

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
104001 2000 DO ₉₉	15.7	X	38.50935	297.83608	96.81852	6.08518	0.1468121	0.28274068	2.2990258	20	—	—
104002 2000 DX ₉₉	15.9	X	94.10122	5.52453	45.12989	6.02986	0.1432318	0.29250441	2.2475763	20	1 24.8	18.2
104003 2000 DD ₁₀₀	16.1	X	98.26001	25.83741	24.51900	5.45310	0.1866528	0.29368081	2.2415702	20	2 7.7	18.5
104004 2000 DU ₁₀₀	15.0	X	101.89899	287.85215	1.91452	13.37803	0.1786108	0.22405259	2.6847431	20	12 17.0	19.6
104005 2000 DS ₁₀₁	15.3	X	27.84643	3.16993	125.65628	11.02607	0.0443554	0.19451798	2.9500512	20	2 4.5	19.1
104006 2000 DG ₁₀₂	15.8	X	225.53649	270.72619	129.78265	9.45509	0.0201549	0.25770833	2.4455905	20	6 21.4	19.0
104007 2000 DT ₁₀₂	15.3	X	21.30194	233.88162	113.44583	6.92525	0.0444773	0.22287509	2.6941908	20	11 14.5	18.9
104008 2000 DY ₁₀₂	16.5	X	41.55407	29.77170	34.77898	4.83251	0.1636012	0.28707887	2.2758060	20	—	—
104009 2000 DD ₁₀₃	16.0	X	75.73240	340.21512	48.01195	5.14782	0.1683754	0.28622952	2.2803058	20	—	—
104010 2000 DH ₁₀₅	15.2	X	79.95851	46.67031	301.99242	0.82469	0.1029385	0.23027208	2.6361808	20	—	—
104011 2000 DQ ₁₀₅	14.9	X	188.90643	120.31666	148.40274	14.71012	0.2393116	0.23029093	2.6360370	20	—	—
104012 2000 DV ₁₀₆	15.4	X	151.88810	331.48075	139.24001	13.41440	0.0972144	0.20848957	2.8167382	20	6 23.4	19.8
104013 2000 DL ₁₀₇	15.5	X	138.79551	144.51341	66.26338	6.80622	0.1042300	0.21806631	2.7336547	20	10 17.2	19.8
104014 2000 DR ₁₀₇	15.2	X	125.70194	219.04557	3.45338	4.42042	0.0425907	0.22164550	2.7041458	20	10 12.6	19.0
104015 2000 DF ₁₀₈	14.9	X	191.78260	155.16696	137.04062	10.31065	0.0192309	0.19052178	2.9911599	20	—	—
104016 2000 DH ₁₀₈	14.8	X	17.44286	124.09527	154.67979	13.82125	0.1345983	0.21299128	2.7769081	20	8 13.9	18.0
104017 2000 DV ₁₀₈	15.2	X	16.35795	135.21155	332.90696	7.61348	0.0574593	0.19193556	2.9764534	20	—	—
104018 2000 DF ₁₀₉	17.1	X	109.86050	90.33078	125.89059	2.31854	0.1335891	0.26465365	2.4026147	20	9 30.6	20.5
104019 2000 DT ₁₀₉	15.9	X	58.58367	253.10670	130.08488	2.32775	0.0809536	0.23327225	2.6135290	20	—	—
104020 2000 DU ₁₁₀	15.5	X	111.75862	157.80345	8.18835	4.43960	0.1324398	0.20983647	2.8046719	20	7 24.5	19.7
104021 2000 DW ₁₁₀	15.2	X	200.94808	96.56859	27.77341	24.47982	0.1794974	0.22015402	2.7163452	20	9 9.1	20.0
104022 2000 DJ ₁₁₁	16.5	X	345.76352	307.55036	134.02482	4.61980	0.1698596	0.25571675	2.4582720	20	6 19.5	18.7
104023 2000 DZ ₁₁₁	15.2	X	335.49958	321.65958	49.99764	10.53303	0.1111428	0.18586931	3.0408681	20	—	—
104024 2000 DA ₁₁₂	15.0	X	26.43387	124.08375	157.30040	7.95174	0.1547330	0.21269294	2.7795042	20	9 6.3	18.3
104025 2000 DF ₁₁₂	15.8	X	281.63422	145.21539	126.81189	9.05847	0.1164993	0.24466259	2.5317705	20	2 29.7	19.3
104026 2000 DY ₁₁₂	15.6	X	24.79610	357.12404	347.47838	10.43325	0.2401225	0.27097409	2.3651075	20	12 25.5	18.9
104027 2000 DA ₁₁₃	16.5	X	286.70576	285.37042	150.18594	2.34305	0.1752394	0.27285027	2.3542529	20	10 21.9	18.4
104028 2000 DT ₁₁₃	15.0	X	176.77647	19.48783	324.65540	10.18846	0.0823001	0.19720634	2.9231794	20	2 12.8	19.3
104029 2000 DG ₁₁₅	15.5	X	133.38064	164.03111	326.59579	2.79898	0.0365109	0.21039033	2.7997475	20	6 22.8	19.4
104030 2000 DK ₁₁₆	15.7	X	198.33389	261.14654	348.60303	10.90749	0.2626704	0.23041069	2.6351235	20	—	—
104031 2000 EA	15.1	X	248.64684	159.73220	345.15280	3.89638	0.0224755	0.22581463	2.6707588	20	12 5.1	18.7
104032 2000 ED ₁	16.5	X	191.63662	44.17731	152.64541	3.12610	0.1064830	0.27430753	2.3459076	20	12 1.5	19.7
104033 2000 EJ ₁	15.5	X	310.83285	325.38698	334.78977	10.78502	0.1346538	0.25560170	2.4590096	20	5 8.6	18.6
104034 2000 EK ₁	14.6	X	315.33541	25.22360	341.77785	3.74936	0.1260808	0.17020750	3.2246574	20	8 21.0	18.4
104035 2000 ER ₁	15.4	X	251.98321	39.71319	270.60977	0.97333	0.0509615	0.20100749	2.8862097	20	3 23.8	19.4
104036 2000 EJ ₄	15.6	X	74.62765	268.69695	4.77310	0.39460	0.1251383	0.22018193	2.7161157	20	10 27.1	19.6
104037 2000 EK ₄	16.2	X	129.06261	242.73441	159.96201	2.91795	0.0666900	0.19903546	2.9052427	20	2 29.9	20.4
104038 2000 EP ₄	16.4	X	26.80522	244.15296	150.49465	5.29966	0.1752465	0.28260208	2.2997775	20	—	—
104039 2000 EY ₅	15.2	X	3.12832	351.58751	4.53807	5.67395	0.0587748	0.21920218	2.7242030	20	10 28.5	18.5
104040 2000 EK ₆	15.2	X	56.91441	83.94043	6.28772	8.61214	0.0580644	0.19121418	2.9839347	20	1 31.0	19.2
104041 2000 EE ₈	15.5	X	315.04101	129.14601	291.79206	1.89788	0.1045661	0.22748155	2.6576958	20	11 14.1	18.5
104042 2000 EJ ₁₀	16.6	X	191.03162	177.17471	349.40898	3.55224	0.1730913	0.26937227	2.3744742	20	10 13.9	20.2
104043 2000 EU ₁₀	15.9	X	19.37422	295.73251	130.32886	9.78666	0.1351128	0.23668413	2.5883517	20	—	—
104044 2000 EA ₁₁	15.6	X	7.57292	233.47424	129.96235	6.85216	0.1122140	0.27291634	2.3538730	20	12 7.6	18.3
104045 2000 EC ₁₁	15.5	X	101.35514	124.04053	333.66474	8.67994	0.0906626	0.22057234	2.7129098	20	11 5.6	19.6
104046 2000 EW ₁₁	14.5	X	307.55191	57.81726	358.59448	16.29189	0.1269111	0.17741653	3.1367025	20	10 9.0	18.4
104047 2000 EM ₁₂	15.2	X	285.63935	144.61450	95.98462	8.21435	0.2262922	0.24155687	2.5534251	20	1 11.5	19.2
104048 2000 EL ₁₃	15.6	X	66.73710	316.11694	279.79887	3.01920	0.1238517	0.26285459	2.4135651	20	9 2.7	18.7
104049 2000 EP ₁₃	14.9	X	261.51818	211.41684	43.34594	3.23811	0.1044505	0.19262735	2.9693228	20	1 23.9	19.3
104050 2000 ET ₁₃	15.9	X	355.19395	34.74740	12.88695	4.46704	0.1974373	0.27944363	2.3170740	20	—	—
104051 2000 ET ₁₄	15.9	X	57.60946	132.73011	353.02965	1.08887	0.1313310	0.19966490	2.8991336	20	3 21.3	19.5
104052 Zachery	15.9	X	198.90639	62.58126	193.42554	12.47759	0.2220620	0.22853360	2.6495330	20	—	—
104053 2000 EE ₁₆	15.1	X	32.25753	342.02924	336.90409	7.31841	0.1536390	0.21904249	2.7255269	20	11 2.3	18.7
104054 2000 ET ₁₆	14.9	X	97.30444	143.85531	209.08819	4.27827	0.1434320	0.23269783	2.6178283	20	—	—
104055 2000 EQ ₁₇	15.2	X	54.91115	343.46778	97.19239	7.61886	0.2324375	0.24410295	2.5356387	20	1 17.5	17.1
104056 2000 ES ₁₇	16.3	X	32.43799	334.68198	76.57688	6.79704	0.1515474	0.28477468	2.2880656	20	—	—
104057 2000 EU ₁₇	14.9	X	271.57054	37.36465	126.41051	13.31104	0.0979071	0.23196272	2.6233561	20	—	—
104058 2000 EV ₁₇	15.8	X	270.91877	32.12388	79.85834	7.47915	0.0641158	0.27452863	2.3446478	20	11 30.9	18.3
104059 2000 EZ ₁₇	15.6	X	258.01055	152.89733	121.44287	14.27262	0.1337546	0.24321150	2.5418308	20	2 3.5	19.3
104060 2000 EM ₁₈	15.5	X	158.48328	57.28383	45.46335	4.98747	0.1708992	0.21060072	2.7978826	20	6 21.6	20.0
104061 2000 EP ₁₈	14.6	X	313.00821	92.30858	355.42405	8.07091	0.0737797	0.18071168	3.0984552	20	12 2.9	18.7
104062 2000 EU ₁₈	15.0	X	204.23665	355.06543	116.00216	3.73095	0.1264277	0.16927063	3.2365449	20	8 13.2	20.0
104063 2000 EX ₁₈	16.1	X	147.16959	280.15182	122.78701	3.62436	0.1558962	0.29869764	2.2164002	20	3 24.3	19.1
104064 2000 EF ₁₉	16.4	X	181.52267	233.37761	5.73425	7.07963	0.0749465	0.27725446	2.3292549	20	—	—
104065 2000 EJ ₁₉	15.2	X	223.43864	111.81149	18.22336	4.79267	0.1340234	0.17363133	3.1821257	20	9 24.6	20.0
104066 2000 EN ₂₀	14.8	X	82.51379	19.61254	242.56038	11.38696	0.1438386	0.21840144	2.7308576	20	10 21.3	19.0
104067 2000 EY ₂₀	14.5	X	37.16359	28.07012	261.10433	8.38863	0.1685956	0.21533703	2.7567046	20	10 1.5	18.1
104068 2000 EJ ₂₂	15.4	X	13.40987	326.36506	170.55700	2.14124	0.0474392	0.19568446	2.9383159	20	1 24.7	19.1
104069 2000 EU ₂₂	17.0	X	21.15674	288.42921	101.77136	0.25708	0.1392620	0.23253670	2.6190375	20	—	—
104070 2000 EM ₂₃	15.8	X	124.65842	51.92615	172.20057	2.33863	0.0240162	0.21974283	2.7197328	20	10 13.3	19.5
104071 2000 ET ₂₃	15.7	X	4.40011	84.53185	196.26777	1.73837	0.1550076	0.25532026	2.4608163	20	7 30.6	17.7
104072 2000 EU ₂₃	15.6	X	166.18709	180.91716	211.09199	1.27613	0.0759749	0.19802278	2.9151391	20	3 29.7	20.0
104073 2000 EZ ₂₄	15.1	X	250.28135	270.53557	3.51449	7.21454	0.0425858	0.19168889	2.9790063	20	2 11.2	19.4
104074 2000 ES ₂₅	16.0	X	227.82858	134.75040	3.48728	7.06161	0.1333536	0.270				

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
104081 2000 EH ₃₀	16.3	X	167.32498	100.94912	53.80028	6.57987	0.0643775	0.26527338	2.3988713	20	9 13.6	19.7
104082 2000 EQ ₃₀	15.1	X	99.83752	10.34856	111.15314	9.19048	0.1083883	0.20370470	2.8606760	20	5 12.7	19.2
104083 2000 EU ₃₀	14.1	X	70.58168	2.31712	38.58767	10.57590	0.0901836	0.18921585	3.0049070	20	—	—
104084 2000 EA ₃₂	15.9	X	36.11502	262.20953	141.47570	7.72612	0.1771420	0.28439681	2.2900918	20	—	—
104085 2000 EF ₃₂	15.7	X	285.48714	0.74803	122.57327	5.37590	0.0612188	0.22942689	2.6426512	20	12 24.8	19.0
104086 2000 EM ₃₂	14.8	X	225.49345	66.02534	141.43755	10.90245	0.0670327	0.18199408	3.0838829	20	—	—
104087 2000 EV ₃₂	15.6	X	73.99467	182.25277	132.59149	7.39232	0.1541020	0.27303281	2.3532035	20	12 30.0	19.1
104088 2000 EZ ₃₂	15.8	X	248.89450	37.35687	70.47097	2.79950	0.0203085	0.22150332	2.7053028	20	10 19.9	19.3
104089 2000 EJ ₃₃	16.4	X	144.19661	156.14497	80.85077	5.08507	0.0452750	0.27248721	2.3563437	20	12 2.7	19.5
104090 2000 ET ₃₃	15.7	X	39.27892	26.31207	79.00263	6.54463	0.1161803	0.29069634	2.2568863	20	—	—
104091 2000 EA ₃₄	14.8	X	218.67931	265.91636	28.49613	14.51171	0.1885402	0.23819857	2.5773691	20	1 24.7	19.4
104092 2000 EN ₃₄	15.1	X	260.37268	356.31508	122.73585	13.17447	0.0847991	0.22391496	2.6858431	20	11 13.9	18.8
104093 2000 EO ₃₄	16.0	X	272.04151	107.72554	125.03794	12.57233	0.2020810	0.23733572	2.5836121	20	—	—
104094 2000 EX ₃₄	16.2	X	15.48901	6.80929	71.28530	6.56642	0.1721444	0.28673217	2.2776401	20	—	—
104095 2000 EB ₃₅	14.7	X	60.72911	352.83520	231.32584	7.94058	0.1393630	0.21214904	2.7842528	20	8 4.6	18.5
104096 2000 EN ₃₅	15.5	X	294.62992	137.42870	106.88934	9.62610	0.1476312	0.24394537	2.5367305	20	2 4.8	19.0
104097 2000 EV ₃₆	14.5	X	218.44608	154.47824	116.90654	10.43304	0.1239249	0.18720332	3.0264048	20	—	—
104098 2000 EQ ₃₇	14.6	X	4.32286	318.47472	233.17074	0.97520	0.0398996	0.19700275	2.9251930	20	3 21.4	18.5
104099 2000 ER ₃₇	15.3	X	123.53754	235.19002	1.45161	6.50765	0.0885856	0.26732212	2.3865990	20	11 5.4	18.9
104100 2000 ER ₃₉	16.3	X	329.21136	157.53910	46.20355	1.62579	0.2027498	0.24191854	2.5508795	20	1 19.3	19.4
104101 2000 EK ₄₂	14.4	X	141.29916	295.68550	354.99399	10.43714	0.1102705	0.17797512	3.1301359	20	—	—
104102 2000 EB ₄₃	13.6	X	264.79110	110.57270	1.77670	4.49758	0.1702408	0.12612825	3.9378678	20	10 6.4	19.2
104103 2000 EW ₄₃	15.3	X	332.18968	70.62622	110.87119	1.78238	0.1368783	0.19055640	2.9907976	20	1 14.5	19.0
104104 2000 EB ₄₄	16.2	X	183.78466	68.59591	72.35302	1.82470	0.1440120	0.26465678	2.4025957	20	9 7.0	19.9
104105 2000 EQ ₄₄	15.0	X	188.83985	167.28816	192.60841	10.30871	0.2244760	0.24431970	2.5341388	20	3 12.2	19.3
104106 2000 ES ₄₄	16.0	X	232.90703	298.80647	314.62896	1.44730	0.2383179	0.23299156	2.6156277	20	—	—
104107 2000 EB ₄₅	16.0	X	174.94435	159.17798	344.03048	5.87194	0.1140316	0.26326841	2.4110352	20	9 1.4	19.4
104108 2000 EH ₄₅	14.9	X	313.84762	20.72496	243.98727	1.37797	0.0322868	0.19912880	2.9043347	20	4 15.9	18.8
104109 2000 EN ₄₆	15.8	X	293.65744	82.57250	3.04402	6.65381	0.0703883	0.27135600	2.3628878	20	11 25.9	18.5
104110 2000 EA ₄₇	16.2	X	116.89154	325.35866	197.98346	4.26670	0.1393663	0.25730902	2.4481200	20	7 27.6	19.9
104111 2000 EE ₄₇	14.5	X	311.08717	277.53466	6.32695	12.29289	0.0684864	0.20041705	2.8918755	20	4 28.8	18.5
104112 2000 EO ₄₇	16.1	X	326.09034	328.95345	135.78953	0.51069	0.1471658	0.27925911	2.3180946	20	—	—
104113 2000 EJ ₄₉	14.8	X	48.44558	194.41287	188.79354	14.75343	0.1010916	0.22939571	2.6428906	20	—	—
104114 2000 EO ₅₀	16.3	X	94.95145	40.63362	160.31754	2.75592	0.1378332	0.25902082	2.4373221	20	8 23.6	19.7
104115 2000 EX ₅₁	16.0	X	257.24659	317.43325	315.70450	0.95190	0.0389458	0.19455960	2.9496305	20	2 15.7	20.2
104116 2000 EF ₅₂	14.9	X	149.68245	15.91400	341.78299	1.18306	0.1083345	0.19239077	2.9717566	20	2 3.8	19.3
104117 2000 EZ ₅₂	16.2	X	62.04699	5.16335	346.86644	5.39563	0.1627821	0.27729382	2.3290345	20	—	—
104118 2000 EJ ₅₃	16.0	X	68.86695	268.09331	154.81649	5.24911	0.0346341	0.24144784	2.5541937	20	—	—
104119 2000 EF ₅₄	14.9	X	70.05968	215.53322	176.66761	14.71832	0.0471285	0.18233163	3.0800756	20	—	—
104120 2000 EL ₅₅	14.6	X	72.48712	182.62788	133.47871	7.53585	0.0626595	0.17050176	3.2209463	20	11 29.9	19.3
104121 2000 ET ₅₅	15.9	X	150.36865	132.95443	257.45637	2.64797	0.2319334	0.25210680	2.4816832	20	3 17.8	20.0
104122 2000 EG ₅₆	15.6	X	309.61482	51.99140	168.97445	6.15770	0.1552430	0.24193296	2.5507782	20	1 21.2	19.1
104123 2000 EY ₅₆	15.9	X	13.09595	133.57815	327.56418	3.19079	0.1269444	0.28636996	2.2795603	20	—	—
104124 2000 EU ₅₇	16.3	X	0.26478	311.51695	211.44523	2.73003	0.1589618	0.24258710	2.5461907	20	1 20.1	19.0
104125 2000 EC ₅₈	16.1	X	227.18398	162.40117	173.97530	24.04362	0.0746384	0.39337291	1.8447311	20	3 8.4	18.1
104126 2000 ET ₅₈	15.0	X	238.16724	276.88039	14.06136	8.85222	0.0623983	0.19175114	2.9783615	20	2 17.4	19.5
104127 2000 EG ₅₉	15.2	X	298.78993	52.78951	161.31520	0.66249	0.1424701	0.18914977	3.0056069	20	1 11.0	19.6
104128 2000 EK ₅₉	14.9	X	283.86486	133.41990	11.08340	10.75944	0.0572226	0.17943212	3.1131683	20	—	—
104129 2000 EB ₆₀	15.5	X	159.29335	101.78276	177.03918	9.77658	0.1301480	0.22814731	2.6525229	20	—	—
104130 2000 EZ ₆₀	14.9	X	176.05289	309.04718	352.67062	9.44802	0.0580634	0.18558477	3.0439755	20	—	—
104131 2000 EE ₆₁	15.8	X	241.11148	41.68631	184.27420	13.59068	0.2115234	0.23214115	2.6220117	20	—	—
104132 2000 EO ₆₁	14.3	X	54.73490	11.07874	356.75694	18.39404	0.1410576	0.17904230	3.1176853	20	—	—
104133 2000 EX ₆₂	16.2	X	234.11084	71.76858	168.63502	7.35135	0.1630268	0.23308823	2.6149044	20	—	—
104134 2000 EB ₆₃	15.2	X	202.47864	215.62018	147.40312	2.62990	0.0843286	0.19884124	2.9071341	20	4 2.5	19.5
104135 2000 EG ₆₃	15.6	X	221.77886	61.43354	29.08529	2.51884	0.1873386	0.21561387	2.7543445	20	8 3.7	19.9
104136 2000 EH ₆₃	16.5	X	286.23753	71.86917	26.32610	3.07471	0.1274671	0.27377511	2.3489480	20	11 29.0	18.6
104137 2000 EE ₆₄	16.7	X	318.51177	40.22238	73.34374	0.97136	0.1788516	0.28053985	2.3110340	20	—	—
104138 2000 EQ ₆₄	14.7	X	150.62909	175.26633	192.32846	8.40665	0.0539753	0.19200767	2.9757081	20	2 9.1	19.2
104139 2000 EA ₆₅	15.2	X	52.03185	128.31560	185.57329	8.60596	0.1792669	0.21777704	2.7360749	20	11 28.5	19.2
104140 2000 EB ₆₅	14.7	X	16.22937	294.90547	189.43131	9.43294	0.0209746	0.18955060	3.0013682	20	1 13.6	18.9
104141 2000 EE ₆₅	14.5	X	167.66036	338.04622	352.42863	8.26277	0.0446635	0.18843124	3.0132427	20	1 18.6	19.0
104142 2000 EN ₆₅	14.9	X	202.56743	344.88269	359.57957	11.72624	0.0674232	0.19524051	2.9427685	20	3 11.9	19.4
104143 2000 EU ₆₅	15.3	X	348.03653	347.11152	154.40293	1.16426	0.0971210	0.18871094	3.0102645	20	—	—
104144 2000 EP ₆₆	14.7	X	224.37305	211.95039	42.64867	3.95626	0.0372609	0.18572560	3.0424366	20	—	—
104145 2000 EW ₆₆	15.2	X	202.95421	147.46287	52.63875	1.40869	0.1525402	0.17540451	3.1606437	20	11 23.5	20.2
104146 2000 EE ₆₇	15.3	X	97.57182	77.00614	192.62757	12.27869	0.0150806	0.21977884	2.7194357	20	11 7.3	19.1
104147 2000 EH ₆₇	14.8	X	243.03854	172.92203	222.32419	1.42930	0.0650270	0.20806700	2.8205507	20	6 29.1	18.9
104148 2000 EJ ₆₇	15.9	X	142.89151	8.96627	205.46173	2.01081	0.1259599	0.21788145	2.7352007	20	10 23.5	20.2
104149 2000 ET ₆₇	15.2	X	300.90982	300.04693	184.98033	17.53481	0.1987469	0.18154660	3.0889483	20	12 23.9	19.0
104150 2000 EE ₆₈	15.1	X	29.06383	90.75079	7.65709	10.28458	0.1274970	0.18978290	2.9989185	20	—	—
104151 2000 EK ₆₈	15.3	X	328.93544	186.98744	27.87226	2.03149	0.0520242	0.19457782	2.9494463	20	3 2.8	19.1
104152 2000 EU ₆₈	15.3	X	185.81197	157.39405	40.99970	1.60461	0.1420197	0.17293762	3.1906297	20	11 6.2	20.5
104153 2000 EC ₆₉	15.2	X	196.22148	286.35869	170.20341	9.60436	0.1842774	0.21191034	2.7863432	20	7 16.3	19.9
104154 2000 EP ₆₉	14.0	X	59.96768	159.03635	186.92638	27.35199	0.1342750	0.17456143	3.1708123	20	12 27.8	

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>			
104161	2000	EQ ₇₅	15.1	X	339.10757	47.71948	89.09165	4.09339	0.1591102	0.18924543	3.0045939	20	—	—	
104162	2000	EB ₇₆	16.4	X	19.32935	80.40963	10.83760	5.47376	0.1448399	0.28788969	2.2715308	20	—	—	
104163	2000	EL ₇₆	16.0	X	262.78541	330.80816	130.18977	12.29919	0.1082317	0.27253029	2.3560954	20	11	1.2	18.9
104164	2000	EP ₇₇	14.7	X	192.36019	326.84915	347.57830	10.90545	0.0820636	0.19305558	2.9649302	20	1	27.8	19.3
104165	2000	EY ₇₇	15.0	X	338.02302	163.52975	129.20363	5.33074	0.0862160	0.20895292	2.8125727	20	6	23.9	18.3
104166	2000	EL ₇₈	14.9	X	292.69795	144.48012	351.83223	16.11209	0.0260855	0.18292264	3.0734377	20	—	—	—
104167	2000	EO ₇₉	14.9	X	274.31876	331.06040	122.05053	6.04620	0.2376118	0.17854547	3.1234664	20	9	26.5	19.1
104168	2000	EU ₇₉	15.2	X	340.22997	306.60939	14.96911	6.22871	0.0688568	0.21341374	2.7732422	20	8	10.8	18.6
104169	2000	EB ₈₀	14.3	X	212.50560	132.32173	15.12332	5.14588	0.1180498	0.17390759	3.1787548	20	10	5.2	19.2
104170	2000	EB ₈₁	16.4	X	245.25368	19.85168	129.22834	4.63438	0.1702876	0.27548278	2.3392308	20	11	28.0	19.0
104171	2000	EK ₈₁	15.9	X	150.30365	17.21106	8.12688	7.61254	0.1242907	0.29519217	2.2339125	20	3	2.0	18.9
104172	2000	EE ₈₂	15.0	X	321.70773	164.68870	14.85768	11.07501	0.0816567	0.19102520	2.9859024	20	1	7.2	19.2
104173	2000	EE ₈₃	14.3	X	344.60609	162.17972	23.86411	12.89300	0.0370972	0.19510002	2.9441810	20	2	23.4	18.4
104174	2000	EU ₈₃	15.0	X	297.42504	150.31714	135.74051	5.72803	0.0971761	0.20199520	2.8767935	20	4	15.0	18.9
104175	2000	EJ ₈₄	15.2	X	165.34103	336.36475	172.85446	13.50374	0.1415144	0.21675413	2.7446762	20	8	23.7	19.7
104176	2000	EX ₈₅	15.6	X	339.88570	28.25999	144.30737	4.41752	0.1503340	0.24043513	2.5613609	20	1	1.6	18.7
104177	2000	EO ₈₇	15.9	X	242.91991	84.58046	53.31955	3.00292	0.1599443	0.27281186	2.3544740	20	11	9.1	18.5
104178	2000	EC ₉₀	16.0	X	325.50565	4.89093	63.08431	7.83502	0.0880046	0.27615561	2.3354297	20	12	27.7	18.3
104179	2000	EZ ₉₀	14.7	X	156.56469	170.16232	194.42520	14.67901	0.1019290	0.24192953	2.5508023	20	2	9.0	18.7
104180	2000	EM ₉₁	14.9	X	137.46253	239.54215	282.39477	13.40180	0.1435957	0.21316981	2.7753574	20	8	10.0	19.4
104181	2000	EA ₉₆	15.5	X	85.99378	44.88664	26.41887	0.83598	0.0826752	0.19455109	2.9497164	20	2	15.5	19.4
104182	2000	EB ₉₆	15.9	X	281.59939	32.25465	353.93302	6.32160	0.1317860	0.26337206	2.4104026	20	8	4.5	18.6
104183	2000	EH ₉₆	16.5	X	195.63665	36.07553	132.96996	2.20267	0.1309393	0.27001660	2.3706953	20	10	27.8	20.0
104184	2000	EK ₉₆	14.5	X	200.47842	240.51400	16.86216	26.92542	0.1759703	0.17868024	3.1218956	20	—	—	—
104185	2000	EG ₉₈	15.6	X	128.89985	163.96347	148.91509	14.48523	0.1036675	0.23414648	2.6070195	20	—	—	—
104186	2000	EH ₉₈	16.1	X	211.80229	240.99306	146.81239	4.09919	0.1936807	0.21033131	2.8002713	20	5	8.1	20.8
104187	2000	EJ ₉₈	16.1	X	35.48450	124.59992	338.88271	1.39030	0.0101855	0.19366410	2.9587161	20	1	13.5	20.0
104188	2000	EW ₉₉	15.2	X	189.22812	14.26645	5.17615	1.66333	0.1045269	0.20132091	2.8832134	20	4	7.7	19.7
104189	2000	EQ ₁₀₀	16.6	X	329.05300	100.39894	306.71200	1.28096	0.2068549	0.27384290	2.3485604	20	12	13.9	18.3
104190	2000	EL ₁₀₁	16.2	X	284.23732	336.92720	338.11232	1.30768	0.0512050	0.20438518	2.8543229	20	5	9.0	20.1
104191	2000	EN ₁₀₁	15.5	X	166.81362	63.17707	340.99835	1.14781	0.0898242	0.20229841	2.8739182	20	4	14.6	19.8
104192	2000	EE ₁₀₂	15.9	X	351.43636	160.04946	213.05160	1.68831	0.0956309	0.22138522	2.7062649	20	11	8.1	18.8
104193	2000	EO ₁₀₂	15.5	X	89.47903	155.63974	197.86090	2.45240	0.0911002	0.23125385	2.6287144	20	—	—	—
104194	2000	EE ₁₀₃	14.7	X	94.02390	355.75729	352.86753	13.65318	0.1552190	0.23118034	2.6292716	20	—	—	—
104195	2000	EN ₁₀₃	14.3	X	72.44894	306.83253	68.09435	22.90735	0.0446237	0.23210173	2.6223086	20	—	—	—
104196	2000	EL ₁₀₅	15.5	X	222.09109	104.19242	127.26792	10.90365	0.0996035	0.23021311	2.6366310	20	—	—	—
104197	2000	ET ₁₀₅	14.7	X	258.14374	41.50935	61.55362	9.80010	0.0912071	0.22010437	2.7167537	20	10	17.9	18.4
104198	2000	ED ₁₀₆	14.0	X	179.30446	173.70211	155.16064	14.93635	0.0601462	0.18931621	3.0038450	20	1	26.9	18.6
104199	2000	EO ₁₀₇	15.3	X	272.06733	106.82802	151.42928	28.71504	0.2088694	0.24197401	2.5504897	20	1	21.5	19.7
104200	2000	EL ₁₀₈	14.5	X	209.20520	82.21796	204.55311	8.14937	0.0660749	0.18856027	3.0118679	20	1	8.7	19.2
104201	2000	EN ₁₀₈	15.2	X	174.19463	61.60211	14.99011	8.71889	0.1465372	0.21044333	2.7992774	20	6	1.4	19.8
104202	2000	ES ₁₀₈	14.6	X	163.68233	205.68256	47.75997	8.98715	0.1474920	0.27269721	2.3551338	20	—	—	—
104203	2000	EY ₁₀₉	15.3	X	60.20827	267.05166	5.26082	7.36393	0.0950347	0.26404495	2.4063057	20	10	10.5	18.3
104204	2000	EA ₁₁₁	14.5	X	221.71986	155.62194	18.58434	17.80165	0.1673382	0.17607723	3.1525882	20	11	5.8	19.6
104205	2000	EE ₁₁₂	15.6	X	262.49177	282.29098	204.94108	13.00577	0.1494334	0.22692537	2.6620366	20	11	14.9	18.9
104206	2000	EO ₁₁₂	15.4	X	144.90220	347.87451	108.45500	3.02366	0.0461216	0.20683792	2.8317133	20	5	24.3	19.4
104207	2000	ED ₁₁₃	15.2	X	26.50150	151.54115	134.25174	8.96285	0.2865365	0.21173651	2.7878681	20	10	7.4	18.5
104208	2000	EQ ₁₁₃	14.7	X	216.68148	261.91181	350.37575	10.04691	0.1044274	0.18395962	3.0618769	20	—	—	—
104209	2000	EN ₁₁₅	15.6	X	294.25920	228.94723	343.21675	7.35859	0.0375853	0.19135086	2.9825136	20	1	18.9	19.8
104210	Leeupton		15.1	X	48.55653	78.96445	165.64047	10.69752	0.1417579	0.20864814	2.8153110	20	8	16.8	18.8
104211	2000	EW ₁₁₆	16.6	X	241.01269	256.30114	178.19503	2.03340	0.0630317	0.26275516	2.4141739	20	8	23.1	19.6
104212	2000	ER ₁₁₇	14.5	X	199.96141	306.20258	25.17476	17.10586	0.0874236	0.19710602	2.9241711	20	2	29.2	19.7
104213	2000	EE ₁₁₈	15.0	X	91.10226	186.15849	58.77686	9.80113	0.0907710	0.21848486	2.7301624	20	10	9.8	19.0
104214	2000	EJ ₁₁₈	15.2	X	168.53296	214.82876	23.07858	12.63228	0.0748449	0.22817341	2.6523207	20	12	18.9	19.3
104215	2000	ES ₁₁₈	15.5	X	214.40533	101.61160	91.08740	9.14295	0.0543237	0.22857017	2.6492504	20	12	19.0	18.9
104216	2000	EF ₁₁₉	15.0	X	181.98100	30.76827	119.64649	14.73367	0.1397549	0.21872880	2.7281322	20	9	16.9	19.5
104217	2000	EM ₁₁₉	14.0	X	236.77437	142.04779	5.35681	17.41913	0.1623356	0.17770472	3.1333103	20	10	21.2	18.8
104218	2000	EU ₁₁₉	15.2	X	117.98024	147.76707	37.15517	9.66445	0.2086393	0.21286583	2.7779990	20	9	2.4	19.9
104219	2000	EO ₁₂₀	15.1	X	180.29775	348.58019	127.84306	11.72398	0.1939647	0.21499380	2.7596379	20	7	28.0	19.8
104220	2000	EP ₁₂₀	15.7	X	92.78671	136.95420	47.23276	6.96334	0.0844027	0.25887180	2.4382574	20	7	23.9	19.0
104221	2000	EU ₁₂₀	14.8	X	294.19715	319.90324	136.18551	11.00245	0.0739788	0.17901499	3.1180024	20	11	21.0	19.1
104222	2000	EH ₁₂₁	14.7	X	150.38215	234.20211	2.40090	11.52477	0.0773800	0.22578194	2.6710166	20	11	25.4	18.9
104223	2000	EP ₁₂₁	14.7	X	269.62495	75.56262	16.63881	12.70540	0.2368254	0.22628413	2.6670633	20	9	26.4	18.0
104224	2000	EC ₁₂₂	14.6	X	134.42047	278.97874	30.37284	3.91920	0.2021031	0.23114636	2.6295293	20	—	—	—
104225	2000	EE ₁₂₃	16.5	X	95.96980	40.62610	120.12732	0.30171	0.0449253	0.25555141	2.4593322	20	6	17.1	19.6
104226	2000	EN ₁₂₃	15.0	X	110.36675	349.51841	119.62850	3.17860	0.0210853	0.20246652	2.8723272	20	4	25.9	18.9
104227	2000	EH ₁₂₅	15.4	X	205.06050	275.73507	139.21580	6.08042	0.0702131	0.20805741	2.8206374	20	6	9.9	19.7
104228	2000	EG ₁₂₇	15.1	X	45.27264	185.99998	123.86827	5.85432	0.1019283	0.21					

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
104241 2000 <i>EB</i> ₁₃₄	15.1	X	193.09620	74.70043	79.35188	7.96644	0.1117692	0.21787975	2.7352150	20	10 4.3	19.3
104242 2000 <i>EL</i> ₁₃₄	15.8	X	275.18490	52.37978	108.41274	6.34430	0.0721860	0.27813761	2.3243217	20	—	—
104243 2000 <i>ES</i> ₁₃₄	16.5	X	179.74860	64.08336	95.56320	3.12266	0.1272317	0.26594171	2.3948505	20	9 29.1	20.0
104244 2000 <i>EX</i> ₁₃₄	14.6	X	320.56978	6.03708	152.06551	12.10600	0.0405307	0.18603351	3.0390785	20	—	—
104245 2000 <i>ED</i> ₁₃₅	15.2	X	7.27648	120.55319	141.01143	6.25248	0.0711946	0.20545315	2.8444229	20	6 28.1	18.8
104246 2000 <i>EM</i> ₁₃₅	14.7	X	218.68186	57.34625	98.74716	5.02363	0.0339680	0.22140903	2.7060709	20	11 10.8	18.4
104247 2000 <i>EH</i> ₁₃₆	14.8	X	202.75486	305.43532	17.39445	9.72741	0.0878296	0.19131739	2.9828615	20	2 18.2	19.5
104248 2000 <i>EJ</i> ₁₃₆	15.7	X	295.49033	344.73825	142.25837	2.80307	0.2099284	0.18120987	3.0927737	20	12 15.8	19.2
104249 2000 <i>EQ</i> ₁₃₆	14.5	X	16.45757	169.34469	149.49003	4.82798	0.0967202	0.21536791	2.7564411	20	10 5.5	17.9
104250 2000 <i>ET</i> ₁₃₆	16.3	X	207.45206	73.38246	156.63939	5.46522	0.2203989	0.22789236	2.6545009	20	—	—
104251 2000 <i>EJ</i> ₁₃₇	13.9	X	140.15463	248.15667	51.12327	11.94476	0.0768449	0.17866949	3.12220208	20	—	—
104252 2000 <i>EJ</i> ₁₃₈	15.5	X	120.05395	23.52335	343.28834	2.98190	0.1477713	0.19119215	2.9841639	20	1 19.3	19.8
104253 2000 <i>EK</i> ₁₃₈	15.6	X	285.50801	23.65558	351.35739	5.63507	0.0344739	0.21336145	2.7736953	20	8 4.4	19.3
104254 2000 <i>ET</i> ₁₃₉	15.0	X	300.82355	78.44719	151.15789	12.57455	0.1401955	0.24024102	2.5627403	20	1 23.8	18.5
104255 2000 <i>EJ</i> ₁₄₀	14.7	X	118.30676	70.02930	163.41318	30.16106	0.1853028	0.21926552	2.7236784	20	10 30.9	19.7
104256 2000 <i>EA</i> ₁₄₁	16.0	X	317.92690	100.78837	63.78376	5.85856	0.1129136	0.28663078	2.2781772	20	—	—
104257 2000 <i>EH</i> ₁₄₁	15.0	X	133.23400	273.47173	25.39160	10.96608	0.1805379	0.22913853	2.6448678	20	—	—
104258 2000 <i>EQ</i> ₁₄₁	13.7	X	134.55437	124.58293	164.07831	16.83579	0.1630427	0.17681356	3.1438296	20	—	—
104259 2000 <i>EK</i> ₁₄₂	16.0	X	227.72652	104.65794	320.39758	2.47057	0.1829737	0.21675202	2.7446941	20	—	—
104260 2000 <i>EF</i> ₁₄₄	14.5	X	226.51613	278.91463	262.87140	11.12729	0.1154756	0.17882406	3.1202214	20	11 30.4	19.0
104261 2000 <i>ES</i> ₁₄₄	15.8	X	291.89454	90.60951	212.93394	1.35443	0.0528882	0.20391182	2.8587386	20	5 4.5	19.5
104262 2000 <i>EY</i> ₁₄₄	15.0	X	330.17413	47.43849	335.64769	5.72208	0.0317938	0.21851541	2.7299079	20	10 14.4	18.6
104263 2000 <i>EZ</i> ₁₄₄	14.4	X	206.60057	11.18370	189.98856	15.02633	0.1455823	0.17610850	3.1522150	20	11 30.3	19.5
104264 2000 <i>EW</i> ₁₄₅	14.7	X	214.76837	337.65748	130.95551	14.30185	0.1256357	0.21799265	2.7342705	20	8 26.3	18.8
104265 2000 <i>EK</i> ₁₄₆	15.6	X	265.38907	283.84219	214.04711	12.61555	0.1257679	0.22786419	2.6547196	20	12 6.2	19.0
104266 2000 <i>EW</i> ₁₄₆	15.1	X	247.08149	319.58474	119.97872	13.86346	0.1367859	0.21851278	2.7299299	20	8 25.2	19.0
104267 2000 <i>EM</i> ₁₄₇	13.9	X	94.72755	16.71435	355.54831	7.92587	0.0797073	0.18369454	3.0648217	20	—	—
104268 2000 <i>EA</i> ₁₄₈	14.1	X	168.82102	107.07973	191.23000	9.42678	0.0912082	0.18187772	3.0851981	20	—	—
104269 2000 <i>EK</i> ₁₄₈	13.8	X	278.86171	313.54281	183.94644	15.64197	0.0407800	0.17720488	3.1391996	20	12 20.7	18.4
104270 2000 <i>EC</i> ₁₄₉	16.1	X	65.38193	42.87730	18.43129	4.04582	0.1742376	0.29120836	2.2542400	20	—	—
104271 2000 <i>EF</i> ₁₄₉	15.4	X	183.77185	207.69904	130.88809	10.04334	0.0656126	0.24370620	2.5383899	20	2 7.4	19.0
104272 2000 <i>ES</i> ₁₄₉	14.6	X	197.30451	190.43536	121.55215	11.05051	0.0794550	0.19139888	2.9820147	20	1 27.3	19.1
104273 2000 <i>EU</i> ₁₄₉	15.6	X	162.42909	58.04808	140.23860	13.53194	0.0976491	0.21978294	2.7194019	20	10 28.5	20.0
104274 2000 <i>EU</i> ₁₅₀	16.4	X	210.44143	356.91918	145.71330	2.55500	0.1529739	0.26937307	2.3744695	20	10 7.2	19.8
104275 2000 <i>EW</i> ₁₅₀	14.7	X	315.55322	73.82745	144.84686	2.09091	0.0626528	0.19411611	2.9541214	20	2 16.8	18.7
104276 2000 <i>EL</i> ₁₅₁	15.3	X	353.47155	302.61141	120.44302	15.40583	0.0828327	0.23194906	2.6234592	20	—	—
104277 2000 <i>ER</i> ₁₅₁	14.7	X	161.28830	270.93751	263.58448	9.74592	0.1174899	0.21931744	2.7232485	20	9 17.3	19.2
104278 2000 <i>EK</i> ₁₅₂	16.1	X	120.58018	0.13791	188.78914	6.46534	0.0677950	0.26242943	2.4161711	20	8 29.5	19.4
104279 2000 <i>EE</i> ₁₅₃	14.6	X	273.47963	95.46003	198.10390	1.65383	0.0487334	0.19891538	2.9064118	20	3 29.6	18.7
104280 2000 <i>ED</i> ₁₅₄	14.7	X	345.64915	108.20082	45.87831	9.46725	0.0335371	0.19025413	2.9939646	20	1 12.8	18.9
104281 2000 <i>ET</i> ₁₅₄	14.8	X	82.87521	128.81666	153.94856	15.63197	0.1740221	0.21612405	2.7500081	20	11 24.3	19.4
104282 2000 <i>EK</i> ₁₅₅	15.7	X	300.36210	186.72754	318.64964	8.69134	0.1150107	0.28105399	2.3082147	20	—	—
104283 2000 <i>EL</i> ₁₅₅	15.0	X	255.25193	3.02558	220.47949	9.45134	0.0722700	0.18594942	3.0399947	20	—	—
104284 2000 <i>EU</i> ₁₅₅	16.6	X	308.22779	36.94198	225.08523	5.68234	0.1671048	0.29443262	2.2377527	20	3 3.4	19.2
104285 2000 <i>EH</i> ₁₅₆	14.2	X	71.42184	209.33940	243.80272	8.22562	0.0204514	0.19278167	2.9677380	20	2 12.0	18.4
104286 2000 <i>EF</i> ₁₅₇	14.4	X	179.42693	163.53684	135.00404	18.62603	0.1789292	0.18083632	3.0970314	20	—	—
104287 2000 <i>EM</i> ₁₅₇	14.6	X	174.26836	100.41883	113.84966	19.66387	0.1472743	0.17156393	3.2076384	20	11 20.1	20.1
104288 2000 <i>EC</i> ₁₅₈	14.2	X	186.57822	237.26960	335.74025	13.99545	0.1319780	0.17419923	3.1752059	20	11 20.7	19.5
104289 2000 <i>EW</i> ₁₅₈	14.9	X	169.78412	6.85748	213.76822	14.74463	0.0551088	0.22276479	2.6950801	20	11 30.8	18.9
104290 2000 <i>EB</i> ₁₆₄	15.9	X	246.40587	80.31581	171.83411	8.99419	0.2252765	0.23588905	2.5941646	20	—	—
104291 2000 <i>EU</i> ₁₆₄	16.0	X	221.76812	104.96070	177.01771	7.32713	0.1873235	0.23672839	2.5880291	20	1 7.7	20.4
104292 2000 <i>EC</i> ₁₆₅	14.7	X	249.04478	207.15022	355.71071	11.11915	0.0616538	0.18334259	3.0687427	20	—	—
104293 2000 <i>EN</i> ₁₆₆	15.1	X	232.75151	114.59129	23.83267	13.93041	0.1480126	0.22472044	2.6794212	20	10 19.5	18.7
104294 2000 <i>ER</i> ₁₆₈	15.2	X	116.57457	16.15202	92.49387	12.29895	0.1019053	0.20418227	2.8562137	20	5 15.5	19.5
104295 2000 <i>EH</i> ₁₆₉	14.1	X	109.24087	227.98238	59.13043	13.50479	0.1710580	0.22439846	2.6819837	20	12 19.8	18.5
104296 2000 <i>ET</i> ₁₆₉	14.5	X	113.66321	315.41705	36.51706	17.36151	0.0967430	0.18632435	3.0359153	20	—	—
104297 2000 <i>EK</i> ₁₇₁	15.0	X	357.62419	307.90448	135.64458	15.67543	0.0791001	0.23205092	2.6226913	20	—	—
104298 2000 <i>EG</i> ₁₇₂	16.0	X	85.84071	243.26745	169.94181	5.08396	0.1758311	0.28917981	2.2647698	20	1 17.5	18.1
104299 2000 <i>EM</i> ₁₇₃	15.4	X	333.17599	146.95122	55.34219	13.89092	0.1143184	0.24427547	2.5344447	20	2 11.3	18.7
104300 2000 <i>ET</i> ₁₇₄	16.1	X	126.21811	265.03786	249.66443	7.78960	0.2381088	0.21153154	2.7896687	20	7 28.9	21.0
104301 2000 <i>EZ</i> ₁₇₅	15.5	X	115.12133	184.77420	155.17767	14.29324	0.1665846	0.23442613	2.6049459	20	—	—
104302 2000 <i>ED</i> ₁₇₈	16.7	X	304.09568	16.62690	77.30066	2.65270	0.1353613	0.27685355	2.3315031	20	12 29.3	18.5
104303 2000 <i>EA</i> ₁₇₉	14.8	X	83.21591	99.79486	93.79006	9.74121	0.1571825	0.21025655	2.8009350	20	7 30.9	18.8
104304 2000 <i>EM</i> ₁₇₉	15.3	X	305.55383	223.35392	11.18503	14.97170	0.0819657	0.24633875	2.5202728	20	2 20.5	18.8
104305 2000 <i>EH</i> ₁₈₃	15.7	X	18.61908	245.50600	26.29279	12.04559	0.1619437	0.25777974	2.4451389	20	8 23.9	18.4
104306 2000 <i>EM</i> ₁₈₅	15.8	X	127.87518	321.97980	46.89419	8.38771	0.1480666	0.28947299	2.2632404	20	1 16.5	18.7
104307 2000 <i>EO</i> ₁₈₆	14.3	X	338.05697	48.62030	6.64050	16.54823	0.2326400	0.18018051	3.1045418	20	12 3.3	17.7
104308 2000 <i>ES</i> ₁₈₆	15.8	X	138.59458	193.82215	146.86850	8.99196	0.1527332	0.24052437	2.5607272	20	—	—
104309 2000 <i>EL</i> ₁₉₂	15.4	X	296.35747	157.41347	302.96724	2.68165	0.0853991	0.17818615	3.1276640	20	11 24.3	19.5
104310 2000 <i>ER</i> ₁₉₄	15.8	X	265.96412	45.99789	1.20242	5.56006	0.0766539	0.21473460	2.7618581	20	8 14.7	19.5
104311 2000 <i>EY</i> ₁₉₅	15.9	X	285.14868	201.64285	143.64660	2.43077	0.0707383	0.20805244	2.8206823	20	6 17.3	19.7</

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
104321 2000 <i>FD</i> ₃	15.9	X	349.87104	37.22808	126.02661	5.71739	0.1524253	0.24123884	2.5556687	20	1 4.3	18.6
104322 2000 <i>FF</i> ₄	15.1	X	99.21753	355.53410	337.38504	2.15062	0.0610111	0.17808859	3.1288061	20	—	—
104323 2000 <i>FT</i> ₄	16.0	X	332.95707	339.23278	19.00033	1.56701	0.1999348	0.26209607	2.4182195	20	9 28.2	17.4
104324 2000 <i>FX</i> ₄	14.7	X	314.37269	297.55419	14.49816	14.46178	0.2952214	0.20135585	2.8828799	20	5 6.3	18.2
104325 2000 <i>FM</i> ₆	15.9	X	340.11104	113.13737	35.77291	1.87468	0.0177601	0.18623997	3.0368322	20	—	—
104326 2000 <i>FU</i> ₆	15.0	X	346.44760	210.33238	170.82277	5.06811	0.1741976	0.17709105	3.1405447	20	11 5.3	18.5
104327 2000 <i>FA</i> ₇	16.1	X	201.80152	253.62407	210.67371	1.99724	0.0458836	0.21177452	2.7875344	20	8 9.9	20.0
104328 2000 <i>FW</i> ₇	14.6	X	25.81979	49.29895	85.71052	14.22857	0.0469125	0.19151376	2.9808221	20	2 13.6	18.7
104329 2000 <i>FN</i> ₈	14.0	X	108.32747	171.54805	178.11850	7.09273	0.1155968	0.18041045	3.1019033	20	—	—
104330 2000 <i>FY</i> ₈	15.1	X	349.96649	155.49752	356.89616	1.79849	0.1044582	0.18834464	3.0141662	20	1 8.7	18.9
104331 2000 <i>FA</i> ₉	15.4	X	296.43191	277.04939	212.02520	4.41324	0.1180265	0.17853500	3.1235885	20	12 27.7	19.2
104332 2000 <i>FD</i> ₉	16.4	X	61.06145	17.05842	215.28389	2.18346	0.1308968	0.25576023	2.4579934	20	8 21.8	19.4
104333 2000 <i>FO</i> ₉	16.1	X	260.44396	182.66070	182.81392	1.41310	0.0796055	0.20543912	2.8445525	20	6 9.8	20.2
104334 2000 <i>FF</i> ₁₀	15.0	X	256.91826	161.85410	161.10015	2.25588	0.0823773	0.19828078	2.9126098	20	4 12.1	19.1
104335 2000 <i>FF</i> ₁₁	14.8	X	193.82969	79.54400	17.87151	15.62678	0.2204010	0.21513278	2.7584492	20	7 19.4	19.8
104336 2000 <i>FM</i> ₁₂	13.6	X	164.75228	354.72794	56.39535	17.32174	0.1033182	0.15470336	3.4366572	20	4 27.6	19.0
104337 2000 <i>FT</i> ₁₂	14.7	X	245.97709	178.23766	39.08567	15.19816	0.1325817	0.23342104	2.6124183	20	—	—
104338 2000 <i>FA</i> ₁₃	14.4	X	253.77132	36.80300	52.09284	16.96526	0.1193870	0.17164660	3.2066084	20	9 18.5	19.3
104339 2000 <i>FF</i> ₁₃	14.9	X	13.40663	340.43326	91.87403	14.94770	0.1346794	0.23312115	2.6146582	20	—	—
104340 2000 <i>FN</i> ₁₃	15.5	X	351.95253	43.39594	109.10191	13.19894	0.1904439	0.24066557	2.5597256	20	—	—
104341 2000 <i>FR</i> ₁₃	15.1	X	117.20051	135.02193	131.85821	16.69612	0.2095518	0.21999234	2.7176760	20	12 7.5	20.0
104342 2000 <i>FH</i> ₁₅	15.1	X	289.15833	203.98489	22.89226	27.50409	0.2104805	0.23784853	2.5798972	20	—	—
104343 2000 <i>FW</i> ₁₅	15.6	X	246.62462	146.93159	92.11891	6.22928	0.2568956	0.23409452	2.6074053	20	—	—
104344 2000 <i>FX</i> ₁₅	15.7	X	158.67471	115.61062	36.05118	9.55326	0.0972048	0.21398211	2.7683293	20	8 26.2	20.1
104345 2000 <i>FD</i> ₁₆	14.5	X	200.57831	70.66939	153.38224	16.28410	0.2290437	0.17741855	3.1366786	20	12 14.8	19.9
104346 2000 <i>FY</i> ₁₆	14.4	X	196.84609	223.25276	16.50005	27.55127	0.1442434	0.17940663	3.1134631	20	—	—
104347 2000 <i>FZ</i> ₁₆	15.7	X	302.20959	103.68662	72.09304	4.79169	0.1278155	0.28454167	2.2893145	20	—	—
104348 2000 <i>FL</i> ₁₇	15.1	X	265.24947	225.97869	35.55332	15.30362	0.0600688	0.24164031	2.5528373	20	2 9.1	19.0
104349 2000 <i>FO</i> ₁₇	16.0	X	313.04427	32.67968	114.68854	6.54212	0.0794862	0.28257876	2.2999040	20	—	—
104350 2000 <i>FB</i> ₁₈	15.0	X	104.74490	81.33628	43.84543	15.45421	0.1060199	0.20303367	2.8669756	20	5 18.1	19.2
104351 2000 <i>FF</i> ₁₈	15.3	X	334.79902	320.72484	136.76314	14.03523	0.0203327	0.22921239	2.6442996	20	—	—
104352 2000 <i>FP</i> ₁₈	15.1	X	95.31666	150.47512	125.44276	10.07848	0.1835796	0.21791707	2.7349027	20	11 27.4	19.6
104353 2000 <i>FR</i> ₁₉	14.5	X	153.05052	166.23316	141.84390	13.58868	0.0833804	0.18289643	3.0737312	20	—	—
104354 2000 <i>FX</i> ₁₉	14.6	X	300.24327	152.82006	67.79395	10.70095	0.0859275	0.19159406	2.9799892	20	1 30.6	18.9
104355 2000 <i>FF</i> ₂₀	14.5	X	44.93772	39.57164	50.98340	10.70286	0.0112102	0.18912295	3.0058910	20	1 11.3	18.8
104356 2000 <i>FM</i> ₂₀	15.5	X	123.82623	178.76669	143.09266	9.57125	0.0800253	0.23001546	2.6381412	20	—	—
104357 2000 <i>FO</i> ₂₀	14.8	X	53.99209	103.12101	155.26884	13.49290	0.1779857	0.21056378	2.7982097	20	9 21.0	18.5
104358 2000 <i>FT</i> ₂₀	15.8	X	359.74354	48.80673	113.69157	5.78773	0.1316123	0.24200038	2.5503044	20	1 22.9	18.3
104359 2000 <i>FV</i> ₂₀	15.3	X	99.67380	83.79085	141.89116	9.60609	0.1034090	0.21367675	2.7709660	20	9 24.3	19.4
104360 2000 <i>FK</i> ₂₁	14.7	X	123.94216	269.87554	38.74921	15.25130	0.1591997	0.22705081	2.6610560	20	—	—
104361 2000 <i>FV</i> ₂₁	14.8	X	58.06824	9.40898	91.29847	11.78715	0.0640248	0.19260036	2.9696002	20	2 15.5	18.8
104362 2000 <i>FS</i> ₂₂	16.2	X	288.67364	48.94297	53.14361	2.86177	0.1631790	0.27415107	2.3468001	20	12 7.1	17.9
104363 2000 <i>FH</i> ₂₃	14.6	X	197.23231	156.70352	83.55454	12.16895	0.0329690	0.17929394	3.1147675	20	—	—
104364 2000 <i>FK</i> ₂₆	14.8	X	310.02553	223.10015	147.32055	5.39743	0.0829840	0.21305154	2.7763844	20	8 27.1	18.2
104365 2000 <i>FP</i> ₂₆	15.7	X	261.92813	273.74362	21.53798	8.22149	0.1556394	0.24301139	2.5432260	20	3 4.8	19.5
104366 2000 <i>FC</i> ₂₇	15.2	X	329.50415	41.13674	68.83464	2.01224	0.1212242	0.18204484	3.0833096	20	—	—
104367 2000 <i>FG</i> ₂₇	14.0	X	129.12059	301.61599	10.42653	22.24169	0.1618408	0.17750453	3.1356657	20	—	—
104368 2000 <i>FL</i> ₂₇	15.3	X	5.85164	178.82436	13.25427	1.93522	0.0208466	0.19608481	2.9343151	20	3 25.1	19.1
104369 2000 <i>FT</i> ₂₇	15.0	X	46.93757	219.28373	237.33839	1.60662	0.0426598	0.18978394	2.9989075	20	1 21.2	19.1
104370 2000 <i>FV</i> ₂₇	14.9	X	238.46093	243.57821	352.38852	8.56401	0.0909225	0.18377925	3.0638798	20	—	—
104371 2000 <i>FH</i> ₂₉	14.9	X	211.57315	194.04679	6.12291	10.26131	0.1895311	0.17567295	3.1574232	20	11 25.9	20.1
104372 2000 <i>FT</i> ₂₉	14.9	X	233.34440	142.13694	24.50424	5.52020	0.1084697	0.17534644	3.1613415	20	11 19.5	19.4
104373 2000 <i>FV</i> ₂₉	16.2	X	237.39025	249.66770	16.34442	16.55688	0.2344281	0.23411177	2.6072772	20	1 2.9	21.0
104374 2000 <i>FN</i> ₃₀	14.6	X	3.42826	333.60644	153.83948	8.10499	0.1262330	0.18876881	3.0096493	20	—	—
104375 2000 <i>FE</i> ₃₁	14.7	X	155.13615	10.90473	109.78280	10.04905	0.1032514	0.20993583	2.8037869	20	7 9.0	19.1
104376 2000 <i>FC</i> ₃₂	14.6	X	325.25341	95.27208	104.29936	11.96734	0.0503264	0.19254472	2.9701723	20	2 9.7	18.7
104377 2000 <i>FF</i> ₃₂	14.8	X	265.89674	336.86937	152.42787	6.03490	0.1364684	0.17677905	3.1442387	20	11 13.3	19.1
104378 2000 <i>FR</i> ₃₃	14.6	X	191.63000	232.45986	45.26386	16.78660	0.1135337	0.23283096	2.6168303	20	—	—
104379 2000 <i>FB</i> ₃₄	14.6	X	259.39544	347.69632	35.37801	5.64762	0.0430421	0.20810904	2.8201708	20	7 7.9	18.6
104380 2000 <i>FP</i> ₃₄	15.9	X	218.60071	155.33236	47.19659	7.37650	0.0530359	0.27552420	2.3389964	20	—	—
104381 2000 <i>FW</i> ₃₄	15.4	X	195.41232	161.66908	143.17414	5.08840	0.1782499	0.23465102	2.6032812	20	1 13.4	19.6
104382 2000 <i>FA</i> ₃₅	15.4	X	86.99589	186.66316	61.11191	3.59594	0.1378794	0.21355360	2.7720312	20	10 10.5	19.4
104383 2000 <i>FD</i> ₃₆	14.6	X	198.37083	91.07575	44.90699	10.68024	0.0477183	0.21551121	2.7552191	20	9 22.3	18.6
104384 2000 <i>FF</i> ₃₆	15.9	X	321.96454	306.65501	146.43743	7.48139	0.0618087	0.27548295	2.3392299	20	—	—
104385 2000 <i>FL</i> ₃₆	16.0	X	347.64743	289.17225	158.13191	7.00541	0.0729768	0.27826465	2.3236142	20	—	—
104386 2000 <i>FV</i> ₃₆	16.0	X	155.89518	330.04713	173.66295	6.01265	0.0803524	0.25959560	2.4337231	20	8 10.5	19.4
104387 2000 <i>FY</i> ₃₆	16.4	X	224.09331	338.46981	172.80413	7.90223	0.1429098	0.27066040	2.3669345	20	11 6.4	19.6
104388 2000 <i>FZ</i> ₃₆	14.3	X	251.03002	113.97900	176.78061	10.79868	0.0841560	0.19251371	2.9704912	20	2 24.3	18.7
104389 2000 <i>FP</i> ₃₈	15.1	X	270.30822	255.70177	165.15488	6.10096	0.0745142	0.21473110	2.7618881	20	9 6.5	18.8
104390 2000 <i>FR</i> ₃₈	15.3	X	110.65101	34.35361	184.03246	10.90794	0.1656239	0.21291579	2.7775644	20	9 29.2	19.5
104391 2000 <i>FX</i> ₃₈	15.7	X	226.78498	165.40587	128.16265	4.22181	0.0991309	0.23805018	2.5784401	20	1 28.7	19.6
104392 2000 <i>FW</i> ₃₉	14.7	X	130.94632	215.56910	178.79177	14.68017	0.1121280	0.1917830				

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
104401 2000 <i>FY</i> ₄₅	14.4	X	327.00600	230.81201	139.59209	12.05116	0.1274943	0.21501383	2.7594665	20	9 26.3	17.5
104402 2000 <i>FU</i> ₄₆	15.4	X	345.20871	167.54997	42.09432	15.99203	0.0288075	0.24465985	2.5317894	20	3 22.7	18.8
104403 2000 <i>FG</i> ₄₇	15.9	X	321.47870	22.98532	163.79596	13.29079	0.1934950	0.23865787	2.5740613	20	—	—
104404 2000 <i>FH</i> ₄₇	14.5	X	89.73169	184.56079	151.89636	12.59713	0.1916473	0.22460300	2.6803552	20	—	—
104405 2000 <i>FJ</i> ₄₈	14.6	X	69.28346	243.61573	66.62570	11.11336	0.2507320	0.21730659	2.7400224	20	12 17.4	19.0
104406 2000 <i>FN</i> ₅₁	15.0	X	74.61531	332.38556	19.32504	3.06466	0.2122637	0.17620931	3.1510127	20	—	—
104407 2000 <i>FP</i> ₅₁	15.3	X	296.48006	55.03271	13.15205	11.46273	0.3187660	0.17556219	3.1587509	20	9 14.9	18.9
104408 2000 <i>FD</i> ₅₂	15.6	X	114.21386	162.12556	215.58854	0.54283	0.1267296	0.18769597	3.0211069	20	1 22.8	19.7
104409 2000 <i>FM</i> ₅₅	15.3	X	338.63859	140.02218	127.03884	2.99512	0.0146572	0.20290951	2.8681451	20	5 25.5	19.1
104410 2000 <i>FF</i> ₅₆	16.0	X	277.21176	312.48223	141.53291	5.93450	0.1289642	0.27113658	2.3641624	20	11 8.4	18.4
104411 2000 <i>FM</i> ₅₆	15.5	X	263.02565	168.34470	115.83709	5.06274	0.1666415	0.24121136	2.5558629	20	2 18.4	19.4
104412 2000 <i>FT</i> ₅₆	16.1	X	266.87352	178.30585	79.94463	5.21816	0.1392983	0.23858676	2.5745726	20	1 24.1	19.9
104413 2000 <i>FV</i> ₅₆	14.5	X	177.41226	123.04234	171.87547	8.79861	0.0263494	0.18328972	3.0693328	20	—	—
104414 2000 <i>FZ</i> ₅₆	14.1	X	219.66894	325.38824	329.95011	10.03928	0.0862872	0.19154063	2.9805433	20	1 31.3	18.8
104415 2000 <i>FG</i> ₅₇	15.0	X	309.61580	143.45751	102.67314	3.16171	0.0362846	0.19712187	2.9240144	20	3 19.3	19.0
104416 2000 <i>FS</i> ₅₇	14.7	X	287.32552	68.06046	24.18612	9.36658	0.0643249	0.17421228	3.1750473	20	11 2.2	19.0
104417 2000 <i>FT</i> ₅₇	14.6	X	202.34103	193.53264	93.50913	5.27022	0.0585267	0.18694528	3.0291890	20	1 3.5	19.0
104418 2000 <i>FB</i> ₅₈	15.7	X	255.05309	94.32784	122.65064	4.99407	0.1927545	0.23315260	2.6144231	20	—	—
104419 2000 <i>FN</i> ₅₈	15.1	X	81.85843	206.73875	78.92330	16.23095	0.1078981	0.21806891	2.7336330	20	11 19.7	19.2
104420 2000 <i>FT</i> ₅₈	14.9	X	326.33243	117.06495	106.63353	11.05369	0.1093678	0.18549790	3.0449259	20	—	—
104421 2000 <i>FG</i> ₅₉	14.7	X	237.35552	224.19508	56.12734	14.88515	0.1239759	0.23909644	2.5709126	20	1 25.1	18.9
104422 2000 <i>FJ</i> ₅₉	15.2	X	189.08649	58.59915	48.11962	12.48118	0.1316544	0.21182265	2.7871122	20	7 29.3	19.8
104423 2000 <i>FA</i> ₆₀	14.9	X	359.46834	309.50335	159.03723	12.89188	0.0320923	0.18495853	3.0508427	20	—	—
104424 2000 <i>FS</i> ₆₀	14.7	X	28.49262	244.96346	168.19748	11.08585	0.1052299	0.18176344	3.0864910	20	—	—
104425 2000 <i>FG</i> ₆₁	14.6	X	339.47564	46.64620	58.91504	14.51692	0.1207655	0.18263794	3.0766308	20	—	—
104426 2000 <i>FR</i> ₆₁	15.9	X	333.99089	231.92685	63.86281	9.39288	0.1365117	0.25264290	2.4781712	20	6 18.4	18.4
104427 2000 <i>FE</i> ₆₂	14.4	X	171.77440	162.43874	167.90189	10.33646	0.0868086	0.18909786	3.0061569	20	1 22.2	19.0
104428 2000 <i>FK</i> ₆₂	14.7	X	278.77881	306.33001	198.74318	13.60229	0.0698070	0.17945000	3.1129615	20	12 26.3	19.1
104429 2000 <i>FE</i> ₆₃	14.6	X	145.72502	199.50669	214.97321	9.01447	0.0684524	0.19754513	2.9198363	20	4 2.4	18.8
104430 2000 <i>FD</i> ₆₄	15.3	X	85.15594	67.69451	139.36798	5.13581	0.0094026	0.20950371	2.8076409	20	7 28.1	19.2
104431 2000 <i>FP</i> ₆₄	16.3	X	60.85124	285.77989	309.35891	6.13663	0.1491326	0.25661658	2.4525220	20	8 27.8	19.5
104432 2000 <i>FX</i> ₆₄	14.5	X	262.21118	242.82641	329.79547	8.75996	0.0419253	0.18392329	3.0622800	20	—	—
104433 2000 <i>FT</i> ₆₆	16.4	X	11.47106	190.96394	34.11602	2.31541	0.0305126	0.20055157	2.8905823	20	5 14.1	20.1
104434 2000 <i>FT</i> ₆₆	16.3	X	18.96224	271.62996	351.03935	6.91742	0.0992390	0.25674233	2.4517211	20	7 27.9	19.0
104435 2000 <i>FD</i> ₆₇	15.9	X	139.84805	288.05150	164.35348	2.65642	0.1603349	0.20509162	2.8477647	20	5 22.6	20.3
104436 2000 <i>FG</i> ₆₈	14.9	X	75.98245	19.12501	22.65214	9.59716	0.1705877	0.18608789	3.0384864	20	1 10.9	18.8
104437 2000 <i>FL</i> ₇₂	15.9	X	320.67523	336.34322	1.97819	7.71983	0.1355683	0.25954615	2.4340322	20	8 2.5	18.3
104438 2000 <i>FH</i> ₇₃	15.4	X	344.77907	146.25350	188.47915	5.28950	0.0442475	0.21424289	2.7660823	20	9 1.3	18.9
104439 2000 <i>FW</i> ₇₃	14.8	X	233.17548	211.84756	100.67147	13.16136	0.0109181	0.19671024	2.9280921	20	3 15.1	19.1
104440 2000 <i>GC</i> ₇₄	14.9	X	344.75428	310.17168	37.98916	6.23253	0.0561435	0.21611411	2.7500925	20	9 23.9	18.3
104441 2000 <i>QQ</i> ₇₄	14.7	X	178.66578	235.41072	170.88539	2.11416	0.0618328	0.20059521	2.8901630	20	4 30.3	19.0
104442 2000 <i>GB</i> ₁	16.7	X	133.63533	143.44071	149.36714	24.15398	0.0336479	0.37369309	1.9089417	20	—	—
104443 2000 <i>GS</i> ₂	14.4	X	179.08766	291.04181	21.63723	11.47511	0.1254120	0.18543443	3.0456206	20	1 14.9	19.4
104444 2000 <i>GR</i> ₃	15.2	X	38.45134	249.49076	208.73290	20.31474	0.3158025	0.28871718	2.2671885	20	—	—
104445 2000 <i>GA</i> ₄	15.3	X	335.22286	201.28406	149.98015	2.33230	0.1412594	0.20983246	2.8047077	20	9 9.3	18.1
104446 2000 <i>GT</i> ₄	16.0	X	7.89697	262.48897	50.11268	22.37584	0.0720818	0.35733206	1.9667752	20	10 17.6	18.1
104447 2000 <i>GP</i> ₅	15.8	X	4.38298	128.18512	307.67648	4.00766	0.1495956	0.28183436	2.3039520	20	—	—
104448 2000 <i>GE</i> ₆	15.0	X	131.80216	68.00133	26.08157	6.31979	0.0132380	0.20125057	2.8838852	20	4 30.5	19.1
104449 2000 <i>GK</i> ₆	15.3	X	125.08734	94.39719	188.71920	13.80288	0.2339901	0.22138075	2.7063013	20	12 28.8	20.3
104450 2000 <i>GT</i> ₆	15.0	X	237.69709	188.72055	23.37699	11.37474	0.0401098	0.18114290	3.0933560	20	—	—
104451 2000 <i>GJ</i> ₇	15.7	X	177.77184	111.97481	353.91201	7.20585	0.0660448	0.20994106	2.8037404	20	7 16.1	19.9
104452 2000 <i>GK</i> ₇	14.9	X	278.82085	158.91728	186.53732	9.22286	0.1434302	0.20514495	2.8472711	20	5 29.7	19.0
104453 2000 <i>GS</i> ₇	14.0	X	259.96202	37.80872	59.67423	15.46430	0.2632333	0.22033533	2.7148549	20	9 22.2	18.0
104454 2000 <i>GU</i> ₇	15.1	X	278.20784	117.39479	59.14598	14.85077	0.0760973	0.22988277	2.6391562	20	—	—
104455 2000 <i>GC</i> ₈	15.8	X	241.34798	27.21490	184.04073	14.23420	0.1962425	0.23147207	2.6270620	20	—	—
104456 2000 <i>GG</i> ₈	16.5	X	171.49112	190.89928	341.67342	0.77772	0.1232740	0.26708556	2.3880080	20	10 5.7	20.1
104457 2000 <i>GL</i> ₈	17.0	X	254.94718	201.21873	354.64221	2.25621	0.1610387	0.28031797	2.3122534	20	—	—
104458 2000 <i>GG</i> ₉	15.4	X	343.66776	175.04631	178.88243	5.96884	0.1383285	0.26636064	2.3923388	20	10 14.3	17.5
104459 2000 <i>GJ</i> ₉	16.4	X	249.17442	299.54463	189.17266	5.87943	0.0491572	0.27203466	2.3589563	20	11 23.8	19.2
104460 2000 <i>GF</i> ₁₀	15.6	X	48.43788	155.93988	112.48679	1.60324	0.0253556	0.21356484	2.7719339	20	9 2.6	19.2
104461 2000 <i>GL</i> ₁₀	15.9	X	120.04265	222.12553	15.21201	4.03744	0.0631314	0.21882439	2.7273376	20	10 25.6	19.9
104462 2000 <i>GO</i> ₁₀	14.3	X	159.05805	321.32339	4.07270	11.29865	0.1411710	0.18602276	3.0391956	20	1 11.9	19.3
104463 2000 <i>GW</i> ₁₂	15.1	X	311.97147	341.83396	24.82788	4.24766	0.0814609	0.21334575	2.7738313	20	8 26.8	18.5
104464 2000 <i>GR</i> ₁₃	14.7	X	56.21096	43.17603	9.18299	15.43645	0.0904473	0.18571793	3.0425204	20	—	—
104465 2000 <i>GS</i> ₁₃	16.8	X	240.60927	106.62870	356.51091	1.24397	0.1417668	0.26766713	2.3845478	20	9 20.6	19.7
104466 2000 <i>GK</i> ₁₄	15.2	X	234.51929	163.89716	91.90402	1.21058	0.0864742	0.18600492	3.0393900	20	—	—
104467 2000 <i>GR</i> ₁₄	16.8	X	102.78827	125.04781	61.38801	1.05284	0.1138226	0.25787062	2.4445643	20	8 10.9	20.0
104468 2000 <i>GN</i> ₁₅	15.2	X	140.73496	71.70927	198.24335	13.30475	0.0652670	0.22464049	2.6800569	20	12 27.7	19.4
104469 2000 <i>GS</i> ₁₅	16.2	X	315.13224	237.71425	212.38389	3.81952	0.0967678	0.27516638	2.3410237	20	—	—
104470 2000 <i>GW</i> ₁₅	15.0	X	334.00670	109.35757	193.49571	14.43104	0.1565339	0.20506074	2.8480506	20	6 24.8	18.4
104471 2000 <i>GO</i> ₁₆	16.0	X	243.88298	74.13581	214.09336	3.17179	0.2298590	0.23801976	2.5786598	20	1 30.9	20.5
104472 2000 <i>GF</i> ₁₇	15.3	X	78.75242	318.83952	155.54432							

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>		
104481	2000	GF ₂₃	15.2	X	274.83642	170.91653	44.63074	1.68460	0.0853352	0.18614910	3.0378204	20	—	—
104482	2000	GK ₂₃	15.1	X	205.45643	306.05492	31.38252	3.60689	0.1228899	0.19296851	2.9658220	20	3 5.9	19.8
104483	2000	GU ₂₃	15.6	X	18.04016	101.11026	251.29841	0.75895	0.0742599	0.21915592	2.7245863	20	11 17.3	18.8
104484	2000	GQ ₂₄	15.8	X	226.98121	269.85605	11.93700	15.00220	0.1962576	0.23504073	2.6004029	20	1 16.3	20.4
104485	2000	GJ ₂₅	15.2	X	134.53934	109.71135	10.87137	1.84111	0.0201032	0.20391065	2.8587495	20	6 9.0	19.3
104486	2000	GX ₂₅	15.2	X	161.19165	290.34803	28.29223	2.27306	0.1698262	0.18269233	3.0760201	20	1 6.6	20.1
104487	2000	GO ₂₆	14.8	X	246.74167	288.64761	39.20606	2.35402	0.0592896	0.19770025	2.9183088	20	4 8.9	19.0
104488	2000	GQ ₂₈	16.2	X	335.62370	58.43655	5.24255	2.22159	0.1841823	0.27449428	2.3448434	20	—	—
104489	2000	GT ₂₈	15.8	X	7.75681	187.14116	335.36410	1.23646	0.1594484	0.24235316	2.5478289	20	2 3.8	18.1
104490	2000	GZ ₂₈	15.3	X	134.17775	262.72133	9.57480	12.78847	0.1788321	0.22160866	2.7044455	20	12 24.0	20.0
104491	2000	GK ₃₀	15.9	X	22.38801	167.69714	199.34050	2.04885	0.1036418	0.22151766	2.7051861	20	12 16.9	19.5
104492	2000	GQ ₃₀	15.1	X	78.88016	288.22562	182.03203	1.86444	0.0270422	0.19505365	2.9446476	20	3 17.9	19.1
104493	2000	GX ₃₀	15.4	X	214.91019	110.51906	197.04451	1.65497	0.0437410	0.19019187	2.9946179	20	2 9.2	19.9
104494	2000	GA ₃₁	16.4	X	286.73522	98.16153	182.57400	4.42170	0.2038201	0.24283278	2.5444730	20	3 3.6	19.9
104495	2000	GK ₃₂	14.8	X	89.42316	128.36163	195.30065	13.02620	0.1806207	0.22228555	2.6989524	20	—	—
104496	2000	GK ₃₃	15.4	X	232.77487	162.52668	226.32128	2.31472	0.2114286	0.25391312	2.4698995	20	5 25.3	19.2
104497	2000	GC ₃₅	14.7	X	61.06535	282.70926	230.22255	1.09892	0.0173292	0.19793913	2.9159604	20	4 16.4	18.6
104498	2000	GJ ₃₅	15.4	X	357.37255	228.88658	235.50173	1.57297	0.0655447	0.18331986	3.0689964	20	—	—
104499	2000	GH ₃₆	14.6	X	249.33851	337.16960	17.87074	4.06469	0.1764751	0.20242703	2.8727007	20	5 1.8	18.9
104500	2000	GQ ₃₆	14.6	X	274.85578	110.01446	213.13901	1.38754	0.0476155	0.20135696	2.8828693	20	5 8.6	18.6
104501	2000	GM ₃₈	16.3	X	353.96117	353.62526	85.68632	1.54484	0.1771969	0.27913251	2.3187954	20	—	—
104502	2000	GT ₃₈	15.2	X	357.48382	269.87816	20.54137	15.01908	0.1497367	0.20556636	2.8433786	20	7 31.9	18.6
104503	2000	GW ₃₈	16.1	X	326.72525	109.61836	188.94826	6.66055	0.1274812	0.25158189	2.4851339	20	6 10.4	18.7
104504	2000	GA ₃₉	15.1	X	143.22628	354.08379	43.84321	3.00947	0.0701876	0.19379404	2.9573935	20	3 13.4	19.3
104505	2000	GR ₃₉	14.4	X	76.11296	167.63464	199.28380	11.71897	0.1968626	0.22780193	2.6552033	20	—	—
104506	2000	GH ₄₀	15.3	X	290.19057	329.88536	171.45163	1.35855	0.0620266	0.17894350	3.1188328	20	—	—
104507	2000	GW ₄₀	15.6	X	303.71865	127.02985	17.37734	1.68326	0.1426453	0.18214192	3.0822139	20	—	—
104508	2000	GM ₄₁	15.9	X	330.89535	41.99774	209.46733	5.07022	0.0321972	0.24726366	2.5139841	20	4 19.6	19.1
104509	2000	GR ₄₁	15.6	X	177.84346	80.25537	213.16170	3.61472	0.1339434	0.23022713	2.6365239	20	—	—
104510	2000	GD ₄₃	15.2	X	35.99960	107.35729	20.28766	10.28362	0.0729094	0.19159157	2.9800150	20	2 19.9	19.1
104511	2000	GK ₄₃	14.7	X	57.48901	223.44397	196.41374	10.44038	0.1194672	0.18571345	3.0425693	20	—	—
104512	2000	GO ₄₃	15.1	X	246.40270	7.24211	25.62664	3.92006	0.0708457	0.20636167	2.8360684	20	6 29.6	19.2
104513	2000	GZ ₄₃	14.2	X	180.00122	157.46659	191.81701	12.81574	0.1789792	0.19023015	2.9942161	20	2 23.3	19.3
104514	2000	GJ ₄₅	14.9	X	338.91653	358.19777	31.16418	9.74630	0.1721127	0.21884977	2.7271267	20	11 11.8	17.6
104515	2000	GT ₄₅	17.1	X	353.11605	267.31817	191.67749	4.46080	0.2002825	0.28192204	2.3034743	20	—	—
104516	2000	GF ₄₆	14.7	X	320.56815	70.44131	34.65975	6.15317	0.1683119	0.18002145	3.1063702	20	—	—
104517	2000	GG ₄₇	15.3	X	354.30631	42.80547	15.93957	7.56650	0.0908843	0.27413137	2.3469125	20	—	—
104518	2000	GO ₄₇	15.5	X	42.11601	40.72289	208.01434	6.57833	0.0712092	0.25568509	2.4584749	20	8 5.7	18.6
104519	2000	GS ₄₇	15.1	X	151.62595	225.83908	17.34000	5.58864	0.1393823	0.17126419	3.2113798	20	11 26.1	20.4
104520	2000	GW ₄₇	14.4	X	141.73690	146.80273	199.73947	6.22338	0.0918380	0.18464348	3.0543120	20	1 11.4	19.1
104521	2000	GP ₄₉	15.4	X	53.96396	87.24921	184.03207	2.84277	0.0533914	0.21169589	2.7882246	20	9 16.8	19.2
104522	2000	GQ ₄₉	16.7	X	70.12420	50.41267	182.44509	2.67438	0.0445845	0.25781470	2.4449178	20	8 21.8	19.7
104523	2000	GE ₅₀	14.8	X	174.87589	245.36222	31.03079	5.67034	0.1792332	0.17717870	3.1395089	20	—	—
104524	2000	GX ₅₀	14.5	X	304.26139	60.86761	75.26615	2.41482	0.1310291	0.18080205	3.0974227	20	—	—
104525	2000	GA ₅₁	15.4	X	300.06482	184.06132	32.70150	10.81674	0.0197557	0.18944880	3.0024432	20	2 5.9	19.8
104526	2000	GE ₅₁	15.9	X	243.98954	254.71844	32.68396	9.17569	0.1507392	0.23812518	2.5778986	20	2 8.2	20.1
104527	2000	GS ₅₁	15.3	X	273.74338	272.52003	33.79933	11.10457	0.0558695	0.19727973	2.9224544	20	4 15.4	19.3
104528	2000	GE ₅₂	15.8	X	158.41986	159.52749	50.96769	2.79172	0.1471349	0.26694635	3.3888381	20	11 9.2	19.3
104529	2000	GH ₅₂	15.4	X	56.20813	78.31398	202.45405	5.98703	0.0759039	0.21287402	2.7779277	20	10 5.5	19.2
104530	2000	GZ ₅₂	14.8	X	210.30835	249.54918	19.06196	13.19518	0.1114178	0.18210079	3.0826780	20	—	—
104531	2000	GK ₅₃	16.7	X	163.28134	317.16084	202.43002	1.04509	0.1425206	0.26237718	2.4164919	20	9 9.3	20.3
104532	2000	GJ ₅₄	16.8	X	180.23974	329.71863	164.00953	1.31784	0.1169117	0.26118296	2.4238523	20	8 24.7	20.4
104533	2000	GK ₅₄	15.0	X	198.86095	108.14245	190.06274	2.55109	0.2349605	0.18207729	3.0829433	20	1 14.9	20.3
104534	2000	GN ₅₄	15.0	X	245.75407	247.71265	30.87580	9.19342	0.0951295	0.18855481	3.0119260	20	2 8.9	19.7
104535	2000	GY ₅₄	17.0	X	183.85900	136.74840	18.98484	1.83264	0.1306474	0.26457569	2.4030866	20	9 26.5	20.6
104536	2000	GT ₅₅	15.8	X	232.46199	64.09669	182.69935	3.47236	0.1228536	0.23175269	2.6249409	20	—	—
104537	2000	GY ₅₅	16.0	X	219.49043	70.58805	195.01968	12.93563	0.2475673	0.23070799	2.6328591	20	—	—
104538	2000	GJ ₅₆	15.9	X	200.10411	138.02355	60.77670	2.98873	0.1463567	0.27133328	2.3630197	20	12 7.5	18.9
104539	2000	GU ₅₆	16.1	X	301.96284	89.86135	34.40878	6.12149	0.0954702	0.27617285	2.3353325	20	—	—
104540	2000	GF ₅₇	14.2	X	21.12802	194.20811	207.52630	23.66519	0.0805690	0.17648771	3.1476981	20	—	—
104541	2000	GD ₅₈	15.1	X	177.71856	286.90829	356.44572	1.99166	0.0386904	0.18033793	3.1027349	20	—	—
104542	2000	GU ₅₈	14.8	X	319.76587	52.31632	33.21688	7.68531	0.1738376	0.17659533	3.1464191	20	12 7.0	18.3
104543	2000	GX ₅₈	16.8	X	126.02671	177.19122	30.10246	1.81127	0.1324275	0.26202994	2.4186263	20	10 4.4	20.4
104544	2000	GG ₅₉	15.2	X	327.09966	118.64870	187.72039	5.75321	0.0569795	0.20386889	2.8591400	20	6 26.9	18.9
104545	2000	GJ ₅₉	15.2	X	359.79709	159.01218	60.25596	3.12841	0.0537160	0.19727796	2.9224718	20	4 20.7	19.0
104546	2000	GS ₆₀	16.3	X	329.21272	52.45094	198.05822	3.23190	0.1633780	0.24478323	2.5309386	20	3 29.1	19.1
104547	2000	GV ₆₁	14.8	X	309.34027	41.26653	31.46197	5.25735	0.1434460	0.17323331	3.1869980	20	11 3.2	18.6
104548	2000	GS ₆₂	15.2	X	133.11965	54.95834	216.97791	0.35443	0.1489934	0.17135660	3.2102251	20	12 13.9	20.4
104549	2000	GV ₆₂	15.5	X	284.94321	337.96238	141.03703	2.12941	0.1644095	0.17648609	3.1477174	20	11 22.3	19.4
104550	2000	GH ₆₃	15.4	X	290.14044	154.12463	199.75239	1.80351	0.0572743	0.20547997	2.8441755	20	7 7.5	19.2

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
104561 2000 GS ₇₁	14.6 ^m	X	202.63509	66.40724	202.19021	7.10185	0.1890397	0.17911340	3.1168602	20	—	—
104562 2000 GY ₇₁	16.1	X	250.94410	66.14057	47.68815	7.07367	0.0928143	0.26719880	2.3873333	20	10 28.6	18.7
104563 2000 GL ₇₂	16.5	X	168.47257	345.83834	159.21400	2.24691	0.1526327	0.26072502	2.4266897	20	8 26.4	20.3
104564 2000 GO ₇₂	14.9	X	328.50235	111.78803	75.00762	2.45538	0.1649301	0.18875862	3.0097576	20	1 12.6	18.6
104565 2000 GZ ₇₂	15.1	X	267.34284	191.35546	33.30837	12.86341	0.2415870	0.18370389	3.0647178	20	—	—
104566 2000 GX ₇₄	14.7	X	283.03463	310.91207	207.52823	10.72558	0.1437585	0.17936551	3.1139390	20	—	—
104567 2000 GC ₇₅	14.4	X	277.41898	105.10247	205.83060	19.63149	0.3457338	0.19305991	2.9648859	20	3 16.7	19.4
104568 2000 GF ₇₅	15.5	X	276.01160	239.30851	51.35695	6.26916	0.2403273	0.19193341	2.9764756	20	3 8.7	20.2
104569 2000 GP ₇₅	14.6	X	288.48049	80.96222	44.86787	7.22701	0.1097494	0.17562870	3.1579534	20	12 11.2	18.6
104570 2000 GN ₇₇	15.7	X	46.98197	224.83533	49.87872	4.18641	0.1121362	0.20993447	2.8037991	20	9 22.8	19.3
104571 2000 GF ₇₈	16.1	X	235.32769	325.14121	159.45415	2.41752	0.1822478	0.26736703	2.3863317	20	10 16.0	19.2
104572 2000 GG ₇₈	15.0	X	150.30255	167.12889	207.82159	9.12260	0.0794668	0.18933806	3.0036139	20	2 19.4	19.7
104573 2000 GK ₇₈	15.4	X	336.74505	25.86818	178.04509	2.59907	0.0677071	0.19161542	2.9797678	20	2 26.1	19.3
104574 2000 GQ ₇₈	15.1	X	253.04041	303.54672	215.39569	9.20408	0.1841486	0.17613618	3.1518848	20	11 24.8	19.6
104575 2000 GX ₇₈	15.2	X	96.51742	79.10913	46.90774	6.79439	0.0384552	0.19778795	2.9174460	20	5 1.6	19.0
104576 2000 GG ₈₀	15.1	X	251.10517	249.18105	207.22941	9.52259	0.0950882	0.21737638	2.7394360	20	9 22.9	18.9
104577 2000 GM ₈₀	15.9	X	241.78646	27.71578	160.76455	6.85232	0.0517687	0.27647324	2.3336407	20	—	—
104578 2000 GV ₈₀	15.3	X	130.71700	58.46014	18.12792	9.61383	0.0716956	0.19753869	2.9198998	20	4 13.9	19.5
104579 2000 GW ₈₀	15.1	X	70.52606	180.70997	263.43963	0.67035	0.0308379	0.18972785	2.9994986	20	2 4.8	19.1
104580 2000 GG ₈₁	15.5	X	29.22000	240.50065	39.44783	6.77980	0.1074166	0.25693441	2.4504990	20	9 11.9	18.3
104581 2000 GA ₈₂	15.8	X	187.82193	10.02398	194.99166	23.66947	0.0846563	0.36843955	1.9270451	20	12 31.7	18.5
104582 2000 GX ₈₃	15.2	X	114.93993	100.04868	155.39209	11.13810	0.2100914	0.21843494	2.7305783	20	11 21.8	20.0
104583 2000 GF ₈₄	14.7	X	219.80915	208.55522	99.22193	10.14917	0.0750132	0.19165768	2.9793297	20	2 16.6	19.3
104584 2000 GK ₈₄	14.9	X	21.92985	58.50261	66.49520	12.36442	0.1124179	0.19098607	2.9863102	20	1 24.6	18.6
104585 2000 GW ₈₄	15.4	X	267.98038	106.60911	126.20848	13.02447	0.1240903	0.23571153	2.5954669	20	—	—
104586 2000 GP ₈₅	15.8	X	255.72451	122.71013	133.65268	13.48440	0.2232395	0.23512299	2.5997963	20	1 4.9	20.2
104587 2000 GX ₈₅	16.2	X	339.13894	354.67301	219.08087	5.54328	0.1375192	0.29407883	2.2395471	20	2 16.0	18.5
104588 2000 GG ₈₆	14.0	X	180.89329	229.41693	79.01729	12.63362	0.0591541	0.18777825	3.0202242	20	1 5.9	18.5
104589 2000 GT ₈₆	14.9	X	15.66512	314.48474	182.69510	9.11209	0.0257265	0.19012142	2.9953576	20	1 28.0	19.1
104590 2000 GC ₈₇	14.9	X	254.24857	95.12403	96.81800	6.24537	0.0874166	0.18042720	3.1017113	20	—	—
104591 2000 GJ ₈₇	15.0	X	313.57505	84.58678	43.75429	9.13867	0.0989835	0.18106811	3.0943878	20	—	—
104592 2000 GJ ₈₉	15.8	X	281.64980	127.54023	145.61865	5.66868	0.1085039	0.24189158	2.5510691	20	3 2.2	19.1
104593 2000 GK ₈₉	15.5	X	269.40310	101.60575	130.03348	5.08319	0.1237040	0.23529077	2.5985602	20	—	—
104594 2000 GA ₉₀	14.7	X	40.44863	327.98247	143.28024	11.10133	0.0886091	0.19020321	2.9944988	20	2 1.8	18.3
104595 2000 GF ₉₁	14.8	X	153.69059	116.19161	173.05290	11.44681	0.1834298	0.22488641	2.6781028	20	—	—
104596 2000 GL ₉₁	13.8	X	273.64663	346.21826	189.38531	27.70992	0.1068294	0.17997273	3.1069308	20	—	—
104597 2000 GJ ₉₂	16.3	X	86.22888	350.18873	205.30060	3.11093	0.0936317	0.25735577	2.4478235	20	7 29.4	19.6
104598 2000 GW ₉₂	15.1	X	157.85791	172.04642	25.70354	10.96043	0.0802803	0.21895768	2.7262306	20	10 18.4	18.9
104599 2000 GA ₉₄	15.2	X	66.68951	111.17213	158.77629	15.26144	0.2340455	0.21114975	2.7930305	20	10 29.9	19.7
104600 2000 GP ₉₄	14.4	X	199.19368	148.62722	157.38164	14.95801	0.1929343	0.23285974	2.6166147	20	1 17.7	19.0
104601 2000 GQ ₉₇	16.1	X	309.47527	345.62733	244.24228	4.06886	0.2151568	0.24153870	2.5535531	20	1 23.7	19.5
104602 2000 GP ₉₇	14.9	X	262.20965	164.33429	117.22806	3.61279	0.0248952	0.19409821	2.9543030	20	3 5.9	19.0
104603 2000 GQ ₉₇	14.8	X	41.78957	51.95905	104.90008	3.31912	0.0288338	0.19671891	2.9280061	20	3 30.1	18.7
104604 2000 GU ₉₇	16.1	X	295.36852	206.95404	64.78966	4.79974	0.1585214	0.24376741	2.5379650	20	3 11.9	19.6
104605 2000 GQ ₉₉	15.5	X	34.15752	305.71346	302.12183	3.54908	0.1506744	0.25385200	2.4702960	20	8 6.2	18.1
104606 2000 GS ₉₉	14.6	X	198.01516	17.59072	219.09140	11.15171	0.1558008	0.17689294	3.1428890	20	12 29.6	19.7
104607 2000 GF ₁₀₀	16.5	X	295.62434	244.83601	336.18095	3.64252	0.1181759	0.28683614	2.2770897	20	1 3.2	19.4
104608 2000 GG ₁₀₀	14.4	X	281.13826	187.63632	350.71025	6.38125	0.0571145	0.18183531	3.0856777	20	—	—
104609 2000 GT ₁₀₀	15.4	X	246.34403	254.89853	12.47986	8.47629	0.1643390	0.23568273	2.5956783	20	1 15.1	19.6
104610 2000 GG ₁₀₁	15.4	X	90.13518	267.49358	341.18496	7.25495	0.1574470	0.26262524	2.4149700	20	10 19.6	19.0
104611 2000 GZ ₁₀₁	15.6	X	168.54076	53.58889	207.90903	7.00062	0.2782699	0.22427749	2.6829480	20	—	—
104612 2000 GE ₁₀₃	14.6	X	190.53677	4.14012	172.45847	6.67989	0.1022798	0.17031984	3.2232394	20	10 19.7	19.5
104613 2000 GO ₁₀₃	16.1	X	106.46977	130.34466	73.90416	3.52778	0.1432037	0.25948700	2.4344021	20	9 12.5	19.7
104614 2000 GD ₁₀₄	15.6	X	174.16799	61.25594	129.34300	3.19557	0.1117549	0.26723109	2.3871409	20	11 3.1	19.0
104615 2000 GH ₁₀₅	15.1	X	56.37714	157.19689	50.61653	9.49814	0.1399457	0.20336464	2.8638642	20	7 10.8	18.9
104616 2000 GF ₁₀₈	14.8	X	194.55592	101.34503	196.68568	14.63537	0.3151385	0.22903722	2.6456477	20	1 7.2	20.0
104617 2000 GX ₁₀₉	15.7	X	317.89078	175.24860	182.71960	22.16267	0.0439935	0.26021551	2.4298563	20	8 28.6	18.9
104618 2000 GZ ₁₀₉	15.2	X	204.02678	121.50642	153.94987	4.01713	0.1414673	0.18264670	3.0765324	20	—	—
104619 2000 GJ ₁₁₀	15.0	X	64.47340	261.07317	200.10303	11.94844	0.0895247	0.19314207	2.9640450	20	2 21.0	18.9
104620 2000 GR ₁₁₀	16.1	X	253.83048	117.01560	348.19700	3.74010	0.1426062	0.26894088	2.3770127	20	10 10.9	18.8
104621 2000 GX ₁₁₀	15.3	X	200.96322	286.57415	212.77736	7.35879	0.1478940	0.21738225	2.7393866	20	9 13.9	19.7
104622 2000 GA ₁₁₁	15.9	X	282.20660	241.19288	247.14572	3.45249	0.1114223	0.27571191	2.3379346	20	—	—
104623 2000 GN ₁₁₁	14.6	X	104.92708	176.20578	204.46809	9.07469	0.0963627	0.18664374	3.0324508	20	1 9.9	19.0
104624 2000 GD ₁₁₂	14.5	X	209.48038	295.60064	32.78842	13.08170	0.1489818	0.19194138	2.9763932	20	3 3.3	19.5
104625 2000 GE ₁₁₂	17.1	X	2.87753	129.53633	121.50489	2.89766	0.1472419	0.29971773	2.2113684	20	6 9.8	18.7
104626 2000 GT ₁₁₂	14.6	X	121.21121	113.16762	176.33119	12.45477	0.2634927	0.22280740	2.6947366	20	—	—
104627 2000 GY ₁₁₂	15.7	X	154.26648	61.03883	60.14686	2.75213	0.1197561	0.25830544	2.4418202	20	7 11.7	19.2
104628 2000 GH ₁₁₃	15.1	X	300.65627	82.13587	55.39619	1.75306	0.1627253	0.18187709	3.0852052	20	—	—
104629 2000 GV ₁₁₃	14.8	X	246.14319	284.59975	299.90832	5.47565	0.1307709	0.18315461	3.0708420	20	—	—
104630 2000 GF ₁₁₄	15.4	X	116.50877	339.56096	136.84086	3.48227	0.2865243	0.21911161	2.7249537	20	—	—
104631 2000 GQ ₁₁₄	15.5	X	9.06092	73.00798	204.69335	6.29846	0.1817889	0.25483962	2.4639095	20	8 5.8	17.8
104632 2000 GC ₁₁₅	15.0	X	18.96833	126.62371	62.86228	3.97452	0.0433708	0.19885146	2.9070345	20	4 9.9	18.8
104633 2000 GV ₁₁₅	15.3	X	126.80448	258.93936	30.21616	12.71253	0.3024987	0.22094035	2.7098964	20	—	—
104634 2000 GU ₁₁₆	14.9	X	125.4									

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>		
104641	2000	<i>GD</i> ₁₂₀	16.4	X	303.58371	236.13533	193.97824	1.77400	0.1825648	0.27157269	2.3616307	20	11 17.9	17.9
104642	2000	<i>GO</i> ₁₂₂	15.4	X	38.38483	64.91724	201.55428	6.54041	0.0472783	0.21075114	2.7965511	20	8 16.8	19.2
104643	2000	<i>GY</i> ₁₂₂	16.0	X	168.88093	233.61585	41.23415	22.68764	0.0399905	0.37456774	1.9059689	20	—	—
104644	2000	<i>GG</i> ₁₂₃	15.8	X	287.42130	261.82047	65.75291	2.59269	0.1562631	0.24797505	2.5091737	20	5 13.5	18.8
104645	2000	<i>GT</i> ₁₂₅	14.4	X	181.89549	102.28995	152.17886	8.37819	0.2008941	0.17443297	3.1723688	20	—	—
104646	2000	<i>GY</i> ₁₂₅	15.0	X	289.45399	16.04138	192.44260	12.68463	0.1935499	0.23387980	2.6090010	20	—	—
104647	2000	<i>GK</i> ₁₂₆	15.2	X	103.91406	43.83821	167.50464	8.27011	0.1906249	0.25731915	2.4480558	20	9 21.4	18.9
104648	2000	<i>GQ</i> ₁₂₉	15.9	X	250.57352	212.03131	192.34037	5.50851	0.0956142	0.20964716	2.8063601	20	7 15.4	19.9
104649	2000	<i>GG</i> ₁₃₂	15.8	X	149.33659	262.54719	109.33142	7.21619	0.1037485	0.28476536	2.2881155	20	2 10.1	18.9
104650	2000	<i>GY</i> ₁₃₂	15.7	X	302.00901	97.67996	175.00742	9.62593	0.1641100	0.24346031	2.5400987	20	3 18.6	18.9
104651	2000	<i>GF</i> ₁₃₃	16.4	X	100.28766	267.47565	191.26056	21.91410	0.1095360	0.39128652	1.8512829	20	3 25.3	17.7
104652	2000	<i>GY</i> ₁₃₃	14.2	X	144.53576	166.31314	97.26507	7.21867	0.0911335	0.17202090	3.2019551	20	12 14.4	19.2
104653	2000	<i>GB</i> ₁₃₄	14.0	X	179.32795	101.88033	182.56568	14.43364	0.1367285	0.17682618	3.1436801	20	—	—
104654	2000	<i>GS</i> ₁₃₄	15.6	X	306.27815	110.69777	157.58613	15.29977	0.1131083	0.24487663	2.5302950	20	3 29.4	18.8
104655	2000	<i>GR</i> ₁₃₅	15.6	X	195.77308	181.48756	48.33692	14.66518	0.2177729	0.22510765	2.6763478	20	12 23.8	20.1
104656	2000	<i>GH</i> ₁₃₅	14.7	X	316.99131	43.75912	95.12337	12.05445	0.1303825	0.18325751	3.0696924	20	—	—
104657	2000	<i>GJ</i> ₁₃₅	14.7	X	321.77473	39.05659	85.14473	13.17222	0.1041951	0.18148937	3.0895976	20	—	—
104658	2000	<i>GQ</i> ₁₃₆	15.0	X	206.55057	99.17469	167.90257	12.32215	0.1104064	0.22912087	2.6450037	20	—	—
104659	2000	<i>GJ</i> ₁₃₇	14.3	X	172.38938	106.29447	153.09257	12.69682	0.1507192	0.22227039	2.6990752	20	—	—
104660	2000	<i>GR</i> ₁₃₈	15.4	X	309.31265	147.14519	57.34981	9.84211	0.0806611	0.18893881	3.0078437	20	1 22.8	19.6
104661	2000	<i>GA</i> ₁₃₉	15.3	X	262.10310	169.74174	65.78576	13.24825	0.1329292	0.18587912	3.0407611	20	—	—
104662	2000	<i>GB</i> ₁₃₉	14.8	X	172.01192	142.01419	150.04952	13.51907	0.1319413	0.17997424	3.1069134	20	—	—
104663	2000	<i>GW</i> ₁₃₉	13.9	X	91.11166	257.17853	105.08246	6.38771	0.1690570	0.17959035	3.1113394	20	—	—
104664	2000	<i>GZ</i> ₁₃₉	15.1	X	85.88937	176.09474	77.19383	6.33855	0.1216907	0.21317178	2.7753403	20	10 15.8	19.2
104665	2000	<i>GQ</i> ₁₄₀	15.4	X	218.88349	34.83750	134.66116	2.66368	0.1469571	0.17301206	3.1897144	20	11 4.6	20.3
104666	2000	<i>GF</i> ₁₄₁	15.2	X	231.44035	186.69443	50.63474	1.67292	0.0644061	0.18312405	3.0711837	20	—	—
104667	2000	<i>GX</i> ₁₄₁	14.6	X	183.28982	87.57658	160.12498	16.74282	0.0965115	0.17568073	3.1573299	20	—	—
104668	2000	<i>GB</i> ₁₄₂	14.8	X	143.38208	131.21167	154.38858	13.01541	0.1561544	0.22288167	2.6941378	20	—	—
104669	2000	<i>GV</i> ₁₄₂	14.9	X	224.88874	150.59506	98.31728	11.13710	0.1715282	0.18040388	3.1019787	20	—	—
104670	2000	<i>GW</i> ₁₄₃	15.0	X	193.40451	258.05035	38.57037	28.99459	0.3423241	0.22936490	2.6431273	20	1 8.4	20.5
104671	2000	<i>GW</i> ₁₄₄	15.4	X	128.55509	135.47527	174.36960	0.86586	0.1545806	0.17479622	3.1679722	20	—	—
104672	2000	<i>GC</i> ₁₄₆	14.7	X	82.21598	281.11563	37.04415	2.04897	0.1523749	0.17106596	3.2138602	20	12 21.1	19.6
104673	2000	<i>GQ</i> ₁₄₆	15.7	X	136.11094	165.06012	161.89006	19.63580	0.2918876	0.23533562	2.5982301	20	—	—
104674	2000	<i>GK</i> ₁₄₈	15.3	X	283.40565	29.57591	149.97876	0.90819	0.0630309	0.18511245	3.0491513	20	—	—
104675	2000	<i>GB</i> ₁₄₉	15.8	X	77.67020	322.43051	355.64698	8.24531	0.1248756	0.27258449	2.3557830	20	—	—
104676	2000	<i>GL</i> ₁₄₉	16.0	X	127.62864	54.43857	174.14463	8.30771	0.1146883	0.218226708	2.7319782	20	10 27.6	20.3
104677	2000	<i>GW</i> ₁₅₀	14.8	X	101.34293	316.20805	44.55961	1.99807	0.1436448	0.18189065	3.0850519	20	—	—
104678	2000	<i>GB</i> ₁₅₂	15.0	X	146.20821	240.69638	162.03729	2.23920	0.0729381	0.19788391	2.9165027	20	3 21.6	19.4
104679	2000	<i>GY</i> ₁₅₂	14.7	X	113.63230	41.41292	323.50862	8.16199	0.0624706	0.18463674	3.0543863	20	—	—
104680	2000	<i>GK</i> ₁₅₃	14.6	X	288.27412	96.26862	216.62464	15.56248	0.0851474	0.20104223	2.8858772	20	5 7.6	18.5
104681	2000	<i>GM</i> ₁₅₃	14.3	X	171.51933	43.46023	261.44571	6.12596	0.1517311	0.18226008	3.0808816	20	—	—
104682	2000	<i>GB</i> ₁₅₄	14.6	X	236.04071	206.63597	272.01595	7.15401	0.1609557	0.17173516	3.2055058	20	9 16.2	19.6
104683	2000	<i>GF</i> ₁₅₄	14.6	X	54.15160	153.61314	225.88487	13.80259	0.0940979	0.22837305	2.6507747	20	—	—
104684	2000	<i>GC</i> ₁₅₄	15.8	X	29.77444	34.41159	287.73460	5.97653	0.1135849	0.26457076	2.4031164	20	11 8.2	18.7
104685	2000	<i>GK</i> ₁₅₄	15.7	X	227.83150	286.90179	214.40094	13.13651	0.1207202	0.22117833	2.7079522	20	10 20.3	19.4
104686	2000	<i>GQ</i> ₁₅₄	15.8	X	312.78524	294.63879	279.60936	5.08873	0.0954423	0.24054340	2.5605922	20	1 26.1	19.1
104687	2000	<i>GK</i> ₁₅₅	15.3	X	115.86009	348.60144	212.17986	8.28136	0.0851821	0.21203592	2.7852430	20	9 3.2	19.5
104688	2000	<i>GN</i> ₁₅₅	14.5	X	109.64838	332.85752	22.95765	13.26590	0.1150918	0.18272687	3.0756325	20	—	—
104689	2000	<i>GO</i> ₁₅₅	14.9	X	187.24916	281.23807	30.01943	10.16856	0.0923504	0.18709460	3.0275771	20	1 19.6	19.7
104690	2000	<i>GX</i> ₁₅₆	15.1	X	213.05777	127.79883	207.42099	8.18849	0.0918096	0.19225672	2.9731378	20	3 7.9	19.8
104691	2000	<i>GV</i> ₁₅₈	14.9	X	56.06066	13.39543	116.81298	3.00029	0.0515979	0.19674308	2.9277663	20	3 17.1	18.7
104692	2000	<i>GW</i> ₁₅₈	14.9	X	346.14429	171.20383	111.60065	3.14826	0.0468978	0.20646487	2.8351232	20	6 24.5	18.4
104693	2000	<i>GB</i> ₁₆₀	14.9	X	107.65605	60.96407	226.99985	11.48655	0.2837680	0.21806439	2.7336708	20	12 22.8	19.9
104694	2000	<i>GL</i> ₁₆₀	14.8	X	190.89124	275.66096	2.61464	19.12060	0.2137329	0.18057172	3.1000561	20	—	—
104695	2000	<i>GU</i> ₁₆₁	14.6	X	280.81563	314.83345	165.14341	16.56782	0.1806096	0.17555774	3.1588044	20	11 17.9	18.9
104696	2000	<i>GV</i> ₁₆₁	15.3	X	66.14344	141.00720	161.95728	14.05697	0.1680352	0.21489187	2.7605104	20	11 29.9	19.7
104697	2000	<i>GW</i> ₁₆₂	15.8	X	265.26467	123.06258	166.21212	14.91348	0.1893515	0.24095021	2.5577092	20	2 22.6	19.7
104698	2000	<i>GJ</i> ₁₆₃	16.5	X	313.80874	211.67848	185.52027	6.35228	0.2126129	0.26974293	2.3722985	20	10 17.7	18.1
104699	2000	<i>GC</i> ₁₆₄	15.0	X	93.07661	188.47555	113.65439	11.56185	0.2013898	0.21732718	2.7398493	20	12 25.2	19.6
104700	2000	<i>GK</i> ₁₆₄	14.6	X	180.75292	49.56229	241.24790	14.16008	0.0907721	0.23572435	2.5953728	20	—	—
104701	2000	<i>GV</i> ₁₆₄	14.1	X	0.05949	288.82071	124.71445	9.59286	0.0762496	0.17484989	3.1673239	20	12 27.8	18.2
104702	2000	<i>GZ</i> ₁₆₄	16.1	X	120.86821	274.10341	167.23102	2.70332	0.0552133	0.24676969	2.5173378	20	4 4.2	19.3
104703	2000	<i>GK</i> ₁₆₆	14.9	X	285.47130	206.29550	205.84116	5.08337	0.0711189	0.21396515	2.7684755	20	9 15.5	18.5
104704	2000	<i>GM</i> ₁₆₇	15.2	X	206.19399	339.18129	226.32988	11.01777	0.1224404	0.22644722	2.6657825	20	12 15.8	19.2
104705	2000	<i>GS</i> ₁₆₇	15.5	X	276.69641	222.37737	202.42841	10.10467	0.0697373	0.21501854	2.7594261	20	9 19.7	19.1
104706	2000	<i>GZ</i> ₁₆₇	16.2	X	206.24370	84.55007	62.90347	3.15704	0.1260318	0.26720411	2.3873016	20	10 11.8	19.4
104707	2000	<i>GA</i> ₁₆₈	16.1	X	77.45226	336.31914	141.89602	2.67777	0.0386647	0.24464214	2.5319116	20	3 24.2	19.1
104708	2000	<i>GK</i> ₁₆₈	15.8	X	173.05133	194.76885	64.85654	4.95724	0.1871398	0.22493956	2.6776809	20	—	—
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ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
104721 2000 GQ ₁₇₅	16.0	X	323.19631	254.42877	207.78635	3.15025	0.0143450	0.22922689	2.6441881	20	—	—
104722 2000 GU ₁₇₅	14.8	X	34.51969	310.94202	175.68977	2.81024	0.0321615	0.19365297	2.9588295	20	2 9.5	18.8
104723 2000 GY ₁₇₅	15.9	X	168.85647	313.43126	330.54941	1.50360	0.2707394	0.22815298	2.6524790	20	—	—
104724 2000 GK ₁₇₆	15.6	X	242.93075	290.04766	128.12123	0.56801	0.0610804	0.21225329	2.7833411	20	7 30.2	19.2
104725 2000 GX ₁₇₆	15.0	X	161.10454	69.95327	328.19589	1.16297	0.0877376	0.19895375	2.9060380	20	4 1.3	19.2
104726 2000 GX ₁₇₈	15.6	X	230.12147	77.11748	173.08290	13.64870	0.0861428	0.23034602	2.6356166	20	—	—
104727 2000 GY ₁₇₈	15.7	X	28.90028	350.16475	123.36958	6.85332	0.2072264	0.28775152	2.2722580	20	—	—
104728 2000 GP ₁₇₉	14.9	X	4.71378	352.54169	121.93684	2.77087	0.1340247	0.18548465	3.0450708	20	—	—
104729 2000 GT ₁₈₁	15.2	X	314.34300	234.71029	185.98073	8.58281	0.1498319	0.21992277	2.7182491	20	11 11.2	18.0
104730 2000 HQ	16.1	X	285.87663	16.57897	76.26647	3.03001	0.1272885	0.27002907	2.3706223	20	11 20.1	18.2
104731 2000 HB ₂	15.5	X	337.89851	348.28098	165.99005	3.31446	0.0101892	0.18566976	3.0430465	20	1 4.9	19.7
104732 2000 HH ₂	16.3	X	106.06731	78.17584	153.68011	2.48788	0.1464047	0.26173078	2.4204689	20	10 17.2	20.0
104733 2000 HT ₂	14.2	X	109.04736	147.76802	188.89309	8.63892	0.0789038	0.17766995	3.1337191	20	—	—
104734 2000 HU ₂	15.5	X	175.94177	286.35024	73.98563	5.01093	0.2253867	0.23830337	2.5766134	20	3 6.9	19.9
104735 2000 HZ ₂	15.5	X	6.84740	17.98679	210.10951	11.94664	0.0500570	0.19677442	2.9274554	20	5 13.1	19.2
104736 2000 HJ ₄	14.9	X	119.26462	270.83731	62.23959	5.11111	0.0326879	0.17959381	3.1112994	20	—	—
104737 2000 HG ₅	16.7	X	187.14713	244.77733	63.14595	23.03415	0.0642296	0.37664036	1.8989702	20	—	—
104738 2000 HX ₇	13.9	X	47.37914	341.18970	39.87283	18.17422	0.1653557	0.17583522	3.1554802	20	—	—
104739 2000 HU ₈	15.3	X	110.25300	229.76268	48.01342	10.62419	0.2519925	0.21635609	2.7480415	20	12 11.5	20.2
104740 2000 HY ₈	15.0	X	85.49354	240.16107	45.86936	7.60057	0.2847662	0.21365622	2.7711435	20	12 4.4	19.8
104741 2000 HC ₉	15.9	X	31.23799	194.02479	45.26754	9.30811	0.1030156	0.25150696	2.4856275	20	7 13.4	18.8
104742 2000 HY ₉	15.2	X	162.25563	134.88859	99.41653	0.88989	0.2494086	0.16998212	3.2275073	20	11 24.2	20.9
104743 2000 HW ₁₀	15.0	X	304.99023	14.80145	221.06344	3.58688	0.1292504	0.23890394	2.5722934	20	2 7.4	18.5
104744 2000 HX ₁₀	15.0	X	109.36728	265.24151	49.17868	13.34647	0.1963138	0.22074076	2.7115296	20	—	—
104745 2000 HN ₁₁	15.1	X	252.69658	18.18086	223.79402	6.82836	0.1322450	0.18414479	3.0598239	20	—	—
104746 2000 HZ ₁₁	15.5	X	210.71579	298.93398	35.45171	16.21629	0.3252822	0.23621504	2.5917773	20	3 7.4	20.6
104747 2000 HE ₁₂	16.6	X	187.94238	285.65793	269.71228	1.32970	0.1625679	0.26852126	2.3794884	20	11 17.9	19.9
104748 2000 HO ₁₂	15.4	X	348.77819	229.12048	335.72532	1.14248	0.1389747	0.19273128	2.9682553	20	3 9.4	18.9
104749 2000 HR ₁₂	15.8	X	199.20232	136.85006	13.70054	2.42377	0.1482893	0.26484836	2.4014370	20	10 4.2	19.3
104750 2000 HW ₁₂	15.6	X	179.24864	234.29931	41.03239	13.40097	0.2227373	0.22513417	2.6761376	20	—	—
104751 2000 HM ₁₃	14.5	X	219.31393	242.49859	36.53648	9.09129	0.2034473	0.18170950	3.0871018	20	1 10.3	19.9
104752 2000 HP ₁₃	14.7	X	177.62336	18.85152	241.11620	4.21875	0.1235220	0.17514098	3.1638134	20	—	—
104753 2000 HZ ₁₄	15.8	X	220.58833	8.70878	158.25914	7.95320	0.1168450	0.27054561	2.3676039	20	11 26.4	19.0
104754 2000 HC ₁₅	14.8	X	282.37732	44.93451	156.64599	3.36071	0.0680957	0.18357346	3.0661692	20	—	—
104755 2000 HF ₁₅	15.2	X	273.07577	77.11446	180.04283	14.16178	0.1459691	0.18828598	3.0147922	20	1 31.5	20.0
104756 2000 HW ₁₅	15.9	X	302.00839	221.18729	41.94931	3.65246	0.0849982	0.24344638	2.5401957	20	3 19.4	19.1
104757 2000 HF ₁₆	16.3	X	121.72845	97.75999	101.39898	2.25208	0.1381026	0.25992979	2.4316366	20	9 20.5	19.9
104758 2000 HR ₁₈	15.2	X	208.44748	313.30529	83.38529	3.14723	0.0857154	0.20119973	2.8843710	20	5 20.1	19.6
104759 2000 HY ₁₈	15.1	X	283.42329	336.91226	62.03242	5.93506	0.1868400	0.21138095	2.7909935	20	8 11.3	18.6
104760 2000 HD ₁₉	15.0	X	205.99728	342.73559	245.13759	1.00998	0.0883160	0.17603219	3.1531259	20	—	—
104761 2000 HO ₂₂	16.2	X	213.07481	276.92179	23.51890	3.95437	0.2696013	0.23270613	2.6177660	20	1 24.2	20.9
104762 2000 HO ₂₂	15.1	X	211.86516	212.39570	41.46101	10.33177	0.0584505	0.18021124	3.1041888	20	—	—
104763 2000 HT ₂₂	15.9	X	141.84524	153.65323	39.15712	0.99161	0.0644589	0.26130702	2.4230851	20	9 30.7	19.1
104764 2000 HG ₂₃	14.7	X	181.73491	217.11355	69.57464	10.11820	0.0410967	0.18069492	3.0986469	20	—	—
104765 2000 HN ₂₃	15.7	X	7.94539	122.77588	137.25793	8.82320	0.0599623	0.25203532	2.4821524	20	6 28.7	18.7
104766 2000 HG ₂₄	14.9	X	1.45488	238.62004	70.04013	16.62395	0.1655628	0.20995971	2.8035743	20	9 10.6	18.3
104767 2000 HP ₂₅	15.6	X	203.19453	279.29680	38.06174	15.09721	0.1291459	0.23546464	2.5972809	20	2 10.0	20.0
104768 2000 HG ₂₆	15.6	X	161.55016	196.75847	68.78392	4.35366	0.258236	0.22220790	2.6995811	20	—	—
104769 2000 HV ₂₆	15.1	X	277.51197	109.83270	191.04081	1.61731	0.0806674	0.19562600	2.9389013	20	4 8.8	19.3
104770 2000 HC ₂₈	15.8	X	253.75234	304.95016	226.09212	21.21076	0.0628022	0.37189764	1.9150808	20	—	—
104771 2000 HH ₂₈	14.4	X	38.41370	200.99193	81.84320	22.23065	0.1162782	0.21095495	2.7947496	20	10 4.3	18.6
104772 2000 HV ₂₈	15.1	X	100.02388	58.67152	185.39202	20.81524	0.0685625	0.26089727	2.4256214	20	10 21.2	18.5
104773 2000 HE ₂₉	15.8	X	239.87965	143.96682	130.16434	8.02674	0.1670725	0.23640125	2.5904161	20	1 14.9	19.9
104774 2000 HP ₂₉	14.4	X	287.60710	133.38393	71.86459	15.40747	0.0153226	0.18612407	3.0380927	20	1 4.8	18.8
104775 2000 HQ ₂₉	14.4	X	206.67171	174.33603	68.12975	18.57358	0.0774434	0.17921874	3.1156388	20	—	—
104776 2000 HW ₂₉	15.6	X	212.30577	188.58362	20.97502	12.63557	0.0967503	0.27337254	2.3512535	20	—	—
104777 2000 HP ₃₀	15.3	X	129.94604	208.51973	96.62084	10.62614	0.2797949	0.22166992	2.7039472	20	—	—
104778 2000 HX ₃₀	15.4	X	171.21723	126.09940	146.95874	13.49102	0.2437090	0.22405789	2.6847008	20	—	—
104779 2000 HR ₃₁	14.9	X	218.13409	81.10962	134.59542	14.57647	0.1294599	0.22584728	2.6705013	20	—	—
104780 2000 HX ₃₁	15.2	X	195.18257	215.09860	62.57821	2.28977	0.1454926	0.17917224	3.1161779	20	—	—
104781 2000 HA ₃₂	14.8	X	242.00276	301.64213	44.46427	12.59428	0.0733098	0.19648044	2.9303748	20	4 25.7	19.0
104782 2000 HJ ₃₂	14.8	X	46.18260	122.63460	218.56021	14.39264	0.2684748	0.21437807	2.7649194	20	—	—
104783 2000 HT ₃₂	15.2	X	254.50805	137.11772	106.90286	13.73412	0.2655613	0.23280128	2.6170528	20	—	—
104784 2000 HX ₃₂	14.5	X	126.56589	214.07972	177.11090	22.09564	0.0586468	0.23562289	2.5961178	20	2 4.2	18.4
104785 2000 HL ₃₃	14.5	X	185.57047	202.54324	118.78262	18.53252	0.1856805	0.18308340	3.0716383	20	1 30.8	19.7
104786 2000 HH ₃₅	14.7	X	175.91869	101.13749	97.97101	7.67978	0.0431317	0.17025297	3.2240832	20	11 4.6	19.5
104787 2000 HZ ₃₅	14.4	X	151.38155	211.17547	58.44019	23.96802	0.0686500	0.17459641	3.1703887	20	12 26.2	19.5
104788 2000 HD ₃₆	15.4	X	311.83889	9.69598	156.29326	12.83791	0.1287816	0.23328066	2.6134662	20	—	—
104789 2000 HL ₃₆	16.2	X	159.08013	100.24067	116.71818	9.03362	0.2401844	0.21831623	2.7315681	20	11 11.3	21.1
104790 2000 HP ₃₆	15.3	X	200.61229	208.29772	75.92297	15.39698	0.1299142	0.23308859	2.6149017	20	1 16.2	19.4
104791 2000 HG ₃₇	15.7	X	307.63943	46.80524	142.24886	12.75404	0.1290948	0.23434870	2.6055196	20	—	—
104792 2000 HJ ₃₇	15.3	X	234.45352	102.91181	144.57141	13.36130	0.2736702	0.17995092	3.1071818	20	—	—
104793 2000 HB ₃₈	16.0	X	295.73884	2.36812	28.74715	6.99545	0.1180487	0.26196438	2.4190298	20	9 8.7	18.5
104794 2000 HP ₃₈	14.6	X	45.69347	287.54307	204.63031	10.19427	0.1367251	0.19137093	2.9823051	20	3 9.7	18.3
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ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>		
104801	2000	HL ₄₂	15.8 ^m	X	198.82692	267.66767	34.80392	12.84164	0.2723864	0.23128678	2.6284649	20	1 18.6	20.7
104802	2000	HZ ₄₂	15.7	X	102.03221	259.89319	86.00387	3.02847	0.2672553	0.27302718	2.3532359	20	—	—
104803	2000	HJ ₄₃	15.9	X	230.59522	79.27747	78.71948	3.08494	0.1579543	0.27042309	2.3683190	20	11 19.6	18.7
104804	2000	HN ₄₃	15.2	X	57.79979	240.51284	227.83785	7.17669	0.0433261	0.18891658	3.0080797	20	2 16.7	19.4
104805	2000	HS ₄₃	15.2	X	146.12178	54.58041	58.43672	2.33933	0.0852677	0.20159809	2.8805700	20	6 18.4	19.6
104806	2000	HU ₄₄	14.3	X	337.76339	248.43182	196.66411	16.06284	0.2233254	0.17950338	3.1123443	20	—	—
104807	2000	HS ₄₅	15.9	X	184.10552	214.13271	78.74108	3.55310	0.1200636	0.23079344	2.6322093	20	—	—
104808	2000	HG ₄₇	15.5	X	230.13734	216.22617	53.58659	2.41359	0.2390193	0.18182339	3.0858126	20	1 6.2	20.8
104809	2000	HL ₄₇	15.0	X	303.19430	116.71477	49.57187	7.94375	0.1051839	0.18200938	3.0837100	20	—	—
104810	2000	HQ ₄₇	15.0	X	200.10489	161.11548	74.75960	2.54781	0.1319768	0.17550902	3.1593889	20	—	—
104811	2000	HP ₄₈	16.3	X	210.28703	263.39964	252.71808	2.39583	0.1502130	0.26704727	2.3882363	20	10 22.9	19.6
104812	2000	HV ₄₈	15.2	X	251.77384	89.40381	159.23291	0.34119	0.2025588	0.18312643	3.0711570	20	—	—
104813	2000	HO ₄₉	14.5	X	171.65215	290.87722	47.34996	16.72620	0.0824904	0.18477255	3.0528895	20	2 8.3	19.4
104814	2000	HH ₅₀	15.8	X	281.04601	62.97027	210.50878	3.91797	0.1769366	0.23924527	2.5698463	20	2 20.2	19.7
104815	2000	HK ₅₀	14.9	X	107.19118	165.29188	174.64295	2.22328	0.2149028	0.22297094	2.6934187	20	—	—
104816	2000	HC ₅₁	15.0	X	162.14109	192.63357	65.38373	5.85353	0.0778688	0.17304584	3.1892993	20	12 25.2	19.9
104817	2000	HV ₅₁	16.0	X	160.21235	95.93218	49.59364	3.84958	0.1276963	0.25792923	2.4441940	20	8 20.8	19.7
104818	2000	HE ₅₂	15.0	X	7.58228	171.81625	224.31519	4.02370	0.1307448	0.26866850	2.3786190	20	—	—
104819	2000	HK ₅₄	15.0	X	208.46118	186.92534	84.45715	2.90744	0.1276953	0.17926450	3.1151086	20	—	—
104820	2000	HQ ₅₅	14.8	X	254.48262	258.93290	333.23241	2.82842	0.0719205	0.18328027	3.0694382	20	—	—
104821	2000	HR ₅₅	16.3	X	210.72982	193.50961	317.04970	1.68446	0.1443500	0.26702951	2.3883422	20	10 16.7	19.7
104822	2000	HS ₅₅	16.1	X	93.93865	322.86118	237.75287	5.46562	0.0765706	0.25586590	2.4573166	20	8 11.6	19.4
104823	2000	HK ₅₆	15.2	X	123.59567	305.31777	41.11188	15.71671	0.2198160	0.22798483	2.6537830	20	1 1.6	19.3
104824	2000	HP ₅₆	15.2	X	291.92111	141.81561	72.03857	4.52374	0.0543519	0.18646964	3.0343381	20	1 15.6	19.4
104825	2000	HJ ₅₈	14.7	X	291.50990	290.43526	224.19756	8.58181	0.0666346	0.17799553	3.1298966	20	—	—
104826	2000	HM ₅₈	16.1	X	292.08528	311.45693	41.36487	7.17302	0.2216949	0.30224881	2.1990055	20	6 14.7	18.3
104827	2000	HP ₅₉	14.7	X	207.57478	44.79592	229.98425	9.33189	0.0544102	0.18206501	3.0830818	20	—	—
104828	2000	HC ₆₀	15.5	X	246.05428	200.60850	68.92754	2.18516	0.0904730	0.18644498	3.0346055	20	1 27.0	20.1
104829	2000	HX ₆₂	14.9	X	278.42311	293.36189	197.98736	16.23143	0.1067365	0.17588916	3.1548351	20	12 5.5	19.3
104830	2000	HD ₆₃	16.2	X	42.46412	13.00181	119.37368	2.60575	0.1520477	0.24266514	2.5456447	20	3 1.3	18.7
104831	2000	HQ ₆₃	15.9	X	248.55226	244.01149	43.75767	8.02051	0.1789137	0.23763980	2.5814077	20	2 10.7	20.2
104832	2000	HN ₆₄	15.2	X	211.72376	30.10954	225.53973	12.70921	0.1536330	0.22952096	2.6419290	20	—	—
104833	2000	HN ₆₅	14.6	X	131.15572	257.03190	60.79100	5.40395	0.1515565	0.17633162	3.1495554	20	—	—
104834	2000	HO ₆₇	15.4	X	209.75005	163.86379	184.99517	1.25757	0.0383450	0.19312110	2.9642596	20	3 24.9	19.6
104835	2000	HQ ₆₈	16.3	X	94.55041	356.84912	188.19657	1.98224	0.1370618	0.25384292	2.4703549	20	7 31.6	19.6
104836	2000	HH ₇₀	14.3	X	156.54471	11.77668	233.34717	12.32279	0.0622831	0.17247850	3.1962893	20	12 5.2	19.2
104837	2000	HT ₇₀	14.6	X	204.75093	194.80584	69.08139	13.08431	0.0453986	0.17967051	3.1104139	20	—	—
104838	2000	HY ₇₀	15.1	X	96.78066	269.11486	59.77300	11.92989	0.1412757	0.22114811	2.7081989	20	—	—
104839	2000	HA ₇₁	14.4	X	231.91271	267.35305	350.85118	11.56800	0.1547015	0.18329409	3.0692840	20	—	—
104840	2000	HF ₇₁	15.1	X	295.26182	126.66303	71.01276	5.88825	0.0553619	0.18510781	3.0492021	20	—	—
104841	2000	HK ₇₁	14.6	X	343.02573	267.00379	192.08552	9.31189	0.1148002	0.17945489	3.1129049	20	—	—
104842	2000	HW ₇₁	14.9	X	287.43854	208.26813	28.79991	8.94266	0.0311937	0.18864367	3.0109801	20	2 13.3	19.2
104843	2000	HZ ₇₁	16.6	X	251.08542	65.39645	211.27042	3.21476	0.2052058	0.23606773	2.5928554	20	1 24.9	20.8
104844	2000	HE ₇₂	16.2	X	193.12744	79.26450	208.38837	12.64615	0.1802139	0.22915934	2.6447076	20	—	—
104845	2000	HZ ₇₂	15.9	X	165.36060	225.66177	111.53108	11.26641	0.0109690	0.23663560	2.5887056	20	1 11.2	19.4
104846	2000	HH ₇₃	14.6	X	45.73049	141.11803	178.91363	25.92889	0.2120516	0.21393028	2.7687763	20	12 3.3	19.1
104847	2000	HV ₇₃	15.0	X	352.14031	95.98251	91.95818	12.21831	0.0569210	0.19260656	2.9695365	20	3 5.2	19.1
104848	2000	HL ₇₄	15.1	X	188.82352	171.53153	138.70539	14.08823	0.1933639	0.23170537	2.6252982	20	1 14.9	19.5
104849	2000	HP ₇₄	15.7	X	112.00138	105.03058	207.08796	3.55918	0.1167764	0.22216697	2.6999127	20	—	—
104850	2000	HS ₇₄	15.7	X	74.97630	41.47594	94.26064	4.03787	0.0563453	0.24543757	2.5264382	20	4 17.3	18.8
104851	2000	HH ₇₅	13.9	X	42.85047	184.48793	192.31335	9.04292	0.0777193	0.17364186	3.1819970	20	—	—
104852	2000	HJ ₇₅	15.7	X	242.51274	209.87941	82.17220	5.38426	0.2313747	0.23569127	2.5956083	20	2 5.9	20.1
104853	2000	HN ₇₅	14.7	X	126.91623	188.99868	100.31092	7.34180	0.1377623	0.17137346	3.2100146	20	12 27.9	19.7
104854	2000	HR ₇₅	15.5	X	233.98129	249.15447	50.75688	3.57425	0.1595647	0.18737948	3.0245077	20	2 16.3	20.4
104855	2000	HK ₇₆	14.8	X	308.46123	183.99591	60.22266	15.89580	0.1150344	0.19123305	2.9837385	20	3 12.5	19.1
104856	2000	HJ ₇₇	15.5	X	264.15991	133.56137	111.07121	13.99722	0.1170976	0.23817974	2.5775049	20	1 5.9	19.3
104857	2000	HT ₇₇	14.3	X	0.37347	296.44927	238.43262	8.89648	0.0681698	0.19276955	2.9678624	20	2 18.9	18.4
104858	2000	HA ₇₈	14.3	X	176.31197	291.17352	5.66298	16.47213	0.1229876	0.18176626	3.0864591	20	—	—
104859	2000	HU ₇₈	14.6	X	194.59101	167.90252	88.35099	18.86347	0.1641610	0.17842531	3.1248685	20	—	—
104860	2000	HV ₇₈	15.8	X	278.91993	131.49763	100.61338	15.29099	0.1231940	0.23735418	2.5834781	20	1 5.6	19.5
104861	2000	HT ₇₉	15.5	X	214.34464	91.36015	124.43419	14.32425	0.0628611	0.22531511	2.6747047	20	—	—
104862	2000	HV ₇₉	15.2	X	97.23030	78.85589	105.40403	15.95129	0.0902235	0.20522967	2.8464875	20	7 25.5	19.3
104863	2000	HA ₈₂	16.8	X	295.58627	185.43115	52.97264	4.12870	0.0933904	0.28789005	2.2715290	20	1 30.5	19.7
104864	2000	HF ₈₂	15.5	X	131.67655	51.18164	38.61892	3.79151	0.1255650	0.24726438	2.5139792	20	5 6.2	19.1
104865	2000	HG ₈₆	15.9	X	352.76899	109.38743	85.79830	6.12557	0.1107640	0.24107689	2.5568132	20	3 2.0	18.8
104866	2000	HM ₈₆	13.9	X	288.77351	233.62096	212.53379	14.85167	0.0520247	0.16818140	3.2505042	20	10 29.4	18.1
104867	2000	HY ₈₆	15.2	X	155.92631	180.39228	64.49797	17.99133	0.2106445	0.21947254	2.7219654	20	12 7.8	19.8
104868	2000	HP ₈₇	15.6	X	205.01994	87.08641	155.86134	8.14807	0.2164025	0.22673721	2.6635091	20	—	—
104869	2000	HQ ₈₉	16.4	X	137.95877	181.58859	0.80320	1.18908	0.1334754	0.25953466	2.4341040	20	9 13.9	20.1
104870	2000	HV ₉₃	15.0	X	207.93504	138.36399	216.95197	8.10602	0.1306806	0.19248486	2.9707880	20	3 26.2	19.8
104871	200													

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
104881 2000 <i>HJ</i> ₁₀₃	15.8 ^m	X	212.97536	160.30451	102.49754	5.68674	0.1937325	0.23085734	2.6317235	20	—	—
104882 2000 <i>HK</i> ₁₀₃	13.9	X	17.98689	293.57009	98.71336	14.55594	0.1061724	0.17387377	3.1791670	20	12 29.5	18.0
104883 2000 <i>HT</i> ₁₀₃	15.7	X	189.51158	219.90222	97.58708	10.00194	0.0818614	0.23479627	2.6022074	20	1 20.7	19.6
104884 2000 <i>HU</i> ₁₀₃	16.3	X	222.16739	139.10442	127.54901	7.35620	0.2172747	0.23123721	2.6288405	20	—	—
104885 2000 <i>HW</i> ₁₀₃	15.2	X	250.52843	112.15369	126.25389	15.70690	0.0755829	0.23142676	2.6274049	20	—	—
104886 2000 <i>JS</i>	16.5	X	291.66673	231.63298	298.26020	1.35977	0.1443316	0.28030511	2.3123241	20	—	—
104887 2000 <i>JH</i> ₁	16.2	X	152.45091	196.04130	87.30021	23.84525	0.0678314	0.37248959	1.9130513	20	—	—
104888 2000 <i>JL</i> ₁	14.1	X	98.84459	335.73358	348.51847	11.59853	0.0404735	0.17679027	3.1441057	20	—	—
104889 2000 <i>JQ</i> ₁	15.3	X	305.64702	107.06450	158.14968	2.82258	0.0519402	0.19611941	2.9339700	20	4 4.5	19.2
104890 2000 <i>JT</i> ₁	15.0	X	338.16291	18.79957	80.37775	26.34398	0.2144654	0.28075614	2.3098470	20	—	—
104891 2000 <i>JA</i> ₂	14.8	X	43.43288	269.52323	249.23090	7.73395	0.1056156	0.19581902	2.9369697	20	4 6.2	18.5
104892 2000 <i>JB</i> ₂	14.2	X	182.82927	191.70172	20.84148	14.68974	0.0696876	0.17033464	3.2230527	20	11 19.9	19.2
104893 2000 <i>JO</i> ₂	16.6	X	151.26048	152.52253	175.09257	22.39423	0.0627422	0.37532204	1.9034143	20	—	—
104894 2000 <i>JL</i> ₃	16.8	X	165.91687	136.98073	188.96157	22.98449	0.0948980	0.37877524	1.8918281	20	—	—
104895 2000 <i>JU</i> ₄	15.5	X	185.67210	33.96216	10.00388	4.90074	0.1133862	0.20342358	2.8633110	20	5 3.3	19.9
104896 Schwanden	15.0	X	217.90496	182.69824	56.94007	19.21781	0.0785432	0.17804011	3.1293742	20	—	—
104897 2000 <i>JP</i> ₅	15.8	X	108.10658	159.24433	179.67086	5.00802	0.1853924	0.22320931	2.6915008	20	—	—
104898 2000 <i>JX</i> ₅	13.7	X	297.18269	267.08585	32.07955	29.23356	0.3981537	0.19807405	2.9146360	20	3 29.6	18.4
104899 2000 <i>JS</i> ₆	15.9	X	175.09041	90.82163	162.57654	11.71046	0.1694918	0.22315735	2.6919185	20	—	—
104900 2000 <i>JL</i> ₇	14.9	X	333.39269	18.75394	43.47657	1.06801	0.1454914	0.17484700	3.1673587	20	12 1.9	18.5
104901 2000 <i>JM</i> ₇	15.2	X	203.32186	121.75493	152.03914	0.61178	0.1014771	0.18206587	3.0830722	20	—	—
104902 2000 <i>JN</i> ₈	15.9	X	30.39526	186.00898	224.54298	19.47843	0.1104322	0.37429101	1.9069082	20	—	—
104903 2000 <i>JJ</i> ₉	14.1	X	328.06369	90.94082	22.99602	16.53358	0.2084006	0.18154716	3.0889419	20	—	—
104904 2000 <i>JP</i> ₉	15.7	X	106.67036	117.58420	188.97780	3.04820	0.1779592	0.21935202	2.7229622	20	—	—
104905 2000 <i>JW</i> ₉	15.4	X	172.89555	153.24095	136.10593	13.18535	0.0936551	0.22756631	2.6570358	20	—	—
104906 2000 <i>JK</i> ₁₀	15.0	X	323.09320	267.07683	235.09536	21.86383	0.2139907	0.28257132	2.2999443	20	—	—
104907 2000 <i>JX</i> ₁₀	15.5	X	114.21230	262.35433	205.23613	13.38155	0.1374935	0.20022678	2.8937073	20	5 13.6	19.8
104908 2000 <i>JZ</i> ₁₀	14.3	X	124.85524	107.89861	252.21944	8.94594	0.0659056	0.18322028	3.0701082	20	1 5.9	18.7
104909 2000 <i>JV</i> ₁₂	15.3	X	235.39262	192.12736	44.39184	1.89077	0.0901974	0.18046031	3.1013319	20	—	—
104910 2000 <i>JL</i> ₁₃	15.4	X	203.44732	254.61377	58.98234	13.58014	0.2013058	0.23133227	2.6281202	20	2 4.4	20.1
104911 2000 <i>JX</i> ₁₃	14.8	X	216.16722	117.48908	185.64475	3.07691	0.2250639	0.18415459	3.0597153	20	2 1.4	20.0
104912 2000 <i>JB</i> ₁₅	14.5	X	90.02026	359.75145	262.33658	6.95337	0.2209029	0.21110171	2.7934541	20	11 4.5	19.1
104913 2000 <i>JK</i> ₁₅	15.6	X	112.31015	71.81382	230.68800	8.53993	0.2544908	0.21749397	2.7384484	20	—	—
104914 2000 <i>JJ</i> ₁₆	14.7	X	140.91987	82.21609	187.93225	9.26047	0.0306154	0.17282678	3.1919937	20	12 17.9	19.5
104915 2000 <i>JR</i> ₁₆	14.3	X	280.91927	126.16987	66.84210	28.71579	0.2150193	0.18110739	3.0939403	20	—	—
104916 2000 <i>JM</i> ₁₇	15.4	X	312.80057	139.37992	76.93522	17.70511	0.1812135	0.18891603	3.0080855	20	1 27.8	19.7
104917 2000 <i>JR</i> ₁₇	15.7	X	179.66342	60.04835	138.83929	5.43180	0.0597831	0.26795733	2.3828258	20	11 21.3	19.1
104918 2000 <i>JX</i> ₁₇	15.9	X	209.94667	333.29429	164.09124	7.43373	0.1934086	0.26610986	2.3938416	20	9 25.1	19.5
104919 2000 <i>JA</i> ₁₈	15.6	X	97.82724	90.91646	166.70489	7.94570	0.2429438	0.21282463	2.7783575	20	11 11.0	20.3
104920 2000 <i>JU</i> ₁₈	15.5	X	168.65293	147.63480	108.37065	15.16552	0.1433988	0.22340933	2.6898941	20	—	—
104921 2000 <i>JW</i> ₁₈	14.2	X	181.88476	115.68868	116.06002	18.57637	0.1573507	0.17206596	3.2013961	20	12 12.4	19.5
104922 2000 <i>JA</i> ₁₉	14.7	X	354.66660	339.29996	98.78293	25.79834	0.2030779	0.27702898	2.3305186	20	—	—
104923 2000 <i>JN</i> ₂₀	15.9	X	313.13995	334.56730	255.43830	3.62072	0.1642859	0.24058194	2.5603187	20	2 5.0	19.2
104924 2000 <i>JL</i> ₂₁	14.9	X	203.10907	239.69445	27.14286	14.60729	0.1139996	0.17980292	3.1088947	20	—	—
104925 2000 <i>JJ</i> ₂₂	16.0	X	357.09698	167.75346	25.41212	2.31893	0.0872341	0.24155232	2.5534572	20	3 6.1	18.8
104926 2000 <i>JS</i> ₂₃	15.4	X	251.49907	359.25417	240.73422	13.12239	0.1220351	0.23321108	2.6139860	20	—	—
104927 2000 <i>JU</i> ₂₃	15.3	X	319.57355	3.92993	245.82413	12.00173	0.1038506	0.24357400	2.5393083	20	3 16.1	18.7
104928 2000 <i>JS</i> ₂₅	15.2	X	295.76315	30.34244	225.46235	10.13854	0.0583909	0.19184406	2.9773997	20	3 5.5	19.5
104929 2000 <i>JX</i> ₂₅	15.7	X	226.13495	285.91596	0.19551	0.55775	0.1682661	0.18419595	3.0592573	20	1 23.4	20.6
104930 2000 <i>JO</i> ₂₈	15.4	X	237.23641	242.85005	31.97628	9.18688	0.1688698	0.23345456	2.6121682	20	1 15.9	19.8
104931 2000 <i>JC</i> ₂₉	15.9	X	332.01674	299.55286	271.99552	4.30940	0.1990959	0.24046851	2.5611238	20	2 2.3	18.7
104932 2000 <i>JH</i> ₂₉	14.8	X	125.26810	47.77008	238.86971	7.79527	0.2615286	0.21853027	2.7297842	20	—	—
104933 2000 <i>JJ</i> ₂₉	15.7	X	353.17083	333.65724	236.96981	8.47492	0.1478202	0.24314988	2.5422603	20	3 13.3	18.4
104934 2000 <i>JN</i> ₂₉	15.7	X	203.77877	245.59555	306.20399	1.56160	0.1636572	0.26992403	2.3712373	20	11 30.1	18.9
104935 2000 <i>JN</i> ₃₀	16.9	X	5.54486	310.13055	301.71722	1.47006	0.1832155	0.29768865	2.2214056	20	6 19.7	18.2
104936 2000 <i>JN</i> ₃₁	15.3	X	180.50037	307.74082	238.50842	6.80415	0.2418903	0.21757812	2.7377424	20	10 17.9	20.2
104937 2000 <i>JY</i> ₃₁	15.4	X	211.44986	50.78783	246.61421	11.80431	0.1696483	0.23204918	2.6227045	20	1 16.0	19.9
104938 2000 <i>JT</i> ₃₂	15.7	X	167.45016	296.46671	254.34591	3.60877	0.1417307	0.26430285	2.4047401	20	10 22.8	19.4
104939 2000 <i>JK</i> ₃₃	14.2	X	135.70054	71.59858	241.50446	19.06764	0.0946739	0.17497965	3.1657578	20	—	—
104940 2000 <i>JC</i> ₃₅	15.3	X	120.60140	99.59160	229.39288	14.21879	0.1441753	0.22430840	2.6827015	20	—	—
104941 2000 <i>JK</i> ₃₅	16.0	X	197.84511	272.78332	33.48530	3.70049	0.1140185	0.23208569	2.6224294	20	1 17.1	20.0
104942 2000 <i>JZ</i> ₃₅	14.2	X	191.43732	68.32715	234.18295	13.76254	0.1880902	0.17990985	3.1076547	20	1 11.4	19.7
104943 2000 <i>JQ</i> ₄₀	13.1	X	302.18104	20.22070	72.81448	9.65152	0.1924291	0.12504905	3.9604919	20	11 2.5	18.0
104944 2000 <i>JN</i> ₄₁	14.8	X	118.00603	14.05688	41.75435	9.35813	0.0883882	0.19112239	2.9848900	20	3 12.2	19.2
104945 2000 <i>JN</i> ₄₂	14.9	X	150.08051	178.94914	155.96686	1.23286	0.1902081	0.18020497	3.1042608	20	1 16.8	19.9
104946 2000 <i>JU</i> ₄₂	16.5	X	317.06593	260.35826	79.51468	3.13776	0.2013808	0.30135944	2.2033298	20	7 22.3	17.7
104947 2000 <i>JB</i> ₄₃	15.7	X	192.39804	228.63472	51.15624	2.18593	0.0356503	0.22941156	2.6427689	20	—	—
104948 2000 <i>JN</i> ₄₃	15.4	X	15.30487	276.95036	241.16814	0.86033	0.0469140	0.18957008	3.0011626	20	2 23.8	19.2
104949 2000 <i>JR</i> ₄₄	15.2	X	297.97129	102.83535	73.22768	1.42807	0.1307811	0.18185133	3.0854965	20	—	—
104950 2000 <i>JX</i> ₄₄	15.1	X	239.01732	295.31939	229.57091	13.01713	0.1783246	0.17329458	3.1862467	20	11 15.6	19.9
104951 2000 <i>JY</i> ₄₄	15.5	X	263.49980	58.73708	160.14959	1.41720	0.1191412	0.18160715	3.0882616	20	—	—
104952 2000 <i>JV</i> ₄₅	14.6	X	137.82468	170.91382	104.83963	2.58609	0.1412135	0.17000868	3.2271711	20	12 21.9	19.8
10												

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
104961 2000 JX ₅₂	15.8 ^m	X	302.32482	237.37636	346.65703	3.49480	0.1669628	0.23638172	2.5905588	20	1 17.2	19.4
104962 2000 JY ₅₂	15.4	X	183.60350	14.42480	251.71711	12.29283	0.2358993	0.22382188	2.6865877	20	—	—
104963 2000 JE ₅₄	15.1	X	180.45082	67.89486	257.84467	3.86365	0.3147272	0.23099201	2.6307005	20	1 30.2	20.0
104964 2000 JP ₅₄	14.6	X	244.84971	187.14616	80.69417	6.42478	0.1604179	0.18422503	3.0589353	20	1 19.6	19.6
104965 2000 JH ₅₆	16.1	X	159.02319	87.72440	215.43390	10.85253	0.1735379	0.22476481	2.6790686	20	—	—
104966 2000 JU ₅₇	14.9	X	266.15024	91.96046	229.79696	11.95757	0.2011856	0.24099023	2.5574261	20	3 31.6	19.0
104967 2000 JW ₅₇	14.5	X	199.84372	215.57718	69.54751	18.35113	0.1729814	0.17835275	3.1257159	20	—	—
104968 2000 JX ₅₈	15.1	X	115.68597	127.52377	94.50121	8.93666	0.1631644	0.21070611	2.7969495	20	10 12.3	19.7
104969 2000 JF ₅₉	15.0	X	161.85528	299.31982	347.71068	12.65721	0.2506384	0.22490634	2.6779446	20	—	—
104970 2000 JQ ₅₉	15.1	X	255.53098	237.66945	9.09005	13.01097	0.2497955	0.18381151	3.0635214	20	—	—
104971 2000 JJ ₆₀	15.1	X	285.66507	182.29020	19.96322	4.80545	0.1665683	0.18347993	3.0672112	20	—	—
104972 2000 JX ₆₃	15.5	X	198.95111	141.10688	193.79369	2.58022	0.2428509	0.23425793	2.6061927	20	2 20.9	20.2
104973 2000 JM ₆₄	14.5	X	6.67735	98.40854	317.36376	8.73747	0.2361907	0.27701656	2.3305883	20	—	—
104974 2000 JX ₆₄	15.9	X	141.17755	106.56178	140.13791	24.13021	0.2840824	0.21820365	2.7325076	20	12 4.6	21.3
104975 2000 JB ₆₅	14.8	X	308.35403	86.47548	94.00558	13.71796	0.2088452	0.18511668	3.0491048	20	—	—
104976 2000 JH ₆₅	13.9	X	91.62385	257.84492	82.66458	23.21648	0.2366680	0.16954488	3.2330538	20	—	—
104977 2000 JX ₆₅	14.1	X	243.52326	8.29266	221.65222	22.41548	0.0928164	0.17810608	3.1286013	20	—	—
104978 2000 JZ ₆₅	14.1	X	192.54520	205.16419	75.16122	28.84478	0.1275190	0.17847508	3.1242876	20	—	—
104979 2000 JN ₆₉	14.1	X	208.18644	63.94293	160.76197	19.78218	0.1729945	0.17387230	3.1791849	20	12 25.3	19.4
104980 2000 JB ₇₁	16.2	X	281.18078	230.32488	62.64235	4.95467	0.2405303	0.24163886	2.5528475	20	3 11.9	20.1
104981 2000 JS ₇₁	14.8	X	159.95385	160.54676	105.09107	2.44401	0.1118429	0.17420436	3.1751435	20	12 31.0	19.7
104982 2000 JS ₇₃	14.9	X	228.20983	81.78505	108.57062	14.76127	0.1339600	0.22314370	2.6920283	20	12 21.2	18.6
104983 2000 JY ₇₃	15.1	X	258.48259	170.46487	106.58709	4.53231	0.1535389	0.18699705	3.0286300	20	2 12.1	19.7
104984 2000 JL ₇₇	15.7	X	303.29393	351.40983	218.87918	4.10872	0.0838579	0.23526769	2.5987302	20	1 11.4	19.3
104985 2000 JB ₇₉	15.3	X	235.15763	232.27626	210.80221	10.71979	0.0704559	0.21114239	2.7930953	20	8 26.5	19.5
104986 2000 JQ ₈₂	15.0	X	289.53510	97.55260	29.88773	3.34743	0.0697659	0.17506611	3.1647154	20	12 19.0	19.1
104987 2000 JK ₈₃	15.2	X	83.07963	106.18554	226.36109	13.16555	0.2362590	0.21767285	2.7369479	20	—	—
104988 2000 JB ₈₄	16.7	X	325.70022	252.25418	218.52237	20.79512	0.0934219	0.37370069	1.9089159	20	—	—
104989 2000 JH ₈₄	15.1	X	237.99314	157.36463	143.12543	5.73591	0.1118090	0.18865175	3.0108942	20	2 22.3	19.6
104990 2000 JR ₈₄	15.9	X	238.17200	61.80665	171.61627	4.33141	0.1572380	0.23049405	2.6344881	20	—	—
104991 2000 JT ₈₄	14.8	X	311.36163	354.07357	196.09807	11.73517	0.1013365	0.18631551	3.0360112	20	1 2.2	19.2
104992 2000 JF ₈₅	15.9	X	242.30488	74.07331	171.82578	11.64276	0.1260486	0.23092063	2.6312426	20	—	—
104993 2000 JQ ₈₅	16.1	X	180.61038	251.01318	93.95455	0.99206	0.2976517	0.23578918	2.5948971	20	2 21.7	20.6
104994 2000 JY ₈₅	14.1	X	167.80984	239.22223	98.74245	17.99928	0.2304956	0.18093432	3.0959130	20	2 8.6	19.5
104995 2000 KJ	16.1	X	147.51858	23.27317	165.88040	1.36025	0.1323949	0.26048974	2.4281507	20	10 2.3	19.7
104996 2000 KH ₂	14.1	X	115.32999	184.67797	121.89799	30.13381	0.1653437	0.17173906	3.2054573	20	—	—
104997 2000 KS ₂	13.9	X	203.36132	125.34217	186.21241	22.14742	0.2900286	0.18061984	3.0995055	20	1 30.1	19.9
104998 2000 KT ₂	14.6	X	230.08671	83.84657	128.77248	26.26899	0.1846311	0.17522727	3.1627747	20	—	—
104999 2000 KW ₂	14.4	X	214.61892	123.92987	144.53578	21.86514	0.0739389	0.17916122	3.1163056	20	—	—
105000 2000 KZ ₃	14.4	X	204.23782	126.43614	236.48702	10.46663	0.1404312	0.18997446	2.9969022	20	3 30.4	19.4
105001 2000 KH ₅	16.5	X	351.19504	247.49556	219.57005	21.09058	0.1060156	0.37524705	1.9036679	20	—	—
105002 2000 KN ₅	14.1	X	177.08055	347.21031	254.51218	35.09981	0.1057616	0.22000532	2.7175691	20	12 24.6	18.5
105003 2000 KX ₅	15.3	X	134.70761	219.84326	127.94353	9.63886	0.2214556	0.22676678	2.6632775	20	1 14.7	19.3
105004 2000 KZ ₅	14.4	X	196.08272	243.94105	109.03865	12.68579	0.2803695	0.23528122	2.5986305	20	3 16.8	19.3
105005 2000 KR ₆	14.2	X	195.81219	153.71642	104.36818	12.36594	0.1131634	0.17570791	3.1570042	20	—	—
105006 2000 KP ₁₀	15.5	X	204.27409	84.65322	193.16201	2.08451	0.2208362	0.17863070	3.1224727	20	—	—
105007 2000 KR ₁₀	15.2	X	34.34483	197.11038	209.94127	3.54946	0.0692346	0.17600906	3.1534022	20	—	—
105008 2000 KZ ₁₀	15.5	X	132.46069	49.84658	236.08191	4.81922	0.1132570	0.22061743	2.7125401	20	—	—
105009 2000 KA ₁₂	16.8	X	139.97473	238.59035	81.07510	2.98683	0.2041428	0.27382605	2.3486567	20	—	—
105010 2000 KN ₁₂	15.8	X	314.22247	40.85258	61.08606	9.35736	0.1967265	0.27341748	2.3509959	20	—	—
105011 2000 KW ₁₂	16.2	X	231.08206	273.56012	62.67916	8.80229	0.2673774	0.28733870	2.2744338	20	3 18.7	20.2
105012 2000 KG ₁₃	15.6	X	243.91546	223.48825	92.43025	0.46551	0.1692788	0.19000654	2.9965649	20	3 12.6	20.2
105013 2000 KH ₁₃	16.0	X	264.76636	177.57375	234.50951	5.67658	0.0942221	0.25688245	2.4508295	20	8 16.9	19.2
105014 2000 KK ₁₃	15.3	X	337.18507	153.72747	61.43361	4.03389	0.0310578	0.19118383	2.9842506	20	3 18.1	19.3
105015 2000 KL ₁₃	15.5	X	260.67384	267.57267	61.61745	2.68553	0.1201893	0.19464266	2.9487913	20	4 19.8	19.9
105016 2000 KM ₁₃	15.1	X	168.47218	154.08947	232.15989	10.14325	0.1078421	0.19076748	2.9885910	20	3 24.1	19.9
105017 2000 KT ₁₃	15.0	X	227.57045	224.15687	61.46251	11.77825	0.0582656	0.18490236	3.0514605	20	1 31.6	19.7
105018 2000 KU ₁₅	15.8	X	291.21115	197.39490	89.33401	2.16697	0.1728491	0.19263702	2.9692234	20	3 27.0	19.9
105019 2000 KK ₁₆	15.2	X	178.55587	95.85122	244.32242	11.03623	0.1991091	0.23194581	2.6234836	20	2 6.9	19.8
105020 2000 KD ₁₇	15.6	X	223.23560	68.78829	243.05084	9.39926	0.1889236	0.23439438	2.6051811	20	2 10.2	20.2
105021 2000 KR ₂₁	13.8	X	128.59021	35.82956	250.63589	11.47906	0.0814267	0.16990602	3.2284709	20	12 23.8	18.8
105022 2000 KQ ₂₉	14.5	X	271.98547	227.65359	70.40100	13.93806	0.0424069	0.19111522	2.9849646	20	4 10.8	18.9
105023 2000 KD ₃₀	14.7	X	224.71485	99.68348	155.71175	1.12742	0.1216989	0.17865006	3.1222471	20	—	—
105024 2000 KH ₃₀	15.1	X	232.61125	176.44912	136.39603	1.86116	0.1413411	0.18660281	3.0328942	20	2 29.9	20.0
105025 2000 KS ₃₀	14.4	X	183.46008	155.46043	255.72078	11.38737	0.0603104	0.19449949	2.9502382	20	5 10.2	18.9
105026 2000 KX ₃₀	14.8	X	210.21661	150.92693	89.04347	0.42443	0.1617131	0.17496198	3.1659709	20	—	—
105027 2000 KT ₃₁	15.5	X	180.07861	234.80048	83.76558	5.90241	0.2234955	0.22754381	2.6572109	20	1 20.4	20.1
105028 2000 KM ₃₂	15.6	X	119.15716	79.81963	246.04882	1.74654	0.1404313	0.22143596	2.7058514	20	—	—
105029 2000 KG ₃₃	15.2	X	216.59551	25.67989	254.06811	13.16611	0.2454417	0.22819287	2.6521699	20	1 1.3	20.0
105030 2000 KB ₃₅	16.2	X	158.85101	149.55929	157.95436	6.85430	0.2265026	0.22427033	2.6830051	20	—	—
105031 2000 KE ₃₅	14.5	X	294.88186	86.48912	79.38074	16.99944	0.1851151	0.18002362	3.1063453	20	—	—
105032 2000 KJ ₃₆	14.8	X	236.46254	159.72729	197.68705	9.36706	0.0476345	0.19387366	2.9565837	20	5 6.3	19.0
105033 2000 KU ₃₆	15.6	X	156.81111	209.21581	68.09532	6.99734	0.1015147	0.22142795	2.7059167	20	—	—
105034 2000 KF ₃₇	14.6	X	263.68050	334.40788	43.77058	18.44440	0.2803532	0.20197337	2.8770007	20	5 31	

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
105041 2000 <i>KO</i> ₄₁	14.3	X	217.33195	125.29086	197.31326	10.09713	0.1866479	0.18598708	3.0395844	20	2 23.3	19.5
105042 2000 <i>KB</i> ₄₂	14.5	X	174.80116	251.28849	83.60811	12.00000	0.0922079	0.18277471	3.0750957	20	2 4.5	19.3
105043 2000 <i>KH</i> ₄₂	14.3	X	146.02092	149.35619	156.70039	14.52109	0.1646879	0.17287727	3.1913721	20	—	—
105044 2000 <i>KM</i> ₄₂	14.5	X	299.60608	21.31828	187.83275	17.73592	0.1130522	0.23330678	2.6132711	20	—	—
105045 2000 <i>KH</i> ₄₈	15.0	X	116.59480	84.72374	222.76306	11.60297	0.1533574	0.21850707	2.7299775	20	—	—
105046 2000 <i>KP</i> ₄₈	15.6	X	225.49704	170.30612	138.73390	6.22467	0.1502838	0.23366835	2.6105746	20	2 14.2	19.7
105047 2000 <i>KG</i> ₅₂	14.9	X	312.48467	28.74596	119.32765	2.55069	0.1613770	0.18169692	3.0872443	20	—	—
105048 2000 <i>KN</i> ₅₂	14.8	X	264.24224	3.19565	194.51427	7.25077	0.0962804	0.17993656	3.1073471	20	—	—
105049 2000 <i>KB</i> ₅₃	15.2	X	101.49594	147.14928	219.10376	11.11398	0.1944337	0.22498431	2.6773258	20	—	—
105050 2000 <i>KV</i> ₅₃	15.2	X	149.31722	191.05830	134.80319	14.05868	0.2923864	0.22628368	2.6670668	20	1 8.6	19.8
105051 2000 <i>KW</i> ₅₃	15.9	X	320.34986	49.96920	158.38120	12.85780	0.1430005	0.23872405	2.5735855	20	1 21.1	19.4
105052 2000 <i>KD</i> ₅₄	15.1	X	337.38395	104.08857	146.15833	13.39960	0.1313601	0.24398699	2.5364420	20	4 22.8	18.1
105053 2000 <i>KF</i> ₅₄	15.9	X	227.32486	104.99695	177.43366	15.12952	0.1597027	0.23154893	2.6264806	20	1 13.2	20.4
105054 2000 <i>KJ</i> ₅₅	15.3	X	256.84345	38.94767	216.39379	3.97034	0.2502544	0.23259058	2.6186330	20	1 2.9	19.7
105055 2000 <i>KR</i> ₅₇	16.0	X	281.02245	145.26119	133.98797	4.21324	0.2658825	0.19026367	2.9938645	20	2 23.9	20.6
105056 2000 <i>KR</i> ₅₈	15.2	X	301.55923	90.53972	127.66722	9.79079	0.0844395	0.18756837	3.0224769	20	1 27.5	19.4
105057 2000 <i>KX</i> ₆₀	14.6	X	240.59546	12.21312	200.69871	9.90049	0.0646693	0.17781855	3.1319729	20	—	—
105058 2000 <i>KH</i> ₆₁	14.7	X	186.63591	227.89164	84.06616	18.47348	0.2094625	0.18019958	3.1043228	20	1 22.7	20.1
105059 2000 <i>KN</i> ₆₁	15.9	X	135.41532	164.61209	93.27072	6.09505	0.1857260	0.26631887	2.3925889	20	12 15.6	19.9
105060 2000 <i>KT</i> ₆₁	15.4	X	260.55329	234.43902	86.97924	2.89919	0.2694390	0.19136421	2.9823749	20	3 26.5	20.2
105061 2000 <i>KB</i> ₆₂	14.5	X	91.33791	132.33494	211.03933	32.46106	0.2916336	0.21873080	2.7281156	20	—	—
105062 2000 <i>KE</i> ₆₂	15.0	X	186.39534	181.19250	108.47513	14.64024	0.1777287	0.22743083	2.6580909	20	—	—
105063 2000 <i>KZ</i> ₆₂	14.5	X	35.64784	235.69347	191.74991	13.40798	0.0086305	0.17857876	3.1230781	20	—	—
105064 2000 <i>KH</i> ₆₃	14.6	X	258.46362	357.36371	167.02723	8.97858	0.1789798	0.17607116	3.1526606	20	12 9.2	19.0
105065 2000 <i>KO</i> ₆₃	14.6	X	206.59825	138.39465	206.61497	14.64946	0.1722220	0.23801158	2.5787188	20	3 7.2	19.0
105066 2000 <i>KW</i> ₆₃	14.3	X	2.55542	205.98095	178.47902	14.08061	0.0309455	0.16844548	3.2471060	20	11 22.6	19.0
105067 2000 <i>KA</i> ₆₆	15.2	X	249.00459	94.18248	180.22439	15.36552	0.0370043	0.23530727	2.5984388	20	1 30.8	19.1
105068 2000 <i>KD</i> ₆₆	14.5	X	155.27676	115.05451	151.47852	17.41068	0.1290203	0.17140426	3.2096300	20	12 27.6	19.9
105069 2000 <i>KQ</i> ₆₆	15.2	X	269.59384	105.71048	183.27774	26.24635	0.1317185	0.23776742	2.5804839	20	3 3.1	19.1
105070 2000 <i>KV</i> ₆₆	14.8	X	211.44636	111.45474	163.87387	9.35536	0.1173156	0.18188145	3.0851558	20	—	—
105071 2000 <i>KX</i> ₆₆	14.7	X	354.28383	89.66422	94.75242	22.73152	0.1138128	0.19269017	2.9686774	20	3 2.5	18.8
105072 2000 <i>KY</i> ₆₆	14.5	X	278.18739	18.48586	114.36098	23.71292	0.0922077	0.17509180	3.1644059	20	12 12.1	19.0
105073 2000 <i>KY</i> ₆₇	15.3	X	97.08264	323.83225	39.06426	1.46650	0.1950660	0.17660014	3.1463620	20	—	—
105074 2000 <i>KB</i> ₆₈	14.2	X	161.54959	134.73168	139.07595	22.78311	0.0222980	0.17707170	3.1407735	20	—	—
105075 2000 <i>KS</i> ₆₉	14.9	X	24.08681	331.25756	97.24646	12.57002	0.0797377	0.17772441	3.1330789	20	—	—
105076 2000 <i>KF</i> ₇₀	14.4	X	181.36057	143.91871	134.10558	11.13416	0.1841257	0.17633146	3.1495573	20	—	—
105077 2000 <i>KT</i> ₇₀	14.7	X	243.64767	91.80331	58.18726	14.03960	0.1451856	0.17193762	3.2029890	20	11 8.5	19.2
105078 2000 <i>KD</i> ₇₁	15.9	X	252.39483	92.48028	171.42486	13.76597	0.1064605	0.23432743	2.6056773	20	1 17.1	20.0
105079 2000 <i>KV</i> ₇₃	14.7	X	177.12738	73.47744	203.14497	16.84384	0.2400547	0.17504131	3.1650143	20	—	—
105080 2000 <i>KB</i> ₇₄	15.2	X	273.17129	249.61787	168.41358	6.36240	0.1129860	0.26013164	2.4303786	20	9 7.3	18.1
105081 2000 <i>KF</i> ₇₄	13.9	X	54.10370	314.66397	70.65159	23.04140	0.0904219	0.17603905	3.1530440	20	—	—
105082 2000 <i>KC</i> ₇₅	15.1	X	197.15274	194.97754	75.22637	13.42552	0.0974134	0.17816167	3.1279505	20	—	—
105083 2000 <i>KF</i> ₇₅	15.8	X	163.38515	142.03612	112.05576	8.51104	0.1688572	0.22110356	2.7085627	20	12 27.6	20.1
105084 2000 <i>KC</i> ₇₆	15.3	X	98.61180	175.17246	158.75631	15.50611	0.1959879	0.21915646	2.7245819	20	—	—
105085 2000 <i>KH</i> ₇₈	14.9	X	259.41174	111.18374	152.48464	9.44314	0.0919017	0.18500397	3.0503430	20	2 1.7	19.4
105086 2000 <i>KR</i> ₇₈	15.8	X	164.41583	112.57840	221.35982	11.05876	0.2663939	0.22767706	2.6561741	20	1 24.4	20.6
105087 2000 <i>KB</i> ₇₉	14.7	X	230.92219	158.06466	136.42868	7.52066	0.1737730	0.18406731	3.0606825	20	2 5.5	19.7
105088 2000 <i>KO</i> ₈₁	15.5	X	270.28459	114.22865	215.28400	12.28203	0.1877000	0.24434023	2.5339968	20	4 19.2	19.2
105089 2000 <i>KY</i> ₈₁	14.3	X	168.70006	335.04702	248.98185	15.09513	0.1085024	0.17117049	3.2125516	20	11 20.9	19.3
105090 2000 <i>KW</i> ₈₂	14.7	X	283.92564	188.58064	75.75609	11.18905	0.1018439	0.19226725	2.9730292	20	3 5.0	19.1
105091 2000 <i>LO</i>	14.6	X	149.55281	231.02272	37.14851	5.50723	0.1327794	0.16998417	3.2274812	20	12 23.3	19.8
105092 2000 <i>LC</i> ₁	14.8	X	345.04651	350.94488	224.01820	10.78146	0.1583298	0.19139289	2.9820769	20	3 10.8	18.5
105093 2000 <i>LE</i> ₁	14.8	X	204.94012	156.29542	95.39067	18.11587	0.1554013	0.17519352	3.1631809	20	—	—
105094 2000 <i>LK</i> ₁	14.4	X	221.47290	242.16774	98.86781	11.45716	0.1119841	0.18954899	3.0013852	20	3 30.6	19.3
105095 2000 <i>LQ</i> ₁	15.4	X	56.31778	226.42621	105.07658	9.07084	0.2227624	0.21272466	2.7792279	20	12 27.4	19.5
105096 2000 <i>LY</i> ₂	13.7	X	89.76418	53.95287	251.59391	33.36345	0.1956630	0.21273755	2.7791156	20	12 21.1	18.4
105097 2000 <i>LL</i> ₃	15.8	X	266.97832	116.43968	146.37180	8.01670	0.1671726	0.23440542	2.6050993	20	1 26.2	19.8
105098 2000 <i>LA</i> ₆	15.7	X	216.39935	98.00340	236.79730	7.80193	0.2704166	0.23683194	2.5872746	20	3 1.2	20.6
105099 2000 <i>LC</i> ₇	14.7	X	343.19041	274.73718	144.52202	7.78197	0.1186763	0.17078062	3.2174390	20	12 12.9	18.7
105100 2000 <i>LD</i> ₉	15.0	X	194.10010	172.26882	82.24582	13.14332	0.1511840	0.22369353	2.6876153	20	—	—
105101 2000 <i>LL</i> ₉	14.2	X	195.64261	75.83344	245.34793	15.57585	0.2282836	0.18114690	3.0934905	20	2 1.9	19.8
105102 2000 <i>LA</i> ₁₁	15.0	X	251.73030	106.62516	171.72969	10.34816	0.2438879	0.23297890	2.6157224	20	1 24.8	19.5
105103 2000 <i>LD</i> ₁₁	15.6	X	256.32950	51.32871	186.00637	11.31488	0.2451140	0.23035975	2.6355119	20	—	—
105104 2000 <i>LJ</i> ₁₁	15.1	X	121.76404	86.56501	163.89900	13.07218	0.1972329	0.21285578	2.7780864	20	11 20.4	20.0
105105 2000 <i>LH</i> ₁₄	14.3	X	203.78406	120.45308	241.49023	14.96343	0.3123856	0.18319373	3.0704049	20	3 24.4	20.1
105106 2000 <i>LS</i> ₁₄	16.0	X	152.23048	9.87878	306.94293	6.19320	0.3802046	0.27041911	2.3683423	20	1 2.9	20.0
105107 2000 <i>LJ</i> ₁₄	14.1	X	172.43792	274.07807	51.35095	25.38896	0.3031010	0.17469870	3.1691510	20	2 6.7	20.2
105108 2000 <i>LS</i> ₁₅	15.4	X	142.09710	0.85383	238.28364	7.87963	0.1532766	0.21220069	2.7838010	20	11 20.5	19.9
105109 2000 <i>LX</i> ₁₅	16.6	X	231.50006	106.02517	121.16895	24.86489	0.0715689	0.37692361	1.8980187	20	—	—
105110 2000 <i>LT</i> ₁₆	15.3	X	100.01006	158.18173	122.68685	10.65631	0.2395702	0.21364984	2.7711987	20	12 8.9	20.1
105111 2000 <i>LP</i> ₁₉	15.1	X	122.11366	66.94889	226.99257	8.13273	0.1431046	0.21485920	2.7607903	20	—	—
105112 2000 <i>LS</i> ₁₉	14.0	X	294.50740	323.70532	250.15498	15.						

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
105121 2000 <i>LS</i> ₃₁	14.6	X	208.57625	81.73463	253.01022	9.63391	0.2912607	0.18080811	3.0973536	20	2 26.9	20.4
105122 2000 <i>LV</i> ₃₁	15.9	X	75.81795	27.50275	279.71392	17.27828	0.0611257	0.35790916	1.9646605	20	—	—
105123 2000 <i>LZ</i> ₃₄	15.3	X	264.24021	138.73167	209.36361	8.70331	0.0466658	0.19788259	2.9165157	20	5 28.2	19.4
105124 2000 <i>LC</i> ₃₅	15.4	X	124.81382	187.26107	88.44615	13.25569	0.1469694	0.21860991	2.7291211	20	12 19.2	19.7
105125 2000 <i>LO</i> ₃₆	15.6	X	250.34889	101.60118	190.63913	12.95585	0.1639992	0.23621845	2.5917524	20	2 12.6	19.8
105126 2000 <i>ME</i> ₁	14.9	X	176.58073	48.68181	252.88347	25.64039	0.2317544	0.27059390	2.3673222	20	—	—
105127 2000 <i>MH</i> ₁	13.8	X	261.00658	316.99853	294.14586	29.18402	0.3579007	0.23105315	2.6302365	20	—	—
105128 2000 <i>MW</i> ₁	15.0	X	160.37603	75.62214	290.48372	11.60161	0.1874432	0.22828748	2.6514371	20	2 21.7	19.4
105129 2000 <i>MH</i> ₂	15.0	X	45.44487	176.73586	101.19187	9.28056	0.1932388	0.20368569	2.8608541	20	10 9.4	19.0
105130 2000 <i>MJ</i> ₂	14.3	X	219.51826	21.09241	161.46087	18.77388	0.1194124	0.17159075	3.2073041	20	11 25.8	19.4
105131 2000 <i>MD</i> ₃	14.6	X	81.81840	299.34972	104.46713	10.18136	0.0878570	0.17430455	3.1739268	20	1 11.2	18.9
105132 2000 <i>MJ</i> ₃	15.4	X	157.18790	203.71358	104.06673	12.02828	0.1798685	0.22489200	2.6780584	20	—	—
105133 2000 <i>NA</i>	15.9	X	265.48203	283.54213	32.03415	4.25388	0.2704303	0.28055884	2.3109297	20	3 18.1	19.5
105134 2000 <i>NS</i> ₁	16.1	X	57.47184	174.65609	188.16502	3.42743	0.1065750	0.21325611	2.7746086	20	—	—
105135 2000 <i>NT</i> ₁	14.2	X	167.22014	282.92086	280.31720	13.80863	0.0834251	0.20947956	2.8078568	20	10 28.9	18.7
105136 2000 <i>NB</i> ₄	15.3	X	54.29807	187.96805	173.51041	3.71060	0.1046839	0.21274713	2.7790321	20	—	—
105137 2000 <i>NA</i> ₆	14.2	X	348.51191	97.99517	363.88911	5.77676	0.3374885	0.20109142	2.8854066	20	11 4.5	16.3
105138 2000 <i>NP</i> ₆	15.3	X	303.61179	266.38589	228.03090	4.30387	0.0626305	0.21757955	2.7377303	20	—	—
105139 2000 <i>NA</i> ₇	15.1	X	164.35527	184.30973	212.80492	3.47133	0.2029870	0.23113638	2.6296050	20	4 7.2	19.5
105140 2000 <i>NL</i> ₁₀	15.8	X	31.96353	281.61090	237.36367	32.52836	0.8169638	1.12740042	0.9142899	20	8 6.2	17.9
105141 2000 <i>NF</i> ₁₁	18.9	X	311.98087	115.92501	123.73191	14.82498	0.1890416	0.58181895	1.4210547	20	—	—
105142 2000 <i>NA</i> ₁₂	14.6	X	308.81879	41.37178	133.07014	19.21343	0.0893080	0.18139962	3.0906167	20	—	—
105143 2000 <i>NJ</i> ₁₂	14.1	X	136.96049	71.05796	260.42017	16.93221	0.2250532	0.16888442	3.2414774	20	1 4.2	19.3
105144 2000 <i>NR</i> ₁₂	14.7	X	190.47397	57.50582	235.18078	11.86393	0.1196260	0.17280695	3.1922379	20	—	—
105145 2000 <i>NP</i> ₁₄	16.8	X	171.98361	203.30433	116.32118	2.01036	0.1431205	0.32218001	2.1073515	20	—	—
105146 2000 <i>NB</i> ₁₅	14.9	X	268.14746	270.46385	317.36507	12.61835	0.1499708	0.22537230	2.6742522	20	—	—
105147 2000 <i>NH</i> ₁₅	16.3	X	263.05439	27.21548	309.89405	3.59285	0.1826606	0.28651799	2.2787750	20	4 18.3	19.6
105148 2000 <i>NL</i> ₁₇	15.3	X	214.81338	176.17651	109.17040	16.64830	0.2022839	0.22540394	2.6740019	20	1 8.1	19.9
105149 2000 <i>NA</i> ₁₉	15.4	X	69.32743	49.06338	325.15205	4.09233	0.1827207	0.21400349	2.7681449	20	—	—
105150 2000 <i>NB</i> ₂₀	15.0	X	57.49819	239.61056	143.86297	8.62811	0.2363825	0.21250792	2.7811173	20	—	—
105151 2000 <i>NQ</i> ₂₂	13.9	X	221.53905	86.80002	289.11652	20.68816	0.1433891	0.18550671	3.0448294	20	4 27.9	19.2
105152 2000 <i>NV</i> ₂₄	13.3	X	159.10717	114.65390	297.12510	19.37732	0.2727535	0.18120991	3.0927733	20	4 16.9	19.1
105153 2000 <i>NS</i> ₂₅	14.8	X	98.70374	21.79438	306.61336	14.07380	0.1805591	0.21441543	2.7645982	20	—	—
105154 2000 <i>NA</i> ₂₆	14.9	X	76.66480	54.86002	293.95093	8.26369	0.2488609	0.21263939	2.7799709	20	—	—
105155 2000 <i>NG</i> ₂₆	15.7	X	319.63426	147.26576	137.18039	29.49737	0.0444431	0.38826009	1.8608908	20	5 27.5	18.3
105156 2000 <i>NW</i> ₂₆	16.3	X	65.75518	25.83688	304.40008	4.06563	0.2197528	0.30864964	2.1684972	20	—	—
105157 2000 <i>NA</i> ₂₈	14.1	X	224.44383	66.16848	271.23290	15.18385	0.2112771	0.18437156	3.0573144	20	3 10.9	19.6
105158 2000 <i>OL</i>	13.5	X	217.30802	333.53067	131.90150	14.76717	0.4856612	0.22743762	2.6580380	20	1 11.2	19.2
105159 2000 <i>OQ</i> ₅	14.5	X	103.71867	3.30085	304.93352	17.20976	0.2379954	0.21130562	2.7916567	20	—	—
105160 2000 <i>OU</i> ₅	15.5	X	209.50308	33.97660	301.39176	7.23560	0.1971597	0.27812553	2.3243890	20	2 24.8	19.3
105161 2000 <i>OA</i> ₆	14.5	X	89.61878	141.67376	270.95307	10.51360	0.1654005	0.22150583	2.7052824	20	2 1.2	18.0
105162 2000 <i>OZ</i> ₈	14.2	X	207.34337	221.92987	164.84813	17.95519	0.2237706	0.18104705	3.0946277	20	5 5.3	19.7
105163 2000 <i>OW</i> ₁₁	16.0	X	265.21763	214.42661	127.13518	8.45083	0.1652553	0.28917125	2.2648145	20	5 4.7	19.1
105164 2000 <i>OM</i> ₁₂	15.8	X	346.45722	263.20667	124.89084	14.18678	0.2487452	0.25465365	2.4651089	20	12 22.1	18.1
105165 2000 <i>OQ</i> ₁₂	15.3	X	159.74235	247.67327	124.03643	14.01993	0.1977056	0.22784416	2.6548752	20	3 7.6	19.7
105166 2000 <i>OU</i> ₁₂	14.3	X	14.51473	202.15233	304.72335	13.46640	0.0799196	0.22979624	2.6398187	20	1 31.5	17.5
105167 2000 <i>OT</i> ₁₃	15.3	X	224.88983	34.17301	279.26376	2.29718	0.1078198	0.23092613	2.6312008	20	2 19.7	19.4
105168 2000 <i>OU</i> ₁₄	14.6	X	211.12554	177.46134	120.91708	18.13973	0.1515868	0.17768998	3.1334836	20	1 25.8	19.7
105169 2000 <i>OC</i> ₁₅	16.1	X	316.57625	113.79288	273.78188	3.56923	0.1079352	0.30154008	2.2024498	20	10 18.0	17.9
105170 2000 <i>OK</i> ₁₅	14.9	X	26.03309	31.63633	314.86838	8.06330	0.1733546	0.20614629	2.8380434	20	11 30.9	18.6
105171 2000 <i>OA</i> ₁₉	14.8	X	205.12918	196.48632	150.12440	2.23029	0.2755249	0.18098889	3.0952907	20	3 13.9	20.2
105172 2000 <i>OS</i> ₂₀	14.2	X	216.08017	36.26603	357.83209	17.16612	0.2288649	0.18178454	3.0862522	20	5 10.4	19.8
105173 2000 <i>OJ</i> ₂₂	16.8	X	333.40835	187.48547	149.97576	25.26798	0.0664750	0.39559288	1.8378232	20	9 26.7	18.2
105174 2000 <i>OK</i> ₂₂	15.7	X	321.11806	291.22521	321.11693	22.38222	0.0893120	0.38378542	1.8753273	20	3 19.8	17.7
105175 2000 <i>OO</i> ₂₂	15.6	X	273.91487	250.47372	142.13113	3.70996	0.2723481	0.28924450	2.2644321	20	7 7.9	18.4
105176 2000 <i>OW</i> ₂₅	15.1	X	243.07886	316.01725	306.90966	13.91345	0.1315564	0.22809106	2.6529590	20	1 9.0	19.3
105177 2000 <i>OA</i> ₂₇	14.9	X	151.72192	185.35039	187.65462	3.12034	0.1164198	0.22625785	2.6672698	20	2 20.2	19.0
105178 2000 <i>ON</i> ₂₇	14.9	X	149.66167	192.22077	174.91584	2.66717	0.1314679	0.22488966	2.6780770	20	2 12.7	18.8
105179 2000 <i>OP</i> ₂₈	14.5	X	176.30637	103.51766	249.68360	7.23146	0.0769397	0.22918059	2.6445442	20	2 16.1	18.5
105180 2000 <i>OK</i> ₂₉	14.6	X	96.40881	137.13611	288.51146	21.29402	0.0479011	0.22739291	2.6583864	20	2 5.3	18.4
105181 2000 <i>OS</i> ₂₉	14.5	X	338.18986	270.04866	284.92201	13.57337	0.0547320	0.23055960	2.6339887	20	2 8.5	18.1
105182 2000 <i>OF</i> ₃₀	14.4	X	233.22316	323.17851	288.87754	15.06394	0.1779487	0.17497834	3.1657737	20	—	—
105183 2000 <i>OO</i> ₃₀	15.4	X	47.55883	109.14073	266.40939	7.04299	0.2412276	0.21095130	2.7947819	20	—	—
105184 2000 <i>OZ</i> ₃₀	16.4	X	120.42962	188.24016	162.65653	5.80759	0.2591026	0.26826281	2.3810165	20	1 1.5	19.6
105185 2000 <i>OG</i> ₃₁	15.6	X	100.09082	169.35477	167.05721	10.10081	0.2156101	0.21447945	2.7640481	20	—	—
105186 2000 <i>OO</i> ₃₁	14.6	X	60.68150	113.02409	276.79841	6.46268	0.2304999	0.21431800	2.7654360	20	—	—
105187 2000 <i>OC</i> ₃₃	16.3	X	335.75204	64.45462	247.11513	4.80301	0.1902930	0.29539582	2.2328857	20	7 18.4	17.7
105188 2000 <i>OR</i> ₃₃	14.7	X	220.73354	143.88687	155.94014	17.81243	0.1457795	0.17900810	3.1180825	20	2 3.4	19.8
105189 2000 <i>OW</i> ₃₄	14.9	X	39.44805	231.14376	170.19440	9.11744	0.1630166	0.21272578	2.7792181	20	—	—
105190 2000 <i>OZ</i> ₃₄	15.1	X	116.22285	94.14281	269.91638	11.64388	0.1846486	0.22005183	2.7171861	20	1 10.2	18.9
105191 2000 <i>ON</i> ₃₅	16.1	X	213.71420	338.08207	6.27594	4.46806	0.2229947	0.27897060	2.3196925	20	3 12.9	19.8
105192 2000 <i>OV</i> ₃₇	14.9	X	83.39828	80.97072	277.25565	10.62628	0.1871					

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>		
105201	2000	OG ₄₀	14.7	X	42.41077	157.91531	245.32565	5.85787	0.1234925	0.21400771	2.7681085	20	—	—
105202	2000	OJ ₄₀	15.0	X	205.89551	119.70169	171.17677	14.20418	0.1993163	0.17585564	3.1552360	20	1 11.7	20.6
105203	2000	OV ₄₁	13.8	X	329.84849	153.28546	226.51622	9.04195	0.0971171	0.15181390	3.4801265	20	9 25.4	18.4
105204	2000	OF ₄₂	15.1	X	159.25176	16.11965	279.47424	7.06040	0.1270175	0.21740630	2.7391846	20	—	—
105205	2000	OV ₄₃	15.1	X	27.53951	33.27328	280.17711	7.50088	0.1984115	0.20114620	2.8848827	20	10 22.2	18.8
105206	2000	OB ₄₄	15.9	X	41.58001	59.03619	286.49527	5.31947	0.1845312	0.30558909	2.1829518	20	—	—
105207	2000	OL ₄₆	14.3	X	310.60883	186.53709	154.58369	20.34483	0.2561833	0.19213620	2.9743810	20	6 22.8	18.1
105208	2000	OH ₄₈	17.4	X	132.69397	318.73221	21.51324	2.11907	0.2561807	0.31734483	2.1287031	20	—	—
105209	2000	OU ₄₈	14.4	X	53.32038	8.43280	11.35937	8.33715	0.1987843	0.20907332	2.8114928	20	—	—
105210	2000	OK ₅₂	13.7	X	164.58762	47.07192	282.40850	14.22298	0.3095367	0.17244265	3.1967323	20	1 27.1	19.5
105211	2000	Sanden	16.4	X	76.07978	304.80907	28.78157	23.40173	0.1094424	0.36168157	1.9509754	20	—	—
105212	2000	OP ₅₂	14.4	X	83.57803	144.92014	245.91929	9.10887	0.1260290	0.21431007	2.7655043	20	—	—
105213	2000	OV ₅₂	13.5	X	141.83228	74.47384	30.42235	17.99221	0.2457900	0.17595027	3.1541046	20	6 9.9	19.2
105214	2000	OL ₅₆	15.4	X	134.16130	274.47991	341.27545	13.10702	0.1621871	0.21105653	2.7938528	20	11 30.4	20.2
105215	2000	OR ₅₆	15.6	X	78.62794	240.31661	114.44389	10.36957	0.2038739	0.21294596	2.7773020	20	—	—
105216	2000	OS ₅₆	15.1	X	60.40621	330.37315	82.27030	5.95981	0.1070760	0.21857635	2.7294006	20	—	—
105217	2000	OL ₅₆	16.9	X	111.27770	307.50722	322.01315	17.59309	0.0482558	0.35777042	1.9651684	20	12 30.1	19.4
105218	2000	OJ ₅₇	14.9	X	120.97933	78.01258	318.72218	12.64348	0.1461970	0.22497539	2.6773966	20	2 18.9	18.8
105219	2000	ON ₅₇	15.2	X	330.95280	277.60339	125.80729	8.25606	0.3161539	0.20210581	2.8757438	20	11 19.3	17.2
105220	2000	OU ₅₈	14.8	X	307.33002	226.10067	138.36741	10.84061	0.0972916	0.19674177	2.9277792	20	8 10.7	18.3
105221	2000	OU ₆₀	15.3	X	92.08047	344.40267	11.45089	4.60989	0.1147386	0.21552554	2.7550969	20	—	—
105222	2000	Oscarsaa	16.2	X	129.32371	115.30145	102.29926	5.62413	0.0940269	0.30423284	2.1894346	20	10 28.8	19.2
105223	2000	PJ	17.2	X	151.10867	142.36815	217.22740	1.57868	0.2310671	0.27336707	2.3512849	20	2 8.6	20.9
105224	2000	PB ₁	14.9	X	79.17573	40.29902	328.43929	12.53231	0.1567971	0.21436106	2.7650657	20	—	—
105225	2000	PF ₁	14.2	X	118.11292	290.25369	135.69345	27.57682	0.2290406	0.22516432	2.6758987	20	4 12.4	18.9
105226	2000	PS ₂	15.6	X	118.80693	169.97536	157.90394	7.09851	0.1578288	0.21681326	2.7441772	20	—	—
105227	2000	PO ₅	14.5	X	208.96646	233.09114	150.88142	11.25926	0.1481244	0.18433012	3.0577726	20	5 5.6	19.6
105228	2000	PW ₅	15.3	X	108.81040	258.02129	143.48882	13.50498	0.1553767	0.22335673	2.6903164	20	2 13.7	18.8
105229	2000	PY ₇	14.3	X	198.43304	206.10199	174.46691	17.59247	0.2033547	0.18080317	3.0974100	20	4 20.4	19.7
105230	2000	PC ₁₀	15.8	X	236.44232	214.05896	123.56784	12.41344	0.1605686	0.23219746	2.6215878	20	4 3.8	20.1
105231	2000	PJ ₁₀	14.9	X	115.14825	298.75499	50.23545	9.56736	0.1586473	0.21632693	2.7482885	20	—	—
105232	2000	PL ₁₁	13.7	X	179.84374	28.95807	3.01606	27.40120	0.1420645	0.17966551	3.1104715	20	4 7.9	18.9
105233	2000	PL ₁₂	14.9	X	246.17324	216.69942	127.39957	14.26633	0.2165465	0.23385170	2.6092099	20	4 17.3	19.3
105234	2000	PB ₁₃	14.7	X	341.38698	98.88083	287.63220	24.10599	0.2469383	0.29764989	2.2215984	20	12 28.1	16.4
105235	2000	PP ₁₃	15.5	X	57.53578	170.80308	180.36242	3.94172	0.1410194	0.21180291	2.7872854	20	—	—
105236	2000	PE ₂₀	14.8	X	337.70381	50.49238	8.72231	8.22275	0.1382444	0.20626784	2.85769284	20	12 15.0	18.2
105237	2000	PF ₂₀	16.6	X	199.26803	243.36467	63.40785	3.62095	0.1668854	0.27444598	2.3451186	20	1 14.8	20.2
105238	2000	PC ₂₁	15.3	X	74.71718	185.45084	140.08208	5.14272	0.0650353	0.21077171	2.7963691	20	12 21.5	19.3
105239	2000	PD ₂₁	15.3	X	304.87103	167.29233	188.65221	1.88876	0.1157907	0.19581269	2.9370330	20	7 23.2	18.9
105240	2000	PA ₂₂	16.1	X	169.42811	285.00604	77.78986	7.20071	0.1272000	0.27611350	2.3356672	20	2 25.8	19.6
105241	2000	PT ₂₄	15.1	X	22.88966	121.83821	218.77281	14.10674	0.1641459	0.20403054	2.8576295	20	11 18.8	18.6
105242	2000	PY ₂₄	15.7	X	282.03359	307.10960	83.23913	5.51810	0.2177327	0.29118932	2.2543383	20	7 28.9	18.0
105243	2000	PB ₂₆	13.6	X	154.46541	58.46476	354.02625	22.90580	0.3128515	0.17333909	3.1857012	20	4 15.5	19.6
105244	2000	PC ₂₆	14.8	X	231.31431	74.01411	219.41853	20.79584	0.1812165	0.17771392	3.1332021	20	1 29.7	20.4
105245	2000	PO ₂₇	15.0	X	252.78806	280.51927	329.08461	12.27451	0.1387585	0.22524377	2.6752694	20	1 2.6	19.3
105246	2000	QH ₂	16.2	X	220.19576	103.02301	323.66036	21.57876	0.1287401	0.38431372	1.8736082	20	5 9.2	19.1
105247	2000	QH ₃	16.2	X	284.42046	219.28016	153.57514	3.78204	0.1436622	0.29214244	2.2494324	20	7 17.6	18.6
105248	2000	QM ₃	15.0	X	265.79519	247.64225	160.83662	7.45029	0.2390603	0.19129320	2.9831129	20	7 18.2	19.5
105249	2000	QB ₄	16.3	X	240.97825	205.19492	168.79031	4.08179	0.1508178	0.28616024	2.2806739	20	5 20.4	19.6
105250	2000	QJ ₆	16.6	X	292.90078	13.70044	335.88898	6.94224	0.2053809	0.28995811	2.2607153	20	6 14.2	19.0
105251	2000	QP ₆	14.2	X	225.52378	18.32370	343.49324	11.58877	0.1435063	0.18286083	3.0741302	20	4 16.4	19.3
105252	2000	QD ₇	16.3	X	256.90821	244.45994	341.56211	19.71348	0.0195374	0.36869529	1.9261539	20	—	—
105253	2000	QF ₁₀	16.1	X	334.36705	90.31716	298.16489	2.81528	0.1803673	0.30300090	2.1953652	20	12 4.6	17.7
105254	2000	QF ₁₀	15.1	X	90.87890	74.37832	305.00201	4.03287	0.1304749	0.21869660	2.7284000	20	—	—
105255	2000	QR ₁₀	14.5	X	168.29257	169.83805	146.08024	5.31463	0.2098533	0.17323170	3.1870177	20	1 12.2	19.8
105256	2000	QQ ₁₁	16.6	X	101.47137	331.19054	359.98858	2.01996	0.2098273	0.26412023	2.4058485	20	—	—
105257	2000	QD ₁₃	16.5	X	2.00499	231.14260	18.96528	1.10039	0.2094934	0.29216319	2.2493259	20	6 6.8	17.6
105258	2000	QM ₁₃	16.8	X	100.62271	108.37577	242.91119	0.57777	0.1982422	0.26541698	2.3980059	20	—	—
105259	2000	QU ₁₃	15.0	X	126.89144	76.79587	323.70031	6.91383	0.1841965	0.22605825	2.6688396	20	3 5.5	19.0
105260	2000	QC ₁₄	15.3	X	29.24936	290.86928	139.68743	5.78338	0.0783552	0.21728158	2.7402327	20	—	—
105261	2000	QS ₁₄	15.4	X	290.26329	343.29719	350.78810	2.95861	0.2383562	0.19099163	2.9862522	20	5 13.3	19.4
105262	2000	QH ₁₅	15.6	X	24.30730	236.27276	160.20709	3.02559	0.2010224	0.20957636	2.8069921	20	—	—
105263	2000	QG ₁₇	14.6	X	189.89466	215.95058	173.09811	4.98276	0.1139420	0.18245015	3.0787416	20	4 22.3	19.4
105264	2000	QE ₁₈	15.4	X	157.16151	287.78113	142.62547	2.68431	0.1731205	0.23212109	2.6221628	20	5 12.0	19.5
105265	2000	QA ₁₈	15.4	X	256.20322	312.08078	152.56762	2.53757	0.0235580	0.20308853	2.8664594	20	10 21.3	19.2
105266	2000	QC ₂₁	16.2	X	124.39367	278.74087	165.67307	6.35287	0.0773024	0.27898669	2.3196034	20	4 15.1	19.1
105267	2000	QB ₂₂	16.7	X	155.53293	42.36470	342.95225	4.30120	0.1655279	0.27651877	2.3333845	20	3 10.5	20.2
105268	2000	QK ₂₂	15.4	X	292.42839	151.40822	166.17361	5.87312	0.2715257	0.24081749	2.5586489	20	4 20.3	18.9
105269	2000	QV ₂₃	15.6	X	16.98559	73.65627	234.80950	4.63592	0.1091065	0.19846441	2.9108129	20	9 16.8	19.3
105270	2000	QF ₂₄	17.0	X	130.24115	47.81969	316.20538	2.62119	0.0874250	0.31954140	2.1189366	20	—</	

ELEMENTS AND OPPOSITION DATES IN 2020

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>		
105281	2000	QH ₃₆	15.1	X	126.18323	81.29684	313.98283	12.20463	0.0091822	0.22686954	2.6624733	20	2 5.8	18.6
105282	2000	QK ₃₆	15.2	X	187.85752	266.71948	147.90206	13.87491	0.1806321	0.23542899	2.5975431	20	5 22.6	19.7
105283	2000	QQ ₃₈	16.5	X	262.66176	59.84592	323.56375	2.60402	0.1080694	0.29190269	2.2506639	20	7 6.5	19.1
105284	2000	QJ ₄₀	15.1	X	338.14312	231.19514	147.92200	11.26904	0.1424019	0.20156088	2.8809245	20	10 26.4	18.5
105285	2000	QD ₄₂	15.6	X	54.21258	56.80161	284.54286	1.37569	0.0778488	0.20824117	2.8189778	20	12 17.9	19.3
105286	2000	QG ₄₂	14.7	X	147.40198	163.04376	152.49100	12.13635	0.1551026	0.16878190	3.2427899	20	—	—
105287	2000	QF ₄₄	16.5	X	299.79126	218.47944	153.11859	3.49795	0.1344994	0.29493147	2.2352287	20	8 15.7	18.4
105288	2000	QL ₄₄	15.0	X	303.72011	271.92600	334.44929	9.84260	0.1591833	0.18242279	3.0790494	20	2 23.6	19.1
105289	2000	QH ₄₆	16.0	X	63.59852	193.88628	321.10036	2.61195	0.0311816	0.28316850	2.2967096	20	4 18.3	18.7
105290	2000	QX ₄₇	14.4	X	183.50938	43.46536	336.76710	10.35503	0.0937485	0.18057690	3.0999969	20	3 31.5	19.4
105291	2000	QY ₄₇	14.4	X	177.86648	280.22509	144.93569	2.53403	0.0909326	0.18514441	3.0488003	20	5 23.7	19.0
105292	2000	QP ₄₉	17.2	X	128.69381	193.38916	138.32819	2.41468	0.1455827	0.31664227	2.1318507	20	—	—
105293	2000	QY ₄₉	15.7	X	151.87475	11.24630	343.20057	7.53024	0.0526957	0.22271831	2.6954551	20	1 25.2	19.5
105294	2000	QG ₅₀	16.5	X	235.17865	182.94656	124.25825	1.32822	0.0816238	0.27847966	3.3224180	20	2 20.1	19.8
105295	2000	QN ₅₀	16.5	X	129.28069	220.77156	139.27814	1.72102	0.2040986	0.26927774	2.3750299	20	1 16.1	19.6
105296	2000	QM ₅₁	15.2	X	326.76975	356.11572	33.49648	2.23652	0.0805293	0.20072309	2.8889354	20	10 16.6	18.8
105297	2000	QA ₅₃	16.3	X	82.53625	115.72194	308.30192	6.15405	0.0891613	0.27256818	2.3558770	20	1 19.7	18.9
105298	2000	QZ ₅₃	14.4	X	140.77184	344.46315	349.25541	9.22020	0.0638095	0.21871478	2.7282487	20	—	—
105299	2000	QU ₅₄	15.7	X	197.64738	192.63013	198.59760	4.64751	0.1397238	0.28259534	2.2998140	20	4 28.2	19.2
105300	2000	QU ₅₅	16.6	X	84.94608	335.35546	6.93592	2.95802	0.1802788	0.26171284	2.4205796	20	—	—
105301	2000	QS ₅₅	16.3	X	338.05605	356.72993	358.04351	7.53687	0.2071932	0.29789293	2.2203900	20	10 15.7	17.6
105302	2000	QF ₅₇	16.2	X	280.65974	283.52872	74.53256	1.92767	0.2018260	0.19025883	2.9939152	20	5 25.7	20.5
105303	2000	QV ₅₇	15.0	X	145.39380	42.15879	337.10207	12.48998	0.1813870	0.22484950	2.6783958	20	2 27.9	19.2
105304	2000	QY ₅₈	15.6	X	48.31177	271.09122	87.20196	4.17467	0.1163855	0.20892237	2.8128469	20	—	—
105305	2000	QN ₆₀	15.0	X	248.13706	244.72673	142.52232	9.42895	0.1146648	0.18899703	3.0072260	20	6 18.7	19.6
105306	2000	QS ₆₀	14.8	X	202.98311	274.38347	140.08584	9.93979	0.1477271	0.18561076	3.0436914	20	6 4.3	19.8
105307	2000	QT ₆₀	15.7	X	94.99251	274.65717	81.37998	3.01688	0.0928886	0.21452146	2.7636872	20	—	—
105308	2000	QV ₆₃	15.5	X	346.54599	266.60476	95.37551	7.38449	0.2267173	0.19859412	2.9095453	20	10 22.6	18.3
105309	2000	QX ₆₅	15.3	X	33.12912	271.99996	129.81042	9.60772	0.1618979	0.20899411	2.8122031	20	—	—
105310	2000	QM ₆₇	14.6	X	205.23567	184.35569	142.21788	18.52371	0.1974540	0.17697181	3.1419551	20	2 21.9	19.9
105311	2000	QL ₇₀	16.1	X	204.80117	249.98522	1.78886	19.64660	0.0618555	0.36466796	1.9403093	20	—	—
105312	2000	QC ₇₁	15.3	X	172.52029	348.40379	103.16491	1.03513	0.0210032	0.18915806	3.0055191	20	6 18.9	19.6
105313	2000	QV ₇₁	15.2	X	77.04902	39.61195	310.56807	2.86429	0.1057700	0.21168617	2.7883101	20	—	—
105314	2000	QC ₇₂	15.4	X	49.68840	57.25033	311.75246	2.78048	0.1085472	0.20992393	2.8038929	20	—	—
105315	2000	QY ₇₂	15.0	X	56.06673	79.92033	328.91226	10.62969	0.0896360	0.21562043	2.7542886	20	—	—
105316	2000	QN ₇₃	16.1	X	261.62530	15.51513	328.44177	1.48466	0.1005240	0.28634325	2.2797020	20	5 8.4	19.0
105317	2000	QU ₇₄	15.0	X	345.50541	244.17761	333.56451	10.53649	0.0358504	0.18105510	3.0945361	20	3 26.9	19.3
105318	2000	QB ₇₅	15.1	X	25.72485	151.80502	208.08693	1.64216	0.0663698	0.20544835	2.8444673	20	12 3.1	18.9
105319	2000	QL ₇₅	16.3	X	183.64099	190.16865	156.73738	3.42871	0.2561364	0.27552207	2.3390084	20	2 21.6	20.1
105320	2000	QP ₇₅	15.5	X	127.71541	44.92887	338.39627	5.49708	0.0428365	0.22265706	2.6959494	20	1 30.3	19.2
105321	2000	QY ₇₅	14.8	X	94.02446	43.53722	330.67229	8.65126	0.2228496	0.21553380	2.7550266	20	1 3.4	18.3
105322	2000	QD ₇₆	15.2	X	24.85739	206.52812	258.90310	1.74551	0.1384290	0.21823250	2.7322667	20	—	—
105323	2000	QC ₇₈	15.2	X	236.55106	83.53407	316.02820	3.32735	0.2080166	0.18682812	3.0304553	20	6 11.1	20.0
105324	2000	QM ₈₁	15.4	X	307.33405	265.02848	160.30118	2.34426	0.0506835	0.20334468	2.8640517	20	11 5.7	19.1
105325	2000	QH ₈₂	16.3	X	49.77960	91.47024	258.19033	1.38846	0.2077746	0.25644325	2.4536269	20	—	—
105326	2000	QS ₈₂	14.5	X	312.98956	271.96379	349.07326	22.13513	0.0223101	0.18155193	3.0888878	20	4 4.2	19.0
105327	2000	QF ₈₃	14.9	X	253.03774	307.48150	30.31976	0.94985	0.2401345	0.18444362	3.0565180	20	4 9.9	19.9
105328	2000	QS ₈₃	15.8	X	224.63964	172.57575	223.40278	2.28883	0.1161339	0.23550232	2.5970038	20	6 3.4	19.5
105329	2000	QA ₈₄	14.8	X	290.63829	284.98020	166.39906	12.26306	0.0191099	0.20323143	2.8651155	20	11 20.4	18.9
105330	2000	QG ₈₄	16.6	X	79.04551	199.43688	170.83938	6.99839	0.2071114	0.26207433	2.4183532	20	—	—
105331	2000	QK ₈₄	14.9	X	109.49744	327.48813	315.92388	12.03918	0.1388532	0.20954592	2.8072639	20	12 12.4	19.5
105332	2000	QR ₈₄	16.0	X	276.87755	210.89233	207.96189	4.92205	0.1040057	0.29844309	2.2176603	20	9 21.8	18.1
105333	2000	QH ₈₅	14.9	X	50.31895	173.09200	236.61565	4.07064	0.1592487	0.21450237	2.7638511	20	—	—
105334	2000	QC ₈₅	15.5	X	72.16132	80.08189	304.09210	6.26581	0.2364336	0.21384570	2.7695063	20	—	—
105335	2000	QZ ₈₅	15.5	X	20.79617	229.45121	178.94758	9.59957	0.1727079	0.21000137	2.8032035	20	—	—
105336	2000	QC ₈₆	15.1	X	163.90738	48.03158	187.23388	8.30061	0.2563784	0.21278146	2.7787332	20	12 2.5	20.1
105337	2000	QR ₈₆	15.3	X	93.15901	89.45525	175.73137	14.82588	0.1265607	0.20466310	2.8517384	20	11 6.3	19.8
105338	2000	QD ₈₉	14.5	X	179.77458	135.22543	296.94405	7.82174	0.1367164	0.18463914	3.0543598	20	6 2.2	19.4
105339	2000	QL ₉₁	13.1	X	15.61467	174.14548	342.51188	23.54840	0.0834442	0.17486105	3.1671890	20	2 26.7	17.1
105340	2000	QC ₉₃	14.8	X	256.04521	161.96837	179.52208	15.44908	0.2308184	0.18479336	3.0526603	20	4 20.0	19.8
105341	2000	QY ₉₃	14.7	X	36.32234	256.87277	171.40621	12.95128	0.1795732	0.21448402	2.7640088	20	—	—
105342	2000	QE ₉₄	14.7	X	177.83573	83.83533	312.14069	10.14482	0.0565677	0.18147656	3.0897430	20	4 11.5	19.5
105343	2000	QJ ₉₄	14.7	X	268.79239	303.78698	305.83867	8.65643	0.0871768	0.17567505	3.1573980	20	1 28.6	19.4
105344	2000	QM ₉₄	15.5	X	162.52870	240.00997	35.72724	3.05054	0.1630896	0.21738562	2.7393583	20	—	—
105345	2000	QG ₉₅	16.7	X	81.31291	143.20882	269.35973	2.12463	0.1277152	0.31798412	2.1258491	20	—	—
105346	2000	QN ₉₆	14.7	X	228.05381	324.65846	22.76591	5.82487	0.1920586	0.18188598	3.0851046	20	4 3.9	19.7
105347	2000	QB ₉₈	14.6	X	281.22078	319.66683	14.56641	8.86157	0.2891400	0.18808919	3.0168947	20	4 25.1	19.1
105348	2000	QH ₉₉	16.4	X	4.48870	357.82470	15.21830	6.30222	0.1644760	0.30241546	2.1981976	20	—	—
105349	2000	QC ₁₀₀	16.6	X	83.18180	295.21171	92.46858	3.35606	0.2253514	0.26427508	2.4049086	20	—	—
105350	2000	QN ₁₀₀	14.9	X	37.33393	309.67565	30.70618	6.34136	0.0782978	0.20292582	2.86799			

ELEMENTS AND OPPOSITION DATES IN 2020

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>		
105361	2000	QG ₁₁₂	15.2	X	193.48071	221.39384	156.36787	2.86138	0.2115346	0.17956557	3.1116256	20	4 11.3	20.4
105362	2000	QT ₁₁₂	16.0	X	195.34246	216.42263	158.94481	15.13172	0.1322526	0.22991905	2.6388786	20	4 10.9	20.3
105363	2000	QK ₁₁₅	16.0	X	143.32875	136.88889	300.86903	6.34008	0.0844007	0.28184344	2.3039025	20	4 25.5	19.2
105364	2000	QM ₁₁₆	16.3	X	170.88733	43.50241	14.56794	6.44192	0.2280296	0.27969539	2.3156834	20	5 6.9	20.2
105365	2000	QY ₁₁₇	14.2	X	245.71483	318.12504	324.77199	16.22129	0.1894971	0.17782714	3.1318721	20	2 5.9	19.3
105366	2000	QZ ₁₂₁	15.3	X	82.11732	115.23618	239.18308	5.95422	0.1503524	0.21061563	2.7977505	20	—	—
105367	2000	QO ₁₂₃	15.1	X	37.44341	193.45266	191.41500	11.78565	0.2850103	0.20634460	2.8362248	20	—	—
105368	2000	QG ₁₂₄	16.3	X	112.52978	343.19312	32.52694	7.22576	0.1227676	0.26882390	2.3777022	20	1 4.2	19.2
105369	2000	QW ₁₂₅	14.6	X	217.28341	175.79609	179.69402	11.24636	0.0762238	0.18095661	3.0956588	20	4 10.8	19.3
105370	2000	QY ₁₂₅	15.4	X	45.96431	236.70304	175.24543	13.40349	0.1984394	0.21230880	2.7828559	20	—	—
105371	2000	QD ₁₂₆	16.6	X	151.16461	193.05545	163.36299	2.44116	0.2000536	0.27112306	2.3642410	20	2 2.4	20.0
105372	2000	QF ₁₂₇	16.2	X	7.88246	359.07616	5.53989	4.62425	0.1688879	0.30093699	2.2053913	20	12 26.6	18.7
105373	2000	QG ₁₂₇	14.5	X	11.94973	70.64573	15.36076	17.63541	0.1744113	0.20950185	2.8076576	20	—	—
105374	2000	QG ₁₂₈	14.7	X	264.23393	216.80521	186.90274	7.78490	0.2309941	0.18747339	3.0234976	20	7 10.9	19.2
105375	2000	QC ₁₂₉	16.6	X	22.04869	17.39143	338.37844	3.98166	0.1521996	0.30288647	2.1959181	20	—	—
105376	2000	QK ₁₂₉	16.1	X	135.36961	245.73679	159.12165	5.89338	0.0968355	0.27503774	2.3417536	20	3 7.4	19.1
105377	2000	QA ₁₃₀	15.7	X	183.71341	100.25673	172.27014	22.03843	0.0818271	0.36465930	1.9403401	20	—	—
105378	2000	QF ₁₃₀	15.3	X	109.31911	47.51674	12.87673	6.11933	0.2319346	0.26558726	2.3969808	20	3 16.8	18.5
105379	2000	QR ₁₃₀	16.7	X	283.08477	251.89853	165.77819	4.83921	0.1332146	0.29782930	2.2207062	20	9 29.1	18.5
105380	2000	QK ₁₃₁	15.1	X	333.98304	267.53547	182.46523	4.31053	0.0326265	0.21197991	2.7857336	20	—	—
105381	2000	QO ₁₃₁	15.0	X	2.01548	203.33210	175.99032	7.80063	0.2531580	0.20055853	2.8905154	20	12 18.3	18.2
105382	2000	QF ₁₃₂	14.9	X	45.31418	270.84949	120.42287	4.34293	0.2083180	0.21245362	2.7815911	20	—	—
105383	2000	QT ₁₃₃	14.5	X	302.15701	248.27295	333.98604	16.87286	0.1362677	0.22917233	2.6446077	20	1 23.7	18.3
105384	2000	QO ₁₃₆	17.5	X	144.73652	137.06380	200.48678	1.75719	0.2379878	0.27027464	2.3691861	20	1 7.8	21.0
105385	2000	QZ ₁₃₇	15.6	X	105.83396	139.57357	159.59843	8.02121	0.2128450	0.20906765	2.8115436	20	12 30.7	20.4
105386	2000	QC ₁₃₈	16.0	X	127.83352	12.71632	48.81630	2.98857	0.1826159	0.27430446	2.3459251	20	3 31.9	19.4
105387	2000	QL ₁₃₈	16.2	X	331.37750	28.40010	14.05763	5.24545	0.1563824	0.30063292	2.2068782	20	12 16.4	18.1
105388	2000	QO ₁₃₈	14.1	X	95.97327	83.63183	4.72095	15.86944	0.0220858	0.17511795	3.1640908	20	3 15.6	18.5
105389	2000	QT ₁₃₈	14.6	X	312.81961	169.82671	173.88264	10.31047	0.1128510	0.19123427	2.9837257	20	7 18.0	18.5
105390	2000	QZ ₁₃₈	16.1	X	218.57380	44.50017	353.47724	3.01168	0.2408601	0.28374762	2.2935836	20	5 21.2	19.8
105391	2000	QA ₁₃₉	15.4	X	213.60518	78.21405	177.68237	10.14425	0.1380997	0.26719476	2.3873573	20	—	—
105392	2000	QB ₁₄₀	14.9	X	329.86372	242.58423	79.69578	1.70017	0.0575469	0.19045630	2.9918454	20	7 22.6	18.6
105393	2000	QT ₁₄₁	14.3	X	195.23048	354.75039	11.04247	21.55401	0.1180465	0.17747385	3.1360271	20	3 30.1	19.3
105394	2000	QU ₁₄₁	14.4	X	197.20363	272.47613	107.44113	2.68848	0.1983475	0.17906534	3.1174179	20	4 17.2	19.7
105395	2000	QD ₁₄₂	14.9	X	145.58337	223.83002	152.21724	2.12764	0.1718158	0.17164285	3.2066550	20	2 28.5	20.0
105396	2000	QN ₁₄₂	14.6	X	227.76878	349.86876	8.36321	20.26466	0.1960317	0.18119731	3.0929167	20	4 11.7	19.7
105397	2000	QA ₁₄₃	16.5	X	51.59555	335.76590	34.13200	1.89612	0.2022122	0.25905630	2.4370996	20	—	—
105398	2000	QX ₁₄₃	16.2	X	1.52866	154.95873	13.34108	22.13689	0.0247921	0.37276918	1.9120946	20	1 30.9	18.6
105399	2000	QG ₁₄₄	15.2	X	266.63646	249.33487	48.41898	4.00717	0.2038026	0.18253792	3.0777546	20	3 11.5	20.1
105400	2000	QJ ₁₄₄	14.7	X	156.28557	286.32085	117.40142	5.59534	0.2169044	0.17637012	3.1490971	20	4 14.4	20.0
105401	2000	QM ₁₄₄	16.0	X	113.59227	292.96012	60.61507	2.30283	0.1449873	0.26555943	2.3971483	20	—	—
105402	2000	QZ ₁₄₄	16.2	X	28.81630	311.21844	89.79103	3.37739	0.1629041	0.25848600	2.4406830	20	—	—
105403	2000	QU ₁₄₅	16.0	X	122.27814	296.88178	27.01180	6.69051	0.1391049	0.26328149	2.4109553	20	—	—
105404	2000	QZ ₁₄₅	16.9	X	49.36430	10.93928	71.51288	4.05909	0.1491847	0.31609902	2.1342926	20	—	—
105405	2000	QM ₁₄₈	16.7	X	111.59755	312.85281	302.10177	3.53239	0.2332269	0.30560440	2.1828789	20	11 28.2	20.2
105406	2000	QN ₁₅₀	16.3	X	81.18933	8.41746	333.59592	5.17174	0.2465209	0.30908951	2.1664393	20	—	—
105407	2000	QE ₁₅₃	14.3	X	257.44174	70.81348	308.41749	10.82595	0.1345958	0.19120770	2.9840021	20	6 16.4	18.8
105408	2000	QO ₁₅₃	16.1	X	316.97301	166.78788	247.40938	3.70100	0.0942943	0.30396956	2.1906987	20	12 2.4	17.9
105409	2000	QX ₁₅₃	16.6	X	130.72123	198.42185	180.53082	3.87774	0.2135437	0.27202237	2.3590273	20	2 10.8	20.0
105410	2000	QL ₁₅₄	15.0	X	303.37263	44.92477	247.72209	9.15786	0.0780255	0.18763873	3.0217212	20	5 1.4	19.0
105411	2000	QO ₁₅₄	15.0	X	96.23910	150.57382	224.50005	7.95549	0.1756322	0.21724583	2.7405333	20	—	—
105412	2000	QY ₁₅₄	14.7	X	28.55147	209.22010	232.18839	8.38036	0.1431429	0.21650231	2.7468041	20	—	—
105413	2000	QF ₁₅₅	15.1	X	66.42373	133.56213	231.23112	8.02076	0.1501320	0.21355136	2.7720506	20	—	—
105414	2000	QA ₁₅₉	14.3	X	99.38845	172.63812	258.93910	8.18131	0.0797379	0.17511353	3.1641441	20	3 1.2	19.0
105415	2000	QW ₁₅₉	15.0	X	23.77669	198.90034	207.04035	7.72441	0.2646048	0.21053991	2.7984213	20	—	—
105416	2000	QY ₁₆₁	15.2	X	303.22748	60.26157	247.03165	7.67102	0.0776301	0.18955732	3.0012972	20	5 21.5	19.0
105417	2000	QL ₁₆₃	16.7	X	182.08854	72.37061	236.39844	6.14303	0.2237574	0.27212461	2.3584364	20	1 4.1	20.5
105418	2000	QR ₁₆₄	15.1	X	306.08221	47.55237	301.87015	9.45731	0.1037668	0.19284122	2.9671270	20	7 18.4	18.9
105419	2000	QR ₁₆₅	15.6	X	157.69661	63.34875	194.91995	7.79907	0.2372259	0.21372200	2.7705749	20	12 23.7	20.6
105420	2000	QB ₁₆₇	15.0	X	346.12490	178.61441	271.59736	3.26325	0.1736359	0.20983944	2.8046455	20	—	—
105421	2000	QL ₁₆₇	14.5	X	279.08305	65.51361	333.31451	15.65107	0.0862588	0.19453154	2.9499141	20	8 17.9	18.5
105422	2000	QW ₁₆₇	15.0	X	113.88213	9.35114	294.20068	7.15109	0.2034222	0.21162051	2.7888867	20	—	—
105423	2000	QA ₁₆₈	14.7	X	255.88755	102.24116	316.84656	11.06783	0.0397585	0.19455216	2.9497057	20	8 17.7	18.9
105424	2000	QD ₁₇₃	14.9	X	214.72429	121.04574	172.50612	16.40043	0.1837495	0.17613216	3.1519327	20	1 20.9	20.5
105425	2000	QF ₁₇₃	16.1	X	251.84141	175.03860	237.14675	4.35854	0.1160666	0.29342075	2.2428944	20	7 30.5	18.7
105426	2000	QK ₁₇₃	16.3	X	185.10024	78.85881	266.48453	3.01257	0.1391220	0.27648336	2.3335837	20	2 15.4	19.8
105427	2000	QL ₁₇₃	14.1	X	2.15577	273.21936	166.14817	16.20003	0.2388146	0.21101309	2.7942362	20	—	—
105428	2000	QT ₁₇₃	14.5	X	182.72412	182.55620	251.00063	5.91134	0.1290012	0.18660177	3.0329055	20	6 7.3	19.4
105429	2000	QN ₁₇₄	14.9	X	207.86856	103.67140	310.09489	12.58725	0.1309784	0.18703564	3.0282134	20	6 6.7	19.9
105430	2000	QR ₁₇₄	15.1	X	223.60270	177.7								

ELEMENTS AND OPPOSITION DATES IN 2020

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
105441 2000 QU ₁₈₀	15.4	X	163.33334	54.02956	346.72935	5.53980	0.2809056	0.27213227	2.3583922	20	4 11.1	19.5
105442 2000 QW ₁₈₀	15.0	X	288.00162	84.23679	306.77085	1.97070	0.1879253	0.23734257	2.5835624	20	8 7.4	18.0
105443 2000 QY ₁₈₀	15.8	X	103.55616	72.00879	28.56456	4.65194	0.2162040	0.26844816	2.3799204	20	4 28.7	19.1
105444 2000 QU ₁₈₂	14.3	X	257.65052	305.72802	38.43838	17.40116	0.2492806	0.17908676	3.1171693	20	4 22.2	19.2
105445 2000 QW ₁₈₂	15.0	X	43.32806	154.49494	207.34157	22.88698	0.0528343	0.40697606	1.8033920	20	—	—
105446 2000 QS ₁₈₃	15.3	X	125.44505	352.25855	350.35283	4.98182	0.1598270	0.21917883	2.7243965	20	—	—
105447 2000 QU ₁₈₃	14.7	X	10.96118	85.75091	348.13701	6.93488	0.0518683	0.21615005	2.7497876	20	—	—
105448 2000 QZ ₁₉₀	15.7	X	155.06938	263.49346	133.54525	14.81308	0.1054625	0.22781460	2.6551049	20	3 29.3	19.9
105449 2000 QA ₁₉₁	15.9	X	324.99225	190.22131	138.73327	15.28804	0.1866342	0.24364987	2.5387811	20	7 16.5	18.4
105450 2000 QE ₁₉₁	15.3	X	112.86932	337.17697	10.85515	8.63521	0.2147050	0.21589466	2.7519558	20	—	—
105451 2000 QZ ₁₉₂	15.1	X	63.58887	323.72350	96.41454	5.62631	0.1590867	0.21754604	2.7380115	20	1 4.1	17.9
105452 2000 QB ₁₉₃	15.6	X	114.39918	207.73202	146.70528	13.37234	0.1582514	0.21794225	2.7346921	20	—	—
105453 2000 QX ₁₉₄	14.9	X	148.88161	73.05045	311.93020	11.10630	0.2113252	0.22685754	2.6625671	20	3 7.3	19.4
105454 2000 QP ₁₉₅	15.1	X	347.80960	101.44043	348.63108	8.70152	0.1302245	0.20977707	2.8052014	20	—	—
105455 2000 QJ ₁₉₇	17.0	X	82.48962	253.11227	147.12590	1.61043	0.1700282	0.26754038	2.3853008	20	—	—
105456 2000 QK ₁₉₇	16.6	X	240.95512	288.26183	345.96565	2.32027	0.1506844	0.27632029	2.3345017	20	1 12.4	20.0
105457 2000 QG ₁₉₈	15.0	X	212.15459	220.57707	139.54592	11.19783	0.0981332	0.18211249	3.0825459	20	4 12.6	19.9
105458 2000 QN ₁₉₉	14.9	X	128.25157	106.96803	346.18703	14.16087	0.0768736	0.18227914	3.0806669	20	4 27.6	19.7
105459 2000 QX ₁₉₉	16.6	X	263.42909	3.84013	12.75270	3.76970	0.2140534	0.28941231	2.2635567	20	6 9.8	19.7
105460 2000 QV ₂₀₁	16.2	X	144.43318	10.94893	355.83990	6.89451	0.1317768	0.27235473	2.3571077	20	2 3.5	19.4
105461 2000 QH ₂₀₅	14.8	X	268.90421	340.80761	342.81276	10.53613	0.1595125	0.18456909	3.0551326	20	4 12.8	19.4
105462 2000 QG ₂₀₆	15.6	X	32.02710	194.62939	173.42084	1.69494	0.1761099	0.20535052	2.8453707	20	—	—
105463 2000 QT ₂₀₆	14.9	X	259.80059	15.01522	4.34469	9.69269	0.1019454	0.18806978	3.0171023	20	6 23.7	19.4
105464 2000 QD ₂₀₇	16.1	X	84.35088	353.54581	359.04183	1.01036	0.2008007	0.26121476	2.4236556	20	—	—
105465 2000 QO ₂₀₇	14.8	X	166.45061	56.14049	340.65784	2.63317	0.1825155	0.17679207	3.1440844	20	4 9.8	20.1
105466 2000 QP ₂₀₇	15.0	X	223.21636	254.71365	178.32655	12.13586	0.2827397	0.18562047	3.0435853	20	7 3.9	20.4
105467 2000 QD ₂₀₈	14.4	X	197.13815	295.17616	172.10968	13.97194	0.1822757	0.18844519	3.0130940	20	7 28.6	19.6
105468 2000 QF ₂₀₈	15.8	X	121.90164	274.78199	146.89296	1.45508	0.0997944	0.27419526	2.3465479	20	3 13.7	18.6
105469 2000 QA ₂₀₉	17.0	X	286.88947	200.71705	184.96048	4.25965	0.1481345	0.29411623	2.2393573	20	8 10.1	19.0
105470 2000 QE ₂₀₉	16.2	X	156.83182	186.68902	310.55341	2.64887	0.0754406	0.29258439	2.2471666	20	8 6.6	19.2
105471 2000 QP ₂₀₉	15.1	X	98.46013	275.35734	192.59255	11.36207	0.1786820	0.22731031	2.6590304	20	4 30.9	18.9
105472 2000 QG ₂₁₀	15.2	X	166.11011	327.69893	334.58905	5.23355	0.0129823	0.21705372	2.7421501	20	—	—
105473 2000 QA ₂₁₁	15.4	X	190.63888	244.85211	148.49124	2.04223	0.1856342	0.17980370	3.1088777	20	4 27.3	20.6
105474 2000 QJ ₂₁₁	15.0	X	192.54548	228.27154	156.24664	8.34636	0.1184473	0.18091499	3.0961335	20	4 20.8	20.0
105475 2000 QK ₂₁₁	16.7	X	225.57477	336.93224	58.07271	1.44468	0.2137917	0.28557339	2.2837973	20	5 26.0	20.2
105476 2000 QM ₂₁₁	15.3	X	338.46907	227.27093	146.40879	2.83640	0.0986939	0.19961295	2.8996366	20	10 14.8	18.7
105477 2000 QO ₂₁₃	16.3	X	174.88077	8.57643	12.53546	4.07230	0.1327746	0.27763964	2.3271001	20	3 23.1	19.5
105478 2000 QS ₂₁₃	16.4	X	66.30572	279.30925	141.03099	1.80673	0.1696532	0.26654035	2.3912634	20	—	—
105479 2000 QO ₂₁₄	16.5	X	318.11428	347.28973	62.90681	1.95982	0.1392480	0.30053181	2.2073731	20	11 29.5	17.9
105480 2000 QV ₂₁₅	16.2	X	97.87042	319.39698	67.30972	3.28269	0.1133181	0.26734596	2.3864571	20	—	—
105481 2000 QB ₂₁₆	14.4	X	164.67001	29.35910	51.74502	6.14230	0.1767307	0.18111356	3.0938701	20	5 31.1	19.4
105482 2000 QJ ₂₁₆	15.9	X	253.70429	165.65254	119.88947	3.34245	0.1781076	0.22854463	2.6494478	20	2 10.8	20.2
105483 2000 QK ₂₁₆	16.5	X	350.33740	187.57286	127.01956	3.17605	0.1067312	0.24441745	2.5334631	20	8 20.6	18.9
105484 2000 QV ₂₁₆	15.2	X	292.44794	194.04779	104.48322	4.27747	0.1475058	0.18529483	3.0471502	20	4 17.5	19.4
105485 2000 QW ₂₁₆	16.2	X	108.05997	269.43237	10.70338	6.61220	0.1454731	0.25703006	2.4498910	20	12 15.8	20.2
105486 2000 QX ₂₁₆	14.7	X	207.67165	231.39550	161.53154	9.92545	0.0579186	0.18344678	3.0675806	20	5 18.4	19.4
105487 2000 QS ₂₁₉	15.3	X	47.90949	320.01953	48.83766	4.98444	0.2060902	0.20991862	2.8039401	20	—	—
105488 2000 QX ₂₂₀	15.4	X	311.87014	264.05789	105.30803	2.47258	0.1760290	0.19646224	2.9305557	20	8 16.3	18.7
105489 2000 QE ₂₂₁	15.4	X	5.46189	238.80105	104.59107	6.53508	0.1280278	0.20206782	2.8760842	20	10 23.6	18.9
105490 2000 QS ₂₂₃	15.3	X	48.41913	94.52620	329.69937	5.32562	0.2209571	0.21640153	2.7476569	20	—	—
105491 2000 QM ₂₂₇	15.3	X	26.13385	250.99860	182.21234	11.95290	0.1292147	0.21324308	2.7747216	20	—	—
105492 2000 QO ₂₂₇	14.8	X	337.56003	255.45360	351.66834	26.92116	0.1095484	0.18371189	3.0646288	20	4 7.4	19.0
105493 2000 QF ₂₂₈	15.1	X	344.28919	315.24055	35.56935	2.39633	0.1114733	0.19615453	2.9336198	20	9 22.9	18.5
105494 2000 QF ₂₂₈	15.3	X	312.35404	235.35059	79.17888	3.96578	0.1865285	0.18885374	3.0087469	20	5 29.5	19.0
105495 2000 QW ₂₂₈	14.8	X	235.59193	267.01980	155.98086	11.27323	0.1142400	0.19076908	2.9885743	20	7 18.4	19.4
105496 2000 QC ₂₂₉	15.3	X	231.56712	354.39735	26.13361	2.63877	0.2570610	0.18475639	3.0530675	20	5 10.9	20.6
105497 2000 QF ₂₂₉	15.0	X	302.63933	349.42219	14.84139	10.95242	0.1263954	0.19137997	2.9822111	20	8 3.2	18.9
105498 2000 QM ₂₃₀	14.4	X	166.75653	23.84153	35.37533	12.93372	0.1361307	0.17876560	3.1209016	20	5 4.8	19.4
105499 2000 QS ₂₃₀	15.3	X	151.76059	332.31668	88.93263	3.08413	0.2437187	0.17696049	3.1420892	20	4 30.9	20.8
105500 2000 QL ₂₃₁	16.8	X	215.56882	66.28109	248.33236	2.24155	0.1819528	0.27819348	2.3240105	20	2 6.1	20.5
105501 2000 QA ₂₃₂	15.4	X	296.37245	307.91513	56.76181	7.57742	0.2462914	0.19119351	2.9841498	20	7 1.5	19.1
105502 2000 QN ₂₅₀	14.8	X	252.76413	276.30188	121.03140	11.67968	0.1135380	0.19247148	2.9709258	20	7 6.6	19.1
105503 2000 RG ₁	16.5	X	170.12923	74.18437	317.84470	1.74688	0.2118755	0.27663937	2.3327063	20	4 3.7	20.2
105504 2000 RX ₁	13.7	X	159.46032	43.14594	5.27513	26.86390	0.1745780	0.17603207	3.1531274	20	4 10.8	19.1
105505 2000 RK ₃	14.4	X	241.42286	105.97498	314.82561	1.46464	0.1748768	0.18745800	3.0236631	20	7 16.0	19.0
105506 2000 RO ₃	14.5	X	292.60810	41.58192	5.18871	19.39800	0.1155986	0.19434411	2.9518104	20	9 15.4	18.3
105507 2000 RZ ₆	14.8	X	247.10043	29.06056	24.32597	13.21309	0.1352436	0.18650077	3.0340004	20	7 21.0	19.5
105508 2000 RA ₉	15.0	X	76.30884	157.16262	358.02740	10.92594	0.0285654	0.18162209	3.0880923	20	5 7.8	19.5
105509 2000 RL ₉	15.5	X	149.10370	277.84141	70.95909	10.33448	0.2098468	0.26527666	2.9988515	20	1 25.9	19.2
105510 2000 RJ ₁₁	14.5	X	234.62253	323.21225	98.53255	3.01604	0.2217972	0.18197750	3.0840701	20	7 5.5	19.5
105511 2000 RF ₁₃	14.1	X	68.96069	167.89913	305.59131	17.25420	0.0420514	0.17744092	3.1364150	20	3 4.9	18.7
105512 2000 RJ ₁₄	14.5	X	230.72245	130.27353	269.38420	8.79301	0.1193039	0.18757502	3.0224054	20	6 13.8	19.0
105513 2000 RL ₁₄	14.7	X	218.57195	142.14646	249.87489	7.80782	0.1090976	0.18545851	3.0453569	20		

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>		
105521	2000	RM ₂₄	14.2	X	80.38903	133.11594	335.23391	26.72257	0.0630221	0.17637504	3.1490385	20	3 14.7	18.8
105522	2000	RH ₂₅	14.3	X	238.19157	92.82086	189.36098	25.53967	0.2029924	0.17682713	3.1436688	20	1 24.2	20.0
105523	2000	RC ₂₆	16.5	X	201.01285	152.73579	236.08428	2.72804	0.1615759	0.28109279	2.3080023	20	4 26.9	20.1
105524	2000	RF ₂₆	15.0	X	299.18303	44.14570	299.93497	10.19016	0.2215714	0.19051138	2.9912687	20	6 11.8	18.8
105525	2000	RL ₂₆	15.2	X	337.87952	0.46969	315.03394	12.65306	0.1875831	0.19307280	2.9647539	20	7 21.2	18.2
105526	2000	RQ ₂₆	15.0	X	96.90703	156.98220	236.00851	8.53042	0.2004488	0.21696839	2.7428690	20	1 23.7	18.7
105527	2000	RW ₂₆	14.9	X	284.52253	94.78459	286.13554	8.81805	0.1184544	0.19139793	2.9820246	20	7 24.9	18.8
105528	2000	RZ ₂₆	16.2	X	155.70973	107.28182	278.09787	6.18699	0.1290602	0.27496542	2.3421642	20	3 4.9	19.6
105529	2000	RG ₂₇	14.4	X	257.91252	111.00973	294.36981	9.20349	0.0575630	0.19119294	2.9841557	20	7 30.5	18.4
105530	2000	RM ₂₇	15.2	X	295.89901	117.67539	234.06709	8.54250	0.1052688	0.19007554	2.9958396	20	7 4.1	19.2
105531	2000	RR ₂₈	14.5	X	170.26327	143.94597	265.25979	8.93177	0.0428972	0.18018738	3.1044629	20	4 21.4	19.1
105532	2000	RA ₂₉	15.0	X	247.79105	96.76599	296.89520	8.77145	0.1065505	0.18764940	3.0216067	20	6 27.2	19.5
105533	2000	RB ₂₉	14.7	X	315.05466	30.52003	312.67791	9.08437	0.0752128	0.19146139	2.9813657	20	7 27.3	18.5
105534	2000	RC ₂₉	15.0	X	271.31365	77.84733	309.97251	9.15037	0.0619308	0.19059053	2.9904405	20	7 25.9	19.1
105535	2000	RT ₃₂	14.3	X	161.60651	166.36399	223.58763	7.30973	0.1922643	0.17478558	3.1681007	20	3 28.3	19.6
105536	2000	RG ₃₇	16.0	X	138.00387	350.02429	6.17462	20.11584	0.0613196	0.36599079	1.9356312	20	—	—
105537	2000	RH ₃₇	16.6	X	233.33404	60.24151	0.59577	23.07824	0.1012728	0.38727894	1.8640324	20	8 12.1	19.0
105538	2000	RF ₃₉	14.3	X	183.35861	82.85445	285.87788	12.71057	0.1367235	0.17632684	3.1496123	20	3 15.6	19.6
105539	2000	RJ ₃₉	14.4	X	132.42930	142.29563	302.22680	16.23317	0.1865302	0.17941181	3.1134032	20	5 2.1	19.7
105540	2000	RH ₄₀	14.4	X	97.41353	88.68818	247.87430	8.38987	0.1580428	0.21075469	2.7965197	20	—	—
105541	2000	RL ₄₀	14.3	X	233.41523	115.80838	322.43722	12.93452	0.0462698	0.19145005	2.9814834	20	8 13.9	18.5
105542	2000	RR ₄₀	14.4	X	180.62914	237.21800	254.57699	9.53958	0.0450243	0.19194311	2.9763754	20	8 15.0	19.0
105543	2000	RW ₄₀	14.6	X	308.80418	39.24142	313.30567	9.91199	0.0853224	0.19094140	2.9867760	20	7 29.2	18.5
105544	2000	RC ₄₁	15.7	X	157.52026	143.25114	245.28791	6.29498	0.1916440	0.27447377	2.3449602	20	3 15.9	19.4
105545	2000	RY ₄₁	14.4	X	290.26288	114.75360	266.36857	8.93805	0.1148390	0.19113456	2.9847633	20	8 1.3	18.3
105546	2000	RM ₄₄	16.5	X	168.55443	214.91915	201.98653	20.14187	0.0992156	0.37870917	1.8920481	20	4 28.1	18.6
105547	2000	RX ₄₄	14.6	X	258.14153	334.25284	342.59789	10.16113	0.2303526	0.18139921	3.0906212	20	3 19.8	19.7
105548	2000	RF ₄₅	13.9	X	189.26078	14.18338	358.17477	11.37626	0.1591825	0.17587189	3.1550417	20	3 30.4	19.2
105549	2000	RJ ₄₅	14.6	X	65.19769	348.70546	341.33746	14.87810	0.1385803	0.20399925	2.8579217	20	12 24.4	19.1
105550	2000	RY ₄₅	14.7	X	303.79708	8.58217	352.61982	9.47798	0.1438091	0.18921977	3.0048655	20	7 27.7	18.5
105551	2000	RW ₄₆	16.0	X	112.54993	50.59235	332.04738	7.89981	0.0828904	0.26707615	2.3880641	20	1 8.3	19.0
105552	2000	RR ₄₉	14.1	X	200.20602	103.02894	211.68115	24.63160	0.2649542	0.17149450	3.2085039	20	1 29.2	20.2
105553	2000	RA ₅₀	13.0	X	256.11899	260.73845	37.57080	22.93971	0.0353236	0.17251042	3.1958949	20	3 28.7	17.8
105554	2000	RJ ₅₃	14.1	X	200.70974	50.23002	51.50632	8.70978	0.2097524	0.18392965	3.0622094	20	7 27.6	19.4
105555	2000	RK ₅₃	14.6	X	226.27780	9.07280	40.57259	12.31276	0.1685469	0.18274512	3.0754277	20	6 16.1	19.6
105556	2000	RU ₅₃	16.9	X	231.68776	348.01476	353.94720	19.93667	0.0750557	0.37838765	1.8931197	20	3 22.3	18.8
105557	2000	RZ ₅₃	15.0	X	191.85687	74.61199	318.78935	7.15246	0.1363943	0.17939500	3.1135977	20	4 24.9	20.1
105558	2000	RK ₅₄	14.7	X	268.43645	53.42635	276.49000	8.75243	0.0689397	0.18394633	3.0620243	20	5 4.1	19.1
105559	2000	RN ₅₄	14.3	X	250.36853	107.79713	272.93463	10.01089	0.1314408	0.18376203	3.0640713	20	6 10.1	18.7
105560	2000	RA ₅₆	15.3	X	300.27380	185.13158	200.53596	1.49076	0.0973548	0.19552310	2.9399323	20	8 27.8	19.1
105561	2000	RB ₅₆	14.8	X	154.02033	120.14621	298.31002	8.70530	0.0667741	0.17712939	3.1400914	20	4 14.6	19.6
105562	2000	RS ₅₇	15.9	X	341.45409	96.22629	347.40756	8.19923	0.0824029	0.30684108	2.1770098	20	—	—
105563	2000	RY ₅₈	17.3	X	225.23067	286.83735	317.47853	2.51473	0.0162046	0.31421305	2.1428243	20	—	—
105564	2000	RR ₆₀	13.5	X	226.70667	78.74508	336.92623	12.18493	0.1123338	0.18156854	3.0886994	20	7 1.9	18.3
105565	2000	RA ₆₁	14.5	X	266.64862	320.02694	54.17750	10.58076	0.2729621	0.18379280	3.0637293	20	6 1.4	19.1
105566	2000	RQ ₆₃	14.9	X	191.65212	97.09916	285.40312	7.07808	0.0921066	0.18077953	3.0976800	20	4 11.8	19.8
105567	2000	RG ₆₄	14.5	X	200.75691	85.13872	217.35092	17.82854	0.2159916	0.17566392	3.1575313	20	1 17.7	20.2
105568	2000	RN ₆₄	15.1	X	58.83092	158.80434	165.43018	2.09384	0.0763389	0.20445111	2.8537093	20	12 1.7	19.1
105569	2000	RB ₆₅	14.9	X	24.93694	146.76386	205.41296	14.67332	0.1506781	0.20384513	2.8593621	20	12 4.3	18.8
105570	2000	RP ₆₆	15.9	X	203.06157	212.46145	158.39507	8.30811	0.2322130	0.27766418	2.3269630	20	4 7.6	19.9
105571	2000	RT ₆₇	16.0	X	153.01411	249.18040	177.94540	5.46065	0.1638336	0.27620086	2.3351746	20	5 2.8	19.5
105572	2000	RQ ₆₈	15.5	X	149.06267	333.91501	19.18613	11.65254	0.1557071	0.26911442	2.3759907	20	1 27.3	19.1
105573	2000	RF ₇₀	14.1	X	163.80454	273.92581	185.58430	8.38640	0.2493980	0.17960987	3.1111139	20	6 23.2	19.6
105574	2000	RZ ₇₀	15.0	X	62.77689	303.68370	34.43194	11.03393	0.1400400	0.20570686	2.8420838	20	12 31.3	19.4
105575	2000	RJ ₇₁	16.6	X	241.78288	187.52400	189.29519	6.70673	0.1911341	0.28375700	2.2935330	20	5 21.1	20.0
105576	2000	RM ₇₂	14.7	X	221.35139	199.27653	193.07779	8.18769	0.2515598	0.18107482	3.0943114	20	5 18.8	20.1
105577	2000	RP ₇₄	14.3	X	326.31797	157.39409	239.27421	8.98890	0.0976907	0.15202207	3.4769487	20	10 11.5	18.8
105578	2000	RE ₇₅	16.4	X	335.57397	236.88129	186.12242	6.97191	0.1650940	0.30358991	2.1925247	20	—	—
105579	2000	RE ₇₇	16.6	X	208.88455	170.30815	192.91051	1.83733	0.2718147	0.27966575	2.3158470	20	3 30.7	20.7
105580	2000	RN ₇₈	15.3	X	284.21920	205.91785	180.72857	11.21088	0.1057437	0.19274545	2.9681098	20	8 1.8	19.4
105581	2000	RW ₈₀	14.7	X	219.76739	49.23358	338.51778	10.46524	0.0981092	0.18334601	3.0687046	20	5 16.8	19.6
105582	2000	RC ₈₂	15.1	X	12.86688	141.80998	302.12310	12.60052	0.1734074	0.21168228	2.7883442	20	—	—
105583	2000	RU ₈₂	13.7	X	120.41648	154.91268	293.64781	12.80016	0.1197649	0.17743601	3.1364729	20	4 18.5	18.7
105584	2000	RV ₈₂	14.7	X	239.96058	116.02591	266.88901	8.75059	0.1051357	0.18600643	3.0393735	20	6 4.2	19.2
105585	2000	RM ₈₃	14.4	X	87.37021	128.55452	305.02906	9.59992	0.1061135	0.17028600	3.2236664	20	2 23.4	18.9
105586	2000	RB ₈₅	14.8	X	161.44339	343.31461	97.53015	2.44553	0.1802775	0.18226186	3.0808616	20	5 28.8	19.9
105587	2000	RM ₈₅	15.0	X	25.37861	95.26661	347.81903	4.62956	0.0998002	0.21584709	2.7523601	20	—	—
105588	2000	RT ₈₅	14.8	X	246.97020	240.06544	135.18050	1.84911	0.1027220	0.18540461	3.0459471	20	6 3.1	19.2
105589	2000	RV ₈₅	15.9	X	213.28887	327.97332	8.06584	8.95437	0.1351861	0.22669020	2.6638773	20	3 9.2	20.1
105590	2000	RJ ₈₆												

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
105601 2000 RZ ₉₁	14.9	X	228.30314	187.75847	233.93610	4.33442	0.1323676	0.18650443	3.0339607	20	7 7.1	19.6
105602 2000 RL ₉₃	14.8	X	29.52619	307.02748	174.46894	21.91783	0.0458970	0.22051826	2.7133533	20	1 21.4	18.7
105603 2000 RS ₉₃	15.6	X	20.58455	276.46086	128.30353	6.97796	0.1103709	0.20866688	2.8151424	20	—	—
105604 2000 RR ₉₄	14.8	X	291.33939	337.10780	12.08755	9.29938	0.1461551	0.18821616	3.0155378	20	6 18.5	19.0
105605 2000 RJ ₉₅	16.5	X	67.30163	357.54596	19.13993	3.16081	0.1588831	0.31085294	2.1582383	20	—	—
105606 2000 RV ₉₅	14.8	X	301.40575	242.30645	70.56155	6.17893	0.1392930	0.18618025	3.0374815	20	5 17.9	18.8
105607 2000 RY ₉₅	17.2	X	74.93339	327.75668	53.93351	2.51880	0.1465691	0.31262119	2.1500923	20	—	—
105608 2000 RY ₉₆	14.7	X	130.98259	100.93308	241.36325	15.69191	0.2410767	0.21741662	2.7390979	20	1 5.5	19.1
105609 2000 RB ₉₈	14.3	X	236.50858	128.78916	258.89569	14.91017	0.0965668	0.18614548	3.0378598	20	6 7.4	18.9
105610 2000 RG ₉₈	13.8	X	267.59698	46.95428	274.64497	12.29085	0.1009831	0.18301317	3.0724240	20	4 15.8	18.5
105611 2000 RL ₉₈	14.6	X	19.11857	183.22872	245.65096	12.73587	0.1412337	0.21043773	2.7993271	20	—	—
105612 2000 RT ₉₉	14.2	X	229.97217	151.77483	265.08152	9.60785	0.0994857	0.18774886	3.0205394	20	7 5.9	18.7
105613 2000 RX ₁₀₀	16.0	X	283.77507	255.08071	326.88872	17.57252	0.0596416	0.36969415	1.9226829	20	—	—
105614 2000 RT ₁₀₁	14.3	X	214.44501	128.93364	270.30614	10.77515	0.1119522	0.18312848	3.0711341	20	5 27.4	19.1
105615 2000 RX ₁₀₁	14.7	X	45.08550	0.57082	294.08502	10.89306	0.0276415	0.19641970	2.9309788	20	9 23.4	19.0
105616 2000 RF ₁₀₂	14.2	X	218.86167	39.04143	271.10087	9.22869	0.2061844	0.17583126	3.1555276	20	2 9.9	19.7
105617 2000 RT ₁₀₂	14.8	X	305.32400	124.31187	249.32039	11.52365	0.1208106	0.19285585	2.9669769	20	8 11.3	18.7
105618 2000 RX ₁₀₂	14.2	X	83.15009	111.74510	313.19242	14.81312	0.0543754	0.16883021	3.2421712	20	2 3.6	18.6
105619 2000 RA ₁₀₄	13.5	X	261.07367	321.30344	4.94890	17.32365	0.0463131	0.17883940	3.1200430	20	4 20.6	18.2
105620 2000 RE ₁₀₄	14.3	X	256.01819	26.01718	312.79540	14.07363	0.2274038	0.18311779	3.0712537	20	4 7.6	19.5
105621 2000 RG ₁₀₅	15.9	X	205.25359	117.12246	216.23375	21.87575	0.0341268	0.37358661	1.9093044	20	1 29.3	18.7
105622 2000 RK ₁₀₅	14.6	X	304.78430	76.30276	293.43886	10.02199	0.1766635	0.19057930	2.9905581	20	8 1.1	18.1
105623 2000 SN ₁	15.2	X	42.22661	130.28775	288.76623	18.32081	0.0851125	0.36114891	1.9528933	20	—	—
105624 2000 ST ₃	14.6	X	77.87082	349.68644	60.53413	9.87766	0.2301893	0.21621113	2.7492697	20	1 28.5	17.9
105625 2000 SG ₄	16.7	X	294.00290	225.22748	171.17325	5.26427	0.1905292	0.29254463	2.2473703	20	9 4.5	18.5
105626 2000 SW ₄	16.9	X	356.25663	329.92701	28.05889	21.78303	0.0750141	0.35020595	1.9933660	20	11 19.6	19.0
105627 2000 SY ₄	14.1	X	168.22548	275.76913	39.90817	23.51340	0.3871396	0.17180342	3.2046567	20	1 25.2	20.5
105628 2000 SG ₅	16.7	X	170.03788	125.17140	312.60200	22.04137	0.1131009	0.38416469	1.8740928	20	5 28.5	19.6
105629 2000 SS ₅	14.9	X	284.68384	71.49706	148.82011	12.12900	0.1125685	0.18660576	3.0328623	20	5 7.2	19.2
105630 2000 SZ ₅	13.9	X	205.81063	220.66890	215.83932	22.98377	0.0456352	0.17595237	3.1540795	20	3 12.9	18.9
105631 2000 SU ₇	16.7	X	287.49802	132.75752	307.98229	5.01681	0.1057764	0.29830129	2.2183631	20	11 13.5	18.8
105632 2000 SQ ₈	16.0	X	115.98150	253.70772	164.34109	4.84802	0.1656503	0.22245838	2.6975543	20	3 15.7	19.8
105633 2000 SZ ₉	16.2	X	195.98509	83.47578	212.67290	20.28712	0.0748386	0.36874783	1.9259710	20	—	—
105634 2000 SX ₁₂	15.0	X	357.30413	30.30881	282.31313	2.47169	0.1619251	0.19718420	2.9233982	20	8 24.7	18.1
105635 2000 SN ₁₃	16.1	X	155.70795	338.94655	1.36749	6.70602	0.1179201	0.27085052	2.3658267	20	1 11.2	19.5
105636 2000 ST ₁₃	14.8	X	116.16665	37.61549	30.28847	8.77979	0.0821685	0.17485712	3.1672366	20	3 23.6	19.4
105637 2000 SC ₁₄	16.3	X	74.63859	142.49277	243.31019	4.10390	0.2323809	0.26602057	2.3943772	20	—	—
105638 2000 SK ₁₄	14.7	X	309.61998	57.95385	276.46170	12.00296	0.1019206	0.19190550	2.9767642	20	7 3.0	18.3
105639 2000 SL ₁₅	14.7	X	271.23385	59.15647	213.05864	15.73821	0.1597463	0.17828676	3.1264872	20	2 13.4	19.7
105640 2000 SP ₁₅	16.3	X	203.31807	219.38279	267.48042	5.81555	0.0975800	0.29527459	2.2334968	20	9 12.8	19.4
105641 2000 SH ₁₇	14.5	X	335.20308	150.19153	327.51725	14.70818	0.1154300	0.21049958	2.7987787	20	—	—
105642 2000 SJ ₁₇	14.6	X	225.74075	45.87918	342.40635	9.29794	0.0510790	0.18484166	3.0521285	20	5 29.4	19.3
105643 2000 SF ₁₈	15.1	X	289.60136	312.17959	317.23474	8.92405	0.0731757	0.17867403	3.1219678	20	3 14.4	19.5
105644 2000 SY ₁₉	14.3	X	353.16865	51.45565	269.86322	8.60141	0.0841014	0.19276834	2.9678748	20	8 21.9	18.1
105645 2000 SQ ₂₀	15.0	X	2.23176	92.34648	232.52540	4.37602	0.1596834	0.19506294	2.9445541	20	9 19.1	18.2
105646 2000 SL ₂₁	16.3	X	210.08174	116.34191	3.66796	4.17840	0.0683310	0.29508394	2.2045587	20	9 19.2	18.8
105647 2000 SL ₂₂	14.9	X	189.36420	101.36734	4.94529	13.28476	0.0578942	0.18938390	3.0031291	20	8 1.1	19.5
105648 2000 SA ₂₃	16.9	X	177.45107	172.99874	208.63971	2.13583	0.1870932	0.27586530	2.3370679	20	3 27.6	20.6
105649 2000 SQ ₂₃	13.9	X	146.34961	28.29222	31.54965	28.01448	0.2175105	0.17519574	3.1631541	20	4 22.3	19.0
105650 2000 SU ₂₃	16.9	X	146.02168	100.45853	197.47997	22.17353	0.0706681	0.36510903	1.9387464	20	—	—
105651 2000 SF ₂₄	16.2	X	349.16837	202.22976	22.71878	21.44715	0.0199996	0.37815800	1.8938861	20	4 3.1	17.7
105652 2000 SU ₂₄	14.7	X	264.47292	142.82981	213.16344	9.51007	0.1367054	0.18472590	3.0534035	20	5 26.1	19.2
105653 2000 SA ₂₆	15.0	X	304.11408	151.58491	190.77310	9.87880	0.1020239	0.19236970	2.9719735	20	7 4.4	19.0
105654 2000 SX ₂₆	12.9	X	216.19305	102.51693	264.02864	4.83842	0.1371268	0.08197052	5.2484484	20	4 20.6	20.5
105655 2000 ST ₂₇	14.8	X	314.20906	353.91066	321.50761	9.34866	0.0411842	0.18767801	3.0212996	20	6 22.2	18.9
105656 2000 SA ₂₈	14.5	X	120.41824	185.63223	229.18485	5.76592	0.1519480	0.17252972	3.1956566	20	3 16.3	19.4
105657 2000 SL ₂₈	14.1	X	52.68368	322.89549	233.82299	13.59456	0.1286826	0.18528354	3.0472739	20	6 16.2	18.1
105658 2000 SF ₂₉	15.0	X	53.24104	266.27291	347.03449	13.15379	0.0346286	0.19309556	2.9645209	20	8 21.3	19.0
105659 2000 SV ₃₁	15.6	X	51.05329	348.44593	317.03812	1.29264	0.0325389	0.20053240	2.8907665	20	10 21.8	19.5
105660 2000 SG ₃₂	15.6	X	27.60160	253.11608	126.00567	2.79623	0.1183778	0.20607968	2.8386549	20	—	—
105661 2000 SQ ₃₂	15.5	X	276.53176	313.80706	64.99046	3.48540	0.1219922	0.18989468	2.9977416	20	7 11.8	19.5
105662 2000 SN ₃₆	15.1	X	71.89235	1.59609	28.67634	13.75180	0.0414849	0.21358132	2.7717914	20	—	—
105663 2000 SZ ₃₆	14.6	X	130.79399	80.20191	21.16715	5.14757	0.1293104	0.17994979	3.1071949	20	5 20.7	19.5
105664 2000 SL ₃₇	16.1	X	74.28147	331.02101	163.58551	3.60215	0.1221104	0.27756097	2.3275398	20	4 22.4	18.5
105665 2000 SQ ₃₇	14.9	X	221.40579	2.46049	27.93710	10.00342	0.2185606	0.18301654	3.0723863	20	5 15.3	20.1
105666 2000 SS ₃₇	14.9	X	340.86780	161.11036	159.24533	10.12061	0.0494808	0.19142169	2.9817778	20	8 4.3	18.8
105667 2000 SO ₃₈	15.0	X	187.15517	233.93401	159.17490	5.36448	0.1801816	0.17909449	3.1170796	20	4 25.1	20.2
105668 2000 SW ₃₈	15.9	X	133.82932	345.71290	71.86961	4.89900	0.1578099	0.27429707	2.3459672	20	3 31.9	19.3
105669 2000 SW ₃₉	16.1	X	333.44308	290.80590	144.58328	4.61255	0.1169783	0.30408357	2.1901511	20	—	—
105670 2000 SK ₄₀	14.6	X	182.18751	278.51256	29.07389	16.66696	0.1535644	0.16861305	3.2449544	20	1 15.9	20.1
105671 2000 SM ₄₀	15.9	X	57.42940	295.65955	51.29400	7.66640	0.2304138	0.25625260	2.4548438	20	—	—
105672 2000 SX ₄₀	15.3	X	266.47008	324.17728	150.91013	2.55446	0.0198464	0.20305847	2.8667423	20	11 16.9	19.3
105673 2000 SL ₄₂	14.6	X	150.66051	256.03491	205.84945	13.64832	0.2154327	0.17682044	3.1437481	20	6 14.8	20.1
105674 2000 SQ ₄₂	15.5	X	214.845									

ELEMENTS AND OPPOSITION DATES IN 2020

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>		
105681	2000	SR ₄₆	13.8 ^m	X	113.45351	214.48195	302.10640	21.32169	0.0713906	0.19005480	2.9960575	20	7 7.9	18.3
105682	2000	SD ₄₇	15.0	X	171.62813	20.96849	276.42085	10.76809	0.1167271	0.21884527	2.7271641	20	—	—
105683	2000	SF ₄₈	15.0	X	43.43003	219.25476	207.08680	12.92745	0.1612954	0.21494100	2.7600897	20	—	—
105684	2000	SV ₄₈	16.7	X	214.49980	154.38079	276.91131	5.83093	0.0907196	0.28930550	2.2641138	20	7 13.2	19.6
105685	2000	SC ₅₁	12.5	X	150.77172	252.25449	195.52328	15.52952	0.0561439	0.08113124	5.2845818	20	5 23.1	19.8
105686	2000	SG ₅₂	14.6	X	107.13287	146.57312	303.77074	5.09691	0.1190709	0.17670457	3.1451222	20	4 8.9	19.3
105687	2000	SS ₅₅	15.2	X	233.57148	172.23518	214.38949	2.53163	0.1958042	0.18493611	3.0510892	20	5 25.0	20.1
105688	2000	SG ₅₇	16.5	X	16.76298	98.18499	337.97210	3.54755	0.0738892	0.31196777	2.1530935	20	—	—
105689	2000	SX ₅₇	14.8	X	236.14730	169.12999	179.02283	9.81816	0.0941397	0.18174163	3.0867380	20	4 20.9	19.5
105690	2000	SA ₅₈	15.6	X	269.19854	267.36353	130.94458	3.06576	0.1591226	0.18993948	2.9972701	20	7 21.5	19.6
105691	2000	SK ₆₀	14.8	X	167.87618	225.43222	211.54378	0.52384	0.1527173	0.18106164	3.0944615	20	5 28.9	19.9
105692	2000	SL ₆₂	14.8	X	198.36842	272.60548	124.62463	0.28984	0.1865041	0.18082383	3.0971741	20	5 7.6	20.0
105693	2000	SU ₆₂	15.2	X	179.97519	69.19518	356.75282	5.74428	0.1262249	0.18166609	3.0875937	20	5 24.9	20.2
105694	2000	SV ₆₂	12.1	X	296.96711	283.91597	6.52338	24.07597	0.1080167	0.08244037	5.2284879	20	4 15.6	19.0
105695	2000	SC ₆₃	16.2	X	174.47440	52.81276	277.59524	1.24593	0.2035913	0.27143582	2.3624245	20	1 23.2	19.8
105696	2000	SJ ₆₃	16.5	X	94.85190	291.39081	111.06562	2.63269	0.1327549	0.26730488	2.3867016	20	1 16.0	19.0
105697	2000	SV ₆₄	16.5	X	249.50342	31.87349	7.76381	0.35161	0.0840901	0.28898418	2.2657918	20	7 15.2	19.2
105698	2000	SX ₆₄	14.6	X	216.79593	291.69697	7.64099	10.93372	0.1710193	0.17402472	3.1773283	20	2 4.1	20.0
105699	2000	SH ₆₆	15.4	X	307.00874	137.31245	42.52903	1.84664	0.1239794	0.26660678	2.3908661	20	—	—
105700	2000	SK ₆₇	16.5	X	113.25315	333.86539	65.87927	3.85758	0.2189870	0.26902502	2.3765171	20	2 21.9	19.6
105701	2000	SS ₆₇	14.9	X	280.35160	156.36186	178.14773	9.99232	0.0800174	0.18531736	3.0469031	20	5 27.5	19.3
105702	2000	SB ₆₈	16.3	X	70.49861	301.05418	43.26259	2.56251	0.2281564	0.25820131	2.4424766	20	—	—
105703	2000	SV ₆₈	15.2	X	14.85252	145.59414	185.77469	1.79390	0.1135873	0.19816524	2.9137418	20	10 16.9	18.8
105704	2000	SF ₆₉	15.3	X	240.96841	204.64815	214.37649	0.57297	0.1839389	0.18739321	3.0243600	20	7 12.1	19.8
105705	2000	SO ₆₉	14.5	X	109.28563	31.51030	62.18286	6.08388	0.2071106	0.17316797	3.1877995	20	4 29.9	19.4
105706	2000	SR ₆₉	14.0	X	187.28472	26.60666	32.35276	16.16374	0.1120249	0.18127395	3.0920449	20	5 21.5	19.0
105707	2000	SL ₇₀	14.8	X	215.82905	269.85227	66.93003	6.14487	0.1640382	0.17704131	3.1411329	20	3 16.2	20.0
105708	2000	SB ₇₁	15.0	X	213.26578	306.57566	75.43416	2.39302	0.1925854	0.18099958	3.0951688	20	5 2.2	20.0
105709	2000	SH ₇₁	16.1	X	59.71277	56.45498	24.16199	4.81769	0.1183667	0.26684542	2.3894405	20	1 10.0	18.5
105710	2000	SA ₇₂	14.8	X	165.44742	2.97799	81.82425	5.74127	0.1851242	0.17971927	3.1098512	20	6 5.9	20.0
105711	2000	SO ₇₃	15.1	X	230.05021	309.45616	74.62657	4.13352	0.2088842	0.18286700	3.0740610	20	5 17.9	20.2
105712	2000	SO ₇₄	16.1	X	353.44118	302.79891	136.60250	6.20157	0.1089914	0.25690283	2.4506998	20	—	—
105713	2000	SR ₇₄	13.4	X	118.69039	40.65671	37.57984	13.37625	0.1141714	0.17356386	3.1829502	20	4 11.8	18.1
105714	2000	SP ₇₅	15.2	X	188.85385	231.59418	126.31732	6.02074	0.1839907	0.17499958	3.1655175	20	3 17.2	20.5
105715	2000	SO ₇₅	15.2	X	55.53235	177.21259	174.92180	12.58041	0.1876998	0.20538289	2.8450716	20	—	—
105716	2000	SZ ₇₅	13.9	X	119.64629	55.74449	38.26607	12.61654	0.1030373	0.17544146	3.1601999	20	4 28.2	18.6
105717	2000	SM ₇₆	16.1	X	142.20358	296.74452	89.53244	4.84947	0.1739801	0.27140102	2.3626265	20	3 2.1	19.5
105718	2000	SN ₇₇	15.8	X	14.20638	84.43139	301.70792	0.87368	0.0526275	0.20544765	2.8444738	20	12 18.7	19.4
105719	2000	SO ₇₇	15.5	X	274.11617	117.29708	320.48496	1.13856	0.0904035	0.19766192	2.9186860	20	9 28.8	19.2
105720	2000	SR ₇₉	12.2	X	267.85794	280.38688	45.25737	9.82206	0.0551371	0.08100055	5.2902648	20	5 5.6	19.2
105721	2000	ST ₇₉	16.0	X	184.82847	50.99676	22.57354	5.63411	0.1298474	0.28362660	2.2942359	20	6 9.6	19.5
105722	2000	SF ₈₀	16.6	X	54.99380	264.75455	182.87690	1.83412	0.1987427	0.26641500	2.3920134	20	1 16.9	18.3
105723	2000	SH ₈₁	15.9	X	24.47623	77.70013	44.21052	7.85342	0.1652782	0.26635423	2.3923772	20	1 1.4	18.1
105724	2000	SN ₈₁	16.3	X	59.38503	266.88736	138.29148	2.37859	0.2277831	0.26196337	2.4190360	20	—	—
105725	2000	SS ₈₁	14.6	X	98.80161	274.47906	174.73211	8.27577	0.1573178	0.17182488	3.2043899	20	4 7.2	19.2
105726	2000	SW ₈₁	15.4	X	348.62226	204.92782	166.03312	2.13512	0.0437462	0.19876991	2.9078296	20	10 23.9	19.2
105727	2000	SG ₈₂	14.9	X	156.53041	22.21700	62.27445	7.96488	0.1293323	0.17929092	3.1148025	20	5 26.5	19.8
105728	2000	SR ₈₂	14.4	X	123.16177	34.69512	34.99360	16.36604	0.0792173	0.17346079	3.1842110	20	4 4.2	19.1
105729	2000	SE ₈₃	15.2	X	308.75697	276.75800	74.11974	2.96444	0.2204957	0.19132764	2.9827549	20	7 7.6	18.6
105730	2000	SN ₈₃	14.9	X	215.98206	16.58595	13.53161	17.92934	0.1303146	0.18220899	3.0814575	20	5 11.3	20.0
105731	2000	SU ₈₃	16.4	X	207.96121	336.68486	24.29893	3.11631	0.1854009	0.27862835	2.3215917	20	3 29.2	20.1
105732	2000	SK ₈₃	15.0	X	255.18560	343.38126	22.60083	9.82051	0.0827016	0.18481254	3.0524490	20	6 1.4	19.5
105733	2000	SP ₈₄	15.8	X	296.30271	0.42172	42.09083	4.18469	0.1706545	0.29471506	2.2363228	20	9 26.4	17.5
105734	2000	SS ₈₄	14.9	X	241.75704	193.39501	178.97617	9.68110	0.0845751	0.18348898	3.0671103	20	5 27.9	19.6
105735	2000	SG ₈₅	16.2	X	180.15912	323.28245	63.43179	6.85229	0.1161714	0.27667621	2.3324992	20	4 6.8	19.6
105736	2000	SK ₈₆	15.1	X	209.32695	334.33976	66.51564	8.73912	0.0880354	0.23191801	2.6236933	20	5 25.8	18.9
105737	2000	SL ₈₈	16.0	X	170.74957	51.97886	53.37637	6.88841	0.0927560	0.28459476	2.2890298	20	7 9.6	19.3
105738	2000	SU ₈₈	14.7	X	180.72747	258.45859	169.08703	11.24378	0.1028863	0.17990250	3.1077394	20	5 30.9	19.8
105739	2000	SY ₈₈	15.9	X	288.47254	327.95077	122.79722	5.47002	0.0649379	0.26664315	2.3906487	20	—	—
105740	2000	SF ₈₉	14.2	X	63.61590	91.47877	308.18251	15.76499	0.1834779	0.21266363	2.7797596	20	—	—
105741	2000	SJ ₈₉	14.4	X	250.62815	47.82417	270.82300	16.13813	0.2074646	0.18093786	3.0958726	20	3 10.8	19.8
105742	2000	SH ₉₀	14.1	X	253.70040	343.74140	301.64487	21.13543	0.0491064	0.17796496	3.1302550	20	2 19.6	19.0
105743	2000	SA ₉₁	13.9	X	187.06915	140.42438	270.47365	15.71229	0.0850712	0.18010935	3.1053594	20	5 13.4	18.8
105744	2000	SR ₉₁	14.5	X	250.66628	33.37030	273.87860	11.62800	0.1337703	0.18099550	3.0952153	20	3 6.3	19.5
105745	2000	SE ₉₂	14.4	X	81.84167	68.70581	290.60052	11.34866	0.0508607	0.21288263	2.7778528	20	—	—
105746	2000	SP ₉₂	12.7	X	216.76718	43.42203	323.34741	19.89998	0.0738424	0.08203370	5.2457532	20	4 16.8	20.2
105747	2000	SA ₉₃	15.0	X	308.02410	75.12953	212.36475	16.02742	0.1439801	0.18621752	3.0370762	20	4 23.1	18.8
105748	2000	SG ₉₄	14.6	X	169.65000	117.50306	324.69813	10.67377	0.0902443	0.18353791	3.0665651	20	6 3.5	19.5
105749	2000	SK ₉₄	14.8	X	223.89558	91.12956	321.80980	8.97427	0.0913657	0.18707769	3.0277596	20	6 26.5	19.4
105750	2000	SY ₉₄	16.3	X	125.70932	146.29454	237.64030	5.						

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>		
105761	2000	SU ₁₀₁	15.8	X	276.58965	165.82352	248.53606	2.63070	0.1031012	0.19402237	2.9550728	20	8 29.3	19.6
105762	2000	SJ ₁₀₄	16.1	X	274.68921	224.33626	212.45823	1.09982	0.1915705	0.24530899	2.5273210	20	9 20.9	18.8
105763	2000	SV ₁₀₄	17.4	X	92.42259	25.15297	359.59170	2.24348	0.1299843	0.31495614	2.1394526	20	—	—
105764	2000	ST ₁₀₆	16.5	X	251.49364	82.81729	316.65180	1.48678	0.0219257	0.28902522	2.2655773	20	7 28.3	19.2
105765	2000	SX ₁₀₆	14.7	X	174.32428	108.58300	202.60360	4.60868	0.0954192	0.16736469	3.2610702	20	1 6.7	19.8
105766	2000	SB ₁₀₇	15.0	X	55.78991	26.84873	6.82343	8.72569	0.1591260	0.21025942	2.8009095	20	—	—
105767	2000	SE ₁₀₇	14.6	X	236.58031	115.91173	206.27457	9.35310	0.1090275	0.17773436	3.1329619	20	3 16.4	19.5
105768	2000	SH ₁₀₇	14.8	X	297.00265	39.58918	4.55897	11.75112	0.0548268	0.19535041	2.9416646	20	9 22.7	18.6
105769	2000	SO ₁₀₇	16.4	X	262.04792	265.15635	199.80943	5.86577	0.1365912	0.29775050	2.2210980	20	11 2.6	18.5
105770	2000	SA ₁₀₈	15.9	X	270.75535	154.35508	227.22088	0.75090	0.2794213	0.18799626	3.0178889	20	6 15.0	20.4
105771	2000	SG ₁₀₈	15.2	X	259.05115	344.53379	15.26197	0.71148	0.2632704	0.18540417	3.0459519	20	5 9.2	20.1
105772	2000	ST ₁₀₈	15.0	X	276.41178	310.41210	20.65064	9.22663	0.1446241	0.18451994	3.0556751	20	5 5.1	19.4
105773	2000	SC ₁₁₁	14.9	X	232.73319	76.62583	21.38710	11.13937	0.0837969	0.19254099	2.9702106	20	9 7.0	19.3
105774	2000	SO ₁₁₁	14.8	X	171.19964	342.96755	52.77951	1.05727	0.1952117	0.17597354	3.1538265	20	4 13.9	20.0
105775	2000	SY ₁₁₂	16.2	X	322.80298	217.17905	155.53603	1.60038	0.1843833	0.24493685	2.5298803	20	9 22.2	18.2
105776	2000	SG ₁₁₃	14.8	X	235.38827	211.48492	168.04874	2.59311	0.0902963	0.18307136	3.0717730	20	5 28.0	19.4
105777	2000	ST ₁₁₃	14.3	X	181.38698	9.72841	25.93512	17.40500	0.1886987	0.17725844	3.1385672	20	4 20.7	19.7
105778	2000	SW ₁₁₄	16.4	X	67.68017	233.12917	191.15311	2.01118	0.1819940	0.26471111	2.4022670	20	1 7.1	18.4
105779	2000	SA ₁₁₅	15.1	X	263.31116	192.00828	186.50125	1.59384	0.2198642	0.18648672	3.0341527	20	6 10.8	19.5
105780	2000	SH ₁₁₅	16.4	X	135.33780	305.96893	50.46869	0.72745	0.1326323	0.31733520	2.1287462	20	—	—
105781	2000	SM ₁₁₅	14.9	X	242.66526	349.72386	49.37480	1.31736	0.1944626	0.18514662	3.0487761	20	6 17.9	19.7
105782	2000	SR ₁₁₅	15.0	X	259.77668	285.28930	69.27014	1.91711	0.1407702	0.18386286	3.0629509	20	5 17.8	19.5
105783	2000	SM ₁₁₈	15.3	X	246.11510	341.99635	52.62595	4.23238	0.1502927	0.18521715	3.0480020	20	6 20.6	19.8
105784	2000	SV ₁₁₈	15.1	X	233.46238	268.26911	88.72292	2.83260	0.1758237	0.18057639	3.1000027	20	4 21.6	20.0
105785	2000	SY ₁₁₉	14.6	X	138.75584	308.17820	156.62281	6.58024	0.0967803	0.17865658	3.1221712	20	5 31.6	19.4
105786	2000	SD ₁₂₀	16.8	X	39.08595	256.03449	166.69631	3.04791	0.0832013	0.31106682	2.1572489	20	—	—
105787	2000	SM ₁₂₀	16.0	X	332.98220	301.70869	64.18428	5.50852	0.1687269	0.29548128	2.2324551	20	10 22.8	17.5
105788	2000	SB ₁₂₁	14.4	X	180.56279	18.31966	40.56488	15.45378	0.1628412	0.17859691	3.1228666	20	5 16.4	19.6
105789	2000	SR ₁₂₁	14.3	X	127.26458	250.52814	199.51017	18.89210	0.1772412	0.17416400	3.1756341	20	5 10.3	19.4
105790	2000	SG ₁₂₂	16.2	X	38.00287	276.55104	118.85348	3.83093	0.1629022	0.30736235	2.1745477	20	—	—
105791	2000	SH ₁₂₂	15.1	X	329.13964	256.49776	92.42260	5.27819	0.1181623	0.19167808	2.9791183	20	8 25.4	18.6
105792	2000	SK ₁₂₂	14.4	X	126.40845	268.10338	196.60425	15.83478	0.0789965	0.17708386	3.1406297	20	5 17.9	19.2
105793	2000	SM ₁₂₂	15.2	X	235.20764	234.88741	178.26673	6.66677	0.1885891	0.18461730	3.0546008	20	6 28.2	20.2
105794	2000	SV ₁₂₂	16.7	X	358.47139	355.05200	40.13724	6.77946	0.1824533	0.30175188	2.2014191	20	—	—
105795	2000	SA ₁₂₃	14.5	X	149.19228	262.31416	170.76620	5.47993	0.1848559	0.17519155	3.1632045	20	5 10.3	19.8
105796	2000	SR ₁₂₃	14.3	X	139.97950	279.32445	175.33298	10.06506	0.1606754	0.17616200	3.1515768	20	5 26.7	19.5
105797	2000	SD ₁₂₄	14.7	X	273.57199	259.15714	101.31150	4.79226	0.1306552	0.18466282	3.0540987	20	6 15.9	18.9
105798	2000	SE ₁₂₅	16.0	X	166.25130	232.55540	91.39304	4.50023	0.20366132	0.26798079	2.3828687	20	1 11.3	19.9
105799	2000	SV ₁₂₆	14.1	X	129.04617	247.48000	192.10370	15.82649	0.1736916	0.17222681	3.1994025	20	4 29.4	19.2
105800	2000	SG ₁₂₇	16.2	X	235.40756	276.40780	160.47087	7.45159	0.1733870	0.28752407	2.2734561	20	8 4.9	19.3
105801	2000	SK ₁₂₈	14.6	X	246.01577	190.73255	187.41153	8.14660	0.0616660	0.18326400	3.0696199	20	6 10.9	19.1
105802	2000	SV ₁₂₈	14.8	X	313.08370	275.59369	44.06370	10.43597	0.1556186	0.18672836	3.0315346	20	6 9.8	18.7
105803	2000	SH ₁₃₂	12.4	X	242.30450	28.13802	328.90818	27.97157	0.0760247	0.08144211	5.2711255	20	4 28.1	19.9
105804	2000	SY ₁₃₃	14.7	X	59.86757	169.83457	300.07998	9.11632	0.1227007	0.17097014	3.2150610	20	3 2.9	18.9
105805	2000	SL ₁₃₅	14.0	X	149.27256	101.08001	331.09050	10.19652	0.1591278	0.17784064	3.1317136	20	5 2.3	19.2
105806	2000	ST ₁₃₅	14.7	X	240.17113	13.31758	330.08900	10.92749	0.0713791	0.18083856	3.0970059	20	4 14.7	19.5
105807	2000	SY ₁₃₅	14.8	X	261.23975	76.75697	235.83841	15.53485	0.2364400	0.18185380	3.0854685	20	3 13.3	20.0
105808	2000	SZ ₁₃₅	11.7	X	64.66279	338.66801	202.05594	34.47673	0.0176028	0.08224902	5.2365937	20	5 26.9	18.9
105809	2000	SJ ₁₃₆	15.2	X	161.72688	86.58470	310.36316	4.93323	0.1538880	0.17568245	3.1573094	20	4 3.3	20.3
105810	2000	SR ₁₃₈	14.9	X	259.79261	171.87117	247.42967	4.32835	0.0999149	0.19129147	2.9831309	20	8 12.9	19.1
105811	2000	SY ₁₃₈	14.8	X	339.58502	39.21575	298.11929	9.47327	0.1182057	0.19269781	2.9685989	20	8 22.4	18.3
105812	2000	SZ ₁₃₈	15.9	X	125.19369	291.15475	348.82981	7.59826	0.2595739	0.25925351	2.4358635	20	—	—
105813	2000	ST ₁₄₀	14.8	X	53.52299	134.69960	267.12834	2.51836	0.0977714	0.21080704	2.7960567	20	—	—
105814	2000	SW ₁₄₀	14.8	X	259.13482	165.78102	210.79922	9.98352	0.1817655	0.18610280	3.0383241	20	6 8.7	19.5
105815	2000	SB ₁₄₁	15.8	X	272.05619	356.61906	340.36828	6.20529	0.1529745	0.28456843	2.2891710	20	5 2.4	18.8
105816	2000	SJ ₁₄₁	15.9	X	305.27181	9.99488	316.30838	7.16580	0.1372406	0.28733145	2.2744720	20	6 12.0	18.2
105817	2000	SC ₁₄₂	15.0	X	298.36104	121.08725	275.05632	8.48563	0.1788977	0.19268951	2.9686842	20	8 23.8	18.7
105818	2000	SM ₁₄₂	14.4	X	186.13820	163.33199	243.69571	4.48338	0.1631042	0.17891871	3.1191209	20	5 8.7	19.6
105819	2000	SN ₁₄₂	14.8	X	167.86522	66.20535	342.21823	14.15345	0.0806906	0.17635846	3.1492358	20	4 15.9	19.8
105820	2000	SP ₁₄₂	14.2	X	222.98507	127.48068	280.30582	9.47183	0.0909886	0.18346968	3.0673254	20	6 18.4	18.9
105821	2000	SQ ₁₄₂	13.7	X	104.22100	278.77072	228.15239	24.58426	0.2143882	0.17782748	3.1318681	20	6 24.7	18.9
105822	2000	SZ ₁₄₂	15.6	X	316.29971	112.71675	209.58924	13.88546	0.2271937	0.18936123	3.0033689	20	6 9.7	19.3
105823	2000	SF ₁₄₃	14.6	X	176.47618	59.13078	348.28522	13.11574	0.1576633	0.17730527	3.1380145	20	4 25.9	19.9
105824	2000	SV ₁₄₃	15.2	X	172.96788	339.10262	39.00594	1.31969	0.1918684	0.17523029	3.1627384	20	3 26.0	20.4
105825	2000	SG ₁₄₄	16.7	X	242.21090	145.81648	298.11686	1.81414	0.1301111	0.29194762	2.2504330	20	8 31.1	19.3
105826	2000	SD ₁₄₅	14.8	X	335.58249	335.08392	334.64671	2.61350	0.2103404	0.19064268	2.9898952	20	7 3.9	17.7
105827	2000	SM ₁₄₆	15.9	X	347.42366	92.57171	320.06988	1.73362	0.2261225	0.20182690	2.8783925	20	—	—
105828	2000	SR ₁₄₆	14.9	X	255.49700	155.86445	206.52187	10.68019	0.1561784	0.18403394	3.0610524	20	5 21.8	19.5
105829	2000	SH ₁₄₇	15.4	X	25.29941	7.36797	19.11842	12.79125	0.0736326	0.20474215	2.8510043	20	—	—

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
105841 2000 <i>ST</i> ₁₅₅	16.9	X	344.08774	19.28278	357.92264	3.81279	0.1587150	0.29878023	2.2159918	20	12 2.6	18.8
105842 2000 <i>SJ</i> ₁₅₆	14.5	X	152.95378	50.42522	50.25601	1.72126	0.1472610	0.17940342	3.1135002	20	6 12.7	19.4
105843 2000 <i>SD</i> ₁₆₀	16.1	X	245.55514	258.24126	333.03046	16.52400	0.0699796	0.36658356	1.9335440	20	—	—
105844 2000 <i>SH</i> ₁₆₀	16.5	X	147.97492	81.09096	229.43376	19.71619	0.0760764	0.36408860	1.9423672	20	—	—
105845 2000 <i>SB</i> ₁₆₃	15.0	X	15.59504	2.90761	3.80175	14.07514	0.1800400	0.20386249	2.8591998	20	12 11.4	18.8
105846 2000 <i>SK</i> ₁₆₄	16.1	X	108.12409	24.16559	41.24169	23.05073	0.0916346	0.37110936	1.9177918	20	3 1.8	18.6
105847 2000 <i>SD</i> ₁₆₅	14.7	X	308.15828	37.82320	290.69687	10.23638	0.1828445	0.18984855	2.9982271	20	6 11.2	18.3
105848 2000 <i>SK</i> ₁₆₅	14.6	X	258.07583	105.26213	238.77923	12.53572	0.1236758	0.18388585	3.0626957	20	5 3.9	19.1
105849 2000 <i>SL</i> ₁₆₅	14.5	X	162.39540	168.36780	283.83612	8.92422	0.0786026	0.18287681	3.0739511	20	6 9.1	19.3
105850 2000 <i>SN</i> ₁₆₅	14.4	X	200.20428	88.38505	281.13193	10.31383	0.0974720	0.17818582	3.1276678	20	4 2.9	19.4
105851 2000 <i>ST</i> ₁₆₅	14.6	X	195.59060	47.39863	266.76089	10.79587	0.1087170	0.17094115	3.2154244	20	1 27.9	19.8
105852 2000 <i>SV</i> ₁₆₅	14.6	X	220.68848	19.42008	329.72774	10.86132	0.0829460	0.17813224	3.1282950	20	3 31.4	19.6
105853 2000 <i>SY</i> ₁₆₅	14.7	X	115.30615	168.00551	299.19785	10.26765	0.0427658	0.17798757	3.1299899	20	4 27.9	19.4
105854 2000 <i>SB</i> ₁₆₇	14.2	X	125.90526	100.02581	338.93506	8.68280	0.0708846	0.17541255	3.1605471	20	4 9.7	19.0
105855 2000 <i>SD</i> ₁₆₇	14.6	X	228.94335	357.75538	344.81303	14.45320	0.0523216	0.17723466	3.1388480	20	4 3.1	19.3
105856 2000 <i>SH</i> ₁₆₇	14.4	X	289.73076	113.81797	227.20058	15.01920	0.2025961	0.18711987	3.0273045	20	5 28.4	18.6
105857 2000 <i>SZ</i> ₁₆₇	14.3	X	120.37355	141.68264	309.42344	4.02354	0.1490926	0.17429379	3.1740574	20	4 26.4	19.2
105858 2000 <i>SW</i> ₁₆₉	15.8	X	169.77843	240.77488	207.07732	21.25589	0.1750036	0.28065459	2.3104041	20	6 13.2	19.8
105859 2000 <i>SY</i> ₁₆₉	14.8	X	195.39811	357.22755	21.58838	11.00710	0.2301644	0.17691183	3.1426653	20	4 12.8	20.1
105860 2000 <i>SJ</i> ₁₇₀	14.3	X	289.62726	29.28071	22.75203	10.30213	0.1239477	0.19289015	2.9666252	20	9 16.1	18.1
105861 2000 <i>SP</i> ₁₇₀	14.7	X	246.96631	119.39021	214.83520	4.17949	0.1713183	0.17943584	3.1131252	20	4 5.8	19.6
105862 2000 <i>SO</i> ₁₇₀	14.7	X	307.80546	143.63556	212.74857	8.91039	0.0804795	0.18856987	3.0117657	20	7 29.6	18.8
105863 2000 <i>SZ</i> ₁₇₀	16.3	X	249.31777	75.01814	10.06042	3.28079	0.0854659	0.29216436	2.2493199	20	9 20.7	18.7
105864 2000 <i>SC</i> ₁₇₁	14.7	X	230.27850	315.72138	26.61176	10.59460	0.2289238	0.17846969	3.1243505	20	3 30.4	20.0
105865 2000 <i>SE</i> ₁₇₁	14.7	X	286.87819	104.15606	339.66035	4.04170	0.1539679	0.18517870	3.0484240	20	6 4.5	18.8
105866 2000 <i>SH</i> ₁₇₁	15.0	X	234.02821	221.00073	215.15761	12.70982	0.0765018	0.18769665	3.0210996	20	8 3.3	19.7
105867 2000 <i>ST</i> ₁₇₁	14.3	X	235.54661	49.18705	334.80494	10.54412	0.1416231	0.17981397	3.1087593	20	5 25.8	19.3
105868 2000 <i>SC</i> ₁₇₃	14.5	X	353.90497	202.68309	271.72111	15.05938	0.1746067	0.21474351	2.7617817	20	—	—
105869 2000 <i>SJ</i> ₁₇₃	14.0	X	164.08004	20.30736	335.56800	21.85455	0.0784013	0.17139625	3.0297300	20	2 18.2	18.9
105870 2000 <i>ST</i> ₁₇₃	14.4	X	258.35832	71.88158	319.30193	15.42708	0.0585499	0.18784210	3.0195398	20	7 15.9	18.7
105871 2000 <i>SK</i> ₁₇₄	14.6	X	261.22751	38.63143	243.51970	17.12126	0.1993036	0.17789436	3.1310831	20	2 9.3	20.0
105872 2000 <i>SZ</i> ₁₇₄	16.1	X	133.80205	58.47103	344.41476	9.66635	0.1295082	0.27169985	2.3608938	20	3 6.8	19.2
105873 2000 <i>SB</i> ₁₇₆	14.4	X	234.19847	109.94176	342.55617	9.43835	0.0670658	0.19075621	2.9887087	20	8 30.8	18.5
105874 2000 <i>SF</i> ₁₇₆	16.1	X	232.42065	96.74611	282.44690	6.00474	0.1203855	0.28230271	2.3014031	20	5 18.7	19.4
105875 2000 <i>SD</i> ₁₇₇	14.5	X	208.94220	121.07746	220.34643	24.59430	0.1277438	0.17434904	3.1733867	20	3 7.8	20.0
105876 2000 <i>SF</i> ₁₇₇	13.7	X	288.89616	298.28710	5.59624	11.98244	0.0888149	0.17983738	3.1084895	20	4 23.1	18.1
105877 2000 <i>SJ</i> ₁₇₇	15.1	X	253.92113	33.82465	355.77404	8.53605	0.1299313	0.18495497	3.0508818	20	6 26.2	19.7
105878 2000 <i>SP</i> ₁₇₇	15.7	X	336.48131	76.14808	257.28571	5.62868	0.2239304	0.29265724	2.2467937	20	8 28.8	17.0
105879 2000 <i>SQ</i> ₁₇₇	14.4	X	177.35631	114.31228	346.74728	8.91514	0.0463227	0.18313205	3.0710943	20	7 8.3	19.1
105880 2000 <i>SO</i> ₁₇₇	16.7	X	88.07353	123.28915	216.94233	19.70738	0.0553558	0.35738554	1.9665790	20	—	—
105881 2000 <i>SZ</i> ₁₇₈	14.9	X	153.09269	17.36825	11.34524	8.54416	0.1441793	0.17108442	3.2136290	20	3 19.9	20.0
105882 2000 <i>SL</i> ₁₇₉	14.3	X	315.11686	15.64176	9.23596	10.25741	0.1034706	0.19275954	2.9679652	20	9 20.3	17.8
105883 2000 <i>SY</i> ₁₇₉	16.3	X	17.08039	350.24728	34.80051	8.80025	0.1385333	0.30276543	2.1965033	20	—	—
105884 2000 <i>SB</i> ₁₈₀	14.9	X	285.79886	142.17951	260.61244	9.51429	0.0818041	0.19230888	2.9726002	20	8 26.3	19.1
105885 2000 <i>SW</i> ₁₈₀	14.8	X	259.83586	81.25873	250.77744	9.02372	0.0799864	0.18502331	3.0501304	20	4 25.4	19.3
105886 2000 <i>SP</i> ₁₈₁	15.0	X	323.02469	317.13791	96.52707	9.00937	0.1220984	0.19949688	2.9077612	20	10 18.6	18.4
105887 2000 <i>SM</i> ₁₈₂	15.0	X	113.51060	306.52827	46.78319	9.99243	0.2050729	0.21625679	2.7488827	20	—	—
105888 2000 <i>SP</i> ₁₈₂	16.6	X	170.62646	118.77259	8.88609	9.87499	0.2395184	0.18607534	3.0386231	20	8 4.5	20.0
105889 2000 <i>SO</i> ₁₈₂	14.5	X	157.04024	115.30684	17.01287	6.42019	0.1331466	0.28717518	2.2752971	20	8 2.7	19.9
105890 2000 <i>SB</i> ₁₈₃	14.8	X	24.22692	296.28860	11.13060	1.90938	0.0812451	0.19624687	2.9326995	20	9 24.9	18.6
105891 2000 <i>SF</i> ₁₈₃	15.7	X	264.29797	27.78272	31.23106	1.55582	0.0913406	0.19239874	2.9716745	20	8 22.3	19.7
105892 2000 <i>SO</i> ₁₈₃	16.5	X	347.70650	14.28365	40.06554	6.37977	0.1359144	0.30502191	2.1856571	20	—	—
105893 2000 <i>SD</i> ₁₈₄	14.9	X	237.58337	11.40336	17.40416	14.24769	0.1175362	0.18324457	3.0698369	20	6 4.9	19.8
105894 2000 <i>SE</i> ₁₈₅	16.0	X	317.72198	281.43525	93.19481	6.55523	0.2068291	0.29463653	2.2367202	20	10 1.2	17.3
105895 2000 <i>SE</i> ₁₈₇	14.8	X	162.13155	322.63977	100.96053	7.98848	0.1255237	0.17824578	3.1269663	20	5 9.0	19.8
105896 2000 <i>SG</i> ₁₈₇	12.2	X	272.10429	270.60885	50.42055	10.71559	0.1278394	0.08172970	5.2587531	20	4 27.1	19.2
105897 2000 <i>ST</i> ₁₈₇	14.7	X	287.66299	294.72017	81.44978	9.84703	0.1025699	0.18936629	3.0033153	20	7 28.0	18.8
105898 2000 <i>SC</i> ₁₈₈	15.2	X	290.04957	269.92354	153.99127	2.53533	0.1060147	0.19562537	2.9389076	20	10 2.4	18.8
105899 2000 <i>SH</i> ₁₈₉	14.8	X	262.10377	93.63020	217.96661	11.88481	0.2059781	0.18098279	3.0953602	20	3 18.6	19.8
105900 2000 <i>SJ</i> ₁₉₀	15.7	X	27.09152	197.69400	322.01579	7.47429	0.1408912	0.27762724	2.3271694	20	3 1.5	17.8
105901 2000 <i>SG</i> ₁₉₂	12.4	X	345.40000	57.11222	203.87443	15.47154	0.0253577	0.08188162	5.2522463	20	5 27.2	19.3
105902 2000 <i>SQ</i> ₁₉₂	16.3	X	48.62739	233.79158	266.62308	1.23668	0.1581217	0.27446528	2.3450086	20	3 19.5	18.4
105903 2000 <i>SJ</i> ₁₉₆	15.9	X	222.49467	120.16635	107.26342	0.53269	0.0146169	0.21334138	2.7738692	20	—	—
105904 2000 <i>SB</i> ₁₉₇	12.6	X	191.23366	232.61218	176.64268	8.29467	0.0247896	0.08272601	5.2164453	20	5 21.4	19.6
105905 2000 <i>SL</i> ₁₉₉	15.5	X	316.37403	69.68584	28.78647	2.69006	0.0161505	0.20655215	2.8343245	20	12 30	

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
105921 2000 SA ₂₁₀	14.5	X	211.64904	214.67173	154.08483	12.18444	0.2118934	0.17949970	3.1123868	20	4 17.6	19.9
105922 2000 SB ₂₁₀	14.4	X	241.76237	183.05232	141.55567	11.15001	0.1706469	0.17949777	3.1124091	20	3 24.3	19.4
105923 2000 SX ₂₁₀	14.4	X	26.28776	248.62766	51.10329	13.20327	0.0719498	0.19463900	2.9488282	20	9 23.4	18.4
105924 2000 SH ₂₁₁	14.7	X	250.32770	252.93457	151.62306	10.23295	0.1353109	0.18716388	3.0268299	20	7 9.4	19.3
105925 2000 SD ₂₁₃	16.3	X	216.89247	239.66169	138.28294	7.17135	0.1226511	0.28141489	2.3062409	20	5 3.5	19.7
105926 2000 SE ₂₁₈	14.9	X	335.83973	270.75062	71.91765	10.67487	0.2042194	0.19287402	2.9667906	20	8 29.6	18.1
105927 2000 SV ₂₁₈	14.3	X	107.45077	353.93893	78.13833	11.32330	0.0888723	0.17048223	3.2211922	20	3 23.3	19.1
105928 2000 SA ₂₁₉	14.4	X	194.18293	51.35033	81.56367	11.46748	0.2698215	0.18770536	3.0210061	20	8 28.8	19.9
105929 2000 SU ₂₁₉	16.0	X	185.32121	297.73765	107.93880	5.37219	0.2514293	0.27839751	2.3228749	20	5 6.7	20.0
105930 2000 SO ₂₂₂	14.6	X	215.51032	210.74099	173.25374	16.26959	0.0901982	0.17866234	3.1221040	20	5 14.7	19.6
105931 2000 SV ₂₂₃	15.2	X	297.01682	152.37227	191.38953	3.71815	0.0607903	0.18728248	3.0255519	20	7 2.1	19.2
105932 2000 SC ₂₂₄	15.4	X	194.85695	26.40964	358.16422	1.61826	0.1484541	0.17824383	3.1269891	20	4 19.8	20.6
105933 2000 SG ₂₂₄	15.4	X	186.72979	278.97428	119.66701	2.11777	0.1804090	0.17815539	3.1280239	20	4 30.4	20.7
105934 2000 SM ₂₂₄	15.1	X	239.46807	353.26785	41.59693	2.91942	0.0892613	0.18457158	3.0551052	20	6 20.6	19.5
105935 2000 SP ₂₂₄	13.2	X	331.96428	218.28877	341.59628	13.87590	0.1331524	0.12374012	3.9883723	20	2 19.0	18.4
105936 2000 SQ ₂₂₄	15.1	X	267.56129	79.14660	202.36860	15.90067	0.1738297	0.17884957	3.1199247	20	2 19.9	20.2
105937 2000 SR ₂₂₅	15.1	X	176.30780	267.60546	179.19376	13.57328	0.2685626	0.17805880	3.1291551	20	6 17.8	20.9
105938 2000 SL ₂₂₇	15.4	X	211.10649	245.47700	127.42199	6.86655	0.1749430	0.17820895	3.1273972	20	4 22.7	20.6
105939 2000 SY ₂₂₇	16.0	X	134.76703	297.10399	56.44733	5.44549	0.2510371	0.26857815	2.3791524	20	1 21.0	19.5
105940 2000 SU ₂₃₀	16.2	X	80.71617	23.06803	25.83439	1.69563	0.1780577	0.26424762	2.4050752	20	1 9.8	18.5
105941 2000 SX ₂₃₀	16.8	X	270.29301	351.17512	27.86837	4.52504	0.1128718	0.28775040	2.2722638	20	7 10.9	19.4
105942 2000 SM ₂₃₃	17.2	X	320.41642	242.16832	117.66505	6.34147	0.2028159	0.29471231	2.2363367	20	9 9.1	18.4
105943 2000 SY ₂₃₃	16.5	X	277.62138	245.80638	84.84467	5.41641	0.3025387	0.28672779	2.2776633	20	4 15.3	19.8
105944 2000 ST ₂₃₅	16.2	X	353.75298	181.29106	293.16365	1.07754	0.1823740	0.26206603	2.4184043	20	—	—
105945 2000 SU ₂₃₇	15.0	X	231.65536	257.71949	126.51740	10.90771	0.1376734	0.18316957	3.0706749	20	5 27.5	19.9
105946 2000 ST ₂₃₈	14.6	X	242.98151	270.78993	172.86090	14.23603	0.1846242	0.18970372	2.9997529	20	8 12.2	19.2
105947 2000 SL ₂₄₀	15.8	X	186.76296	319.52430	341.11565	18.96687	0.0529832	0.36504023	1.9389900	20	—	—
105948 2000 SZ ₂₄₀	17.3	X	53.75098	148.79850	216.45119	20.66713	0.0899811	0.35789498	1.9647124	20	—	—
105949 2000 SE ₂₄₂	14.9	X	301.26829	284.90889	12.93326	9.30654	0.3365499	0.18955147	3.0013590	20	3 29.1	19.1
105950 2000 SA ₂₄₃	15.3	X	129.28139	209.46240	78.07547	5.14302	0.0742709	0.21017651	2.8016460	20	—	—
105951 2000 ST ₂₄₃	16.1	X	254.22589	199.61641	37.40278	6.93324	0.0716745	0.27028623	2.3691184	20	—	—
105952 2000 SN ₂₄₆	16.4	X	38.44526	318.62450	95.07350	4.07863	0.1648531	0.26114093	2.4241124	20	—	—
105953 2000 SY ₂₄₆	14.9	X	6.54723	83.58413	35.02023	10.47946	0.1613287	0.21519889	2.7578842	20	—	—
105954 2000 SS ₂₄₈	15.0	X	273.49387	199.20461	123.39188	3.49663	0.1148793	0.18400665	3.0613551	20	4 28.5	19.4
105955 2000 SU ₂₄₉	15.0	X	36.31549	13.93709	92.89316	3.95591	0.1022424	0.21775110	2.7362923	20	1 16.4	18.1
105956 2000 SX ₂₄₉	15.0	X	192.97188	238.36256	167.87108	10.36099	0.1204558	0.18127905	3.0919869	20	5 17.2	20.0
105957 2000 SX ₂₅₁	14.2	X	137.33154	78.54181	39.94871	11.30166	0.0722125	0.18257160	3.0773760	20	6 13.0	18.9
105958 2000 SN ₂₅₂	15.7	X	329.61789	244.13749	41.35482	7.58588	0.1179749	0.28586839	2.2822529	20	5 25.8	17.8
105959 2000 SX ₂₅₅	16.3	X	307.76709	222.69013	57.72688	3.63883	0.1115421	0.28225373	2.3016693	20	4 13.0	18.7
105960 2000 ST ₂₅₇	15.0	X	268.72777	80.38171	221.47505	4.24337	0.1501790	0.18020105	3.1043059	20	3 21.4	19.8
105961 2000 SY ₂₅₇	15.1	X	211.79334	239.27722	133.59980	2.65738	0.2369485	0.17966120	3.1105214	20	4 19.3	20.5
105962 2000 SB ₂₅₈	14.8	X	198.36497	52.84834	10.92349	10.74037	0.0643507	0.18275227	3.0753475	20	6 11.6	19.5
105963 2000 SR ₂₅₈	13.9	X	49.40950	25.76819	121.20859	3.06833	0.1102037	0.17220466	3.1996768	20	4 6.9	18.0
105964 2000 SX ₂₅₈	16.2	X	351.84520	155.30508	163.36174	5.65877	0.2293388	0.24368868	2.5385116	20	9 6.9	18.1
105965 2000 SL ₂₅₉	15.0	X	248.63452	348.28159	9.66080	7.37266	0.1328811	0.18204547	3.0833024	20	5 8.6	19.8
105966 2000 SN ₂₅₉	15.8	X	283.18800	188.98059	218.80926	4.19793	0.1698149	0.24212944	2.5493981	20	8 25.6	18.8
105967 2000 SU ₂₅₉	16.3	X	99.57433	258.70937	69.88292	3.28844	0.1637472	0.25880644	2.4386679	20	—	—
105968 2000 SS ₂₆₀	14.5	X	48.59842	281.70812	59.24175	11.92648	0.2429283	0.20258383	2.8712182	20	12 30.9	18.9
105969 2000 SX ₂₆₁	14.7	X	349.60655	181.47297	182.54702	9.93833	0.1022801	0.19561778	2.9389836	20	10 19.7	18.2
105970 2000 SP ₂₆₂	14.8	X	198.91321	230.27138	105.36207	4.44755	0.0990378	0.17439977	3.1727714	20	2 28.7	19.8
105971 2000 SB ₂₆₃	16.3	X	210.70223	228.93535	60.55675	5.56130	0.1237415	0.27117776	2.3639231	20	1 3.4	19.8
105972 2000 SZ ₂₆₃	16.1	X	45.64920	310.98348	218.33500	1.56521	0.1466624	0.27888665	2.3202695	20	4 27.2	18.1
105973 2000 SE ₂₆₄	14.3	X	4.27433	344.90908	177.36923	11.56585	0.0964056	0.17132517	3.2106178	20	2 12.9	18.4
105974 2000 SX ₂₆₄	15.3	X	319.01618	261.75139	94.99032	2.85612	0.1070800	0.19267820	2.9688004	20	8 18.6	19.0
105975 2000 SJ ₂₆₅	16.2	X	248.51841	285.41473	164.09939	5.00769	0.1297240	0.29374302	2.2412537	20	9 18.9	18.5
105976 2000 SV ₂₆₅	14.9	X	232.82680	297.16373	60.88433	9.90349	0.1198644	0.18066372	3.0990036	20	4 27.7	19.7
105977 2000 SF ₂₆₆	16.5	X	187.81298	331.95029	101.62837	4.85315	0.1164224	0.28258217	2.2998855	20	6 13.9	19.7
105978 2000 SJ ₂₆₆	14.8	X	304.85597	243.43254	96.46543	7.16846	0.0922222	0.18707527	3.0277856	20	7 4.5	18.6
105979 2000 SS ₂₆₆	14.8	X	182.11234	284.40718	125.22295	15.54168	0.1561277	0.17608859	3.1524526	20	5 14.1	20.2
105980 2000 SN ₂₆₈	15.2	X	287.65731	176.91517	178.27557	10.74821	0.1235100	0.18666895	3.0321778	20	6 24.9	19.5
105981 2000 SS ₂₆₈	15.0	X	255.89600	239.33509	182.27876	7.64161	0.1016455	0.18930091	3.0040069	20	8 10.5	19.3
105982 2000 SV ₂₆₈	14.7	X	150.23947	336.82502	70.34170	5.45147	0.1156575	0.17324253	3.1868848	20	4 7.2	19.6
105983 2000 SE ₂₆₉	16.1	X	223.15064	30.54175	54.11625	6.72510	0.1415245	0.28770748	2.2724898	20	8 9.1	19.3
105984 2000 SQ ₂₆₉	16.5	X	329.76680	266.75637	136.46178	3.55152	0.1534407	0.29830089	2.2183650	20	12 13.8	18.2
105985 2000 ST ₂₆₉	15.3	X	273.51335	319.19379	75.08568	6.32794	0.1212100	0.23878001	2.5731834	20	8 2.7	18.5
105986 2000 SX ₂₆₉	14.6	X	166.40704	232.37097	182.33494	11.26547	0.2291806	0.17531570	3.1617110	20	5 4.9	20.1
105987 2000 SN ₂₇₀	16.7	X	89.00878	251.31738	124.92581	2.05669	0.1917197	0.26228054	2.4170854	20	—	—
105988 2000 SD ₂₇₁	14.7	X	304.80789	239.88473	68.56767	7.00496	0.0175051	0.18165874	3.0876770	20	6 2.3	18.8
105989 2000 SV ₂₇₁	14.8	X	126.05270	275.34883	182.90216	12.97705	0.1582788	0.17413084	3.1760373	20	5 17.9	19.9
105990 2000 SP ₂₇₃	14.5	X	210.71261	69.90575	279.53977	7.00382	0.1890985	0.17657054	3.1467136	20	3 19.2	19.9
105991 2000 SC ₂₇₄	16.3	X	132.35237	270.65389	57.99443	0.51265	0.2274445	0.26372011	2.4082813	20	—	—
105992 2000 SR ₂₇₅	13.7	X	163.81252	354.99570	55.01911	17.13715	0.0866335	0.17455414	3.1709005	20	4 24.3	18.6
105993 2000 SZ ₂₇₇	14.4	X	248.88576	103.62268	216.60829	21.78966	0.2061407	0.17828				

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>		
106001	2000	SR ₂₈₃	12.5	X	175.86848	92.23583	319.78963	9.27575	0.0182636	0.08174557	5.2580726	20	5 3.1	19.6
106002	2000	SE ₂₈₄	16.3	X	162.45552	200.42766	326.86587	5.38791	0.0781001	0.29625483	2.2285673	20	9 22.9	19.3
106003	2000	SQ ₂₈₄	14.4	X	201.86452	165.21144	314.45857	9.71059	0.0574990	0.19192648	2.9765472	20	8 25.8	18.8
106004	2000	SN ₂₈₅	14.9	X	36.31155	293.66280	350.26632	10.32593	0.0364529	0.19256429	2.9699710	20	9 5.7	18.9
106005	2000	SO ₂₈₅	14.4	X	274.87669	53.10471	323.24580	8.39772	0.0756645	0.18756439	3.0225196	20	7 14.2	18.5
106006	2000	SY ₂₈₅	14.6	X	68.95632	126.25667	348.67462	8.48950	0.0554211	0.17393746	3.1783909	20	3 15.9	18.9
106007	2000	SX ₂₈₇	14.3	X	191.03965	50.24670	341.82055	11.50819	0.0719950	0.17534964	3.1613031	20	4 21.6	19.2
106008	2000	SY ₂₈₈	16.4	X	186.84713	133.72157	319.87521	6.30613	0.0649584	0.28752059	2.2734744	20	7 13.5	19.3
106009	2000	SG ₂₉₀	15.1	X	212.21997	85.43774	279.30051	4.29313	0.1181753	0.17966686	3.1104560	20	4 11.4	20.0
106010	2000	SR ₂₉₀	14.7	X	217.19945	212.69543	207.03168	7.91527	0.1374052	0.18531395	3.0469405	20	6 22.9	19.6
106011	2000	SU ₂₉₁	15.1	X	6.18449	44.65877	264.01281	2.30149	0.0865105	0.19346498	2.9607460	20	8 28.9	18.9
106012	2000	SF ₂₉₂	16.8	X	298.09745	121.99371	329.11281	4.36942	0.0939202	0.30195718	2.2004211	20	12 23.4	18.8
106013	2000	SQ ₂₉₂	13.7	X	290.45787	287.23658	9.52158	26.22173	0.1992766	0.18093410	3.0959155	20	4 2.0	18.0
106014	2000	SZ ₂₉₂	14.5	X	304.72377	128.48761	262.99857	11.07553	0.1296631	0.19258289	2.9697798	20	9 1.6	18.4
106015	2000	SK ₂₉₃	15.7	X	133.95464	20.21032	298.16456	8.11761	0.2267100	0.26235839	2.4166073	20	—	—
106016	2000	SS ₂₉₃	14.9	X	196.74276	103.32600	323.84399	9.63455	0.1541743	0.17998721	3.1067641	20	6 11.7	20.0
106017	2000	SH ₂₉₄	16.4	X	326.54394	28.44308	350.79238	8.14541	0.2217599	0.29448304	2.2374973	20	10 26.6	17.8
106018	2000	SK ₂₉₄	14.3	X	123.20560	195.83447	304.69461	10.91630	0.1063703	0.18082585	3.0971510	20	6 30.3	19.0
106019	2000	SN ₂₉₄	14.8	X	221.57264	134.42758	312.23488	9.16462	0.0703519	0.18770980	3.0209584	20	8 6.9	19.3
106020	2000	SS ₂₉₄	14.6	X	225.35389	21.54135	14.18294	22.89679	0.1193131	0.18131243	3.0916073	20	5 27.2	19.8
106021	2000	SX ₂₉₄	14.1	X	333.69590	9.30960	337.10204	9.59557	0.0972641	0.18992722	2.9973991	20	8 28.3	17.8
106022	2000	SK ₂₉₆	15.0	X	199.91362	184.47531	269.60937	8.84591	0.1184356	0.18790109	3.0189078	20	7 18.7	19.8
106023	2000	SN ₂₉₆	15.3	X	175.44685	95.94681	302.78555	10.77992	0.0942879	0.17751608	3.1355297	20	4 13.2	20.3
106024	2000	SC ₂₉₇	14.8	X	128.85048	159.85904	297.75226	6.41855	0.1252112	0.17848463	3.1241761	20	5 13.1	19.6
106025	2000	SG ₂₉₇	14.8	X	176.46791	190.22563	315.18471	6.61596	0.0944518	0.24299299	2.5433544	20	9 2.6	18.6
106026	2000	ST ₂₉₇	14.5	X	140.43999	169.33939	218.94291	14.16178	0.0668523	0.17214430	3.2004247	20	2 23.3	19.5
106027	2000	SF ₂₉₈	16.4	X	195.32444	243.74363	274.93933	5.70290	0.0632956	0.29767779	2.2214596	20	10 22.5	19.3
106028	2000	SB ₂₉₉	15.0	X	270.23251	27.08258	280.13705	9.41375	0.1377508	0.18055333	3.1002666	20	3 27.4	19.8
106029	2000	SN ₂₉₉	15.0	X	158.59648	72.68053	346.56112	7.76764	0.0900223	0.17782353	3.1319145	20	4 23.1	19.8
106030	2000	SB ₃₀₀	15.7	X	106.30919	134.83311	350.71052	7.13833	0.2019409	0.27773886	2.3265459	20	6 1.9	19.1
106031	2000	SL ₃₀₀	14.6	X	126.63116	114.34969	354.61502	10.07953	0.1686513	0.17760005	3.1345413	20	5 28.1	19.7
106032	2000	SO ₃₀₂	14.9	X	241.67992	46.22117	235.40104	10.24928	0.1304294	0.17430064	3.1739742	20	1 31.3	20.1
106033	2000	SJ ₃₀₃	14.5	X	153.90289	189.87580	216.26394	8.79921	0.0900535	0.17482441	3.1676316	20	4 4.2	19.3
106034	2000	SK ₃₀₃	15.1	X	352.59271	70.92807	234.19860	4.66780	0.1260803	0.19053506	2.9910209	20	8 1.9	18.6
106035	2000	SU ₃₀₃	14.5	X	147.95452	168.30512	287.73728	9.12845	0.0537837	0.17920645	3.1157812	20	5 26.8	19.2
106036	2000	SE ₃₀₄	14.1	X	103.98724	199.67219	234.01428	13.48367	0.0752237	0.17198234	3.2024337	20	3 7.7	18.9
106037	2000	SU ₃₀₄	14.9	X	317.78705	123.55887	229.12795	9.86581	0.1070375	0.19144616	2.9815236	20	8 5.7	18.8
106038	2000	SG ₃₀₅	14.7	X	138.78405	107.91537	326.03021	6.13839	0.1870953	0.17479918	3.1679367	20	4 28.4	19.9
106039	2000	SH ₃₀₅	15.3	X	27.02661	110.86570	266.89506	4.80044	0.0810886	0.20398771	2.8580296	20	12 28.4	19.0
106040	2000	SR ₃₀₅	15.8	X	245.84338	123.28779	231.60173	6.47400	0.1301283	0.28223414	2.3017758	20	4 30.5	19.1
106041	2000	SU ₃₀₅	14.2	X	147.57753	191.71332	232.67700	10.44706	0.1380249	0.17511222	3.1641598	20	4 23.1	19.2
106042	2000	SK ₃₀₆	14.6	X	64.67446	22.91806	299.14939	6.39612	0.0698534	0.20301458	2.8671554	20	12 3.9	18.7
106043	2000	SA ₃₀₇	14.4	X	99.50819	95.12573	8.35118	17.40587	0.1859957	0.17205772	3.2014983	20	4 22.8	19.2
106044	2000	SB ₃₀₇	14.7	X	334.46892	329.71019	347.71308	10.01888	0.1091185	0.18895127	3.0077115	20	7 22.8	18.4
106045	2000	SD ₃₀₇	14.9	X	246.22593	355.78875	343.24691	8.39318	0.0855953	0.17939964	3.1135440	20	4 16.6	19.6
106046	2000	SF ₃₀₇	14.9	X	355.55390	43.87672	260.71983	9.59187	0.0799607	0.19086090	2.9876157	20	8 3.4	18.8
106047	2000	SG ₃₀₇	15.2	X	184.23523	55.78534	344.58749	11.00615	0.1347592	0.17828789	3.1264740	20	4 25.0	20.4
106048	2000	SW ₃₀₇	15.8	X	181.27017	112.08210	327.34132	6.81554	0.1399837	0.28188255	2.3036894	20	6 14.2	19.3
106049	2000	SX ₃₀₇	15.9	X	22.42049	182.51641	258.30685	6.46290	0.1192797	0.26042596	2.4285471	20	—	—
106050	2000	SP ₃₀₈	16.8	X	211.06489	139.40001	295.37455	5.74942	0.1450115	0.28560540	2.2836267	20	7 9.5	20.2
106051	2000	SJ ₃₁₂	14.1	X	210.29612	42.05803	295.64963	15.94874	0.1258839	0.17583580	3.1554734	20	3 3.1	19.4
106052	2000	ST ₃₁₂	14.0	X	182.67788	175.50514	260.69697	16.48152	0.1768024	0.18106701	3.0944003	20	6 10.3	19.0
106053	2000	SJ ₃₁₃	13.8	X	304.36756	305.42589	308.83888	20.11207	0.1565072	0.17852368	3.1237205	20	2 27.1	18.4
106054	2000	SN ₃₁₃	14.9	X	5.25428	72.42553	299.00626	12.01663	0.0891590	0.20025664	2.8934197	20	11 18.2	18.8
106055	2000	SP ₃₁₃	14.1	X	208.18622	142.05760	285.73645	11.80382	0.0695107	0.18452632	3.0556047	20	6 29.1	18.7
106056	2000	SF ₃₁₅	14.1	X	222.33407	320.22290	349.85272	27.04615	0.2128705	0.17530811	3.1618023	20	2 22.6	19.6
106057	2000	SZ ₃₁₅	14.7	X	160.79640	101.82605	288.66320	13.17356	0.0428406	0.17643474	3.1483281	20	3 14.6	19.6
106058	2000	SE ₃₁₆	14.8	X	19.90904	278.60687	205.81923	29.80407	0.1691479	0.21974183	2.7197411	20	1 3.1	18.4
106059	2000	SK ₃₁₆	14.6	X	48.09588	149.71195	237.51735	16.91639	0.1538689	0.21019545	2.8014778	20	—	—
106060	2000	SS ₃₁₆	12.5	X	253.57080	93.50005	252.00479	17.42674	0.0299857	0.08337203	5.1894636	20	5 14.5	19.4
106061	2000	SU ₃₁₇	14.9	X	151.16002	353.63329	279.59979	16.71842	0.1133436	0.21132681	2.7914702	20	—	—
106062	2000	ST ₃₁₈	14.1	X	264.27222	22.43999	316.73942	15.21651	0.1973953	0.18267020	3.0762685	20	4 19.1	19.2
106063	2000	SR ₃₁₉	13.4	X	194.16724	53.24410	17.27566	16.84507	0.2354744	0.17774306	3.1328598	20	6 8.8	19.1
106064	2000	SA ₃₂₃	14.7	X	306.08695	28.38348	238.47689	22.01031	0.0890863	0.18109050	3.0941327	20	3 27.1	19.3
106065	2000	ST ₃₂₄	15.4	X	94.47560	139.23104	26.33995	3.65310	0.0496186	0.18324631	3.0698175	20	6 20.5	19.7
106066	2000	SZ ₃₂₄	15.6	X	124.07110	131.87489	40.72151	2.40466	0.0864022	0.18805466	3.0172641	20	8 9.3	20.0
106067	2000	SC ₃₂₈	14.4	X	214.99250	143.12725	351.87426	9.45178	0.1536690	0.19298634	2.9656393	20	9 20.8	18.9
106068	2000	SC ₃₂₉	15.0	X	120.86314	225.01479	180.89080	5.23227	0.0637746	0.17349008	3.1838526	20	2 25.9	19.6
106069	2000	SJ ₃₃₀	15.9	X	276.36507	72.40086	3.09693	6.70920	0.2069466					

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>		
106081	2000	SU ₃₄₈	14.9	X	165.33094	284.57831	115.90774	11.07287	0.1164417	0.17742270	3.1366298	20	4 16.5	20.0
106082	2000	SP ₃₅₀	14.6	X	275.06196	203.42153	136.01720	17.35146	0.1376161	0.18584467	3.0411369	20	5 22.2	19.2
106083	2000	SR ₃₅₂	15.2	X	201.27734	248.43189	142.63927	14.30154	0.2145030	0.17947758	3.1126425	20	5 6.6	20.7
106084	2000	SA ₃₅₅	14.6	X	144.97675	338.78246	107.42066	10.89209	0.1018110	0.18017436	3.1046124	20	5 18.6	19.5
106085	2000	SO ₃₅₅	15.1	X	186.41317	331.13457	55.09244	11.46328	0.2263729	0.17784156	3.1317028	20	4 17.9	20.6
106086	2000	SE ₃₅₆	16.0	X	211.07705	257.03720	76.32770	9.94535	0.2361567	0.27681685	2.3317091	20	3 1.5	20.2
106087	2000	SY ₃₅₇	14.5	X	240.06187	325.38190	79.90856	17.77116	0.1286731	0.18609473	3.0384120	20	6 29.4	19.2
106088	2000	SB ₃₅₉	14.4	X	270.65460	354.11742	313.94505	21.25151	0.1290320	0.18166109	3.0876503	20	3 22.8	19.3
106089	2000	SJ ₃₅₉	14.4	X	133.15858	159.54917	313.39835	6.28151	0.0707164	0.18169715	3.0872418	20	6 1.6	19.0
106090	2000	SY ₃₅₉	16.1	X	25.02270	15.85364	90.70034	3.18392	0.1278021	0.26566876	2.3964906	20	—	—
106091	2000	SZ ₃₆₁	12.6	X	295.56756	168.50663	138.50959	8.53213	0.0512872	0.08375587	5.1735963	20	5 18.9	19.5
106092	2000	SK ₃₆₂	14.8	X	43.17947	66.77007	22.95598	22.78855	0.2919868	0.21495934	2.7599328	20	5 28.5	17.6
106093	2000	SD ₃₆₆	14.6	X	212.64569	229.50860	178.10143	10.75875	0.0953939	0.18643575	3.0347058	20	6 7.5	19.4
106094	2000	SA ₃₆₈	15.2	X	272.42971	7.32404	358.35532	10.94379	0.0770648	0.18939242	3.0030391	20	6 26.2	19.6
106095	2000	SP ₃₆₉	15.7	X	14.95250	325.48655	352.21681	10.15988	0.2938834	0.19817312	2.9136645	20	10 21.3	18.9
106096	2000	TQ	15.1	X	215.80464	344.37629	30.68377	1.82389	0.1765310	0.18012746	3.1051512	20	4 26.3	20.2
106097	2000	TC ₂	14.2	X	12.70068	180.47613	221.69089	12.68357	0.1893433	0.20250562	2.8719574	20	—	—
106098	2000	TC ₅	15.6	X	239.60215	234.19929	235.38037	1.25673	0.0576017	0.19724558	2.9227917	20	9 29.2	19.5
106099	2000	TF ₇	15.5	X	245.09995	102.91077	325.26412	1.25183	0.1511339	0.18988997	2.9977911	20	8 1.3	19.8
106100	2000	TX ₉	15.0	X	274.73629	347.51589	9.41098	9.23515	0.0312027	0.18575890	3.0420730	20	6 23.9	19.4
106101	2000	TT ₁₂	15.1	X	273.63945	252.01705	59.33892	14.68015	0.2826261	0.18350365	3.0669468	20	3 31.1	20.1
106102	2000	TE ₁₃	15.1	X	197.00083	250.30761	206.00069	4.13989	0.1019524	0.18603150	3.0391005	20	7 19.6	19.9
106103	2000	TM ₁₃	15.5	X	258.83809	315.70735	51.29360	3.63361	0.1017005	0.18477272	3.0528876	20	6 6.1	19.9
106104	2000	TZ ₁₅	16.7	X	45.08559	260.67401	39.96346	2.55824	0.0527642	0.29656926	2.2269919	20	10 30.2	19.1
106105	2000	TW ₁₆	15.4	X	304.03523	149.57321	208.46907	2.83786	0.0323643	0.18842803	3.0132769	20	8 2.8	19.4
106106	2000	TG ₁₈	16.1	X	276.92343	268.20321	206.05849	5.10732	0.1213045	0.29968596	2.2115247	20	12 16.5	18.1
106107	2000	TC ₁₉	15.9	X	296.97067	213.75311	100.20392	7.61358	0.1304327	0.28695677	2.2764515	20	5 13.7	18.4
106108	2000	TF ₁₉	14.9	X	257.03059	335.02024	52.59706	9.62662	0.1078701	0.18869109	3.0104757	20	6 29.9	19.4
106109	2000	TV ₂₁	14.8	X	334.25795	157.35225	146.03701	12.98060	0.1349692	0.18882758	3.0090248	20	6 28.4	18.5
106110	2000	TW ₂₁	16.6	X	162.32123	79.89918	35.64457	1.58444	0.1668426	0.28341071	2.2954009	20	7 14.4	20.1
106111	2000	TS ₂₂	16.1	X	107.95190	82.77627	241.56244	18.16627	0.0865911	0.35950169	1.9588541	20	—	—
106112	2000	TT ₂₃	16.2	X	122.95059	283.66357	62.01220	0.55329	0.0811699	0.21370870	2.7706899	20	—	—
106113	2000	TF ₂₅	14.0	X	29.60292	142.12112	27.10345	26.61917	0.0984717	0.17391689	3.1786414	20	4 7.3	18.0
106114	2000	TC ₂₇	14.9	X	277.23447	141.05793	201.99018	19.28510	0.0160187	0.18225454	3.0809441	20	6 10.9	19.5
106115	2000	TU ₂₇	15.3	X	331.21577	245.65057	128.37931	2.92705	0.1175125	0.19465800	2.9486363	20	10 2.2	18.6
106116	2000	TP ₂₈	15.3	X	288.29249	347.70279	62.76948	11.56732	0.0280734	0.19423403	2.9529256	20	9 27.4	19.5
106117	2000	TH ₂₉	13.9	X	343.64840	65.51185	287.20880	9.37299	0.1236529	0.1930910	2.9645668	20	9 17.5	17.6
106118	2000	TT ₃₂	14.7	X	252.79767	270.73161	124.36074	7.38574	0.1131313	0.18611870	3.0381512	20	7 3.5	19.1
106119	2000	TZ ₃₂	13.6	X	147.21717	164.31128	268.67410	26.10819	0.0684604	0.17645096	3.1481351	20	4 23.9	18.7
106120	2000	TM ₃₃	15.7	X	90.15089	10.94643	336.60957	18.41934	0.0733820	0.35791159	1.9646516	20	—	—
106121	2000	TP ₃₃	15.1	X	117.72269	161.08970	269.30649	20.21768	0.0825312	0.37171426	1.9157106	20	2 21.2	17.6
106122	2000	TE ₃₄	15.8	X	228.60324	188.01985	226.14744	4.26341	0.1543173	0.28393879	2.2925539	20	6 29.0	19.2
106123	2000	TK ₃₅	15.0	X	70.79882	124.83085	30.36861	5.38626	0.0766546	0.17708399	3.1406281	20	5 10.7	19.4
106124	2000	TL ₃₅	15.4	X	257.76819	115.74001	206.36443	0.24326	0.1696992	0.18041399	3.1017940	20	4 2.5	20.0
106125	2000	TS ₃₅	16.7	X	166.02802	273.91114	232.17300	2.41535	0.0590304	0.29078521	2.2564264	20	8 29.3	19.5
106126	2000	TH ₃₆	15.4	X	240.37009	116.74043	235.68137	1.16668	0.1135789	0.18044338	3.1015259	20	4 26.9	20.1
106127	2000	TM ₃₆	14.9	X	220.08938	344.88265	130.40965	2.58404	0.1434626	0.19142633	2.9817297	20	9 3.9	19.5
106128	2000	TR ₃₇	16.0	X	155.04911	239.10967	120.62095	6.59005	0.1471073	0.27280185	2.3545315	20	2 6.1	19.3
106129	2000	TM ₃₈	14.7	X	260.14666	266.98163	120.81491	10.92653	0.1089006	0.18982451	2.9984803	20	7 3.9	18.9
106130	2000	TC ₃₉	15.0	X	230.43984	0.46855	46.15905	10.96447	0.1816323	0.18676642	3.0311227	20	6 15.6	19.9
106131	2000	TO ₃₉	15.0	X	281.70163	295.39740	43.87345	10.35633	0.1482022	0.18772818	3.0207613	20	5 22.3	19.1
106132	2000	TT ₄₀	14.8	X	157.64736	272.28362	44.45315	11.13037	0.2037186	0.16966309	3.2315518	20	1 5.7	20.2
106133	2000	TA ₄₁	16.2	X	301.20083	16.16260	61.06204	8.93749	0.0740083	0.30260803	2.1972649	20	12 7.4	18.1
106134	2000	TZ ₄₁	14.5	X	173.62030	309.05472	135.86234	12.59148	0.3228314	0.18184513	3.0855666	20	6 14.6	20.0
106135	2000	TE ₄₂	15.4	X	95.74873	239.66115	156.39306	17.61406	0.1099282	0.21759870	2.7375697	20	1 14.2	19.2
106136	2000	TH ₄₂	14.5	X	260.03931	354.21509	48.90882	10.20082	0.0726563	0.19111869	2.9849286	20	8 1.4	18.8
106137	2000	TC ₄₃	15.3	X	74.74410	6.57619	40.32964	13.38784	0.1486320	0.21556719	2.7547421	20	1 5.1	18.8
106138	2000	TO ₄₃	14.7	X	235.04630	334.87293	37.05060	17.33481	0.1226531	0.18361755	3.0656784	20	5 12.0	19.4
106139	2000	TQ ₄₃	14.9	X	339.52888	166.90243	142.38351	12.25294	0.0998374	0.19044170	2.9919984	20	7 17.1	18.6
106140	2000	TP ₄₄	15.8	X	200.15842	240.69826	147.63654	15.20343	0.1266537	0.23118375	2.6292457	20	5 3.4	20.2
106141	2000	TQ ₄₄	14.9	X	248.75239	346.65200	66.38312	9.75012	0.0825135	0.19041918	2.9922342	20	7 28.4	19.3
106142	2000	TT ₄₄	16.4	X	207.42662	357.51887	100.16837	5.54949	0.1128520	0.29035333	2.2586634	20	8 10.5	19.4
106143	2000	TU ₄₄	12.2	X	298.37988	182.05917	134.62679	14.07984	0.0635475	0.08466659	5.1364296	20	6 1.4	19.0
106144	2000	TL ₄₆	15.3	X	341.03007	157.35313	108.25684	0.40679	0.2877739	0.18957850	3.0010737	20	5 1.6	17.7
106145	2000	TQ ₄₉	14.5	X	230.75282	53.04424	67.20940	14.43050	0.1139933	0.19520525	2.9431228	20	10 2.7	19.0
106146	2000	TU ₅₀	13.9	X	229.51290	250.92855	168.26757	16.29261	0.2173294	0.18448344	3.0560782	20	6 28.0	19.2
106147	2000	TB ₅₁	14.5	X	257.75657	255.01184	44.43442	27.13919	0.1746301	0.17751245	3.1355725	20	3 22.2	19.8
106148	2000	TH ₅₁	16.1	X	211.43374	249.07104	104.74149	8.17905	0.1540134	0.27722502	2.3294198	20	3 27.8	19.8
106149	2000	TM ₅₁	15.9	X	119.71646	265.43902	84.62761	9.18275	0.1423668	0.26374149	2.4081511	20	—	—
106150	2000													

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
106161 2000 TQ ₆₂	15.3	X	210.47983	291.61895	129.60556	2.29405	0.1388311	0.18288155	3.0738980	20	6 18.5	20.2
106162 2000 TR ₆₂	17.2	X	35.50957	127.81970	248.16190	1.97816	0.1580653	0.30498324	2.1858418	20	—	—
106163 2000 TT ₆₄	14.7	X	289.32782	148.37678	161.59948	10.65569	0.0387565	0.18286314	3.0741044	20	5 14.9	19.1
106164 2000 TA ₆₅	15.6	X	257.11794	124.57279	335.54165	1.04975	0.0637121	0.19635483	2.9316243	20	10 8.4	19.4
106165 2000 TC ₆₅	15.7	X	223.09019	253.40256	148.02872	1.22779	0.1690495	0.18310418	3.0714059	20	6 4.3	20.6
106166 2000 TN ₆₆	15.3	X	337.92756	260.29925	324.67224	0.67842	0.0310568	0.17530314	3.1618621	20	3 30.4	19.7
106167 2000 TS ₆₆	14.5	X	110.22115	35.52585	72.62799	5.76636	0.1291645	0.17511801	3.1640901	20	5 9.3	19.2
106168 2000 TE ₆₇	13.8	X	90.11930	33.05860	94.91291	6.09371	0.1064426	0.17509814	3.1643294	20	5 8.2	18.3
106169 2000 TP ₆₇	15.8	X	296.17990	175.61364	234.55136	3.07177	0.1626439	0.24455076	2.5325423	20	9 23.6	18.4
106170 2000 TF ₆₈	14.8	X	147.36794	226.06966	226.93126	3.05308	0.1234138	0.17840298	3.1251292	20	5 27.9	19.7
106171 2000 TT ₇₀	14.3	X	146.35248	316.77722	133.02011	23.75911	0.1337999	0.17609380	3.1523904	20	5 30.0	19.7
106172 2000 UF	14.4	X	289.48330	45.96221	249.36891	9.04160	0.0979963	0.18011516	3.1052926	20	4 12.4	18.8
106173 2000 UX ₂	17.1	X	164.99514	282.86529	52.86310	3.72727	0.0314428	0.31507714	2.1389048	20	—	—
106174 2000 UX ₃	15.6	X	102.82224	196.52241	237.92218	5.66625	0.0838292	0.27054596	2.3676019	20	2 29.2	18.7
106175 2000 UL ₅	16.5	X	292.92436	196.24323	171.05751	2.57827	0.2203104	0.28846287	2.2685208	20	7 9.4	18.8
106176 2000 UQ ₅	14.6	X	228.64508	339.83569	68.57546	13.38578	0.1314128	0.18145225	3.0900190	20	6 20.6	19.3
106177 2000 UZ ₅	16.3	X	7.45124	27.37611	49.68844	22.09891	0.1005984	0.35611192	1.9712651	20	—	—
106178 2000 UA ₆	16.2	X	105.84172	73.07538	239.29424	4.46991	0.2259587	0.30823201	2.1704555	20	—	—
106179 2000 UD ₆	15.3	X	291.16364	9.23805	66.41503	2.96197	0.0957884	0.19672921	2.9279039	20	10 21.1	18.9
106180 2000 UL ₆	14.8	X	307.58678	291.17137	38.82359	16.60610	0.0393521	0.18495473	3.0508844	20	7 1.9	19.2
106181 2000 UY ₆	14.4	X	199.37441	31.32177	47.31797	2.76383	0.1121665	0.18181948	3.0858568	20	6 30.5	19.1
106182 2000 UF ₇	15.0	X	164.13878	199.54957	163.67091	2.53926	0.1697531	0.17091980	3.2156921	20	2 29.7	20.3
106183 2000 US ₈	16.1	X	244.15106	174.68781	215.30004	6.77009	0.2131372	0.28432201	2.2904935	20	6 7.2	19.5
106184 2000 UG ₉	16.5	X	272.60861	16.44364	342.04024	0.98328	0.2579315	0.28553191	2.2840185	20	5 20.4	19.7
106185 2000 UP ₉	14.4	X	181.86417	322.15623	60.32610	14.72330	0.1404569	0.173132942	3.1882728	20	4 12.2	19.7
106186 2000 US ₉	14.1	X	186.85591	331.38106	57.04840	10.64320	0.2454894	0.17503309	3.1651135	20	4 20.5	19.7
106187 2000 UY ₉	16.5	X	268.65533	181.03617	209.73986	3.35615	0.1407681	0.28689625	2.2767716	20	7 19.2	19.3
106188 2000 UZ ₁₀	15.6	X	104.03823	166.31484	269.13481	10.14420	0.1664458	0.21984345	2.7189029	20	3 18.1	19.6
106189 2000 UM ₁₁	15.7	X	308.92217	88.22624	242.58421	21.85566	0.1160527	0.38766259	1.8628024	20	6 30.9	17.2
106190 2000 UH ₁₂	16.2	X	225.15563	307.50706	29.88804	2.49603	0.1112392	0.22604053	2.6689791	20	3 22.2	20.1
106191 2000 UL ₁₂	14.4	X	177.64243	40.85568	35.12455	3.81599	0.1378118	0.17806899	3.1290357	20	6 4.9	19.4
106192 2000 UP ₁₂	16.3	X	95.22516	233.52529	225.24600	1.13995	0.1993366	0.22109222	2.7086553	20	4 16.5	20.0
106193 2000 UU ₁₄	14.8	X	194.24525	71.10701	328.46363	8.28196	0.1356676	0.17815102	3.1280752	20	5 4.5	19.9
106194 2000 UF ₁₅	16.0	X	219.83432	355.63537	347.89307	2.57981	0.2292255	0.27588686	2.3369462	20	3 15.9	19.9
106195 2000 UM ₁₅	14.7	X	232.95616	357.43801	55.18696	10.17472	0.0679139	0.18298634	3.0727244	20	7 8.8	19.3
106196 2000 UF ₁₆	16.1	X	86.03690	358.08655	53.76542	22.70363	0.0876151	0.36693415	1.9323122	20	—	—
106197 2000 UO ₁₇	14.7	X	233.93817	165.74391	184.96723	10.60337	0.0624393	0.17758049	3.1347714	20	4 24.6	19.3
106198 2000 UQ ₁₈	14.0	X	199.55409	68.72642	265.51078	14.59052	0.2134140	0.17156916	3.2075732	20	2 19.3	19.8
106199 2000 UR ₁₈	14.2	X	227.11236	54.37504	336.00481	8.02472	0.0427851	0.17938862	3.1136715	20	6 4.3	18.8
106200 2000 UA ₁₉	15.1	X	258.55741	115.97406	223.78062	7.76988	0.2925540	0.18256519	3.0774481	20	4 11.1	20.1
106201 2000 UR ₂₁	14.0	X	106.93517	345.03255	92.68079	6.34222	0.0813683	0.17047253	3.2213144	20	3 25.9	18.7
106202 2000 UE ₂₂	16.2	X	40.24725	319.02650	73.43431	6.54816	0.1132482	0.30684069	2.1770116	20	—	—
106203 2000 UB ₂₃	16.0	X	7.73209	282.64036	122.61293	3.42452	0.1653901	0.25322793	2.4743529	20	—	—
106204 2000 UP ₂₇	16.2	X	4.09374	253.39665	127.11381	5.57895	0.1735193	0.29956458	2.2121220	20	—	—
106205 2000 UY ₂₈	15.6	X	193.78621	264.22172	169.23274	2.18732	0.1111739	0.18190327	3.0849092	20	6 18.4	20.5
106206 2000 UR ₂₉	14.6	X	204.81238	139.89999	242.69162	22.80793	0.2847074	0.27724377	2.3293148	20	4 17.1	19.1
106207 2000 UU ₂₉	15.9	X	190.97093	273.78577	223.77866	23.72592	0.1670966	0.29013927	2.2597742	20	9 1.7	19.9
106208 2000 UW ₃₀	14.4	X	166.88726	316.61872	82.70616	2.70860	0.2175390	0.17322898	3.1870511	20	4 16.2	19.8
106209 2000 UQ ₃₁	15.0	X	84.81508	37.18346	82.34692	2.85884	0.1377182	0.17208267	3.2011889	20	4 24.7	19.4
106210 2000 UA ₃₂	15.0	X	218.23001	9.85363	45.98645	13.44265	0.1134099	0.18308280	3.0716450	20	6 20.2	19.8
106211 2000 UR ₃₂	15.6	X	98.20079	294.48487	209.47428	5.20390	0.1193102	0.27659142	2.3329758	20	6 8.3	18.6
106212 2000 UJ ₃₃	16.4	X	268.21685	51.47733	77.80101	4.25081	0.0601437	0.29946167	2.2126288	20	12 29.1	18.5
106213 2000 UJ ₃₃	16.1	X	115.57106	128.24330	195.39665	3.91427	0.1712276	0.30965801	2.1637870	20	—	—
106214 2000 UZ ₃₄	14.6	X	181.94702	144.81927	245.77854	3.76660	0.0218878	0.17546822	3.1598786	20	4 13.3	19.1
106215 2000 UD ₃₅	16.9	X	206.46652	92.42911	7.88502	3.39477	0.1229217	0.28738171	2.2742069	20	8 11.8	19.9
106216 2000 US ₃₅	15.1	X	183.01341	50.61879	22.96959	0.83387	0.1727249	0.17937625	3.1138146	20	6 7.2	20.3
106217 2000 UT ₃₅	14.7	X	241.54998	131.89630	226.20861	11.38555	0.1449660	0.18040578	3.1019569	20	5 1.9	19.4
106218 2000 UV ₃₅	16.2	X	45.96498	44.78045	32.78897	2.62484	0.1969120	0.26183971	2.4197976	20	—	—
106219 2000 UC ₃₆	16.2	X	196.04164	48.50283	24.58054	4.71766	0.1544809	0.28220971	2.3019086	20	6 20.4	19.6
106220 2000 UD ₃₇	16.6	X	226.22596	359.73948	87.24851	2.55929	0.0769968	0.28855639	2.2680306	20	8 23.3	19.3
106221 2000 UA ₃₈	16.1	X	115.23509	38.50915	17.09961	2.92493	0.1627145	0.26909482	2.3761061	20	3 7.3	19.1
106222 2000 UN ₃₈	14.7	X	214.04138	356.55453	37.12891	7.97020	0.0515753	0.17986535	3.1081673	20	5 23.4	19.2
106223 2000 UX ₃₈	14.6	X	280.37200	105.13552	205.15371	4.70452	0.1448814	0.18008522	3.1056368	20	4 15.9	19.0
106224 2000 UA ₃₉	16.8	X	33.06421	248.13568	162.03898	1.63554	0.0989197	0.30776618	2.1726451	20	—	—
106225 2000 UN ₃₉	15.1	X	305.36498	288.15323	163.44401	2.17820	0.0100857	0.20058720	2.8902400	20	12 6.9	19.1
106226 2000 US ₃₉	14.7	X	322.29041	264.21076	47.22537	9.61950	0.1363457	0.18543163	3.0456512	20	6 17.1	18.5
106227 2000 UA ₄₀	16.4	X	153.80808	307.04952	49.57799	1.29188	0.2254158	0.26908748	2.3761493	20	2 8.5	20.1
106228 2000 UB ₄₀	14.8	X	140.62667	157.88093	238.81818	5.83757	0.1083714	0.17000761	3.2271846	20	3 10.9	19.9
106229 2000 UM ₄₀	14.6	X	133.70668	348.52108	127.05482	5.08752	0.2195952	0.17610781	3.1522233	20	6 17.8	19.9
106230 2000 UB ₄₁	13.8	X	134.21103	212.89243	234.05631	13.74157	0.1925507	0.17331360	3.1860136	20	5 12.7	18.8
106231 2000 UL ₄₁	14.6	X	123.16243	75.09579	24.40239	1.47121	0.1866610	0.17292199	3.1908220	20	5 16.9	19.6
106232 2000 UK ₄₂	15.6	X	273.69916	95.11563	65.77554	3.97519	0.0832155	0.30500086	2.1857576	20	—	—
106233 2000 UP ₄₃	16.5	X	3.03481	149.05304	172.26887	0.94927	0.2105777	0.29384701	2.2407248	20	10 19.9	18.1
106234 2000 UJ ₄₄	14.3	X	83.75322	103.85232								

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
106241 2000 UC ₄₇	14.8	X	293.43525	129.10844	225.36473	8.08094	0.0767434	0.18471383	3.0535364	20	7 7.8	19.0
106242 2000 UL ₄₇	14.9	X	249.74106	141.10118	245.31279	6.36037	0.1145911	0.18263531	3.0766604	20	6 18.6	19.5
106243 2000 UX ₄₇	16.2	X	235.30543	196.56550	231.33355	5.74461	0.1081963	0.28640815	2.2793576	20	7 30.8	19.2
106244 2000 UX ₄₈	14.4	X	295.53997	285.65406	54.64492	11.32094	0.0613068	0.18256600	3.0774390	20	6 25.2	18.6
106245 2000 UZ ₄₈	16.3	X	229.43440	2.05163	56.19279	4.52197	0.1607562	0.28432564	2.2904740	20	7 5.7	19.5
106246 2000 UF ₅₀	15.5	X	119.97175	303.98111	64.54373	6.44376	0.3009451	0.26510889	2.3998634	20	1 31.9	19.0
106247 2000 UA ₅₁	15.0	X	251.47176	131.51423	235.78780	9.99812	0.1252302	0.18170712	3.0871288	20	5 26.4	19.6
106248 2000 UO ₅₁	14.8	X	214.37644	41.04486	29.00219	4.10428	0.0851190	0.18262405	3.0767867	20	7 7.8	19.5
106249 2000 UK ₅₂	14.8	X	195.57576	325.58210	173.71010	3.74144	0.1772905	0.18833472	3.0142721	20	9 5.9	19.8
106250 2000 UM ₅₂	16.1	X	289.97512	331.09695	65.76879	6.71357	0.0961163	0.29076566	2.2565275	20	9 16.4	18.4
106251 2000 UA ₅₄	14.4	X	202.86516	207.57703	208.34238	10.70123	0.1352590	0.17947371	3.1126872	20	6 5.2	19.4
106252 2000 UV ₅₄	16.6	X	62.80074	173.52544	176.81986	4.99801	0.2166094	0.30531135	2.1842755	20	—	—
106253 2000 UE ₅₆	16.4	X	190.17949	252.13294	176.67903	2.21857	0.2228486	0.27864446	2.3215023	20	6 7.6	20.3
106254 2000 UU ₅₆	14.8	X	232.58160	129.68550	307.86484	8.48933	0.0979055	0.18966631	3.0001474	20	8 4.9	19.2
106255 2000 UE ₅₇	15.2	X	169.59470	131.81370	36.03475	11.46818	0.0293138	0.19297540	2.9657514	20	9 25.9	19.5
106256 2000 UK ₅₇	14.9	X	257.31892	90.11748	245.02272	7.61404	0.1111926	0.18122717	3.0925770	20	4 22.9	19.5
106257 2000 US ₅₈	16.5	X	278.19879	1.37977	350.12948	5.51159	0.1068522	0.28570836	2.2830780	20	6 10.9	19.2
106258 2000 UN ₅₉	14.1	X	141.07165	73.85208	356.26699	11.44664	0.0748271	0.17506293	3.1647538	20	4 16.1	18.9
106259 2000 UX ₅₉	14.9	X	308.17869	23.23434	4.82696	9.31643	0.0308674	0.19316563	2.9638040	20	9 19.4	18.7
106260 2000 UC ₆₀	14.7	X	175.83274	135.85967	350.77894	5.97785	0.1190468	0.18620126	3.0372531	20	8 6.9	19.5
106261 2000 UD ₆₀	14.8	X	265.62780	22.31414	279.58647	3.68408	0.0728634	0.17674008	3.1447010	20	3 27.2	19.4
106262 2000 UZ ₆₀	14.8	X	288.21113	307.35913	11.34324	9.40250	0.0947261	0.18212426	3.0824132	20	5 10.9	19.2
106263 2000 UG ₆₂	17.0	X	338.69521	108.52662	316.80502	2.22618	0.0992760	0.30220753	2.1992058	20	—	—
106264 2000 UP ₆₂	14.4	X	219.37343	92.04218	15.46844	11.77528	0.0755245	0.19021077	2.9944195	20	9 4.1	18.9
106265 2000 UG ₆₂	16.2	X	80.47585	93.61992	312.09819	3.50957	0.1587958	0.26365954	2.4086502	20	1 1.9	18.6
106266 2000 UA ₆₃	14.5	X	112.04131	235.35106	245.42730	9.99467	0.0701123	0.17670017	3.1451745	20	5 18.5	19.1
106267 2000 UZ ₆₃	14.6	X	185.39576	17.23603	1.20499	15.91226	0.0621188	0.17503570	3.1650819	20	4 1.6	19.3
106268 2000 UD ₆₄	15.2	X	63.49734	50.83664	234.02677	7.22427	0.2933834	0.20099533	2.8863262	20	11 14.6	19.7
106269 2000 UK ₆₄	16.5	X	168.93823	108.00172	348.51283	4.30198	0.1268412	0.28251342	3.0020586	20	6 24.9	19.9
106270 2000 UW ₆₆	16.1	X	359.01955	111.50120	7.62512	4.30661	0.0884935	0.26188115	2.4195423	20	—	—
106271 2000 UO ₆₇	14.5	X	325.01226	34.95821	261.13650	8.76552	0.1138545	0.18415774	3.0596804	20	6 3.9	18.2
106272 2000 UP ₆₇	14.4	X	336.69495	228.87559	17.30313	15.79759	0.0438384	0.17692113	3.1425552	20	4 20.9	18.8
106273 2000 UB ₆₈	15.0	X	271.10329	337.83365	19.23597	10.19090	0.0761847	0.18335914	3.0685580	20	6 11.2	19.4
106274 2000 UU ₆₉	15.3	X	281.20651	223.28398	21.27174	7.44367	0.0835560	0.26953542	2.3735159	20	1 26.1	18.5
106275 2000 UY ₆₉	15.1	X	188.10202	176.10855	296.40014	3.21617	0.2295078	0.23413425	2.6071103	20	7 29.6	19.7
106276 2000 UB ₇₀	15.1	X	206.01953	58.50887	342.33681	4.33223	0.1678591	0.17948088	3.1126044	20	5 17.8	20.3
106277 2000 UA ₇₁	15.9	X	298.71027	114.81457	306.87700	2.02461	0.0753954	0.29594469	2.2301250	20	11 7.2	17.9
106278 2000 UZ ₇₁	14.4	X	203.13660	358.95168	358.85056	4.41216	0.1474130	0.17446759	3.1719490	20	3 26.9	19.5
106279 2000 UN ₇₂	14.3	X	218.92276	330.25682	75.71762	10.66309	0.0447568	0.17971919	3.1098522	20	6 15.0	18.8
106280 2000 UQ ₇₂	14.8	X	232.68427	63.33071	317.74482	8.11450	0.1238356	0.17965045	3.1106455	20	5 21.4	19.7
106281 2000 UW ₇₃	14.4	X	255.22324	346.42500	39.84773	13.89349	0.1316912	0.18406584	3.0606988	20	6 21.7	19.0
106282 2000 UP ₇₄	14.6	X	178.72961	344.10951	89.90054	6.27694	0.1432569	0.17933715	3.1142672	20	6 4.4	19.6
106283 2000 UZ ₇₄	15.0	X	287.15949	103.13119	292.79133	10.52361	0.0919208	0.19019187	2.9946179	20	8 18.9	19.2
106284 2000 UG ₇₆	16.3	X	142.50510	319.83387	41.96650	23.18121	0.0308538	0.36916896	1.9245060	20	—	—
106285 2000 UG ₇₇	14.8	X	293.29262	149.60382	195.23888	9.17607	0.1004618	0.18543522	3.0456120	20	6 22.5	19.0
106286 2000 UK ₇₇	15.9	X	246.89679	269.72378	173.56341	5.50386	0.0818967	0.24085561	2.5583789	20	9 6.7	19.3
106287 2000 UP ₇₇	16.6	X	149.55010	245.47173	114.03954	3.18338	0.2329732	0.26868939	2.3784957	20	2 8.9	20.3
106288 2000 UK ₇₈	16.3	X	136.76792	8.37133	70.97447	1.82473	0.0700326	0.27432883	2.3457861	20	4 21.9	19.2
106289 2000 UY ₇₈	16.3	X	248.62490	86.85478	41.95090	7.62886	0.0821047	0.29596245	2.3003348	20	11 22.2	18.7
106290 2000 UR ₇₉	14.0	X	269.31625	127.96240	244.82514	13.92279	0.2877176	0.18478193	3.0527862	20	6 1.5	18.5
106291 2000 UW ₇₉	15.8	X	167.27607	3.77133	50.72699	7.78460	0.1009060	0.27477727	2.3432332	20	4 27.2	19.1
106292 2000 UM ₈₀	16.7	X	35.15832	95.78841	6.63265	1.38400	0.0612739	0.31399537	2.1438146	20	—	—
106293 2000 US ₈₁	14.7	X	322.18696	349.02969	70.28262	7.38617	0.16212934	0.19513748	2.9438042	20	11 12.8	17.1
106294 2000 UH ₈₂	15.1	X	233.90665	33.36427	23.61422	5.93176	0.1740142	0.18462030	3.0545677	20	7 4.0	19.9
106295 2000 UJ ₈₂	16.0	X	158.23923	335.21547	20.52236	1.58691	0.1979619	0.26796944	2.3827540	20	2 9.4	19.7
106296 2000 UE ₈₃	15.9	X	87.37093	253.49446	79.11311	7.07816	0.1331507	0.25669083	2.4520490	20	—	—
106297 2000 UQ ₈₃	14.0	X	58.18866	90.35858	50.42555	5.29227	0.1086021	0.17253990	3.1955309	20	4 11.7	18.1
106298 2000 UX ₈₃	14.3	X	74.20594	113.55391	71.92339	10.89805	0.0226176	0.18063766	3.0993016	20	6 15.7	18.6
106299 2000 UJ ₈₄	14.5	X	192.35474	52.01215	53.94995	11.55196	0.0554390	0.18643226	3.0347436	20	8 2.7	19.2
106300 2000 UX ₈₄	16.5	X	106.01244	294.11995	80.32989	3.82654	0.2054671	0.26439441	2.4041849	20	1 6.8	19.2
106301 2000 UJ ₈₆	14.3	X	185.78828	327.73075	70.00491	5.94511	0.0636974	0.17651074	3.1474243	20	4 29.2	19.1
106302 2000 UJ ₈₇	14.8	X	191.49044	298.92825	133.73419	4.33283	0.1919093	0.17946772	3.1127565	20	6 13.4	20.0
106303 2000 UO ₈₇	14.9	X	184.99825	21.84080	86.27128	9.01313	0.0625363	0.18357148	3.0661912	20	7 25.1	19.5
106304 2000 UO ₈₈	14.7	X	207.01845	312.34749	46.25966	22.33570	0.0726494	0.17499197	3.1656093	20	4 10.9	19.7
106305 2000 UD ₉₀	16.2	X	268.81863	189.39384	261.46863	2.34239	0.1559192	0.24540270	2.5266775	20	10 6.6	19.3
106306 2000 UU ₉₁	15.0	X	286.15235	58.63255	284.73288	4.44021	0.1711188	0.18565454	3.0432129	20	5 30.8	19.3
106307 2000 UD ₉₂	15.6	X	329.42731	23.03513	327.44835	2.45159	0.0808951	0.19095487	2.9866355	20	8 27.3	19.4
106308 2000 UN ₉₂	16.7	X	143.50541	25.08097	281.59561	3.82053	0.0995154	0.31201219	2.1528892	20	—	—
106309 2000 UU ₉₂	14.8	X	260.66916	328.73679	333.58659	4.32266	0.0859100	0.17658956	3.1464877	20	3 21.2	19.5
106310 2000 UX ₉₂	14.5	X	119.88442	249.96891	253.92611	9.57851	0.0943752	0.18105151	3.0945769	20	6 28.2	19.2
106311 2000 UL ₉₃	15.4	X	244.72525	44.38368	331.06942	6.27448	0.1313353	0.18238371	3.0794892	20	5 26.9	20.2
106312 2000 UC ₉₄	14.7	X	243.93433	53.74853	19.69869	10.93430	0.0425078	0.18905150	3.0066475	20	8 25.9	19.0
106313 2000 UE ₉₄	13.9	X	245.61956	263.93801	19.10984	8.90466	0.0323856	0.16907560	3.2390334	20	2 21.6	18.6
1063												

ELEMENTS AND OPPOSITION DATES IN 2020

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>		
106321	2000	US ₉₈	16.3	X	309.96880	191.75663	267.70350	5.59294	0.1317596	0.30079646	2.2060782	20	—	—
106322	2000	UQ ₉₉	16.3	X	298.16135	141.71178	279.19249	3.53587	0.1157401	0.29491353	2.2353194	20	11 1.7	18.2
106323	2000	UD ₁₀₀	14.9	X	242.83134	350.15298	32.52563	7.73780	0.1077788	0.18114260	3.0935394	20	6 5.8	19.6
106324	2000	UD ₁₀₁	14.8	X	326.38028	116.75775	281.73377	8.77418	0.1016248	0.19468090	2.9484050	20	10 21.9	18.5
106325	2000	UE ₁₀₁	15.2	X	219.81192	31.50267	20.72159	9.79954	0.1994911	0.18070196	3.0985664	20	6 11.0	20.4
106326	2000	UN ₁₀₁	14.8	X	270.64167	46.74455	289.70743	5.89761	0.1030902	0.18111884	3.0938099	20	5 11.1	19.2
106327	2000	UF ₁₀₂	15.2	X	214.36447	355.35506	9.89307	9.23637	0.1666102	0.17669357	3.1452528	20	4 12.8	20.3
106328	2000	UV ₁₀₂	14.8	X	236.53616	12.93612	294.57162	4.08772	0.1204521	0.17252001	3.1957766	20	2 28.2	19.9
106329	2000	UL ₁₀₄	15.3	X	289.20385	64.30847	2.93779	5.00145	0.1103717	0.29289171	2.2455945	20	10 25.1	17.4
106330	2000	UU ₁₀₄	14.3	X	272.39342	299.80593	45.95547	17.67310	0.2515806	0.18196178	3.0842478	20	5 6.6	19.0
106331	2000	UW ₁₀₅	14.7	X	220.54521	304.72713	63.51810	16.34907	0.2045789	0.17971258	3.1099284	20	4 25.8	20.0
106332	2000	UO ₁₀₆	16.4	X	309.20685	225.01704	99.05542	6.75654	0.1998276	0.28760046	2.2730535	20	6 5.6	18.4
106333	2000	UC ₁₀₇	14.9	X	214.03293	337.88538	83.04797	11.97643	0.1454672	0.18240559	3.0792430	20	6 20.9	19.6
106334	2000	UM ₁₀₇	14.7	X	242.70070	255.04894	91.52967	7.87046	0.2984470	0.18102791	3.0948459	20	4 11.2	20.1
106335	2000	UV ₁₀₇	16.6	X	354.72542	217.92785	137.49981	5.66708	0.1869823	0.29654463	2.2271151	20	11 24.4	18.6
106336	2000	UW ₁₀₇	16.0	X	114.64078	230.80395	115.30803	7.20622	0.1873069	0.26185061	2.4197304	20	—	—
106337	2000	UZ ₁₀₇	15.6	X	298.55544	96.25107	80.27961	7.19987	0.0643278	0.26270774	2.4144644	20	—	—
106338	2000	UE ₁₀₈	15.1	X	275.75601	181.41543	156.33123	8.35020	0.1000481	0.18246995	3.0785188	20	5 23.2	19.5
106339	2000	UT ₁₀₈	15.0	X	136.15071	313.00586	134.65307	5.57721	0.1476357	0.17407550	3.1767103	20	5 13.8	20.0
106340	2000	UO ₁₀₈	16.1	X	121.62132	308.06909	145.91322	5.38254	0.1434990	0.27386142	2.3484545	20	5 3.9	19.3
106341	2000	UZ ₁₀₈	13.8	X	214.97549	322.82527	99.39084	9.28407	0.1710716	0.18148963	3.0895947	20	6 22.0	18.7
106342	2000	UP ₁₁₀	16.2	X	110.74361	358.70156	118.10179	5.03674	0.1375142	0.27479941	2.3431073	20	5 20.7	19.4
106343	2000	UT ₁₁₀	16.4	X	157.62527	22.01456	38.44247	20.74390	0.1140104	0.37504405	1.9043548	20	4 21.9	18.5
106344	2000	UC ₁₁₁	15.2	X	105.13515	91.05668	29.66868	3.69037	0.1325764	0.17321149	3.1872656	20	5 18.1	19.9
106345	2000	UQ ₁₁₁	15.8	X	297.44277	258.92899	156.94662	1.95722	0.0671695	0.24566982	2.5244857	20	10 17.4	18.8
106346	2000	UA ₁₁₂	15.2	X	203.59674	359.48601	69.77481	9.76113	0.1573139	0.18069431	3.0986539	20	6 20.4	20.1
106347	2000	UG ₁₁₂	15.3	X	211.37609	292.89416	48.41143	12.02530	0.1808409	0.17521894	3.1628749	20	3 19.9	20.7
106348	2000	UJ ₁₁₂	16.6	X	331.66067	266.41680	221.47820	0.71392	0.1408100	0.25824836	2.4421800	20	—	—
106349	2000	VE	15.9	X	262.57024	169.54752	261.36218	4.20601	0.1567256	0.29039741	2.2584348	20	9 4.3	18.5
106350	2000	VM ₁	14.7	X	156.65080	58.60043	102.47732	24.16680	0.2661401	0.27980207	2.3150948	20	9 15.2	19.2
106351	2000	VH ₂	14.9	X	111.34368	50.65700	97.57395	23.54229	0.2270024	0.27167934	2.3610126	20	7 11.3	18.5
106352	2000	VA ₃	16.8	X	141.36766	250.36933	56.77060	3.78934	0.0654386	0.30902500	2.1667409	20	—	—
106353	2000	VX ₃	15.2	X	209.68257	39.34301	14.98957	1.36636	0.0986302	0.18178695	3.0862249	20	6 11.4	19.8
106354	2000	VD ₄	15.1	X	225.65435	317.23218	14.94342	1.87081	0.0843007	0.17507729	3.1645807	20	3 21.2	20.0
106355	2000	VS ₄	16.2	X	139.50212	240.00762	183.17458	2.14596	0.1981523	0.27311527	2.3527298	20	4 16.1	19.7
106356	2000	VX ₄	15.2	X	176.32504	276.30503	118.01135	4.30037	0.2949505	0.17472056	3.1688867	20	4 19.6	21.0
106357	2000	VD ₅	14.9	X	234.32028	359.47719	40.07976	5.06551	0.1185519	0.18348089	3.0672005	20	6 17.3	19.6
106358	2000	VE ₅	14.8	X	158.57287	302.02392	212.37802	8.50713	0.0624391	0.18856149	3.0118549	20	8 19.1	19.4
106359	2000	VP ₆	14.5	X	192.56258	275.06961	48.00137	6.67984	0.0614806	0.16833275	3.2485557	20	2 9.4	19.5
106360	2000	VB ₇	13.9	X	338.45204	219.61288	41.01974	16.89744	0.2609384	0.18307963	3.0716805	20	4 24.1	16.9
106361	2000	VK ₇	14.0	X	261.86899	259.19424	41.13252	9.93903	0.0539079	0.17460936	3.1702319	20	3 28.9	18.6
106362	2000	VB ₈	15.4	X	268.63780	98.05551	252.99816	1.35631	0.0827733	0.18240326	3.0792691	20	5 31.7	19.5
106363	2000	VE ₈	14.4	X	80.19652	95.22656	29.99437	0.37587	0.1538247	0.17113656	3.2129763	20	4 27.3	18.8
106364	2000	VO ₈	15.2	X	302.94784	4.80009	55.04339	2.68548	0.0855037	0.19573492	2.9378109	20	10 18.8	18.7
106365	2000	VS ₈	15.2	X	306.77336	236.97249	102.99903	2.26507	0.1889632	0.18767923	3.0212865	20	6 23.6	18.7
106366	2000	VM ₉	16.8	X	64.52442	131.32661	343.22507	0.09307	0.1701593	0.26840437	2.3801792	20	3 14.3	18.9
106367	2000	VQ ₉	16.7	X	110.41757	70.45449	0.48729	1.32350	0.1663742	0.27017121	2.3697908	20	3 21.3	19.8
106368	2000	VZ ₉	16.2	X	91.27127	40.49889	51.33940	4.08412	0.1353337	0.26991375	2.3712975	20	3 21.3	19.0
106369	2000	VE ₁₀	14.8	X	136.44358	90.97167	54.00582	8.96776	0.0315084	0.18333089	3.0688732	20	7 14.9	19.3
106370	2000	VT ₁₀	16.4	X	150.22540	265.98664	214.60436	5.17666	0.1062757	0.28164251	2.3049981	20	7 5.8	19.7
106371	2000	VA ₁₁	14.9	X	212.13363	132.17259	229.96647	4.23585	0.1701164	0.17669400	3.1452476	20	4 7.3	20.1
106372	2000	VJ ₁₁	15.0	X	125.93175	229.79338	239.61153	0.31064	0.1414152	0.17513927	3.1638340	20	5 27.8	19.9
106373	2000	VP ₁₁	14.9	X	265.29743	290.10044	79.71953	1.64874	0.1993960	0.18455711	3.0552648	20	6 4.6	19.4
106374	2000	VQ ₁₁	16.1	X	97.11905	217.15539	219.96890	5.64033	0.1869366	0.26857454	2.3791737	20	3 13.5	19.0
106375	2000	VT ₁₃	15.0	X	126.82102	264.87624	175.72259	4.10124	0.1484177	0.17196095	3.2026992	20	4 25.4	19.9
106376	2000	VW ₁₃	14.8	X	179.92886	204.27324	212.12390	11.45134	0.1588117	0.17680779	3.1438981	20	5 15.7	19.9
106377	2000	YY ₁₃	16.9	X	0.94603	228.06975	181.73163	2.41666	0.1121048	0.30264057	2.1971074	20	—	—
106378	2000	VG ₁₄	14.8	X	243.83664	253.80442	60.02039	9.87510	0.3499793	0.17847425	3.1242972	20	3 4.1	20.5
106379	2000	VL ₁₄	14.0	X	160.10793	353.49413	67.23306	10.28216	0.0902279	0.17469508	3.1691948	20	5 1.8	18.8
106380	2000	VE ₁₅	16.6	X	211.25251	323.70598	80.67137	4.01823	0.1564117	0.28093306	2.3088771	20	5 28.5	20.1
106381	2000	VB ₁₆	14.9	X	233.08557	237.24672	128.67324	4.78285	0.1889261	0.17940257	3.1135101	20	5 1.8	19.9
106382	2000	VF ₁₆	14.8	X	243.18614	160.85346	213.44948	6.61809	0.1515642	0.18090402	3.0962587	20	5 23.7	19.5
106383	2000	VG ₁₆	15.4	X	208.91419	260.59497	217.68292	10.21229	0.1473820	0.23794627	2.5791906	20	8 26.6	19.6
106384	2000	VQ ₁₆	16.4	X	259.34290	256.31824	165.59859	3.79657	0.1818792	0.28901479	2.2656318	20	8 14.2	19.0
106385	2000	VH ₁₇	15.8	X	291.84097	158.75814	120.68621	4.71745	0.1203488	0.23720505	2.5845608	20	7 23.2	18.9
106386	2000	VP ₁₇	16.1	X	123.95942	235.94417	192.73257	3.89529	0.2059247	0.27078982	2.3661803	20	4 8.2	19.5
106387	2000	VR ₁₇	16.1	X	25.24839	211.31731	205.88346	3.99485	0.0877353	0.30623249	2.1798932	20	—	—
106388	2000	VV ₁₇	14.5	X	50.37260	86.38544	64.30219	16.99739	0.0389077	0.17050255	3.2209363	20	4 11.9	19.1
106389	2000	VN ₂₀	14.8	X	276.31359	294.36732	52.31056	10.78763	0.0207657	0.18174128	3.0867419	20	6 13.1	19.1
106390	2000	VR ₂₀	15.3	X	2									

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>		
106401	2000	VB ₂₈	15.9 ^m	X	201.28822	168.17789	200.41621	7.21698	0.1371393	0.27491737	2.3424370	20	4 1.6	19.3
106402	2000	VD ₂₈	16.3	X	238.51056	236.80071	177.85964	4.87161	0.1344661	0.28476408	2.2881224	20	7 13.5	19.3
106403	2000	VN ₂₈	16.3	X	112.31576	263.91712	157.98614	2.76065	0.1503984	0.26814046	2.3817407	20	3 9.7	19.4
106404	2000	VV ₂₈	16.1	X	217.71429	180.42667	190.85275	5.27265	0.1737810	0.27765309	2.3270250	20	4 20.9	19.8
106405	2000	VJ ₂₉	14.8	X	236.96811	190.74327	209.92175	5.96805	0.1416206	0.18116469	3.0932879	20	6 19.3	19.7
106406	2000	VM ₂₉	16.0	X	56.48712	300.19841	192.71728	4.61077	0.2003328	0.26667967	2.3904304	20	3 31.9	18.2
106407	2000	VN ₂₉	15.6	X	45.30946	131.69889	224.21060	9.59745	0.2315416	0.25195070	2.4827081	20	—	—
106408	2000	VK ₃₀	14.8	X	309.05672	157.91764	210.36736	9.01044	0.0957414	0.18799328	3.0179208	20	8 14.3	18.8
106409	2000	VE ₃₁	16.5	X	217.28432	189.72852	250.31471	2.22593	0.0902540	0.28492100	2.2872822	20	7 28.6	19.6
106410	2000	VJ ₃₁	16.2	X	126.52024	173.31129	218.12261	1.82625	0.1919092	0.26752503	2.3853921	20	2 20.3	19.6
106411	2000	VK ₃₁	16.3	X	256.77765	22.22515	79.17359	1.87852	0.0744773	0.29348792	2.2425522	20	10 28.4	18.5
106412	2000	VL ₃₁	16.7	X	20.53899	161.03065	218.97853	2.23605	0.1579516	0.30162403	2.2020411	20	—	—
106413	2000	VD ₃₂	14.7	X	208.16989	265.39686	171.79222	2.21176	0.1143619	0.18106459	3.0944279	20	7 7.1	19.5
106414	2000	VM ₃₂	13.9	X	190.49830	7.54314	69.03138	12.68392	0.1331742	0.17862117	3.1225837	20	6 17.7	19.0
106415	2000	VR ₃₂	14.0	X	140.91417	6.82913	84.04126	6.41141	0.1280370	0.17355962	3.1830021	20	5 20.0	19.0
106416	2000	VC ₃₄	14.7	X	192.34721	195.58369	228.23262	4.61287	0.1396963	0.17730045	3.1380714	20	6 4.5	19.7
106417	2000	VC ₃₅	16.2	X	256.83591	93.52916	240.72182	19.92362	0.1193408	0.37763526	1.8956334	20	4 5.7	18.8
106418	2000	VU ₃₅	15.7	X	321.51409	177.33436	220.86957	4.90991	0.2246744	0.29412250	2.2393255	20	11 21.1	16.6
106419	2000	VO ₃₇	15.0	X	272.03344	251.07089	167.38036	1.52867	0.3724819	0.18585740	3.0409981	20	7 20.2	19.4
106420	2000	VC ₃₈	15.4	X	207.19989	357.26769	80.30368	8.96845	0.1793358	0.27980591	2.3150736	20	7 6.5	19.0
106421	2000	VE ₃₈	15.9	X	8.46496	191.86403	198.56493	3.10101	0.0255063	0.29953737	2.2122560	20	—	—
106422	2000	VC ₄₂	16.7	X	68.36169	11.89004	7.96374	3.65718	0.0764092	0.30913702	2.1662174	20	—	—
106423	2000	VH ₄₂	16.2	X	14.62479	70.85566	22.06303	5.31807	0.0987699	0.25980694	2.4324031	20	—	—
106424	2000	VN ₄₂	16.2	X	70.59972	52.90828	24.02116	6.38025	0.1170925	0.26552306	2.3973672	20	1 25.4	18.7
106425	2000	VU ₄₂	14.8	X	183.95456	56.17320	6.71768	4.59798	0.1355500	0.17839299	3.1252459	20	5 25.4	19.8
106426	2000	VN ₄₃	15.5	X	179.37695	85.21603	346.05774	2.32532	0.1018027	0.17935624	3.1140462	20	5 31.8	20.3
106427	2000	VT ₄₃	14.9	X	287.23024	11.27359	304.29392	4.38834	0.1613519	0.18211984	3.0824630	20	4 26.5	19.3
106428	2000	VV ₄₃	14.7	X	99.95631	171.55929	12.51745	10.59033	0.0266156	0.18417527	3.0594862	20	7 21.3	19.2
106429	2000	VZ ₄₃	14.0	X	10.59607	339.89014	235.94228	21.80517	0.1439119	0.17581204	3.1557576	20	5 3.2	17.6
106430	2000	VN ₄₅	15.4	X	333.31752	346.81561	52.04215	2.86357	0.0745976	0.19800878	2.9152764	20	11 7.1	18.8
106431	2000	VU ₄₅	16.1	X	204.48222	124.80197	62.11700	5.97607	0.0867305	0.29958406	2.2120261	20	12 11.7	18.7
106432	2000	VB ₄₈	15.0	X	323.51445	274.39049	44.70687	11.42762	0.0598480	0.18466442	3.0540811	20	7 9.1	19.2
106433	2000	VM ₄₈	16.9	X	330.91551	38.35253	6.78955	1.00417	0.2145851	0.29737417	2.2229715	20	12 27.4	18.2
106434	2000	VV ₄₉	15.8	X	206.97681	39.56139	34.17250	4.03068	0.0708752	0.28185503	2.3038393	20	7 9.8	19.0
106435	2000	VM ₅₀	14.2	X	187.85493	2.80836	63.45666	19.10246	0.1472531	0.17669648	3.1452183	20	6 1.9	19.2
106436	2000	VB ₅₁	14.3	X	326.05225	27.23305	258.60689	9.79491	0.0778316	0.18150871	3.0893782	20	5 26.4	18.3
106437	2000	VL ₅₁	16.3	X	191.12182	180.73881	332.69935	4.16219	0.0789715	0.29243879	2.2479125	20	10 7.9	19.4
106438	2000	VK ₅₂	14.5	X	252.35180	300.64185	26.64152	11.67368	0.2279635	0.17893350	3.1189490	20	3 31.4	19.6
106439	2000	VL ₅₂	16.5	X	109.58783	352.41581	325.51910	3.50602	0.1734186	0.30769861	2.1729631	20	—	—
106440	2000	VM ₅₂	15.1	X	102.83785	201.09645	27.84077	10.33049	0.0462884	0.19093326	2.9868609	20	9 23.5	19.4
106441	2000	VA ₅₃	15.3	X	26.02400	13.83076	249.57447	13.67567	0.0802263	0.23558034	2.5964304	20	7 28.8	18.7
106442	2000	VL ₅₄	16.3	X	310.19985	113.92652	6.66583	4.13068	0.0525130	0.30424340	2.1893840	20	—	—
106443	2000	VN ₅₄	15.1	X	167.38953	116.81618	282.15481	3.64365	0.1592685	0.17320717	3.1873185	20	4 11.7	20.3
106444	2000	VP ₅₄	15.0	X	136.81596	260.65021	269.52679	8.80973	0.0635711	0.18557992	3.0440286	20	8 14.1	19.7
106445	2000	VN ₅₅	16.2	X	269.09101	98.20501	279.06020	6.22239	0.1097194	0.28526586	2.2854384	20	7 5.8	18.8
106446	2000	VT ₅₅	16.6	X	310.38478	340.50102	9.54452	3.82070	0.2093106	0.28914642	2.2649442	20	7 21.7	18.2
106447	2000	VA ₅₆	14.9	X	272.56379	93.05045	272.71868	6.59461	0.1377094	0.18322102	3.0700999	20	6 16.6	19.2
106448	2000	VN ₅₆	16.2	X	309.94680	23.81283	12.85298	2.87034	0.1766301	0.29339173	2.2430423	20	10 15.7	17.7
106449	2000	VU ₅₆	14.5	X	258.77172	94.75617	274.15502	8.34379	0.1484928	0.18145887	3.0899438	20	6 2.3	19.0
106450	2000	VJ ₅₇	13.9	X	260.99884	92.34970	278.36794	4.03850	0.2173522	0.18247963	3.0784099	20	5 29.4	18.7
106451	2000	VX ₅₇	16.0	X	228.10433	61.19784	37.54204	6.36709	0.1414052	0.28753008	2.2734245	20	9 4.4	19.0
106452	2000	VJ ₅₉	13.7	X	230.85521	354.40775	35.69623	21.24347	0.1300679	0.17834674	3.1257862	20	5 27.1	18.8
106453	2000	VC ₆₀	14.5	X	147.78498	64.54793	55.60130	12.31590	0.0481351	0.18014005	3.1050066	20	6 26.1	19.2
106454	2000	VJ ₆₀	14.9	X	82.15917	282.51624	215.01764	8.51717	0.0565605	0.17499648	3.1655448	20	5 1.3	19.1
106455	2000	VJ ₆₂	16.4	X	147.80836	51.88096	42.66882	23.19396	0.1001707	0.37777228	1.8951750	20	5 22.7	18.7
106456	2000	VW ₆₂	16.2	X	78.37956	185.95032	266.84593	6.10619	0.0679507	0.26819833	2.3813981	20	2 16.9	19.1
106457	2000	WC	15.9	X	34.11543	145.16744	98.23055	1.92546	0.0189467	0.23171768	2.6252053	20	7 10.6	19.0
106458	2000	WT ₂	16.1	X	90.13567	243.11202	183.23287	22.00428	0.1038201	0.36605943	1.9353892	20	1 12.9	18.3
106459	2000	WD ₃	16.3	X	65.62160	240.55141	256.49037	19.64228	0.0294232	0.37284992	1.9118186	20	3 3.9	18.7
106460	2000	WV ₃	14.6	X	316.27825	23.72116	338.68104	10.61289	0.0781490	0.18936233	3.0033572	20	8 23.9	18.3
106461	2000	WZ ₃	14.2	X	276.19097	249.59213	10.45633	16.85730	0.0859344	0.16916609	3.2378782	20	2 25.6	19.1
106462	2000	WP ₄	14.6	X	285.57115	339.03636	342.47248	8.77036	0.0797819	0.18076951	3.0977944	20	5 12.9	19.0
106463	2000	WR ₄	15.0	X	128.55866	222.95138	276.09859	10.39423	0.0645004	0.18069174	3.0986833	20	6 29.5	19.6
106464	2000	WU ₄	14.8	X	139.84997	79.15676	344.98579	11.93538	0.0615903	0.17068574	3.2186313	20	4 5.9	19.7
106465	2000	WZ ₄	16.3	X	267.69462	252.40488	281.24049	17.37366	0.0497890	0.35466940	1.9766066	20	—	—
106466	2000	WF ₇	16.4	X	50.85067	352.46354	129.30581	5.95252	0.1811577	0.26622908	2.3931269	20	3 1.7	18.4
106467	2000	WJ ₇	16.6	X	150.21317	229.02121	173.20261	6.44578	0.1098121	0.27201698	2.3590585	20	3 23.2	19.7
106468	2000	WO ₇	16.3	X	138.72548	208.52743	264.14683	3.49426	0.0977697	0.27836232	2.3230707	20	6 11.7	19.3
106469	2000	WR ₈	15.9	X	329.69396	29.78638	325.62355	5.73864	0.0393365	0.28751023	2.2735291	20	9 18.2	18.3
106470	2000	WU ₉	16.6	X	86.09545	106.07334	51.60146							

ELEMENTS AND OPPOSITION DATES IN 2020

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>		
106481	2000	WD ₁₉	13.8	X	240.82594	340.16318	98.10806	14.41190	0.2243271	0.18760647	3.0220676	20	8 2.2	18.6
106482	2000	WA ₂₂	16.9	X	9.08263	238.11410	169.92952	4.75395	0.0988709	0.30369411	2.1920232	20	—	—
106483	2000	WF ₂₂	14.0	X	140.37839	10.48767	64.04989	24.35088	0.1319355	0.17340800	3.1848572	20	5 5.1	19.1
106484	2000	WV ₂₂	16.4	X	299.64330	192.28424	197.42498	6.95057	0.1102439	0.29179353	2.2512252	20	9 15.4	18.6
106485	2000	WU ₂₃	14.4	X	237.75114	77.49894	272.44997	7.14654	0.0941601	0.17576221	3.1563540	20	4 20.7	19.4
106486	2000	WG ₂₄	14.6	X	97.13641	333.43709	140.09644	6.66633	0.1159717	0.17103396	3.2142610	20	4 30.9	19.3
106487	2000	WH ₂₄	14.6	X	151.90204	48.02839	89.28914	12.47892	0.0837303	0.18206347	3.0830992	20	7 25.8	19.4
106488	2000	WY ₂₄	16.4	X	312.81191	36.52901	70.99822	5.45982	0.1234012	0.29825944	2.2185706	20	—	—
106489	2000	WA ₂₅	15.0	X	335.98322	175.27920	247.90634	12.79541	0.1587093	0.24433411	2.5340391	20	—	—
106490	2000	WB ₂₆	14.7	X	199.25648	100.88315	271.67927	1.03619	0.0547964	0.17156796	3.2075881	20	4 11.6	19.3
106491	2000	WG ₂₈	14.4	X	241.73923	252.69603	97.37752	17.60978	0.2487044	0.18174893	3.0866553	20	4 22.6	19.8
106492	2000	WJ ₂₈	14.5	X	170.63126	243.57906	175.29710	9.35629	0.0766287	0.17574029	3.1566165	20	5 9.8	19.4
106493	2000	WM ₂₉	15.4	X	109.52316	158.95505	58.42324	24.74416	0.1765933	0.29000703	2.2604611	20	10 18.6	19.3
106494	2000	WL ₃₀	14.2	X	91.97326	71.77292	81.61873	12.86442	0.1166643	0.17550672	3.1594165	20	6 11.2	18.6
106495	2000	WD ₃₁	15.5	X	109.32653	308.95844	88.00057	13.46193	0.1486302	0.21469957	2.7621585	20	2 12.4	19.5
106496	2000	WK ₃₁	14.7	X	163.27283	290.66129	113.70510	8.00345	0.1435860	0.17221236	3.1995815	20	4 19.1	19.9
106497	2000	WO ₃₁	14.4	X	141.24113	40.61057	99.78221	11.87571	0.0667074	0.18019058	3.1044261	20	7 16.1	19.0
106498	2000	WD ₃₃	14.5	X	160.72821	226.75963	229.81738	17.16734	0.1749718	0.17595698	3.1540244	20	6 14.8	19.8
106499	2000	WE ₃₃	14.1	X	162.21077	300.27242	105.67046	8.64480	0.1708990	0.17193240	3.2030538	20	4 21.4	19.4
106500	2000	WR ₃₄	16.0	X	53.58765	300.18726	133.29782	7.58119	0.0919310	0.26033846	2.4290912	20	—	—
106501	2000	WN ₃₆	16.3	X	203.93465	326.91071	122.47454	6.64491	0.1149533	0.28257805	2.2999078	20	7 23.7	19.4
106502	2000	WO ₃₆	14.4	X	277.96760	345.04165	114.26207	10.32395	0.0100726	0.19377220	2.9576157	20	11 13.8	18.6
106503	2000	WS ₃₆	16.5	X	325.28157	179.98256	203.04731	5.93325	0.2153402	0.29338544	2.2430744	20	11 3.4	17.6
106504	2000	WT ₃₆	15.1	X	176.71603	293.85338	145.42454	6.43088	0.1876428	0.17578701	3.1560572	20	6 9.4	20.5
106505	2000	WY ₃₆	15.6	X	36.49700	247.94024	170.94689	4.39889	0.2780273	0.25665671	2.4522663	20	—	—
106506	2000	WS ₃₈	14.4	X	164.68843	302.66663	113.32409	8.41135	0.1653821	0.17318588	3.1875798	20	5 4.4	19.7
106507	2000	WO ₃₉	16.3	X	216.51660	302.90384	141.21795	5.04369	0.2218286	0.28343808	2.2952531	20	7 20.7	19.7
106508	2000	WR ₃₉	14.5	X	224.08969	288.02700	114.12872	12.60727	0.1449626	0.17866132	3.1221160	20	6 9.4	19.6
106509	2000	WM ₄₁	16.4	X	115.57813	268.91280	153.32022	6.56372	0.1433124	0.26717565	2.3874711	20	3 14.2	19.4
106510	2000	WN ₄₁	15.9	X	246.68669	265.61910	118.49516	7.08789	0.1167896	0.28087329	2.3092046	20	6 14.1	18.9
106511	2000	WK ₄₂	14.5	X	77.61040	59.50264	69.30605	8.01325	0.1153841	0.17049860	3.2209860	20	4 25.3	18.9
106512	2000	WP ₄₂	16.7	X	286.51016	212.94027	210.64980	3.47380	0.0879567	0.29347756	2.2426050	20	10 18.5	18.6
106513	2000	WH ₄₃	13.8	X	116.94093	57.80986	71.17128	26.17024	0.1907578	0.17397102	3.1779820	20	6 14.4	18.9
106514	2000	WN ₄₄	14.8	X	5.04244	194.58524	64.25595	10.73748	0.0471551	0.18115699	3.0933756	20	6 18.8	19.0
106515	2000	WS ₄₄	16.6	X	279.27903	135.41685	218.45200	3.06971	0.0777755	0.28375569	2.2935401	20	6 21.7	19.1
106516	2000	WN ₄₅	15.0	X	268.13532	214.21920	158.33995	4.11520	0.1593265	0.18372425	3.0644913	20	6 16.9	19.4
106517	2000	WQ ₄₅	14.9	X	293.04879	116.89726	223.96218	8.70353	0.0420192	0.18171272	3.0870654	20	6 24.9	19.2
106518	2000	WR ₄₉	14.5	X	244.64481	245.29572	102.10222	17.81274	0.2249591	0.18060539	3.096708	20	4 23.8	19.9
106519	2000	WY ₄₉	16.6	X	71.47780	146.11649	56.59547	5.17522	0.0962704	0.27993301	2.3143728	20	7 23.9	19.4
106520	2000	WA ₅₁	14.9	X	78.07601	352.10322	96.23396	26.12562	0.2928297	0.26327034	2.4110234	20	4 7.4	18.4
106521	2000	WC ₅₁	15.3	X	223.30588	211.61701	221.85525	24.49748	0.2806355	0.28796827	2.2711176	20	7 3.2	19.6
106522	2000	WM ₅₃	17.0	X	56.20733	270.28976	240.18678	3.20526	0.1607162	0.26999526	2.3708202	20	4 19.9	19.4
106523	2000	WE ₅₅	14.4	X	37.31194	356.40922	297.06020	24.40110	0.1692160	0.28321141	2.2964776	20	10 9.9	17.9
106524	2000	WJ ₅₅	15.6	X	263.84906	354.62364	75.49873	7.33555	0.0710800	0.28488172	2.2874924	20	9 26.3	18.3
106525	2000	WZ ₅₅	15.3	X	127.87654	300.56305	65.01928	5.92463	0.1780097	0.30861803	2.1686453	20	1 12.2	17.8
106526	2000	WN ₅₆	16.5	X	167.39068	90.83535	326.39700	0.04212	0.1630118	0.27601675	2.3362129	20	5 2.4	19.9
106527	2000	WW ₅₆	14.6	X	180.07545	358.33893	66.06994	20.68978	0.1539477	0.17671284	3.1450241	20	5 25.0	19.7
106528	2000	WA ₅₇	14.4	X	279.52732	261.00929	73.73195	14.58876	0.2049431	0.18105353	3.0945538	20	5 10.2	19.0
106529	2000	WZ ₅₇	16.0	X	31.34673	37.56194	83.37040	3.19736	0.1787805	0.26199273	2.4188553	20	1 15.9	17.8
106530	2000	WA ₅₈	16.3	X	238.23136	204.94019	223.28442	3.04332	0.1168383	0.28568641	2.2831950	20	8 3.8	19.2
106531	2000	WY ₅₈	14.1	X	219.76394	273.50569	93.30782	21.21678	0.1316682	0.17304419	3.1893196	20	5 2.1	19.5
106532	2000	WC ₅₉	15.9	X	346.78782	249.78259	252.37259	8.08666	0.1620183	0.25709748	2.4494627	20	—	—
106533	2000	WD ₆₀	15.5	X	339.16955	200.40633	195.79171	2.98148	0.0639163	0.29470675	2.2363649	20	12 8.5	17.7
106534	2000	WK ₆₀	16.0	X	309.40032	210.33702	222.70962	4.39038	0.1656730	0.29533394	2.2331975	20	12 16.7	18.1
106535	2000	WR ₆₂	13.8	X	222.67038	243.67253	142.25970	16.92763	0.2162594	0.18106619	3.0944096	20	5 17.9	19.3
106536	2000	WV ₆₂	14.6	X	225.14028	276.78507	118.27577	17.75388	0.3026049	0.18154756	3.0889374	20	5 25.7	20.3
106537	2000	McCarthy	16.2	X	272.76296	270.97527	59.78033	7.76627	0.1443584	0.28061942	2.3105971	20	4 30.2	19.3
106538	2000	WK ₆₃	16.2	X	13.93219	41.69709	163.44465	10.33157	0.7636401	0.26105041	2.4246727	20	9 1.1	18.3
106539	2000	WA ₆₆	15.7	X	319.93428	230.49701	253.82581	4.10228	0.1053488	0.30264550	2.1970835	20	—	—
106540	2000	WD ₆₆	15.8	X	168.66068	105.45932	251.25073	18.44442	0.0965191	0.37056821	1.9196584	20	1 22.2	18.3
106541	2000	WE ₆₆	15.8	X	163.99820	131.83613	250.43837	20.00299	0.0637785	0.37249128	1.9130455	20	2 13.9	18.5
106542	2000	WP ₆₆	15.8	X	253.70846	54.16337	57.17360	7.52737	0.2077994	0.29276233	2.2462560	20	10 17.4	18.3
106543	2000	WA ₆₇	16.5	X	149.37682	272.66655	79.07027	26.20032	0.0988209	0.36760096	1.9299747	20	—	—
106544	2000	WJ ₆₈	16.0	X	198.89658	168.50371	292.97941	5.13111	0.1086508	0.28599176	2.2815695	20	8 3.7	19.1
106545	2000	Colanduno	15.2	X	327.64654	271.70437	58.24555	6.01171	0.0920402	0.18593583	3.0401428	20	7 26.7	19.0
106546	2000	WF ₆₉	14.7	X	295.45106	124.90350	245.53016	21.67472	0.0436937	0.23877247	2.5732376	20	8 1.8	18.5
106547	2000	WH ₆₉	15.9	X	92.56493	157.34212	0.79381	10.16791	0.2002163	0.27758613	2.3273991	20	7 3.8	19.3
106548	2000	WN ₆₉	14.5	X	225.18626	22.52039	317.15862	8.38665	0.0838042	0.17504236	3.1650017	20	3 25.7	19.4
106549	2000	WS ₆₉	14.5	X	290.39324	62.98783	269.30200	8.68346	0.1155144	0.18365353	3.0652780	20	5 30.7	18.8
106550	2000	WX ₇₂	14.5											

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>		
106561	2000	WL ₈₃	16.4	X	7.55306	224.30100	287.77127	3.31182	0.1393953	0.26477239	2.4018963	20	1 15.4	18.6
106562	2000	WQ ₈₃	16.6	X	318.22120	153.69987	319.64755	4.06554	0.0190413	0.30472465	2.1870783	20	—	—
106563	2000	WR ₈₅	14.7	X	338.93727	60.69278	285.16711	3.75931	0.2505925	0.19040637	2.9923685	20	9 1.1	17.3
106564	2000	WY ₈₅	16.1	X	250.74248	307.19890	56.44240	5.79101	0.1924596	0.28087678	2.3091855	20	5 11.8	19.2
106565	2000	WE ₈₆	15.3	X	119.44798	251.30908	267.54691	11.69387	0.1837581	0.22712007	2.6605150	20	7 24.8	19.6
106566	2000	WJ ₈₈	15.6	X	289.09232	60.35093	52.88448	5.44592	0.0634483	0.29412653	2.2393050	20	—	—
106567	2000	WK ₈₈	15.1	X	202.14496	65.29576	323.63134	6.96855	0.2279156	0.27362851	2.3497870	20	4 24.2	19.2
106568	2000	WV ₈₈	16.0	X	93.29958	56.88086	62.18611	5.96797	0.1793060	0.26750627	2.3855035	20	5 7.3	19.0
106569	2000	WZ ₈₉	16.0	X	178.14457	99.70403	256.98087	3.35728	0.1791686	0.27072995	2.3665291	20	2 24.9	19.8
106570	2000	WY ₈₉	15.0	X	349.45482	276.01699	64.71947	14.93799	0.1533311	0.24138536	2.5546344	20	10 8.6	17.9
106571	2000	WB ₉₀	14.6	X	197.80552	145.43524	269.41005	3.95168	0.1711803	0.17758649	3.1347009	20	5 28.3	19.8
106572	2000	WN ₉₀	16.5	X	226.30518	291.10357	251.76115	3.12994	0.1019831	0.29892967	2.2152532	20	—	—
106573	2000	WR ₉₀	15.4	X	345.10316	201.16151	59.06692	10.09296	0.1030909	0.27757279	2.3274737	20	5 18.5	17.6
106574	2000	WH ₉₄	16.1	X	172.98758	22.59077	14.27405	1.00174	0.1916599	0.27368574	2.3494594	20	4 12.4	19.7
106575	2000	WO ₉₄	14.6	X	204.16096	354.95681	59.95178	5.95550	0.1649660	0.17777210	3.1325185	20	6 3.1	19.6
106576	2000	WX ₉₄	16.1	X	215.78002	210.83115	63.80453	3.32392	0.0450292	0.31119198	2.1566704	20	—	—
106577	2000	WV ₉₅	16.4	X	298.82515	301.42609	78.59749	3.58803	0.2725353	0.29010714	2.2599410	20	8 3.5	18.0
106578	2000	WA ₉₇	16.2	X	199.21629	78.57518	99.83966	2.12663	0.1277523	0.29266918	2.2467326	20	11 17.2	19.0
106579	2000	WO ₉₈	16.3	X	98.23618	319.22291	87.77386	4.30450	0.1872505	0.26291472	2.4131971	20	2 7.2	19.1
106580	2000	WZ ₉₈	15.2	X	181.03202	18.87055	43.71586	1.61362	0.1682883	0.17552505	3.1591965	20	5 23.2	20.3
106581	2000	WK ₁₀₀	16.0	X	209.19450	113.13027	273.66542	6.41954	0.1137479	0.27588755	2.3369423	20	5 2.9	19.4
106582	2000	WH ₁₀₁	16.2	X	231.67976	83.19071	125.64624	1.59014	0.1624667	0.28665079	2.2780711	20	9 17.2	19.2
106583	2000	WE ₁₀₂	14.6	X	187.02097	278.90508	137.45713	10.56150	0.1123438	0.17738586	3.1370641	20	5 24.3	19.7
106584	2000	WG ₁₀₄	16.5	X	304.32433	326.03486	103.40769	7.33110	0.1319724	0.29514117	2.2341698	20	11 30.3	18.3
106585	2000	WY ₁₀₅	16.5	X	102.11095	84.91177	115.79428	3.50785	0.0973245	0.28066044	2.3103720	20	8 30.8	19.5
106586	2000	WL ₁₀₅	16.0	X	311.18830	274.82783	108.58814	2.33546	0.1331731	0.28859856	2.2678097	20	9 29.2	17.7
106587	2000	WH ₁₀₆	14.6	X	115.93247	334.03234	130.69331	9.28861	0.1118610	0.17184853	3.2040959	20	5 11.6	19.5
106588	2000	WV ₁₀₆	15.5	X	117.66231	312.41107	264.19494	22.42611	0.2201181	0.28737217	2.2742572	20	10 5.6	19.8
106589	2000	WN ₁₀₇	15.9	X	12.60493	11.66008	163.40709	14.32561	0.6142823	0.31254593	2.1504374	20	—	—
106590	2000	WQ ₁₀₇	14.6	X	177.62947	69.46252	42.20499	15.09938	0.1591280	0.18093726	3.0958795	20	7 22.2	19.9
106591	2000	WF ₁₀₈	16.3	X	220.09550	96.37486	16.09136	5.71437	0.0642529	0.28961298	2.2625110	20	9 22.5	19.0
106592	2000	WM ₁₀₈	16.3	X	141.30449	15.40075	339.70989	4.54703	0.1760637	0.26518084	2.3994293	20	1 21.2	19.8
106593	2000	WO ₁₀₈	14.6	X	211.07098	0.02190	358.59576	5.97333	0.1423599	0.17401956	3.1773911	20	4 3.7	19.7
106594	2000	WV ₁₀₈	16.9	X	283.13325	24.42715	26.67462	7.30925	0.0850294	0.29059235	2.2574247	20	9 25.8	19.2
106595	2000	WT ₁₀₉	14.5	X	116.10168	177.82926	320.76501	4.49827	0.0958480	0.17585465	3.1552478	20	6 17.9	19.2
106596	2000	WE ₁₁₀	16.3	X	58.25551	90.91872	342.08140	3.63515	0.1696195	0.26141511	2.4224171	20	1 1.2	18.5
106597	2000	WG ₁₁₁	15.4	X	289.73982	91.37502	297.55516	5.91573	0.0296391	0.23733255	2.5836551	20	8 28.9	18.8
106598	2000	WZ ₁₁₂	15.5	X	236.75045	220.10038	302.16858	6.02855	0.0609195	0.29785346	2.2205861	20	12 27.1	17.8
106599	2000	WA ₁₁₃	16.0	X	123.86519	6.50377	34.27961	7.48020	0.1190816	0.26677573	2.3898566	20	2 24.2	19.2
106600	2000	WX ₁₁₃	15.1	X	225.77603	326.59484	60.39975	13.99875	0.1333585	0.17805160	3.1292395	20	5 22.6	19.8
106601	2000	WE ₁₁₄	16.2	X	40.71022	89.24565	275.96970	7.15439	0.0577093	0.30035570	2.2082359	20	—	—
106602	2000	WH ₁₁₄	16.1	X	61.58043	72.61674	352.54433	3.03195	0.0691379	0.31093589	2.1578544	20	—	—
106603	2000	WM ₁₁₄	16.2	X	55.95775	128.31507	328.14401	2.15536	0.1555466	0.26299580	2.4127010	20	1 29.9	18.4
106604	2000	WN ₁₁₄	16.2	X	291.23639	200.55975	111.01952	2.85533	0.0812194	0.30334662	2.1936968	20	—	—
106605	2000	WD ₁₁₅	15.8	X	237.28377	116.00109	296.68052	6.38637	0.0913232	0.28321868	2.2964383	20	7 15.9	18.7
106606	2000	WR ₁₁₅	15.7	X	148.46568	8.32036	5.85511	3.46817	0.0762620	0.31651560	2.1324194	20	2 3.9	18.1
106607	2000	WU ₁₁₅	16.0	X	218.04959	123.48426	299.86726	3.78564	0.1181077	0.28170693	2.3046467	20	7 3.8	19.1
106608	2000	WM ₁₁₆	15.8	X	16.16461	11.09744	305.76485	3.59404	0.0606525	0.28896316	2.2659017	20	10 8.2	18.2
106609	2000	WN ₁₁₆	16.4	X	213.37203	45.15953	33.73142	4.88113	0.0999204	0.28230815	2.3013735	20	7 23.1	19.5
106610	2000	WU ₁₁₆	16.1	X	275.48008	336.88564	31.49094	5.13798	0.1260543	0.28297515	2.2977557	20	6 29.6	18.9
106611	2000	WJ ₁₂₀	16.0	X	113.90864	63.97749	49.21698	7.50298	0.1728131	0.27134548	2.3629488	20	5 21.9	19.2
106612	2000	WK ₁₂₀	15.4	X	282.59480	61.99930	38.20468	5.98428	0.1235805	0.29335729	2.2432179	20	12 2.0	17.3
106613	2000	WN ₁₂₁	16.8	X	299.34508	22.19787	212.03714	20.93796	0.0487742	0.37032970	1.9204825	20	1 14.5	19.4
106614	2000	WQ ₁₂₁	15.8	X	268.64633	209.08643	149.10157	7.06958	0.1910673	0.28300669	2.2975850	20	5 26.9	18.9
106615	2000	WY ₁₂₁	16.8	X	22.57325	298.03377	88.37684	1.82226	0.1642620	0.30130315	2.2036042	20	—	—
106616	2000	WJ ₁₂₂	16.7	X	187.11355	131.42023	22.95113	1.97240	0.1403268	0.28806490	2.2706097	20	9 30.4	19.8
106617	2000	WB ₁₂₃	15.8	X	258.26298	58.96475	76.14225	3.59292	0.1614855	0.29413713	2.2392512	20	12 5.5	17.9
106618	2000	WJ ₁₂₃	15.4	X	13.74007	341.57646	82.54354	5.74230	0.1559379	0.25218388	2.4811775	20	—	—
106619	2000	WB ₁₂₄	15.9	X	248.90050	23.64047	82.19246	4.32893	0.1168382	0.23947913	2.5681730	20	10 7.1	19.3
106620	2000	WL ₁₂₄	15.0	X	294.98622	266.94679	268.88099	18.07392	0.0499858	0.35844619	1.9626977	20	—	—
106621	2000	WM ₁₂₄	16.6	X	188.49379	112.64093	268.82451	17.10868	0.1061977	0.37418006	1.9072851	20	3 19.4	19.6
106622	2000	WP ₁₂₄	15.4	X	16.56666	36.20489	76.57099	23.50777	0.0976912	0.35714504	1.9674618	20	—	—
106623	2000	WT ₁₂₄	15.9	X	83.21881	185.16087	257.49137	20.06659	0.1375664	0.36788814	1.9289702	20	1 25.1	17.7
106624	2000	WV ₁₂₄	14.5	X	209.60770	285.09446	106.48257	17.06234	0.2499055	0.17918207	3.1160639	20	5 13.8	20.1
106625	2000	WC ₁₂₅	15.5	X	235.94211	95.79609	321.34938	7.44133	0.1169039	0.28253589	2.3001366	20	7 18.1	18.6
106626	2000	WE ₁₂₆	16.3	X	128.17899	356.50395	19.38552	2.78823	0.1990493	0.26518258	2.3994188	20	2 5.2	19.5
106627	2000	WG ₁₂₆	16.2	X	108.32895	197.46788	294.12479	1.30784	0.1720217	0.27209778	2.3585914	20	6 10.2	19.3
106628	2000	WH ₁₂₆	15.0	X	243.38013	294.78686	84.22663	23.29416	0.3434188	0.27999910	2.3140086	20	5 17.6	19.2
106629	2000	WY ₁₂₈	14.8	X	95.42440	98.68058	32.24852	5.96439	0.0924188	0.17401748	3.1774164	20	5 13.7	19.3
106630	2000	WF ₁₃₀	15.8											

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>		
106641	2000	WR ₁₃₃	16.4	X	30.21471	21.94999	298.38412	6.93224	0.1897412	0.29738544	2.2229153	20	11 27.0	19.1
106642	2000	WL ₁₃₄	14.4	X	126.83620	119.04127	22.16391	14.58616	0.1115124	0.17885057	3.1199131	20	7 6.1	19.4
106643	2000	WO ₁₃₄	14.7	X	274.25472	93.55818	289.09008	8.69078	0.1642434	0.18590303	3.0405004	20	7 6.9	18.9
106644	2000	WT ₁₃₄	14.9	X	182.23158	32.40199	19.33840	10.97397	0.1336311	0.17626261	3.1503774	20	5 8.8	20.1
106645	2000	WV ₁₃₄	14.6	X	158.21290	155.08658	13.65583	9.42721	0.0162356	0.18930284	3.0039864	20	9 11.3	18.8
106646	2000	WW ₁₃₄	16.2	X	122.83190	94.28729	310.67584	5.81004	0.1295376	0.26833441	2.3805929	20	2 24.6	19.3
106647	2000	WC ₁₃₅	16.0	X	43.23402	348.98407	355.30460	5.77254	0.1636325	0.30118542	2.2041784	20	—	—
106648	2000	WU ₁₃₅	15.7	X	225.96005	256.52439	99.94165	12.66411	0.3055346	0.23066393	2.6331944	20	4 11.1	20.7
106649	2000	WV ₁₃₅	16.5	X	341.91815	318.85877	102.28471	6.23138	0.0847048	0.30144028	2.2029359	20	—	—
106650	2000	WO ₁₃₆	16.8	X	280.84147	149.00421	22.26927	3.36079	0.0220566	0.30764936	2.1731950	20	—	—
106651	2000	WA ₁₃₇	16.9	X	257.85469	243.93164	173.58344	5.43173	0.1256403	0.28838391	2.2689349	20	8 14.5	19.6
106652	2000	WA ₁₄₀	14.6	X	149.38895	15.63515	85.57008	2.79617	0.1276147	0.17318793	3.1875546	20	6 9.1	19.7
106653	2000	WV ₁₄₀	16.3	X	161.82855	274.69379	64.65469	2.55233	0.1567449	0.26445856	2.4037961	20	1 20.4	19.9
106654	2000	WA ₁₄₁	16.6	X	131.85499	249.98780	231.81799	6.16381	0.1175748	0.27782573	2.3260609	20	6 17.9	19.9
106655	2000	WP ₁₄₁	13.8	X	221.60093	342.20483	63.56147	17.89298	0.2343352	0.17674879	3.1445977	20	6 2.8	19.1
106656	2000	WE ₁₄₂	15.8	X	176.58398	235.18058	132.18714	10.53534	0.1440556	0.27344467	2.3508400	20	3 10.3	19.4
106657	2000	WL ₁₄₂	14.4	X	150.26344	324.09913	86.92287	19.93530	0.1971245	0.17333099	3.1858004	20	4 23.9	20.0
106658	2000	WA ₁₄₃	14.9	X	167.95176	263.32985	152.68582	14.23689	0.1898578	0.17441877	3.1725410	20	5 8.8	20.4
106659	2000	WU ₁₄₃	14.9	X	164.66047	250.60960	50.01185	7.27821	0.0981180	0.30315800	2.1946067	20	—	—
106660	2000	WV ₁₄₃	16.1	X	117.25740	67.30133	32.25384	2.55682	0.1762656	0.26855246	2.3793041	20	5 8.0	19.5
106661	2000	WH ₁₄₄	14.6	X	179.32965	259.46673	116.84736	10.56379	0.2430574	0.17474771	3.1685585	20	4 3.1	20.3
106662	2000	WW ₁₄₄	15.0	X	176.49954	252.09471	150.52732	2.70547	0.2087746	0.17392239	3.1785744	20	4 27.3	20.4
106663	2000	WY ₁₄₄	16.1	X	109.58410	240.44879	203.91295	1.54628	0.2077098	0.26707998	2.3880413	20	4 6.3	19.2
106664	2000	WY ₁₄₅	14.1	X	180.58797	302.07516	102.04575	16.59164	0.1284453	0.17748860	3.1358534	20	5 7.1	19.4
106665	2000	WA ₁₄₆	14.8	X	332.66323	240.60634	106.15335	11.25284	0.1117339	0.19191243	2.9766925	20	8 30.5	18.4
106666	2000	WL ₁₄₆	14.0	X	105.39896	292.57762	200.25786	21.41485	0.2639703	0.17037987	3.2224822	20	6 16.4	19.5
106667	2000	WN ₁₄₆	15.0	X	202.40255	285.76732	167.42981	17.55167	0.3063125	0.18012722	3.1051541	20	7 11.3	20.8
106668	2000	WO ₁₄₆	14.2	X	146.62227	315.60730	192.84025	23.58674	0.2501044	0.17918495	3.1160305	20	8 3.4	20.0
106669	2000	WF ₁₄₇	14.2	X	205.85595	292.94463	65.39544	27.07854	0.2349007	0.17905612	3.1175250	20	4 11.5	20.4
106670	2000	WX ₁₄₉	17.0	X	64.49792	292.98133	208.45687	1.61742	0.1403361	0.27181230	2.3602426	20	4 18.4	19.0
106671	2000	WT ₁₅₀	16.0	X	156.04974	89.33060	290.78542	17.65405	0.1038771	0.36862297	1.9264058	20	2 10.5	18.4
106672	2000	WK ₁₅₁	16.2	X	283.09464	247.32373	261.88273	18.16811	0.1097995	0.35411220	1.9786795	20	—	—
106673	2000	WL ₁₅₁	16.3	X	146.41468	187.35011	259.03308	19.82371	0.0246752	0.37753841	1.8959576	20	5 1.9	18.4
106674	2000	WA ₁₅₂	14.2	X	205.42317	296.75141	113.49460	10.46793	0.0862228	0.18033681	3.1027476	20	6 4.2	19.0
106675	2000	WC ₁₅₂	14.4	X	152.17753	328.90430	117.42014	16.81578	0.1648256	0.17477043	3.1682838	20	5 30.4	19.8
106676	2000	WO ₁₅₂	14.0	X	196.79519	135.93891	245.76438	26.50076	0.1877925	0.17700953	3.1415088	20	4 13.9	19.6
106677	2000	WP ₁₅₂	14.7	X	245.55091	208.11761	256.74961	13.57889	0.1137832	0.19308512	2.9646278	20	9 15.6	19.3
106678	2000	WR ₁₅₂	14.7	X	209.33552	108.94396	338.23473	8.23980	0.1054931	0.18459985	3.0547932	20	7 23.6	19.4
106679	2000	WV ₁₅₂	16.4	X	342.72270	1.52833	357.25616	6.55397	0.2021271	0.29539424	2.2328936	20	11 1.8	18.0
106680	2000	WK ₁₅₃	16.1	X	199.22160	74.74592	92.07393	4.17287	0.0681080	0.29049408	2.2579337	20	11 9.6	18.8
106681	2000	WO ₁₅₃	15.1	X	39.80133	27.16043	43.38734	7.85928	0.1231780	0.30477123	2.1868554	20	—	—
106682	2000	WL ₁₅₄	14.3	X	234.26719	75.93818	309.80498	8.40873	0.0972181	0.18070470	3.0985350	20	6 1.4	19.0
106683	2000	WW ₁₅₄	14.8	X	339.09663	330.22172	15.30676	10.38247	0.2105650	0.19136160	2.9824020	20	9 8.0	17.7
106684	2000	WA ₁₅₅	14.4	X	165.20403	74.54468	9.66479	15.40974	0.1150327	0.17832839	3.1260006	20	5 30.5	19.6
106685	2000	WE ₁₅₆	14.5	X	209.42230	33.44106	35.79644	11.33786	0.1730344	0.18023558	3.1039093	20	6 24.9	19.7
106686	2000	WM ₁₅₆	16.2	X	172.49141	195.91784	311.01924	5.33086	0.1735083	0.28603251	2.2813528	20	9 1.9	19.7
106687	2000	WQ ₁₅₇	15.1	X	210.74000	50.38517	76.61876	15.52158	0.1304664	0.23402538	2.6079189	20	9 23.1	19.3
106688	2000	WS ₁₅₇	15.3	X	206.71862	331.27594	59.68946	11.57899	0.1513483	0.27344027	2.3508652	20	5 7.6	18.9
106689	2000	WV ₁₅₇	15.6	X	162.76340	92.77329	51.58012	9.55896	0.1955533	0.27941317	2.3172424	20	8 26.1	19.5
106690	2000	WK ₁₅₈	16.0	X	10.00095	7.98570	0.89620	5.82803	0.2022125	0.29592423	2.2302268	20	—	—
106691	2000	WW ₁₅₈	14.5	X	239.86830	332.57860	89.03628	24.64144	0.1562066	0.18388836	3.0626678	20	7 16.9	19.3
106692	2000	WF ₁₅₉	16.6	X	181.68681	133.92567	104.49375	4.82546	0.1446766	0.29651438	2.2272666	20	—	—
106693	2000	WT ₁₆₁	14.7	X	302.61790	202.59075	124.13017	11.48819	0.1087734	0.18256220	3.0774817	20	6 12.5	18.8
106694	2000	WV ₁₆₁	14.6	X	291.96878	236.21375	119.32354	10.70296	0.1029959	0.18469250	3.0537716	20	7 4.7	18.6
106695	2000	WP ₁₆₄	14.3	X	139.43109	37.76018	101.13130	10.50906	0.0874018	0.18174305	3.0867219	20	7 13.5	18.9
106696	2000	WT ₁₆₄	14.8	X	293.50158	287.60489	113.99672	10.49883	0.0798455	0.19179861	2.9778701	20	9 14.3	18.8
106697	2000	WA ₁₆₅	15.2	X	227.89921	289.00911	94.38385	14.65010	0.0523219	0.22897453	2.6461305	20	5 29.8	19.0
106698	2000	WO ₁₆₆	16.4	X	98.79310	301.20766	197.01612	3.76158	0.1756203	0.27470963	2.3436178	20	6 8.9	19.6
106699	2000	WA ₁₆₇	14.7	X	106.85260	341.42065	110.84843	4.67933	0.0739747	0.17125664	3.2114743	20	4 10.3	19.4
106700	2000	WX ₁₆₇	16.4	X	214.97592	271.17743	63.38906	23.09829	0.0615103	0.37358992	1.9092932	20	3 9.5	19.3
106701	2000	WA ₁₆₈	14.6	X	256.70821	255.61045	124.41643	13.67089	0.2457498	0.18436948	3.0573374	20	6 5.2	19.6
106702	2000	WC ₁₆₈	14.7	X	212.97735	272.23705	153.64647	15.30113	0.2019230	0.18209425	3.0827518	20	6 23.5	20.0
106703	2000	WF ₁₆₈	14.9	X	176.24509	256.48362	128.74423	14.39750	0.1721631	0.17364672	3.1819376	20	4 10.8	20.4
106704	2000	WN ₁₆₈	15.6	X	67.39771	15.55641	109.48435	14.28564	0.1293546	0.26376056	2.4080351	20	4 6.4	18.6
106705	2000	WC ₁₆₉	15.7	X	354.38282	237.29557	241.62866	4.93402	0.0824224	0.25261373	2.4783620	20	—	—
106706	2000	WK ₁₆₉	14.0	X	209.82744	335.90101	86.01068	18.12227	0.1847635	0.18106145	3.0944637	20	6 16.1	19.1
106707	2000	WF ₁₇₀	14.4	X	118.68723	171.31237	302.55141	5.65686	0.1013490	0.17439470	3.1728329	20	5 20.3	19.2
106708	2000	WJ ₁₇₀	14.6	X	250.31897	102.76314	273.94448	8.73586	0.0954467	0.18221837	3.0813517	20	6 9.4	19.2
106709	2000	WF ₁₇₁	15.9	X	208.94337	226.91594	271.42731	1.38462	0.0764522	0.23908018	2.5711029	2		

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>		
106721	2000	WJ ₁₇₇	14.7	X	335.27940	253.38979	85.10301	7.18916	0.1494473	0.18922319	3.0048293	20	8 20.9	18.1
106722	2000	WA ₁₇₉	13.9	X	142.07828	22.59508	82.93145	11.74339	0.1935573	0.17904121	3.1176980	20	6 11.3	18.9
106723	2000	WE ₁₇₉	15.0	X	219.80738	333.07771	97.55815	12.40026	0.0864142	0.18280730	3.0747303	20	7 14.1	19.6
106724	2000	WG ₁₇₉	16.3	X	125.12159	314.08775	160.68278	6.16770	0.1825189	0.27463410	2.3440475	20	6 7.7	19.9
106725	2000	WF ₁₈₀	15.0	X	204.46806	332.05667	91.44208	10.56759	0.0896240	0.17946811	3.1127520	20	6 18.0	19.8
106726	2000	WQ ₁₈₀	14.5	X	192.47099	165.54727	245.55431	8.11259	0.0617670	0.17666278	3.1456182	20	5 21.4	19.0
106727	2000	WT ₁₈₁	15.7	X	283.83255	237.02292	107.79195	23.05003	0.1954314	0.28495694	2.2870898	20	6 1.4	18.8
106728	2000	WR ₁₈₂	14.4	X	188.01819	302.19773	124.62891	15.33459	0.1059833	0.18008468	3.1056431	20	6 7.2	19.5
106729	2000	WS ₁₈₂	15.5	X	237.18338	244.75186	120.95237	14.24691	0.0821383	0.23063057	2.6334483	20	5 17.1	19.5
106730	2000	WA ₁₈₃	14.5	X	210.15935	259.60262	120.54770	17.12699	0.2548241	0.18036369	3.1024394	20	5 1.7	20.2
106731	2000	WV ₁₈₃	14.4	X	80.34522	299.45734	264.53902	14.34071	0.0467011	0.18304688	3.0720469	20	7 18.7	18.9
106732	2000	WE ₁₈₄	15.8	X	122.37756	324.83437	207.50064	3.93312	0.0455189	0.23365979	2.6106384	20	8 4.5	19.5
106733	2000	WQ ₁₈₄	16.1	X	54.30308	73.22714	107.74522	3.42968	0.1032486	0.27088197	2.3656436	20	5 25.5	18.6
106734	2000	WT ₁₈₄	16.5	X	62.00454	264.67995	106.18424	2.45975	0.1053904	0.30185184	2.2009331	20	—	—
106735	2000	WM ₁₈₅	16.2	X	130.11074	37.54730	66.10142	0.35577	0.1502569	0.27272946	2.3549481	20	5 25.2	19.5
106736	2000	WN ₁₈₅	15.5	X	217.97085	103.57512	274.86737	7.75353	0.1121613	0.27522859	2.3406709	20	4 30.9	19.1
106737	2000	WK ₁₈₆	14.9	X	50.02586	176.64660	262.49701	23.11881	0.0871368	0.25820822	2.4424331	20	—	—
106738	2000	WG ₁₈₇	14.4	X	160.55939	336.79389	129.43816	6.39115	0.1184147	0.17918868	3.1159872	20	6 25.9	19.3
106739	2000	WS ₁₈₇	15.7	X	322.96054	295.90209	353.83831	11.71119	0.1645292	0.28432096	2.2904991	20	5 8.1	18.2
106740	2000	WL ₁₈₈	14.8	X	247.44698	350.49859	13.13707	9.47134	0.0147327	0.18065490	3.0991045	20	5 28.6	19.3
106741	2000	WD ₁₈₉	14.3	X	249.16357	278.85683	39.57732	9.99211	0.0761433	0.17501842	3.1652903	20	4 2.2	19.0
106742	2000	WQ ₁₈₉	15.7	X	253.31990	75.40786	28.50520	5.91797	0.0807258	0.24331054	2.5411410	20	10 14.9	18.9
106743	2000	WU ₁₈₉	14.8	X	288.62017	50.78898	270.36381	4.80199	0.1798261	0.18223883	3.0811211	20	5 3.3	19.0
106744	2000	WP ₁₉₀	15.8	X	1.34747	327.61847	231.74948	6.55548	0.1393097	0.27150115	2.3620455	20	3 9.7	18.2
106745	2000	WU ₁₉₁	15.3	X	276.53922	270.95923	134.29941	9.33005	0.1377777	0.18904975	3.0066669	20	8 13.1	19.2
106746	2000	WE ₁₉₂	15.3	X	101.97211	323.59218	133.00703	14.32586	0.1474903	0.22094137	2.7098880	20	4 20.8	19.4
106747	2000	XD ₂	15.7	X	69.33990	50.29290	298.65345	8.03543	0.1313432	0.30323958	2.1942131	20	—	—
106748	2000	XG ₂	15.9	X	145.45286	155.43392	328.24144	6.26141	0.0590461	0.27800724	2.3250483	20	7 3.5	19.0
106749	2000	XS ₂	14.0	X	221.65778	119.61862	292.15371	14.89036	0.0830698	0.18213969	3.0822391	20	6 23.3	18.6
106750	2000	XR ₃	14.1	X	143.12517	93.10833	329.11570	9.92856	0.0458064	0.17194256	3.2029276	20	4 5.4	18.9
106751	2000	XL ₄	14.1	X	201.73786	100.33746	305.54608	10.42915	0.0668678	0.17770717	3.1332815	20	5 23.3	18.9
106752	2000	XS ₄	14.1	X	286.57124	36.14886	297.34319	9.86551	0.1878954	0.18245176	3.0787234	20	5 14.1	18.5
106753	2000	XU ₄	15.1	X	238.24364	81.85152	0.09805	8.62932	0.1225520	0.18679474	3.0308164	20	8 16.9	19.6
106754	2000	XZ ₄	14.4	X	170.16223	83.13489	295.20787	10.75876	0.1095283	0.17043601	3.2217746	20	3 15.6	19.6
106755	2000	XF ₅	15.3	X	269.72886	12.12331	12.11147	11.57732	0.1642949	0.18463466	3.0544093	20	7 4.4	19.8
106756	2000	XS ₅	14.4	X	278.50549	327.05203	7.28972	9.42113	0.0820503	0.17881293	3.1203510	20	5 20.3	19.0
106757	2000	XW ₅	14.3	X	189.97327	155.88645	299.67556	8.34567	0.1182436	0.18030649	3.1030956	20	7 12.0	19.1
106758	2000	XK ₆	16.0	X	145.18974	72.08906	4.29003	6.31206	0.1913889	0.27365152	2.3496552	20	5 5.8	19.7
106759	2000	XT ₆	13.9	X	222.02419	31.26042	47.76202	12.58590	0.3183712	0.18114233	3.0935425	20	7 9.7	19.5
106760	2000	XD ₇	16.7	X	354.39980	94.12885	317.35199	4.93084	0.1469815	0.30018791	2.2090587	20	—	—
106761	2000	XW ₈	15.3	X	281.36782	329.06862	296.62719	18.03846	0.0446162	0.36716340	1.9315078	20	2 7.2	17.4
106762	2000	XU ₉	14.4	X	75.91827	164.53394	313.10100	26.21645	0.2460336	0.26449320	2.4035862	20	4 2.0	17.9
106763	2000	XK ₁₀	15.1	X	147.58517	114.21652	61.61346	14.01228	0.1031035	0.23125448	2.6287096	20	9 19.6	19.4
106764	2000	XG ₁₁	14.4	X	197.24255	30.59161	300.21992	14.93095	0.2420596	0.17276423	3.1927641	20	2 16.2	20.1
106765	2000	XW ₁₁	14.8	X	239.67110	49.04180	2.74327	10.86214	0.1506733	0.18235854	3.0797725	20	7 6.9	19.7
106766	2000	XB ₁₂	16.0	X	354.80478	22.83563	307.08379	8.49086	0.1612225	0.29070508	2.2568410	20	10 1.3	18.0
106767	2000	XW ₁₃	14.3	X	241.18709	87.11368	93.41354	21.86243	0.1725848	0.29052640	2.2577663	20	—	—
106768	2000	XG ₁₄	14.9	X	238.90790	148.58852	297.86602	32.65282	0.2066153	0.23151490	2.6267379	20	8 5.4	19.1
106769	2000	XA ₁₅	15.6	X	144.47470	125.69486	270.48631	21.63296	0.0852183	0.37107424	1.9179127	20	2 10.1	18.2
106770	2000	XD ₁₅	16.3	X	100.91021	334.45054	64.00815	23.19393	0.0768716	0.36047005	1.9553444	20	—	—
106771	2000	XE ₁₅	14.3	X	282.17731	0.00981	70.32507	25.72106	0.4325142	0.19020119	2.9945200	20	8 15.4	19.0
106772	2000	XT ₁₅	14.2	X	146.87389	145.64157	290.48783	16.24368	0.1555874	0.17509264	3.1643958	20	5 4.4	19.5
106773	2000	XG ₁₆	14.4	X	104.53993	200.48855	281.72017	17.04335	0.1324835	0.17313745	3.1881742	20	5 17.9	19.3
106774	2000	XM ₁₆	15.0	X	253.29469	71.30678	331.09666	10.40595	0.0333352	0.18391565	3.0623648	20	7 26.8	19.3
106775	2000	XR ₁₆	14.8	X	152.17595	346.50090	283.28693	13.90176	0.1027939	0.25436141	2.4669967	20	—	—
106776	2000	XP ₁₈	14.8	X	4.80136	336.05173	24.60722	15.29652	0.1594686	0.19559035	2.9392584	20	11 9.6	18.3
106777	2000	XQ ₁₈	14.6	X	251.96211	95.98642	0.69073	10.43701	0.0812174	0.19160820	2.9798426	20	9 24.4	18.7
106778	2000	XL ₁₉	14.8	X	248.88242	59.51651	17.33294	10.38812	0.0880374	0.18775479	3.0204758	20	8 29.3	19.2
106779	2000	XP ₁₉	16.0	X	227.22104	354.77104	3.98998	6.71886	0.1530555	0.27739259	2.3284816	20	4 12.9	19.4
106780	2000	XW ₁₉	14.0	X	217.62297	3.71151	40.25343	19.14386	0.1774691	0.17872650	3.1213569	20	5 29.0	19.3
106781	2000	XU ₂₀	14.4	X	247.00817	299.89507	38.45055	16.62347	0.2437680	0.17756768	3.1349222	20	4 9.3	19.7
106782	2000	XB ₂₁	16.1	X	198.22751	92.29327	14.96057	6.87028	0.0412232	0.28531575	2.2851720	20	8 20.8	19.0
106783	2000	XJ ₂₁	14.5	X	288.69073	43.89749	324.32995	8.24643	0.1542440	0.18482651	3.0522953	20	7 10.3	18.5
106784	2000	XQ ₂₁	16.1	X	281.38786	69.95932	336.79525	7.77425	0.1123139	0.28947364	2.2632370	20	9 8.3	18.1
106785	2000	XU ₂₁	14.3	X	203.02514	63.62649	320.94681	10.05429	0.0862159	0.17443191	3.1723816	20	4 25.1	19.4
106786	2000	XZ ₂₁	13.8	X	52.52011	133.11731	31.59405	11.07692	0.0761716	0.17044543	3.2216558	20	4 27.9	18.1
106787	2000	XO ₂₂	16.6	X	223.54476	119.82583	337.96687	4.89598	0.1093418	0.28699202	2.2762651	20	8 29.4	19.2
106788	2000	XQ ₂₂	15.6	X	152.43824	280.35757	338.72966	5.66438	0.0907074	0.30052864	2.2073887	20	—	—
106789	2000	XZ ₂₂	15.4	X	98.17973	77.87248	35.80816	13.03956	0.1827715	0.22007228	2.7170178	20	5 5.9	19.2
106790	2000	XW ₂₃	16.3	X										

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ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
106801 2000 XT ₃₁	14.4	X	205.15119	21.09537	331.12194	9.71084	0.0781578	0.16922616	3.2371119	20	3 21.4	19.5
106802 2000 XX ₃₂	15.8	X	168.68352	135.92657	31.52278	9.30208	0.0691126	0.28628916	2.2799891	20	10 3.9	18.8
106803 2000 XX ₃₃	15.4	X	221.92787	359.43689	27.81291	6.26228	0.1207066	0.27652310	2.3333601	20	5 17.7	18.8
106804 2000 XY ₃₃	16.2	X	238.58778	14.95282	40.30749	8.36397	0.1801994	0.28232857	2.3012625	20	7 10.5	19.5
106805 2000 XM ₃₅	15.2	X	304.38425	9.82210	43.52219	11.36180	0.0948750	0.23857160	2.5746818	20	10 22.5	18.0
106806 2000 XO ₃₅	14.7	X	280.71272	21.82610	327.84036	15.06962	0.2500773	0.23075047	2.6325360	20	5 15.1	18.7
106807 2000 XE ₃₇	14.3	X	221.41638	23.87542	330.77654	13.82872	0.1986392	0.17596003	3.1539879	20	3 31.4	19.8
106808 2000 XX ₃₈	16.4	X	349.41924	29.92570	35.58128	21.68216	0.0788792	0.35163794	1.9879505	20	—	—
106809 2000 XP ₃₉	14.4	X	230.91857	62.38048	40.37256	17.20243	0.1687397	0.18577999	3.0418428	20	9 5.2	19.4
106810 2000 XY ₃₉	14.5	X	318.64499	17.41122	341.21168	15.21361	0.1466165	0.23948925	2.5681006	20	8 25.2	17.0
106811 2000 XE ₄₀	14.5	X	208.14942	57.07157	354.96848	19.35217	0.1152379	0.17825651	3.1268409	20	6 2.0	19.7
106812 2000 XV ₄₀	13.9	X	147.91411	122.57050	8.88400	16.41400	0.1682368	0.17797006	3.1301952	20	7 21.4	19.3
106813 2000 XW ₄₁	14.1	X	245.29209	16.06187	10.74313	20.32402	0.2520400	0.18054811	3.1003264	20	5 24.6	19.5
106814 2000 XN ₄₂	14.2	X	226.91289	17.24864	23.16423	17.94331	0.2071645	0.17882719	3.1201851	20	5 30.4	19.6
106815 2000 XR ₄₂	16.6	X	343.43130	176.70141	305.17420	17.87966	0.0671444	0.35654984	1.9696507	20	—	—
106816 2000 XE ₄₃	14.3	X	240.61777	22.77369	26.61218	17.52168	0.2001437	0.18059083	3.0998374	20	6 27.8	19.5
106817 Yubangtaek	15.5	X	218.42537	214.01561	200.92781	0.98902	0.1248521	0.17926392	3.151153	20	6 19.5	20.4
106818 2000 XV ₄₄	13.6	X	116.14073	119.42909	12.58070	27.48919	0.1667665	0.17353108	3.1833510	20	6 12.4	19.1
106819 2000 XC ₄₅	16.3	X	145.12369	303.43816	38.56668	20.82133	0.0788378	0.36172201	1.9508300	20	—	—
106820 2000 XJ ₄₅	16.2	X	229.91767	258.87827	29.05822	20.92267	0.0672785	0.36624404	1.9347388	20	1 8.7	19.0
106821 2000 XX ₄₅	15.7	X	326.90179	233.68376	358.80620	18.62588	0.0564988	0.36984820	1.9221490	20	3 4.6	17.4
106822 2000 XN ₄₇	14.8	X	175.78481	23.60785	13.58509	12.82105	0.1550372	0.17327037	3.1865434	20	4 16.6	20.0
106823 2000 XB ₄₉	14.8	X	101.88892	127.90667	29.15484	7.23500	0.1166298	0.22307425	2.6925870	20	6 29.3	18.8
106824 2000 XJ ₅₁	14.4	X	192.86080	44.29253	353.65380	11.46602	0.1364938	0.17439846	3.1727872	20	4 30.4	19.7
106825 2000 XY ₅₃	15.9	X	87.44234	237.70951	133.19200	1.92703	0.1967035	0.25907178	2.4370025	20	—	—
106826 2000 YF	16.7	X	226.86535	57.26788	332.03002	16.33035	0.1093617	0.38115580	1.8839427	20	5 22.8	19.3
106827 2000 YU	14.7	X	251.76646	34.64498	359.20708	17.07463	0.2222562	0.18144052	3.0901521	20	6 16.6	19.9
106828 2000 YG ₁	15.9	X	15.36022	266.64537	108.16589	7.55384	0.1283446	0.29621381	2.2287730	20	—	—
106829 2000 YL ₁	16.1	X	258.70193	343.58187	292.60936	18.09497	0.0621807	0.36900211	1.9250861	20	1 23.5	18.1
106830 2000 YC ₄	16.2	X	126.99757	247.04365	190.84641	0.40865	0.1567469	0.26944904	2.3740232	20	4 17.9	19.6
106831 2000 YQ ₄	16.0	X	182.22173	276.93362	114.95942	0.44459	0.1717057	0.17407130	3.1767614	20	4 18.2	21.3
106832 2000 YU ₆	15.5	X	200.87128	56.06024	6.90121	2.73964	0.0818113	0.22685573	2.6625813	20	6 14.3	19.4
106833 2000 YF ₇	15.9	X	179.90016	18.10371	62.33625	3.34766	0.1883461	0.27664295	2.3326861	20	6 13.8	19.6
106834 2000 YN ₇	16.1	X	157.56719	194.88520	50.58916	6.53809	0.1013270	0.29615264	2.2290800	20	12 31.3	19.2
106835 2000 YE ₈	15.5	X	154.20133	124.16852	270.39945	1.34685	0.2154192	0.26865694	2.3786872	20	3 24.8	19.2
106836 2000 YG ₈	16.4	X	125.36252	93.11580	339.01476	0.87145	0.1606402	0.26845687	2.3798689	20	4 8.7	19.8
106837 2000 YW ₈	16.5	X	127.54866	107.26490	122.56307	3.83537	0.0916801	0.28820719	2.2698623	20	11 8.2	19.6
106838 2000 YT ₉	15.8	X	62.73243	160.09590	279.86350	5.41216	0.1062482	0.25954966	2.4340102	20	1 13.8	18.2
106839 2000 YJ ₁₀	16.0	X	73.39637	139.53163	293.28389	2.13472	0.1659626	0.26279528	2.4139282	20	1 29.1	18.4
106840 2000 YA ₁₁	15.4	X	188.96519	96.84236	94.26350	11.72213	0.0687394	0.24048879	2.5609799	20	11 20.4	19.1
106841 2000 YB ₁₁	15.0	X	258.01384	264.22749	96.54104	15.55874	0.1479634	0.22666422	2.6640808	20	5 25.6	19.0
106842 2000 YT ₁₂	15.4	X	234.24304	325.58557	108.54777	7.74633	0.0812879	0.28308049	2.2971856	20	8 14.9	18.3
106843 2000 YV ₁₂	16.2	X	77.84962	42.24467	64.63727	7.21587	0.1107292	0.26514808	2.3996269	20	3 21.0	19.0
106844 2000 YQ ₁₄	16.7	X	143.69799	46.19275	80.61359	3.03776	0.1536148	0.27631568	2.3345277	20	7 10.2	20.1
106845 2000 YR ₁₄	15.7	X	273.39602	66.72076	49.85115	4.12527	0.1621035	0.29241411	2.2480390	20	12 4.9	17.6
106846 2000 YY ₁₅	15.5	X	263.86780	59.42682	16.33065	4.87533	0.0662934	0.23580501	2.5947809	20	9 22.9	18.7
106847 2000 YO ₁₆	14.9	X	160.22983	24.76253	115.30205	14.12599	0.2041636	0.22775671	2.6555548	20	8 11.5	19.4
106848 2000 YP ₁₆	16.8	X	271.71206	232.29742	266.22660	3.32988	0.3318001	0.34309736	2.0208053	20	—	—
106849 2000 YC ₁₇	16.4	X	42.69870	310.19148	130.00624	24.82588	0.1092965	0.36002302	1.9569627	20	—	—
106850 2000 YN ₁₈	15.0	X	108.92658	235.49298	292.70203	10.66983	0.2007270	0.22200278	2.7012438	20	7 29.2	19.3
106851 2000 YS ₁₉	15.4	X	286.11671	100.08789	338.60290	21.88047	0.1067540	0.24052474	2.5607247	20	10 12.2	18.9
106852 2000 YV ₁₉	14.9	X	150.95773	317.62400	141.33148	16.17254	0.1931429	0.17448579	3.1717285	20	6 13.0	20.4
106853 2000 YZ ₁₉	15.9	X	265.67673	117.70131	26.30201	2.92263	0.0681279	0.29654567	2.2271099	20	—	—
106854 2000 YB ₂₁	15.9	X	357.17657	296.56774	121.67399	5.26564	0.0953643	0.29878958	2.2159456	20	—	—
106855 2000 YN ₂₁	15.6	X	244.98343	263.88137	183.64512	13.02134	0.1485315	0.23853069	2.5749761	20	8 28.9	19.4
106856 2000 YF ₂₂	16.8	X	171.86977	158.30755	34.28298	2.21393	0.1481673	0.28640597	2.2793692	20	11 2.4	20.1
106857 2000 YU ₂₂	16.0	X	182.19841	295.43995	119.37294	6.96240	0.1102206	0.27368332	2.3494732	20	5 15.6	19.5
106858 2000 YT ₂₃	16.0	X	3.02424	271.58128	105.20285	7.76985	0.1110373	0.29441508	2.2378416	20	12 24.8	18.4
106859 2000 YC ₂₆	15.1	X	203.47263	140.15896	275.75057	6.31146	0.1118506	0.17737654	3.1371739	20	6 6.2	20.0
106860 2000 YO ₂₆	14.7	X	207.79477	255.83066	135.40903	12.54059	0.1548928	0.17690175	3.1427847	20	5 13.7	20.0
106861 2000 YV ₂₆	15.3	X	333.18501	202.76499	203.45271	4.21819	0.2385546	0.24324424	2.5416027	20	12 12.1	17.2
106862 2000 YZ ₂₆	15.8	X	115.80374	235.05293	198.54684	9.59431	0.1461212	0.26565707	2.3965609	20	3 28.3	19.0
106863 2000 YA ₂₇	15.5	X	342.02137	252.51559	181.25662	9.76800	0.1587431	0.24693887	2.5161880	20	—	—
106864 2000 YL ₂₇	16.2	X	137.97416	194.08866	214.21762	2.41756	0.1588103	0.26701047	2.3884557	20	3 21.8	19.8
106865 2000 YU ₂₇	16.6	X	83.30215	62.86626	339.11361	1.76341	0.2050068	0.25819728	2.4425021	20	1 10.2	19.0
106866 2000 YQ ₂₈	16.3	X	176.65692	235.63155	164.93485	23.03150	0.1069512	0.37410979	1.9075240	20	4 17.9	18.9
106867 2000 YR ₂₈	16.5	X	36.70717	7.83036	112.27807	23.70833	0.0708047	0.36411055	1.9422891	20	1 1.0	18.1
106868 2000 YK ₃₁	16.1	X	256.06829	1.33779	352.86826	1.50910	0.2537880	0.27631657	2.3345227	20	4 27.6	19.7
106869 Irlinyi	16.5	X	47.25657	323.39193	92.12745	3.10073	0.1432516	0.25582865	2.4575551	20	—	—
106870 2000 YN ₃₂	16.1	X	214.83195	270.38968	125.24799	7.17437	0.2573328	0.27796296	2.3252952	20	5 17.3	20.1
106871 2000 YP ₃₂	15.5	X	223.85430	240.65263	114.98536	23.89486	0.2483445	0.27323410	2.3520476	20	4 13.9	20.0
106872 2000 YV ₃₂	15.7	X	77.84320	54.07311	270.90350	5.40327	0.1244434	0.29803832	2.2196678	20	—	—
106873 2000 YA ₃₃	16.1	X	203.67042	97.41263	291.09221	5.01047	0.2620865	0.27509306	2.3414396	20	4 25.3	20.2
106874 2000 YD ₃₃	14.7</											

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>		
106881	2000	YX ₃₆	16.4	X	114.10960	331.96707	161.20301	3.34833	0.1718089	0.27301252	2.3533201	20	6 18.9	19.9
106882	2000	YY ₃₆	15.8	X	197.49172	354.13270	128.96550	6.11933	0.1058893	0.28420265	2.2911347	20	9 3.4	18.9
106883	2000	YZ ₃₇	15.5	X	310.63524	261.42532	145.60486	3.15078	0.1444045	0.24114568	2.5563269	20	10 21.4	17.9
106884	2000	YN ₃₇	16.3	X	147.81644	310.58945	140.35448	2.50187	0.1688488	0.27363268	2.3497631	20	5 28.5	19.9
106885	2000	YY ₃₇	15.7	X	222.07172	42.18673	126.43841	4.86316	0.1143865	0.24217804	2.5490570	20	11 23.9	19.2
106886	2000	YC ₃₈	14.4	X	322.23865	300.19505	114.33638	16.34933	0.0588750	0.19189958	2.9768254	20	11 15.5	18.6
106887	2000	YC ₃₉	15.2	X	325.36614	238.35636	128.47051	4.72584	0.2183302	0.23875417	2.5733690	20	9 17.3	17.2
106888	2000	YM ₃₉	16.2	X	205.32783	228.92745	229.18878	4.06147	0.1085516	0.28204012	2.3028313	20	8 5.3	19.5
106889	2000	YW ₃₉	16.3	X	28.88975	358.51984	166.18665	2.34300	0.1454174	0.26460356	2.4029179	20	3 17.8	18.3
106890	2000	YA ₄₀	15.9	X	115.01768	105.71683	259.65007	5.21616	0.1404360	0.25833283	2.4416476	20	—	—
106891	2000	YV ₄₀	14.7	X	163.15504	263.16742	194.15968	3.56086	0.1898666	0.17367133	3.1816369	20	6 19.0	20.1
106892	2000	YK ₄₁	16.2	X	298.43672	289.21637	123.89537	6.41069	0.1371324	0.29025945	2.2591504	20	10 23.0	18.2
106893	2000	YS ₄₁	16.0	X	140.61030	127.52039	281.83751	6.36089	0.1029591	0.26779415	2.3837937	20	3 17.0	19.4
106894	2000	YT ₄₁	15.7	X	324.22792	323.99540	83.52051	2.10054	0.1424514	0.29390575	2.2404263	20	12 5.9	17.5
106895	2000	YX ₄₁	15.7	X	142.64795	233.35728	126.19685	2.20799	0.1949077	0.26298707	2.4127544	20	1 29.7	19.3
106896	2000	YL ₄₃	15.5	X	310.94202	326.80122	139.06903	4.80468	0.0717388	0.24678431	2.5172384	20	—	—
106897	2000	YK ₄₃	15.8	X	139.54501	279.79029	151.37125	2.27352	0.1936139	0.27031561	2.3689467	20	4 26.7	19.4
106898	2000	YU ₄₃	16.4	X	126.59708	88.43392	317.67402	1.30208	0.2075594	0.26663259	2.3907118	20	3 12.6	19.6
106899	2000	YF ₄₄	16.6	X	134.20035	254.54246	245.17868	0.64479	0.1800877	0.27633469	2.3344206	20	7 19.1	20.3
106900	2000	YA ₄₅	15.7	X	178.29249	268.54924	126.80856	6.87703	0.1322677	0.27086915	2.3657182	20	4 17.2	19.3
106901	2000	YB ₄₅	16.0	X	283.62996	290.98138	95.79414	7.81081	0.1204824	0.28499161	2.2869043	20	8 13.5	18.4
106902	2000	YJ ₄₅	16.2	X	103.55484	312.65908	148.04785	4.35571	0.1461723	0.26786902	2.3833495	20	4 21.2	19.2
106903	2000	YN ₄₅	15.5	X	226.85905	55.80470	118.39895	14.26974	0.1242019	0.24271609	2.5452885	20	12 6.9	19.2
106904	2000	YH ₄₆	16.4	X	122.93499	148.62524	233.56856	0.74834	0.2041168	0.26301944	2.4125564	20	2 6.9	19.7
106905	2000	YF ₄₆	16.3	X	263.04853	158.19967	225.55721	0.69551	0.2521349	0.28299557	2.2976451	20	6 14.5	19.3
106906	2000	YJ ₄₇	15.7	X	58.27193	299.25220	123.03522	4.63117	0.0683263	0.25625480	2.4548298	20	—	—
106907	2000	YZ ₄₇	16.4	X	117.26176	260.10424	170.63231	2.38762	0.2047539	0.26696396	2.3887331	20	4 4.0	19.6
106908	2000	YX ₄₈	15.6	X	120.99286	320.13399	237.43956	1.09526	0.2168730	0.22898102	2.6460805	20	9 17.1	20.1
106909	2000	YA ₄₉	14.9	X	182.94021	152.24982	276.18142	0.81423	0.1772441	0.17349972	3.1837346	20	5 31.9	20.0
106910	2000	YF ₄₉	15.8	X	154.04450	136.77994	104.57451	7.83635	0.0831514	0.29402414	2.2398248	20	12 22.7	18.8
106911	2000	YH ₄₉	15.7	X	114.75407	226.01491	286.51404	5.73062	0.0595308	0.27601253	2.3362367	20	7 3.9	18.6
106912	2000	YN ₄₉	15.7	X	66.89882	46.09399	384.01127	2.84111	0.1785278	0.29628429	2.2284196	20	—	—
106913	2000	YF ₅₀	16.4	X	110.85129	47.42217	245.82368	1.70288	0.0619478	0.31127876	2.1562696	20	1 6.9	18.6
106914	2000	YO ₅₁	16.2	X	342.37087	300.01105	99.25017	2.78398	0.1600149	0.29517897	2.2339791	20	12 31.5	18.1
106915	2000	YX ₅₁	15.7	X	301.89544	123.51983	315.00663	2.51127	0.1829052	0.24334990	2.5408670	20	11 14.9	18.1
106916	2000	YS ₅₂	15.9	X	277.43142	240.72903	288.99631	8.37463	0.0383497	0.30134058	2.2034218	20	—	—
106917	2000	YT ₅₂	15.2	X	70.61642	347.01723	102.87755	9.60794	0.1104446	0.21125892	2.7920681	20	2 21.9	18.7
106918	2000	YZ ₅₂	16.4	X	91.21078	177.61674	282.86364	2.43613	0.0900161	0.26594665	2.3948209	20	3 22.8	19.2
106919	2000	YC ₅₃	16.3	X	78.19743	19.08881	88.76073	4.29671	0.0835243	0.26503376	2.4003169	20	3 17.0	19.0
106920	2000	YG ₅₄	15.3	X	165.90494	32.19248	96.20405	4.41659	0.1142156	0.27924742	2.3181593	20	8 4.7	18.6
106921	2000	YN ₅₄	16.7	X	161.88902	198.90607	298.89995	1.25309	0.1561618	0.27955647	2.3164505	20	8 11.8	20.1
106922	2000	YM ₅₅	16.0	X	86.64587	266.06478	255.39691	5.09956	0.1601096	0.27250411	2.3562463	20	6 23.6	18.9
106923	2000	YM ₅₇	16.5	X	152.11907	340.22471	145.95361	2.44135	0.1473688	0.27705787	2.3303566	20	7 17.2	20.1
106924	2000	YT ₅₇	16.7	X	8.09047	9.92982	141.08148	2.96024	0.1485188	0.25949491	2.4343526	20	1 15.0	18.9
106925	2000	YS ₅₈	16.0	X	9.73553	230.75058	290.67413	6.26912	0.0408327	0.26266471	2.4147281	20	2 8.4	18.9
106926	2000	YG ₆₁	16.7	X	81.95674	9.64502	145.48203	2.76416	0.1591825	0.26982543	2.3718149	20	6 8.5	19.7
106927	2000	YV ₆₁	16.5	X	97.58696	256.04938	199.23322	0.73821	0.1480084	0.26586706	2.3952988	20	4 4.4	19.3
106928	2000	YQ ₆₂	15.6	X	42.89068	207.81671	292.79089	5.94986	0.0589845	0.26318075	2.4115706	20	2 29.1	18.5
106929	2000	YF ₆₂	16.0	X	177.94889	7.47275	130.90478	4.80642	0.0845342	0.28169705	2.3047006	20	9 2.4	19.1
106930	2000	YY ₆₃	15.1	X	183.40440	267.46596	267.42641	0.78888	0.1143906	0.18583107	3.0412853	20	10 10.3	19.7
106931	2000	YC ₆₄	15.7	X	204.84375	1.50200	205.07911	2.20191	0.1264985	0.24295925	2.5435899	20	12 19.1	19.2
106932	2000	YN ₆₄	15.4	X	236.64633	262.01224	115.95243	6.84828	0.2577584	0.22747672	2.6577333	20	5 13.8	19.9
106933	2000	YY ₆₄	16.1	X	351.29662	83.06279	304.17673	13.05366	0.1745267	0.24275637	2.5450069	20	12 13.1	18.9
106934	2000	YJ ₆₅	15.1	X	236.72206	323.98109	5.07435	1.27520	0.1284621	0.17439915	3.1727789	20	3 25.3	20.0
106935	2000	YB ₆₆	15.9	X	129.46646	71.06719	304.57959	4.84742	0.2653453	0.26339282	2.4102759	20	2 12.5	19.4
106936	2000	YF ₆₆	16.3	X	52.04966	351.29012	293.05369	5.41650	0.1756890	0.28879258	2.2667939	20	10 31.4	19.3
106937	2000	YV ₆₆	16.1	X	343.50035	227.04327	321.36790	2.13570	0.1742316	0.26202253	2.4186719	20	1 21.0	18.7
106938	2000	YR ₆₉	16.2	X	85.80283	268.53637	209.91089	2.11643	0.1734479	0.26940403	2.3742876	20	4 24.4	18.9
106939	2000	YX ₆₉	15.1	X	28.10579	235.35738	93.13352	6.34602	0.1233055	0.24397158	2.5365488	20	11 14.9	18.3
106940	2000	YF ₇₀	15.9	X	15.04283	216.83456	245.17275	5.55444	0.0701219	0.30876373	2.1679630	20	—	—
106941	2000	YR ₇₀	16.6	X	110.53655	293.61294	190.63110	1.93004	0.1724008	0.27302657	2.3532394	20	6 3.0	19.8
106942	2000	YY ₇₀	15.0	X	169.63659	279.91103	138.13948	2.76971	0.1921189	0.17347395	3.1840499	20	5 9.5	20.4
106943	2000	YX ₇₂	15.4	X	256.08429	332.29566	118.24009	4.71880	0.1645091	0.23943641	2.5684784	20	9 18.5	18.7
106944	2000	YA ₇₃	14.7	X	213.41934	5.81239	83.64948	6.74050	0.1313869	0.18236359	3.0797157	20	7 27.9	19.5
106945	2000	YN ₇₅	17.4	X	12.05296	177.95314	211.62275	2.81366	0.1946544	0.29999487	2.2100062	20	—	—
106946	2000	YD ₇₆	16.3	X	240.01379	19.48385	122.98354	6.19760	0.2070519	0.29256170	2.2472829	20	11 10.6	18.9
106947	2000	YL ₇₆	16.3	X	179.55299	2.85579	98.32162	2.99378	0.1694597	0.27992638	2.3144093	20	7 11.4	19.7
106948	2000	YM ₇₆	14.5	X	249.51744	84.63506	262.39833	14.66955	0.2541668	0.17708312	3.1406384	20	4 12.0	19.9
106949	2000	YO ₇₆	16.8	X	67.88441	184.59719	235.09679	1.54694	0.1652734	0.26058618	2.4275515	20	—	—
106950	2000	YF<												

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Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
106961 2000 YZ ₇₉	14.8	X	292.89977	215.90018	138.26925	2.29072	0.2026143	0.18289290	3.0737708	20	6 18.9	18.9
106962 2000 YO ₈₀	16.3	X	301.85026	116.46770	268.76415	2.31323	0.2390828	0.28994053	2.2608067	20	8 24.5	17.8
106963 2000 YC ₈₁	15.8	X	269.97938	292.25126	163.16755	2.68781	0.1271833	0.24244424	2.5471908	20	10 20.9	18.6
106964 2000 YJ ₈₂	16.8	X	235.45045	193.38360	248.11176	1.32821	0.1214206	0.28592663	2.2819160	20	8 19.1	19.5
106965 2000 YR ₈₄	16.3	X	137.32021	305.75021	136.87269	2.40864	0.1788213	0.27193993	2.3595041	20	5 8.2	19.9
106966 2000 YF ₈₅	16.2	X	113.24655	298.53069	129.64421	2.73158	0.1795398	0.26709531	2.3879499	20	3 24.4	19.3
106967 2000 YK ₈₅	16.3	X	75.34815	348.66051	132.30182	3.01484	0.1010208	0.26719402	2.3873617	20	4 1.7	18.9
106968 2000 YT ₈₆	16.2	X	59.60290	31.14570	140.66945	0.90610	0.1468618	0.27096052	2.3651864	20	5 27.4	18.7
106969 2000 YB ₈₇	14.5	X	138.33356	156.63505	298.74095	3.75347	0.1186446	0.17165441	3.2065110	20	5 20.5	19.6
106970 2000 YU ₈₉	16.3	X	151.88436	237.66686	153.65226	1.60298	0.1878317	0.26768478	2.3844429	20	3 17.7	19.9
106971 2000 YB ₉₀	14.1	X	193.22561	100.76327	284.49993	20.62870	0.0967344	0.17028388	3.2236931	20	4 11.5	19.5
106972 2000 YN ₉₀	16.3	X	196.28248	251.54326	137.82482	2.90038	0.2193857	0.27391784	2.3481320	20	4 24.5	20.2
106973 2000 YR ₉₀	16.0	X	61.23678	204.41404	276.13373	5.52041	0.0933008	0.26450540	2.4035123	20	3 3.8	18.7
106974 2000 YW ₉₀	16.6	X	139.51457	239.91715	218.52942	0.84386	0.1304165	0.27231708	2.3573250	20	5 26.8	20.0
106975 2000 YW ₉₁	16.3	X	208.44206	26.18988	340.62928	1.65511	0.2109443	0.27256984	2.3558675	20	4 4.8	20.1
106976 2000 YP ₉₂	16.1	X	270.76095	191.58352	228.15131	5.30406	0.0855118	0.28751857	2.2734851	20	9 12.5	18.6
106977 2000 YG ₉₃	16.1	X	169.47773	308.05499	99.04593	5.82902	0.1594721	0.27290737	2.3539246	20	4 23.9	19.7
106978 2000 YO ₉₄	16.5	X	40.05595	48.70001	112.60564	4.18944	0.1201278	0.26569106	2.3963565	20	4 4.3	18.8
106979 2000 YV ₉₄	15.9	X	150.89968	285.24904	107.30871	3.70373	0.2192788	0.26857599	2.3791652	20	3 22.2	19.6
106980 2000 YM ₉₆	15.6	X	294.49049	104.39601	269.38594	3.11450	0.1861811	0.28413584	2.2914939	20	7 28.8	17.8
106981 2000 YU ₉₆	15.9	X	258.71548	271.41019	104.73001	2.20759	0.1620854	0.27911300	2.3189035	20	6 11.2	18.7
106982 2000 YJ ₉₇	16.4	X	153.30470	110.33531	305.68266	1.31190	0.1918758	0.26969939	2.3725538	20	4 18.6	20.2
106983 2000 YC ₉₈	15.8	X	10.69846	60.95155	96.36692	3.20722	0.1444305	0.25954012	2.4340699	20	1 30.6	18.1
106984 2000 YJ ₉₈	16.4	X	251.25075	90.91000	338.03871	0.56070	0.1793570	0.28424050	2.2909313	20	8 13.8	19.2
106985 2000 YD ₉₉	16.0	X	211.14485	71.25295	109.07559	7.47579	0.0204755	0.29271043	2.2465215	20	12 21.3	18.6
106986 2000 YC ₁₀₀	16.0	X	355.22932	334.63379	105.60291	7.32728	0.0811386	0.29974489	2.2112348	20	—	—
106987 2000 YG ₁₀₀	15.8	X	317.50125	256.13072	207.34905	12.52878	0.1576573	0.24590776	2.5232168	20	—	—
106988 2000 YE ₁₀₁	14.7	X	6.36213	268.73899	83.24870	18.10674	0.3789480	0.24138269	2.5546533	20	12 23.3	17.5
106989 2000 YN ₁₀₂	14.1	X	260.98444	107.15559	274.59525	18.15052	0.2814264	0.17955757	3.1117181	20	6 5.3	19.1
106990 2000 YX ₁₀₂	15.9	X	158.22667	274.54384	171.49123	6.22987	0.1935117	0.27332296	2.3515378	20	6 2.6	19.7
106991 2000 YL ₁₀₃	15.6	X	356.74730	131.03551	236.89888	7.21185	0.1657588	0.29236380	2.2482968	20	12 10.3	17.6
106992 2000 YT ₁₀₃	15.4	X	208.20174	299.18784	134.06765	15.42543	0.1205651	0.22794828	2.6540667	20	7 3.9	19.6
106993 2000 YC ₁₀₆	15.3	X	75.19426	8.09482	106.72506	8.17391	0.1794773	0.26049008	2.4281486	20	4 9.5	18.1
106994 2000 YJ ₁₀₆	15.9	X	283.01174	193.95878	289.23385	5.09214	0.1073279	0.29839839	2.2178818	20	—	—
106995 2000 YO ₁₀₇	15.7	X	113.43000	353.09774	62.98831	3.20851	0.1664233	0.26537732	2.3982448	20	3 7.5	18.8
106996 2000 YP ₁₀₇	16.6	X	110.41540	56.51701	58.50498	2.29782	0.1371245	0.27087507	2.3656838	20	5 16.4	19.7
106997 2000 YR ₁₀₈	16.1	X	134.39994	203.41933	328.36042	3.31158	0.0915101	0.28075725	2.3098409	20	8 24.6	19.3
106998 2000 YA ₁₀₉	15.7	X	331.36479	243.09637	95.19580	7.93027	0.1485273	0.28451370	2.2894646	20	8 30.4	17.6
106999 2000 YG ₁₀₉	16.0	X	342.62620	27.17037	45.93253	2.20458	0.1064317	0.29853125	2.2172237	20	—	—
107000 2000 YU ₁₀₉	16.8	X	125.57202	73.80457	11.29874	1.65791	0.0899206	0.26906057	2.3763083	20	4 17.6	19.9
107001 2000 YW ₁₀₉	16.7	X	82.68155	143.06333	341.00841	1.87944	0.1582446	0.26716056	2.3875611	20	4 24.6	19.4
107002 2000 YY ₁₀₉	15.9	X	348.80918	116.40523	90.79988	8.10002	0.0666736	0.26520780	2.3992666	20	3 15.1	18.7
107003 2000 YS ₁₁₀	16.9	X	322.27960	29.78522	41.37991	2.30362	0.1843185	0.29586750	2.2305119	20	—	—
107004 2000 YC ₁₁₂	12.6	X	253.93779	355.57097	95.92140	13.67629	0.1073069	0.08464831	5.1371692	20	9 9.4	19.7
107005 2000 YE ₁₁₂	16.5	X	206.83633	352.23019	81.85056	6.74054	0.0853220	0.27861729	2.3216532	20	7 8.3	19.7
107006 2000 YH ₁₁₂	16.8	X	147.04892	107.46345	347.15900	3.40783	0.1449045	0.27304501	2.3531334	20	5 29.9	20.4
107007 2000 YL ₁₁₂	14.5	X	56.39232	275.76457	314.19102	10.45907	0.1486567	0.22527730	2.6750040	20	8 11.8	17.8
107008 2000 YM ₁₁₂	16.6	X	172.40142	48.83786	6.41589	3.00649	0.1913028	0.27290975	2.3539109	20	5 4.7	20.3
107009 2000 YA ₁₁₃	16.1	X	136.05954	32.74343	70.04514	3.59415	0.1329499	0.27216163	2.3582225	20	5 29.0	19.5
107010 2000 YD ₁₁₃	15.5	X	201.67332	298.81217	92.28282	4.90486	0.1280701	0.22214336	2.7001040	20	5 5.1	19.7
107011 2000 YQ ₁₁₃	14.9	X	199.00873	339.81920	91.24362	6.45041	0.1465793	0.17510387	3.1642604	20	6 19.1	20.1
107012 2000 YS ₁₁₃	16.2	X	202.63951	351.80851	34.21652	2.97635	0.2073805	0.27385642	2.3484831	20	4 24.5	20.0
107013 2000 YG ₁₁₄	15.7	X	111.58104	336.79779	73.44568	5.40706	0.1007638	0.21244996	2.7816230	20	2 24.2	19.4
107014 2000 YJ ₁₁₄	16.5	X	168.99286	112.45617	74.41272	4.61357	0.2221839	0.28600390	2.2815049	20	10 21.3	20.4
107015 2000 YQ ₁₁₄	16.8	X	282.69576	329.23712	83.84697	3.56805	0.1265515	0.28747758	2.2737012	20	9 21.3	18.9
107016 2000 YK ₁₁₅	16.2	X	165.83333	9.31827	20.15103	1.58768	0.1927428	0.26805551	2.3822439	20	3 28.3	20.0
107017 2000 YQ ₁₁₅	15.8	X	109.29080	162.14994	340.32195	2.09806	0.1569095	0.27161684	2.3613748	20	6 24.6	19.1
107018 2000 YW ₁₁₅	16.2	X	100.69591	137.49626	37.46320	2.76737	0.1431296	0.27393117	2.3480558	20	7 28.8	19.5
107019 2000 YF ₁₁₆	16.1	X	239.95409	48.71270	350.50858	2.45011	0.1744515	0.27863079	2.3215781	20	6 19.2	19.5
107020 2000 YJ ₁₁₆	15.7	X	135.24146	65.30784	335.50809	2.51440	0.1900465	0.26444038	2.4039063	20	3 13.0	19.1
107021 2000 YK ₁₁₆	16.0	X	23.09885	74.59701	85.74392	3.19399	0.1486517	0.26119310	2.4237896	20	3 1.1	18.2
107022 2000 YL ₁₁₆	15.8	X	187.06501	37.20668	60.33787	2.83098	0.1658961	0.22655051	2.6649722	20	7 12.1	20.0
107023 2000 YV ₁₁₆	15.6	X	196.13027	105.49452	336.14594	5.20726	0.0346634	0.27570497	2.3379738	20	7 9.7	18.7
107024 2000 YR ₁₁₇	15.4	X	261.37211	345.75387	107.56765	8.50629	0.1597870	0.23753893	2.5821384	20	10 2.7	18.7
107025 2000 YB ₁₁₈	15.8	X	202.27023	83.27384	328.28350	6.16071	0.1015450	0.27385334	2.3485007	20	5 29.9	19.3
107026 2000 YQ ₁₁₈	16.1	X	140.67344	198.35977	338.79855	6.85872	0.0417586	0.28341762	2.2953636	20	9 9.4	18.9
107027 2000 YK ₁₁₉	16.3	X	121.23906	102.69747	11.36111	5.61432</						

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>		
107041	2000	YR ₁₂₈	15.9	X	250.97337	166.66576	352.99982	3.93719	0.1908996	0.24244612	2.5471776	20	12 6.8	19.1
107042	2000	YD ₁₂₉	15.9	X	284.37246	139.69678	319.57968	13.07827	0.1316802	0.24125958	2.5555222	20	11 11.9	19.1
107043	2000	YE ₁₂₉	16.1	X	261.38785	87.76722	340.84601	4.25274	0.1450938	0.28514750	2.2860707	20	9 2.9	18.6
107044	2000	YP ₁₃₁	16.7	X	76.91187	295.80957	151.28100	2.42008	0.1844720	0.26228283	2.4170714	20	2 28.4	19.2
107045	2000	YS ₁₃₃	16.5	X	173.55974	26.82367	356.13949	2.21839	0.1220625	0.26788536	2.3832525	20	3 23.7	19.9
107046	2000	YF ₁₃₆	16.5	X	142.11425	107.27719	101.18180	9.28249	0.1683164	0.28399432	2.2922551	20	10 28.6	20.2
107047	2000	YL ₁₃₈	16.0	X	216.66659	289.22113	72.63608	3.25757	0.2199622	0.27121428	2.3637108	20	4 7.2	19.9
107048	2000	YR ₁₃₈	16.3	X	177.88585	105.48484	98.09644	7.26288	0.1062056	0.28917716	2.2647836	20	11 28.3	19.3
107049	2000	YZ ₁₃₉	15.1	X	151.79459	86.16166	31.87767	14.97401	0.1700657	0.22364228	2.6880259	20	7 6.4	19.7
107050	2000	YM ₁₄₂	15.5	X	227.34965	283.72607	258.11269	9.38089	0.2159066	0.24116581	2.5561847	20	12 1.4	19.0
107051	2001	AD	17.3	X	155.79733	62.70297	41.42048	1.60944	0.2073597	0.27441947	2.3452695	20	6 23.5	21.0
107052		Aquincum	17.0	X	152.85784	338.24562	105.78009	5.49889	0.1338766	0.27266289	2.3553314	20	5 23.1	20.4
107053	2001	AZ ₁	15.5	X	191.64113	58.56557	336.84603	4.64586	0.1846301	0.27380994	2.3487488	20	4 25.2	19.3
107054		Daniela	15.9	X	10.23945	9.73611	339.73472	5.05537	0.1800685	0.29167819	2.2518186	20	12 21.8	18.4
107055	2001	AC ₃	16.2	X	58.73789	307.72250	104.29883	7.13652	0.1232049	0.25408598	2.4687792	20	—	—
107056	2001	AC ₄	15.7	X	83.91018	280.48104	179.03314	4.20898	0.1168539	0.26486667	2.4013263	20	3 16.5	18.4
107057	2001	AW ₄	16.1	X	41.52466	228.19426	260.81004	3.41688	0.1883828	0.26120400	2.4237222	20	2 19.4	18.1
107058	2001	AW ₆	17.0	X	126.79769	278.02870	216.75954	1.76783	0.1184246	0.27449416	2.3448441	20	6 29.9	20.4
107059	2001	AK ₈	16.1	X	118.75155	346.48909	105.98401	5.97343	0.1325998	0.26961036	2.3730761	20	4 28.2	19.4
107060	2001	AB ₉	16.2	X	146.46743	173.60244	258.06610	7.05851	0.0680173	0.26980393	2.3719409	20	4 20.6	19.6
107061	2001	AR ₉	16.3	X	17.98983	345.71464	205.86517	4.43187	0.1640923	0.26523397	2.3991088	20	4 5.5	18.1
107062	2001	AP ₁₀	16.2	X	110.55815	303.32872	185.05875	3.90333	0.1206688	0.27113506	2.3641712	20	6 2.6	19.3
107063	2001	AD ₁₁	16.7	X	68.87409	246.47212	222.50546	2.95410	0.1576382	0.26314969	2.4117603	20	3 11.2	19.3
107064	2001	AH ₁₂	15.9	X	311.47119	233.06142	242.03659	5.16910	0.0738753	0.24682779	2.5169428	20	—	—
107065	2001	AB ₁₃	15.5	X	215.28442	207.14731	274.54490	9.57309	0.1221633	0.23388215	2.6089835	20	9 7.6	19.6
107066	2001	AC ₁₃	16.3	X	129.25790	221.91030	254.99262	5.20128	0.1570393	0.27190862	2.3596852	20	6 11.8	19.6
107067	2001	AE ₁₅	16.0	X	239.70038	274.33188	177.99508	4.47688	0.1253824	0.23368176	2.6104748	20	9 2.0	19.6
107068	2001	AP ₁₅	15.9	X	276.12035	228.48304	247.31144	4.95680	0.1793007	0.24147450	2.5540057	20	11 19.2	18.4
107069	2001	AU ₁₅	15.9	X	77.87047	4.11329	139.92479	10.79451	0.1714632	0.26650748	2.3914599	20	5 22.7	19.0
107070	2001	AH ₁₆	15.9	X	41.21275	249.44623	268.58354	4.36968	0.1382102	0.26402289	2.4064397	20	3 29.1	18.3
107071	2001	AJ ₁₇	15.3	X	191.50452	196.81838	291.12538	4.64798	0.1974638	0.22974375	2.6402208	20	8 20.6	19.6
107072	2001	AL ₁₈	14.7	X	171.91634	47.03957	161.48816	22.58399	0.1907659	0.28350201	2.2949080	20	11 24.1	18.8
107073	2001	AZ ₁₈	16.7	X	134.66185	275.67040	214.69407	1.44659	0.1740737	0.27427239	2.3461079	20	7 4.8	20.1
107074		Ansonsylva	16.3	X	96.13399	333.92195	67.79368	2.45443	0.1265028	0.30809781	2.1710858	20	1 6.9	18.2
107075	2001	AW ₂₀	16.6	X	202.07849	269.41397	202.84960	6.22031	0.1730204	0.28410393	2.2916655	20	8 15.2	20.2
107076	2001	AM ₂₁	15.6	X	26.93025	192.76620	345.14139	4.00460	0.0137869	0.21688223	2.7435954	20	3 31.9	19.4
107077	2001	AO ₂₁	15.7	X	292.20612	65.77476	344.34065	3.98392	0.1264831	0.23824114	2.5770620	20	9 20.8	18.4
107078	2001	AF ₂₃	16.5	X	256.86625	12.28141	150.10063	6.54293	0.0342705	0.29675489	2.2260630	20	—	—
107079	2001	AR ₂₃	15.2	X	154.89984	225.87479	301.84429	10.42880	0.1293429	0.22975389	2.6401431	20	9 4.3	19.5
107080	2001	AY ₂₃	15.2	X	193.79346	88.74505	63.21252	14.65979	0.0532537	0.23501000	2.6006295	20	10 11.8	19.1
107081	2001	AC ₂₄	16.2	X	11.67515	282.29106	261.39291	2.72666	0.0596108	0.31505283	2.1390148	20	3 5.3	18.2
107082	2001	AK ₂₄	16.4	X	189.66527	118.25145	69.18243	7.01177	0.1176682	0.29081699	2.2562620	20	11 18.9	19.3
107083	2001	AP ₂₄	15.9	X	216.39139	206.83944	87.94369	8.95109	0.0053278	0.25892473	2.4379251	20	1 17.9	19.0
107084	2001	AQ ₂₄	16.0	X	4.09152	339.06511	32.03900	4.10695	0.1842650	0.29366454	2.2416529	20	12 30.5	18.3
107085	2001	AT ₂₄	15.7	X	251.03157	320.86935	80.15720	7.79852	0.1077601	0.28031070	2.3122933	20	7 15.7	18.6
107086	2001	AE ₂₅	15.4	X	176.72606	63.30102	117.95039	11.00203	0.2130400	0.23291101	2.6162307	20	10 18.4	20.0
107087	2001	AK ₂₅	16.1	X	140.14840	43.94725	108.00556	7.55655	0.1327258	0.27561436	2.3384863	20	8 9.5	19.5
107088	2001	AQ ₂₅	16.1	X	83.84792	328.50153	59.51409	6.68859	0.1604965	0.30826836	2.1702849	20	—	—
107089	2001	AA ₂₈	16.7	X	282.79266	88.53327	27.64261	6.14303	0.1042853	0.29558669	2.2319243	20	12 30.6	18.8
107090	2001	AG ₂₈	15.6	X	155.43563	34.45241	38.36928	10.66619	0.1156053	0.27034858	2.3687541	20	5 7.7	19.1
107091	2001	AW ₂₈	16.0	X	184.57665	11.00522	42.78002	4.27071	0.1812190	0.27628815	2.3346827	20	5 14.1	19.6
107092	2001	AD ₂₉	16.4	X	180.48466	90.42105	332.04157	4.06414	0.1161040	0.27589303	2.3369113	20	5 20.5	20.0
107093	2001	AG ₂₉	16.0	X	101.04262	17.98059	38.91314	2.98985	0.2035530	0.26484233	2.4014734	20	2 26.9	18.9
107094	2001	AL ₂₉	16.7	X	198.94231	45.97178	58.67694	2.84215	0.1744560	0.28260061	2.2997854	20	8 4.9	20.2
107095	2001	AA ₃₀	16.0	X	80.84670	351.64232	42.69690	5.72759	0.2196214	0.25943024	2.4347572	20	—	—
107096	2001	AC ₃₀	15.7	X	159.37852	84.67715	63.96426	5.14191	0.1054262	0.28236320	2.3010744	20	8 27.2	19.0
107097	2001	AJ ₃₀	16.2	X	69.98861	94.64072	358.30263	2.21978	0.1699789	0.26337987	2.4103549	20	2 22.6	18.4
107098	2001	AE ₃₁	15.5	X	305.70873	245.24311	310.94246	5.39736	0.1347460	0.25776996	2.4452007	20	—	—
107099	2001	AU ₃₁	16.3	X	230.45540	78.05255	342.12622	4.26446	0.1228269	0.28173177	2.3045113	20	7 14.4	19.4
107100	2001	AY ₃₁	16.1	X	163.39810	37.44195	65.06323	6.83811	0.0501379	0.27701517	2.3305961	20	6 25.0	19.2
107101	2001	AM ₃₂	15.8	X	221.76002	31.44989	41.51728	4.29845	0.1516135	0.23106851	2.6301198	20	7 16.2	19.8
107102	2001	AV ₃₃	15.9	X	251.55005	346.33307	67.85590	6.48375	0.1458792	0.28321237	2.2964724	20	7 30.9	18.8
107103	2001	AL ₃₄	16.0	X	46.79062	358.21780	19.45133	4.67990	0.1640926	0.30026473	2.2086819	20	—	—
107104	2001	AT ₃₄	16.0	X	231.82065	54.64199	336.96307	4.39934	0.1747885	0.27855098	2.3220216	20	5 30.0	19.6
107105	2001	AB ₃₅	15.6	X	169.34369	341.91847	58.28129	7.35456	0.1848416	0.27176701	2.3605048	20	4 15.6	19.3
107106	2001	AW ₃₅	16.1	X	80.26941	157.50562	357.35406	6.69192	0.0689147	0.27086782	2.3657260	20	5 18.9	19.1
107107	2001	AG ₃₆	15.6	X	15.49410	179.09894	12.74325	6.93603	0.1907121	0.26441928	2.4040341	20	3 31.9	17.4
107108	2001	AJ ₃₆	15.8	X	348.28772	34.40421	14.80179	4.94505	0.2021812	0.29513592	2.2341964	20	—	—
107109	2001	AN ₃₆	15.6	X	255.82647	11.91103	0.73295	6.41389	0.1877780	0.27869536	2.3212196	20	5 28.6	19.0
107110	2001	AG ₃₇	15.4	X	294.92586	183.48872	104.53423	23.09690	0.0667					

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
107121 2001 AO ₄₀	14.7	X	308.08308	236.98869	305.45303	13.91398	0.0901217	0.20384256	2.8593862	20	—	—
107122 2001 AE ₄₁	15.9	X	84.18153	114.97014	313.34694	1.81656	0.1734525	0.26004940	2.4308909	20	2 11.9	18.3
107123 2001 AX ₄₂	15.2	X	115.54376	345.89502	0.91208	8.43881	0.2331805	0.30674611	2.1774591	20	—	—
107124 2001 AR ₄₅	16.2	X	12.63462	351.44843	28.78537	5.76918	0.1292122	0.29537044	2.2330136	20	—	—
107125 2001 AU ₄₅	15.8	X	171.61784	231.43318	12.92957	6.64376	0.1250744	0.24385450	2.5373607	20	12 31.3	19.7
107126 2001 AN ₄₆	16.5	X	113.44056	64.86660	29.85690	20.69786	0.1207764	0.36986772	1.9220813	20	4 15.6	18.2
107127 2001 AX ₄₆	15.6	X	149.87053	95.03214	10.85318	23.34782	0.1720345	0.27362339	2.3498162	20	6 16.3	19.8
107128 2001 AG ₄₇	14.6	X	114.73995	49.85886	18.92429	23.96274	0.2504151	0.26495515	2.4007917	20	4 5.4	18.0
107129 2001 AE ₄₇	15.5	X	244.59032	358.06218	82.56889	27.18432	0.2465352	0.28396431	2.2924166	20	8 20.1	19.3
107130 2001 AV ₄₇	16.0	X	308.15494	313.54992	73.03245	12.31118	0.1202984	0.28715176	2.2754208	20	10 5.5	18.3
107131 2001 AP ₄₈	15.9	X	223.55200	278.06184	335.69564	3.71440	0.0980978	0.30468517	2.1872672	20	—	—
107132 2001 AA ₄₉	16.4	X	87.03463	41.56796	29.38820	22.39374	0.1075127	0.36155520	1.9514300	20	1 31.5	18.7
107133 2001 AE ₅₀	16.5	X	340.30869	44.00556	128.61804	1.95741	0.1336422	0.25803120	2.4435500	20	1 1.0	19.4
107134 2001 AW ₅₁	12.9	X	324.39093	263.85918	119.27378	5.63941	0.0486750	0.08462338	5.1381781	20	9 18.9	19.5
107135 2001 BH	16.0	X	135.64083	13.00197	56.76631	5.52868	0.2379349	0.26818283	2.3814898	20	4 25.1	19.7
107136 2001 BQ	15.5	X	326.42720	133.27486	13.75461	5.29677	0.0939956	0.25118852	2.4877278	20	—	—
107137 2001 BW	15.4	X	177.91591	187.13977	339.36244	12.70655	0.0983619	0.23260101	2.6185547	20	9 27.6	19.5
107138 2001 BP ₃	15.1	X	121.30412	180.41515	47.85358	7.49511	0.1179782	0.23450348	2.6043730	20	10 22.8	19.0
107139 2001 BB ₄	16.7	X	183.82108	87.82797	52.12140	5.62571	0.0908444	0.28213191	2.3023318	20	9 13.1	19.9
107140 2001 BC ₅	15.9	X	256.85104	17.68949	1.84879	6.76512	0.1571267	0.27686675	2.3314289	20	6 13.6	19.1
107141 2001 BP ₅	16.7	X	94.08076	45.89714	315.14611	17.04609	0.0934514	0.35412447	1.9786338	20	—	—
107142 2001 BN ₆	16.1	X	301.39901	81.33189	62.80546	4.91063	0.0313741	0.30096366	2.2052611	20	—	—
107143 2001 BW ₆	16.7	X	72.59014	102.75125	103.36541	6.16962	0.1821034	0.27445254	2.3450812	20	8 12.7	19.7
107144 2001 BZ ₇	16.6	X	126.32195	31.55695	50.38969	4.57399	0.1240711	0.26812937	2.3818064	20	4 19.8	19.9
107145 2001 BA ₈	15.2	X	130.00577	33.29042	55.49057	5.26621	0.0877593	0.21829756	2.7317239	20	4 30.8	19.2
107146 2001 BK ₈	16.4	X	73.01222	126.16649	26.42058	3.06311	0.1084106	0.26828189	2.3809036	20	5 13.0	19.0
107147 2001 BG ₉	16.3	X	149.43503	90.68310	10.24828	1.98780	0.1793729	0.27260462	2.3556671	20	6 12.1	19.9
107148 2001 BR ₁₀	15.8	X	173.04410	306.83157	4.80753	19.35578	0.0654396	0.36055294	1.9550447	20	—	—
107149 2001 BS ₁₀	16.6	X	224.96416	22.70374	239.76686	0.77533	0.0500583	0.30682004	2.1771093	20	—	—
107150 2001 BW ₁₀	16.0	X	274.49898	297.14693	304.68001	20.26147	0.3193571	0.30490841	2.1861994	20	—	—
107151 2001 BU ₁₂	14.1	X	205.70276	8.46764	66.57554	17.41626	0.0826643	0.17423778	3.1747376	20	7 3.4	19.0
107152 2001 BX ₁₂	15.8	X	111.37678	118.89718	359.29690	12.37837	0.1090807	0.26898482	2.3767538	20	5 13.6	19.2
107153 2001 BV ₁₃	15.8	X	155.28210	3.56040	147.41134	6.52340	0.0740997	0.27672879	2.3322037	20	8 22.6	18.9
107154 2001 BN ₁₄	15.9	X	134.48559	292.03891	157.37917	2.76149	0.1934687	0.26910397	2.3760522	20	5 15.5	19.5
107155 2001 BO ₁₄	15.5	X	242.88985	26.15997	145.50073	5.56839	0.2270658	0.24102696	2.5571662	20	12 6.8	18.9
107156 2001 BF ₁₅	15.5	X	345.62668	280.86627	322.94824	5.74783	0.1021346	0.26567593	2.3964474	20	4 21.1	18.0
107157 2001 BR ₁₅	15.9	X	277.29295	38.88963	114.30367	3.14713	0.1028778	0.24439177	2.5336405	20	—	—
107158 2001 BU ₁₅	15.9	X	357.66306	42.61832	132.303916	11.69334	0.1892293	0.25775225	2.4453127	20	1 24.9	18.1
107159 2001 BP ₁₈	16.3	X	258.69022	328.49326	74.47154	4.35640	0.1034070	0.28177197	2.3042921	20	7 30.8	19.0
107160 2001 BV ₁₈	16.3	X	131.13108	98.26622	331.83939	6.21072	0.1095087	0.26750507	2.3855107	20	4 4.2	19.6
107161 2001 BY ₁₈	16.3	X	40.25155	85.38852	38.52826	2.96967	0.1522637	0.26050946	2.4280261	20	2 10.0	18.5
107162 2001 BV ₁₉	16.3	X	114.78990	284.64518	205.11596	6.61018	0.1188679	0.27137470	2.3627792	20	6 9.3	19.6
107163 2001 BZ ₁₉	16.5	X	65.85458	162.68741	39.34293	3.05511	0.1747939	0.27239538	2.3568732	20	7 27.1	19.4
107164 2001 BA ₂₀	16.3	X	164.42395	313.26151	74.34939	4.04558	0.1741947	0.26727006	2.3869089	20	3 25.7	20.0
107165 2001 BM ₂₀	16.7	X	243.95323	50.40338	94.79547	7.12477	0.0686245	0.29152480	2.2526085	20	12 10.7	19.1
107166 2001 BK ₂₁	16.3	X	65.29154	137.51674	87.05656	7.72937	0.0691570	0.27676765	2.3319854	20	8 12.4	19.1
107167 2001 BN ₂₁	15.8	X	270.77023	344.21134	127.24792	5.95033	0.1336815	0.29009491	2.2600045	20	11 27.1	17.9
107168 2001 BW ₂₁	15.9	X	254.26857	258.61181	105.94663	6.41743	0.2339774	0.28134272	2.3066353	20	5 13.9	19.3
107169 2001 BQ ₂₂	15.8	X	221.85556	72.67639	304.78068	6.00018	0.1337321	0.27466405	2.3438771	20	5 2.3	19.3
107170 2001 BB ₂₃	16.9	X	73.90972	236.30505	291.33330	3.52016	0.1957716	0.27030906	2.3689850	20	6 20.9	19.6
107171 2001 BC ₂₃	14.1	X	61.31384	6.82966	296.39393	13.78199	0.1992537	0.18952453	3.0016434	20	11 19.2	18.8
107172 2001 BM ₂₃	16.3	X	222.56094	15.23019	127.40216	9.92352	0.1019415	0.28948014	2.2632031	20	11 15.0	19.0
107173 2001 BT ₂₃	16.4	X	52.60607	292.62280	263.91147	2.07230	0.1715770	0.27020514	2.3695924	20	6 26.4	18.9
107174 2001 BY ₂₃	16.6	X	346.48996	20.16688	104.86860	0.81741	0.1471674	0.25306213	2.4754336	20	—	—
107175 2001 BZ ₂₃	16.8	X	140.44273	324.96313	189.45047	1.58588	0.1451728	0.27789935	2.3256500	20	8 11.9	20.2
107176 2001 BA ₂₄	16.2	X	335.36850	347.85020	142.95465	4.89228	0.0385403	0.25228991	2.4804823	20	—	—
107177 2001 BE ₂₄	16.4	X	102.09007	297.20657	150.81926	2.95600	0.1428769	0.26520092	2.3993081	20	3 31.8	19.5
107178 2001 BE ₂₅	11.9	X	264.25408	310.32140	127.45566	22.25275	0.1377743	0.08344849	5.1862932	20	8 29.2	18.9
107179 2001 BK ₂₅	16.5	X	96.42843	256.61605	174.17803	2.28883	0.1911458	0.26293444	2.4130764	20	3 7.2	19.4
107180 2001 BP ₂₅	16.1	X	80.10867	294.15543	134.70488	3.47278	0.2248944	0.26079059	2.4262829	20	2 14.9	18.4
107181 2001 BU ₂₅	14.2	X	92.01666	285.40353	127.00717	23.81282	0.2184615	0.15837114	3.3833897	20	2 26.3	19.1
107182 2001 BA ₂₆	16.1	X	145.40898	293.01664	178.70383	2.36910	0.1187389	0.27336925	2.3512724	20	6 19.5	19.6
107183 2001 BE ₂₆	16.5	X	178.15146	258.90319	150.11592	2.68492	0.1695683	0.27144087	2.3623952	20	5 3.3	20.1
107184 2001 BH ₂₆	15.8	X	291.72498	69.60249	307.03208	3.89321	0.1611514	0.28261611	2.2997014	20	8 2.2	17.9
107185 2001 BN ₂₆	16.3	X	31.89897	357.22766	146.55495	0.54080	0.1597676	0.26082847	2.4260480	20	2 21.6	18.0
107186 2001 BR ₂₆	16.1	X	95.93925	10.05015	128.00986	2.81709	0.1760350	0.26915808	2.3757338	20	6 5.3	19.2
107187 2001 BW ₂₆	16.5	X	129.19325	57.38628	144.14679	4.78332	0.0774636	0.28221139	2.3018995	20	10 2.4	19.6
107188 2001 BB ₂₇	14.8	X	81.02035	69.14126	125.80036	13.32321	0.1196201	0.22254561	2.6968494	20	7 24.0	18.4
107189 2001 BP ₂₇	15.7	X	62.24097	4.58441	121.16162	6.88712	0.0867715	0.26306282	2.4122912	20	3 18.7	18.4
107190 2001 BN ₂₈	16.4	X	160.94850	289.36698	156.45164	2.45416	0.1852079	0.27287331	2.3541204	20	6 3.9	20.1
107191 2001 BS ₂₈	16.0	X	65.23136	170.53265	329.19784	1.80674	0.1551353	0.26477483	2.4018815	20	4 19.2	18.6
107192 2001 BZ ₂₈	16.6	X	62.14340	32.50070	134.54289	1.95936	0.1210817	0.26737048	2.3863112	20	5 20.5	19.3
107193 2001 BC ₃₀	16.1	X	144.53617	303.72508	303.11760	6.26696	0.0988620	0.29125451	2.540019	20	12 17.7	19.2
107194 2001 BE ₃₀	16.7	X	356.28161	217.81869	233.69348	1.04538	0.07					

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>		
107201	2001	BE ₃₂	16.0	X	124.74213	85.86060	323.28560	4.77958	0.1690911	0.26263705	2.4148976	20	3 9.3	19.4
107202	2001	BU ₃₂	16.0	X	274.83582	296.72142	153.41546	6.22304	0.2364710	0.23855414	2.5748073	20	10 3.6	18.8
107203	2001	BC ₃₃	15.9	X	62.78532	342.47892	129.60315	4.27678	0.1371665	0.26060783	2.4274171	20	3 5.1	18.3
107204	2001	BV ₃₃	15.0	X	150.15651	52.57502	139.98097	13.73123	0.0918407	0.23080276	2.6321384	20	10 10.0	19.2
107205	2001	BW ₃₃	16.4	X	150.06702	346.49104	155.09029	5.86213	0.1743354	0.27580586	2.3374037	20	8 4.9	20.1
107206	2001	BX ₃₄	16.6	X	210.84192	155.50459	283.55886	2.00087	0.1852832	0.27855997	2.3219716	20	7 11.4	19.9
107207	2001	BY ₃₄	15.8	X	347.48185	228.97031	315.12246	5.59688	0.0766033	0.25879853	2.4387176	20	2 4.8	18.5
107208	2001	BU ₃₅	15.2	X	148.42655	284.79247	273.15598	22.26206	0.2473918	0.28080632	2.3095718	20	10 5.5	19.8
107209	2001	BW ₃₉	16.4	X	341.60260	8.04016	155.89510	4.02065	0.1189444	0.30357151	2.1926133	20	—	—
107210	2001	BX ₃₉	15.3	X	138.82737	351.66320	257.37949	11.47582	0.1157239	0.23912014	2.5707427	20	12 3.8	19.3
107211	2001	BY ₄₀	16.2	X	135.14079	243.22130	169.85980	10.11423	0.2181454	0.26651766	2.3913991	20	4 2.2	19.8
107212	2001	BE ₄₁	16.4	X	176.97270	136.79558	281.07234	4.62512	0.1518090	0.27198406	2.3592488	20	5 11.2	20.0
107213	2001	BJ ₄₂	16.4	X	94.06997	272.11534	148.50590	3.50986	0.1598399	0.26025824	2.4295904	20	2 14.3	19.1
107214	2001	BG ₄₃	15.8	X	144.95503	270.33005	201.11887	6.59437	0.1775890	0.27254073	2.3560352	20	6 21.6	19.5
107215	2001	BK ₄₃	16.1	X	330.11661	323.99324	183.27408	6.81978	0.1359145	0.25186144	2.4832947	20	—	—
107216	2001	BA ₄₄	15.7	X	358.55669	73.00811	138.28346	10.70539	0.2170247	0.26005522	2.4308547	20	3 24.8	17.6
107217	2001	BM ₄₅	16.1	X	35.41902	210.31429	302.49809	8.66031	0.1299860	0.26068832	2.4269174	20	3 11.6	18.3
107218	2001	BG ₄₆	15.9	X	121.60491	210.81125	180.03305	10.32267	0.1570746	0.26144176	2.4222525	20	2 8.5	19.3
107219	2001	BP ₄₇	16.4	X	34.17765	255.43344	309.30933	4.10435	0.1769163	0.26578414	2.3957969	20	6 4.3	18.5
107220	2001	BF ₄₈	16.0	X	269.71381	306.63111	178.22279	9.07407	0.1256031	0.24074803	2.5591410	20	11 30.3	19.1
107221	2001	BW ₄₈	16.1	X	59.84493	340.37500	231.22460	8.45379	0.1801210	0.27166021	2.3611235	20	7 28.8	19.1
107222	2001	BM ₄₉	16.0	X	181.58594	268.66614	161.14324	5.00778	0.2085576	0.27257481	2.3558388	20	6 2.3	19.9
107223	2001	Ripero	15.9	X	61.31231	148.39552	313.14059	4.55583	0.0662665	0.20918139	2.8105243	20	2 14.9	19.4
107224	2001	BZ ₅₀	15.3	X	196.97342	358.01753	119.54771	15.34011	0.1262549	0.22803968	2.6533575	20	8 20.1	19.4
107225	2001	BF ₅₁	16.0	X	222.69484	275.58706	305.51973	20.41901	0.2922944	0.29251175	2.2475387	20	—	—
107226	2001	BC ₅₂	17.1	X	351.84973	64.59605	111.99153	2.21838	0.1225017	0.25953162	2.4341231	20	1 26.5	19.6
107227	2001	BJ ₅₂	16.0	X	194.09321	61.93367	316.85415	3.29005	0.2746431	0.27176622	2.3605094	20	4 6.8	20.2
107228	2001	BS ₅₂	16.5	X	213.28793	213.31193	201.60415	6.50945	0.0991648	0.27607223	2.3358999	20	6 17.8	19.9
107229	2001	BA ₅₃	15.5	X	95.87877	15.17386	150.99364	14.83973	0.0769999	0.22184264	2.7025436	20	6 28.6	19.5
107230	2001	BF ₅₃	16.9	X	35.12858	170.45365	30.65467	3.11082	0.1412552	0.26715799	2.3875764	20	5 26.1	19.1
107231	2001	BW ₅₃	16.4	X	330.74784	307.15533	182.43964	4.94990	0.0646144	0.30206688	2.1998884	20	—	—
107232	2001	BA ₅₄	15.6	X	150.19195	192.24800	181.69270	6.87937	0.2245153	0.26321933	2.4113349	20	2 25.2	19.4
107233	2001	BE ₅₄	16.3	X	21.54007	256.30800	299.80542	1.30039	0.1581528	0.26411653	2.4058709	20	4 20.7	18.4
107234	2001	BL ₅₄	15.3	X	247.27234	44.01582	110.80680	1.73962	0.0913479	0.18956203	3.0012475	20	11 28.3	19.3
107235	2001	BR ₅₄	16.1	X	77.11190	228.79257	240.17006	5.72783	0.0758665	0.26312952	2.4118835	20	3 10.4	19.1
107236	2001	BM ₅₅	16.0	X	146.65033	183.07733	225.48496	5.55731	0.0913160	0.26656758	2.3911005	20	3 23.6	19.3
107237	2001	BB ₅₆	15.8	X	234.78027	73.50329	50.77280	1.98241	0.0999866	0.23622102	2.5917336	20	10 13.3	19.2
107238	2001	BF ₅₆	16.2	X	357.50926	28.11883	357.10654	3.24773	0.1821029	0.29283714	2.2458734	20	—	—
107239	2001	BS ₅₆	15.4	X	120.53170	298.69707	132.98073	2.75750	0.0814777	0.21415784	2.7668146	20	3 28.7	19.3
107240	2001	BE ₅₇	15.9	X	354.94813	215.27459	223.79885	7.78884	0.1101631	0.29815503	2.2190885	20	—	—
107241	2001	BE ₅₈	16.0	X	120.62348	94.73666	256.97045	1.25824	0.0748097	0.30374363	2.1917849	20	—	—
107242	2001	BH ₅₈	16.1	X	68.02221	273.86871	123.66945	4.24433	0.1024801	0.30345890	2.1931557	20	—	—
107243	2001	BJ ₅₈	16.3	X	93.64484	182.26811	239.67485	1.83995	0.2011663	0.26101092	2.4249173	20	2 21.2	19.0
107244	2001	BQ ₅₈	15.8	X	72.34782	28.30110	129.04342	7.30677	0.0512681	0.26779113	2.3838116	20	5 12.9	18.7
107245	2001	BW ₅₈	16.3	X	114.49863	56.85528	123.48300	3.98496	0.1909327	0.27537065	2.3398658	20	8 24.3	19.8
107246	2001	BY ₅₈	16.1	X	358.27751	46.34005	129.86314	3.38783	0.1387326	0.25869198	2.4393872	20	2 4.2	18.4
107247	2001	BB ₅₉	15.3	X	236.10938	281.98972	147.66018	15.80308	0.1873141	0.22929169	2.6436899	20	7 21.5	19.4
107248	2001	BC ₅₉	16.4	X	101.02489	284.06091	267.82595	1.95005	0.1104259	0.27470195	2.3436615	20	8 16.1	19.6
107249	2001	BE ₅₉	15.9	X	197.61309	95.46371	140.37727	4.63865	0.1648361	0.29299353	2.2450742	20	—	—
107250	2001	BJ ₅₉	16.3	X	42.35519	318.58096	151.24333	4.69623	0.1451873	0.25841488	2.4411307	20	1 22.1	18.4
107251	2001	BN ₅₉	16.5	X	162.24483	225.55194	242.35629	3.14118	0.1769365	0.27446664	2.3450009	20	7 3.3	20.1
107252	2001	BS ₅₉	15.5	X	189.08474	191.92940	292.26334	5.88498	0.1443848	0.22866597	2.6485105	20	8 15.9	19.7
107253	2001	BF ₆₂	15.4	X	162.20171	274.44551	257.18590	3.04442	0.0876890	0.23026590	2.6362280	20	9 19.8	19.3
107254	2001	BJ ₆₂	16.1	X	356.82806	255.98867	180.10793	3.18664	0.0784963	0.29698089	2.2249335	20	—	—
107255	2001	BQ ₆₂	16.0	X	148.41902	187.24689	290.40060	6.32375	0.1552414	0.27418326	2.3466164	20	7 2.7	19.5
107256	2001	BY ₆₂	16.1	X	53.34790	185.40893	278.57163	4.80414	0.1527241	0.25925101	2.4358792	20	2 3.9	18.3
107257	2001	BD ₆₃	16.0	X	216.05634	248.50367	168.08820	3.80135	0.1174754	0.27567150	2.3381631	20	6 21.8	19.3
107258	2001	BG ₆₃	15.7	X	10.78615	75.22724	162.16876	5.08716	0.1937731	0.26791401	2.3830826	20	6 7.8	17.5
107259	2001	BT ₆₃	16.3	X	272.74906	0.04807	144.79385	3.15921	0.1858259	0.24270016	2.5453998	20	12 23.9	18.9
107260	2001	BC ₆₄	15.1	X	56.84188	226.11398	294.47867	8.21713	0.0995486	0.21442846	2.7644862	20	4 26.9	18.7
107261	2001	BM ₆₄	15.6	X	357.48002	175.43844	329.10192	22.39096	0.1444399	0.25415470	2.4683341	20	—	—
107262	2001	BR ₆₄	16.1	X	148.43941	286.53680	265.34536	5.90342	0.0526797	0.28374473	2.2935991	20	10 7.4	19.3
107263	2001	BX ₆₅	16.2	X	25.52828	68.58979	137.22179	5.90036	0.1214332	0.26454013	2.4033020	20	5 15.2	18.6
107264	2001	BA ₆₈	15.8	X	345.66885	67.68332	81.58671	3.17367	0.1369579	0.25292722	2.4763137	20	—	—
107265	2001	BP ₆₈	16.0	X	16.01417	29.75502	18.96395	4.96140	0.1679821	0.29661242	2.2267758	20	—	—
107266	2001	BZ ₆₈	15.9	X	80.32715	25.10179	67.52691	2.01718	0.1451685	0.25993676	2.4315932	20	3 7.8	18.5
107267	2001	BA ₆₉	15.8	X	174.76361	105.19758	352.06340	3.18694	0.1682907	0.27379787	2.3488179	20	7 1.7	19.4
107268	2001	BS ₆₉	15.8	X	90.97450	79.72210	115.26650	6.91885	0.1584046	0.27223232	2.3578143	20	8 16.0	19.1
107269	2001	BF ₇₀	15.0	X	225.73243	280.61609	170.41239	23.51101	0.2474904	0.28079279	2.3096460	20	8 3.4	18.9
107270	2001	BN ₇₀	15.9	X	150.03254	110.03213	244.52061	2.17765						

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	H	G	M	ω	Ω	i	e	μ	a	TE	Oppos.	V
107281 2001 BH ₇₅	16.1	X	30.71240	291.50197	314.86162	1.63871	0.1735952	0.27188005	2.3598505	20	8 4.1	18.3
107282 2001 BL ₇₅	15.2	X	335.25735	158.44876	325.11344	4.27736	0.0687803	0.19862414	2.9092522	20	—	—
107283 2001 BG ₇₆	14.9	X	188.53448	254.91404	178.66986	21.46349	0.2595559	0.27497678	2.3420996	20	6 12.5	19.4
107284 2001 BL ₇₆	15.4	X	10.17236	111.18223	275.58232	13.06627	0.2207938	0.24435597	2.5338880	20	—	—
107285 2001 BN ₇₆	15.7	X	120.06419	349.23884	271.19376	6.65916	0.1087845	0.28687666	2.2768753	20	12 8.2	18.8
107286 2001 BU ₇₆	16.6	X	0.72608	38.54100	130.45445	2.04939	0.1211888	0.25844926	2.4409142	20	1 31.1	19.2
107287 2001 BE ₇₉	16.5	X	149.68406	272.38058	133.10216	2.70965	0.1731521	0.26687775	2.3892475	20	4 2.3	20.0
107288 2001 BK ₇₉	16.6	X	46.38147	225.12779	115.32174	4.94669	0.0569664	0.26758248	2.3850506	20	5 1.9	19.3
107289 2001 BM ₈₂	15.9	X	133.78845	255.99692	347.90683	9.16812	0.0967282	0.25957706	2.4338390	20	3 6.7	19.1
107290 2001 CA	16.4	X	50.34167	187.17984	334.17404	1.94745	0.1436917	0.26387299	2.4073510	20	4 23.4	18.7
107291 2001 CF	15.2	X	15.00651	109.52599	51.01544	7.26176	0.0403399	0.26101800	2.4248735	20	2 20.7	18.2
107292 2001 CZ	16.2	X	191.40688	27.83079	71.78596	2.11512	0.1666170	0.27804222	2.3248533	20	7 21.2	19.6
107293 2001 CF ₁	15.7	X	221.82533	45.18412	0.20247	4.54561	0.2127110	0.27647630	2.3336234	20	6 4.6	19.4
107294 2001 CR ₁	15.5	X	269.82962	96.68626	358.70893	4.00112	0.2615794	0.23871415	2.5736566	20	9 26.5	18.6
107295 2001 CG ₃	16.0	X	141.27317	43.27863	9.65380	2.52274	0.1651297	0.26470384	2.4023110	20	4 1.6	19.3
107296 2001 CS ₃	15.2	X	21.49271	173.91329	353.41769	7.58932	0.1483778	0.20929701	2.8094892	20	3 14.9	18.0
107297 2001 CD ₄	15.5	X	75.98485	106.44480	22.40599	3.94727	0.1226868	0.26395882	2.4068291	20	4 16.1	18.2
107298 2001 CH ₄	15.2	X	234.75965	334.55260	134.58257	18.31237	0.1005840	0.23293542	2.6160479	20	9 27.8	19.1
107299 2001 CX ₄	16.4	X	306.79778	34.80564	54.28023	3.72153	0.1549821	0.29237759	2.2482261	20	—	—
107300 2001 CZ ₅	15.8	X	114.37640	297.93519	113.21499	5.41992	0.2154474	0.26222011	2.4174568	20	3 9.8	19.1
107301 2001 CC ₆	15.8	X	301.13488	277.60305	95.80456	4.37194	0.1065513	0.28108005	2.3080721	20	8 25.4	18.0
107302 2001 CD ₆	16.1	X	229.27567	117.67850	110.96574	6.39459	0.2258091	0.24557931	2.5254661	20	—	—
107303 2001 CE ₆	16.6	X	184.14821	12.55301	107.76658	3.55819	0.1790866	0.27873920	2.3209762	20	8 13.9	19.8
107304 2001 CF ₇	16.4	X	278.34206	342.85483	127.92677	5.74891	0.0968871	0.29084929	2.2560950	20	12 12.5	18.6
107305 2001 CM ₇	16.1	X	302.48772	243.19578	349.38575	4.25352	0.1483201	0.25712959	2.4492588	20	1 28.8	19.4
107306 2001 CX ₇	16.2	X	35.41287	118.25064	4.81650	6.17572	0.0995489	0.25751940	2.4467865	20	1 30.4	18.8
107307 2001 CE ₈	16.4	X	88.06626	166.53646	2.24367	3.72299	0.1454547	0.26983681	2.3717482	20	7 4.2	19.5
107308 2001 CR ₈	16.6	X	148.89090	107.62618	14.56987	4.75396	0.0960454	0.27291231	2.3538962	20	7 7.3	20.0
107309 2001 CU ₈	16.4	X	304.49623	348.03786	64.92576	4.44949	0.1350922	0.28687943	2.2768606	20	11 1.0	18.1
107310 2001 CF ₉	16.8	X	85.08156	129.54247	28.55157	3.13151	0.1305272	0.26858020	2.3791403	20	6 11.7	19.7
107311 2001 CY ₉	16.3	X	103.66509	67.81573	147.78653	7.17280	0.1643164	0.27864732	2.3214864	20	9 28.4	19.7
107312 2001 CA ₁₀	15.0	X	349.30861	12.11021	42.42505	9.96598	0.2463038	0.24451978	2.5327562	20	—	—
107313 2001 CW ₁₀	16.3	X	125.32763	46.47775	77.48416	3.29121	0.1591861	0.27164506	2.3612112	20	6 17.3	19.8
107314 2001 CC ₁₁	15.9	X	175.90262	95.93993	111.31509	8.31847	0.1334636	0.23724051	2.5843033	20	11 20.2	19.9
107315 2001 CJ ₁₁	17.0	X	208.53408	21.54933	80.10592	2.50571	0.2018434	0.28126087	2.3070828	20	8 8.1	20.6
107316 2001 CQ ₁₁	15.5	X	180.87161	44.35478	34.29799	3.39381	0.1584455	0.22358342	2.6884976	20	6 11.8	19.8
107317 2001 CU ₁₁	15.5	X	157.12681	69.20208	340.03941	8.97242	0.1225212	0.21627836	2.7487000	20	4 8.9	19.9
107318 2001 CE ₁₂	15.8	X	295.86563	46.85195	336.30499	5.92435	0.1125149	0.28262552	2.2996503	20	8 28.5	18.1
107319 2001 CL ₁₂	16.5	X	145.73489	107.72922	49.50682	3.31235	0.0981779	0.27805268	2.3247950	20	8 22.2	19.7
107320 2001 CC ₁₃	15.8	X	84.51408	104.10328	65.47295	3.55770	0.1426639	0.27001031	2.3707321	20	6 29.8	18.9
107321 2001 CL ₁₃	14.6	X	187.28483	302.88013	128.79107	18.35833	0.2908880	0.17276860	3.1927102	20	6 10.2	20.6
107322 2001 CF ₁₄	15.1	X	13.08377	297.54921	111.88367	10.04043	0.0713533	0.19508169	2.9443654	20	—	—
107323 2001 CH ₁₄	15.7	X	183.69377	282.51874	100.12270	2.47571	0.1926636	0.26838964	2.3802663	20	4 5.6	19.5
107324 2001 CM ₁₄	16.5	X	171.54304	111.88962	107.01794	5.52898	0.1055948	0.28967133	2.2622072	20	12 10.6	19.5
107325 2001 CE ₁₅	15.9	X	92.27402	33.96843	35.09405	4.27955	0.0727592	0.25974230	2.4328066	20	2 11.7	18.8
107326 2001 CM ₁₅	16.0	X	358.92112	328.05951	69.50558	2.47859	0.1577439	0.24362025	2.5389869	20	—	—
107327 2001 CU ₁₅	16.1	X	80.06664	139.39802	92.27750	4.51596	0.1797720	0.27704760	2.3304142	20	9 26.7	19.4
107328 2001 CM ₁₆	15.0	X	65.38301	277.27395	332.92812	12.04565	0.1486006	0.22687038	2.6624667	20	9 17.3	18.8
107329 2001 CR ₁₆	16.7	X	128.71943	27.73585	69.45460	3.08209	0.1610772	0.26898668	2.3767429	20	5 16.3	20.1
107330 2001 CN ₁₇	16.5	X	123.11547	82.15056	63.98116	3.94899	0.1360708	0.27290036	2.3539649	20	7 13.5	19.8
107331 2001 CT ₁₇	15.9	X	141.04379	176.13753	13.87800	5.36662	0.0228322	0.23150335	2.6268254	20	9 21.4	19.4
107332 2001 CX ₁₇	14.7	X	221.64926	282.10670	224.67002	14.52525	0.2309893	0.23713755	2.5850513	20	10 7.6	18.9
107333 2001 CM ₁₈	16.7	X	6.67349	320.46166	122.74088	3.73731	0.1054914	0.30120044	2.2041052	20	—	—
107334 2001 CH ₁₉	16.7	X	103.45749	186.10396	18.69930	9.02044	0.1571709	0.27736722	2.3286236	20	9 11.4	20.0
107335 2001 CL ₁₉	16.8	X	354.34508	58.28000	110.56482	2.27788	0.1244090	0.25788271	2.4444879	20	1 19.8	19.4
107336 2001 CA ₂₀	17.2	X	156.03681	89.38147	71.28922	1.82083	0.1336514	0.27932222	2.3177454	20	9 6.6	20.7
107337 2001 CE ₂₂	16.2	X	162.00913	124.01370	345.12087	5.22581	0.1019220	0.27540772	2.3396558	20	7 4.5	19.6
107338 2001 CG ₂₂	16.5	X	80.35569	121.67837	51.57907	3.24056	0.0977413	0.27140278	2.3626162	20	6 21.9	19.3
107339 2001 CT ₂₂	15.1	X	261.12121	77.46961	97.94668	3.29796	0.0384626	0.19586759	2.9364842	20	—	—
107340 2001 CB ₂₃	15.5	X	101.94565	325.37799	310.52974	5.39051	0.1179456	0.23798969	2.5788770	20	11 29.5	19.4
107341 2001 CE ₂₃	15.5	X	92.29486	113.89190	137.89610	8.44131	0.1834440	0.23141045	2.6275283	20	10 29.7	19.7
107342 2001 CO ₂₃	16.3	X	74.54107	305.83209	124.21860	4.59421	0.1699616	0.25889934	2.4380845	20	1 29.0	18.7
107343 2001 CP ₂₃	16.5	X	22.47946	171.23896	349.74248	0.86996	0.1309774	0.26113482	2.4241502	20	2 28.1	18.7
107344 2001 CV ₂₃	16.4	X	48.41180	46.48036	157.00327	2.82396	0.1172007	0.27025195	2.3693187	20	6 20.4	18.8
107345 2001 CM ₂₄	15.3	X	143.74422	303.30712	291.07490	13.02035	0.1278104	0.23753041	2.5822002	20	11 18.2	19.5
107346 2001 CP ₂₄	16.0	X	61.38704	279.40735	267.82172	6.13609	0.0965162	0.27104106	2.3647178	20	6 13.7	18.6
107347 2001 CG ₂₅	15.0	X	149.20148	292.79082	93.32936	7.02332	0.0709737	0.21067696	2.7972075	20	3 6.0	19.1
107348 2001 CN ₂₅	16.6	X	43.97392	167.18196	47.01599	3.46922	0					

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>	
107361	2001 CX ₂₈	15.9	X	285.17903	41.50564	25.20235	6.58591	0.1665115	0.28756274	2.2732523	20	10 9.8	17.6
107362	2001 CG ₂₉	16.0	X	225.98069	164.37179	352.21497	9.56921	0.1363830	0.23784830	2.5798988	20	11 4.4	19.8
107363	2001 CJ ₂₉	15.8	X	125.68765	91.72900	96.35677	6.78677	0.1227120	0.27819383	2.3240085	20	9 13.6	19.2
107364	2001 CL ₂₉	16.6	X	319.48747	81.77466	123.40153	14.29286	0.1600796	0.25629018	2.4546038	20	1 11.2	19.8
107365	2001 CQ ₂₉	16.5	X	35.53973	199.58744	14.22124	3.25267	0.1175344	0.26917902	2.3756105	20	6 12.9	18.8
107366	2001 CR ₂₉	15.2	X	32.00855	318.65316	115.76825	3.24947	0.0384511	0.20041850	2.8918616	20	—	—
107367	2001 CG ₃₀	15.9	X	74.09907	92.75867	87.99835	7.58233	0.0605714	0.27127783	2.3633417	20	6 17.6	18.7
107368	2001 CH ₃₀	16.2	X	191.22529	138.60811	34.91714	5.63837	0.2005048	0.23480371	2.6021525	20	10 17.9	20.5
107369	2001 CL ₃₀	15.2	X	256.85545	301.17544	175.29209	12.03230	0.2433159	0.23691245	2.5866884	20	10 11.4	18.5
107370	2001 CQ ₃₀	15.1	X	274.97250	349.95310	113.80522	13.24550	0.1776718	0.23876420	2.5732970	20	11 6.2	18.3
107371	2001 CN ₃₁	15.8	X	240.96379	323.61737	315.68649	4.69516	0.1061443	0.25701090	2.4500128	20	1 23.2	19.2
107372	2001 CP ₃₁	16.3	X	98.65288	322.70080	138.14025	5.97245	0.1508433	0.26480036	2.4017272	20	4 16.8	19.4
107373	2001 CR ₃₁	15.7	X	159.31705	32.21779	13.78484	21.36551	0.0812375	0.36813388	1.9281117	20	3 30.2	17.8
107374	2001 CF ₃₄	15.0	X	251.29198	58.49285	83.60023	14.35067	0.1218543	0.23950184	2.5680106	20	11 26.6	18.3
107375	2001 CK ₃₄	15.2	X	203.18846	36.05115	74.27242	16.15721	0.1446159	0.22908556	2.6452755	20	8 20.0	19.6
107376	2001 CG ₃₆	16.2	X	156.03296	110.45847	20.27665	6.59333	0.1380903	0.27515613	2.3410818	20	7 29.7	19.9
107377	2001 CL ₃₆	15.9	X	48.78078	73.92514	86.47486	7.11744	0.0666751	0.26348828	2.4096937	20	4 14.2	18.7
107378	2001 CU ₃₆	15.2	X	88.31808	125.40698	150.99175	22.41423	0.2172007	0.28257943	2.2999004	20	12 6.2	19.4
107379	Johnlogan	15.5	X	147.12096	72.21995	358.18679	3.93465	0.0632579	0.21354857	2.7720748	20	4 20.6	19.5
107380	2001 CY ₃₈	14.4	X	290.70985	6.43400	84.55727	12.36097	0.0969765	0.19042316	2.9921925	20	11 10.4	18.3
107381	2001 CP ₃₉	15.8	X	261.48369	40.55230	16.25354	6.09987	0.1441617	0.28430264	2.2905975	20	8 19.3	18.4
107382	2001 CT ₃₉	15.6	X	263.00629	21.63377	16.88007	6.80551	0.0857643	0.28102756	2.3083595	20	8 4.2	18.4
107383	2001 CN ₄₀	15.5	X	305.08894	56.81385	34.98233	13.79902	0.0631083	0.24187685	2.5511726	20	12 13.9	18.7
107384	2001 CC ₄₁	15.3	X	183.65553	5.58056	86.79426	13.16474	0.1470416	0.22370766	2.6875021	20	7 2.1	19.5
107385	2001 CL ₄₁	15.6	X	7.80040	100.95814	273.53359	1.56394	0.2170938	0.29247392	2.2477325	20	—	—
107386	2001 CS ₄₂	16.5	X	48.06073	220.47748	348.57796	2.72682	0.1744895	0.26820172	2.3813781	20	7 8.7	19.0
107387	2001 CU ₄₂	16.7	X	67.61629	354.80321	126.39071	1.41352	0.1618693	0.26263591	2.4149046	20	3 29.9	19.2
107388	2001 CY ₄₃	15.3	X	48.62450	121.33322	80.54462	10.84282	0.1610246	0.26814489	2.3817145	20	6 25.5	17.7
107389	2001 CQ ₄₄	15.7	X	286.99773	80.17063	41.14567	12.54344	0.1429725	0.24216547	2.5491452	20	12 20.8	18.5
107390	2001 CT ₄₅	15.2	X	204.40299	82.04523	95.08184	14.43800	0.0337740	0.23633188	2.5909230	20	11 24.7	18.9
107391	2001 CW ₄₅	15.5	X	187.88641	132.85792	89.92162	15.05436	0.0319255	0.23947542	2.5681995	20	12 29.9	18.9
107392	2001 CZ ₄₅	15.8	X	202.85160	345.78651	58.97152	11.29784	0.0738114	0.27041974	2.3683386	20	5 23.6	18.9
107393	Bernacca	15.4	X	143.28920	220.47102	88.04087	3.30422	0.0629985	0.19896262	2.9059517	20	—	—
107394	2001 CJ ₄₉	15.6	X	290.42307	206.07929	75.53104	2.96576	0.2120841	0.26159607	2.4212998	20	3 8.3	18.9
107395	2001 CR ₄₉	15.4	X	48.72337	34.49619	154.06637	8.18282	0.0470160	0.21815883	2.7328818	20	5 21.9	19.0
107396	2001 DU	16.2	X	261.18845	66.91156	33.10360	1.53150	0.0421518	0.23533308	2.5982488	20	10 24.5	19.5
107397	2001 DY	15.9	X	230.06956	225.86277	357.11167	3.75190	0.1953493	0.24438135	2.5337125	20	—	—
107398	2001 DA ₁	15.9	X	355.63215	72.94793	163.68720	3.22375	0.1442226	0.26347066	2.4098012	20	5 1.2	17.9
107399	2001 DJ ₁	17.3	X	284.66907	136.15764	139.73287	5.42659	0.1774906	0.31252732	2.1505229	20	2 21.1	19.9
107400	2001 DP ₂	16.6	X	314.32809	295.34190	324.88601	7.45652	0.2143191	0.31350747	2.1460382	20	2 29.6	19.1
107401	2001 DS ₂	16.4	X	6.05396	236.94287	340.02901	1.76748	0.1534703	0.26439948	2.4041542	20	4 19.6	18.5
107402	2001 DW ₂	16.6	X	81.28956	271.49974	112.19451	24.76634	0.1016209	0.35460449	1.9768478	20	—	—
107403	2001 DW ₃	16.0	X	343.12083	209.48620	31.93852	6.58510	0.0749327	0.26616221	2.3935277	20	4 18.9	18.6
107404	2001 DA ₅	16.4	X	133.79253	211.95506	16.20575	5.74064	0.0573908	0.28532439	2.2851258	20	11 9.5	19.4
107405	2001 DS ₅	15.8	X	55.35236	352.55082	50.44287	8.00080	0.1208047	0.30122776	2.2039719	20	—	—
107406	2001 DG ₆	16.1	X	302.64913	345.14986	99.43540	5.79675	0.0529853	0.28841148	2.2687903	20	12 16.8	18.6
107407	2001 DS ₆	16.2	X	77.87774	42.47153	162.16318	2.71858	0.1169439	0.27115489	2.3640560	20	8 5.4	19.2
107408	2001 DZ ₆	16.0	X	73.91049	263.18378	165.56535	2.01926	0.1514685	0.25753726	2.4466734	20	1 23.1	18.3
107409	2001 DS ₇	16.1	X	119.88953	20.27447	150.30615	6.38177	0.0719400	0.27658013	2.3330393	20	8 5.9	19.2
107410	2001 DV ₇	16.8	X	83.64611	223.30864	274.75948	1.54088	0.1301440	0.26656684	2.3911049	20	5 11.8	19.5
107411	2001 DG ₈	16.6	X	283.32124	123.12979	133.05174	1.82346	0.1535783	0.25845484	2.4408791	20	2 2.9	19.9
107412	2001 DX ₈	16.7	X	332.10085	146.14940	350.90197	18.84864	0.0544813	0.35195115	1.9867709	20	—	—
107413	2001 DE ₉	15.7	X	348.38917	191.80836	154.45835	23.96953	0.1801137	0.28059735	2.3107183	20	10 27.4	18.2
107414	2001 DS ₉	14.7	X	101.48172	77.37450	73.85478	8.29090	0.0569655	0.16794029	3.2536147	20	6 11.5	19.2
107415	2001 DU ₉	16.1	X	275.22120	162.18986	70.30833	7.38379	0.0958370	0.25361546	2.4718317	20	1 2.5	19.5
107416	2001 DX ₉	15.6	X	250.90067	347.27057	88.23405	7.44501	0.1445635	0.28229159	2.3014635	20	8 31.9	18.5
107417	2001 DZ ₉	15.6	X	35.67368	199.13454	56.00212	7.43528	0.0795967	0.27369726	2.3493934	20	8 14.6	18.3
107418	2001 DH ₁₀	16.4	X	67.94286	181.31671	40.33693	5.55625	0.1823065	0.27353672	2.3503126	20	8 30.0	19.5
107419	2001 DV ₁₀	15.8	X	113.67417	136.85117	149.12300	5.34193	0.1135542	0.23827592	2.5768113	20	12 24.0	19.8
107420	2001 DC ₁₁	16.3	X	157.60254	56.07137	136.21339	6.35095	0.1288007	0.28291493	2.2980817	20	10 22.0	19.7
107421	2001 DF ₁₁	16.7	X	86.24778	48.37568	41.43568	1.87428	0.1584527	0.26147885	2.4220234	20	3 14.6	19.3
107422	2001 DO ₁₁	16.3	X	182.01099	70.78898	135.77478	6.29845	0.1316870	0.23622645	2.5916938	20	11 24.6	20.3
107423	2001 DR ₁₁	16.4	X	117.32372	334.97737	90.68257	2.82623	0.1671476	0.26242545	2.4161955	20	3 25.0	19.6
107424	2001 DC ₁₂	15.2	X	184.27271	248.77774	116.59812	5.37928	0.0855052	0.20971585	2.8057472	20	3 18.2	19.5
107425	2001 DF ₁₂	15.5	X	252.39985	219.71926	61.42702	3.19653	0.1762818	0.25523018	2.4613953	20	2 2.2	19.3
107426	2001 DL ₁₃	15.2	X	357.57606	244.55507	34.21102	7.82033	0.2104335	0.26743706	2.3859151	20	7 19.7	17.0
107427	2001 DM ₁₃	15.9	X	39.28151	55.58291	77.59733	6.95362	0.0528329	0.25683779	2.4511135	20	2 19.8	18.8
107428	2001 DP ₁₃	16.2	X	160.03655	50.20823	103.43802	8.03328	0.0361971	0.27649101	2.3335407	20	9 4.9	19.3
107429	2001 DQ ₁₃	15.4	X	270.04666	66.66383	64.37958	6.83624	0.2265587	0.23981929	2.5657439	20	11 22.4	18.0
107430	2001 DU ₁₃	15.2	X	71.84300	193.48564	66.06489	8.14481	0.2105673	0.22440331	2.6819451	20	10 20.5	19.2
107431	2001 DD ₁₄	16.3	X	71.08798	40.94655	322.54150	17.10890	0.1010225	0.34886268	1.9984795	20	—	—
107432	2001 DM ₁₄	16.5	X	244.43341	302.21712	305.37375	6.67362	0.2067468	0.30087710	2			

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>		
107441	2001	DE ₁₇	15.9 ^m	X	254.83452	106.61321	66.81455	7.10656	0.1226111	0.24265236	2.5457341	20	—	—
107442	2001	DR ₁₇	15.3	X	29.04260	136.31398	127.25391	10.96711	0.2248049	0.21986704	2.7187084	20	8 30.9	18.3
107443	2001	DX ₁₇	15.4	X	357.06264	177.05791	55.25414	6.69417	0.0816154	0.26457506	2.4030904	20	4 30.1	18.0
107444	2001	DF ₁₈	16.6	X	142.62243	50.98687	70.82528	6.54652	0.1890678	0.27217763	2.3581301	20	7 4.0	20.3
107445	2001	DR ₁₈	15.6	X	157.29655	197.13985	49.97311	8.25607	0.1633304	0.23669972	2.5882381	20	12 16.4	19.9
107446	2001	DO ₁₉	15.8	X	234.62759	95.30074	121.58721	8.29147	0.1388924	0.24382709	2.5375508	20	—	—
107447	2001	DR ₁₉	15.7	X	166.00105	65.33373	83.61046	5.66943	0.0925548	0.27767120	2.3269238	20	9 4.1	19.0
107448	2001	DS ₁₉	14.4	X	106.72154	20.21847	145.03033	19.61729	0.0709374	0.16851062	3.2462692	20	7 7.7	19.4
107449	2001	DB ₂₀	16.3	X	16.12262	185.25052	44.90393	7.44665	0.0334699	0.26826078	2.3810285	20	5 26.5	19.0
107450	2001	DE ₂₀	15.7	X	151.49950	20.51556	94.24912	6.07312	0.1124645	0.22081281	2.7109398	20	6 28.4	19.9
107451	2001	DG ₂₀	16.5	X	102.63750	68.26102	134.26559	12.47671	0.1174134	0.27495158	2.3422427	20	9 5.7	19.8
107452	2001	DA ₂₁	15.6	X	320.14474	1.10445	85.97265	5.50243	0.2335806	0.24277603	2.5448695	20	—	—
107453	2001	DQ ₂₃	16.5	X	106.36410	94.43988	96.08784	3.78048	0.1044671	0.27587588	2.3370082	20	8 22.4	19.6
107454	2001	DR ₂₃	16.8	X	348.98086	193.10919	27.98483	3.55357	0.0441713	0.31517692	2.1384533	20	3 28.3	18.9
107455	2001	DD ₂₄	16.2	X	94.00702	126.87836	7.77888	4.42658	0.0688594	0.26751660	2.3854422	20	5 7.1	19.2
107456	2001	DF ₂₄	16.5	X	333.06504	153.09943	51.91802	3.24992	0.1362238	0.25842779	2.4410494	20	2 4.2	19.2
107457	2001	DS ₂₄	15.6	X	320.72356	314.57179	109.69974	5.69184	0.1204961	0.23995418	2.5647822	20	12 3.7	18.4
107458	2001	DN ₂₆	16.0	X	192.79199	293.56867	101.08632	3.35062	0.1686475	0.26908781	2.3761473	20	4 28.8	19.8
107459	2001	DP ₂₆	15.6	X	172.75132	335.47534	84.76002	2.87116	0.2043432	0.21952790	2.7215077	20	5 13.8	20.1
107460	2001	DB ₂₆	16.3	X	342.32469	114.67239	89.77934	2.25870	0.1299444	0.25912044	2.4366974	20	2 18.8	18.9
107461	2001	DS ₂₇	16.4	X	170.66459	94.45532	8.37732	7.38100	0.0630760	0.27339506	2.3511244	20	7 5.9	19.7
107462	2001	DE ₂₈	16.4	X	101.59286	33.00426	46.62482	2.62560	0.1718320	0.26216383	2.4178028	20	3 24.4	19.3
107463	2001	DG ₂₈	15.9	X	248.81749	218.81829	102.41214	5.29575	0.0331185	0.26364419	2.4087436	20	4 3.8	19.0
107464	2001	DJ ₂₈	16.9	X	172.44442	30.51625	122.52201	6.63951	0.1757177	0.28024044	2.3126798	20	9 13.2	20.5
107465	2001	DN ₂₈	14.9	X	12.11764	201.18095	21.44866	5.17754	0.0989685	0.21435465	2.7651208	20	5 12.3	18.0
107466	2001	DV ₂₈	15.9	X	240.96786	70.24168	57.43543	3.50537	0.1514461	0.23601947	2.5932089	20	10 18.5	19.2
107467	2001	DX ₂₈	15.7	X	8.57207	123.68035	116.24735	2.31181	0.1421303	0.26656598	2.3911101	20	6 3.2	17.6
107468	2001	DY ₂₉	15.9	X	245.84543	87.16164	45.26497	3.07639	0.1405561	0.23699364	2.5860977	20	11 1.0	19.2
107469	2001	DB ₃₀	16.4	X	80.16033	152.87945	8.72384	5.32945	0.1647908	0.26761222	2.3848739	20	6 15.4	19.4
107470	2001	DO ₃₁	15.6	X	324.17672	233.63859	31.31403	5.15306	0.1826542	0.26275315	2.4141862	20	4 6.6	18.0
107471	2001	DT ₃₁	16.2	X	76.80381	120.69079	58.74104	3.11764	0.1297487	0.26877794	2.3779733	20	7 1.3	19.0
107472	2001	DB ₃₂	16.1	X	30.85343	104.30265	64.68652	3.42291	0.1232335	0.26130787	2.4230799	20	3 29.4	18.4
107473	2001	DJ ₃₂	15.9	X	343.34488	188.47769	76.11707	3.81591	0.1888419	0.26522322	2.3991736	20	5 14.9	17.6
107474	2001	DE ₃₃	15.9	X	176.43198	130.66104	23.60949	4.20142	0.1488007	0.22939034	2.6429319	20	9 13.5	20.1
107475	2001	DK ₃₃	15.7	X	254.57014	353.01638	75.66329	2.82894	0.1498284	0.28110749	2.3079219	20	8 23.9	18.4
107476	2001	DL ₃₃	15.4	X	115.81739	161.45843	143.92431	9.87974	0.0089033	0.24131199	2.5551522	20	—	—
107477	2001	DW ₃₃	15.9	X	10.07588	187.20077	38.81736	4.08649	0.1936634	0.26370055	2.4084004	20	5 15.3	17.5
107478	2001	DX ₃₄	16.1	X	114.83033	89.83174	145.96044	6.04613	0.0877062	0.28431743	2.2905181	20	11 2.1	19.3
107479	2001	DK ₃₅	16.5	X	139.65179	24.20677	146.15441	7.30121	0.1107599	0.27872352	2.3210632	20	9 1.7	19.7
107480	2001	DS ₃₅	16.2	X	330.04053	294.98143	149.68891	5.64040	0.1502390	0.24524605	2.5277534	20	—	—
107481	2001	DH ₃₆	16.6	X	101.83623	329.95989	148.83576	1.64633	0.1393146	0.26736882	2.3863211	20	5 11.8	19.5
107482	2001	DP ₃₆	15.8	X	235.40436	165.04809	314.01017	2.86777	0.1313914	0.23535473	2.5980894	20	9 30.7	19.3
107483	2001	DQ ₃₆	15.8	X	181.88765	296.08193	116.24497	2.68349	0.0763049	0.21885020	2.7271231	20	5 11.5	19.7
107484	2001	DS ₃₆	15.9	X	205.76496	54.05534	141.91614	8.77932	0.1326905	0.23945716	2.5683301	20	12 6.8	19.8
107485	2001	DG ₃₇	16.2	X	242.82718	23.38929	125.29388	3.71115	0.0650856	0.23959343	2.5673561	20	11 30.9	19.4
107486	2001	DL ₃₇	15.2	X	91.16318	114.57814	145.38711	15.14102	0.0774073	0.23267405	2.6180066	20	10 30.9	19.2
107487	2001	DN ₃₇	16.0	X	72.34358	67.89865	356.53969	1.97121	0.1607402	0.25690554	2.4506826	20	1 16.5	18.3
107488	2001	DR ₃₇	15.9	X	210.50793	237.79934	351.63734	2.59905	0.2116479	0.24303025	2.5430944	20	—	—
107489	2001	DB ₃₈	16.1	X	302.80419	185.59774	274.45213	5.60934	0.0357160	0.29391515	2.2403785	20	—	—
107490	2001	DR ₃₉	15.3	X	84.00337	319.24008	322.85236	11.63924	0.0877517	0.23538414	2.5978730	20	11 11.7	19.3
107491	2001	DB ₄₁	15.1	X	192.33609	198.51793	51.90444	2.85479	0.0345316	0.19275238	2.9680386	20	—	—
107492	2001	DK ₄₁	16.2	X	234.66974	294.30165	161.82534	5.50729	0.1115460	0.28296387	2.2978168	20	9 9.9	18.9
107493	2001	DE ₄₃	16.0	X	52.84368	98.54920	162.27480	2.69751	0.2198564	0.27498500	2.3420530	20	10 7.6	19.1
107494	2001	DM ₄₃	16.6	X	257.79058	129.72626	140.26033	5.36234	0.1116996	0.30724354	2.1751083	20	1 21.1	19.7
107495	2001	DP ₄₃	16.2	X	18.63107	270.67512	341.99939	1.95090	0.1807847	0.26936492	2.3745174	20	7 21.8	18.0
107496	2001	DS ₄₃	16.2	X	71.99890	321.38512	161.03176	1.46023	0.1324506	0.26245578	2.4160094	20	4 2.9	18.7
107497	2001	DO ₄₄	16.3	X	132.27463	46.70534	145.35950	7.05411	0.0724880	0.27916925	2.3185920	20	9 22.8	19.4
107498	2001	DQ ₄₄	16.3	X	17.90052	12.73228	149.56870	1.48765	0.1257292	0.25909813	2.4368373	20	2 21.6	18.3
107499	2001	DZ ₄₅	16.3	X	262.28004	11.66310	109.08160	2.92283	0.0895605	0.23775800	2.5805521	20	11 17.1	19.3
107500	2001	DJ ₄₆	16.5	X	254.98368	114.10406	142.39308	4.72898	0.1149136	0.30485434	2.1864580	20	—	—
107501	2001	DP ₄₆	16.7	X	256.79767	123.73747	97.87394	8.00588	0.1286798	0.29977793	2.2110723	20	—	—
107502	2001	DX ₄₇	16.4	X	76.21963	54.42773	8.27484	19.96889	0.0960325	0.35638156	1.9702707	20	—	—
107503	2001	DM ₄₈	15.7	X	87.29129	335.07082	34.86026	6.95168	0.2004098	0.30390752	2.1909969	20	—	—
107504	2001	DQ ₄₈	16.7	X	98.77681	106.90319	19.21939	7.20234	0.1513843	0.26813009	2.3818022	20	5 17.5	19.9
107505	2001	DK ₄₉	15.9	X	256.58289	67.58314	44.54504	6.69262	0.0984745	0.28848196	2.2684207	20	11 6.9	18.4
107506	2001	DM ₄₉	16.0	X	111.55064	111.09218	53.87884	7.06667	0.1105070	0.27373741	2.3491637	20	7 25.1	19.3
107507	2001	DP ₄₉	15.9	X	63.22835	11.44852	73.27763	7.46291	0.0545532	0.25682131	2.4512184	20	1 18.7	18.8
107508	2001	DV ₄₉	15.7	X	142.93045	23.87658	23.34203	6.80021	0.1113388	0.26537482	2.3982599	20	3 23.3	18.9
107509	2001	DC ₅₀	16.4	X	162.39589	126.79043	79.07172	7.26343	0.0966290	0.28629315	2.2799680	20	11 14.4	19.6
107510	2001	DK ₅₀	15.2	X	114.71832	249.75928	0.21480	14.24359	0.0549698	0.235624				

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>		
107521	2001	DV ₆₀	16.3	X	340.23603	353.93750	193.07985	2.21606	0.1368174	0.25743886	2.4472968	20	1 19.8	19.1
107522	2001	DY ₆₀	15.1	X	15.51255	325.05346	328.45886	12.32846	0.1760501	0.22657751	2.6647605	20	9 6.7	18.0
107523	2001	DZ ₆₀	15.9	X	172.47140	212.91293	320.09821	4.46134	0.0879470	0.28348573	2.2949959	20	10 9.7	19.0
107524	2001	DB ₆₁	16.7	X	184.31631	316.99079	152.22296	2.90816	0.1289259	0.27746881	2.3280552	20	7 27.7	20.2
107525	2001	DG ₆₁	15.8	X	344.48367	335.60121	287.65230	3.28477	0.1587845	0.26764763	2.3846636	20	5 16.6	17.8
107526	2001	DH ₆₁	16.5	X	54.80533	332.04061	208.84378	2.05980	0.1702294	0.26690569	2.3890808	20	6 6.1	18.9
107527	2001	DP ₆₁	16.5	X	82.94909	27.79648	203.72975	2.12994	0.1719862	0.27717309	2.3297108	20	9 25.8	19.8
107528	2001	DQ ₆₂	16.5	X	18.77045	15.03198	146.99602	2.83552	0.1441805	0.25988070	2.4319428	20	2 22.3	18.4
107529	2001	DB ₆₅	16.7	X	59.32769	329.60185	245.70545	0.61723	0.0842994	0.27185532	2.3599362	20	7 20.2	19.2
107530	2001	DE ₆₅	16.6	X	27.70439	335.34597	140.02644	2.95929	0.1297762	0.25567987	2.4585084	20	1 2.8	18.8
107531	2001	DR ₆₅	15.9	X	245.46742	141.98426	303.04472	3.62148	0.1605031	0.23213211	2.6220798	20	8 24.9	19.6
107532	2001	DZ ₆₆	15.5	X	181.60838	289.95488	335.53249	7.68020	0.1561288	0.29441527	2.2378407	20	—	—
107533	2001	DF ₆₇	15.7	X	283.83708	144.15550	331.43455	8.45729	0.0670828	0.23981277	2.5657904	20	12 14.4	18.9
107534	2001	DR ₆₇	16.0	X	208.75364	278.48797	160.41350	5.68482	0.1244980	0.27601490	2.3362234	20	7 12.9	19.3
107535	2001	DB ₆₈	16.0	X	342.00106	298.10073	339.92189	6.29387	0.1025797	0.26880337	2.3778233	20	6 9.0	18.5
107536	2001	DC ₆₈	16.7	X	265.21886	143.76349	342.66836	3.27225	0.2437274	0.23986570	2.5654130	20	11 3.5	19.7
107537	2001	DQ ₆₉	15.3	X	282.09948	274.08511	164.53739	10.09937	0.0952632	0.23472658	2.6027225	20	10 21.5	18.4
107538	2001	DR ₆₉	16.3	X	156.98892	105.09757	320.03095	2.48189	0.1921179	0.26772407	2.3842096	20	5 3.4	20.0
107539	2001	DB ₇₀	15.6	X	136.60119	276.89057	171.36173	9.74032	0.1791140	0.26749854	2.3855495	20	5 16.4	19.4
107540	2001	DF ₇₀	16.1	X	167.51566	255.90135	166.72592	2.04157	0.2031392	0.268897552	2.3768086	20	5 11.6	19.8
107541	2001	DG ₇₀	15.3	X	172.69667	6.28413	163.21604	13.97175	0.1123433	0.23012721	2.6372871	20	10 1.2	19.3
107542	2001	DQ ₇₀	15.5	X	358.03884	240.61260	156.68189	13.87903	0.0716338	0.23874486	2.5734360	20	12 23.1	18.9
107543	2001	DQ ₇₀	16.1	X	109.52015	328.55207	154.49019	6.77230	0.0728184	0.26655040	2.3912032	20	5 19.6	19.3
107544	2001	DR ₇₀	15.0	X	211.57717	2.72729	347.17233	11.31116	0.2442123	0.26168393	2.4207578	20	3 16.7	19.2
107545	2001	DB ₇₁	15.5	X	110.23669	294.48795	174.01626	5.19427	0.1599981	0.21459423	2.7630624	20	5 12.9	19.5
107546	2001	DG ₇₁	16.5	X	251.92712	278.73602	308.90456	2.71803	0.1694486	0.29830605	2.2183395	20	—	—
107547	2001	DS ₇₁	16.4	X	223.17167	337.39417	157.37910	6.71109	0.1046226	0.28435617	2.2903100	20	10 22.3	19.3
107548	2001	DV ₇₁	15.7	X	248.26759	149.86128	339.15656	7.34328	0.1451571	0.23626257	2.5914297	20	10 26.5	19.3
107549	2001	DU ₇₂	16.2	X	257.40479	214.23878	266.07439	1.40285	0.1512229	0.23757006	2.5819128	20	10 29.7	19.2
107550	2001	DO ₇₄	15.2	X	30.21948	234.59518	14.20941	14.14744	0.1734243	0.26645450	2.3917770	20	8 13.9	17.9
107551	2001	DY ₇₄	16.1	X	115.17168	60.36795	183.80570	7.07180	0.2486511	0.27612070	2.3356266	20	11 16.2	20.2
107552	2001	DT ₇₇	16.4	X	166.59141	65.84362	350.48125	1.03333	0.1729057	0.26978861	2.3720307	20	4 30.7	20.2
107553	2001	DU ₇₈	16.8	X	140.78571	19.43515	141.63311	3.88702	0.0918388	0.27521748	2.3407339	20	8 19.8	19.8
107554	2001	DY ₇₈	15.0	X	194.16040	151.12633	95.14124	9.75201	0.1395586	0.24253014	2.5465892	20	—	—
107555	2001	DH ₈₀	16.3	X	101.06761	82.90316	102.17203	3.06571	0.0585688	0.27249997	2.3562701	20	8 1.2	19.2
107556	2001	DF ₈₁	15.9	X	246.37134	113.60660	53.73626	8.11001	0.1178000	0.23926324	2.5697176	20	12 21.0	19.1
107557	2001	DT ₈₁	16.2	X	346.44469	213.23904	126.62531	2.67306	0.0831239	0.23102043	2.6304847	20	9 17.2	19.2
107558	2001	DK ₈₅	16.3	X	68.22054	278.59850	17.42929	2.76582	0.0827633	0.22782175	2.6550493	20	11 12.6	20.0
107559	2001	DK ₈₆	16.7	X	68.39448	173.52028	67.02637	4.28402	0.1223602	0.27368167	2.3494827	20	9 16.7	19.7
107560	2001	DM ₈₆	16.5	X	12.59423	128.75605	117.58494	5.44661	0.1224874	0.26636198	2.3923307	20	6 20.9	18.6
107561	2001	DW ₈₆	16.4	X	299.45920	287.89091	309.03906	1.46543	0.1476512	0.25546334	2.4598974	20	1 29.2	19.7
107562	2001	DV ₈₇	15.5	X	172.77858	5.25973	70.33437	6.21725	0.0264217	0.21942421	2.7223650	20	5 29.7	19.3
107563	2001	DZ ₈₇	15.4	X	53.48305	114.95029	119.47502	11.31597	0.1028698	0.22066022	2.7121894	20	8 7.4	18.9
107564	2001	DZ ₈₈	16.1	X	216.68422	74.18782	167.32545	15.39204	0.0918009	0.24424280	2.5346707	20	—	—
107565	2001	DG ₈₉	16.4	X	200.63415	270.45036	6.86197	7.08870	0.1449998	0.29708423	2.2244171	20	—	—
107566	2001	DH ₈₉	15.2	X	352.78988	249.08716	163.38097	11.80215	0.0549601	0.23839808	2.5759309	20	—	—
107567	2001	DK ₈₉	16.4	X	189.33431	224.71602	16.97308	6.39789	0.1611251	0.29148950	2.2527903	20	—	—
107568	2001	DR ₈₉	14.7	X	152.23255	296.81091	158.56340	22.24493	0.1112980	0.17090439	3.2158855	20	6 7.2	20.1
107569	2001	DD ₉₀	16.6	X	106.50611	330.92354	143.02221	2.77036	0.1205424	0.26515054	2.3996121	20	5 8.9	19.8
107570	2001	DE ₉₀	14.3	X	131.56357	247.45495	315.21729	21.14656	0.0965780	0.17748526	3.1358926	20	9 12.2	19.4
107571	2001	DM ₉₀	14.6	X	300.92645	85.61502	179.72151	9.73319	0.2340760	0.20410155	2.8569667	20	2 28.9	18.7
107572	2001	DB ₉₁	15.9	X	152.56251	305.53687	262.65050	2.96526	0.1965814	0.23312035	2.6146642	20	10 25.4	20.4
107573	2001	DM ₉₂	16.3	X	140.22975	109.69017	79.99065	8.69187	0.0592995	0.28079450	2.3096366	20	10 2.1	19.5
107574	2001	DS ₉₂	16.7	X	44.58568	95.43680	57.33172	1.72489	0.1274825	0.26216479	2.4177969	20	3 30.5	19.1
107575	2001	DG ₉₄	16.6	X	192.25164	293.02823	174.93364	5.03064	0.2039902	0.27788965	2.3257042	20	7 29.8	20.5
107576	2001	DM ₉₄	16.0	X	108.35244	210.11033	291.98594	5.57595	0.1705198	0.26969921	2.3725549	20	6 24.6	19.3
107577	2001	DS ₉₅	16.2	X	341.48452	121.98333	90.82277	3.43346	0.1343977	0.26186190	2.4196609	20	2 29.1	18.8
107578	2001	DB ₉₆	16.1	X	181.06866	125.25735	33.35022	3.53122	0.0902925	0.23244542	2.6197231	20	9 26.5	20.0
107579	2001	DF ₉₆	15.3	X	355.45532	300.49734	338.73915	11.38551	0.2621115	0.27113274	2.3641847	20	7 19.5	16.7
107580	2001	DN ₉₆	15.4	X	193.91575	105.11694	28.03847	2.95956	0.0671745	0.18067495	3.0988752	20	9 3.9	20.0
107581	2001	DA ₉₇	16.3	X	39.61825	193.39870	28.58015	2.69936	0.1669741	0.26902996	2.3764879	20	7 12.5	18.6
107582	2001	DP ₉₇	16.5	X	327.43915	184.65151	40.14008	3.79955	0.1280775	0.25939343	2.4349875	20	2 24.7	19.2
107583	2001	DZ ₉₇	16.7	X	59.08463	308.04429	261.11821	5.58589	0.1961253	0.27077553	2.3662635	20	7 28.4	19.6
107584	2001	DR ₉₈	15.8	X	300.14896	338.40602	226.63455	6.18212	0.1515213	0.25283821	2.4768949	20	—	—
107585	2001	DM ₉₉	15.4	X	254.59293	158.62121	262.06630	5.53631	0.0938019	0.27954208	2.3165300	20	8 17.3	18.4
107586	2001	DW ₁₀₀	15.6	X	331.32968	266.28630	5.71409	11.28509	0.2777335	0.26604101	2.3942545	20	4 10.5	17.8
107587	2001	DA ₁₀₁	16.0	X	8.28791	161.75100	145.74119	7.17021	0.1331216	0.27910312	2.3189582	20	9 23.7	18.2
107588	2001	DU ₁₀₁	15.5	X	308.78909	123.07302	58.38737	4.99274	0.1264482	0.25192024	2.4829083	20	—	—
107589	2001	DW ₁₀₁	15.8	X	242.46744	358.43883	39.46693	5.93634	0.1585247	0.27669133	2.3324142	20	6 21.9	19.0
107590	2001	DX ₁₀₁												

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
107601 2001 <i>EW</i>	15.6	X	32.39328	119.66522	129.10519	6.88644	0.0704526	0.21835243	2.7312662	20	7 20.5	18.8
107602 2001 <i>EN</i> ₁	16.4	X	60.76184	136.88964	74.00459	7.41077	0.1970141	0.27008213	2.3703118	20	8 6.6	19.4
107603 2001 <i>EN</i> ₂	15.6	X	210.71090	135.09639	60.69984	9.80750	0.1036047	0.23868543	2.5738631	20	12 13.5	19.2
107604 2001 <i>ES</i> ₂	16.4	X	233.31084	48.85028	107.95872	5.38140	0.1459336	0.23615614	2.5922082	20	11 17.0	19.9
107605 2001 <i>ET</i> ₂	16.2	X	84.32986	103.10796	118.30337	6.09457	0.0882111	0.27356698	2.3501393	20	9 5.4	19.3
107606 2001 <i>EL</i> ₃	17.0	X	349.96289	124.39125	76.90340	1.56835	0.0273408	0.31117624	2.1567431	20	3 2.5	19.1
107607 2001 <i>ES</i> ₃	16.2	X	249.25207	279.23373	153.86347	10.03666	0.1704439	0.28137454	2.3064614	20	8 17.5	19.2
107608 2001 <i>EW</i> ₃	16.6	X	38.80576	164.50377	63.92041	2.33260	0.1399457	0.26879516	2.3778717	20	7 16.2	19.0
107609 2001 <i>EY</i> ₃	16.1	X	132.34100	278.10048	154.73418	11.16758	0.2100586	0.26539002	2.3981683	20	4 26.2	19.9
107610 2001 <i>EO</i> ₄	16.5	X	81.31242	77.46157	124.76346	3.12925	0.1082874	0.27175057	2.3606000	20	8 6.1	19.5
107611 2001 <i>EP</i> ₄	16.2	X	162.89961	73.01708	141.81461	6.04102	0.1239710	0.23359984	2.61110850	20	11 16.3	20.4
107612 2001 <i>EV</i> ₄	16.5	X	59.88427	80.06853	32.51875	2.68628	0.1668643	0.25899036	2.4375132	20	3 4.9	18.7
107613 2001 <i>EB</i> ₅	17.1	X	282.45527	115.01634	83.99902	2.37440	0.0934776	0.30003616	2.2098035	20	—	—
107614 2001 <i>ED</i> ₅	16.3	X	58.72852	110.35612	90.62160	3.34101	0.1367263	0.26810369	2.3819585	20	7 6.9	19.0
107615 2001 <i>EK</i> ₅	16.8	X	236.94866	209.37747	63.04724	3.57401	0.2075284	0.30121570	2.2040307	20	1 1.6	20.5
107616 2001 <i>EO</i> ₆	15.6	X	112.22669	28.59049	68.85092	7.03375	0.0992136	0.26277519	2.4140512	20	4 21.9	18.7
107617 2001 <i>EV</i> ₆	16.2	X	236.98322	162.26243	48.99739	4.25759	0.1644340	0.29362989	2.2418293	20	—	—
107618 2001 <i>EO</i> ₇	16.5	X	279.60960	148.64777	98.66325	3.34138	0.0505811	0.30570070	2.1824205	20	1 24.0	18.9
107619 2001 <i>EQ</i> ₇	16.3	X	354.79874	108.90053	75.20589	3.36200	0.1371440	0.25667501	2.4521498	20	2 11.3	18.7
107620 2001 <i>EW</i> ₇	16.2	X	131.67592	91.16761	56.67984	2.76319	0.1462534	0.27232065	2.3573044	20	7 26.1	19.7
107621 2001 <i>EC</i> ₈	15.8	X	68.90348	144.17939	66.99000	3.34646	0.1133887	0.27046899	2.3680510	20	8 3.5	18.6
107622 2001 <i>EJ</i> ₈	15.0	X	86.97505	191.66284	151.68473	5.85018	0.1546048	0.24206546	2.5498473	20	—	—
107623 2001 <i>EM</i> ₉	14.7	X	179.71923	262.56080	0.16194	12.69420	0.2431730	0.23969711	2.5666157	20	—	—
107624 2001 <i>EN</i> ₉	15.5	X	263.03961	297.07528	161.25987	12.42140	0.1790875	0.23475274	2.6025291	20	10 6.4	18.8
107625 2001 <i>EX</i> ₉	16.4	X	171.40646	86.80285	141.12365	3.79815	0.2423181	0.23441246	2.6050472	20	12 2.8	20.9
107626 2001 <i>EG</i> ₁₀	15.3	X	233.36032	82.66163	5.96265	13.78069	0.0507041	0.22652632	2.6651620	20	9 3.8	19.0
107627 2001 <i>ER</i> ₁₀	16.1	X	40.84372	340.63909	311.18343	6.62832	0.1130841	0.27839153	2.3229082	20	10 13.9	19.0
107628 2001 <i>EV</i> ₁₀	16.4	X	67.58235	151.60142	66.33248	2.07657	0.1390902	0.27034941	2.3687493	20	8 15.3	19.3
107629 2001 <i>EY</i> ₁₀	15.0	X	68.14772	289.90662	6.36799	22.12190	0.0098988	0.23173616	2.6250657	20	10 26.9	18.9
107630 2001 <i>ET</i> ₁₁	15.5	X	84.39617	195.31979	55.79103	2.84427	0.1259938	0.22742608	2.6581279	20	10 12.1	19.3
107631 2001 <i>EU</i> ₁₁	16.9	X	109.51936	66.72411	67.80429	2.38435	0.1320208	0.26842603	2.3800512	20	6 10.6	19.9
107632 2001 <i>EX</i> ₁₁	15.7	X	258.71620	42.56776	101.72829	2.26033	0.0706368	0.23871112	2.5736784	20	12 15.3	18.9
107633 2001 <i>EA</i> ₁₂	16.2	X	68.09732	179.56813	23.02193	5.62440	0.1221473	0.26930116	2.3748922	20	7 22.8	19.1
107634 2001 <i>EG</i> ₁₂	15.8	X	271.40333	40.61105	81.91859	4.73612	0.2384986	0.23789705	2.5795464	20	11 11.2	18.5
107635 2001 <i>EL</i> ₁₂	15.6	X	227.36387	85.26849	150.11946	8.45670	0.1318049	0.24262380	2.5459338	20	—	—
107636 2001 <i>EL</i> ₁₃	16.6	X	12.36438	261.58206	190.08347	21.58062	0.1220921	0.35180661	1.9873150	20	—	—
107637 2001 <i>EO</i> ₁₃	15.0	X	222.85010	276.29119	168.48294	21.66269	0.0576901	0.22513716	2.6761139	20	8 8.6	19.1
107638 Wendyfreedman	15.9	X	148.25969	269.03938	6.74263	8.59230	0.1472687	0.23835308	2.5762551	20	—	—
107639 2001 <i>EV</i> ₁₃	15.5	X	256.70626	10.58435	159.55250	15.41306	0.0597570	0.24175520	2.5520284	20	—	—
107640 2001 <i>EQ</i> ₁₅	15.9	X	152.15550	333.25103	37.91011	21.52835	0.0881310	0.35997130	1.9571501	20	2 9.5	18.7
107641 2001 <i>ER</i> ₁₆	14.4	X	193.04946	199.08865	341.88717	8.62979	0.1046148	0.18254734	3.0776487	20	10 24.2	19.3
107642 2001 <i>EZ</i> ₁₆	16.4	X	17.05809	279.79837	185.96916	22.98245	0.0844997	0.35238658	1.9851339	20	—	—
107643 2001 <i>EY</i> ₁₇	15.6	X	174.86316	160.65973	145.99696	14.23753	0.1788838	0.24356579	2.5393654	20	—	—
107644 2001 <i>EG</i> ₁₈	16.6	X	45.11551	83.52858	339.19853	11.50142	0.1284919	0.25222403	2.4809142	20	—	—
107645 2001 <i>EZ</i> ₁₈	15.7	X	131.51455	181.64755	274.47702	6.20638	0.0546233	0.26812839	2.3818122	20	5 4.5	18.9
107646 2001 <i>EG</i> ₂₀	16.4	X	15.94884	21.90252	189.40242	1.86821	0.1210664	0.26397076	2.4067566	20	5 2.7	18.4
107647 2001 <i>EQ</i> ₂₀	16.2	X	23.82113	30.35291	198.18426	3.59020	0.0978588	0.26726031	2.3869669	20	6 12.3	18.5
107648 2001 <i>ER</i> ₂₀	15.8	X	305.46909	255.51403	194.34680	4.65741	0.2213126	0.24130827	2.5551785	20	12 8.9	17.7
107649 2001 <i>ET</i> ₂₀	16.3	X	141.37120	208.98233	249.37610	1.90031	0.1733993	0.26913888	2.3758467	20	5 31.7	19.7
107650 2001 <i>ER</i> ₂₁	15.7	X	333.73536	282.88985	326.53206	13.78874	0.1668034	0.26209179	2.4182458	20	3 26.0	18.4
107651 2001 <i>EW</i> ₂₁	16.4	X	52.28169	318.65175	282.88525	6.07061	0.1848266	0.27213768	2.3583609	20	8 31.2	19.3
107652 2001 <i>EP</i> ₂₃	15.7	X	248.73988	3.16329	321.71388	5.52745	0.0567594	0.26202353	2.4186658	20	3 31.3	19.1
107653 2001 <i>EA</i> ₂₄	14.9	X	345.54167	282.10945	25.95867	13.32409	0.1508022	0.21670498	2.7450912	20	8 3.8	18.0
107654 2001 <i>EE</i> ₂₄	16.4	X	333.77990	204.70934	311.07849	0.57167	0.1274098	0.25094960	2.4893066	20	—	—
107655 2001 <i>EF</i> ₂₄	15.9	X	86.55828	36.04187	172.90435	3.23486	0.0919910	0.27319449	2.3522750	20	8 19.4	18.8
107656 2001 <i>EC</i> ₂₅	16.1	X	152.29347	331.85321	123.93707	2.88746	0.1822455	0.26764273	2.3846926	20	6 8.7	19.9
107657 2001 <i>EN</i> ₂₅	15.5	X	268.17258	310.92825	127.17692	15.96507	0.1749099	0.23230490	2.6207794	20	9 18.9	19.0
107658 2001 <i>EF</i> ₂₇	15.9	X	25.88715	281.29862	242.47253	6.47319	0.0665155	0.26142290	2.4223690	20	3 5.3	18.7
107659 2001 <i>EK</i> ₂₇	14.3	X	266.44712	258.86391	145.84297	16.34718	0.0905218	0.17414986	3.1758060	20	8 3.6	18.8
107660 2001 <i>FH</i>	15.4	X	79.22807	66.65124	188.37899	4.08663	0.1108606	0.27759227	2.3273649	20	10 16.9	18.6
107661 2001 <i>FC</i> ₂	15.7	X	110.42954	17.99416	69.43397	6.09434	0.1679287	0.26143761	2.4222781	20	4 15.8	19.0
107662 2001 <i>FG</i> ₂	15.9	X	6.31940	304.54176	248.08884	6.62571	0.1991230	0.25905065	2.4371350	20	3 6.3	18.0
107663 2001 <i>FK</i> ₂	16.2	X	18.46756	329.88980	209.54487	6.33471	0.1581834	0.26168253	2.4207665	20	3 16.9	18.3
107664 2001 <i>FO</i> ₂	16.0	X	318.60953	94.32134	3.86346	9.80471	0.0637796	0.24136581	2.5547724	20	—	—
107665 2001 <i>FK</i> ₃	15.0	X	202.86396	77.86084	193.06763	5.19892	0.2604007	0.24224549	2.5485838	20	—	—
107666 2001 <i>FN</i> ₃	16.5	X	128.32394	259.22875	220.04052	4.00140	0.1632353	0.26855172	2.3793085	20	6 14.5	

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
107681 2001 FO ₁₁	14.6	X	132.90169	80.22989	163.14493	9.63877	0.0448196	0.18035264	3.1025662	20	11 11.8	19.3
107682 2001 FB ₁₂	15.8	X	210.28221	144.27991	41.76197	6.03260	0.0861621	0.23529273	2.5985458	20	12 2.2	19.4
107683 2001 FD ₁₂	15.5	X	137.92736	83.48778	177.15734	16.48928	0.0921265	0.23399266	2.6081620	20	12 16.9	19.8
107684 2001 FF ₁₂	16.0	X	69.14769	85.60746	71.36185	3.08027	0.1630659	0.26349279	2.4096662	20	5 23.6	18.6
107685 2001 FJ ₁₂	16.3	X	7.12305	119.07841	146.85271	2.83197	0.1644890	0.26652432	2.3913592	20	7 14.6	18.2
107686 2001 FN ₁₂	15.4	X	28.12924	153.88842	47.91339	5.13341	0.0118905	0.21162820	2.7888192	20	5 5.5	19.1
107687 2001 FZ ₁₂	16.9	X	267.51130	151.20286	19.95977	5.30579	0.2218570	0.24231187	2.5481183	20	—	—
107688 2001 FB ₁₃	15.8	X	109.07886	60.55803	175.17381	14.81580	0.0555491	0.22765591	2.6563386	20	10 14.7	19.6
107689 2001 FE ₁₃	16.1	X	73.33196	35.11558	155.74765	2.82831	0.1289614	0.26785551	2.3834296	20	7 12.2	18.9
107690 2001 FB ₁₄	14.8	X	24.85585	131.66905	109.53792	1.37662	0.0859786	0.16478511	3.2950150	20	6 27.4	19.1
107691 2001 FE ₁₄	16.2	X	53.55112	110.33099	9.08135	6.36086	0.0888297	0.25661651	2.4525224	20	2 24.7	18.8
107692 2001 FA ₁₅	16.0	X	287.29067	287.99384	186.96443	6.15601	0.1241525	0.23847068	2.5754081	20	12 14.2	18.9
107693 2001 FE ₁₅	15.8	X	306.62326	314.92572	323.28117	0.54647	0.1703834	0.25981181	2.4323727	20	3 29.6	18.7
107694 2001 FO ₁₅	15.7	X	131.26705	251.88748	12.45778	4.52093	0.1222665	0.28495843	2.2870818	20	12 24.2	19.1
107695 2001 FP ₁₅	14.9	X	50.26471	347.35397	8.38954	7.90385	0.0375676	0.23684671	2.5871671	20	—	—
107696 2001 FZ ₁₅	16.2	X	187.88381	202.69687	3.50231	9.16534	0.1405082	0.28586986	2.2822180	20	12 5.7	19.6
107697 2001 FA ₁₆	15.9	X	327.84416	141.65620	167.76945	2.87436	0.1258039	0.26754015	2.3853022	20	6 29.8	18.3
107698 2001 FS ₁₆	15.0	X	223.99797	84.25696	84.64692	2.39106	0.0598787	0.18361048	3.0657571	20	11 20.7	19.3
107699 2001 FC ₁₇	16.2	X	348.90108	96.64377	20.54429	2.11442	0.0965473	0.24641396	2.5197600	20	—	—
107700 2001 FQ ₁₇	16.7	X	20.60939	336.93564	225.23093	1.87495	0.1521637	0.26129435	2.4231634	20	4 29.0	18.8
107701 2001 FS ₁₇	15.5	X	101.28960	204.63639	4.60108	12.25307	0.1192972	0.22201267	2.7011636	20	9 7.9	19.6
107702 2001 FX ₁₇	16.2	X	8.51664	343.86279	262.22489	1.80022	0.1290232	0.26436156	2.4043841	20	6 12.2	18.2
107703 2001 FE ₁₈	15.5	X	314.98915	238.18075	4.61677	4.70379	0.1259122	0.25683489	2.4511320	20	3 1.8	18.5
107704 2001 FL ₁₈	16.0	X	245.74132	250.08206	274.52778	2.44033	0.0595773	0.23750529	2.5823822	20	12 25.0	19.3
107705 2001 FP ₁₈	16.1	X	15.02825	20.36957	237.69958	1.74734	0.1583478	0.26650554	2.3914716	20	7 18.4	18.2
107706 2001 FS ₁₈	15.7	X	127.49601	37.67710	201.90906	7.91664	0.1641670	0.22917471	2.6445894	20	11 11.9	20.0
107707 2001 FV ₁₈	15.4	X	163.86157	208.64313	356.87975	13.26155	0.1140760	0.23109532	2.6299164	20	10 30.1	19.6
107708 2001 FD ₁₉	15.5	X	139.22021	203.64076	304.35785	4.07754	0.0989844	0.22037905	2.7144958	20	7 27.6	19.6
107709 2001 FN ₁₉	16.1	X	30.13305	103.74299	203.95784	5.97264	0.1312339	0.27635343	2.3343151	20	10 27.6	18.8
107710 2001 FQ ₁₉	16.2	X	151.59524	305.47568	250.74779	2.52602	0.1468860	0.22837791	2.6507371	20	10 9.8	20.4
107711 2001 FC ₂₀	15.3	X	102.40849	123.19572	343.62385	12.29124	0.1096474	0.21065673	2.7973866	20	4 18.2	19.4
107712 2001 FF ₂₀	15.7	X	3.76161	55.01267	263.70890	4.46389	0.1616789	0.27423083	2.3463450	20	9 30.5	17.9
107713 2001 FS ₂₀	16.5	X	310.16114	280.31385	317.55023	3.66054	0.1228867	0.30701177	2.1762028	20	2 9.1	19.0
107714 2001 FZ ₂₁	15.7	X	263.06320	341.84055	169.95282	8.15770	0.1317641	0.23750475	2.5823861	20	12 22.9	18.9
107715 2001 FH ₂₂	15.1	X	100.03281	126.93436	156.27534	8.72427	0.2385802	0.22792188	2.6542717	20	12 15.2	19.8
107716 2001 FJ ₂₂	15.1	X	5.60218	139.07879	155.93777	6.51971	0.2995854	0.21488401	2.7605777	20	9 7.2	17.3
107717 2001 FV ₂₂	15.2	X	127.24107	53.19725	188.78078	14.02026	0.1445374	0.22806581	2.6531549	20	11 14.9	19.6
107718 2001 FF ₂₃	15.8	X	317.68300	119.23547	28.66880	12.60977	0.1543227	0.24526301	2.5276369	20	—	—
107719 2001 FP ₂₃	16.1	X	345.04041	195.71499	64.50071	7.40542	0.1155683	0.26204066	2.4185604	20	5 18.1	18.5
107720 2001 FR ₂₃	15.4	X	171.48093	52.65002	172.13749	13.42763	0.2109832	0.23255776	2.6188794	20	12 1.7	20.0
107721 2001 FT ₂₃	16.7	X	211.22596	175.63385	86.88869	6.57877	0.1810495	0.29368294	2.2415593	20	—	—
107722 2001 FJ ₂₄	15.6	X	192.00454	326.97038	310.94479	10.37978	0.1635621	0.29575411	2.2310820	20	—	—
107723 2001 FV ₂₄	15.7	X	285.97719	345.60605	257.31690	5.93727	0.0928428	0.25395616	2.4696205	20	1 26.7	19.1
107724 2001 FO ₂₅	15.5	X	173.62684	70.63769	192.37555	11.38630	0.2585884	0.23799368	2.5788481	20	—	—
107725 2001 FR ₂₅	15.1	X	218.90386	357.75310	191.92341	0.83388	0.2130942	0.18512200	3.0490464	20	11 22.5	19.9
107726 2001 FZ ₂₆	14.7	X	121.85558	88.26745	197.96473	27.35948	0.2109482	0.23283745	2.6167817	20	12 29.2	19.7
107727 2001 FF ₂₇	15.7	X	184.20093	207.03598	345.33157	11.80969	0.1347415	0.23269092	2.6178801	20	11 2.2	20.0
107728 2001 FG ₂₇	15.8	X	175.64461	308.43037	286.51810	4.27127	0.0732935	0.23701441	2.5859466	20	12 26.3	19.6
107729 2001 FT ₂₇	16.0	X	235.44123	281.81051	326.67160	2.55748	0.2233588	0.24454500	2.5325821	20	—	—
107730 2001 FC ₂₈	15.4	X	60.69606	274.97848	23.63557	4.91947	0.1694637	0.28046699	2.3114342	20	11 27.9	18.6
107731 2001 FH ₂₈	16.6	X	112.43381	86.37112	87.88323	3.01264	0.1446109	0.27260832	2.3556457	20	8 10.2	19.9
107732 2001 FK ₂₈	15.8	X	322.65531	184.02841	73.89759	3.45433	0.1553840	0.26093844	2.4253663	20	3 30.5	18.5
107733 2001 FO ₂₈	15.1	X	16.28229	215.36894	158.30991	11.80911	0.1351647	0.23604845	2.5929966	20	12 26.0	18.6
107734 2001 FO ₂₉	15.9	X	101.43393	211.96712	70.84656	8.47310	0.2275177	0.28130701	2.3068305	20	12 20.3	19.7
107735 2001 FA ₃₀	15.0	X	11.12911	330.20210	307.10524	14.12755	0.0379194	0.22154551	2.7049594	20	7 25.8	18.4
107736 2001 FY ₃₀	15.3	X	44.29418	173.93864	180.72754	7.12599	0.1426751	0.23533105	2.5982637	20	—	—
107737 2001 FA ₃₁	16.8	X	59.05579	352.32126	127.50716	1.13489	0.1632252	0.25818797	2.4425608	20	3 12.9	18.9
107738 2001 FC ₃₁	16.2	X	325.34370	166.78765	110.25904	2.62808	0.1637965	0.26240438	2.4163249	20	4 30.7	18.7
107739 2001 FT ₃₁	16.1	X	293.95743	8.47242	133.38431	4.89494	0.1652952	0.24046018	2.5611830	20	—	—
107740 2001 FN ₃₂	16.3	X	331.86093	56.23069	139.46005	5.85535	0.0659626	0.25122186	2.4875077	20	1 30.9	19.4
107741 2001 FS ₃₂	16.7	X	256.22629	160.48524	181.47549	21.50542	0.0468380	0.36790565	1.9289090	20	5 7.4	19.0
107742 2001 FH ₃₃	16.1	X	75.56475	268.29361	247.87118	4.40641	0.1601396	0.26509282	2.3999604	20	5 31.6	18.7
107743 2001 FN ₃₃	15.8	X	198.02783	248.17280	336.02374	3.10498	0.1887456	0.23936677	2.5689766	20	12 25.8	19.8
107744 2001 FS ₃₃	15.8	X	217.60927	352.37572	207.76598	5.09103	0.2282878	0.23953433	2.5677784	20	12 11.9	19.6
107745 2001 FA ₃₅	16.4	X	184.84728	239.07060	0.48147	6.75652	0.1044363	0.29085138	2.2560841	20	—	—
107746 2001 FE ₃₅	16.3	X	112.96778	162.54403	337.87779	1.93676	0.1228839	0.26889993	2.3772540	20	6 21.9	19.4
107747 2001 FO ₃₅	15.9	X	102.08442	263.55653	317.51588	5.32373	0.0836755	0.27780666	2.3261673	20	9 22.5	19.1
107748 2001 FQ ₃₅	16.0	X	0.77749	350.38575	163.53513	4.90133	0.0750109	0.25426547	2.4676172	20	1 15.1	18.8
107749 2001 FS ₃₅	16.1	X	56.24072	107.41864	164.15899	5.46869	0.0769745	0.27712835	2.3299615	20	10 6.1	19.0
107750 2001 FY ₃₅	15.8	X	27.55278	299.87019	352.48501	6.43298	0.1011494	0.27569918	2.3380066	20	9 25.2	18.4
107751 2001 FH ₃₆	16.3	X	335.22668	356.70648	241.29877	1.54350	0.1639816	0.25988807	2.4318969	20	3 19.1	18.8
107752 2001 FS ₃₆	16.6	X	147.64573	312.55106	181.66330	4.96768	0.1842575	0.27321540	2.3521550	20	7 23.6	20.4
107753 2001 FW ₃₆	15.4	X	219.35146	292.97768	321.52638	8.33648	0.2332674	0.24506579	2.5289928	20	—	—
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ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>		
107761	2001	FS ₃₈	16.2	X	14.10112	231.06976	300.55271	4.03436	0.0796212	0.25802005	2.4436204	20	2 28.4	18.9
107762	2001	FY ₃₉	15.9	X	179.97027	266.10962	336.45917	3.67515	0.1614702	0.23779205	2.5803057	20	—	—
107763	2001	FK ₄₀	15.5	X	249.09210	306.24860	171.74315	3.02830	0.2814666	0.23595328	2.5936938	20	9 26.5	19.2
107764	2001	FN ₄₀	16.5	X	77.53730	98.92061	50.30530	0.55724	0.1134928	0.26426622	2.4049623	20	5 16.5	19.3
107765	2001	FP ₄₀	14.9	X	216.80870	99.67323	2.96323	13.28400	0.0658820	0.22611377	2.6684027	20	8 30.5	18.7
107766	2001	FS ₄₀	16.4	X	259.36351	225.70706	6.84030	6.78846	0.1175191	0.29958194	2.2120366	20	—	—
107767	2001	FW ₄₀	15.3	X	74.67573	164.67776	8.05908	9.33041	0.0895774	0.21495873	2.7599380	20	6 9.3	19.2
107768	2001	FN ₄₁	16.1	X	332.29987	212.97101	65.43528	1.00398	0.1279004	0.26446247	2.4037725	20	5 20.1	18.5
107769	2001	FW ₄₁	16.2	X	121.30745	83.74310	29.46840	1.71560	0.187285	0.26604249	2.3942457	20	5 25.7	19.5
107770	2001	FY ₄₁	16.0	X	39.39710	208.30502	35.14952	1.65291	0.1537514	0.26884704	2.3775658	20	8 12.1	18.4
107771	2001	FA ₄₂	15.5	X	77.67656	130.67035	349.56960	7.52457	0.1787448	0.21009427	2.8023771	20	4 16.6	19.2
107772	2001	FW ₄₃	15.9	X	188.29135	104.81847	148.62566	1.87361	0.1044583	0.24011749	2.5636192	20	—	—
107773	2001	FL ₄₄	15.5	X	159.81181	281.06016	9.96031	16.76250	0.1896498	0.23923461	2.5699226	20	—	—
107774	2001	FJ ₄₆	16.6	X	157.82806	201.23262	49.86028	2.73845	0.1682256	0.28569758	2.2831354	20	12 31.4	20.0
107775	2001	FH ₄₇	15.5	X	250.34299	344.27520	185.98650	15.21932	0.0811690	0.23826669	2.5768778	20	—	—
107776	2001	FN ₄₇	14.8	X	152.28709	262.02842	18.22903	15.43857	0.1616821	0.23673789	2.5879598	20	—	—
107777	2001	FO ₄₇	15.0	X	91.65951	234.45228	11.74509	11.52155	0.1518704	0.22417650	2.6837537	20	10 13.8	19.1
107778	2001	FD ₄₈	15.1	X	106.16646	303.42043	357.55487	17.06784	0.2426327	0.23265392	2.6181577	20	—	—
107779	2001	FG ₄₈	16.7	X	183.22436	11.60560	207.18307	4.45128	0.1634120	0.28534592	2.2850109	20	12 16.2	20.1
107780	2001	FW ₄₈	15.9	X	200.55500	56.13146	194.89086	16.37067	0.2617544	0.23885996	2.5726091	20	—	—
107781	2001	FO ₄₉	15.7	X	354.38258	260.64604	338.22080	3.20501	0.0444642	0.21231683	2.7827858	20	5 6.5	19.3
107782	2001	FX ₄₉	15.3	X	130.46700	250.50526	358.83236	12.53553	0.1510088	0.23022485	2.6365413	20	11 21.4	19.8
107783	2001	FR ₅₀	16.5	X	343.46121	282.57145	279.14936	1.35301	0.1223100	0.25637491	2.4540630	20	2 16.9	19.2
107784	2001	FA ₅₁	15.1	X	166.85949	327.72862	202.11976	13.31229	0.1872230	0.22663105	2.6643408	20	9 19.3	19.6
107785	2001	FN ₅₁	15.7	X	27.24433	20.87397	181.62176	7.06012	0.0683891	0.26207255	2.4183641	20	5 7.2	18.5
107786	2001	FV ₅₁	14.9	X	199.45811	7.34409	180.62370	3.21369	0.1385157	0.18179269	3.0861600	20	11 9.1	19.6
107787	2001	FE ₅₂	15.9	X	81.72018	231.64699	18.11370	5.46299	0.1499195	0.27415189	2.3467953	20	10 15.8	19.3
107788	2001	FG ₅₂	15.7	X	152.27905	45.72494	215.43152	7.20845	0.1688304	0.23472248	2.6027528	20	12 28.1	20.0
107789	2001	FM ₅₂	16.0	X	249.47542	294.82250	333.10076	5.28094	0.1407122	0.30095799	2.2052888	20	1 10.2	19.3
107790	2001	FR ₅₂	16.5	X	209.82667	127.99035	90.32778	1.30511	0.1010844	0.29060591	2.2573544	20	—	—
107791	2001	FU ₅₂	16.3	X	256.80126	334.98986	225.19323	6.17621	0.0941231	0.29405399	2.2396733	20	—	—
107792	2001	FN ₅₃	15.9	X	167.85290	220.89216	22.13428	12.89227	0.2576697	0.23344368	2.6122494	20	12 14.7	20.7
107793	2001	FG ₅₄	14.9	X	113.19038	28.78121	213.33559	12.28769	0.1574525	0.22503569	2.6769183	20	10 31.6	19.1
107794	2001	FK ₅₄	15.8	X	5.42965	32.42774	200.08520	23.07031	0.1822796	0.26105901	2.4246195	20	5 16.7	18.1
107795	2001	FN ₅₄	15.4	X	198.84864	6.82548	205.68385	12.10120	0.1916491	0.23364106	2.6107779	20	12 11.2	19.6
107796	2001	FQ ₅₄	15.3	X	124.80943	13.59855	207.62107	13.17269	0.1857636	0.22514982	2.6760136	20	10 17.5	19.8
107797	2001	FF ₅₅	14.8	X	167.75022	60.52636	208.47223	29.34971	0.2432275	0.23587085	2.5942980	20	—	—
107798	2001	FJ ₅₆	16.2	X	157.67478	262.77324	338.79560	5.58933	0.1471271	0.28486237	2.2875960	20	12 20.4	19.6
107799	2001	FK ₅₆	15.9	X	35.03277	46.20747	205.17865	6.03822	0.0857014	0.26905240	2.3763558	20	8 2.3	18.6
107800	2001	FA ₅₇	15.3	X	211.89254	151.70832	38.21261	11.86729	0.1296881	0.23422630	2.6064273	20	12 1.9	19.1
107801	2001	FF ₅₈	16.0	X	203.25608	132.38214	158.74092	4.89793	0.1814332	0.29935929	2.2131332	20	—	—
107802	2001	FT ₅₈	14.8	X	52.12999	247.14218	44.05349	23.86603	0.2178003	0.27570503	2.3379735	20	11 12.9	18.1
107803	2001	FO ₅₈	16.1	X	269.00384	149.27972	37.72933	4.32179	0.0962927	0.24253057	2.5465863	20	—	—
107804	2001	FV ₅₈	12.1	X	355.57347	40.51507	346.78180	6.93039	0.3317047	0.08105676	5.2878186	20	10 26.6	19.0
107805	2001	Saibi	16.5	X	102.32545	357.35061	127.08737	5.27979	0.1177488	0.26344022	2.4099868	20	5 18.4	19.7
107806	2001	FZ ₅₈	15.6	X	175.15584	187.48544	76.63586	9.33018	0.2074773	0.24060152	2.5601798	20	—	—
107807	2001	FG ₅₉	16.5	X	141.64582	32.22888	148.12595	7.14035	0.1071716	0.27809860	2.3245390	20	9 17.9	19.9
107808	2001	FF ₅₉	16.4	X	180.48936	11.57104	88.67569	4.77127	0.1096268	0.27388053	2.3483452	20	7 12.4	19.7
107809	2001	FL ₅₉	16.1	X	152.67952	82.75952	79.71917	3.34181	0.1041890	0.27743771	2.3282291	20	9 6.2	19.5
107810	2001	FN ₅₉	16.2	X	176.78664	241.78923	22.29157	6.06346	0.1305879	0.29276117	2.2462620	20	—	—
107811	2001	FO ₅₉	16.4	X	57.73201	74.88137	127.81670	6.72605	0.0489170	0.26877528	2.3779890	20	6 23.3	19.2
107812	2001	FR ₅₉	14.4	X	343.25944	13.18766	6.03302	11.99200	0.1794502	0.23397318	2.6083067	20	11 8.8	17.1
107813	2001	FS ₅₉	15.8	X	43.28039	263.02223	20.29041	5.73744	0.1764502	0.27567554	2.3381403	20	10 18.5	18.4
107814	2001	FG ₆₀	16.3	X	57.45413	356.71763	112.02048	2.39933	0.162115	0.25693825	2.4504746	20	2 17.3	18.8
107815	2001	FR ₆₀	15.9	X	104.80180	185.13968	61.90663	2.86169	0.1034120	0.22973188	2.6403117	20	10 26.9	19.9
107816	2001	FW ₆₀	15.3	X	62.94231	93.41165	162.30943	14.66517	0.0600194	0.22463974	2.6800629	20	9 11.9	18.8
107817	2001	FO ₆₁	15.5	X	324.84178	325.15607	4.58915	12.90208	0.1724418	0.27366836	2.3495588	20	7 29.4	17.7
107818	2001	FX ₆₁	15.0	X	71.17403	152.33762	159.85529	14.30784	0.2874623	0.23105190	2.6302459	20	12 27.3	19.6
107819	2001	FM ₆₂	16.7	X	109.99323	13.82973	119.31050	4.47052	0.0943415	0.26706443	2.3881339	20	6 5.0	19.8
107820	2001	FX ₆₂	16.3	X	62.43392	208.07162	37.57481	7.16707	0.0657129	0.27431365	2.3458727	20	9 8.2	19.2
107821	2001	FK ₆₃	16.6	X	83.99481	72.88616	74.47019	2.19137	0.1284220	0.26520307	2.3992952	20	5 25.9	19.5
107822	2001	FS ₆₃	16.5	X	33.46380	149.10044	71.80495	2.31316	0.1443895	0.26593016	2.3949199	20	6 24.4	18.7
107823	2001	FA ₆₄	15.6	X	292.97598	304.04154	165.02108	12.89496	0.1943167	0.23995398	2.5647837	20	12 11.9	18.3
107824	2001	FB ₆₄	16.7	X	355.08307	141.89805	46.81129	4.68229	0.1117926	0.25711313	2.4493633	20	2 22.4	19.2
107825	2001	FN ₆₄	15.3	X	64.43965	127.06410	166.83820	8.48756	0.1746484	0.22796946	2.6539023	20	11 19.7	19.3
107826	2001	FM ₆₅	15.5	X	132.20417	240.27953	64.09628	4.64485	0.0727140	0.24049630	2.5609265	20	—	—
107827	2001	FS ₆₅	16.4	X	45.14100	20.51750	107.58965	3.50725	0.1313066	0.25710358	2.4494240	20	2 25.6	18.7
107828	2001	FS ₆₇	16.6	X	136.89312	139.07212	101.86678	3.46335	0.2113143	0.28371420	2.2937637	20	12 22.5	20.4
107829	2001	FZ ₆₇	15.5	X	215.02639	209.22243	56.31586	5.50646	0.1310577	0.24537090	2.5268959	20	—	—
107830	2001	FY ₆₉	15.6	X	43.00568	72.92245	136.79394	5.02436	0.0852667	0.265480				

ELEMENTS AND OPPOSITION DATES IN 2020

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
107841 2001 FF ₇₃	16.7	X	250.87450	84.51766	150.34870	6.00064	0.1311721	0.29706917	2.2244927	20	—	—
107842 2001 FQ ₇₃	16.3	X	306.12200	118.29556	54.70477	5.70354	0.0807529	0.29834230	2.2181598	20	—	—
107843 2001 FA ₇₄	15.5	X	181.16959	94.43418	126.80754	3.59019	0.0954850	0.23451771	2.6042677	20	12 13.1	19.3
107844 2001 FE ₇₄	14.8	X	63.51995	282.03762	27.09493	27.08906	0.2295949	0.22702051	2.6612928	20	12 3.6	19.4
107845 2001 FL ₇₅	16.4	X	137.88175	9.42386	115.55231	3.24491	0.1612380	0.26927429	2.3750502	20	7 1.8	19.9
107846 2001 FR ₇₅	16.1	X	233.09927	300.48691	136.53066	6.29077	0.1074250	0.27665523	2.3326171	20	8 11.5	19.0
107847 2001 FU ₇₅	15.9	X	201.03116	174.81383	99.41308	3.59834	0.0824305	0.24436739	2.5338091	20	—	—
107848 2001 FE ₇₆	15.5	X	101.75405	252.57540	34.08521	11.97984	0.1924692	0.23014215	2.6371729	20	12 14.4	20.0
107849 2001 FV ₇₆	15.5	X	282.52654	133.15818	37.03517	8.37073	0.1100697	0.24247368	2.5469846	20	—	—
107850 2001 FA ₇₇	16.3	X	76.94387	175.45449	53.34424	6.49322	0.2433626	0.27087701	2.3656725	20	9 26.5	19.9
107851 2001 FF ₇₇	14.7	X	27.79498	249.59467	37.20488	12.93267	0.2010293	0.21910540	2.7250051	20	9 29.4	18.0
107852 2001 FP ₇₇	15.6	X	192.93457	180.82877	55.92170	8.76414	0.1391990	0.23727930	2.5840217	20	—	—
107853 2001 FT ₇₇	15.9	X	313.06622	150.62855	111.29247	3.07665	0.1727346	0.25660199	2.4526149	20	3 18.2	18.8
107854 2001 FV ₇₇	15.5	X	129.54264	253.64855	40.80227	15.31088	0.1481596	0.23482301	2.6020099	20	—	—
107855 2001 FU ₇₈	15.9	X	194.37239	64.41783	177.66115	6.31657	0.1262357	0.28894634	2.2659896	20	—	—
107856 2001 FW ₇₈	16.1	X	204.06799	200.82826	67.03210	6.33861	0.1703115	0.29355141	2.2422288	20	—	—
107857 2001 FY ₇₈	15.5	X	231.50042	71.73391	187.02675	15.93387	0.1914672	0.24444891	2.5332457	20	—	—
107858 2001 FB ₇₉	15.8	X	111.06809	46.42462	186.01198	9.09058	0.2454335	0.22378553	2.6868786	20	10 23.7	20.4
107859 2001 FC ₇₉	15.7	X	189.62143	70.51920	191.71500	14.48764	0.1862364	0.23797619	2.5789745	20	—	—
107860 2001 FH ₈₀	15.7	X	62.21101	280.94891	234.67260	7.20934	0.1854241	0.26192274	2.4192862	20	5 14.0	18.1
107861 2001 FN ₈₀	14.2	X	108.07940	294.11802	331.14053	9.02492	0.2023043	0.17623403	3.1507180	20	11 15.9	19.6
107862 2001 FP ₈₀	14.4	X	170.23933	316.75079	214.62989	26.74301	0.1667653	0.17622417	3.1508355	20	9 17.1	20.0
107863 2001 FQ ₈₀	14.4	X	63.68604	72.67635	238.76274	11.82358	0.2756565	0.22639172	2.6662182	20	12 17.9	18.7
107864 2001 FT ₈₀	15.6	X	346.61794	254.38555	136.62092	7.11767	0.0701397	0.25659672	2.4526485	20	3 10.2	18.6
107865 2001 FO ₈₂	15.7	X	215.24902	104.09391	319.42383	7.40781	0.1777253	0.24271711	2.5452813	20	—	—
107866 2001 FE ₈₄	16.6	X	353.14781	284.49313	7.39836	6.71525	0.1397817	0.26985159	2.3716617	20	7 28.4	18.8
107867 2001 FH ₈₅	15.7	X	10.91951	274.91566	75.11281	1.29239	0.1541937	0.17684115	3.1435026	20	11 4.1	19.5
107868 2001 FI ₈₅	16.0	X	346.62490	160.88243	190.58774	2.24417	0.2416259	0.27380995	2.3487488	20	10 31.3	17.4
107869 2001 FM ₈₆	16.3	X	183.91440	34.52801	185.45332	6.19858	0.1341343	0.28528885	2.2853156	20	12 21.4	19.5
107870 2001 FY ₈₆	15.3	X	151.40561	208.80124	120.80989	6.58120	0.2749210	0.24286791	2.5442276	20	1 11.3	19.5
107871 2001 FB ₈₇	15.9	X	277.61353	34.36023	125.53845	6.83348	0.0875857	0.24126892	2.5554563	20	—	—
107872 2001 FL ₈₇	16.6	X	201.27445	232.91105	59.53713	6.74525	0.0944164	0.29849679	2.2173943	20	—	—
107873 2001 FV ₈₇	16.3	X	61.36047	109.65562	90.30509	4.32949	0.1374219	0.26663951	2.3906704	20	7 9.7	19.1
107874 2001 FD ₈₈	14.5	X	122.59770	138.24396	87.43059	9.06318	0.0466930	0.17641309	3.1485857	20	10 11.6	19.2
107875 2001 FF ₈₈	14.8	X	155.39765	144.47176	135.09001	7.35412	0.1769877	0.18519655	3.0482280	20	—	—
107876 2001 FV ₈₈	15.4	X	81.79140	61.84376	173.20432	12.96242	0.1030362	0.21975654	2.7196197	20	9 13.5	19.2
107877 2001 FZ ₈₈	15.9	X	9.05276	129.11649	192.75792	2.06322	0.2330280	0.27683512	2.3316065	20	10 31.7	17.9
107878 2001 FG ₈₉	15.9	X	258.91490	89.91635	1.32420	10.29113	0.1519621	0.23281773	2.6169295	20	9 22.4	19.2
107879 2001 FP ₈₉	14.8	X	153.23470	114.60151	34.67241	1.91093	0.1117659	0.17157842	3.2074577	20	8 10.7	19.7
107880 2001 FT ₈₉	16.6	X	339.35192	133.50280	183.67144	5.93186	0.2222988	0.26860792	2.3789766	20	8 2.2	18.1
107881 2001 FS ₉₀	15.6	X	74.13270	39.73955	109.22492	3.14080	0.1493316	0.26266726	2.4147124	20	5 18.0	18.4
107882 2001 FA ₉₁	15.5	X	207.63109	320.45668	187.13334	12.54163	0.1987337	0.23005321	2.6378526	20	9 29.9	19.5
107883 2001 FJ ₉₁	16.3	X	1.29775	42.86797	170.50162	4.75633	0.1459912	0.26113251	2.4241645	20	4 6.2	18.4
107884 2001 FK ₉₁	16.1	X	126.99332	137.72712	13.83580	5.45528	0.1120201	0.27202601	2.3590063	20	7 24.5	19.5
107885 2001 FY ₉₁	15.3	X	345.61880	208.99496	75.06758	6.03548	0.0870846	0.21853865	2.7297144	20	6 24.6	18.4
107886 2001 FC ₉₂	14.6	X	350.87122	263.98103	117.87153	10.74056	0.0417305	0.18343289	3.0677354	20	11 9.9	18.9
107887 2001 FL ₉₂	15.1	X	180.72346	199.43739	126.08015	8.93989	0.1166826	0.25163122	2.4848091	20	1 20.2	18.9
107888 2001 FY ₉₂	16.1	X	103.47768	167.27816	52.42753	6.60181	0.3088636	0.27549517	2.3391607	20	10 12.1	20.2
107889 2001 FA ₉₃	15.9	X	176.02096	354.37439	76.57885	5.45829	0.1263445	0.26996231	2.3710131	20	5 28.7	19.5
107890 2001 FC ₉₃	16.0	X	158.00772	341.30601	115.22270	7.57397	0.0737499	0.26954102	2.3734831	20	6 11.4	19.2
107891 2001 FO ₉₃	16.3	X	37.11278	184.57419	70.81551	6.75205	0.1899996	0.27036449	2.3686612	20	9 5.3	19.0
107892 2001 FS ₉₃	16.0	X	2.37618	331.22185	77.21190	5.74086	0.1956092	0.29278879	2.2461207	20	—	—
107893 2001 FU ₉₃	14.8	X	12.98126	300.48114	118.80142	11.81329	0.1086698	0.19233025	2.9723799	20	—	—
107894 2001 FG ₉₄	15.1	X	89.23894	269.63075	58.48594	10.56456	0.1932918	0.23749343	2.5824682	20	—	—
107895 2001 FR ₉₄	15.5	X	111.20170	251.40378	48.30430	9.88413	0.0704933	0.23717902	2.5847499	20	—	—
107896 2001 FT ₉₄	15.1	X	14.79290	176.55070	60.20048	9.34244	0.0889787	0.21406153	2.7676445	20	6 6.0	18.4
107897 2001 FC ₉₅	16.0	X	93.74213	55.25318	64.59540	6.92593	0.1070429	0.26279063	2.4139567	20	4 28.7	19.0
107898 2001 FL ₉₅	14.7	X	214.96126	121.14685	67.45761	9.17348	0.1063729	0.18533714	3.0466863	20	12 9.0	18.9
107899 2001 FR ₉₅	15.9	X	148.12733	209.87354	59.70138	6.74804	0.1509377	0.28752423	2.2734553	20	—	—
107900 2001 FT ₉₅	15.0	X	13.22183	48.44940	62.94118	8.69823	0.0495186	0.19741011	2.9211675	20	—	—
107901 2001 FY ₉₅	14.8	X	332.69212	221.83998	44.96054	13.38556	0.0790501	0.21178905	2.7874069	20	5 9.8	18.3
107902 2001 FB ₉₆	15.5	X	240.11281	29.60606	39.75874	10.62694	0.2500617	0.27805570	2.3247781	20	7 24.9	19.1
107903 2001 FV ₉₆	15.1	X	153.58676	262.58607	33.69198	15.14670	0.1068209	0.24113787	2.5563821	20	—	—
107904 2001 FJ ₉₇	16.6	X	138.05418	205.13234	58.52244	7.25944	0.1531371	0.28472266	2.2883443	20	12 28.9	20.1
107905 2001 FU ₉₇	15.7	X	297.94312	109.82564	25.75622	29.16732	0.1130466	0.24129597	2.5552653	20	—	—
107906 2001 FV ₉₇	14.7	X	194.68907	193.13162	41.95759	15.39599	0.0609760	0.23847723	2.5753609	20	—	—
107907 2001 FZ ₉₇	15.5	X	327.06957	109.39415	127.01463	7.90012	0.1461651	0.25676335	2.4515873	20	3 9.6	18.3
107908 2001 FH ₉₉	15.3	X	67.30208	180.81507	73.06803	15.11219	0.1648601	0.22				

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>		
107921	2001	FZ ₁₀₂	16.7	X	126.84373	271.16883	212.40214	1.23699	0.1784736	0.26994866	2.3710930	20	6 20.0	20.1
107922	2001	FB ₁₀₃	15.7	X	127.40984	314.66161	148.26339	2.80877	0.2156995	0.21709152	2.7418318	20	5 28.1	20.1
107923	2001	FN ₁₀₃	16.0	X	324.82100	354.21454	183.27523	6.04364	0.0716923	0.25243072	2.4795598	20	—	—
107924	2001	FO ₁₀₃	16.1	X	355.89395	338.97076	311.54036	1.74569	0.2171923	0.26966491	2.3727560	20	8 3.8	17.5
107925	2001	FQ ₁₀₃	16.3	X	282.30642	102.41601	148.62614	3.66816	0.1173962	0.25522278	2.4614429	20	1 30.8	19.8
107926	2001	FT ₁₀₃	16.4	X	125.53163	124.39017	160.13816	7.06105	0.1169635	0.28864568	2.2675629	20	—	—
107927	2001	FE ₁₀₄	16.2	X	45.70931	167.49609	325.37412	7.49416	0.1312828	0.25890949	2.4380208	20	3 1.1	18.7
107928	2001	FM ₁₀₅	15.7	X	324.04188	265.59491	163.15180	8.69173	0.2865430	0.24229171	2.5282597	20	12 28.3	17.4
107929	2001	FV ₁₀₆	16.8	X	342.15170	283.81402	161.58362	4.99480	0.2041904	0.24548186	2.5621343	20	—	—
107930	2001	FU ₁₀₈	17.3	X	32.10740	247.28566	307.61137	0.55965	0.1219291	0.26297031	2.4128569	20	5 8.5	19.7
107931	2001	FV ₁₀₈	15.7	X	32.71060	296.83461	359.71781	5.19998	0.1507749	0.27547827	2.3392563	20	10 16.9	18.5
107932	2001	FZ ₁₀₈	15.8	X	220.09993	47.33474	2.50691	4.59077	0.1161878	0.21927392	2.7236088	20	6 15.9	20.0
107933	2001	FB ₁₁₀	14.3	X	351.24521	330.99368	351.67250	17.96294	0.1771112	0.22106155	2.7089058	20	9 5.4	16.9
107934	2001	FK ₁₁₀	16.4	X	275.72046	31.19172	174.29857	4.43881	0.1395416	0.24572484	2.5244688	20	—	—
107935	2001	FV ₁₁₁	15.0	X	224.23099	186.29510	300.27588	3.86997	0.1079947	0.18023006	3.1039727	20	9 22.2	19.6
107936	2001	FA ₁₁₃	15.3	X	273.43921	93.42920	130.99570	9.39769	0.0704433	0.24565166	2.5249701	20	—	—
107937	2001	FZ ₁₁₃	15.9	X	296.03051	178.33328	290.33777	9.54024	0.1444555	0.24062071	2.5600437	20	12 20.4	18.4
107938	2001	FQ ₁₁₃	16.3	X	185.14237	254.09118	348.92770	9.61920	0.1032905	0.23916135	2.5704474	20	—	—
107939	2001	FE ₁₁₃	16.2	X	312.58576	285.63400	7.18531	2.48580	0.1848838	0.26301815	2.4125644	20	4 25.9	18.7
107940	2001	FE ₁₁₄	16.1	X	18.14311	249.46880	34.73663	3.19220	0.2204935	0.27033191	2.3688515	20	9 18.2	18.1
107941	2001	FY ₁₁₄	15.9	X	96.07101	139.57616	85.46214	5.81630	0.0453797	0.27604190	2.3360710	20	9 21.9	18.9
107942	2001	FB ₁₁₅	15.2	X	131.14299	353.23344	94.70860	5.60020	0.0352687	0.21124711	2.7921722	20	4 27.1	19.1
107943	2001	FO ₁₁₅	15.7	X	13.17539	288.42438	25.97036	2.71037	0.2736965	0.27617495	2.3353207	20	11 3.3	17.9
107944	2001	FU ₁₁₅	16.3	X	132.64196	326.19881	282.41718	3.11510	0.1767735	0.23098973	2.6307178	20	11 26.1	20.7
107945	2001	FZ ₁₁₇	16.2	X	200.43198	216.41768	29.47112	4.90599	0.0743486	0.24018072	2.5631693	20	—	—
107946	2001	FY ₁₁₇	15.0	X	59.28767	119.71335	191.27220	11.15848	0.1979409	0.22697882	2.6616186	20	12 6.6	19.1
107947	2001	FA ₁₁₈	16.5	X	278.96851	63.29264	155.60887	4.31542	0.0974627	0.29911290	2.2143484	20	—	—
107948	2001	FC ₁₁₈	16.2	X	12.76155	172.10111	161.07255	3.98907	0.1300509	0.26283558	2.4136814	20	5 30.9	18.5
107949	2001	FI ₁₁₈	16.5	X	30.00410	17.32274	221.53164	10.30782	0.1876895	0.26817642	2.3815278	20	7 20.1	19.0
107950	2001	FA ₁₂₀	16.4	X	327.73315	58.37239	172.68403	2.15865	0.2026809	0.20644241	2.8353289	20	3 23.3	20.0
107951	2001	FP ₁₂₀	14.8	X	90.67123	312.87141	32.10286	12.41782	0.1649062	0.23929746	2.5694726	20	—	—
107952	2001	FS ₁₂₀	15.9	X	259.72480	59.77929	94.38208	2.36907	0.1203654	0.23855978	2.5747668	20	12 22.9	18.9
107953	2001	FV ₁₂₀	15.4	X	186.93225	20.32982	181.60754	12.76754	0.1016351	0.23344346	2.6122510	20	11 26.3	19.5
107954	2001	FX ₁₂₀	15.6	X	232.34556	262.40902	32.65931	8.42567	0.2308371	0.30098553	2.2051542	20	1 27.7	19.4
107955	2001	FY ₁₂₀	15.4	X	247.89371	304.06633	174.63446	14.73802	0.1190766	0.23216216	2.6218535	20	10 21.6	18.9
107956	2001	FF ₁₂₂	15.9	X	326.34000	156.69911	76.18991	5.60523	0.1556204	0.25922482	2.4360433	20	3 2.1	18.6
107957	2001	FL ₁₂₂	16.0	X	12.27124	77.70445	172.69459	6.05399	0.0712614	0.26671503	2.3902191	20	6 22.8	18.6
107958	2001	FM ₁₂₂	15.5	X	91.68050	86.00482	39.28916	4.42557	0.0492006	0.21047180	2.7902520	20	4 25.2	19.2
107959	2001	FT ₁₂₂	16.1	X	182.11504	255.32284	17.38747	5.54040	0.1741572	0.24062161	2.5600373	20	—	—
107960	2001	FT ₁₂₂	16.5	X	28.19841	184.97678	38.85043	3.32601	0.1442104	0.26457269	2.4031048	20	6 18.4	18.8
107961	2001	FZ ₁₂₂	15.6	X	22.63692	35.24179	13.02033	12.23766	0.1864264	0.24223790	2.5486370	20	—	—
107962	2001	FK ₁₂₃	15.3	X	248.56621	48.57583	353.40357	8.89550	0.0442869	0.22050641	2.7134505	20	7 21.4	19.1
107963	2001	FT ₁₂₃	14.4	X	27.95189	9.80500	358.41026	15.28105	0.2079321	0.23457443	2.6038478	20	—	—
107964	2001	FR ₁₂₄	16.4	X	129.98997	273.91512	177.20699	6.31085	0.1263631	0.26410424	2.4059456	20	5 7.5	19.8
107965	2001	FT ₁₂₄	16.1	X	84.74671	159.22144	142.34864	4.29008	0.2103969	0.28160072	2.3052262	20	12 28.9	19.7
107966	2001	FX ₁₂₄	15.8	X	152.98135	108.16656	183.32792	12.86142	0.1530927	0.23943870	2.5684621	20	—	—
107967	2001	FF ₁₂₅	15.6	X	54.65018	296.66879	346.72968	3.46507	0.1942188	0.22392391	2.6857716	20	10 25.2	19.4
107968	2001	FK ₁₂₅	16.0	X	169.10885	279.04482	186.61721	3.49220	0.1669251	0.22146983	2.7055756	20	7 4.9	20.4
107969	2001	FM ₁₂₅	15.9	X	313.84658	163.12090	182.49272	1.73080	0.1006068	0.22235820	2.6983645	20	7 27.8	19.1
107970	2001	FS ₁₂₆	15.3	X	232.73895	342.12742	175.76119	21.95789	0.0138504	0.23439755	2.6051576	20	12 7.1	19.3
107971	2001	FG ₁₂₇	15.9	X	254.88513	7.33698	168.82040	14.77501	0.1973741	0.23970213	2.5665799	20	—	—
107972	2001	FM ₁₂₇	15.0	X	268.31201	81.71549	47.73407	16.57505	0.0751897	0.18458839	3.0549197	20	11 23.2	19.2
107973	2001	FS ₁₂₈	15.0	X	331.92741	93.83127	202.36388	10.06626	0.2559970	0.26651438	2.3914187	20	5 31.5	16.8
107974	2001	FY ₁₂₈	15.7	X	225.72178	86.61702	118.50443	5.87627	0.1494353	0.23988944	2.5652437	20	—	—
107975	2001	FD ₁₂₉	15.6	X	355.85143	339.01874	264.67479	5.94998	0.2194073	0.26159861	2.4212842	20	5 6.1	17.3
107976	2001	FT ₁₂₉	16.1	X	32.82750	308.63195	197.93083	6.66568	0.1204199	0.25866988	2.4395261	20	2 24.6	18.5
107977	2001	FZ ₁₂₉	15.6	X	232.38149	256.85377	353.87000	13.28734	0.1707281	0.24652878	2.5189776	20	—	—
107978	2001	FE ₁₃₀	14.6	X	185.38160	155.08469	350.35372	9.67680	0.0695866	0.17700732	3.1415350	20	9 8.6	19.1
107979	2001	FR ₁₃₀	15.7	X	224.84881	37.46997	230.05670	3.98464	0.1498557	0.24483278	2.5305971	20	—	—
107980	2001	FS ₁₃₀	15.7	X	234.75249	7.39680	220.14802	8.26308	0.2133651	0.24639548	2.5198860	20	—	—
107981	2001	FY ₁₃₀	15.3	X	334.63928	110.94913	202.86051	12.56370	0.0715277	0.22166713	2.7039699	20	7 16.7	18.9
107982	2001	FG ₁₃₁	14.6	X	166.83563	87.43515	79.18694	3.65374	0.0283534	0.17656996	3.1467205	20	9 16.6	19.2
107983	2001	FG ₁₃₂	15.7	X	277.27504	329.93645	185.57484	15.08751	0.0927508	0.23858282	2.5746010	20	—	—
107984	2001	FT ₁₃₂	16.6	X	142.71739	330.00262	285.79888	5.87763	0.1531875	0.28482756	2.2877824	20	12 23.7	20.1
107985	2001	FP ₁₃₃	15.9	X	136.32040	52.93659	208.28767	13.09186	0.2324455	0.23110262	2.6298611	20	12 14.2	20.7
107986	2001	FR ₁₃₃	16.4	X	212.51248	268.03477	294.46327	1.58283	0.0884077	0.28779622	2.2720227	20	—	—
107987	2001	FG ₁₃₄	16.2	X	269.59612	305.20247	206.02949	4.27450	0.2036214	0.23934015	2.5691671	20	12 23.2	18.9
107988	2001	FJ ₁₃₄	15.9	X	177.27831	195.83010	97.87074	4.34859	0.0402626	0.24371819	2.5383066	20	—	—
107989	2001	FF ₁₃₅	15.8	X	21.89063	57.83506	205.55384	24.05280	0.2969982	0.26825649	2.3810539	20	8 29.9	18.5
107990	2001	FJ ₁₃₅	16.1	X	48.50894	263.50504	218.177							