.2 20.5 12 23 8 17.89 +29 41.7 2.493 3.375 8.6 20.3 1 2 8 10.61 +30 13.2 2.440 3.381 5.7 20.1 1 12 8 1.96 +30 39.9 2.416 3.386 3.3 20.0 1 22 7 52.76 +30 58.2 2.422 3.391 3.5 20.0 2 1 7 43.94 +31 5.9 2.458 3.396 6.0 20.2 2 11 7 36.40 +31 2.8 2.522 3.400 8.8 20.4 2 21 7 30.76 +30 50.0 2.611 3.405 11.4 20.5							48528 1993 OC_3 1 18.0 166°22' 0.3/17.9 18 R 12 13 8 25.94 +20 41.0 2.090 2.886 13.6 19.4 12 23 8 20.31 +20 52.6 2.007 2.889 10.4 19.2 1 2 8 12.32 +21 9.4 1.949 2.893 6.6 19.0 1 12 8 2.68 +21 28.0 1.918 2.896 2.5 18.7 1 22 7 52.33 +21 45.2 1.917 2.898 1.8 18.6 2 1 7 42.42 +21 58.3 1.946 2.900 5.9 18.9 2 11 7 34.00 +22 5.8 2.004 2.902 9.7 19.2 2 21 7 27.81 +22 7.5 2.086 2.903 13.0 19.4						
279827 2000 ST_{98} 1 18.0 94°65' 4.8/16.2 18 12 13 8 29.78 +33 34.9 2.000 2.801 13.9 20.3 12 23 8 23.38 +34 10.8 1.938 2.818 10.8 20.2 1 2 8 14.28 +34 41.9 1.900 2.835 7.6 20.0 1 12 8 3.37 +35 1.8 1.890 2.851 5.1 19.9 1 22 7 51.87 +35 6.0 1.908 2.867 5.4 19.9 2 1 7 41.14 +34 53.0 1.955 2.882 8.0 20.1 2 11 7 32.35 +34 24.4 2.028 2.898 11.0 20.3 2 21 7 26.24 +33 44.0 2.125 2.913 13.8 20.5							114245 2002 WN_9 1 18.0 161°01' 3.7/20.1 18 12 13 8 19.93 +7 44.2 2.596 3.354 12.2 20.4 12 23 8 15.26 +7 32.3 2.508 3.357 9.8 20.3 1 2 8 8.88 +7 31.7 2.443 3.360 7.1 20.1 1 12 8 1.32 +7 42.4 2.406 3.362 4.6 19.9 1 22 7 53.24 +8 3.1 2.398 3.365 3.7 19.9 2 1 7 45.43 +8 31.8 2.421 3.367 5.5 20.0 2 11 7 38.63 +9 5.8 2.472 3.369 8.2 20.2 2 21 7 33.42 +9 42.1 2.549 3.371 10.8 20.3						
323907 2005 TY_{38} 1 18.0 103°72' 3.0/19.3 18 12 13 8 24.15 +11 42.7 2.023 2.801 14.5 21.3 12 23 8 18.79 +11 29.2 1.951 2.817 11.4 21.1 1 2 8 11.24 +11 26.8 1.902 2.832 7.9 20.9 1 12 8 2.21 +11 34.9 1.879 2.847 4.4 20.7 1 22 7 52.62 +11 51.4 1.886 2.862 3.2 20.7 2 1 7 43.52 +12 13.8 1.923 2.876 6.1 20.9 2 11 7 35.88 +12 39.1 1.987 2.890 9.5 21.1 2 21 7 30.37 +13 4.8 2.076 2.904 12.7 21.4							325282 2008 GU_{137} 1 18.0 234°44' 0.0/18.0 16 12 13 8 23.51 +18 50.2 2.238 3.031 12.9 22.2 12 23 8 18.49 +19 13.4 2.139 3.019 9.9 22.0 1 2 8 11.23 +19 44.0 2.064 3.007 6.4 21.8 1 12 8 2.30 +20 18.9 2.017 2.995 2.5 21.5 1 22 7 52.55 +20 54.5 2.000 2.982 1.6 21.4 2 1 7 43.02 +21 27.3 2.014 2.968 5.7 21.6 2 11 7 34.72 +21 54.8 2.056 2.954 9.5 21.8 2 21 7 28.45 +22 15.8 2.123 2.940 12.8 22.0						
286160 2001 TJ_{257} 1 18.0 85°41' 0.2/17.9 18 12 13 8 23.30 +18 33.4 1.821 2.626 14.9 20.8 12 23 8 18.59 +19 8.5 1.748 2.635 11.4 20.6 1 2 8 11.34 +19 52.7 1.698 2.644 7.3 20.4 1 12 8 2.31 +20 41.9 1.675 2.653 2.8 20.1 1 22 7 52.54 +21 31.1 1.680 2.662 1.9 20.1 2 1 7 43.24 +22 15.5 1.714 2.670 6.4 20.4 2 11 7 35.56 +22 52.2 1.776 2.679 10.5 20.7 2 21 7 30.29 +23 19.8 1.861 2.688 13.9 20.9							446787 1997 TP_{22} 1 18.0 75°81' 0.1/17.9 16 12 13 8 28.33 +19 29.8 1.434 2.247 17.8 22.2 12 23 8 22.79 +19 47.0 1.377 2.268 13.6 22.0 1 2 8 14.13 +20 12.9 1.342 2.290 8.6 21.7 1 12 8 3.38 +20 42.8 1.333 2.311 3.3 21.5 1 22 7 51.94 +21 11.5 1.351 2.332 2.2 21.4 2 1 7 41.38 +21 34.8 1.396 2.353 7.4 21.8 2 11 7 33.07 +21 50.7 1.467 2.374 12.0 22.1 2 21 7 27.79 +21 58.9 1.561 2.395 15.8 22.4						
432548 2010 JH_{31} 1 18.0 208°07' 1.3/18.8 17 12 13 8 19.73 +15 0.0 2.917 3.694 10.6 22.2 12 23 8 15.01 +15 5.4 2.820 3.689 8.2 22.1 1 2 8 8.68 +15 17.6 2.748 3.684 5.4 21.9 1 12 8 1.22 +15 35.2 2.705 3.678 2.5 21.7 1 22 7 53.26 +15 56.3 2.693 3.673 1.7 21.6 2 1 7 45.50 +16 19.0 2.712 3.667 4.4 21.8 2 11 7 38.65 +16 41.3 2.760 3.660 7.3 22.0 2 21 7 33.25 +17 1.8 2.836 3.653 9.9 22.1							112929 2002 QN_{67} 1 18.0 297°41' 0.0/17.9 18 12 13 8 21.62 +19 36.4 2.013 2.817 13.7 20.1 12 23 8 17.31 +19 48.5 1.915 2.801 10.6 19.8 1 2 8 10.60 +20 7.5 1.840 2.785 6.8 19.6 1 12 8 2.09 +20 30.5 1.792 2.770 2.6 19.3 1 22 7 52.70 +20 54.0 1.773 2.754 1.8 19.2 2 1 7 43.55 +21 14.9 1.783 2.739 6.1 19.4 2 11 7 35.76 +21 30.8 1.820 2.724 10.2 19.6 2 21 7 30.18 +21 40.9 1.881 2.709 13.8 19.8						
67943 2000 WP_{151} 1 18.0 88°10' 3.5/16.8 18 12 13 8 34.80 +25 52.2 1.377 2.190 18.4 19.6 12 23 8 27.84 +26 47.4 1.331 2.221 13.9 19.4 1 2 8 17.37 +27 45.1 1.306 2.252 9.0 19.2 1 12 8 4.57 +28 36.3 1.308 2.283 4.4 19.1 1 22 7 51.14 +29 13.6 1.338 2.312 4.5 19.1 2 1 7 38.90 +29 32.9 1.395 2.341 8.8 19.5 2 11 7 29.36 +29 35.2 1.478 2.369 13.0 19.8 2 21 7 23.32 +29 23.8 1.582 2.396 16.6 20.1							428961 2008 YN_{105} 1 18.0 331°69' 0.4/18.3 17 12 13 8 18.55 +14 33.3 1.917 2.718 14.4 20.8 12 23 8 15.09 +15 37.6 1.822 2.706 11.1 20.6 1 2 8 9.26 +16 57.7 1.750 2.694 7.3 20.3 1 12 8 1.61 +18 29.6 1.706 2.683 2.9 20.0 1 22 7 53.02 +20 7.0 1.691 2.672 1.8 19.9 2 1 7 44.58 +21 42.7 1.705 2.662 6.3 20.2 2 11 7 37.45 +23 10.6 1.748 2.653 10.4 20.4 2 21 7 32.50 +24 26.7 1.814 2.644 14.1 20.6						

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
473625	2015	<i>XO</i> ₂₉₃	1 18.1	51°08	0°7/17.9	18	377806	2006	<i>AN</i> ₇₇	1 18.1	284°34	0°1/18.2	17
12 13	8 26.32	+20 38.8	1.349	2.171	18.2	21.4	12 13	8 24.16	+20 18.5	1.997	2.798	13.9	21.0
65884	1997	<i>YP</i> ₁₅	1 18.1	270°70	0°3/18.0	18	157765	2007	<i>DM</i> ₅₈	1 18.1	278°79	0°0/18.1	18
12 13	8 26.02	+20 14.8	1.647	2.456	16.0	19.9	12 13	8 23.67	+19 44.4	1.948	2.751	14.2	20.8
67915	2000	<i>WG</i> ₁₀₅	1 18.1	99°18	0°4/18.3	18	15135	2000	<i>EG</i> ₉₂	1 18.1	195°58	5°5/21.0	18
12 13	8 28.01	+18 4.8	1.736	2.533	15.8	20.2	12 13	8 22.72	+3 3.9	2.264	3.005	14.3	18.4
167511	2003	<i>YW</i> ₁₁₅	1 18.1	16°80	3°1/16.9	18	465862	2010	<i>RH</i> ₁₁₆	1 18.1	34°11	7°9/22.3	16
12 13	8 26.76	+30 4.0	2.155	2.957	13.0	19.6	12 13	8 20.66	+1 4.8	1.244	2.027	21.6	20.5
223691	2004	<i>QK</i> ₂₇	1 18.1	119°16	5°5/15.9	18	197338	2003	<i>WR</i> ₁₇₆	1 18.1	71°14	0°7/18.5	18
12 13	8 31.05	+36 20.1	2.156	2.949	13.3	20.8	12 13	8 22.11	+16 49.8	2.074	2.869	13.7	20.8
272924	2006	<i>BX</i> ₁₉₉	1 18.1	83°60	0°2/18.2	18	77679	2001	<i>MK</i> ₂₇	1 18.1	63°13	2°3/17.2	18
12 13	8 23.21	+19 9.4	2.046	2.845	13.7	21.3	12 13	8 25.11	+27 18.5	2.227	3.029	12.6	18.1
506325	2017	<i>OZ</i> ₉	1 18.1	6°96	2°6/18.9	18	390662	2002	<i>RM</i> ₇₆	1 18.1	206°92	2°9/17.0	18
12 13	8 24.09	+14 39.8	2.182	2.965	13.5	20.9	12 13	8 32.16	+26 39.8	1.901	2.698	14.7	22.4
464663	2001	<i>SW</i> ₁₃₃	1 18.1	81°78	7°1/22.9	18	465237	2007	<i>RJ</i> ₂₇₃	1 18.1	98°26	4°3/20.8	18
12 13	8 20.09	- 3 50.7	2.441	3.146	14.3	21.2	12 13	8 21.20	+ 5 5.9	2.558	3.302	12.7	21.7
292435	2006	<i>SP</i> ₃₃₅	1 18.1	206°61	0°9/18.7	17	83539	2001	<i>SF</i> ₁₆₄	1 18.1	185°40	6°3/22.2	18
12 13	8 20.13	+15 54.3	2.745	3.527	11.0	21.7	12 13	8 19.38	- 3 13.6	2.968	3.664	12.1	19.7

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
48246	2001	QG ₃₂	1 18.2	116 ^o 94	1 ^o 9/17.2	18							
12 13	8 24.97	+26 32.7	2.853	3.642	10.5	19.2	12 13	8 32.05	+39 2.2	2.062	2.854	13.8	20.6
12 23	8 19.22	+26 56.2	2.782	3.661	8.0	19.1	12 23	8 25.75	+39 43.4	1.987	2.854	11.2	20.5
504216	2006	UM ₆₆	1 18.2	163 ^o 77	4 ^o 1/21.1	17							
12 13	8 19.75	+3 22.4	3.291	4.016	10.5	23.1	12 13	8 28.81	+25 45.3	1.763	2.570	15.2	19.9
12 23	8 15.05	+3 9.0	3.200	4.022	8.6	22.9	12 23	8 23.12	+26 24.6	1.703	2.591	11.6	19.7
284347	2006	RT ₇₁	1 18.2	170 ^o 31	0 ^o 1/18.3	17							
12 13	8 21.62	+18 54.7	2.847	3.631	10.6	22.2	12 13	8 23.80	+18 25.7	2.008	2.805	14.0	20.4
12 23	8 16.76	+19 10.3	2.759	3.634	8.1	22.1	12 23	8 19.10	+18 12.7	1.920	2.802	10.8	20.1
99579	2002	FV ₃₃	1 18.2	161 ^o 61	3 ^o 2/16.8	18							
12 13	8 28.42	+26 23.7	1.847	2.653	14.7	19.8	12 13	8 21.76	+20 8.2	1.987	2.792	13.8	21.1
12 23	8 23.00	+27 15.9	1.770	2.657	11.3	19.6	12 23	8 17.66	+20 38.5	1.903	2.790	10.6	20.9
383640	2007	RE ₂₈₈	1 18.2	132 ^o 97	0 ^o 8/18.7	16							
12 13	8 22.78	+16 46.0	2.784	3.562	11.0	22.3	12 13	8 25.28	+23 40.5	2.070	2.872	13.5	19.8
12 23	8 17.57	+16 54.9	2.705	3.575	8.5	22.1	12 23	8 20.35	+23 53.3	1.975	2.861	10.3	19.6
89710	2001	YZ ₁₀₇	1 18.2	45 ^o 42	0 ^o 2/18.4	18							
12 13	8 22.74	+16 51.6	1.706	2.512	15.7	19.4	12 13	8 19.74	+18 33.1	1.122	1.964	19.8	21.0
12 23	8 18.63	+17 32.0	1.634	2.521	12.1	19.2	12 23	8 17.81	+19 24.7	1.046	1.953	15.3	20.7
400068	2006	SV ₁₃₀	1 18.2	109 ^o 16	2 ^o 5/17.2	18							
12 13	8 30.68	+26 35.1	2.109	2.903	13.5	22.1	12 13	8 29.59	+35 56.4	2.238	3.032	12.8	21.6
12 23	8 24.07	+27 5.9	2.047	2.927	10.3	21.9	12 23	8 23.80	+36 52.2	2.150	3.022	10.2	21.4
277247	2005	RG ₃₀	1 18.2	114 ^o 61	4 ^o 6/16.4	18							
12 13	8 32.04	+28 44.8	1.564	2.376	16.6	20.4	12 13	8 28.86	+16 58.0	1.776	2.569	15.7	22.5
12 23	8 26.15	+29 47.8	1.502	2.390	12.8	20.2	12 23	8 23.20	+17 20.4	1.699	2.577	12.1	22.2
448114	2008	PD ₁₅	1 18.3	151 ^o 68	0 ^o 6/18.5	18							
12 13	8 32.04	+28 44.8	1.564	2.376	16.6	20.4	12 13	8 28.86	+16 58.0	1.776	2.569	15.7	22.5
12 23	8 26.15	+29 47.8	1.502	2.390	12.8	20.2	12 23	8 23.20	+17 20.4	1.699	2.577	12.1	22.2
359061	2008	YR ₇₈	1 18.2	112 ^o 01	1 ^o 6/18.8	18							
12 13	8 28.42	+16 46.9	1.669	2.465	16.4	20.8	12 13	8 24.11	+20 25.0	1.711	2.521	15.5	21.4
12 23	8 22.90	+16 32.3	1.595	2.475	12.7	20.5	12 23	8 19.82	+20 36.5	1.627	2.517	11.9	21.2
417713	2007	CK ₁₀	1 18.3	332 ^o 28	0 ^o 3/18.1	18							
12 13	8 28.42	+16 46.9	1.669	2.465	16.4	20.8	12 13	8 24.11	+20 25.0	1.711	2.521	15.5	21.4
12 23	8 22.90	+16 32.3	1.595	2.475	12.7	20.5	12 23	8 19.82	+20 36.5	1.627	2.517	11.9	21.2

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Table with columns: 2019/20, alpha_2000, delta_2000, Delta, r, beta, V, 2019/20, alpha_2000, delta_2000, Delta, r, beta, V. Contains data for various stars including 138539, 182403, 400284, 431530, 192067, 204669, 494970, 453610, 17638, 15993, 466855, 220444, 29814, 425138, 120086, 71896, 385170, and 278081.

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
1670	Minnaert		1 18.3	28° 90'	5° 1'	15.7	18						
12 13	h m	° /											
12 13	8 25.10	+30 58.3	1.812	2.627	14.5	15.6							
149540	2003 GY ₅₀		1 18.3	253° 32'	1° 2'	17.7	18						
12 13	h m	° /											
12 13	8 23.93	+20 22.7	1.996	2.797	13.9	20.0							
52338	1992 RH ₁		1 18.3	43° 22'	10° 6'	11.7	18						
12 13	h m	° /											
12 13	8 30.97	+42 36.6	1.708	2.509	15.9	18.3							
422543	2014 TM ₂₇		1 18.3	133° 26'	0° 5'	18.6	18						
12 13	h m	° /											
12 13	8 26.06	+17 49.6	2.011	2.803	14.2	21.9							
20280	1998 FQ ₄₉		1 18.3	133° 12'	0° 5'	18.1	18						
12 13	h m	° /											
12 13	8 29.02	+20 38.1	2.004	2.795	14.2	18.5							
238790	2005 KY ₉		1 18.3	200° 98'	5° 8'	14.2	18						
12 13	h m	° /											
12 13	8 27.94	+40 54.4	2.998	3.775	10.3	21.2							
336980	2011 KE ₂₃		1 18.3	142° 76'	0° 5'	18.7	18						
12 13	h m	° /											
12 13	8 22.09	+16 55.4	2.635	3.417	11.4	21.4							
3213	Smolensk		1 18.3	99° 29'	0° 4'	18.1	18						
12 13	h m	° /											
12 13	8 23.13	+20 38.3	2.525	3.316	11.6	17.7							
378500	2007 TG ₃₇₉		1 18.3	72° 23'	0° 2'	18.2	18						
12 13	h m	° /											
12 13	8 23.51	+19 50.8	2.211	3.007	12.9	21.5							
410015	2006 WU ₁₂₇		1 18.3	34° 39'	12° 7'	23.8	18						
12 13	h m	° /											
12 13	8 23.13	-10 9.1	1.805	2.491	19.2	20.4							
5000	2000 SG ₄₇		1 18.3	124° 74'	0° 7'	18.6	18						
12 13	h m	° /											
12 13	8 27.95	+19 2.4	2.124	2.911	13.7	19.3							
455813	2005 SK ₁₈₄		1 18.3	148° 60'	2° 5'	17.2	18						
12 13	h m	° /											
12 13	8 27.50	+26 20.6	2.017	2.819	13.7	21.8							
156217	2001 US ₇₄		1 18.3	122° 69'	0° 5'	18.6	18						
12 13	h m	° /											
12 13	8 29.29	+16 46.2	1.792	2.582	15.7	21.0							
226199	2002 UL ₁₀		1 18.3	138° 77'	3° 7'	16.7	18						
12 13	h m	° /											
12 13	8 29.61	+25 13.6	1.513	2.328	16.9	20.3							
414775	2010 PN ₅₆		1 18.3	100° 30'	2° 9'	17.0	18						
12 13	h m	° /											
12 13	8 28.03	+26 25.0	1.859	2.665	14.6	21.5							
7171	Arthturkraus		1 18.3	293° 69'	0° 3'	18.2	18						
12 13	h m	° /											
12 13	8 26.62	+20 39.5	1.474	2.290	17.2	17.5							

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Table with columns: 2019/20, alpha_2000, delta_2000, Delta, r, beta, V, 2019/20, alpha_2000, delta_2000, Delta, r, beta, V. Rows include star IDs like 401950, 406745, 286006, 455374, 67781, 427102, 290696, 463546, 489020, 206354, 403531, 275365, 154731, 265357, 380952, 235666, 366882, 306729.

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
226777	2004 RB ₁₄₂		1 18.4	16°00	2°8/19.7 18		66381	1999 JZ ₁₂₆		1 18.4	172°26	2°4/19.5 18	
12 13	8 23.34	+12 13.1	1.923	2.708	15.0	20.7	12 13	8 27.70	+12 46.5	2.122	2.893	14.2	20.4
275749	2001 OL ₉		1 18.4	122°05	1°5/17.7 18		92909	2000 RV ₈		1 18.4	55°18	4°6/16.3 18	
12 13	8 32.01	+22 8.1	1.863	2.656	15.1	21.4	12 13	8 27.37	+29 26.5	1.703	2.517	15.4	18.8
344559	2002 XF ₁₆		1 18.4	9°92	3°9/17.7 18		35073	1989 TG ₁₆		1 18.4	112°44	0°5/18.6 18	
12 13	8 30.21	+28 50.2	1.104	1.942	20.3	20.0	12 13	8 29.63	+17 39.4	1.791	2.583	15.6	20.0
138136	2000 EE ₂₉		1 18.4	20°24	1°3/17.7 18		493762	2015 TY ₃₁₉		1 18.4	256°21	3°7/17.0 18	
12 13	8 22.79	+17 52.3	1.406	2.226	17.7	18.5	12 13	8 29.88	+26 25.3	1.483	2.300	17.1	21.8
293480	2007 FO ₁₅		1 18.4	279°50	8°2/22.1 18		219737	2001 XM ₁₇₄		1 18.4	25°19	2°3/19.3 18	
12 13	8 22.07	- 1 44.9	2.030	2.757	16.2	20.4	12 13	8 24.47	+14 15.6	1.842	2.633	15.3	20.2
87824	2000 SG ₁₆₇		1 18.4	135°37	3°1/20.0 18		68673	2002 CD ₁₁₅		1 18.4	193°14	0°6/18.7 18	
12 13	8 25.16	+10 9.3	2.373	3.134	13.1	20.0	12 13	8 28.39	+17 56.4	2.000	2.788	14.4	20.6
463362	2012 TB ₃₀		1 18.4	151°07	2°9/20.3 17		488907	2005 TX ₁₀₀		1 18.4	65°08	3°7/17.2 15	
12 13	8 21.44	+ 9 2.2	2.859	3.613	11.3	21.9	12 13	8 31.27	+26 16.2	1.278	2.103	18.9	21.9
188106	2001 YX ₁₁₅		1 18.4	47°36	3°6/16.6 18		258439	2001 XF ₂₃₁		1 18.4	38°13	1°1/18.0 18 R	
12 13	8 25.71	+25 25.4	1.585	2.404	16.1	19.4	12 13	8 25.77	+21 57.1	1.555	2.370	16.5	20.7
155277	2005 WJ ₁₅₉		1 18.4	26°64	3°1/16.9 18		283931	2004 PT ₁₇		1 18.4	42°81	0°7/18.7 17	
12 13	8 26.01	+26 36.4	1.872	2.681	14.4	20.3	12 13	8 24.79	+14 28.0	1.171	1.994	20.4	19.8

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
467805	2010 <i>BS</i> ₁₂₇		1 18.4 177°30'	4.5°/20.9	17		494008	2016 <i>AN</i> ₁₁₄		1 18.4 186°10'	2.4°/16.9	18	
12 13	8 21.26	+ 4 42.5	2.788	3.525	11.9	21.6	12 13	8 26.14	+23 2.7	1.995	2.797	13.9	20.8
12 23	8 16.69	+ 4 16.6	2.696	3.526	9.8	21.4	12 23	8 21.40	+24 16.7	1.912	2.797	10.6	20.6
430243	2013 <i>WG</i> ₁₁		1 18.4 43°98'	4.0°/20.7	18		310482	2000 <i>SX</i> ₂₈₀		1 18.4 140°86'	12.2°/17.5	16	
12 13	8 20.92	+ 7 23.9	2.103	2.870	14.4	20.8	12 13	8 59.25	+47 17.0	1.278	2.054	21.5	20.2
12 23	8 16.91	+ 7 22.1	2.024	2.878	11.6	20.6	12 23	8 48.93	+47 55.9	1.217	2.063	18.2	20.0
219433	2000 <i>UA</i> ₁₈		1 18.4 124°88'	3.2°/16.6	18		83722	2001 <i>TL</i> ₉₈		1 18.4 285°69'	0.7°/18.9	18	
12 13	8 27.35	+27 24.7	2.220	3.018	12.8	20.8	12 13	8 18.64	+16 36.1	3.161	3.940	9.8	19.5
12 23	8 21.93	+28 21.9	2.148	3.030	9.8	20.6	12 23	8 14.67	+16 47.6	3.058	3.929	7.6	19.3
116068	2003 <i>WW</i> ₁₁₉		1 18.4 9°94'	3.6°/16.6	18		81403	2000 <i>GD</i> ₈₅		1 18.4 170°92'	2.0°/17.2	18	
12 13	8 24.27	+27 57.0	1.936	2.747	13.9	19.4	12 13	8 26.85	+23 5.6	2.251	3.044	12.8	19.8
12 23	8 20.00	+28 48.3	1.859	2.748	10.7	19.2	12 23	8 21.60	+24 7.5	2.167	3.048	9.8	19.6
270949	2002 <i>VS</i> ₅₁		1 18.4 110°21'	0.8°/17.9	18		167795	2005 <i>AU</i> ₅₃		1 18.4 339°07'	1.3°/18.9	18	
12 13	8 24.92	+21 27.0	2.829	3.612	10.7	21.7	12 13	8 23.70	+17 5.4	1.340	2.161	18.4	20.2
12 23	8 19.41	+21 59.7	2.761	3.636	8.1	21.6	12 23	8 20.44	+17 2.2	1.259	2.152	14.4	19.9
503839	2017 <i>KU</i> ₃₃		1 18.4 204°60'	0.3°/18.6	17		171337	2006 <i>JE</i> ₅₉		1 18.4 234°86'	0.6°/18.7	18	
12 13	8 25.35	+15 52.3	2.174	2.958	13.5	22.0	12 13	8 27.39	+17 32.9	1.857	2.650	15.1	21.7
12 23	8 20.50	+16 42.9	2.080	2.954	10.5	21.8	12 23	8 22.47	+17 46.5	1.761	2.640	11.8	21.5
21462	Karenedbal		1 18.4 3°63'	3.9°/19.6	18		32744	1979 <i>MR</i> ₅		1 18.4 115°03'	0.6°/18.7	18	
12 13	8 23.40	+12 59.0	1.267	2.083	19.5	17.7	12 13	8 29.68	+17 53.6	1.655	2.452	16.5	19.3
12 23	8 20.15	+12 29.5	1.195	2.082	15.5	17.4	12 23	8 24.17	+18 2.1	1.585	2.466	12.7	19.1
13623	1995 <i>TD</i>		1 18.4 137°07'	3.8°/20.1	18		421998	2014 <i>QE</i> ₃₁₁		1 18.4 90°53'	6.6°/22.4	18	
12 13	8 28.55	+ 9 42.8	1.697	2.473	17.0	18.9	12 13	8 24.17	+ 0 18.3	1.876	2.614	16.9	21.3
12 23	8 23.21	+ 9 39.7	1.622	2.484	13.6	18.7	12 23	8 19.56	+ 0 12.8	1.805	2.631	14.1	21.1
297451	2000 <i>SC</i> ₂₅₀		1 18.4 99°84'	0.4°/18.6	18		606	Brangäne		1 18.4 72°87'	2.0°/17.8	18	
12 13	8 28.10	+17 17.7	1.630	2.430	16.6	20.9	12 13	8 32.16	+25 34.2	1.666	2.470	16.1	14.2
12 23	8 23.01	+17 44.6	1.562	2.444	12.8	20.7	12 23	8 25.93	+25 42.1	1.609	2.494	12.3	14.1

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
237330	2009 <i>CT</i> ₄₈		1 18.4	209°54'	0°0'/18.4	17	226834	2004 <i>RL</i> ₃₃₆		1 18.5	142°99'	0°7'/18.8	18
12 13	8 22.77	+19 28.2	2.689	3.475	11.1	21.2	12 13	8 25.00	+17 52.8	2.069	2.861	13.8	21.6
12 23	8 18.05	+19 43.9	2.595	3.471	8.6	21.1	12 23	8 20.21	+17 58.1	1.985	2.863	10.7	21.3
458348	2010 <i>VE</i> ₁₇₆		1 18.4	56°10'	5°9'/20.4	16	300266	2007 <i>HW</i> ₈₈		1 18.5	148°89'	3°3'/19.9	18
12 13	8 29.56	+8 6.7	1.541	2.317	18.5	21.1	12 13	8 27.81	+10 56.7	1.762	2.540	16.4	21.8
12 23	8 23.81	+7 6.6	1.490	2.347	14.8	20.9	12 23	8 22.64	+10 54.1	1.682	2.547	13.0	21.6
205670	2001 <i>XD</i> ₁₉₂		1 18.4	62°94'	0°6'/18.7	18	466764	2015 <i>AD</i> ₁₄₈		1 18.5	78°70'	1°2'/17.8	18
12 13	8 26.53	+15 51.5	1.384	2.195	18.4	20.2	12 13	8 24.23	+22 2.1	2.105	2.906	13.3	21.5
12 23	8 22.25	+16 31.8	1.322	2.210	14.2	19.9	12 23	8 19.64	+22 37.0	2.028	2.912	10.2	21.3
193851	2001 <i>QM</i> ₁₁₄		1 18.4	165°54'	2°4'/19.4	18	255857	2006 <i>SC</i> ₁₆₀		1 18.5	228°71'	2°7'/17.2	18
12 13	8 29.12	+13 41.6	1.791	2.574	16.0	20.9	12 13	8 27.83	+25 42.5	1.953	2.756	14.1	20.6
12 23	8 23.64	+13 36.0	1.709	2.579	12.6	20.7	12 23	8 22.82	+26 26.1	1.864	2.749	10.9	20.3
273380	2006 <i>VD</i> ₉		1 18.4	97°45'	1°9'/17.6	18	258083	2001 <i>PK</i> ₆₂		1 18.5	111°80'	1°2'/17.9	18
12 13	8 27.65	+23 41.4	1.795	2.601	15.0	21.0	12 13	8 29.81	+23 22.8	2.061	2.854	13.8	20.3
12 23	8 22.60	+24 15.3	1.723	2.610	11.5	20.8	12 23	8 23.76	+23 34.2	1.991	2.871	10.6	20.2
122402	2000 <i>QD</i> ₈₃		1 18.4	71°29'	4°0'/20.6	18	331514	2000 <i>DO</i> ₇₈		1 18.5	317°85'	7°3'/16.3	18
12 13	8 25.05	+7 50.9	1.845	2.615	16.1	19.2	12 13	8 32.33	+36 59.9	1.559	2.370	16.7	20.6
12 23	8 20.18	+7 55.6	1.784	2.641	12.8	19.0	12 23	8 27.25	+37 38.2	1.478	2.359	13.5	20.4
467182	2016 <i>EV</i> ₁₁₃		1 18.5	155°94'	3°5'/16.8	18	430954	2005 <i>UW</i> ₅₁₃		1 18.5	24°34'	3°9'/20.8	17
12 13	8 27.30	+28 44.7	2.069	2.872	13.4	21.4	12 13	8 19.85	+6 34.5	2.642	3.394	12.2	21.6
12 23	8 22.18	+29 27.2	1.990	2.874	10.4	21.2	12 23	8 15.78	+6 22.0	2.552	3.395	9.9	21.4
458848	2011 <i>UV</i> ₇₀		1 18.5	1°09'	5°3'/16.3	18	242128	2002 <i>XA</i> ₄₂		1 18.5	100°25'	4°6'/20.7	18
12 13	8 24.73	+28 8.0	1.242	2.080	18.5	20.4	12 13	8 25.86	+5 53.1	2.642	3.377	12.6	19.9
12 23	8 21.76	+29 18.0	1.175	2.078	14.4	20.1	12 23	8 20.11	+5 8.6	2.570	3.400	10.2	19.8
67570	2000 <i>SB</i> ₁₀₂		1 18.5	260°39'	2°4'/19.4	18	488002	2015 <i>TK</i> ₃₄₆		1 18.5	277°35'	3°0'/17.2	18
12 13	8 26.39	+13 56.2	1.656	2.450	16.6	19.4	12 13	8 27.75	+24 0.8	1.441	2.262	17.4	21.3
12 23	8 21.97	+13 51.1	1.563	2.439	13.1	19.2	12 23	8 23.68	+24 56.4	1.358	2.253	13.4	21.0

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
196864	2003 <i>SL</i> ₂₇₈	1 18.5 87°44'		2°9/17.3 18			40622	1999 <i>RY</i> ₁₆₉	1 18.5 204°57'		0°1/18.5 18		
12 13	8 28.02	+28 26.9	2.117	2.917	13.3	20.0	12 13	8 28.82	+19 39.2	2.039	2.828	14.1	20.5
418804	2008 <i>VU</i> ₂₀	1 18.5 346°55'		5°6/15.2 18			69997	1998 <i>WX</i> ₄₀	1 18.5 49°40'		8°3/14.2 18		
12 13	8 25.72	+32 55.7	2.025	2.833	13.5	20.5	12 13	8 30.16	+40 42.2	1.910	2.708	14.6	18.8
402429	2006 <i>AG</i> ₃₆	1 18.5 308°09'		0°9/18.2 18			325317	2008 <i>HL</i> ₇₀	1 18.5 260°09'		0°7/18.9 18		
12 13	8 26.75	+21 25.6	1.373	2.194	18.0	21.6	12 13	8 25.07	+16 42.4	1.973	2.766	14.4	21.2
149289	2002 <i>TH</i> ₂₂₃	1 18.5 40°47'		1°8/19.2 18			291698	2006 <i>HR</i> ₁₁₆	1 18.5 327°18'		1°1/18.1 18		
12 13	8 25.62	+15 29.5	1.508	2.314	17.4	20.3	12 13	8 24.58	+20 39.0	1.337	2.163	18.1	20.9
303396	2004 <i>XQ</i> ₉₇	1 18.5 4°79'		2°1/17.9 18			358092	2006 <i>JF</i> ₈₀	1 18.5 179°81'		1°6/19.3 18		
12 13	8 25.11	+24 6.8	1.158	1.997	19.5	20.3	12 13	8 26.24	+13 49.4	1.782	2.571	15.8	21.3
454478	2014 <i>OM</i> ₁₀₇	1 18.5 123°00'		2°4/17.4 18			458225	2010 <i>RN</i> ₁₆₅	1 18.5 70°64'		6°3/21.9 18		
12 13	8 29.41	+23 59.6	1.833	2.634	14.9	22.0	12 13	8 24.79	+ 2 27.3	1.679	2.435	17.9	21.7
164085	2003 <i>WD</i> ₁₂₂	1 18.5 0°95'		2°4/19.5 18			42806	1999 <i>JR</i> ₃	1 18.5 30°14'		21°0/26.1 18		
12 13	8 24.27	+14 19.0	2.011	2.798	14.3	19.7	12 13	8 26.48	-15 57.5	1.157	1.854	27.5	17.7
333617	2007 <i>TX</i> ₈₂	1 18.5 116°23'		3°7/20.5 18			151922	2004 <i>EY</i> ₈₆	1 18.5 322°22'		1°5/17.8 18		
12 13	8 22.85	+ 8 24.6	2.419	3.177	13.0	20.9	12 13	8 25.09	+21 29.0	1.668	2.480	15.7	19.8
73202	2002 <i>JY</i> ₁₄	1 18.5 115°53'		3°3/17.0 18			319463	2006 <i>OW</i> ₆	1 18.5 36°41'		3°3/19.9 18		
12 13	8 29.87	+26 3.8	1.768	2.574	15.3	19.4	12 13	8 23.43	+11 28.3	2.168	2.943	13.8	20.3

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Table with 14 columns: 2019/20, alpha_2000, delta_2000, Delta, r, beta, V, 2019/20, alpha_2000, delta_2000, Delta, r, beta, V. It lists astronomical data for various objects including 88595, 406905, 54968, 108698, 73027, 295107, 5430, 459234, 31599, 428140, 240389, 239020, 402058, 291549, 327858, 169373, 417299, and 53589.

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Table with columns for year (2019/20), object name, and various astronomical parameters (alpha_2000, delta_2000, Delta, r, beta, V). It contains multiple entries for different objects such as 461801, 194375, 389783, 495853, 235613, 213597, 207699, 104141, 211556, 498887, 96167, 34081, 353321, 158961, 205455, 422402, 97824, and 292866.

2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
388071	2005 <i>US</i> ₂₄	1 18.6 143 ^o 43		4.7/16.7 18				409901	2006 <i>TL</i> ₈	1 18.6 114 ^o 40		3 ^o 5/16.9 18	
12 13	8 33.95	+29 48.7	1.674	2.478	16.0	21.7	12 13	8 31.90	+28 50.0	2.121	2.913	13.5	22.5
12 23	8 28.05	+30 45.5	1.604	2.487	12.5	21.4	12 23	8 25.65	+29 38.9	2.057	2.935	10.4	22.4
240499	2004 <i>EN</i> ₁₀	1 18.6 241 ^o 30		2 ^o 6/20.1 17				381698	2009 <i>DD</i> ₇₄	1 18.6 19 ^o 61		6 ^o 0/22.2 18	
12 13	8 21.94	+10 51.2	2.571	3.337	12.1	20.9	12 13	8 18.98	+3 2.5	1.511	2.290	18.7	20.0
453382	2009 <i>BH</i> ₁₃₈	1 18.6 7 ^o 09		1 ^o 2/18.2 17				422261	2014 <i>SJ</i> ₁₄₁	1 18.6 83 ^o 93		0 ^o 0/18.6 18	
12 13	8 24.99	+21 33.4	1.207	2.040	19.2	21.5	12 13	8 27.38	+18 6.5	1.789	2.586	15.4	21.3
196899	2003 <i>TX</i> ₁₀	1 18.6 305 ^o 30		0 ^o 6/18.9 18				165745	2001 <i>QV</i> ₁₆₈	1 18.6 143 ^o 11		4 ^o 9/16.4 18	
12 13	8 24.06	+17 20.7	2.119	2.910	13.5	20.3	12 13	8 30.97	+36 18.1	2.461	3.247	12.0	20.3
168325	1993 <i>FT</i> ₂₇	1 18.6 249 ^o 32		0 ^o 8/18.2 18				208415	2001 <i>ST</i> ₂₇₄	1 18.6 92 ^o 76		1 ^o 1/18.0 18	
12 13	8 24.47	+22 29.1	2.520	3.311	11.6	20.7	12 13	8 25.09	+22 40.8	2.417	3.209	12.0	21.6
421193	2013 <i>RS</i> ₇₆	1 18.6 98 ^o 30		0 ^o 7/18.3 18				319836	2006 <i>VG</i> ₁₅₅	1 18.6 34 ^o 88		2 ^o 8/17.2 18	
12 13	8 26.14	+21 19.1	2.088	2.884	13.6	21.5	12 13	8 25.23	+22 26.7	1.377	2.202	17.7	20.2
135163	2001 <i>QP</i> ₂₄₄	1 18.6 155 ^o 25		5 ^o 0/15.6 18				33613	Pendharkar	1 18.6 330 ^o 46		7 ^o 0/20.4 18	
12 13	8 29.41	+37 51.2	2.866	3.646	10.7	21.0	12 13	8 22.82	+8 25.0	1.251	2.056	20.3	18.3
469722	2005 <i>LP</i> ₄₀	1 18.6 85 ^o 31		7 ^o 5/23.3 17				132759	2002 <i>PM</i> ₆₉	1 18.6 223 ^o 86		2 ^o 9/20.2 17	
12 13	8 41.98	-3 47.0	1.540	2.239	21.5	23.2	12 13	8 23.98	+9 55.3	2.866	3.618	11.3	21.1
198527	2004 <i>XA</i> ₁₀₄	1 18.6 315 ^o 10		2 ^o 4/17.4 18				230660	2003 <i>SO</i> ₁₃₈	1 18.6 123 ^o 16		1 ^o 0/19.1 18	
12 13	8 25.41	+25 13.0	2.029	2.834	13.6	20.3	12 13	8 25.46	+16 51.1	2.310	3.092	12.8	20.3

EPHEMERIDES

1 18.6

1 18.6

2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
3928	Randa		1 18.6 141°63	0°7/18.9	18		162432	2000 <i>FR</i> ₅		1 18.6 45°81	0°3/18.8	18	
12 13	8 31.64	+17 34.8	1.784	2.572	15.8	17.5	12 13	8 24.29	+18 28.0	2.061	2.856	13.7	20.0
448460	2010 <i>EO</i> ₁₀₉		1 18.6 217°95	1°2/18.2	18		82238	2001 <i>JN</i> ₄		1 18.6 117°94	0°9/19.2	18	
12 13	8 29.79	+21 53.7	1.610	2.416	16.5	21.6	12 13	8 23.68	+14 56.7	2.338	3.119	12.8	19.8
460794	2014 <i>WK</i> ₃₇		1 18.6 346°97	4°6/20.1	18		395315	2011 <i>ON</i> ₂₀		1 18.6 251°38	0°9/19.0	18	
12 13	8 24.50	+10 42.1	1.632	2.421	17.0	20.7	12 13	8 27.83	+15 19.9	1.623	2.420	16.8	21.7
45710	2000 <i>FD</i> ₄₀		1 18.6 119°18	4°3/16.4	18		132288	2002 <i>FJ</i> ₂₀		1 18.6 302°82	3°0/17.3	18	
12 13	8 30.76	+30 28.6	2.062	2.859	13.7	18.8	12 13	8 27.15	+23 55.7	1.516	2.334	16.8	19.8
285953	2001 <i>RB</i> ₂₃		1 18.6 116°62	5°9/16.6	18		253142	2002 <i>VP</i> ₆₂		1 18.6 28°18	2°3/19.3	18	
12 13	8 35.17	+36 22.5	1.933	2.726	14.6	20.9	12 13	8 27.00	+16 16.2	1.458	2.266	17.8	19.7
405959	2006 <i>SR</i> ₃₄		1 18.6 80°64	2°8/17.6	18		463301	2012 <i>HU</i> ₇₉		1 18.6 289°14	0°2/18.5	17	
12 13	8 32.33	+26 49.7	1.726	2.529	15.7	21.7	12 13	8 25.13	+18 55.6	1.872	2.672	14.7	21.8
29358	1996 <i>AY</i> ₇		1 18.6 225°87	1°6/17.9	18		59666	1999 <i>JH</i> ₉₇		1 18.6 105°02	4°9/21.7	18	
12 13	8 30.63	+22 51.9	1.756	2.557	15.5	19.4	12 13	8 25.22	+ 3 34.4	2.262	2.999	14.4	19.4
343968	2011 <i>LC</i> ₁₁		1 18.6 139°78	5°0/22.4	18		223665	2004 <i>PH</i> ₃₇		1 18.6 235°61	4°2/20.3	18	R
12 13	8 21.67	+ 0 7.2	2.931	3.642	12.0	21.7	12 13	8 26.13	+ 9 14.6	2.159	2.921	14.3	20.6
372962	2011 <i>BL</i> ₁₀₅		1 18.6 162°65	1°6/19.5	18		96006	2004 <i>NE</i> ₂₇		1 18.6 160°18	0°6/18.9	18	
12 13	8 24.72	+13 57.7	2.189	2.968	13.6	21.5	12 13	8 30.66	+17 1.9	2.112	2.889	14.0	22.2

EPHEMERIDES

1 18.6

1 18.7

2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
217448 2005 TZ ₄ 1 18.6 182 ^o .41 0 ^o .5/18.9 17							412965 2014 QX ₃₀₄ 1 18.6 48 ^o .76 8 ^o .4/23.1 18						
12 13	8 27.58	+17 47.0	2.664	3.436	11.6	22.1	12 13	8 23.35	-1 46.0	1.707	2.445	18.4	20.8
12 23	8 21.91	+17 55.7	2.570	3.437	9.0	21.9	12 23	8 19.53	-2 17.5	1.631	2.451	15.6	20.7
1 2	8 14.35	+18 10.1	2.501	3.437	5.9	21.7	1 2	8 13.22	-2 24.9	1.574	2.457	12.6	20.5
1 12	8 5.42	+18 28.2	2.462	3.437	2.5	21.5	1 12	8 5.10	-2 5.4	1.539	2.464	9.8	20.3
1 22	7 55.88	+18 47.5	2.453	3.436	1.2	21.4	1 22	7 56.15	-1 19.2	1.528	2.470	8.4	20.3
2 1	7 46.57	+19 5.8	2.477	3.434	4.6	21.6	2 1	7 47.53	-0 9.9	1.545	2.477	9.4	20.3
2 11	7 38.31	+19 21.3	2.531	3.431	7.9	21.9	2 11	7 40.38	+1 15.4	1.587	2.484	11.9	20.5
2 21	7 31.76	+19 33.2	2.611	3.427	10.7	22.0	2 21	7 35.51	+2 48.6	1.652	2.491	14.8	20.7
433074 2012 TA ₄₉ 1 18.6 191 ^o .03 5 ^o .7/22.4 17							303428 2005 AV ₁₄ 1 18.6 352 ^o .40 6 ^o .5/16.4 18						
12 13	8 21.92	-1 14.9	2.944	3.646	12.1	22.1	12 13	8 27.28	+31 27.5	1.257	2.091	18.6	20.1
12 23	8 17.41	-1 39.1	2.848	3.645	10.3	21.9	12 23	8 24.10	+32 28.2	1.188	2.086	14.6	19.8
1 2	8 11.36	-1 49.2	2.773	3.643	8.3	21.8	1 2	8 16.98	+33 28.9	1.139	2.082	10.4	19.5
1 12	8 4.20	-1 43.8	2.725	3.641	6.5	21.7	1 12	8 6.83	+34 19.1	1.113	2.079	7.0	19.3
1 22	7 56.52	-1 23.1	2.705	3.638	5.7	21.6	1 22	7 55.26	+34 49.3	1.111	2.076	7.3	19.3
2 1	7 48.99	-0 48.5	2.715	3.635	6.4	21.7	2 1	7 44.31	+34 54.0	1.134	2.075	10.9	19.5
2 11	7 42.26	-0 2.8	2.752	3.631	8.1	21.8	2 11	7 35.91	+34 33.7	1.180	2.074	15.3	19.8
2 21	7 36.88	+0 50.3	2.816	3.627	10.2	21.9	2 21	7 31.21	+33 53.6	1.244	2.075	19.2	20.0
251157 2006 TN ₇₅ 1 18.6 109 ^o .10 2 ^o .2/19.8 18							239990 2001 SL ₈ 1 18.6 326 ^o .55 5 ^o .2/21.6 18						
12 13	8 27.15	+12 20.3	1.964	2.740	15.0	21.4	12 13	8 21.57	+3 36.9	2.372	3.114	13.7	20.8
12 23	8 22.04	+12 34.6	1.892	2.757	11.7	21.2	12 23	8 17.53	+3 18.6	2.281	3.113	11.3	20.7
1 2	8 14.62	+13 1.6	1.842	2.774	8.0	21.0	1 2	8 11.63	+3 15.0	2.213	3.112	8.7	20.5
1 12	8 5.57	+13 39.0	1.820	2.790	4.1	20.8	1 12	8 4.39	+3 27.1	2.170	3.112	6.2	20.3
1 22	7 55.86	+14 23.2	1.826	2.806	2.4	20.7	1 22	7 56.52	+3 54.2	2.155	3.111	5.2	20.3
2 1	7 46.57	+15 10.3	1.863	2.821	5.7	21.0	2 1	7 48.85	+4 33.9	2.169	3.111	6.4	20.3
2 11	7 38.72	+15 56.4	1.927	2.836	9.4	21.2	2 11	7 42.20	+5 22.6	2.211	3.110	8.9	20.5
2 21	7 33.03	+16 38.4	2.017	2.850	12.7	21.5	2 21	7 37.21	+6 16.2	2.279	3.110	11.6	20.7
131863 2002 AG ₁₅₂ 1 18.6 308 ^o .25 2 ^o .2/17.8 18							88675 2001 RR ₈₈ 1 18.6 64 ^o .48 0 ^o .2/18.6 18						
12 13	8 27.01	+23 21.8	1.425	2.246	17.5	20.2	12 13	8 26.19	+18 57.3	1.747	2.549	15.5	19.7
12 23	8 23.35	+23 53.9	1.339	2.234	13.6	20.0	12 23	8 21.78	+19 23.7	1.672	2.556	12.0	19.5
1 2	8 16.27	+24 33.5	1.273	2.221	8.9	19.7	1 2	8 14.71	+19 59.2	1.619	2.563	7.8	19.2
1 12	8 6.50	+25 14.7	1.232	2.209	4.0	19.3	1 12	8 5.71	+20 39.6	1.593	2.570	3.2	19.0
1 22	7 55.32	+25 50.8	1.217	2.197	3.2	19.3	1 22	7 55.86	+21 20.3	1.595	2.577	1.7	18.9
2 1	7 44.42	+26 15.8	1.228	2.185	8.3	19.5	2 1	7 46.42	+21 56.6	1.625	2.584	6.3	19.2
2 11	7 35.53	+26 27.3	1.265	2.174	13.3	19.8	2 11	7 38.61	+22 25.7	1.682	2.591	10.6	19.5
2 21	7 29.81	+26 25.8	1.322	2.163	17.7	20.0	2 21	7 33.27	+22 46.3	1.763	2.599	14.2	19.7
6743 Liu 1 18.6 206 ^o .77 3 ^o .4/16.9 18							318 Magdalena 1 18.6 16 ^o .59 3 ^o .6/20.7 18						
12 13	8 32.04	+26 27.7	1.884	2.682	14.7	17.8	12 13	8 21.16	+8 4.3	2.164	2.931	14.1	14.2
12 23	8 26.48	+27 28.1	1.795	2.677	11.4	17.6	12 23	8 17.40	+8 10.4	2.078	2.933	11.3	14.0
1 2	8 17.93	+28 33.1	1.730	2.670	7.7	17.4	1 2	8 11.62	+8 31.0	2.015	2.936	8.1	13.8
1 12	8 7.08	+29 35.8	1.692	2.663	4.2	17.1	1 12	8 4.41	+9 5.5	1.978	2.938	5.0	13.6
1 22	7 55.04	+30 28.7	1.683	2.655	4.2	17.1	1 22	7 56.51	+9 51.5	1.969	2.941	3.6	13.6
2 1	7 43.23	+31 6.6	1.704	2.647	7.8	17.3	2 1	7 48.86	+10 45.5	1.989	2.944	5.7	13.7
2 11	7 33.08	+31 27.5	1.752	2.637	11.7	17.5	2 11	7 42.34	+11 43.1	2.038	2.948	8.9	13.9
2 21	7 25.63	+31 32.7	1.824	2.627	15.2	17.7	2 21	7 37.64	+12 40.3	2.111	2.951	12.0	14.1
364705 2007 UX ₁₁₀ 1 18.6 36 ^o .93 0 ^o .4/18.8 18							325820 2010 RA ₁₅₄ 1 18.6 29 ^o .85 0 ^o .2/18.6 18						
12 13	8 26.76	+18 26.6	1.333	2.151	18.6	21.5	12 13	8 27.46	+21 6.0	1.177	2.008	19.8	20.1
12 23	8 22.81	+18 36.2	1.270	2.162	14.4	21.3	12 23	8 23.48	+20 58.4	1.130	2.029	15.2	19.8
1 2	8 15.62	+18 56.7	1.227	2.174	9.4	21.1	1 2	8 16.02	+20 58.3	1.102	2.051	9.8	19.6
1 12	8 6.10	+19 24.0	1.209	2.186	3.9	20.8	1 12	8 6.22	+21 1.6	1.097	2.075	3.9	19.3
1 22	7 55.65	+19 53.1	1.217	2.199	1.9	20.7	1 22	7 55.68	+21 4.1	1.117	2.099	2.0	19.3
2 1	7 45.86	+20 19.3	1.251	2.213	7.3	21.0	2 1	7 46.15	+21 2.7	1.163	2.125	7.6	19.7
2 11	7 38.22	+20 39.3	1.310	2.227	12.2	21.4	2 11	7 39.07	+20 56.3	1.232	2.152	12.6	20.1
2 21	7 33.61	+20 52.1	1.390	2.241	16.4	21.6	2 21	7 35.24	+20 45.0	1.323	2.180	16.7	20.4
130862 2000 US ₈₆ 1 18.6 137 ^o .85 0 ^o .1/18.7 18							4269 Bogado 1 18.6 173 ^o .49 1 ^o .4/18.1 18						
12 13	8 28.16	+17 35.5	1.723	2.520	15.9	20.2	12 13	8 32.50	+22 40.1	1.794	2.590	15.5	17.7
12 23	8 23.35	+18 8.1	1.645	2.526	12.3	19.9	12 23	8 26.67	+23 3.2	1.713	2.593	11.9	17.5
1 2	8 15.77	+18 51.6	1.590	2.532	8.1	19.7	1 2	8 17.93	+23 31.6	1.654	2.596	7.8	17.2
1 12	8 6.15	+19 41.9	1.561	2.537	3.3	19.4	1 12	8 7.05	+24 0.3	1.621	2.598	3.3	16.9
1 22	7 55.60	+20 33.5	1.560	2.543	1.6	19.3	1 22	7 55.19	+24 24.5	1.619	2.599	2.3	16.9
2 1	7 45.43	+21 21.3	1.589	2.548	6.4	19.6	2 1	7 43.77	+24 40.3	1.645	2.600	6.8	17.2
2 11	7 36.94	+22 1.6	1.645	2.552	10.8	19.9	2 11	7 34.12	+24 46.4	1.699	2.599	11.0	17.4
2 21	7 31.00	+22 32.7	1.724	2.557	14.6	20.1	2 21	7 27.15	+24 43.4	1.777	2.598	14.7	17.6
258076 2001 PO ₁₁ 1 18.6 85 ^o .69 2 ^o .1/19.6 18							431572 2007 UZ ₁₂₆ 1 18.6 182 ^o .66 4 ^o .8/15.0 17						
12 13	8 29.38	+13 21.0	1.957	2.732	15.1	21.0	12 13	8 27.73	+36 34.5	3.037	3.818	10.1	21.8
12 23	8 23.57	+13 27.3	1.898	2.763	11.7	20.8	12 23	8 22.21	+37 39.2	2.956	3.819	8.1	21.6
1 2	8 15.49	+13 44.5	1.862	2.794	7.9	20.6	1 2	8 14.66	+38 40.4	2.902	3.819	6.1	21.5
1 12	8 5.90	+14 10.6	1.854	2.824	3.9	20.5	1 12	8 5.64	+39 32.8	2.876	3.818	4.9	21.4
1 22	7 55.80	+14 42.3	1.874	2.854	2.3	20.4	1 22	7 55.90	+40 12.1	2.881	3.817	5.2	21.4
2 1	7 46.28	+15 16.0	1.925	2.883	5.6	20.7	2 1	7 46.36	+40 35.7	2.915	3.816	6.9	21.5
2 11	7 38.33	+15 48.7	2.005	2.912	9.2	20.9	2 11	7 37.93	+40 43.4	2.977	3.814	8.9	21.7
2 21	7 32.58	+16 18.2	2.109	2.939	12.4	21.2	2 21	7 31.28	+40 36.7	3.063	3.812	10.8	21.8
312091 2007 TD ₁₀₄ 1 18.6 244 ^o .79 3 ^o .9/16.9 18							191450 2003 SU ₂₁₀ 1 18.7 77 ^o .79 4 ^o .2/20.6 18						
12 13	8 29.53	+27 35.0	1.772	2.579	15.1	21.1	12 13	8 25.63	+8 33.8	2.065	2.828	14.8	20.1
12 23	8 24.75	+28 30.3	1.685	2.571	11.8	20.9	12 23	8 20.72	+8 5.4	1.993	2.845	11.9	19.9
1 2	8 16.91	+29 29.4	1.620	2.562	8.0	20.7	1 2	8					

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1 18.7

1 18.7

2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
107507	2001 <i>DP</i> ₄₉		1 18.7	27 ^o 17	3 ^o 7/16.9	18	142119	2002 <i>RD</i> ₇		1 18.7	71 ^o 77	1 ^o 2/19.2	18
12 13	8 ^h 27 ^m 58 ^s	+25 37.5	1.507	2.326	16.8	19.5	12 13	8 ^h 28 ^m 65 ^s	+15 42.2	1.615	2.411	16.9	20.7
12 23	8 23.52	+26 41.5	1.435	2.329	12.9	19.3	12 23	8 23.59	+15 59.5	1.556	2.435	13.0	20.5
1 2	8 16.20	+27 51.6	1.385	2.331	8.6	19.0	1 2	8 15.80	+16 28.5	1.519	2.459	8.6	20.2
1 12	8 6.43	+28 59.7	1.361	2.334	4.5	18.8	1 12	8 6.13	+17 5.7	1.507	2.482	3.8	20.0
1 22	7 55.50	+29 57.4	1.363	2.337	4.5	18.8	1 22	7 55.78	+17 46.5	1.524	2.506	1.8	19.9
2 1	7 45.03	+30 38.5	1.393	2.341	8.6	19.1	2 1	7 46.07	+18 26.2	1.569	2.529	6.3	20.3
2 11	7 36.57	+31 0.9	1.448	2.344	12.8	19.3	2 11	7 38.19	+19 1.3	1.641	2.552	10.6	20.6
2 21	7 31.15	+31 6.0	1.524	2.348	16.6	19.6	2 21	7 32.91	+19 29.8	1.736	2.575	14.2	20.9
279504	2011 <i>AC</i> ₅₂		1 18.7	13 ^o 07	0 ^o 3/18.8	18	11519	<i>Adler</i>		1 18.7	234 ^o 68	1 ^o 0/18.2	18
12 13	8 23.17	+15 41.8	1.907	2.703	14.7	19.5	12 13	8 29.16	+21 21.1	1.882	2.679	14.8	18.8
12 23	8 19.34	+16 32.7	1.824	2.704	11.4	19.3	12 23	8 24.16	+21 46.7	1.787	2.668	11.5	18.6
1 2	8 13.10	+17 36.6	1.764	2.705	7.5	19.0	1 2	8 16.39	+22 19.1	1.715	2.657	7.5	18.3
1 12	8 5.08	+18 49.5	1.730	2.707	3.1	18.8	1 12	8 6.50	+22 54.3	1.669	2.646	3.1	18.0
1 22	7 56.18	+20 5.7	1.726	2.709	1.5	18.6	1 22	7 55.52	+23 27.2	1.653	2.634	2.0	17.9
2 1	7 47.53	+21 19.3	1.751	2.711	5.9	18.9	2 1	7 44.74	+23 53.8	1.666	2.621	6.5	18.2
2 11	7 40.24	+22 25.4	1.804	2.713	10.0	19.2	2 11	7 35.48	+24 11.6	1.706	2.608	10.9	18.4
2 21	7 35.12	+23 21.0	1.881	2.716	13.5	19.4	2 21	7 28.69	+24 20.3	1.770	2.595	14.6	18.6
237223	2008 <i>VO</i> ₂₃		1 18.7	13 ^o 34	0 ^o 9/19.1	18	110275	2001 <i>SO</i> ₂₅₂		1 18.7	204 ^o 12	1 ^o 5/19.4	18
12 13	8 23.30	+16 37.7	2.015	2.809	14.0	21.0	12 13	8 25.84	+14 55.9	2.009	2.794	14.4	20.6
12 23	8 19.25	+16 51.8	1.932	2.810	10.9	20.8	12 23	8 21.24	+15 5.1	1.920	2.792	11.3	20.3
1 2	8 12.93	+17 14.9	1.872	2.812	7.2	20.5	1 2	8 14.27	+15 24.7	1.854	2.790	7.6	20.1
1 12	8 4.98	+17 44.9	1.838	2.814	3.2	20.3	1 12	8 5.56	+15 52.7	1.814	2.788	3.6	19.9
1 22	7 56.27	+18 18.1	1.833	2.816	1.5	20.2	1 22	7 56.02	+16 25.8	1.804	2.785	1.9	19.7
2 1	7 47.86	+18 51.1	1.858	2.818	5.5	20.4	2 1	7 46.73	+17 0.6	1.823	2.782	5.7	20.0
2 11	7 40.77	+19 21.0	1.910	2.821	9.4	20.7	2 11	7 38.78	+17 33.9	1.870	2.779	9.6	20.2
2 21	7 35.75	+19 45.8	1.986	2.823	12.8	20.9	2 21	7 32.96	+18 3.2	1.942	2.776	13.1	20.4
12589	1999 <i>RR</i> ₁₁₄		1 18.7	157 ^o 14	1 ^o 1/18.3	18	328655	2009 <i>SV</i> ₂₅₂		1 18.7	40 ^o 43	2 ^o 4/17.5	18
12 13	8 33.05	+21 42.4	1.663	2.460	16.4	18.9	12 13	8 26.36	+24 37.6	1.831	2.639	14.7	20.7
12 23	8 27.24	+22 5.2	1.586	2.468	12.6	18.7	12 23	8 21.96	+25 20.2	1.755	2.643	11.3	20.5
1 2	8 18.37	+22 34.4	1.531	2.474	8.2	18.5	1 2	8 14.87	+26 7.4	1.702	2.647	7.4	20.3
1 12	8 7.25	+23 5.1	1.503	2.480	3.4	18.2	1 12	8 5.83	+26 53.5	1.676	2.651	3.5	20.1
1 22	7 55.14	+23 32.0	1.503	2.484	2.2	18.1	1 22	7 55.90	+27 32.9	1.678	2.655	3.2	20.1
2 1	7 43.54	+23 51.1	1.533	2.489	7.0	18.4	2 1	7 46.36	+28 1.4	1.708	2.659	6.9	20.3
2 11	7 33.86	+24 0.6	1.589	2.492	11.5	18.7	2 11	7 38.45	+28 17.2	1.765	2.663	10.8	20.5
2 21	7 27.05	+24 1.2	1.669	2.495	15.3	18.9	2 21	7 33.02	+28 20.9	1.846	2.668	14.2	20.8
44655	1999 <i>RQ</i> ₁₅₈		1 18.7	161 ^o 21	0 ^o 8/18.9	18	305637	2009 <i>BG</i> ₃₁		1 18.7	112 ^o 89	0 ^o 8/18.3	18
12 13	8 30.79	+16 52.0	1.599	2.395	17.0	19.6	12 13	8 30.87	+20 36.7	1.816	2.611	15.3	21.7
12 23	8 25.58	+17 9.7	1.520	2.399	13.3	19.4	12 23	8 25.17	+21 9.2	1.749	2.629	11.8	21.5
1 2	8 17.35	+17 38.8	1.463	2.404	8.8	19.1	1 2	8 16.80	+21 48.8	1.705	2.647	7.6	21.3
1 12	8 6.86	+18 15.8	1.432	2.408	3.8	18.8	1 12	8 6.56	+22 30.5	1.688	2.665	3.1	21.1
1 22	7 55.33	+18 55.8	1.429	2.411	1.8	18.7	1 22	7 55.56	+23 9.2	1.700	2.682	1.9	21.0
2 1	7 44.23	+19 33.9	1.454	2.414	6.8	19.0	2 1	7 45.11	+23 40.9	1.742	2.698	6.3	21.3
2 11	7 34.98	+20 6.4	1.506	2.416	11.5	19.3	2 11	7 36.40	+24 3.4	1.812	2.714	10.4	21.6
2 21	7 28.53	+20 31.7	1.581	2.417	15.5	19.6	2 21	7 30.22	+24 16.7	1.905	2.729	13.8	21.9
319478	2006 <i>PB</i> ₃₀		1 18.7	64 ^o 58	1 ^o 7/18.1	16	54317	2000 <i>JD</i> ₇₆		1 18.7	37 ^o 50	7 ^o 8/14.4	18
12 13	8 33.18	+23 57.3	1.540	2.346	17.1	21.3	12 13	8 29.44	+35 20.4	1.624	2.438	16.0	18.5
12 23	8 27.11	+24 12.9	1.490	2.377	13.0	21.1	12 23	8 25.16	+37 8.1	1.561	2.443	12.8	18.3
1 2	8 18.03	+24 31.8	1.463	2.407	8.4	20.9	1 2	8 17.40	+38 53.3	1.522	2.449	9.8	18.1
1 12	8 6.98	+24 48.8	1.461	2.438	3.6	20.7	1 12	8 6.99	+40 24.5	1.508	2.454	7.9	18.0
1 22	7 55.37	+24 59.1	1.488	2.468	2.6	20.7	1 22	7 55.29	+41 31.8	1.520	2.460	8.6	18.1
2 1	7 44.68	+25 0.3	1.543	2.498	7.0	21.0	2 1	7 44.08	+42 9.5	1.559	2.467	11.2	18.2
2 11	7 36.20	+24 52.4	1.624	2.528	11.2	21.4	2 11	7 35.04	+42 18.2	1.621	2.473	14.2	18.4
2 21	7 30.65	+24 36.8	1.728	2.557	14.7	21.7	2 21	7 29.27	+42 2.7	1.703	2.480	17.1	18.6
259325	2003 <i>FB</i> ₇₂		1 18.7	236 ^o 67	3 ^o 2/20.5	18	171418	2006 <i>TH</i> ₂		1 18.7	292 ^o 74	0 ^o 6/18.9	18
12 13	8 24.16	+ 8 29.8	2.239	3.000	13.8	20.5	12 13	8 23.81	+17 52.0	2.371	3.158	12.4	20.4
12 23	8 19.77	+ 8 44.9	2.137	2.989	11.1	20.3	12 23	8 19.31	+17 55.4	2.281	3.156	9.6	20.2
1 2	8 13.26	+ 9 14.7	2.057	2.979	8.0	20.1	1 2	8 12.83	+18 5.1	2.216	3.155	6.3	20.0
1 12	8 5.14	+ 9 58.3	2.005	2.967	4.7	19.9	1 12	8 4.93	+18 19.1	2.178	3.154	2.7	19.8
1 22	7 56.19	+10 53.3	1.982	2.956	3.3	19.8	1 22	7 56.37	+18 35.1	2.170	3.153	1.3	19.7
2 1	7 47.34	+11 55.8	1.989	2.944	5.7	19.9	2 1	7 48.07	+18 50.7	2.192	3.151	4.9	19.9
2 11	7 39.56	+13 1.3	2.025	2.932	9.1	20.1	2 11	7 40.90	+19 4.0	2.243	3.150	8.4	20.1
2 21	7 33.62	+14 5.4	2.086	2.919	12.4	20.3	2 21	7 35.53	+19 14.0	2.319	3.149	11.4	20.3
416582	2004 <i>HA</i> ₂₆		1 18.7	244 ^o 30	4 ^o 4/16.2	17	115494	2003 <i>UW</i> ₂₄		1 18.7	55 ^o 96	1 ^o 2/19.1	18
12 13	8 29.59	+30 43.7	2.162	2.959	13.1	21.2	12 13	8 27.37	+17 55.6	1.951	2.743	14.6	19.8
12 23	8 24.42	+31 43.9	2.066	2.944	10.3	21.0	12 23	8 22.25	+17 34.9	1.879	2.755	11.3	19.6
1 2	8 16.54	+32 45.1	1.995	2.929	7.2	20.8	1 2	8 14.79	+17 20.3	1.829	2.768	7.4	19.4
1 12	8 6.55	+33 40.6	1.951	2.914	4.8	20.6	1 12	8 5.72	+17 10.5	1.806	2.781	3.3	19.1
1 22	7 55.46	+34 24.1	1.936	2.898	5.1	20.6	1 22	7 56.02	+17 3.5	1.812	2.794	1.8	19.0
2 1	7 44.51	+34 50.9	1.951	2.881	7.8	20.7	2 1	7 46.82	+16 57.9	1.848	2.807	5.7	19.3
2 11	7 34.99	+35 0.0	1.992	2.864	11.1	20.9	2 11	7 39.14	+16 52.2	1.911	2.820	9.5	19.6
2 21	7 27.87	+34 53.1	2.057	2.847	14.1	21.0	2 21	7 33.66	+16 45.9	1.999	2.834	12.8	19.8
426295	2012 <i>TV</i> <												

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
114803	2003 <i>NP</i> ₈		1 18.7 217°01	0°8/19.0	18		41475	2000 <i>PR</i> ₁₃		1 18.7 325°92	3°2/18.9	18	
12 13	8 29.36	+17 10.3	2.025	2.808	14.4	20.5	12 13	8 42.84	+33 23.3	1.112	1.932	21.4	17.5
12 23	8 24.04	+17 19.9	1.928	2.800	11.2	20.3	12 23	8 37.13	+32 5.9	1.011	1.902	17.3	17.1
1 2	8 16.17	+17 38.0	1.853	2.791	7.5	20.0	1 2	8 26.16	+30 26.6	0.928	1.872	12.0	16.7
1 12	8 6.39	+18 2.2	1.806	2.781	3.2	19.7	1 12	8 10.89	+28 16.6	0.869	1.843	5.9	16.3
1 22	7 55.64	+18 29.1	1.788	2.771	1.6	19.6	1 22	7 53.39	+25 33.4	0.836	1.816	3.9	16.1
2 1	7 45.07	+18 55.2	1.801	2.759	5.9	19.8	2 1	7 36.55	+22 24.5	0.830	1.790	10.4	16.3
2 11	7 35.88	+19 18.0	1.842	2.747	10.0	20.1	2 11	7 23.09	+19 6.8	0.850	1.766	17.2	16.6
2 21	7 28.92	+19 35.9	1.908	2.734	13.6	20.3	2 21	7 14.55	+15 57.1	0.891	1.744	23.1	16.9
350581	2001 <i>OC</i> ₅₅		1 18.7 163°41	5°2/16.5	18		63619	2001 <i>QV</i> ₇₈		1 18.7 112°61	7°1/15.8	18	
12 13	8 33.39	+30 25.8	1.640	2.447	16.2	20.7	12 13	8 34.68	+34 52.3	1.579	2.386	16.7	18.7
12 23	8 27.91	+31 28.6	1.567	2.451	12.7	20.5	12 23	8 29.09	+36 6.5	1.516	2.396	13.3	18.5
1 2	8 19.04	+32 31.8	1.517	2.454	8.8	20.3	1 2	8 19.87	+37 16.5	1.476	2.405	9.8	18.3
1 12	8 7.63	+33 26.8	1.492	2.457	5.6	20.1	1 12	8 7.97	+38 12.1	1.460	2.414	7.3	18.2
1 22	7 55.05	+34 5.4	1.495	2.459	5.9	20.1	1 22	7 54.94	+38 44.7	1.472	2.423	7.7	18.2
2 1	7 43.00	+34 23.0	1.526	2.461	9.1	20.3	2 1	7 42.63	+38 50.4	1.510	2.431	10.5	18.4
2 11	7 33.07	+34 19.5	1.582	2.463	13.0	20.5	2 11	7 32.74	+38 31.0	1.573	2.439	13.8	18.6
2 21	7 26.31	+33 58.7	1.661	2.464	16.4	20.7	2 21	7 26.27	+37 52.1	1.656	2.447	16.9	18.8
186222	2001 <i>WA</i> ₈₁		1 18.7 104°39	2°8/17.3	18		169277	2001 <i>SN</i> ₂₁₉		1 18.7 137°71	0°3/18.8	18	
12 13	8 27.67	+25 18.9	1.912	2.716	14.3	21.2	12 13	8 24.12	+18 12.3	2.761	3.540	11.1	21.5
12 23	8 22.86	+26 10.3	1.838	2.723	11.0	21.0	12 23	8 19.23	+18 29.3	2.679	3.550	8.5	21.4
1 2	8 15.42	+27 5.7	1.787	2.730	7.2	20.8	1 2	8 12.62	+18 51.9	2.621	3.559	5.5	21.2
1 12	8 6.07	+27 59.1	1.763	2.737	3.6	20.6	1 12	8 4.82	+19 17.8	2.593	3.568	2.3	21.0
1 22	7 55.85	+28 44.7	1.769	2.744	3.5	20.6	1 22	7 56.52	+19 44.6	2.595	3.577	1.1	20.9
2 1	7 46.03	+29 18.2	1.803	2.751	7.0	20.8	2 1	7 48.47	+20 9.7	2.628	3.586	4.3	21.2
2 11	7 37.81	+29 37.7	1.865	2.757	10.6	21.0	2 11	7 41.41	+20 31.4	2.691	3.594	7.4	21.4
2 21	7 32.02	+29 44.2	1.950	2.764	13.9	21.3	2 21	7 35.92	+20 48.7	2.781	3.601	10.0	21.5
184300	2005 <i>ED</i> ₁₁₄		1 18.7 168°59	1°6/18.1	18		251027	2006 <i>QH</i> ₆₁		1 18.7 74°22	2°6/19.9	17	
12 13	8 33.85	+22 39.4	1.694	2.490	16.2	21.7	12 13	8 29.13	+12 13.7	1.723	2.504	16.6	20.5
12 23	8 27.90	+23 8.4	1.614	2.495	12.5	21.5	12 23	8 23.69	+12 19.5	1.667	2.535	13.0	20.3
1 2	8 18.85	+23 43.2	1.557	2.500	8.1	21.2	1 2	8 15.75	+12 38.8	1.633	2.564	8.8	20.1
1 12	8 7.51	+24 18.6	1.527	2.503	3.5	20.9	1 12	8 6.12	+13 9.3	1.624	2.594	4.6	19.9
1 22	7 55.13	+24 48.7	1.526	2.506	2.5	20.9	1 22	7 55.92	+13 47.4	1.644	2.623	2.8	19.9
2 1	7 43.21	+25 9.3	1.554	2.508	7.1	21.2	2 1	7 46.36	+14 28.9	1.694	2.652	6.1	20.1
2 11	7 33.20	+25 18.8	1.609	2.509	11.6	21.4	2 11	7 38.53	+15 9.6	1.770	2.681	10.0	20.4
2 21	7 26.07	+25 18.1	1.687	2.509	15.4	21.7	2 21	7 33.13	+15 46.7	1.871	2.709	13.4	20.7
197329	2003 <i>WL</i> ₁₅₈		1 18.7 77°50	0°6/18.4	18		193784	2001 <i>OT</i> ₄₀		1 18.7 199°15	3°8/16.9	18	
12 13	8 26.05	+21 0.8	2.083	2.879	13.6	21.0	12 13	8 32.18	+27 11.5	1.842	2.641	15.0	21.3
12 23	8 21.23	+21 19.1	2.009	2.890	10.4	20.8	12 23	8 26.69	+28 13.7	1.756	2.638	11.6	21.0
1 2	8 14.15	+21 42.6	1.959	2.902	6.7	20.6	1 2	8 18.16	+29 19.8	1.695	2.635	7.8	20.8
1 12	8 5.49	+22 8.1	1.937	2.914	2.7	20.3	1 12	8 7.29	+30 22.6	1.660	2.630	4.4	20.6
1 22	7 56.17	+22 31.8	1.943	2.925	1.6	20.3	1 22	7 55.25	+31 14.5	1.654	2.625	4.5	20.6
2 1	7 47.26	+22 50.8	1.980	2.937	5.6	20.6	2 1	7 43.49	+31 50.2	1.678	2.619	8.0	20.8
2 11	7 39.76	+23 3.4	2.044	2.948	9.2	20.8	2 11	7 33.46	+32 8.1	1.729	2.612	11.9	21.0
2 21	7 34.37	+23 9.3	2.133	2.960	12.4	21.0	2 21	7 26.19	+32 9.8	1.802	2.605	15.3	21.2
247448	2002 <i>GL</i> ₁₉		1 18.7 284°62	0°8/18.9	18		323987	2005 <i>UH</i> ₁₉₈		1 18.7 20°74	4°5/20.7	18	
12 13	8 27.27	+17 49.5	1.599	2.403	16.7	20.6	12 13	8 23.31	+ 8 25.5	1.612	2.397	17.4	20.4
12 23	8 23.16	+17 53.2	1.503	2.387	13.1	20.3	12 23	8 19.71	+ 8 16.9	1.535	2.401	14.0	20.2
1 2	8 16.00	+18 6.9	1.428	2.371	8.7	20.0	1 2	8 13.48	+ 8 26.0	1.479	2.405	10.1	20.0
1 12	8 6.45	+18 27.8	1.379	2.355	3.8	19.7	1 12	8 5.32	+ 8 52.9	1.447	2.409	6.2	19.8
1 22	7 55.61	+18 52.2	1.356	2.339	1.8	19.5	1 22	7 56.27	+ 9 34.9	1.441	2.414	4.5	19.7
2 1	7 44.94	+19 16.0	1.362	2.323	7.0	19.8	2 1	7 47.59	+10 27.7	1.463	2.420	7.1	19.9
2 11	7 35.94	+19 35.9	1.393	2.307	12.0	20.1	2 11	7 40.49	+11 25.6	1.511	2.426	11.0	20.1
2 21	7 29.68	+19 50.2	1.447	2.291	16.3	20.3	2 21	7 35.81	+12 23.2	1.581	2.432	14.7	20.4
136904	1998 <i>HY</i> ₅₉		1 18.7 215°71	6°1/14.5	18		95882	Longshaw		1 18.7 323°11	4°2/20.3	18	
12 13	8 28.68	+40 16.0	2.761	3.541	11.0	20.3	12 13	8 23.08	+10 31.0	1.291	2.099	19.6	19.0
12 23	8 23.28	+41 19.2	2.681	3.537	9.0	20.2	12 23	8 20.42	+10 22.1	1.204	2.086	15.8	18.7
1 2	8 15.54	+42 16.5	2.626	3.532	7.2	20.1	1 2	8 14.48	+10 32.9	1.136	2.072	11.3	18.4
1 12	8 6.09	+43 2.0	2.598	3.527	6.1	20.0	1 12	8 5.91	+11 3.6	1.091	2.060	6.5	18.1
1 22	7 55.84	+43 30.7	2.600	3.522	6.5	20.0	1 22	7 55.92	+11 51.7	1.070	2.048	4.3	17.9
2 1	7 45.85	+43 40.2	2.629	3.517	8.1	20.1	2 1	7 46.12	+12 51.4	1.074	2.036	8.2	18.1
2 11	7 37.18	+43 30.9	2.685	3.511	10.1	20.2	2 11	7 38.18	+13 55.6	1.103	2.026	13.4	18.3
2 21	7 30.61	+43 5.4	2.764	3.505	12.1	20.4	2 21	7 33.30	+14 57.9	1.152	2.016	18.1	18.6
202163	2004 <i>VL</i> ₂₉		1 18.7 300°98	2°1/17.8	18		189472	1999 <i>TS</i> ₁₆₀		1 18.7 89°66	4°1/20.6	18	
12 13	8 27.24	+22 38.6	1.477	2.294	17.1	20.6	12 13	8 24.47	+ 8 26.0	2.044	2.810	14.8	20.4
12 23	8 23.42	+23 18.4	1.392	2.285	13.3	20.3	12 23	8 20.02	+ 8 9.0	1.963	2.817	11.9	20.2
1 2	8 16.30	+24 7.0	1.328	2.275	8.7	20.0	1 2	8 13.39	+ 8 5.6	1.904	2.823	8.6	20.0
1 12	8 6.60	+24 58.2	1.289	2.265	3.8	19.7	1 12	8 5.22	+ 8 15.9	1.871	2.829	5.5	19.9
1 22	7 55.55	+25 45.0	1.276	2.256	3.1	19.6	1 22	7 56.35	+ 8 38.3	1.866	2.836	4.1	19.8
2 1	7 44.79	+26 21.1	1.291	2.247	8.0	19.9	2 1	7 47.80	+ 9 10.2	1.890	2.842	6.2	19.9
2 11	7 35.95	+26 43.5	1.331	2.238	12.9	20.1	2 11	7 40.52	+ 9 47.9	1.941	2.848	9.5	20.1
2 21	7 30.17	+26 52.2	1.392	2.230	17.2	20.4	2 21	7 35.24	+10 27.7	2.018	2.854	12.6	20.3
428459	2007 <i>TJ</i> ₄₅₁		1 18.7 150°74	2°9/16.6	17		238380	2004 <i>CA</i> ₁₀₃		1 18.7 278°77	2°3/19.8	18	
12 13	8 26.19	+29 12.7											

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
416049	2002 <i>GS</i> ₂₉		1 18.7	28°27'	0°8/18.3	18	493349	2014 <i>WC</i> ₁₀		1 18.7	134°30'	6°2/15.2	18
12 13	8 25.80	+20 51.0	1.852	2.655	14.8	21.7	12 13	8 33.51	+37 10.6	2.267	3.052	12.9	22.2
12 23	8 21.45	+21 15.3	1.772	2.657	11.4	21.5	12 23	8 27.24	+38 25.8	2.203	3.067	10.4	22.0
1 2	8 14.53	+21 46.4	1.715	2.659	7.4	21.2	1 2	8 18.24	+39 35.6	2.163	3.080	7.9	21.9
1 12	8 5.74	+22 20.5	1.684	2.661	3.0	21.0	1 12	8 7.27	+40 32.5	2.152	3.093	6.3	21.8
1 22	7 56.10	+22 52.9	1.682	2.664	1.8	20.9	1 22	7 55.45	+41 10.4	2.169	3.105	6.7	21.8
2 1	7 46.81	+23 19.8	1.709	2.666	6.2	21.2	2 1	7 44.11	+41 26.4	2.215	3.117	8.7	22.0
2 11	7 39.06	+23 38.9	1.762	2.669	10.3	21.4	2 11	7 34.48	+41 21.4	2.288	3.128	11.1	22.2
2 21	7 33.66	+23 49.6	1.839	2.672	13.8	21.6	2 21	7 27.40	+40 59.0	2.383	3.138	13.4	22.3
495160	2012 <i>FV</i> ₇₃		1 18.7	37°00'	12°4/25.9	18	118624	2000 <i>HR</i> ₂₄		1 18.7	283°75'	3°8/21.9	17
12 13	8 22.81	-11 50.6	1.799	2.476	19.5	21.0	12 13	8 16.39	+1 42.0	4.215	4.927	8.6	20.2
12 23	8 19.11	-12 58.0	1.725	2.480	17.5	20.9	12 23	8 12.89	+1 22.9	4.105	4.913	7.2	20.0
1 2	8 13.00	-13 37.4	1.668	2.485	15.4	20.7	1 2	8 8.36	+1 12.7	4.019	4.899	5.7	19.9
1 12	8 5.12	-13 43.2	1.630	2.490	13.6	20.6	1 12	8 3.11	+1 11.8	3.960	4.886	4.3	19.8
1 22	7 56.40	-13 13.0	1.614	2.495	12.5	20.6	1 22	7 57.51	+1 20.2	3.931	4.872	3.8	19.8
2 1	7 47.98	-12 8.4	1.622	2.501	12.7	20.6	2 1	7 51.98	+1 37.0	3.931	4.858	4.4	19.8
2 11	7 40.96	-10 35.7	1.653	2.507	13.9	20.7	2 11	7 46.94	+2 0.8	3.961	4.844	5.7	19.9
2 21	7 36.13	-8 44.2	1.706	2.513	15.9	20.8	2 21	7 42.76	+2 29.6	4.017	4.831	7.3	20.0
1051	Merope		1 18.7	138°21'	7°6/24.6	18	259073	2002 <i>UQ</i> ₇₃		1 18.7	18°50'	4°1/17.3	18
12 13	8 21.13	-8 11.2	2.785	3.450	13.4	15.8	12 13	8 24.90	+26 40.0	1.168	2.009	19.2	20.3
12 23	8 16.94	-8 34.2	2.698	3.456	11.8	15.7	12 23	8 22.06	+27 25.2	1.114	2.018	14.8	20.1
1 2	8 11.16	-8 38.5	2.632	3.462	10.0	15.5	1 2	8 15.51	+28 14.1	1.079	2.029	9.8	19.8
1 12	8 4.26	-8 22.1	2.589	3.467	8.5	15.4	1 12	8 6.27	+28 58.2	1.066	2.040	5.2	19.6
1 22	7 56.85	-7 45.0	2.572	3.473	7.6	15.4	1 22	7 55.96	+29 29.4	1.078	2.054	4.9	19.6
2 1	7 49.63	-6 48.9	2.584	3.478	7.9	15.4	2 1	7 46.48	+29 42.7	1.115	2.068	9.3	19.9
2 11	7 43.29	-5 37.7	2.622	3.483	9.2	15.5	2 11	7 39.50	+29 37.8	1.174	2.084	14.0	20.2
2 21	7 38.36	-4 16.6	2.686	3.487	10.9	15.6	2 21	7 35.96	+29 17.5	1.254	2.102	18.0	20.5
338179	2002 <i>RC</i> ₁₃₂		1 18.7	53°30'	0°0/18.7	18	371917	2008 <i>DW</i> ₈₁		1 18.7	237°59'	1°8/17.8	17
12 13	8 32.65	+21 25.6	1.216	2.037	19.9	20.4	12 13	8 28.54	+24 11.1	2.308	3.099	12.6	22.2
12 23	8 27.64	+21 7.8	1.155	2.049	15.4	20.1	12 23	8 23.30	+24 43.9	2.206	3.084	9.8	22.0
1 2	8 18.92	+20 56.0	1.114	2.061	10.0	19.9	1 2	8 15.69	+25 20.7	2.127	3.068	6.4	21.8
1 12	8 7.57	+20 46.6	1.096	2.074	4.1	19.6	1 12	8 6.27	+25 57.3	2.077	3.052	2.9	21.5
1 22	7 55.25	+20 35.9	1.104	2.087	2.0	19.5	1 22	7 55.91	+26 29.2	2.057	3.035	2.5	21.4
2 1	7 43.84	+20 21.8	1.139	2.100	7.9	19.9	2 1	7 45.67	+26 53.0	2.067	3.017	6.0	21.6
2 11	7 34.99	+20 3.8	1.197	2.114	13.2	20.2	2 11	7 36.65	+27 6.8	2.106	2.999	9.6	21.8
2 21	7 29.64	+19 42.7	1.277	2.128	17.6	20.5	2 21	7 29.68	+27 10.8	2.170	2.981	12.8	22.0
284439	2007 <i>DQ</i> ₁₁₄		1 18.7	204°18'	1°3/19.3	18	25241	1998 <i>UF</i> ₁₄		1 18.7	109°58'	1°1/18.1	18
12 13	8 29.32	+15 17.2	1.831	2.616	15.6	21.9	12 13	8 25.89	+22 2.7	2.231	3.025	12.9	18.3
12 23	8 24.24	+15 32.4	1.739	2.612	12.2	21.6	12 23	8 21.07	+22 31.6	2.153	3.033	9.9	18.1
1 2	8 16.44	+15 59.2	1.670	2.607	8.2	21.4	1 2	8 14.07	+23 5.4	2.099	3.041	6.4	17.9
1 12	8 6.58	+16 35.0	1.628	2.602	3.8	21.1	1 12	8 5.53	+23 40.1	2.073	3.049	2.7	17.7
1 22	7 55.69	+17 16.0	1.614	2.596	1.9	20.9	1 22	7 56.32	+24 11.9	2.077	3.057	1.9	17.6
2 1	7 45.03	+17 57.6	1.630	2.589	6.3	21.2	2 1	7 47.45	+24 37.6	2.111	3.065	5.5	17.9
2 11	7 35.88	+18 36.0	1.673	2.582	10.6	21.5	2 11	7 39.88	+24 55.5	2.173	3.073	9.0	18.1
2 21	7 29.16	+19 8.9	1.741	2.574	14.5	21.7	2 21	7 34.31	+25 5.3	2.260	3.080	12.0	18.3
268499	2005 <i>YA</i> ₈₃		1 18.7	13°18'	0°8/18.9	18	52011	2002 <i>LW</i> ₁₉		1 18.7	176°30'	1°3/19.3	18
12 13	8 24.34	+17 54.8	1.543	2.355	16.8	20.2	12 13	8 29.82	+16 14.0	2.302	3.074	13.2	20.1
12 23	8 20.69	+17 54.4	1.470	2.358	13.0	20.0	12 23	8 23.95	+16 8.3	2.212	3.077	10.3	19.9
1 2	8 14.19	+18 3.4	1.418	2.362	8.6	19.7	1 2	8 15.90	+16 9.5	2.146	3.079	6.9	19.7
1 12	8 5.64	+18 19.3	1.390	2.367	3.7	19.4	1 12	8 6.29	+16 16.0	2.108	3.081	3.2	19.5
1 22	7 56.19	+18 38.4	1.390	2.372	1.8	19.3	1 22	7 55.97	+16 25.7	2.101	3.082	1.7	19.4
2 1	7 47.21	+18 57.1	1.416	2.378	6.6	19.6	2 1	7 45.95	+16 36.5	2.124	3.082	5.2	19.6
2 11	7 40.00	+19 12.5	1.469	2.386	11.2	19.9	2 11	7 37.18	+16 46.5	2.177	3.081	8.8	19.8
2 21	7 35.42	+19 23.2	1.544	2.393	15.1	20.2	2 21	7 30.40	+16 54.5	2.256	3.079	11.9	20.0
301097	2008 <i>UN</i> ₃₆₀		1 18.7	234°55'	1°9/19.4	18	92415	2000 <i>JP</i> ₄₂		1 18.7	208°55'	2°3/17.7	18
12 13	8 28.80	+14 59.0	1.718	2.508	16.3	21.8	12 13	8 30.60	+23 42.9	1.742	2.545	15.6	20.7
12 23	8 24.04	+14 57.4	1.625	2.499	12.8	21.6	12 23	8 25.54	+24 26.4	1.656	2.541	12.0	20.4
1 2	8 16.41	+15 7.1	1.553	2.490	8.7	21.3	1 2	8 17.46	+25 16.2	1.593	2.536	7.9	20.2
1 12	8 6.61	+15 26.4	1.507	2.480	4.2	21.0	1 12	8 7.08	+26 6.4	1.556	2.531	3.6	19.9
1 22	7 55.67	+15 52.2	1.489	2.470	2.3	20.9	1 22	7 55.54	+26 50.4	1.548	2.526	3.1	19.9
2 1	7 44.95	+16 20.8	1.500	2.460	6.6	21.1	2 1	7 44.31	+27 23.2	1.568	2.520	7.4	20.1
2 11	7 35.82	+16 48.7	1.538	2.449	11.2	21.4	2 11	7 34.80	+27 42.5	1.615	2.513	11.7	20.4
2 21	7 29.24	+17 13.4	1.599	2.437	15.2	21.6	2 21	7 28.04	+27 48.8	1.686	2.506	15.4	20.6
83546	2001 <i>SG</i> ₁₇₂		1 18.7	151°69'	0°7/19.1	18	233983	1995 <i>SA</i> ₁₆		1 18.7	196°69'	4°3/21.6	18
12 13	8 23.74	+16 56.9	2.483	3.265	12.1	20.8	12 13	8 21.81	+3 40.8	2.861	3.591	11.8	21.5
12 23	8 19.19	+17 8.3	2.395	3.267	9.3	20.6	12 23	8 17.47	+3 36.7	2.763	3.588	9.7	21.3
1 2	8 12.75	+17 26.6	2.332	3.270	6.2	20.4	1 2	8 11.54	+3 45.5	2.688	3.586	7.4	21.2
1 12	8 4.96	+17 50.0	2.297	3.272	2.7	20.2	1 12	8 4.48	+4 7.6	2.641	3.583	5.3	21.0
1 22	7 56.57	+18 15.7	2.292	3.274	1.3	20.1	1 22	7 56.87	+4 41.9	2.622	3.579	4.3	20.9
2 1	7 48.41	+18 41.2	2.318	3.276	4.7	20.3	2 1	7 49.39	+5 26.2	2.634	3.576	5.4	21.0
2 11	7 41.34	+19 4.2	2.372	3.278	8.0	20.5	2 11	7 42.74	+6 17.4	2.675	3.572	7.6	21.1
2 21	7 35.96	+19 23.4	2.452	3.280	10.9	20.7	2 21	7 37.47	+7 12.0	2.743	3.567	10.0	21.3
73744	1993 <i>TJ</i> ₂₂		1 18.7	185°61'	3°2/16.8	18	420184	2011 <i>GJ</i> ₄₈		1 18.7	349°59'	0°4/18.5	18
12 13	8 27.63	+29 36.3	2.641	3.431	11.2	20.5</							

EPHEMERIDES

1 18.7

1 18.7

2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
433084	2012 <i>TY</i> ₇₅ 1 18.7 341°81' 8°0'/22.7 18						520702	2014 <i>QF</i> ₄₆₆ 1 18.7 140°25' 2°1'/19.7 18					
12 13	8 21.12	- 2 23.4	2.171	2.890	15.4	20.4	12 13	8 26.36	+13 10.9	1.888	2.671	15.3	21.7
12 23	8 17.46	- 3 14.8	2.081	2.885	13.3	20.3	12 23	8 21.76	+13 21.7	1.806	2.676	12.0	21.4
1 2	8 11.79	- 3 48.1	2.012	2.881	11.0	20.1	1 2	8 14.71	+13 44.9	1.746	2.680	8.2	21.2
1 12	8 4.64	- 4 0.2	1.966	2.877	9.0	20.0	1 12	8 5.88	+14 18.8	1.713	2.684	4.1	21.0
1 22	7 56.78	- 3 50.1	1.946	2.873	8.0	19.9	1 22	7 56.22	+14 59.8	1.708	2.688	2.3	20.9
2 1	7 49.10	- 3 18.8	1.953	2.869	8.8	19.9	2 1	7 46.87	+15 43.8	1.732	2.691	5.9	21.1
2 11	7 42.50	- 2 30.3	1.985	2.866	10.7	20.1	2 11	7 38.96	+16 27.0	1.784	2.695	9.9	21.4
2 21	7 37.68	- 1 29.8	2.041	2.863	13.1	20.2	2 21	7 33.28	+17 6.3	1.860	2.698	13.5	21.6
235620	2004 <i>RQ</i> ₂ 1 18.7 168°42' 2°1'/19.6 18						172025	2001 <i>UL</i> ₂₁₄ 1 18.7 270°25' 1°6'/19.6 18					
12 13	8 29.09	+14 2.6	1.734	2.520	16.3	21.8	12 13	8 22.87	+14 20.9	2.424	3.202	12.4	20.2
12 23	8 24.08	+14 3.6	1.652	2.523	12.8	21.6	12 23	8 18.66	+14 26.4	2.326	3.194	9.7	20.0
1 2	8 16.33	+14 16.7	1.591	2.526	8.7	21.3	1 2	8 12.51	+14 40.8	2.252	3.185	6.6	19.8
1 12	8 6.56	+14 40.0	1.556	2.528	4.3	21.1	1 12	8 4.94	+15 2.6	2.205	3.177	3.3	19.5
1 22	7 55.84	+15 10.4	1.549	2.529	2.5	20.9	1 22	7 56.67	+15 29.6	2.187	3.168	1.8	19.4
2 1	7 45.48	+15 43.9	1.571	2.531	6.4	21.2	2 1	7 48.56	+15 59.1	2.200	3.159	4.9	19.6
2 11	7 36.73	+16 16.8	1.621	2.531	10.8	21.4	2 11	7 41.48	+16 28.5	2.242	3.151	8.3	19.8
2 21	7 30.50	+16 46.5	1.694	2.532	14.6	21.7	2 21	7 36.10	+16 55.6	2.309	3.142	11.4	20.0
320545	2008 <i>AC</i> ₁₆ 1 18.7 326°46' 2°1'/19.8 18						11938	1993 <i>FZ</i> ₂₆ 1 18.7 161°40' 1°7'/19.5 18					
12 13	8 22.58	+12 5.8	1.482	2.286	17.8	20.6	12 13	8 25.61	+14 33.6	2.153	2.933	13.7	19.3
12 23	8 19.69	+12 38.2	1.393	2.275	14.1	20.3	12 23	8 20.90	+14 34.3	2.066	2.935	10.7	19.1
1 2	8 13.85	+13 30.4	1.324	2.263	9.7	20.0	1 2	8 14.01	+14 44.4	2.003	2.937	7.3	18.9
1 12	8 5.67	+14 40.0	1.280	2.253	4.8	19.7	1 12	8 5.56	+15 2.2	1.967	2.939	3.6	18.7
1 22	7 56.24	+16 1.5	1.261	2.243	2.5	19.5	1 22	7 56.38	+15 25.3	1.960	2.941	2.0	18.5
2 1	7 46.96	+17 27.2	1.270	2.233	7.1	19.8	2 1	7 47.49	+15 50.9	1.983	2.942	5.4	18.8
2 11	7 39.31	+18 49.6	1.305	2.225	12.1	20.0	2 11	7 39.85	+16 16.3	2.035	2.943	9.0	19.0
2 21	7 34.38	+20 2.9	1.362	2.217	16.5	20.3	2 21	7 34.18	+16 39.3	2.111	2.944	12.3	19.2
514150	2015 <i>KJ</i> ₅₇ 1 18.7 78°64' 3°5'/18.0 18 C						293081	2006 <i>WR</i> ₁₈₂ 1 18.7 94°34' 2°5'/17.3 18					
12 13	9 4.54	+22 40.8	0.701	1.521	30.6	22.9	12 13	8 27.56	+23 11.6	1.830	2.634	14.9	20.2
12 23	8 52.62	+23 50.9	0.685	1.577	23.0	22.7	12 23	8 22.93	+24 21.8	1.758	2.644	11.4	20.0
1 2	8 34.86	+25 7.5	0.685	1.631	14.6	22.5	1 2	8 15.60	+25 39.2	1.710	2.654	7.4	19.8
1 12	8 13.72	+26 13.0	0.707	1.683	6.3	22.3	1 12	8 6.28	+26 56.9	1.689	2.663	3.5	19.6
1 22	7 52.73	+26 53.8	0.753	1.732	4.8	22.4	1 22	7 56.03	+28 7.7	1.697	2.673	3.3	19.6
2 1	7 35.23	+27 7.4	0.823	1.779	11.4	22.9	2 1	7 46.15	+29 5.8	1.734	2.682	7.1	19.9
2 11	7 23.18	+26 59.7	0.916	1.823	17.3	23.4	2 11	7 37.89	+29 48.3	1.798	2.692	10.9	20.1
2 21	7 16.90	+26 38.8	1.027	1.865	21.8	23.9	2 21	7 32.12	+30 15.3	1.886	2.701	14.3	20.3
48565	1994 <i>CA</i> ₉ 1 18.7 350°90' 0°8'/18.5 18						373055	2011 <i>EQ</i> ₈₅ 1 18.7 55°21' 1°3'/17.9 18					
12 13	8 26.04	+20 34.9	1.124	1.959	20.2	18.5	12 13	8 25.09	+20 30.2	1.884	2.687	14.6	19.9
12 23	8 23.20	+20 49.8	1.053	1.955	15.7	18.2	12 23	8 20.89	+21 24.4	1.810	2.695	11.1	19.7
1 2	8 16.50	+21 15.6	1.000	1.951	10.3	17.9	1 2	8 14.19	+22 27.0	1.760	2.704	7.2	19.5
1 12	8 6.83	+21 47.3	0.969	1.947	4.2	17.6	1 12	8 5.67	+23 32.9	1.737	2.714	3.0	19.3
1 22	7 55.70	+22 18.2	0.963	1.945	2.4	17.4	1 22	7 56.33	+24 36.1	1.743	2.723	2.2	19.2
2 1	7 45.10	+22 42.2	0.981	1.944	8.6	17.8	2 1	7 47.35	+25 31.2	1.778	2.733	6.3	19.5
2 11	7 36.94	+22 56.1	1.022	1.943	14.4	18.1	2 11	7 39.85	+26 14.9	1.840	2.742	10.2	19.8
2 21	7 32.40	+22 59.4	1.082	1.944	19.2	18.4	2 21	7 34.64	+26 46.5	1.926	2.752	13.6	20.0
31751	1999 <i>JF</i> ₈₅ 1 18.7 127°96' 1°1'/17.9 18						377105	2002 <i>WQ</i> ₂₅ 1 18.7 35°09' 3°7'/16.6 18					
12 13	8 24.36	+21 8.4	2.726	3.511	11.0	18.2	12 13	8 25.06	+27 43.7	2.028	2.835	13.5	20.5
12 23	8 19.56	+22 2.4	2.646	3.522	8.4	18.0	12 23	8 20.87	+28 50.3	1.955	2.841	10.4	20.3
1 2	8 12.96	+23 1.7	2.592	3.533	5.4	17.9	1 2	8 14.18	+29 59.3	1.907	2.848	7.0	20.1
1 12	8 5.07	+24 2.5	2.568	3.544	2.3	17.7	1 12	8 5.67	+31 4.5	1.886	2.855	4.2	19.9
1 22	7 56.60	+25 0.8	2.574	3.554	1.8	17.6	1 22	7 56.33	+31 59.5	1.894	2.862	4.3	20.0
2 1	7 48.34	+25 52.9	2.612	3.564	4.8	17.9	2 1	7 47.33	+32 40.0	1.930	2.869	7.3	20.1
2 11	7 41.09	+26 36.4	2.680	3.573	7.8	18.1	2 11	7 39.80	+33 4.4	1.993	2.877	10.5	20.4
2 21	7 35.45	+27 10.4	2.774	3.583	10.4	18.2	2 21	7 34.55	+33 13.5	2.080	2.885	13.5	20.6
216262	2006 <i>WR</i> ₁₆ 1 18.7 155°15' 2°8'/17.3 18						377092	2002 <i>VX</i> ₁₄₅ 1 18.7 98°26' 5°4'/15.4 18					
12 13	8 30.18	+26 55.7	2.224	3.016	13.0	20.9	12 13	8 27.43	+34 13.7	2.291	3.088	12.5	21.0
12 23	8 24.47	+27 38.3	2.146	3.024	10.0	20.7	12 23	8 22.59	+35 26.5	2.217	3.092	9.9	20.8
1 2	8 16.35	+28 22.5	2.092	3.031	6.6	20.5	1 2	8 15.27	+36 37.1	2.169	3.096	7.3	20.7
1 12	8 6.51	+29 3.1	2.067	3.038	3.5	20.3	1 12	8 6.13	+37 38.5	2.148	3.100	5.5	20.6
1 22	7 55.90	+29 35.4	2.071	3.044	3.4	20.3	1 22	7 56.12	+38 24.8	2.156	3.104	5.9	20.6
2 1	7 45.65	+29 56.0	2.106	3.049	6.4	20.5	2 1	7 46.43	+38 52.5	2.193	3.108	8.0	20.7
2 11	7 36.85	+30 4.0	2.169	3.054	9.7	20.7	2 11	7 38.19	+39 1.2	2.256	3.112	10.6	20.9
2 21	7 30.27	+30 0.7	2.256	3.058	12.6	20.9	2 21	7 32.20	+38 53.2	2.342	3.115	13.1	21.1
269323	Madisonvillehigh 1 18.7 282°77' 5°0'/16.4 18						297017	2010 <i>GY</i> ₅ 1 18.7 291°80' 4°4'/20.1 18					
12 13	8 29.70	+33 44.8	2.083	2.882	13.5	21.3	12 13	8 27.48	+11 13.5	1.464	2.258	18.5	20.7
12 23	8 24.47	+34 26.3	2.003	2.880	10.7	21.1	12 23	8 23.39	+10 41.6	1.379	2.251	14.8	20.5
1 2	8 16.53	+35 4.3	1.947	2.878	7.7	20.9	1 2	8 16.20	+10 24.2	1.313	2.244	10.6	20.2
1 12	8 6.62	+35 32.7	1.918	2.876	5.4	20.7	1 12	8 6.63	+10 21.8	1.272	2.238	6.2	20.0
1 22	7 55.84	+35 46.0	1.916	2.874	5.5	20.8	1 22	7 55.87	+10 33.4	1.256	2.231	4.5	19.8
2 1	7 45.47	+35 41.6	1.944	2.872	8.0	20.9	2 1	7 45.40	+10 56.0	1.267	2.225	7.9	20.0
2 11	7 36.77	+35 20.2	1.998	2.870	11.0	21.1	2 11	7 36.73	+11 25.6	1.304	2.219	12.5	20.2
2 21	7 30.57	+34 44.7	2.075	2.868	13.9	21.3	2 21	7 30.89	+11 57.7	1.362	2.213	16.7	20.5
67336	2000 <i>JG</i> ₉ 1 18.7 232°39' 1°4'/19.2 18						108946	2001 <i>PR</i> ₂₇ 1 18.7 172°56' 3°4'/20.6 18					
12 13	8 29.69	+16 7.0	1.783	2.571	15.8	21.3	12 13	8 26.25	+ 8 38.9	2.358	3.112	13.4	21.0
12 23	8 24.69	+16 8.1	1.687	2.561	12.5	21.0	12 23	8 21.18	+ 8 35.5	2.268	3.115	10.8	20.8
1 2	8 16.85	+16 19.3	1.612	2.550									

EPHEMERIDES

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1 18.7

2019/20		α_{2000}	δ_{2000}	Δ	r	β	V	2019/20		α_{2000}	δ_{2000}	Δ	r	β	V
252217		2001 <i>KK</i> ₂₃		1 18.7 133°58'		1°6/19.6 18		244721		2003 <i>QB</i> ₈₅		1 18.7 150°44'		1°9/19.6 18	
12 13	8 28.49	+14 2.9	2.417	3.182	12.8	21.9		12 13	8 29.60	+13 46.0	2.162	2.931	14.0	22.0	
241127		2007 <i>PQ</i> ₃₁		1 18.7 117°80'		1°0/18.3 18		281678		2008 <i>VA</i> ₈₀		1 18.7 245°96'		1°6/17.7 18	
12 13	8 31.73	+21 23.9	1.841	2.634	15.2	21.6		12 13	8 24.55	+22 26.4	2.230	3.027	12.8	20.4	
30983		1995 <i>SE</i> ₁₆		1 18.7 9°70'		1°9/19.9 18		83879		2001 <i>UQ</i> ₁₀₈		1 18.7 115°48'		1°6/19.7 18	
12 13	8 25.10	+24 52.4	2.024	2.829	13.6	19.1		12 13	8 23.87	+14 0.3	2.690	3.459	11.6	20.1	
162726		2000 <i>VR</i> ₁₂		1 18.7 148°80'		1°0/19.2 18		330463		2007 <i>EQ</i> ₁₅₃		1 18.7 300°42'		1°8/19.6 18	
12 13	8 29.85	+16 6.4	2.025	2.805	14.5	21.0		12 13	8 24.12	+13 21.6	1.895	2.683	15.0	21.3	
18705		1998 <i>HX</i> ₈₈		1 18.7 179°14'		0°6/18.3 18		244513		2002 <i>TQ</i> ₁₆₉		1 18.7 149°55'		4°1/20.1 18	
12 13	8 23.77	+21 25.0	2.895	3.679	10.5	19.5		12 13	8 28.60	+10 44.5	1.866	2.637	15.8	20.3	
161766		2006 <i>TC</i> ₅₆		1 18.7 168°51'		0°4/18.5 18		82903		2001 <i>QD</i> ₉₇		1 18.7 20°38'		1°1/18.4 18	
12 13	8 24.05	+20 35.8	2.802	3.585	10.8	21.1		12 13	8 28.15	+22 38.7	1.659	2.467	16.0	18.4	
406158		2006 <i>WM</i> ₆		1 18.7 63°89'		7°8/14.5 18		256003		2006 <i>TK</i> ₁₂₆		1 18.7 82°79'		5°4/21.4 18	
12 13	8 32.12	+34 34.1	1.597	2.408	16.4	20.5		12 13	8 26.08	+5 19.1	1.789	2.549	16.8	20.9	
411922		2012 <i>FR</i> ₇₄		1 18.7 37°88'		10°3/16.0 18		498564		2008 <i>KS</i> ₅		1 18.7 227°79'		0°9/19.2 17	
12 13	8 43.31	+47 14.3	1.741	2.516	16.7	20.3		12 13	8 26.16	+15 45.3	2.426	3.202	12.5	23.1	
240238		2002 <i>TB</i> ₂₆₈		1 18.7 23°86'		9°7/23.1 18 R		402086		2003 <i>UO</i> ₂₃₃		1 18.7 116°48'		0°4/18.6 18	
12 13	8 22.00	- 1 45.3	1.596	2.343	19.1	19.0		12 13	8 30.73	+20 36.5	1.825	2.620	15.3	21.6	

EPHEMERIDES

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
152858	1999 <i>XN</i> ₃₅		1 18.7 74 ^o 13 14 ^o 0/13.0 18				457872	2009 <i>SF</i> ₂₅₂		1 18.7 188 ^o 51 4 ^o 6/16.6 18			
12 13	8 49.32	+47 35.6	1.366	2.151	20.0	18.8	12 13	8 31.43	+33 12.6	2.263	3.055	12.8	21.6
12 23	8 41.99	+50 25.5	1.349	2.189	17.1	18.8	12 23	8 25.61	+33 53.5	2.181	3.054	10.1	21.4
1 2	8 29.10	+52 53.2	1.353	2.227	14.9	18.7	1 2	8 17.22	+34 31.4	2.123	3.053	7.2	21.2
1 12	8 12.04	+54 40.8	1.379	2.264	14.0	18.8	1 12	8 6.97	+35 0.5	2.093	3.052	4.9	21.0
1 22	7 53.46	+55 37.4	1.430	2.300	14.5	18.9	1 22	7 55.90	+35 15.7	2.091	3.050	5.1	21.0
2 1	7 36.55	+55 42.7	1.502	2.336	16.1	19.1	2 1	7 45.20	+35 14.6	2.120	3.048	7.5	21.2
2 11	7 23.89	+55 6.1	1.594	2.371	18.0	19.3	2 11	7 36.05	+34 57.4	2.175	3.045	10.4	21.4
2 21	7 16.55	+54 1.2	1.703	2.405	19.8	19.6	2 21	7 29.26	+34 26.9	2.255	3.042	13.1	21.5
492543	2014 <i>OX</i> ₁₀₅		1 18.7 275 ^o 06 0 ^o 1/18.8 18				496124	2010 <i>EK</i> ₁₂		1 18.7 309 ^o 11 0 ^o 6/18.7 17			
12 13	8 26.69	+17 9.0	1.573	2.378	16.9	21.4	12 13	8 36.57	+24 31.6	1.344	2.154	18.9	21.0
12 23	8 22.77	+17 46.4	1.486	2.371	13.1	21.1	12 23	8 31.99	+23 56.3	1.215	2.103	15.2	20.6
1 2	8 15.83	+18 37.5	1.420	2.364	8.7	20.8	1 2	8 23.03	+23 17.9	1.107	2.051	10.4	20.1
1 12	8 6.54	+19 38.0	1.380	2.356	3.6	20.5	1 12	8 10.02	+22 31.4	1.022	1.999	4.5	19.6
1 22	7 56.03	+20 41.9	1.367	2.349	1.7	20.4	1 22	7 54.17	+21 32.2	0.964	1.946	2.4	19.3
2 1	7 45.73	+21 42.4	1.382	2.342	7.0	20.7	2 1	7 37.58	+20 18.6	0.932	1.893	9.5	19.6
2 11	7 37.12	+22 34.5	1.423	2.335	11.9	20.9	2 11	7 22.80	+18 53.4	0.926	1.839	16.5	19.7
2 21	7 31.26	+23 15.6	1.486	2.327	16.1	21.2	2 21	7 11.85	+17 23.1	0.941	1.785	22.9	19.9
222813	2002 <i>CH</i> ₂₈₂		1 18.7 195 ^o 80 1 ^o 3/19.4 18				473606	2015 <i>XT</i> ₂₆₅		1 18.7 206 ^o 38 1 ^o 0/19.1 18			
12 13	8 25.15	+15 3.1	2.052	2.837	14.1	21.3	12 13	8 30.47	+17 36.1	1.787	2.577	15.7	21.5
12 23	8 20.74	+15 17.8	1.964	2.837	11.0	21.1	12 23	8 25.22	+17 32.6	1.698	2.573	12.3	21.2
1 2	8 14.04	+15 42.8	1.900	2.836	7.4	20.9	1 2	8 17.17	+17 37.2	1.631	2.569	8.2	21.0
1 12	8 5.67	+16 16.0	1.862	2.835	3.4	20.6	1 12	8 7.03	+17 47.8	1.590	2.565	3.6	20.7
1 22	7 56.50	+16 54.1	1.853	2.835	1.7	20.5	1 22	7 55.88	+18 1.0	1.578	2.560	1.7	20.6
2 1	7 47.57	+17 33.3	1.874	2.834	5.5	20.8	2 1	7 45.04	+18 14.1	1.595	2.555	6.4	20.8
2 11	7 39.94	+18 10.2	1.923	2.833	9.4	21.0	2 11	7 35.82	+18 24.6	1.640	2.549	10.8	21.1
2 21	7 34.35	+18 42.7	1.996	2.831	12.8	21.2	2 21	7 29.13	+18 31.5	1.708	2.542	14.6	21.3
128527	2004 <i>PV</i> ₄₉		1 18.7 66 ^o 48 0 ^o 3/18.6 18				296228	2009 <i>CB</i> ₃₉		1 18.7 292 ^o 17 1 ^o 0/18.4 18			
12 13	8 27.22	+18 54.3	1.809	2.608	15.2	20.2	12 13	8 28.53	+21 57.7	1.573	2.383	16.6	20.8
12 23	8 22.42	+19 29.8	1.748	2.630	11.7	20.0	12 23	8 24.27	+22 8.5	1.483	2.371	12.9	20.5
1 2	8 15.11	+20 13.7	1.710	2.652	7.5	19.8	1 2	8 16.86	+22 25.8	1.414	2.359	8.5	20.2
1 12	8 6.06	+21 1.6	1.698	2.675	3.0	19.6	1 12	8 7.00	+22 45.2	1.370	2.347	3.5	19.9
1 22	7 56.35	+21 48.5	1.715	2.697	1.6	19.5	1 22	7 55.89	+23 2.0	1.353	2.335	2.2	19.7
2 1	7 47.17	+22 30.0	1.761	2.720	6.0	19.9	2 1	7 45.05	+23 12.3	1.364	2.323	7.3	20.0
2 11	7 39.62	+23 3.1	1.835	2.742	9.9	20.2	2 11	7 36.02	+23 14.1	1.401	2.312	12.1	20.3
2 21	7 34.43	+23 27.1	1.933	2.764	13.3	20.4	2 21	7 29.88	+23 7.6	1.460	2.300	16.4	20.5
495596	2015 <i>AV</i> ₂₃₈		1 18.7 30 ^o 66 0 ^o 9/18.3 18				505257	2012 <i>UF</i> ₁₄₆		1 18.7 149 ^o 59 2 ^o 2/19.8 17			
12 13	8 23.91	+19 57.1	1.631	2.444	16.0	20.4	12 13	8 24.63	+13 47.6	2.562	3.332	12.1	21.7
12 23	8 20.23	+20 37.7	1.569	2.459	12.2	20.2	12 23	8 19.81	+13 27.1	2.472	3.334	9.5	21.5
1 2	8 13.87	+21 27.2	1.529	2.475	7.9	19.9	1 2	8 13.17	+13 13.7	2.407	3.336	6.5	21.3
1 12	8 5.61	+22 20.6	1.514	2.492	3.2	19.7	1 12	8 5.26	+13 6.9	2.369	3.337	3.5	21.1
1 22	7 56.57	+23 11.9	1.527	2.509	2.0	19.7	1 22	7 56.79	+13 5.6	2.362	3.339	2.3	21.0
2 1	7 48.05	+23 56.2	1.568	2.527	6.5	20.0	2 1	7 48.57	+13 8.5	2.385	3.341	4.8	21.2
2 11	7 41.23	+24 30.3	1.635	2.546	10.7	20.3	2 11	7 41.38	+13 13.9	2.437	3.342	7.9	21.4
2 21	7 36.91	+24 53.2	1.726	2.565	14.3	20.5	2 21	7 35.83	+13 20.3	2.515	3.344	10.7	21.6
350737	2001 <i>YG</i> ₂₂		1 18.7 18 ^o 05 0 ^o 1/18.7 18				297028	2010 <i>GH</i> ₆₆		1 18.7 255 ^o 12 7 ^o 2/22.7 17			
12 13	8 26.76	+21 10.5	1.038	1.879	21.2	20.6	12 13	8 22.25	-3 15.5	2.603	3.301	13.6	21.2
12 23	8 23.70	+20 51.7	0.981	1.885	16.4	20.3	12 23	8 18.08	-3 57.2	2.500	3.289	11.8	21.0
1 2	8 16.71	+20 40.4	0.942	1.894	10.7	20.0	1 2	8 12.14	-4 22.9	2.418	3.277	9.8	20.8
1 12	8 6.90	+20 33.2	0.925	1.903	4.4	19.7	1 12	8 4.89	-4 30.2	2.362	3.265	8.0	20.7
1 22	7 55.96	+20 26.0	0.932	1.914	2.1	19.6	1 22	7 56.95	-4 18.2	2.331	3.252	7.2	20.6
2 1	7 45.93	+20 16.1	0.962	1.927	8.4	20.0	2 1	7 49.11	-3 47.7	2.329	3.240	7.9	20.6
2 11	7 38.56	+20 2.3	1.015	1.941	14.0	20.4	2 11	7 42.14	-3 1.8	2.354	3.227	9.6	20.7
2 21	7 34.84	+19 44.7	1.088	1.956	18.7	20.7	2 21	7 36.68	-2 4.9	2.404	3.214	11.7	20.9
368067	2012 <i>JU</i> ₅		1 18.7 349 ^o 23 4 ^o 9/21.5 18				413977	2007 <i>DV</i> ₅₈		1 18.7 4 ^o 49 1 ^o 7/19.5 18			
12 13	8 21.57	+5 20.8	1.625	2.401	17.6	20.0	12 13	8 24.94	+14 38.9	1.827	2.619	15.4	21.5
12 23	8 18.55	+5 36.1	1.539	2.397	14.4	19.7	12 23	8 20.85	+14 48.3	1.743	2.619	12.0	21.3
1 2	8 12.92	+6 14.1	1.473	2.393	10.6	19.5	1 2	8 14.25	+15 9.4	1.682	2.619	8.1	21.1
1 12	8 5.30	+7 14.9	1.431	2.389	6.8	19.3	1 12	8 5.82	+15 40.0	1.646	2.619	3.9	20.8
1 22	7 56.67	+8 35.0	1.415	2.386	4.9	19.2	1 22	7 56.51	+16 16.8	1.638	2.620	2.0	20.7
2 1	7 48.26	+10 8.0	1.427	2.384	7.2	19.3	2 1	7 47.49	+16 55.6	1.659	2.620	6.0	21.0
2 11	7 41.32	+11 46.1	1.465	2.383	11.2	19.5	2 11	7 39.93	+17 32.7	1.708	2.621	10.1	21.2
2 21	7 36.74	+13 21.6	1.527	2.382	15.0	19.7	2 21	7 34.63	+18 5.5	1.780	2.622	13.8	21.4
492867	2014 <i>QN</i> ₃₇₇		1 18.7 221 ^o 48 0 ^o 8/19.0 17				411716	2012 <i>BE</i> ₄		1 18.7 145 ^o 66 2 ^o 8/17.8 18			
12 13	8 29.39	+17 39.1	2.012	2.796	14.4	22.4	12 13	8 33.78	+28 25.9	1.992	2.785	14.2	21.3
12 23	8 24.15	+17 42.9	1.915	2.788	11.2	22.1	12 23	8 27.45	+28 35.7	1.914	2.792	11.0	21.1
1 2	8 16.37	+17 54.3	1.841	2.779	7.5	21.9	1 2	8 18.41	+28 44.2	1.859	2.798	7.4	20.9
1 12	8 6.67	+18 11.2	1.794	2.769	3.3	21.6	1 12	8 7.46	+28 46.6	1.832	2.804	3.8	20.7
1 22	7 56.01	+18 30.4	1.777	2.759	1.5	21.5	1 22	7 55.76	+28 39.3	1.835	2.810	3.4	20.7
2 1	7 45.56	+18 48.9	1.789	2.748	5.9	21.7	2 1	7 44.60	+28 20.4	1.867	2.815	6.7	20.9
2 11	7 36.49	+19 4.4	1.830	2.736	10.0	21.9	2 11	7 35.21	+27 50.8	1.928	2.820	10.4	21.1
2 21	7 29.67	+19 15.6	1.896	2.724	13.6	22.1	2 21	7 28.38	+27 13.1	2.012	2.824	13.6	21.4
500508	2012 <i>TH</i> ₂₈₈												

EPHEMERIDES

1 18.7

1 18.8

2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
57936	2002 <i>JU</i> ₂₃		1 18.7 179°49	0°4/18.9	18		406116	2006 <i>VX</i> ₄₃		1 18.8 84°13	0°2/18.8	18	
12 13	8 28.89	+17 34.3	2.140	2.922	13.7	21.0	12 13	8 29.20	+18 56.2	1.775	2.570	15.6	21.6
12 23	8 23.55	+17 57.1	2.052	2.924	10.7	20.8	12 23	8 24.02	+19 5.4	1.707	2.587	12.0	21.5
1 2	8 15.86	+18 28.3	1.987	2.925	7.0	20.5	1 2	8 16.22	+19 22.1	1.662	2.604	7.8	21.2
1 12	8 6.45	+19 4.8	1.950	2.925	3.0	20.3	1 12	8 6.59	+19 43.1	1.644	2.620	3.2	21.0
1 22	7 56.22	+19 42.9	1.943	2.925	1.4	20.2	1 22	7 56.26	+20 4.6	1.654	2.636	1.5	20.9
2 1	7 46.24	+20 18.7	1.966	2.924	5.5	20.4	2 1	7 46.47	+20 23.2	1.693	2.652	6.0	21.2
2 11	7 37.59	+20 49.6	2.019	2.923	9.3	20.7	2 11	7 38.38	+20 36.8	1.760	2.668	10.2	21.5
2 21	7 31.04	+21 14.1	2.096	2.920	12.7	20.9	2 21	7 32.74	+20 44.9	1.850	2.684	13.7	21.8
147278	2002 <i>YU</i> ₃₁		1 18.7 284°42	0°9/19.2	18		464430	2016 <i>BE</i> ₃₃		1 18.8 22°93	0°3/18.9	18	
12 13	8 25.06	+14 33.3	1.910	2.699	14.9	19.8	12 13	8 25.74	+19 10.6	1.286	2.110	18.8	21.2
12 23	8 21.19	+15 15.4	1.800	2.675	11.8	19.5	12 23	8 22.29	+19 12.1	1.224	2.119	14.5	21.0
1 2	8 14.71	+16 12.6	1.713	2.651	7.9	19.2	1 2	8 15.53	+19 23.5	1.182	2.129	9.5	20.7
1 12	8 6.13	+17 22.2	1.652	2.627	3.5	18.9	1 12	8 6.42	+19 41.0	1.163	2.140	4.0	20.4
1 22	7 56.31	+18 39.1	1.619	2.602	1.6	18.7	1 22	7 56.34	+20 0.1	1.169	2.152	1.8	20.3
2 1	7 46.43	+19 57.2	1.617	2.577	6.2	19.0	2 1	7 46.93	+20 16.6	1.202	2.165	7.4	20.7
2 11	7 37.75	+21 10.5	1.642	2.552	10.7	19.2	2 11	7 39.67	+20 27.7	1.259	2.179	12.4	21.0
2 21	7 31.30	+22 15.0	1.692	2.527	14.7	19.4	2 21	7 35.48	+20 32.5	1.337	2.193	16.6	21.3
126713	2002 <i>CX</i> ₂₄₃		1 18.7 290°12	2°0/19.7	18		217099	2001 <i>WH</i> ₆₉		1 18.8 139°61	4°7/21.1	18	
12 13	8 24.64	+13 49.5	1.974	2.759	14.6	19.4	12 13	8 26.69	+ 5 58.9	2.256	3.000	14.2	21.6
12 23	8 20.46	+13 55.1	1.884	2.756	11.5	19.2	12 23	8 21.56	+ 5 34.6	2.174	3.011	11.6	21.4
1 2	8 13.94	+14 11.9	1.817	2.752	7.8	19.0	1 2	8 14.41	+ 5 24.0	2.114	3.021	8.6	21.2
1 12	8 5.69	+14 38.5	1.777	2.748	3.9	18.7	1 12	8 5.83	+ 5 27.5	2.081	3.030	5.9	21.1
1 22	7 56.59	+15 11.8	1.764	2.745	2.2	18.6	1 22	7 56.62	+ 5 44.3	2.077	3.039	4.7	21.0
2 1	7 47.73	+15 48.4	1.781	2.741	5.8	18.8	2 1	7 47.71	+ 6 12.2	2.103	3.048	6.3	21.1
2 11	7 40.17	+16 24.7	1.826	2.738	9.7	19.0	2 11	7 39.99	+ 6 47.9	2.157	3.056	9.1	21.3
2 21	7 34.72	+16 57.9	1.895	2.734	13.2	19.2	2 21	7 34.12	+ 7 27.7	2.236	3.063	11.9	21.5
143622	Robertbloch		1 18.7 272°92	4°6/16.8	18		360770	2005 <i>CV</i> ₁₄		1 18.8 276°68	0°9/18.4	18	
12 13	8 29.94	+27 49.6	1.521	2.337	16.8	20.3	12 13	8 28.16	+21 6.5	1.672	2.478	16.0	21.8
12 23	8 25.66	+28 53.2	1.440	2.330	13.1	20.1	12 23	8 23.87	+21 27.9	1.578	2.464	12.4	21.5
1 2	8 17.93	+30 1.3	1.381	2.324	8.9	19.8	1 2	8 16.58	+21 57.3	1.505	2.449	8.2	21.2
1 12	8 7.50	+31 5.3	1.347	2.317	5.2	19.6	1 12	8 6.93	+22 30.3	1.458	2.435	3.4	20.9
1 22	7 55.69	+31 56.5	1.341	2.311	5.4	19.6	1 22	7 56.04	+23 1.8	1.439	2.420	2.1	20.8
2 1	7 44.22	+32 28.5	1.361	2.304	9.2	19.8	2 1	7 45.32	+23 27.1	1.447	2.406	7.0	21.0
2 11	7 34.79	+32 39.6	1.406	2.298	13.5	20.0	2 11	7 36.26	+23 43.6	1.483	2.391	11.8	21.3
2 21	7 28.55	+32 32.2	1.472	2.291	17.4	20.3	2 21	7 29.90	+23 50.7	1.540	2.376	15.9	21.5
260649	2005 <i>GT</i> ₁₄₄		1 18.7 266°81	3°1/19.7	18		429273	2010 <i>CV</i> ₆₇		1 18.8 261°16	2°7/20.4	17	
12 13	8 28.95	+13 27.1	1.867	2.646	15.6	20.9	12 13	8 22.79	+10 6.6	2.296	3.064	13.3	21.0
12 23	8 24.07	+12 55.5	1.761	2.627	12.4	20.7	12 23	8 18.76	+10 22.1	2.200	3.059	10.6	20.8
1 2	8 16.50	+12 32.9	1.678	2.608	8.7	20.4	1 2	8 12.71	+10 50.7	2.127	3.053	7.5	20.6
1 12	8 6.83	+12 19.3	1.620	2.588	4.8	20.1	1 12	8 5.19	+11 31.1	2.081	3.047	4.2	20.4
1 22	7 56.02	+12 13.8	1.591	2.568	3.3	20.0	1 22	7 56.93	+12 20.9	2.064	3.041	2.8	20.3
2 1	7 45.31	+12 15.1	1.592	2.548	6.7	20.1	2 1	7 48.81	+13 16.2	2.077	3.035	5.3	20.4
2 11	7 35.99	+12 21.0	1.619	2.527	10.9	20.3	2 11	7 41.74	+14 13.2	2.119	3.029	8.6	20.6
2 21	7 29.01	+12 29.3	1.670	2.507	14.8	20.5	2 21	7 36.43	+15 8.1	2.186	3.022	11.8	20.8
159149	2004 <i>XH</i> ₁₀₄		1 18.7 89°13	0°9/18.3	18		193838	2001 <i>QQ</i> ₅₅		1 18.8 170°42	0°3/18.6	18	
12 13	8 26.29	+21 2.9	2.051	2.847	13.8	20.3	12 13	8 30.64	+18 27.1	1.871	2.659	15.2	21.0
12 23	8 21.61	+21 32.5	1.975	2.856	10.6	20.1	12 23	8 25.27	+19 7.4	1.787	2.664	11.7	20.8
1 2	8 14.60	+22 8.2	1.922	2.865	6.8	19.9	1 2	8 17.19	+19 57.7	1.727	2.667	7.7	20.6
1 12	8 5.92	+22 45.9	1.897	2.874	2.8	19.7	1 12	8 7.09	+20 53.6	1.694	2.670	3.1	20.3
1 22	7 56.53	+23 21.6	1.902	2.883	1.8	19.6	1 22	7 56.02	+21 49.4	1.690	2.672	1.7	20.2
2 1	7 47.49	+23 51.4	1.935	2.892	5.7	19.9	2 1	7 45.26	+22 39.8	1.717	2.674	6.3	20.5
2 11	7 39.87	+24 13.3	1.997	2.901	9.5	20.1	2 11	7 36.05	+23 21.5	1.771	2.674	10.5	20.7
2 21	7 34.38	+24 26.8	2.083	2.909	12.7	20.4	2 21	7 29.29	+23 53.1	1.850	2.674	14.1	21.0
207116	2005 <i>AD</i> ₄₃		1 18.7 324°99	0°4/18.6	18		207128	2005 <i>AJ</i> ₇₃		1 18.8 44°86	0°9/18.4	18	
12 13	8 26.16	+20 9.5	1.406	2.225	17.8	20.3	12 13	8 28.09	+20 11.1	1.298	2.119	18.8	20.0
12 23	8 22.73	+20 22.7	1.322	2.215	13.8	20.0	12 23	8 24.07	+20 42.3	1.241	2.135	14.5	19.7
1 2	8 16.00	+20 45.4	1.257	2.204	9.1	19.7	1 2	8 16.68	+21 23.8	1.203	2.151	9.4	19.5
1 12	8 6.71	+21 13.6	1.217	2.195	3.8	19.4	1 12	8 6.90	+22 9.6	1.190	2.168	3.8	19.2
1 22	7 56.10	+21 41.9	1.203	2.186	2.0	19.2	1 22	7 56.16	+22 52.8	1.203	2.185	2.2	19.2
2 1	7 45.80	+22 5.4	1.216	2.177	7.6	19.6	2 1	7 46.16	+23 27.9	1.242	2.202	7.6	19.5
2 11	7 37.44	+22 21.0	1.253	2.169	12.7	19.8	2 11	7 38.41	+23 51.9	1.306	2.221	12.5	19.9
2 21	7 32.12	+22 27.9	1.312	2.162	17.2	20.1	2 21	7 33.79	+24 4.5	1.391	2.239	16.6	20.2
190949	2001 <i>VL</i> ₅₉		1 18.7 94°53	2°4/17.8	17		314239	2005 <i>QP</i> ₄₃		1 18.8 214°79	4°6/17.0	18	
12 13	8 33.43	+24 30.7	1.551	2.357	17.0	20.5	12 13	8 32.84	+32 30.6	1.972	2.769	14.2	20.9
12 23	8 27.70	+25 6.6	1.490	2.376	13.0	20.3	12 23	8 27.06	+33 0.8	1.889	2.766	11.2	20.7
1 2	8 18.81	+25 46.7	1.452	2.396	8.5	20.1	1 2	8 18.38	+33 27.9	1.829	2.762	7.9	20.5
1 12	8 7.69	+26 24.4	1.439	2.414	3.9	19.9	1 12	8 7.58	+33 45.6	1.796	2.759	5.1	20.3
1 22	7 55.73	+26 53.6	1.455	2.433	3.3	19.9	1 22	7 55.83	+33 48.5	1.791	2.755	5.1	20.3
2 1	7 44.51	+27 10.2	1.499	2.451	7.5	20.2	2 1	7 44.54	+33 34.2	1.816	2.751	7.9	20.5
2 11	7 35.44	+27 13.7	1.569	2.469	11.8	20.5	2 11	7 35.05	+33 3.8	1.867	2.747	11.3	20.6
2 21	7 29.38	+27 5.8	1.661	2.486	15.4	20.7	2 21	7 28.24	+32 20.6	1.941	2.743	14.4	20.8
240823	2006 <i>AY</i> ₇₇		1 18.7 306°50	1°3/19.3	18		109643	2001 <i>RW</i> ₁		1 18.8 240°77	2°0/17.7	18	
12 13	8 25.78	+15 16.9	1.443	2.252									

EPHEMERIDES

1 18.8

1 18.8

2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
496556	2014	<i>WR</i> ₄₆₈	1 18.8	32°46'	0.7/18.4	18	205449	2001	<i>PU</i> ₃₁	1 18.8	134°63'	2.0°/17.5	18
12 13	8 23.83	+18 58.5	2.035	2.832	13.8	20.6	12 13	8 25.12	+23 58.4	2.437	3.231	11.9	20.7
12 23	8 19.85	+19 48.3	1.954	2.836	10.6	20.4	12 23	8 20.52	+24 50.2	2.355	3.236	9.1	20.5
1 2	8 13.55	+20 47.4	1.897	2.840	6.9	20.2	1 2	8 13.86	+25 46.3	2.299	3.240	6.0	20.3
1 12	8 5.57	+21 51.3	1.868	2.844	2.8	19.9	1 12	8 5.70	+26 42.0	2.271	3.245	2.8	20.1
1 22	7 56.79	+22 54.9	1.867	2.849	1.7	19.8	1 22	7 56.83	+27 32.9	2.273	3.249	2.6	20.1
2 1	7 48.27	+23 53.0	1.897	2.854	5.8	20.1	2 1	7 48.20	+28 15.2	2.305	3.253	5.6	20.3
2 11	7 41.05	+24 42.1	1.954	2.858	9.6	20.4	2 11	7 40.72	+28 46.8	2.366	3.258	8.8	20.5
2 21	7 35.92	+25 20.5	2.035	2.864	12.8	20.6	2 21	7 35.08	+29 7.4	2.453	3.261	11.5	20.7
218617	2005	<i>QY</i> ₄₂	1 18.8	72°59'	5.0°/21.7	18	18229	3222	<i>T</i> ₋₁	1 18.8	154°69'	0.9°/19.1	18
12 13	8 24.63	+ 4 13.2	1.814	2.571	16.7	20.0	12 13	8 33.26	+16 43.5	1.733	2.518	16.4	19.2
12 23	8 20.48	+ 4 24.5	1.740	2.584	13.7	19.9	12 23	8 27.35	+16 55.5	1.655	2.528	12.7	19.0
1 2	8 13.95	+ 4 56.4	1.686	2.597	10.1	19.7	1 2	8 18.57	+17 17.7	1.599	2.536	8.4	18.7
1 12	8 5.72	+ 5 48.5	1.658	2.610	6.7	19.5	1 12	8 7.70	+17 46.8	1.569	2.544	3.7	18.5
1 22	7 56.74	+ 6 57.6	1.657	2.624	5.0	19.4	1 22	7 55.89	+18 18.7	1.569	2.551	1.7	18.3
2 1	7 48.11	+ 8 18.2	1.684	2.637	6.9	19.5	2 1	7 44.53	+18 49.2	1.598	2.557	6.4	18.6
2 11	7 40.91	+ 9 43.8	1.739	2.650	10.2	19.8	2 11	7 34.93	+19 15.3	1.655	2.562	10.8	18.9
2 21	7 35.89	+11 8.0	1.819	2.663	13.5	20.0	2 21	7 27.98	+19 35.6	1.736	2.567	14.6	19.2
379772	2011	<i>HK</i> ₂₈	1 18.8	220°83'	3.3°/20.3	18	278494	2007	<i>VT</i> ₂₅₂	1 18.8	167°85'	5.3°/22.4	18
12 13	8 29.74	+10 0.2	1.930	2.695	15.6	22.8	12 13	8 22.72	- 0 8.1	2.984	3.690	11.9	21.5
12 23	8 24.59	+10 6.9	1.828	2.684	12.6	22.6	12 23	8 18.15	- 0 30.7	2.892	3.694	10.0	21.4
1 2	8 16.81	+10 28.7	1.747	2.672	8.9	22.3	1 2	8 12.06	- 0 39.8	2.823	3.697	8.0	21.3
1 12	8 7.00	+11 4.7	1.694	2.659	5.1	22.1	1 12	8 4.90	- 0 34.4	2.780	3.700	6.2	21.1
1 22	7 56.07	+11 52.3	1.669	2.645	3.4	22.0	1 22	7 57.25	- 0 14.8	2.766	3.703	5.3	21.1
2 1	7 45.22	+12 47.3	1.674	2.630	6.5	22.1	2 1	7 49.77	+ 0 17.7	2.781	3.705	6.1	21.1
2 11	7 35.69	+13 44.8	1.707	2.614	10.5	22.3	2 11	7 43.09	+ 1 0.1	2.825	3.707	7.8	21.3
2 21	7 28.43	+14 40.5	1.765	2.598	14.3	22.5	2 21	7 37.74	+ 1 49.0	2.895	3.709	9.8	21.4
280217	2002	<i>TT</i> ₃₀₉	1 18.8	59°17'	3.2°/17.5	17	188629	2005	<i>QL</i> ₅₆	1 18.8	32°42'	4.6°/21.1	18
12 13	8 30.02	+23 23.1	1.246	2.072	19.2	20.6	12 13	8 23.20	+ 7 16.3	1.344	2.140	19.7	18.9
12 23	8 25.91	+24 28.4	1.187	2.084	14.8	20.4	12 23	8 20.01	+ 7 28.1	1.288	2.159	15.8	18.7
1 2	8 18.11	+25 42.7	1.149	2.097	9.7	20.1	1 2	8 13.92	+ 8 3.2	1.252	2.180	11.3	18.5
1 12	8 7.57	+26 56.8	1.134	2.110	4.6	19.9	1 12	8 5.79	+ 8 59.7	1.238	2.201	6.8	18.3
1 22	7 55.85	+28 1.0	1.146	2.123	4.2	19.9	1 22	7 56.86	+10 12.7	1.249	2.224	4.6	18.2
2 1	7 44.85	+28 47.9	1.183	2.137	9.0	20.2	2 1	7 48.53	+11 34.7	1.287	2.248	7.4	18.4
2 11	7 36.30	+29 15.1	1.245	2.151	13.8	20.5	2 11	7 42.09	+12 57.5	1.350	2.272	11.6	18.7
2 21	7 31.21	+29 24.4	1.327	2.164	17.9	20.8	2 21	7 38.35	+14 14.7	1.436	2.297	15.4	19.0
146049	2000	<i>EK</i> ₃₀	1 18.8	136°58'	6.7°/15.7	18	241723	2000	<i>UL</i> ₉₂	1 18.8	171°19'	2.3°/19.7	18
12 13	8 36.25	+38 58.2	2.151	2.934	13.6	19.3	12 13	8 29.78	+14 11.6	1.831	2.612	15.7	20.9
12 23	8 29.55	+39 56.9	2.086	2.946	11.1	19.1	12 23	8 24.56	+14 1.3	1.746	2.615	12.4	20.6
1 2	8 19.91	+40 48.1	2.044	2.957	8.5	19.0	1 2	8 16.71	+14 1.5	1.684	2.617	8.5	20.4
1 12	8 8.19	+41 24.1	2.030	2.968	6.9	18.9	1 12	8 6.94	+14 10.9	1.648	2.619	4.3	20.2
1 22	7 55.63	+41 39.3	2.044	2.979	7.1	18.9	1 22	7 56.28	+14 27.1	1.640	2.620	2.6	20.0
2 1	7 43.70	+41 31.3	2.086	2.989	9.1	19.1	2 1	7 45.96	+14 47.1	1.662	2.621	6.2	20.3
2 11	7 33.70	+41 2.2	2.154	2.998	11.6	19.3	2 11	7 37.18	+15 8.1	1.712	2.621	10.4	20.5
2 21	7 26.50	+40 16.6	2.245	3.006	14.0	19.4	2 21	7 30.80	+15 27.8	1.785	2.621	14.0	20.8
273039	2006	<i>DE</i> ₁₃₂	1 18.8	80°52'	3.2°/20.8	18	420665	2012	<i>JH</i> ₄₆	1 18.8	241°57'	11.6°/10.4	16
12 13	8 24.24	+ 8 10.3	2.051	2.816	14.8	20.8	12 13	8 38.19	+51 0.8	2.078	2.839	14.8	21.9
12 23	8 19.94	+ 8 32.8	1.975	2.829	11.8	20.7	12 23	8 32.64	+53 4.5	2.016	2.833	13.2	21.8
1 2	8 13.50	+ 9 11.4	1.920	2.843	8.4	20.5	1 2	8 22.93	+54 55.2	1.977	2.828	12.0	21.7
1 12	8 5.53	+10 4.2	1.893	2.856	4.9	20.3	1 12	8 9.81	+56 21.0	1.962	2.822	11.6	21.6
1 22	7 56.89	+11 7.9	1.894	2.869	3.3	20.2	1 22	7 54.85	+57 12.9	1.971	2.817	12.3	21.7
2 1	7 48.56	+12 17.7	1.925	2.882	5.7	20.4	2 1	7 40.23	+57 26.9	2.004	2.811	13.7	21.7
2 11	7 41.50	+13 28.4	1.984	2.895	9.1	20.6	2 11	7 28.11	+57 5.8	2.057	2.805	15.4	21.9
2 21	7 36.39	+14 35.7	2.069	2.908	12.2	20.8	2 21	7 19.90	+56 16.8	2.128	2.799	17.1	22.0
492260	2013	<i>WC</i> ₄₇	1 18.8	76°69'	5.4°/21.4	18	456606	2007	<i>EV</i> ₂₁₇	1 18.8	209°97'	2.5°/17.5	18
12 13	8 24.43	+ 4 38.9	2.226	2.971	14.4	20.6	12 13	8 27.88	+26 15.6	2.289	3.083	12.6	21.6
12 23	8 19.87	+ 4 1.7	2.149	2.983	11.8	20.5	12 23	8 22.85	+26 52.1	2.200	3.079	9.7	21.4
1 2	8 13.34	+ 3 38.7	2.093	2.994	9.0	20.3	1 2	8 15.49	+27 31.0	2.135	3.075	6.4	21.2
1 12	8 5.44	+ 3 30.9	2.063	3.006	6.5	20.2	1 12	8 6.43	+28 7.6	2.098	3.071	3.3	21.0
1 22	7 56.96	+ 3 38.2	2.061	3.017	5.4	20.1	1 22	7 56.55	+28 37.4	2.091	3.066	3.0	20.9
2 1	7 48.79	+ 3 58.7	2.088	3.029	6.7	20.2	2 1	7 46.91	+28 57.2	2.114	3.060	6.1	21.1
2 11	7 41.78	+ 4 29.2	2.143	3.040	9.2	20.4	2 11	7 38.56	+29 5.6	2.165	3.055	9.5	21.3
2 21	7 36.58	+ 5 5.8	2.222	3.051	11.9	20.6	2 21	7 32.28	+29 3.4	2.240	3.049	12.5	21.5
393349	1991	<i>VU</i> ₉	1 18.8	75°10'	0.6°/18.6	18	158217	2001	<i>SJ</i> ₁₂₂	1 18.8	141°88'	1.2°/19.7	18
12 13	8 33.45	+19 22.1	1.388	2.194	18.7	20.7	12 13	8 20.02	+14 19.3	3.845	4.606	8.5	20.8
12 23	8 27.79	+19 55.2	1.337	2.223	14.3	20.5	12 23	8 15.78	+14 22.3	3.757	4.615	6.6	20.7
1 2	8 18.88	+20 38.1	1.308	2.252	9.2	20.3	1 2	8 10.37	+14 30.6	3.694	4.623	4.5	20.6
1 12	8 7.76	+21 24.8	1.304	2.281	3.7	20.0	1 12	8 4.18	+14 43.1	3.661	4.631	2.3	20.4
1 22	7 55.90	+22 8.7	1.327	2.309	2.0	20.0	1 22	7 57.65	+14 58.7	3.659	4.639	1.3	20.3
2 1	7 44.93	+22 44.7	1.378	2.337	7.2	20.4	2 1	7 51.28	+15 15.9	3.689	4.646	3.2	20.5
2 11	7 36.25	+23 10.3	1.455	2.365	11.8	20.7	2 11	7 45.55	+15 33.4	3.749	4.653	5.4	20.7
2 21	7 30.68	+23 25.4	1.554	2.392	15.7	21.0	2 21	7 40.85	+15 50.0	3.837	4.660	7.4	20.8
369302	2009	<i>SY</i> ₃₈	1 18.8	113°74'	2.4°/19.9	18	345926	2007	<i>RO</i> ₂₂₃	1 18.8	77°41'	10.0°/12.9	18
12 13	8 26.19	+12 44.											

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2019/20		α_{2000}	δ_{2000}	Δ	r	β	V	2019/20		α_{2000}	δ_{2000}	Δ	r	β	V					
30090		2000	<i>EL</i> ₁₂₉	1 18.8	155°71	1°6/17.9	18	318827		2005	<i>SK</i> ₂₂₀	1 18.8	166°09	0°5/18.9	18					
12 13	8 29.40	+23 16.3	2.225	3.014	13.1	19.7	12 13	8 30.10	+19 15.6	2.294	3.072	13.0	20.9	12 13	8 24.28	+19 6.4	2.206	3.077	10.1	20.7
204329		2004	<i>RJ</i> ₁₇₅	1 18.8	106°76	4°7/20.6	18	502460		2015	<i>BB</i> ₃₀₇	1 18.8	217°88	4°1/16.5	18					
12 13	8 30.47	+8 39.0	1.690	2.459	17.4	20.9	12 13	8 28.11	+32 14.0	2.505	3.297	11.7	21.5	12 13	8 22.95	+32 57.9	2.418	3.292	9.2	21.3
457867		2009	<i>SC</i> ₂₂₂	1 18.8	144°65	0°0/18.8	18	82578		2001	<i>OS</i> ₈₆	1 18.8	116°96	1°9/19.7	18					
12 13	8 28.12	+19 32.8	2.165	2.952	13.4	22.1	12 13	8 28.56	+13 55.0	2.140	2.913	14.0	20.6	12 13	8 23.13	+13 58.8	2.066	2.930	11.0	20.4
465300		2007	<i>TE</i> ₃₉₇	1 18.8	101°81	4°7/21.8	18	130546		2000	<i>QW</i> ₂₂₇	1 18.8	189°75	5°3/21.3	18					
12 13	8 23.85	+3 28.0	2.609	3.340	12.8	22.1	12 13	8 27.09	+5 36.3	1.795	2.554	16.8	20.4	12 13	8 22.59	+5 25.6	1.708	2.554	13.8	20.2
447057		2004	<i>RE</i> ₂₄₂	1 18.8	33°15	1°9/19.5	18	269582		2009	<i>WX</i> ₂₂₂	1 18.8	175°42	1°8/19.7	18					
12 13	8 26.16	+14 47.8	1.229	2.047	19.9	21.2	12 13	8 25.48	+13 50.9	2.126	2.905	13.9	21.7	12 13	8 20.97	+13 57.1	2.038	2.906	10.9	21.5
318141		2004	<i>PD</i> ₄₆	1 18.8	177°17	1°3/18.2	18	507122		2009	<i>SF</i> ₃₁₃	1 18.8	134°28	1°1/17.9	17					
12 13	8 30.55	+20 37.1	1.811	2.606	15.4	21.4	12 13	8 20.94	+24 28.0	4.028	4.808	7.8	23.0	12 13	8 16.50	+24 52.4	3.947	4.820	6.0	22.9
415692		1995	<i>SO</i> ₉	1 18.8	82°09	2°1/17.9	18	152682		1998	<i>KT</i> ₂₁	1 18.8	211°35	3°1/20.5	17					
12 13	8 28.51	+24 55.1	1.922	2.723	14.4	21.8	12 13	8 25.64	+9 21.0	2.737	3.485	11.9	20.9	12 13	8 20.63	+9 8.6	2.633	3.478	9.6	20.7
376051		2010	<i>EK</i> ₃₀	1 18.8	29°72	5°5/15.9	18	13351		Zibeline	1 18.8	272°05	4°8/20.5	18						
12 13	8 27.33	+33 17.6	1.972	2.779	13.9	19.9	12 13	8 27.26	+9 11.2	1.528	2.312	18.2	17.2	12 13	8 23.33	+8 49.1	1.434	2.299	14.8	16.9
243807		2000	<i>SR</i> ₁₇₆	1 18.8	107°69	1°8/18.2	18	164801		1999	<i>JH</i> ₄₂	1 18.8	140°79	6°5/21.8	18					
12 13	8 33.57	+24 21.1	1.710	2.508	16.0	20.5	12 13	8 29.15	+1 59.6	2.087	2.814	15.7	20.4	12 13	8 23.64	+1 20.7	2.008	2.827	13.1	20.2

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
166269	2002 GY ₈₉		1 18.8 137°09	3°4/17.4	18		76815	2000 QE ₁₈₁		1 18.8 301°21	17°5/21.1	18	
12 13	8 32.50	+27 38.1	1.857	2.656	14.9	20.4	12 13	8 30.65	- 6 9.0	1.164	1.904	25.2	17.9
12 23	8 26.82	+28 19.8	1.784	2.666	11.5	20.2	12 23	8 26.72	- 9 7.2	1.093	1.898	22.7	17.7
1 2	8 18.27	+29 2.9	1.735	2.675	7.7	20.0	1 2	8 19.02	-11 42.2	1.038	1.891	20.1	17.5
1 12	8 7.65	+29 41.2	1.712	2.683	4.2	19.8	1 12	8 8.27	-13 39.9	1.002	1.885	18.1	17.3
1 22	7 56.15	+30 8.7	1.719	2.691	4.0	19.8	1 22	7 55.85	-14 49.4	0.986	1.879	17.5	17.3
2 1	7 45.14	+30 21.9	1.754	2.699	7.4	20.0	2 1	7 43.62	-15 5.5	0.989	1.873	18.4	17.3
2 11	7 35.93	+30 20.6	1.817	2.706	11.1	20.2	2 11	7 33.53	-14 32.9	1.012	1.867	20.6	17.4
2 21	7 29.39	+30 6.6	1.902	2.713	14.3	20.5	2 21	7 26.91	-13 23.1	1.050	1.862	23.3	17.6
26551	Shenliangbo		1 18.8 211°38	1°3/19.4	18		82339	2001 LB ₁₃		1 18.8 190°01	2°6/19.8	18	
12 13	8 27.16	+15 30.7	1.983	2.768	14.6	19.4	12 13	8 29.49	+13 48.9	2.128	2.899	14.2	19.1
12 23	8 22.50	+15 40.8	1.892	2.764	11.4	19.2	12 23	8 24.02	+13 21.0	2.036	2.898	11.2	18.8
1 2	8 15.40	+16 1.0	1.824	2.761	7.7	19.0	1 2	8 16.26	+13 1.2	1.968	2.897	7.8	18.6
1 12	8 6.49	+16 29.2	1.783	2.757	3.6	18.7	1 12	8 6.82	+12 49.1	1.927	2.895	4.2	18.4
1 22	7 56.69	+17 2.1	1.771	2.752	1.7	18.6	1 22	7 56.62	+12 43.6	1.916	2.893	2.8	18.3
2 1	7 47.11	+17 36.1	1.788	2.748	5.7	18.8	2 1	7 46.69	+12 43.2	1.935	2.891	5.8	18.5
2 11	7 38.89	+18 7.8	1.833	2.743	9.8	19.0	2 11	7 38.08	+12 46.2	1.982	2.888	9.4	18.7
2 21	7 32.83	+18 35.2	1.903	2.738	13.3	19.3	2 21	7 31.53	+12 51.0	2.055	2.885	12.7	18.9
203513	2002 AM ₁₆₂		1 18.8 20°37	0°4/18.9	18		460989	2014 WH ₃₄₆		1 18.8 224°97	5°3/16.3	18	
12 13	8 25.25	+18 59.2	1.051	1.889	21.1	20.0	12 13	8 32.69	+34 15.8	2.144	2.935	13.4	21.5
12 23	8 22.57	+18 59.5	0.995	1.898	16.3	19.8	12 23	8 26.98	+35 3.3	2.056	2.928	10.7	21.3
1 2	8 16.11	+19 11.7	0.957	1.908	10.7	19.5	1 2	8 18.45	+35 47.6	1.992	2.919	7.8	21.1
1 12	8 6.89	+19 31.9	0.942	1.919	4.5	19.2	1 12	8 7.81	+36 22.0	1.955	2.911	5.6	20.9
1 22	7 56.55	+19 54.4	0.949	1.932	2.0	19.1	1 22	7 56.15	+36 40.7	1.947	2.901	5.8	20.9
2 1	7 47.03	+20 14.1	0.981	1.946	8.2	19.5	2 1	7 44.81	+36 40.4	1.968	2.892	8.2	21.0
2 11	7 40.04	+20 27.6	1.035	1.962	13.7	19.8	2 11	7 35.10	+36 21.6	2.015	2.882	11.2	21.2
2 21	7 36.55	+20 33.7	1.110	1.978	18.3	20.2	2 21	7 27.95	+35 47.4	2.086	2.871	14.1	21.4
500240	2012 JE ₂₇		1 18.8 258°71	4°4/20.9	17		80048	1999 JG ₅₄		1 18.8 239°74	3°6/16.5	17	
12 13	8 25.36	+ 7 3.2	2.249	3.002	14.0	22.4	12 13	8 26.47	+30 48.9	2.726	3.517	10.9	20.1
12 23	8 20.92	+ 6 48.1	2.139	2.983	11.5	22.2	12 23	8 21.60	+31 38.6	2.631	3.506	8.5	19.9
1 2	8 14.32	+ 6 46.4	2.051	2.963	8.5	22.0	1 2	8 14.66	+32 28.2	2.561	3.495	5.9	19.7
1 12	8 6.06	+ 6 58.7	1.989	2.943	5.6	21.8	1 12	8 6.18	+33 12.9	2.520	3.483	3.9	19.6
1 22	7 56.89	+ 7 24.3	1.956	2.923	4.4	21.7	1 22	7 56.91	+33 48.3	2.510	3.471	4.0	19.6
2 1	7 47.75	+ 8 0.8	1.952	2.902	6.3	21.8	2 1	7 47.79	+34 11.3	2.529	3.459	6.3	19.7
2 11	7 39.63	+ 8 44.9	1.976	2.880	9.5	21.9	2 11	7 39.74	+34 21.0	2.576	3.447	8.9	19.8
2 21	7 33.33	+ 9 32.5	2.026	2.859	12.7	22.1	2 21	7 33.48	+34 18.1	2.648	3.434	11.4	20.0
11676	1998 CQ ₂		1 18.8 279°08	0°3/18.7	18		399583	2003 SG ₃₂₆		1 18.8 161°52	0°1/18.9	18	
12 13	8 28.66	+20 10.9	1.620	2.425	16.4	19.0	12 13	8 30.30	+18 44.9	2.041	2.825	14.2	22.5
12 23	8 24.37	+20 21.5	1.527	2.412	12.8	18.7	12 23	8 24.78	+19 2.7	1.958	2.832	11.0	22.3
1 2	8 17.02	+20 40.2	1.456	2.400	8.5	18.4	1 2	8 16.81	+19 27.8	1.898	2.837	7.2	22.1
1 12	8 7.29	+21 3.3	1.410	2.387	3.5	18.1	1 12	8 7.07	+19 57.0	1.866	2.842	3.0	21.8
1 22	7 56.31	+21 26.2	1.392	2.374	1.8	17.9	1 22	7 56.52	+20 26.6	1.864	2.847	1.4	21.7
2 1	7 45.54	+21 44.9	1.401	2.361	7.0	18.2	2 1	7 46.30	+20 53.0	1.892	2.850	5.7	22.0
2 11	7 36.49	+21 56.7	1.437	2.349	11.8	18.5	2 11	7 37.52	+21 14.0	1.949	2.853	9.6	22.3
2 21	7 30.19	+22 1.0	1.496	2.336	16.0	18.7	2 21	7 30.98	+21 28.6	2.030	2.856	13.0	22.5
373918	2003 UH ₁₆₁		1 18.8 52°03	2°9/20.2	18		29867	1999 FA ₅₅		1 18.8 337°65	8°2/22.4	18	
12 13	8 25.34	+11 39.5	1.847	2.629	15.6	20.8	12 13	8 22.02	+ 1 3.7	1.566	2.327	18.8	17.3
12 23	8 20.95	+11 34.2	1.781	2.648	12.3	20.6	12 23	8 19.10	+ 0 23.8	1.480	2.318	16.0	17.0
1 2	8 14.24	+11 41.9	1.738	2.668	8.5	20.4	1 2	8 13.49	+ 0 6.5	1.412	2.310	12.7	16.8
1 12	8 5.95	+12 1.2	1.720	2.688	4.7	20.2	1 12	8 5.82	+ 0 15.4	1.366	2.302	9.7	16.6
1 22	7 57.02	+12 29.5	1.731	2.708	3.0	20.2	1 22	7 57.08	+ 0 51.1	1.344	2.296	8.2	16.5
2 1	7 48.56	+13 3.3	1.770	2.728	5.9	20.4	2 1	7 48.52	+ 1 50.6	1.348	2.289	9.5	16.6
2 11	7 41.58	+13 38.9	1.836	2.749	9.6	20.6	2 11	7 41.45	+ 3 7.3	1.377	2.284	12.6	16.7
2 21	7 36.76	+14 13.1	1.926	2.769	12.8	20.9	2 21	7 36.81	+ 4 33.2	1.427	2.279	16.0	16.9
201964	2004 NW ₂₆		1 18.8 81°46	1°3/19.3	18		237752	2001 XB ₂₄₉		1 18.8 108°46	1°1/18.3	18	
12 13	8 34.07	+16 44.8	1.525	2.317	17.9	20.5	12 13	8 30.93	+19 55.3	1.674	2.472	16.3	20.2
12 23	8 27.96	+16 41.2	1.470	2.346	13.8	20.3	12 23	8 25.72	+20 46.8	1.607	2.489	12.5	20.0
1 2	8 18.90	+16 47.7	1.437	2.375	9.1	20.1	1 2	8 17.62	+21 47.7	1.562	2.505	8.1	19.7
1 12	8 7.86	+17 1.4	1.429	2.403	4.1	19.8	1 12	8 7.44	+22 52.2	1.544	2.521	3.3	19.5
1 22	7 56.17	+17 18.4	1.449	2.431	2.0	19.8	1 22	7 56.37	+23 53.4	1.555	2.536	2.2	19.4
2 1	7 45.30	+17 35.4	1.498	2.459	6.6	20.1	2 1	7 45.79	+24 45.7	1.595	2.551	6.8	19.8
2 11	7 36.53	+17 49.8	1.574	2.485	11.0	20.4	2 11	7 37.04	+25 25.8	1.662	2.566	11.0	20.0
2 21	7 30.61	+18 0.5	1.674	2.512	14.7	20.7	2 21	7 30.97	+25 53.2	1.753	2.579	14.7	20.3
354556	2004 TN ₅₄		1 18.8 39°27	1°5/19.3	18		205932	2002 JA ₂₂		1 18.8 263°93	2°3/19.8	18	
12 13	8 27.51	+16 1.8	1.205	2.025	20.1	21.0	12 13	8 27.02	+12 55.1	1.755	2.541	16.1	20.2
12 23	8 23.78	+16 6.2	1.149	2.040	15.6	20.8	12 23	8 22.87	+13 4.8	1.655	2.526	12.8	20.0
1 2	8 16.63	+16 25.1	1.112	2.057	10.4	20.6	1 2	8 15.96	+13 28.6	1.576	2.510	8.9	19.7
1 12	8 7.05	+16 54.9	1.098	2.074	4.7	20.3	1 12	8 6.87	+14 5.3	1.523	2.494	4.5	19.4
1 22	7 56.52	+17 30.5	1.110	2.092	2.2	20.2	1 22	7 56.57	+14 51.5	1.497	2.478	2.6	19.2
2 1	7 46.75	+18 6.2	1.147	2.111	7.5	20.6	2 1	7 46.35	+15 42.4	1.500	2.461	6.5	19.4
2 11	7 39.27	+18 37.6	1.208	2.130	12.6	20.9	2 11	7 37.53	+16 33.3	1.531	2.444	11.1	19.7
2 21	7 34.99	+19 2.2	1.291	2.150	16.9	21.2	2 21	7 31.14	+17 20.3	1.584	2.427	15.2	19.9
243045	2006 XS ₃₁		1 18.8 307°59	0°9/19.2	17		281283	2007 RZ ₁₀₃		1 18.8 134°80	4°6/16.2	18	
12 13	8 23.79	+17 40.0	2.540	3.323	11.8	20.2	12 13	8 29.52	+34 45.1	2.562	3.350	11.6	20.7
12 23	8 19.39	+17 31.7	2.444	3.316	9.2	20.1	12 23	8 23.95	+35 31.1	2.489	3.358	9.1	20.5
1 2	8 13.11	+17 28.9	2.372	3.309	6.1	19.8	1 2	8 16.14	+36 13.3	2.441	3.366	6.7	20.4
1 12	8 5.49	+17 30.0	2.327	3.302	2.8	19.6	1 12	8 6.75	+36 46.4	2.420	3.373	4.9	20.3
1 22	7 57.24	+17 33.4	2.313	3.295	1.3	19.5	1 22	7 56.70	+37 6.1	2.429	3.381	5.0	20.3
2 1	7 49.18	+17 37.4	2.329	3.288	4.6	19.7	2 1	7 47.02	+37 10.2	2.468	3.388	7.0	20.4
2 11	7 42.15	+17 40.5	2.374	3.282	7.9	19.9	2 11	7 38.71	+36 59.0	2.534	3.394	9.5	20.6
2 21	7 36.77	+17 41.9	2.445	3.276	10.9	20.1	2 21	7 32.46	+36 34.8	2.624	3.401	11.8	20.8

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
410815	2009 <i>KS</i> ₂₈		1 18.8 141°75'	4°1'/21.0	18		395399	2011 <i>SO</i> ₁₁₂		1 18.8 125°23'	0°8'/19.2	18	
12 13	8 27.19	+ 6 54.6	2.290	3.037	14.0	21.8	12 13	8 32.03	+16 57.6	1.965	2.744	14.9	22.1
12 23	8 22.01	+ 6 43.6	2.208	3.049	11.3	21.6	12 23	8 26.03	+17 11.1	1.894	2.764	11.5	21.9
1 2	8 14.81	+ 6 46.0	2.149	3.060	8.3	21.5	1 2	8 17.57	+17 33.2	1.846	2.782	7.6	21.7
1 12	8 6.20	+ 7 1.8	2.117	3.070	5.4	21.3	1 12	8 7.38	+18 0.8	1.825	2.800	3.3	21.5
1 22	7 56.96	+ 7 29.5	2.114	3.080	4.1	21.2	1 22	7 56.51	+18 30.3	1.834	2.817	1.5	21.4
2 1	7 48.01	+ 8 6.5	2.141	3.090	5.9	21.4	2 1	7 46.11	+18 58.2	1.874	2.833	5.6	21.7
2 11	7 40.23	+ 8 49.1	2.196	3.098	8.8	21.6	2 11	7 37.29	+19 22.0	1.942	2.848	9.6	21.9
2 21	7 34.28	+ 9 33.7	2.278	3.106	11.6	21.8	2 21	7 30.77	+19 40.5	2.035	2.862	12.9	22.2
266578	2008 <i>HS</i> ₁₁		1 18.8 283°83'	5°0'/16.4	18		464332	2016 <i>AU</i> ₁₁₁		1 18.8 79°19'	5°3'/17.5	18	
12 13	8 29.21	+30 32.7	1.809	2.617	14.9	20.6	12 13	8 38.22	+34 57.3	1.758	2.553	15.8	20.6
12 23	8 24.83	+31 32.6	1.718	2.602	11.7	20.4	12 23	8 31.32	+35 9.4	1.692	2.565	12.5	20.4
1 2	8 17.36	+32 34.1	1.650	2.587	8.2	20.1	1 2	8 21.20	+35 14.2	1.648	2.578	8.9	20.2
1 12	8 7.48	+33 29.6	1.608	2.572	5.4	19.9	1 12	8 8.89	+35 5.0	1.630	2.591	5.9	20.1
1 22	7 56.30	+34 11.5	1.593	2.557	5.6	19.9	1 22	7 55.85	+34 37.3	1.641	2.603	5.7	20.1
2 1	7 45.31	+34 34.5	1.607	2.542	8.8	20.1	2 1	7 43.73	+33 50.8	1.680	2.616	8.4	20.3
2 11	7 36.02	+34 37.5	1.646	2.527	12.5	20.2	2 11	7 33.90	+32 49.0	1.746	2.628	11.9	20.5
2 21	7 29.52	+34 22.8	1.707	2.513	15.9	20.4	2 21	7 27.17	+31 37.3	1.836	2.641	15.0	20.8
421098	2013 <i>QC</i> ₆₀		1 18.8 240°70'	0°6'/18.5	17		399511	2002 <i>VL</i> ₂₇		1 18.8 68°91'	6°5'/21.6	14 C	
12 13	8 27.98	+21 5.0	2.111	2.902	13.6	21.8	12 13	8 30.61	+ 4 24.0	1.677	2.429	18.1	21.3
12 23	8 23.13	+21 22.2	2.014	2.892	10.5	21.6	12 23	8 24.98	+ 3 37.8	1.624	2.462	14.8	21.1
1 2	8 15.84	+21 45.2	1.941	2.882	6.9	21.4	1 2	8 16.84	+ 3 10.6	1.591	2.494	11.2	21.0
1 12	8 6.72	+22 10.5	1.895	2.871	2.9	21.1	1 12	8 7.05	+ 3 3.7	1.583	2.527	7.9	20.9
1 22	7 56.68	+22 34.4	1.878	2.860	1.6	21.0	1 22	7 56.71	+ 3 16.3	1.602	2.559	6.5	20.9
2 1	7 46.83	+22 53.6	1.892	2.849	5.8	21.2	2 1	7 47.03	+ 3 45.2	1.648	2.590	8.0	21.0
2 11	7 38.28	+23 6.2	1.933	2.837	9.7	21.4	2 11	7 39.11	+ 4 25.5	1.721	2.621	10.9	21.3
2 21	7 31.88	+23 11.7	1.999	2.825	13.1	21.6	2 21	7 33.61	+ 5 11.6	1.818	2.652	13.9	21.5
194627	2001 <i>XV</i> ₁₅₆		1 18.8 357°58'	0°6'/19.0	18		36673	2000 <i>QG</i> ₂₂₁		1 18.8 251°28'	1°4'/19.7	18	
12 13	8 24.57	+18 43.0	1.132	1.966	20.2	19.6	12 13	8 25.47	+12 50.1	2.035	2.814	14.5	18.6
12 23	8 22.09	+18 39.7	1.062	1.962	15.8	19.4	12 23	8 21.29	+13 33.7	1.936	2.804	11.4	18.4
1 2	8 15.92	+18 48.0	1.010	1.959	10.5	19.0	1 2	8 14.73	+14 32.3	1.859	2.794	7.7	18.1
1 12	8 6.93	+19 4.6	0.980	1.958	4.5	18.7	1 12	8 6.34	+15 43.2	1.810	2.783	3.7	17.9
1 22	7 56.60	+19 24.8	0.974	1.957	2.0	18.5	1 22	7 56.95	+17 1.5	1.791	2.772	1.7	17.7
2 1	7 46.80	+19 43.5	0.993	1.958	8.1	18.9	2 1	7 47.63	+18 21.4	1.801	2.761	5.7	17.9
2 11	7 39.31	+19 57.2	1.034	1.960	13.8	19.2	2 11	7 39.50	+19 37.5	1.840	2.750	9.7	18.2
2 21	7 35.25	+20 4.3	1.095	1.963	18.6	19.5	2 21	7 33.43	+20 45.7	1.905	2.739	13.4	18.4
379500	2010 <i>FU</i> ₅₆		1 18.8 327°91'	2°3'/20.1	18		197091	2003 <i>UO</i> ₁₈₃		1 18.8 114°21'	0°3'/18.7	18	
12 13	8 22.54	+11 30.2	2.093	2.872	14.1	20.5	12 13	8 26.05	+19 35.2	2.273	3.061	12.8	20.5
12 23	8 18.85	+11 48.7	2.001	2.867	11.2	20.3	12 23	8 21.30	+20 0.3	2.194	3.070	9.9	20.3
1 2	8 12.99	+12 20.7	1.931	2.862	7.7	20.1	1 2	8 14.45	+20 31.8	2.139	3.079	6.4	20.1
1 12	8 5.53	+13 4.6	1.888	2.857	4.1	19.8	1 12	8 6.11	+21 6.3	2.112	3.088	2.6	19.9
1 22	7 57.27	+13 57.2	1.873	2.852	2.4	19.7	1 22	7 57.11	+21 40.4	2.114	3.097	1.3	19.8
2 1	7 49.17	+14 54.3	1.888	2.848	5.5	19.9	2 1	7 48.41	+22 10.8	2.148	3.105	5.1	20.0
2 11	7 42.23	+15 51.6	1.931	2.844	9.2	20.1	2 11	7 40.95	+22 35.2	2.209	3.113	8.6	20.3
2 21	7 37.20	+16 45.4	1.998	2.840	12.5	20.3	2 21	7 35.40	+22 52.8	2.296	3.121	11.7	20.5
492800	2014 <i>QN</i> ₂₄₈		1 18.8 121°26'	0°4'/18.6	18		241532	2010 <i>DV</i> ₇		1 18.8 237°50'	2°1'/19.7	18	
12 13	8 28.79	+19 0.5	1.950	2.740	14.6	22.0	12 13	8 28.96	+13 51.3	1.732	2.517	16.3	21.5
12 23	8 23.71	+19 38.2	1.875	2.753	11.2	21.8	12 23	8 24.36	+13 54.9	1.636	2.507	12.9	21.2
1 2	8 16.15	+20 24.3	1.824	2.765	7.3	21.5	1 2	8 16.93	+14 11.5	1.562	2.497	8.9	21.0
1 12	8 6.82	+21 14.6	1.801	2.777	3.0	21.3	1 12	8 7.30	+14 39.2	1.514	2.485	4.4	20.7
1 22	7 56.69	+22 4.2	1.806	2.789	1.6	21.2	1 22	7 56.50	+15 14.9	1.493	2.474	2.4	20.5
2 1	7 46.95	+22 48.3	1.842	2.800	5.9	21.5	2 1	7 45.85	+15 54.4	1.502	2.462	6.6	20.7
2 11	7 38.70	+23 24.2	1.906	2.810	9.8	21.8	2 11	7 36.71	+16 33.4	1.537	2.449	11.1	21.0
2 21	7 32.73	+23 50.8	1.994	2.821	13.1	22.0	2 21	7 30.08	+17 8.9	1.596	2.436	15.2	21.2
409942	2006 <i>UA</i> ₁₁₃		1 18.8 54°40'	4°7'/20.8	18		427197	2014 <i>VA</i> ₂₂		1 18.8 81°80'	0°0'/18.8	18	
12 13	8 26.19	+ 8 29.1	1.638	2.417	17.4	22.0	12 13	8 26.99	+18 27.5	1.895	2.690	14.8	21.6
12 23	8 22.01	+ 8 6.5	1.565	2.425	14.0	21.8	12 23	8 22.38	+18 52.5	1.822	2.701	11.4	21.4
1 2	8 15.18	+ 8 0.3	1.512	2.434	10.2	21.6	1 2	8 15.32	+19 26.0	1.771	2.712	7.4	21.1
1 12	8 6.45	+ 8 11.0	1.483	2.443	6.4	21.4	1 12	8 6.50	+20 4.5	1.747	2.723	3.1	20.9
1 22	7 56.88	+ 8 36.8	1.481	2.452	4.8	21.3	1 22	7 56.92	+20 43.5	1.752	2.734	1.4	20.8
2 1	7 47.72	+ 9 14.1	1.507	2.462	7.2	21.5	2 1	7 47.74	+21 19.1	1.786	2.745	5.8	21.1
2 11	7 40.17	+ 9 58.1	1.559	2.471	11.0	21.7	2 11	7 40.05	+21 48.3	1.848	2.756	9.8	21.4
2 21	7 35.05	+10 44.1	1.634	2.481	14.5	22.0	2 21	7 34.62	+22 10.0	1.934	2.767	13.2	21.6
206810	2004 <i>DG</i> ₅₉		1 18.8 286°36'	5°3'/22.5	18		295602	2008 <i>SN</i> ₁₇₆		1 18.8 50°32'	3°1'/17.8	18	
12 13	8 21.87	+ 1 9.1	2.387	3.116	13.9	20.1	12 13	8 30.69	+24 49.8	1.274	2.098	18.9	21.0
12 23	8 18.02	+ 1 14.9	2.292	3.113	11.6	19.9	12 23	8 26.42	+25 31.3	1.215	2.111	14.6	20.8
1 2	8 12.30	+ 1 38.7	2.218	3.110	9.0	19.7	1 2	8 18.49	+26 18.3	1.176	2.124	9.6	20.5
1 12	8 5.22	+ 2 20.8	2.169	3.106	6.6	19.5	1 12	8 7.93	+27 3.1	1.162	2.137	4.6	20.3
1 22	7 57.45	+ 3 19.9	2.149	3.103	5.3	19.5	1 22	7 56.28	+27 37.8	1.173	2.151	4.0	20.3
2 1	7 49.83	+ 4 32.6	2.158	3.100	6.4	19.5	2 1	7 45.41	+27 57.4	1.210	2.165	8.6	20.6
2 11	7 43.18	+ 5 53.8	2.195	3.097	8.8	19.7	2 11	7 36.98	+28 0.9	1.271	2.179	13.3	20.9
2 21	7 38.15	+ 7 18.2	2.259	3.093	11.5	19.8	2 21	7 31.94	+27 50.4	1.353	2.193	17.4	21.2
327412	2005 <i>VG</i> ₈₉		1 18.8 102°02'	1°3'/18.1	18		188724	2005 <i>UC</i> ₁₇		1 18.8 167°69'	5°9'/21.4	18	
12 13	8 27.95	+21 42											

EPHEMERIDES

1 18.8

1 18.8

2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
83690	2001 <i>TW</i> ₆₃		1 18.8 123° 06'	18.7	18		109405	2001 <i>QH</i> ₁₈₁		1 18.8 110° 25'	4.0	20.5	18
12 13	8 28.81	+19 28.2	2.201	2.985	13.3	19.9	12 13	8 29.13	+9 29.6	2.111	2.869	14.7	19.6
12 23	8 23.42	+19 56.8	2.127	3.001	10.2	19.7	12 23	8 23.59	+8 57.6	2.036	2.886	11.8	19.5
1 2	8 15.82	+20 31.9	2.077	3.016	6.6	19.5	1 2	8 15.90	+8 37.3	1.985	2.902	8.5	19.3
1 12	8 6.68	+21 10.0	2.055	3.031	2.7	19.3	1 12	8 6.72	+8 28.7	1.960	2.919	5.3	19.1
1 22	7 56.88	+21 47.2	2.063	3.045	1.4	19.2	1 22	7 56.94	+8 31.1	1.965	2.935	4.0	19.1
2 1	7 47.44	+22 19.9	2.102	3.059	5.3	19.5	2 1	7 47.56	+8 42.6	1.999	2.950	6.1	19.2
2 11	7 39.36	+22 46.0	2.169	3.072	8.9	19.7	2 11	7 39.54	+9 0.5	2.062	2.965	9.2	19.4
2 21	7 33.31	+23 4.7	2.262	3.084	11.9	19.9	2 21	7 33.54	+9 21.8	2.150	2.979	12.2	19.7
76449	2000 <i>FL</i> ₃₃		1 18.8 232° 07'	18.4	18		199393	2006 <i>BJ</i> ₂₆₄		1 18.8 138° 47'	0.6	18.5	18
12 13	8 24.62	+19 23.7	2.345	3.134	12.5	19.0	12 13	8 26.32	+20 18.3	2.217	3.007	13.0	21.1
12 23	8 20.32	+20 9.9	2.252	3.129	9.6	18.8	12 23	8 21.64	+20 45.8	2.134	3.012	10.0	20.9
1 2	8 13.91	+21 4.2	2.184	3.125	6.3	18.6	1 2	8 14.75	+21 19.4	2.075	3.016	6.5	20.7
1 12	8 5.95	+22 2.8	2.144	3.120	2.6	18.3	1 12	8 6.29	+21 55.9	2.044	3.020	2.7	20.4
1 22	7 57.18	+23 1.2	2.134	3.115	1.5	18.2	1 22	7 57.11	+22 31.2	2.043	3.024	1.5	20.4
2 1	7 48.57	+23 54.9	2.155	3.111	5.3	18.5	2 1	7 48.20	+23 2.0	2.071	3.028	5.3	20.6
2 11	7 41.05	+24 40.9	2.204	3.106	8.8	18.7	2 11	7 40.55	+23 26.1	2.128	3.032	8.9	20.9
2 21	7 35.36	+25 17.6	2.279	3.100	11.9	18.9	2 21	7 34.88	+23 42.6	2.210	3.035	12.1	21.1
368462	2003 <i>SC</i> ₁₀₁		1 18.8 78° 26'	19.9	18		429880	2012 <i>SM</i> ₆₂		1 18.8 86° 79'	0.9	19.4	18
12 13	8 27.86	+13 47.9	2.070	2.846	14.3	20.3	12 13	8 23.68	+15 5.8	2.377	3.157	12.6	21.3
12 23	8 22.71	+13 19.4	1.995	2.859	11.3	20.1	12 23	8 19.40	+15 34.7	2.296	3.166	9.8	21.1
1 2	8 15.35	+12 59.6	1.942	2.872	7.8	19.9	1 2	8 13.19	+16 13.1	2.239	3.175	6.5	21.0
1 12	8 6.48	+12 47.9	1.916	2.885	4.2	19.7	1 12	8 5.62	+16 58.3	2.210	3.184	2.9	20.7
1 22	7 56.98	+12 43.1	1.920	2.897	2.8	19.6	1 22	7 57.43	+17 47.1	2.211	3.193	1.3	20.6
2 1	7 47.91	+12 43.8	1.953	2.910	5.6	19.8	2 1	7 49.48	+18 35.6	2.242	3.202	4.8	20.9
2 11	7 40.20	+12 48.0	2.015	2.923	9.1	20.1	2 11	7 42.63	+19 20.7	2.303	3.211	8.1	21.1
2 21	7 34.54	+12 53.8	2.101	2.936	12.3	20.3	2 21	7 37.51	+20 0.3	2.389	3.220	11.1	21.3
45562	2000 <i>CD</i> ₅₆		1 18.8 105° 21'	3.5	17.7	18	76298	2000 <i>EC</i> ₁₃₁		1 18.8 59° 34'	3.5	20.9	18
12 13	8 35.46	+29 48.5	1.895	2.688	14.8	18.5	12 13	8 23.54	+8 23.2	2.064	2.831	14.7	19.6
12 23	8 28.90	+30 5.4	1.828	2.705	11.5	18.3	12 23	8 19.52	+8 32.5	1.985	2.840	11.7	19.4
1 2	8 19.51	+30 20.1	1.785	2.722	7.8	18.1	1 2	8 13.38	+8 56.8	1.927	2.849	8.4	19.2
1 12	8 8.21	+30 26.9	1.769	2.738	4.3	17.9	1 12	8 5.72	+9 35.2	1.896	2.858	5.1	19.0
1 22	7 56.21	+30 21.9	1.782	2.754	4.0	17.9	1 22	7 57.38	+10 24.9	1.893	2.867	3.5	18.9
2 1	7 44.93	+30 3.3	1.825	2.770	7.1	18.1	2 1	7 49.32	+11 21.9	1.919	2.876	5.7	19.1
2 11	7 35.58	+29 32.5	1.895	2.785	10.7	18.4	2 11	7 42.48	+12 21.6	1.974	2.885	9.1	19.3
2 21	7 28.93	+28 52.6	1.990	2.799	13.8	18.6	2 21	7 37.56	+13 19.8	2.053	2.895	12.2	19.5
394371	2007 <i>DK</i> ₅₅		1 18.8 272° 48'	4.0	20.5	18	15863	1996 <i>HT</i> ₁₅		1 18.8 48° 70'	0.8	19.2	18
12 13	8 26.91	+9 38.9	1.451	2.241	18.7	20.7	12 13	8 25.15	+16 46.8	1.982	2.774	14.3	18.3
12 23	8 23.19	+9 41.5	1.366	2.236	15.1	20.5	12 23	8 20.90	+16 59.7	1.903	2.780	11.1	18.1
1 2	8 16.36	+10 3.6	1.300	2.230	10.7	20.2	1 2	8 14.35	+17 21.8	1.847	2.787	7.4	17.9
1 12	8 7.13	+10 44.9	1.258	2.225	6.2	19.9	1 12	8 6.14	+17 50.3	1.818	2.793	3.2	17.7
1 22	7 56.63	+11 41.9	1.242	2.219	4.0	19.8	1 22	7 57.19	+18 21.8	1.818	2.800	1.5	17.5
2 1	7 46.36	+12 48.7	1.253	2.213	7.6	20.0	2 1	7 48.58	+18 52.9	1.847	2.808	5.5	17.8
2 11	7 37.83	+13 58.3	1.289	2.208	12.3	20.2	2 11	7 41.32	+19 20.7	1.903	2.815	9.4	18.1
2 21	7 32.12	+15 4.8	1.348	2.202	16.6	20.5	2 21	7 36.17	+19 43.3	1.984	2.822	12.7	18.3
33255	Kathybush		1 18.8 304° 83'	4.3	20.9	18	486285	2013 <i>CT</i> ₅₃		1 18.8 293° 91'	2.9	20.1	18
12 13	8 22.58	+7 47.2	2.237	2.998	13.8	19.1	12 13	8 26.14	+11 28.6	1.536	2.329	17.7	20.7
12 23	8 18.79	+7 25.4	2.133	2.982	11.3	18.9	12 23	8 22.45	+11 41.7	1.450	2.323	14.1	20.4
1 2	8 12.96	+7 16.0	2.051	2.966	8.4	18.7	1 2	8 15.81	+12 12.6	1.384	2.318	9.8	20.2
1 12	8 5.58	+7 19.8	1.995	2.950	5.5	18.5	1 12	8 6.89	+12 59.6	1.342	2.313	5.2	19.9
1 22	7 57.38	+7 36.1	1.966	2.934	4.3	18.4	1 22	7 56.80	+13 58.6	1.328	2.307	3.0	19.7
2 1	7 49.28	+8 3.1	1.967	2.918	6.2	18.5	2 1	7 46.92	+15 3.7	1.340	2.302	7.0	20.0
2 11	7 42.20	+8 37.6	1.996	2.903	9.3	18.6	2 11	7 38.70	+16 8.6	1.379	2.297	11.7	20.2
2 21	7 36.89	+9 16.0	2.049	2.887	12.4	18.8	2 21	7 33.14	+17 8.3	1.441	2.292	15.9	20.5
433124	2012 <i>TR</i> ₁₇₃		1 18.8 238° 57'	6.7	22.7	17	428480	2007 <i>VE</i> ₉₉		1 18.8 42° 03'	4.5	16.3	18
12 13	8 23.10	-2 25.9	2.699	3.398	13.2	22.2	12 13	8 26.68	+31 11.0	2.157	2.960	13.0	20.8
12 23	8 18.79	-3 1.6	2.595	3.387	11.3	22.0	12 23	8 22.21	+32 13.7	2.085	2.965	10.1	20.6
1 2	8 12.76	-3 22.0	2.512	3.375	9.3	21.9	1 2	8 15.28	+33 15.9	2.036	2.971	7.1	20.4
1 12	8 5.44	-3 25.1	2.455	3.363	7.5	21.7	1 12	8 6.55	+34 11.2	2.015	2.976	4.8	20.3
1 22	7 57.46	-3 10.1	2.424	3.350	6.7	21.7	1 22	7 57.00	+34 54.0	2.022	2.982	5.0	20.3
2 1	7 49.56	-2 38.1	2.423	3.338	7.4	21.7	2 1	7 47.79	+35 20.6	2.058	2.988	7.5	20.5
2 11	7 42.50	-1 52.1	2.449	3.325	9.1	21.8	2 11	7 40.02	+35 30.2	2.121	2.995	10.4	20.7
2 21	7 36.90	-0 56.3	2.500	3.311	11.3	21.9	2 21	7 34.50	+35 24.6	2.207	3.001	13.1	20.9
348412	2005 <i>KR</i> ₉		1 18.8 169° 12'	1.8	19.9	18	264777	2002 <i>GD</i> ₁₆₂		1 18.8 21° 94'	4.7	16.6	18
12 13	8 27.59	+12 51.0	2.507	3.268	12.5	22.4	12 13	8 29.09	+31 17.4	1.947	2.751	14.1	20.1
12 23	8 22.28	+13 5.8	2.416	3.274	9.8	22.2	12 23	8 24.35	+32 10.0	1.870	2.752	11.0	19.9
1 2	8 15.02	+13 30.4	2.350	3.278	6.7	22.0	1 2	8 16.81	+33 1.9	1.817	2.752	7.8	19.7
1 12	8 6.36	+14 3.1	2.313	3.282	3.4	21.8	1 12	8 7.23	+33 46.1	1.790	2.753	5.1	19.6
1 22	7 57.05	+14 41.3	2.306	3.285	1.9	21.7	1 22	7 56.69	+34 16.8	1.791	2.754	5.3	19.6
2 1	7 47.95	+15 21.9	2.330	3.288	4.8	21.9	2 1	7 46.54	+34 30.1	1.821	2.755	8.0	19.8
2 11	7 39.92	+16 1.9	2.384	3.289	8.1	22.1	2 11	7 38.06	+34 25.9	1.876	2.756	11.3	20.0
2 21	7 33.60	+16 39.0	2.465	3.290	11.0	22.3	2 21	7 32.12	+34 6.5	1.955	2.757	14.3	20.2
492665	2014 <i>PB</i> ₉		1 18.8 61° 31'	0.6	18.6	18	382729	2003 <i>AV</i> ₂₅		1 18.8 332° 87'	2.5	17.1	

EPHEMERIDES

1 18.8

1 18.9

2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
12160 Karelwakker	1 18.8 189°01' 2.5/17.7 18						476573 2008 RA ₃₅	1 18.9 356°02' 18.7/30.6 18					
12 13	8 31.96	+25 44.7	2.093	2.884	13.7	19.2	12 13	8 25.30	-18 48.3	1.180	1.858	27.9	21.3
12 23	8 26.25	+26 20.0	2.006	2.883	10.6	19.0	12 23	8 22.58	-20 0.5	1.112	1.858	25.8	21.2
1 2	8 17.93	+26 58.2	1.942	2.882	7.0	18.8	1 2	8 16.32	-20 27.3	1.054	1.857	23.4	21.0
1 12	8 7.67	+27 34.0	1.906	2.880	3.5	18.5	1 12	8 7.25	-19 56.6	1.010	1.857	21.0	20.8
1 22	7 56.49	+28 2.4	1.901	2.877	3.1	18.5	1 22	7 56.69	-18 21.7	0.983	1.857	19.3	20.7
2 1	7 45.59	+28 20.0	1.925	2.873	6.5	18.7	2 1	7 46.41	-15 44.3	0.974	1.857	18.7	20.6
2 11	7 36.19	+28 25.5	1.977	2.869	10.2	18.9	2 11	7 38.22	-12 17.6	0.986	1.857	19.7	20.7
2 21	7 29.14	+28 20.0	2.054	2.863	13.4	19.1	2 21	7 33.35	-8 22.6	1.018	1.858	21.9	20.8
456973 2008 BS ₂	1 18.8 163°51' 2.6/18.3 18						265701 2005 UF ₁₆₂	1 18.9 160°77' 3.6/16.8 18					
12 13	8 53.61	+25 42.4	1.511	2.283	18.9	21.7	12 13	8 29.50	+28 18.5	2.231	3.025	12.9	20.8
12 23	8 43.76	+26 2.3	1.432	2.298	14.8	21.4	12 23	8 24.27	+29 20.2	2.152	3.030	10.0	20.6
1 2	8 29.75	+26 23.8	1.376	2.311	9.8	21.2	1 2	8 16.60	+30 23.8	2.098	3.035	6.8	20.4
1 12	8 12.64	+26 38.7	1.347	2.320	4.5	20.9	1 12	8 7.13	+31 23.0	2.071	3.039	4.0	20.3
1 22	7 54.24	+26 40.0	1.349	2.328	3.4	20.8	1 22	7 56.80	+32 12.3	2.075	3.042	4.1	20.3
2 1	7 36.75	+26 24.8	1.383	2.332	8.4	21.1	2 1	7 46.74	+32 47.5	2.108	3.045	6.9	20.5
2 11	7 22.15	+25 55.2	1.446	2.335	13.4	21.4	2 11	7 38.08	+33 7.2	2.170	3.048	10.0	20.7
2 21	7 11.53	+25 16.4	1.532	2.334	17.6	21.7	2 21	7 31.61	+33 12.7	2.255	3.050	12.9	20.8
186522 2002 VG ₄₅	1 18.9 346°19' 9.2/21.1 18						329164 2012 BA ₁₀₇	1 18.9 275°53' 14.0/12.4 18					
12 13	8 23.00	+4 31.9	1.330	2.117	20.3	19.4	12 13	8 59.97	+59 52.3	2.035	2.742	16.7	20.2
12 23	8 20.32	+3 1.4	1.249	2.106	17.1	19.1	12 23	8 50.59	+61 7.5	1.958	2.722	15.4	20.1
1 2	8 14.57	+1 48.4	1.187	2.097	13.6	18.9	1 2	8 35.19	+62 2.2	1.900	2.702	14.4	20.0
1 12	8 6.43	+0 58.6	1.146	2.088	10.4	18.7	1 12	8 15.13	+62 21.7	1.863	2.681	14.0	19.9
1 22	7 57.06	+0 35.6	1.128	2.081	9.2	18.6	1 22	7 53.20	+61 55.5	1.848	2.661	14.4	19.9
2 1	7 47.96	+0 39.7	1.134	2.075	10.9	18.6	2 1	7 32.94	+60 41.2	1.856	2.640	15.5	19.9
2 11	7 40.62	+1 6.7	1.163	2.070	14.3	18.8	2 11	7 17.21	+58 46.0	1.886	2.619	17.1	20.0
2 21	7 36.10	+1 49.7	1.212	2.067	18.0	19.0	2 21	7 7.22	+56 22.5	1.934	2.598	18.8	20.1
204277 2004 GJ ₁₉	1 18.9 90°62' 15.7/9.7 18						377113 2002 XK ₂₃	1 18.9 61°10' 4.3/20.6 18					
12 13	8 41.53	+43 35.6	1.130	1.945	21.5	19.5	12 13	8 28.54	+9 13.7	2.062	2.822	14.9	20.4
12 23	8 37.68	+47 23.4	1.091	1.955	18.5	19.3	12 23	8 23.06	+8 30.1	2.001	2.850	11.9	20.2
1 2	8 27.80	+50 59.5	1.073	1.966	16.3	19.2	1 2	8 15.49	+7 58.3	1.963	2.879	8.6	20.1
1 12	8 12.52	+53 58.6	1.078	1.976	15.8	19.2	1 12	8 6.55	+7 39.1	1.952	2.908	5.5	19.9
1 22	7 54.15	+56 0.4	1.106	1.987	17.0	19.3	1 22	7 57.14	+7 31.7	1.969	2.936	4.3	19.9
2 1	7 36.38	+56 57.7	1.154	1.997	19.4	19.5	2 1	7 48.25	+7 34.6	2.016	2.965	6.2	20.1
2 11	7 22.86	+56 58.0	1.220	2.007	21.9	19.7	2 11	7 40.78	+7 45.3	2.091	2.994	9.1	20.3
2 21	7 15.53	+56 16.6	1.299	2.016	24.3	19.9	2 21	7 35.32	+8 0.7	2.191	3.022	12.0	20.5
8786 Belskaya	1 18.9 57°26' 0.4/19.0 18						199875 2007 EB ₁₉₆	1 18.9 247°95' 18.6/11.4 18					
12 13	8 24.96	+17 57.5	2.130	2.921	13.5	18.4	12 13	8 52.28	+54 35.6	1.190	1.969	22.7	19.9
12 23	8 20.55	+18 13.3	2.058	2.935	10.4	18.2	12 23	8 47.25	+56 59.9	1.140	1.964	20.7	19.8
1 2	8 14.01	+18 36.6	2.009	2.949	6.8	18.0	1 2	8 34.63	+59 2.5	1.106	1.959	19.1	19.7
1 12	8 5.98	+19 4.5	1.988	2.964	2.9	17.7	1 12	8 15.41	+60 20.5	1.091	1.954	18.6	19.6
1 22	7 57.34	+19 33.9	1.995	2.978	1.3	17.6	1 22	7 52.98	+60 36.3	1.095	1.948	19.3	19.6
2 1	7 49.06	+20 1.4	2.033	2.993	5.2	17.9	2 1	7 32.34	+59 45.4	1.116	1.943	21.0	19.7
2 11	7 42.09	+20 24.9	2.098	3.007	8.8	18.2	2 11	7 17.60	+57 59.6	1.155	1.937	23.2	19.8
2 21	7 37.07	+20 42.9	2.189	3.022	11.9	18.4	2 21	7 10.27	+55 37.2	1.208	1.931	25.5	20.0
81386 2000 GT ₇₃	1 18.9 93°92' 12.5/12.1 18						78671 2002 TZ ₁₀₈	1 18.9 33°38' 1.4/19.7 18					
12 13	8 41.21	+51 38.9	1.837	2.601	16.3	19.2	12 13	8 23.45	+13 32.3	2.055	2.839	14.1	19.4
12 23	8 35.31	+53 29.6	1.784	2.603	14.5	19.1	12 23	8 19.58	+14 4.2	1.972	2.843	11.1	19.2
1 2	8 24.83	+55 4.0	1.752	2.606	13.1	19.0	1 2	8 13.51	+14 48.7	1.912	2.847	7.4	19.0
1 12	8 10.78	+56 9.5	1.743	2.609	12.5	18.9	1 12	8 5.85	+15 43.1	1.879	2.852	3.5	18.8
1 22	7 55.09	+56 36.9	1.757	2.612	13.1	19.0	1 22	7 57.42	+16 43.3	1.875	2.857	1.7	18.7
2 1	7 40.24	+56 23.6	1.794	2.614	14.5	19.1	2 1	7 49.23	+17 44.6	1.901	2.861	5.3	18.9
2 11	7 28.47	+55 34.4	1.851	2.617	16.2	19.2	2 11	7 42.28	+18 42.6	1.954	2.867	9.1	19.2
2 21	7 21.03	+54 18.1	1.926	2.620	18.1	19.4	2 21	7 37.29	+19 34.2	2.033	2.872	12.4	19.4
415811 2001 PK ₄₉	1 18.9 135°53' 5.5/22.3 18						95072 2002 AW ₆₆	1 18.9 196°13' 1.0/19.4 18					
12 13	8 27.66	+0 21.9	2.756	3.458	12.8	23.3	12 13	8 27.18	+16 19.1	2.431	3.205	12.5	20.7
12 23	8 22.00	-0 4.5	2.677	3.478	10.7	23.1	12 23	8 22.12	+16 26.0	2.336	3.202	9.8	20.5
1 2	8 14.68	-0 16.7	2.620	3.496	8.5	23.0	1 2	8 15.02	+16 40.4	2.265	3.199	6.5	20.3
1 12	8 6.20	-0 13.6	2.591	3.513	6.5	22.9	1 12	8 6.45	+17 0.2	2.222	3.196	3.0	20.1
1 22	7 57.24	+0 4.4	2.590	3.530	5.5	22.9	1 22	7 57.16	+17 23.1	2.210	3.192	1.4	19.9
2 1	7 48.56	+0 35.5	2.620	3.546	6.3	22.9	2 1	7 48.06	+17 46.4	2.228	3.187	4.9	20.2
2 11	7 40.86	+1 16.5	2.679	3.561	8.2	23.1	2 11	7 40.06	+18 7.9	2.276	3.182	8.3	20.4
2 21	7 34.70	+2 3.8	2.765	3.574	10.4	23.2	2 21	7 33.85	+18 26.1	2.350	3.177	11.4	20.6
205493 2001 QP ₂₆₈	1 18.9 72°82' 4.9/20.7 18						455805 2005 SP ₁₁₀	1 18.9 69°38' 2.0/18.0 18					
12 13	8 27.30	+7 30.2	2.320	3.068	13.8	19.7	12 13	8 28.93	+24 11.8	1.786	2.591	15.2	21.2
12 23	8 22.08	+6 31.0	2.237	3.076	11.2	19.5	12 23	8 24.14	+24 41.2	1.716	2.601	11.7	21.0
1 2	8 14.89	+5 42.2	2.177	3.084	8.4	19.3	1 2	8 16.63	+25 14.7	1.668	2.611	7.6	20.7
1 12	8 6.33	+5 5.2	2.145	3.092	5.9	19.2	1 12	8 7.16	+25 47.1	1.646	2.621	3.5	20.5
1 22	7 57.18	+4 40.8	2.141	3.100	4.9	19.1	1 22	7 56.87	+26 13.5	1.652	2.631	2.8	20.5
2 1	7 48.34	+4 28.6	2.168	3.108	6.5	19.2	2 1	7 47.06	+26 30.2	1.688	2.642	6.7	20.7
2 11	7 40.66	+4 26.8	2.222	3.116	9.1	19.4	2 11	7 38.95	+26 35.9	1.750	2.652	10.6	21.0
2 21	7 34.79	+4 32.8	2.302	3.125	11.7	19.6	2 21	7 33.38	+26 31.6	1.835	2.663	14.1	21.2
58213 1992 QP	1 18.9 132°12' 3.4/20.7 18						492454 2014 ME ₆₁	1 18.9 170°96' 1.5/19.8 18					
12 13	8 29.24	+8 21.7	2.088	2.842	14.9	19.7	12 13	8 28.65	+12 36.5	2.140	2.908	14.2	22.0
12 23	8 23.80	+8 35.3	2.011	2.859	11.9	19.5	12 23	8 23.52	+13 16.6	2.051	2.913	11.1	21.8
1 2	8 16.12	+9 3.9	1.957	2.876	8.5	19.3	1 2	8 16.08	+14 10.1	1.985	2.916	7.5	21.6
1 12	8 6.87												

EPHEMERIDES

1 18.9

1 18.9

2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
294044	2007 <i>TP</i> ₁₃₈		1 18.9 208 ^o 83	3 ^o 3/17.2	18		95380	2002 <i>CN</i> ₁₆₇		1 18.9 274 ^o 11	6 ^o 6/15.9	18	
12 13	8 29.62	+31 1.7	2.594	3.381	11.5	20.8	12 13	8 33.38	+37 37.7	2.047	2.839	13.9	19.3
12 23	8 24.02	+31 24.5	2.504	3.377	8.9	20.6	12 23	8 27.90	+38 25.5	1.956	2.824	11.3	19.1
1 2	8 16.27	+31 45.3	2.439	3.373	6.2	20.5	1 2	8 19.33	+39 7.8	1.888	2.808	8.6	18.9
1 12	8 6.97	+31 59.8	2.403	3.368	3.8	20.3	1 12	8 8.41	+39 36.8	1.847	2.793	6.8	18.8
1 22	7 56.97	+32 4.6	2.396	3.363	3.7	20.3	1 22	7 56.33	+39 46.1	1.833	2.778	7.0	18.8
2 1	7 47.28	+31 57.6	2.421	3.358	6.1	20.4	2 1	7 44.59	+39 32.5	1.847	2.762	9.3	18.9
2 11	7 38.83	+31 38.9	2.473	3.353	8.9	20.6	2 11	7 34.64	+38 57.1	1.888	2.747	12.2	19.0
2 21	7 32.34	+31 10.4	2.551	3.347	11.5	20.8	2 21	7 27.49	+38 4.3	1.950	2.731	15.1	19.2
6689	Floss		1 18.9 208 ^o 75	2 ^o 7/19.9	18		214827	2006 <i>VO</i> ₇₁		1 18.9 206 ^o 65	2 ^o 3/19.9	18	
12 13	8 30.45	+12 26.1	1.802	2.578	16.2	19.1	12 13	8 27.32	+13 40.5	1.899	2.681	15.2	21.0
12 23	8 25.38	+12 24.7	1.709	2.573	12.9	18.9	12 23	8 22.76	+13 35.3	1.811	2.680	12.0	20.8
1 2	8 17.56	+12 36.4	1.637	2.567	8.9	18.6	1 2	8 15.71	+13 41.1	1.745	2.678	8.3	20.5
1 12	8 7.65	+13 0.0	1.591	2.560	4.8	18.4	1 12	8 6.83	+13 56.6	1.706	2.676	4.3	20.3
1 22	7 56.65	+13 32.7	1.574	2.552	2.9	18.2	1 22	7 57.07	+14 19.5	1.695	2.674	2.5	20.2
2 1	7 45.84	+14 10.7	1.585	2.544	6.5	18.4	2 1	7 47.56	+14 46.6	1.713	2.672	6.0	20.4
2 11	7 36.51	+14 50.0	1.625	2.535	10.8	18.7	2 11	7 39.46	+15 14.6	1.758	2.670	10.0	20.6
2 21	7 29.62	+15 27.2	1.689	2.525	14.7	18.9	2 21	7 33.58	+15 40.9	1.828	2.667	13.6	20.8
47881	2000 <i>FV</i> ₃₀		1 18.9 58 ^o 57	7 ^o 9/15.6	18		320386	2007 <i>UV</i> ₃₆		1 18.9 19 ^o 29	2 ^o 4/17.9	18	
12 13	8 33.67	+36 39.3	1.553	2.363	16.8	18.0	12 13	8 25.83	+22 1.9	1.269	2.098	18.7	20.0
12 23	8 28.58	+38 3.9	1.503	2.381	13.5	17.8	12 23	8 22.81	+22 57.0	1.204	2.103	14.4	19.7
1 2	8 19.88	+39 22.1	1.474	2.399	10.2	17.7	1 2	8 16.32	+24 2.7	1.160	2.109	9.4	19.5
1 12	8 8.59	+40 23.0	1.471	2.417	8.1	17.6	1 12	8 7.21	+25 11.4	1.139	2.115	4.2	19.2
1 22	7 56.28	+40 58.5	1.493	2.436	8.5	17.7	1 22	7 56.90	+26 14.3	1.143	2.123	3.4	19.2
2 1	7 44.80	+41 5.1	1.541	2.455	10.9	17.9	2 1	7 47.12	+27 3.9	1.174	2.131	8.4	19.5
2 11	7 35.77	+40 45.3	1.613	2.474	13.9	18.1	2 11	7 39.55	+27 36.7	1.228	2.141	13.3	19.8
2 21	7 30.11	+40 5.2	1.706	2.493	16.7	18.3	2 21	7 35.20	+27 52.8	1.304	2.151	17.5	20.1
160759	2000 <i>SV</i> ₁₀₁		1 18.9 23 ^o 19	1 ^o 8/18.3	18		240815	2006 <i>AL</i> ₁₅		1 18.9 281 ^o 70	0 ^o 5/19.1	18	
12 13	8 29.30	+23 31.0	1.286	2.111	18.8	19.1	12 13	8 27.75	+17 13.9	1.536	2.341	17.2	21.3
12 23	8 25.39	+23 43.9	1.220	2.116	14.5	18.9	12 23	8 23.97	+17 34.6	1.441	2.325	13.5	21.0
1 2	8 17.91	+24 2.3	1.173	2.121	9.5	18.6	1 2	8 17.03	+18 8.2	1.366	2.309	9.0	20.7
1 12	8 7.83	+24 20.8	1.150	2.127	4.1	18.3	1 12	8 7.57	+18 51.5	1.316	2.292	3.9	20.4
1 22	7 56.61	+24 33.6	1.153	2.134	2.8	18.2	1 22	7 56.68	+19 39.2	1.293	2.276	1.7	20.2
2 1	7 46.07	+24 36.8	1.182	2.142	8.0	18.6	2 1	7 45.89	+20 25.6	1.298	2.260	7.2	20.5
2 11	7 37.83	+24 29.3	1.235	2.150	13.0	18.9	2 11	7 36.76	+21 5.8	1.328	2.243	12.3	20.7
2 21	7 32.90	+24 12.6	1.309	2.159	17.3	19.2	2 21	7 30.47	+21 37.4	1.381	2.227	16.8	20.9
165784	2001 <i>RN</i> ₅		1 18.9 75 ^o 94	0 ^o 2/18.9	18		231265	Saulperlmutter		1 18.9 196 ^o 34	1 ^o 9/18.0	18	
12 13	8 25.72	+19 13.7	2.274	3.062	12.8	19.9	12 13	8 28.64	+25 9.6	2.133	2.929	13.3	21.0
12 23	8 21.06	+19 21.0	2.195	3.071	9.9	19.7	12 23	8 23.62	+25 29.4	2.048	2.928	10.3	20.7
1 2	8 14.33	+19 34.1	2.140	3.080	6.5	19.5	1 2	8 16.18	+25 51.5	1.986	2.927	6.8	20.5
1 12	8 6.17	+19 50.4	2.113	3.089	2.7	19.3	1 12	8 7.00	+26 11.8	1.952	2.926	3.1	20.3
1 22	7 57.38	+20 7.2	2.115	3.098	1.2	19.2	1 22	7 57.01	+26 26.5	1.947	2.925	2.5	20.3
2 1	7 48.92	+20 22.0	2.148	3.107	5.0	19.4	2 1	7 47.35	+26 32.7	1.971	2.924	6.0	20.5
2 11	7 41.69	+20 33.2	2.208	3.116	8.5	19.7	2 11	7 39.09	+26 29.6	2.024	2.922	9.6	20.7
2 21	7 36.35	+20 39.9	2.294	3.125	11.5	19.9	2 21	7 33.01	+26 18.0	2.101	2.921	12.8	20.9
246369	2007 <i>TR</i> ₃₉₈		1 18.9 5 ^o 32	3 ^o 7/20.6	18		113641	2002 <i>TY</i> ₇₆		1 18.9 85 ^o 01	3 ^o 5/17.2	18	
12 13	8 24.03	+ 9 32.6	2.229	2.995	13.8	20.0	12 13	8 29.02	+30 1.4	2.232	3.028	12.8	20.1
12 23	8 19.81	+ 9 9.0	2.141	2.995	11.1	19.8	12 23	8 23.78	+30 33.7	2.161	3.039	9.9	19.9
1 2	8 13.57	+ 8 56.7	2.075	2.995	8.0	19.6	1 2	8 16.19	+31 4.7	2.113	3.049	6.8	19.8
1 12	8 5.87	+ 8 55.8	2.036	2.995	5.0	19.4	1 12	8 6.96	+31 29.5	2.093	3.060	4.0	19.6
1 22	7 57.50	+ 9 5.4	2.025	2.996	3.7	19.4	1 22	7 57.06	+31 43.9	2.102	3.070	3.9	19.6
2 1	7 49.37	+ 9 23.7	2.043	2.996	5.8	19.5	2 1	7 47.59	+31 45.7	2.140	3.080	6.6	19.8
2 11	7 42.35	+ 9 47.7	2.090	2.997	8.9	19.7	2 11	7 39.58	+31 34.8	2.206	3.091	9.6	20.0
2 21	7 37.14	+10 14.7	2.161	2.998	11.9	19.9	2 21	7 33.77	+31 13.0	2.297	3.101	12.4	20.2
426404	2013 <i>PF</i> ₆₂		1 18.9 230 ^o 96	0 ^o 1/18.9	18		348733	2006 <i>FH</i> ₁₇		1 18.9 312 ^o 62	0 ^o 2/18.9	18	
12 13	8 29.80	+20 44.4	1.977	2.769	14.4	20.8	12 13	8 26.45	+18 38.8	1.370	2.187	18.2	20.7
12 23	8 24.59	+20 33.3	1.889	2.766	11.2	20.6	12 23	8 23.29	+18 49.1	1.279	2.171	14.3	20.4
1 2	8 16.86	+20 26.5	1.823	2.763	7.3	20.3	1 2	8 16.75	+19 10.8	1.209	2.155	9.5	20.1
1 12	8 7.28	+20 21.4	1.784	2.761	3.1	20.1	1 12	8 7.49	+19 40.6	1.163	2.140	4.1	19.7
1 22	7 56.86	+20 15.7	1.775	2.758	1.4	19.9	1 22	7 56.74	+20 13.5	1.142	2.125	1.8	19.5
2 1	7 46.78	+20 7.5	1.796	2.755	5.8	20.2	2 1	7 46.15	+20 44.0	1.147	2.110	7.7	19.9
2 11	7 38.19	+19 56.0	1.844	2.752	9.8	20.5	2 11	7 37.45	+21 8.2	1.177	2.096	13.1	20.1
2 21	7 31.89	+19 41.2	1.917	2.749	13.4	20.7	2 21	7 31.86	+21 24.1	1.227	2.083	17.9	20.4
64428	2001 <i>VW</i> ₈		1 18.9 232 ^o 87	2 ^o 9/19.9	18		427703	2004 <i>FA</i> ₅₈		1 18.9 330 ^o 96	3 ^o 7/19.7	18	
12 13	8 30.57	+13 26.6	1.802	2.581	16.1	19.5	12 13	8 24.58	+14 21.5	1.649	2.448	16.5	19.6
12 23	8 25.50	+13 5.3	1.705	2.571	12.8	19.3	12 23	8 21.24	+13 27.1	1.544	2.421	13.2	19.3
1 2	8 17.67	+12 54.4	1.630	2.560	8.9	19.0	1 2	8 15.09	+12 39.3	1.459	2.394	9.4	19.0
1 12	8 7.71	+12 53.5	1.580	2.549	4.8	18.7	1 12	8 6.72	+11 59.4	1.400	2.368	5.4	18.7
1 22	7 56.64	+13 0.9	1.559	2.537	3.1	18.6	1 22	7 57.10	+11 28.0	1.367	2.343	3.9	18.6
2 1	7 45.75	+13 14.2	1.567	2.525	6.6	18.8	2 1	7 47.56	+11 5.0	1.361	2.319	7.3	18.7
2 11	7 36.33	+13 30.7	1.602	2.512	10.9	19.0	2 11	7 39.46	+10 49.5	1.380	2.297	11.8	18.9
2 21	7 29.37	+13 47.9	1.661	2.498	14.8	19.2	2 21	7 33.85	+10 39.8	1.422	2.275	16.0	19.1
134367	1995 <i>OY</i> ₇		1 18.9 232										

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
3934	Tove						1 18.9	238°27' 4.3"/21.3 18					
12 13	8 25.45	+ 6 2.6	2.099	2.852	14.9	17.5	12 13	8 27.68	+14 26.3	1.409	2.213	18.5	19.2
12 23	8 21.19	+ 6 8.6	1.998	2.842	12.2	17.3	12 23	8 24.13	+14 5.8	1.314	2.195	14.8	18.9
1 2	8 14.67	+ 6 31.5	1.919	2.832	9.0	17.1	1 2	8 17.27	+13 57.6	1.239	2.177	10.3	18.6
1 12	8 6.44	+ 7 11.3	1.866	2.821	5.8	16.9	1 12	8 7.74	+14 1.5	1.187	2.159	5.3	18.3
1 22	7 57.29	+ 8 6.0	1.841	2.810	4.3	16.8	1 22	7 56.72	+14 15.3	1.161	2.141	3.2	18.1
2 1	7 48.24	+ 9 11.6	1.846	2.799	6.3	16.9	2 1	7 45.80	+14 35.5	1.162	2.124	7.7	18.3
2 11	7 40.30	+10 23.2	1.879	2.787	9.7	17.0	2 11	7 36.65	+14 58.4	1.187	2.107	13.0	18.6
2 21	7 34.30	+11 35.4	1.937	2.775	13.0	17.2	2 21	7 30.51	+15 20.7	1.234	2.090	17.7	18.8
502928	2015 EV ₃₀						1 18.9	58°13' 1°0"/19.5 18					
12 13	8 23.70	+14 44.0	2.204	2.987	13.4	21.3	12 13	8 28.28	+15 28.6	2.177	2.953	13.7	21.1
12 23	8 19.64	+15 14.6	2.122	2.994	10.4	21.1	12 23	8 23.36	+15 11.6	2.069	2.936	10.8	20.9
1 2	8 13.50	+15 55.9	2.065	3.001	6.9	20.9	1 2	8 16.10	+15 1.8	1.985	2.918	7.4	20.7
1 12	8 5.88	+16 45.1	2.034	3.008	3.2	20.6	1 12	8 7.06	+14 58.4	1.928	2.899	3.7	20.4
1 22	7 57.58	+17 38.5	2.033	3.015	1.4	20.5	1 22	7 57.08	+14 59.8	1.900	2.881	2.1	20.2
2 1	7 49.52	+18 31.8	2.062	3.022	5.0	20.8	2 1	7 47.20	+15 4.2	1.903	2.862	5.6	20.4
2 11	7 42.63	+19 21.6	2.119	3.029	8.6	21.0	2 11	7 38.50	+15 9.7	1.934	2.842	9.4	20.6
2 21	7 37.59	+20 5.2	2.202	3.037	11.8	21.2	2 21	7 31.79	+15 14.9	1.990	2.822	12.9	20.8
467137	2016 EP ₇₈						1 18.9	260°51' 1°9"/19.6 18					
12 13	8 28.28	+15 28.6	2.177	2.953	13.7	21.1	12 13	8 28.28	+15 28.6	2.177	2.953	13.7	21.1
12 23	8 23.36	+15 11.6	2.069	2.936	10.8	20.9	12 23	8 23.36	+15 11.6	2.069	2.936	10.8	20.9
1 2	8 16.10	+15 1.8	1.985	2.918	7.4	20.7	1 2	8 16.10	+15 1.8	1.985	2.918	7.4	20.7
1 12	8 7.06	+14 58.4	1.928	2.899	3.7	20.4	1 12	8 7.06	+14 58.4	1.928	2.899	3.7	20.4
1 22	7 57.08	+14 59.8	1.900	2.881	2.1	20.2	1 22	7 57.08	+14 59.8	1.900	2.881	2.1	20.2
2 1	7 47.20	+15 4.2	1.903	2.862	5.6	20.4	2 1	7 47.20	+15 4.2	1.903	2.862	5.6	20.4
2 11	7 38.50	+15 9.7	1.934	2.842	9.4	20.6	2 11	7 38.50	+15 9.7	1.934	2.842	9.4	20.6
2 21	7 31.79	+15 14.9	1.990	2.822	12.9	20.8	2 21	7 31.79	+15 14.9	1.990	2.822	12.9	20.8
424239	2007 RB ₂₀₁						1 18.9	84°86' 6°9"/23.2 18					
12 13	8 22.96	- 2 3.6	2.346	3.057	14.6	21.1	12 13	8 22.96	- 2 3.6	2.346	3.057	14.6	21.1
12 23	8 18.86	- 2 30.1	2.265	3.066	12.4	20.9	12 23	8 18.86	- 2 30.1	2.265	3.066	12.4	20.9
1 2	8 12.90	- 2 38.4	2.204	3.075	10.1	20.8	1 2	8 12.90	- 2 38.4	2.204	3.075	10.1	20.8
1 12	8 5.63	- 2 26.7	2.168	3.084	8.0	20.7	1 12	8 5.63	- 2 26.7	2.168	3.084	8.0	20.7
1 22	7 57.76	- 1 55.5	2.159	3.092	6.9	20.6	1 22	7 57.76	- 1 55.5	2.159	3.092	6.9	20.6
2 1	7 50.13	- 1 6.8	2.177	3.101	7.6	20.7	2 1	7 50.13	- 1 6.8	2.177	3.101	7.6	20.7
2 11	7 43.54	- 0 5.2	2.223	3.110	9.5	20.8	2 11	7 43.54	- 0 5.2	2.223	3.110	9.5	20.8
2 21	7 38.61	+ 1 4.3	2.294	3.118	11.7	21.0	2 21	7 38.61	+ 1 4.3	2.294	3.118	11.7	21.0
372452	2009 SK ₁₂₄						1 18.9	190°98' 3°4"/17.4 18					
12 13	8 30.92	+29 15.1	2.132	2.926	13.4	21.5	12 13	8 30.92	+29 15.1	2.132	2.926	13.4	21.5
12 23	8 25.47	+29 44.5	2.048	2.926	10.4	21.3	12 23	8 25.47	+29 44.5	2.048	2.926	10.4	21.3
1 2	8 17.47	+30 13.6	1.987	2.925	7.1	21.0	1 2	8 17.47	+30 13.6	1.987	2.925	7.1	21.0
1 12	8 7.59	+30 37.1	1.955	2.923	4.0	20.9	1 12	8 7.59	+30 37.1	1.955	2.923	4.0	20.9
1 22	7 56.87	+30 50.3	1.951	2.922	3.9	20.8	1 22	7 56.87	+30 50.3	1.951	2.922	3.9	20.8
2 1	7 46.51	+30 50.6	1.977	2.920	6.8	21.0	2 1	7 46.51	+30 50.6	1.977	2.920	6.8	21.0
2 11	7 37.67	+30 37.8	2.031	2.918	10.2	21.2	2 11	7 37.67	+30 37.8	2.031	2.918	10.2	21.2
2 21	7 31.16	+30 13.9	2.109	2.916	13.2	21.4	2 21	7 31.16	+30 13.9	2.109	2.916	13.2	21.4
98685	2000 WM ₁₉₂						1 18.9	34°58' 2°7"/17.9 17					
12 13	8 28.90	+24 11.4	1.252	2.079	19.0	19.0	12 13	8 28.90	+24 11.4	1.252	2.079	19.0	19.0
12 23	8 25.12	+24 45.6	1.194	2.092	14.6	18.8	12 23	8 25.12	+24 45.6	1.194	2.092	14.6	18.8
1 2	8 17.75	+25 25.7	1.156	2.104	9.6	18.6	1 2	8 17.75	+25 25.7	1.156	2.104	9.6	18.6
1 12	8 7.80	+26 4.7	1.142	2.118	4.4	18.3	1 12	8 7.80	+26 4.7	1.142	2.118	4.4	18.3
1 22	7 56.81	+26 35.4	1.153	2.133	3.5	18.3	1 22	7 56.81	+26 35.4	1.153	2.133	3.5	18.3
2 1	7 46.58	+26 52.7	1.191	2.148	8.3	18.6	2 1	7 46.58	+26 52.7	1.191	2.148	8.3	18.6
2 11	7 38.74	+26 55.6	1.252	2.164	13.1	18.9	2 11	7 38.74	+26 55.6	1.252	2.164	13.1	18.9
2 21	7 34.21	+26 45.7	1.334	2.180	17.2	19.2	2 21	7 34.21	+26 45.7	1.334	2.180	17.2	19.2
221093	2005 SM ₆₁						1 18.9	348°91' 0°7"/19.2 18					
12 13	8 26.83	+17 37.4	1.816	2.612	15.3	20.8	12 13	8 26.83	+17 37.4	1.816	2.612	15.3	20.8
12 23	8 22.55	+17 46.2	1.732	2.611	11.9	20.6	12 23	8 22.55	+17 46.2	1.732	2.611	11.9	20.6
1 2	8 15.67	+18 4.0	1.670	2.611	7.9	20.4	1 2	8 15.67	+18 4.0	1.670	2.611	7.9	20.4
1 12	8 6.89	+18 28.1	1.634	2.610	3.4	20.1	1 12	8 6.89	+18 28.1	1.634	2.610	3.4	20.1
1 22	7 57.19	+18 54.9	1.627	2.609	1.5	19.9	1 22	7 57.19	+18 54.9	1.627	2.609	1.5	19.9
2 1	7 47.79	+19 20.8	1.648	2.609	6.0	20.2	2 1	7 47.79	+19 20.8	1.648	2.609	6.0	20.2
2 11	7 39.89	+19 43.0	1.696	2.609	10.2	20.5	2 11	7 39.89	+19 43.0	1.696	2.609	10.2	20.5
2 21	7 34.34	+19 59.7	1.769	2.609	13.9	20.7	2 21	7 34.34	+19 59.7	1.769	2.609	13.9	20.7
22616	Bogolyubov						1 18.9	262°13' 1°0"/19.3 18					
12 13	8 28.00	+16 27.5	1.760	2.554	15.8	18.8	12 13	8 28.00	+16 27.5	1.760	2.554	15.8	18.8
12 23	8 23.72	+16 40.7	1.663	2.541	12.4	18.6	12 23	8 23.72	+16 40.7	1.663	2.541	12.4	18.6
1 2	8 16.64	+17 5.0	1.588	2.527	8.3	18.3	1 2	8 16.64	+17 5.0	1.588	2.527	8.3	18.3
1 12	8 7.38	+17 38.0	1.539	2.514	3.7	18.0	1 12	8 7.38	+17 38.0	1.539	2.514	3.7	18.0
1 22	7 56.94	+18 15.5	1.517	2.500	1.7	17.8	1 22	7 56.94	+18 15.5	1.517	2.500	1.7	17.8
2 1	7 46.62	+18 53.3	1.525	2.486	6.4	18.1	2 1	7 46.62	+18 53.3	1.525	2.486	6.4	18.1
2 11	7 37.78	+19 27.4	1.559	2.471	11.0	18.3	2 11	7 37.78	+19 27.4	1.559	2.471	11.0	18.3
2 21	7 31.41	+19 55.5	1.617	2.457	15.0	18.5	2 21	7 31.41	+19 55.5	1.617	2.457	15.0	18.5
205696	2001 YB ₁₃₉						1 18.9	346°50' 1°8"/19.5 18					
12 13	8 25.18	+16 7.5	1.242	2.063	19.5	20.7	12 13	8 25.18	+16 7.5	1.242	2.063	19.5	20.7
12 23	8 22.40	+16 2.6	1.164	2.056	15.4	20.4	12 23	8 22.40	+16 2.6	1.164	2.056	15.4	20.4
1 2	8 16.16	+16 11.5	1.106	2.050	10.4	20.1	1 2	8 16.16	+16 11.5	1.106	2.050	10.4	20.1
1 12	8 7.26	+16 32.1	1.070	2.045	4.9	19.8	1 12	8 7.26	+16 32.1	1.070	2.045	4.9	19.8
1 22	7 57.00	+17 0.4	1.059	2.041	2.3	19.6	1 22	7 57.00	+17 0.4	1.059	2.041	2.3	19.6
2 1	7 47.12	+17 31.1	1.073	2.038	7.7	20.0							

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
409967	2006	VQ ₂₄	1 18.9	225°60'	4°8'/20.9	18	82438	2001	OK ₆	1 18.9	208°81'	4°2'/20.9	18
12 13	8 27.01	+ 7 26.0	2.011	2.769	15.3	21.3	12 13	8 26.90	+ 7 45.6	2.160	2.914	14.5	20.3
12 23	8 22.42	+ 6 58.4	1.916	2.763	12.5	21.1	12 23	8 22.18	+ 7 30.1	2.064	2.910	11.8	20.1
1 2	8 15.49	+ 6 44.6	1.843	2.757	9.3	20.8	1 2	8 15.26	+ 7 28.1	1.990	2.904	8.6	19.9
1 12	8 6.80	+ 6 45.5	1.796	2.750	6.1	20.6	1 12	8 6.71	+ 7 39.7	1.943	2.899	5.6	19.7
1 22	7 57.24	+ 7 0.4	1.777	2.744	4.8	20.5	1 22	7 57.34	+ 8 3.9	1.924	2.893	4.2	19.6
2 1	7 47.85	+ 7 27.2	1.787	2.737	6.8	20.7	2 1	7 48.13	+ 8 38.1	1.935	2.887	6.2	19.7
2 11	7 39.71	+ 8 2.4	1.824	2.729	10.1	20.8	2 11	7 40.08	+ 9 18.7	1.974	2.880	9.4	19.9
2 21	7 33.62	+ 8 41.9	1.886	2.722	13.4	21.0	2 21	7 33.94	+ 10 2.1	2.039	2.872	12.6	20.1
331238	2011	BH ₉₈	1 18.9	205°02'	1°9'/17.9	18	428143	2006	SX ₁₆₇	1 18.9	29°30'	4°4'/21.3	18
12 13	8 27.48	+23 34.2	2.071	2.868	13.6	21.4	12 13	8 22.69	+ 6 31.1	2.267	3.023	13.9	20.9
12 23	8 22.88	+24 15.0	1.985	2.867	10.5	21.1	12 23	8 18.77	+ 6 15.4	2.182	3.026	11.3	20.7
1 2	8 15.83	+25 1.0	1.923	2.865	6.9	20.9	1 2	8 12.92	+ 6 13.4	2.119	3.030	8.4	20.5
1 12	8 6.95	+25 47.3	1.888	2.863	3.2	20.7	1 12	8 5.69	+ 6 25.4	2.081	3.034	5.6	20.4
1 22	7 57.18	+26 28.9	1.883	2.862	2.6	20.6	1 22	7 57.82	+ 6 50.2	2.072	3.038	4.4	20.3
2 1	7 47.67	+27 1.7	1.907	2.860	6.2	20.9	2 1	7 50.18	+ 7 25.5	2.092	3.042	6.0	20.4
2 11	7 39.52	+27 23.5	1.959	2.857	9.9	21.1	2 11	7 43.62	+ 8 7.5	2.140	3.046	8.8	20.6
2 21	7 33.57	+27 34.4	2.035	2.855	13.2	21.3	2 21	7 38.77	+ 8 52.7	2.213	3.051	11.6	20.8
495550	2014	WA ₁₈₈	1 18.9	159°83'	0°7'/19.3	18	29704	1998	YB ₉	1 18.9	167°58'	1°7'/19.6	18
12 13	8 26.71	+16 12.4	2.009	2.795	14.4	22.0	12 13	8 31.08	+14 43.8	1.816	2.596	15.9	20.0
12 23	8 22.22	+16 39.1	1.924	2.798	11.2	21.7	12 23	8 25.77	+14 48.6	1.732	2.601	12.5	19.8
1 2	8 15.35	+17 16.2	1.862	2.800	7.4	21.5	1 2	8 17.77	+15 4.7	1.670	2.605	8.4	19.6
1 12	8 6.74	+18 0.8	1.827	2.802	3.3	21.3	1 12	8 7.79	+15 29.8	1.635	2.608	4.1	19.3
1 22	7 57.28	+18 48.6	1.821	2.804	1.4	21.1	1 22	7 56.88	+16 0.5	1.629	2.610	2.1	19.2
2 1	7 48.08	+19 35.2	1.845	2.805	5.6	21.4	2 1	7 46.29	+16 33.1	1.652	2.612	6.1	19.5
2 11	7 40.21	+20 17.3	1.897	2.806	9.5	21.7	2 11	7 37.27	+17 4.1	1.703	2.613	10.4	19.7
2 21	7 34.46	+20 52.5	1.974	2.808	13.0	21.9	2 21	7 30.68	+17 31.3	1.779	2.614	14.1	19.9
318105	2004	HR ₅₀	1 18.9	270°72'	7°1'/14.6	18	297425	2000	SK ₇₅	1 18.9	98°76'	1°1'/18.4	18
12 13	8 31.08	+35 2.8	1.916	2.717	14.4	20.9	12 13	8 32.44	+20 47.2	1.707	2.502	16.1	21.3
12 23	8 26.55	+36 40.2	1.826	2.700	11.6	20.7	12 23	8 26.84	+21 27.3	1.644	2.525	12.4	21.1
1 2	8 18.80	+38 18.0	1.759	2.683	8.9	20.5	1 2	8 18.41	+22 15.0	1.605	2.547	8.0	20.9
1 12	8 8.40	+39 46.5	1.718	2.665	7.1	20.3	1 12	8 8.01	+23 4.6	1.592	2.568	3.3	20.7
1 22	7 56.47	+40 56.1	1.706	2.647	7.8	20.3	1 22	7 56.82	+23 50.3	1.608	2.589	2.1	20.6
2 1	7 44.56	+41 40.3	1.721	2.629	10.3	20.4	2 1	7 46.22	+24 27.4	1.653	2.610	6.5	21.0
2 11	7 34.32	+41 57.7	1.761	2.611	13.5	20.6	2 11	7 37.47	+24 53.7	1.726	2.629	10.7	21.3
2 21	7 26.96	+41 51.4	1.822	2.592	16.4	20.8	2 21	7 31.37	+25 9.2	1.822	2.649	14.2	21.5
241583	1996	UV ₃	1 18.9	71°57'	0°3'/18.8	18	99587	2002	GY ₁₅	1 18.9	194°02'	4°2'/17.0	18
12 13	8 31.03	+19 42.4	1.491	2.297	17.6	21.0	12 13	8 32.99	+29 44.9	1.911	2.709	14.6	20.1
12 23	8 26.07	+19 59.3	1.430	2.315	13.5	20.8	12 23	8 27.49	+30 34.2	1.828	2.707	11.4	19.9
1 2	8 18.05	+20 24.8	1.389	2.333	8.8	20.6	1 2	8 19.03	+31 24.0	1.769	2.705	7.9	19.7
1 12	8 7.86	+20 54.4	1.374	2.351	3.6	20.3	1 12	8 8.36	+32 7.6	1.736	2.703	4.8	19.5
1 22	7 56.83	+21 23.0	1.386	2.369	1.7	20.2	1 22	7 56.62	+32 38.3	1.733	2.700	4.8	19.5
2 1	7 46.46	+21 46.5	1.427	2.387	6.8	20.6	2 1	7 45.22	+32 52.3	1.758	2.697	7.9	19.6
2 11	7 38.12	+22 2.3	1.493	2.405	11.4	20.9	2 11	7 35.56	+32 49.1	1.810	2.693	11.5	19.8
2 21	7 32.66	+22 10.2	1.582	2.423	15.3	21.2	2 21	7 28.57	+32 31.1	1.885	2.688	14.7	20.0
121363	1999	TK ₆₁	1 18.9	2°98'	1°9'/19.7	18	104209	2000	EN ₁₁₅	1 18.9	267°64'	2°6'/17.7	18
12 13	8 25.36	+14 30.7	1.865	2.654	15.2	20.4	12 13	8 28.22	+27 23.5	2.206	3.003	12.9	20.5
12 23	8 21.32	+14 30.8	1.780	2.654	11.9	20.2	12 23	8 23.32	+27 46.5	2.119	2.999	10.0	20.3
1 2	8 14.82	+14 41.7	1.718	2.654	8.1	20.0	1 2	8 16.05	+28 10.4	2.056	2.995	6.7	20.1
1 12	8 6.53	+15 2.0	1.682	2.654	4.0	19.7	1 12	8 7.04	+28 30.6	2.020	2.992	3.5	19.8
1 22	7 57.39	+15 28.7	1.674	2.655	2.2	19.6	1 22	7 57.23	+28 43.3	2.013	2.988	3.1	19.8
2 1	7 48.53	+15 58.5	1.694	2.655	5.9	19.8	2 1	7 47.72	+28 45.7	2.036	2.984	6.2	20.0
2 11	7 41.08	+16 27.9	1.742	2.656	9.9	20.1	2 11	7 39.58	+28 37.3	2.087	2.980	9.6	20.2
2 21	7 35.82	+16 54.6	1.814	2.657	13.5	20.3	2 21	7 33.58	+28 19.3	2.162	2.977	12.7	20.4
156394	2001	YA ₁₃₉	1 18.9	318°72'	3°0'/17.3	18	249167	2008	BA ₃₅	1 18.9	79°92'	5°5'/17.3	18
12 13	8 25.21	+23 31.7	1.688	2.502	15.5	19.6	12 13	8 39.53	+34 58.6	1.785	2.576	15.7	19.9
12 23	8 21.86	+24 40.8	1.599	2.489	12.0	19.3	12 23	8 32.22	+35 27.8	1.733	2.604	12.4	19.7
1 2	8 15.59	+25 59.3	1.532	2.477	8.0	19.1	1 2	8 21.79	+35 50.1	1.704	2.632	8.8	19.6
1 12	8 7.00	+27 20.6	1.491	2.465	4.0	18.8	1 12	8 9.33	+35 58.4	1.702	2.659	6.0	19.5
1 22	7 57.13	+28 36.6	1.477	2.453	3.8	18.7	1 22	7 56.30	+35 47.9	1.728	2.686	5.9	19.5
2 1	7 47.38	+29 39.9	1.492	2.442	7.8	19.0	2 1	7 44.27	+35 17.9	1.782	2.713	8.4	19.7
2 11	7 39.20	+30 26.4	1.533	2.431	12.1	19.2	2 11	7 34.57	+34 31.5	1.864	2.739	11.6	19.9
2 21	7 33.65	+30 55.5	1.595	2.421	15.9	19.4	2 21	7 27.92	+33 33.9	1.969	2.765	14.4	20.2
466671	2014	WB ₁₉₂	1 18.9	139°62'	2°7'/20.6	18	3373	Koktebelia	1 18.9	37°14'	2°5'/19.8	18	
12 13	8 25.43	+ 9 29.8	2.088	2.854	14.5	21.3	12 13	8 27.49	+13 49.2	1.180	1.997	20.6	16.3
12 23	8 21.09	+ 9 58.0	2.002	2.859	11.6	21.1	12 23	8 24.06	+13 49.7	1.118	2.006	16.2	16.0
1 2	8 14.55	+10 41.7	1.938	2.863	8.1	20.9	1 2	8 17.13	+14 7.8	1.075	2.016	11.0	15.8
1 12	8 6.40	+11 38.9	1.901	2.867	4.5	20.7	1 12	8 7.62	+14 40.9	1.054	2.027	5.5	15.5
1 22	7 57.46	+12 46.0	1.894	2.871	2.8	20.6	1 22	7 56.99	+15 24.1	1.058	2.039	2.9	15.4
2 1	7 48.74	+13 58.1	1.916	2.875	5.5	20.8	2 1	7 46.99	+16 11.0	1.087	2.051	7.8	15.7
2 11	7 41.23	+15 9.9	1.968	2.879	9.1	21.0	2 11	7 39.24	+16 55.9	1.140	2.064	13.0	16.0
2 21	7 35.68	+16 17.4	2.045	2.882	12.4	21.2	2 21	7 34.75	+17 34.6	1.214	2.077	17.5	16.3
425460	2010	EU ₉₁	1 18.9	210°04'	2°1'/20.2	17	418316	2008	FN ₉₉	1 18.9	114°76'	6°9'/15.1	18
12 13	8 23.42	+11 32.1											

EPHEMERIDES

1 18.9

1 18.9

2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
247473	2002 JZ ₆₇	1 18.9 232°04'		3°2/20.2 18			116667	2004 CN ₄₁	1 18.9 61°91'		8°3/15.3 18		
12 13	8 28.98	+11 28.9	2.014	2.782	14.9	21.0	12 13	8 35.93	+44 4.4	2.093	2.871	14.1	18.2
12 23	8 24.04	+11 14.5	1.912	2.771	12.0	20.7	12 23	8 29.66	+45 7.4	2.044	2.892	11.8	18.1
1 2	8 16.65	+11 11.5	1.833	2.759	8.5	20.5	1 2	8 20.29	+45 58.6	2.018	2.913	9.6	18.0
1 12	8 7.36	+11 19.7	1.781	2.746	4.9	20.3	1 12	8 8.80	+46 30.0	2.018	2.934	8.4	17.9
1 22	7 57.08	+11 37.5	1.757	2.733	3.3	20.1	1 22	7 56.59	+46 36.3	2.044	2.955	8.7	18.0
2 1	7 46.91	+12 2.3	1.763	2.719	6.2	20.3	2 1	7 45.19	+46 16.4	2.096	2.976	10.2	18.1
2 11	7 38.01	+12 31.0	1.796	2.705	10.0	20.5	2 11	7 35.96	+45 33.3	2.174	2.997	12.2	18.3
2 21	7 31.24	+13 0.6	1.855	2.690	13.6	20.7	2 21	7 29.68	+44 32.8	2.273	3.018	14.2	18.5
506217	2016 JY ₂₄	1 18.9 213°20'		1°2/19.8 17			179001	2001 RA ₁₉	1 18.9 96°83'		4°6/21.3 18		
12 13	8 23.91	+13 6.7	2.884	3.647	11.0	21.8	12 13	8 25.53	+ 6 33.0	1.842	2.606	16.3	20.3
12 23	8 19.43	+13 43.1	2.781	3.640	8.6	21.6	12 23	8 21.44	+ 6 31.6	1.759	2.609	13.2	20.1
1 2	8 13.26	+14 29.4	2.703	3.633	5.9	21.4	1 2	8 14.93	+ 6 48.0	1.697	2.613	9.7	19.9
1 12	8 5.84	+15 23.5	2.655	3.626	2.8	21.2	1 12	8 6.65	+ 7 22.1	1.660	2.616	6.3	19.7
1 22	7 57.78	+16 22.4	2.637	3.618	1.4	21.1	1 22	7 57.51	+ 8 11.5	1.650	2.620	4.6	19.6
2 1	7 49.79	+17 22.7	2.651	3.610	4.2	21.3	2 1	7 48.63	+ 9 12.1	1.669	2.623	6.7	19.7
2 11	7 42.62	+18 21.1	2.696	3.601	7.2	21.5	2 11	7 41.12	+10 18.2	1.715	2.627	10.2	19.9
2 21	7 36.86	+19 14.9	2.768	3.593	9.9	21.6	2 21	7 35.78	+11 24.6	1.786	2.630	13.6	20.1
258267	2001 TY ₂₃₃	1 18.9 84°85'		0°3/18.8 18			295971	2008 YV ₂₈	1 18.9 142°44'		0°6/19.1 18		
12 13	8 28.86	+20 4.6	1.827	2.624	15.2	20.9	12 13	8 31.78	+18 26.2	1.766	2.556	15.9	21.1
12 23	8 24.01	+20 20.6	1.755	2.635	11.7	20.7	12 23	8 26.37	+18 26.9	1.688	2.564	12.4	20.9
1 2	8 16.56	+20 43.4	1.705	2.646	7.6	20.5	1 2	8 18.19	+18 35.3	1.632	2.571	8.2	20.7
1 12	8 7.27	+21 9.5	1.681	2.657	3.2	20.3	1 12	8 8.01	+18 48.7	1.602	2.577	3.5	20.4
1 22	7 57.20	+21 34.7	1.686	2.668	1.5	20.2	1 22	7 56.94	+19 3.5	1.601	2.583	1.5	20.3
2 1	7 47.56	+21 55.5	1.720	2.679	6.0	20.5	2 1	7 46.30	+19 16.6	1.629	2.589	6.2	20.6
2 11	7 39.54	+22 9.9	1.781	2.690	10.1	20.8	2 11	7 37.36	+19 26.1	1.685	2.594	10.5	20.9
2 21	7 33.90	+22 17.4	1.867	2.701	13.6	21.0	2 21	7 30.96	+19 31.0	1.764	2.599	14.2	21.1
206158	2002 TT ₁₈₀	1 18.9 36°14'		5°9/17.2 18			503482	2016 EO ₁₇₂	1 18.9 354°06'		1°3/18.2 18		
12 13	8 33.55	+36 17.3	1.802	2.602	15.2	19.5	12 13	8 25.89	+21 28.8	2.029	2.828	13.8	21.0
12 23	8 27.81	+36 39.8	1.743	2.618	12.1	19.3	12 23	8 21.71	+22 11.5	1.945	2.827	10.6	20.8
1 2	8 19.05	+36 54.7	1.707	2.634	8.8	19.2	1 2	8 15.11	+23 1.3	1.884	2.827	6.9	20.5
1 12	8 8.26	+36 55.4	1.696	2.651	6.3	19.0	1 12	8 6.74	+23 53.7	1.851	2.827	3.0	20.3
1 22	7 56.81	+36 37.5	1.712	2.669	6.2	19.1	1 22	7 57.49	+24 43.5	1.846	2.827	2.1	20.2
2 1	7 46.19	+36 0.2	1.757	2.687	8.6	19.3	2 1	7 48.47	+25 26.3	1.871	2.827	6.0	20.5
2 11	7 37.70	+35 6.6	1.827	2.705	11.6	19.5	2 11	7 40.80	+25 59.1	1.924	2.827	9.8	20.7
2 21	7 32.08	+34 1.4	1.921	2.724	14.5	19.7	2 21	7 35.28	+26 21.3	2.001	2.827	13.1	20.9
417752	2007 DP ₄₀	1 18.9 352°51'		5°6/21.4 18			461727	2005 TM ₆₆	1 18.9 78°43'		1°1/19.4 18		
12 13	8 22.22	+ 6 21.8	1.524	2.309	18.3	21.0	12 13	8 27.61	+16 21.3	1.831	2.622	15.4	22.0
12 23	8 19.42	+ 6 5.5	1.442	2.304	15.0	20.7	12 23	8 23.04	+16 28.3	1.755	2.631	12.0	21.7
1 2	8 13.88	+ 6 9.6	1.379	2.299	11.2	20.5	1 2	8 15.95	+16 45.0	1.702	2.640	8.0	21.5
1 12	8 6.27	+ 6 35.1	1.339	2.296	7.4	20.3	1 12	8 7.06	+17 8.9	1.675	2.650	3.6	21.3
1 22	7 57.61	+ 7 20.3	1.324	2.294	5.6	20.2	1 22	7 57.37	+17 36.6	1.677	2.659	1.6	21.2
2 1	7 49.21	+ 8 20.8	1.336	2.292	7.8	20.3	2 1	7 48.08	+18 4.5	1.707	2.668	5.8	21.5
2 11	7 42.35	+ 9 30.1	1.373	2.291	11.7	20.5	2 11	7 40.31	+18 29.7	1.765	2.677	9.9	21.7
2 21	7 37.97	+10 41.2	1.432	2.291	15.5	20.7	2 21	7 34.84	+18 50.3	1.847	2.686	13.5	22.0
148966	2001 XT ₂₂₈	1 18.9 171°19'		0°5/18.7 18			186868	2004 HW ₃₀	1 18.9 183°86'		6°3/22.6 18		
12 13	8 28.76	+20 59.5	2.056	2.848	13.9	20.7	12 13	8 25.99	- 1 0.1	2.566	3.269	13.7	21.8
12 23	8 23.77	+21 13.2	1.971	2.849	10.7	20.5	12 23	8 21.11	- 1 28.8	2.471	3.270	11.6	21.6
1 2	8 16.36	+21 32.3	1.910	2.850	7.0	20.3	1 2	8 14.40	- 1 41.7	2.398	3.270	9.3	21.5
1 12	8 7.20	+21 53.5	1.875	2.851	2.9	20.0	1 12	8 6.36	- 1 37.0	2.351	3.269	7.3	21.4
1 22	7 57.23	+22 13.2	1.870	2.852	1.5	19.9	1 22	7 57.67	- 1 14.8	2.332	3.268	6.3	21.3
2 1	7 47.56	+22 28.4	1.895	2.853	5.7	20.2	2 1	7 49.13	- 0 36.6	2.342	3.266	7.1	21.3
2 11	7 39.29	+22 37.4	1.948	2.853	9.5	20.5	2 11	7 41.55	+ 0 14.0	2.380	3.263	9.1	21.5
2 21	7 33.21	+22 39.9	2.025	2.853	12.9	20.7	2 21	7 35.54	+ 1 12.6	2.444	3.260	11.4	21.6
403535	2010 GE ₉₈	1 18.9 277°59'		4°3/17.3 18			65440	2002 TF ₂₈₅	1 18.9 115°08'		3°2/20.7 18		
12 13	8 31.35	+28 4.8	1.533	2.347	16.8	21.3	12 13	8 25.87	+ 9 28.2	2.612	3.363	12.3	19.6
12 23	8 27.01	+28 51.8	1.446	2.335	13.2	21.0	12 23	8 20.86	+ 9 10.5	2.533	3.379	9.9	19.4
1 2	8 19.19	+29 42.1	1.381	2.323	9.0	20.7	1 2	8 14.12	+ 9 2.7	2.478	3.394	7.1	19.2
1 12	8 8.60	+30 28.1	1.340	2.311	5.1	20.5	1 12	8 6.19	+ 9 4.7	2.450	3.408	4.4	19.1
1 22	7 56.55	+31 1.8	1.327	2.299	5.0	20.4	1 22	7 57.77	+ 9 15.2	2.452	3.423	3.2	19.0
2 1	7 44.77	+31 17.5	1.340	2.287	8.9	20.6	2 1	7 49.64	+ 9 32.5	2.485	3.437	5.0	19.2
2 11	7 35.00	+31 14.2	1.378	2.274	13.4	20.9	2 11	7 42.53	+ 9 54.2	2.548	3.451	7.7	19.4
2 21	7 28.42	+30 54.3	1.438	2.262	17.4	21.1	2 21	7 37.00	+10 18.1	2.636	3.464	10.3	19.6
294158	2007 TQ ₃₅₀	1 18.9 170°69'		1°6/18.2 18			29726	1999 AH ₂₆	1 18.9 295°55'		2°0/19.7 18		
12 13	8 32.04	+23 1.8	1.994	2.784	14.3	22.0	12 13	8 27.25	+15 2.3	1.772	2.562	15.8	18.9
12 23	8 26.42	+23 34.5	1.911	2.789	11.1	21.8	12 23	8 22.99	+14 54.2	1.683	2.557	12.5	18.7
1 2	8 18.17	+24 12.2	1.851	2.792	7.2	21.6	1 2	8 16.07	+14 56.6	1.617	2.553	8.5	18.5
1 12	8 7.98	+24 50.1	1.819	2.795	3.2	21.3	1 12	8 7.18	+15 7.9	1.576	2.548	4.2	18.2
1 22	7 56.88	+25 23.2	1.817	2.797	2.3	21.3	1 22	7 57.30	+15 25.8	1.562	2.543	2.3	18.1
2 1	7 46.10	+25 47.7	1.845	2.798	6.3	21.5	2 1	7 47.68	+15 46.9	1.578	2.539	6.2	18.3
2 11	7 36.87	+26 2.0	1.901	2.799	10.2	21.8	2 11	7 39.55	+16 8.3	1.620	2.534	10.5	18.5
2 21	7 30.02	+26 6.2	1.981	2.799	13.6	22.0	2 21	7 33.80	+16 27.7	1.686	2.530	14.3	18.8
402227	2005 EJ ₂₀₆	1 18.9 308°75'		2°1/18.2 18			210676	2000 QB ₂₁₇	1 18.9 92°87'		1°2/18.4 18		
12 13	8 30.10	+24 39.4	1.586	2.396	16.5	20.8	12 13	8 32.22	+20 54.6	1.628	2.427	16.6	20.6
12 23	8 25.66	+24 55.7	1.502	2.390	12.8	20.5	12 23	8 26.83	+21 33.5</				

2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
244692	2003 QA₃	1 18.9	216°91	0.4/19.1	18		333710	2009 AX₅	1 18.9	56°10	1.2/18.4	18	
12 13	8 30.79	+18 33.0	1.927	2.714	14.9	21.4	12 13	8 26.18	+22 2.7	2.070	2.868	13.6	20.8
12 23	8 25.59	+18 38.9	1.833	2.707	11.6	21.2	12 23	8 21.73	+22 31.5	1.998	2.880	10.4	20.6
1 2	8 17.74	+18 52.4	1.761	2.700	7.7	20.9	1 2	8 15.00	+23 5.3	1.950	2.892	6.8	20.4
1 12	8 7.87	+19 10.7	1.716	2.692	3.3	20.6	1 12	8 6.67	+23 40.3	1.929	2.905	2.9	20.1
1 22	7 56.99	+19 30.4	1.701	2.683	1.4	20.5	1 22	7 57.65	+24 12.3	1.937	2.918	1.9	20.1
2 1	7 46.33	+19 48.2	1.715	2.674	6.0	20.8	2 1	7 49.00	+24 37.9	1.974	2.931	5.6	20.4
2 11	7 37.11	+20 1.7	1.757	2.665	10.3	21.0	2 11	7 41.74	+24 55.2	2.040	2.944	9.3	20.6
2 21	7 30.26	+20 10.1	1.823	2.655	14.0	21.2	2 21	7 36.58	+25 4.0	2.129	2.957	12.4	20.8
10171	Takaotengu	1 18.9	343°40	9°0/16.3	18		418678	2008 TE₁₆₈	1 18.9	204°70	3°6/17.1	18	
12 13	8 35.63	+40 49.5	1.525	2.330	17.3	16.9	12 13	8 28.58	+29 28.2	2.209	3.006	12.9	21.8
12 23	8 30.64	+41 37.0	1.453	2.323	14.3	16.7	12 23	8 23.70	+30 8.9	2.126	3.006	10.0	21.6
1 2	8 21.62	+42 13.9	1.401	2.318	11.3	16.5	1 2	8 16.38	+30 49.8	2.068	3.005	6.9	21.4
1 12	8 9.59	+42 29.6	1.372	2.312	9.3	16.3	1 12	8 7.29	+31 25.4	2.036	3.004	4.1	21.2
1 22	7 56.27	+42 16.0	1.368	2.308	9.5	16.3	1 22	7 57.36	+31 50.9	2.034	3.003	4.1	21.2
2 1	7 43.73	+41 30.9	1.390	2.304	11.8	16.4	2 1	7 47.74	+32 3.2	2.061	3.001	6.8	21.4
2 11	7 33.87	+40 18.4	1.435	2.301	15.0	16.6	2 11	7 39.52	+32 1.8	2.116	3.000	10.0	21.6
2 21	7 27.77	+38 46.7	1.501	2.298	18.1	16.8	2 21	7 33.49	+31 48.0	2.194	2.999	12.9	21.7
496120	2010 AS₁₁₅	1 18.9	145°65	1°3/19.4	18		137051	1998 VA₂₇	1 18.9	81°03	7°1/21.9	18	R
12 13	8 29.82	+17 36.2	2.691	3.457	11.6	20.8	12 13	8 29.26	+3 4.6	1.762	2.508	17.6	20.0
12 23	8 23.85	+17 4.0	2.601	3.463	9.1	20.6	12 23	8 24.18	+2 8.1	1.696	2.527	14.6	19.9
1 2	8 16.06	+16 35.4	2.537	3.469	6.1	20.4	1 2	8 16.62	+1 29.9	1.651	2.547	11.3	19.7
1 12	8 7.01	+16 9.8	2.502	3.474	2.9	20.2	1 12	8 7.35	+1 12.4	1.629	2.566	8.4	19.6
1 22	7 57.44	+15 46.4	2.498	3.479	1.6	20.1	1 22	7 57.37	+1 15.8	1.634	2.584	7.1	19.6
2 1	7 48.17	+15 24.6	2.527	3.484	4.5	20.3	2 1	7 47.88	+1 38.1	1.667	2.603	8.4	19.7
2 11	7 40.00	+15 4.2	2.585	3.488	7.6	20.5	2 11	7 39.95	+2 14.6	1.726	2.622	11.2	19.9
2 21	7 33.52	+14 44.7	2.671	3.493	10.3	20.7	2 21	7 34.32	+2 59.9	1.808	2.640	14.1	20.1
167087	2003 SD₁₄	1 18.9	100°57	1°3/19.5	18		197804	2004 PB₆₈	1 18.9	171°63	3°7/20.7	18	
12 13	8 30.70	+15 22.2	1.770	2.555	16.1	20.8	12 13	8 29.52	+9 16.9	1.843	2.609	16.2	20.9
12 23	8 25.37	+15 36.6	1.703	2.575	12.5	20.7	12 23	8 24.56	+9 13.7	1.757	2.612	13.0	20.7
1 2	8 17.43	+16 2.0	1.658	2.595	8.3	20.4	1 2	8 17.03	+9 25.9	1.693	2.615	9.3	20.4
1 12	8 7.66	+16 35.5	1.640	2.614	3.8	20.2	1 12	8 7.60	+9 52.9	1.654	2.617	5.5	20.2
1 22	7 57.15	+17 13.0	1.650	2.632	1.8	20.1	1 22	7 57.23	+10 32.1	1.644	2.618	3.8	20.1
2 1	7 47.15	+17 50.3	1.690	2.651	5.9	20.4	2 1	7 47.13	+11 19.6	1.663	2.619	6.5	20.3
2 11	7 38.82	+18 24.1	1.757	2.668	10.1	20.7	2 11	7 38.48	+12 10.8	1.709	2.619	10.3	20.5
2 21	7 32.92	+18 52.2	1.849	2.685	13.6	21.0	2 21	7 32.13	+13 1.4	1.781	2.619	13.9	20.7
496157	2010 VC₇₈	1 18.9	195°94	12°8/9.4	17		235057	2003 FU₇₇	1 18.9	320°46	3°0/20.1	18	
12 13	8 40.72	+51 39.1	1.924	2.684	15.8	21.3	12 13	8 25.68	+12 5.4	1.357	2.162	19.1	19.7
12 23	8 35.42	+54 9.2	1.870	2.684	14.2	21.2	12 23	8 22.61	+12 10.4	1.273	2.153	15.2	19.4
1 2	8 25.46	+56 25.2	1.839	2.683	13.0	21.1	1 2	8 16.31	+12 33.7	1.207	2.145	10.6	19.1
1 12	8 11.52	+58 13.3	1.832	2.682	12.8	21.1	1 12	8 7.46	+13 14.3	1.165	2.136	5.6	18.8
1 22	7 55.29	+59 22.9	1.849	2.681	13.5	21.2	1 22	7 57.25	+14 8.1	1.148	2.129	3.2	18.7
2 1	7 39.29	+59 49.6	1.888	2.680	15.0	21.3	2 1	7 47.25	+15 8.9	1.158	2.121	7.5	18.9
2 11	7 26.10	+59 36.8	1.947	2.679	16.7	21.4	2 11	7 39.07	+16 10.1	1.192	2.115	12.7	19.2
2 21	7 17.38	+58 53.0	2.022	2.677	18.3	21.5	2 21	7 33.84	+17 6.2	1.248	2.108	17.3	19.4
299510	2006 CV₁₂	1 18.9	218°95	1°3/18.5	18		98084	2000 RC₆₉	1 18.9	101°10	0°2/18.9	18	
12 13	8 32.83	+23 17.5	1.715	2.514	15.9	20.7	12 13	8 32.03	+18 49.6	1.700	2.493	16.3	20.3
12 23	8 27.52	+23 26.3	1.627	2.509	12.4	20.5	12 23	8 26.56	+19 17.8	1.635	2.513	12.5	20.1
1 2	8 19.16	+23 39.1	1.562	2.504	8.2	20.2	1 2	8 18.30	+19 55.0	1.593	2.533	8.2	19.9
1 12	8 8.51	+23 51.7	1.522	2.498	3.5	19.9	1 12	8 8.08	+20 36.7	1.577	2.553	3.4	19.7
1 22	7 56.74	+23 59.7	1.511	2.493	2.2	19.8	1 22	7 57.06	+21 17.6	1.589	2.572	1.6	19.6
2 1	7 45.33	+23 59.9	1.529	2.486	6.9	20.1	2 1	7 46.60	+21 53.2	1.631	2.590	6.3	19.9
2 11	7 35.69	+23 51.3	1.574	2.480	11.4	20.4	2 11	7 37.95	+22 20.8	1.700	2.608	10.5	20.2
2 21	7 28.83	+23 35.0	1.642	2.473	15.3	20.6	2 21	7 31.90	+22 39.6	1.794	2.626	14.1	20.5
16843	1997 XX₃	1 18.9	185°34	0°9/19.7	18	R	493906	2015 XK₂₈₇	1 18.9	85°03	1°3/18.4	18	
12 13	8 20.14	+15 1.9	3.918	4.681	8.3	19.0	12 13	8 30.27	+21 1.1	1.548	2.355	17.0	21.9
12 23	8 16.08	+15 13.3	3.821	4.680	6.5	18.9	12 23	8 25.64	+21 40.5	1.480	2.366	13.1	21.7
1 2	8 10.86	+15 29.8	3.749	4.680	4.4	18.7	1 2	8 17.94	+22 28.6	1.433	2.378	8.5	21.4
1 12	8 4.83	+15 50.4	3.707	4.679	2.1	18.5	1 12	8 8.00	+23 19.6	1.412	2.389	3.6	21.2
1 22	7 58.41	+16 13.7	3.697	4.678	1.1	18.5	1 22	7 57.07	+24 7.1	1.419	2.400	2.3	21.1
2 1	7 52.10	+16 38.0	3.718	4.676	3.1	18.6	2 1	7 46.66	+24 45.6	1.453	2.411	7.1	21.4
2 11	7 46.39	+17 1.8	3.769	4.674	5.4	18.8	2 11	7 38.16	+25 12.4	1.514	2.422	11.6	21.7
2 21	7 41.68	+17 23.9	3.849	4.673	7.4	18.9	2 21	7 32.49	+25 27.3	1.597	2.433	15.4	22.0
241150	2007 RS₃₇	1 18.9	135°84	1°5/18.3	18		110875	2001 UM₉₇	1 18.9	167°55	3°6/17.1	18	
12 13	8 32.08	+22 37.3	1.896	2.688	14.9	21.2	12 13	8 30.74	+28 52.7	2.165	2.959	13.2	21.0
12 23	8 26.50	+23 10.0	1.821	2.700	11.4	21.0	12 23	8 25.40	+29 42.8	2.085	2.963	10.3	20.8
1 2	8 18.24	+23 48.0	1.770	2.711	7.5	20.7	1 2	8 17.52	+30 33.9	2.029	2.965	7.0	20.6
1 12	8 8.04	+24 26.4	1.746	2.722	3.2	20.5	1 12	8 7.78	+31 20.0	2.001	2.968	4.2	20.4
1 22	7 57.01	+25 0.1	1.752	2.732	2.3	20.5	1 22	7 57.17	+31 55.7	2.002	2.970	4.1	20.4
2 1	7 46.41	+25 25.2	1.787	2.741	6.3	20.7	2 1	7 46.87	+32 17.3	2.033	2.972	7.0	20.6
2 11	7 37.45	+25 40.1	1.850	2.750	10.3	21.0	2 11	7 38.04	+32 24.0	2.091	2.973	10.2	20.8
2 21	7 30.96	+25 45.0	1.937	2.759	13.7	21.2	2 21	7 31.50	+32 17.4	2.174	2.974	13.1	21.0
59923	1999 RY₁₆₅	1 18.9	152°75	1°5/18.1	18		18183	2000 QG₃₇	1 18.9	75°13	1°3/19.5	18	
12 13	8 28.96	+23 58.3	2.492	3.277	11.9								

EPHEMERIDES

1 18.9

1 18.9

2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
12090	1998 <i>HX₃₆</i>		1 18.9 155°07	2°9/20.6	18		443046	2013 <i>EX₁₀₄</i>		1 18.9 293°95	1°8/17.9	17	
12 13	8 26.35	+ 9 48.0	2.597	3.348	12.4	19.6	12 13	8 24.19	+27 0.2	3.044	3.832	9.9	21.1
12 23	8 21.34	+ 9 45.0	2.509	3.356	9.9	19.5	12 23	8 19.69	+27 13.4	2.942	3.818	7.7	20.9
1 2	8 14.53	+ 9 52.5	2.446	3.364	7.0	19.3	1 2	8 13.48	+27 26.9	2.864	3.803	5.1	20.7
1 12	8 6.45	+10 9.8	2.410	3.371	4.2	19.1	1 12	8 6.04	+27 38.0	2.816	3.788	2.6	20.5
1 22	7 57.79	+10 35.3	2.404	3.377	2.9	19.0	1 22	7 58.00	+27 44.1	2.798	3.774	2.2	20.5
2 1	7 49.35	+11 6.5	2.429	3.383	4.9	19.2	2 1	7 50.11	+27 43.6	2.811	3.759	4.7	20.6
2 11	7 41.91	+11 40.8	2.483	3.388	7.8	19.4	2 11	7 43.11	+27 35.8	2.853	3.745	7.4	20.8
2 21	7 36.07	+12 15.4	2.565	3.393	10.5	19.6	2 21	7 37.59	+27 21.1	2.921	3.731	9.9	20.9
48597	1994 <i>XP₄</i>		1 18.9 339°63	2°3/18.2	18		197144	2003 <i>UX₂₅₅</i>		1 18.9 151°94	1°6/19.9	18	
12 13	8 25.51	+24 30.9	1.318	2.149	18.1	18.6	12 13	8 25.46	+13 31.4	2.477	3.246	12.4	20.5
12 23	8 22.79	+24 46.2	1.236	2.135	14.1	18.3	12 23	8 20.81	+13 43.3	2.390	3.252	9.8	20.3
1 2	8 16.57	+25 6.6	1.173	2.122	9.4	18.0	1 2	8 14.27	+14 4.5	2.327	3.257	6.6	20.1
1 12	8 7.61	+25 26.8	1.133	2.110	4.3	17.7	1 12	8 6.38	+14 33.4	2.292	3.262	3.3	19.9
1 22	7 57.23	+25 40.5	1.119	2.099	3.2	17.6	1 22	7 57.86	+15 7.5	2.286	3.267	1.8	19.8
2 1	7 47.18	+25 43.4	1.130	2.089	8.3	17.8	2 1	7 49.56	+15 43.9	2.312	3.271	4.7	20.0
2 11	7 39.22	+25 33.9	1.164	2.081	13.5	18.1	2 11	7 42.30	+16 19.7	2.367	3.275	7.9	20.2
2 21	7 34.50	+25 13.2	1.219	2.074	18.0	18.3	2 21	7 36.72	+16 52.7	2.448	3.279	10.8	20.4
146421	2001 <i>QP₂₂₀</i>		1 18.9 239°47	0°0/18.9	18		371719	2007 <i>ET₇₄</i>		1 18.9 254°83	1°5/19.7	17	
12 13	8 32.62	+21 33.1	1.964	2.752	14.6	20.1	12 13	8 26.76	+14 45.1	2.304	3.078	13.1	21.4
12 23	8 26.95	+21 14.0	1.869	2.744	11.4	19.9	12 23	8 22.17	+14 50.6	2.195	3.060	10.4	21.2
1 2	8 18.59	+20 57.8	1.796	2.735	7.5	19.6	1 2	8 15.39	+15 5.4	2.110	3.042	7.1	21.0
1 12	8 8.26	+20 41.9	1.751	2.726	3.2	19.3	1 12	8 6.95	+15 27.8	2.052	3.024	3.5	20.7
1 22	7 56.97	+20 24.4	1.735	2.717	1.4	19.2	1 22	7 57.60	+15 55.5	2.023	3.005	1.8	20.5
2 1	7 45.99	+20 3.7	1.749	2.708	5.9	19.4	2 1	7 48.30	+16 25.6	2.026	2.985	5.2	20.7
2 11	7 36.53	+19 39.7	1.792	2.698	10.2	19.7	2 11	7 40.04	+16 55.2	2.057	2.965	8.9	20.9
2 21	7 29.48	+19 13.1	1.859	2.689	13.8	19.9	2 21	7 33.63	+17 22.1	2.113	2.945	12.3	21.1
167930	2005 <i>ET₁₆₀</i>		1 18.9 228°63	4°1/21.4	18		348441	2005 <i>QO₈₀</i>		1 18.9 89°57	1°0/19.4	17	
12 13	8 23.47	+ 5 59.7	2.530	3.274	12.9	20.7	12 13	8 31.86	+15 14.6	1.444	2.241	18.5	21.5
12 23	8 19.29	+ 5 53.5	2.431	3.269	10.5	20.6	12 23	8 26.85	+15 45.1	1.382	2.261	14.4	21.3
1 2	8 13.30	+ 6 0.4	2.355	3.263	7.8	20.4	1 2	8 18.71	+16 30.3	1.342	2.281	9.5	21.1
1 12	8 5.98	+ 6 20.7	2.306	3.257	5.3	20.2	1 12	8 8.34	+17 25.6	1.326	2.301	4.2	20.8
1 22	7 57.99	+ 6 53.1	2.285	3.250	4.1	20.1	1 22	7 57.05	+18 24.6	1.338	2.321	1.8	20.7
2 1	7 50.13	+ 7 35.2	2.295	3.244	5.6	20.2	2 1	7 46.39	+19 20.9	1.378	2.340	6.8	21.1
2 11	7 43.18	+ 8 23.6	2.333	3.237	8.3	20.4	2 11	7 37.76	+20 9.9	1.444	2.358	11.6	21.4
2 21	7 37.80	+ 9 14.6	2.397	3.230	11.0	20.5	2 21	7 32.05	+20 49.3	1.533	2.377	15.5	21.7
403710	2010 <i>VD₁₈₇</i>		1 18.9 84°14	2°5/20.3	18		442728	2012 <i>VD₆₈</i>		1 18.9 103°05	4°8/17.1	18	
12 13	8 28.68	+11 20.1	1.862	2.636	15.8	21.2	12 13	8 34.51	+28 21.7	1.438	2.251	17.8	21.4
12 23	8 23.65	+11 34.9	1.798	2.660	12.4	21.0	12 23	8 29.38	+29 26.5	1.375	2.263	13.8	21.2
1 2	8 16.24	+12 3.6	1.755	2.684	8.5	20.9	1 2	8 20.64	+30 33.9	1.334	2.275	9.4	20.9
1 12	8 7.19	+12 44.1	1.740	2.708	4.5	20.7	1 12	8 9.22	+31 34.4	1.317	2.286	5.6	20.7
1 22	7 57.50	+13 32.5	1.752	2.731	2.7	20.6	1 22	7 56.64	+32 19.2	1.328	2.297	5.5	20.8
2 1	7 48.27	+14 24.4	1.795	2.754	5.8	20.8	2 1	7 44.73	+32 42.9	1.365	2.308	9.2	21.0
2 11	7 40.57	+15 15.2	1.865	2.777	9.5	21.1	2 11	7 35.15	+32 45.3	1.428	2.319	13.4	21.3
2 21	7 35.08	+16 1.9	1.961	2.799	12.8	21.4	2 21	7 28.95	+32 30.2	1.511	2.329	17.0	21.5
144805	2004 <i>HD₅₉</i>		1 18.9 197°38	3°5/20.9	18		381324	2007 <i>VM₂₆₅</i>		1 18.9 113°36	0°9/18.4	18	
12 13	8 23.40	+ 8 13.0	2.634	3.385	12.2	20.7	12 13	8 25.85	+22 4.0	2.554	3.341	11.6	21.8
12 23	8 19.12	+ 7 58.2	2.540	3.384	9.9	20.5	12 23	8 21.10	+22 29.0	2.474	3.350	8.9	21.6
1 2	8 13.12	+ 7 54.1	2.470	3.383	7.2	20.3	1 2	8 14.44	+22 57.8	2.420	3.360	5.8	21.4
1 12	8 5.88	+ 8 0.8	2.426	3.382	4.7	20.2	1 12	8 6.45	+23 27.5	2.394	3.369	2.5	21.2
1 22	7 58.05	+ 8 17.3	2.412	3.381	3.5	20.1	1 22	7 57.87	+23 54.8	2.398	3.379	1.6	21.1
2 1	7 50.39	+ 8 41.7	2.428	3.379	5.2	20.2	2 1	7 49.57	+24 17.1	2.433	3.388	4.8	21.4
2 11	7 43.65	+ 9 11.5	2.473	3.378	7.8	20.4	2 11	7 42.37	+24 32.7	2.496	3.397	7.9	21.6
2 21	7 38.41	+ 9 43.9	2.544	3.376	10.5	20.5	2 21	7 36.89	+24 41.4	2.586	3.405	10.7	21.8
60770	2000 <i>GL₁₄₃</i>		1 18.9 188°23	10°6/24.8	18		306802	2001 <i>QC₅₀</i>		1 18.9 110°63	2°7/17.1	17	
12 13	8 27.85	- 9 18.5	1.984	2.656	18.0	19.1	12 13	8 25.50	+32 2.0	3.650	4.430	8.6	20.9
12 23	8 23.17	-10 6.2	1.896	2.656	16.0	19.0	12 23	8 20.28	+32 22.4	3.577	4.445	6.7	20.8
1 2	8 16.10	-10 29.0	1.825	2.655	13.8	18.8	1 2	8 13.64	+32 40.4	3.531	4.461	4.6	20.7
1 12	8 7.23	-10 22.3	1.777	2.653	11.8	18.7	1 12	8 6.04	+32 53.3	3.514	4.476	3.0	20.6
1 22	7 57.44	- 9 44.3	1.752	2.651	10.7	18.6	1 22	7 58.07	+32 58.9	3.529	4.491	2.9	20.6
2 1	7 47.81	- 8 36.6	1.754	2.648	11.0	18.6	2 1	7 50.38	+32 56.0	3.574	4.506	4.6	20.7
2 11	7 39.45	- 7 5.1	1.781	2.645	12.6	18.7	2 11	7 43.56	+32 44.7	3.649	4.521	6.5	20.9
2 21	7 33.18	- 5 18.3	1.832	2.640	14.9	18.9	2 21	7 38.07	+32 25.8	3.750	4.535	8.4	21.0
16742	Zink		1 18.9 113°27	1°0/19.4	18		99039	2001 <i>EB₄</i>		1 18.9 48°06	6°9/16.5	18	
12 13	8 32.94	+16 45.1	1.885	2.665	15.4	20.0	12 13	8 34.68	+38 38.7	1.873	2.667	15.0	18.9
12 23	8 26.93	+16 49.4	1.817	2.686	12.0	19.8	12 23	8 28.91	+39 20.2	1.808	2.676	12.1	18.8
1 2	8 18.38	+17 2.4	1.772	2.707	7.9	19.6	1 2	8 19.98	+39 53.5	1.766	2.685	9.2	18.6
1 12	8 8.09	+17 21.3	1.753	2.727	3.5	19.3	1 12	8 8.84	+40 10.7	1.749	2.694	7.2	18.5
1 22	7 57.11	+17 42.8	1.765	2.747	1.6	19.2	1 22	7 56.85	+40 6.2	1.759	2.703	7.3	18.5
2 1	7 46.67	+18 3.6	1.806	2.766	5.7	19.6	2 1	7 45.59	+39 38.5	1.797	2.713	9.4	18.7
2 11	7 37.87	+18 21.5	1.876	2.784	9.7	19.8	2 11	7 36.45	+38 50.2	1.860	2.722	12.2	18.9
2 21	7 31.46	+18 35.3	1.971	2.801	13.1	20.1	2 21	7 30.29	+37 46.7	1.946	2.732	14.9	19.1
460130	2014 <i>PH₄₂</i>		1 18.9 66°14	5°0/21.8	18		96033	2004 <i>PE₃₆</i>		1 18.9			

EPHEMERIDES

2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
286549	2002 <i>CE</i> ₁₅₉		1 18.9 307 ^o 28	0.7/18.7	18		489113	2006 <i>BE</i> ₂₄₉		1 18.9 251 ^o 29	2.7/17.9	18	
12 13	8 27.27	+19 51.8	1.440	2.255	17.6	20.7	12 13	8 32.29	+25 35.3	1.691	2.494	15.9	22.2
12 23	8 23.88	+20 17.4	1.351	2.241	13.8	20.4	12 23	8 27.38	+26 2.6	1.599	2.483	12.4	21.9
1 2	8 17.21	+20 54.0	1.282	2.228	9.1	20.1	1 2	8 19.29	+26 33.7	1.529	2.471	8.3	21.7
1 12	8 7.91	+21 37.3	1.238	2.215	3.8	19.7	1 12	8 8.72	+27 2.9	1.485	2.459	4.0	21.4
1 22	7 57.17	+22 21.1	1.220	2.202	2.0	19.6	1 22	7 56.87	+27 24.2	1.469	2.447	3.4	21.3
2 1	7 46.62	+22 59.4	1.229	2.190	7.6	19.9	2 1	7 45.26	+27 33.3	1.482	2.434	7.6	21.5
2 11	7 37.88	+23 28.1	1.262	2.178	12.7	20.1	2 11	7 35.43	+27 29.0	1.521	2.422	12.0	21.8
2 21	7 32.16	+23 45.8	1.318	2.166	17.3	20.4	2 21	7 28.46	+27 12.9	1.582	2.408	16.0	22.0
52719	1998 <i>FV</i> ₁₃₀		1 18.9 314 ^o 26	2.5/17.7	18		292289	2006 <i>SA</i> ₁₃₄		1 18.9 113 ^o 82	2.2/18.3	18	
12 13	8 25.96	+26 25.9	2.163	2.964	13.0	19.8	12 13	8 35.61	+27 0.9	1.924	2.715	14.8	20.8
12 23	8 21.78	+26 55.8	2.070	2.953	10.1	19.6	12 23	8 29.11	+27 1.8	1.852	2.728	11.4	20.6
1 2	8 15.22	+27 27.9	2.001	2.943	6.7	19.4	1 2	8 19.87	+27 2.1	1.803	2.742	7.5	20.4
1 12	8 6.89	+27 58.0	1.959	2.932	3.4	19.1	1 12	8 8.75	+26 57.6	1.781	2.755	3.6	20.2
1 22	7 57.66	+28 21.5	1.946	2.922	3.1	19.1	1 22	7 56.94	+26 44.8	1.790	2.768	2.8	20.2
2 1	7 48.65	+28 35.2	1.962	2.912	6.3	19.3	2 1	7 45.75	+26 22.5	1.828	2.780	6.4	20.4
2 11	7 40.92	+28 37.7	2.005	2.902	9.8	19.5	2 11	7 36.38	+25 51.5	1.894	2.792	10.2	20.7
2 21	7 35.31	+28 29.8	2.073	2.892	13.0	19.7	2 21	7 29.60	+25 14.1	1.985	2.804	13.5	20.9
117636	2005 <i>ED</i> ₁₃₀		1 18.9 122 ^o 07	3.1/20.4	18		197418	2003 <i>YA</i> ₅₇		1 18.9 30 ^o 50	0.9/19.4	18	
12 13	8 28.99	+10 56.5	1.883	2.654	15.7	20.2	12 13	8 24.66	+16 23.7	1.703	2.505	15.9	19.4
12 23	8 24.00	+10 53.0	1.807	2.666	12.5	20.0	12 23	8 20.97	+16 40.8	1.635	2.517	12.3	19.2
1 2	8 16.58	+11 3.0	1.752	2.678	8.8	19.8	1 2	8 14.72	+17 8.8	1.589	2.530	8.2	19.0
1 12	8 7.41	+11 25.4	1.723	2.689	4.9	19.5	1 12	8 6.66	+17 44.7	1.568	2.543	3.6	18.7
1 22	7 57.46	+11 57.5	1.723	2.700	3.2	19.5	1 22	7 57.83	+18 24.3	1.575	2.558	1.5	18.6
2 1	7 47.89	+12 35.7	1.752	2.710	6.1	19.7	2 1	7 49.43	+19 3.0	1.610	2.572	5.9	19.0
2 11	7 39.77	+13 16.2	1.809	2.720	9.8	19.9	2 11	7 42.60	+19 37.4	1.672	2.588	10.1	19.2
2 21	7 33.89	+13 55.4	1.891	2.729	13.2	20.1	2 21	7 38.10	+20 5.2	1.757	2.604	13.7	19.5
143116	2002 <i>XT</i> ₂₇		1 18.9 153 ^o 15	4.2/20.7	18		378397	2007 <i>RQ</i> ₅₂		1 18.9 47 ^o 90	2.6/20.3	18	
12 13	8 29.23	+ 8 38.2	2.184	2.937	14.4	20.1	12 13	8 24.45	+11 54.5	2.055	2.833	14.4	20.8
12 23	8 23.86	+ 8 8.1	2.099	2.944	11.6	20.0	12 23	8 20.34	+11 53.2	1.980	2.844	11.4	20.7
1 2	8 16.34	+ 7 49.7	2.037	2.951	8.5	19.8	1 2	8 14.11	+12 3.7	1.927	2.856	7.9	20.5
1 12	8 7.28	+ 7 43.4	2.002	2.957	5.5	19.6	1 12	8 6.36	+12 24.8	1.900	2.868	4.3	20.3
1 22	7 57.52	+ 7 48.6	1.995	2.963	4.2	19.5	1 22	7 57.97	+12 54.0	1.902	2.880	2.7	20.2
2 1	7 48.05	+ 8 3.5	2.019	2.968	6.1	19.7	2 1	7 49.90	+13 28.1	1.933	2.892	5.4	20.4
2 11	7 39.83	+ 8 25.3	2.071	2.973	9.2	19.9	2 11	7 43.10	+14 3.8	1.992	2.905	8.9	20.6
2 21	7 33.54	+ 8 50.9	2.148	2.977	12.2	20.1	2 21	7 38.23	+14 38.0	2.075	2.917	12.1	20.8
125266	2001 <i>VG</i>		1 18.9 30 ^o 08	2.5/17.9	18		235032	2003 <i>FH</i> ₁₄		1 18.9 234 ^o 35	2.6/19.9	18	
12 13	8 28.14	+22 21.6	1.228	2.056	19.3	20.1	12 13	8 29.56	+13 2.7	1.766	2.547	16.2	21.2
12 23	8 24.81	+23 13.5	1.165	2.063	14.9	19.8	12 23	8 24.92	+13 0.4	1.670	2.537	12.9	21.0
1 2	8 17.83	+24 15.6	1.122	2.070	9.7	19.6	1 2	8 17.51	+13 10.8	1.595	2.527	9.0	20.7
1 12	8 8.11	+25 20.0	1.102	2.079	4.4	19.3	1 12	8 7.94	+13 33.0	1.547	2.516	4.7	20.5
1 22	7 57.15	+26 17.8	1.108	2.087	3.5	19.3	1 22	7 57.23	+14 4.0	1.526	2.505	2.7	20.3
2 1	7 46.78	+27 1.7	1.139	2.097	8.6	19.6	2 1	7 46.66	+14 40.1	1.534	2.494	6.5	20.5
2 11	7 38.74	+27 28.5	1.194	2.107	13.6	19.9	2 11	7 37.55	+15 17.3	1.569	2.481	10.9	20.7
2 21	7 34.08	+27 39.1	1.270	2.117	17.9	20.2	2 21	7 30.88	+15 52.3	1.628	2.469	14.9	21.0
260032	2004 <i>GD</i> ₃₂		1 18.9 137 ^o 79	3.2/20.3	18		462702	2009 <i>VZ</i> ₈₈		1 18.9 92 ^o 42	1.4/18.3	18	
12 13	8 27.14	+11 41.0	1.793	2.574	16.1	20.9	12 13	8 29.18	+23 19.7	2.024	2.819	14.0	22.1
12 23	8 22.84	+11 29.7	1.708	2.574	12.8	20.7	12 23	8 24.12	+23 40.8	1.950	2.831	10.7	21.9
1 2	8 15.97	+11 31.4	1.645	2.574	9.0	20.4	1 2	8 16.63	+24 5.6	1.901	2.842	7.0	21.7
1 12	8 7.21	+11 45.5	1.608	2.574	5.1	20.2	1 12	8 7.43	+24 30.2	1.878	2.854	3.1	21.5
1 22	7 57.54	+12 9.9	1.597	2.575	3.3	20.1	1 22	7 57.51	+24 50.4	1.885	2.865	2.1	21.4
2 1	7 48.15	+12 41.2	1.616	2.575	6.4	20.3	2 1	7 48.02	+25 3.4	1.921	2.876	5.9	21.7
2 11	7 40.22	+13 15.7	1.661	2.575	10.3	20.5	2 11	7 40.02	+25 8.0	1.985	2.887	9.6	21.9
2 21	7 34.58	+13 49.8	1.731	2.575	14.0	20.7	2 21	7 34.26	+25 4.6	2.074	2.898	12.8	22.1
206275	2002 <i>YG</i> ₃₃		1 18.9 40 ^o 03	2.7/19.8	18		348474	2005 <i>SF</i> ₁₀₄		1 18.9 115 ^o 99	1.9/18.3	17	
12 13	8 29.62	+15 29.2	1.862	2.646	15.4	19.6	12 13	8 32.79	+22 55.7	1.499	2.307	17.4	21.1
12 23	8 24.35	+14 39.7	1.794	2.663	12.1	19.4	12 23	8 27.78	+23 27.7	1.429	2.315	13.5	21.1
1 2	8 16.68	+13 57.5	1.749	2.681	8.3	19.2	1 2	8 19.48	+24 6.4	1.379	2.323	8.8	20.8
1 12	8 7.39	+13 22.6	1.730	2.700	4.4	19.0	1 12	8 8.75	+24 45.7	1.355	2.331	3.9	20.6
1 22	7 57.52	+12 54.7	1.741	2.719	2.9	19.0	1 22	7 56.93	+25 19.1	1.358	2.339	2.8	20.5
2 1	7 48.19	+12 33.2	1.780	2.738	6.0	19.2	2 1	7 45.66	+25 41.8	1.389	2.346	7.5	20.8
2 11	7 40.44	+12 16.9	1.847	2.757	9.7	19.5	2 11	7 36.45	+25 52.1	1.447	2.353	12.1	21.1
2 21	7 34.96	+12 4.5	1.938	2.777	12.9	19.7	2 21	7 30.29	+25 50.9	1.526	2.360	16.1	21.4
76788	2000 <i>LX</i> ₁₃		1 18.9 202 ^o 39	0.4/19.3	18		322868	2001 <i>UP</i> ₁₇₁		1 18.9 77 ^o 43	1.3/19.5	18	
12 13	8 24.39	+15 46.2	2.887	3.657	10.8	19.7	12 13	8 29.24	+16 32.6	1.802	2.592	15.6	20.7
12 23	8 19.86	+16 27.1	2.788	3.653	8.4	19.5	12 23	8 24.28	+16 28.1	1.732	2.606	12.2	20.5
1 2	8 13.63	+17 16.5	2.714	3.649	5.6	19.3	1 2	8 16.79	+16 32.5	1.684	2.621	8.1	20.3
1 12	8 6.15	+18 11.7	2.670	3.644	2.4	19.1	1 12	8 7.51	+16 43.8	1.662	2.636	3.7	20.1
1 22	7 58.02	+19 9.5	2.656	3.639	1.0	19.0	1 22	7 57.50	+16 58.9	1.668	2.650	1.8	19.9
2 1	7 49.98	+20 6.4	2.675	3.633	4.2	19.2	2 1	7 47.98	+17 15.0	1.704	2.665	5.8	20.2
2 11	7 42.78	+20 59.3	2.724	3.627	7.2	19.4	2 11	7 40.05	+17 29.5	1.767	2.680	9.9	20.5
2 21	7 37.01	+21 46.3	2.800	3.621	9.9	19.6	2 21	7 34.48	+17 41.1	1.854	2.694	13.4	20.8
119659	2001 <i>XE</i> ₆₂		1 18.9 151 ^o 88	2.3/17.5									

EPHEMERIDES

1 18.9

1 18.9

2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
87052	2000 <i>KG</i> ₂₇		1 18.9 131°01	4.3/16.7	18		330474	2007 <i>EZ</i> ₂₁₈		1 18.9 110°76	3.0/20.5	18	
12 13	8 30.12	+28 53.3	1.939	2.741	14.2	19.2	12 13	8 25.96	+10 54.4	2.007	2.780	14.8	21.3
12 23	8 25.27	+30 2.2	1.865	2.746	11.1	19.0	12 23	8 21.65	+10 52.7	1.923	2.783	11.8	21.1
1 2	8 17.65	+31 13.3	1.814	2.751	7.6	18.8	1 2	8 15.07	+11 4.0	1.861	2.787	8.3	20.9
1 12	8 7.96	+32 19.0	1.790	2.756	4.7	18.7	1 12	8 6.84	+11 27.2	1.825	2.790	4.7	20.6
1 22	7 57.28	+33 12.6	1.795	2.761	4.9	18.7	1 22	7 57.83	+12 0.0	1.817	2.794	3.1	20.5
2 1	7 46.93	+33 49.2	1.829	2.766	7.8	18.9	2 1	7 49.08	+12 39.1	1.838	2.797	5.8	20.7
2 11	7 38.19	+34 7.5	1.890	2.770	11.2	19.1	2 11	7 41.61	+13 20.6	1.888	2.800	9.4	20.9
2 21	7 31.98	+34 9.4	1.974	2.774	14.2	19.3	2 21	7 36.16	+14 1.2	1.962	2.803	12.7	21.2
237806	2002 <i>CM</i> ₄₄		1 18.9 196°27	4.7/21.8	18		285305	1998 <i>VN</i> ₄₆		1 18.9 165°74	3.0/17.3	18	
12 13	8 31.25	+1 29.6	1.205	1.974	23.0	20.5	12 13	8 34.35	+27 29.7	1.779	2.577	15.5	22.3
12 23	8 27.44	+2 55.4	1.120	1.973	18.9	20.2	12 23	8 28.72	+28 23.1	1.702	2.582	12.0	22.0
1 2	8 19.86	+5 5.0	1.053	1.972	13.9	19.9	1 2	8 20.02	+29 19.2	1.647	2.586	8.1	21.8
1 12	8 9.17	+7 57.0	1.009	1.971	8.2	19.6	1 12	8 9.00	+30 10.9	1.620	2.590	4.5	21.6
1 22	7 56.66	+11 20.6	0.992	1.969	4.7	19.4	1 22	7 56.89	+30 51.1	1.621	2.593	4.4	21.6
2 1	7 44.20	+14 56.8	1.005	1.967	8.5	19.6	2 1	7 45.18	+31 15.2	1.651	2.595	7.8	21.8
2 11	7 33.79	+18 24.7	1.045	1.965	14.3	19.9	2 11	7 35.32	+31 22.1	1.708	2.596	11.7	22.0
2 21	7 26.85	+21 29.2	1.109	1.963	19.5	20.2	2 21	7 28.28	+31 14.2	1.788	2.597	15.1	22.3
167655	2004 <i>ED</i> ₄		1 18.9 324°02	9.3/13.7	18		284457	2007 <i>FT</i> ₃₆		1 18.9 172°68	2.9/17.6	18	
12 13	8 31.84	+44 17.3	1.995	2.782	14.4	19.5	12 13	8 33.19	+25 19.1	1.810	2.607	15.3	21.6
12 23	8 27.31	+45 38.0	1.917	2.769	12.3	19.4	12 23	8 27.76	+26 10.3	1.729	2.610	11.8	21.4
1 2	8 19.38	+46 49.6	1.862	2.756	10.3	19.2	1 2	8 19.36	+27 6.2	1.672	2.613	7.9	21.2
1 12	8 8.80	+47 42.5	1.832	2.744	9.4	19.1	1 12	8 8.73	+28 0.3	1.642	2.615	4.0	20.9
1 22	7 56.89	+48 8.8	1.827	2.733	9.9	19.1	1 22	7 57.01	+28 45.9	1.641	2.616	3.6	20.9
2 1	7 45.35	+48 5.0	1.847	2.721	11.6	19.2	2 1	7 45.63	+29 17.9	1.669	2.617	7.3	21.1
2 11	7 35.84	+47 32.5	1.890	2.710	13.9	19.3	2 11	7 35.98	+29 34.8	1.724	2.617	11.3	21.4
2 21	7 29.45	+46 36.8	1.954	2.700	16.2	19.5	2 21	7 29.03	+29 37.7	1.802	2.616	14.9	21.6
166958	2003 <i>MN</i> ₈		1 18.9 193°71	2.4/20.2	18		119629	2001 <i>WP</i> ₁₀₁		1 18.9 130°76	0.6/18.6	18	
12 13	8 29.81	+12 1.1	2.208	2.970	14.0	21.1	12 13	8 25.74	+21 2.5	2.825	3.605	10.8	21.0
12 23	8 24.47	+12 4.7	2.112	2.968	11.1	20.9	12 23	8 20.84	+21 25.4	2.744	3.616	8.3	20.9
1 2	8 16.87	+12 19.6	2.039	2.965	7.7	20.7	1 2	8 14.21	+21 52.3	2.689	3.627	5.4	20.7
1 12	8 7.59	+12 44.5	1.993	2.961	4.2	20.4	1 12	8 6.40	+22 20.6	2.662	3.638	2.2	20.5
1 22	7 57.45	+13 16.9	1.978	2.956	2.5	20.3	1 22	7 58.06	+22 47.4	2.667	3.649	1.2	20.4
2 1	7 47.49	+13 53.9	1.993	2.950	5.5	20.5	2 1	7 49.97	+23 10.3	2.703	3.659	4.3	20.7
2 11	7 38.71	+14 31.8	2.037	2.944	9.1	20.7	2 11	7 42.86	+23 27.9	2.768	3.669	7.3	20.9
2 21	7 31.91	+15 8.1	2.107	2.937	12.4	20.9	2 21	7 37.30	+23 39.5	2.860	3.678	9.8	21.1
220428	2003 <i>UJ</i> ₃		1 18.9 163°03	0.9/19.3	17 R		385518	2004 <i>HP</i> ₅₄		1 18.9 219°18	4.2/15.9	18	
12 13	8 33.73	+16 16.3	1.783	2.563	16.1	22.4	12 13	8 27.34	+33 18.2	2.922	3.707	10.3	21.3
12 23	8 27.96	+16 35.1	1.701	2.571	12.6	22.2	12 23	8 22.40	+34 19.3	2.831	3.700	8.2	21.2
1 2	8 19.36	+17 4.8	1.642	2.578	8.4	21.9	1 2	8 15.45	+35 19.2	2.767	3.693	5.9	21.0
1 12	8 8.67	+17 42.2	1.609	2.583	3.7	21.6	1 12	8 7.00	+36 12.7	2.731	3.685	4.3	20.9
1 22	7 56.99	+18 22.6	1.606	2.588	1.6	21.5	1 22	7 57.77	+36 55.6	2.725	3.676	4.6	20.9
2 1	7 45.67	+19 1.6	1.632	2.592	6.2	21.8	2 1	7 48.66	+37 24.5	2.750	3.668	6.5	21.0
2 11	7 36.00	+19 35.7	1.687	2.595	10.6	22.1	2 11	7 40.57	+37 38.8	2.803	3.659	8.8	21.2
2 21	7 28.91	+20 3.1	1.766	2.596	14.4	22.3	2 21	7 34.20	+37 39.3	2.880	3.650	11.0	21.3
329348	2001 <i>RY</i> ₃₀		1 18.9 93°57	0.9/19.4	18		69218	2330 <i>T</i> ₋₃		1 18.9 173°04	0.6/19.2	18	
12 13	8 29.09	+16 27.9	1.892	2.678	15.1	21.6	12 13	8 30.91	+17 31.5	2.128	2.906	13.9	20.3
12 23	8 24.08	+16 43.6	1.822	2.696	11.7	21.4	12 23	8 25.39	+17 44.5	2.040	2.909	10.9	20.0
1 2	8 16.62	+17 8.9	1.776	2.713	7.8	21.2	1 2	8 17.49	+18 5.3	1.976	2.912	7.2	19.8
1 12	8 7.44	+17 40.9	1.755	2.730	3.4	20.9	1 12	8 7.86	+18 31.2	1.940	2.915	3.1	19.6
1 22	7 57.56	+18 15.6	1.764	2.747	1.5	20.8	1 22	7 57.42	+18 58.9	1.934	2.916	1.3	19.4
2 1	7 48.11	+18 49.2	1.803	2.763	5.6	21.1	2 1	7 47.24	+19 25.1	1.958	2.917	5.4	19.7
2 11	7 40.19	+19 18.9	1.869	2.779	9.6	21.4	2 11	7 38.40	+19 47.3	2.011	2.917	9.3	20.0
2 21	7 34.52	+19 42.9	1.960	2.795	13.0	21.7	2 21	7 31.69	+20 4.4	2.090	2.917	12.6	20.2
75321	1999 <i>XY</i> ₄₅		1 18.9 44°24	3.4/20.2	18		40325	1999 <i>LW</i> ₃₃		1 18.9 148°07	1.8/17.8	18	
12 13	8 28.44	+12 35.6	1.585	2.375	17.4	19.6	12 13	8 25.12	+23 21.3	2.459	3.251	11.9	19.1
12 23	8 24.09	+12 9.8	1.508	2.379	13.9	19.4	12 23	8 20.80	+24 13.1	2.373	3.252	9.1	18.9
1 2	8 16.91	+11 56.7	1.452	2.383	9.7	19.1	1 2	8 14.43	+25 9.8	2.312	3.253	6.0	18.8
1 12	8 7.65	+11 56.0	1.420	2.388	5.4	18.9	1 12	8 6.57	+26 7.1	2.280	3.255	2.8	18.5
1 22	7 57.44	+12 5.9	1.415	2.392	3.6	18.8	1 22	7 57.98	+27 0.4	2.278	3.256	2.4	18.5
2 1	7 47.64	+12 23.7	1.438	2.397	6.9	19.0	2 1	7 49.56	+27 45.7	2.306	3.257	5.5	18.7
2 11	7 39.54	+12 45.8	1.487	2.402	11.2	19.3	2 11	7 42.24	+28 20.8	2.363	3.258	8.6	18.9
2 21	7 34.02	+13 8.9	1.559	2.407	15.0	19.5	2 21	7 36.70	+28 45.1	2.446	3.258	11.4	19.1
248626	2006 <i>FL</i> ₃		1 18.9 185°05	1.7/19.9	18		331237	2011 <i>BR</i> ₉₅		1 18.9 273°18	1.8/18.1	18	
12 13	8 25.55	+13 51.2	2.380	3.153	12.8	21.2	12 13	8 27.54	+23 13.0	2.009	2.808	13.9	21.3
12 23	8 21.02	+13 56.8	2.289	3.153	10.1	21.0	12 23	8 23.24	+23 50.3	1.912	2.794	10.8	21.0
1 2	8 14.51	+14 11.6	2.221	3.152	6.9	20.8	1 2	8 16.36	+24 33.7	1.838	2.780	7.1	20.8
1 12	8 6.56	+14 34.2	2.181	3.152	3.5	20.6	1 12	8 7.49	+25 18.4	1.791	2.766	3.2	20.5
1 22	7 57.93	+15 2.3	2.171	3.151	1.9	20.5	1 22	7 57.56	+25 59.4	1.773	2.752	2.5	20.4
2 1	7 49.49	+15 33.0	2.191	3.150	4.9	20.7	2 1	7 47.76	+26 32.1	1.784	2.738	6.4	20.6
2 11	7 42.12	+16 3.7	2.240	3.149	8.3	20.9	2 11	7 39.28	+26 54.0	1.823	2.724	10.4	20.8
2 21	7 36.50	+16 32.1	2.314	3.148	11.3	21.1	2 21	7 33.07	+27 4.9	1.885	2.709	13.9	21.0
402684	2006 <i>UH</i> ₃₆₁		1 18.9 44°72	0.3/18.9	16		93178	2000 <i>SW</i> ₁₀₃		1 18.9 329°50	4.4/17.6	18	
12 13	8 32.77	+21 12.9	1.324										

EPHEMERIDES

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
110376	2001 <i>SS</i> ₃₃₉		1 18.9 264 ^o 00	2 ^o 1/19.6 18			95157	2002 <i>AU</i> ₁₇₅		1 18.9 127 ^o 77	1 ^o 0/18.5 18		
12 13	8 30.34	+16 5.8	1.919	2.701	15.1	19.4	12 13	8 27.70	+20 45.6	2.050	2.844	13.9	20.1
12 23	8 25.31	+15 35.0	1.820	2.689	11.9	19.2	12 23	8 23.08	+21 23.1	1.970	2.849	10.7	19.9
1 2	8 17.65	+15 10.8	1.743	2.676	8.2	18.9	1 2	8 16.08	+22 7.6	1.913	2.854	7.0	19.7
1 12	8 8.02	+14 52.6	1.692	2.663	4.1	18.6	1 12	8 7.32	+22 54.8	1.883	2.860	2.9	19.5
1 22	7 57.36	+14 39.3	1.670	2.650	2.4	18.5	1 22	7 57.75	+23 40.1	1.883	2.865	1.8	19.4
2 1	7 46.90	+14 29.6	1.678	2.637	6.1	18.7	2 1	7 48.47	+24 19.1	1.913	2.869	5.8	19.7
2 11	7 37.84	+14 22.1	1.714	2.624	10.3	18.9	2 11	7 40.54	+24 49.3	1.970	2.874	9.5	19.9
2 21	7 31.08	+14 15.8	1.773	2.610	14.1	19.1	2 21	7 34.77	+25 9.8	2.052	2.878	12.8	20.1
455609	2004 <i>TB</i> ₁₅₁		1 18.9 99 ^o 53	2 ^o 4/17.9 18			462901	2010 <i>XL</i> ₄₄		1 18.9 13 ^o 91	6 ^o 5/15.6 18		
12 13	8 28.85	+25 47.1	2.002	2.801	13.9	21.3	12 13	8 26.83	+30 0.0	1.410	2.238	17.3	20.5
12 23	8 24.09	+26 17.5	1.921	2.803	10.8	21.1	12 23	8 23.81	+31 43.1	1.347	2.241	13.5	20.3
1 2	8 16.77	+26 50.5	1.864	2.805	7.1	20.9	1 2	8 17.27	+33 29.9	1.305	2.245	9.6	20.1
1 12	8 7.60	+27 21.3	1.834	2.807	3.5	20.7	1 12	8 8.02	+35 8.8	1.288	2.250	6.8	19.9
1 22	7 57.58	+27 45.1	1.832	2.809	3.0	20.7	1 22	7 57.43	+36 28.8	1.296	2.256	7.3	20.0
2 1	7 47.89	+27 58.7	1.860	2.811	6.5	20.9	2 1	7 47.28	+37 22.4	1.331	2.263	10.6	20.2
2 11	7 39.70	+28 1.0	1.915	2.813	10.1	21.1	2 11	7 39.27	+37 47.9	1.389	2.270	14.3	20.4
2 21	7 33.83	+27 52.8	1.994	2.815	13.4	21.3	2 21	7 34.53	+37 48.8	1.467	2.279	17.8	20.6
179081	2001 <i>SK</i> ₁₄₈		1 18.9 126 ^o 25	1 ^o 8/19.8 18			40481	1999 <i>RQ</i> ₆₁		1 18.9 268 ^o 10	1 ^o 4/18.5 18		
12 13	8 28.51	+14 55.1	1.956	2.737	14.9	20.4	12 13	8 30.27	+22 28.6	1.683	2.486	16.0	19.3
12 23	8 23.66	+14 51.5	1.875	2.744	11.7	20.2	12 23	8 25.82	+22 50.2	1.589	2.474	12.5	19.0
1 2	8 16.41	+14 57.6	1.816	2.750	7.9	20.0	1 2	8 18.32	+23 18.3	1.517	2.461	8.2	18.7
1 12	8 7.42	+15 11.7	1.784	2.756	3.9	19.7	1 12	8 8.42	+23 48.3	1.471	2.447	3.6	18.4
1 22	7 57.66	+15 31.3	1.781	2.762	2.1	19.6	1 22	7 57.25	+24 15.0	1.453	2.434	2.3	18.3
2 1	7 48.23	+15 53.3	1.807	2.768	5.7	19.8	2 1	7 46.27	+24 33.7	1.463	2.421	7.1	18.6
2 11	7 40.21	+16 15.1	1.862	2.773	9.5	20.1	2 11	7 36.95	+24 42.4	1.499	2.407	11.7	18.8
2 21	7 34.36	+16 34.6	1.941	2.778	13.0	20.3	2 21	7 30.36	+24 41.1	1.559	2.393	15.8	19.0
279253	2009 <i>VL</i> ₄₅		1 18.9 109 ^o 69	0 ^o 8/18.6 18			459803	2013 <i>RT</i> ₈₁		1 18.9 164 ^o 30	2 ^o 6/20.3 18		
12 13	8 28.71	+21 53.0	2.092	2.884	13.7	20.9	12 13	8 25.77	+11 34.1	2.127	2.899	14.1	21.6
12 23	8 23.72	+22 7.8	2.014	2.892	10.5	20.7	12 23	8 21.43	+11 35.4	2.039	2.900	11.2	21.4
1 2	8 16.39	+22 27.1	1.959	2.900	6.9	20.5	1 2	8 14.92	+11 48.6	1.974	2.901	7.9	21.1
1 12	8 7.40	+22 47.6	1.931	2.907	2.9	20.2	1 12	8 6.83	+12 12.6	1.935	2.902	4.3	20.9
1 22	7 57.68	+23 5.6	1.933	2.915	1.6	20.2	1 22	7 57.98	+12 45.0	1.925	2.903	2.7	20.8
2 1	7 48.32	+23 18.4	1.964	2.922	5.6	20.4	2 1	7 49.34	+13 22.7	1.945	2.903	5.5	21.0
2 11	7 40.36	+23 24.5	2.024	2.929	9.3	20.7	2 11	7 41.90	+14 2.2	1.992	2.904	9.0	21.2
2 21	7 34.54	+23 23.9	2.109	2.936	12.5	20.9	2 21	7 36.38	+14 40.3	2.065	2.904	12.3	21.4
318045	2004 <i>FU</i> ₁₇		1 18.9 31 ^o 97	21 ^o 3/2.4 18			411195	2010 <i>KW</i> ₃		1 18.9 204 ^o 08	3 ^o 1/20.5 18		
12 13	8 23.36	-20 7.1	1.035	1.727	30.4	19.7	12 13	8 28.89	+10 21.8	2.174	2.934	14.2	22.1
12 23	8 21.43	-22 2.6	0.987	1.735	28.3	19.5	12 23	8 23.85	+10 18.3	2.077	2.929	11.4	21.9
1 2	8 15.82	-23 9.3	0.948	1.744	26.0	19.4	1 2	8 16.54	+10 27.2	2.002	2.923	8.1	21.7
1 12	8 7.41	-23 14.5	0.921	1.753	23.8	19.3	1 12	8 7.53	+10 47.6	1.954	2.917	4.7	21.5
1 22	7 57.65	-22 11.3	0.907	1.764	22.0	19.2	1 22	7 57.66	+11 17.7	1.935	2.910	3.2	21.4
2 1	7 48.41	-20 1.2	0.909	1.776	21.3	19.2	2 1	7 47.93	+11 54.6	1.946	2.902	5.7	21.5
2 11	7 41.48	-16 57.3	0.928	1.788	21.7	19.3	2 11	7 39.38	+12 34.6	1.987	2.894	9.3	21.7
2 21	7 38.00	-13 20.2	0.965	1.801	23.1	19.4	2 21	7 32.78	+13 14.5	2.052	2.885	12.6	21.9
33528	Jinzman		1 18.9 273 ^o 31	2 ^o 5/18.1 18			103958	2000 <i>DC</i> ₇₆		1 18.9 204 ^o 76	0 ^o 3/18.8 18		
12 13	8 31.00	+24 29.7	1.596	2.405	16.5	19.4	12 13	8 26.30	+20 20.8	2.770	3.549	11.0	20.4
12 23	8 26.63	+24 59.7	1.503	2.390	12.9	19.1	12 23	8 21.42	+20 39.0	2.673	3.544	8.5	20.2
1 2	8 18.99	+25 35.3	1.431	2.375	8.6	18.8	1 2	8 14.73	+21 1.9	2.601	3.539	5.6	20.0
1 12	8 8.73	+26 10.9	1.385	2.360	4.0	18.5	1 12	8 6.71	+21 26.8	2.558	3.534	2.3	19.7
1 22	7 57.07	+26 39.9	1.366	2.345	3.2	18.4	1 22	7 58.04	+21 51.2	2.546	3.528	1.1	19.6
2 1	7 45.58	+26 57.4	1.375	2.330	7.8	18.7	2 1	7 49.52	+22 12.6	2.564	3.521	4.5	19.9
2 11	7 35.89	+27 1.4	1.409	2.314	12.5	18.9	2 11	7 41.96	+22 29.1	2.613	3.515	7.6	20.1
2 21	7 29.15	+26 52.8	1.466	2.299	16.7	19.1	2 21	7 35.97	+22 40.3	2.688	3.508	10.3	20.2
368446	2003 <i>EZ</i> ₂₁		1 18.9 330 ^o 81	5 ^o 1/21.6 18			73280	2002 <i>JK</i> ₅₉		1 18.9 112 ^o 44	1 ^o 0/18.5 18		
12 13	8 22.74	+ 5 56.4	1.591	2.369	17.9	20.1	12 13	8 27.85	+21 53.5	2.210	3.001	13.1	19.9
12 23	8 19.91	+ 6 1.2	1.500	2.358	14.7	19.9	12 23	8 22.97	+22 16.9	2.132	3.010	10.1	19.7
1 2	8 14.38	+ 6 28.0	1.428	2.348	10.9	19.6	1 2	8 15.87	+22 45.0	2.078	3.019	6.6	19.5
1 12	8 6.73	+ 7 17.3	1.380	2.338	7.0	19.4	1 12	8 7.21	+23 14.3	2.051	3.027	2.8	19.3
1 22	7 57.95	+ 8 26.6	1.358	2.329	5.1	19.2	1 22	7 57.84	+23 41.0	2.054	3.036	1.7	19.2
2 1	7 49.29	+ 9 50.3	1.362	2.321	7.4	19.3	2 1	7 48.81	+24 2.0	2.088	3.044	5.4	19.5
2 11	7 42.06	+11 20.6	1.393	2.313	11.5	19.5	2 11	7 41.08	+24 15.8	2.149	3.052	8.9	19.7
2 21	7 37.26	+12 50.2	1.447	2.306	15.5	19.8	2 21	7 35.35	+24 22.0	2.236	3.060	12.0	19.9
215253	2001 <i>MG</i> ₁₈		1 18.9 184 ^o 82	2 ^o 3/17.7 18			117602	2005 <i>EF</i> ₇₆		1 18.9 174 ^o 22	4 ^o 0/21.5 18		
12 13	8 30.95	+26 2.5	2.482	3.265	12.0	21.1	12 13	8 23.95	+ 5 33.6	2.602	3.342	12.7	20.5
12 23	8 25.27	+26 42.4	2.392	3.265	9.3	20.9	12 23	8 19.62	+ 5 29.4	2.509	3.343	10.3	20.4
1 2	8 17.37	+27 24.6	2.328	3.265	6.2	20.7	1 2	8 13.55	+ 5 38.4	2.439	3.344	7.7	20.2
1 12	8 7.84	+28 4.5	2.292	3.264	3.2	20.5	1 12	8 6.21	+ 6 0.5	2.396	3.345	5.2	20.1
1 22	7 57.51	+28 37.9	2.287	3.262	2.8	20.5	1 22	7 58.27	+ 6 34.5	2.382	3.346	4.0	20.0
2 1	7 47.40	+29 1.4	2.314	3.259	5.8	20.6	2 1	7 50.49	+ 7 17.8	2.398	3.346	5.4	20.1
2 11	7 38.50	+29 13.9	2.369	3.256	8.9	20.8	2 11	7 43.63	+ 8 7.1	2.443	3.347	8.0	20.2
2 21	7 31.57	+29 15.9	2.450	3.252	11.8	21.0	2 21	7 38.29	+ 8 58.8	2.515	3.347	10.6	20.4
124642	2001 <i>SJ</i> ₆₈		1 18.9 9 ^o 24	3 ^o 8/17.6 18			359900	2011 <i>WE</i> ₆₃		1 18.9 194 ^o 79	2 ^o 9/17.5 18		
12 13	8 24.27	+24 16.8	1.027	1.875	20.7	18.3	12 13	8 31.59	+25 49.7	1.965	2.760	14.3	21.7
12 23	8 22.52	+25 13.4	0.968	1.877	16.1	18.1	12 23	8 26.40	+26 40.3	1.879	2.758	11.1	21.5
1 2	8 16.72	+26 19.5	0.927	1.880	10.6	17.8	1 2	8 18.45	+27 35.1	1.816	2.756	7.4	21.2
1 12	8 7.84	+27 25.8	0.908	1.884	5.3	17.5	1 12	8 8.40	+28 28.0	1.781	2.753	3.9	21.0
1 22	7 57.51	+28 21.6	0.912	1.890	4.8	17.5	1 22	7 57.31	+29 12.9	1.775	2.750	3.6	21.0
2 1	7 47.84	+28 58.8	0.940	1.898	9.9	17.8	2 1	7 46.46	+29 45.1	1.799	2.746	7.0	21.2
2 11	7 40.79	+29 14.8	0.989	1.907	15.1	18.1	2 11	7 37.15	+30 2.7	1.850	2.742	10.8	21.4
2 21	7 37.49	+29 11.4	1.057	1.917	19.7	18.4	2 21	7 30.30					

EPHEMERIDES

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2019/20	α_{2000}	δ_{2000}	Δ	r	β	V	2019/20	α_{2000}	δ_{2000}	Δ	r	β	V
285914	2001 <i>QP</i> ₁₆₁	1 18.9 136°94		1.4/18.3 18			16269	Merkord	1 19.0 95°99		0.2/19.1 18		
12 13	8 30.96	+23 8.1	2.274	3.059	12.9	21.5	12 13	8 26.54	+18 36.7	2.429	3.211	12.3	19.6
12 23	8 25.27	+23 36.2	2.198	3.072	9.9	21.3	12 23	8 21.68	+18 53.6	2.355	3.227	9.5	19.4
1 2	8 17.33	+24 8.0	2.146	3.085	6.5	21.1	1 2	8 14.90	+19 16.6	2.305	3.243	6.2	19.2
1 12	8 7.81	+24 39.5	2.122	3.098	2.9	20.9	1 12	8 6.79	+19 43.0	2.284	3.259	2.6	19.0
1 22	7 57.60	+25 6.7	2.129	3.109	2.0	20.8	1 22	7 58.12	+20 9.8	2.292	3.275	1.1	18.9
2 1	7 47.76	+25 26.6	2.167	3.120	5.5	21.1	2 1	7 49.77	+20 34.5	2.332	3.291	4.7	19.2
2 11	7 39.27	+25 37.9	2.233	3.130	8.9	21.3	2 11	7 42.58	+20 55.0	2.400	3.306	7.9	19.5
2 21	7 32.85	+25 40.9	2.325	3.140	11.9	21.5	2 21	7 37.15	+21 10.3	2.494	3.321	10.8	19.7
72120	2000 <i>YP</i> ₆₃	1 19.0 353°88		0°3/18.9 18			239794	6715 <i>P-L</i>	1 19.0 73°87		5°7/17.1 18		
12 13	8 25.68	+18 49.1	1.328	2.149	18.5	18.7	12 13	8 35.43	+31 0.2	1.375	2.191	18.3	20.2
12 23	8 22.76	+19 15.3	1.252	2.146	14.4	18.5	12 23	8 30.29	+31 55.5	1.317	2.204	14.3	20.0
1 2	8 16.52	+19 54.2	1.196	2.143	9.5	18.2	1 2	8 21.36	+32 49.7	1.280	2.218	10.0	19.8
1 12	8 7.71	+20 41.0	1.163	2.140	4.0	17.8	1 12	8 9.68	+33 32.9	1.266	2.232	6.4	19.6
1 22	7 57.62	+21 29.4	1.156	2.139	1.8	17.7	1 22	7 56.90	+33 57.0	1.280	2.246	6.3	19.7
2 1	7 47.89	+22 13.0	1.175	2.138	7.5	18.0	2 1	7 44.96	+33 58.0	1.319	2.260	9.7	19.9
2 11	7 40.13	+22 47.3	1.219	2.138	12.7	18.3	2 11	7 35.57	+33 37.5	1.383	2.274	13.8	20.2
2 21	7 35.44	+23 10.5	1.283	2.139	17.2	18.6	2 21	7 29.70	+33 0.5	1.468	2.287	17.4	20.4
165035	2000 <i>DH</i> ₆₃	1 19.0 274°88		2°7/17.8 18			110976	2001 <i>UJ</i> ₁₈₂	1 19.0 209°94		1°0/19.7 18		
12 13	8 29.42	+27 57.8	2.192	2.987	13.0	20.2	12 13	8 24.37	+14 49.7	2.608	3.380	11.8	20.3
12 23	8 24.39	+28 15.3	2.103	2.982	10.1	20.0	12 23	8 20.06	+15 13.0	2.512	3.377	9.2	20.2
1 2	8 16.92	+28 32.7	2.038	2.977	6.8	19.8	1 2	8 13.91	+15 45.2	2.440	3.373	6.2	20.0
1 12	8 7.70	+28 45.9	2.001	2.973	3.6	19.6	1 12	8 6.43	+16 24.2	2.396	3.369	2.9	19.7
1 22	7 57.65	+28 50.9	1.993	2.968	3.2	19.6	1 22	7 58.27	+17 7.3	2.383	3.365	1.3	19.6
2 1	7 47.92	+28 45.5	2.015	2.964	6.3	19.8	2 1	7 50.25	+17 51.1	2.401	3.360	4.5	19.8
2 11	7 39.58	+28 29.3	2.065	2.959	9.7	20.0	2 11	7 43.16	+18 32.9	2.448	3.356	7.7	20.0
2 21	7 33.43	+28 4.0	2.139	2.954	12.8	20.2	2 21	7 37.64	+19 10.4	2.521	3.351	10.6	20.2
131	<i>Vala</i>	1 19.0 256°81		2°6/17.9 18			280220	2002 <i>TY</i> ₃₅₈	1 19.0 169°65		0°4/19.2 18		
12 13	8 29.77	+24 6.0	1.694	2.500	15.8	14.0	12 13	8 25.71	+17 57.0	2.254	3.040	13.0	21.4
12 23	8 25.42	+24 51.1	1.608	2.493	12.3	13.8	12 23	8 21.34	+18 13.0	2.166	3.040	10.1	21.2
1 2	8 18.03	+25 42.8	1.543	2.487	8.1	13.5	1 2	8 14.86	+18 36.5	2.102	3.040	6.7	21.0
1 12	8 8.30	+26 34.9	1.505	2.480	3.9	13.2	1 12	8 6.85	+19 4.8	2.065	3.041	2.9	20.8
1 22	7 57.36	+27 20.8	1.495	2.473	3.3	13.2	1 22	7 58.10	+19 34.9	2.058	3.041	1.2	20.7
2 1	7 46.65	+27 55.1	1.513	2.466	7.4	13.4	2 1	7 49.57	+20 3.5	2.081	3.041	5.0	20.9
2 11	7 37.64	+28 15.0	1.557	2.458	11.8	13.7	2 11	7 42.21	+20 28.2	2.132	3.041	8.6	21.2
2 21	7 31.36	+28 21.2	1.624	2.451	15.6	13.9	2 21	7 36.73	+20 47.6	2.209	3.041	11.8	21.4
135251	2001 <i>SY</i> ₃₇	1 19.0 215°63		4°3/16.4 18			5580	<i>Sharidake</i>	1 19.0 47°18		5°2/17.4 18		
12 13	8 28.12	+32 23.3	2.491	3.283	11.7	19.9	12 13	8 33.43	+28 56.7	1.180	2.009	19.9	16.7
12 23	8 23.26	+33 14.5	2.407	3.281	9.2	19.7	12 23	8 29.11	+29 46.0	1.127	2.023	15.5	16.4
1 2	8 16.14	+34 4.2	2.348	3.278	6.6	19.5	1 2	8 20.75	+30 36.2	1.093	2.038	10.5	16.2
1 12	8 7.37	+34 47.2	2.316	3.275	4.5	19.4	1 12	8 9.47	+31 17.5	1.083	2.053	6.1	16.0
1 22	7 57.79	+35 18.6	2.314	3.272	4.7	19.4	1 22	7 57.04	+31 41.2	1.097	2.069	5.8	16.0
2 1	7 48.45	+35 35.3	2.342	3.269	6.9	19.5	2 1	7 45.57	+31 43.0	1.137	2.086	9.9	16.3
2 11	7 40.36	+35 36.9	2.397	3.266	9.6	19.7	2 11	7 36.87	+31 24.2	1.199	2.102	14.4	16.6
2 21	7 34.27	+35 24.9	2.476	3.263	12.1	19.9	2 21	7 31.91	+30 49.7	1.282	2.119	18.4	16.9
192295	1991 <i>TN</i> ₁₅	1 19.0 86°74		2°6/20.1 17			373646	2002 <i>PT</i> ₁₀₁	1 19.0 120°80		3°5/20.7 18		
12 13	8 30.57	+12 38.8	1.468	2.259	18.5	21.1	12 13	8 26.23	+ 9 52.1	2.314	3.073	13.5	20.7
12 23	8 25.88	+12 43.9	1.401	2.275	14.6	20.8	12 23	8 21.55	+ 9 30.7	2.229	3.080	10.8	20.6
1 2	8 18.16	+13 4.9	1.356	2.290	10.0	20.6	1 2	8 14.89	+ 9 20.0	2.167	3.086	7.8	20.4
1 12	8 8.26	+13 39.3	1.335	2.305	5.1	20.4	1 12	8 6.84	+ 9 19.9	2.133	3.092	4.8	20.2
1 22	7 57.44	+14 23.0	1.340	2.321	2.8	20.3	1 22	7 58.16	+ 9 29.5	2.127	3.098	3.5	20.1
2 1	7 47.16	+15 10.6	1.374	2.335	6.9	20.5	2 1	7 49.72	+ 9 46.9	2.151	3.104	5.5	20.3
2 11	7 38.79	+15 56.9	1.434	2.350	11.4	20.8	2 11	7 42.41	+10 9.3	2.203	3.110	8.5	20.5
2 21	7 33.23	+16 38.5	1.516	2.365	15.4	21.1	2 21	7 36.87	+10 34.1	2.281	3.115	11.4	20.7
331087	2009 <i>WJ</i> ₁₅₀	1 19.0 138°63		1°7/19.9 18			411443	2010 <i>WX</i> ₄₉	1 19.0 26°99		7°2/15.4 18		
12 13	8 26.46	+13 44.7	2.154	2.930	13.9	21.6	12 13	8 27.73	+31 9.7	1.350	2.179	17.8	19.7
12 23	8 21.94	+13 55.2	2.069	2.935	10.9	21.4	12 23	8 24.60	+33 0.4	1.297	2.190	14.0	19.5
1 2	8 15.24	+14 16.2	2.007	2.939	7.4	21.2	1 2	8 17.82	+34 52.2	1.265	2.203	10.1	19.3
1 12	8 6.98	+14 46.0	1.973	2.944	3.7	21.0	1 12	8 8.30	+36 32.7	1.258	2.217	7.4	19.2
1 22	7 57.99	+15 21.7	1.967	2.948	1.9	20.9	1 22	7 57.52	+37 50.7	1.276	2.232	7.9	19.2
2 1	7 49.24	+15 59.7	1.992	2.952	5.2	21.1	2 1	7 47.35	+38 39.2	1.320	2.248	11.0	19.4
2 11	7 41.71	+16 36.9	2.045	2.956	8.8	21.3	2 11	7 39.51	+38 58.2	1.387	2.264	14.6	19.7
2 21	7 36.12	+17 10.7	2.123	2.960	12.1	21.5	2 21	7 35.05	+38 51.9	1.473	2.282	17.9	20.0
208511	2001 <i>XQ</i> ₉₀	1 19.0 105°83		0°2/18.9 18			97899	2000 <i>QO</i> ₇₄	1 19.0 146°36		0°1/19.1 18		
12 13	8 26.41	+20 23.5	2.561	3.343	11.7	21.0	12 13	8 32.64	+18 42.1	2.025	2.805	14.5	20.9
12 23	8 21.52	+20 35.1	2.482	3.355	9.0	20.8	12 23	8 26.80	+18 57.9	1.947	2.817	11.2	20.7
1 2	8 14.77	+20 51.2	2.428	3.367	5.9	20.6	1 2	8 18.48	+19 20.9	1.891	2.829	7.4	20.5
1 12	8 6.73	+21 9.2	2.403	3.379	2.4	20.4	1 12	8 8.39	+19 47.9	1.864	2.839	3.1	20.2
1 22	7 58.14	+21 26.5	2.408	3.391	1.1	20.3	1 22	7 57.51	+20 15.1	1.866	2.849	1.3	20.1
2 1	7 49.85	+21 40.8	2.444	3.402	4.6	20.6	2 1	7 47.02	+20 39.1	1.899	2.857	5.6	20.4
2 11	7 42.65	+21 50.8	2.509	3.413	7.7	20.8	2 11	7 38.01	+20 57.8	1.960	2.865	9.5	20.7
2 21	7 37.16	+21 55.8	2.600	3.424	10.5	21.0	2 21	7 31.27	+21 10.3	2.047	2.873	12.9	20.9
241076	2006 <i>TG</i> ₆₂	1 19.0 120°05		6°5/14.4 18 R			507618	2013 <i>DM</i> ₄	1 19.0 215°47		0°6/18.5 17		
12 13	8 31.08	+41 15.9	2.709	3.485	11.3	20.2	12 13	8 22.14	+22 29.2	3.814	4.591	8.3	