

ELEMENTS AND OPPOSITION DATES IN 2021

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2021 JULY 5.0 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>
496001 2007 VR ₁₈₃	17.5	X	6.25475	298.11220	220.46808	23.049052	0.6182995	0.22342206	2.6897919	21	—	—
496002 2007 VF ₂₂₃	18.4	X	359.68495	123.66820	213.24795	21.04761	0.2401830	0.28073870	2.3099426	21	10 15.4	19.9
496003 2007 VN ₂₃₃	16.2	X	246.42036	267.63198	60.78677	15.25952	0.2226336	0.18127059	3.0920830	21	3 28.5	21.5
496004 2007 XS	17.8	X	155.17195	91.13849	254.92981	18.55658	0.0978434	0.38152866	1.8827151	21	—	—
496005 2007 XJ ₁₆	19.1	X	44.47906	32.88774	309.10974	6.23922	0.5565716	0.29058361	2.2574699	21	—	—
496006 2007 XJ ₅₂	16.1	X	206.14248	267.58890	108.22887	16.89328	0.2552839	0.17596862	3.1538853	21	4 20.6	21.9
496007 2007 XS ₅₆	15.5	X	169.79985	113.08063	307.40765	23.05449	0.2619082	0.17516748	3.1634943	21	4 30.6	21.5
496008 2007 XQ ₅₉	16.0	X	181.06866	110.99363	293.42797	25.13062	0.2485371	0.17465118	3.1697258	21	4 18.0	22.0
496009 2007 YF ₆₉	18.1	X	354.15003	290.68297	77.79934	5.15076	0.2322773	0.27971707	2.3155637	21	11 24.3	19.6
496010 2007 YB ₇₃	17.4	X	340.11609	7.63005	120.56078	24.39877	0.0717553	0.36141436	1.9519369	21	—	—
496011 2008 AK ₄₉	17.0	X	212.07248	355.15963	308.90293	4.57264	0.1057051	0.22864916	2.6486403	21	1 19.5	21.0
496012 2008 DK ₆₁	16.1	X	25.43538	129.73621	158.36964	22.50984	0.1139360	0.17579232	3.1559936	21	8 23.1	20.2
496013 2008 EL ₆	20.8	X	293.54799	38.32018	177.68197	13.14246	0.4800890	0.43362619	1.7287242	21	—	—
496014 2008 EC ₅₇	17.5	X	355.32436	99.63989	130.92435	7.47402	0.2660326	0.22845297	2.6501564	21	3 26.5	19.8
496015 2008 HF ₅₃	17.3	X	342.65510	159.64043	157.40118	8.7023	0.2303917	0.23391910	2.6087087	21	7 14.2	19.6
496016 2008 HD ₇₀	16.2	X	337.44793	184.64422	79.72756	15.30434	0.2243576	0.22650206	2.6653522	21	4 20.1	19.2
496017 2008 KG ₃₂	16.9	X	14.44306	114.66592	147.86406	6.80912	0.1108797	0.23221553	2.6214518	21	7 1.3	19.8
496018 2008 NU	17.4	X	310.01672	19.72352	289.82694	10.71966	0.5308524	0.21641539	2.7475396	21	3 12.1	22.0
496019 2008 ON ₁₁	16.4	X	333.22187	340.64952	304.91727	9.85663	0.2457920	0.21913213	2.7247831	21	4 27.0	19.4
496020 2008 PP ₁₅	17.0	X	291.87450	265.62378	92.26806	12.03657	0.3182694	0.21941477	2.7224431	21	5 27.8	20.8
496021 2008 QC ₂	18.8	X	67.76031	83.47586	228.59021	1.42711	0.1831354	0.31678148	2.1312261	21	12 21.2	21.8
496022 2008 QV ₂₅	16.2	X	262.74203	98.35631	274.65304	17.51497	0.2356217	0.21297690	2.7770331	21	5 24.2	20.8
496023 2008 RH ₆₆	16.1	X	263.75756	11.48223	9.30867	11.56960	0.2695245	0.21361532	2.7714973	21	5 29.3	20.7
496024 2008 RT ₁₀₄	17.2	X	329.29752	68.88047	353.91113	24.20267	0.3195155	0.23277146	2.6127262	21	11 22.4	19.5
496025 2008 RN ₁₁₆	17.7	X	188.67425	21.51858	343.18593	0.53014	0.1530900	0.19326895	2.9627476	21	3 15.8	22.6
496026 2008 RV ₁₂₁	17.2	X	292.60465	18.64886	282.58536	4.99126	0.1200567	0.20891108	2.8129482	21	4 10.1	21.1
496027 2008 RH ₁₃₁	17.3	X	273.56137	205.19286	179.29683	2.91214	0.2151227	0.21188840	2.7856356	21	6 22.9	21.4
496028 2008 SC ₉	16.5	X	277.72204	195.29212	175.20664	8.60459	0.1667004	0.21660736	2.7459159	21	6 16.8	20.4
496029 2008 SL ₆₀	16.0	X	290.52213	93.05405	255.67630	13.65835	0.3321627	0.21427941	2.7657680	21	5 9.6	20.1
496030 2008 SU ₁₈₁	17.8	X	347.02469	307.20037	59.04933	3.97276	0.1597074	0.22535900	2.6743574	21	10 14.6	20.3
496031 2008 SR ₂₇₄	13.9	X	337.44234	211.06990	208.33944	6.81266	0.0958858	0.08109341	5.2862253	21	11 7.3	20.4
496032 2008 SS ₂₉₄	16.6	X	307.21805	41.25231	295.64879	13.45301	0.2552394	0.21733647	2.7397713	21	5 27.0	20.1
496033 2008 TH ₄₉	17.1	X	155.29462	177.91950	202.60516	11.10719	0.1887487	0.18992801	2.9973908	21	3 4.8	22.1
496034 2008 TG ₁₀₇	17.2	X	259.13574	234.19708	98.68670	3.22960	0.0694171	0.20263862	2.8707006	21	4 21.3	21.3
496035 2008 UQ ₁₀₂	16.7	X	64.23835	215.52999	218.34994	11.05729	0.1764684	0.17594748	3.1541380	21	1 20.6	20.7
496036 2008 UK ₁₂₁	16.1	X	106.68537	128.18592	299.47690	6.79828	0.0737329	0.18162081	3.0881068	21	2 26.1	20.4
496037 2008 US ₁₃₅	18.6	X	34.64243	114.14459	215.97354	3.97505	0.2167791	0.30787966	2.1721112	21	12 10.6	21.2
496038 2008 UY ₁₉₅	16.1	X	115.90186	169.59776	234.87397	14.53979	0.0714969	0.17713400	3.1400370	21	2 6.2	20.8
496039 2008 UV ₃₂₉	16.6	X	169.03284	113.29523	248.15784	3.01143	0.0758576	0.18426525	3.0584902	21	2 17.6	21.2
496040 2008 UM ₃₄₅	17.1	X	289.64872	95.53538	267.04456	15.27807	0.3603820	0.21480105	2.7612885	21	5 23.2	21.3
496041 2008 US ₃₆₆	16.7	X	237.16033	51.98785	247.09385	15.60530	0.0818643	0.18546272	3.0453109	21	2 7.9	21.6
496042 2008 VP ₇₃	16.5	X	29.45974	242.96788	231.42530	16.97125	0.1174957	0.17362749	3.1821726	21	1 10.0	20.7
496043 2008 WP ₇	16.8	X	188.66568	127.31232	225.10550	5.88790	0.1038820	0.18742530	3.0240148	21	2 26.4	21.5
496044 2008 WM ₄₁	15.5	X	276.62630	347.47965	247.39319	28.96417	0.1454826	0.17461494	3.1701644	21	—	—
496045 2008 WA ₆₄	16.1	X	116.54418	171.86729	243.81180	16.55689	0.1950988	0.18149766	3.0895036	21	3 6.2	21.1
496046 2008 WN ₁₀₆	16.6	X	296.80320	342.17864	50.73312	14.26651	0.1921055	0.21582824	2.7525204	21	8 16.6	20.2
496047 2008 WZ ₁₂₇	16.5	X	219.60140	81.32150	250.99056	9.76615	0.0645505	0.18403130	3.0610817	21	3 3.9	21.3
496048 2008 XU	16.5	X	9.42777	116.97914	248.63064	11.93872	0.1343641	0.22603410	2.6690297	21	11 19.7	19.6
496049 2008 YE ₂₈	15.9	X	110.36050	158.23024	293.51340	27.21317	0.1623953	0.17978146	3.1091341	21	3 30.9	21.1
496050 2009 AZ ₂₄	18.6	X	139.23649	231.97109	120.78296	21.51899	0.0760038	0.39862197	1.8285011	21	—	—
496051 2009 AG ₃₃	15.9	X	141.72670	246.71082	131.79210	26.79389	0.1797202	0.16977918	3.2300787	21	2 24.4	21.1
496052 2009 AK ₃₃	18.0	X	213.88356	43.32146	11.88615	1.04446	0.1703767	0.27200408	2.3591331	21	6 4.3	21.8
496053 2009 AM ₃₃	18.2	X	140.20863	20.98875	121.72204	7.53195	0.1879177	0.26995986	2.3710275	21	7 20.2	21.9
496054 2009 BT ₄	18.1	X	346.31869	149.18569	259.92161	6.06400	0.2141490	0.30270046	2.1968176	21	—	—
496055 2009 BU ₁₃₁	16.2	X	176.18017	16.77215	80.21539	13.02692	0.1302723	0.19028613	2.9936289	21	6 23.6	21.0
496056 2009 BH ₁₈₉	16.3	X	203.12338	299.41213	102.82254	15.15090	0.2087002	0.19548365	2.9403279	21	5 16.1	21.5
496057 2009 CQ ₂₄	16.7	X	327.14705	109.47454	148.62068	10.03791	0.0326517	0.17513835	3.1638451	21	4 22.7	21.2
496058 2009 DE ₁₀₇	17.5	X	242.36012	265.49770	145.23670	6.46715	0.0997662	0.26885624	2.3775115	21	7 5.6	20.7
496059 2009 DL ₁₀₉	17.8	X	99.90560	12.08155	156.30870	5.76811	0.1504405	0.26303275	2.4124751	21	7 6.8	21.0
496060 2009 DZ ₁₂₁	17.9	X	41.06290	80.88287	164.27479	11.05794	0.2049362	0.25991767	2.4317122	21	8 7.2	20.4
496061 2009 GX ₃	17.8	X	22.86149	86.34953	198.00573	2.08900	0.1833199	0.25565402	2.4586741	21	8 29.6	20.1
496062 2009 JC ₆	17.2	X	90.25699	85.05681	112.33986	10.22092	0.1641631	0.25788974	2.4444435	21	8 7.4	20.5
496063 2009 OY ₂₃	17.2	X	242.14853	89.35843	291.81518	11.56023	0.2857510	0.22955585	2.6416614	21	5 8.8	21.9
496064 2009 OZ ₂₃	17.4	X	302.98920	49.68994	299.46614	14.44594	0.2159711	0.23935119	2.5690881	21	6 14.6	20.7
496065 2009 PT ₁	16.8	X	256.50144	26.92209	335.87771	11.99123	0.3002598	0.22876698	2.6477308	21	4 24.4	21.6
496066 2009 PK ₁₆	16.7	X	248.32827	31.38344	344.33774	7.81247	0.3057407	0.22709232	2.6607317	21	5 5.8	21.5
496067 2009 QR ₄₁	16.9	X	289.98237	178.79192	168.54247	15.07985	0.2628378	0.23271649	2.6176883	21	5 20.3	20.8
496068 2009 RC	17.0	X	255.95229	77.29084	284.75616	11.65507	0.2962209	0.22830177	2.6513264	21	4 24.5	21.8
496069 2009 RT ₁₈	17.6	X	270.01698	88.29217	268.78630	4.17339	0.2756904	0.23068106	2.6330640	21	5 5.7	21.9
496070 2009 RH ₂₈	17.6	X	332.17470	156.18130	182.39164	13.55277	0.3394325	0.24090820	2.5580066	21	7 3.9	19.8
496071 2009 RD ₃₀	18.5	X	321.33670	5.33248	336.64015	4.30397	0.2656227	0.23864136	2.5741799	21	6 28.4	20.8
496072 2009 RP ₄₇	17.1	X	249.85636	163.23303	191.18542	12.31391	0.2110199	0.22306446	2.6926658	21	4 22.7	21.5
496073 2009 RV ₄₇	13.8	X	332.07326	207.73197	199.28004	14.06263	0.0916467	0.08275821	5.2150921	21	10 17	

ELEMENTS AND OPPOSITION DATES IN 2021

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2021 JULY 5.0 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>
496081 2009 SG ₁₀₃	15.3	X	300.61085	178.16828	235.28229	31.28349	0.1936789	0.23754453	2.5820978	21	9 3.3	19.0
496082 2009 SD ₁₁₂	17.6	X	332.10028	128.09180	202.24765	12.58960	0.1732314	0.23833137	2.5764116	21	7 14.7	20.5
496083 2009 SD ₁₃₀	17.0	X	28.13688	205.14482	182.05089	6.32801	0.1577760	0.17540859	3.1605947	21	—	—
496084 2009 SB ₁₃₄	16.8	X	201.52135	263.33537	114.44019	4.38983	0.1045211	0.21405530	2.7676981	21	4 12.5	21.1
496085 2009 SF ₁₄₂	17.4	X	226.97837	15.81879	1.91697	3.01394	0.1207283	0.22131617	2.7068278	21	5 4.2	21.6
496086 2009 SC ₁₅₀	17.1	X	185.42917	54.38773	344.82144	6.43717	0.1589401	0.21626997	2.7487710	21	4 19.2	21.6
496087 2009 ST ₁₆₂	17.0	X	308.97753	334.14833	6.15988	16.62217	0.1953489	0.23569489	2.5955890	21	6 12.3	20.5
496088 2009 SF ₁₇₀	17.1	X	162.55830	236.11926	165.23517	12.91510	0.2259920	0.21280302	2.7785455	21	4 9.9	21.8
496089 2009 SH ₁₉₄	17.6	X	275.25733	88.65761	261.21004	2.07460	0.2514627	0.22912081	2.6450041	21	5 5.1	21.7
496090 2009 SW ₂₂₀	17.3	X	272.61397	74.13472	279.87086	11.54207	0.2844998	0.22983723	2.6395048	21	5 1.1	21.7
496091 2009 SU ₂₅₅	16.8	X	238.03910	137.18558	235.22218	12.22186	0.2811534	0.22509647	2.6764364	21	4 27.4	21.4
496092 2009 SX ₂₉₀	17.4	X	309.99404	211.76921	110.33064	4.14461	0.1169983	0.22827060	2.6515678	21	6 3.9	20.7
496093 2009 SE ₂₉₃	17.5	X	64.22272	75.52744	165.20380	11.78728	0.0239714	0.23805874	2.5783783	21	8 6.7	20.9
496094 2009 SL ₃₂₇	16.0	X	280.46748	112.30556	236.41679	11.82520	0.3201927	0.22935604	2.6431954	21	5 2.6	20.1
496095 2009 TZ ₆	16.8	X	208.62530	101.41890	277.61182	5.82268	0.2021702	0.21543924	2.7558326	21	4 14.2	21.7
496096 2009 TS ₁₄	16.8	X	259.98894	9.16153	11.71147	13.64853	0.2186570	0.22830604	2.6512933	21	5 30.1	21.1
496097 2009 TX ₄₄	17.3	X	269.50701	141.71878	221.32600	12.30837	0.1923538	0.22933485	2.6433582	21	5 24.3	21.2
496098 2009 UX ₅₉	16.2	X	309.08765	116.35929	227.68285	29.33678	0.2833366	0.23447882	2.6045556	21	6 2.8	19.5
496099 2009 UQ ₁₁₁	15.7	X	127.74861	295.39133	118.86688	15.18605	0.2717853	0.19090274	2.9871792	21	4 5.3	20.8
496100 2009 UE ₁₁₆	17.6	X	263.79617	116.32631	243.23110	6.30073	0.2215373	0.22522069	2.6754522	21	5 9.4	21.7
496101 2009 UW ₁₂₉	16.9	X	338.58810	50.59450	270.18026	11.70480	0.3112434	0.23668255	2.5883632	21	6 28.5	18.4
496102 2009 UP ₁₃₃	17.5	X	323.87393	175.52648	199.44337	6.64847	0.1890506	0.24149950	2.5538295	21	9 5.1	19.8
496103 2009 VA ₁₁	16.7	X	107.04598	75.91882	73.25985	3.14168	0.0275723	0.21861408	2.7290864	21	6 2.9	20.4
496104 2009 VR ₅₇	17.1	X	240.29816	288.43543	67.66218	9.69840	0.1971908	0.21732330	2.7398820	21	4 19.6	21.6
496105 2009 VX ₇₀	16.7	X	104.41750	190.42417	254.63712	9.31604	0.0686945	0.19631303	2.9320405	21	3 11.5	20.9
496106 2009 VF ₈₁	17.5	X	122.29865	215.06492	200.34610	7.91492	0.2798535	0.19842896	2.9111595	21	3 25.6	22.2
496107 2009 WH	16.9	X	10.34449	156.91740	174.72841	5.00733	0.1268842	0.24342226	2.5403635	21	11 6.0	19.6
496108 2009 WR ₂₃	16.9	X	293.20441	89.20564	248.12808	10.76771	0.1235684	0.22322322	2.6913890	21	5 29.8	20.3
496109 2009 WY ₄₄	17.0	X	219.79053	320.83842	65.76947	7.76985	0.0519637	0.21455080	2.7634352	21	5 13.9	21.0
496110 2009 WK ₈₂	17.4	X	268.79620	60.57071	292.63619	5.89385	0.3000495	0.22449733	2.6811962	21	4 26.3	21.8
496111 2009 WU ₉₄	17.3	X	286.73995	257.39310	106.37321	3.07251	0.2266837	0.23106119	2.6301754	21	6 9.7	20.8
496112 2009 WE ₁₆₀	18.4	X	104.24409	162.13610	283.11952	2.08717	0.1598384	0.28351932	2.2948146	21	3 16.1	21.1
496113 2009 WN ₁₆₃	16.9	X	209.83175	175.89994	255.73131	7.71659	0.1697328	0.21975945	2.7195957	21	6 22.7	21.4
496114 2009 WF ₁₈₅	16.3	X	298.14488	115.56304	271.40006	28.48503	0.3755391	0.23227766	2.6209843	21	6 30.9	19.6
496115 2009 WF ₂₄₂	17.9	X	252.39013	22.27512	332.53733	4.64825	0.1762124	0.21816264	2.7328500	21	4 25.6	22.3
496116 2009 WA ₂₆₃	16.7	X	262.16038	77.11748	250.56981	7.71283	0.2723441	0.21439639	2.7647619	21	3 22.9	21.5
496117 2009 XZ ₈	16.9	X	224.93047	151.26919	261.85987	13.35654	0.1073261	0.21842811	2.7306353	21	6 18.2	20.9
496118 2009 YX ₁₅	16.4	X	94.76241	129.62511	310.89975	13.97718	0.1044853	0.18754917	3.0226831	21	2 28.1	20.6
496119 2010 AH ₆₉	16.5	X	164.33567	134.52337	310.35489	14.38472	0.1095864	0.20540789	2.8448408	21	5 24.7	21.2
496120 2010 AS ₁₁₅	15.2	X	240.05191	34.79200	291.53302	24.80140	0.1147671	0.17527237	3.1622322	21	3 6.3	20.7
496121 2010 CG ₁₈₂	16.3	X	155.40080	221.78931	165.44304	14.86950	0.1640722	0.18375921	3.0641027	21	3 14.9	21.2
496122 2010 CZ ₁₈₂	16.3	X	104.01404	222.38682	201.91419	4.65157	0.1252096	0.17935158	3.1141002	21	2 27.3	20.6
496123 2010 CJ ₁₈₆	15.8	X	209.88723	302.75383	57.21153	16.72259	0.0452649	0.17179398	3.2047741	21	4 9.6	20.7
496124 2010 EK ₁₂	17.6	X	105.93441	275.20619	300.31442	14.87420	0.4245849	0.29048778	2.2579664	21	9 28.9	22.2
496125 2010 FF ₉₂	16.3	X	20.42777	78.50196	97.05039	20.93602	0.2875375	0.18159212	3.0884321	21	3 30.9	19.5
496126 2010 GQ ₁₀₈	18.2	X	137.58904	60.62276	199.60732	6.19831	0.1191227	0.30516982	2.1849508	21	12 19.0	21.4
496127 2010 GN ₁₄₅	17.6	X	75.78820	240.44754	52.31466	8.47337	0.2643014	0.29766183	2.2215390	21	12 7.8	21.1
496128 2010 LJ ₁₀	17.5	X	21.61082	21.75928	302.88144	12.99308	0.2581003	0.27433738	2.3457374	21	11 8.8	20.3
496129 2010 MO ₉₉	17.0	X	37.20968	91.42513	208.63818	11.57164	0.2281915	0.18118999	3.0930000	21	10 13.1	20.7
496130 2010 NB ₆₇	17.6	X	353.31565	162.98965	194.94459	12.12746	0.2773435	0.26965232	2.3728299	21	11 10.5	19.1
496131 2010 OF ₃₅	17.3	X	214.20817	107.98962	299.07673	10.78672	0.2943313	0.24058197	2.5603185	21	5 19.8	22.1
496132 2010 PW ₂₃	17.7	X	140.92947	3.34936	299.00324	7.74330	0.2281313	0.30313128	2.1947356	21	—	—
496133 2010 QN ₄	16.7	X	188.39413	169.47391	174.53399	14.02717	0.2636590	0.22982836	2.6395727	21	2 17.1	21.4
496134 2010 RS ₂₇	18.3	X	298.87292	126.14705	262.69621	1.73717	0.1288825	0.26510377	2.3998943	21	8 9.3	20.7
496135 2010 RY ₃₉	17.6	X	68.91107	35.31698	277.35370	6.08689	0.1367878	0.28307321	2.2972250	21	12 12.3	20.6
496136 2010 RP ₆₁	17.7	X	323.80563	201.19502	190.67106	4.68671	0.1890275	0.26849196	2.3796615	21	10 10.6	19.4
496137 2010 RU ₆₃	18.2	X	12.09566	58.71209	294.17756	1.55626	0.2357124	0.27631740	2.3345180	21	12 4.9	20.3
496138 2010 RN ₇₃	18.2	X	339.00268	288.12908	78.62740	3.02612	0.2038194	0.27114053	2.3641395	21	10 9.1	19.7
496139 2010 RX ₈₀	17.7	X	348.41839	157.74230	151.06825	1.94227	0.1834272	0.26214025	2.4179477	21	7 20.2	19.5
496140 2010 RY ₉₀	18.0	X	336.73050	338.46497	27.01509	1.30102	0.2002896	0.26847361	2.3797700	21	9 28.4	19.5
496141 2010 RY ₁₀₉	18.0	X	25.84221	351.42924	341.31235	6.34078	0.2836765	0.27534320	2.3400213	21	12 4.9	20.8
496142 2010 RM ₁₂₅	18.2	X	346.54754	225.81981	143.07299	3.78434	0.1807061	0.27129581	2.3632373	21	10 30.2	20.0
496143 2010 RC ₁₆₅	18.0	X	305.21557	25.77925	354.95583	3.04499	0.2452342	0.26248119	2.4158535	21	7 31.6	20.3
496144 2010 RM ₁₆₅	18.2	X	105.89082	111.84855	187.73007	5.08309	0.1969004	0.29131794	2.2536747	21	—	—
496145 2010 RF ₁₇₉	17.7	X	333.16409	358.63888	9.47901	6.59227	0.2111083	0.26814395	2.3817200	21	9 23.6	19.0
496146 2010 SO ₁₀	17.8	X	349.23898	33.28670	330.36688	10.12718	0.2542768	0.27121577	2.3637022	21	10 28.2	19.5
496147 2010 SC ₁₈	16.6	X	308.28970	32.43560	359.80016	8.73524	0.0836133	0.17490476	3.1666614	21	9 9.2	20.7
496148 2010 SZ ₁₉	18.2	X	344.69000	10.91527	344.19133	2.20205	0.2047768	0.26829752	2.3808111	21	9 30.6	19.8
496149 2010 SA ₃₃	17.4	X	343.76855	281.18545	81.44163	3.14680	0.2362309	0.26999200	2.3708393	21	10 16.6	18.6
496150 2010 TR ₇₄	16.6	X	30.99512	106.65746	198.48699	16.12149	0.2242671	0.17832024	3.1260958	21	10 9.4	20.3
496151 2010 TJ ₇₆	18.1	X	334.00026	73.71118	15.49501	20.98523	0.1010403	0.37576137	1.9019304	21	—	—
496152 2010 TN ₁₂₀	17.5	X	38.34593	244.62614	27.94255	12.71620	0.2337318	0.26618659	2.3933815	21	9 25.5	20.1
496153 2010 UC ₂₅	17.1	X	205.67420	177.31878	238.78577	10.10762	0					

ELEMENTS AND OPPOSITION DATES IN 2021

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2021 JULY 5.0 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>
496161 2010 VJ ₂₀₈	18.5	X	186.30417	206.85156	224.27877	3.82835	0.2349451	0.23729907	2.5838781	21	5 31.7	23.0
496162 2010 VZ ₂₁₀	16.4	X	13.20679	107.28727	236.45387	16.17334	0.2204715	0.17607453	3.1526205	21	10 26.7	20.0
496163 2010 WM ₁₉	18.0	X	96.80895	115.27313	247.14199	6.29452	0.1379869	0.29054361	2.2576771	21	—	—
496164 2010 WL ₄₀	18.4	X	23.09348	67.42629	276.35263	5.40395	0.3036213	0.27224799	2.3577238	21	12 19.7	21.2
496165 2010 XW ₃	17.4	X	27.66162	78.64774	227.08316	15.38308	0.0853252	0.25830610	2.4418160	21	9 20.4	20.6
496166 2010 XW ₁₈	14.0	X	4.52880	147.71774	228.56224	12.58971	0.1616831	0.08240499	5.2299842	21	10 28.8	20.1
496167 2010 XA ₇₆	17.3	X	320.88783	127.66300	237.55864	13.85785	0.1421386	0.25966146	2.4333115	21	8 15.9	20.1
496168 2011 AC ₇	14.1	X	8.11349	315.69085	105.37312	6.15336	0.0510193	0.08404681	5.1616502	21	12 17.6	20.7
496169 2011 AU ₃₉	18.2	X	199.12456	134.42426	109.56370	24.04478	0.0805031	0.36597660	1.9356812	21	—	—
496170 2011 AD ₄₅	16.4	X	5.61070	275.03315	308.05247	11.86173	0.1742236	0.20931824	2.8092992	21	4 10.3	19.6
496171 2011 AU ₇₄	17.6	X	17.08634	329.60357	93.78407	24.06712	0.1015820	0.36699100	1.9321126	21	—	—
496172 2011 BG ₁₀₉	17.6	X	310.08529	91.03257	194.32875	3.61204	0.0723843	0.21111997	2.7932931	21	4 22.8	21.3
496173 2011 BT ₁₂₀	17.4	X	89.57306	220.04305	311.47829	5.59419	0.0360951	0.22234707	2.6984546	21	6 10.5	21.0
496174 2011 CQ ₄	18.4	X	208.50784	86.45732	86.01337	23.74071	0.5833587	0.34806354	2.0015373	21	10 19.6	22.9
496175 2011 CK ₂₃	16.6	X	163.26943	150.48451	302.80486	8.08428	0.0313267	0.22046690	2.7137747	21	5 31.1	20.5
496176 2011 CR ₄₁	17.1	X	288.60340	21.80646	283.82299	5.08490	0.0318211	0.21276118	2.7789099	21	4 23.8	21.0
496177 2011 CA ₆₆	15.7	X	299.31836	286.09570	287.42034	21.25060	0.4684922	0.17786281	3.1314534	21	—	—
496178 2011 CN ₇₈	17.7	X	99.94785	225.70802	256.16518	2.81573	0.0508343	0.20990918	2.8040242	21	4 21.5	21.5
496179 2011 CO ₁₀₅	17.3	X	108.27810	133.13841	324.54289	14.38223	0.1038869	0.20620230	2.8375294	21	4 2.5	21.5
496180 2011 CQ ₁₁₀	17.3	X	279.31037	142.25078	190.09061	6.38652	0.0508054	0.21542268	2.7559739	21	5 17.2	21.0
496181 2011 CM ₁₁₂	17.3	X	344.38024	341.64635	309.05821	10.02807	0.1712987	0.21961992	2.7207475	21	6 12.6	20.2
496182 2011 CZ ₁₁₅	17.5	X	243.30162	69.14262	385.65493	5.21171	0.0619301	0.21329032	2.7743119	21	4 27.1	21.5
496183 2011 DG ₃	16.3	X	137.78167	278.04625	159.67980	11.86621	0.0768297	0.20908642	2.8113754	21	4 19.4	20.5
496184 2011 DC ₁₅	17.1	X	274.44317	44.75701	113.69321	5.95198	0.0502792	0.22434524	2.6824078	21	6 13.2	20.8
496185 2011 EB ₉	17.1	X	20.42158	109.21815	323.43494	2.90890	0.0172430	0.21779557	2.7359197	21	5 26.8	20.6
496186 2011 FO ₁₂	17.0	X	303.82243	189.60143	50.76434	1.98353	0.1747338	0.18302028	3.0723445	21	2 6.5	21.2
496187 2011 FZ ₄₇	16.9	X	299.41702	32.73819	206.49602	4.86936	0.2355984	0.18001957	3.1063919	21	1 22.1	21.6
496188 2011 GQ ₁₇	15.7	X	201.69359	341.29827	336.65599	8.26554	0.0497049	0.18091298	3.0961565	21	2 2.8	20.3
496189 2011 GO ₈₅	16.5	X	258.62820	81.45046	209.90263	15.57902	0.2059589	0.18015798	3.1048006	21	2 13.1	21.9
496190 2011 HW ₄	16.5	X	247.05677	125.95597	145.07160	11.66462	0.0553603	0.17752549	3.1454188	21	1 25.3	21.3
496191 2011 HH ₃₁	17.1	X	336.12250	182.03624	20.38588	0.92257	0.2207248	0.18596347	3.0398416	21	1 25.3	21.0
496192 2011 HK ₃₆	16.0	X	329.91670	125.83139	97.96506	11.85799	0.0741609	0.18442222	3.0567544	21	3 10.0	20.3
496193 2011 HX ₃₉	16.8	X	280.84745	81.21666	208.44085	13.70306	0.1476100	0.19134765	2.9825470	21	3 10.4	21.4
496194 2011 HH ₅₂	16.2	X	207.61089	240.68013	135.25044	11.76272	0.0392444	0.19150338	2.9809299	21	4 22.5	20.7
496195 2011 HF ₅₄	16.0	X	50.39652	313.38048	168.21459	10.23098	0.0534986	0.18401141	3.0613023	21	2 17.2	20.0
496196 2011 HN ₅₈	15.9	X	212.01156	348.07107	72.42848	18.62879	0.1000243	0.20897269	2.8123952	21	6 13.6	20.3
496197 2011 HK ₅₉	16.2	X	246.20404	217.16217	112.28615	10.66701	0.1464568	0.18820718	3.0156337	21	3 31.6	21.1
496198 2011 HP ₉₉	16.1	X	178.58275	143.08408	191.80774	16.18574	0.1073464	0.16926965	3.2365575	21	1 29.2	21.4
496199 2011 JB ₄	16.3	X	204.37985	276.54700	106.09603	11.17757	0.1202672	0.19128859	2.9831609	21	4 25.7	21.2
496200 2011 JM ₁₀	16.6	X	20.39571	45.11190	146.64954	14.00883	0.1427023	0.19227608	2.9729381	21	4 10.6	20.1
496201 2011 JO ₁₈	16.0	X	163.80867	249.52090	110.44977	12.05692	0.0482181	0.17606628	3.1527190	21	2 12.6	20.7
496202 2011 JJ ₂₁	16.3	X	267.06510	162.99682	137.97963	14.72435	0.0993349	0.18440646	3.0569286	21	3 22.7	20.9
496203 2011 KJ ₈	15.8	X	294.84629	195.80224	98.13095	10.96505	0.0516990	0.19025861	2.9939176	21	4 23.4	20.1
496204 2011 SF ₄	17.5	X	109.09142	307.92251	339.65366	4.01466	0.0522712	0.21412496	2.7670979	21	12 4.6	21.5
496205 2011 SW ₇₃	16.4	X	193.69678	235.56911	197.19129	11.09917	0.0887733	0.17263986	3.1942973	21	6 12.2	21.5
496206 2011 SW ₁₇₄	16.3	X	295.04849	198.82112	178.41291	10.49439	0.1466884	0.18463476	3.0544082	21	7 20.5	20.5
496207 2011 SZ ₁₈₃	18.1	X	133.00960	229.12129	179.43446	4.94581	0.2278868	0.24353139	2.5396044	21	3 18.3	21.7
496208 2011 SE ₂₀₇	18.2	X	273.89232	155.41842	174.08179	12.45685	0.1919923	0.27444657	2.3451152	21	4 13.5	21.6
496209 2011 SQ ₂₆₉	16.6	X	292.77177	195.93687	180.72198	9.14840	0.1677314	0.18532193	3.0468530	21	7 13.6	20.8
496210 2011 UY ₈	18.8	X	30.47846	135.12280	212.27105	1.76959	0.2170713	0.30326504	2.1940902	21	12 27.6	21.4
496211 2011 UZ ₈₂	18.1	X	126.37403	11.89163	252.06251	6.49807	0.1344348	0.30346027	2.1931491	21	12 12.2	21.1
496212 2011 UT ₁₄₂	19.0	X	0.58403	135.31253	256.78472	3.72705	0.1893777	0.30222785	2.1991072	21	—	—
496213 2011 UR ₂₀₁	17.3	X	111.29152	153.11688	203.72741	5.78977	0.0363622	0.22006988	2.7170375	21	—	—
496214 2011 US ₂₄₆	18.5	X	48.22724	298.87011	60.53629	1.70449	0.2435543	0.31060039	2.1594081	21	—	—
496215 2011 UA ₂₉₉	18.9	X	75.18804	296.82335	55.39834	2.53190	0.1941119	0.31598370	2.1348118	21	—	—
496216 2011 WH ₂	16.6	X	356.14682	330.73220	359.63922	1.33924	0.2060470	0.18576530	3.0420031	21	9 5.1	19.4
496217 2011 WZ ₇	16.8	X	25.07444	274.28024	54.28440	3.53029	0.1816758	0.19320469	2.9634045	21	10 27.5	20.3
496218 2011 WV ₈	17.3	X	244.05482	160.95338	303.23084	0.91758	0.1652726	0.18102747	3.0948509	21	9 4.6	21.8
496219 2011 WR ₅₆	18.4	X	297.06633	238.99611	222.72178	5.30639	0.0297605	0.30047615	2.2076457	21	12 20.6	20.9
496220 2011 WW ₅₈	17.9	X	46.23439	203.69687	212.84707	4.57414	0.1296511	0.21645418	2.7472113	21	—	—
496221 2011 WV ₈₃	18.2	X	15.08180	247.89526	78.22011	9.75211	0.1932127	0.28948350	2.2631856	21	10 31.1	20.3
496222 2011 WQ ₈₉	18.5	X	309.52810	113.51077	291.54502	2.45003	0.2044545	0.28781661	2.2719154	21	9 28.1	20.1
496223 2011 WL ₁₀₄	18.4	X	49.79746	4.08635	325.04080	5.87418	0.1129749	0.30004777	2.2097465	21	12 10.9	21.2
496224 2011 WU ₁₀₉	17.7	X	99.27965	9.06291	232.67413	5.37105	0.1329973	0.28396179	2.2924301	21	10 12.5	21.0
496225 2011 WX ₁₀₉	17.2	X	283.49093	258.50988	177.32061	1.56293	0.1585989	0.18545231	3.0454248	21	9 18.9	21.2
496226 2012 BC ₃	17.0	X	70.77031	23.20663	128.46827	14.62953	0.1955071	0.23229873	2.6208258	21	5 17.6	20.4
496227 2012 BY ₃₀	17.7	X	181.38654	48.92911	100.72475	7.08768	0.0642181	0.26780065	2.3837551	21	9 12.9	21.1
496228 2012 BS ₁₂₁	16.5	X	327.66785	309.53589	128.23487	10.89311	0.0622414	0.18538272	3.0461869	21	12 7.5	20.6
496229 2012 BB ₁₄₇	18.1	X	140.58497	246.11880	317.21018	4.34368	0.1711770	0.26606909	2.3940861	21	10 4.1	21.9
496230 2012 CL ₂	18.3	X	358.63447	285.30215	146.71410	36.02988	0.5032317	0.30401438	2.1904834	21	—	—
496231 2012 CJ ₁₁	18.6	X	258.84772	85.12632	346.18247	2.60810	0.1572052	0.26880810	2.3777954	21	8 17.4	21.5
496232 2012 CL ₃₂	18.2	X	259.86195	235.42953	190.65333	4.02273	0.0867817	0.26583267	2.3955054	21	8 20.6	21.2
496233 2012 CA ₅₄	16.9	X	211.52177	245.37821	147.30620	22.21490	0.0336905	0.23857138	2.5746834	2		

ELEMENTS AND OPPOSITION DATES IN 2021

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2021 JULY 5.0 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>
496241 2012 GM ₁₈	17.2	X	15.74160	347.30643	180.47498	13.44912	0.2173309	0.21220908	2.7837277	21	2 11.4	20.0
496242 2012 GQ ₂₂	17.1	X	143.39704	335.41423	171.27389	13.65708	0.1139152	0.23663135	2.5887366	21	7 21.7	21.2
496243 2012 GX ₃₆	17.0	X	349.40685	64.52106	227.16570	7.56026	0.1018343	0.23005529	2.6378367	21	6 27.9	20.0
496244 2012 HK ₂₆	17.3	X	328.50221	103.27087	207.06829	15.09346	0.2097634	0.22620031	2.6677221	21	6 4.6	20.3
496245 2012 HZ ₃₁	16.7	X	83.93507	12.55215	115.42854	13.11466	0.1167722	0.21479100	2.7613746	21	4 24.8	20.5
496246 2012 HZ ₆₆	16.9	X	84.87884	326.86007	220.12260	12.36176	0.1264711	0.23094584	2.6310511	21	7 7.3	20.6
496247 2012 HV ₆₈	16.4	X	173.41691	20.09335	69.05180	22.71981	0.0369250	0.22715824	2.6602170	21	6 6.9	20.0
496248 2012 HH ₇₂	16.9	X	289.85608	69.59325	193.16582	11.79811	0.1281191	0.20093669	2.8868877	21	2 17.3	21.2
496249 2012 HW ₇₄	17.8	X	352.87324	73.37710	209.96697	3.44336	0.1589894	0.22659422	2.6646295	21	6 20.1	20.4
496250 2012 HG ₈₂	16.6	X	333.26282	188.44907	71.04217	10.65523	0.1614550	0.21508642	2.7588456	21	4 13.9	19.9
496251 2012 JP	16.1	X	73.94844	331.96455	198.92757	36.42771	0.1601264	0.22094764	2.7098367	21	6 4.9	20.3
496252 2012 JG ₅₅	17.2	X	266.42864	280.07539	9.95357	1.58580	0.0361053	0.20411366	2.8568538	21	3 9.9	21.1
496253 2012 KY ₄	17.3	X	310.67103	91.90977	209.83435	5.58697	0.0442003	0.21821638	2.7324013	21	5 19.3	20.8
496254 2012 LE ₁₅	16.8	X	357.78310	140.89879	148.32774	14.36118	0.1260524	0.22649576	2.6654016	21	7 9.7	19.8
496255 2012 MW ₁₂	16.0	X	187.89071	217.04014	135.23077	18.02246	0.2140950	0.17797732	3.1301101	21	3 6.3	21.5
496256 2012 OA	16.2	X	26.17047	221.93617	262.50134	8.21381	0.0640243	0.17446170	3.1720205	21	1 20.0	20.4
496257 2012 OO ₁	18.5	X	142.01699	229.83173	104.34096	25.02966	0.1090962	0.38188754	1.8815354	21	—	—
496258 2012 OE ₄	16.7	X	210.85558	117.24274	208.31483	4.50345	0.1602294	0.17535439	3.1612460	21	2 17.9	21.9
496259 2012 PB	18.5	X	191.48222	192.28499	152.54335	21.80917	0.0578128	0.40079638	1.8218818	21	1 12.1	20.7
496260 2012 PK ₁₆	16.3	X	241.68656	42.10884	293.34571	8.48339	0.1190900	0.18843721	3.0131790	21	3 26.9	21.2
496261 2012 PO ₁₈	16.1	X	234.92828	39.44846	313.29233	7.94330	0.1052093	0.18948968	3.0020114	21	4 11.6	20.9
496262 2012 PT ₄₀	16.7	X	303.84949	19.07377	251.13586	6.69857	0.1503780	0.19156247	2.9803168	21	3 12.9	21.0
496263 2012 PA ₄₃	15.9	X	211.07132	357.01235	335.77035	16.71872	0.1806880	0.17400172	3.1776082	21	2 27.2	21.1
496264 2012 QX ₄₁	16.1	X	219.53375	42.06971	330.50394	17.82714	0.3515115	0.18423796	3.0587922	21	4 6.9	22.1
496265 2012 RE ₃	16.0	X	201.42843	145.51815	209.41087	14.06974	0.2861975	0.17453371	3.1711480	21	3 14.0	21.9
496266 2012 RU ₂₇	16.9	X	131.25161	257.68536	355.43782	12.33737	0.1648763	0.23829528	2.5766717	21	11 21.1	21.4
496267 2012 RU ₃₇	16.4	X	255.32143	127.24215	185.99321	16.08800	0.0963416	0.17971225	3.1099323	21	3 21.3	21.0
496268 2012 SR ₄	15.6	X	107.22510	80.92559	37.27098	9.86805	0.0610828	0.17502040	3.1652664	21	4 27.4	19.9
496269 2012 SS ₂₀	16.7	X	259.41712	176.87848	171.36211	13.34726	0.3636973	0.18990082	2.9976769	21	4 14.4	22.1
496270 2012 ST ₃₂	16.9	X	295.07948	200.52250	127.94116	1.77296	0.0871859	0.19459784	2.9492440	21	5 28.0	20.7
496271 2012 TX ₃	16.6	X	258.48087	46.52085	220.37380	10.08243	0.0859636	0.17172440	3.2056397	21	1 28.4	21.6
496272 2012 TW ₂₇	16.7	X	211.07389	313.86025	48.17767	1.72805	0.1928232	0.17729807	3.1380995	21	4 2.3	22.0
496273 2012 TF ₆₇	16.0	X	202.56011	356.07660	27.43047	30.34297	0.2130597	0.17454282	3.1710376	21	4 18.9	21.4
496274 2012 TN ₁₂₁	16.6	X	281.25357	74.72041	245.06268	4.62382	0.1507362	0.18671461	3.0316834	21	4 19.0	21.0
496275 2012 TG ₁₂₃	17.7	X	216.47128	57.51720	229.52111	20.88471	0.0487942	0.37723501	1.8969741	21	—	—
496276 2012 TS ₁₄₁	18.4	X	77.73450	124.31685	217.89906	21.99795	0.0602179	0.35400142	1.9790923	21	—	—
496277 2012 TF ₁₇₅	16.5	X	145.16568	230.99543	196.91457	8.69093	0.0730788	0.17449918	3.1715662	21	4 15.4	21.3
496278 2012 TV ₂₀₅	16.4	X	214.24091	292.42385	48.93522	6.41745	0.1587970	0.17265537	3.1941060	21	3 15.6	21.7
496279 2012 TC ₂₉₁	16.0	X	213.06046	100.27976	267.61516	10.09070	0.1435550	0.17070767	3.2183555	21	4 7.9	21.3
496280 2012 UF ₄₇	16.3	X	191.03489	327.62805	57.27396	5.85156	0.1939401	0.17170794	3.2058446	21	4 14.3	21.7
496281 2012 UO ₆₀	16.1	X	189.27458	227.96848	167.52543	28.89675	0.2162343	0.17589743	3.1547362	21	4 27.6	21.9
496282 2012 UK ₆₅	18.0	X	43.03268	325.40321	76.40942	1.99597	0.2171000	0.23945067	2.5683765	21	—	—
496283 2012 UM ₁₀₆	18.3	X	160.29231	120.38769	269.15707	1.45158	0.1874203	0.27587639	2.3370052	21	3 12.8	21.8
496284 2012 VV ₄₅	18.1	X	107.98227	290.98216	70.50240	23.68218	0.0455948	0.36162086	1.9511938	21	—	—
496285 2012 VQ ₉₃	16.1	X	118.64957	219.31495	224.93138	10.04962	0.0657082	0.15713108	3.4011672	21	4 3.7	21.1
496286 2012 VQ ₁₀₂	16.9	X	38.02790	8.49535	104.22596	9.59237	0.0640869	0.25402558	2.4691705	21	1 3.8	19.7
496287 2012 VD ₁₀₆	17.5	X	209.05241	34.16889	42.61083	1.13406	0.2376030	0.18456554	3.0551719	21	6 26.0	22.6
496288 2012 VZ ₁₀₇	16.1	X	180.11103	358.47151	60.11596	16.59531	0.0935332	0.17050249	3.2209371	21	5 13.0	21.1
496289 2012 VE ₁₁₁	16.0	X	16.64011	357.32083	81.82181	4.02519	0.1734474	0.12453377	3.9714091	21	—	—
496290 2012 YA ₆	17.5	X	62.33461	272.27597	126.25837	24.04879	0.0270515	0.34854834	1.9996809	21	—	—
496291 2013 AD ₃	16.9	X	21.53981	304.23135	70.33800	4.66694	0.0940859	0.21369322	2.7708237	21	12 11.8	20.5
496292 2013 AF ₅₅	16.3	X	186.68811	187.19491	89.03398	13.14634	0.1256134	0.22674267	2.6634663	21	—	—
496293 2013 AL ₅₅	13.4	X	333.51179	300.47065	107.66877	34.51983	0.0097951	0.08422504	5.1543658	21	11 8.8	20.6
496294 2013 AL ₉₄	17.2	X	187.49912	306.15624	269.13839	31.32274	0.1420816	0.32794035	2.0826013	21	12 16.4	19.9
496295 2013 AA ₁₃₁	15.7	X	221.79489	107.37402	251.05517	24.60989	0.2309696	0.17156321	3.2076473	21	3 28.7	21.6
496296 2013 BB ₇₁	18.1	X	102.94354	24.15333	167.52235	6.10075	0.1823195	0.28099674	2.3085283	21	8 15.6	21.3
496297 2013 BZ ₇₅	16.7	X	242.45420	317.57381	115.84585	9.98315	0.1529866	0.18032291	3.1029071	21	7 28.8	21.4
496298 2013 CC ₁₂₂	16.6	X	242.13645	288.69079	134.02407	9.12354	0.2259660	0.17823713	3.1270676	21	7 7.3	21.6
496299 2013 CB ₁₂₄	18.1	X	125.85405	19.22546	141.64366	5.45506	0.1593120	0.27726817	2.3291782	21	7 27.7	21.4
496300 2013 CV ₁₉₄	14.4	X	308.44353	88.58593	1.02909	7.04103	0.0825283	0.08438435	5.1478765	21	11 2.2	20.9
496301 2013 CZ ₂₁₂	18.2	X	125.77530	256.27827	326.96241	3.76262	0.1207905	0.29451217	2.2373498	21	10 16.5	21.4
496302 2013 CA ₂₁₅	14.1	X	7.64333	215.59527	170.20586	9.30347	0.0465102	0.08155322	5.2663368	21	11 10.0	20.9
496303 2013 ER ₄₈	18.2	X	198.92373	170.80850	346.30202	7.06043	0.0706961	0.29822181	2.2187572	21	10 11.2	21.2
496304 2013 EJ ₉₅	18.2	X	36.39526	241.29420	15.48838	2.55114	0.1657718	0.26979913	2.3719690	21	8 13.3	20.5
496305 2013 EG ₁₀₆	18.1	X	82.22642	198.26744	55.14121	5.30912	0.2215704	0.27965303	2.3159172	21	10 21.2	21.5
496306 2013 EW ₁₂₂	17.8	X	127.32116	356.50262	176.32957	8.00171	0.0573948	0.27709015	2.3301756	21	8 3.9	21.0
496307 2013 FJ ₄	17.8	X	79.44428	131.88024	105.90322	5.21156	0.1874149	0.27331683	2.3515730	21	9 24.4	21.0
496308 2013 FT ₁₁	18.2	X	158.67795	118.56608	61.07817	6.08983	0.1053087	0.28980825	2.2614946	21	9 27.9	21.4
496309 2013 GP ₃₁	17.8	X	47.73084	297.42347	9.57716	8.56514	0.1732153	0.28447362	2.2896796	21	11 12.0	20.7
496310 2013 GX ₄₃	17.6	X	162.41631	120.93618	34.73039	8.71783	0.2127827	0.28255833	2.3000149	21	8 31.6	21.5
496311 2013 GK ₁₀₁	17.8	X	59.83825	124.06478	206.80157	6.65359	0.1533568	0.29534034	2.2331653	21	12 29.4	20.9
496312 2013 GH ₁₀₂	18.1	X	138.85902	215.47469	358.77276	5.61260	0.1154551	0.29222855	2.2489905	21	10 18.3	21.3
496313 2013 GI ₁₁₂	17.6	X	189.08216	307.93356	218.58594	4.92103	0.1255880	0.29041044	2.2583672	21	10 8.3	

ELEMENTS AND OPPOSITION DATES IN 2021

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2021 JULY 5.0 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>
496321 2013 JJ ₂₃	17.7	X	168.23952	70.83968	81.95320	5.65311	0.1156482	0.27471370	2.3435947	21	8 31.7	21.2
496322 2013 JR ₂₉	17.2	X	280.31288	145.23464	69.08723	15.11182	0.1085504	0.21053458	2.7984685	21	—	—
496323 2013 JY ₆₀	18.2	X	41.71172	189.89470	71.54157	2.43115	0.1751960	0.26228397	2.4170644	21	8 31.4	20.7
496324 2013 KU ₁	16.8	X	252.54097	118.28525	233.49973	10.22042	0.4118663	0.21460694	2.7629533	21	4 4.8	22.2
496325 2013 KB ₁₃	18.3	X	18.92258	87.40915	241.40854	10.11509	0.2992334	0.26786697	2.3833616	21	11 21.1	20.7
496326 2013 LB ₁	17.4	X	353.48804	313.19320	262.65112	31.76901	0.5232538	0.23429879	2.6058896	21	—	—
496327 2013 MY ₆	17.9	X	150.59266	9.80705	124.98463	52.24591	0.5030331	0.51949105	1.5325595	21	7 31.4	20.6
496328 2013 NB ₈	17.3	X	198.23978	275.78031	244.92880	4.55319	0.0951341	0.28269742	2.2992604	21	10 11.8	20.6
496329 2013 NF ₁₃	17.1	X	321.17652	18.94705	290.26194	12.98362	0.0816508	0.23083847	2.6318669	21	6 7.8	20.4
496330 2013 NB ₂₁	16.8	X	356.72889	247.26123	307.31850	8.00197	0.1924102	0.21744361	2.7388712	21	2 12.9	19.8
496331 2013 OH ₈	16.4	X	346.98139	334.47925	296.84957	11.47912	0.1459990	0.22745720	2.6578854	21	5 18.9	19.4
496332 2013 OC ₉	16.9	X	294.68017	81.30754	264.09956	11.82126	0.2567699	0.22919104	2.6444638	21	5 20.6	20.5
496333 2013 OK ₉	17.3	X	283.37161	102.26588	254.34842	11.33520	0.2944687	0.23043920	2.6349061	21	5 16.7	21.1
496334 2013 PL ₃	17.3	X	239.11823	113.67283	262.48412	5.51256	0.4035211	0.21392385	2.7688319	21	4 26.4	22.5
496335 2013 PD ₁₈	17.1	X	238.82852	62.25677	305.66899	5.30459	0.0930804	0.22160442	2.7044800	21	5 5.3	21.3
496336 2013 PO ₁₉	16.4	X	274.29818	272.23398	40.30435	8.65814	0.2141681	0.21282492	2.7783550	21	3 27.6	20.7
496337 2013 PR ₂₃	17.8	X	337.08630	76.46078	223.96873	2.76359	0.0763966	0.23014239	2.6371711	21	6 21.7	20.9
496338 2013 PS ₂₅	17.1	X	302.50704	46.66284	302.88780	9.83508	0.1478591	0.23274075	2.6175065	21	6 26.4	20.2
496339 2013 PR ₃₀	16.2	X	119.14936	72.30632	337.85816	15.84355	0.1085377	0.18634566	3.0356837	21	2 26.2	20.4
496340 2013 PB ₄₃	17.1	X	287.96351	4.28823	329.81926	5.88554	0.0383979	0.22270652	2.6955502	21	5 30.4	20.8
496341 2013 PN ₆₂	17.2	X	304.34276	184.74839	227.21002	4.81979	0.2226455	0.25233438	2.4801908	21	9 17.2	19.5
496342 2013 PA ₇₀	17.2	X	16.01498	94.33460	224.86754	5.07519	0.2045031	0.25514808	2.4619232	21	10 11.7	19.6
496343 2013 QR ₂	17.4	X	337.14800	17.67137	308.31721	7.59525	0.1577699	0.24244235	2.5472040	21	7 24.1	19.9
496344 2013 QA ₃	17.5	X	256.40361	79.17490	283.41205	2.74382	0.2004032	0.22287694	2.6941760	21	5 7.9	21.6
496345 2013 QF ₈	17.3	X	260.59875	102.91920	238.87308	5.33745	0.0802472	0.21854698	2.7296451	21	4 29.8	21.1
496346 2013 QX ₁₄	17.2	X	21.74084	14.81984	269.76336	6.06847	0.1209651	0.24410348	2.5356350	21	8 16.0	19.9
496347 2013 QJ ₄₁	16.7	X	341.99094	56.15007	178.99796	8.70810	0.2476917	0.21947490	2.7219458	21	3 5.8	19.7
496348 2013 QU ₄₇	17.3	X	301.90662	141.87228	175.18909	14.24609	0.2738669	0.22528782	2.6749207	21	4 23.5	21.0
496349 2013 QZ ₅₃	16.7	X	219.11238	37.04236	335.77890	12.18807	0.1572249	0.21231968	2.7827608	21	4 14.5	21.5
496350 2013 QJ ₅₇	16.9	X	251.79209	203.62343	150.61489	12.41441	0.1873594	0.21679055	2.7443689	21	4 29.5	21.4
496351 2013 QD ₆₂	17.5	X	344.26641	148.26393	147.42688	7.77276	0.2164129	0.23765894	2.5812690	21	6 15.6	19.7
496352 2013 QO ₆₅	16.8	X	260.60597	194.63937	130.86275	9.72517	0.1733758	0.21221506	2.7836753	21	4 4.1	21.2
496353 2013 QO ₆₅	17.2	X	299.98313	84.58740	263.38529	11.68202	0.1973732	0.23027091	2.6361897	21	6 11.1	20.4
496354 2013 QD ₆₈	16.8	X	305.18146	54.44469	282.61071	11.80237	0.1892822	0.23216732	2.6218147	21	6 4.7	20.2
496355 2013 QO ₆₈	17.5	X	187.46406	66.29717	308.48082	3.08246	0.2229109	0.19925183	2.9031391	21	3 26.1	22.6
496356 2013 QN ₆₉	17.5	X	8.98785	215.42430	119.58341	2.57764	0.1961295	0.25600034	2.4564562	21	10 23.3	19.6
496357 2013 QW ₇₀	18.0	X	88.02118	294.24562	333.34438	7.60494	0.1891176	0.26547808	2.3976380	21	11 4.6	21.7
496358 2013 QW ₇₁	17.6	X	293.22357	257.15682	86.41721	5.29863	0.1337974	0.22953222	2.6418426	21	6 5.8	20.8
496359 2013 QE ₇₇	17.6	X	37.44632	340.26319	290.16959	4.67595	0.0977689	0.24507788	2.5289096	21	8 20.3	20.6
496360 2013 QK ₈₄	16.7	X	240.02627	50.05594	316.60364	11.68233	0.1891474	0.21355358	2.7720314	21	4 24.3	21.5
496361 2013 RN ₁₇	17.4	X	325.18266	6.87057	310.02399	7.35802	0.1580660	0.23425988	2.6061782	21	6 15.1	20.2
496362 2013 RY ₁₈	17.5	X	304.66012	99.00066	258.17944	3.44370	0.2427333	0.23397524	2.6082914	21	6 23.7	20.6
496363 2013 RB ₂₂	17.6	X	191.71059	355.59303	344.96461	4.99320	0.1930704	0.31260680	2.1501583	21	2 5.9	20.7
496364 2013 RS ₂₄	17.6	X	286.85975	220.21480	143.50210	2.98144	0.2131867	0.22761820	2.6566319	21	6 10.9	21.2
496365 2013 RJ ₃₂	15.6	X	79.82143	89.19890	297.36270	12.98873	0.3187828	0.15713594	3.4010970	21	1 15.7	19.9
496366 2013 RQ ₄₀	16.3	X	95.62523	257.55497	167.56041	10.16980	0.0654720	0.17931075	3.1145729	21	2 9.6	20.6
496367 2013 RH ₄₂	16.6	X	203.34227	36.25128	330.48940	6.42143	0.1040148	0.20214873	2.8753367	21	3 28.4	21.1
496368 2013 RF ₄₉	18.0	X	28.80604	110.17889	197.14828	3.83519	0.1842236	0.25119701	2.4876717	21	10 14.6	20.5
496369 2013 RZ ₇₁	17.3	X	229.73681	324.58893	53.97725	5.47413	0.0759073	0.21132755	2.7914636	21	5 12.9	21.4
496370 2013 RP ₇₆	16.9	X	322.13403	327.44019	355.64675	10.21243	0.1552740	0.23045967	2.6347501	21	6 19.1	20.0
496371 2013 RV ₈₃	17.2	X	264.50278	71.41718	280.89684	4.91851	0.0606273	0.21466111	2.7624885	21	5 21.2	21.1
496372 2013 RD ₉₁	17.7	X	316.86374	139.92437	199.82914	7.25920	0.2078587	0.23207051	2.6225438	21	6 25.5	20.5
496373 2013 SY ₁₆	17.5	X	242.94846	46.65526	329.50796	1.57919	0.0967017	0.21693673	3.7431359	21	5 22.2	21.5
496374 2013 SZ ₂₅	16.5	X	112.98611	69.97823	336.14385	14.95666	0.2357733	0.17486694	2.1671180	21	3 1.8	21.2
496375 2013 SC ₄₃	16.7	X	247.37592	278.14410	80.94695	5.45841	0.0843163	0.21163625	2.7887484	21	5 8.5	20.7
496376 2013 SY ₄₅	17.4	X	265.51158	118.68029	233.11608	6.24704	0.2048888	0.22142597	2.7059328	21	5 3.5	21.6
496377 2013 SQ ₅₉	17.4	X	265.23843	112.67230	224.41888	5.73552	0.2296726	0.21827154	2.7319410	21	4 11.9	21.8
496378 2013 SH ₇₁	16.8	X	309.42423	40.29449	317.85593	11.69024	0.2014020	0.23266305	2.6180892	21	7 12.9	19.8
496379 2013 SB ₈₂	17.3	X	283.73258	257.86770	85.50983	4.66378	0.1968158	0.22159622	2.7045467	21	5 15.3	21.2
496380 2013 TU ₇	17.0	X	308.92746	207.25986	107.46753	3.97121	0.1766125	0.22111613	2.7084600	21	5 14.4	20.4
496381 2013 TT ₁₃	17.1	X	319.46925	181.94804	116.56728	2.95972	0.1209351	0.21746739	2.7386716	21	5 17.2	20.3
496382 2013 TK ₂₁	17.5	X	71.67106	184.31687	136.45261	2.56614	0.2035529	0.26736328	2.3863541	21	12 29.5	21.1
496383 2013 TG ₂₄	16.9	X	297.13153	158.51582	207.88010	17.25579	0.2806950	0.22902317	2.6457559	21	6 17.7	20.6
496384 2013 TQ ₂₄	17.4	X	317.19659	111.47382	216.10201	11.68796	0.2163044	0.22566400	2.6719471	21	6 7.4	20.4
496385 2013 TD ₂₈	16.9	X	267.08187	9.38888	330.99951	12.65324	0.2352865	0.21485540	2.7608228	21	4 12.3	21.5
496386 2013 TF ₂₈	17.4	X	285.69933	213.13508	142.08423	1.97717	0.2452823	0.22431994	2.6826095	21	5 25.7	21.3
496387 2013 TR ₂₉	15.8	X	123.32447	77.86124	324.21288	11.62868	0.0879250	0.17321923	3.1871071	21	2 19.7	20.4
496388 2013 TY ₃₅	18.1	X	14.13212	234.39799	185.95136	4.01712	0.1990002	0.27206137	2.3588018	21	—	—
496389 2013 TO ₃₇	16.0	X	184.36656	352.27618	1.35832	12.48237	0.1374858	0.18384005	3.0632043	21	3 2.5	20.9
496390 2013 TX ₃₇	16.4	X	146.26446	22.64794	351.78614	2.73914	0.2083439	0.17890237	3.1193109	21	2 23.5	21.5
496391 2013 TA ₅₀	18.0	X	16.63655	269.35616	140.74891	3.22131	0.1792092	0.26723585	2.3871126	21	—	—
496392 2013 TU ₅₁	18.2	X	321.11024	350.12266	354.79670	3.21237	0.3615035	0.23713650	2.5850589	21	6 12.6	20.7
496393 2013 TV ₅₂	17.3	X	301.82480	102.23518	257.93767	6.21880	0.2217772	0.22814482	2.65254			

ELEMENTS AND OPPOSITION DATES IN 2021

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2021 JULY 5.0 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>
496401 2013 TR ₁₀₉	16.0	X	218.69124	74.50807	233.09706	14.55941	0.0761333	0.17658373	3.1465570	21	2 2.0	21.1
496402 2013 TZ ₁₁₀	17.1	X	296.27251	87.23529	227.49184	15.52110	0.1595564	0.20961680	2.8066311	21	4 28.3	20.8
496403 2013 TW ₁₂₅	17.2	X	318.03163	153.59254	203.08360	12.87159	0.1641787	0.23474274	2.6026031	21	7 26.8	20.3
496404 2013 TD ₁₄₅	17.1	X	279.71918	331.74426	17.98459	9.31024	0.2111261	0.22092739	2.7100024	21	5 13.6	21.2
496405 2013 UY ₅	16.9	X	243.88477	100.55498	245.57310	8.22892	0.2140495	0.20963770	2.8064445	21	4 3.9	21.7
496406 2013 WZ ₂	15.8	X	139.41049	154.37713	232.40074	14.11284	0.1248199	0.17386884	3.1792271	21	2 18.2	20.9
496407 2013 WB ₅	16.5	X	167.45901	124.52267	232.14189	9.15305	0.2128721	0.17576626	3.1563056	21	2 17.4	21.9
496408 2013 WQ ₉	17.3	X	321.47550	55.11983	259.05690	7.92449	0.2914464	0.21983559	2.7189677	21	5 12.2	20.4
496409 2013 WL ₂₇	17.0	X	284.30976	105.01914	251.13858	11.32034	0.2741164	0.22050151	2.7134907	21	5 20.7	20.9
496410 2013 WX ₃₇	16.6	X	270.23865	6.29662	60.78590	12.93795	0.1335214	0.22032555	2.7149352	21	9 3.4	20.5
496411 2013 WN ₁₀₄	16.0	X	138.40909	347.04834	78.44825	14.41197	0.1881743	0.17834295	3.1258305	21	4 21.3	21.2
496412 2013 WB ₁₀₆	15.4	X	137.79785	353.49707	72.66823	30.37818	0.2028879	0.17681568	3.1438045	21	4 30.3	20.9
496413 2013 WD ₁₀₆	16.5	X	242.00379	276.69868	116.84244	8.43004	0.2348142	0.21138308	2.7909747	21	6 1.8	21.2
496414 2013 XT ₁₉	16.4	X	141.18315	216.97268	256.45242	10.12163	0.0757002	0.17565176	3.1576771	21	6 5.9	20.9
496415 2013 YD ₃₆	16.0	X	171.73558	206.92621	138.38373	14.76698	0.1713695	0.17623939	3.1506541	21	2 9.6	21.1
496416 2013 YE ₈₈	15.8	X	116.62861	6.05198	113.44855	11.13686	0.0185952	0.17217157	3.2000868	21	5 12.9	20.5
496417 2014 BJ ₅₅	15.9	X	203.09110	209.12984	126.82639	11.32018	0.0860029	0.15758427	3.3946432	21	3 1.3	21.1
496418 2014 CY ₁₃	18.2	X	324.92474	302.39891	166.13057	24.13676	0.1622493	0.37567990	1.9022054	21	—	—
496419 2014 DL ₄₇	14.2	X	358.90493	214.40274	188.55825	7.02587	0.0935632	0.08445654	5.1449423	21	11 19.1	20.6
496420 2014 DD ₄₉	16.9	X	267.64211	176.31058	1.56313	13.26510	0.1039926	0.23409635	2.6073918	21	—	—
496421 2014 DL ₅₄	17.0	X	279.58399	129.70154	1.53503	8.54050	0.0970411	0.22572998	2.6714264	21	12 8.9	20.4
496422 2014 DR ₁₁₀	18.3	X	141.29485	184.16634	166.33962	21.45302	0.0690766	0.39099293	1.8522095	21	—	—
496423 2014 DR ₁₄₁	18.3	X	258.44561	48.46568	158.03034	24.13459	0.0400142	0.38075424	1.8852671	21	—	—
496424 2014 EV ₄	16.7	X	209.29740	175.56615	357.52007	8.87956	0.0458532	0.21121916	2.7924185	21	11 4.1	20.7
496425 2014 FT ₆₄	16.4	X	50.00235	233.74109	25.71907	12.64092	0.0145095	0.18060085	3.0997228	21	8 15.9	20.9
496426 2014 GQ ₉	15.5	X	311.63813	166.86065	185.46495	19.18539	0.0865990	0.17997063	3.1069550	21	7 19.3	20.0
496427 2014 GG ₁₈	18.4	X	297.18298	277.15167	208.65703	21.14183	0.0728606	0.35571790	1.9727206	21	—	—
496428 2014 GC ₅₀	17.9	X	228.39382	128.12199	123.89854	24.48199	0.0357630	0.37577658	1.9018791	21	—	—
496429 2014 JH ₂₇	16.6	X	320.26817	325.23038	138.24851	14.53498	0.1870826	0.22034736	2.7147561	21	—	—
496430 2014 JB ₃₁	18.1	X	113.04352	262.74936	122.69313	22.09237	0.1138808	0.37907112	1.8908435	21	—	—
496431 2014 JM ₃₄	16.1	X	131.27994	322.89151	223.88411	15.63009	0.1292688	0.17216701	3.2001433	21	8 23.4	21.5
496432 2014 KX ₇₈	17.9	X	69.30108	40.71046	270.68390	3.10359	0.1588814	0.32482232	2.0959076	21	12 20.9	20.8
496433 2014 LB ₁	18.2	X	291.26944	101.36998	230.8542	0.87557	0.2627452	0.26209818	2.4182064	21	4 25.9	21.7
496434 2014 LV ₁₅	17.2	X	139.52057	141.62099	144.39743	2.52694	0.2154672	0.19072037	2.9890831	21	—	—
496435 2014 LJ ₁₇	18.2	X	65.73136	326.32275	111.49757	23.26400	0.0957602	0.37355773	1.9094028	21	—	—
496436 2014 LZ ₂₆	17.3	X	83.53532	25.03585	278.42087	7.46496	0.3794064	0.30915876	2.1661158	21	—	—
496437 2014 MJ ₉	16.6	X	51.67684	100.30743	191.40621	8.57174	0.1259052	0.17076099	3.2176856	21	10 6.9	20.9
496438 2014 NS ₂	17.5	X	12.46392	35.54086	267.90170	10.15485	0.2636155	0.28654851	2.2786132	21	9 18.8	19.4
496439 2014 OC ₃₆	18.3	X	84.46657	140.92726	114.95318	4.96464	0.1345469	0.30186101	2.2008885	21	10 20.9	21.2
496440 2014 OH ₉₉	17.5	X	285.36949	124.98356	320.83507	5.79932	0.1162859	0.29595611	2.2300666	21	10 26.3	19.7
496441 2014 OM ₁₁₂	18.4	X	111.42601	82.94811	133.28902	5.81222	0.1168666	0.29777985	2.2209520	21	9 25.5	21.4
496442 2014 OA ₁₃₇	17.2	X	41.87303	15.11466	0.45272	0.56638	0.1872738	0.17907689	3.1172839	21	—	—
496443 2014 OF ₂₁₄	16.2	X	128.35801	145.46624	122.66224	12.89403	0.0486047	0.17858065	3.1230560	21	11 29.9	21.0
496444 2014 OM ₂₃₀	18.1	X	17.53239	353.96773	14.93529	4.47841	0.1123098	0.29943909	2.2127400	21	12 21.7	20.6
496445 2014 OJ ₂₃₂	18.0	X	258.24371	122.43694	286.97647	3.05236	0.2332256	0.26116609	2.4239567	21	7 6.0	21.3
496446 2014 OW ₃₄₆	16.4	X	73.86356	181.49889	147.00351	12.43805	0.0922025	0.17902533	3.1178824	21	12 14.7	21.1
496447 2014 PC	17.9	X	4.55825	234.40597	112.99092	6.88961	0.2253621	0.29167649	2.2518274	21	11 17.5	19.8
496448 2014 PW ₂₂	18.0	X	159.64071	42.71263	323.11695	16.90507	0.0420117	0.36409561	1.9423422	21	1 8.6	20.1
496449 2014 PJ ₂₉	18.5	X	345.22928	212.16347	135.90834	4.86045	0.1600088	0.28554765	2.2839346	21	9 24.7	20.1
496450 2014 QB ₁	18.2	X	59.18667	114.58820	180.88067	5.58765	0.2159258	0.29901051	2.2148539	21	11 22.4	21.2
496451 2014 QD ₃₂	17.9	X	224.64658	328.68762	355.04644	20.36319	0.1421890	0.36772244	1.9295497	21	2 12.8	20.8
496452 2014 QJ ₄₂	16.2	X	32.78052	279.98102	118.20561	13.11585	0.1751962	0.17124685	3.2115965	21	—	—
496453 2014 QR ₁₃₀	17.5	X	243.90442	72.03533	344.64502	10.62393	0.2093501	0.26224452	2.4173067	21	7 5.0	21.3
496454 2014 QM ₂₆₃	17.7	X	173.46925	52.56131	101.26238	8.45739	0.1470425	0.27575478	2.3376923	21	9 7.9	21.4
496455 2014 QJ ₂₇₉	17.9	X	7.70346	266.34485	117.80153	7.00934	0.0800476	0.31085192	2.1582430	21	12 26.5	20.1
496456 2014 QF ₂₈₄	17.1	X	210.76576	267.93332	28.13200	13.07305	0.2070491	0.21740126	2.7392269	21	1 14.0	22.0
496457 2014 QN ₂₉₇	18.6	X	105.09749	23.61249	284.54824	4.33191	0.2526566	0.32212079	2.1076098	21	—	—
496458 2014 QJ ₃₅₆	18.1	X	357.02755	286.25714	0.94539	11.73432	0.1552110	0.26618599	2.3933851	21	7 8.1	20.4
496459 2014 QV ₃₇₂	16.0	X	113.52187	315.30252	19.08712	14.76906	0.0475806	0.18189957	3.0849510	21	—	—
496460 2014 QS ₄₁₄	18.4	X	47.16180	153.99073	134.71480	3.95208	0.1055007	0.29139729	2.2532655	21	10 11.3	20.9
496461 2014 QG ₄₁₅	18.0	X	59.87343	101.29012	142.85800	10.04739	0.0965050	0.28001695	2.3139102	21	8 21.7	20.6
496462 2014 QK ₄₂₇	16.3	X	63.12418	206.38054	151.06245	3.25547	0.1041557	0.17299896	3.1898754	21	—	—
496463 2014 QB ₄₃₉	16.7	X	191.17246	247.86737	133.71601	6.89597	0.0383096	0.21482544	2.7610795	21	4 6.3	20.7
496464 2014 SW ₁₀₂	16.8	X	203.26716	63.99700	165.75917	0.58052	0.1128950	0.17799831	3.1298639	21	12 26.2	21.5
496465 2014 SQ ₁₀₃	17.3	X	96.73096	212.58496	144.00446	1.34234	0.1644513	0.18295226	3.0731059	21	—	—
496466 2014 SJ ₁₁₂	18.6	X	38.92992	77.68711	183.84709	4.03655	0.1749581	0.27196606	2.3593529	21	8 24.9	20.8
496467 2014 SO ₁₁₂	18.6	X	34.09059	117.28026	185.88836	1.58888	0.2147823	0.28741271	2.2740433	21	10 28.9	21.0
496468 2014 SA ₁₁₃	18.7	X	13.18676	118.22322	188.42096	1.76220	0.1519549	0.27759942	2.3273249	21	9 12.9	20.8
496469 2014 SB ₁₂₆	18.6	X	33.96608	94.94538	197.39164	2.06308	0.1785562	0.28431080	2.2905537	21	10 5.4	20.7
496470 2014 SV ₁₅₃	17.4	X	169.71616	230.28152	207.99899	12.69378	0.2263101	0.23164666	2.6257418	21	5 27.9	22.0
496471 2014 SL ₁₅₇	16.1	X	106.43742	321.98200	7.62801	16.32101	0.2049987	0.17469629	3.1691802	21	—	—
496472 2014 SS ₂₀₄	18.0	X	85.17036	154.47427	79.19882	3.60099	0.2342885	0.28162605	3.2050880	21	9 30.7	21.4
496473 2014 SE ₂₀₇	17.0	X	193.17825	232.14972	196.54417	8.37631	0.1261736	0.23252003	2.6191627	21	6 4.8	21.2
496474 2014 SR ₂₀₇	16.6</											

ELEMENTS AND OPPOSITION DATES IN 2021

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2021 JULY 5.0 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>
496481 2014 SY ₂₈₇	17.4	X	307.73531	191.52083	164.33814	7.10637	0.1151183	0.26452918	2.4033683	21	7 18.1	20.0
496482 2014 SG ₃₀₃	16.8	X	333.62954	132.69094	269.33774	22.85783	0.1951824	0.27646191	2.3337044	21	11 23.1	18.8
496483 2014 SC ₃₁₀	16.8	X	326.49630	68.39514	225.03126	13.38235	0.1122009	0.23906268	2.5711546	21	5 20.6	19.7
496484 2014 SD ₃₁₄	18.4	X	27.88971	123.07912	173.81436	6.82693	0.2123410	0.27826133	2.3236327	21	10 8.3	20.5
496485 2014 SM ₃₁₅	17.0	X	212.14722	213.69604	182.90311	9.30593	0.1936660	0.23442103	2.6049837	21	5 12.4	21.4
496486 2014 SF ₃₁₆	17.9	X	340.03426	262.95176	63.88077	6.09067	0.1774538	0.26666569	2.3905140	21	8 2.9	19.9
496487 2014 TE ₉	18.0	X	28.77109	290.20917	9.52341	1.72295	0.2006106	0.27851215	2.3222374	21	10 10.6	20.3
496488 2014 TK ₉	18.4	X	272.55015	49.89120	0.93018	2.32602	0.1190160	0.26513799	2.3996878	21	8 13.6	21.4
496489 2014 TN ₂₂	17.5	X	64.28909	73.11972	177.23478	4.16188	0.0502068	0.26410929	2.4059149	21	8 27.1	20.4
496490 2014 TQ ₂₂	17.5	X	3.73788	223.72312	74.13611	2.16479	0.1836608	0.26592790	2.3949335	21	8 11.2	19.3
496491 2014 TJ ₅₈	17.0	X	272.38499	183.25218	228.61320	12.42833	0.1739593	0.26355309	2.4092987	21	7 30.9	20.4
496492 2014 TP ₅₈	16.5	X	117.54222	125.23719	15.61311	13.07999	0.1129434	0.23210700	2.6222689	21	6 15.1	20.5
496493 2014 TB ₆₃	17.4	X	344.21141	135.44857	256.39085	5.31714	0.1341219	0.28812532	2.2702923	21	11 28.5	19.3
496494 2014 TD ₆₆	17.5	X	324.25246	137.51708	246.41515	2.08210	0.1734544	0.27580813	2.3373908	21	9 29.2	19.3
496495 2014 TK ₇₂	17.3	X	204.92348	223.49624	204.76064	4.05186	0.1349784	0.240233483	2.5627844	21	6 15.1	21.2
496496 2014 TU ₇₄	17.8	X	249.62685	187.00322	198.71184	13.43742	0.2817149	0.24557280	2.5255106	21	5 24.5	22.2
496497 2014 UE ₁₅	17.3	X	175.86460	193.13335	248.12021	3.41339	0.0975000	0.23257224	2.6187707	21	6 2.1	21.2
496498 2014 UJ ₄₉	17.9	X	95.60904	47.74997	258.87172	6.69861	0.1247051	0.29572307	2.2312381	21	—	—
496499 2014 UW ₄₉	17.6	X	29.71039	324.22993	15.95051	3.97619	0.1746881	0.28373093	2.2936735	21	12 5.1	20.2
496500 2014 UP ₅₃	17.1	X	141.30896	224.40013	195.15757	7.47733	0.2136447	0.21039986	2.7996630	21	4 10.6	21.5
496501 2014 UY ₆₆	16.5	X	275.68785	137.75633	215.42196	3.99864	0.1467593	0.24115654	2.5562502	21	5 23.9	20.0
496502 2014 US ₆₇	16.3	X	326.57697	47.73041	225.86578	11.79137	0.1192484	0.23011208	2.6374026	21	4 20.6	19.5
496503 2014 UA ₇₂	17.2	X	222.48764	182.13712	211.80043	13.64166	0.1118716	0.23857749	2.5746394	21	5 21.6	21.1
496504 2014 UR ₈₅	17.9	X	0.68431	274.48326	60.79817	2.97966	0.1330143	0.27015546	2.3698829	21	10 1.7	20.1
496505 2014 UF ₈₇	17.0	X	329.61023	250.43196	33.86166	15.15185	0.0833341	0.24270886	2.5453390	21	5 12.7	20.1
496506 2014 UA ₁₀₃	16.8	X	104.56043	346.03131	106.41540	5.44436	0.0760749	0.20881882	2.8137766	21	3 28.1	20.6
496507 2014 UA ₁₁₈	17.6	X	272.78950	304.51643	131.09284	5.07168	0.1507536	0.27139773	2.3626455	21	9 15.3	20.2
496508 2014 UH ₁₂₁	17.6	X	183.96261	61.52288	340.99873	7.49843	0.2813446	0.22497664	2.6773866	21	4 22.9	22.6
496509 2014 UV ₁₃₂	16.7	X	103.43337	246.36813	205.91505	12.20349	0.0470836	0.20938649	2.8086887	21	3 16.7	20.7
496510 2014 UB ₁₃₃	17.6	X	33.80617	249.98696	64.44410	6.73472	0.2150327	0.28378484	2.2933830	21	11 13.2	20.0
496511 2014 UE ₁₆₁	16.6	X	198.49063	158.71223	234.68172	13.76169	0.0977532	0.22533712	2.6745305	21	4 24.5	20.8
496512 2014 UX ₁₆₇	16.5	X	212.78271	162.19035	246.93149	10.00403	0.1192234	0.23533205	2.5982564	21	5 29.9	20.4
496513 2014 UJ ₁₇₃	17.4	X	117.80442	319.86645	187.36638	14.53691	0.1065835	0.23203717	2.6227950	21	6 24.0	21.5
496514 2014 UP ₁₇₆	17.3	X	166.59777	126.41472	44.46408	10.13067	0.0325109	0.26738946	2.3861982	21	9 25.8	20.5
496515 2014 UH ₁₈₉	17.5	X	8.49591	50.57844	306.04070	6.76362	0.1418519	0.28701117	2.2761638	21	11 19.1	19.9
496516 2014 UG ₁₉₈	16.8	X	222.60278	163.19221	228.15926	14.78765	0.1348782	0.23349865	2.6118394	21	5 16.6	20.7
496517 2014 UQ ₁₉₈	16.9	X	196.05052	135.76837	281.45100	5.60717	0.0991476	0.23684611	2.5871714	21	5 22.5	20.8
496518 2014 UX ₂₀₅	16.8	X	261.46417	146.71918	223.68060	14.61981	0.1606256	0.24201080	2.5502312	21	5 28.1	20.5
496519 2014 US ₂₁₈	17.0	X	23.67265	48.44088	244.75144	23.80588	0.1941591	0.27357499	2.3500934	21	9 5.6	20.0
496520 2014 VQ ₂	16.2	X	213.95817	254.04809	125.07698	13.53960	0.1002594	0.22112365	2.7083986	21	4 30.1	20.6
496521 2014 VG ₉	17.2	X	276.11002	200.64296	224.55694	5.71427	0.1097204	0.26280192	2.4138875	21	9 6.7	20.1
496522 2014 VF ₁₄	17.5	X	318.98516	217.39446	134.69959	8.75748	0.2394341	0.26474093	2.4020866	21	7 13.9	19.7
496523 2014 VX ₂₁	16.3	X	27.68602	257.06815	224.81020	10.05523	0.1228622	0.18008807	3.1056040	21	1 16.3	20.2
496524 2014 WJ ₁₀	16.9	X	343.37098	37.34161	226.42823	12.83202	0.0904694	0.23488673	2.6015393	21	5 8.7	19.7
496525 2014 WD ₅₁	17.0	X	193.20411	103.09873	275.83275	3.15196	0.0781487	0.21330441	2.7741897	21	4 1.4	21.2
496526 2014 WK ₆₈	17.9	X	46.09501	85.29104	273.63254	6.67180	0.1924119	0.29045412	2.2581408	21	12 1.5	20.8
496527 2014 WM ₇₂	17.8	X	211.91887	115.45185	273.82208	5.99478	0.3370604	0.22997330	2.6384636	21	4 26.4	22.8
496528 2014 WX ₇₃	16.7	X	158.10022	345.97471	66.21339	6.25388	0.1182390	0.21326801	2.7745054	21	4 12.1	21.0
496529 2014 WJ ₁₂₃	16.6	X	247.65131	71.28052	312.60588	3.57752	0.1753037	0.24038552	2.5617132	21	5 28.1	20.4
496530 2014 WB ₁₃₆	17.6	X	55.37286	63.18970	237.38999	4.38860	0.1404365	0.27592408	2.3367360	21	11 9.2	20.6
496531 2014 WA ₁₄₄	17.9	X	150.94702	299.72708	251.43683	3.08836	0.1117825	0.25963101	2.4335018	21	9 27.4	21.5
496532 2014 WE ₁₄₄	16.4	X	324.85500	297.59641	244.51189	13.89457	0.1122369	0.17731827	2.1378612	21	—	—
496533 2014 WK ₁₄₅	16.2	X	309.45983	290.02016	24.65097	12.47698	0.1676935	0.24215233	2.5492374	21	5 10.6	19.3
496534 2014 WL ₁₅₈	17.2	X	345.35152	134.50125	117.12846	3.67493	0.0774797	0.23194671	2.6234768	21	4 27.9	20.2
496535 2014 WU ₁₈₀	17.5	X	118.41282	317.87632	294.25562	5.85459	0.1045791	0.27410174	2.3470816	21	11 11.9	21.1
496536 2014 WW ₁₈₄	16.2	X	336.31419	219.58137	350.82943	11.06645	0.0503000	0.18806822	3.0171190	21	2 28.3	20.2
496537 2014 WE ₁₉₃	16.4	X	37.38104	288.82360	184.17465	16.95027	0.1018001	0.17816435	3.1279191	21	1 20.6	20.6
496538 2014 WR ₁₉₆	16.4	X	95.20094	273.70654	269.70004	13.17904	0.0302550	0.23552898	2.5968079	21	7 3.1	19.9
496539 2014 WT ₁₉₉	16.3	X	46.97807	335.15852	133.66340	13.29732	0.0662785	0.18688743	3.0298142	21	1 28.7	20.1
496540 2014 WU ₂₀₁	17.6	X	12.05301	223.27887	143.17870	8.49112	0.2574231	0.29256557	2.2472630	21	—	—
496541 2014 WF ₂₂₄	16.7	X	44.39030	310.52974	234.91798	6.95547	0.1412781	0.21356277	2.7719519	21	5 7.9	19.6
496542 2014 WM ₂₅₄	16.4	X	35.71398	278.03093	199.76749	11.05504	0.1036579	0.18336851	3.0684535	21	1 22.8	20.4
496543 2014 WM ₂₆₁	17.4	X	235.76633	237.60539	122.73907	4.73713	0.1174221	0.22542789	2.6738125	21	4 24.2	21.5
496544 2014 WT ₂₆₁	16.6	X	79.66311	227.76902	215.56645	8.60366	0.1455611	0.18785965	3.0193517	21	2 18.4	20.6
496545 2014 WD ₂₆₂	16.8	X	196.68635	267.33953	109.01032	8.46431	0.0331608	0.21282699	2.7783370	21	4 7.7	20.9
496546 2014 WY ₂₈₂	16.8	X	266.45629	151.36728	154.80743	6.68211	0.0263383	0.21288430	2.7783833	21	3 31.9	20.6
496547 2014 WR ₃₁₀	17.3	X	82.63815	287.05266	269.80004	7.05201	0.0419605	0.23427273	2.6060829	21	7 6.5	20.6
496548 2014 WW ₃₂₀	17.0	X	190.10579	228.05839	206.98245	21.98133	0.0810906	0.23621594	2.5917707	21	6 8.7	21.2
496549 2014 WT ₃₄₁	17.6	X	357.63851	242.55402	100.00009	9.39180	0.1466476	0.27486891	2.3427124	21	10 13.8	19.9
496550 2014 WA ₃₅₃	17.1	X	244.27317	128.58198	270.95970	11.89894	0.1483083	0.24218588	2.5490019	21	6 17.6	20.7
496551 2014 WD ₃₅₃	16.6	X	231.72308	296.56025	83.20714	14.77181	0.1772373	0.23193859	2.6235381	21	5 12.1	20.9
496552 2014 WM ₃₈₅	16.9	X	280.07138	164.04866	207.28428	13.34707	0.0514391	0.24612353	2.5217418	21	7 6.3	20.4
496553 2014 WV ₄₀₆	17.6	X	259.07795	149								

ELEMENTS AND OPPOSITION DATES IN 2021

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2021 JULY 5.0 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>		
496561	2014	<i>XL</i> ₄	16.2	X	67.81930	292.10869	260.20827	8.32830	0.0729977	0.23107655	2.6300588	21	6 14.2	19.6
496562	2014	<i>XT</i> ₂₆	16.2	X	257.00015	232.84619	113.55774	6.02056	0.0491407	0.21143949	2.7904783	21	5 8.7	20.1
496563	2014	<i>XC</i> ₂₇	16.2	X	214.78830	309.23196	104.84750	15.57496	0.1007125	0.22295021	2.6935857	21	6 10.7	20.4
496564	2014	<i>XP</i> ₃₇	16.4	X	80.69782	190.24541	230.83435	13.81949	0.2614519	0.18035564	3.1025317	21	2 8.3	20.5
496565	2014	<i>XL</i> ₃₉	17.1	X	342.58681	302.65395	81.29809	4.64538	0.2593718	0.27835149	2.3231309	21	11 24.9	18.2
496566	2014	<i>YF</i> ₁₀	15.1	X	168.87461	219.21101	136.99685	19.45090	0.0804882	0.17138253	3.2099014	21	2 15.4	19.9
496567	2014	<i>YF</i> ₁₂	15.7	X	286.63723	327.25343	282.39919	3.22788	0.1559181	0.17124556	3.2116127	21	2 1.6	20.5
496568	2014	<i>YZ</i> ₁₂	16.2	X	141.31990	342.30701	108.06245	10.44372	0.0570188	0.20272946	2.8698430	21	5 8.7	20.5
496569	2014	<i>YR</i> ₂₀	17.4	X	175.68477	115.52662	303.63920	10.83531	0.1856951	0.22199912	2.7012734	21	5 3.8	22.1
496570	2014	<i>YF</i> ₂₈	15.6	X	182.00480	20.89294	306.35937	10.18070	0.0504298	0.17492352	3.1664350	21	1 23.5	20.3
496571	2015	<i>AX</i> ₃₉	16.5	X	54.34405	172.74578	330.26371	4.42458	0.1185621	0.18394089	3.0620846	21	3 27.6	20.2
496572	2015	<i>AG</i> ₁₀₁	16.7	X	95.24967	79.46299	325.70335	3.23860	0.2028456	0.17121663	3.2119745	21	2 7.4	20.9
496573	2015	<i>AO</i> ₁₃₉	16.9	X	200.69234	132.29666	303.55103	8.75475	0.1786256	0.22446422	2.6814598	21	6 19.7	21.4
496574	2015	<i>AZ</i> ₁₆₁	17.6	X	295.39659	245.22156	120.82252	3.21197	0.1920297	0.23602838	2.5931436	21	6 30.5	20.7
496575	2015	<i>AH</i> ₁₉₈	17.9	X	320.08509	357.40187	12.53992	4.57545	0.1457164	0.25640610	2.4538639	21	8 30.7	20.2
496576	2015	<i>AB</i> ₂₂₄	17.4	X	286.53048	225.16290	173.80118	11.62245	0.1456444	0.24262541	2.5459226	21	8 8.9	20.6
496577	2015	<i>AB</i> ₂₆₀	16.6	X	269.88526	35.66229	250.90079	7.87258	0.0486946	0.17976442	3.1093306	21	3 7.3	21.2
496578	2015	<i>AB</i> ₂₆₄	16.2	X	257.53112	347.28348	20.22590	15.73805	0.1464332	0.20392292	2.8586349	21	5 18.5	20.7
496579	2015	<i>AL</i> ₂₆₄	16.3	X	83.35391	76.61728	37.50007	16.23350	0.2321932	0.17869357	3.1217403	21	4 22.1	20.5
496580	2015	<i>BE</i> ₈	15.1	X	165.66384	230.20013	106.71922	28.66361	0.2172679	0.17141883	3.2094482	21	1 29.7	20.6
496581	2015	<i>BS</i> ₂₆	16.1	X	281.30219	177.72116	145.25322	12.00413	0.1197783	0.19303497	2.9651413	21	5 2.3	20.5
496582	2015	<i>BZ</i> ₃₅	15.8	X	169.33166	127.29665	271.12777	11.38472	0.0850434	0.17539499	3.1607581	21	3 31.4	20.9
496583	2015	<i>BO</i> ₇₅	17.1	X	283.70356	319.43135	51.44763	6.35413	0.1799844	0.23068791	2.6330119	21	6 22.3	20.7
496584	2015	<i>BH</i> ₇₆	16.6	X	131.01857	339.16260	98.79714	9.64617	0.0687822	0.18719540	3.0264901	21	4 14.5	21.1
496585	2015	<i>BE</i> ₈₄	17.3	X	205.44120	2.44937	36.83264	3.98077	0.0969793	0.21196309	2.7858810	21	5 11.2	21.5
496586	2015	<i>BB</i> ₁₀₁	16.3	X	219.75702	214.98116	146.30433	10.62941	0.0948967	0.19063207	2.9900061	21	4 14.5	21.0
496587	2015	<i>BH</i> ₁₅₆	15.4	X	247.40298	173.64426	138.39029	29.78589	0.1800386	0.17042647	3.2218947	21	3 9.7	20.8
496588	2015	<i>BU</i> ₁₆₇	16.3	X	86.01540	103.84949	20.03366	2.64799	0.0711570	0.18708916	3.0276358	21	4 12.0	20.4
496589	2015	<i>BU</i> ₁₇₁	16.2	X	199.21566	220.36713	127.91473	19.85675	0.1760882	0.18155312	3.0888743	21	3 11.3	21.5
496590	2015	<i>BF</i> ₃₀₁	18.5	X	356.14580	114.79142	7.79905	4.54903	0.1324886	0.29189272	2.2507152	21	—	—
496591	2015	<i>BG</i> ₃₃₆	16.8	X	248.61540	275.19753	91.39361	5.29139	0.1200250	0.20987172	2.8043579	21	5 15.8	21.1
496592	2015	<i>BC</i> ₃₆₅	16.6	X	315.58501	213.96494	83.33275	14.35885	0.0838930	0.21270494	2.7793997	21	5 17.7	20.2
496593	2015	<i>BT</i> ₄₃₆	18.2	X	213.95783	308.21197	341.12401	2.35778	0.1225130	0.30199592	2.2002330	21	—	—
496594	2015	<i>BD</i> ₄₆₂	15.8	X	236.43194	179.82370	135.55082	13.89875	0.0698306	0.16919813	3.2374695	21	3 10.7	20.7
496595	2015	<i>BX</i> ₄₈₉	17.1	X	319.36836	51.31661	301.72095	6.06845	0.1737347	0.23348775	2.6119207	21	7 26.5	19.5
496596	2015	<i>BP</i> ₄₉₇	16.5	X	261.15644	185.36712	127.35856	10.20173	0.1194381	0.18334068	3.0687640	21	3 28.5	21.2
496597	2015	<i>CV</i> ₃₅	16.4	X	116.79504	12.27107	81.80088	10.92690	0.1068551	0.19127005	2.9833540	21	4 22.2	20.8
496598	2015	<i>CH</i> ₄₀	16.5	X	90.28671	301.21867	162.29786	9.63377	0.0678024	0.17489072	3.1668305	21	3 25.6	20.9
496599	2015	<i>CG</i> ₄₇	16.6	X	299.05176	18.42095	355.72003	11.00659	0.0334105	0.21715211	2.7413218	21	8 14.5	20.3
496600	2015	<i>CK</i> ₅₆	16.8	X	61.56142	357.19685	169.00735	12.75552	0.1438217	0.17963160	3.1108631	21	5 16.7	21.0
496601	2015	<i>DA</i> ₆₄	16.1	X	147.17599	292.43869	141.66279	11.25512	0.0532858	0.18733285	3.0250096	21	4 26.1	20.7
496602	2015	<i>DY</i> ₁₁₂	17.7	X	166.55534	290.57719	13.01120	10.09445	0.1600492	0.29097032	2.2554693	21	—	—
496603	2015	<i>DP</i> ₁₃₅	16.3	X	128.42165	16.84621	77.92782	18.76553	0.1905604	0.18016099	3.1047660	21	5 15.1	21.3
496604	2015	<i>DC</i> ₁₃₆	13.9	X	78.23361	221.78920	84.42117	16.85143	0.0894332	0.08367770	5.1768181	21	11 12.2	20.9
496605	2015	<i>DC</i> ₁₄₅	15.9	X	111.07321	260.70066	149.67152	16.62532	0.0815948	0.17265378	3.1941256	21	2 15.2	20.2
496606	2015	<i>DK</i> ₁₅₆	16.2	X	132.16064	294.78236	146.22575	13.57348	0.1116272	0.17844394	3.1246510	21	4 24.9	21.1
496607	2015	<i>DL</i> ₂₁₃	18.2	X	293.32291	85.16812	134.66975	7.76234	0.1117851	0.29040848	2.2583774	21	—	—
496608	2015	<i>ES</i> ₉	15.7	X	148.85199	66.81446	6.75191	13.53733	0.1609838	0.18470865	3.0535935	21	4 27.9	20.7
496609	2015	<i>EU</i> ₅₃	16.1	X	0.60801	298.02071	271.00142	8.38729	0.0118216	0.17762235	3.1342789	21	3 29.2	20.6
496610	2015	<i>FO</i> ₁₃₃	16.2	X	260.29217	293.49781	34.16107	16.49934	0.1262470	0.19115818	2.9845174	21	4 11.9	20.7
496611	2015	<i>FS</i> ₁₆₉	18.4	X	278.97882	87.80263	90.62407	2.27945	0.1349077	0.27458148	2.3443470	21	—	—
496612	2015	<i>FS</i> ₃₃₈	17.2	X	282.99986	260.76641	183.19571	12.17296	0.1212054	0.22141433	2.7060276	21	10 10.3	20.5
496613	2015	<i>FE</i> ₃₈₂	16.2	X	188.10524	116.90480	280.65080	7.89415	0.0915106	0.18583288	3.0412656	21	4 20.1	21.0
496614	2015	<i>GX</i> ₂	16.2	X	61.94838	151.21845	16.15503	9.45430	0.0300813	0.17519988	3.1631043	21	4 29.1	20.5
496615	2015	<i>HA</i> ₃	15.5	X	280.96254	33.35681	262.40779	10.84974	0.0540260	0.17160719	3.2070992	21	3 30.9	20.3
496616	2015	<i>HH</i> ₃	16.1	X	166.07263	137.83731	280.09209	8.88849	0.0934567	0.18029871	3.1031848	21	4 22.7	21.0
496617	2015	<i>HD</i> ₁₀₅	17.7	X	170.17071	126.88042	102.43133	8.35012	0.1638030	0.24016370	2.5632904	21	12 1.8	21.9
496618	2015	<i>HE</i> ₁₃₃	14.4	X	33.07298	316.84693	60.12362	3.27714	0.0147822	0.08272071	5.2166682	21	11 25.4	21.2
496619	2015	<i>KX</i> ₄₂	16.4	X	138.84744	89.93498	59.82158	15.16652	0.1298246	0.18773782	3.0206579	21	7 25.8	21.4
496620	2015	<i>PN</i> ₃	15.7	X	9.46057	351.85230	338.85883	27.35580	0.1731070	0.17292371	3.1908007	21	9 18.6	19.6
496621	2015	<i>PV</i> ₂₂₉	17.0	X	105.63234	57.83322	288.03934	12.39215	0.2173282	0.21810322	2.7333464	21	—	—
496622	2015	<i>RZ</i> ₂₃	17.6	X	110.26237	185.35743	184.05557	12.71931	0.2777040	0.22755881	2.6570942	21	1 10.8	21.3
496623	2015	<i>RM</i> ₂₄	17.9	X	266.32886	109.72882	181.01977	6.37549	0.1063186	0.27444482	2.3451251	21	2 19.0	21.2
496624	2015	<i>RT</i> ₆₃	17.6	X	58.85501	268.79714	169.10865	7.88544	0.1225251	0.22818445	2.6522351	21	—	—
496625	2015	<i>RM</i> ₇₆	17.3	X	33.41392	258.81285	193.31998	5.88858	0.1000929	0.22482865	2.6785615	21	—	—
496626	2015	<i>RD</i> ₉₈	16.7	X	346.88981	74.98498	342.97075	12.61310	0.2644374	0.18379027	3.0637574	21	12 21.9	19.9
496627	2015	<i>TA</i> ₂₄	18.2	X	349.90761	281.62054	177.76044	22.94268	0.0671467	0.37581200	1.9017596	21	—	—
496628	2015	<i>TO</i> ₂₀₉	18.4	X	42.41065	168.09397	217.56930							

ELEMENTS AND OPPOSITION DATES IN 2021

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2021 JULY 5.0 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>
496641 2015 XU ₁₇₉	18.4	X	159.64808	312.87782	203.19004	5.45258	0.1088069	0.28960035	2.2625768	21	8 22.7	21.8
496642 2016 AE ₃	17.1	X	57.58224	92.39850	106.70569	5.57459	0.1592668	0.24683938	2.5168640	21	6 21.4	19.9
496643 2016 AW ₇₇	16.6	X	6.16292	321.23402	244.89238	3.88763	0.0940544	0.21971486	2.7199636	21	3 26.2	19.9
496644 2016 AW ₉₅	16.8	X	90.99834	134.29928	120.04163	7.29627	0.0971106	0.28630585	2.2799005	21	10 21.5	19.9
496645 2016 AG ₉₇	17.7	X	128.22578	143.36277	32.48666	2.77223	0.1492117	0.26380247	2.4077801	21	8 19.6	21.3
496646 2016 AR ₉₈	17.2	X	90.87214	288.63304	312.94576	7.09107	0.0843893	0.27929807	2.3178790	21	9 24.1	20.3
496647 2016 AC ₁₀₅	16.8	X	313.43028	174.98076	106.65661	10.91002	0.0249375	0.23207669	2.6224972	21	5 1.8	20.4
496648 2016 AZ ₁₁₀	17.2	X	61.95729	263.60032	336.16591	5.41023	0.0818517	0.26040204	2.4286988	21	8 15.0	19.9
496649 2016 AE ₁₁₁	17.6	X	120.23616	43.12955	54.78079	2.80950	0.1400265	0.22753446	2.6572838	21	4 28.0	21.2
496650 2016 AL ₁₂₂	18.3	X	121.37209	78.91462	145.11063	7.26761	0.0602796	0.28051174	2.3111884	21	10 12.0	21.4
496651 2016 AE ₁₂₉	15.8	X	71.65389	358.24433	91.27942	11.87352	0.0256239	0.17988908	3.1078938	21	2 7.9	20.2
496652 2016 AV ₁₂₉	15.8	X	86.48826	356.51386	74.59121	12.52069	0.0597081	0.17944672	3.1129993	21	2 9.8	20.2
496653 2016 AZ ₁₃₀	17.4	X	134.65428	37.73340	278.17102	18.09314	0.0649058	0.35068631	1.9915452	21	—	—
496654 2016 AY ₁₄₂	16.3	X	349.02742	292.05969	280.79106	23.57267	0.2949377	0.20078403	2.8883508	21	2 3.8	19.9
496655 2016 AH ₁₇₇	16.4	X	279.79741	78.09740	230.65339	12.89512	0.2660567	0.21696682	2.7428823	21	3 14.8	21.0
496656 2016 AG ₁₇₈	16.3	X	36.10240	327.22146	184.36699	10.64367	0.0649995	0.20316976	2.8656953	21	3 3.6	20.0
496657 2016 AV ₁₈₃	16.3	X	344.09687	326.91525	300.80741	14.26934	0.1211898	0.22636719	2.6664108	21	5 8.3	19.6
496658 2016 BF ₄	17.5	X	260.56166	107.15199	312.75353	9.78601	0.1611876	0.28782080	2.2718933	21	8 3.4	20.4
496659 2016 BV ₁₉	17.4	X	107.99049	75.45373	102.36203	3.32189	0.1470843	0.25398892	2.4694081	21	7 29.8	20.8
496660 2016 BP ₂₆	18.0	X	118.21196	123.43163	68.00125	2.42833	0.1249916	0.26787825	2.3832947	21	8 27.9	21.3
496661 2016 BZ ₃₆	16.9	X	11.99851	127.91875	112.17525	13.80782	0.2031620	0.22989121	2.6390917	21	5 29.6	19.4
496662 2016 BK ₄₀	18.2	X	120.20972	113.58564	118.92592	6.45850	0.0666704	0.28909256	2.2652255	21	10 24.0	21.3
496663 2016 BX ₅₁	17.2	X	308.13354	322.73664	310.66918	4.03094	0.1255402	0.22113349	2.7083183	21	3 23.6	20.8
496664 2016 BK ₅₅	17.6	X	72.46443	14.20318	185.48369	2.68928	0.1406995	0.24590771	2.5232171	21	7 11.9	20.7
496665 2016 BP ₅₈	16.3	X	336.66651	134.94914	139.46483	14.29046	0.1385976	0.23131744	2.6282326	21	5 12.7	19.6
496666 2016 BD ₇₀	17.8	X	315.45233	190.39276	113.37611	7.12929	0.0598085	0.24397454	2.5365283	21	5 26.3	20.9
496667 2016 BF ₇₃	17.0	X	188.10767	22.61394	1.99026	5.61898	0.0066248	0.22074698	2.7114787	21	4 1.3	20.7
496668 2016 CH ₄	17.6	X	144.85462	215.82173	214.84362	2.92177	0.0773210	0.22684925	2.6626320	21	4 13.3	21.4
496669 2016 CT ₂₈	15.4	X	74.25787	313.53464	79.24155	9.36854	0.0656956	0.15519777	3.4293546	21	—	—
496670 2016 CY ₂₈	17.2	X	80.62812	64.44065	96.10755	13.79479	0.0911363	0.22071599	2.7117326	21	5 26.1	20.8
496671 2016 CY ₃₄	17.0	X	335.33253	55.25644	223.67271	6.62485	0.1208355	0.23818201	2.5774886	21	5 13.3	19.8
496672 2016 CF ₅₄	17.7	X	82.12805	131.60761	99.91200	4.74950	0.0724272	0.26419256	2.4054093	21	9 1.2	20.8
496673 2016 CU ₇₁	17.0	X	53.97960	65.12420	81.43309	13.74587	0.1056262	0.21428286	2.7657384	21	4 4.5	20.6
496674 2016 CE ₉₄	16.3	X	336.18572	2.82665	163.95429	15.18658	0.1789693	0.18090781	3.0962154	21	—	—
496675 2016 CJ ₉₉	16.8	X	213.70898	97.01787	269.15198	10.48395	0.0189754	0.22410537	2.6843215	21	4 4.9	20.8
496676 2016 CY ₁₀₆	16.9	X	325.77800	119.40315	179.54352	9.86554	0.0905713	0.24363409	2.5388907	21	5 31.2	20.0
496677 2016 CV ₁₁₄	16.9	X	359.30813	44.61244	174.37295	13.79109	0.0732080	0.21572297	2.7534157	21	4 7.5	20.2
496678 2016 CJ ₁₂₀	16.1	X	266.01385	319.25231	292.55018	9.38603	0.0997255	0.18224138	3.0810924	21	1 18.4	20.6
496679 2016 CC ₁₂₃	17.2	X	348.58916	35.66027	175.88900	5.79122	0.0339758	0.20931106	2.8093635	21	3 14.9	20.9
496680 2016 CK ₁₃₃	17.8	X	46.37938	203.95476	88.42517	5.77107	0.1214640	0.27793389	2.3254573	21	10 17.3	20.5
496681 2016 CV ₂₀₇	17.1	X	58.39825	128.78419	137.77308	7.06740	0.0985868	0.26650471	2.3914765	21	9 22.2	20.0
496682 2016 CH ₂₁₉	18.6	X	26.58802	190.02214	169.20372	2.98190	0.1015742	0.30744148	2.1741745	21	12 21.6	21.1
496683 2016 CB ₂₄₆	16.2	X	255.66011	305.70566	65.30154	12.97503	0.0737876	0.21285339	2.7781072	21	6 2.3	20.2
496684 2016 CY ₂₄₈	17.4	X	153.31885	287.69341	173.46380	12.17618	0.1144450	0.24713559	2.5148525	21	6 5.7	21.4
496685 2016 CF ₂₅₇	16.3	X	180.41879	306.88221	115.16677	22.78073	0.1069422	0.23251198	2.6192231	21	5 21.6	20.7
496686 2016 CA ₂₆₄	17.3	X	58.06683	358.27686	281.62450	6.30482	0.1116901	0.27687123	2.3314038	21	10 7.8	20.3
496687 2016 DP ₉	16.6	X	283.53709	99.72500	141.90285	9.96057	0.0878211	0.18541158	3.0458708	21	1 25.7	21.2
496688 2016 EL ₂₃	16.5	X	310.54274	44.40222	267.24073	8.61552	0.1728118	0.21669051	2.7452135	21	5 10.9	20.0
496689 2016 EO ₂₉	16.5	X	338.39329	46.82200	236.30187	11.31862	0.1728465	0.21623149	2.7490972	21	5 19.8	19.3
496690 2016 EU ₅₆	16.4	X	37.88696	353.62360	133.26259	15.37378	0.1111263	0.18681995	3.0305436	21	2 9.5	20.0
496691 2016 ER ₈₁	15.5	X	182.21985	241.04448	93.00096	10.52318	0.0579144	0.17978843	3.1090537	21	2 1.8	20.2
496692 2016 EV ₈₇	16.2	X	335.69925	79.01611	140.69054	9.42837	0.0716316	0.18085433	3.0968258	21	3 10.2	20.3
496693 2016 EX ₁₀₉	16.3	X	302.77650	101.35268	109.56207	10.38453	0.0416692	0.17508233	3.1645199	21	1 20.3	20.7
496694 2016 EY ₁₂₃	16.2	X	230.08947	326.56409	334.18204	5.88637	0.1080026	0.17583147	3.1555252	21	2 10.1	21.1
496695 2016 EP ₁₂₄	17.8	X	96.75849	287.34750	304.90433	5.28284	0.0230267	0.26190638	2.4193869	21	9 10.1	21.0
496696 2016 ER ₁₂₄	17.3	X	3.55081	304.38223	303.18339	4.50541	0.0192991	0.22176232	2.7031961	21	5 21.3	20.9
496697 2016 EY ₁₂₄	16.8	X	76.63626	143.68002	319.59425	5.12380	0.1077272	0.19152707	2.9806841	21	3 7.3	20.5
496698 2016 EP ₁₂₆	17.1	X	143.59009	223.04485	210.08981	1.37991	0.0459376	0.20710469	2.8292811	21	4 13.7	21.1
496699 2016 ET ₁₂₆	16.1	X	334.89400	184.09475	358.09664	15.63562	0.0340712	0.17326360	3.1866265	21	1 31.8	20.7
496700 2016 EG ₁₂₉	17.6	X	136.81363	160.84177	342.44690	2.91425	0.1469378	0.24186714	2.5512409	21	7 15.1	21.4
496701 2016 EQ ₁₂₉	16.9	X	114.64410	249.36418	188.53118	10.07410	0.0790088	0.19576816	2.9374783	21	3 20.9	21.0
496702 2016 EQ ₁₅₄	16.4	X	351.34904	212.94229	330.78230	0.72214	0.1237439	0.17629720	3.1499653	21	2 9.1	20.2
496703 2016 EX ₁₅₄	17.9	X	134.12688	229.71264	339.44624	4.64863	0.1724352	0.26455514	2.4032111	21	10 5.9	21.7
496704 2016 EC ₁₆₆	16.9	X	78.67085	348.50280	198.19748	7.97227	0.1224253	0.22930636	2.6435771	21	6 29.4	20.5
496705 2016 EG ₁₆₇	16.0	X	135.17550	18.78951	0.24572	9.13852	0.0721685	0.17381839	3.1798422	21	2 7.4	20.7
496706 2016 EB ₁₆₉	17.3	X	258.67152	186.55607	195.01737	8.63977	0.1690707	0.23950011	2.5680230	21	6 8.0	21.1
496707 2016 ET ₁₆₉	17.3	X	275.43393	301.38437	6.28203	1.76546	0.0365073	0.20312027	2.8661607	21	4 11.7	21.3
496708 2016 ED ₁₇₆	16.9	X	82.27090	68.60912	105.11384	13.68011	0.2062440	0.23012278	2.6373209	21	6 30.5	20.4
496709 2016 EL ₁₇₆	17.1	X	303.42525	127.86286	229.13270	6.25190	0.1212756	0.24654358	2.5188767	21	7 10.9	20.1
496710 2016 EZ ₁₇₉	17.3	X	230.97072	80.65051	349.07772	3.13098	0.0212104	0.24075788	2.5590713	21	7 16.5	20.6
496711 2016 EC ₁₈₀	18.2	X	128.77412	60.45623	232.64342	5.18065	0.1143188	0.30369436	2.1920220	21	—	—
496712 2016 EV ₁₉₁	16.8	X	345.97739	289.42564	236.93807	8.06896	0.0677648	0.18009041	3.1055772	21	1 14.4	21.1
496713 2016 FG ₅	16.3	X	114.47009	208.91285	178.77857	2.36172	0.0217753	0.16				

ELEMENTS AND OPPOSITION DATES IN 2021

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2021 JULY 5.0 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>
496721 2016 GY ₁₈	18.3	X	218.86391	86.57639	356.76359	3.31719	0.1643477	0.25758500	2.4463711	21	7 17.9	22.0
496722 2016 GQ ₂₃	16.7	X	109.40023	219.58834	322.27668	5.72771	0.0945568	0.24170536	2.5523792	21	7 30.4	20.2
496723 2016 GZ ₂₃	17.9	X	46.47213	55.47359	209.95763	8.88137	0.1613830	0.24306387	2.5428600	21	9 5.0	21.0
496724 2016 GX ₂₄	17.8	X	126.13531	272.38346	247.38253	3.67478	0.0582397	0.23959251	2.5673627	21	7 15.4	21.2
496725 2016 GE ₃₄	16.3	X	51.83303	271.92630	198.30648	10.63106	0.0571296	0.17586797	3.1550886	21	2 5.2	20.6
496726 2016 GO ₃₄	16.9	X	219.73843	119.59712	210.26903	6.66843	0.0824768	0.18342588	3.0678136	21	3 3.3	21.7
496727 2016 GX ₅₈	17.8	X	282.85128	24.18588	344.76339	6.78688	0.0132860	0.24164865	2.5527785	21	7 17.0	21.1
496728 2016 GM ₁₃₁	18.1	X	334.16761	93.35891	326.17818	2.15795	0.1459736	0.29644036	2.2276374	21	12 25.8	19.8
496729 2016 GZ ₁₇₀	16.7	X	240.27594	222.37396	192.05511	21.83110	0.0379733	0.23403562	2.6078428	21	7 12.6	20.8
496730 2016 GR ₁₈₀	15.8	X	9.02956	35.57804	151.58626	11.43509	0.0220736	0.18158448	3.0885187	21	3 18.2	20.0
496731 2016 GZ ₁₈₃	16.4	X	98.94022	18.84805	138.56181	7.45884	0.0152775	0.21161613	2.7889252	21	6 3.1	20.3
496732 2016 GS ₂₀₉	16.9	X	94.33936	17.84051	149.95802	3.76483	0.0382573	0.22353850	2.6888578	21	6 12.9	20.5
496733 2016 GJ ₂₄₁	16.7	X	334.26466	208.17792	95.72429	10.72589	0.1243522	0.22876078	2.6477786	21	6 17.5	19.5
496734 2016 GE ₂₄₄	16.2	X	266.09591	79.92387	209.60729	10.03794	0.1090724	0.17963936	3.1107734	21	2 28.5	21.0
496735 2016 GX ₂₄₅	17.0	X	135.99246	135.17166	335.98417	3.49221	0.0273941	0.21218482	2.7839399	21	5 20.2	20.9
496736 2016 GE ₂₄₆	16.4	X	240.09624	151.35583	231.53830	5.33553	0.0782086	0.21829336	2.7317589	21	5 30.1	20.3
496737 2016 GO ₂₄₇	16.6	X	330.07877	226.61978	23.03273	9.44466	0.0308917	0.19346530	2.9607426	21	4 10.8	20.5
496738 2016 GH ₂₄₈	16.8	X	268.49613	92.16788	234.87583	1.10654	0.0673113	0.20047853	2.8912843	21	4 23.9	20.9
496739 2016 HA ₅	15.8	X	205.75690	322.47558	35.01439	9.58435	0.0729532	0.18673488	3.0314641	21	3 26.9	20.5
496740 2016 HA ₁₂	17.0	X	191.41009	173.88392	248.28813	3.40288	0.0611659	0.21241207	2.7819539	21	5 26.0	20.8
496741 2016 HC ₁₅	16.5	X	261.08774	116.84809	197.62256	8.10388	0.0832705	0.18600014	3.0394420	21	3 29.7	20.9
496742 2016 JQ ₁	15.8	X	336.65432	274.23900	280.34452	5.62659	0.1326990	0.17149315	3.2085208	21	1 30.7	20.0
496743 2016 JJ ₉	16.2	X	26.05241	336.07202	172.59652	8.03504	0.1699174	0.17334668	3.1856082	21	2 20.4	19.8
496744 2016 JE ₁₀	16.4	X	298.28073	51.82065	213.23269	7.49993	0.0259560	0.17693199	3.1424265	21	3 20.8	20.8
496745 2016 JQ ₂₅	16.2	X	25.27281	277.23868	244.41292	8.29333	0.1725005	0.17826908	3.1266939	21	3 3.8	19.8
496746 2016 JZ ₂₆	16.6	X	117.99397	278.39437	196.71538	9.79384	0.0486843	0.19692476	2.9259652	21	5 8.8	20.7
496747 2016 JH ₃₇	15.9	X	278.41342	175.53829	99.94701	13.33585	0.0438865	0.17189897	3.2034691	21	3 15.5	20.7
496748 2016 NC ₁₃	16.1	X	145.45524	321.64794	151.29001	10.99211	0.0375619	0.17628771	3.1500784	21	6 8.5	20.8
496749 2016 NY ₃₀	16.3	X	343.86098	60.20823	343.33076	25.12743	0.1462425	0.22123552	2.7074856	21	11 16.6	19.9
496750 2016 NT ₅₄	18.3	X	180.82361	95.01653	201.61640	3.60884	0.2359767	0.29014446	2.2597472	21	—	—
496751 2016 PT ₃₇	15.8	X	275.04971	217.66060	164.36825	17.48508	0.2039710	0.17827472	3.1266279	21	6 24.2	20.7
496752 2016 SB ₁₄	16.2	X	329.73661	164.84444	176.41301	11.07684	0.1364039	0.17926981	3.1150470	21	7 28.8	20.1
496753 2016 GS ₂₁	16.4	X	313.39192	205.71975	163.78967	10.62997	0.0969405	0.17411743	3.1762004	21	8 13.9	20.6
496754 2016 TP ₃₈	16.9	X	32.57252	24.85359	322.05878	4.96031	0.0253567	0.21096689	2.7946442	21	11 10.1	20.8
496755 2016 TS ₆₂	17.2	X	339.82700	230.16515	184.76733	4.47989	0.0391323	0.21803879	2.7338848	21	12 1.1	20.8
496756 2016 UN ₄₉	17.2	X	348.37442	103.13163	238.08257	10.13280	0.1446194	0.17752851	3.1353833	21	8 28.1	21.0
496757 2016 UD ₈₈	17.0	X	18.86919	82.76969	227.47835	0.74001	0.1964908	0.18389121	3.0626362	21	9 21.8	20.5
496758 2016 US ₁₀₂	16.8	X	273.79276	263.72172	164.04531	0.91785	0.1264084	0.17577216	3.1562349	21	8 30.4	21.2
496759 2016 UY ₁₁₇	18.4	X	7.97367	147.47025	338.26189	1.64171	0.1593026	0.25833063	2.4416614	21	—	—
496760 2016 UY ₁₄₃	16.3	X	247.93408	70.75590	7.81078	4.72819	0.1388922	0.17148084	3.2086743	21	8 12.7	21.1
496761 2016 VE ₁₀	17.5	X	13.73022	357.68479	74.55201	3.30396	0.0594189	0.23503918	2.6004143	21	—	—
496762 2016 WY ₄₈	18.4	X	73.05171	292.44705	159.37978	1.37121	0.1576593	0.27049435	2.3679031	21	2 4.3	20.6
496763 2016 XO ₃	15.9	X	307.74267	169.37154	258.78486	22.74655	0.2619038	0.18275269	3.0753428	21	9 20.5	20.0
496764 2016 BR ₁₅	16.2	X	35.41290	245.19829	126.94684	10.32925	0.1006974	0.18458871	3.0549162	21	12 22.5	20.4
496765 2017 BL ₂₁	17.0	X	103.63628	103.04581	280.23907	4.68695	0.0551004	0.22321256	2.6914747	21	—	—
496766 2017 BF ₂₄	17.3	X	136.95055	172.47707	174.36515	8.49753	0.0880139	0.22035935	2.7146576	21	—	—
496767 2017 BU ₅₀	16.6	X	309.56774	300.38001	161.88398	0.10433	0.1359676	0.17915331	3.1163973	21	12 4.1	20.2
496768 2017 BG ₅₉	17.7	X	38.83258	144.97558	31.65766	9.49536	0.2099002	0.26624736	2.3930173	21	4 13.4	19.3
496769 2017 BQ ₈₄	17.2	X	15.90619	54.88345	39.46463	4.29383	0.0681230	0.21543422	2.7558755	21	—	—
496770 2017 BF ₁₀₀	17.2	X	29.44784	99.81848	345.00582	4.68619	0.1388259	0.22130066	2.7069542	21	—	—
496771 2017 BD ₁₀₈	15.6	X	10.76220	305.73898	114.20617	10.40370	0.0481112	0.17048144	3.2212021	21	—	—
496772 2017 BP ₁₂₈	15.7	X	281.38181	291.03055	205.68363	8.65583	0.0988769	0.17834336	3.1258257	21	12 9.2	19.9
496773 2017 DE ₄₈	18.0	X	107.81941	110.33453	10.20554	8.34843	0.1497461	0.27786915	2.3258185	21	5 7.8	21.0
496774 2017 DY ₈₃	17.6	X	66.74007	190.88688	4.37247	3.84437	0.1030751	0.28481910	2.2878277	21	6 20.2	20.1
496775 2017 DD ₁₀₈	16.7	X	334.30194	200.56400	105.85751	7.13532	0.1465148	0.27776288	2.3264117	21	6 17.1	18.6
496776 2017 DR ₁₁₁	17.2	X	30.52937	297.66769	191.07859	11.86886	0.1363651	0.23434842	2.6055217	21	1 14.4	20.2
496777 2017 DY ₁₁₂	16.8	X	108.55256	171.50189	220.21918	4.38134	0.0466772	0.22378634	2.6868722	21	1 4.7	20.4
496778 2017 DC ₁₁₄	17.1	X	67.08464	283.06690	170.23954	10.60912	0.1251574	0.23570910	2.5954847	21	1 30.8	20.1
496779 2017 DX ₁₁₅	16.3	X	307.38570	47.86873	118.18620	13.31835	0.1372091	0.18599476	3.0395007	21	—	—
496780 2017 EF ₂	17.8	X	132.20679	102.42428	148.22832	24.54134	0.0616790	0.35621654	1.9708791	21	12 15.0	20.8
496781 2017 EY ₅	15.7	X	226.56114	219.54452	26.64981	18.45872	0.0789262	0.18111345	3.0938714	21	—	—
496782 2017 EX ₁₆	15.9	X	39.65210	259.36826	137.61710	9.07010	0.0877761	0.16809143	3.2516641	21	—	—
496783 2017 EU ₂₁	16.8	X	45.63278	20.63637	159.94972	14.99093	0.0433876	0.24501118	2.5293685	21	4 24.7	20.1
496784 2017 FR ₄₁	16.3	X	311.27277	28.16527	137.69372	7.26393	0.0761093	0.18855080	3.0119688	21	—	—
496785 2017 FF ₇₁	16.8	X	309.87841	300.47937	181.00587	14.49527	0.2358142	0.17804304	3.1293398	21	12 20.8	20.4
496786 2017 FD ₇₇	17.6	X	251.95734	44.63438	352.85001	7.43689	0.0585996	0.29379662	2.2409811	21	7 6.8	20.4
496787 2017 FN ₁₀₆	18.1	X	72.44592	204.74938	40.46730	5.42555	0.1989725	0.29195373	2.2504016	21	9 28.8	21.0
496788 2017 GG ₅	17.9	X	71.56616	309.10685	39.63390	21.75854	0.1128943	0.37145573	1.9165994	21	—	—
496789 2017 HG ₁₈	18.3	X	24.97267	179.61458	97.21721	3.57161	0.1078938	0.28240436	2.3008508	21	8 15.5	20.4
496790 2017 HD ₂₂	17.9	X	69.85657	145.72489	61.13901	6.33855	0.1790371	0.27502385	2.3418324	21	7 28.0	20.7
496791 2017 HP ₃₃	16.0	X	169.12118	130.25306	191.14334	8.92056	0.0696172	0.17414341	3.1758844	21	1 3.4	20.9
496792 2017 HY ₃₃	16.4	X	5.48438	109.53421	67.60084	14.46247	0.1313614	0.22046807	2.7137365	21	2 19.2	19.8
496793 2017 HJ ₃₄	16.2	X	244.83568	324.47661	100.87215	10.73237	0.0936592	0.23139858	2.6276182	21	4 7.2	20.3
496794 2017 HG ₄₁												

ELEMENTS AND OPPOSITION DATES IN 2021

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2021 JULY 5.0 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>
496801 2017 <i>JU</i>	17.7	X	187.56599	355.69747	219.65764	22.51321	0.0997910	0.34898529	1.9980114	21	12 22.0	20.5
496802 2017 <i>JZ</i>	17.4	X	302.88671	205.99661	81.25176	5.71585	0.2217539	0.22661655	2.6644544	21	3 24.8	21.1
496803 2017 <i>JO</i> ₁	16.0	X	244.05490	180.20475	113.56395	14.77388	0.0760911	0.19205017	2.9752691	21	2 17.3	20.5
496804 2017 <i>JD</i> ₂	18.5	X	311.75571	57.24886	90.27199	24.47074	0.0481368	0.39257431	1.8472321	21	—	—
496805 2017 <i>JE</i> ₂	17.8	X	131.87842	212.20505	97.90334	25.54435	0.0744549	0.37187744	1.9151501	21	—	—
496806 2017 <i>JA</i> ₄	15.7	X	209.43236	110.50120	190.35644	16.19231	0.0815046	0.16874061	3.2433188	21	1 19.7	21.0
496807 2017 <i>JJ</i> ₄	16.3	X	332.19298	166.18398	92.21955	16.08800	0.0986687	0.23498418	2.6008200	21	4 20.8	19.8
496808 2017 <i>JM</i> ₅	15.5	X	332.38270	50.84007	105.17662	16.25627	0.0748541	0.18276628	3.0751904	21	—	—
496809 2017 <i>KH</i>	17.4	X	43.37070	138.45813	102.20320	8.46988	0.0685880	0.26973323	2.3723554	21	7 15.7	19.8
496810 2017 <i>KQ</i> ₂	17.7	X	336.97021	338.91431	123.87898	23.90142	0.0785146	0.37215403	1.9142011	21	—	—
496811 2017 <i>KV</i> ₂	17.4	X	110.86762	265.80372	83.22393	25.30641	0.1603854	0.37073872	1.9190697	21	—	—
496812 2017 <i>KB</i> ₉	16.2	X	272.37301	18.55297	237.66722	10.43340	0.0464543	0.19069279	2.9893714	21	1 31.3	20.7
496813 2017 <i>KT</i> ₁₅	16.9	X	6.52796	191.36095	79.63982	17.13810	0.1355112	0.25755444	2.4465646	21	6 28.9	19.2
496814 2017 <i>KY</i> ₂₆	16.3	X	334.61133	45.46101	188.72265	14.10785	0.1473824	0.21709457	2.7418061	21	3 7.2	19.6
496815 2017 <i>KX</i> ₂₉	15.7	X	195.17805	185.84605	125.49834	15.01791	0.0467078	0.17214354	3.2004341	21	1 18.9	20.4
496816 1989 <i>UP</i>	20.5	X	150.80268	17.82038	53.17055	3.85540	0.4720695	0.38825897	1.8608943	21	5 10.3	23.8
496817 1989 <i>VB</i>	19.9	X	172.75203	330.88089	37.84447	2.18498	0.4601214	0.38808825	1.8614401	21	3 6.6	23.2
496818 1993 <i>RA</i>	19.3	X	120.74824	265.42626	171.65667	5.60492	0.4163688	0.37095897	1.9183100	21	4 24.6	21.9
496819 1994 <i>XE</i>	18.0	X	331.25221	354.42530	112.84630	7.74582	0.2635970	0.29437362	2.2380517	21	—	—
496820 1995 <i>FM</i> ₁₅	17.4	X	100.46159	166.74607	33.28911	9.86698	0.0746797	0.23611130	2.5925364	21	8 14.0	21.1
496821 1995 <i>OA</i> ₃	17.6	X	359.40864	126.45242	191.48295	5.29242	0.1893828	0.22831396	2.6512320	21	8 27.5	20.0
496822 1995 <i>OW</i> ₁₁	16.5	X	254.73943	0.66429	332.56602	9.01126	0.1642597	0.18010091	3.1054564	21	4 3.9	21.5
496823 1995 <i>QZ</i> ₁₄	16.9	X	210.13916	155.16072	210.40400	5.61980	0.1258944	0.17886286	3.1197701	21	4 5.9	22.0
496824 1995 <i>SL</i> ₂₂	16.0	X	318.22173	278.48670	9.52031	25.92436	0.1977514	0.18101910	3.0949463	21	4 14.8	20.2
496825 1995 <i>SY</i> ₂₅	18.6	X	345.71477	33.21445	350.48413	1.84839	0.2096275	0.26700402	2.3889492	21	11 20.5	20.4
496826 1995 <i>SR</i> ₆₅	17.2	X	263.21243	182.29558	143.15517	1.44545	0.1666218	0.17991001	3.1076529	21	4 6.9	21.8
496827 1995 <i>SE</i> ₇₂	17.7	X	204.41055	226.75562	193.21121	9.98679	0.2297266	0.1778323	3.1323878	21	6 3.5	23.2
496828 1995 <i>SO</i> ₇₈	17.4	X	278.93597	16.36357	9.02570	13.57547	0.2025676	0.22229063	2.6989113	21	7 4.4	21.4
496829 1995 <i>TD</i> ₅	18.1	X	1.52203	314.46414	23.06336	2.28984	0.2180617	0.26522853	2.3991416	21	10 15.0	19.7
496830 1995 <i>UM</i> ₈₁	16.4	X	187.30123	85.93570	12.00306	25.83300	0.2446353	0.17902222	3.1179185	21	7 8.7	22.3
496831 1995 <i>VT</i> ₆	16.9	X	238.43998	291.53479	68.89886	1.96062	0.1843625	0.17581582	3.1557123	21	4 23.9	22.1
496832 1995 <i>WP</i> ₂₁	18.4	X	316.86723	298.01747	106.06367	3.53187	0.1842351	0.26359929	2.4090171	21	10 15.3	20.2
496833 1996 <i>AM</i> ₆	17.1	X	171.79420	6.64756	89.09365	5.05312	0.0660177	0.20985506	2.8069144	21	6 16.3	21.1
496834 1996 <i>TQ</i> ₆	20.3	X	13.90310	214.84406	171.66300	6.03845	0.4095096	0.28088059	2.3091646	21	—	—
496835 1997 <i>GR</i> ₁	17.2	X	104.22310	46.62976	154.62187	9.39285	0.0908524	0.21740193	2.7392213	21	8 16.2	21.0
496836 1998 <i>OL</i> ₂	16.9	X	341.26376	355.52955	305.94826	8.52158	0.2642417	0.21189110	2.7865119	21	6 11.6	19.4
496837 1998 <i>SB</i> ₁₅	21.0	X	221.42887	67.68074	6.75935	15.62616	0.1614282	0.72570308	1.2263941	21	7 20.9	21.5
496838 1998 <i>SS</i> ₄₀	17.4	X	287.29650	220.19474	22.61411	2.02842	0.0880423	0.20590478	2.8402621	21	6 4.2	21.3
496839 1998 <i>WR</i> ₃₀	17.0	X	295.47136	286.71047	64.83960	2.94715	0.0862770	0.20369029	2.8608110	21	6 27.9	20.7
496840 1998 <i>YX</i> ₃₁	15.9	X	47.88721	258.75698	300.42311	14.63248	0.1323692	0.18926912	3.0043431	21	6 2.4	19.8
496841 1999 <i>CV</i> ₇	16.1	X	99.06764	182.60426	342.84109	22.54399	0.3019160	0.18872651	3.1010990	21	7 27.7	21.2
496842 1999 <i>RB</i> ₃₀	17.0	X	298.50592	45.08356	330.87990	15.01610	0.3395216	0.22005994	2.7171194	21	6 26.1	20.7
496843 1999 <i>RH</i> ₂₄₃	17.1	X	296.89134	146.64486	166.90857	4.80481	0.0558013	0.21399414	2.7682255	21	5 15.3	20.9
496844 1999 <i>TH</i> ₆₆	17.3	X	261.13876	28.83789	1.92518	4.83497	0.1730346	0.21509668	2.7587578	21	6 22.4	21.4
496845 1999 <i>TF</i> ₇₁	18.1	X	337.74500	144.38727	221.52079	0.68681	0.2041314	0.26772615	2.3841973	21	10 1.0	19.7
496846 1999 <i>TD</i> ₈₄	18.4	X	41.70855	32.76722	275.24633	1.97600	0.2462060	0.27116349	2.3640060	21	11 16.6	21.3
496847 1999 <i>TS</i> ₂₀₉	17.0	X	271.96332	195.73246	197.47845	18.56044	0.2885578	0.21614688	2.7498145	21	6 21.6	21.6
496848 1999 <i>TM</i> ₂₉₄	18.1	X	330.62950	42.33976	356.04505	2.03743	0.2271606	0.27106631	2.3645710	21	11 8.3	19.5
496849 1999 <i>TN</i> ₃₁₉	17.8	X	244.89968	45.91521	20.47430	4.81356	0.1117733	0.21622185	2.7491789	21	7 29.6	21.8
496850 1999 <i>UK</i> ₁₂	18.2	X	347.89584	8.17403	44.49528	4.80703	0.2394178	0.27326792	2.3518536	21	—	—
496851 1999 <i>UX</i> ₃₁	18.2	X	14.23282	297.81869	39.02823	5.11208	0.1729590	0.26926195	2.3751228	21	11 2.7	20.2
496852 1999 <i>VD</i> ₄₁	17.3	X	292.45822	342.16786	25.54424	4.80855	0.0909000	0.21602908	2.7508141	21	7 16.1	20.8
496853 1999 <i>VL</i> ₄₂	18.0	X	267.30608	176.38261	297.13859	1.98045	0.1438662	0.26913593	2.3758641	21	10 29.3	20.7
496854 1999 <i>VY</i> ₈₄	18.4	X	9.58576	136.77344	211.12657	0.83536	0.1998193	0.26921287	2.3754114	21	11 15.3	20.5
496855 1999 <i>VD</i> ₁₁₆	18.0	X	31.19968	171.04305	164.93117	1.91457	0.1975800	0.27007569	2.3703495	21	12 3.3	20.6
496856 1999 <i>VQ</i> ₁₃₁	18.3	X	331.84480	344.17612	42.20116	2.04234	0.1922657	0.26777198	2.3839252	21	10 21.4	20.0
496857 1999 <i>VD</i> ₁₄₇	16.9	X	81.37490	127.20149	231.89229	12.81996	0.1305989	0.23214049	2.6220167	21	—	—
496858 1999 <i>VU</i> ₂₀₉	18.4	X	324.50267	153.97923	228.88885	0.42255	0.1919791	0.26675564	2.3899766	21	9 25.9	20.0
496859 1999 <i>WB</i> ₁₈	18.6	X	307.22012	182.82761	232.25405	4.57294	0.2195816	0.26687027	2.3892921	21	10 2.5	20.6
496860 1999 <i>XL</i> ₁₃₆	19.5	X	266.36707	275.05701	270.33610	8.91206	0.6477392	0.40230107	1.8173361	21	12 13.7	17.7
496861 2000 <i>BE</i> ₁₉	18.0	X	161.28502	326.49499	71.56273	10.11379	0.584370	0.38569691	1.8691261	21	4 13.7	21.8
496862 2000 <i>BK</i> ₄₂	17.7	X	247.09273	15.24687	129.17355	8.10383	0.0520554	0.26386470	2.4074015	21	11 28.1	20.8
496863 2000 <i>CL</i> ₅₉	18.2	X	12.76793	335.92125	143.62773	33.43170	0.1744603	0.41320497	1.7852225	21	—	—
496864 2000 <i>CW</i> ₁₀₈	17.3	X	214.04565	295.14530	129.53107	4.37047	0.0522907	0.20300229	2.8672711	21	6 25.4	21.4
496865 2000 <i>DP</i> ₆₆	16.5	X	2.24740	252.03861	345.45302	13.47200	0.2123008	0.19152719	2.9806828	21	4 25.5	19.8
496866 2000 <i>JO</i> ₅	16.2	X	4.87098	165.97438	59.38874	11.20612	0.2135827	0.18584059	3.0411815	21	4 24.7	19.3
496867 2000 <i>LM</i> ₂₂	18.5	X	90.18397	97.85439	172.98251	5.33063	0.2323087	0.29432940	2.2382759	21	11 22.1	22.0
496868 2000 <i>OA</i> ₅₁	18.2	X	66.25111	25.84302	256.71499	7.36830	0.4169760	0.29144808	2.2530037	21	11 30.2	22.1
496869 2000 <i>QU</i> ₇	18.1	X	0.55979	87.71589	339.16678	22.32223	0.6468874	0.28578091	2.2826916	21	—	—
496870 2000 <i>QE</i> ₂₂₇	16.5	X	258.64622	47.92250	299.88655	8.93468	0.2693830	0.17727084	3.1384209	21	4 14.7	21.9
496871 2000 <i>RZ</i> ₁₂	16.1	X	245.63812	55.95461	288.56852	14.22643	0.3490246	0.17604400	3.1529850	21	3 24.0	22.1
496872 2000 <i>SH</i> ₅	17.4	X	291.44245	72.04432								

ELEMENTS AND OPPOSITION DATES IN 2021

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2021 JULY 5.0 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>
496881 2000 <i>SP</i> ₂₄₂	16.6	X	323.04721	10.34572	8.21660	14.98723	0.2747258	0.23410492	2.6073281	21	9 5.7	18.6
496882 2000 <i>SH</i> ₃₆₂	17.6	X	285.90079	260.17899	135.07782	7.27655	0.2823773	0.22972209	2.6403867	21	7 12.4	21.2
496883 2000 <i>SF</i> ₃₆₉	16.0	X	214.26807	90.15830	318.09693	24.38745	0.2961512	0.17463598	3.1699098	21	5 20.3	22.1
496884 2000 <i>TW</i> ₃₂	17.5	X	306.31791	21.22582	30.47630	7.73064	0.3162361	0.23215635	2.6218972	21	9 7.5	19.9
496885 2000 <i>TA</i> ₄₅	17.3	X	309.85443	207.80173	151.38809	10.20940	0.2830890	0.23055295	2.6340394	21	6 28.4	20.3
496886 2000 <i>UN</i> ₁₅	18.1	X	14.77730	92.31339	300.74247	4.45691	0.1636869	0.28800626	2.2709179	21	—	—
496887 2000 <i>UT</i> ₃₂	18.4	X	357.66853	236.54217	147.14093	1.51024	0.2112596	0.28374765	2.2935834	21	12 22.5	20.2
496888 2000 <i>UF</i> ₄₄	16.8	X	287.20825	9.13654	40.13375	14.22923	0.2361198	0.22856089	2.6493221	21	8 18.3	20.4
496889 2000 <i>UE</i> ₆₇	17.6	X	15.59006	354.22487	20.83756	7.33561	0.1821992	0.28612677	2.2808517	21	—	—
496890 2000 <i>VR</i> ₂₃	17.6	X	16.03167	144.82044	232.53917	5.28061	0.2726026	0.28622752	2.2803165	21	—	—
496891 2000 <i>WK</i> ₁₅₉	16.7	X	354.69009	127.07810	281.95000	22.22984	0.2597854	0.28365282	2.2940945	21	—	—
496892 2000 <i>XZ</i> ₁₀	16.4	X	229.50937	214.60223	245.65180	9.47867	0.0597496	0.22551276	2.6731416	21	8 25.1	20.3
496893 2000 <i>XG</i> ₂₄	17.0	X	269.26903	50.44712	28.28744	7.76234	0.3000177	0.22700778	2.6613922	21	8 20.3	20.9
496894 2000 <i>YF</i> ₃₁	17.6	X	242.20915	97.06774	317.22571	6.82527	0.2259521	0.21882438	2.7273237	21	6 27.6	22.0
496895 2001 <i>AF</i> ₄₇	17.0	X	322.96711	69.02052	49.99996	21.81763	0.3152495	0.28387488	2.2928980	21	—	—
496896 2001 <i>AT</i> ₄₇	16.6	X	287.79082	103.73119	319.11886	25.80970	0.4790890	0.22679653	2.6630446	21	7 27.1	20.5
496897 2001 <i>BZ</i> ₁₅	19.2	X	280.04999	30.77056	129.69721	25.09183	0.0177975	0.57227553	1.4368097	21	—	—
496898 2001 <i>CM</i> ₄₇	16.9	X	226.09032	149.32549	337.79364	3.61090	0.2194923	0.22160072	2.7045101	21	9 11.8	21.3
496899 2001 <i>FH</i> ₉₁	16.9	X	209.69775	173.43405	3.47621	24.74208	0.1898029	0.27181230	2.3602426	21	10 26.1	20.8
496900 2001 <i>FH</i> ₂₂₀	18.0	X	323.02690	149.75371	250.68300	0.49528	0.1819892	0.26908139	2.3761851	21	10 22.9	19.9
496901 2001 <i>HB</i>	20.4	X	194.88005	237.97620	195.83855	9.28168	0.6938283	0.65439330	1.3139439	21	6 3.7	23.1
496902 2001 <i>QB</i> ₁₄₃	16.7	X	256.67002	275.65739	71.42304	17.93833	0.4039281	0.18522615	3.0479033	21	4 14.6	22.5
496903 2001 <i>QJ</i> ₁₄₄	17.0	X	263.78976	178.44671	162.80919	1.63995	0.1874872	0.18566770	3.0430691	21	4 23.9	21.7
496904 2001 <i>QU</i> ₁₅₁	16.9	X	260.68041	96.49339	266.96734	8.27880	0.2412236	0.18786350	3.0193105	21	5 10.4	21.8
496905 2001 <i>QO</i> ₂₀₄	17.2	X	283.42647	111.54000	246.44943	0.48958	0.2500188	0.23978983	2.5659541	21	5 24.8	20.9
496906 2001 <i>QT</i> ₂₁₀	16.6	X	293.72560	58.17098	289.80994	5.29920	0.2479918	0.19069037	2.9893967	21	5 26.3	20.7
496907 2001 <i>QQ</i> ₂₂₉	17.7	X	307.04528	30.92401	295.87003	5.27858	0.2876642	0.23979746	2.5658996	21	5 5.1	21.1
496908 2001 <i>QC</i> ₂₃₇	15.2	X	194.72756	342.24984	353.76231	16.81924	0.2739365	0.12440165	3.9742205	21	2 26.8	22.0
496909 2001 <i>RK</i> ₁₃₉	18.0	X	312.78223	28.81033	357.21954	9.41295	0.2918996	0.24466911	2.5317255	21	8 17.9	20.1
496910 2001 <i>SK</i> ₁₆₈	16.0	X	217.86483	207.69087	215.91783	14.27655	0.2423865	0.18261271	3.0769141	21	6 16.3	21.4
496911 2001 <i>ST</i> ₁₈₈	16.5	X	244.73795	325.60517	346.86663	16.42778	0.1752064	0.18008776	3.1056076	21	3 4.7	21.6
496912 2001 <i>SF</i> ₂₀₉	18.3	X	53.17371	190.21458	162.87926	6.22187	0.1628493	0.30553382	2.1832151	21	—	—
496913 2001 <i>ST</i> ₂₂₂	16.9	X	248.33541	322.43155	47.49317	3.10518	0.2547004	0.18486837	3.0518345	21	5 7.5	21.8
496914 2001 <i>SV</i> ₂₂₉	16.4	X	240.83606	3.57934	19.77496	10.05998	0.3455983	0.18408537	3.0604822	21	5 9.3	21.9
496915 2001 <i>SA</i> ₂₆₉	17.0	X	242.93693	356.28069	347.64806	2.18396	0.1760682	0.18304496	3.0720682	21	4 7.4	21.8
496916 2001 <i>SX</i> ₂₈₈	18.5	X	229.66284	183.46373	187.61775	32.61908	0.1928560	0.43318332	1.7299023	21	4 10.6	20.7
496917 2001 <i>SD</i> ₃₃₆	16.7	X	246.98909	234.99011	188.23575	6.07784	0.2481063	0.18928517	3.0041734	21	7 9.7	21.6
496918 2001 <i>TV</i> ₂	16.4	X	251.61442	189.99305	202.67273	9.88261	0.2089510	0.18665024	3.0323804	21	6 11.4	21.3
496919 2001 <i>TM</i> ₁₀₃	17.6	X	166.44461	294.24903	15.00999	20.12618	0.0498615	0.36322338	1.9454505	21	—	—
496920 2001 <i>TV</i> ₁₆₀	16.6	X	105.35475	349.49579	223.27646	11.57779	0.1175295	0.23846700	2.5754346	21	9 2.0	20.6
496921 2001 <i>TP</i> ₂₀₇	18.4	X	93.31320	313.83617	3.25606	6.17707	0.1951713	0.30676729	2.1773589	21	—	—
496922 2001 <i>TS</i> ₂₆₀	18.6	X	318.56797	341.58012	66.11611	5.04445	0.1700215	0.24667748	2.5179651	21	10 21.7	20.9
496923 2001 <i>UV</i> ₅₇	16.4	X	173.89000	16.13577	18.20648	12.03598	0.1063754	0.17552866	3.1591532	21	4 6.6	21.1
496924 2001 <i>UR</i> ₆₄	15.4	X	195.61558	176.49946	235.25798	15.11906	0.2497011	0.17901897	3.1179562	21	5 16.9	20.7
496925 2001 <i>UE</i> ₈₆	16.9	X	285.51120	261.66535	88.30674	2.44555	0.1676561	0.18567583	3.0429802	21	5 31.5	21.1
496926 2001 <i>UP</i> ₁₁₂	17.5	X	312.76886	185.02061	215.05332	5.80480	0.2300574	0.24362357	2.5389639	21	9 14.5	19.6
496927 2001 <i>UY</i> ₁₅₆	17.7	X	218.87930	271.30219	49.54564	23.24544	0.0635477	0.37005216	1.9214426	21	1 28.9	20.6
496928 2001 <i>UG</i> ₁₇₇	18.4	X	42.35534	151.43224	213.82908	5.85328	0.2604918	0.30378320	2.1915946	21	—	—
496929 2001 <i>UM</i> ₁₈₆	18.2	X	337.59366	135.17224	221.39457	3.67435	0.2552873	0.24469588	2.5315409	21	9 5.7	19.7
496930 2001 <i>UF</i> ₂₀₃	16.6	X	196.76552	179.50379	236.67829	3.24984	0.2389662	0.17972975	3.1097303	21	5 23.2	22.0
496931 2001 <i>UV</i> ₂₂₆	18.2	X	326.89461	311.47548	73.52005	5.36881	0.2082082	0.24560995	2.5252560	21	10 3.6	20.2
496932 2001 <i>UO</i> ₂₂₉	16.3	X	219.19162	37.58225	11.10316	15.31166	0.1283844	0.18465765	3.0541557	21	6 2.7	21.4
496933 2001 <i>VY</i> ₂	16.9	X	244.23884	165.00883	211.01885	21.15455	0.3118970	0.18484306	3.0521131	21	5 8.1	22.2
496934 2001 <i>VA</i> ₆	16.1	X	225.67584	193.22448	220.76670	14.20729	0.2563021	0.18254436	3.0778221	21	6 10.6	21.5
496935 2001 <i>VO</i> ₅₅	16.4	X	219.11801	147.70266	237.98577	17.85485	0.1928118	0.17957568	3.1115088	21	5 5.3	21.7
496936 2001 <i>VO</i> ₇₄	17.4	X	324.13846	339.94170	51.64203	13.59523	0.1713562	0.24379407	2.5377799	21	10 12.5	19.9
496937 2001 <i>VH</i> ₁₁₀	16.2	X	215.32926	91.93831	254.65772	9.06952	0.3726128	0.17712805	3.1401072	21	3 10.8	22.3
496938 2001 <i>WF</i> ₃₀	15.8	X	206.47374	325.22347	55.96721	17.77151	0.1429564	0.17635822	3.1492387	21	4 25.7	21.0
496939 2001 <i>WO</i> ₃₃	15.9	X	235.55710	320.78221	69.88184	13.37170	0.1205013	0.18073588	3.0981786	21	6 1.1	20.7
496940 2001 <i>WZ</i> ₃₃	16.4	X	177.58528	341.39170	71.79851	11.94292	0.2346693	0.17520487	3.1630442	21	5 7.9	21.9
496941 2001 <i>WC</i> ₆₆	17.6	X	290.18906	186.17241	220.81917	10.72124	0.2257981	0.24131644	2.5551208	21	8 9.9	20.9
496942 2001 <i>WJ</i> ₇₁	17.1	X	207.73146	178.01727	228.46481	9.11035	0.3038046	0.17948497	3.1125571	21	5 18.5	22.7
496943 2001 <i>WY</i> ₇₅	18.0	X	330.66430	279.99656	72.63151	5.70285	0.3156265	0.24255378	2.5464238	21	8 3.2	19.6
496944 2001 <i>WX</i> ₈₀	16.2	X	212.58835	349.06169	66.06467	14.94103	0.1483870	0.17964596	3.1106973	21	6 5.9	21.1
496945 2001 <i>XO</i> ₉	17.3	X	319.79175	102.71570	270.12677	15.86254	0.2544004	0.24046124	2.5611754	21	8 7.9	19.9
496946 2001 <i>XV</i> ₁₄	17.9	X	62.92051	149.58733	280.81478	18.28999	0.1257293	0.35984805	1.9575969	21	—	—
496947 2001 <i>XQ</i> ₅₂	16.6	X	255.54908	198.46005	189.26475	1.50004	0.3108776	0.18379045	3.0637553	21	5 30.4	21.7
496948 2001 <i>XP</i> ₁₂₂	17.8	X	305.91187	316.56705	84.90916	3.56375	0.2192599	0.24174948	2.5520687	21	9 7.8	20.2
496949 2001 <i>XM</i> ₂₄₄	16.3	X	157.63699	179.76299	258.98829	11.02512	0.1540145	0.17447885	3.1718127	21	5 15.6	21.5
496950 2001 <i>YR</i> ₂₄	17.7	X	281.79703	172.41347	263.08633	12.31124	0.2571393	0.24065290	2.5598154	21	8 29.5	21.2
496951 2001 <i>YD</i> ₁₃₂	17.2	X	228.20548	153.29365	294.36867	11.05080	0.1590804	0.23439526	2.6051746			

ELEMENTS AND OPPOSITION DATES IN 2021

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2021 JULY 5.0 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>
496961 2002 GQ ₈₆	17.5	X	103.64666	161.79473	90.74919	5.59958	0.2035634	0.27574188	2.3377652	21	11 7.7	21.2
496962 2002 GP ₁₈₆	20.2	X	191.91180	24.82361	31.18168	8.10748	0.3311391	0.67684899	1.2847191	21	4 27.2	20.6
496963 2002 NL ₆₀	17.9	X	351.15284	30.73886	314.12282	4.68343	0.2461020	0.26213770	2.4179634	21	9 29.8	19.4
496964 2002 OM ₃₀	18.5	X	36.32384	31.16078	267.13874	2.21669	0.1892955	0.26400803	2.4065301	21	10 15.5	21.1
496965 2002 PQ ₄₀	17.5	X	286.44578	193.54927	169.98666	13.53609	0.4350052	0.20048146	2.8912562	21	5 16.4	22.3
496966 2002 PG ₈₃	17.5	X	14.49341	3.27255	330.26759	10.82736	0.2938155	0.26351590	2.4095253	21	11 13.9	20.0
496967 2002 PL ₁₅₅	18.1	X	15.57825	353.42646	326.39331	0.71490	0.2046317	0.26308346	2.4121650	21	10 14.3	20.1
496968 2002 PQ ₁₆₇	18.2	X	9.56612	29.43881	342.01947	0.57513	0.2027593	0.26675634	2.3899724	21	12 19.2	20.6
496969 2002 PR ₁₇₂	18.5	X	336.45208	333.73088	27.44835	1.55065	0.2501031	0.26093024	2.4254171	21	9 17.4	19.7
496970 2002 QV ₅	17.7	X	28.57519	329.42757	359.77512	5.61962	0.3423863	0.26585070	2.3953971	21	12 11.4	20.8
496971 2002 QO ₃₂	17.9	X	22.50077	356.82476	349.95362	3.36489	0.2067693	0.26529006	2.3987707	21	12 4.9	20.5
496972 2002 QO ₃₂	17.8	X	3.83103	216.87880	113.88351	2.04739	0.1623247	0.26076925	2.4264153	21	10 2.2	20.0
496973 2002 QD ₇₀	18.0	X	323.03013	39.91786	330.77483	1.74378	0.2171230	0.25969298	2.4331147	21	8 28.5	19.7
496974 2002 QD ₈₁	18.6	X	13.95376	286.34102	62.93464	2.32709	0.2167453	0.26553805	2.3972769	21	11 26.9	20.9
496975 2002 QW ₈₂	18.5	X	24.66505	101.38802	229.94674	2.25307	0.2061378	0.26507159	2.4000885	21	11 17.2	21.0
496976 2002 QH ₁₀₀	18.4	X	352.76958	247.90419	92.33689	2.36000	0.2075016	0.26082087	2.4260951	21	9 27.2	20.0
496977 2002 QT ₁₀₇	18.0	X	26.94310	19.18327	304.60769	4.07060	0.2364173	0.26489264	2.4011693	21	11 13.8	20.6
496978 2002 QN ₁₁₂	16.9	X	321.10454	312.12107	309.42569	5.24009	0.2910218	0.19719348	2.9233064	21	3 4.2	20.8
496979 2002 QD ₁₃₂	18.6	X	44.52187	210.26812	113.40184	3.57752	0.1744522	0.26772491	2.3842047	21	11 30.7	21.7
496980 2002 QQ ₁₃₈	18.5	X	18.13996	184.86996	144.28840	2.06798	0.2047672	0.26434264	2.4044988	21	11 3.7	20.7
496981 2002 RP ₂₈	21.3	X	251.78547	250.70141	163.35934	7.99507	0.3906017	0.46026345	1.6613650	21	6 18.2	23.7
496982 2002 RT ₇₀	17.0	X	258.04942	95.60712	263.73276	6.34784	0.2797827	0.19653477	2.9298347	21	4 28.7	21.9
496983 2002 RS ₇₉	17.2	X	313.01090	167.15090	173.99383	10.26293	0.3170789	0.20262451	2.8708339	21	6 4.1	20.8
496984 2002 RX ₁₃₁	18.0	X	342.15503	132.33019	334.87451	7.99950	0.2864093	0.26050775	2.4280388	21	10 16.1	19.1
496985 2002 RJ ₁₄₆	17.9	X	7.69432	331.82635	252.12609	2.18322	0.2072473	0.26017319	2.4301198	21	10 3.9	19.7
496986 2002 RL ₁₇₀	17.5	X	2.74043	32.42871	328.37433	10.34213	0.2123880	0.26410521	2.4059397	21	11 18.2	20.0
496987 2002 RL ₁₇₄	17.7	X	9.60833	140.65536	213.25093	4.27706	0.2315756	0.26393027	2.4070027	21	11 28.6	20.0
496988 2002 RB ₂₀₉	18.1	X	41.93762	172.47924	173.70235	4.46279	0.2207057	0.26775785	2.3840091	21	—	—
496989 2002 RC ₂₁₁	17.2	X	240.12765	52.81256	339.09877	14.27249	0.2768364	0.19600554	2.9351062	21	5 21.1	22.5
496990 2002 RR ₂₄₀	18.7	X	5.77650	118.84013	239.68871	2.46024	0.2332589	0.26411494	2.4058806	21	11 28.2	20.8
496991 2002 RD ₂₅₃	17.8	X	40.29278	301.56369	330.47218	5.46703	0.1380357	0.25828386	2.4419562	21	9 4.8	20.3
496992 2002 RL ₂₆₅	15.6	X	128.42593	7.10531	7.99858	8.06727	0.2481736	0.12482614	3.9652053	21	2 20.8	21.8
496993 2002 RQ ₂₈₁	17.1	X	305.45321	308.31438	32.28934	2.41472	0.0764570	0.20107411	2.8855722	21	6 29.2	20.8
496994 2002 TS ₁₉₀	18.4	X	202.83034	312.73271	8.02954	46.46284	0.0479315	0.38865866	1.8596183	21	—	—
496995 2002 TF ₂₄₃	17.6	X	313.35690	186.14079	202.44709	4.57451	0.2038911	0.25671808	2.4518755	21	9 3.9	19.6
496996 2002 TF ₃₂₅	17.0	X	171.66529	228.08692	182.95031	10.36789	0.0242372	0.18936821	3.0032951	21	4 21.1	21.3
496997 2002 TV ₃₃₀	18.0	X	37.01337	288.81538	24.76764	6.80061	0.1295103	0.26172938	2.4204776	21	10 28.2	20.8
496998 2002 TF ₃₇₈	15.8	X	175.47964	317.66311	4.65498	2.74144	0.2232731	0.12678296	3.9242994	21	1 26.8	22.2
496999 2002 TU ₃₇₉	17.2	X	201.67940	233.72807	189.24637	5.11561	0.1654854	0.19326521	2.9627858	21	6 5.8	22.0
497000 2002 UL ₉	15.6	X	271.44137	103.30601	288.28833	15.24329	0.2683150	0.19659912	2.9291954	21	6 23.7	20.1
497001 2002 UG ₄₃	17.0	X	262.24756	139.90833	223.07103	2.86356	0.1800616	0.19359569	2.9594131	21	5 19.1	21.4
497002 2002 UH ₆₄	18.3	X	353.96276	158.56281	182.85459	0.79010	0.2070789	0.25945165	2.4346232	21	9 30.2	20.1
497003 2002 UG ₇₈	15.6	X	153.58124	66.30206	286.18229	1.89303	0.2624880	0.12386489	3.9856936	21	2 13.5	22.2
497004 2002 VN ₁₄	18.7	X	199.97489	294.37664	36.75327	25.40420	0.2531380	0.39188791	1.8493884	21	2 3.6	22.1
497005 2002 XN ₉₉	16.2	X	338.85766	107.63298	244.92304	12.47495	0.1978659	0.25344053	2.4729690	21	8 30.9	18.6
497006 2002 YE ₁₂	18.2	X	117.55432	335.63206	102.88962	37.49607	0.0701917	0.44034205	1.7111022	21	2 8.1	20.0
497007 2003 AO ₂₂	17.3	X	184.67857	115.02691	3.11040	3.77749	0.2091424	0.24127717	2.5553981	21	7 29.3	21.6
497008 2003 BG ₃	17.5	X	203.84459	332.93881	149.54189	8.65450	0.2269057	0.24300745	2.5432536	21	8 17.9	21.7
497009 2003 BU ₃₅	16.4	X	210.72888	213.73639	261.05473	12.70333	0.5753281	0.14297533	3.6221128	21	7 26.3	23.7
497010 2003 BJ ₃₆	16.4	X	66.44994	35.03654	129.82955	10.48325	0.1710889	0.17345614	3.1842679	21	5 26.5	20.7
497011 2003 BA ₈₂	17.7	X	179.37299	210.81021	299.83151	4.10564	0.1713576	0.24286369	2.5442571	21	9 1.9	21.9
497012 2003 BE ₈₃	16.9	X	155.02326	172.63596	334.99863	13.12140	0.1837074	0.23817762	2.5775202	21	8 10.8	21.2
497013 2003 DT ₁₀	17.9	X	340.42674	183.70467	348.54852	19.72156	0.0547159	0.37389299	1.9082613	21	—	—
497014 2003 ED ₁₉	17.0	X	124.51155	225.46744	324.90818	3.87775	0.1403258	0.23647747	2.5898595	21	8 30.9	21.0
497015 2003 FX ₆₅	16.7	X	62.21410	48.56890	203.89780	9.22109	0.0331458	0.23409540	2.6073988	21	8 19.7	20.3
497016 2003 FC ₇₄	17.4	X	113.49775	46.85434	150.15794	5.76481	0.2292489	0.23293937	2.6160184	21	9 5.5	21.5
497017 2003 FS ₁₀₃	17.2	X	91.39701	1.12522	186.46620	15.29178	0.2140327	0.22915229	2.6447619	21	7 28.0	21.3
497018 2003 GJ ₅₁	17.3	X	80.66423	38.62577	187.70812	12.66553	0.2036499	0.23176922	2.6248161	21	9 4.4	21.1
497019 2003 GN ₅₁	19.6	X	64.70283	228.74681	172.51743	19.55368	0.0466750	0.58117717	1.4221007	21	—	—
497020 2003 HY	18.0	X	335.75438	153.29943	30.51682	21.69913	0.0700038	0.37200213	1.9147222	21	—	—
497021 2003 HB ₂₉	17.4	X	350.63551	45.25933	206.15095	8.22660	0.3404227	0.21795104	2.7346186	21	4 1.4	19.6
497022 2003 KB ₃₆	16.5	X	287.65702	229.14293	135.93879	15.91913	0.3198181	0.21430027	2.7655886	21	6 3.0	20.8
497023 2003 LX ₇	16.9	X	347.09572	315.05790	54.63263	7.19075	0.2561638	0.23104017	2.6303350	21	10 27.8	18.7
497024 2003 QS ₁	18.0	X	32.47634	176.64052	178.70725	4.19384	0.2386378	0.28245737	2.3005629	21	—	—
497025 2003 QW ₃₀	20.4	X	97.43127	303.15317	164.54219	11.27889	0.3317308	0.91166629	1.0533648	21	—	—
497026 2003 QP ₄₉	18.6	X	10.06814	243.79534	145.71125	6.30732	0.3594301	0.28138260	2.3064173	21	—	—
497027 2003 QE ₇₃	18.3	X	74.49953	146.90918	164.41802	6.57161	0.2637130	0.28535958	2.2849379	21	12 28.2	22.1
497028 2003 QG ₉₃	17.1	X	294.37104	255.08605	85.79515	9.75461	0.3441309	0.21122718	2.7923479	21	5 6.7	21.2
497029 2003 QL ₉₅	18.1	X	33.25032	137.58477	225.25697	4.47082	0.2113052	0.28294083	2.2979415	21	—	—
497030 2003 QV ₁₁₇	17.8	X	252.01004	78.31883	316.60566	3.92995	0.1692656	0.21172749	2.7879472	21	6 18.2	22.0
497031 2003 RC ₄	17.8	X	44.64703	354.17234	8.45315	9.59083	0.2659981	0.28471111	2.2884061	21	—	—
497032 2003 SG	18.6	X	40.61295	156.97632	206.02852	7.45010	0.3085979	0.28415602	2.2913854	21	—	—
497033 2003 SF ₁	18.0	X	319.06812	107.56194	329.40517	6.22013	0.0922636	0.28185980	2.3038133	21	12 14.9	20.3
497034 2003												

ELEMENTS AND OPPOSITION DATES IN 2021

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2021 JULY 5.0 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>
497041 2003 SQ ₁₆₆	17.2	X	286.21822	152.64659	224.65910	7.23147	0.3169257	0.21158241	2.7892215	21	6 14.1	21.3
497042 2003 SO ₁₉₇	18.1	X	22.36453	339.50515	11.81030	5.18300	0.2442364	0.27950464	2.3167368	21	12 20.9	20.8
497043 2003 SA ₂₁₆	16.7	X	293.55420	1.94775	27.15752	9.30977	0.3131394	0.21244018	2.7817084	21	7 11.3	20.5
497044 2003 SR ₂₇₈	18.6	X	23.78214	51.81537	315.16462	4.42175	0.2590463	0.28032231	2.3122295	21	—	—
497045 2003 SQ ₂₈₁	17.0	X	316.28430	46.28689	296.44351	3.92623	0.1675559	0.21343130	2.7730901	21	7 6.1	19.9
497046 2003 SC ₂₈₇	17.4	X	331.49365	93.97157	224.63532	3.01531	0.0718364	0.21178842	2.7874125	21	7 8.6	20.8
497047 2003 SD ₂₈₇	17.4	X	324.56582	128.46486	215.79410	3.58450	0.0879182	0.21415753	2.7668173	21	7 31.3	20.8
497048 2003 SG ₂₉₈	17.7	X	26.79531	294.20776	53.64411	3.21316	0.2535170	0.28020768	2.3128601	21	12 23.9	20.3
497049 2003 SW ₃₂₄	18.8	X	46.57363	307.09559	7.01502	4.26862	0.3093509	0.28086171	2.3092681	21	12 10.1	22.1
497050 2003 SV ₃₂₇	17.3	X	58.62041	346.62046	294.43732	5.99361	0.1812369	0.27621489	2.3350956	21	10 21.2	20.5
497051 2003 SW ₃₂₇	17.9	X	11.42337	210.88164	161.16960	2.88399	0.2025663	0.27942754	2.3171630	21	12 26.5	20.3
497052 2003 SO ₃₄₂	17.6	X	149.95319	232.38718	354.21175	19.97654	0.0568513	0.28100746	2.3084695	21	11 6.5	21.2
497053 2003 SA ₃₄₅	16.8	X	268.30542	53.87749	313.44595	5.75196	0.1487827	0.21022250	2.8012374	21	6 2.7	21.0
497054 2003 SK ₃₅₃	17.1	X	312.16999	190.61277	178.33781	8.62256	0.3092404	0.21370938	2.7706840	21	7 10.9	20.2
497055 2003 SJ ₃₇₁	17.3	X	261.13071	80.42588	347.45121	3.58092	0.1948906	0.21378681	2.7700150	21	8 7.9	21.2
497056 2003 SY ₃₇₁	17.5	X	232.36258	262.87706	194.02219	3.79242	0.1759049	0.21341629	2.7732201	21	8 13.9	21.9
497057 2003 SJ ₄₁₁	17.3	X	322.83599	354.40501	349.03610	4.52518	0.0947952	0.21392189	2.7688487	21	7 29.1	20.6
497058 2003 SZ ₄₂₈	18.7	X	36.85803	135.90359	204.79793	1.84551	0.2338881	0.27973217	2.3154804	21	12 23.9	21.5
497059 2003 SA ₄₃₀	16.3	X	246.29712	162.20455	260.85096	12.77840	0.2265123	0.20990429	2.8040678	21	7 10.2	20.8
497060 2003 TX ₅₈	18.7	X	187.69345	52.06597	326.64970	2.80411	0.1862912	0.30667045	2.1778172	21	3 21.3	22.0
497061 2003 UF ₂₅	16.4	X	315.80608	105.15968	262.47988	11.69283	0.2242908	0.21322018	2.7749202	21	7 28.7	19.5
497062 2003 UO ₃₂	18.6	X	48.04045	308.51087	30.36081	6.23147	0.2555807	0.28137485	2.3064597	21	—	—
497063 2003 UD ₄₀	17.8	X	31.83980	128.83893	203.48158	4.54741	0.2576250	0.27691094	2.3311809	21	12 10.0	20.7
497064 2003 UK ₄₈	16.4	X	304.90568	317.75638	62.44160	10.24032	0.2308780	0.21257394	2.7805414	21	8 1.6	19.7
497065 2003 UJ ₆₉	18.7	X	310.27599	267.22324	141.37884	1.71545	0.1632079	0.27406766	2.3472762	21	10 10.7	20.6
497066 2003 UL ₁₀₂	16.8	X	305.47294	187.56966	164.22334	10.15469	0.2995813	0.21113012	2.7932035	21	6 9.4	20.4
497067 2003 UC ₁₄₄	16.6	X	266.84661	336.81009	34.30654	8.55391	0.2687482	0.20588745	2.8404215	21	5 21.9	21.1
497068 2003 UP ₁₆₅	18.4	X	33.73692	119.95719	219.34703	2.76071	0.2803144	0.27880742	2.3205976	21	12 24.8	21.3
497069 2003 UQ ₁₇₄	17.9	X	3.80175	338.54302	10.01379	2.77857	0.2120039	0.27444004	2.3451522	21	11 7.3	19.8
497070 2003 UP ₂₃₂	18.6	X	347.73677	120.67474	268.29554	1.55231	0.2090958	0.27631133	2.3345524	21	12 7.3	20.3
497071 2003 UL ₂₅₄	18.2	X	343.95872	7.72826	35.01296	7.21535	0.1603364	0.27724780	2.3292922	21	12 13.7	20.2
497072 2003 UA ₃₅₂	18.2	X	343.81861	299.91284	104.93836	3.08740	0.2039090	0.27821907	2.3238680	21	12 23.8	19.8
497073 2003 UO ₃₅₈	17.7	X	226.17696	204.45986	200.83137	3.21104	0.2163585	0.20387944	2.8590413	21	6 2.9	22.5
497074 2003 UB ₃₉₂	18.3	X	298.23324	334.01642	110.35882	7.13980	0.0786841	0.27616212	2.3353930	21	11 20.9	20.9
497075 2003 UR ₄₀₇	17.0	X	276.77432	323.70985	80.83809	6.31156	0.1713630	0.21177398	2.7875392	21	7 31.6	20.8
497076 2003 VP ₂	17.9	X	353.49838	120.48810	256.25760	4.97456	0.2253299	0.27492590	2.3423886	21	12 2.7	19.4
497077 2003 WJ ₂	18.2	X	345.83849	125.05636	248.76267	4.97805	0.1332641	0.27269414	2.3551515	21	10 29.6	20.4
497078 2003 WO ₂	17.6	X	192.45928	256.99489	244.82151	6.37518	0.0341794	0.26650201	2.3914927	21	9 10.7	20.9
497079 2003 WR ₁₅	18.6	X	293.13806	228.96360	226.42354	3.93129	0.1955829	0.27395996	2.3478913	21	11 12.3	20.1
497080 2003 WD ₂₅	18.2	X	353.95632	1.05595	34.15154	3.71921	0.2343140	0.27699259	2.3307227	21	—	—
497081 2003 WQ ₄₂	17.2	X	272.42691	297.33623	109.06217	10.55055	0.3837137	0.21060964	2.7978036	21	6 28.7	21.6
497082 2003 WS ₅₉	17.9	X	355.62363	277.27073	99.80851	2.05460	0.1909323	0.27486206	2.3427513	21	12 2.5	19.7
497083 2003 WW ₅₉	17.9	X	27.26650	150.18981	212.07189	4.33681	0.2291173	0.27871314	2.3211208	21	—	—
497084 2003 WC ₈₃	17.7	X	34.80984	288.61566	76.61099	23.39760	0.2885060	0.28102455	2.3083760	21	—	—
497085 2003 WS ₉₁	18.3	X	345.21137	341.10485	89.60611	6.30255	0.2079977	0.27872974	2.3210287	21	—	—
497086 2003 WM ₁₆₀	18.4	X	310.76954	347.70945	83.08970	1.87053	0.1836516	0.27281168	2.3544749	21	11 14.3	19.9
497087 2003 WG ₁₆₅	18.2	X	334.36133	204.96057	187.06185	0.75654	0.1696408	0.27196805	2.3593414	21	11 6.3	19.9
497088 2003 XB ₂₄	18.0	X	311.79043	209.86672	215.70407	0.97493	0.1697581	0.27216916	2.3581790	21	11 8.5	19.8
497089 2003 XT ₂₇	16.9	X	268.29722	119.33585	255.32087	13.71880	0.1612293	0.20423940	2.8556810	21	6 11.4	21.0
497090 2003 XB ₃₀	18.2	X	352.78799	112.64797	253.68264	1.47646	0.1812565	0.27232112	2.3573017	21	11 7.1	20.0
497091 2003 YO ₆	18.5	X	318.98629	80.08018	0.48818	5.12786	0.3160942	0.27296642	2.3535851	21	12 25.4	19.2
497092 2003 YA ₁₅	17.3	X	331.39193	127.76525	284.75388	22.54845	0.2509707	0.27268648	2.3551956	21	12 10.5	19.0
497093 2003 YP ₁₄₆	17.6	X	298.41003	75.20871	39.77538	6.22556	0.3753155	0.27171480	2.3608072	21	11 27.9	18.3
497094 2004 AH ₇	18.9	X	88.16686	300.81352	109.62866	15.99980	0.4226135	0.34957531	1.9957626	21	1 22.5	18.3
497095 2004 AB ₇	15.9	X	289.33553	349.92697	303.57908	11.66813	0.0259366	0.18584658	3.0411161	21	4 8.5	20.4
497096 2004 BW ₁	19.0	X	29.46445	295.00994	76.65865	4.30115	0.5213992	0.28054874	2.3109852	21	—	—
497097 2004 BW ₇	16.5	X	200.69315	316.17496	102.79270	14.15610	0.2422931	0.19558449	2.9393171	21	5 31.3	21.7
497098 2004 BS ₆₅	16.6	X	96.81286	182.24074	308.51554	11.17896	0.1264402	0.18568119	3.0429217	21	5 9.3	21.1
497099 2004 BB ₈₅	17.0	X	311.48306	301.22727	126.70056	28.91680	0.4205639	0.27183148	2.3601316	21	10 24.9	18.9
497100 2004 BQ ₁₄₃	18.1	X	289.13326	321.94847	106.13971	2.32315	0.1518324	0.26425783	2.4050132	21	9 29.7	20.6
497101 2004 BT ₁₄₉	17.7	X	280.60257	156.40641	288.34143	5.65507	0.0914566	0.26500042	2.4005182	21	10 14.5	20.5
497102 2004 BO ₁₅₃	16.9	X	143.07554	172.72311	315.55757	3.61652	0.1458249	0.19267152	2.9688690	21	7 1.7	21.6
497103 2004 BO ₁₆₀	16.2	X	276.16687	212.78592	163.27276	6.32776	0.2406784	0.19210206	2.9747333	21	6 12.6	20.7
497104 2004 CX ₈	16.4	X	97.47531	72.47962	36.45929	0.44051	0.1439733	0.18271695	3.0757438	21	4 18.9	20.6
497105 2004 CH ₈	16.8	X	219.62846	299.60154	128.69659	16.95782	0.1995442	0.19779540	2.9173728	21	6 27.2	21.8
497106 2004 CC ₉	16.4	X	214.55642	57.05668	329.14878	8.69163	0.0773694	0.18851389	3.0123619	21	5 3.5	21.2
497107 2004 CA ₅₃	16.3	X	17.62622	248.93382	313.96944	25.12164	0.1856914	0.18030791	3.1030792	21	3 31.8	20.3
497108 2004 DP ₅₄	18.7	X	276.58262	80.86886	150.45799	23.59651	0.0633448	0.39563590	1.8376900	21	—	—
497109 2004 DV ₅₅	16.6	X	109.36057	123.03851	328.88388	11.93164	0.0985879	0.17964221	3.1107405	21	3 31.8	21.2
497110 2004 DG ₆₃	16.3	X	187.03868	53.19779	352.90287	9.42034	0.0224784	0.18325193	3.0697547	21	4 28.6	20.8
497111 2004 DE ₆₄	16.2	X	69.65895	180.36096	350.99754	14.38284	0.2064404	0.18254351	3.0776918	21	6 9.3	20.5
497112 2004 EH ₁	17.2	X	4.10869	101.20540	155.10985	27.21826	0.4486807	0.23210985	2.6222474	21	5 29.7	18.9
497113 2004 EK ₁	22.2	X	178.93560	300.43718	166.88260	11.64317	0.2508461	0.70535120	1.249			

ELEMENTS AND OPPOSITION DATES IN 2021

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2021 JULY 5.0 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>
497121 2004 GY ₁₉	17.7	X	186.04432	100.09901	95.13333	6.72843	0.0709886	0.25698374	2.4501855	21	11 14.3	21.1
497122 2004 GM ₄₈	16.0	X	306.50394	98.19169	203.82671	9.16420	0.2127839	0.17585914	3.1551941	21	4 21.7	20.2
497123 2004 KP ₃	16.2	X	1.96766	15.78704	241.52588	14.07887	0.0409534	0.23323671	2.6137945	21	6 1.6	19.4
497124 2004 LL ₂₃	16.0	X	32.40556	310.59851	295.21395	30.86554	0.2537833	0.23208532	2.6224322	21	7 26.2	18.4
497125 2004 NG ₄	17.6	X	93.26793	144.73985	286.15866	19.26764	0.0482337	0.38483563	1.8719139	21	—	—
497126 2004 NO ₆	17.1	X	331.24060	221.73076	108.01467	7.83663	0.3620540	0.22894476	2.6463599	21	6 13.3	19.2
497127 2004 NR ₂₃	17.4	X	308.42920	193.68360	145.79276	9.39447	0.3298017	0.22705437	2.6610282	21	5 23.2	20.9
497128 2004 PU ₁₉	16.9	X	318.30832	5.34823	350.90177	8.57371	0.3453459	0.22798113	2.6538118	21	6 29.3	19.6
497129 2004 PC ₃₁	17.3	X	321.69735	237.62089	142.07406	14.08480	0.2899652	0.23225688	2.6211407	21	8 26.7	19.1
497130 2004 PC ₆₇	17.2	X	328.01421	62.25815	315.39610	27.69957	0.4253036	0.23256058	2.6188582	21	8 11.8	18.4
497131 2004 PX ₈₀	16.9	X	359.68250	352.68838	345.03611	3.57048	0.1958560	0.23457511	2.6038428	21	9 30.5	19.2
497132 2004 PS ₉₅	17.4	X	330.67038	291.46780	65.88166	7.63820	0.3305874	0.23159413	2.6261388	21	8 9.8	19.1
497133 2004 PV ₉₇	18.1	X	80.65457	301.87517	17.27460	6.22781	0.2445862	0.30489064	2.1862844	21	—	—
497134 2004 PQ ₁₂	17.1	X	351.43695	319.79286	3.65133	13.47661	0.2563656	0.23173179	2.6250987	21	8 26.9	19.0
497135 2004 QD ₂₀	18.0	X	128.49202	353.40202	224.19196	17.53966	0.6976254	0.30785483	1.7222280	21	10 26.3	23.2
497136 2004 QO ₂₆	17.3	X	295.66826	267.06779	120.40496	4.71550	0.2603960	0.22592371	2.6698990	21	7 19.6	20.4
497137 2004 RW	17.5	X	343.21854	158.61758	199.98299	13.83755	0.2779610	0.23412322	2.6071922	21	9 24.9	19.1
497138 2004 RE ₁₀	17.5	X	308.14735	276.50327	102.35706	8.65799	0.4021108	0.22770188	2.6559810	21	7 1.8	20.5
497139 2004 RC ₁₆	17.5	X	330.82839	42.80334	338.97404	12.94004	0.2671639	0.23298421	2.6156827	21	9 23.5	19.3
497140 2004 RQ ₁₉	17.8	X	141.79268	207.64483	121.60560	1.41612	0.2124244	0.25577406	2.4579047	21	—	—
497141 2004 RQ ₂₀	17.6	X	284.89932	126.77502	235.30198	0.89067	0.2189198	0.22390549	2.6859189	21	6 6.3	21.1
497142 2004 RH ₃₈	17.0	X	29.39321	292.08324	353.87227	29.48977	0.2806885	0.23319711	2.6140904	21	9 23.6	19.7
497143 2004 RG ₃₉	16.9	X	298.42581	347.86666	25.32448	4.37783	0.1801903	0.22742542	2.6581330	21	7 18.8	20.0
497144 2004 RC ₆₀	16.9	X	306.85106	216.42357	185.68139	3.23426	0.1979492	0.23134923	2.6279918	21	9 9.9	19.6
497145 2004 RG ₇₁	17.1	X	347.69103	286.89531	32.77079	7.46567	0.2375978	0.22408044	2.6845207	21	4 5.2	19.6
497146 2004 RN ₈₉	17.2	X	281.22287	202.93095	169.45141	14.78891	0.2648727	0.22530432	2.6747901	21	6 10.4	21.3
497147 2004 RY ₈₉	17.4	X	343.73857	144.33428	193.05183	4.43378	0.2819387	0.23182362	2.6244054	21	8 18.2	19.0
497148 2004 RO ₉₅	18.7	X	22.89043	145.15714	190.98153	5.83733	0.2371838	0.29634281	2.2281262	21	12 4.2	21.1
497149 2004 RW ₁₁₁	18.6	X	147.86263	208.06159	183.41998	22.35023	0.0997888	0.38128643	1.8835124	21	1 27.7	21.0
497150 2004 RF ₁₄₀	17.2	X	311.75519	235.50179	180.33796	12.46340	0.1734859	0.23465814	2.6032285	21	10 16.8	19.7
497151 2004 RM ₁₄₈	17.3	X	320.07337	358.89114	12.20214	13.43515	0.2943571	0.22935078	2.6432358	21	8 13.1	19.8
497152 2004 RW ₁₆₃	16.8	X	319.32952	49.45741	339.23318	16.90982	0.2131968	0.23116254	2.6294065	21	9 11.4	19.3
497153 2004 RC ₁₇₀	17.8	X	99.65037	31.69995	282.35636	5.30186	0.1880099	0.30487092	2.1863787	21	—	—
497154 2004 RJ ₁₈₅	18.1	X	85.38256	80.36936	247.95255	3.69963	0.1739260	0.30415453	2.1898105	21	—	—
497155 2004 RW ₁₉₁	17.2	X	303.13383	161.42313	191.61655	9.14811	0.3099685	0.22515178	2.6759980	21	6 4.9	20.8
497156 2004 RG ₁₉₄	17.4	X	299.79994	38.29586	331.66352	7.16346	0.2921578	0.22546942	2.6734842	21	6 26.3	20.7
497157 2004 RE ₁₉₇	17.3	X	286.36914	70.92301	335.83603	12.02484	0.2688921	0.22591007	2.6700065	21	8 3.2	20.8
497158 2004 RO ₁₉₇	18.0	X	311.78750	133.39318	217.87377	3.60147	0.3033937	0.22620363	2.6676960	21	6 16.5	20.8
497159 2004 RF ₁₉₈	17.0	X	326.42413	166.66711	198.19892	13.91065	0.2576144	0.22909922	2.6451704	21	8 12.9	19.7
497160 2004 RT ₂₀₈	16.9	X	321.88224	104.64905	262.08824	10.09372	0.3217133	0.22944949	2.6424776	21	7 25.3	19.1
497161 2004 RW ₂₂₅	18.4	X	87.03440	306.55171	355.90977	5.28214	0.2039933	0.30185244	2.2009301	21	12 26.9	21.8
497162 2004 RB ₂₉₈	17.4	X	304.27517	351.06469	359.30615	4.81218	0.1585552	0.22497217	2.6774221	21	6 28.3	20.6
497163 2004 RH ₃₁₆	17.8	X	329.39243	123.84504	202.66519	11.73508	0.2837604	0.22832479	2.6511482	21	6 18.2	20.4
497164 2004 RR ₃₂₄	17.7	X	279.91881	127.14640	284.42935	6.19758	0.4008440	0.22452827	2.6809498	21	7 10.1	21.7
497165 2004 RG ₃₃₃	16.2	X	44.05261	284.59569	6.97313	29.06805	0.1643324	0.23408244	2.6074951	21	10 6.3	19.4
497166 2004 RK ₃₃₆	18.1	X	19.48733	162.13319	212.77725	6.66545	0.1178396	0.29681190	2.2257780	21	—	—
497167 2004 RG ₃₄₆	17.6	X	292.97616	328.72317	60.79880	2.81996	0.2896550	0.22699111	2.6615226	21	7 13.9	21.0
497168 2004 SG ₅	18.1	X	47.63420	347.02424	39.34009	8.20903	0.3412570	0.30303956	2.1951785	21	—	—
497169 2004 SO ₁₉	17.2	X	339.70266	122.64818	201.93574	29.70934	0.3121272	0.22798477	2.6537835	21	7 2.6	20.2
497170 2004 SJ ₃₇	17.4	X	319.46175	142.75500	253.17972	2.91012	0.1897609	0.23309873	2.6148259	21	9 27.2	19.8
497171 2004 TX ₁	17.0	X	248.52190	208.98821	201.72561	8.70203	0.2471611	0.22119534	2.7078134	21	6 25.9	21.4
497172 2004 TF ₉	17.9	X	194.62644	295.81715	20.29618	21.10093	0.0982556	0.37600075	1.9011231	21	—	—
497173 2004 TA ₁₀	18.4	X	110.70754	51.35123	26.91436	21.41954	0.1483847	0.37769826	1.8954226	21	3 11.1	20.4
497174 2004 TK ₁₀	21.4	X	333.14573	347.70133	205.30789	24.60298	0.2987144	0.90599927	1.0577527	21	—	—
497175 2004 TB ₁₁	17.7	X	239.43927	58.29052	244.09843	21.09509	0.0542368	0.38178892	1.8818594	21	1 11.7	20.2
497176 2004 TQ ₁₃	18.4	X	300.28964	163.28108	233.19638	10.47410	0.5172485	0.22529453	2.6748676	21	6 24.9	22.3
497177 2004 TA ₃₄	17.8	X	300.09708	120.38256	281.01976	1.18136	0.2063987	0.22764169	2.6564492	21	8 25.3	20.5
497178 2004 TY ₃₅	18.6	X	64.26650	330.80963	11.09240	2.88579	0.1735052	0.30040325	2.2080029	21	—	—
497179 2004 TG ₃₇	18.8	X	20.06407	182.55288	196.13867	3.44541	0.1505898	0.29756108	2.2202045	21	—	—
497180 2004 TJ ₃₇	17.5	X	330.77843	309.92581	20.02901	6.20918	0.1769929	0.22475115	2.6791772	21	7 15.4	20.2
497181 2004 TX ₄₁	17.4	X	343.51382	1.74278	337.98510	3.21102	0.2161098	0.22758285	2.6569070	21	8 25.6	19.3
497182 2004 TS ₅₅	16.8	X	316.50978	320.67759	40.15197	12.44713	0.2080897	0.22484803	2.6784075	21	8 1.2	19.9
497183 2004 TW ₆₃	18.5	X	347.16267	30.13291	28.08188	4.17715	0.1266526	0.29705446	2.2245662	21	—	—
497184 2004 TA ₆₅	17.9	X	335.78047	133.74549	223.59830	1.89495	0.1112103	0.22825822	2.6516636	21	9 7.4	20.7
497185 2004 TX ₆₉	17.5	X	272.32615	69.71005	312.45881	1.15977	0.2446007	0.22257709	2.6965951	21	6 14.3	21.6
497186 2004 TF ₇₁	18.6	X	69.89144	7.07768	328.41362	2.85237	0.1924899	0.30093080	2.2054216	21	—	—
497187 2004 TU ₇₁	17.2	X	13.49404	117.09282	197.27926	12.68668	0.2687764	0.23144882	2.6272379	21	10 5.9	19.4
497188 2004 TA ₉₃	16.6	X	283.48852	24.53239	19.31283	15.10564	0.1916479	0.22492005	2.6778357	21	8 12.3	20.3
497189 2004 TJ ₁₁₃	17.4	X	290.37500	195.76469	211.70803	4.23736	0.1688972	0.22572473	2.6714679	21	8 22.4	20.8
497190 2004 TQ ₁₃₅	17.4	X	281.14573	109.42136	294.96603	4.01708	0.2654838	0.22424830	2.6831808	21	7 21.4	21.0
497191 2004 TT ₁₅₀	17.4	X	256.40733	181.59917	205.50340	8.41546	0.1238169	0.21977083	2.7195018	21	6 18.2	21.4
497192 2004 TU ₁₅₀	17.6	X	248.58019	132.99436	288.92531	1.38092	0.0755117	0.22314969	2.6919802	21	7 31.5	21.3
497193 2004 TP ₁₅₉	18.5	X	44.56363	144.21132	230.95021	3.93840	0.1348472	0.29974781	2.2112204	21	—	—
497194 2004 TS ₁₆₁												

ELEMENTS AND OPPOSITION DATES IN 2021

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2021 JULY 5.0 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>
497201 2004 TA ₂₅₉	17.6	X	327.71376	103.45018	221.37124	0.98500	0.2469918	0.22434897	2.6823781	21	6 18.7	20.0
497202 2004 TK ₂₇₄	17.3	X	243.89494	85.47133	31.27931	6.45121	0.2141628	0.22534021	2.6745061	21	9 20.2	21.3
497203 2004 TF ₂₇₆	17.5	X	301.39699	321.12512	40.12297	11.92751	0.1867564	0.22183522	2.7026038	21	7 4.8	21.0
497204 2004 TN ₂₇₈	18.1	X	300.77176	220.66868	158.15567	2.45918	0.2154856	0.22403390	2.6848924	21	7 22.9	21.3
497205 2004 TD ₃₂₈	18.1	X	79.64822	239.26772	93.92303	8.12868	0.2554362	0.30297837	2.1954740	21	—	—
497206 2004 UJ ₇	16.8	X	275.43083	21.65256	16.11682	11.98021	0.1918913	0.22296174	2.6934928	21	7 19.8	20.7
497207 2004 UP ₉	17.8	X	274.31213	302.17404	94.50088	5.21184	0.3680564	0.22274198	2.6952641	21	6 19.8	22.0
497208 2004 VQ ₂₆	17.1	X	262.53255	190.48649	262.30996	7.11948	0.2348812	0.22464651	2.6800091	21	8 31.2	21.1
497209 2004 VY ₃₆	17.0	X	287.37910	347.14927	46.13357	6.76762	0.1074373	0.22241790	2.6978816	21	8 12.6	20.5
497210 2004 VH ₃₈	17.5	X	272.90381	153.49208	223.70246	2.71619	0.3140111	0.21997954	2.7177814	21	5 31.3	21.7
497211 2004 VG ₆₈	17.2	X	310.66524	288.93685	64.11812	7.01534	0.1589256	0.22137382	2.7063578	21	7 13.3	20.4
497212 2004 VH ₆₈	17.5	X	274.36894	288.21811	70.36589	4.36218	0.1015727	0.21545016	2.7557395	21	6 5.9	21.1
497213 2004 VB ₇₇	17.5	X	242.30033	154.90137	262.69685	1.99952	0.2405741	0.21847926	2.7302091	21	6 29.9	21.9
497214 2004 VZ ₇₇	16.7	X	262.04241	5.02161	66.86172	9.81605	0.2680829	0.22172568	2.7034938	21	8 6.9	20.8
497215 2004 VY ₉₀	17.2	X	307.44072	62.85455	321.29609	3.76597	0.2563554	0.22710144	2.6606605	21	8 5.5	19.7
497216 2004 XF ₂₄	16.7	X	270.73825	0.91557	66.93951	14.76376	0.2316567	0.22300685	2.6931296	21	8 20.3	20.7
497217 2004 XK ₉₈	18.3	X	348.04162	149.01253	291.77592	6.94335	0.1584992	0.29374427	2.2412473	21	—	—
497218 2004 XX ₁₀₂	17.8	X	60.13427	153.76675	271.16311	18.28533	0.0877465	0.36562702	1.9369148	21	—	—
497219 2004 XG ₁₃₁	16.8	X	230.94440	1.87662	62.83631	10.76339	0.3076616	0.21637316	2.7478970	21	6 23.9	21.8
497220 2004 XD ₁₃₄	16.6	X	247.73457	180.75998	264.83232	14.66657	0.1841244	0.22155053	2.7049185	21	8 10.2	20.9
497221 2004 XE ₁₃₇	16.8	X	295.08447	133.58667	285.56973	12.09773	0.2436690	0.22523978	2.6753010	21	8 29.4	20.1
497222 2004 XA ₁₄₃	17.3	X	279.64902	69.40473	320.01698	4.64383	0.1502181	0.21862805	2.7289702	21	7 17.7	20.8
497223 2004 YV ₁₈	17.2	X	253.53709	135.13152	287.41509	11.88082	0.1406453	0.21445879	2.7642256	21	7 27.7	21.2
497224 2005 AN ₁₅	17.8	X	268.99708	185.33218	293.79354	23.55757	0.1937602	0.28458128	2.2891021	21	10 24.3	21.0
497225 2005 AD ₁₆	17.1	X	248.46444	22.81251	113.21593	10.44598	0.2655457	0.22285283	2.6943703	21	10 15.6	21.2
497226 2005 AA ₂₃	16.5	X	264.76992	122.83678	306.15338	13.92597	0.3034935	0.21901530	2.7257525	21	7 29.4	20.6
497227 2005 AN ₂₇	17.5	X	261.25104	75.70457	125.72354	24.08941	0.0535499	0.35561996	1.9730827	21	—	—
497228 2005 AV ₅₉	18.5	X	318.89857	119.22894	309.68039	7.80863	0.1019020	0.28526161	2.2854611	21	12 2.8	20.7
497229 2005 AU ₆₅	17.7	X	251.24034	305.89518	136.22678	4.17731	0.1714742	0.21635489	2.7480517	21	8 17.5	21.6
497230 2005 CU ₂₅	18.0	X	63.93753	122.29002	93.58286	8.00572	0.4640520	0.25815561	2.4427649	21	9 14.6	21.9
497231 2005 CY ₃₀	17.7	X	211.89255	204.94578	357.94867	3.93565	0.1072243	0.28385691	2.2929948	21	12 23.7	20.6
497232 2005 EF	20.7	X	34.48324	269.51388	350.73303	18.59245	0.1663334	0.74349874	1.2067461	21	10 13.9	20.5
497233 2005 EN ₁₅	18.0	X	251.41287	105.86322	348.48031	6.38969	0.0739881	0.27303701	2.3531794	21	9 21.1	21.0
497234 2005 ES ₄₂	17.8	X	130.66597	237.57892	311.82786	1.77724	0.1294989	0.26888584	2.3773371	21	9 6.3	21.2
497235 2005 EO ₄₃	17.9	X	202.27630	163.87687	351.41292	7.80676	0.2310489	0.27435680	2.3456267	21	9 27.5	21.7
497236 2005 EJ ₉₄	19.1	X	35.95728	286.16816	327.76332	7.15847	0.5395674	0.25378553	2.4707273	21	10 8.3	22.4
497237 2005 EN ₉₈	18.1	X	181.79734	191.63881	3.31033	3.14323	0.1704523	0.27618339	2.3352731	21	11 2.3	21.6
497238 2005 EH ₁₁₄	18.0	X	282.39600	317.07743	161.98728	7.12195	0.0437081	0.28110060	2.3079596	21	12 17.7	20.7
497239 2005 EY ₁₆₅	17.9	X	210.06452	173.34891	5.41970	7.44839	0.0472006	0.27707400	2.3302662	21	11 24.1	20.9
497240 2005 EP ₁₇₄	16.6	X	48.68745	357.30596	187.88172	15.63577	0.1726878	0.19019480	2.9945871	21	5 23.8	20.4
497241 2005 EN ₂₀₄	17.9	X	92.33156	58.20839	195.03402	6.09631	0.0833369	0.26720307	2.3830708	21	10 14.1	20.9
497242 2005 EA ₂₃₇	16.4	X	298.94525	262.53762	5.85766	11.13175	0.2055099	0.18229145	3.0805282	21	3 4.6	20.9
497243 2005 EO ₂₇₉	16.4	X	76.64871	241.26371	265.75933	9.75886	0.1896098	0.19277871	2.9677683	21	5 15.5	20.4
497244 2005 EW ₃₂₇	18.3	X	259.24680	247.78277	330.72147	17.63479	0.0722422	0.35585197	1.9722250	21	—	—
497245 2005 FH	17.4	X	266.22646	318.28384	143.61257	35.14423	0.0522762	0.22177756	2.7030722	21	8 4.4	22.5
497246 2005 GL ₁₉	16.5	X	339.28250	89.87847	196.36084	10.44376	0.6811993	0.19130428	2.9829977	21	6 6.9	20.4
497247 2005 GA ₂₅	18.1	X	47.46924	259.72609	15.58743	1.19088	0.1944088	0.26190321	2.4194064	21	10 1.6	21.0
497248 2005 GW ₅₅	18.4	X	139.38072	323.18671	219.66321	1.71220	0.1536424	0.26516664	2.3995149	21	9 7.4	22.1
497249 2005 GO ₅₇	16.5	X	4.52465	208.11931	29.59904	14.75128	0.1717320	0.18675731	3.0312213	21	5 7.1	19.7
497250 2005 GP ₁₀₅	18.2	X	15.91441	149.32031	155.19693	2.86946	0.1841588	0.25836529	2.4414431	21	9 17.9	20.3
497251 2005 GO ₁₃₅	16.1	X	284.64887	240.27802	64.77229	15.48220	0.0537915	0.18361572	3.0656987	21	4 24.8	20.5
497252 2005 GQ ₁₆₀	17.5	X	186.45081	165.62936	43.52099	9.79218	0.1748148	0.27453488	2.3446122	21	11 23.7	21.0
497253 2005 GB ₁₈₀	15.9	X	319.49762	65.22590	148.56636	26.92734	0.2064607	0.17454604	3.1709986	21	1 20.8	20.5
497254 2005 GS ₂₀₁	16.8	X	235.15632	182.19624	205.26664	9.17582	0.0717011	0.19102106	2.9859455	21	6 1.5	21.3
497255 2005 GU ₂₀₁	18.0	X	180.44187	358.98981	169.56592	1.30657	0.0768595	0.26741950	2.3860196	21	10 3.2	21.1
497256 2005 GZ ₂₁₂	16.8	X	1.91209	79.99129	107.16988	3.56918	0.1901755	0.18162357	3.0880755	21	2 24.9	20.2
497257 2005 JY	16.2	X	279.56252	101.38048	212.32707	21.52589	0.4920482	0.17589911	3.1547162	21	3 3.7	22.2
497258 2005 JO ₇	17.2	X	87.74468	142.96140	34.43584	1.48244	0.1186186	0.19311986	2.9642723	21	6 29.5	21.3
497259 2005 JM ₁₆	17.3	X	325.12339	211.34306	23.38807	2.17231	0.3288285	0.18020783	3.1042280	21	2 4.1	21.5
497260 2005 JY ₃₆	16.3	X	315.18736	135.04852	99.94194	18.12308	0.2105644	0.17476552	3.1683431	21	2 12.7	20.8
497261 2005 JC ₅₈	16.4	X	146.27694	51.78473	42.41078	9.25876	0.0482217	0.18742146	3.0240561	21	5 14.7	20.9
497262 2005 JA ₆₁	16.3	X	101.53095	58.32244	94.98814	11.01879	0.0684408	0.18735469	3.0247745	21	6 9.2	20.5
497263 2005 JS ₉₇	16.4	X	302.01079	178.99611	71.18229	11.47154	0.0861589	0.17592771	3.1543743	21	3 6.7	21.0
497264 2005 JF ₁₀₆	18.1	X	212.98698	46.96724	115.40202	2.24969	0.1269510	0.27137871	2.3627559	21	10 28.9	21.3
497265 2005 JK ₁₂₀	16.8	X	262.78666	72.00608	223.10513	20.89999	0.3450027	0.17153855	3.2079547	21	2 9.3	22.8
497266 2005 JB ₁₅₅	18.0	X	9.43638	277.23433	43.18590	1.37979	0.1928133	0.25783582	2.4447843	21	9 30.6	20.1
497267 2005 JX ₁₇₂	18.2	X	48.68364	49.65977	237.57485	3.94882	0.1833715	0.25848079	2.4407158	21	10 16.4	21.1
497268 2005 JW ₁₇₄	16.6	X	336.63771	42.28801	227.07423	15.78075	0.1508773	0.18500989	3.0502780	21	5 2.9	20.3
497269 2005 JW ₁₈₅	16.9	X	21.57155	118.26288	180.99420	8.84551	0.2206118	0.25573888	2.4581302	21	9 26.5	19.0
497270 2005 MK ₄₅	15.6	X	262.59753	51.95028	300.36385	20.56146	0.1914130	0.17502994	3.1651514	21	4 28.4	20.9
497271 2005 NO ₉	16.3	X	253.22310	36.62231	299.34465	17.98969	0.1691109	0.17077986	3.2174485	21	3 30.8	21.7
497272 2005 NR ₂₉	17.4	X	353.38803	260.32966	118.05662	8.62868	0.2622277	0.25466937	2.4650074	21	12 5.9	19.4
497273 2005 NB ₃₃	18.1	X	347.61684	240.22488	125.67950	3.34650	0.2646746	0.2516166				

ELEMENTS AND OPPOSITION DATES IN 2021

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2021 JULY 5.0 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>
497281 2005 QS ₁₂₆	18.4	X	342.01107	285.97783	62.51541	0.26570	0.1839660	0.24646760	2.5193944	21	9 8.7	20.4
497282 2005 QN ₁₆₁	17.3	X	304.04399	3.93018	33.85632	8.14981	0.2271621	0.24545821	2.5262966	21	8 30.8	19.9
497283 2005 QS ₁₈₉	16.6	X	275.03460	150.21418	192.14799	4.40334	0.1648869	0.17248841	3.1961668	21	5 11.1	21.3
497284 2005 SO	17.9	X	269.46358	93.53153	318.52305	4.17452	0.3083378	0.23831921	2.5764992	21	7 12.5	21.8
497285 2005 SX ₁₁	17.2	X	246.15958	41.10198	20.97454	11.52229	0.1715067	0.23606280	2.5928915	21	7 20.1	21.3
497286 2005 SJ ₂₁	17.8	X	310.09341	20.17271	354.35950	5.90712	0.2381813	0.24100646	2.5573113	21	8 1.9	20.4
497287 2005 SH ₅₅	18.4	X	300.64531	194.33911	187.29347	4.76600	0.2881467	0.24025830	2.5626175	21	7 13.6	21.4
497288 2005 SE ₆₄	18.6	X	317.09238	338.80671	57.78748	0.26121	0.2316456	0.24486553	2.5303714	21	9 21.9	20.7
497289 2005 SW ₇₆	18.7	X	286.49384	222.48580	174.19339	1.69215	0.2605805	0.24010157	2.5637325	21	7 18.9	21.8
497290 2005 SS ₈₄	17.7	X	5.10514	288.15423	10.96473	11.59821	0.3110899	0.24373671	2.5381781	21	9 3.0	19.2
497291 2005 SB ₈₆	17.8	X	264.76643	2.02115	69.25785	1.62619	0.1195995	0.24148235	2.5539504	21	8 29.9	21.1
497292 2005 ST ₈₈	18.0	X	356.91051	121.69442	211.60402	5.51176	0.2121172	0.24434904	2.5339359	21	9 19.4	20.1
497293 2005 SD ₉₈	17.8	X	353.88879	67.43476	255.35314	4.50095	0.2491468	0.24336333	2.5407735	21	8 25.2	19.5
497294 2005 SK ₁₁₀	18.0	X	354.13056	138.90493	195.72074	2.51972	0.2497105	0.24496474	2.5296882	21	9 19.0	19.6
497295 2005 SR ₁₁₁	18.0	X	331.72085	11.21726	1.36669	8.65536	0.2588467	0.24451537	2.5327866	21	9 19.1	19.5
497296 2005 SS ₁₈₁	18.0	X	331.09669	349.89575	359.34191	7.38151	0.2236168	0.24221893	2.5487701	21	8 12.9	20.1
497297 2005 ST ₂₃₀	18.1	X	359.06107	108.75754	202.18903	3.32799	0.2943172	0.24396299	2.5366083	21	8 25.3	19.3
497298 2005 SJ ₂₃₁	17.8	X	348.76609	320.49542	21.96664	4.52875	0.2189124	0.24327797	2.5413678	21	9 17.4	19.6
497299 2005 SF ₂₃₃	18.0	X	329.19454	170.10139	205.13212	3.61980	0.1790641	0.24306184	2.5428741	21	9 20.0	20.3
497300 2005 SL ₂₃₄	18.5	X	288.58198	229.82880	171.90667	3.93294	0.3058693	0.24115419	2.5562667	21	7 20.9	21.7
497301 2005 SO ₂₃₉	15.4	X	266.61138	97.22931	254.44183	16.59036	0.1635270	0.17148109	3.2086713	21	5 11.6	20.3
497302 2005 SA ₂₄₆	18.8	X	309.13027	190.80715	201.64457	9.81693	0.2317818	0.24249564	2.5468308	21	8 23.4	21.5
497303 2005 SD ₂₆₉	17.9	X	247.98744	229.47990	182.31985	4.69135	0.1438124	0.23496117	2.6009898	21	7 7.9	21.7
497304 2005 ST ₂₆₉	19.1	X	323.73463	51.13307	298.87087	2.90254	0.2968506	0.24206416	2.5498564	21	7 10.9	21.1
497305 2005 SL ₂₇₃	17.9	X	346.82560	96.06728	201.44562	8.90650	0.2027701	0.23833230	2.5764049	21	6 24.9	20.4
497306 2005 SW ₂₈₈	17.2	X	160.51626	359.33748	153.37783	13.97619	0.1989910	0.23244973	2.6196907	21	8 19.3	21.6
497307 2005 SP ₂₉₁	17.7	X	9.53782	210.48280	166.17351	7.53670	0.0971730	0.25271091	2.4777266	21	12 7.6	20.7
497308 2005 TL ₄	18.2	X	322.51645	292.30345	34.92512	2.97976	0.0975529	0.23612344	2.5924476	21	7 4.3	21.3
497309 2005 TW ₄₂	19.2	X	131.91859	87.92906	210.00751	3.65659	0.1578664	0.32412562	2.0989100	21	—	—
497310 2005 TO ₅₈	18.0	X	296.66139	336.91493	30.53060	4.86671	0.2358257	0.23773356	2.5807289	21	6 27.1	21.1
497311 2005 TN ₆₂	19.1	X	335.53082	307.84982	35.63102	5.60581	0.2998866	0.24247084	2.5470045	21	8 5.9	20.6
497312 2005 TB ₆₆	18.3	X	329.80918	344.95145	348.01311	2.24238	0.2215616	0.24017823	2.5631870	21	7 11.0	20.5
497313 2005 TY ₈₇	18.9	X	344.46452	143.27603	189.03066	2.61985	0.2504422	0.24326660	2.5403333	21	8 15.3	20.4
497314 2005 TH ₉₇	18.3	X	321.81660	81.78507	263.92569	1.66732	0.1671423	0.23852806	2.5749950	21	7 21.0	20.9
497315 2005 TO ₉₉	18.2	X	275.74591	85.75722	335.82018	2.49726	0.1800332	0.24093466	2.5578193	21	8 21.3	21.4
497316 2005 TK ₁₀₂	17.8	X	335.70229	124.92880	213.79053	12.77794	0.1895546	0.24072095	2.5593330	21	8 1.7	20.5
497317 2005 TO ₁₀₃	18.0	X	270.49518	64.98201	345.02004	5.24181	0.2980177	0.23781426	2.5801450	21	7 12.8	21.8
497318 2005 TA ₁₁₅	17.7	X	257.30586	229.35384	207.72401	6.60801	0.1810063	0.24010956	2.5636757	21	8 15.2	21.3
497319 2005 TY ₁₁₅	18.6	X	334.67378	10.36368	359.46695	4.14697	0.1848864	0.24538033	2.5268311	21	9 25.3	20.5
497320 2005 TX ₁₁₆	18.3	X	308.88509	120.44385	233.46895	2.15830	0.1718115	0.23922086	2.5700210	21	7 8.3	21.0
497321 2005 TA ₁₂₀	17.6	X	8.18344	298.33787	18.33678	13.45441	0.0721474	0.24206628	2.5498415	21	9 12.0	20.7
497322 2005 TK ₁₂₃	17.9	X	296.49094	10.16351	18.00587	8.41526	0.1621566	0.24065444	2.5598045	21	8 12.6	21.0
497323 2005 TO ₁₂₅	18.6	X	292.34844	8.44242	24.85119	1.67497	0.1991148	0.23973555	2.5663414	21	8 3.6	21.7
497324 2005 TH ₁₃₀	18.2	X	304.07433	174.48313	198.27496	4.52177	0.1781941	0.23897785	2.5717630	21	7 25.7	21.0
497325 2005 TU ₁₄₅	18.3	X	317.68260	224.45477	159.42234	5.61312	0.1771219	0.24318141	2.5420405	21	9 9.8	20.6
497326 2005 TD ₁₄₉	18.2	X	351.62620	209.75538	136.85026	3.56291	0.1013351	0.24404689	2.5360269	21	9 25.1	20.8
497327 2005 TW ₁₅₆	18.1	X	347.10991	348.64276	0.93786	7.52093	0.1337639	0.24421807	2.5348417	21	9 20.9	20.6
497328 2005 TR ₁₅₇	18.2	X	281.06072	186.84974	233.64286	2.34335	0.1670736	0.24136425	2.5547834	21	8 28.4	21.3
497329 2005 TZ ₁₆₄	18.1	X	247.96914	82.83474	11.51624	3.75128	0.2083180	0.23848024	2.5753393	21	8 27.3	21.8
497330 2005 TW ₁₆₈	17.6	X	247.55367	222.93974	215.53438	8.09053	0.1386038	0.23768839	2.5810559	21	8 10.3	21.4
497331 2005 TE ₁₈₂	16.4	X	236.71033	92.48767	321.92224	21.85232	0.0202463	0.23551068	2.5969424	21	7 19.0	20.1
497332 2005 TU ₁₉₆	18.2	X	321.95082	220.91658	133.41115	1.99165	0.2332083	0.24067055	2.5596903	21	7 25.1	20.1
497333 2005 UW ₁	18.1	X	8.44014	118.03123	219.29866	6.50805	0.2281129	0.24603434	2.5223512	21	10 26.7	20.2
497334 2005 UK ₁₁	17.9	X	335.07522	36.30112	322.66017	3.82021	0.2585705	0.24216309	2.5491619	21	9 4.8	19.6
497335 2005 UP ₁₁	18.1	X	261.92242	356.60602	95.30315	4.63016	0.1477394	0.24039876	2.5616191	21	9 20.5	21.5
497336 2005 UT ₁₅	18.1	X	279.67037	45.75170	47.77949	6.10715	0.2072768	0.24384937	2.5373962	21	10 9.0	20.9
497337 2005 UT ₂₃	17.8	X	350.15077	6.06190	297.87881	1.73633	0.2828300	0.23880593	2.5729972	21	7 10.5	19.1
497338 2005 UN ₄₈	18.6	X	313.86051	181.76118	174.24839	2.90734	0.2398108	0.23847176	2.5754003	21	7 8.8	21.1
497339 2005 UN ₇₀	18.2	X	292.83220	74.45957	345.46690	4.71096	0.3124662	0.24164656	2.5527933	21	8 23.1	21.1
497340 2005 UH ₈₀	17.8	X	296.60566	222.91633	189.03516	5.15766	0.3136245	0.24035304	2.5619440	21	8 15.0	20.5
497341 2005 UF ₈₅	18.0	X	356.68125	283.59056	47.15786	5.03198	0.2068009	0.24243339	2.5472667	21	9 18.8	20.0
497342 2005 UH ₉₇	17.2	X	251.04391	235.77009	214.12640	21.56358	0.1197128	0.23842968	2.5757033	21	8 29.2	21.2
497343 2005 UX ₉₇	17.4	X	221.39155	318.54993	110.63145	3.42511	0.1948112	0.23014349	2.6371627	21	6 28.9	21.6
497344 2005 UY ₁₀₄	17.6	X	331.23757	130.19110	204.36992	6.26253	0.1782684	0.23651326	2.5895982	21	7 20.1	20.2
497345 2005 UL ₁₂₁	18.1	X	341.83159	105.62777	227.91372	2.33163	0.1950669	0.24000232	2.5644393	21	8 11.8	20.3
497346 2005 UD ₁₂₄	18.0	X	345.76892	114.31375	243.96553	3.67109	0.2578877	0.24428331	2.5343904	21	10 4.7	19.5
497347 2005 UX ₁₃₃	18.9	X	312.20378	47.25105	318.78020	3.01809	0.2823994	0.24018217	2.5631589	21	7 13.9	21.5
497348 2005 UV ₁₆₆	17.5	X	116.57866	188.95974	33.85652	14.50801	0.0260578	0.24115264	2.5562777	21	9 29.6	21.0
497349 2005 UD ₁₆₉	17.6	X	357.13883	329.77085	9.80998	2.87108	0.1848312	0.24270721	2.5453505	21	9 29.4	19.8
497350 2005 UO ₁₇₁	18.1	X	299.67412	162.68212	242.23531	3.19853	0.1585331	0.24044759	2.5612723	21	9 6.5	20.9
497351 2005 UA ₁₇₈	18.1	X	322.13907	334.33252	30.60422	6.04927	0.2341949	0.24020807	2.5629747	21	8 15.3	20.3
497352 2005 UC ₁₈₀	16.0	X	41.11448	289.19429	227.27377	24.04191	0.1218999	0.21118409	2.7927277	21	3 13.8	19.8
497353 2005 UH ₁₈₃	17.8	X	247.42186	179.76093	252.78049	3.38596						

ELEMENTS AND OPPOSITION DATES IN 2021

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2021 JULY 5.0 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>
497361 2005 UZ ₂₃₅	18.3	X	316.57760	269.92372	93.97716	4.09690	0.1957384	0.23860937	2.5744101	21	8 4.7	20.7
497362 2005 UU ₂₄₈	18.1	X	321.89809	199.88565	173.75788	1.64867	0.1687379	0.24080839	2.5587134	21	9 2.8	20.6
497363 2005 UW ₂₅₆	18.3	X	335.46466	295.44044	82.27435	1.85326	0.1994841	0.24453046	2.5326824	21	10 10.9	20.3
497364 2005 UH ₂₆₀	17.7	X	279.57471	213.07884	217.26159	12.21433	0.2476088	0.23953477	2.5677752	21	8 22.6	21.3
497365 2005 UY ₂₆₀	18.1	X	248.55112	212.55287	216.34234	5.29239	0.2400366	0.23327424	2.6135142	21	7 19.2	22.2
497366 2005 UV ₂₇₆	18.1	X	299.17766	174.04441	231.22761	3.02670	0.1991511	0.24110743	2.5565973	21	8 30.8	20.9
497367 2005 UN ₂₈₁	17.6	X	332.93383	292.21173	43.08044	9.40805	0.1818997	0.23838976	2.5759908	21	7 30.5	20.2
497368 2005 UM ₂₈₆	17.5	X	317.06974	261.05759	85.52172	4.10548	0.0603541	0.23611923	2.5924784	21	7 28.5	20.5
497369 2005 JU ₃₀₇	18.2	X	244.46900	162.13945	240.16235	2.44627	0.1084623	0.23041142	2.6351179	21	6 25.9	21.8
497370 2005 UL ₃₁₉	18.2	X	234.59701	138.55324	287.62364	1.77349	0.1086229	0.23289662	2.6163385	21	7 16.3	21.8
497371 2005 UV ₃₁₉	17.8	X	314.41964	0.61578	27.35130	5.54873	0.1599073	0.24157394	2.5533048	21	9 13.3	20.3
497372 2005 UM ₃₃₂	18.2	X	272.54185	292.52832	110.79181	4.68059	0.0847328	0.23530950	2.5984224	21	8 6.9	21.4
497373 2005 UL ₃₃₄	17.5	X	329.87515	272.10578	65.64231	13.99340	0.1959655	0.23596916	2.5935774	21	7 24.9	20.2
497374 2005 UM ₃₃₇	18.1	X	243.19555	232.44179	211.49215	4.50015	0.2083168	0.23589410	2.5941276	21	8 5.5	22.0
497375 2005 UL ₃₆₉	18.0	X	306.88302	163.96399	189.94598	5.02367	0.1710717	0.23508075	2.6001077	21	7 4.6	21.1
497376 2005 UJ ₃₇₁	18.2	X	297.26584	5.87945	41.49203	3.37945	0.1623433	0.23971822	2.5664650	21	9 8.8	21.0
497377 2005 UN ₄₁₄	17.5	X	332.28137	177.91391	189.47636	4.44086	0.1598405	0.24212141	2.5494545	21	9 15.7	19.7
497378 2005 UG ₄₂₃	18.6	X	312.12055	50.42284	305.83396	1.50062	0.2192261	0.23844703	2.5755784	21	7 10.1	21.2
497379 2005 UW ₄₂₅	17.8	X	330.42689	93.12446	246.65463	2.73228	0.2446381	0.23882196	2.5728821	21	7 19.2	19.8
497380 2005 UM ₄₂₉	18.6	X	327.85878	101.86174	241.83385	4.33360	0.2981283	0.23945939	2.5683141	21	7 9.7	20.5
497381 2005 UU ₄₃₅	16.3	X	19.65014	138.05767	72.08134	10.74871	0.0154747	0.15612171	3.4158112	21	5 3.0	21.1
497382 2005 UM ₄₃₆	17.9	X	2.39249	98.80178	213.94083	15.24232	0.2185091	0.24242111	2.6473528	21	8 25.5	20.3
497383 2005 UM ₄₆₂	16.6	X	342.51178	250.96429	116.04912	2.30756	0.2050270	0.18155785	3.0888207	21	9 27.9	19.6
497384 2005 UM ₄₇₂	17.7	X	246.90171	191.45381	268.08019	3.57206	0.2323950	0.23616542	2.5921404	21	8 26.8	21.6
497385 2005 UB ₅₂₆	17.5	X	338.76473	17.87047	117.72915	1.76523	0.1821486	0.23681769	2.5873785	21	8 9.6	19.7
497386 2005 UG ₅₂₇	18.1	X	256.39689	148.99753	263.91725	4.00750	0.1700508	0.23295245	2.6159204	21	7 15.9	21.7
497387 2005 VD ₈	17.9	X	338.80805	148.75531	184.62623	0.71962	0.0572761	0.23714428	2.5550024	21	8 12.5	21.0
497388 2005 VS ₉	18.2	X	296.41554	238.74022	164.97173	4.95953	0.2824501	0.24027521	2.5624972	21	8 9.1	21.0
497389 2005 VT ₃₃	17.9	X	312.64851	255.97806	134.14340	2.33397	0.2548539	0.24069229	2.5595361	21	8 27.6	19.9
497390 2005 VX ₅₉	18.2	X	279.10901	294.93663	99.18009	2.71272	0.1924664	0.23642274	2.5902592	21	7 16.5	21.4
497391 2005 VA ₈₁	17.0	X	306.02284	278.21495	62.32235	13.60687	0.2051369	0.23218809	2.6216583	21	6 7.5	20.0
497392 2005 VR ₈₉	18.2	X	244.07857	274.62582	197.59263	7.94701	0.1211681	0.23970978	2.5665253	21	9 24.8	21.6
497393 2005 VH ₉₅	17.6	X	313.28320	268.33092	87.91127	7.36195	0.2455871	0.23648106	2.5898333	21	7 7.6	20.1
497394 2005 VA ₁₀₃	17.6	X	294.35831	75.96147	316.01471	5.58470	0.3374029	0.23901518	2.5714952	21	7 11.6	20.8
497395 2005 VL ₁₀₉	17.8	X	317.09813	336.96537	46.40763	4.67509	0.0806870	0.24065468	2.5598028	21	9 19.3	20.7
497396 2005 VP ₁₁₄	17.3	X	333.85016	301.30673	50.26318	13.55596	0.3052435	0.24076678	2.5590082	21	8 21.3	19.2
497397 2005 VP ₁₁₇	18.2	X	294.27499	153.12706	240.51023	3.39335	0.2303409	0.23790962	2.5794556	21	8 4.3	21.1
497398 2005 VC ₁₁₈	17.2	X	300.27707	282.59774	103.45851	23.52031	0.3238124	0.23886477	2.5725746	21	7 13.7	20.2
497399 2005 VC ₁₂₅	17.1	X	313.19607	117.68490	273.83711	12.14784	0.1800638	0.23711226	2.5852351	21	9 2.7	20.1
497400 2005 VH ₁₃₀	18.4	X	341.82570	159.92947	166.04003	5.85200	0.2215851	0.24124156	2.5556495	21	7 28.3	20.3
497401 2005 VR ₁₃₅	17.2	X	159.26309	53.79738	78.95190	9.42160	0.1898866	0.22528793	2.6749198	21	7 25.7	21.7
497402 2005 WJ ₄	16.0	X	339.45134	75.61938	283.08630	28.31554	0.3043653	0.23666927	2.5884601	21	8 20.7	18.5
497403 2005 WT ₅	16.5	X	232.11959	201.15922	245.81570	21.12277	0.0554481	0.23473335	2.6026725	21	8 6.6	20.6
497404 2005 WH ₁₄	17.3	X	296.89796	149.87457	243.63734	14.17336	0.1055812	0.23685526	2.5871048	21	8 18.3	20.8
497405 2005 WF ₁₇	16.7	X	124.21651	287.32003	239.28432	7.79282	0.2032971	0.22442282	2.6817896	21	8 2.3	21.2
497406 2005 WM ₃₃	17.7	X	308.52694	353.68709	60.43551	6.75297	0.2267739	0.24125331	2.5555665	21	10 3.6	20.0
497407 2005 WG ₃₄	17.1	X	274.41997	154.68145	256.48474	12.87636	0.1628670	0.23564263	2.5959728	21	8 2.2	20.8
497408 2005 WY ₃₅	17.6	X	339.62352	288.16389	100.12111	2.77847	0.1591849	0.24331259	2.5411267	21	11 4.8	19.8
497409 2005 WE ₄₈	17.9	X	217.80731	67.22445	56.74502	4.44243	0.1174229	0.23542739	2.5975548	21	9 12.9	21.8
497410 2005 WE ₄₉	18.1	X	295.16816	143.80184	254.90570	7.85630	0.1632125	0.23692598	2.5865900	21	8 17.3	21.2
497411 2005 WE ₅₀	17.7	X	351.00106	225.04625	77.49163	3.03689	0.1986692	0.23353381	2.6115772	21	7 15.3	19.7
497412 2005 WL ₆₃	18.0	X	299.74986	131.87877	247.04063	4.74084	0.2475081	0.23731177	2.5837859	21	7 15.5	20.8
497413 2005 WH ₈₀	17.8	X	297.29786	101.57420	281.90511	1.28133	0.2527837	0.23578499	2.5949278	21	7 17.2	20.6
497414 2005 WS ₈₀	17.4	X	273.59425	181.29250	253.75668	13.76101	0.1721309	0.23779814	2.5802616	21	8 30.1	21.1
497415 2005 WU ₁₀₃	16.9	X	197.75977	203.58633	260.36238	11.62659	0.2446194	0.22876641	2.6477352	21	7 17.8	21.6
497416 2005 WV ₁₀₅	17.1	X	312.86239	250.38465	153.80600	8.21582	0.1850849	0.24217831	2.5490551	21	10 2.1	19.5
497417 2005 WG ₁₁₄	17.6	X	331.96088	90.84113	272.21416	7.38989	0.1839331	0.23897750	2.5717655	21	9 2.3	20.2
497418 2005 WU ₁₂₄	17.6	X	325.18150	261.84993	67.17465	6.19964	0.2678638	0.23389338	2.6089000	21	6 15.3	19.8
497419 2005 WF ₁₂₆	18.2	X	290.44841	303.68996	59.69115	4.42846	0.2084129	0.23417006	2.6068445	21	6 16.6	21.4
497420 2005 WO ₁₄₀	18.6	X	295.00511	345.47789	85.22278	3.30242	0.2840444	0.23913533	2.5706339	21	9 18.3	21.1
497421 2005 WT ₁₆₀	17.5	X	258.60818	44.89611	31.74454	4.76987	0.1905436	0.23499527	2.6007382	21	8 19.4	21.1
497422 2005 WB ₁₆₆	17.3	X	297.90497	303.85583	77.87170	13.89431	0.2893804	0.23687125	2.5869884	21	7 10.3	20.4
497423 2005 WV ₁₈₆	17.7	X	325.89511	13.55063	344.98704	2.51403	0.1125806	0.23798948	2.5788785	21	8 24.3	20.2
497424 2005 WK ₁₈₈	17.6	X	317.08218	312.82186	62.13355	5.41259	0.2271601	0.23601620	2.5932328	21	8 20.1	20.0
497425 2005 XK	18.0	X	278.46409	192.45380	236.53858	12.04941	0.1974829	0.23866630	2.5740006	21	8 26.3	21.5
497426 2005 XZ ₉	18.1	X	321.70434	61.80283	318.04298	2.82062	0.2432798	0.24044824	2.5612677	21	9 2.6	20.2
497427 2005 XR ₁₂	18.3	X	19.02619	263.13955	149.33286	0.84435	0.1702572	0.25503669	2.4626401	21	—	—
497428 2005 XQ ₂₈	16.2	X	200.18236	88.71290	257.18424	23.13747	0.2937864	0.21650624	2.7467709	21	2 19.6	21.7
497429 2005 XB ₂₉	17.9	X	287.82002	14.03469	50.62169	6.93351	0.2451157	0.23942593	2.5685534	21	9 5.9	20.9
497430 2005 XA ₄₅	18.6	X	310.94172	66.37052	303.29742	3.81171	0.3150527	0.23804937	2.5784459	21	7 10.4	21.1
497431 2005 XX ₄₉	17.9	X	270.52274	18.67885	64.31759	7.51361	0.2086298	0.23665094	2.5885937	21	9 11.9	21.4
497432 2005 XH ₅₂	16.6	X	318.62501	72.56362	290.38145	12.18108	0.1962620	0.23393635	2.6085805	21	8 3.4	19.3
497433 2005 XC ₅₉	17.9	X	290.76315	322.83495	75.29171</							

ELEMENTS AND OPPOSITION DATES IN 2021

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2021 JULY 5.0 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>
497441 2005 YW ₁₃	17.4	X	220.04024	120.76341	291.85571	8.12327	0.1176321	0.22072017	2.7116983	21	6 11.6	21.6
497442 2005 YQ ₁₄	16.8	X	310.15699	296.44865	113.30959	8.77468	0.1831601	0.23696492	2.5863066	21	10 6.9	19.5
497443 2005 YA ₁₉	18.2	X	62.94833	221.21166	299.90383	1.54156	0.1378271	0.27588948	2.3369313	21	4 27.3	20.3
497444 2005 YW ₂₀	17.6	X	274.02683	120.04514	289.84828	2.73534	0.0980525	0.23042159	2.6350403	21	8 14.4	20.8
497445 2005 YQ ₂₁	17.5	X	308.58452	306.41028	102.60590	5.38460	0.1356090	0.23698252	2.5861786	21	10 6.5	20.3
497446 2005 YC ₂₂	17.6	X	268.22380	95.71537	297.16060	5.53240	0.2156307	0.22882951	2.6472484	21	6 27.8	21.3
497447 2005 YH ₂₂	16.9	X	218.82992	281.47528	104.27974	14.03593	0.2162485	0.21908349	2.7251869	21	5 8.2	21.7
497448 2005 YL ₂₂	18.6	X	21.58642	124.61167	289.52285	5.10794	0.1706707	0.31483145	2.1400174	21	—	—
497449 2005 YN ₂₃	17.9	X	310.17680	104.99904	281.86588	3.38920	0.3035106	0.23697439	2.5862377	21	8 5.8	20.1
497450 2005 YM ₃₂	16.7	X	139.14200	348.88601	122.11050	7.15373	0.0135347	0.21420134	2.7664401	21	5 25.2	20.6
497451 2005 YG ₃₆	16.3	X	60.88648	291.44760	305.05672	13.83253	0.0378820	0.22132001	2.7067965	21	7 30.0	19.8
497452 2005 YL ₅₂	16.8	X	167.81957	222.80877	281.89996	12.42794	0.1167144	0.22417914	2.6837326	21	8 11.1	21.2
497453 2005 YB ₅₈	17.3	X	217.52739	293.99391	112.99990	8.20923	0.1079999	0.21977304	2.7194836	21	6 3.6	21.5
497454 2005 YN ₅₉	18.7	X	282.79672	153.64137	281.06112	5.84071	0.3087055	0.23659909	2.5889719	21	8 25.2	21.9
497455 2005 YY ₅₉	18.0	X	199.44141	33.52824	86.89687	5.17338	0.1162075	0.22692673	2.6620260	21	8 18.7	22.0
497456 2005 YO ₆₂	16.5	X	326.18942	91.23975	286.82899	13.28692	0.1445493	0.23584499	2.5944877	21	9 11.3	19.6
497457 2005 YP ₆₄	17.9	X	284.52731	343.75211	78.20439	5.68019	0.2134505	0.23856766	2.5747101	21	9 1.2	21.0
497458 2005 YQ ₈₀	17.2	X	308.00806	242.71614	105.63366	7.53315	0.0878027	0.22516174	2.6759191	21	7 12.1	20.5
497459 2005 YR ₈₁	17.2	X	145.05989	185.19549	284.40903	10.49351	0.0783360	0.21637453	2.7478854	21	6 3.9	21.4
497460 2005 YJ ₉₁	18.4	X	307.52711	344.02579	126.98014	4.83186	0.0769249	0.30813778	2.1708980	21	—	—
497461 2005 YV ₉₇	17.0	X	358.67932	280.45760	84.80362	7.59945	0.1771511	0.24002762	2.5642591	21	11 11.4	19.6
497462 2005 YA ₉₈	16.5	X	301.56984	215.60329	96.63040	15.67373	0.0809475	0.21781430	2.7357629	21	5 19.2	20.3
497463 2005 YB ₁₀₁	16.6	X	338.21440	70.99284	276.33417	10.68629	0.0910687	0.23238530	2.6201749	21	8 24.5	19.7
497464 2005 YE ₁₀₈	18.4	X	9.95559	114.28516	274.33267	5.49702	0.1469363	0.30873973	2.1680753	21	—	—
497465 2005 YR ₁₃₀	16.9	X	158.10685	212.16111	301.32896	12.39116	0.1886443	0.22365854	2.6878955	21	8 15.4	21.4
497466 2005 YT ₁₃₇	16.7	X	189.33165	280.78425	99.28171	14.57730	0.0634027	0.21013723	2.8019951	21	4 8.1	21.1
497467 2005 YR ₁₃₉	17.9	X	271.00414	311.03005	90.48401	6.18639	0.2931589	0.23252419	2.6191314	21	7 1.8	21.8
497468 2005 YA ₁₄₁	17.3	X	227.39523	106.18312	323.87530	2.70025	0.0938600	0.22554485	2.6728881	21	7 14.9	21.3
497469 2005 YD ₁₄₅	16.3	X	159.46631	166.33733	304.76951	12.74579	0.0908456	0.21765732	2.7370781	21	6 24.3	20.6
497470 2005 YC ₁₄₇	16.5	X	83.98587	239.62733	301.37589	10.45629	0.0705451	0.21736437	2.7395368	21	6 22.2	20.2
497471 2005 YA ₁₅₄	16.8	X	240.23453	236.81608	309.91010	7.88694	0.0129651	0.18353231	3.0666275	21	12 30.6	21.2
497472 2005 YQ ₁₆₃	17.3	X	355.05158	224.32237	90.85025	6.82448	0.0110556	0.22929312	2.6436789	21	8 13.8	20.8
497473 2005 YD ₁₇₀	18.0	X	291.56331	185.52890	226.31528	3.40471	0.2027736	0.23521938	2.5990860	21	8 24.9	20.9
497474 2005 YN ₁₇₄	17.4	X	299.50951	353.42616	51.37499	7.69957	0.2748656	0.23680639	2.5874608	21	8 22.8	20.3
497475 2005 YH ₁₈₆	15.8	X	137.92415	182.52077	310.26387	24.92172	0.0934818	0.21632476	2.7483069	21	7 2.4	20.2
497476 2005 YO ₂₁₀	17.2	X	299.98287	347.63259	45.16397	5.75580	0.2949901	0.23645818	2.5900003	21	7 30.7	20.1
497477 2005 YW ₂₃₈	17.3	X	326.49192	83.96339	294.70856	1.96778	0.1350444	0.23579763	2.5948351	21	9 21.0	20.0
497478 2005 YZ ₂₅₀	17.3	X	182.25354	169.07933	267.09443	4.70877	0.0423905	0.21692635	2.7432234	21	6 2.2	21.2
497479 2005 YM ₂₅₁	17.6	X	224.91716	331.28841	143.98329	4.74505	0.1537993	0.22996964	2.6384916	21	9 3.6	21.4
497480 2005 YU ₂₅₅	18.0	X	291.29099	295.89811	92.62555	6.78287	0.3014804	0.23365797	2.6106520	21	7 7.9	21.2
497481 2005 YG ₂₅₇	17.1	X	324.79495	240.31116	159.29773	5.43736	0.2712444	0.23903351	2.5713638	21	10 14.8	18.6
497482 2005 YF ₂₇₁	17.1	X	156.59519	62.46762	127.41606	9.12649	0.0386859	0.23033409	2.6357076	21	10 4.0	20.9
497483 2005 YE ₂₇₇	17.3	X	307.67749	128.22294	255.55869	4.54773	0.3627097	0.23583229	2.5945809	21	7 15.1	19.8
497484 2005 YW ₂₈₄	17.0	X	345.94501	243.34648	121.58271	5.25566	0.3179328	0.23973487	2.5663462	21	10 26.9	18.3
497485 2005 YA ₂₉₁	17.1	X	45.83143	174.01256	110.51531	6.14655	0.1298025	0.22734204	2.6587829	21	9 30.3	20.5
497486 2006 AA ₆	16.8	X	214.28349	315.20853	136.56555	14.93098	0.1815435	0.22537931	2.6741927	21	7 21.4	21.2
497487 2006 AT ₁₄	17.9	X	231.08037	168.89250	300.03039	2.34429	0.1584361	0.22953864	2.6417933	21	8 31.1	21.9
497488 2006 AR ₁₅	16.8	X	186.60088	140.71575	304.88846	12.59913	0.1483704	0.21884297	2.7271832	21	6 20.1	21.3
497489 2006 AJ ₁₉	17.0	X	209.43712	329.44263	121.09470	14.82414	0.2309282	0.22768247	2.6561320	21	7 13.3	21.6
497490 2006 AH ₂₃	17.5	X	215.58955	9.00933	106.17084	4.39079	0.1668715	0.22839518	2.6506035	21	8 24.4	21.6
497491 2006 AB ₂₄	16.7	X	278.88132	96.51600	272.72664	12.68571	0.0930843	0.22830059	2.6513355	21	6 27.3	20.0
497492 2006 AM ₂₇	17.5	X	56.86401	43.10705	129.29310	8.36204	0.1461001	0.27013630	2.3699949	21	5 10.1	20.0
497493 2006 AO ₃₂	17.9	X	255.93676	137.63562	270.61979	5.69719	0.2112275	0.22793548	2.6541661	21	7 4.4	22.0
497494 2006 AP ₅₈	17.8	X	322.47100	84.67746	298.96630	3.56377	0.2866931	0.23795148	2.5791531	21	9 3.2	19.4
497495 2006 AM ₆₆	16.4	X	42.72887	303.01235	295.09640	15.17832	0.1948305	0.21626396	2.7488220	21	7 27.0	19.4
497496 2006 AO ₇₂	16.9	X	257.03152	282.39525	132.54289	8.77858	0.2173414	0.22822875	2.6518919	21	7 13.5	21.0
497497 2006 AV ₇₆	16.9	X	333.79648	49.72197	288.82040	11.71359	0.1360328	0.22678889	2.6631045	21	8 3.5	19.9
497498 2006 AA ₈₂	17.2	X	190.76481	173.91926	311.82055	11.65308	0.2829272	0.22469738	2.6796046	21	8 10.2	21.8
497499 2006 AD ₈₆	17.0	X	133.12050	256.22604	260.99163	6.51171	0.0878911	0.22739053	2.6584049	21	7 22.5	21.0
497500 2006 AQ ₈₆	16.1	X	314.10564	69.23948	264.32545	28.57571	0.3357848	0.23422749	2.6064184	21	5 19.3	19.4
497501 2006 AV ₉₇	16.6	X	293.15409	269.19715	127.75544	29.49786	0.3346969	0.23345364	2.6121751	21	7 17.3	19.9
497502 2006 AP ₁₀₅	17.0	X	11.98886	223.49354	129.02761	3.84062	0.0910804	0.23431079	2.6058007	21	11 4.4	20.0
497503 2006 BL ₆	16.8	X	298.76660	77.77387	335.21946	26.78177	0.4354009	0.23531821	2.5983583	21	8 7.4	20.0
497504 2006 BG ₉	17.0	X	294.21264	89.58488	329.05473	26.82708	0.4057898	0.23543786	2.5974778	21	8 10.5	20.2
497505 2006 BR ₂₁	17.0	X	269.39957	128.99195	307.28440	12.29578	0.2253211	0.23289192	2.6163736	21	8 21.8	20.7
497506 2006 BO ₄₄	17.2	X	237.45322	295.61070	157.96532	13.13844	0.2266575	0.22504446	2.6768488	21	8 10.3	21.5
497507 2006 BZ ₄₈	17.7	X	241.53023	42.94391	46.50895	2.00480	0.0427155	0.22793708	2.6541537	21	9 3.4	21.1
497508 2006 BB ₅₁	16.9	X	213.56958	106.90029	343.94364	2.06141	0.1570762	0.22476441	2.6790718	21	7 22.0	21.1
497509 2006 BB ₆₆	17.4	X	193.55141	357.26197	111.53213	6.18725	0.1263563	0.22237803	2.6982041	21	7 26.5	21.4
497510 2006 BQ ₇₄	17.2	X	308.85011	335.77822	39.34298	3.49600	0.1191135	0.22679423	2.6630626	21	8 18.2	20.2
497511 2006 BF ₇₅	16.9	X	288.98819	73.02755	337.94029	7.21868	0.0313945	0.22847367	2.6499964	21	9 15.5	20.2
497512 2006 BU ₇₅	17.3	X	187.34448	329.84818	107.34249	6.05576	0.1409985	0.21707915	2.7419360	21	6 9.9	21.7
497513 2006 BQ ₇₆	17.1	X	226.64930	39.9								

ELEMENTS AND OPPOSITION DATES IN 2021

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2021 JULY 5.0 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>
497521 2006 BY ₁₂₄	18.8	X	345.76358	339.80911	117.11348	2.06038	0.1261424	0.30986762	2.1628111	21	—	—
497522 2006 BH ₁₃₃	16.8	X	187.37562	117.99867	328.00922	11.94464	0.1384152	0.21534894	2.7566030	21	6 21.4	21.4
497523 2006 BO ₁₃₇	17.5	X	295.95525	252.05707	164.15699	4.20331	0.1993186	0.23236140	2.6203546	21	9 10.9	20.4
497524 2006 BW ₁₄₃	16.6	X	97.66000	262.66096	270.14820	8.55902	0.2367893	0.21289689	2.7777288	21	7 19.8	20.8
497525 2006 BC ₁₆₄	18.5	X	336.18487	114.83403	318.67803	4.72000	0.1211971	0.30626403	2.1797435	21	—	—
497526 2006 BL ₁₆₅	17.2	X	223.71726	335.72837	136.41608	3.96481	0.0671891	0.22530460	2.6747879	21	9 7.6	20.9
497527 2006 BU ₁₈₆	16.6	X	162.97392	165.79863	329.63158	14.43695	0.1963916	0.21786644	2.7353264	21	8 2.5	21.3
497528 2006 BY ₁₉₄	18.0	X	357.42855	81.61041	308.65291	8.29585	0.0762917	0.30057672	2.2071532	21	12 15.8	20.3
497529 2006 BH ₂₀₄	18.6	X	44.80470	298.07398	118.94881	3.65476	0.0943779	0.31468752	2.1406699	21	—	—
497530 2006 BM ₂₁₂	17.1	X	202.04779	330.19619	149.13891	11.84994	0.0355885	0.22117626	2.7079691	21	8 23.5	21.0
497531 2006 BF ₂₂₅	16.6	X	174.09145	151.44234	307.20160	8.25429	0.1138502	0.21667169	2.7453725	21	6 23.9	21.0
497532 2006 BF ₂₃₄	16.7	X	15.99155	207.64566	87.49514	2.45264	0.0301044	0.22294527	2.6936254	21	8 15.5	20.0
497533 2006 BB ₂₃₆	16.8	X	208.93105	318.15679	78.97439	5.98845	0.0705913	0.21232604	2.7827052	21	5 14.5	21.0
497534 2006 BR ₂₃₇	18.4	X	226.31606	196.33965	9.05165	2.81902	0.0722013	0.30714959	2.1755518	21	—	—
497535 2006 BN ₂₄₅	18.6	X	346.36512	38.72500	134.91640	22.04666	0.0682463	0.38653389	1.8664270	21	—	—
497536 2006 CF ₂	17.4	X	221.21666	1.23730	91.46077	3.94294	0.0336816	0.22287775	2.6941695	21	8 13.6	21.2
497537 2006 CF ₁₁	17.8	X	235.82557	308.37898	142.84435	5.87093	0.1766089	0.22965144	2.6409283	21	8 11.9	21.9
497538 2006 CW ₁₃	17.9	X	260.64930	118.83994	314.13845	4.41331	0.2155435	0.22969254	2.6406132	21	8 10.8	21.7
497539 2006 CD ₁₆	17.1	X	213.01572	264.13446	131.01205	6.06338	0.0345636	0.21308121	2.7761266	21	5 19.2	21.1
497540 2006 CU ₁₇	16.4	X	131.19120	172.65996	345.32971	6.48005	0.1214962	0.21676868	2.7445534	21	7 26.9	20.5
497541 2006 CN ₁₈	18.2	X	203.74920	177.04688	341.34147	5.95556	0.1023646	0.29382353	2.2408442	21	10 15.0	21.2
497542 2006 CY ₂₂	16.9	X	287.51332	55.96520	339.83372	27.08633	0.1820295	0.22515996	2.6759332	21	8 10.8	20.5
497543 2006 CS ₂₆	16.6	X	251.14560	118.10954	315.89790	21.46857	0.0450117	0.22593785	2.6697877	21	8 20.8	20.3
497544 2006 CN ₄₁	17.0	X	265.97911	255.01133	169.76222	11.91949	0.1769738	0.22586230	2.6703830	21	8 10.1	20.8
497545 2006 CD ₆₇	16.8	X	114.39374	216.02956	332.49475	9.16328	0.0636455	0.21944322	2.7222078	21	8 10.5	20.6
497546 2006 CK ₆₇	17.7	X	21.99649	306.54372	179.03207	1.08039	0.1419765	0.25693106	2.4505203	21	—	—
497547 2006 DQ ₆	18.2	X	8.45542	358.06724	162.41974	22.60493	0.0682422	0.38529166	1.8704365	21	—	—
497548 2006 DP ₂₈	17.8	X	96.69450	174.59925	51.89127	1.75614	0.1839136	0.28139279	2.3063616	21	9 26.6	21.0
497549 2006 DT ₃₂	17.2	X	214.94070	325.19968	166.07903	7.28454	0.3088640	0.22726696	2.6593685	21	9 1.1	22.0
497550 2006 DJ ₃₃	17.4	X	194.94241	328.93948	166.08403	5.65555	0.1625192	0.22191968	2.7019181	21	8 27.8	21.7
497551 2006 DH ₄₂	17.4	X	269.77539	305.08274	148.52757	11.31936	0.1693867	0.23520823	2.5991681	21	9 30.2	20.7
497552 2006 DW ₄₇	17.2	X	58.20124	236.39791	334.69329	13.28178	0.0253227	0.21220174	2.7837918	21	6 20.6	21.2
497553 2006 DS ₈₅	16.8	X	6.80123	292.79676	355.28809	5.06186	0.0124724	0.21440070	2.7647248	21	7 22.9	20.5
497554 2006 DQ ₉₂	16.6	X	265.44438	77.63684	346.63330	11.89044	0.1138560	0.22269110	2.6956747	21	8 22.5	20.3
497555 2006 DQ ₁₀₃	18.9	X	331.39243	313.47093	147.70010	3.05233	0.0620289	0.30557135	2.1830363	21	—	—
497556 2006 DQ ₁₀₅	17.2	X	36.03041	124.14312	159.30576	5.44561	0.0246261	0.21863579	2.7289058	21	8 26.1	20.6
497557 2006 DV ₁₁₃	17.9	X	72.78200	298.41610	359.26922	10.42296	0.1784196	0.28951701	2.2630110	21	11 30.4	21.4
497558 2006 DE ₁₂₅	17.5	X	188.99842	147.72633	317.90858	6.60366	0.0690142	0.21850500	2.7299947	21	7 19.7	21.5
497559 2006 DG ₁₃₃	16.6	X	38.40014	234.11167	11.83153	7.56029	0.1732739	0.21066249	2.7973356	21	7 31.3	19.9
497560 2006 DL ₁₃₉	17.4	X	154.66058	108.89171	33.66660	5.03776	0.0827975	0.21622181	2.7491792	21	7 30.2	21.5
497561 2006 DK ₁₄₂	17.0	X	322.01476	184.35728	144.23078	6.80014	0.0301641	0.21449494	2.7639150	21	7 12.0	20.7
497562 2006 DS ₁₄₂	18.3	X	115.67587	149.26048	120.47523	3.69809	0.1571259	0.29300081	2.2450370	21	12 8.6	21.7
497563 2006 DM ₁₄₃	17.3	X	223.84719	294.98053	155.25458	5.29368	0.0784182	0.22065579	2.7122257	21	8 6.8	21.1
497564 2006 DJ ₁₄₆	16.7	X	304.31225	3.05618	351.78779	13.90114	0.1081025	0.21618121	2.7495234	21	7 16.4	20.4
497565 2006 DU ₁₄₆	17.2	X	44.61232	59.35155	197.54176	3.63611	0.0537890	0.21434200	2.7652296	21	8 4.6	20.7
497566 2006 DU ₁₅₄	17.3	X	145.86950	205.23352	274.65188	3.14529	0.1572289	0.21121679	2.7924394	21	6 24.3	21.8
497567 2006 DD ₁₆₃	16.9	X	293.48102	164.42408	184.88135	4.20727	0.0840640	0.21412067	2.7671348	21	6 22.2	20.6
497568 2006 DO ₁₇₁	16.7	X	77.15876	108.90784	137.77752	5.48551	0.0489145	0.21830622	2.7316516	21	9 6.9	20.3
497569 2006 DH ₁₇₆	18.4	X	47.35782	227.14546	161.61573	22.74833	0.1047276	0.37089413	1.9185336	21	—	—
497570 2006 DK ₁₇₆	17.4	X	352.64588	275.49538	36.36982	2.78835	0.0361245	0.21657900	2.7461557	21	8 4.3	20.8
497571 2006 DA ₁₇₇	17.1	X	168.74649	1.82792	135.99656	3.78798	0.1252504	0.21833279	2.7314300	21	8 7.2	21.3
497572 2006 DC ₂₁₁	17.1	X	178.75173	137.66157	355.58198	9.30122	0.1650274	0.21873773	2.7280579	21	8 13.7	21.7
497573 2006 EC ₄₉	17.3	X	276.47402	292.71434	154.65716	13.34566	0.2419030	0.23252324	2.6191386	21	9 17.9	20.5
497574 2006 EO ₅₃	17.4	X	247.92531	124.99775	356.23099	14.17504	0.2454663	0.23052047	2.6342868	21	9 23.6	21.1
497575 2006 EJ ₇₃	17.2	X	106.10274	38.26055	156.61381	10.02999	0.0570072	0.21626039	2.7488523	21	8 5.2	21.0
497576 2006 FD	16.8	X	122.86478	173.56828	17.01861	9.60940	0.1506358	0.21733245	2.7398051	21	9 2.4	21.2
497577 2006 FA ₂	18.3	X	284.45053	238.23715	345.74421	18.97005	0.0829653	0.38221494	1.8804608	21	—	—
497578 2006 FA ₄₇	17.8	X	79.58083	129.25661	134.01168	8.91010	0.3851986	0.27915226	2.3186861	21	11 15.9	22.0
497579 2006 GP ₈	18.3	X	143.61974	73.35802	111.21875	3.03991	0.1523986	0.28284738	2.2984476	21	9 17.2	21.7
497580 2006 GD ₃₄	17.3	X	73.48137	58.28656	154.38274	4.17329	0.0300351	0.20832494	2.8182220	21	7 13.4	21.2
497581 2006 GW ₃₇	17.2	X	106.84697	75.94093	148.57416	22.35039	0.2322148	0.28117985	2.3075259	21	10 12.8	21.2
497582 2006 HC ₉	16.9	X	132.66479	344.82565	203.92212	13.38753	0.0626493	0.21723493	2.7406249	21	8 27.2	21.1
497583 2006 HG ₂₀	16.3	X	343.22713	302.40941	21.23444	18.35930	0.1215020	0.21101508	2.7942187	21	8 11.9	19.9
497584 2006 HJ ₂₄	16.6	X	282.74757	147.28746	78.21286	4.81522	0.2411993	0.18058463	3.0999084	21	—	—
497585 2006 HB ₂₅	18.4	X	85.54397	155.12446	112.49326	2.91843	0.2007946	0.28021834	2.3128014	21	11 9.3	21.9
497586 2006 HS ₆₁	16.7	X	296.55992	63.55824	25.76720	28.90602	0.4095862	0.23575436	2.5951525	21	10 3.0	19.3
497587 2006 HX ₆₃	16.1	X	351.52784	75.01706	55.97614	13.03707	0.0283659	0.17694427	3.1422821	21	—	—
497588 2006 HJ ₇₃	17.9	X	92.36542	153.50122	94.35498	5.95640	0.0593252	0.27970481	2.3156314	21	10 8.6	20.9
497589 2006 HV ₈₆	17.1	X	119.21667	166.84626	34.42365	14.44771	0.0622172	0.21519578	2.7579108	21	9 8.0	21.3
497590 2006 HM ₉₂	16.3	X	228.46055	230.06628	63.43078	18.21598	0.1919177	0.17894569	3.1188074	21	1 31.6	21.8
497591 2006 HS ₁₂₃	17.2	X	322.52917	198.39516	81.74707	2.96514	0.1095354	0.19645356	2.9306421	21	4 30.4	20.8
497592 2006 JB ₅₂	17.6	X	327.51270	145.49445	79.07430	2.39177	0.1844256	0.18835407	3.0610656	21	2 15.2	21.3
497593 2006 JU ₆₉	17.0	X	338.80009	66.91361	217.74836	4.91233	0.0276883	0.20301426	2.8145824	21	6 7.4	20.7

ELEMENTS AND OPPOSITION DATES IN 2021

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2021 JULY 5.0 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>		
497601	2006	<i>KD</i> ₉₀	18.5	X	34.61715	272.39594	209.93379	21.84377	0.0879350	0.37959007	1.8891197	21	—	—
497602	2006	<i>KJ</i> ₁₀₂	16.6	X	307.10970	156.76784	98.38956	15.20909	0.0999245	0.18742600	3.0240072	21	3 16.7	21.0
497603	2006	<i>KO</i> ₁₀₈	18.0	X	25.82490	25.01968	258.36789	1.26971	0.2035453	0.27212468	2.3584360	21	9 8.6	20.0
497604	2006	<i>KR</i> ₁₁₉	18.1	X	66.92769	178.11438	139.12701	7.74691	0.2372102	0.28182341	2.3040116	21	12 26.4	21.6
497605	2006	<i>MF</i>	16.5	X	303.41618	247.11472	87.81950	13.36776	0.1627510	0.20054671	2.8906290	21	6 6.1	20.1
497606	2006	<i>MW</i> ₂	15.9	X	305.81116	92.77153	88.01494	26.64785	0.2193990	0.17836543	3.1255678	21	—	—
497607	2006	<i>OK</i> ₄	16.4	X	215.12560	52.15596	0.89160	13.00158	0.3051575	0.17643502	3.1483247	21	5 27.8	22.2
497608	2006	<i>PM</i> ₂	18.1	X	19.62638	23.18317	306.95833	3.68601	0.2103431	0.27026453	2.3692453	21	11 7.4	20.5
497609	2006	<i>PW</i> ₅	17.5	X	200.58733	135.31188	134.28236	23.77799	0.0773279	0.35993293	1.9572892	21	—	—
497610	2006	<i>PH</i> ₁₃	18.4	X	2.34532	178.37332	181.22634	4.59601	0.2966554	0.26929783	2.3749118	21	12 6.8	20.3
497611	2006	<i>PT</i> ₁₃	16.9	X	245.64241	174.11548	188.78997	5.71468	0.2845053	0.18262280	3.0768008	21	4 25.9	22.3
497612	2006	<i>QS</i> ₂	17.0	X	292.24287	187.81507	136.86699	2.24455	0.2882324	0.18637268	3.0353904	21	4 21.4	21.4
497613	2006	<i>QK</i> ₄	16.5	X	237.12695	260.74106	100.79059	2.15240	0.2245091	0.17800819	3.1297482	21	4 21.7	21.7
497614	2006	<i>QK</i> ₇	17.7	X	13.27021	351.49041	352.15051	5.97745	0.3500089	0.26788531	2.3832528	21	12 11.4	20.2
497615	2006	<i>QT</i> ₈	17.9	X	340.64541	94.17777	263.52228	1.28445	0.1895277	0.26403844	2.4063453	21	9 22.8	19.8
497616	2006	<i>QF</i> ₁₃	17.9	X	54.91923	238.86698	94.71478	5.49306	0.2915691	0.27572198	2.3378777	21	—	—
497617	2006	<i>QP</i> ₃₅	18.0	X	41.42591	324.67742	359.15034	5.67835	0.2184252	0.27177445	2.3604617	21	12 2.5	21.0
497618	2006	<i>QD</i> ₃₇	16.4	X	271.43505	335.35763	336.00635	15.54024	0.2937669	0.18222264	3.0813036	21	3 12.6	21.6
497619	2006	<i>QL</i> ₃₉	13.7	X	86.64601	253.95077	172.27777	13.35113	0.6011950	0.08521764	5.1142628	21	4 21.6	21.5
497620	2006	<i>QR</i> ₄₈	17.8	X	18.25317	192.93326	136.47955	6.41555	0.2031739	0.26802250	2.3824395	21	11 6.7	20.2
497621	2006	<i>QY</i> ₄₉	18.1	X	20.36451	18.73084	319.59014	1.49335	0.2153910	0.26936552	2.3745139	21	11 22.3	20.4
497622	2006	<i>QZ</i> ₅₅	16.3	X	213.33229	208.81762	163.07525	11.74545	0.2515296	0.17584201	3.1553991	21	4 16.4	21.9
497623	2006	<i>QA</i> ₆₂	18.2	X	171.05698	342.04498	341.37611	18.91795	0.0968843	0.36036019	1.9557418	21	—	—
497624	2006	<i>QZ</i> ₇₂	17.6	X	342.37864	63.51037	343.86564	13.63956	0.1068333	0.27269705	2.3551347	21	12 9.7	20.4
497625	2006	<i>QT</i> ₈₁	17.7	X	34.78732	245.30876	71.88813	2.75586	0.1915347	0.26825552	2.3810596	21	11 11.4	20.5
497626	2006	<i>QT</i> ₈₉	20.1	X	146.04049	56.21909	162.42273	24.48671	0.4726727	0.54627548	1.4820456	21	11 22.9	23.2
497627	2006	<i>QU</i> ₉₅	17.3	X	43.91160	246.35912	73.45724	6.95667	0.1748212	0.27139491	2.3626620	21	11 25.4	20.1
497628	2006	<i>QD</i> ₉₉	16.0	X	260.92385	13.43653	343.13021	13.72074	0.2138621	0.18252226	3.0779307	21	4 30.8	21.1
497629	2006	<i>QJ</i> ₁₀₅	17.9	X	320.01109	86.90689	308.31927	7.90274	0.2238967	0.26536754	2.3983037	21	9 27.0	19.7
497630	2006	<i>QK</i> ₁₁₅	17.4	X	6.19323	140.71286	195.31611	5.22993	0.2425516	0.26650258	2.3914893	21	10 29.2	19.2
497631	2006	<i>QZ</i> ₁₂₁	16.3	X	228.16664	43.22112	312.78946	9.07836	0.2290494	0.17679320	3.1440710	21	4 2.8	21.8
497632	2006	<i>QM</i> ₁₆₂	17.6	X	268.94290	95.99233	354.34919	6.45919	0.1522673	0.26573679	2.3960815	21	9 27.1	20.3
497633	2006	<i>QS</i> ₁₆₆	16.3	X	246.36895	80.72749	270.40609	8.15244	0.2638847	0.17851533	3.1238178	21	4 10.2	21.7
497634	2006	<i>QV</i> ₁₈₄	16.6	X	231.74340	180.95785	190.15876	4.73282	0.2504741	0.17772897	3.1330252	21	4 27.0	21.9
497635	2006	<i>QZ</i> ₁₈₄	16.4	X	230.71771	233.86103	113.96056	2.48349	0.1773128	0.17517419	3.1634135	21	4 3.5	21.6
497636	2006	<i>QP</i> ₁₈₅	16.7	X	205.94229	273.89500	99.94345	2.28765	0.1888504	0.17398839	3.1777706	21	4 12.7	22.0
497637	2006	<i>QV</i> ₁₈₆	16.9	X	281.46509	294.23165	36.67392	0.89527	0.1777572	0.18370415	3.0647148	21	4 30.9	21.3
497638	2006	<i>RA</i> ₅	17.4	X	18.67932	104.63152	260.09205	4.97030	0.2685656	0.27132387	2.3630743	21	—	—
497639	2006	<i>RY</i> ₇	17.8	X	19.28315	171.58358	160.20250	1.39670	0.2039476	0.26769023	2.3844106	21	11 9.7	20.2
497640	2006	<i>RB</i> ₁₀	18.1	X	20.49728	178.46919	175.53381	6.16556	0.2600780	0.27006306	2.3704234	21	12 22.4	20.9
497641	2006	<i>RB</i> ₁₂	16.0	X	247.91182	66.15969	306.30873	16.08047	0.1086258	0.18519562	3.0482383	21	5 20.8	20.9
497642	2006	<i>RW</i> ₃₁	17.2	X	224.99987	242.71615	129.39478	0.31480	0.1895463	0.17605685	3.1528315	21	4 25.4	22.5
497643	2006	<i>RV</i> ₃₆	17.6	X	325.56037	10.93243	16.02509	2.29695	0.2263540	0.26379724	2.4078119	21	10 3.1	18.8
497644	2006	<i>RS</i> ₄₀	16.7	X	194.77047	145.65912	242.35595	9.58453	0.0792159	0.17763623	3.1341156	21	4 17.0	21.5
497645	2006	<i>RD</i> ₄₁	16.7	X	235.14859	196.04168	187.73714	11.42184	0.0930844	0.17918522	3.1160273	21	5 27.1	21.5
497646	2006	<i>RW</i> ₄₁	18.2	X	3.33683	210.07301	177.47356	2.47169	0.1980271	0.26978067	2.3720773	21	12 31.5	20.6
497647	2006	<i>RZ</i> ₄₄	18.1	X	30.08335	324.25647	25.36171	2.85597	0.1947621	0.26978795	2.3720346	21	12 19.1	21.0
497648	2006	<i>RG</i> ₄₇	17.0	X	233.48817	329.88219	35.74296	3.32980	0.1602923	0.17606263	3.1527625	21	4 30.5	21.8
497649	2006	<i>RL</i> ₅₁	16.0	X	258.04737	286.33562	17.21804	32.65736	0.0889642	0.16917858	3.2377188	21	3 24.7	21.0
497650	2006	<i>RF</i> ₅₅	18.5	X	316.77222	256.87985	177.06309	5.57912	0.2061534	0.26631323	2.3926227	21	12 1.8	20.3
497651	2006	<i>RW</i> ₅₅	16.2	X	304.83057	294.03483	25.59395	11.04184	0.0751090	0.18062384	3.0994598	21	5 29.7	20.5
497652	2006	<i>RS</i> ₅₆	18.6	X	8.65793	332.11385	25.68796	2.92446	0.2028002	0.26670651	2.3952700	21	11 27.4	20.9
497653	2006	<i>RV</i> ₅₈	16.8	X	251.67233	181.76757	154.10859	1.58711	0.1802124	0.17626705	3.1503245	21	4 7.2	21.7
497654	2006	<i>RO</i> ₆₁	17.7	X	63.88546	130.97970	337.55274	1.77521	0.2015963	0.27028136	2.3691469	21	11 10.7	21.0
497655	2006	<i>RQ</i> ₆₄	16.2	X	338.18429	338.98687	292.68702	9.29287	0.0439969	0.18463793	3.0543732	21	5 17.8	20.4
497656	2006	<i>RZ</i> ₆₅	16.1	X	359.56047	229.98016	12.56810	27.14416	0.1106447	0.17767201	3.1336948	21	4 29.3	20.3
497657	2006	<i>RQ</i> ₆₇	18.0	X	52.53180	15.27211	294.59657	6.31159	0.1305628	0.27185572	2.3599913	21	11 14.4	21.0
497658	2006	<i>RA</i> ₇₂	18.2	X	330.91697	189.69556	184.72463	4.89213	0.1283978	0.26274183	2.4142556	21	9 29.4	22.1
497659	2006	<i>RB</i> ₇₂	18.8	X	65.74333	128.36963	172.28020	1.68911	0.1884942	0.27068342	2.3668003	21	11 27.7	20.4
497660	2006	<i>RC</i> ₇₄	18.4	X	15.37998	336.51303	14.28599	2.63326	0.2111727	0.26806775	2.3821714	21	11 30.7	20.9
497661	2006	<i>RW</i> ₇₅	18.4	X	353.24052	337.06821	20.88589	3.28485	0.1393624	0.26445045	2.4038453	21	10 19.7	20.6
497662	2006	<i>RB</i> ₇₉	16.7	X	226.82329	238.04759	132.07285	1.90107	0.1774035	0.17654051	3.1470705	21	4 25.9	21.9
497663	2006	<i>RF</i> ₇₉	17.9	X	273.23862	307.88690	143.80743	1.74897	0.1434154	0.26375018	2.4080982	21	10 8.4	20.6
497664	2006	<i>RW</i> ₈₂	18.3	X	316.05219	207.38089	195.53258	5.00065	0.1992286	0.26290451	2.4132595	21	10 7.4	20.0
497665	2006	<i>RN</i> ₈₇	18.6	X	341.93726	246.03253	151.61034	1.39941	0.1870231	0.26724942	2.3870318	21	12 2.5	20.3
497666	2006	<i>RW</i> ₈₉	18.1	X	343.96845	36.73873	329.02782	1.32962	0.1339386	0.26295523	2.4129492	21	10 11.9	20.4
497667	2006	<i>RL</i> ₉₂	18.1	X	58.00236	324.32943	353.65819	1.87199	0.1817400	0.27069808	2.3667148	21	12 10.0	21.4
497668	2006	<i>RL</i> ₉₄	16.1	X	216.49302	171.19852	213.81099	8.689						

ELEMENTS AND OPPOSITION DATES IN 2021

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2021 JULY 5.0 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>
497681 2006 SK ₂₆	18.0	X	34.38197	106.12812	213.61211	9.59284	0.2540281	0.26839010	2.3802636	21	11 24.7	20.8
497682 2006 SQ ₂₆	17.5	X	42.59386	299.20372	6.64456	6.84455	0.1946031	0.26816500	2.3815954	21	11 4.7	20.4
497683 2006 SN ₃₂	18.5	X	305.52566	222.31004	188.94903	0.89104	0.1781316	0.26236553	2.4165634	21	9 29.6	20.6
497684 2006 SP ₃₂	16.8	X	171.08264	244.02574	190.31501	5.07635	0.1854627	0.17405804	3.1769228	21	5 25.0	22.2
497685 2006 SS ₃₂	16.1	X	202.41199	59.75469	1.75834	26.18579	0.2053285	0.17788596	3.1311817	21	5 26.4	21.9
497686 2006 SP ₄₁	17.4	X	206.14215	206.82192	195.89045	0.59540	0.2403199	0.17599659	3.1535512	21	5 14.5	22.9
497687 2006 SU ₄₆	16.4	X	269.36880	38.55448	338.02510	11.47841	0.2120782	0.18563663	3.0434086	21	6 7.9	21.2
497688 2006 SD ₅₄	16.1	X	238.88151	142.64721	214.92346	16.73230	0.2572909	0.17784830	3.1316237	21	4 14.8	21.6
497689 2006 SP ₅₉	16.1	X	241.73847	92.08212	301.44204	15.08394	0.1119005	0.18267264	3.0762412	21	6 12.5	20.9
497690 2006 SH ₆₃	18.0	X	13.96914	150.16458	210.38038	10.99990	0.2484676	0.26887202	2.3774185	21	12 18.9	20.7
497691 2006 SO ₆₆	18.5	X	312.57333	235.56501	156.32549	0.41751	0.2254015	0.26113209	2.4241671	21	9 6.7	20.3
497692 2006 SP ₆₆	18.4	X	330.94854	200.19568	186.18382	3.35657	0.1710811	0.26424205	2.4051090	21	10 18.6	20.2
497693 2006 SO ₆₇	16.4	X	254.97518	324.58699	10.28346	5.41394	0.1344313	0.17658706	3.1465174	21	4 12.3	21.2
497694 2006 SB ₇₀	16.7	X	238.22206	187.31731	162.29026	1.54599	0.1743214	0.17404780	3.1770474	21	4 11.7	21.8
497695 2006 SR ₇₀	18.4	X	1.15903	170.49986	152.86900	1.33484	0.2114766	0.26025033	2.4296396	21	9 18.8	20.1
497696 2006 SZ ₇₁	16.9	X	242.35512	283.95644	78.07461	2.52744	0.1947060	0.17630868	3.1498286	21	4 28.7	21.9
497697 2006 SZ ₇₂	16.2	X	234.98047	350.43479	34.45573	11.76763	0.1717970	0.17735410	3.1374386	21	5 22.7	21.1
497698 2006 SO ₇₅	16.0	X	181.37136	280.04038	194.63894	25.25816	0.2084585	0.17911803	3.1168066	21	7 16.2	21.8
497699 2006 SZ ₇₅	18.3	X	330.49898	353.11231	39.39453	3.59517	0.1800867	0.26340083	2.4102271	21	10 26.9	20.0
497700 2006 SC ₈₀	17.0	X	229.71540	157.44069	203.25895	10.44898	0.0890017	0.17548910	3.1596279	21	4 22.6	21.8
497701 2006 SL ₈₅	16.2	X	188.19186	45.58618	14.02894	16.63687	0.2429968	0.17409072	3.1765252	21	5 16.1	21.9
497702 2006 SS ₈₅	18.4	X	8.94493	118.60973	206.61867	2.02930	0.2157437	0.26276436	2.4141175	21	10 10.9	20.4
497703 2006 SG ₈₇	18.0	X	353.88957	212.87230	178.92962	1.25917	0.1768095	0.26794812	2.3828803	21	12 16.9	20.1
497704 2006 SW ₉₄	18.1	X	336.50571	354.71794	22.20366	4.22697	0.2283428	0.26233561	2.4167472	21	10 16.2	19.4
497705 2006 SF ₉₇	16.3	X	239.96064	320.33369	21.62464	12.07262	0.0986922	0.17187066	3.2038208	21	4 9.9	21.1
497706 2006 SR ₉₇	18.3	X	332.98635	226.66678	184.33078	1.12598	0.1660590	0.26609081	2.3939558	21	12 1.4	20.3
497707 2006 SP ₉₈	18.1	X	331.55937	27.72332	15.87711	2.88700	0.1834617	0.26492025	2.4010025	21	11 15.9	19.8
497708 2006 SN ₁₀₃	18.2	X	285.59549	67.29802	357.59064	0.84169	0.1658621	0.26064163	2.4272073	21	9 14.6	20.6
497709 2006 SX ₁₀₄	16.5	X	219.60901	112.25593	290.61184	12.58557	0.3038233	0.17620099	3.1511119	21	5 20.5	22.3
497710 2006 SA ₁₀₆	18.1	X	355.77056	304.32441	39.28557	0.69856	0.2089816	0.26266010	2.4147563	21	10 9.5	19.8
497711 2006 SE ₁₀₆	16.8	X	278.55451	319.85190	17.83132	3.24020	0.1032504	0.17966237	3.1105079	21	5 15.9	21.3
497712 2006 SN ₁₁₄	16.6	X	210.81771	22.20156	56.11950	1.07044	0.1573320	0.18032383	3.1028966	21	7 3.1	21.7
497713 2006 SG ₁₁₆	16.4	X	258.61427	313.50939	22.15789	1.98545	0.1530842	0.17518081	3.1633339	21	4 15.7	21.4
497714 2006 SS ₁₁₇	17.0	X	212.03203	157.65361	205.97103	1.77954	0.1970193	0.17118896	3.2123206	21	4 4.6	22.5
497715 2006 SY ₁₁₉	17.6	X	32.08629	205.62827	121.85310	5.88525	0.2743321	0.26850851	2.3795638	21	12 5.4	20.5
497716 2006 SK ₁₃₁	16.6	X	266.60492	127.85808	212.06684	8.80137	0.2377319	0.18290316	3.0736559	21	4 19.9	21.4
497717 2006 SF ₁₃₄	16.6	X	276.93237	334.35440	13.37007	11.36304	0.2213143	0.18316258	3.0707530	21	5 8.0	21.3
497718 2006 SH ₁₃₄	18.0	X	346.52654	147.69164	227.52794	5.50141	0.2283381	0.26538030	2.3982269	21	11 10.9	19.7
497719 2006 SR ₁₄₅	16.6	X	291.07376	103.96349	192.43716	23.75312	0.2081543	0.17717068	3.1396035	21	3 26.3	21.3
497720 2006 SC ₁₅₀	17.9	X	345.26633	203.18600	202.23477	6.72330	0.1205219	0.26832055	2.3806749	21	12 14.1	20.2
497721 2006 SZ ₁₅₆	16.7	X	284.34295	135.59785	191.24553	4.68135	0.1429168	0.18145618	3.0899743	21	5 5.1	21.2
497722 2006 SB ₁₅₈	16.8	X	236.96110	275.39146	58.65548	2.59459	0.2062628	0.17413490	3.1759879	21	3 22.2	22.1
497723 2006 SO ₁₆₃	18.0	X	326.54898	208.75923	188.27638	5.73186	0.2256816	0.26270110	2.4145051	21	10 24.5	19.3
497724 2006 SG ₁₆₆	16.1	X	183.21300	255.63404	191.30141	25.89492	0.2122084	0.17828792	3.1264736	21	6 17.5	21.9
497725 2006 SD ₁₆₇	18.1	X	310.07523	189.16389	210.61852	4.38562	0.2305883	0.26142384	2.4223632	21	9 11.2	20.2
497726 2006 SN ₁₆₇	16.4	X	190.28508	179.19924	204.31638	7.91621	0.0630228	0.17175795	3.2052222	21	4 9.1	21.1
497727 2006 SB ₁₇₀	16.7	X	178.49195	246.70176	195.16996	15.79103	0.2222957	0.17626475	3.1503519	21	6 9.2	22.3
497728 2006 SH ₁₇₁	16.7	X	226.78600	205.71126	192.68163	8.55542	0.1814704	0.17994469	3.1072535	21	5 29.5	21.8
497729 2006 SW ₁₇₅	16.6	X	271.06399	156.82464	218.28088	4.63498	0.1826791	0.18463962	3.0543545	21	6 13.1	21.1
497730 2006 SP ₁₇₈	17.9	X	274.52043	264.15096	180.92938	6.80368	0.1030667	0.26391166	2.4071159	21	10 7.5	20.6
497731 2006 SV ₁₈₀	18.3	X	316.10720	250.62204	188.17558	1.30413	0.1360237	0.26962780	2.3729738	21	12 9.0	20.4
497732 2006 SS ₁₈₂	18.6	X	8.49417	106.63355	226.41945	0.63515	0.1938143	0.26338658	2.4103140	21	10 18.9	20.7
497733 2006 SQ ₁₈₄	16.3	X	248.61272	317.00550	25.02227	9.54919	0.0927987	0.17451863	3.1713306	21	4 18.8	21.0
497734 2006 SO ₁₈₆	16.4	X	269.99716	308.83997	19.96266	9.72392	0.1822336	0.17648239	3.1477614	21	4 15.3	21.3
497735 2006 SY ₁₉₂	16.3	X	215.06272	23.11684	18.60261	5.66031	0.2427257	0.17720258	3.1392267	21	5 18.7	21.7
497736 2006 ST ₂₀₃	17.0	X	233.86800	192.27404	175.61359	6.27773	0.1783436	0.17663749	3.1459185	21	4 30.1	22.1
497737 2006 ST ₂₀₅	18.1	X	19.90230	304.37684	35.30761	5.62254	0.2490966	0.26736902	2.3863199	21	11 28.3	20.6
497738 2006 SX ₂₀₆	18.5	X	348.69405	346.76911	18.68545	7.13864	0.1804824	0.26312498	2.4119113	21	10 24.3	20.3
497739 2006 SF ₂₁₃	16.4	X	340.22312	312.96042	318.25476	5.87817	0.1250316	0.18384731	3.0631237	21	5 12.8	20.2
497740 2006 SH ₂₁₅	15.9	X	230.65771	188.95659	189.02651	26.99066	0.0947297	0.17649194	3.1476478	21	5 15.5	21.0
497741 2006 SR ₂₁₅	18.4	X	35.44470	178.32747	128.56825	2.32772	0.2293107	0.26556135	2.3971367	21	11 4.4	21.0
497742 2006 SP ₂₁₆	18.4	X	8.35669	307.42134	51.39886	3.19517	0.1984437	0.26692531	2.3889636	21	11 27.9	20.7
497743 2006 SJ ₂₁₉	16.7	X	257.83024	78.02154	296.43860	1.42336	0.0728283	0.18458920	3.0549108	21	6 11.0	21.1
497744 2006 ST ₂₂₉	16.7	X	198.34476	197.34402	210.14975	7.78324	0.1459258	0.17575475	3.1564433	21	5 16.3	21.7
497745 2006 SU ₂₃₂	17.3	X	211.03144	117.95755	310.72502	2.86934	0.2782472	0.17913040	3.1166631	21	6 16.3	22.7
497746 2006 SE ₂₃₅	16.1	X	187.98935	222.69807	204.36858	10.27721	0.0933430	0.17791779	3.1308082	21	5 30.6	21.0
497747 2006 SF ₂₃₆	16.7	X	251.29986	211.02900	170.13933	11.78905	0.1478845	0.18415028	3.0597630	21	6 4.6	21.6
497748 2006 SJ ₂₃₉	18.3	X	319.07005	257.64340	160.13421	2.65430	0.1048665	0.26688573	2.3891998	21	11 13.8	20.5
497749 2006 SF ₂₄₀	17.5	X	258.49799	49.97556	29.96698	3.79324	0.2165664	0.25674480	2.4517054	21	8 20.7	20.9
497750 2006 SM ₂₄₂	16.7	X	248.41512	223.67770	122.88005	2.56350	0.1791517	0.17735413	3.1374381	21	4 17.5	21.6
497751 2006 SU ₂₄₇	18.0	X	327.77147	287.21440	122.17108	1.36679	0.2157739	0.26641103	2.3920371	21	11 18.8	19.5
497752 2006 SA ₂₄₈	16.4	X	281.00964	335.29255	10.85403	9.23954	0.0923787	0.18318479	3.0705048	21	5 29.8	20.8
497753 2006 SC ₂₄₈	16.7	X	24									

ELEMENTS AND OPPOSITION DATES IN 2021

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2021 JULY 5.0 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>		
497761	2006	SO ₂₉₇	17.7	X	17.32638	151.98967	186.48816	13.83811	0.1777656	0.26658522	2.3909950	21	11 13.3	20.4
497762	2006	SL ₃₀₃	16.3	X	166.27925	85.74185	345.07237	8.87385	0.0886705	0.17541112	3.1605644	21	5 8.8	21.3
497763	2006	SV ₃₀₉	16.5	X	190.12467	83.21240	7.22290	15.92440	0.2065140	0.17834895	3.1257603	21	6 29.3	22.1
497764	2006	SE ₃₁₀	16.3	X	230.29847	235.51488	200.85903	17.37507	0.2935958	0.18225109	3.0809830	21	7 6.3	21.9
497765	2006	SK ₃₁₀	18.5	X	319.58390	178.80001	242.05153	2.39232	0.1128923	0.26655053	2.3912025	21	11 17.9	20.8
497766	2006	SQ ₃₁₁	16.2	X	205.70197	43.51035	356.40730	7.87072	0.1619984	0.17520462	3.1630472	21	5 10.2	21.5
497767	2006	SG ₃₁₃	16.6	X	184.85112	33.96402	28.24221	10.12684	0.1177543	0.17471849	3.1689117	21	5 18.9	21.6
497768	2006	SG ₃₁₄	16.7	X	255.29832	263.99384	111.94237	2.16048	0.1927591	0.18106047	3.0944748	21	5 27.4	21.4
497769	2006	SV ₃₁₅	18.5	X	54.96078	194.06681	128.09419	2.18567	0.2011239	0.27057557	2.3674292	21	12 14.7	21.7
497770	2006	SF ₃₂₄	18.1	X	311.75378	281.87515	163.45131	3.67385	0.2360257	0.26691362	2.3890334	21	12 6.2	19.5
497771	2006	SU ₃₂₄	16.4	X	294.32394	249.18438	27.66448	10.36063	0.2036978	0.17415510	3.1757422	21	3 12.0	21.1
497772	2006	SP ₃₂₇	16.6	X	194.83506	335.53314	101.41619	2.44992	0.1739215	0.17655222	3.1469313	21	6 16.5	21.7
497773	2006	SO ₃₂₈	16.8	X	168.99192	24.21896	51.13936	6.39821	0.1770266	0.17183448	3.2042706	21	5 23.1	22.1
497774	2006	SS ₃₃₁	16.8	X	221.67103	34.47035	19.87198	9.72277	0.1578555	0.17778788	3.1323332	21	6 12.7	22.0
497775	2006	SB ₃₃₂	17.6	X	14.51341	99.20496	228.94796	4.02333	0.2388122	0.26272514	2.4173578	21	10 30.7	19.8
497776	2006	SM ₃₃₂	18.2	X	330.47565	63.57493	9.50115	5.07576	0.2039726	0.26722243	2.3871925	21	—	—
497777	2006	SG ₃₃₈	18.1	X	42.10590	272.63096	69.73678	3.22631	0.2094149	0.26510991	2.3998573	21	10 28.4	20.9
497778	2006	SX ₃₃₉	18.1	X	38.09301	289.72598	41.55357	6.81953	0.1328736	0.26834755	2.3805152	21	11 24.6	20.9
497779	2006	SV ₃₄₁	16.4	X	229.70957	23.43034	346.65466	6.73884	0.1715103	0.17508711	3.1644623	21	4 25.6	21.7
497780	2006	SL ₃₄₂	16.5	X	227.47220	172.77893	221.04461	10.03405	0.2267210	0.17732582	3.1377720	21	5 21.5	21.8
497781	2006	ST ₃₅₈	17.9	X	359.46860	219.43980	164.28718	4.14835	0.2117812	0.26775714	2.3840133	21	12 21.0	20.2
497782	2006	SR ₃₆₇	17.4	X	335.36240	191.09602	171.02527	9.05318	0.2741749	0.26634246	2.3924477	21	12 12.7	18.8
497783	2006	SV ₃₈₂	16.4	X	213.29247	259.04315	115.93495	13.09990	0.1419708	0.17031058	3.2233562	21	4 26.4	21.8
497784	2006	SB ₃₈₃	17.0	X	276.47734	200.15381	137.63619	2.00268	0.1824111	0.18187661	3.0852107	21	5 4.2	21.6
497785	2006	SY ₃₈₄	16.5	X	263.41591	226.08077	140.25377	11.22561	0.0644049	0.17907941	3.1172547	21	6 10.4	21.1
497786	2006	SA ₃₈₇	15.4	X	136.89451	198.91623	130.63521	3.83739	0.1931859	0.08656800	5.0609394	21	1 7.8	22.6
497787	2006	SP ₃₈₇	16.2	X	68.33120	2.83327	183.77803	27.03952	0.1024700	0.17637087	3.1490881	21	6 13.7	21.0
497788	2006	SQ ₃₉₂	18.5	X	358.62729	133.29730	26.90500	20.99913	0.0583287	0.35775591	1.9652215	21	—	—
497789	2006	SV ₃₉₇	16.2	X	164.09684	53.54699	22.37921	15.88223	0.1021872	0.17303980	3.1893735	21	5 12.8	21.3
497790	2006	SD ₄₀₀	16.9	X	30.16824	68.57030	268.84257	11.42100	0.2686356	0.26828075	2.3809104	21	12 14.3	19.7
497791	2006	SL ₄₀₀	17.1	X	191.25144	344.15542	69.20138	3.27081	0.1864179	0.17313069	3.1882571	21	5 16.4	22.3
497792	2006	SS ₄₀₁	16.8	X	182.39730	25.87223	45.18624	16.36759	0.0789836	0.17289228	3.1911874	21	5 26.7	21.7
497793	2006	SR ₄₀₂	17.2	X	233.54029	215.32759	165.98878	1.35978	0.1812151	0.17662220	3.1461000	21	5 14.6	22.3
497794	2006	ST ₄₀₂	16.5	X	163.86818	74.23885	35.35639	9.79466	0.0637067	0.17715362	3.1398051	21	6 25.3	21.3
497795	2006	SU ₄₀₂	15.8	X	191.01895	215.66640	203.42979	15.50641	0.0726393	0.17365266	3.1818651	21	5 24.5	20.8
497796	2006	SY ₄₀₈	18.4	X	25.24002	323.03520	26.26367	3.52573	0.1987425	0.26623794	2.3930738	21	12 11.5	21.2
497797	2006	SN ₄₁₀	17.1	X	247.26121	194.80146	203.02357	9.45005	0.0960068	0.18274709	3.0754056	21	6 24.9	21.8
497798	2006	TP ₃	18.3	X	355.91482	291.57008	71.03452	3.99238	0.1647164	0.26365500	2.4086778	21	11 4.9	20.3
497799	2006	TC ₅	16.4	X	221.08391	38.41955	34.07564	16.94591	0.2127807	0.18124626	3.0923597	21	7 2.2	21.8
497800	2006	TK ₈	17.8	X	327.42602	335.52714	41.62436	2.73306	0.1810997	0.25962605	2.4335328	21	9 24.4	19.5
497801	2006	TL ₁₅	16.5	X	290.85887	144.40632	206.07361	17.00399	0.2175790	0.18443567	3.0566058	21	6 1.0	21.0
497802	2006	TZ ₁₇	16.1	X	242.98755	328.69169	42.19130	13.58926	0.0781765	0.17606459	3.1527391	21	5 18.3	20.7
497803	2006	TC ₂₃	16.3	X	241.36322	166.85659	205.22124	12.40551	0.1206135	0.17519871	3.1631184	21	5 16.6	21.2
497804	2006	TP ₂₆	16.0	X	155.79313	65.71341	33.88254	18.60326	0.0573574	0.17372257	3.1810114	21	5 30.6	20.9
497805	2006	TS ₃₀	17.0	X	240.99184	338.14255	36.19827	1.99787	0.1977434	0.17680552	3.1439249	21	5 11.1	22.1
497806	2006	TW ₃₂	17.0	X	216.46643	180.99611	209.34006	8.79263	0.1766733	0.17422498	3.1748930	21	5 10.9	22.2
497807	2006	TC ₃₆	17.7	X	243.62539	219.49863	230.10815	4.27498	0.1675378	0.25302779	2.4756576	21	8 18.8	21.3
497808	2006	TJ ₄₀	16.4	X	226.12232	185.59329	215.49410	9.20316	0.1857017	0.17645912	3.1480381	21	5 31.5	21.6
497809	2006	TU ₅₁	15.9	X	254.54645	140.48240	221.48330	18.16109	0.1602755	0.17487555	3.1670140	21	5 13.3	20.8
497810	2006	TJ ₇₀	16.4	X	237.20448	106.37180	237.59866	4.40262	0.1464162	0.17144536	3.2091171	21	4 4.5	21.6
497811	2006	TW ₇₃	16.8	X	181.71098	325.82615	87.99623	4.05725	0.2804944	0.17048171	3.2211988	21	5 10.8	22.5
497812	2006	TP ₇₇	16.5	X	290.18920	127.38032	209.26373	21.97560	0.2043595	0.18085609	3.0968057	21	5 15.9	21.0
497813	2006	TL ₈₁	16.3	X	252.16919	136.06024	239.91557	9.53260	0.1043375	0.17771744	3.1331608	21	6 2.8	21.0
497814	2006	TX ₉₁	16.0	X	249.39183	349.19220	40.23653	17.99243	0.2058730	0.17871983	3.1214345	21	6 2.3	21.2
497815	2006	TX ₉₈	16.9	X	242.68476	186.69540	162.15457	0.96613	0.1859844	0.17414807	3.1758277	21	4 13.8	22.1
497816	2006	TF ₁₀₄	18.4	X	309.59328	209.66264	202.85213	4.74984	0.1909866	0.26049024	2.4281476	21	10 8.0	20.4
497817	2006	TN ₁₀₄	17.9	X	357.85668	267.05917	95.86102	2.13236	0.2086367	0.26353729	2.4093949	21	11 15.1	19.7
497818	2006	TG ₁₀₅	17.1	X	197.74522	282.40635	139.66100	1.57830	0.1718648	0.17415697	3.1757196	21	6 1.4	22.3
497819	2006	TX ₁₁₆	16.8	X	291.01918	161.90554	168.26887	9.87896	0.0581362	0.18013760	3.1050348	21	5 31.2	21.2
497820	2006	TZ ₁₁₉	16.9	X	165.93921	256.49487	180.41457	8.75240	0.0761292	0.17553428	3.1590859	21	5 20.3	21.8
497821	2006	TR ₁₂₁	18.1	X	343.24489	138.69956	230.81183	2.34535	0.2270788	0.26198086	2.4189284	21	10 21.6	19.7
497822	2006	TL ₁₂₄	16.7	X	196.27801	337.30066	63.85395	5.72421	0.1786946	0.17192058	3.2032006	21	5 6.7	21.9
497823	2006	TZ ₁₂₈	16.5	X	207.84724	174.74570	241.27274	8.69693	0.1271523	0.17529550	3.1619539	21	6 4.4	21.6
497824	2006	TE ₁₂₉	16.4	X	219.19259	25.76030	29.16105	10.86276	0.0862056	0.17819579	3.1275511	21	6 15.7	21.4
497825	2006	TC ₁₃₀	16.6	X	228.76686	211.56870	159.53766	15.83201	0.2863303	0.17517510	3.1634026	21	4 26.4	22.2
497826	2006	UU	16.7	X	200.60989	32.43833	31.02282	10.71296	0.2219792	0.17640587	3.1486715	21	6 2.3	22.2
497827	2006	UN ₄	18.3	X	23.06768	207.93014	138.54757	1.81228	0.2071909	0.26772631	2.3841963	21	12 6.8	20.9
497828	2006	UY ₁₈	16.5	X	205.25786	167.49980	226.09466	10.19297	0.0533426	0.17324327	3.1868757	21	5 7.9	21.1
497829	2006	UJ ₁₉	16.7	X	10.92468	9.28180	228.30425	8.45495	0.1477286	0.24374874	2			

ELEMENTS AND OPPOSITION DATES IN 2021

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2021 JULY 5.0 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>
497841 2006 UA ₅₉	16.9	X	164.10270	124.82852	337.97055	2.47195	0.1301510	0.17416237	3.1756539	21	6 19.7	21.9
497842 2006 UP ₆₅	18.6	X	335.35959	13.42709	353.26132	1.17881	0.1833595	0.26297165	2.4128487	21	9 25.4	20.2
497843 2006 UB ₇₃	18.0	X	284.73092	131.04365	332.43561	4.48837	0.1545568	0.26495999	2.4007624	21	11 9.6	20.5
497844 2006 US ₇₃	16.1	X	269.75346	306.16203	12.17860	15.90717	0.0827653	0.17276133	3.1927998	21	4 12.9	20.8
497845 2006 UK ₇₇	16.9	X	217.27387	90.43677	289.32163	3.59162	0.2030575	0.17322255	3.1871299	21	4 26.0	22.2
497846 2006 UA ₇₉	16.6	X	257.88358	344.18031	15.11130	10.44297	0.1771476	0.17803228	3.1294659	21	5 8.3	21.5
497847 2006 UR ₇₉	16.1	X	15.86505	188.26174	17.10135	12.48328	0.0182470	0.16924493	3.2368726	21	4 16.8	20.5
497848 2006 UV ₈₀	16.1	X	272.26169	145.23606	206.76482	27.20615	0.1468068	0.18070381	3.0985452	21	5 21.3	20.9
497849 2006 UG ₈₂	16.3	X	218.52962	26.56887	20.92964	10.11991	0.0958751	0.17612027	3.1520746	21	6 4.5	21.3
497850 2006 UE ₈₆	16.1	X	194.77890	202.16487	222.38399	13.53680	0.2294550	0.17557856	3.1585547	21	6 1.0	21.6
497851 2006 UE ₉₄	16.7	X	287.93638	156.74252	173.29863	3.63711	0.1493855	0.17828352	3.1265251	21	5 12.9	21.1
497852 2006 UC ₉₆	17.8	X	13.36096	229.97143	97.61374	2.57310	0.2069097	0.26196848	2.4190046	21	10 23.7	19.9
497853 2006 UW ₉₇	16.4	X	229.89777	195.80982	209.23627	15.69014	0.1109306	0.17780402	3.1321436	21	6 13.6	21.4
497854 2006 UE ₁₀₀	16.0	X	220.14154	172.89938	207.84408	22.54826	0.1522600	0.17253326	3.1956129	21	5 4.1	21.2
497855 2006 UL ₁₁₄	16.9	X	200.80271	198.76924	212.73103	3.67081	0.0959503	0.17511084	3.1641765	21	5 24.2	21.8
497856 2006 UR ₁₁₉	16.4	X	227.52615	157.81649	193.42500	4.67771	0.1663649	0.17140799	3.2095835	21	4 4.5	21.7
497857 2006 UR ₁₂₂	16.8	X	238.60957	312.19607	74.72991	3.03841	0.1132628	0.17802439	3.1295853	21	5 31.6	21.5
497858 2006 UG ₁₂₂	17.1	X	213.53872	2.17370	50.78035	4.38034	0.1392862	0.17688065	3.1430346	21	6 5.1	22.0
497859 2006 US ₁₂₂	18.3	X	287.50010	38.07356	50.30551	2.94568	0.1879638	0.26237186	2.4165245	21	10 20.2	20.7
497860 2006 UN ₁₃₄	18.1	X	245.37062	330.46107	138.87363	2.81723	0.1605127	0.25656192	2.4528703	21	9 20.6	21.4
497861 2006 UT ₁₃₈	17.6	X	264.00589	113.42994	353.52575	4.98914	0.0619503	0.26087706	2.4257467	21	10 25.9	20.5
497862 2006 UH ₁₃₉	16.4	X	268.22396	15.65340	322.23779	4.77439	0.1952364	0.17517447	3.1634102	21	4 21.6	21.3
497863 2006 UX ₁₅₇	16.4	X	157.13691	37.78216	37.46930	12.28158	0.0541193	0.17133582	3.2104847	21	5 5.1	21.2
497864 2006 US ₁₆₀	17.0	X	159.12760	331.64041	120.12264	2.50664	0.1869364	0.17226553	3.1989230	21	6 4.3	22.4
497865 2006 UJ ₁₆₃	18.2	X	353.97573	295.53814	55.03324	5.79049	0.0846762	0.26076251	2.4264571	21	10 7.9	20.7
497866 2006 UO ₁₆₃	16.8	X	251.88607	292.64014	55.81133	6.12395	0.1265399	0.17522505	3.1628014	21	4 28.0	21.5
497867 2006 UV ₁₆₆	16.6	X	262.16339	336.46140	43.43115	15.88944	0.0710656	0.18120152	3.0928687	21	6 22.4	21.2
497868 2006 UV ₁₇₄	17.6	X	35.82735	311.36053	38.78727	8.13718	0.1396512	0.27127779	3.2633419	21	12 18.9	20.6
497869 2006 UC ₁₈₉	16.5	X	244.43262	81.28094	286.07055	8.47753	0.2971381	0.17807941	3.1289137	21	4 25.7	22.1
497870 2006 UT ₁₉₅	18.1	X	30.81652	176.27683	196.62532	6.27229	0.1271728	0.27400319	2.3476443	21	—	—
497871 2006 UU ₁₉₆	17.8	X	346.45439	340.05815	41.42030	4.36116	0.0893843	0.26309669	2.4120842	21	11 7.0	20.3
497872 2006 UH ₁₉₇	18.7	X	312.37351	204.30331	190.12775	0.67518	0.1594843	0.25821565	2.4423862	21	9 19.1	20.9
497873 2006 US ₁₉₇	16.8	X	231.05062	307.22338	62.30372	2.32717	0.1803084	0.17277375	3.1926468	21	4 28.5	21.9
497874 2006 UJ ₂₀₉	16.9	X	234.43444	182.21791	207.04932	10.68145	0.2433690	0.17699976	3.1416244	21	5 21.2	22.2
497875 2006 UN ₂₁₁	16.2	X	300.84405	270.82744	29.26257	15.53549	0.1084381	0.17275907	3.1928277	21	4 25.9	20.7
497876 2006 UO ₂₁₃	16.1	X	260.26539	284.23329	43.89452	15.76608	0.2119795	0.17135094	3.2102958	21	4 7.9	21.3
497877 2006 UF ₂₁₄	16.1	X	271.53790	94.29179	251.43858	8.11570	0.0942865	0.17456949	3.1707146	21	5 19.4	20.6
497878 2006 UF ₂₁₉	15.9	X	215.34101	45.84502	24.33285	16.93025	0.2070823	0.17869240	3.1217539	21	6 23.8	21.4
497879 2006 UZ ₂₂₁	16.0	X	214.17469	183.17409	213.19808	16.24435	0.1624328	0.17679674	3.1440290	21	5 16.7	21.1
497880 2006 US ₂₂₇	17.1	X	62.23814	264.40350	51.37804	10.46378	0.2625169	0.27119618	2.3638160	21	12 20.3	20.8
497881 2006 UC ₂₃₉	18.3	X	274.61349	80.64788	331.13322	1.55931	0.1792140	0.25423340	2.4678247	21	8 6.8	21.2
497882 2006 UF ₂₄₃	18.4	X	346.67655	216.02835	196.21745	2.92809	0.1375176	0.26984921	2.3716756	21	12 28.5	20.7
497883 2006 UC ₂₅₁	17.9	X	1.53438	125.08609	221.53680	3.95594	0.1824550	0.26216869	2.4177729	21	10 23.4	19.8
497884 2006 UD ₂₅₄	16.9	X	230.78141	324.74624	75.75919	0.73855	0.1870122	0.17703911	3.1411589	21	6 3.4	22.1
497885 2006 UC ₂₆₁	18.0	X	2.72744	110.85447	203.03816	1.85804	0.2082347	0.25604142	2.4561934	21	9 4.4	19.7
497886 2006 UL ₂₆₆	17.8	X	283.42680	228.78911	170.92491	1.29654	0.1386070	0.25395262	2.4696434	21	8 8.9	20.7
497887 2006 UM ₂₆₆	17.8	X	24.36382	287.84243	44.75177	8.41184	0.3182165	0.26621887	2.3931880	21	12 6.4	20.6
497888 2006 UQ ₂₇₄	17.2	X	210.76715	231.40029	196.19960	9.96305	0.2205768	0.17840644	3.1250889	21	6 17.1	22.6
497889 2006 UO ₂₇₅	18.5	X	308.35036	319.60600	76.33588	2.42186	0.1944134	0.25891297	2.4379989	21	9 9.9	20.7
497890 2006 UC ₂₇₈	17.0	X	166.36562	77.00455	14.98985	1.04618	0.1665541	0.17252749	3.1956841	21	6 9.8	22.2
497891 2006 UF ₂₇₉	16.1	X	234.59290	337.07351	48.05943	11.67523	0.2329089	0.17617959	3.1513671	21	5 15.6	21.5
497892 2006 UB ₂₈₃	18.7	X	316.62282	108.53971	302.26173	1.18712	0.2063342	0.26163656	2.4210500	21	10 20.3	20.5
497893 2006 UZ ₂₈₇	18.2	X	68.62760	102.44574	200.22129	3.95303	0.0893192	0.26585391	3.2953778	21	11 20.6	21.4
497894 2006 UR ₂₈₈	16.5	X	259.32614	47.91787	290.87659	4.05943	0.1667027	0.17555850	3.1587953	21	4 17.0	21.4
497895 2006 UQ ₃₀₂	16.0	X	9.60239	233.72889	3.36619	9.42871	0.0551662	0.18205002	3.0832511	21	5 16.4	20.1
497896 2006 UR ₃₂₂	18.6	X	272.28969	80.73936	26.11278	1.72626	0.1554521	0.26183682	2.4198154	21	10 25.4	21.1
497897 2006 UH ₃₂₃	16.3	X	217.22994	44.32578	1.18255	8.03248	0.1099461	0.18182245	3.0858232	21	5 30.7	21.2
497898 2006 UJ ₃₂₃	16.7	X	211.45914	227.45690	173.89452	11.09551	0.1219236	0.17996704	3.1069963	21	5 23.0	21.8
497899 2006 UM ₃₄₀	17.7	X	246.82347	97.40583	37.53674	6.16860	0.1376690	0.26024312	2.4296845	21	10 29.9	20.8
497900 2006 UT ₃₅₈	18.0	X	352.57467	272.92589	96.86049	3.49792	0.2084849	0.26301953	2.4125559	21	11 14.5	19.8
497901 2006 UR ₃₅₉	17.6	X	344.78960	103.49941	229.25188	6.15145	0.1212644	0.25420773	2.4679909	21	8 18.7	20.1
497902 2006 UU ₃₅₉	17.8	X	283.96065	358.88634	92.73751	3.11202	0.1435431	0.26248995	2.4157998	21	10 26.5	20.2
497903 2006 VU ₅	18.2	X	344.11474	350.98404	64.16654	2.65537	0.1612045	0.26650486	2.3914757	21	12 30.2	20.4
497904 2006 VH ₇	18.1	X	320.20388	189.68633	233.71423	2.09893	0.2128933	0.26261296	2.4150453	21	11 20.4	19.8
497905 2006 VC ₈	18.2	X	352.11705	66.80922	329.33404	4.14106	0.1626205	0.26668233	2.3904146	21	12 12.4	20.5
497906 2006 VB ₁₉	18.0	X	349.53426	345.44878	5.35811	1.84392	0.2265748	0.26001830	2.4310848	21	10 6.3	19.4
497907 2006 VA ₂₀	17.8	X	284.66258	169.52608	250.31995	1.81883	0.1836753	0.25571971	2.4582530	21	8 31.9	20.7
497908 2006 VM ₂₆	17.7	X	300.39731	342.44623	62.60835	3.45924	0.1895744	0.25624714	2.4548787	21	9 9.1	20.1
497909 2006 VV ₂₆	18.2	X	290.76995	190.29472	242.74753	0.63598	0.1619647	0.25825676	2.4421270	21	10 5.7	20.5
497910 2006 VT ₃₈	17.9	X	298.80280	187.33343	242.84896	3.31712	0.0904260	0.26082279	2.4260832	21	10 25.1	20.4
497911 2006 VQ ₄₀	18.0	X	17.47355	256.10477	62.70575	3.68696	0.2063000	0.25934397	2.4352971	21	10 17.8	20.2
497912 2006 VS ₄₅	15.8	X	234.03464	92.23785	279.12276	23.36046	0.3494904	0.17697921	3.1418676	21	4 15.3	22.0
497913 2006 VZ ₄₆	16.5	X	207.25200	9								

ELEMENTS AND OPPOSITION DATES IN 2021

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2021 JULY 5.0 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>
497921 2006 VG ₈₂	17.0	X	223.22730	33.06282	12.55908	2.88516	0.1244919	0.17531303	3.1617432	21	6 6.5	21.9
497922 2006 VC ₉₇	18.3	X	344.06997	101.06532	237.95351	1.59953	0.1778480	0.25849407	2.4406321	21	8 29.5	20.2
497923 2006 VJ ₉₈	16.3	X	240.54726	319.35932	53.40061	5.94413	0.1719588	0.17313132	3.1882494	21	5 11.3	21.3
497924 2006 WV ₁₀₇	16.3	X	210.59849	21.80860	51.27193	15.50898	0.2632735	0.17510092	3.1642960	21	6 20.5	22.0
497925 2006 VT ₁₁₇	18.3	X	297.31281	139.16227	275.97340	1.63839	0.1861660	0.25708148	2.4495644	21	9 15.9	20.6
497926 2006 VL ₁₂₁	15.6	X	233.44743	156.49670	244.91233	13.54864	0.2849790	0.17786203	3.1314626	21	5 31.3	21.0
497927 2006 VP ₁₂₅	18.6	X	329.51070	17.77279	31.23076	2.69480	0.2055371	0.26232711	2.4167994	21	11 19.9	20.3
497928 2006 VJ ₁₃₁	16.5	X	189.03053	358.84601	92.40659	2.68394	0.0907924	0.17455261	3.1709190	21	6 29.9	21.3
497929 2006 VX ₁₃₈	18.0	X	345.99609	154.29903	232.20959	5.82874	0.1367818	0.26184293	2.4197777	21	11 17.3	20.2
497930 2006 VY ₁₄₃	15.6	X	233.72538	121.35039	254.58269	19.23778	0.1949982	0.17507061	3.1646611	21	5 5.3	21.0
497931 2006 VW ₁₇₁	18.0	X	308.56549	157.45392	232.71033	2.27405	0.2021796	0.25485026	2.4638409	21	8 27.4	20.2
497932 2006 WX ₂₈	17.9	X	312.18919	333.28485	60.82454	2.31462	0.1870490	0.25712250	2.4493038	21	9 16.0	19.9
497933 2006 WB ₃₂	18.0	X	285.20587	306.62337	86.84421	6.22289	0.1190790	0.25189294	2.4830877	21	8 7.9	20.9
497934 2006 WZ ₄₃	18.0	X	302.10319	215.95642	190.74531	4.31324	0.1764754	0.25703798	2.4498407	21	9 14.1	20.2
497935 2006 WN ₄₅	16.4	X	143.65332	156.91468	200.40724	9.81535	0.1519477	0.15561166	3.4232711	21	1 27.9	21.8
497936 2006 WO ₄₅	15.8	X	325.25986	79.28309	213.74290	22.49446	0.0939384	0.17695693	3.1421313	21	5 24.6	20.1
497937 2006 WP ₅₇	18.1	X	144.42740	135.53183	230.15815	18.86613	0.0786598	0.35769746	1.9654356	21	—	—
497938 2006 WS ₇₂	18.5	X	341.66406	8.36858	38.91278	2.80582	0.1895833	0.26499819	2.4005317	21	12 15.9	20.4
497939 2006 WS ₉₆	17.9	X	358.45314	310.68284	60.21223	4.00075	0.2023970	0.26290337	2.4132665	21	11 26.7	19.9
497940 2006 WP ₁₀₄	18.1	X	228.62903	348.15020	143.02806	1.11984	0.1483995	0.25433449	2.4671708	21	9 30.7	21.6
497941 2006 WB ₁₁₀	18.4	X	303.98623	233.07793	184.81932	1.74330	0.1815075	0.25728674	2.4482614	21	10 5.6	20.4
497942 2006 WX ₁₁₀	18.3	X	318.49696	280.99700	159.63549	1.46099	0.1533519	0.26354657	2.4093384	21	12 14.7	20.2
497943 2006 WA ₁₃₃	18.1	X	286.04036	30.08266	60.74317	2.14135	0.1536928	0.26010297	2.4305572	21	10 25.9	20.4
497944 2006 WQ ₁₃₅	18.2	X	319.28834	297.09842	123.94059	3.74052	0.2001456	0.26197643	2.4189556	21	11 15.8	19.9
497945 2006 WK ₁₄₆	16.4	X	224.23483	336.04377	82.24938	11.85034	0.2183660	0.17650522	3.1474899	21	6 17.0	21.5
497946 2006 WY ₁₄₇	16.4	X	230.99419	333.07137	63.02877	15.54783	0.1289404	0.17361819	3.1822862	21	6 1.9	21.4
497947 2006 WV ₁₄₉	18.0	X	278.51543	150.09176	271.42774	4.89355	0.1225803	0.25207080	2.4681915	21	9 1.9	21.2
497948 2006 WR ₁₅₀	16.8	X	133.40509	326.42218	201.46871	4.13391	0.1809310	0.23977724	2.5860438	21	8 12.9	21.0
497949 2006 WK ₁₅₈	18.1	X	32.10217	257.35324	85.09478	6.97161	0.1542733	0.26279181	2.4139494	21	12 4.9	20.9
497950 2006 WP ₁₇₉	16.9	X	231.13620	145.02403	229.46987	3.74909	0.2055267	0.17216296	3.2001934	21	5 2.4	22.2
497951 2006 WD ₁₈₈	17.5	X	249.89178	238.20206	258.49104	3.98557	0.1436074	0.25927003	2.4357601	21	11 3.3	20.4
497952 2006 WF ₁₉₅	16.1	X	221.23560	314.08637	76.56111	6.14165	0.1954116	0.17220643	3.1996548	21	5 14.8	21.5
497953 2006 WW ₂₀₅	17.0	X	165.77987	207.50732	280.81684	11.23892	0.0915125	0.23701799	2.5859206	21	7 21.4	20.9
497954 2006 XG ₁₁	16.1	X	158.72597	187.24476	255.65661	9.09377	0.0623053	0.16905343	3.2393165	21	5 17.1	20.9
497955 2006 XX ₁₂	17.8	X	337.20107	339.19886	65.82262	3.60238	0.1954903	0.26210379	2.4181719	21	12 2.1	19.3
497956 2006 XE ₁₉	17.8	X	322.44260	9.05732	94.32781	9.19838	0.1829990	0.26522550	2.3991599	21	—	—
497957 2006 XD ₃₄	16.2	X	146.71379	102.31006	73.68009	13.34432	0.2252442	0.24170888	2.5523544	21	9 14.3	20.8
497958 2006 XG ₃₅	17.5	X	330.02932	341.94023	93.62578	5.81912	0.1613013	0.26283066	2.4137115	21	12 31.2	19.6
497959 2006 XZ ₄₉	15.5	X	81.56005	159.11286	286.98484	9.85032	0.0568926	0.14633113	3.5665220	21	2 19.3	20.6
497960 2006 XP ₅₁	15.6	X	183.99194	179.61467	257.02748	16.35816	0.1618888	0.17211570	3.2007793	21	6 6.8	20.7
497961 2007 AC ₈	15.8	X	116.43374	206.89817	316.48846	28.32559	0.1758258	0.23065785	2.6332407	21	7 26.9	19.9
497962 2007 AA ₂₈	17.4	X	63.91779	90.63227	129.32245	13.38987	0.1190095	0.23227760	2.6209848	21	7 24.5	20.8
497963 2007 AD ₂₉	18.0	X	210.82978	324.84621	145.34488	2.41056	0.1680859	0.24163850	2.5528500	21	8 12.4	22.1
497964 2007 AT ₂₉	17.2	X	92.92791	267.00313	312.21261	13.15090	0.1002086	0.23799274	2.5788549	21	8 25.9	20.8
497965 2007 BQ ₁	17.2	X	192.52566	162.71235	324.57140	5.43671	0.2105777	0.24080593	2.5587308	21	8 15.4	21.3
497966 2007 BO ₁₁	16.7	X	21.71951	120.36667	114.11466	13.34346	0.1273331	0.22544981	2.6736392	21	6 6.9	19.7
497967 2007 BF ₂₂	17.0	X	174.04217	212.32262	311.05275	16.14417	0.0933698	0.24421585	2.5348571	21	9 8.9	21.0
497968 2007 BW ₃₂	17.9	X	218.52891	334.91407	127.23769	2.67357	0.1178989	0.24287382	2.5441863	21	8 14.4	21.4
497969 2007 BO ₃₃	17.5	X	118.45144	225.89625	298.22221	3.99058	0.1697837	0.23293811	2.6160278	21	7 24.5	21.5
497970 2007 BB ₃₉	16.7	X	53.58669	292.90722	294.72246	11.74776	0.2088732	0.22970051	2.6405521	21	8 1.9	19.9
497971 2007 BU ₄₁	17.2	X	262.35300	111.95236	302.15539	4.51950	0.1824030	0.24403312	2.5361224	21	7 23.8	20.8
497972 2007 BL ₇₉	17.9	X	207.54874	164.77051	326.97861	14.94612	0.1429095	0.24244756	2.5471675	21	9 4.8	21.8
497973 2007 BG ₈₀	16.6	X	104.54399	256.98921	311.03884	27.08721	0.0826895	0.23941500	2.5686315	21	8 19.2	20.4
497974 2007 BQ ₁₀₁	18.0	X	345.27194	265.47662	123.98951	6.17467	0.1891947	0.25372545	2.4711173	21	11 24.6	20.1
497975 2007 CZ ₁₀	16.5	X	194.18165	279.13433	138.13500	10.65211	0.1894131	0.16249503	3.3259010	21	5 26.1	22.2
497976 2007 CT ₁₆	17.6	X	189.39383	89.06983	55.62284	5.67156	0.1915664	0.24155074	2.5534683	21	9 7.1	21.8
497977 2007 CO ₂₇	18.2	X	350.00050	274.09701	132.30279	3.52837	0.2435737	0.26176439	2.4202617	21	—	—
497978 2007 CS ₂₉	17.8	X	182.56920	177.89303	313.53802	7.64195	0.1072196	0.23922767	2.5699723	21	8 13.6	21.8
497979 2007 CF ₃₇	17.6	X	56.74172	248.63266	319.72080	10.92324	0.1502930	0.22641273	2.6660533	21	7 3.8	20.9
497980 2007 CM ₄₅	17.1	X	159.50810	65.04397	115.31766	6.73136	0.1266856	0.24210011	2.5496039	21	9 25.6	21.1
497981 2007 CA ₅₈	16.5	X	67.65843	34.33899	96.77144	11.26196	0.1587857	0.21648078	2.7469862	21	4 10.6	19.9
497982 2007 CJ ₇₉	17.0	X	70.32727	203.94803	3.07236	14.05808	0.2687805	0.22567120	2.6718903	21	8 14.3	20.9
497983 2007 DS ₁₅	17.1	X	242.30684	287.40058	136.62775	17.23664	0.0962026	0.23732497	2.5836902	21	7 23.8	20.9
497984 2007 DR ₁₈	17.5	X	7.71840	72.80483	156.81387	11.18204	0.2264906	0.21655940	2.7463214	21	5 3.4	20.0
497985 2007 DT ₁₈	17.8	X	178.34171	3.93717	151.62553	8.98330	0.0992700	0.23943423	2.5684940	21	9 11.4	21.7
497986 2007 DC ₂₃	17.7	X	225.86302	304.51085	159.12279	16.93874	0.0739698	0.23959253	2.5673625	21	8 28.9	21.2
497987 2007 DF ₂₄	17.6	X	74.24451	238.30118	319.02749	1.73691	0.1473884	0.22540459	2.6739968	21	7 12.8	21.1
497988 2007 DK ₃₀	17.0	X	69.96809	47.99124	155.82185	13.55423	0.1031325	0.22569872	2.6716731	21	7 7.8	20.6
497989 2007 DD ₄₀	17.4	X	96.12393	178.43001	34.38371	3.87174	0.1889383	0.23550877	2.5969564	21	9 6.1	21.2
497990 2007 DC ₄₄	17.2	X	46.07920	101.02052	170.43359	14.45840	0.0903179	0.23422430	2.6064421	21	9 2.9	20.5
497991 2007 DH ₅₂	16.5	X	99.89104	226.90412	354.98447	14.98955	0.0675199	0.23223268	2.6213228	21	9 7.9	20.1
497992 2007 DT ₆₆	17.4	X	351.35723	275.31423	354.00595	14.68856	0.2726561	0.21816620	2.7328202	21	5 7.7	20.0
497993 2007 DA ₇₅	17.9	X	330.94571	303.04386	148.65784	1.62865						

ELEMENTS AND OPPOSITION DATES IN 2021

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2021 JULY 5.0 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>		
498001	2007	EY ₅₉	16.6 ^m	X	135.48929	164.85646	9.43936	17.71826	0.1302599	0.22982824	2.6395737	21	8 28.5	20.9
498002	2007	EA ₆₇	17.5	X	115.96066	54.00076	144.53524	4.54728	0.1377453	0.23139441	2.6276497	21	9 1.9	21.5
498003	2007	EK ₈₄	17.7	X	267.74804	7.33850	85.48593	4.25159	0.1129879	0.24444267	2.5332888	21	10 5.7	20.8
498004	2007	EP ₈₄	17.4	X	350.25258	218.90933	105.28204	5.02019	0.0435315	0.23238026	2.6202128	21	8 19.1	20.6
498005	2007	ET ₉₉	17.4	X	354.51668	288.19639	356.64982	17.85418	0.3819506	0.21782215	2.7356972	21	6 3.5	19.4
498006	2007	EZ ₁₀₂	17.1	X	115.65202	42.78375	166.53611	13.57850	0.1181296	0.23282417	2.6168812	21	9 13.7	20.8
498007	2007	EC ₁₁₄	17.9	X	263.93997	318.25883	130.74877	5.22372	0.1167619	0.24401999	2.5362133	21	9 24.1	21.1
498008	2007	ER ₁₁₇	17.4	X	28.15933	225.57033	34.95015	9.48093	0.1754180	0.22060747	2.7126218	21	8 4.6	20.5
498009	2007	EU ₁₂₁	17.7	X	225.58509	11.26443	88.77019	6.49267	0.0738315	0.23940977	2.5686689	21	8 26.9	21.3
498010	2007	EK ₁₃₈	16.8	X	39.28017	26.30322	132.71158	9.24488	0.0863834	0.21545707	2.7556806	21	3 22.1	20.1
498011	2007	EM ₁₄₀	17.2	X	353.16186	274.81159	325.06463	8.17923	0.1950086	0.21606379	2.7505195	21	4 8.7	20.1
498012	2007	EF ₁₄₇	17.8	X	32.60716	62.97925	155.99624	7.87688	0.1644013	0.21877000	2.7277896	21	6 7.5	20.8
498013	2007	EJ ₁₅₃	16.7	X	206.35745	209.69155	139.57473	7.54872	0.0346709	0.21025320	2.8009647	21	3 13.8	20.7
498014	2007	EC ₁₉₁	16.7	X	235.15930	77.20029	12.79527	22.31011	0.0340667	0.23290698	2.6162609	21	9 6.7	20.5
498015	2007	EU ₁₉₃	17.8	X	187.53556	316.33960	192.05533	15.21531	0.1295934	0.23606728	2.5928587	21	9 6.7	21.9
498016	2007	EX ₁₉₇	16.8	X	194.37379	258.12708	198.13746	21.35916	0.0733210	0.22695320	2.6618189	21	7 9.1	21.2
498017	2007	EE ₂₁₇	16.8	X	204.50191	107.26410	4.66047	22.13609	0.0183198	0.23297036	2.6157864	21	8 28.6	20.6
498018	2007	FQ ₄	17.0	X	59.39945	239.60768	348.01131	10.94452	0.1451585	0.22654113	2.6650458	21	8 5.3	20.4
498019	2007	FY ₅	16.8	X	347.50751	338.51666	11.99470	12.68971	0.1978840	0.23727770	2.5840332	21	9 25.8	18.8
498020	2007	FA ₁₇	17.8	X	45.66173	270.91828	332.37404	4.20965	0.1997057	0.22733946	2.6588031	21	8 11.9	20.8
498021	2007	FS ₁₉	17.2	X	335.22168	129.05866	181.09904	10.91070	0.2067601	0.22334464	2.6904135	21	6 18.9	20.1
498022	2007	FS ₂₄	17.3	X	68.08124	78.46408	170.49392	3.72592	0.1511719	0.23146686	2.6271014	21	9 13.5	20.6
498023	2007	FK ₄₃	16.8	X	183.34364	206.11819	308.11675	11.57080	0.2173423	0.23730336	2.5838470	21	9 5.3	21.3
498024	2007	GD ₄	16.8	X	61.53780	89.04990	145.54649	14.01556	0.2549107	0.22304681	2.6928079	21	9 2.2	20.4
498025	2007	GF ₅	17.1	X	121.54999	81.41326	180.52389	8.06758	0.1735405	0.22779912	2.6552252	21	8 16.7	21.3
498026	2007	GU ₈	16.7	X	323.65900	344.28143	23.67538	16.06136	0.0874183	0.23147836	2.6270144	21	9 12.1	20.0
498027	2007	GP ₁₈	17.1	X	37.01399	232.82743	33.44184	12.09666	0.0484830	0.22358603	2.6884767	21	8 13.4	20.8
498028	2007	GH ₃₁	16.7	X	46.10576	50.49838	209.62155	16.97550	0.1760019	0.22324307	2.6912295	21	8 26.0	20.3
498029	2007	GT ₃₄	17.0	X	5.84741	92.14764	177.51761	12.62588	0.1536855	0.22115240	2.7081369	21	6 26.6	20.0
498030	2007	GV ₄₇	16.7	X	63.40360	205.78768	55.45790	15.67047	0.0353325	0.22651033	2.6652874	21	9 15.1	20.6
498031	2007	GP ₆₀	17.3	X	3.56012	335.85065	336.88149	3.31489	0.1436577	0.22427658	2.6829553	21	8 26.8	19.9
498032	2007	HM ₅	17.5	X	180.37571	347.10977	181.94586	32.24577	0.1032120	0.23779077	2.5803149	21	9 29.9	21.4
498033	2007	HF ₂₅	16.9	X	322.67224	322.83401	74.13422	5.56258	0.1294108	0.23278741	2.6171567	21	10 14.5	19.6
498034	2007	HK ₃₄	17.4	X	323.08502	89.43938	213.37555	3.05771	0.2382475	0.21198153	2.7857194	21	5 10.4	20.4
498035	2007	HR ₄₀	16.5	X	331.16230	261.96889	45.62557	14.01796	0.1517107	0.21660588	2.7459285	21	6 12.0	19.7
498036	2007	HF ₅₉	17.6	X	27.79800	198.22442	44.19949	3.93596	0.1398901	0.21828836	2.7318006	21	6 29.4	20.5
498037	2007	HY ₆₁	17.2	X	112.84269	24.51247	148.02589	2.32405	0.0247653	0.22486246	2.6782929	21	7 11.6	20.8
498038	2007	HG ₈₃	16.9	X	339.14821	30.48767	259.45982	3.43998	0.1207604	0.21576353	2.7530706	21	6 6.5	19.8
498039	2007	HD ₉₅	16.9	X	66.36145	349.22722	221.05128	7.99131	0.1061031	0.21735358	2.7396275	21	7 10.8	20.6
498040	2007	JN ₁₄	16.7	X	298.00639	343.49074	41.52786	13.85051	0.1191430	0.22686228	2.6625300	21	8 20.3	20.2
498041	2007	JG ₃₈	17.6	X	9.94170	50.73138	185.67247	4.34081	0.1428773	0.21235057	2.7824909	21	5 17.7	20.5
498042	2007	JM ₄₀	18.3	X	281.22110	32.27039	226.34311	17.18467	0.1782480	0.40600962	1.8062527	21	—	—
498043	2007	LV ₁₅	17.2	X	123.46645	58.57066	144.54232	9.89239	0.0911348	0.22689817	2.6622493	21	9 12.9	21.2
498044	2007	LY ₁₉	17.0	X	216.82255	258.42954	173.21313	6.63685	0.0323395	0.21838207	2.7310190	21	7 8.7	20.9
498045	2007	OC ₁₁	18.5	X	82.28560	24.57880	175.99778	1.96378	0.1816705	0.29509526	2.2344634	21	12 17.2	21.7
498046	2007	PT ₂₇	18.0	X	79.60055	146.61936	178.35811	3.41970	0.2982574	0.30028890	2.2085634	21	—	—
498047	2007	PR ₃₀	18.2	X	43.92410	102.76348	243.74136	4.47445	0.2616161	0.29521660	2.2337893	21	—	—
498048	2007	QX ₁₀	18.7	X	91.23971	136.03676	177.88453	2.75472	0.1910535	0.29881650	2.2158125	21	—	—
498049	2007	RW ₄₂	18.4	X	46.02464	66.92803	263.95942	2.80101	0.2489102	0.29172914	2.2515564	21	12 25.9	21.4
498050	2007	RV ₄₃	16.5	X	211.95801	209.29286	204.48082	10.11004	0.1052673	0.19371129	2.9582356	21	6 6.6	21.1
498051	2007	RH ₄₅	16.1	X	181.71652	70.94832	326.79319	8.91764	0.0781667	0.18588808	3.0406634	21	4 12.5	20.9
498052	2007	RO ₄₅	17.3	X	287.48006	122.38719	250.69974	3.51779	0.1453477	0.20211495	2.8756571	21	7 6.1	21.0
498053	2007	RF ₄₆	16.4	X	163.43564	241.83300	201.03453	9.57326	0.0631638	0.19052611	2.9211146	21	5 22.9	20.9
498054	2007	RF ₄₈	17.1	X	301.15834	318.95782	12.34915	5.07664	0.1203124	0.19698363	2.9953823	21	6 2.8	21.0
498055	2007	RH ₅₁	17.8	X	0.39807	66.33111	316.53324	5.87577	0.2206877	0.28853234	2.2681567	21	12 30.1	19.9
498056	2007	RT ₅₃	16.1	X	209.74864	59.17933	325.02137	7.81228	0.1284702	0.18804986	3.0173154	21	4 24.3	21.1
498057	2007	RT ₅₇	18.1	X	11.08131	316.28590	31.40856	4.98949	0.1720714	0.28287677	2.2982884	21	11 15.4	20.2
498058	2007	RM ₆₁	17.4	X	286.95089	50.35032	223.77355	0.40676	0.2017267	0.18998904	2.9967488	21	2 22.9	22.0
498059	2007	RA ₇₀	18.2	X	82.55255	163.41088	153.89807	6.22263	0.1774619	0.29726619	2.235098	21	—	—
498060	2007	RO ₉₇	18.6	X	17.02298	357.13772	49.81057	3.90504	0.1832029	0.29462348	2.2367862	21	—	—
498061	2007	RV ₉₇	16.3	X	194.73299	357.39923	32.45147	9.60996	0.1411874	0.18460247	3.0547643	21	4 20.8	21.2
498062	2007	RU ₁₀₄	18.1	X	53.01340	12.87322	354.33259	5.49727	0.2492932	0.29818521	2.2189388	21	—	—
498063	2007	RB ₁₀₉	18.2	X	315.14766	225.77409	192.72647	2.38305	0.1738612	0.28502363	2.2867330	21	11 8.8	19.8
498064	2007	RJ ₁₀₉	18.0	X	42.44157	203.07930	191.66193	4.00711	0.1577301	0.29898419	2.2149839	21	—	—
498065	2007	RF ₁₃₃	18.1	X	46.50708	307.23064	8.10068	10.81042	0.2024527	0.28890048	2.2662294	21	11 26.5	21.2
498066	2007	RM ₁₃₃	18.1	X	107.94539	180.99389	106.11047	10.74536	0.4401425	0.29996947	2.2101310	21	12 30.9	22.6
498067	2007	RC ₁₃₄	17.9	X	72.19311	244.25218	52.86233	3.77065	0.2449538	0.29261050	2.2470330	21	12 8.2	21.3
498068	2007	RT ₁₄₆	18.8	X	243.13569	86.35505	196.03394	16.81432	0.4486843	0.39608949	1.8362867	21	—	—
498069	2007	RK ₁₅₂	18.5	X	48.45855	137.29743	209.30815	3.06493	0.2115535	0.29509339	2.2344110	21	—	—
498070	2007	RG ₁₆₀	16.6	X	214.12297	204.682								

ELEMENTS AND OPPOSITION DATES IN 2021

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2021 JULY 5.0 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>	
498081	2007 RY ₂₀₇	18.7	X	37.31457	7.39426	14.22450	7.79968	0.0979487	0.29666095	2.2265330	21	—	—
498082	2007 RQ ₂₀₈	18.5	X	90.44375	166.79283	120.22830	2.34171	0.1737258	0.29270194	2.2465650	21	12 7.2	21.8
498083	2007 RN ₂₁₃	16.9	X	235.88940	150.47959	207.04568	1.40013	0.2261930	0.19089196	2.9872916	21	4 14.1	22.0
498084	2007 RM ₂₁₅	17.3	X	269.25925	55.91999	336.87294	3.65279	0.0866537	0.20108545	2.8854637	21	7 17.9	21.2
498085	2007 RF ₂₂₁	18.1	X	61.86094	85.85546	261.32225	1.51232	0.1353043	0.29511715	2.2342911	21	—	—
498086	2007 RA ₂₂₅	16.7	X	179.26330	253.22484	179.16717	9.69551	0.2873180	0.18838664	3.0137183	21	5 30.7	22.3
498087	2007 RD ₂₂₇	18.2	X	35.78255	303.11733	20.30373	4.88285	0.1683237	0.28764994	2.2727929	21	11 19.8	20.9
498088	2007 RK ₂₃₇	17.6	X	231.89995	240.55180	184.23132	7.54169	0.3275663	0.19682574	2.9269465	21	6 23.8	23.0
498089	2007 RV ₂₄₄	16.8	X	230.06873	8.37533	28.96639	9.53656	0.1363745	0.19263551	2.9692390	21	5 31.4	21.5
498090	2007 RO ₂₄₅	18.0	X	55.55741	325.62231	44.04715	4.59395	0.1892413	0.29706289	2.2245241	21	—	—
498091	2007 RG ₂₅₇	18.0	X	34.51324	342.61247	31.00905	6.97291	0.2191108	0.29556233	2.2320469	21	—	—
498092	2007 RH ₂₆₀	18.5	X	190.48905	186.77534	204.79083	22.16454	0.0678204	0.39589172	1.8368983	21	3 23.7	20.6
498093	2007 RT ₂₆₀	16.5	X	193.55356	245.18237	164.84089	10.09542	0.1353607	0.18779528	3.0200417	21	5 16.2	21.5
498094	2007 RR ₂₆₅	18.6	X	111.63284	333.51260	325.41237	2.06680	0.2106541	0.30064375	2.2068252	21	—	—
498095	2007 RE ₂₇₀	16.6	X	219.83952	341.13185	54.11202	2.29439	0.2396927	0.18607929	3.0385801	21	5 27.5	21.7
498096	2007 RY ₂₇₂	17.1	X	202.54824	183.33161	217.60617	4.24481	0.1618631	0.18796697	3.0182024	21	5 10.8	22.0
498097	2007 RH ₂₈₀	16.5	X	249.07190	106.00717	300.53540	13.60913	0.2919169	0.19695760	2.9256400	21	6 18.6	21.5
498098	2007 RC ₂₉₂	17.3	X	242.06231	243.24288	158.09463	1.99940	0.0702963	0.19652854	2.9298966	21	6 26.7	21.4
498099	2007 RP ₂₉₂	17.2	X	252.10386	264.24355	159.43696	2.42369	0.0519146	0.20271174	2.8700103	21	8 9.7	21.2
498100	2007 RT ₂₉₂	17.3	X	274.77560	290.81828	50.14467	1.97784	0.0903056	0.19222390	2.9734761	21	5 17.1	21.3
498101	2007 RW ₂₉₂	16.8	X	216.08403	204.12363	169.89595	2.04163	0.1748315	0.18575487	3.0421170	21	4 20.5	21.8
498102	2007 RL ₂₉₄	17.1	X	240.19526	17.47200	12.49162	1.69614	0.1323367	0.19321248	2.9633248	21	6 3.4	21.7
498103	2007 RG ₂₉₅	17.0	X	216.60036	199.43115	197.68364	7.63221	0.0799616	0.18969315	2.9998644	21	5 23.7	21.6
498104	2007 RV ₂₉₆	17.0	X	277.10656	188.91923	180.15364	0.79979	0.2041215	0.19329866	2.9624440	21	6 9.2	21.2
498105	2007 RB ₂₉₇	15.8	X	281.52626	313.70260	17.54641	10.32276	0.0855828	0.19533713	2.9417980	21	5 10.9	20.0
498106	2007 RG ₂₉₇	18.4	X	27.18748	18.30722	32.46785	5.87813	0.1257828	0.29871381	2.2163203	21	—	—
498107	2007 RP ₃₀₈	16.5	X	242.41868	341.74459	359.27118	5.15306	0.1578063	0.18780959	3.0198882	21	4 4.2	21.4
498108	2007 RN ₃₁₇	17.9	X	266.37960	289.09355	181.19645	7.19963	0.0714257	0.28659190	2.2783832	21	11 9.9	20.5
498109	2007 RW ₃₁₇	18.4	X	13.35630	109.96976	203.87075	4.27062	0.2240553	0.28364520	2.2941356	21	10 7.7	20.1
498110	2007 RO ₃₂₀	16.4	X	276.18961	130.21581	197.57001	9.33683	0.1159708	0.19089049	2.9873070	21	4 29.7	20.6
498111	2007 RX ₃₂₁	16.6	X	215.12656	74.27101	11.27924	10.23088	0.0849102	0.19842372	2.9112108	21	7 24.3	21.1
498112	2007 RO ₃₂₃	18.5	X	353.83027	216.18028	181.29365	2.91168	0.1854982	0.28656162	2.2785437	21	—	—
498113	2007 RD ₃₂₄	17.3	X	263.65085	53.74893	306.95749	0.69658	0.1551226	0.19319636	2.9634897	21	5 20.4	21.7
498114	2007 RN ₃₂₅	16.8	X	246.33131	347.93767	42.92763	3.25759	0.2578344	0.18961767	3.0006604	21	5 30.2	21.7
498115	2007 RR ₃₂₅	16.8	X	258.73161	309.50842	48.19374	3.80233	0.3358439	0.19016414	2.9949090	21	4 25.0	22.0
498116	2007 SD ₃	17.6	X	22.08984	32.89803	356.76108	7.61566	0.1855054	0.29451759	2.2373223	21	—	—
498117	2007 SX ₃	16.2	X	219.58567	209.06236	202.67829	12.30582	0.3177133	0.18969366	2.9998590	21	6 1.4	21.8
498118	2007 SH ₈	16.6	X	252.33723	158.08457	181.23057	12.07406	0.0946592	0.18760986	3.0220312	21	4 20.6	21.1
498119	2007 SF ₉	18.5	X	13.37600	358.02445	27.30867	7.17406	0.1941124	0.29088380	2.2559165	21	—	—
498120	2007 SF ₁₃	17.8	X	42.60879	12.60702	352.03484	8.48496	0.1518804	0.29409654	2.2394573	21	—	—
498121	2007 SA ₁₇	17.4	X	252.01852	180.39732	203.17320	1.29581	0.3033416	0.19633417	2.9318301	21	5 22.7	22.4
498122	2007 SZ ₁₉	16.8	X	257.42592	196.95666	167.48249	2.08228	0.1237441	0.18889708	3.0082866	21	5 22.8	21.3
498123	2007 SD ₂₃	18.5	X	346.51997	34.79087	359.24032	5.60502	0.1641240	0.28504760	2.2866049	21	12 8.4	20.5
498124	2007 TP ₆	16.3	X	225.84147	39.31147	314.78751	10.98291	0.2032740	0.18601438	3.0392870	21	3 29.2	21.6
498125	2007 TG ₁₅	19.5	X	6.61206	136.67048	282.17999	4.59494	0.4729803	0.29089075	2.2558806	21	—	—
498126	2007 TG ₁₉	18.3	X	63.40111	152.19076	192.95078	3.76019	0.1594760	0.29540399	2.2328445	21	—	—
498127	2007 TE ₂₆	17.7	X	283.08643	351.79725	358.99821	6.48665	0.2292686	0.19911107	2.9045071	21	5 18.1	21.9
498128	2007 TX ₂₆	18.2	X	61.88688	346.83243	19.17185	7.33512	0.1836087	0.29740746	2.2228056	21	—	—
498129	2007 TY ₂₆	16.9	X	225.54211	200.54633	190.76330	1.58694	0.1736016	0.19005328	2.9960736	21	5 19.2	21.7
498130	2007 TA ₂₈	16.5	X	221.48853	344.92355	23.43067	11.76128	0.1479626	0.18505522	3.0497799	21	4 18.4	21.3
498131	2007 TQ ₃₃	16.9	X	210.24115	193.88784	211.73738	7.31168	0.1249236	0.18741234	3.0241542	21	5 25.2	21.8
498132	2007 TD ₃₉	16.8	X	217.21629	5.33113	52.38881	5.21244	0.1376636	0.19002351	2.9963865	21	6 14.4	21.6
498133	2007 TU ₃₉	17.3	X	244.29453	346.29465	52.17885	3.70316	0.1650664	0.19302650	2.9652280	21	6 15.2	21.8
498134	2007 TJ ₄₁	16.5	X	266.81742	297.20122	45.35854	11.43447	0.1303909	0.18781743	3.0198043	21	5 4.8	21.0
498135	2007 TZ ₄₂	16.9	X	103.56662	16.08333	134.91711	0.59183	0.0831809	0.19118692	2.9842184	21	6 9.9	21.1
498136	2007 TT ₄₄	18.4	X	39.57601	139.31852	193.36461	5.72347	0.2103091	0.28870539	2.2672502	21	12 15.4	21.3
498137	2007 TU ₄₆	16.8	X	195.58675	160.08659	232.47170	4.62579	0.1611878	0.18398568	3.0615876	21	4 24.1	21.9
498138	2007 TS ₅₁	16.9	X	242.01193	4.08932	22.04796	12.13125	0.1999972	0.19167949	2.9791037	21	5 22.9	21.9
498139	2007 TO ₅₄	17.3	X	209.20595	21.43536	36.57405	10.60239	0.1620882	0.18905819	3.0065773	21	6 4.7	22.4
498140	2007 TN ₅₆	18.0	X	348.64851	36.99543	22.32652	5.49734	0.2115727	0.28856772	2.2679713	21	—	—
498141	2007 TL ₅₈	16.9	X	268.12532	127.05402	215.39667	5.59526	0.2392872	0.19074259	2.9888510	21	4 23.1	21.6
498142	2007 TR ₆₁	17.0	X	250.61401	334.96238	32.89887	2.32737	0.1040906	0.18993864	2.9972789	21	5 20.9	21.4
498143	2007 TR ₆₅	18.9	X	96.66165	215.73461	23.75621	43.49365	0.5612913	0.79470539	1.1543352	21	11 11.0	21.5
498144	2007 TR ₇₃	17.7	X	75.47656	359.94551	317.71331	11.98360	0.3519051	0.29514337	2.2341587	21	—	—
498145	2007 TS ₈₀	16.8	X	204.00405	133.53516	201.08559	9.30682	0.1751867	0.17750126	3.1357042	21	2 21.3	22.2
498146	2007 TJ ₈₇	17.0	X	235.84052	206.60597	176.55275	5.03826	0.1689185	0.18907736	3.0063742	21	5 19.9	21.8
498147	2007 TD ₉₆	17.5	X	269.50574	133.26841	185.36216	5.12953	0.2178714	0.19121789	2.9838962	21	3 23.7	22.4
498148	2007 TZ ₉₉	16.8	X	174.83902	206.05680	207.11062	9.55756	0.1524251	0.18034984	3.1025983	21	5 1.7	21.8
498149	2007 TB ₁₀₂	17.0	X	252.69789	208.85020	114.51755	2.44018	0.0821556	0.18358933	3.0659925	21	4 2.4	21.5
498150	2007 TN ₁₀₂	18.5	X	17.02014	305.30959	66.51866	3.28395	0.2119732	0.28766848	2.2726952	21	—	—
498151	2007 TO ₁₀₉	18.1	X	33.93513	125.85706	216.09862	6.16644	0.2097623	0.28964934	2.2623216	21	12 20.5	20.9
498152	2007 TK ₁₁₁	17.6	X	58.94945	324.27990	341.79354	6.98013						

ELEMENTS AND OPPOSITION DATES IN 2021

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2021 JULY 5.0 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>
498161 2007 TA ₁₃₅	16.8	X	228.41759	149.55813	213.33718	5.18663	0.1523503	0.18988316	2.9978627	21	4 18.2	21.5
498162 2007 TK ₁₃₅	16.7	X	202.59280	222.38450	175.22420	10.54167	0.1197018	0.19042807	2.9921411	21	5 9.6	21.5
498163 2007 TV ₁₅₂	16.9	X	238.25478	179.66598	207.09263	7.33564	0.2332676	0.19253379	2.9702847	21	5 21.3	21.9
498164 2007 TN ₁₆₇	18.2	X	25.54205	119.27769	256.00629	1.83609	0.1716685	0.29152625	2.2526010	21	—	—
498165 2007 TB ₁₆₈	16.8	X	226.89496	17.40919	356.83971	5.84410	0.1987813	0.18803577	3.0174661	21	4 26.5	21.8
498166 2007 TU ₁₇₇	16.4	X	225.92948	327.08614	47.10700	9.04940	0.1641545	0.18588402	3.0407077	21	4 29.9	21.3
498167 2007 TZ ₁₇₇	17.1	X	231.68851	13.10667	35.22054	9.85431	0.1891022	0.19099086	2.9862603	21	6 12.2	22.1
498168 2007 TY ₁₇₉	16.8	X	221.02779	229.88644	200.17848	11.06199	0.3900598	0.19014415	2.9951189	21	6 19.8	22.6
498169 2007 TG ₁₈₂	16.6	X	266.04326	39.64915	344.14063	15.32997	0.2262129	0.19653318	2.9298505	21	6 11.5	21.4
498170 2007 TV ₁₉₄	18.8	X	2.23643	5.18466	37.60182	4.77890	0.0783085	0.28994404	2.2607885	21	—	—
498171 2007 TC ₁₉₉	16.6	X	179.33417	200.20324	220.09679	7.92854	0.0781718	0.18489470	3.0515448	21	5 12.3	21.2
498172 2007 TK ₁₉₉	18.6	X	5.29733	5.66728	3.61644	2.39715	0.1611370	0.28613610	2.2808022	21	12 6.7	20.7
498173 2007 TX ₂₀₀	17.1	X	228.10402	171.12945	215.26147	6.06491	0.2780904	0.18905030	3.0066610	21	5 9.9	22.3
498174 2007 TY ₂₀₉	16.1	X	229.13428	332.70184	52.15782	11.27061	0.0586882	0.18654524	3.0335182	21	5 22.3	20.6
498175 2007 TZ ₂₀₉	17.0	X	217.76716	183.11253	181.66437	3.66117	0.1560654	0.18211978	3.0824637	21	4 11.9	22.0
498176 2007 TK ₂₁₁	16.5	X	171.91050	164.47077	237.19011	9.53944	0.1112504	0.17985718	3.1082614	21	4 10.9	21.4
498177 2007 TJ ₂₁₂	16.7	X	167.62797	151.80165	282.80246	5.01579	0.1713467	0.18288809	3.0738247	21	5 20.0	21.8
498178 2007 TN ₂₁₅	16.5	X	160.39098	121.69827	299.40678	2.95606	0.1226116	0.17887797	3.1195945	21	4 24.6	21.5
498179 2007 TO ₂₂₀	18.2	X	33.78144	136.41115	230.45234	5.97288	0.2163478	0.29188286	2.2507659	21	—	—
498180 2007 TV ₂₃₁	16.8	X	302.06133	115.83609	220.51354	9.55535	0.1170050	0.19277611	2.9677951	21	6 12.5	20.8
498181 2007 TE ₂₃₂	17.0	X	274.60858	254.15786	101.35031	1.29395	0.1107786	0.19049453	2.9914452	21	6 1.9	21.2
498182 2007 TU ₂₃₅	17.4	X	213.45631	252.07159	164.12838	3.07840	0.2105740	0.19014027	2.9951596	21	6 6.1	22.4
498183 2007 TN ₂₅₅	17.9	X	328.81285	196.18637	237.39649	5.66344	0.0558312	0.28960296	2.2625632	21	12 26.9	20.3
498184 2007 TP ₂₆₀	18.0	X	36.07304	323.19883	34.27872	13.00063	0.1593621	0.28958430	2.2626604	21	—	—
498185 2007 TV ₂₇₁	16.2	X	114.18840	245.36490	220.78460	8.51124	0.0546220	0.17973417	3.1096794	21	4 23.2	20.7
498186 2007 TU ₂₈₃	17.2	X	7.62665	70.59906	183.93596	6.21247	0.0792091	0.19325374	2.9629031	21	6 8.9	20.9
498187 2007 TP ₂₉₅	17.1	X	312.76459	299.71999	12.50847	7.31100	0.2284208	0.19798270	2.9155325	21	5 7.1	20.7
498188 2007 TV ₂₉₅	16.3	X	180.90313	31.33123	10.22689	5.46799	0.1326445	0.18374797	3.0642275	21	4 20.9	21.2
498189 2007 TN ₃₀₆	16.6	X	251.39205	330.68491	13.12580	4.97057	0.1884641	0.19232087	2.9724766	21	4 13.4	21.4
498190 2007 TS ₃₁₆	17.0	X	204.87400	7.54108	86.65188	3.22783	0.0388174	0.19401500	2.9551476	21	7 22.4	21.4
498191 2007 TA ₃₁₉	16.6	X	87.67013	270.42565	214.55674	8.87116	0.0680782	0.17549040	3.1596124	21	4 15.9	21.1
498192 2007 TJ ₃₁₉	17.6	X	115.84116	191.49214	62.68905	6.52575	0.1412010	0.28244235	2.3006445	21	11 17.0	21.0
498193 2007 TO ₃₂₂	16.6	X	260.34941	187.94813	184.11267	9.83504	0.1040853	0.19310494	2.9644249	21	6 7.5	21.0
498194 2007 TH ₃₂₇	16.5	X	286.45763	41.53757	266.63714	6.35803	0.0510090	0.18472454	3.0534184	21	4 24.2	20.9
498195 2007 TP ₃₂₈	16.7	X	220.74761	341.82008	18.98757	11.72521	0.1047761	0.18186648	3.0853252	21	4 11.3	21.5
498196 2007 TZ ₃₂₈	16.2	X	255.72806	122.12040	244.55579	7.43570	0.1049308	0.18979991	2.9987394	21	5 25.4	20.7
498197 2007 TN ₃₃₄	16.7	X	250.86869	286.58576	37.08309	15.62642	0.2760812	0.18384071	3.0631970	21	3 21.5	22.1
498198 2007 TH ₃₃₈	18.1	X	27.73460	264.66802	97.23785	5.69134	0.2011975	0.28870449	2.2672549	21	—	—
498199 2007 TZ ₃₄₂	16.6	X	240.26197	341.51118	71.90650	6.85960	0.0766262	0.19526149	2.9425577	21	7 9.9	20.9
498200 2007 TM ₃₆₂	16.3	X	197.38567	6.43917	58.49387	9.87193	0.1019188	0.18510656	3.0492159	21	6 4.8	21.1
498201 2007 TH ₃₇₇	16.8	X	182.82438	157.20134	243.22786	3.33898	0.1517253	0.18302338	3.0723098	21	4 22.1	21.8
498202 2007 TF ₃₇₈	17.2	X	248.48761	156.67017	201.62856	9.47387	0.1094654	0.18776353	3.0203821	21	5 7.5	21.7
498203 2007 TJ ₃₈₂	17.0	X	243.55295	220.31975	170.50179	7.85773	0.0853474	0.18888718	3.0083918	21	6 13.9	21.6
498204 2007 TV ₃₈₃	16.0	X	264.49626	108.29362	219.35727	25.68112	0.2079352	0.18634958	3.0356412	21	4 2.8	21.1
498205 2007 TV ₃₉₁	16.5	X	199.44964	177.72588	211.86422	10.87769	0.0962145	0.18464463	3.0542993	21	4 25.3	21.3
498206 2007 TH ₄₀₄	16.5	X	225.22931	121.08568	256.17487	2.09366	0.2435850	0.18656387	3.0333162	21	4 27.9	21.6
498207 2007 TG ₄₀₅	18.0	X	68.15281	304.04637	21.16714	3.87825	0.2093537	0.29017865	2.2595967	21	—	—
498208 2007 TJ ₄₀₈	16.3	X	279.78040	126.76790	230.97926	17.87533	0.0692939	0.18905705	3.0065894	21	6 16.3	20.6
498209 2007 TU ₄₁₂	18.2	X	59.42224	277.92669	83.49437	4.52888	0.2326316	0.29737760	2.2229544	21	—	—
498210 2007 TY ₄₂₈	16.7	X	271.72584	33.60308	302.21596	0.77349	0.0880008	0.18940556	3.0029002	21	5 7.1	20.8
498211 2007 TP ₄₃₃	18.0	X	54.72784	325.69410	44.51989	7.04769	0.2018354	0.29741341	2.2227759	21	—	—
498212 2007 TV ₄₃₃	16.5	X	280.43633	295.70839	52.33008	10.87585	0.1160234	0.19176414	2.9782270	21	5 28.7	20.6
498213 2007 TW ₄₃₃	16.9	X	197.69023	226.08714	176.62643	1.38527	0.1727914	0.18535777	3.0464603	21	5 8.8	21.9
498214 2007 TZ ₄₃₇	17.6	X	149.98629	184.32870	30.59815	5.38451	0.1154721	0.28198542	2.3031291	21	10 30.7	21.0
498215 2007 TP ₄₃₈	16.8	X	162.69109	243.65167	203.85511	11.23716	0.0603592	0.18637969	3.0353142	21	5 27.9	21.4
498216 2007 TV ₄₃₉	17.0	X	198.53001	324.64461	48.88793	5.81209	0.1232249	0.18251822	3.0779760	21	4 6.6	21.8
498217 2007 TP ₄₄₀	17.2	X	70.82012	286.61766	76.69463	4.65093	0.1029442	0.22448143	2.6813228	21	—	—
498218 2007 TZ ₄₄₂	16.3	X	182.48656	141.42104	293.88618	6.12391	0.1490011	0.18461574	3.0546180	21	6 3.0	21.3
498219 2007 TS ₄₄₅	17.1	X	281.71465	99.09959	212.77899	4.13896	0.1560330	0.18690333	3.0296423	21	4 9.8	21.5
498220 2007 TL ₄₄₇	16.2	X	173.31695	58.25690	359.51414	9.63247	0.1234425	0.18347438	3.0672730	21	4 30.9	21.2
498221 2007 TG ₄₄₈	17.1	X	182.26727	88.77946	313.45619	0.25379	0.1616000	0.18271937	3.0757166	21	4 24.5	22.2
498222 2007 TM ₄₄₉	16.4	X	86.39445	69.87329	44.17719	10.34554	0.0178396	0.17682636	3.1436779	21	3 29.1	20.8
498223 2007 TY ₄₄₉	16.5	X	212.69237	153.64723	201.98216	8.78903	0.0651946	0.17717568	3.1395445	21	3 29.2	21.2
498224 2007 TM ₄₅₁	15.8	X	221.28072	322.87609	76.21737	20.98262	0.3765895	0.18409246	3.0604037	21	5 19.3	21.6
498225 2007 UH ₅	18.2	X	159.13326	10.98467	5.25510	21.27397	0.0595853	0.39020652	1.8546973	21	1 26.7	20.6
498226 2007 UM ₁₃	18.4	X	356.80416	180.06552	202.74182	2.19747	0.1749973	0.28464779	2.2887455	21	12 13.9	20.3
498227 2007 UK ₁₅	16.9	X	189.88473	146.52543	189.27788	9.13201	0.0698743	0.17467270	3.1694655	21	2 9.2	21.8
498228 2007 UH ₁₉	17.0	X	141.81903	28.81173	30.70306	1.24957	0.0455150	0.17886355	3.1197622	21	3 28.9	21.4
498229 2007 UX ₂₁	16.8	X	336.35232	120.93880	146.37136	1.76363	0.0261755	0.18484586	3.0520822	21	5 13.6	21.0
498230 2007 UL ₂₄	18.4	X	49.55341	209.30738	115.81710	2.56175	0.2373612	0.28774341	2.2723006	21	12 20.2	21.6
498231 2007 UZ ₂₇	18.5	X	30.37422	308.56680	46.36586	3.86345	0.1402003	0.29076149	2.2565491	21	12 23.0	21.0
498232 2007 UY ₄₁	17.8	X	230.31027	137.09243	260.41023	5.78932	0.2177978	0.18976942	2.9990606	21	5 27.7	22.7
498233 2007 UJ ₅₂	18.1	X	310.42335	10.20251	42.84637	2.90715	0.1835436	0.27815562	2.3242214			

ELEMENTS AND OPPOSITION DATES IN 2021

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2021 JULY 5.0 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>		
498241	2007	UY ₇₂	16.9	X	268.33559	334.97771	6.45039	1.48806	0.1661092	0.19001603	2.9964651	21	4 30.1	21.3
498242	2007	UU ₇₃	17.1	X	139.74924	62.32246	27.74550	3.46033	0.0904204	0.18111913	3.0938066	21	5 6.8	21.6
498243	2007	UQ ₇₉	18.6	X	321.53197	184.27147	225.46506	6.43314	0.0939874	0.28123653	2.3072159	21	11 8.9	20.8
498244	2007	UH ₈₄	18.2	X	51.02874	95.30778	222.08402	1.89532	0.1935923	0.28480599	2.2878979	21	12 5.7	21.1
498245	2007	US ₈₈	16.3	X	89.97885	270.54254	223.28805	9.66266	0.0309880	0.17850263	3.1239660	21	4 24.4	20.7
498246	2007	UF ₉₀	17.2	X	179.69699	45.65304	12.23473	0.91962	0.1820319	0.18249596	3.0782263	21	5 11.2	22.3
498247	2007	UB ₉₃	16.8	X	354.81344	317.13505	335.49995	1.32959	0.0357520	0.19400380	2.9552613	21	7 10.8	20.7
498248	2007	UA ₉₆	18.3	X	31.91982	158.56853	211.81365	4.71728	0.1070587	0.29158511	2.2522978	21	—	—
498249	2007	UO ₉₇	16.9	X	241.41250	181.40464	224.15309	8.56795	0.0732483	0.19234836	2.9721933	21	6 30.2	21.3
498250	2007	UW ₉₈	16.8	X	186.27836	25.07889	55.18221	6.84282	0.1302650	0.18544064	3.0455526	21	6 12.6	21.7
498251	2007	UJ ₉₉	18.4	X	331.16182	328.46267	59.32246	4.73549	0.1550007	0.27892445	2.3199484	21	10 25.8	20.1
498252	2007	UC ₁₀₀	17.2	X	207.41849	57.70245	34.72166	1.43218	0.2367804	0.18971366	2.9996482	21	7 13.8	22.4
498253	2007	UR ₁₀₂	16.4	X	323.82698	50.86031	234.04474	4.49216	0.0933496	0.18658896	3.0330443	21	5 10.7	20.3
498254	2007	UI ₁₀₃	18.0	X	43.99795	335.63828	60.38777	7.56532	0.1885560	0.29633035	2.2281886	21	—	—
498255	2007	UK ₁₁₃	16.4	X	190.42278	344.43663	44.90720	11.02060	0.0383238	0.17890774	3.1192484	21	4 17.8	20.9
498256	2007	UY ₁₁₄	16.9	X	262.83956	88.78267	262.47708	3.91666	0.2637805	0.19043967	2.9920197	21	4 25.4	21.9
498257	2007	UC ₁₁₅	18.4	X	16.53761	278.36218	114.41988	1.64943	0.1677034	0.28923596	2.2644767	21	—	—
498258	2007	UM ₁₁₆	17.1	X	182.64874	309.96191	102.50852	2.04264	0.2160354	0.18216814	3.0819181	21	5 8.5	22.3
498259	2007	UG ₁₁₇	16.8	X	281.06488	115.13362	228.79535	9.13857	0.0752902	0.18981855	2.9985430	21	5 31.6	21.0
498260	2007	UJ ₁₂₂	17.0	X	207.21268	346.53201	71.44126	1.74900	0.2331267	0.18562903	3.0434917	21	6 2.2	22.3
498261	2007	UL ₁₂₄	16.4	X	207.74770	42.98766	34.76536	10.63278	0.0881450	0.19252409	2.9703844	21	7 3.5	21.1
498262	2007	US ₁₂₆	17.0	X	178.82437	168.71673	249.11894	7.26459	0.2191604	0.17962555	3.1109329	21	5 10.8	22.3
498263	2007	UW ₁₂₇	18.2	X	344.33268	329.12535	86.02195	4.42508	0.1484040	0.28655664	2.2785701	21	—	—
498264	2007	UF ₁₂₉	16.7	X	217.52729	335.28559	79.76560	3.01834	0.2615032	0.18402240	3.0611804	21	6 5.6	21.9
498265	2007	UG ₁₃₅	17.0	X	203.63567	185.57084	225.20644	1.68558	0.0919894	0.18887125	3.0085609	21	5 25.5	21.7
498266	2007	UK ₁₃₈	18.0	X	353.29186	18.72048	27.33529	7.89161	0.1150140	0.28735712	2.2743366	21	—	—
498267	2007	VF	16.1	X	214.32505	356.06980	75.39027	11.21313	0.0786725	0.19212973	2.9744477	21	7 2.6	20.6
498268	2007	VJ ₄	16.2	X	166.68475	159.31113	273.58230	9.80564	0.1967169	0.18176014	3.0865284	21	5 17.7	21.4
498269	2007	VW ₄	18.1	X	354.77533	349.51547	46.50284	11.11897	0.2221281	0.28692066	2.2766425	21	—	—
498270	2007	VM ₁₀	18.1	X	344.51839	127.69820	283.58454	2.34835	0.2135254	0.28589070	2.2821071	21	—	—
498271	2007	VO ₁₀	18.4	X	192.21120	340.18544	13.51856	21.69663	0.0387346	0.39056675	1.8535567	21	2 9.2	20.8
498272	2007	VB ₁₅	16.7	X	293.05264	237.32466	113.12456	4.16410	0.0951944	0.19258699	2.9697376	21	6 21.9	20.7
498273	2007	VO ₂₇	16.7	X	194.77004	172.16988	224.54611	8.34949	0.0956322	0.18490034	3.0514826	21	4 28.8	21.3
498274	2007	VD ₃₀	18.1	X	65.52720	112.41166	222.23319	5.72212	0.1131445	0.29269860	2.2465821	21	—	—
498275	2007	VT ₃₂	19.1	X	3.31989	105.68583	291.21949	2.36696	0.2149050	0.28859457	2.2678306	21	—	—
498276	2007	VT ₃₃	18.2	X	297.82644	77.87359	31.56481	6.56132	0.1162483	0.28619550	2.2804866	21	12 25.4	20.3
498277	2007	VS ₃₄	18.4	X	351.16646	354.80435	66.89835	7.59298	0.2190073	0.28758562	2.2731318	21	—	—
498278	2007	VC ₄₆	16.7	X	242.01453	354.13300	21.94583	11.19499	0.1096879	0.18801593	3.0176783	21	5 18.9	21.3
498279	2007	VH ₄₆	16.8	X	237.35383	38.52758	301.70841	4.39719	0.2053364	0.18307846	3.0716935	21	3 25.8	22.0
498280	2007	VD ₄₈	18.5	X	345.07954	68.74090	341.68299	3.69962	0.1422644	0.28580484	2.2825642	21	12 29.3	20.6
498281	2007	VF ₄₉	18.0	X	312.47222	67.32910	12.48571	5.36479	0.1311652	0.28364140	2.2941561	21	12 6.5	20.0
498282	2007	VK ₅₀	15.9	X	267.98658	57.71734	241.76199	14.72039	0.1976442	0.18031143	3.1030389	21	3 1.7	21.1
498283	2007	VQ ₅₀	16.4	X	164.87228	191.09187	251.69690	8.90336	0.0885437	0.18287935	3.0739227	21	5 24.8	21.2
498284	2007	VM ₅₈	18.4	X	348.03909	103.21406	299.95872	2.04132	0.2087106	0.28480224	2.2879180	21	—	—
498285	2007	VS ₆₀	18.5	X	286.37473	174.90903	265.02841	2.51700	0.1275532	0.27762458	2.3271843	21	10 15.9	20.8
498286	2007	VX ₆₂	17.9	X	357.66406	89.81631	293.56390	1.32217	0.1710621	0.28334708	2.2957445	21	12 15.2	19.8
498287	2007	VL ₆₆	16.7	X	195.63407	3.31127	68.97687	12.43217	0.0553707	0.18713863	3.0271022	21	6 13.3	21.2
498288	2007	VH ₇₁	17.7	X	282.11409	257.91032	228.72447	19.01160	0.0858483	0.36077751	1.9542333	21	—	—
498289	2007	VJ ₇₅	18.3	X	47.64243	309.92425	63.41444	3.98694	0.1898795	0.29368324	2.2415578	21	—	—
498290	2007	VJ ₇₆	16.7	X	263.65807	310.82489	56.52215	12.22405	0.1259622	0.19090901	2.9871137	21	5 31.8	21.1
498291	2007	VY ₇₈	18.1	X	179.04201	83.57504	77.31070	2.23585	0.1263115	0.27163176	2.3612883	21	9 20.7	21.6
498292	2007	VC ₈₀	17.7	X	229.66772	310.59295	109.57780	0.32419	0.2233080	0.19029705	2.9935144	21	6 23.5	22.7
498293	2007	VO ₈₈	15.9	X	222.57259	137.81498	264.71570	16.78165	0.2455812	0.18611795	3.0381593	21	5 25.9	21.3
498294	2007	VE ₉₆	18.2	X	8.76633	279.65340	81.89977	4.69692	0.2393260	0.28504086	2.2866409	21	12 15.0	20.2
498295	2007	VS ₉₇	18.3	X	285.05693	183.02173	255.15171	5.17498	0.1238365	0.27775833	2.3264371	21	10 10.3	20.8
498296	2007	VR ₉₈	18.4	X	342.04293	55.46313	332.18179	1.98653	0.2211805	0.28253339	2.3001502	21	11 24.8	19.7
498297	2007	VH ₉₉	17.6	X	344.81886	31.43454	356.34758	5.27927	0.1411858	0.28139408	2.3063546	21	11 20.6	19.7
498298	2007	VE ₁₀₁	16.3	X	212.79163	149.64581	243.81009	17.11048	0.2679975	0.18409809	3.0603413	21	5 6.4	21.7
498299	2007	VO ₁₀₄	16.7	X	247.38227	115.66651	244.54636	9.15349	0.1536887	0.18600714	3.0393658	21	5 2.4	21.5
498300	2007	VW ₁₀₆	16.9	X	260.04324	337.22173	352.34040	1.09260	0.1097245	0.18231041	3.0803146	21	4 13.7	21.5
498301	2007	VE ₁₀₇	16.1	X	117.01308	219.88446	234.46889	8.06976	0.0698587	0.17489740	3.1667502	21	4 13.2	20.7
498302	2007	VS ₁₀₈	16.9	X	220.27799	303.47451	63.31370	1.89060	0.1810708	0.18196737	3.0841847	21	4 15.5	22.1
498303	2007	VC ₁₀₉	16.7	X	214.81030	140.84429	231.86129	8.63537	0.0430526	0.17936193	3.1139804	21	4 21.8	21.3
498304	2007	VH ₁₀₉	16.9	X	186.95288	66.61665	57.52096	16.89364	0.1577641	0.19136356	2.9823817	21	8 12.6	22.1
498305	2007	VR ₁₁₂	16.7	X	218.94858	320.56681	63.38712	9.98619	0.1580836	0.18342864	3.0677828	21	5 6.6	21.6
498306	2007	VU ₁₁₇	17.9	X	317.94712	173.35140	242.15079	6.35807	0.0986993	0.28244362	2.3006375	21	11 10.6	20.1
498307	2007	VK ₁₁₈	18.5	X	12.11336	162.71238	196.25024	4.85144	0.1442022	0.28412692	2.2915419	21	12 1.1	20.9
498308	2007	VG ₁₂₈	16.9	X	194.26105	53.05257	28.98124	13.13782	0.1054030	0.19114617	2.9846424	21	6 22.7	21.8
498309	2007	VT ₁₃₁	17.9	X	122.11293	186.11981	359.88552	1.78416	0.1200984	0.26859835	2.3790331	21	8 23.7	21.4
498310	2007	VM ₁₃₈	16.8	X	291.51938	120.03503</								

ELEMENTS AND OPPOSITION DATES IN 2021

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2021 JULY 5.0 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>
498321 2007 VF ₁₆₆	16.6	X	241.66422	119.68747	236.61480	13.26162	0.2203942	0.18408845	3.0604482	21	4 16.2	21.7
498322 2007 VG ₁₇₀	17.7	X	285.72794	50.97113	61.84341	7.22759	0.1374240	0.28161479	2.3051494	21	12 3.7	19.6
498323 2007 VH ₁₇₀	17.9	X	41.72887	310.04192	63.10520	22.57214	0.0932182	0.36083803	1.9540148	21	—	—
498324 2007 VD ₁₇₈	16.4	X	198.94273	137.07989	205.62808	10.60360	0.1921422	0.17680971	3.1438753	21	2 26.2	21.8
498325 2007 VC ₁₈₂	17.4	X	260.33640	245.78820	74.70247	1.73073	0.2453192	0.18666163	3.0322570	21	3 21.8	22.3
498326 2007 VK ₁₈₃	17.8	X	261.37810	171.92921	295.15739	5.26491	0.1883237	0.27668861	2.3324295	21	10 2.7	20.8
498327 2007 VX ₁₈₈	17.8	X	352.78629	76.30224	303.17117	1.01767	0.2137488	0.28319291	2.2965776	21	12 6.2	19.5
498328 2007 VT ₂₀₅	18.4	X	48.03444	111.63524	221.92964	5.67355	0.2401173	0.28928944	2.2641976	21	12 29.4	21.6
498329 2007 VW ₂₁₀	18.7	X	18.92069	49.05708	314.11132	3.50672	0.1534370	0.28525280	2.2855081	21	12 18.9	21.2
498330 2007 VB ₂₁₃	18.4	X	8.84706	197.23789	157.15126	3.01797	0.1558949	0.28127321	2.3070153	21	11 20.2	20.6
498331 2007 VS ₂₂₆	17.8	X	337.13664	12.87599	55.28708	8.40300	0.1479102	0.28873839	2.2670775	21	—	—
498332 2007 VO ₂₂₈	16.1	X	182.59511	3.53922	94.43011	23.00369	0.2473637	0.18052267	3.1006176	21	6 30.7	21.5
498333 2007 VH ₂₃₂	17.3	X	237.41892	343.44582	58.35029	1.91593	0.1832899	0.18953361	3.0015476	21	6 11.0	22.1
498334 2007 VE ₂₃₄	18.0	X	94.14686	139.52312	237.78520	20.80228	0.1019839	0.37356547	1.9093765	21	—	—
498335 2007 VD ₂₃₅	18.0	X	351.20812	172.08590	228.37345	3.56115	0.1644203	0.28427702	2.2907352	21	12 27.8	20.0
498336 2007 VZ ₂₃₅	17.2	X	207.22369	143.44718	275.62232	3.78573	0.1024522	0.18839287	3.0136518	21	6 8.0	21.8
498337 2007 VX ₂₃₈	16.6	X	208.64497	0.73495	64.07292	12.26084	0.1557931	0.18638826	3.0352212	21	6 13.6	21.6
498338 2007 VU ₂₄₀	15.9	X	219.10553	275.49152	96.02693	17.13477	0.2472214	0.18253216	3.0778193	21	4 24.9	21.5
498339 2007 VU ₂₄₃	16.9	X	182.27611	172.62134	252.32157	4.36941	0.2408142	0.18177499	3.0863603	21	5 22.4	22.3
498340 2007 VW ₂₄₃	15.9	X	199.89143	204.83398	246.42323	16.92247	0.2620297	0.18826171	3.0150514	21	7 3.1	21.4
498341 2007 VY ₂₄₃	18.4	X	332.21957	46.21212	13.62950	2.74010	0.1865524	0.28387612	2.2928914	21	12 21.6	20.1
498342 2007 VZ ₂₄₇	16.5	X	191.48235	221.66104	190.40027	9.47736	0.1527406	0.18301855	3.0723638	21	5 15.9	21.6
498343 2007 VX ₂₅₆	16.6	X	195.51609	222.99087	150.88468	6.26610	0.0707221	0.17764038	3.1340669	21	4 4.7	21.4
498344 2007 VX ₂₅₈	17.9	X	269.21135	262.45084	81.69049	10.04115	0.4970567	0.19501940	2.9449923	21	4 8.6	23.5
498345 2007 VK ₂₇₃	16.4	X	136.01914	342.23539	135.17451	5.98993	0.1879643	0.17314113	3.1881220	21	4 12.9	21.5
498346 2007 VC ₂₇₇	16.2	X	264.90212	58.73220	253.25676	8.82424	0.1248815	0.18197908	3.0840523	21	3 23.2	21.0
498347 2007 VF ₂₇₉	16.7	X	243.41460	129.75181	244.58067	8.65637	0.0729657	0.18601629	3.0392661	21	5 24.8	21.2
498348 2007 VS ₂₈₈	18.4	X	27.65591	47.12756	319.81534	2.34713	0.2198349	0.28895128	2.2659638	21	—	—
498349 2007 VQ ₃₀₃	16.1	X	172.01930	320.39939	135.17451	17.89513	0.2219106	0.18442001	3.0567789	21	6 21.6	21.6
498350 2007 VZ ₃₀₃	16.7	X	206.98776	268.87909	134.11032	13.69733	0.2292960	0.18524798	3.0476639	21	5 19.3	22.2
498351 2007 VR ₃₀₅	16.1	X	183.86434	104.70696	309.96722	6.88903	0.0515086	0.17326904	3.1865598	21	5 7.7	20.9
498352 2007 VX ₃₀₆	18.2	X	33.15761	90.24373	245.90664	9.83242	0.2166274	0.28326769	2.2961734	21	12 11.5	21.0
498353 2007 VE ₃₀₇	18.0	X	26.14829	311.66421	66.87631	7.23853	0.1104486	0.28639346	2.2794356	21	—	—
498354 2007 VX ₃₀₈	16.4	X	217.06843	261.90528	194.89369	12.53588	0.2752073	0.19076242	2.9886439	21	7 21.8	21.9
498355 2007 VP ₃₀₉	16.1	X	197.85280	7.27824	78.91721	12.79465	0.2107562	0.18366036	3.0652020	21	6 28.9	21.3
498356 2007 VV ₃₁₁	16.3	X	193.70109	299.80888	74.37690	12.50036	0.1210539	0.17529917	3.1619098	21	4 7.9	21.5
498357 2007 VX ₃₁₄	16.7	X	209.31016	332.58027	73.96354	8.80073	0.1359203	0.18313980	3.0710076	21	5 25.1	21.7
498358 2007 VD ₃₁₅	16.4	X	179.85473	6.11779	98.61463	11.49939	0.0739077	0.18853384	3.0121494	21	7 7.2	20.8
498359 2007 VK ₃₁₅	15.6	X	31.60212	295.18642	249.91438	15.02967	0.0806173	0.17079580	3.2172483	21	4 12.1	20.0
498360 2007 VK ₃₁₆	16.3	X	296.21537	65.82760	247.81481	15.49752	0.0472802	0.18316738	3.0706993	21	5 15.9	20.7
498361 2007 VV ₃₁₈	16.0	X	251.98626	91.24224	255.47644	8.31017	0.1081679	0.18433798	3.0576856	21	4 24.3	20.7
498362 2007 VA ₃₂₀	16.6	X	206.72385	171.75178	253.14775	10.72142	0.1509003	0.18840254	3.0135487	21	6 12.8	21.5
498363 2007 VZ ₃₂₂	16.3	X	242.97617	125.71995	268.03536	9.39119	0.1085472	0.18906390	3.0065168	21	6 13.9	20.9
498364 2007 VE ₃₂₄	16.3	X	215.07615	143.70207	256.10079	15.91087	0.1204858	0.18556484	3.0441935	21	5 22.1	21.1
498365 2007 VT ₃₂₄	17.7	X	32.76718	232.77469	127.29623	4.03197	0.2028348	0.28746616	2.2737615	21	—	—
498366 2007 VV ₃₂₄	18.4	X	350.27017	269.37581	129.59239	3.22158	0.2301323	0.28483067	2.2877657	21	—	—
498367 2007 VC ₃₂₅	16.2	X	179.57130	169.88905	265.28402	6.85057	0.1595419	0.18268632	3.0760876	21	5 31.6	21.2
498368 2007 VT ₃₂₆	17.1	X	238.82857	213.08485	171.30294	2.54805	0.1512443	0.18613346	3.0379905	21	5 25.4	21.9
498369 2007 VW ₃₂₆	16.5	X	176.53104	200.83753	215.62056	7.14459	0.1769122	0.17830353	3.1262911	21	5 7.5	21.6
498370 2007 VF ₃₃₀	16.7	X	247.91642	253.96426	120.57427	3.47517	0.0979099	0.18606053	3.0387843	21	5 28.1	21.1
498371 2007 VH ₃₃₂	16.3	X	191.71132	139.50091	311.32413	12.43808	0.1458822	0.17793732	3.1305791	21	7 2.4	21.5
498372 2007 VP ₃₃₄	16.5	X	185.31302	333.10810	70.20601	10.76159	0.0804927	0.17804509	3.1293157	21	4 30.7	21.3
498373 2007 WL ₂₁	16.3	X	125.84691	192.71622	265.37645	9.11185	0.1163193	0.17774026	3.1228926	21	5 3.0	21.1
498374 2007 WJ ₂₂	18.1	X	350.50069	127.77434	278.57283	4.92692	0.0825270	0.28673062	2.2776483	21	12 24.9	20.3
498375 2007 WB ₂₃	18.5	X	334.23483	326.31814	72.49509	3.08977	0.1771213	0.28233586	2.3012229	21	11 20.8	20.2
498376 2007 WC ₂₃	16.9	X	197.43027	27.64760	48.42562	6.29701	0.2105758	0.18511193	3.0491569	21	6 16.3	22.1
498377 2007 WF ₂₃	16.4	X	322.75281	223.11118	66.40566	11.61404	0.0913695	0.18701513	3.0284347	21	5 16.6	20.2
498378 2007 WC ₂₅	16.5	X	212.01912	320.69968	71.95370	10.15984	0.1453718	0.18420752	3.0591292	21	5 11.5	21.4
498379 2007 WR ₂₆	16.9	X	181.59818	330.86556	78.09777	5.88993	0.1636342	0.18057208	3.1000520	21	5 3.7	22.0
498380 2007 WX ₂₇	16.7	X	206.43151	16.89090	27.00379	5.32848	0.2064073	0.18272325	3.0756731	21	5 15.7	22.0
498381 2007 WX ₄₅	18.5	X	46.53005	335.71270	30.87858	7.54220	0.2188971	0.29211030	2.2495974	21	—	—
498382 2007 WV ₄₆	16.6	X	157.37424	107.46132	316.16001	7.95280	0.0848712	0.17802423	3.1295601	21	4 19.8	21.5
498383 2007 WL ₅₁	17.4	X	176.54129	332.98753	128.74548	2.21678	0.1481912	0.18588118	3.0407387	21	6 30.3	22.3
498384 2007 WF ₆₃	16.5	X	169.34050	25.96135	61.23321	13.13192	0.1717422	0.18072835	3.0982647	21	6 5.7	21.6
498385 2007 XF ₁	16.5	X	216.82231	313.09196	67.52523	11.06464	0.2481080	0.18408338	3.0605043	21	4 28.8	21.9
498386 2007 XL ₁	17.9	X	359.93551	164.70410	240.66803	5.75790	0.1980613	0.28751828	2.2734867	21	—	—
498387 2007 XP ₅	17.9	X	289.06208	347.32210	98.57639	4.93576	0.2398603	0.27785401	2.3259030	21	10 15.9	19.8
498388 2007 XT ₈	16.1	X	234.28127	282.49986	84.47652	18.06922	0.3154100	0.18213843	3.0822533	21	4 27.3	21.8
498389 2007 XR ₁₄	16.9	X	203.24058	359.68611	55.93131	2.54281	0.1796566	0.18327504	3.0694967	21	5 28.5	21.9
498390 2007 XN ₂₄	18.0	X	355.71692	210.70720	268.16000	17.73458	0.0822377	0.36935957	1.9238438	21	—	—
498391 2007 XC ₂₅	16.5	X	162.63438	282.20841	138.90720	10.19257	0.0904498	0.17510399	3.1642590	21	4 30.4	21.5
498392 2007 XH ₂₆	18.0	X	2.96276	43.02918	349.94961	3.36887	0.1297200	0.28635576	2.2796356	21	—	—
498393 2007 XT ₂₇	16.6	X	156.95515	332.46639	84.99404	6.12581	0.1791081	0.17339321	3.1850			

ELEMENTS AND OPPOSITION DATES IN 2021

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2021 JULY 5.0 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>
498401 2007 YU ₃₅	16.7	X	234.74289	333.37257	58.59924	2.35692	0.1815071	0.18226878	3.0807835	21	5 27.8	21.5
498402 2007 YS ₄₂	15.7	X	133.74210	184.06305	304.06288	14.13164	0.2243784	0.17425518	3.1745262	21	6 29.5	21.0
498403 2007 YP ₄₃	18.3	X	301.68070	352.87688	83.83623	2.44671	0.1651885	0.27423063	2.3463461	21	11 5.8	20.1
498404 2007 YM ₄₇	17.8	X	313.04577	241.19519	301.54778	17.17696	0.0635360	0.36558851	1.9370509	21	—	—
498405 2007 YP ₄₉	15.7	X	193.70452	121.34548	294.19442	15.46215	0.2244740	0.17818531	3.1276738	21	5 17.8	21.3
498406 2007 YF ₅₀	16.9	X	176.04999	141.83018	303.22734	9.37054	0.2532685	0.17838285	3.1253643	21	6 10.8	22.5
498407 2007 YD ₅₁	16.3	X	187.49265	126.50318	293.29118	9.06309	0.2329367	0.17747252	3.1360427	21	5 18.9	21.8
498408 2007 YU ₅₂	16.1	X	205.09287	144.71451	297.38189	19.03677	0.2584865	0.18381159	3.0635204	21	6 30.3	21.5
498409 2007 YD ₅₉	16.2	X	179.56629	136.59501	304.22591	9.08958	0.2047019	0.17853559	3.1235816	21	6 7.8	21.6
498410 2007 YZ ₆₃	15.9	X	201.73397	68.77979	316.10756	25.26818	0.2911135	0.17381859	3.1798398	21	4 5.8	22.1
498411 2007 YB ₇₁	16.8	X	33.20779	117.26167	323.77095	11.90923	0.2207611	0.22290641	2.6939385	21	—	—
498412 2007 YR ₇₂	15.7	X	176.59841	129.92875	304.58885	26.51167	0.2143587	0.17871661	3.1214720	21	5 28.2	21.4
498413 2008 AO ₂	15.9	X	188.49297	130.57716	311.36326	14.77512	0.2601638	0.17931805	3.1144883	21	6 17.0	21.6
498414 2008 AA ₅	16.6	X	251.04785	266.12347	131.06103	11.93669	0.2939480	0.18543442	3.0456207	21	6 9.9	21.8
498415 2008 AV ₁₄	16.5	X	111.89423	357.62569	135.69663	9.45826	0.1005695	0.17023264	3.2243400	21	6 2.4	21.3
498416 2008 AA ₁₅	17.6	X	280.08384	296.28901	134.77319	8.21529	0.0936256	0.26719973	2.3873277	21	9 30.8	20.4
498417 2008 AF ₁₉	17.7	X	351.93995	6.04392	14.81028	1.82763	0.1899810	0.27307199	2.3529784	21	11 29.4	19.7
498418 2008 AQ ₂₀	17.8	X	197.44356	8.87186	119.77378	6.56280	0.0718432	0.25863068	2.4397726	21	8 31.9	21.2
498419 2008 AG ₂₁	18.0	X	354.45204	267.91877	117.20650	5.70466	0.1204073	0.27201243	2.3590848	21	12 2.7	20.3
498420 2008 AZ ₂₉	17.7	X	305.61603	127.01641	313.03197	7.39803	0.0789605	0.27501162	2.3419019	21	11 22.7	20.2
498421 2008 AF ₃₉	18.4	X	239.44753	217.23969	285.72916	2.65183	0.1822378	0.27097094	2.3651257	21	10 24.9	21.4
498422 2008 AZ ₄₁	17.1	X	49.35101	251.76566	311.00750	27.25921	0.3655137	0.23726891	2.5840971	21	7 24.1	20.0
498423 2008 AH ₄₂	18.0	X	269.40505	126.77408	330.23542	5.21593	0.1430258	0.26941871	2.3742013	21	10 7.7	20.8
498424 2008 AH ₄₇	17.0	X	171.28976	332.22896	111.43139	1.68096	0.1641724	0.17774271	3.1328638	21	6 4.1	22.2
498425 2008 AS ₄₈	18.0	X	283.70489	19.41718	106.43147	6.49367	0.1053308	0.27958467	2.3162947	21	12 22.8	20.1
498426 2008 AE ₄₉	18.7	X	303.77674	126.26686	349.90327	1.22112	0.1877126	0.28187085	2.3037531	21	—	—
498427 2008 AM ₅₂	17.0	X	214.83735	155.10323	224.84380	2.04312	0.2156513	0.18319727	3.0703653	21	4 24.5	22.3
498428 2008 AY ₆₆	18.4	X	335.49994	312.53003	115.31911	5.50584	0.2094611	0.27941188	2.3172495	21	—	—
498429 2008 AY ₇₀	18.0	X	305.34734	12.29538	107.18749	4.04440	0.1561201	0.28164235	2.3049990	21	—	—
498430 2008 AY ₇₅	18.2	X	313.30790	132.85906	280.00534	1.58668	0.1909363	0.27239533	2.3568735	21	10 19.6	20.0
498431 2008 AY ₇₅	18.5	X	235.47607	3.53506	170.29042	0.96437	0.1142406	0.27554439	2.3388821	21	12 12.7	21.1
498432 2008 AH ₇₇	17.4	X	290.69000	310.03717	102.36323	8.84274	0.1058483	0.26633443	2.3924957	21	9 20.2	20.2
498433 2008 AA ₈₄	18.0	X	287.38506	328.35982	112.64008	2.25760	0.1371663	0.27190996	2.3596774	21	10 19.4	20.3
498434 2008 AQ ₉₁	17.8	X	217.79804	68.77172	119.87375	25.16021	0.0575107	0.34893468	1.9982046	21	—	—
498435 2008 AC ₉₄	16.5	X	219.42687	313.08836	97.31425	9.83263	0.1742709	0.18039598	3.1020691	21	6 6.7	21.5
498436 2008 AC ₁₀₅	18.1	X	172.86659	162.64759	14.94112	2.32364	0.1539103	0.26468173	2.4024448	21	10 3.5	21.6
498437 2008 AH ₁₀₆	16.3	X	194.60763	312.14088	94.44063	11.51992	0.1183823	0.17513580	3.1638758	21	5 14.5	21.4
498438 2008 AF ₁₀₈	18.7	X	340.20562	153.21623	293.58710	2.25144	0.1837302	0.28428278	2.2907042	21	—	—
498439 2008 AY ₁₀₉	18.1	X	267.78945	193.57776	284.34964	4.53616	0.1884246	0.27295724	2.3536378	21	10 28.5	20.7
498440 2008 AO ₁₁₀	16.5	X	213.26941	88.69400	311.63141	15.40072	0.3562258	0.18000671	3.1065398	21	5 8.6	22.6
498441 2008 AZ ₁₁₀	18.1	X	358.24457	291.69119	302.78837	3.83622	0.5203102	0.22851443	2.6496812	21	2 10.3	20.0
498442 2008 AD ₁₁₁	17.7	X	165.70913	19.15670	129.98407	5.35666	0.1461209	0.25633637	2.4543089	21	8 21.1	21.5
498443 2008 AX ₁₁₃	18.1	X	324.48530	325.09428	135.34117	5.79273	0.1540702	0.28301463	2.2975420	21	—	—
498444 2008 AV ₁₁₅	16.5	X	233.12079	99.65782	317.06274	14.62068	0.2041020	0.17990779	3.1076784	21	6 25.4	21.7
498445 2008 AJ ₁₁₆	16.4	X	176.93093	133.95259	319.37860	8.77828	0.0497730	0.17673364	3.1447773	21	6 19.7	21.1
498446 2008 AN ₁₁₆	16.4	X	196.16685	358.14303	92.73721	6.62726	0.1194774	0.18023006	3.1039727	21	7 6.1	21.2
498447 2008 AY ₁₁₆	16.6	X	185.18868	104.23840	325.58203	14.99489	0.3196534	0.17733906	3.1376160	21	5 28.3	22.6
498448 2008 AA ₁₃₈	15.9	X	229.55467	57.18829	306.64947	15.87216	0.1018381	0.17211887	2.3007399	21	4 17.3	21.1
498449 2008 BM ₁₆	18.2	X	27.92000	35.95242	127.57160	24.34309	0.0246626	0.37986890	1.8881952	21	1 30.6	19.5
498450 2008 BH ₂₀	18.3	X	269.12091	164.83705	318.30568	0.90729	0.1348955	0.27385850	2.3484712	21	11 18.1	20.8
498451 2008 BQ ₂₆	17.1	X	203.12566	284.60041	144.83160	8.34086	0.1808156	0.17880223	3.1204754	21	6 15.0	22.2
498452 2008 BL ₂₉	17.2	X	227.16395	256.87460	141.36658	1.53958	0.1925066	0.17846795	3.1243707	21	5 28.3	22.3
498453 2008 BH ₃₁	17.9	X	308.13590	271.35912	145.35957	2.69211	0.1998710	0.27000622	2.3707561	21	10 14.4	19.5
498454 2008 BA ₃₈	18.1	X	265.55269	312.49198	149.95532	5.10355	0.0965202	0.26738292	2.3862372	21	10 24.7	20.9
498455 2008 BF ₃₈	18.1	X	231.07031	178.56526	314.62226	6.93408	0.1520051	0.26554445	2.3972384	21	10 2.9	21.7
498456 2008 BK ₄₁	17.1	X	185.02538	203.21714	115.48991	24.55906	0.2747188	0.26221401	2.4174943	21	9 5.6	21.7
498457 2008 BB ₄₈	18.4	X	319.89490	275.37049	317.17142	2.09943	0.1489741	0.27659589	2.3329508	21	12 10.5	20.4
498458 2008 BE ₅₃	16.5	X	161.01166	316.75688	156.36990	26.85933	0.1630823	0.17473916	3.1686618	21	7 2.0	22.1
498459 2008 BN ₅₃	16.1	X	57.15478	138.47130	35.45538	5.64448	0.2352425	0.16377317	3.3085742	21	5 31.2	20.2
498460 2008 CC ₅	18.0	X	69.92312	109.63460	318.02094	17.77291	0.1011764	0.36767406	1.9297189	21	—	—
498461 2008 CD ₈	18.2	X	202.74110	289.35302	231.17815	2.44995	0.1698912	0.26617383	2.3934580	21	10 9.0	21.8
498462 2008 CC ₁₇	18.0	X	235.15204	1.99540	147.01981	5.75455	0.1107188	0.26793354	2.3829668	21	11 9.9	21.1
498463 2008 CJ ₂₁	17.9	X	340.10017	16.47973	16.19862	2.56590	0.1875491	0.27329270	2.3517114	21	11 21.5	19.7
498464 2008 CA ₃₀	17.8	X	321.08094	333.32101	101.10104	2.12616	0.2691542	0.27807347	2.3246791	21	12 20.8	18.8
498465 2008 CE ₃₀	18.6	X	278.27713	112.32835	359.45191	2.40412	0.1190241	0.27319123	2.3522937	21	11 18.7	21.1
498466 2008 CZ ₃₀	18.4	X	147.89201	113.90405	40.24725	2.15731	0.1263543	0.25280358	2.4771121	21	8 9.3	22.1
498467 2008 CM ₃₄	18.0	X	332.57359	280.84020	137.50016	3.36126	0.1802362	0.27475678	2.4433497	21	12 16.2	19.7
498468 2008 CN ₄₀	18.4	X	218.88726	246.23044	231.41894	3.27540	0.1688260	0.26019945	2.4299563	21	8 29.5	22.1
498469 2008 CB ₄₃	18.0	X	325.08124	5.75902	49.85425	4.18097	0.1822543	0.27052987	2.3676958	21	11 22.3	19.5
498470 2008 CY ₄₈	17.9	X	69.22025	128.51492	312.67381	19.27312	0.0939360	0.37397923	1.9079679	21	—	—
498471 2008 CA ₅₁	16.3	X	92.99766	142.94973	2.80482	12.13919	0.2397954	0.16510306	3.2907835	21	6 11.3	21.4
498472 2008 CN ₅₆	18.4	X	320.37709	196.51221	216.79219	2.20665	0.1938198	0.27318508	2.3532920	21	11 8.1	20.0
498473 2008 CC ₅₇	17.9	X	186.93276	333.16054	198.60853	2.46461	0.1277530	0.26410194	2.4059596			

ELEMENTS AND OPPOSITION DATES IN 2021

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2021 JULY 5.0 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>
498481 2008 CW ₈₇	17.6	X	191.16775	97.07361	62.35762	3.33933	0.1371060	0.26072851	2.4266680	21	9 30.2	21.3
498482 2008 CQ ₉₈	16.7	X	146.78851	352.44342	133.66691	2.16920	0.1859783	0.17384392	3.1795308	21	7 4.5	22.0
498483 2008 CH ₁₀₁	17.3	X	2.68645	322.20464	17.66431	4.87665	0.2041379	0.26803544	2.3823628	21	10 19.6	19.2
498484 2008 CS ₁₀₈	16.2	X	210.55185	270.03948	161.17831	24.69437	0.3938519	0.18204235	3.0833378	21	6 17.6	22.5
498485 2008 CE ₁₁₅	17.9	X	266.45490	46.82223	162.22591	23.47018	0.0241578	0.36023876	1.9561812	21	—	—
498486 2008 CC ₁₂₈	16.1	X	205.81425	265.25484	150.69194	26.04338	0.2313145	0.17540526	3.1606347	21	6 4.1	22.0
498487 2008 CM ₁₂₉	17.9	X	221.83605	0.66379	157.50690	8.30677	0.1562624	0.26794583	2.3828939	21	10 31.3	21.3
498488 2008 CV ₁₃₀	18.0	X	245.22014	357.31062	151.42805	2.71465	0.1262288	0.27105608	2.3646305	21	11 19.9	20.9
498489 2008 CE ₁₃₂	18.2	X	207.57131	309.38116	210.80202	0.91213	0.1200174	0.26499423	2.4005556	21	10 18.8	21.6
498490 2008 CV ₁₃₄	18.3	X	142.46878	328.99046	230.41987	1.45709	0.1280814	0.25904638	2.4371618	21	9 30.7	22.0
498491 2008 CQ ₁₆₁	17.9	X	274.28227	340.52087	81.90431	5.62346	0.1319334	0.26697671	2.3886571	21	9 2.4	20.8
498492 2008 CF ₁₇₆	18.3	X	122.28167	92.16524	327.49351	20.05543	0.1527168	0.38168316	1.8822070	21	2 14.8	19.7
498493 2008 CK ₁₇₉	17.1	X	235.75415	33.61329	126.20505	11.94773	0.2266297	0.26811994	2.3818622	21	11 11.1	20.6
498494 2008 CB ₁₈₁	15.3	X	163.96069	165.90058	285.40627	15.97674	0.2347876	0.17489351	3.1667972	21	6 9.3	20.8
498495 2008 CU ₁₉₄	16.5	X	136.22640	332.25589	169.28158	11.09041	0.1715049	0.17314688	3.1880584	21	7 11.9	21.8
498496 2008 CP ₁₉₆	17.5	X	123.63044	231.11007	337.58520	14.33553	0.0282164	0.25771329	2.4455591	21	9 13.3	20.7
498497 2008 CF ₂₀₃	18.2	X	283.44308	321.57536	112.53231	2.08639	0.1661920	0.26563828	2.3966739	21	9 26.4	20.6
498498 2008 CP ₂₀₈	18.2	X	7.32805	340.26753	136.44739	25.17253	0.0462227	0.36368169	1.9438157	21	—	—
498499 2008 CC ₂₁₂	17.1	X	120.58899	27.90738	149.80443	15.08272	0.0736531	0.25130868	2.4869347	21	8 3.8	20.7
498500 2008 DK ₁	17.8	X	287.84412	155.99199	284.49466	3.33210	0.1763676	0.27098143	2.3650647	21	10 9.6	20.2
498501 2008 DJ ₂	18.2	X	300.28166	133.75559	309.65722	2.41046	0.1743193	0.27398053	2.3477738	21	11 10.4	20.2
498502 2008 DG ₈	18.0	X	316.41784	258.37958	159.64062	4.95834	0.0953710	0.26734690	2.3864515	21	11 10.6	20.5
498503 2008 DM ₁₃	17.1	X	214.35882	262.46915	161.72901	10.19382	0.3565298	0.18153712	3.0890559	21	6 11.5	23.0
498504 2008 DX ₁₇	18.0	X	287.12091	97.00721	348.03710	10.16075	0.2032326	0.26868393	2.3785279	21	10 8.5	20.4
498505 2008 DQ ₁₈	16.2	X	206.73782	261.19733	147.94964	16.58916	0.2632548	0.17690113	3.1427921	21	5 25.7	22.0
498506 2008 DF ₂₂	18.1	X	191.20148	41.66844	141.61122	2.91060	0.1664160	0.26248050	2.4158577	21	10 28.4	21.8
498507 2008 DL ₂₈	18.0	X	336.84896	292.89975	142.48069	7.06618	0.0784100	0.27784589	2.3259483	21	—	—
498508 2008 DN ₃₀	16.2	X	115.94695	278.16414	163.32468	22.00617	0.0641409	0.23011477	2.6373821	21	3 23.2	19.8
498509 2008 DA ₄₀	18.3	X	237.78314	297.34661	209.38589	2.04655	0.1479438	0.26664516	2.3906367	21	11 2.6	21.1
498510 2008 DC ₄₅	18.3	X	234.38424	55.71840	101.92623	4.25554	0.1716672	0.26952585	2.3735722	21	11 11.1	21.5
498511 2008 DK ₅₆	16.1	X	170.13552	86.87836	20.05369	18.08486	0.1627322	0.17411040	3.1762858	21	7 2.2	21.6
498512 2008 DM ₆₀	16.5	X	221.18793	268.89544	156.52682	16.53450	0.2531737	0.17872604	3.1213622	21	6 22.2	22.1
498513 2008 DG ₇₆	18.3	X	268.44327	110.01766	5.74125	1.20242	0.1373187	0.26941189	2.3742414	21	11 5.1	20.8
498514 2008 DL ₈₁	18.0	X	159.03130	5.00271	184.10325	1.28636	0.1413536	0.25603692	2.4562222	21	10 4.3	21.6
498515 2008 EQ ₆	16.9	X	236.41625	276.18338	149.91998	10.15740	0.4246284	0.18611535	3.0381876	21	6 23.3	22.7
498516 2008 EW ₁₀	17.7	X	198.04316	358.81251	115.33902	5.98118	0.0727003	0.25195747	2.4826637	21	8 11.5	21.2
498517 2008 ED ₁₂	17.9	X	37.36520	198.92126	39.91581	4.05008	0.1724883	0.23980794	2.5658249	21	7 17.7	20.5
498518 2008 ER ₁₉	15.8	X	110.77593	116.93882	356.41386	16.34628	0.0841683	0.15840157	3.3829563	21	4 27.7	20.9
498519 2008 EE ₃₃	17.9	X	6.54515	353.83800	161.39479	23.17553	0.0604721	0.36795178	1.9287478	21	—	—
498520 2008 EV ₅₇	15.7	X	209.25189	55.62908	9.33950	26.57944	0.2544600	0.17255759	3.1953125	21	6 5.6	21.7
498521 2008 EK ₆₀	18.4	X	108.01127	101.98305	347.54088	19.52680	0.1056348	0.37719351	1.8971132	21	3 4.1	19.7
498522 2008 EM ₇₂	18.2	X	239.37769	287.70799	356.49547	19.49826	0.0675567	0.36775978	1.9294191	21	—	—
498523 2008 EJ ₇₆	18.2	X	252.35558	346.77158	125.55533	2.30871	0.1360187	0.26255970	2.4153718	21	10 8.4	21.2
498524 2008 EO ₁₁₂	17.6	X	340.11484	334.07882	268.83970	2.38369	0.1402892	0.22789282	2.6544973	21	3 27.8	20.5
498525 2008 EC ₁₃₁	17.8	X	223.85838	138.60665	42.12544	5.28065	0.1807174	0.26880543	2.3778111	21	11 25.5	21.0
498526 2008 EG ₁₅₂	17.5	X	44.83318	41.28153	196.93648	13.50372	0.1084928	0.24038917	2.5616873	21	7 16.3	20.8
498527 2008 EU ₁₆₁	17.6	X	173.82265	32.04507	186.45194	4.84274	0.0610842	0.26470420	2.4023088	21	12 1.1	21.0
498528 2008 FB ₅	16.5	X	184.57742	288.66296	172.94806	13.60928	0.2723728	0.17502586	3.1652006	21	7 5.8	22.3
498529 2008 FA ₅₅	16.8	X	339.99761	338.02722	31.21109	7.00537	0.1296552	0.25266157	2.4780492	21	10 9.2	19.1
498530 2008 FA ₈₄	17.8	X	248.27454	101.57337	40.30072	8.51743	0.0666193	0.26381370	2.4077117	21	11 20.9	20.9
498531 2008 FV ₉₇	17.6	X	66.97292	225.87245	97.63064	6.01974	0.1155009	0.26055658	2.4277354	21	12 17.5	20.9
498532 2008 FM ₁₀₄	17.7	X	173.60390	31.66399	152.42052	3.16580	0.1643367	0.25454327	2.4658215	21	10 12.1	21.7
498533 2008 FB ₁₀₈	17.5	X	335.47500	110.25379	140.42451	3.43747	0.0738742	0.22608057	2.6686639	21	4 12.1	20.8
498534 2008 FD ₁₀₈	17.0	X	2.90442	255.05192	1.53215	12.84704	0.2280163	0.23160988	2.6260198	21	5 23.6	19.4
498535 2008 FN ₁₂₆	17.5	X	27.11071	225.22769	45.26364	15.39711	0.1154556	0.23897350	2.5717942	21	8 14.5	20.8
498536 2008 FT ₁₃₀	14.3	X	19.44836	154.50767	87.97481	9.94190	0.0631094	0.08234184	5.2326577	21	6 13.8	21.0
498537 2008 FV ₁₃₁	15.5	X	309.61471	305.48937	185.18517	8.16390	0.0538679	0.12547145	3.9515982	21	12 30.9	21.0
498538 2008 GX ₅	17.8	X	339.70066	142.52334	104.38022	5.48650	0.2217368	0.22540543	2.6739901	21	3 25.5	20.7
498539 2008 GY ₈	18.4	X	236.98789	347.52128	156.78077	4.04793	0.1395011	0.26417592	2.4055103	21	10 31.6	21.6
498540 2008 GN ₁₂	18.0	X	198.68779	319.51828	5.91549	21.17581	0.0501061	0.36844827	1.9270147	21	1 4.5	20.7
498541 2008 GA ₂₆	18.6	X	301.87902	78.11813	42.32885	7.02834	0.3424351	0.27754735	2.3276160	21	—	—
498542 2008 GP ₃₅	17.6	X	90.53599	76.80955	101.90403	6.49929	0.0744124	0.23598589	2.5934548	21	6 27.8	20.9
498543 2008 GO ₃₆	17.7	X	71.19400	121.43049	122.69389	4.58449	0.2324095	0.24219278	2.5489536	21	9 25.7	21.2
498544 2008 GB ₄₄	17.3	X	19.12515	51.47440	216.28078	8.68053	0.2525351	0.23433117	2.6056496	21	7 30.8	19.6
498545 2008 GJ ₅₀	18.3	X	27.23045	207.97047	53.97278	1.97927	0.1979059	0.23832868	2.5764310	21	8 5.8	20.6
498546 2008 GH ₇₀	16.6	X	8.81407	188.57149	75.98147	13.16413	0.1618289	0.23203704	2.6227960	21	6 24.9	19.2
498547 2008 GX ₉₀	18.2	X	214.48088	336.51189	176.53481	3.41743	0.1133950	0.25975984	2.4326972	21	10 18.2	21.5
498548 2008 GH ₁₁₀	20.0	X	166.24729	248.66348	205.89732	29.23845	0.2810044	0.68617605	1.2730506	21	6 2.9	21.5
498549 2008 GD ₁₁₉	17.7	X	8.94739	224.93710	57.53984	5.05479	0.3083820	0.23259739	2.6185819	21	8 10.5	19.2
498550 2008 HV ₄	19.6	X	343.43901	249.53167	224.00480	20.81459	0.2780643	0.57854593	1.4264093	21	—	—
498551 2008 HT ₇	17.6	X	320.88776	151.36579	102.23882	11.31014	0.1704006	0.22110467	2.7085537	21	3 15.8	21.2
498552 2008 HK ₉	18.2	X	194.20305	228.53122	13.00350	1.37864	0.1514670	0.27118414	2.3638860	21	—	—
498553 2008 HV ₁₆	18.1	X	220.13503	322.95670	197.12116	1.90489	0.1573842	0.26155988	2.421523			

ELEMENTS AND OPPOSITION DATES IN 2021

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2021 JULY 5.0 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>
498561 2008 JO ₃₀	17.5	X	342.92855	233.17247	104.97007	12.78094	0.0804900	0.24073603	2.5592261	21	8 30.8	20.6
498562 2008 JW ₃₆	18.1	X	329.99420	95.69705	198.12772	6.82724	0.2725368	0.22553653	2.6729538	21	5 3.4	20.8
498563 2008 KL ₁	17.2	X	352.75373	207.51269	86.21542	15.22026	0.2490017	0.23030697	2.6359146	21	7 1.8	19.1
498564 2008 KS ₅	17.9	X	349.77967	127.54885	138.48274	5.79275	0.2391306	0.22618355	2.6678538	21	5 11.6	20.2
498565 2008 KV ₇	17.9	X	350.72732	163.18762	133.29261	2.52835	0.2696850	0.23077165	2.6323749	21	6 29.2	19.5
498566 2008 KM ₂₂	17.8	X	11.74928	151.28394	165.56571	5.40912	0.1232879	0.24105997	2.5569328	21	9 18.1	20.4
498567 2008 KZ ₂₉	17.2	X	353.70605	164.95539	128.75844	15.48218	0.1662985	0.23208528	2.6224325	21	7 8.1	19.7
498568 2008 KS ₃₈	17.9	X	34.33663	160.60456	76.47745	5.98108	0.1726537	0.23244490	2.6197270	21	7 8.3	20.5
498569 2008 KG ₄₁	18.0	X	0.93949	103.24319	153.06751	6.34043	0.1977246	0.22923119	2.6441550	21	5 26.5	20.4
498570 2008 LM ₆	17.5	X	29.11297	170.31537	76.03506	6.58665	0.0840885	0.23321931	2.6139246	21	7 1.7	20.5
498571 2008 LC ₈	17.4	X	344.90414	80.13745	227.41196	12.32948	0.3008285	0.23005802	2.6378158	21	6 25.3	19.3
498572 2008 LD ₉	17.3	X	19.49460	189.60212	92.03488	15.83596	0.0895053	0.23630199	2.5911415	21	8 10.0	20.5
498573 2008 LX ₉	17.7	X	50.68111	129.99962	151.46350	12.52101	0.1692898	0.24182286	2.5515523	21	10 11.8	21.0
498574 2008 LC ₁₁	17.7	X	71.91822	101.68688	111.53714	4.72776	0.1038350	0.23511299	2.5998700	21	7 24.8	21.1
498575 2008 LU ₁₃	17.4	X	9.88093	138.20803	208.20395	14.80591	0.2155574	0.24355646	2.5394302	21	11 10.9	19.9
498576 2008 LQ ₁₅	17.4	X	13.69892	91.76940	99.07162	4.76801	0.2085733	0.22126596	2.7072372	21	3 16.9	19.9
498577 2008 NV ₁	17.5	X	316.33238	96.06945	214.78977	6.60374	0.3113443	0.21972891	2.7198477	21	4 26.7	20.5
498578 2008 NX ₂	16.5	X	61.99223	323.57759	307.17295	8.06583	0.0459350	0.23404013	2.6078093	21	9 14.8	20.0
498579 2008 OM ₁	15.9	X	72.12543	123.56957	133.29096	28.03948	0.1169395	0.23374623	2.6099948	21	10 2.2	19.9
498580 2008 OG ₄	16.6	X	301.11751	83.12508	293.81943	9.93738	0.2283831	0.22391964	2.6858057	21	7 18.9	19.6
498581 2008 PA ₁₈	15.9	X	338.86751	30.11625	278.62551	11.70877	0.1422410	0.21959953	2.7209158	21	7 1.5	18.8
498582 2008 QA ₂	17.3	X	316.84579	176.65198	190.40273	3.49281	0.3093734	0.22370868	2.6874939	21	7 18.3	19.8
498583 2008 QT ₁₂	17.0	X	270.67742	12.51841	338.95501	12.10382	0.1704000	0.21394258	2.7686702	21	5 8.8	21.3
498584 2008 QU ₁₃	17.6	X	340.43488	181.24819	153.50406	6.02564	0.0844742	0.22518843	2.6757077	21	8 15.1	20.5
498585 2008 QV ₁₆	15.9	X	253.16652	167.05526	235.56011	12.99171	0.1339567	0.21523038	2.7576152	21	7 1.8	20.1
498586 2008 QC ₂₂	17.2	X	353.80320	134.95601	190.17232	11.60032	0.3242542	0.22727533	2.6593032	21	8 30.3	18.7
498587 2008 QS ₂₉	16.4	X	338.64867	317.50538	348.68733	12.17131	0.1728538	0.22096291	2.7097119	21	6 25.1	19.4
498588 2008 RN ₃₀	16.7	X	255.08270	109.94825	290.40871	8.26782	0.2287127	0.21641759	2.7475210	21	6 21.9	21.0
498589 2008 QM ₃₄	16.9	X	302.94344	174.37886	149.18706	14.79799	0.1918326	0.21661556	2.7458466	21	5 18.9	20.7
498590 2008 QE ₃₈	17.6	X	340.88392	321.24967	12.93501	2.17949	0.2045523	0.22387623	2.6861529	21	8 10.7	19.9
498591 2008 QJ ₄₀	16.6	X	283.90123	33.37260	344.64280	14.46299	0.0996893	0.22150140	2.7053185	21	7 19.9	20.4
498592 2008 QD ₄₅	16.4	X	299.44506	20.02685	300.84483	13.39698	0.1821499	0.21187568	2.7866471	21	5 2.6	20.5
498593 2008 QU ₄₆	17.0	X	282.32310	149.35657	218.64919	6.84284	0.2439633	0.21687669	2.7436422	21	6 7.9	20.8
498594 2008 QP ₄₇	16.3	X	230.95045	84.16343	324.30242	23.74954	0.2074415	0.21560175	2.7544476	21	6 11.5	21.3
498595 2008 RD	17.4	X	345.90061	289.04542	12.72035	18.66853	0.3710969	0.22404822	2.6847781	21	5 31.4	19.6
498596 2008 RM ₉	17.2	X	236.37572	217.44478	204.27959	7.34192	0.2144845	0.21244520	2.7816646	21	7 1.3	21.8
498597 2008 RK ₂₉	17.6	X	335.26110	93.57391	197.62469	1.51091	0.2020591	0.21604503	2.7506787	21	5 22.2	20.4
498598 2008 RS ₃₀	17.3	X	316.39616	342.95743	355.90744	5.07378	0.1699063	0.21885364	2.7270946	21	6 30.7	20.4
498599 2008 RN ₃₂	16.3	X	321.29413	57.53165	352.94688	28.50436	0.2274384	0.23018494	2.6368461	21	10 7.4	19.0
498600 2008 RD ₃₅	17.5	X	262.37608	32.95526	329.94840	3.10845	0.1119453	0.21094843	2.7948072	21	5 25.7	21.6
498601 2008 RV ₃₇	17.4	X	241.16491	204.34834	179.05871	4.37988	0.0822754	0.21023235	2.8011499	21	6 1.4	21.5
498602 2008 RW ₄₂	17.2	X	271.68138	186.90046	171.95050	4.13585	0.1645886	0.21166693	2.7884789	21	5 26.1	21.2
498603 2008 RZ ₄₄	17.1	X	4.04645	242.55821	15.44094	4.46430	0.1111091	0.20994035	2.8037467	21	6 6.2	20.8
498604 2008 RZ ₄₆	17.4	X	301.56425	172.53877	195.90211	2.19659	0.0941649	0.21821930	2.7323770	21	7 28.5	20.7
498605 2008 RM ₄₇	16.2	X	298.11426	29.71925	337.48456	15.52152	0.0759152	0.22307972	2.6925431	21	7 29.6	19.7
498606 2008 RF ₅₈	17.4	X	332.30585	175.28014	164.04845	3.94120	0.1444025	0.22205844	2.7007923	21	8 2.6	20.3
498607 2008 RJ ₆₂	17.3	X	299.27972	311.26911	0.17452	8.82115	0.1582948	0.21128178	2.7918668	21	4 25.8	21.2
498608 2008 RR ₇₇	17.1	X	307.47767	338.33120	0.57218	13.67878	0.1852208	0.21764369	2.7371924	21	6 10.7	20.8
498609 2008 RZ ₇₇	16.4	X	306.91729	77.27174	233.35148	3.00983	0.0886822	0.21351790	2.7723402	21	5 19.1	19.8
498610 2008 RY ₇₉	17.8	X	277.69326	110.58588	253.18875	2.44305	0.2163411	0.21568446	2.7537435	21	5 31.4	21.7
498611 2008 RJ ₈₁	17.5	X	330.81211	107.10918	225.91931	3.69301	0.0939728	0.22282135	2.6946240	21	7 25.6	20.6
498612 2008 RG ₉₇	17.2	X	273.59212	191.25142	196.74751	4.34103	0.1274003	0.21487931	2.7606180	21	7 9.8	21.0
498613 2008 RY ₁₀₀	17.0	X	264.47347	85.46997	286.64518	5.43409	0.0760701	0.21137925	2.7910084	21	6 15.1	20.7
498614 2008 RU ₁₀₁	17.4	X	302.62424	235.95469	157.33420	4.74717	0.0867923	0.22407939	2.6845291	21	9 5.3	20.5
498615 2008 RE ₁₀₂	17.7	X	291.45614	206.68689	188.21656	5.22130	0.1269908	0.22163017	2.7042705	21	8 13.2	21.2
498616 2008 RJ ₁₀₃	14.3	X	18.11286	77.17917	305.80326	7.77975	0.1111473	0.08318281	5.1973302	21	11 20.8	20.8
498617 2008 RF ₁₀₈	16.9	X	308.51287	78.78967	260.24170	4.56790	0.0653446	0.21453363	2.7635827	21	7 2.6	20.5
498618 2008 RN ₁₀₈	17.1	X	288.11028	8.09815	30.24014	10.23347	0.2733424	0.21670213	2.7451153	21	7 24.4	20.9
498619 2008 RQ ₁₁₀	17.1	X	288.88624	200.99546	146.35136	4.23569	0.1144223	0.21214485	2.7842895	21	6 8.9	20.8
498620 2008 RS ₁₁₀	17.0	X	221.51033	233.75776	160.24456	6.73333	0.1036797	0.20568549	2.8422805	21	5 23.5	21.4
498621 2008 RZ ₁₁₀	17.1	X	240.42818	230.31705	132.79088	2.98857	0.0807785	0.20481001	2.8503745	21	5 6.4	21.2
498622 2008 RH ₁₁₆	16.7	X	323.86462	193.50674	141.42844	10.72255	0.2984879	0.22013999	2.7164607	21	6 17.8	19.5
498623 2008 RP ₁₁₇	17.0	X	257.77489	42.31534	321.83208	8.54445	0.0486609	0.20883638	2.8136189	21	5 29.5	21.1
498624 2008 RR ₁₁₇	16.8	X	274.96798	199.06550	205.96652	12.72098	0.1731028	0.21869807	2.7283877	21	7 24.7	20.9
498625 2008 RP ₁₂₁	17.5	X	250.16392	211.28047	185.52325	4.61855	0.0836453	0.21421225	2.7663461	21	6 28.6	21.4
498626 2008 RM ₁₂₂	16.8	X	316.01377	124.76607	173.58233	6.93913	0.0743608	0.21279555	2.7786106	21	5 19.5	20.4
498627 2008 RB ₁₂₆	17.4	X	285.98760	23.98303	356.59587	7.22763	0.1144727	0.21632108	2.7483381	21	7 21.7	21.1
498628 2008 RC ₁₂₈	16.7	X	239.78050	111.57549	338.66889	21.67444	0.0635768	0.22644804	2.6657761	21	8 29.9	20.3
498629 2008 RE ₁₃₃	16.3	X	244.09886	15.19381	74.50626	11.88296	0.2922146	0.21610652	2.7501569	21	8 9.4	20.9
498630 2008 RK ₁₃₃	16.8	X	320.75726	213.99926	152.91685	14.52119	0.2699896	0.22348296	2.6893033	21	8 3.1	19.4
498631 2008 RO ₁₃₄	17.4	X	272.45109	253.35669	129.14760	3.74659	0.2151343	0.21483386	2.7610074	21	6 19.2	21.3
498632 2008 RZ ₁₃₄	17.4	X	272.70217	41.94840	331.88853	0.79916	0.2438652	0.21466274	2.7624744	21	6 4.2	21.6
498633 2008 RA ₁₃₅	17.0	X	293.84219	210.92704	178.28956	9.63387						

ELEMENTS AND OPPOSITION DATES IN 2021

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2021 JULY 5.0 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>
498641 2008 SZ ₃₁	16.2	X	282.50040	26.28604	350.28169	12.01058	0.1404054	0.21546141	2.7556437	21	7 7.4	20.1
498642 2008 SZ ₃₂	17.4	X	310.43671	182.60567	161.27516	5.22528	0.1240111	0.22136733	2.7064107	21	7 3.8	20.8
498643 2008 SN ₃₃	17.6	X	4.06268	141.88249	170.08645	4.66736	0.1877544	0.22734803	2.6587362	21	8 29.7	20.0
498644 2008 SB ₄₃	16.5	X	326.71896	353.42779	13.73804	19.15220	0.2452847	0.22321836	2.6914281	21	9 3.4	19.1
498645 2008 SZ ₄₃	17.0	X	261.28793	183.27872	200.70817	8.74141	0.1549358	0.21127079	2.7919636	21	6 16.2	21.2
498646 2008 SG ₄₈	17.1	X	231.31833	212.50250	210.48723	2.82550	0.0826572	0.21494617	2.7600455	21	7 10.4	21.1
498647 2008 SM ₆₃	17.2	X	201.89926	184.25624	262.59534	3.10973	0.0325795	0.21362270	2.7714334	21	7 10.7	21.1
498648 2008 SO ₆₇	17.2	X	304.83280	313.68927	30.25307	4.71578	0.0785315	0.21213033	2.7844165	21	7 2.7	20.8
498649 2008 SE ₈₁	17.1	X	287.34719	282.96111	96.81267	5.53002	0.0892565	0.21566159	2.7539381	21	7 25.0	20.5
498650 2008 SE ₈₈	16.9	X	238.09978	88.50512	11.36313	14.13179	0.1682558	0.21902403	2.7256800	21	8 31.6	21.1
498651 2008 SW ₈₈	17.4	X	265.73053	36.93368	325.59947	5.72343	0.0487762	0.20961598	2.8066384	21	6 7.4	21.3
498652 2008 SX ₈₈	17.2	X	313.88167	45.29824	297.81288	3.83989	0.1247217	0.21699967	2.7426054	21	7 8.9	20.3
498653 2008 SJ ₉₀	17.1	X	267.25571	33.94832	343.60203	4.24592	0.1652086	0.21234107	2.7825739	21	6 12.9	21.2
498654 2008 SG ₁₀₁	16.7	X	255.44301	29.14070	45.53310	10.64881	0.0983608	0.21815650	2.7329013	21	8 28.7	20.6
498655 2008 SM ₁₀₁	16.8	X	283.92751	235.28720	153.36727	5.68833	0.1241171	0.21615375	2.7497563	21	7 25.4	20.3
498656 2008 SC ₁₀₇	17.3	X	307.56005	343.83338	24.54100	17.20659	0.3101131	0.21889517	2.7267497	21	7 4.3	20.9
498657 2008 SM ₁₁₂	17.0	X	283.35132	230.95723	152.20884	5.05581	0.0891926	0.21602024	2.7508892	21	7 22.7	20.7
498658 2008 SQ ₁₁₅	16.6	X	270.00215	260.86855	185.01631	21.89839	0.0489111	0.22559730	2.6724738	21	10 5.2	20.0
498659 2008 SP ₁₂₂	17.2	X	271.86256	25.52580	14.98775	6.73810	0.0365251	0.21557779	2.7546518	21	8 10.9	21.0
498660 2008 SC ₁₂₇	16.9	X	282.31628	48.80283	7.10561	5.21036	0.0404670	0.22136996	2.7063892	21	9 13.2	20.3
498661 2008 SG ₁₂₇	17.7	X	287.47855	157.50694	220.10352	2.85641	0.1149311	0.21528701	2.7571316	21	7 16.9	21.2
498662 2008 SO ₁₂₇	16.4	X	267.98992	158.03195	243.94885	12.11468	0.1695431	0.21686773	2.7437177	21	7 13.1	20.5
498663 2008 SL ₁₂₈	16.9	X	328.94257	80.28675	239.97855	5.48222	0.0324790	0.21102242	2.7941538	21	7 9.9	20.6
498664 2008 SZ ₁₃₆	17.9	X	289.50655	168.42607	217.93850	4.12047	0.4220314	0.21719609	2.7409517	21	6 14.9	22.1
498665 2008 SA ₁₃₉	16.9	X	345.10325	220.31772	117.30941	4.27382	0.0947496	0.21893547	2.7264150	21	8 28.3	19.9
498666 2008 SQ ₁₄₁	16.9	X	211.27132	28.27474	6.03760	5.95760	0.0725920	0.20290851	2.8681545	21	5 11.3	21.2
498667 2008 SS ₁₄₁	17.1	X	221.89224	201.64423	230.48325	8.11698	0.1878713	0.21047513	2.7989955	21	7 2.7	21.8
498668 2008 SM ₁₅₁	17.2	X	332.63266	358.02463	322.74485	4.13459	0.1575724	0.21804377	2.7338431	21	7 6.3	20.0
498669 2008 SV ₁₆₂	16.5	X	280.92568	35.59108	14.94923	14.45806	0.1878351	0.22032106	2.7149721	21	8 17.8	20.2
498670 2008 ST ₁₇₁	17.0	X	305.66763	352.62021	304.01376	5.07179	0.0180622	0.20702132	2.8300406	21	5 7.5	20.8
498671 2008 ST ₁₇₁	17.4	X	246.96731	159.50043	256.29368	3.70565	0.0664953	0.21784583	2.7354990	21	7 21.7	21.3
498672 2008 SO ₁₇₄	16.9	X	280.27538	182.31522	209.58808	14.70342	0.2014549	0.21771465	2.7365976	21	7 10.2	21.0
498673 2008 SS ₁₈₂	17.1	X	297.97509	249.84971	64.68152	3.04199	0.0534373	0.20303197	2.8669917	21	5 17.9	20.8
498674 2008 SM ₁₈₅	16.0	X	236.67946	79.63482	5.65162	14.25302	0.0701000	0.21563890	2.7541314	21	8 22.9	20.1
498675 2008 SF ₁₈₇	16.6	X	46.94090	230.71024	7.95600	13.53338	0.0453770	0.21190642	2.7863776	21	7 18.0	20.5
498676 2008 SP ₁₈₇	17.7	X	261.13005	72.04855	320.22847	2.60063	0.1059788	0.21261831	2.7801546	21	7 3.7	21.7
498677 2008 SS ₂₀₇	17.4	X	299.18803	177.00074	204.64635	18.45721	0.4716910	0.22095471	2.7097790	21	6 11.6	21.6
498678 2008 SU ₂₂₃	17.3	X	237.75631	176.01577	260.41081	3.21067	0.1978784	0.21540255	2.7561456	21	7 22.7	21.7
498679 2008 SB ₂₂₈	17.4	X	297.40566	45.49900	299.28034	5.14022	0.0630546	0.21428226	2.7657435	21	6 25.1	20.9
498680 2008 SH ₂₄₂	16.6	X	313.28666	324.00220	27.31802	14.62257	0.1191435	0.21565220	2.7540181	21	7 25.2	20.2
498681 2008 ST ₂₄₂	17.1	X	272.79403	27.56767	30.08756	15.77588	0.1475505	0.21744008	2.7389009	21	8 24.0	21.1
498682 2008 SJ ₂₅₀	17.4	X	336.09635	336.97471	336.52755	3.28467	0.0899048	0.21288567	2.7778264	21	7 8.4	20.6
498683 2008 SO ₂₅₆	16.8	X	212.72258	42.92397	39.21632	5.60607	0.1418685	0.20964627	2.8063681	21	7 11.3	21.3
498684 2008 SO ₂₆₀	17.3	X	324.28500	347.01278	346.75277	3.54771	0.0703974	0.21421328	2.7663373	21	7 19.9	20.7
498685 2008 SX ₂₆₁	17.3	X	271.41360	33.30699	17.53729	6.11271	0.0258259	0.21997617	2.7178092	21	8 25.9	20.9
498686 2008 SL ₂₆₇	17.3	X	216.19941	250.85800	154.21518	2.50655	0.0817798	0.20703813	2.8298874	21	5 31.9	21.5
498687 2008 SV ₂₇₀	17.0	X	259.57378	175.92946	226.59435	9.51248	0.1268061	0.20997891	2.8034034	21	7 10.2	21.2
498688 2008 SX ₂₇₁	17.0	X	353.38587	292.96155	30.10862	12.18533	0.1964274	0.22278090	2.6949502	21	8 30.2	19.7
498689 2008 SL ₂₇₃	17.0	X	297.60069	329.14277	55.72884	5.23912	0.0798710	0.21343033	2.7730985	21	8 19.4	20.5
498690 2008 SZ ₂₇₃	17.4	X	249.22456	284.08401	96.87240	4.73773	0.1096630	0.20970184	2.8058722	21	6 4.3	21.6
498691 2008 ST ₂₇₅	14.3	X	337.43403	225.36611	199.43669	6.12533	0.1061944	0.08228770	5.2349526	21	11 13.4	20.6
498692 2008 SS ₂₈₀	16.9	X	261.33181	339.91786	59.18510	3.68587	0.1836500	0.21281040	2.7784814	21	7 2.3	21.0
498693 2008 SB ₂₈₃	16.3	X	37.56340	127.93864	32.57263	14.39983	0.0892802	0.21306612	2.7762577	21	8 11.9	20.1
498694 2008 SY ₂₈₃	17.0	X	331.86705	299.09366	160.73259	8.67007	0.2339039	0.22234483	2.6984727	21	8 22.0	19.3
498695 2008 SM ₃₀₀	16.5	X	227.05032	85.05606	348.10640	12.03206	0.0897448	0.21474449	2.7617734	21	7 21.9	20.7
498696 2008 SV ₃₀₆	17.0	X	326.61432	302.48594	14.39191	7.07454	0.1647839	0.21633942	2.7481827	21	6 16.9	20.1
498697 2008 SF ₃₀₇	16.7	X	279.33061	213.49857	157.20102	8.86997	0.2022111	0.21255607	2.7806973	21	6 14.4	20.8
498698 2008 SQ ₃₀₇	17.1	X	319.61914	301.66321	42.40925	8.26583	0.2428940	0.21878425	2.7276711	21	7 2.4	20.1
498699 2008 SR ₃₀₉	15.8	X	142.59715	304.08340	99.15522	23.14716	0.1935977	0.18435736	3.0574714	21	4 4.3	21.1
498700 2008 TR	17.0	X	262.24115	280.58661	79.83122	8.61661	0.2450570	0.21000732	2.8031505	21	5 9.8	21.4
498701 2008 TJ ₁₁	17.2	X	196.07810	274.92573	190.45755	12.75520	0.1477095	0.21367472	2.7709836	21	7 20.8	21.9
498702 2008 TQ ₂₀	16.8	X	188.97528	145.72358	216.34219	10.20934	0.1105583	0.18953502	3.0015327	21	3 9.3	21.6
498703 2008 TV ₂₈	16.9	X	266.74679	189.95931	207.01831	8.51086	0.2177946	0.21790570	2.7349978	21	6 30.1	21.0
498704 2008 TR ₄₃	19.0	X	52.37216	129.84899	236.46609	1.85029	0.1116055	0.31646161	2.1326620	21	—	—
498705 2008 TX ₄₈	17.1	X	320.51390	2.33683	302.69460	4.07431	0.1408098	0.21275304	2.7789807	21	5 23.5	20.5
498706 2008 TF ₆₀	17.5	X	297.72605	12.08999	12.15230	2.92806	0.1487537	0.22171367	2.7035915	21	8 7.3	20.6
498707 2008 TF ₆₃	17.6	X	252.98735	350.82447	22.29974	1.96398	0.0825846	0.20710199	2.8293056	21	6 1.2	21.7
498708 2008 TG ₇₇	17.0	X	354.17554	253.71164	19.37855	9.35549	0.1243038	0.21233327	2.7826421	21	6 7.9	20.2
498709 2008 TE ₈₀	17.3	X	325.59202	304.14077	28.24550	6.29686	0.0343889	0.21566268	2.7539289	21	7 24.6	21.0
498710 2008 TW ₈₃	17.2	X	296.99843	51.11215	275.59250	2.16754	0.2376449	0.21205467	2.7850789	21	5 2.9	21.1
498711 2008 TS ₈₄	17.0	X	336.08207	342.41238	4.59966	2.07414	0.0979039	0.22104598	2.7090330	21	8 25.4	19.9
498712 2008 TE ₈₈	16.8	X	258.43765	183.14950	185.72873	12.85072	0.0703067	0.20717892	2.8286052	21	6 5.3	21.0
498713 2008 TN ₉₀	18.8	X	24.37408	217.47118	167.86458	1.82541	0.1					

ELEMENTS AND OPPOSITION DATES IN 2021

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2021 JULY 5.0 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>
498721 2008 <i>TB</i> ₁₀₉	17.0	X	303.55599	198.21625	131.19635	5.38582	0.2068815	0.21338640	2.7734791	21	5 22.5	20.6
498722 2008 <i>TW</i> ₁₁₂	16.6	X	354.84720	52.11255	269.60540	6.15303	0.2012313	0.22238961	2.6981104	21	8 20.8	19.1
498723 2008 <i>TN</i> ₁₁₃	17.0	X	234.03129	312.77284	89.93697	3.20352	0.0687131	0.20720011	2.8284124	21	6 19.0	21.0
498724 2008 <i>TQ</i> ₁₁₄	17.2	X	297.12637	289.78679	82.66447	5.32763	0.0875307	0.21522852	2.7576311	21	7 30.1	20.7
498725 2008 <i>TG</i> ₁₁₅	16.9	X	271.68993	148.98383	227.50454	12.96119	0.2036155	0.21265220	2.7798592	21	6 11.7	21.1
498726 2008 <i>TA</i> ₁₁₆	17.2	X	267.47001	168.24909	238.78585	7.09545	0.2799068	0.21485154	2.7608559	21	7 5.9	21.4
498727 2008 <i>TF</i> ₁₁₉	17.3	X	282.31515	173.99738	210.05115	5.80866	0.0621813	0.21786183	2.7353650	21	7 25.6	20.9
498728 2008 <i>TA</i> ₁₂₀	16.7	X	288.91397	15.99785	351.13409	4.97244	0.0935270	0.21436860	2.7650000	21	7 9.5	20.3
498729 2008 <i>TE</i> ₁₂₅	16.8	X	311.96565	40.92780	284.58888	3.31995	0.0695027	0.21189588	2.7864707	21	6 18.8	20.3
498730 2008 <i>TY</i> ₁₂₆	17.2	X	291.06033	46.15978	324.01251	6.06884	0.0642049	0.21581253	2.7526539	21	7 21.4	20.8
498731 2008 <i>TF</i> ₁₂₇	17.1	X	350.15658	348.55405	320.59279	5.37390	0.0482163	0.21619631	2.7493954	21	7 27.1	20.4
498732 2008 <i>TL</i> ₁₃₅	17.4	X	287.49530	357.93107	355.98578	3.40033	0.1279305	0.21071838	2.7968410	21	6 12.9	21.2
498733 2008 <i>TU</i> ₁₃₆	17.0	X	247.00853	5.68017	359.69108	1.77164	0.0841954	0.20338232	2.8636983	21	5 14.9	21.3
498734 2008 <i>TA</i> ₁₃₉	17.0	X	249.83206	52.49532	358.40574	6.40573	0.0375916	0.21273807	2.7791111	21	7 25.4	20.8
498735 2008 <i>TB</i> ₁₄₀	16.9	X	272.12858	58.10559	324.26066	2.67783	0.10265263	0.21234169	2.7825686	21	7 4.5	20.8
498736 2008 <i>TB</i> ₁₄₈	16.9	X	281.22287	6.23220	19.78506	18.21605	0.2591365	0.21670175	2.7451186	21	6 28.1	21.1
498737 2008 <i>TL</i> ₁₄₈	17.4	X	243.12019	12.48361	45.57505	4.92157	0.0573721	0.21528222	2.7571725	21	7 23.1	21.3
498738 2008 <i>TS</i> ₁₅₁	17.1	X	321.04790	195.77850	134.99213	3.37814	0.2090791	0.21796418	2.7345086	21	6 20.7	20.0
498739 2008 <i>TN</i> ₁₅₂	17.0	X	320.21634	352.29989	25.42982	15.12619	0.1330685	0.22404553	2.6847995	21	9 14.8	20.1
498740 2008 <i>TK</i> ₁₆₀	17.5	X	266.21421	352.18606	15.63731	2.01181	0.1026456	0.20687615	2.8313644	21	6 7.8	21.4
498741 2008 <i>TL</i> ₁₆₀	17.1	X	196.71661	296.40204	173.81422	4.40776	0.0201631	0.21270231	2.7794226	21	8 4.2	20.9
498742 2008 <i>TP</i> ₁₆₀	17.6	X	338.45927	95.74852	204.14480	6.80889	0.2113372	0.21722097	2.7407424	21	6 9.9	20.3
498743 2008 <i>TW</i> ₁₆₀	17.5	X	260.59645	329.23232	84.83748	4.07493	0.0842020	0.21492802	2.7602009	21	8 5.1	21.2
498744 2008 <i>TY</i> ₁₆₀	16.6	X	260.34143	21.86813	33.36607	12.63185	0.0558143	0.21749594	2.7384319	21	8 15.9	20.6
498745 2008 <i>TU</i> ₁₆₃	17.7	X	236.55048	118.68409	260.80738	0.93899	0.2020067	0.20365593	2.8611328	21	5 21.6	21.9
498746 2008 <i>TH</i> ₁₆₆	17.8	X	254.86749	338.98313	84.92575	3.87588	0.2653773	0.21259569	2.7803517	21	7 17.7	22.0
498747 2008 <i>TH</i> ₁₆₉	17.0	X	356.13203	287.71773	33.06521	5.47647	0.0683937	0.21737587	2.7394402	21	8 24.0	20.3
498748 2008 <i>TK</i> ₁₇₈	16.5	X	289.94357	358.45586	48.42001	12.11969	0.1075900	0.22248851	2.6973108	21	9 8.4	20.1
498749 2008 <i>TT</i> ₁₈₁	17.2	X	262.68211	157.35463	194.17930	4.80455	0.0711084	0.20505724	2.8480831	21	5 18.6	21.2
498750 2008 <i>UP</i> ₂	16.5	X	325.48532	310.40731	32.28395	27.52117	0.2546494	0.22030927	2.7150690	21	7 31.1	19.9
498751 2008 <i>UF</i> ₆	16.8	X	229.72520	96.74637	347.38023	12.26327	0.1739472	0.21384088	2.7695479	21	7 31.2	21.2
498752 2008 <i>UP</i> ₆	17.2	X	263.93330	273.13276	122.95637	4.55775	0.1010374	0.21282834	2.7783252	21	7 12.6	21.1
498753 2008 <i>UJ</i> ₈	17.2	X	336.09798	303.20267	27.24325	1.50396	0.1215192	0.22032260	2.7149594	21	7 30.8	20.1
498754 2008 <i>UM</i> ₁₀	17.4	X	276.56643	44.71491	318.70955	2.80525	0.1101358	0.21259301	2.7803752	21	6 13.9	21.3
498755 2008 <i>UU</i> ₁₀	17.3	X	273.30179	144.22709	234.80823	3.84850	0.0859805	0.21436744	2.7650108	21	7 3.9	21.1
498756 2008 <i>UX</i> ₁₀	17.1	X	309.05179	130.83146	232.65587	4.79527	0.0977563	0.21908663	2.7251608	21	7 31.8	20.5
498757 2008 <i>UZ</i> ₁₁	17.5	X	259.64238	198.61415	211.65035	5.89730	0.2072838	0.21697698	2.7427966	21	7 28.6	21.3
498758 2008 <i>UX</i> ₁₂	17.5	X	255.89846	89.99930	346.85905	3.11908	0.0732438	0.21806679	2.7336507	21	8 12.4	21.5
498759 2008 <i>UA</i> ₁₄	17.3	X	309.50137	90.59444	278.69713	2.87999	0.1101982	0.21976553	2.7195455	21	8 9.1	20.5
498760 2008 <i>UQ</i> ₂₃	17.2	X	358.07734	243.45923	73.98228	2.96468	0.0661067	0.22051301	2.7133964	21	8 21.3	20.5
498761 2008 <i>UH</i> ₃₃	18.8	X	98.82639	146.51041	181.70594	3.83806	0.2365105	0.32166935	2.1095813	21	—	—
498762 2008 <i>UG</i> ₃₄	17.3	X	304.85817	168.59566	188.60235	5.75635	0.0985126	0.21276450	2.7788809	21	7 16.6	20.8
498763 2008 <i>UM</i> ₃₇	17.4	X	274.77244	2.86101	34.77252	10.83444	0.1376143	0.21292513	2.7774832	21	7 26.9	21.3
498764 2008 <i>UJ</i> ₄₀	17.2	X	301.27930	332.72830	29.20724	4.73330	0.0829808	0.21202573	2.7853322	21	7 22.6	20.8
498765 2008 <i>UZ</i> ₅₁	18.4	X	125.26363	194.58947	50.47897	23.20870	0.0370480	0.37983297	1.8883143	21	11 24.8	20.3
498766 2008 <i>UA</i> ₅₄	17.0	X	271.37633	159.48278	222.96072	5.66084	0.1523881	0.20869987	2.8148457	21	6 26.2	20.9
498767 2008 <i>UW</i> ₅₉	17.0	X	304.63801	316.89512	13.33257	7.95751	0.2252779	0.21100387	2.7943176	21	5 18.6	20.6
498768 2008 <i>UY</i> ₆₈	17.3	X	261.42258	307.67862	121.64324	5.95774	0.0940604	0.21870736	2.7283105	21	8 25.5	20.9
498769 2008 <i>UT</i> ₈₀	17.2	X	271.95232	344.45292	40.51275	6.91721	0.0787650	0.21386493	2.7693403	21	7 12.9	21.1
498770 2008 <i>UE</i> ₈₂	16.8	X	235.82439	67.08154	49.69896	12.70651	0.1048546	0.22356207	2.6886688	21	9 28.7	20.8
498771 2008 <i>UE</i> ₈₄	17.4	X	321.68982	59.99433	274.96402	2.50648	0.1017307	0.21345373	2.7728958	21	7 12.9	20.8
498772 2008 <i>UG</i> ₈₅	18.5	X	99.85360	255.10968	190.30337	1.79647	0.1794948	0.26406868	2.4061616	21	3 17.3	21.1
498773 2008 <i>UJ</i> ₉₂	17.0	X	302.92292	164.87766	169.07986	9.78362	0.2904516	0.21387735	2.7692332	21	5 15.2	20.8
498774 2008 <i>UR</i> ₉₃	16.2	X	270.35512	350.71717	67.80679	18.17974	0.2101641	0.21495168	2.7599983	21	8 9.3	20.4
498775 2008 <i>UM</i> ₁₀₈	16.8	X	293.46900	345.89155	35.40967	12.18530	0.1406095	0.21296450	2.7771409	21	7 31.9	20.6
498776 2008 <i>UC</i> ₁₁₅	16.4	X	7.77042	223.58913	13.78411	9.91986	0.0332553	0.19879738	2.9075617	21	5 13.1	20.4
498777 2008 <i>UZ</i> ₁₂₉	17.5	X	242.35893	25.81170	346.44678	1.42334	0.0834122	0.20322579	2.8651685	21	5 18.5	21.6
498778 2008 <i>UA</i> ₁₃₅	17.4	X	234.57518	181.21345	205.94905	1.46875	0.0795634	0.20355080	2.8621178	21	5 29.7	21.5
498779 2008 <i>UG</i> ₁₄₀	17.1	X	245.18806	35.20594	46.90870	5.64417	0.1286565	0.21376443	2.7702083	21	8 18.3	21.1
498780 2008 <i>UR</i> ₁₄₁	17.2	X	316.10002	141.24844	205.35588	2.84491	0.1853546	0.21429042	2.7656733	21	7 8.0	20.2
498781 2008 <i>UH</i> ₁₄₃	17.0	X	281.34157	160.73289	215.90915	7.27391	0.2332989	0.21260876	2.7802378	21	6 19.3	20.9
498782 2008 <i>UJ</i> ₁₄₆	16.4	X	212.37760	70.07407	36.19815	25.68995	0.0704374	0.21522850	2.7576312	21	8 31.5	21.0
498783 2008 <i>UT</i> ₁₄₈	16.6	X	325.23850	103.75742	238.66251	5.27753	0.0363687	0.21074146	2.7966367	21	8 2.5	20.4
498784 2008 <i>UG</i> ₁₅₂	17.2	X	357.89782	115.70160	185.54921	3.08802	0.0700391	0.21404174	2.7678150	21	7 26.6	20.5
498785 2008 <i>UF</i> ₁₅₈	16.7	X	311.31285	305.94639	51.03483	14.29347	0.2301546	0.21539415	2.7562173	21	7 8.3	20.0
498786 2008 <i>UC</i> ₁₆₄	16.8	X	209.46782	82.58776	24.82892	13.20372	0.1727964	0.21113202	2.7931868	21	8 12.1	21.5
498787 2008 <i>UJ</i> ₁₆₈	17.0	X	140.08849	37.44776	87.40990	3.24335	0.0193098	0.20299127	2.8673749	21	6 13.1	21.0
498788 2008 <i>UP</i> ₁₆₉	17.2	X	265.61763	197.99850	148.37920	2.84774	0.0965660	0.20236431	2.8732942	21	5 12.4	21.3
498789 2008 <i>UC</i> ₁₇₁	18.8	X	349.70574	177.97180	250.77025	3.75570	0.0399227	0.31339519	2.1465508	21	—	—
498790 2008 <i>UK</i> ₁₇₃	17.2	X	277.89564	309.35226	35.86251	2.34546	0.0758285	0.20351683	2.8624363	21	5 27.8	21.0
498791 2008 <i>UM</i> ₁₈₁	17.4	X	254.21932	314.18712								

ELEMENTS AND OPPOSITION DATES IN 2021

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2021 JULY 5.0 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>		
498801	2008	UY ₂₆₀	17.1	X	286.28930	130.13650	191.08721	5.61011	0.0556324	0.20094289	2.8868283	21	5 11.9	21.1
498802	2008	UU ₂₆₆	17.3	X	275.31096	7.25569	9.33185	4.21987	0.0822538	0.21017318	2.8016756	21	7 4.9	21.2
498803	2008	UP ₂₆₈	17.1	X	294.82515	254.50130	76.11383	2.95376	0.0698559	0.20515832	2.8471475	21	6 1.4	20.9
498804	2008	UN ₂₇₉	17.5	X	213.65119	349.65323	55.06557	2.86892	0.0694147	0.20295296	2.8677357	21	5 28.9	21.6
498805	2008	UE ₂₈₅	17.0	X	268.20297	349.88042	53.24566	5.91653	0.1638114	0.21375605	2.7702807	21	7 19.6	20.9
498806	2008	UQ ₂₈₅	16.8	X	267.53402	347.24061	44.26680	9.91845	0.0905475	0.21162641	2.7888349	21	7 14.4	20.8
498807	2008	UM ₂₈₈	17.2	X	230.84759	288.08837	89.66933	3.15607	0.0854495	0.20164530	2.8801205	21	5 13.6	21.5
498808	2008	UC ₃₀₇	16.8	X	186.00329	192.79484	276.56889	9.20016	0.0761548	0.20671918	2.8327975	21	7 18.9	21.0
498809	2008	UW ₃₁₁	17.2	X	287.10442	27.94882	336.66079	5.91066	0.0739772	0.21236250	2.7823868	21	7 6.6	20.9
498810	2008	US ₃₂₃	17.0	X	297.58048	314.66274	24.58937	13.75623	0.3258783	0.21253950	2.7808417	21	5 4.9	21.1
498811	2008	UZ ₃₂₅	16.5	X	254.00153	112.12074	299.57897	7.97486	0.1591859	0.21324580	2.7746980	21	7 13.7	20.6
498812	2008	UV ₃₂₇	17.0	X	270.45781	124.32576	248.74603	6.58636	0.2369359	0.21268266	2.7795937	21	6 1.8	21.2
498813	2008	UK ₃₂₉	17.1	X	299.56527	350.01198	351.66647	1.58084	0.2489608	0.21266152	2.7797780	21	5 24.7	20.8
498814	2008	UT ₃₄₂	17.2	X	271.62527	118.88398	248.40552	7.95867	0.2563639	0.21020357	2.8014056	21	5 24.3	21.6
498815	2008	UY ₃₄₄	16.9	X	197.21037	180.80859	225.67416	6.92816	0.0835814	0.19796731	2.9156836	21	5 13.2	21.3
498816	2008	UL ₃₄₇	17.3	X	239.82171	251.67038	161.24676	4.73339	0.0702571	0.20957725	2.8069841	21	7 8.7	21.3
498817	2008	UM ₃₄₉	17.5	X	275.07563	63.73098	342.05939	3.34079	0.1034901	0.21308576	2.7760871	21	8 9.9	21.2
498818	2008	UD ₃₅₀	16.5	X	199.71412	93.53730	252.66299	9.03401	0.1212970	0.19030235	2.9934588	21	2 27.6	21.4
498819	2008	UW ₃₅₇	18.0	X	276.30707	200.43396	269.29459	7.46843	0.1052008	0.30350574	2.1929300	21	11 21.3	20.2
498820	2008	UV ₃₆₂	16.8	X	276.20181	97.61387	303.67612	12.10577	0.2099180	0.21641203	2.7475680	21	7 19.9	20.5
498821	2008	UQ ₃₆₄	16.7	X	304.16585	200.74906	126.37058	10.68631	0.2864657	0.21199728	2.7855814	21	5 10.2	20.5
498822	2008	VO	16.8	X	293.34523	130.26034	230.22298	8.94607	0.1850768	0.21420077	2.7664449	21	6 20.8	20.5
498823	2008	VM ₇	17.5	X	223.50230	243.40813	155.84417	2.39966	0.0716137	0.20413358	2.8566679	21	6 2.5	21.7
498824	2008	VD ₁₉	17.2	X	304.75825	170.29863	140.32965	2.79929	0.0516611	0.20241108	2.8728516	21	5 22.9	21.0
498825	2008	VP ₂₃	17.1	X	264.12686	301.89862	103.35316	4.12046	0.0711229	0.20899125	2.8122288	21	7 30.1	20.9
498826	2008	VO ₂₄	17.0	X	293.59713	292.49039	95.03050	6.23760	0.1384383	0.21318911	2.7751899	21	8 6.9	20.4
498827	2008	VC ₃₉	17.1	X	261.71507	31.14417	338.03827	1.32488	0.0840778	0.20319232	2.8654831	21	6 6.7	21.0
498828	2008	VN ₄₈	16.5	X	298.33814	285.72926	62.41166	20.69978	0.2620187	0.21039886	2.7996718	21	5 29.2	20.1
498829	2008	VZ ₇₈	16.2	X	103.31170	57.86899	107.50465	11.32755	0.0445555	0.19005233	2.9960835	21	6 23.2	20.5
498830	2008	WU ₁	17.1	X	289.02543	257.96749	108.24943	3.97999	0.2347895	0.21315270	2.7755059	21	6 15.3	20.7
498831	2008	WY ₃	17.1	X	303.81596	300.88582	52.84161	7.12908	0.0411427	0.21190978	2.7863482	21	7 21.0	20.8
498832	2008	WQ ₁₇	16.7	X	343.43243	271.30274	52.54718	13.44962	0.1285491	0.21657867	2.7461585	21	8 8.5	20.0
498833	2008	WR ₂₁	17.2	X	301.05619	333.99297	41.74014	6.10142	0.0273283	0.21571702	2.7534663	21	8 19.5	20.9
498834	2008	WZ ₂₂	17.5	X	269.72171	13.00995	49.61422	2.42296	0.1972200	0.21539073	2.7562465	21	8 11.4	21.3
498835	2008	WW ₃₀	17.3	X	241.53116	122.97657	264.55478	6.83308	0.0935915	0.20076974	2.8884878	21	6 5.6	21.4
498836	2008	WZ ₃₅	17.0	X	270.20006	149.45543	220.17984	1.32437	0.0805264	0.20533423	2.8455211	21	6 18.7	20.9
498837	2008	WF ₃₆	17.0	X	263.82264	134.50399	216.71227	1.26696	0.0820149	0.20036679	2.8923592	21	5 17.7	21.0
498838	2008	WL ₃₉	16.5	X	18.23739	6.41666	207.54100	1.29715	0.1396541	0.19165550	2.9793523	21	5 2.7	19.8
498839	2008	WS ₅₂	17.3	X	282.20968	271.07530	47.61621	9.84037	0.1240459	0.20148681	2.8816306	21	4 23.8	21.4
498840	2008	WU ₅₉	16.5	X	263.24568	342.10138	85.95331	10.11513	0.1785251	0.21329578	2.7742645	21	8 15.2	20.5
498841	2008	WK ₇₅	16.9	X	223.23440	309.33326	92.43791	4.49264	0.1495511	0.20147811	2.8817135	21	5 31.1	21.4
498842	2008	WA ₇₆	17.0	X	229.70895	225.96768	212.52312	4.88317	0.0338713	0.20871066	2.8147487	21	8 1.9	21.1
498843	2008	WM ₇₆	17.3	X	264.06298	227.56063	139.19191	2.86460	0.0719243	0.20269352	2.8701822	21	6 8.7	21.3
498844	2008	WP ₉₈	16.1	X	133.73518	147.78878	244.04507	20.76699	0.1142856	0.17959751	3.1112566	21	2 12.9	21.2
498845	2008	WT ₉₉	16.6	X	105.55985	146.91243	67.48081	10.36143	0.0538691	0.21345497	2.7728851	21	9 5.5	20.7
498846	2008	WY ₉₉	17.2	X	302.51347	276.96948	76.12207	5.40053	0.0838276	0.21052944	2.7985140	21	7 11.1	20.8
498847	2008	WT ₁₀₅	16.2	X	271.24158	259.75198	82.93941	10.56654	0.0318180	0.19250485	2.9705824	21	5 24.7	20.4
498848	2008	WH ₁₂₉	15.5	X	26.27230	276.17630	275.31336	14.67158	0.1550154	0.17934576	3.1141675	21	4 11.9	19.4
498849	2008	WT ₁₃₉	15.9	X	297.28386	90.57396	270.14541	23.56364	0.1891885	0.21083689	2.7957928	21	6 26.1	19.3
498850	2008	XM ₁₃	16.9	X	282.40856	50.16860	335.80108	4.78689	0.0091747	0.20955871	2.8071497	21	8 7.6	20.6
498851	2008	XK ₂₁	16.9	X	242.21786	299.16923	118.57454	3.07757	0.0631276	0.20178057	2.8788331	21	7 19.2	20.9
498852	2008	XZ ₃₂	17.0	X	345.83990	276.22776	43.17734	4.19539	0.0950279	0.20993425	2.8038010	21	8 3.3	20.4
498853	2008	XW ₃₃	17.0	X	234.43007	121.44559	276.22844	6.42959	0.0978691	0.20166516	2.7979314	21	6 10.1	21.3
498854	2008	XH ₅₀	17.0	X	206.67414	96.78767	315.17988	15.19239	0.2262024	0.19117604	2.9843316	21	5 22.7	22.4
498855	2008	XU ₅₄	17.1	X	181.24021	12.71081	118.27700	6.40056	0.2434193	0.19915299	2.9040996	21	8 9.4	22.2
498856	2008	YX ₄	16.8	X	281.67960	304.18932	84.30724	11.48806	0.3502958	0.21232716	2.7826955	21	6 18.9	20.9
498857	2008	YD ₂₁	16.3	X	180.94440	297.86811	120.57973	10.82600	0.1004326	0.18627488	3.0364527	21	5 15.3	21.2
498858	2008	YX ₃₅	16.3	X	100.76822	22.65667	111.83074	11.05205	0.0723192	0.18209655	3.0827259	21	5 18.5	20.8
498859	2008	YW ₄₂	16.3	X	356.80552	285.84232	265.34851	8.86916	0.1108309	0.17869736	3.1216962	21	2 23.1	20.4
498860	2008	YO ₄₃	17.6	X	284.38580	316.03962	86.07793	5.24889	0.1034115	0.21251483	2.7810570	21	8 19.4	21.2
498861	2008	YL ₄₄	16.3	X	101.23795	154.91106	91.36117	6.09474	0.1326133	0.17969297	3.1101547	21	4 18.5	20.8
498862	2008	YB ₅₀	18.3	X	221.67953	41.37682	36.00514	5.97625	0.1338006	0.28811312	2.2703563	21	10 9.3	21.4
498863	2008	YF ₅₂	16.5	X	130.69867	136.49218	316.57875	8.06542	0.1307204	0.18166939	3.0875562	21	5 1.9	21.3
498864	2008	YJ ₅₄	16.2	X	17.74920	236.06773	318.05926	15.04883	0.0694508	0.17496424	3.1659437	21	3 29.2	20.6
498865	2008	YJ ₅₆	16.8	X	337.39515	275.18377	299.82880	10.27909	0.0327823	0.17568481	3.1572810	21	3 5.3	21.3
498866	2008	YB ₆₀	16.6	X	185.21879	339.89098	82.57685	6.31166	0.2255609	0.19173645	2.9785136	21	5 22.2	21.8
498867	2008	YA ₈₁	18.4	X	311.65868	350.55445	89.66007	6.16153	0.1150476	0.29912970	2.2142655	21	12 11.8	20.3
498868	2008	YD ₈₂	16.6	X	340.31102	260.18353	303.76667	8.41926	0.0447830	0.17334763	3.1855966	21	2 24.6	21.1
498869	2008	YK ₈₆	16.9	X	255.29553	304.75187	100.70988	16.02586	0.1387963	0.20379595				

ELEMENTS AND OPPOSITION DATES IN 2021

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2021 JULY 5.0 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>
498881 2008 YD ₁₁₀	16.0	X	280.67704	8.02400	295.30043	19.23163	0.1053122	0.18255423	3.0775713	21	3 25.4	21.0
498882 2008 YR ₁₁₄	17.0	X	154.51038	355.49111	84.50140	2.93875	0.1771848	0.18724776	3.0259259	21	5 16.3	21.8
498883 2008 YK ₁₁₈	16.5	X	105.48495	19.77626	111.74879	12.30724	0.0585069	0.18360390	3.0658304	21	5 19.0	21.0
498884 2008 YC ₁₂₀	16.4	X	60.79814	202.92338	303.00156	10.25504	0.0402448	0.17895879	3.1186552	21	3 28.7	20.8
498885 2008 YW ₁₂₂	16.8	X	200.51042	285.30130	126.79944	7.07785	0.1557257	0.19224839	2.9732236	21	5 23.9	21.7
498886 2008 YA ₁₂₄	16.7	X	163.00392	155.02842	273.87067	5.63657	0.1252263	0.18617885	3.0374967	21	5 6.2	21.5
498887 2008 YX ₁₂₆	16.2	X	291.33778	341.84353	302.19000	11.27065	0.0962930	0.17862298	3.1225627	21	3 21.3	20.8
498888 2008 YV ₁₃₂	16.5	X	172.31097	117.96008	318.42454	6.53187	0.0611511	0.18740037	3.0242830	21	5 22.2	21.1
498889 2008 YL ₁₃₃	17.7	X	229.26680	209.00306	112.10714	6.07691	0.0906398	0.29605959	2.2295470	21	11 23.1	20.4
498890 2008 YS ₁₃₇	16.5	X	86.10337	344.73788	130.04865	11.86769	0.0374170	0.17565299	3.1576623	21	4 2.1	21.0
498891 2008 YQ ₁₄₃	16.1	X	8.99998	237.91021	290.67219	8.84762	0.0492255	0.16913205	3.2383126	21	2 19.3	20.5
498892 2008 YB ₁₄₄	16.4	X	268.67075	223.09873	126.36334	11.25345	0.0669759	0.18900852	3.0071041	21	5 26.9	20.8
498893 2008 YG ₁₄₈	16.5	X	245.33365	82.10662	278.21682	7.96874	0.0991342	0.18773283	3.0207114	21	5 4.4	21.2
498894 2008 YN ₁₅₀	17.1	X	212.17810	238.84928	151.41971	2.78747	0.1961425	0.19185283	2.9773090	21	5 5.9	22.2
498895 2008 YF ₁₅₁	16.6	X	179.94889	338.88237	102.73141	12.52666	0.0639593	0.19102354	2.9859197	21	6 9.1	21.1
498896 2008 YX ₁₅₄	16.4	X	206.07601	87.41518	290.02370	9.23207	0.0917300	0.18220669	3.0814834	21	4 12.6	21.4
498897 2008 YV ₁₅₈	16.4	X	130.72487	137.22549	337.08182	16.05058	0.1211218	0.18009491	3.1055255	21	6 5.9	21.7
498898 2008 YB ₁₇₁	15.2	X	28.80812	240.10040	283.68363	25.73556	0.0918696	0.17631858	3.1497107	21	2 27.7	19.8
498899 2008 YX ₁₇₂	16.4	X	170.21114	281.53323	140.19713	10.61292	0.1461708	0.18462863	3.0544758	21	5 10.2	21.5
498900 2009 AC	16.0	X	80.31799	198.32142	291.81484	16.04911	0.1766306	0.17784903	3.1316151	21	4 22.3	20.6
498901 2009 AU ₁	14.4	X	114.23118	269.76357	133.64142	26.17419	0.4972591	0.10038073	4.5853149	21	4 8.4	22.2
498902 2009 AT ₆	17.1	X	186.93694	255.94593	157.78971	4.36885	0.1222631	0.18880536	3.0092609	21	5 13.3	21.9
498903 2009 AN ₉	16.6	X	283.00030	60.97562	295.83195	14.16629	0.2788572	0.20306615	2.8666699	21	5 18.1	21.1
498904 2009 AU ₁₁	16.2	X	61.32881	195.75920	303.19186	9.32564	0.1362798	0.17490333	3.1666787	21	4 2.1	20.4
498905 2009 AS ₁₂	16.5	X	140.24788	7.54891	109.24220	11.44464	0.0927511	0.18884634	3.0088255	21	6 11.3	21.1
498906 2009 AE ₂₀	16.8	X	250.11526	58.96767	304.86582	2.95853	0.0223889	0.18865542	3.0108551	21	5 24.7	21.1
498907 2009 AA ₂₁	16.5	X	2.87892	231.48774	307.22826	8.37407	0.0639522	0.16861628	3.2449129	21	2 23.6	20.9
498908 2009 AV ₂₃	15.9	X	248.40272	187.58515	131.65027	11.87034	0.0594772	0.17749815	3.1357408	21	3 29.6	20.6
498909 2009 AV ₂₅	16.4	X	179.39025	122.00937	289.53905	8.15133	0.0419681	0.18396507	3.0618164	21	4 27.2	21.0
498910 2009 AS ₃₀	16.4	X	52.28424	83.97758	107.08567	14.25800	0.0661663	0.18637794	3.0353333	21	5 25.6	20.6
498911 2009 AQ ₃₃	16.0	X	179.74468	278.30146	125.72570	11.49650	0.1194604	0.18096162	3.0956017	21	4 28.4	21.1
498912 2009 AK ₃₄	16.4	X	70.52314	235.99833	301.18299	9.33418	0.0298567	0.18906561	3.0064987	21	5 22.4	20.7
498913 2009 AH ₃₆	18.0	X	141.75130	237.42951	308.29979	4.20879	0.1616251	0.27706451	2.3303194	21	9 13.6	21.5
498914 2009 AS ₃₉	15.9	X	4.32977	110.69030	125.59002	16.29815	0.1879407	0.17977068	3.1092583	21	5 14.6	19.6
498915 2009 AB ₄₃	15.8	X	29.68618	55.59134	143.85543	10.00723	0.0133003	0.17811605	3.1284846	21	5 1.5	20.3
498916 2009 AW ₄₆	16.9	X	125.65281	159.56433	348.32138	5.79396	0.0752718	0.19129842	2.9830587	21	7 2.1	21.3
498917 2009 AX ₄₈	16.9	X	119.25714	178.90547	284.98641	4.66041	0.1379093	0.18080324	3.0974092	21	5 5.8	21.7
498918 2009 BF	18.7	X	221.76508	347.32036	295.98246	51.70924	0.3069602	0.39877021	1.8280479	21	—	—
498919 2009 BZ ₉	17.5	X	129.34378	332.30454	285.32895	7.21517	0.1091407	0.29507044	2.2345268	21	12 5.2	20.7
498920 2009 BO ₁₄	15.2	X	65.51330	198.31250	110.54637	23.71330	0.2568834	0.17534075	3.1614099	21	5 6.4	19.7
498921 2009 BN ₁₅	16.5	X	207.28659	123.31207	309.71415	11.26708	0.1090849	0.19409169	2.9543691	21	6 26.2	21.1
498922 2009 BR ₁₈	16.1	X	191.36587	57.89122	310.41267	14.33933	0.0329313	0.17481661	3.1677258	21	3 15.7	21.0
498923 2009 BT ₁₉	16.4	X	206.50171	70.44263	305.32143	12.86965	0.1007749	0.18346386	3.0673903	21	4 8.8	21.4
498924 2009 BV ₂₂	16.3	X	44.84771	204.41717	330.06280	15.74463	0.1511346	0.17438837	3.1729096	21	4 20.8	20.5
498925 2009 BT ₂₃	16.9	X	124.12080	202.61125	282.16187	9.38141	0.0695693	0.18757526	3.0224028	21	5 29.9	21.3
498926 2009 BW ₂₇	16.3	X	270.71814	189.59140	114.63472	6.24585	0.0927374	0.17860663	3.1227532	21	3 31.3	20.9
498927 2009 BD ₃₀	18.2	X	52.91329	128.17860	101.52919	2.97288	0.1854308	0.26711992	2.3878032	21	8 3.9	20.8
498928 2009 BP ₃₂	16.8	X	237.02822	56.41051	307.80925	7.16566	0.2288082	0.18839080	3.0136738	21	4 18.9	22.0
498929 2009 BB ₃₃	18.0	X	177.56169	234.96890	311.27172	5.37734	0.0472607	0.28836961	2.2690099	21	10 25.0	21.0
498930 2009 BY ₃₅	16.8	X	153.29148	354.86520	112.90471	10.08316	0.0692243	0.18699444	3.0286582	21	6 12.4	21.4
498931 2009 BE ₃₇	18.3	X	164.05925	213.81618	344.56842	1.91556	0.1217591	0.28588820	2.2821205	21	10 23.8	21.5
498932 2009 BF ₃₇	16.6	X	8.16867	227.96117	324.45931	9.00560	0.0972942	0.17098238	3.2149074	21	3 17.7	20.6
498933 2009 BQ ₃₇	18.4	X	21.90020	319.71329	181.64991	2.34310	0.1472411	0.30535261	2.1840787	21	—	—
498934 2009 BJ ₃₈	17.0	X	223.85332	298.08121	113.89996	3.50822	0.0923012	0.19132719	2.9827596	21	6 17.6	21.4
498935 2009 BL ₃₈	16.5	X	24.46306	222.12850	328.31614	8.56498	0.0326178	0.17485593	3.1672510	21	4 6.7	20.9
498936 2009 BH ₃₉	17.4	X	205.61693	202.12469	326.66053	6.80118	0.0372359	0.28984439	2.2613066	21	11 7.4	20.3
498937 2009 BV ₄₃	16.7	X	109.05193	142.74037	316.70247	9.56055	0.0541831	0.17352505	3.1834248	21	4 4.8	21.4
498938 2009 BS ₄₄	15.7	X	88.98018	189.20743	318.72477	12.92046	0.1080537	0.17850112	3.1239837	21	5 19.4	20.3
498939 2009 BZ ₄₇	16.4	X	172.97184	87.63089	312.38108	10.49847	0.0863922	0.17899896	3.1181886	21	4 5.8	21.4
498940 2009 BC ₄₈	15.7	X	86.91016	181.61609	309.00191	15.80763	0.1072373	0.17792952	3.1306707	21	4 20.1	20.4
498941 2009 BK ₅₀	18.2	X	51.20611	258.73764	117.51692	5.54548	0.2152655	0.30809019	2.1711215	21	—	—
498942 2009 BY ₅₁	16.6	X	108.06591	353.03511	125.06007	11.38629	0.0431443	0.17978500	3.1090932	21	5 4.2	21.2
498943 2009 BN ₅₂	16.2	X	135.78527	295.13429	147.89126	16.71733	0.1239255	0.17697548	3.1419118	21	5 3.2	21.3
498944 2009 BU ₅₃	16.4	X	113.01658	188.17794	321.31974	16.16132	0.1344808	0.18579411	3.0416886	21	6 28.1	21.1
498945 2009 BY ₅₈	16.4	X	98.63825	6.64042	110.86214	11.31380	0.1247964	0.18060723	3.0996498	21	5 3.4	21.0
498946 2009 BJ ₆₁	16.9	X	131.07405	144.67363	310.89734	4.19581	0.1349567	0.18029800	3.1031929	21	5 7.7	21.6
498947 2009 BU ₆₁	18.3	X	83.68395	292.62108	306.25112	1.62506	0.1662550	0.27459680	2.3442598	21	9 24.5	21.4
498948 2009 BF ₆₂	16.1	X	108.66538	337.68829	148.78006	25.49229	0.1253932	0.17921565	3.1156746	21	5 28.2	21.2
498949 2009 BD ₇₀	16.1	X	91.10164	194.86563	323.03664	12.03628	0.2059425	0.18358914	3.0659946	21	6 21.8	20.7
498950 2009 BQ ₇₁	16.0	X	170.30053	134.45346	313.43777	14.54140	0.1187238	0.18698761	3.0287319	21	6 6.2	21.0
498951 2009 BC ₇₇	16.5	X	301.06360	202.91115	121.29325	10.68311	0.0611959	0.19120462	2.9840342	21	6 5.2	20.6
498952 2009 BG ₈₄	17.1	X	139.00358	137.60375	345.10789	1.06905	0.1277595	0.18760408	3.0220932	21	6 19.1	21.7
498953 2009 BK ₈₅	16.7	X	205.54066	276.25259	145.62195	5.21730						

ELEMENTS AND OPPOSITION DATES IN 2021

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2021 JULY 5.0 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>
498961 2009 <i>BM</i> ₁₀₀	18.4	X	82.32859	211.27696	141.62874	5.18361	0.1517304	0.30817550	2.1707208	21	—	—
498962 2009 <i>BM</i> ₁₀₄	16.4	X	131.24317	162.97455	319.83652	9.37288	0.0429531	0.18283496	3.0744202	21	6 1.4	21.0
498963 2009 <i>BL</i> ₁₀₇	16.4	X	140.68357	289.29083	145.67901	11.39913	0.1303907	0.17855769	3.1233238	21	4 27.6	21.4
498964 2009 <i>BZ</i> ₁₁₀	18.2	X	110.26451	315.01388	136.07286	24.04418	0.0628512	0.41126825	1.7908227	21	2 23.6	19.3
498965 2009 <i>BH</i> ₁₁₅	16.5	X	116.98347	5.50442	116.19142	12.49506	0.0869326	0.18453825	3.0554730	21	5 23.9	21.1
498966 2009 <i>BY</i> ₁₁₆	16.9	X	190.17143	6.24224	67.54063	4.08018	0.1586809	0.18907466	3.0064028	21	6 8.3	21.7
498967 2009 <i>BK</i> ₁₂₂	16.1	X	19.01629	83.46991	148.08928	12.09041	0.0742847	0.17987241	3.1080859	21	5 29.6	20.3
498968 2009 <i>BE</i> ₁₂₇	16.8	X	190.04850	305.73213	145.32482	11.74940	0.0690021	0.19084122	2.9878212	21	7 1.1	21.4
498969 2009 <i>BB</i> ₁₂₉	16.2	X	117.62745	320.49781	138.04053	18.93787	0.2237673	0.17794644	3.1304722	21	5 14.8	21.5
498970 2009 <i>BP</i> ₁₃₃	16.3	X	203.77126	116.03328	307.71942	8.39934	0.0568417	0.18996336	2.9970189	21	6 12.1	20.8
498971 2009 <i>BW</i> ₁₃₃	16.7	X	156.76656	153.79357	309.45920	14.92984	0.1207426	0.18823603	3.0153256	21	6 12.8	21.6
498972 2009 <i>BE</i> ₁₃₄	17.2	X	110.27866	35.88181	119.05377	0.45355	0.1273550	0.18664526	3.0324344	21	6 28.8	21.6
498973 2009 <i>BK</i> ₁₃₇	17.0	X	155.82849	353.01030	122.99495	2.17374	0.1878073	0.19000365	2.9965953	21	6 30.2	21.9
498974 2009 <i>BW</i> ₁₃₉	16.1	X	225.32907	32.70535	319.37804	9.43704	0.0741445	0.17762745	3.1342189	21	4 3.2	21.0
498975 2009 <i>BM</i> ₁₄₀	17.2	X	181.91560	329.28675	137.82968	9.59843	0.0424664	0.19236869	2.9719840	21	7 12.3	21.6
498976 2009 <i>BX</i> ₁₄₃	16.1	X	235.09487	214.83832	136.13120	17.33552	0.1325690	0.17991859	2.1075540	21	4 18.7	21.3
498977 2009 <i>BG</i> ₁₄₄	17.4	X	240.50884	314.53511	117.31402	2.36387	0.2530001	0.20203027	2.8764605	21	7 14.9	22.2
498978 2009 <i>BX</i> ₁₄₄	16.8	X	180.58301	109.11046	328.34982	10.63748	0.1316099	0.18764268	3.0216788	21	6 2.7	21.8
498979 2009 <i>BL</i> ₁₄₆	16.7	X	64.62098	191.87396	329.01043	10.80825	0.0864957	0.17340102	3.1849427	21	4 28.8	21.1
498980 2009 <i>BB</i> ₁₄₉	16.4	X	214.29800	53.22362	318.37392	11.93798	0.1685126	0.18301717	3.0723793	21	4 10.0	21.7
498981 2009 <i>BE</i> ₁₅₄	16.7	X	88.28568	30.49522	120.66664	10.70413	0.0137606	0.18191181	3.0848126	21	5 15.6	21.2
498982 2009 <i>BH</i> ₁₅₄	16.6	X	67.02528	23.69053	119.90203	11.65203	0.0547794	0.17529022	3.1620175	21	4 16.3	21.1
498983 2009 <i>BJ</i> ₁₅₇	18.3	X	173.62568	49.44105	148.36562	2.05484	0.1352342	0.28453834	2.2893324	21	11 2.6	21.5
498984 2009 <i>BQ</i> ₁₅₉	16.9	X	93.03585	16.09651	146.94501	1.92320	0.0901842	0.18013804	3.1050298	21	6 13.8	21.3
498985 2009 <i>BE</i> ₁₆₄	17.0	X	270.44016	304.96896	182.92260	3.26223	0.1285217	0.19669814	2.9282122	21	7 6.2	21.0
498986 2009 <i>BZ</i> ₁₆₆	18.1	X	135.81603	4.14195	139.91355	12.51546	0.1699584	0.26770500	2.3843229	21	7 15.9	21.8
498987 2009 <i>BA</i> ₁₆₇	17.9	X	277.85722	330.53860	146.04454	5.63260	0.0971323	0.29416404	2.2391146	21	12 5.1	20.1
498988 2009 <i>BD</i> ₁₇₀	18.7	X	110.98222	97.58630	321.20216	18.10016	0.0667095	0.40401292	1.8121990	21	1 4.5	20.2
498989 2009 <i>BD</i> ₁₇₁	16.8	X	175.10416	269.38975	137.63772	10.15062	0.0791001	0.18178408	3.0862574	21	4 25.4	21.6
498990 2009 <i>BC</i> ₁₇₂	16.3	X	273.57908	46.49746	312.74024	16.44756	0.1174615	0.19073312	2.9889499	21	6 3.4	20.9
498991 2009 <i>BH</i> ₁₇₄	18.4	X	302.28264	144.38410	318.31369	19.75635	0.0406766	0.37844856	1.8929166	21	—	—
498992 2009 <i>BT</i> ₁₇₄	16.6	X	45.50452	228.53918	322.69576	3.73352	0.0865849	0.17521286	3.1629480	21	5 13.9	20.8
498993 2009 <i>BT</i> ₁₇₅	15.3	X	12.68526	220.90129	332.47283	31.92473	0.0827020	0.17180416	3.2046475	21	3 14.6	19.8
498994 2009 <i>BV</i> ₁₇₆	18.7	X	0.72217	303.28081	149.87780	1.81203	0.0685665	0.30778226	2.1725694	21	—	—
498995 2009 <i>BF</i> ₁₇₇	16.1	X	112.88615	160.04707	338.83350	21.61567	0.2091344	0.18359220	3.0659605	21	6 22.8	21.3
498996 2009 <i>BK</i> ₁₇₇	16.4	X	84.06843	165.76611	353.30435	10.59972	0.0738485	0.17770363	3.1333231	21	5 22.6	20.9
498997 2009 <i>BR</i> ₁₈₀	16.6	X	48.62587	73.19655	124.17541	6.16221	0.0993139	0.17992747	3.1074518	21	5 30.4	20.6
498998 2009 <i>BT</i> ₁₈₃	16.1	X	138.49930	178.48707	274.09641	10.43775	0.1182010	0.18236896	3.0796553	21	5 9.6	20.9
498999 2009 <i>CG</i> ₈	16.8	X	249.90334	67.05428	294.23120	14.64082	0.0744836	0.18892433	3.0079974	21	5 12.1	21.5
499000 2009 <i>CF</i> ₁₅	16.3	X	117.74204	131.06043	321.85648	12.35547	0.1537794	0.17743941	3.1364328	21	4 18.1	21.2
499001 2009 <i>CK</i> ₂₅	17.5	X	131.91925	71.28216	84.77806	2.64382	0.1586625	0.18889256	3.0083347	21	7 26.4	22.1
499002 2009 <i>CK</i> ₂₇	18.2	X	139.59469	237.01063	351.62874	7.71852	0.0902710	0.28492842	2.2872424	21	11 4.2	21.5
499003 2009 <i>CK</i> ₂₉	18.1	X	138.43158	138.91229	82.73166	2.28655	0.0966805	0.28294551	2.2979161	21	10 28.2	21.3
499004 2009 <i>CV</i> ₂₉	17.9	X	119.82746	84.87292	125.06316	5.07874	0.0835034	0.27632306	2.3344861	21	9 21.7	21.1
499005 2009 <i>CM</i> ₃₀	16.7	X	106.38316	17.46172	125.77262	7.11554	0.1698000	0.18099043	3.0952731	21	6 15.5	21.3
499006 2009 <i>CS</i> ₃₂	18.3	X	135.89694	73.43861	133.66247	5.00230	0.1414707	0.27753350	2.3276934	21	10 8.9	21.8
499007 2009 <i>CK</i> ₃₇	16.2	X	252.56236	34.09376	296.91014	7.03037	0.1165253	0.17860630	3.1227571	21	4 3.7	21.1
499008 2009 <i>CV</i> ₃₈	16.4	X	277.52534	2.38907	346.34616	9.61574	0.0868995	0.18951676	3.0017254	21	5 29.1	20.8
499009 2009 <i>CX</i> ₄₁	18.0	X	87.01339	155.41714	78.14858	2.44953	0.1565137	0.27538967	2.3397581	21	9 22.3	21.2
499010 2009 <i>CE</i> ₄₄	18.0	X	143.60053	47.47862	169.89424	7.38000	0.1555598	0.27916972	2.3185894	21	10 29.6	21.6
499011 2009 <i>CH</i> ₄₅	16.7	X	73.96483	15.30446	142.89926	3.68091	0.0727363	0.18101081	3.0950408	21	5 11.9	20.9
499012 2009 <i>CS</i> ₄₈	18.6	X	11.36721	94.78545	314.79368	4.23665	0.1354746	0.30591523	2.1814000	21	—	—
499013 2009 <i>CH</i> ₅₀	16.1	X	121.06562	357.36002	132.68929	17.13997	0.1282301	0.18311398	3.0712963	21	6 12.3	21.0
499014 2009 <i>CP</i> ₅₁	16.2	X	122.07671	137.03154	350.13059	9.27590	0.1633234	0.18270808	3.0758433	21	6 9.8	21.1
499015 2009 <i>CL</i> ₅₂	18.0	X	204.96929	74.98994	140.11712	7.18113	0.0576871	0.29857690	2.2169977	21	—	—
499016 2009 <i>CS</i> ₅₂	16.6	X	126.83613	159.71016	327.38333	12.25022	0.1182030	0.18437879	3.0572344	21	6 10.5	21.4
499017 2009 <i>CZ</i> ₅₅	18.1	X	289.54005	340.95842	104.81683	4.09448	0.0848226	0.29032417	2.2588146	21	11 10.3	20.4
499018 2009 <i>CK</i> ₆₀	16.5	X	170.76138	275.98416	136.57120	6.03502	0.1376880	0.18212511	3.0824036	21	4 28.3	21.5
499019 2009 <i>CV</i> ₆₀	16.9	X	188.38123	92.51726	119.95917	14.01770	0.1453562	0.18512340	3.0490310	21	5 6.9	22.1
499020 2009 <i>CF</i> ₆₂	17.9	X	175.68626	234.71209	328.99354	4.86438	0.0991149	0.28921145	2.2646047	21	11 12.6	21.0
499021 2009 <i>CR</i> ₆₂	16.3	X	155.18269	113.77325	0.50587	18.84105	0.0685319	0.18651790	3.0338146	21	6 21.9	21.2
499022 2009 <i>DK</i> ₈	18.4	X	8.80303	121.12609	298.19317	3.48738	0.2334974	0.30333786	2.1937391	21	—	—
499023 2009 <i>DC</i> ₁₈	15.8	X	174.07443	74.33321	340.69505	9.90379	0.0943921	0.17666757	3.1455613	21	4 26.9	20.8
499024 2009 <i>DS</i> ₁₈	15.9	X	126.41165	106.91946	338.37351	21.18683	0.0754222	0.17244528	3.1966997	21	4 5.3	20.9
499025 2009 <i>DG</i> ₂₀	16.8	X	307.07903	201.55340	127.97663	11.09540	0.0618498	0.19062143	2.9901173	21	6 19.5	20.9
499026 2009 <i>DR</i> ₂₀	16.6	X	180.22082	264.54206	147.89412	8.35785	0.1568199	0.18469765	3.0537148	21	5 7.6	21.7
499027 2009 <i>DG</i> ₂₁	16.4	X	283.75282	168.43517	118.54440	14.35324	0.0825485	0.17453450	3.1711384	21	3 30.3	21.2
499028 2009 <i>DA</i> ₂₂	16.5	X	252.27955	23.62536	318.90758	11.21253	0.0777451	0.18207748	3.0829411	21	4 19.4	21.3
499029 2009 <i>DW</i> ₂₈	16.5	X	298.64894	154.16080	164.46126	6.16800	0.0651391	0.17929761	3.1147251	21	5 25.2	20.9
499030 2009 <i>DL</i> ₂₉	18.5	X	258.92204	352.89818	160.02985	6.35663	0.1681859	0.29543465	2.2326900	21	12 15.2	20.7
499031 2009 <i>DR</i> ₄₂	17.4	X	145.35613	270.60232	333.24484	6.69						

ELEMENTS AND OPPOSITION DATES IN 2021

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2021 JULY 5.0 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>
499041 2009 DU ₅₈	16.6	X	359.53735	81.76779	156.08512	11.26584	0.0717973	0.17330295	3.1861441	21	5 9.4	20.9
499042 2009 DN ₅₉	16.2	X	112.82590	98.06419	343.15261	14.69201	0.0801161	0.17025038	3.2241160	21	3 23.0	20.9
499043 2009 DO ₆₂	16.5	X	133.10499	314.23755	146.96902	12.37760	0.1040900	0.17897346	3.1184848	21	5 18.9	21.4
499044 2009 DG ₆₃	16.1	X	131.09824	307.17428	158.88198	17.32122	0.2064407	0.17840686	3.1250839	21	5 31.8	21.4
499045 2009 DO ₆₄	18.0	X	135.48444	104.08031	93.24563	5.35885	0.1296057	0.27374203	2.3491373	21	9 25.7	21.5
499046 2009 DY ₆₄	17.2	X	168.22272	315.96112	153.43999	1.55162	0.1476201	0.19133622	2.9826658	21	7 1.9	22.0
499047 2009 DD ₆₅	16.4	X	146.03777	124.60937	332.57404	11.31462	0.1211191	0.18063629	3.0993173	21	5 22.4	21.4
499048 2009 DK ₇₇	18.1	X	206.81383	352.93696	175.39714	3.45220	0.1623725	0.28763613	2.2728656	21	10 28.0	21.3
499049 2009 DK ₈₆	17.7	X	167.20694	257.55305	334.75818	5.47867	0.0375876	0.29007977	2.2600832	21	12 16.9	20.6
499050 2009 DY ₈₇	16.8	X	125.79103	158.10052	352.62311	9.34117	0.2187517	0.18304326	3.0720873	21	7 20.6	21.9
499051 2009 DF ₉₁	16.6	X	3.70278	255.90569	327.77750	8.38018	0.0233721	0.17424446	3.1746565	21	4 20.9	21.1
499052 2009 DR ₉₁	18.5	X	133.11026	87.41344	157.32219	6.09209	0.1307673	0.28228574	2.3014953	21	11 22.8	22.0
499053 2009 DQ ₉₄	17.1	X	177.21825	93.71083	20.24359	13.88751	0.1833351	0.18833056	3.0143165	21	7 19.6	22.4
499054 2009 DS ₉₈	16.8	X	15.67885	155.88947	101.76739	4.87210	0.1189974	0.17950753	3.1122963	21	6 27.7	20.4
499055 2009 DT ₁₀₅	18.4	X	107.57990	22.30640	182.49510	1.24761	0.1313476	0.26814695	2.3817023	21	9 1.9	21.8
499056 2009 DO ₁₁₆	18.1	X	156.56048	211.97778	352.82840	3.83677	0.0983839	0.28177896	2.3042540	21	10 23.8	21.3
499057 2009 DY ₁₁₇	18.7	X	122.68036	236.24546	323.67863	3.27527	0.1490954	0.27265879	2.3553551	21	9 13.1	22.0
499058 2009 DC ₁₁₈	16.3	X	117.06880	281.63136	168.10910	17.12490	0.1424130	0.17240903	3.1971478	21	4 22.1	21.2
499059 2009 DD ₁₁₉	16.2	X	194.05193	225.10562	170.23878	9.72256	0.0983242	0.17515322	3.1636661	21	4 29.7	21.2
499060 2009 DT ₁₁₉	18.1	X	137.73677	139.95485	343.36753	2.16662	0.1405589	0.27616547	2.3353741	21	10 2.9	21.7
499061 2009 DG ₁₂₂	17.7	X	125.27861	201.55140	21.43539	3.31607	0.1461851	0.27587103	2.3370356	21	10 16.6	21.1
499062 2009 DK ₁₂₇	17.6	X	73.97037	319.15543	345.92490	2.66581	0.2463105	0.27954412	2.3165187	21	12 18.0	21.2
499063 2009 DE ₁₂₈	16.8	X	237.13711	231.34199	180.10500	7.11682	0.1845824	0.19208624	2.9748966	21	6 22.6	21.7
499064 2009 DM ₁₂₉	16.7	X	46.75917	349.17413	191.53597	8.68420	0.0918574	0.17037618	3.2225288	21	5 5.8	20.9
499065 2009 DP ₁₃₂	16.3	X	100.66270	139.05428	332.57988	18.13006	0.0660048	0.17197026	3.2025837	21	4 7.0	21.1
499066 2009 DT ₁₃₂	16.4	X	296.54989	149.96627	151.08457	9.93923	0.0524751	0.17498978	3.1656356	21	5 4.1	20.9
499067 2009 DC ₁₃₃	17.9	X	37.10100	229.72346	6.44548	2.63442	0.1424997	0.25925693	2.4358421	21	7 8.3	20.2
499068 2009 DV ₁₃₉	16.4	X	220.54436	103.29282	314.25532	8.30985	0.0620206	0.18505787	3.0497508	21	6 23.8	21.0
499069 2009 EH	16.0	X	163.07337	52.29839	56.02413	14.04025	0.3856308	0.18804631	3.0173533	21	7 1.6	21.9
499070 2009 EF ₅	18.4	X	243.03508	19.27894	117.19975	6.06125	0.1070013	0.29057856	2.2574961	21	11 8.3	21.1
499071 2009 EU ₇	16.1	X	222.49593	50.91331	12.25450	9.71012	0.1077943	0.18942438	3.0027013	21	6 29.5	20.8
499072 2009 ET ₁₀	18.3	X	71.93774	140.39103	95.72278	2.24477	0.1409423	0.26622526	2.3931498	21	9 3.6	21.2
499073 2009 EB ₂₂	18.3	X	313.98776	55.85608	63.86821	3.89452	0.0594098	0.30082393	2.2059439	21	—	—
499074 2009 EE ₂₄	16.5	X	97.69336	347.41321	158.94787	9.77069	0.0316690	0.17537453	3.1610039	21	5 23.2	21.1
499075 2009 EJ ₂₆	17.8	X	129.85607	226.61178	1.13398	4.89144	0.1829525	0.27633695	2.3344079	21	10 27.0	21.5
499076 2009 EG ₂₉	16.3	X	324.99066	286.63294	6.72371	10.65832	0.0504122	0.17614179	3.1518179	21	5 26.6	20.7
499077 2009 EZ ₂₉	17.7	X	168.83886	156.41979	69.81321	6.89852	0.1761185	0.28679455	2.2773098	21	12 1.3	21.3
499078 2009 FA ₁	18.1	X	110.05586	231.62682	1.85352	1.39017	0.1401826	0.27422509	2.3463777	21	10 13.9	21.3
499079 2009 FQ ₃	16.9	X	158.78158	42.29246	77.22550	3.00182	0.1800695	0.18566449	3.0431041	21	7 7.0	21.8
499080 2009 FE ₄	17.5	X	207.74306	19.48558	144.35264	8.25169	0.0414529	0.28311097	2.2970207	21	11 7.9	20.5
499081 2009 FG ₆	16.6	X	154.28611	90.47678	359.60345	11.50235	0.0856186	0.17964917	3.1106602	21	5 19.2	21.5
499082 2009 FX ₇	18.0	X	218.39084	143.71291	49.67375	4.31155	0.0983880	0.29129336	2.2538015	21	12 22.0	20.6
499083 2009 FZ ₁₁	15.9	X	49.03520	209.55275	341.73654	15.72030	0.0740302	0.17521576	3.1629132	21	5 13.0	20.4
499084 2009 FQ ₁₃	16.1	X	92.85073	173.40119	345.84407	10.56764	0.0327312	0.17777689	3.1324622	21	5 28.8	20.7
499085 2009 FA ₁₅	18.0	X	291.15692	129.96992	343.70228	9.06480	0.0939722	0.29547128	2.2325055	21	12 24.3	20.3
499086 2009 FK ₁₆	16.8	X	130.41093	301.70164	167.00723	9.29692	0.0234666	0.17870396	3.1216193	21	5 20.5	21.5
499087 2009 FR ₁₈	18.0	X	128.20353	14.74020	180.14845	2.33574	0.1675342	0.27097048	2.3651284	21	9 13.8	21.4
499088 2009 FT ₁₉	16.0	X	126.22240	327.83360	122.85044	11.01105	0.0501217	0.17191078	3.2033223	21	4 23.8	20.8
499089 2009 FZ ₃₇	17.6	X	87.02952	211.02680	44.13624	7.27893	0.1692262	0.27128656	2.3632910	21	10 21.8	21.0
499090 2009 FV ₃₈	16.2	X	51.52899	177.28347	9.33779	31.13142	0.2059035	0.17536446	3.1611250	21	5 20.4	20.6
499091 2009 FA ₄₁	16.0	X	118.83414	129.93415	18.54728	15.83746	0.1045132	0.18066882	3.0989453	21	6 28.1	20.9
499092 2009 FV ₄₂	16.0	X	68.44239	173.00461	4.70832	27.78905	0.1230665	0.17616688	3.1515187	21	5 26.0	20.8
499093 2009 FY ₄₇	17.6	X	130.15705	152.30799	47.67763	5.78375	0.1380904	0.27073136	2.3665209	21	9 23.5	21.1
499094 2009 FQ ₄₉	16.1	X	149.94662	275.08602	155.45018	11.37165	0.0831910	0.17169916	3.2059539	21	4 27.9	21.1
499095 2009 FB ₅₅	17.5	X	76.22092	220.48796	39.37851	7.20338	0.1425737	0.27004107	2.3705521	21	10 12.8	20.7
499096 2009 FK ₅₈	18.6	X	208.01921	6.28922	180.06043	1.85024	0.1428180	0.28753325	2.2734077	21	11 23.6	21.5
499097 2009 FE ₆₄	18.3	X	140.51334	95.64424	86.17473	2.56570	0.1278244	0.27066277	2.3669207	21	9 8.6	21.8
499098 2009 FF ₇₀	18.2	X	58.52974	190.99893	62.34686	3.53545	0.1555390	0.26333342	2.4106384	21	9 12.3	21.1
499099 2009 FG ₇₀	18.2	X	147.15353	128.90044	44.00576	1.63231	0.1577679	0.27002484	2.3706471	21	9 4.0	21.7
499100 2009 FV ₇₀	18.0	X	111.79573	231.37526	345.55589	3.72156	0.2014301	0.26946852	2.3739088	21	9 28.1	21.7
499101 2009 FA ₇₆	17.0	X	83.59481	195.70725	74.65726	7.11834	0.1490706	0.27242324	2.3567125	21	11 5.4	20.3
499102 2009 GQ ₂	17.8	X	114.70440	188.16378	17.27773	5.08114	0.1693467	0.26819327	2.3814281	21	9 15.6	21.3
499103 2009 GF ₄	17.9	X	113.15637	223.72713	339.69056	2.35770	0.1649846	0.26676067	2.3899465	21	9 9.4	21.5
499104 2009 GA ₅	18.3	X	54.95848	96.39469	174.09163	3.28633	0.1528041	0.26705948	2.3881635	21	9 29.7	21.2
499105 2009 HU ₃	16.7	X	150.26969	356.79542	131.11744	9.26078	0.1106369	0.18213773	3.0822612	21	7 5.9	21.5
499106 2009 HP ₉	17.9	X	98.29869	218.42838	72.92984	7.39036	0.1448744	0.27857822	2.3218702	21	12 15.7	21.3
499107 2009 HJ ₁₁	17.5	X	48.39305	257.80776	42.24764	7.19082	0.2400431	0.26810072	2.3819761	21	11 12.9	20.4
499108 2009 HC ₁₅	15.8	X	285.29382	272.46315	41.90364	12.73906	0.1382980	0.16925490	3.2367455	21	4 22.8	20.4
499109 2009 HU ₁₅	16.4	X	135.06959	46.40044	77.46697	8.83098	0.0897625	0.17809068	3.1287816	21	6 13.2	21.1
499110 2009 HQ ₂₃	16.6	X	173.30220	95.78832	19.49357	11.80372	0.1766615	0.18461121	3.0546679	21	7 16.9	21.9
499111 2009 HX ₂₈	17.9	X	70.94162	198.97969	101.19818	2.23009	0.1959961	0.27615613	2.3354268	21	12 4.1	21.1
499112 2009 HP ₄₂	18.4	X	283.42610	46.47290	90.43893	5.42996	0.1245905	0.29146733	2.2529046	21	—	—
499113 2009 HZ ₅₄	14.1	X	328.96578	163.10538	124.16237	17.36066	0.0522227	0.08255753	5.2			

ELEMENTS AND OPPOSITION DATES IN 2021

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2021 JULY 5.0 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>
499121 2009 <i>HJ</i> ₁₀₅	18.4	X	97.44174	187.32950	46.08233	3.03280	0.1255383	0.26748323	2.3856406	21	9 29.5	21.7
499122 2009 <i>JE</i> ₁₁	17.4	X	75.47841	359.74168	242.24580	8.31480	0.2614851	0.26126878	2.4233215	21	9 27.4	21.1
499123 2009 <i>KZ</i> ₂	17.3	X	87.40422	198.36087	38.37509	11.44218	0.2559169	0.26315089	2.4117529	21	10 8.6	21.0
499124 2009 <i>KA</i> ₁₀	17.4	X	137.76863	170.83959	75.73274	7.19684	0.0776493	0.27689669	2.3312608	21	11 27.6	20.6
499125 2009 <i>KC</i> ₁₉	18.1	X	64.10656	125.88502	152.36631	1.70375	0.1702408	0.26418960	2.4054273	21	10 24.8	21.1
499126 2009 <i>KG</i> ₃₀	17.9	X	106.10457	81.26931	137.97398	2.74380	0.1309558	0.26326831	2.4110358	21	9 20.4	21.3
499127 2009 <i>LE</i> ₁	17.7	X	44.05828	138.99518	133.84650	8.14958	0.1234108	0.25947711	2.4344640	21	9 12.9	20.5
499128 2009 <i>OV</i> ₂₂	16.5	X	30.10909	22.99862	301.53425	11.91567	0.2147610	0.25840453	2.4411959	21	11 12.4	19.6
499129 2009 <i>PC</i> ₉	18.9	X	316.10622	28.87593	344.98194	3.93841	0.3048300	0.24262572	2.5459204	21	7 31.5	21.0
499130 2009 <i>PN</i> ₉	18.3	X	343.95360	336.76638	354.54212	3.65440	0.1815095	0.24298291	2.5434248	21	8 16.7	20.3
499131 2009 <i>PC</i> ₁₀	15.9	X	177.33695	25.50534	313.43541	6.83131	0.3358165	0.12494601	3.9626689	21	2 16.3	22.8
499132 2009 <i>PZ</i> ₁₉	15.9	X	187.45668	169.76875	159.76981	2.12809	0.3023798	0.12467727	3.9683612	21	2 12.3	22.8
499133 2009 <i>QA</i> ₂₂	17.5	X	272.13965	198.80075	160.99238	4.75229	0.2433908	0.23239983	2.6200657	21	5 17.2	21.4
499134 2009 <i>QW</i> ₃₀	17.3	X	336.27086	84.93723	259.84252	15.71555	0.2395088	0.24491486	2.5300317	21	8 5.9	19.6
499135 2009 <i>QC</i> ₃₃	17.5	X	147.52480	146.34327	240.85522	17.04966	0.0807322	0.37520230	1.9038193	21	1 16.6	19.7
499136 2009 <i>QO</i> ₃₃	17.7	X	156.44483	171.66372	154.03221	23.18701	0.0595587	0.36568559	1.9367080	21	—	—
499137 2009 <i>PZ</i> ₃₆	17.7	X	293.15042	119.96959	188.67193	4.24398	0.2277873	0.22810045	2.6258862	21	4 5.7	21.6
499138 2009 <i>QC</i> ₄₁	15.8	X	184.30737	132.34389	214.16597	3.15084	0.3084866	0.12623918	3.9355606	21	2 27.6	22.6
499139 2009 <i>QT</i> ₆₂	18.0	X	7.45310	318.70675	33.07836	3.30224	0.2318500	0.25276720	2.4773588	21	11 17.5	20.2
499140 2009 <i>RL</i> ₁	17.9	X	308.11269	72.37925	254.12242	5.02354	0.3812531	0.23580999	2.5947444	21	4 22.1	21.5
499141 2009 <i>RZ</i> ₇	16.8	X	147.29252	195.83156	357.82429	8.38151	0.0698393	0.24458022	2.5323389	21	9 25.5	20.3
499142 2009 <i>RJ</i> ₁₂	18.3	X	296.46417	191.72790	176.12692	3.50960	0.2148846	0.23620285	2.5918665	21	6 30.6	21.4
499143 2009 <i>RE</i> ₁₆	17.6	X	242.99762	244.27990	177.47956	4.61334	0.2018702	0.23125915	2.6286742	21	7 9.1	21.7
499144 2009 <i>RT</i> ₁₆	17.9	X	280.86084	246.58761	177.67651	4.92778	0.2002169	0.24062166	2.5600370	21	8 28.2	21.0
499145 2009 <i>RF</i> ₁₉	17.7	X	335.69412	73.57533	270.24092	3.87317	0.2543482	0.24209791	2.5496194	21	8 7.9	19.4
499146 2009 <i>RC</i> ₂₉	17.9	X	347.80002	85.02746	231.69942	4.35111	0.2065106	0.24005686	2.5640509	21	7 28.7	20.0
499147 2009 <i>RL</i> ₄₅	18.4	X	317.87183	164.59965	199.51691	5.90450	0.2899851	0.24039426	2.5616512	21	7 19.5	20.7
499148 2009 <i>RT</i> ₄₉	17.7	X	244.39113	258.00363	201.04586	7.97510	0.1275460	0.23937075	2.5689481	21	9 5.5	21.3
499149 2009 <i>RG</i> ₅₁	17.6	X	226.64171	38.22831	22.91974	5.62641	0.1617714	0.22691262	2.6621362	21	6 26.3	21.8
499150 2009 <i>RY</i> ₅₁	18.2	X	341.19343	294.71336	85.81723	1.11424	0.1516787	0.24726758	2.5139575	21	10 27.3	20.4
499151 2009 <i>RC</i> ₅₅	16.3	X	110.16220	110.10105	26.52043	16.85832	0.0293802	0.21901334	2.7257688	21	5 16.9	20.1
499152 2009 <i>RB</i> ₆₂	17.0	X	240.17875	232.90951	201.49366	16.58635	0.1785005	0.23135660	2.6279360	21	7 21.7	21.4
499153 2009 <i>RF</i> ₇₁	17.7	X	319.17761	48.72543	341.40790	10.26659	0.2020081	0.24436038	2.5338575	21	9 17.8	19.9
499154 2009 <i>SM</i> ₂	17.7	X	30.61269	68.81585	272.33179	5.06727	0.1163829	0.25799961	2.4437495	21	11 22.9	20.5
499155 2009 <i>SK</i> ₃₁	17.6	X	334.68058	344.78640	16.08177	14.51921	0.2345354	0.24356912	2.5393422	21	9 14.3	19.5
499156 2009 <i>SW</i> ₃₄	17.9	X	284.10438	93.99438	278.87752	1.74644	0.1591047	0.23267374	2.6180090	21	6 29.1	21.2
499157 2009 <i>SC</i> ₃₆	17.9	X	0.76528	81.10854	236.93138	3.09202	0.1659578	0.24120990	2.5558732	21	8 30.6	20.3
499158 2009 <i>SC</i> ₄₄	17.4	X	229.63078	144.70871	278.34582	3.51849	0.0993229	0.22835283	2.6059311	21	7 7.3	21.1
499159 2009 <i>SJ</i> ₄₆	17.0	X	52.49289	274.05690	5.34685	9.03573	0.1036720	0.24205047	2.5499525	21	9 27.3	20.1
499160 2009 <i>SL</i> ₅₀	17.8	X	322.97325	19.19511	336.61715	16.83455	0.2398487	0.24222408	2.5487340	21	8 3.7	20.2
499161 2009 <i>SR</i> ₅₀	18.6	X	349.00110	151.49408	171.08332	5.61380	0.2611813	0.24337674	2.5406802	21	8 10.9	20.2
499162 2009 <i>SN</i> ₅₄	15.7	X	217.39014	89.53216	199.93179	3.74841	0.2095383	0.12329611	3.9979417	21	1 20.2	22.2
499163 2009 <i>SK</i> ₆₁	18.1	X	297.54965	40.25489	352.91220	8.60475	0.1683559	0.23900015	2.5716031	21	8 19.2	21.0
499164 2009 <i>SC</i> ₆₆	18.0	X	302.69114	239.24736	163.48120	5.32720	0.0909714	0.24203780	2.5500415	21	9 20.6	20.9
499165 2009 <i>SV</i> ₆₇	17.4	X	238.53835	281.43038	117.91864	2.88523	0.0964884	0.22636520	2.6664265	21	6 16.7	21.1
499166 2009 <i>SL</i> ₆₉	18.4	X	45.62378	91.10422	26.45234	21.30862	0.1094267	0.36541785	1.9376539	21	—	—
499167 2009 <i>SG</i> ₇₀	18.2	X	312.13052	36.27978	341.44591	3.85597	0.0964920	0.24249071	2.5468653	21	8 30.2	21.0
499168 2009 <i>SB</i> ₇₄	18.0	X	266.52080	263.66333	125.93967	4.00383	0.0896076	0.23105731	2.6302048	21	7 9.1	21.5
499169 2009 <i>ST</i> ₉₇	17.7	X	260.82279	72.01159	15.93518	5.50307	0.2708446	0.23635473	2.5507560	21	8 25.8	21.3
499170 2009 <i>SP</i> ₉₈	17.1	X	343.63054	77.30095	236.33265	8.27689	0.1289489	0.23794705	2.5791850	21	7 17.2	19.8
499171 2009 <i>SD</i> ₁₀₃	16.1	X	318.67725	133.49014	236.24516	12.22032	0.2612753	0.23619816	2.5919008	21	7 31.8	18.8
499172 2009 <i>SU</i> ₁₀₃	18.0	X	156.85258	173.43866	216.18981	21.81552	0.1262801	0.37561377	1.9024286	21	2 7.9	20.7
499173 2009 <i>SJ</i> ₁₂₉	19.0	X	339.85458	161.20836	178.20028	4.82771	0.3298337	0.24277873	2.5448506	21	8 4.8	20.0
499174 2009 <i>SG</i> ₁₃₂	17.8	X	252.56196	75.61670	25.60362	14.93930	0.2163544	0.23985347	2.5655001	21	9 14.6	21.6
499175 2009 <i>SW</i> ₁₃₆	18.2	X	309.46848	178.41590	202.71524	8.50251	0.1676719	0.23917825	2.5703263	21	8 17.1	21.0
499176 2009 <i>SJ</i> ₁₄₈	18.1	X	330.91318	150.87047	198.84914	15.40167	0.2411950	0.24216128	2.5491736	21	8 2.5	20.7
499177 2009 <i>SU</i> ₁₆₆	17.4	X	185.53822	260.96684	17.11445	19.74215	0.0741643	0.35741981	1.9664533	21	—	—
499178 2009 <i>SA</i> ₁₈₈	18.2	X	258.36278	297.14375	154.98801	5.96005	0.2378746	0.23792781	2.5793241	21	8 31.1	21.9
499179 2009 <i>ST</i> ₁₈₈	18.3	X	319.90276	276.67971	105.80018	4.13736	0.2367324	0.24205072	2.5499507	21	9 6.6	20.3
499180 2009 <i>SN</i> ₂₀₃	18.1	X	312.12149	205.77147	152.15614	4.54502	0.2228984	0.23732142	2.5837159	21	7 11.3	20.8
499181 2009 <i>SK</i> ₂₀₄	18.2	X	329.76879	142.28826	209.00264	6.44852	0.2070907	0.23979138	2.5659430	21	8 8.7	20.5
499182 2009 <i>SG</i> ₂₁₂	17.4	X	293.51362	202.68895	196.45536	12.12030	0.1685753	0.23901649	2.5714858	21	8 14.6	20.6
499183 2009 <i>SZ</i> ₂₂₈	17.8	X	305.56705	27.32085	17.00917	12.22727	0.1951328	0.24132459	2.5550633	21	9 17.3	20.3
499184 2009 <i>ST</i> ₂₃₃	17.3	X	300.25917	342.45817	18.21120	12.63657	0.2127318	0.23534285	2.5981768	21	6 27.2	20.7
499185 2009 <i>SR</i> ₂₅₀	18.2	X	313.98547	315.82832	51.36685	3.03513	0.2312487	0.23880847	2.5729789	21	7 29.7	20.6
499186 2009 <i>SS</i> ₂₉₀	17.6	X	282.45696	262.54638	132.48611	4.73108	0.1674827	0.23545581	2.5973458	21	7 26.2	20.7
499187 2009 <i>SR</i> ₂₉₁	17.1	X	275.78375	15.92956	358.86186	10.50029	0.1174692	0.23386773	2.6090907	21	6 27.8	20.8
499188 2009 <i>SS</i> ₃₁₀	17.7	X	248.21595	163.36255	256.75083	2.94287	0.2768425	0.23106336	2.6301589	21	7 4.9	22.1
499189 2009 <i>SV</i> ₃₃₆	17.6	X	282.85289	119.34009	232.61075	11.44587	0.2901703	0.23184610	2.6242358	21	5 11.2	21.5
499190 2009 <i>SP</i> ₃₃₈	17.4	X	285.35559	231.02912	163.66864	12.32094	0.2121519	0.23413517	2.6071035	21	7 21.2	20.9
499191 2009 <i>SN</i> ₃₄₇	17.8	X	305.07184	217.70211	157.48310	6.4855						

ELEMENTS AND OPPOSITION DATES IN 2021

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2021 JULY 5.0 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>
499201 2009 TX ₄	18.2	X	158.42867	340.77327	18.79517	21.13454	0.0838218	0.36893333	1.9253253	21	—	—
499202 2009 TP ₃₀	17.1	X	205.56275	84.31759	64.33660	5.23601	0.1269491	0.24271430	2.5453009	21	10 1.4	20.9
499203 2009 TM ₄₄	17.4	X	273.83295	252.16812	145.72392	5.41536	0.2574483	0.23234601	2.6204703	21	7 4.7	21.3
499204 2009 UB ₃	17.1	X	318.78832	56.18540	324.12272	11.37748	0.2018594	0.24134008	2.5549540	21	8 31.4	19.5
499205 2009 UO ₇	17.9	X	359.73399	220.80715	84.12746	4.65596	0.0704217	0.23633784	2.5908794	21	8 7.3	20.8
499206 2009 UJ ₁₁	17.7	X	352.95006	290.11944	55.55084	7.26126	0.0963609	0.24388962	2.5371171	21	9 28.4	20.5
499207 2009 UY ₁₅	17.8	X	188.04714	282.01178	38.94384	21.68950	0.0875187	0.36586316	1.9360813	21	—	—
499208 2009 UH ₂₀	17.9	X	206.32380	73.95881	237.41279	19.72507	0.0608534	0.36843928	1.9270461	21	—	—
499209 2009 UW ₂₃	18.4	X	26.49148	250.75493	207.34757	20.58359	0.0734869	0.35716260	1.9673973	21	—	—
499210 2009 UK ₃₀	17.4	X	299.85703	162.84774	217.31727	12.22563	0.1826741	0.23507235	2.6001696	21	7 25.6	20.7
499211 2009 UT ₃₅	17.7	X	277.74560	204.20480	230.35962	1.21760	0.1763780	0.23686561	2.5870295	21	9 10.9	20.9
499212 2009 UT ₃₇	17.6	X	333.40016	318.43835	59.07632	6.52087	0.1884195	0.24211098	2.5495276	21	10 7.5	19.7
499213 2009 UC ₄₀	17.7	X	187.54408	91.79756	215.63662	20.46850	0.0713618	0.36279081	1.9469966	21	—	—
499214 2009 US ₄₅	18.1	X	333.77635	327.32328	39.30958	5.21939	0.2012160	0.24155994	2.5534035	21	9 19.5	20.1
499215 2009 UP ₄₆	17.3	X	296.71601	346.57776	45.70307	14.34932	0.1602210	0.23543838	2.5947740	21	8 23.3	20.6
499216 2009 UQ ₅₁	18.1	X	279.64016	159.66952	231.73570	2.16202	0.1674454	0.23288339	2.6164375	21	7 16.8	21.4
499217 2009 UY ₅₁	17.7	X	327.87765	293.81896	31.82107	5.53867	0.3059992	0.23574725	2.5952048	21	6 7.9	19.9
499218 2009 UC ₅₇	18.0	X	295.55390	14.00898	32.35789	6.67737	0.1347806	0.23859361	2.5745234	21	9 10.1	21.0
499219 2009 UA ₇₃	17.5	X	280.10180	201.63137	201.05481	5.84182	0.2856293	0.23352039	2.6116773	21	7 13.7	21.2
499220 2009 UB ₈₀	17.5	X	318.34337	77.87031	268.91195	3.13926	0.2814766	0.23688003	2.5869245	21	6 26.2	19.7
499221 2009 UC ₈₄	17.7	X	288.78006	151.48122	219.09910	10.84735	0.1814391	0.22992669	2.6388201	21	6 27.7	21.2
499222 2009 UH ₈₅	17.6	X	297.55443	154.63672	203.79671	4.17202	0.1934257	0.22998206	2.6383966	21	6 22.8	20.9
499223 2009 UO ₈₆	17.2	X	296.49294	177.26747	221.10733	12.56439	0.1905085	0.23701737	2.5892520	21	8 12.9	20.6
499224 2009 US ₈₈	17.2	X	314.70110	9.02474	15.33270	7.01681	0.2954139	0.23996503	2.5647050	21	8 18.6	19.3
499225 2009 UQ ₈₉	17.6	X	338.41061	359.01417	349.88408	4.37879	0.3010549	0.24152082	2.5536791	21	8 24.6	18.6
499226 2009 UH ₉₁	16.6	X	255.20766	344.88331	46.94450	15.64371	0.1648769	0.22757058	2.6570026	21	6 15.9	20.7
499227 2009 UO ₉₈	14.3	X	21.50237	158.14944	221.30531	18.21605	0.0819207	0.08348201	5.1849049	21	11 20.9	20.9
499228 2009 UL ₁₀₃	17.8	X	327.22616	322.47795	38.79138	2.78421	0.3101230	0.23973144	2.5663707	21	8 8.2	19.4
499229 2009 UT ₁₀₃	16.9	X	31.93319	288.85218	65.15880	10.03207	0.0804581	0.25272328	2.4776457	21	12 5.7	19.9
499230 2009 UX ₁₁₀	17.7	X	296.43279	164.97715	230.05653	11.67581	0.1249742	0.23484299	2.6018623	21	8 18.4	21.1
499231 2009 UC ₁₁₂	13.9	X	344.32068	154.31301	251.89051	6.73024	0.2430314	0.08205602	5.2448020	21	10 27.9	19.5
499232 2009 UJ ₁₁₈	17.6	X	261.69370	217.01624	195.70343	2.10475	0.1200916	0.23478081	2.6032217	21	7 29.3	21.1
499233 2009 UO ₁₁₉	18.6	X	345.76727	135.26575	205.11030	4.93271	0.2353693	0.24286096	2.5442761	21	9 1.6	20.5
499234 2009 UD ₁₂₂	16.8	X	204.47407	8.05874	47.81134	14.46174	0.0688735	0.22105905	2.7089263	21	5 30.4	20.8
499235 2009 UZ ₁₂₂	17.5	X	333.77676	272.86105	92.28703	6.19772	0.0702282	0.24005784	2.5640439	21	9 22.7	20.5
499236 2009 UO ₁₂₉	17.9	X	104.71721	145.84548	233.23615	19.33085	0.1087464	0.35756826	1.9659090	21	—	—
499237 2009 UM ₁₃₁	17.1	X	248.86133	202.30494	184.49236	18.70961	0.2876104	0.22569267	2.6717208	21	5 26.1	21.9
499238 2009 UC ₁₃₃	18.7	X	298.53810	176.64003	235.50982	2.81810	0.1924094	0.24269439	2.5454401	21	9 10.3	21.4
499239 2009 UK ₁₃₇	17.2	X	229.32039	131.70602	244.68071	14.02213	0.2633592	0.21793401	2.7347610	21	4 26.0	22.0
499240 2009 UE ₁₄₁	17.7	X	269.35413	139.36177	272.92351	5.32669	0.3047977	0.23399553	2.6081406	21	7 12.2	21.6
499241 2009 US ₁₄₁	18.2	X	319.24921	131.75421	222.47632	12.12586	0.2781379	0.23732425	2.5836953	21	7 7.8	20.9
499242 2009 UW ₁₄₁	17.6	X	314.57658	333.29106	54.91933	3.73110	0.2498233	0.23841472	2.5758110	21	8 31.5	19.8
499243 2009 UA ₁₄₃	18.2	X	322.06919	189.23304	199.63722	1.48253	0.1597851	0.24080666	2.5587257	21	9 27.5	20.5
499244 2009 UJ ₁₄₅	18.0	X	63.00402	92.69182	17.18681	23.46930	0.1419110	0.36512782	1.9386799	21	1 17.2	20.0
499245 2009 UX ₁₄₇	17.8	X	307.62295	144.16580	201.90724	1.53337	0.0881232	0.22908421	2.6452858	21	7 7.9	20.9
499246 2009 UF ₁₄₈	17.4	X	311.61105	289.23230	53.77661	13.52778	0.2829087	0.23177954	2.6247381	21	6 5.9	20.3
499247 2009 UR ₁₄₈	18.5	X	315.18304	298.34799	70.80018	5.54649	0.2824368	0.23807031	2.5782947	21	7 26.1	20.8
499248 2009 UC ₁₄₉	18.5	X	297.82042	174.79258	229.38680	3.57371	0.2674064	0.23815995	2.5776477	21	8 14.1	21.2
499249 2009 UQ ₁₄₉	18.0	X	293.31631	311.70662	85.35788	2.64262	0.1393869	0.23614559	2.5922854	21	8 20.9	21.0
499250 2009 UG ₁₅₂	17.2	X	289.00849	132.64521	244.43761	13.72785	0.2151925	0.23230341	2.6207906	21	6 30.9	20.7
499251 2009 VK	16.6	X	278.03552	53.26597	27.67620	31.38997	0.3031727	0.23211586	2.6222022	21	9 19.3	20.5
499252 2009 VZ ₂	17.7	X	300.05703	102.79793	287.83094	11.03341	0.2938810	0.23706810	2.5855562	21	7 24.4	20.7
499253 2009 VT ₃	17.3	X	267.18256	149.18419	243.24365	8.70113	0.1231653	0.22897610	2.6461184	21	7 7.5	21.0
499254 2009 VN ₄	19.0	X	305.51171	117.46318	262.72538	2.94744	0.2883749	0.23745565	2.5827421	21	7 20.4	21.7
499255 2009 VZ ₄	18.4	X	281.15347	104.58858	286.50486	1.31130	0.2226076	0.23269590	2.6178428	21	7 10.2	21.8
499256 2009 VP ₅	17.5	X	294.92862	325.66014	69.38233	5.43242	0.2501801	0.23595028	2.5937158	21	8 2.2	20.6
499257 2009 VS ₆	18.0	X	340.62912	65.21477	258.19187	1.75121	0.2158104	0.23602147	2.5931942	21	7 21.8	20.1
499258 2009 VV ₉	17.7	X	274.53958	183.31293	226.53238	6.20141	0.3211952	0.23328396	2.6134416	21	7 11.6	21.6
499259 2009 UJ ₂₃	17.5	X	242.66949	93.42072	24.29869	4.95797	0.1997604	0.23497373	2.6088971	21	9 21.7	21.3
499260 2009 VA ₂₈	18.1	X	315.23528	331.85803	47.37248	6.12039	0.2286135	0.23869038	2.5738275	21	8 23.5	20.6
499261 2009 VJ ₂₈	17.1	X	281.33079	166.16095	223.94942	17.10022	0.2113644	0.23253457	2.6190535	21	7 6.9	20.9
499262 2009 VE ₂₉	17.7	X	301.98525	357.03313	40.03541	12.51439	0.1807112	0.23773584	2.5807124	21	9 4.9	20.7
499263 2009 VD ₃₃	17.2	X	320.41950	289.30478	47.55073	13.93645	0.2069052	0.22997010	2.6384881	21	6 28.2	20.2
499264 2009 VM ₃₅	16.9	X	89.44941	212.40314	42.29700	16.10744	0.0903617	0.23861097	2.5743985	21	10 14.4	20.6
499265 2009 VQ ₃₉	16.0	X	282.80466	127.55739	249.46673	21.13281	0.0366037	0.22588122	2.6702339	21	7 16.1	19.9
499266 2009 VZ ₄₁	17.3	X	243.60557	199.40786	222.76816	5.69508	0.2016289	0.22654129	2.6650445	21	7 9.9	21.5
499267 2009 VG ₄₇	17.9	X	316.04696	259.72602	118.78357	2.75473	0.1930521	0.23765098	2.5813267	21	8 26.6	20.2
499268 2009 VM ₄₇	17.5	X	296.71664	165.65859	200.80407	5.33753	0.0329201	0.22793149	2.6541971	21	7 26.7	21.0
499269 2009 VN ₄₉	17.5	X	258.71184	339.64191	49.41158	5.15025	0.1161833	0.22774615	2.6556368	21	6 24.5	21.3
499270 2009 VS ₅₄	17.2	X	76.67443	338.37463	211.15731	6.46969	0.0782655	0.21909369	2.7251023	21	6 23.9	20.9
499271 2009 VW ₅₇	16.3	X	119.56054	276.35982	220.44976	16.59604	0.0811115	0.21464476	2.7626287	21	6 9.7	20.4
499272 2009 VB ₅₈	17.6	X	264.09522	40.42873	52.49889	14.46364	0.2255385	0.23637274	2.5906244	21	9 18.3	21.3
499273 2009 VU ₆₁	17.6	X	318.35281	337.24267	54.02535	4.52981	0.1773129	0.2				

ELEMENTS AND OPPOSITION DATES IN 2021

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2021 JULY 5.0 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>
499281 2009 VS ₇₅	17.1	X	334.00894	351.06853	25.62881	5.52919	0.3035379	0.24182195	2.5515587	21	10 2.0	18.3
499282 2009 VX ₇₅	16.5	X	335.29802	239.49292	124.80904	7.32751	0.2557210	0.24005892	2.5640362	21	9 17.5	18.2
499283 2009 VH ₇₉	17.6	X	284.47165	40.27871	339.53010	6.86357	0.2534900	0.23222171	2.6214053	21	6 24.7	21.3
499284 2009 VF ₉₂	17.6	X	220.54571	241.30385	222.02026	10.61768	0.1573936	0.22886215	2.6469967	21	8 9.6	21.9
499285 2009 VY ₉₃	17.2	X	274.63480	161.77918	260.33564	7.23934	0.1954131	0.23482782	2.6019744	21	8 14.2	20.6
499286 2009 VH ₉₅	17.3	X	335.04569	317.01974	53.95725	10.04203	0.2592067	0.24031283	2.5622298	21	10 1.5	19.1
499287 2009 VC ₉₉	17.3	X	226.38133	9.12661	87.64434	6.05559	0.0817505	0.22973075	2.6403204	21	8 21.6	21.1
499288 2009 VA ₁₁₃	17.5	X	193.48755	210.58480	253.43736	6.40255	0.0565838	0.22224739	2.6992613	21	7 20.9	21.5
499289 2009 VB ₁₁₄	16.5	X	224.14130	158.76041	247.36032	13.02111	0.0867746	0.21887805	2.7268918	21	6 9.9	20.5
499290 2009 VE ₁₁₆	16.6	X	262.39925	107.84550	272.16456	11.80554	0.1858398	0.22231486	2.6987152	21	6 8.0	20.6
499291 2009 WD ₁	17.5	X	258.19676	355.91091	101.40075	5.25894	0.1902697	0.23686408	2.5870406	21	9 16.1	21.0
499292 2009 WR ₅	17.1	X	249.42988	351.58289	90.41634	6.87695	0.3422866	0.23005394	2.6378470	21	7 28.5	21.4
499293 2009 WS ₆	17.2	X	335.90586	323.21800	52.66331	5.39490	0.1282075	0.23920077	2.5701650	21	10 9.4	19.8
499294 2009 WU ₇	17.2	X	263.32926	188.08466	231.32561	13.42595	0.1288049	0.23359316	2.6111349	21	8 3.4	21.2
499295 2009 WR ₈	16.8	X	166.36988	245.43455	249.59040	11.34706	0.2109156	0.22241423	2.6979113	21	7 29.8	21.6
499296 2009 WT ₈	17.4	X	272.31158	43.88972	356.73325	5.57400	0.2920884	0.23238484	2.6201784	21	7 2.8	21.4
499297 2009 WH ₁₁	17.2	X	272.01631	36.84548	323.58468	5.49328	0.0614636	0.22101797	2.7029619	21	6 10.8	20.9
499298 2009 WP ₁₄	17.3	X	338.83860	234.98188	87.59111	7.38329	0.2099348	0.22996507	2.6385265	21	7 17.3	19.5
499299 2009 WN ₁₅	17.5	X	299.66253	255.41925	107.46019	4.78173	0.1160843	0.22703681	2.6611654	21	7 15.4	20.5
499300 2009 WB ₂₀	17.0	X	192.50398	188.80731	284.54267	4.48605	0.1428354	0.22173074	2.7034527	21	7 29.7	21.3
499301 2009 WZ ₂₂	17.0	X	166.53289	242.20213	248.14548	11.19204	0.1399741	0.22232591	2.6986258	21	7 23.6	21.5
499302 2009 WT ₂₅	17.9	X	316.68437	292.27909	113.44912	4.07881	0.2373191	0.24178287	2.5518337	21	10 7.2	19.8
499303 2009 WT ₃₂	17.3	X	17.63414	91.73091	245.78538	6.97873	0.1614450	0.24141312	2.5544386	21	10 31.8	20.2
499304 2009 WH ₃₃	17.1	X	295.39685	283.82292	72.30152	12.82097	0.0970116	0.22387881	2.6861322	21	7 2.1	20.6
499305 2009 WJ ₃₆	18.1	X	303.88620	14.95890	23.92613	3.36192	0.2630424	0.23838463	2.5760278	21	8 21.9	20.7
499306 2009 WZ ₃₆	17.4	X	241.50975	114.68226	276.86709	3.75531	0.1358453	0.22056498	2.7129701	21	6 5.7	21.3
499307 2009 WS ₅₂	18.5	X	354.42707	149.26436	178.64190	7.15630	0.5552887	0.24626215	2.5207954	21	11 18.3	19.3
499308 2009 WP ₅₃	16.4	X	243.71780	190.74688	253.90663	13.67036	0.1606202	0.23173479	2.6250760	21	8 8.1	20.5
499309 2009 WA ₇₀	16.9	X	252.16203	155.63458	258.44540	7.72747	0.1072615	0.22942495	2.6426661	21	7 19.7	20.7
499310 2009 WC ₇₁	17.5	X	282.84149	297.36637	70.27096	7.05117	0.1537319	0.22689601	2.6622662	21	6 20.9	21.0
499311 2009 WD ₇₃	18.2	X	275.93216	296.46439	136.98528	2.63283	0.1679026	0.23630737	2.5911022	21	9 9.3	21.4
499312 2009 WH ₇₅	18.1	X	274.83665	283.98936	129.00814	2.47799	0.1759244	0.23248345	2.6194374	21	8 8.3	21.4
499313 2009 WX ₇₉	17.7	X	268.73009	320.36059	118.61686	5.25623	0.1040033	0.23438971	2.6052157	21	9 18.3	21.0
499314 2009 WO ₈₄	17.9	X	303.40648	65.71965	313.18420	3.25363	0.2651309	0.23529261	2.5985467	21	7 19.8	20.6
499315 2009 WH ₈₆	16.9	X	152.63468	194.86819	290.80284	6.53364	0.1212275	0.21680590	2.7442393	21	7 6.4	21.0
499316 2009 WG ₈₉	18.0	X	293.84724	179.08332	226.30143	5.35438	0.2806689	0.23546596	2.5972711	21	8 5.9	21.0
499317 2009 WH ₁₀₃	17.4	X	288.10105	345.10204	75.27612	6.77798	0.2636741	0.23573268	2.5953117	21	8 27.0	20.5
499318 2009 WR ₁₁₆	17.8	X	349.99324	308.00114	27.92980	2.12606	0.2697989	0.23968900	2.5666736	21	9 10.4	19.3
499319 2009 WU ₁₂₅	16.6	X	43.96574	46.60675	73.91232	11.73424	0.0868811	0.19066846	2.9896256	21	2 12.7	20.5
499320 2009 WO ₁₂₈	17.5	X	197.82002	46.62087	91.45049	3.31033	0.1417950	0.22797647	2.6538479	21	9 6.9	21.6
499321 2009 WJ ₁₃₀	17.2	X	312.91851	86.18938	272.77670	9.60404	0.1382043	0.23282777	2.6168542	21	7 26.2	20.1
499322 2009 WV ₁₃₃	17.9	X	290.25133	117.83254	283.68162	0.84597	0.2331479	0.23560581	2.5962432	21	8 5.1	20.7
499323 2009 WB ₁₄₄	16.8	X	347.39562	73.57398	272.06196	10.11330	0.2133562	0.23835129	2.5762680	21	9 8.9	19.2
499324 2009 WK ₁₄₄	17.8	X	316.81900	329.88618	40.43992	12.46703	0.1987881	0.23899648	2.5716294	21	8 21.5	20.6
499325 2009 WF ₁₄₉	17.6	X	317.21886	168.43449	206.87373	8.60327	0.1966023	0.23762342	2.5815263	21	8 19.0	20.3
499326 2009 WJ ₁₅₃	18.2	X	257.24412	128.11988	300.29324	5.41359	0.2719971	0.23096313	2.6309198	21	7 24.9	22.3
499327 2009 WQ ₁₅₄	17.5	X	280.83796	40.93001	333.96548	5.86704	0.1441995	0.22811558	2.6527689	21	6 30.5	21.0
499328 2009 WR ₁₅₅	17.5	X	326.47443	291.73490	113.72496	6.39729	0.2163094	0.24382815	2.5357435	21	11 4.1	19.5
499329 2009 WR ₁₅₉	16.2	X	326.46448	267.42364	256.67748	12.21471	0.1955522	0.18122931	3.0925526	21	—	—
499330 2009 WA ₁₆₁	17.9	X	325.47008	358.60260	341.55255	1.45257	0.2272037	0.23276967	2.6172897	21	7 11.4	20.3
499331 2009 WA ₁₇₂	17.0	X	354.80110	310.59776	31.71420	9.41017	0.0166315	0.23582062	2.5946664	21	9 22.0	20.4
499332 2009 WE ₁₇₈	17.1	X	216.35539	343.30612	84.01978	3.18311	0.0704897	0.22274617	2.6952304	21	6 30.1	21.0
499333 2009 WU ₁₈₉	17.3	X	317.19912	143.87762	242.53669	4.70021	0.1589679	0.23714970	2.5849630	21	9 10.7	20.0
499334 2009 WA ₂₀₁	17.6	X	322.44118	166.95650	198.39275	4.17157	0.2630998	0.23678384	2.5876250	21	8 6.6	19.7
499335 2009 WE ₂₀₁	17.5	X	201.86422	319.92274	124.62946	2.75289	0.0516917	0.22046324	2.7138047	21	7 6.8	21.2
499336 2009 WN ₂₀₈	17.6	X	326.53207	338.87598	20.27828	2.04236	0.3012450	0.23735881	2.5834445	21	8 3.1	19.5
499337 2009 WA ₂₀₉	17.0	X	212.08938	343.05926	62.82059	7.02002	0.0942700	0.21516295	2.7581913	21	5 26.9	21.0
499338 2009 WG ₂₀₉	17.2	X	288.22623	211.06787	186.35722	13.83448	0.2563678	0.23447693	2.6045696	21	7 20.6	20.8
499339 2009 WA ₂₁₃	16.3	X	215.62907	180.72246	268.07016	12.72809	0.1420968	0.22244188	2.6976877	21	7 19.6	20.6
499340 2009 WK ₂₁₄	17.0	X	257.58116	171.82791	230.77553	4.46517	0.0434483	0.22571637	2.6715339	21	7 20.8	20.7
499341 2009 WY ₂₁₅	17.3	X	349.12138	327.51857	55.65722	19.10527	0.1878831	0.24544228	2.5264059	21	11 18.7	19.5
499342 2009 WS ₂₁₇	17.7	X	288.31777	135.71374	263.54285	3.60792	0.2137843	0.23384922	2.6092284	21	8 1.2	21.0
499343 2009 WL ₂₂₄	16.9	X	231.06503	206.70649	247.10663	13.33722	0.2158814	0.22669756	2.6638197	21	8 1.6	21.5
499344 2009 WX ₂₂₄	17.0	X	300.43174	297.40739	78.02548	14.98092	0.1631439	0.23080593	2.6321143	21	7 29.7	20.3
499345 2009 WU ₂₄₂	17.4	X	241.21910	354.59076	83.99307	8.07922	0.1431575	0.22802194	2.6534951	21	8 7.4	21.3
499346 2009 WB ₂₄₅	17.4	X	320.98006	306.57627	89.86292	8.63879	0.1425795	0.23876169	2.5733150	21	10 13.2	20.1
499347 2009 WC ₂₄₇	17.3	X	355.47931	208.21170	261.06608	17.59471	0.0801242	0.34804958	2.0015909	21	—	—
499348 2009 WU ₂₅₀	17.5	X	301.02163	127.17845	265.32037	5.12760	0.3262960	0.23611646	2.5924987	21	7 22.9	20.5
499349 2009 WC ₂₅₄	16.4	X	184.03375	34.24426	67.74335	13.07529	0.0702500	0.21827406	2.7319199	21	7 8.7	20.5
499350 2009 WL ₂₅₄	17.4	X	248.29748	225.44515	240.51729	6.20077	0.2938078	0.23099378	2.6306871	21	8 27.7	21.6
499351 2009 WO ₂₆₀	16.7	X	226.43027	136.84869	272.73106	10.90291	0.0886018	0.21765649	2.7370851	21	6 17.1	20.6
499352 2009 WB ₂₆₁	17.4	X	304.69519	108.05120	274.39430	10.89646	0.2281793	0.23545419	2.5973577	21	7 30.7	20.3
499353 2009 WL ₂₆₁	16.4	X	228.15963	11.25974								

ELEMENTS AND OPPOSITION DATES IN 2021

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2021 JULY 5.0 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>
499361 2009 YP ₄	17.6	X	202.01294	135.88717	337.61043	3.20042	0.1332901	0.21870626	2.7283196	21	8 9.8	21.8
499362 2009 YQ ₇	17.6	X	296.58282	317.47571	103.23570	6.10817	0.1780157	0.23500782	2.6006456	21	9 25.8	20.4
499363 2009 YZ ₁₆	16.2	X	234.97102	208.65281	259.64525	12.07334	0.1270850	0.23082967	2.6319338	21	9 1.5	20.4
499364 2009 YJ ₂₀	17.4	X	304.22180	310.69952	106.32138	6.44848	0.2613365	0.23582279	2.5946505	21	9 21.8	19.9
499365 2009 YL ₂₀	16.9	X	240.25521	141.26950	308.31133	12.66157	0.1109492	0.22320419	2.6915419	21	8 19.7	20.8
499366 2009 YO ₂₁	17.9	X	268.66539	120.44552	310.56581	6.12016	0.3212947	0.23015638	2.6370642	21	8 3.1	21.9
499367 2010 AB	17.7	X	285.78676	337.54379	103.94592	7.48733	0.3264010	0.23634444	2.5908312	21	9 11.5	20.8
499368 2010 AT ₁	17.9	X	259.60376	358.61127	98.94094	4.48363	0.2374118	0.23316748	2.6143119	21	9 10.6	21.6
499369 2010 AY ₁	17.1	X	167.56838	177.65196	303.74915	16.20248	0.1892018	0.21207683	2.7848848	21	7 18.2	21.7
499370 2010 AJ ₁₀	16.4	X	59.57108	271.47976	304.97134	11.88257	0.1039961	0.20905477	2.8116591	21	7 11.7	20.0
499371 2010 AO ₁₂	16.8	X	267.22760	294.66541	134.84103	13.83768	0.2475849	0.22642104	2.6659880	21	8 9.7	20.5
499372 2010 AN ₂₄	16.9	X	301.29779	340.82875	103.08050	5.24438	0.2640050	0.23795915	2.5790976	21	10 26.0	19.1
499373 2010 AO ₂₄	17.0	X	249.79485	146.35384	316.24075	7.50691	0.1779819	0.22726910	2.6593518	21	9 8.7	20.9
499374 2010 AB ₄₀	17.6	X	359.09474	213.33310	295.80021	16.57044	0.0768688	0.35032598	1.9929106	21	—	—
499375 2010 AZ ₄₃	16.4	X	306.36736	281.25733	105.39583	29.28504	0.3544497	0.23352986	2.6116067	21	7 18.8	19.1
499376 2010 AU ₅₄	17.1	X	175.95382	349.76395	122.44878	10.81234	0.1669951	0.20980328	2.8049677	21	7 12.8	21.8
499377 2010 AY ₅₅	16.4	X	225.46007	337.19608	127.83622	9.81035	0.0343672	0.21819175	2.7326069	21	9 5.2	20.2
499378 2010 AO ₆₅	16.9	X	337.47431	46.25166	352.32243	4.16276	0.3475284	0.23996002	2.5647407	21	11 26.3	17.9
499379 2010 AX ₆₅	17.2	X	235.62690	88.13814	320.28940	14.19599	0.3044645	0.21655524	2.7463565	21	6 7.5	22.2
499380 2010 AK ₇₁	16.5	X	317.50787	264.00648	128.56030	27.43911	0.2474902	0.23333111	2.6130895	21	9 19.9	19.3
499381 2010 AU ₇₂	17.4	X	232.99723	2 37765	63.52998	4.33079	0.1841160	0.21787110	2.7352874	21	7 7.0	21.6
499382 2010 AR ₇₃	16.6	X	202.92659	301.28089	93.93154	10.45562	0.2903700	0.21228754	2.7830417	21	5 4.5	21.8
499383 2010 AB ₇₄	17.5	X	281.96596	27.28984	61.24746	5.77438	0.2904232	0.23515900	2.5995309	21	9 21.3	20.6
499384 2010 AE ₇₆	17.6	X	265.10630	312.23886	125.82614	7.03077	0.3453119	0.23069770	2.6329375	21	8 5.8	21.4
499385 2010 AX ₇₈	16.9	X	150.44307	178.61672	323.02357	17.29469	0.1915148	0.21202109	2.7853729	21	8 10.5	21.6
499386 2010 AQ ₇₉	16.6	X	277.80322	141.91503	314.15744	12.83238	0.2021487	0.23283741	2.6167820	21	9 29.2	20.1
499387 2010 AW ₈₅	16.6	X	16.21261	139.04791	95.21495	9.24061	0.0672657	0.18842284	3.0133322	21	5 26.9	20.4
499388 2010 AD ₈₉	16.3	X	36.11353	5 21302	162.81254	12.14124	0.1012210	0.17901516	3.1180004	21	4 3.8	20.2
499389 2010 AR ₉₀	15.7	X	180.99700	70.77866	327.24537	21.86683	0.0337693	0.18218081	3.0817752	21	4 3.1	20.6
499390 2010 AK ₉₃	16.2	X	309.52666	223.70583	33.35032	10.59429	0.1822948	0.17414354	3.1758829	21	3 9.8	20.6
499391 2010 AA ₁₃₁	16.0	X	252.04209	17.75376	296.42037	16.87986	0.1141990	0.17437622	3.1730570	21	3 9.6	21.2
499392 2010 BF	15.8	X	309.16133	263.77180	303.65369	24.46557	0.2396796	0.17406594	3.1768267	21	—	—
499393 2010 BA ₂	17.2	X	279.41186	7.74665	49.29556	6.09022	0.3030002	0.23032561	2.6357723	21	8 1.9	20.9
499394 2010 BN ₂	17.5	X	301.74055	334.06791	103.28365	7.76340	0.2799763	0.23680178	2.5874944	21	10 15.7	19.8
499395 2010 BK ₉	16.3	X	334.41813	79.12359	135.02770	19.74355	0.1343760	0.17096645	3.2151072	21	2 23.3	20.5
499396 2010 BK ₂₆	16.2	X	54.78957	26.29781	141.52355	28.46553	0.1255946	0.18147855	3.0897204	21	5 12.4	20.8
499397 2010 BV ₂₉	15.8	X	22.74536	144.69506	63.38052	13.89135	0.1649042	0.18159966	3.0883466	21	5 7.6	19.2
499398 2010 BF ₄₈	15.6	X	339.14318	255.65574	329.03619	24.28175	0.1186741	0.17350279	3.1836971	21	3 7.7	19.8
499399 2010 BA ₅₅	18.8	X	312.22751	234.18383	132.94016	4.26100	0.3064927	0.23934398	2.5691396	21	7 10.2	21.3
499400 2010 BZ ₅₈	16.3	X	347.60781	71.97060	174.57257	13.89699	0.2152038	0.17839305	3.1252452	21	4 18.2	19.7
499401 2010 BL ₇₁	16.4	X	6.13232	271.09641	282.78279	14.67492	0.0903060	0.17398454	3.1778175	21	3 10.9	20.8
499402 2010 BJ ₇₄	16.2	X	358.66390	205.72023	19.24269	10.88899	0.0799212	0.17847517	3.1242864	21	4 16.0	20.0
499403 2010 BQ ₇₇	16.3	X	13.33440	198.63666	349.45402	14.91445	0.2245945	0.17477821	3.1681898	21	3 18.2	19.3
499404 2010 BH ₈₁	16.1	X	342.25737	230.47152	342.77587	13.35275	0.1400518	0.17115362	3.2127627	21	3 3.4	20.1
499405 2010 BG ₈₇	15.7	X	194.58129	260.75084	132.33493	14.82064	0.1051430	0.17988581	3.1079316	21	4 30.6	20.8
499406 2010 BU ₉₈	16.0	X	76.81263	337.61699	151.94015	28.30901	0.1141783	0.17651740	3.1473451	21	4 21.0	20.7
499407 2010 BZ ₁₂₇	16.2	X	45.18999	196.28540	308.94211	26.84549	0.1589657	0.17309996	3.1886345	21	3 7.3	20.5
499408 2010 CW ₂	16.7	X	35.27216	188.52548	7.73663	2.59400	0.0730969	0.19141144	2.9818843	21	5 3.1	20.5
499409 2010 CL ₉	16.4	X	33.17759	335.23840	199.08430	10.07961	0.1965578	0.17553795	3.1590418	21	4 12.1	19.7
499410 2010 CA ₂₅	16.9	X	317.10851	90.06187	316.33496	9.47235	0.3424725	0.23651420	2.5895913	21	9 13.5	18.6
499411 2010 CH ₂₅	16.5	X	329.32077	61.23709	135.50755	28.50971	0.2532866	0.17439906	3.1727800	21	1 7.9	20.9
499412 2010 CC ₂₉	16.1	X	324.09002	80.13928	159.07639	9.21773	0.0829847	0.18063790	3.0993024	21	3 17.7	20.1
499413 2010 CS ₃₅	16.0	X	37.89814	320.04536	150.16655	29.09581	0.1961925	0.17411176	3.1762692	21	1 25.0	19.8
499414 2010 CB ₃₉	16.3	X	311.82843	257.25649	335.57516	24.42694	0.2648629	0.17311412	3.1884606	21	2 2.1	21.0
499415 2010 CQ ₄₂	16.7	X	254.02068	329.26782	135.81629	12.86985	0.2023125	0.22750625	2.6575034	21	9 19.6	20.5
499416 2010 CE ₅₆	16.5	X	148.12236	241.28292	269.38366	8.07352	0.1876156	0.20972048	2.8057059	21	8 3.1	21.3
499417 2010 CH ₅₇	17.3	X	278.96972	114.26012	346.60603	29.59373	0.3526985	0.23317999	2.6142184	21	9 15.5	20.6
499418 2010 CU ₅₈	16.6	X	201.11119	310.84656	153.79794	13.01884	0.1253365	0.21384304	2.7695294	21	7 27.2	21.0
499419 2010 CQ ₆₅	16.4	X	357.77870	110.81465	159.85774	14.07331	0.2303562	0.19202711	2.9755073	21	6 12.1	19.5
499420 2010 CU ₇₃	17.1	X	288.91334	260.07488	151.29981	11.76674	0.1898729	0.22506784	2.6766633	21	8 23.8	20.4
499421 2010 CF ₇₈	17.4	X	266.06382	112.62752	334.16729	3.56269	0.2078392	0.22494961	2.6776012	21	9 5.5	20.9
499422 2010 CU ₈₂	16.8	X	196.28290	323.44176	172.65385	13.00098	0.1604529	0.21360065	2.7716242	21	8 29.3	21.3
499423 2010 CQ ₉₂	16.6	X	16.85061	246.12444	348.79210	16.97208	0.1226109	0.19137562	2.9822564	21	5 23.3	20.5
499424 2010 CX ₁₀₉	17.1	X	322.36672	171.30716	127.49839	3.08365	0.0748916	0.19976504	2.8981647	21	5 29.3	20.7
499425 2010 CL ₁₁₆	17.2	X	128.81935	2.09851	133.41115	7.95422	0.0359524	0.20093265	2.8869263	21	6 15.4	21.3
499426 2010 CN ₁₂₀	17.0	X	306.68114	59.73042	330.68870	11.76235	0.2705114	0.22735329	2.6586952	21	8 12.2	19.7
499427 2010 CV ₁₂₆	16.6	X	212.07341	23.92173	336.93701	9.97467	0.0273272	0.18976025	2.9991571	21	3 31.9	21.0
499428 2010 CE ₁₆₄	16.8	X	226.03826	298.99838	127.26001	7.04720	0.0483068	0.21043786	2.7993260	21	7 12.1	20.8
499429 2010 CT ₁₇₃	16.7	X	22.42417	213.06945	337.10642	8.15691	0.0815058	0.18624250	3.0368046	21	4 3.8	20.7
499430 2010 CS ₁₇₅	16.9	X	335.57620	64.97965	155.86192	2.31792	0.1692798	0.17716117	3.1397160	21	2 25.8	20.6
499431 2010 CX ₁₇₅	16.6	X	11.63790	45.74586	153.56987	11.48518	0.1419121	0.18183525	3.0856785	21	4 5.1	20.2
499432 2010 CQ ₁₇₆	17.0	X	43.03348	196.35572	330.19340	5.27093	0.1106231	0.18624015	3.0368301	21	4 7.7	20.7
499433 2010 CF ₁₈₀	17.3	X	222.55827	70.18612	53.48311	8.53437	0.2546815	0.22				

ELEMENTS AND OPPOSITION DATES IN 2021

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2021 JULY 5.0 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>
499441 2010 <i>DM</i> ₃₇	16.6	X	183.72552	265.56370	156.88541	11.56701	0.0919745	0.19750630	2.9202189	21	5 21.7	21.3
499442 2010 <i>DG</i> ₇₈	18.8	X	308.56383	263.65843	329.50160	13.64156	0.2409838	0.43106646	1.7355611	21	—	—
499443 2010 <i>ED</i> ₇	15.7	X	283.65020	154.28638	193.08922	28.03352	0.2018667	0.17647573	3.1478405	21	5 22.3	20.6
499444 2010 <i>EW</i> ₂₇	17.3	X	299.44218	241.03184	185.07961	10.97941	0.1865923	0.23847347	2.5753880	21	10 5.2	19.7
499445 2010 <i>EC</i> ₃₆	16.5	X	144.76344	23.25000	182.76149	13.94718	0.1306341	0.21334637	2.7738259	21	10 8.7	20.9
499446 2010 <i>EF</i> ₄₆	15.5	X	15.58829	221.62793	312.32835	12.99976	0.1799534	0.17865293	3.1222137	21	3 1.1	19.0
499447 2010 <i>ES</i> ₆₉	16.6	X	67.72395	183.86122	3.68030	9.02889	0.1171533	0.19056020	2.9907578	21	6 14.8	20.7
499448 2010 <i>EG</i> ₇₀	16.1	X	27.90172	180.59146	15.73457	12.61261	0.1245886	0.18173087	3.0868599	21	4 23.6	19.9
499449 2010 <i>EK</i> ₇₅	17.0	X	15.82514	91.09277	137.28019	2.59607	0.0782541	0.19039973	2.9924380	21	5 17.8	20.6
499450 2010 <i>EC</i> ₈₁	16.6	X	322.09397	87.71096	157.33093	4.08941	0.0566335	0.18070053	3.0985827	21	3 24.4	20.8
499451 2010 <i>EB</i> ₈₆	16.8	X	242.10069	291.28112	150.76408	13.60624	0.0675473	0.21855075	2.7296136	21	8 19.9	20.6
499452 2010 <i>EU</i> ₉₅	16.6	X	13.15188	173.52546	100.58401	3.12999	0.0632946	0.20081214	2.8880812	21	7 13.5	20.3
499453 2010 <i>EQ</i> ₉₈	16.5	X	58.63860	344.96406	168.97117	13.27446	0.1231199	0.18092201	3.0960534	21	4 23.3	20.5
499454 2010 <i>EA</i> ₁₀₁	16.7	X	54.62277	19.07446	166.90635	9.11925	0.0735155	0.18972402	2.9995390	21	5 21.4	20.7
499455 2010 <i>EO</i> ₁₀₄	17.6	X	258.81351	46.53391	5.57978	6.33266	0.3639678	0.22792112	2.6542775	21	9 2.5	21.8
499456 2010 <i>EG</i> ₁₀₆	15.7	X	356.83809	63.81423	108.85409	27.06592	0.1343214	0.17124721	3.2115921	21	2 5.3	19.8
499457 2010 <i>EL</i> ₁₀₉	16.7	X	334.40631	69.41615	164.75589	22.71411	0.1299984	0.18072514	3.0983014	21	3 19.1	20.6
499458 2010 <i>EU</i> ₁₂₁	16.5	X	100.67702	157.02192	356.03988	8.96112	0.1193515	0.19214103	2.9743310	21	6 13.3	20.9
499459 2010 <i>ET</i> ₁₂₆	15.7	X	307.34032	278.84347	358.37358	20.96270	0.0889296	0.18132084	3.0915118	21	4 3.7	20.1
499460 2010 <i>EC</i> ₁₃₇	16.8	X	41.68602	190.66521	8.88118	5.22862	0.1278930	0.18645548	3.0344916	21	5 22.6	20.5
499461 2010 <i>EA</i> ₁₄₁	16.7	X	305.75570	72.69472	182.55542	13.64667	0.2401313	0.17217663	3.2002240	21	2 16.3	21.4
499462 2010 <i>EV</i> ₁₇₁	15.8	X	293.25592	150.00205	109.20069	16.33315	0.0748106	0.17492975	3.1663598	21	3 8.3	20.5
499463 2010 <i>FB</i> ₁	16.5	X	185.53461	64.78702	355.95675	8.70129	0.0602130	0.19128787	2.9831684	21	5 15.9	21.2
499464 2010 <i>FX</i> ₄	16.2	X	194.20178	318.87323	110.16015	3.22139	0.0433921	0.19519044	2.9432717	21	6 8.4	20.4
499465 2010 <i>FR</i> ₉₃	18.4	X	113.87813	17.97155	163.77937	4.35714	0.1393415	0.28710178	2.2756849	21	8 10.1	21.5
499466 2010 <i>GE</i> ₁₀₁	16.4	X	78.86716	94.39035	68.45513	10.31609	0.0542892	0.18379662	3.0636868	21	5 21.1	20.5
499467 2010 <i>GJ</i> ₁₀₅	16.6	X	117.05794	0.39743	173.30392	8.49322	0.1181847	0.19533466	2.9418228	21	7 27.8	21.1
499468 2010 <i>GY</i> ₁₁₇	16.0	X	305.46430	250.07967	60.49322	17.14384	0.1456686	0.18049860	3.1008933	21	5 12.3	20.1
499469 2010 <i>GA</i> ₁₃₂	17.0	X	5.76319	52.06164	173.02938	10.14379	0.1551692	0.17796780	3.1302216	21	4 28.8	20.6
499470 2010 <i>GN</i> ₁₃₈	17.6	X	200.31864	118.88067	356.93678	7.28188	0.1716530	0.20829711	2.8184730	21	8 10.5	22.2
499471 2010 <i>HO</i> ₂₃	15.9	X	3.77564	49.06641	178.39721	16.59868	0.1523116	0.17837709	3.1254316	21	4 28.9	19.6
499472 2010 <i>HL</i> ₇₇	16.3	X	1.80825	56.75375	160.97499	10.60543	0.1608600	0.17698292	3.1418237	21	4 11.6	19.9
499473 2010 <i>JA</i> ₉	16.8	X	105.47766	356.69328	124.89879	10.01209	0.0575160	0.19453071	2.9499224	21	5 8.1	21.1
499474 2010 <i>JG</i> ₃₇	16.6	X	271.23894	96.95761	197.58143	24.22059	0.2433718	0.17158509	3.2073746	21	2 26.1	22.0
499475 2010 <i>JC</i> ₃₈	18.0	X	104.86917	183.52660	113.82062	9.24735	0.2379074	0.30086118	2.2057618	21	—	—
499476 2010 <i>JZ</i> ₄₇	16.5	X	289.14277	199.33974	116.80957	7.51899	0.0202425	0.17892887	3.1190029	21	5 17.0	20.9
499477 2010 <i>JG</i> ₄₈	18.5	X	117.51289	149.94195	126.83464	4.82874	0.1993986	0.30215610	2.1994553	21	12 21.1	22.1
499478 2010 <i>JW</i> ₇₁	18.2	X	76.01269	93.47034	119.09466	5.97844	0.1770331	0.29839088	2.2179190	21	12 26.5	21.4
499479 2010 <i>JK</i> ₈₈	18.0	X	336.26253	306.15240	112.49261	24.56427	0.1212936	0.39037341	1.8541687	21	—	—
499480 2010 <i>JE</i> ₁₀₃	16.3	X	109.70813	286.39507	229.92167	12.69912	0.0732314	0.20107440	3.0855694	21	6 21.9	20.5
499481 2010 <i>JF</i> ₁₀₉	16.3	X	325.26178	83.83096	152.29438	27.12181	0.1270845	0.18121290	2.9927392	21	3 8.7	20.4
499482 2010 <i>JY</i> ₁₁₀	16.3	X	290.53062	250.31448	58.92391	11.31526	0.0548025	0.17761720	3.1343395	21	5 4.4	20.7
499483 2010 <i>JK</i> ₁₁₂	16.5	X	334.24851	174.06558	76.00052	2.65327	0.1344199	0.17365001	3.1818974	21	4 8.5	20.4
499484 2010 <i>JK</i> ₁₂₅	18.3	X	38.38320	184.98774	160.87665	6.47848	0.2669644	0.28324469	2.2962977	21	—	—
499485 2010 <i>JE</i> ₁₇₈	16.3	X	22.13812	83.54561	144.91548	11.80035	0.0342390	0.18575113	3.0421578	21	5 28.3	20.6
499486 2010 <i>KB</i> ₈₉	16.6	X	49.08662	9.10878	167.44624	15.20971	0.1027089	0.18829936	3.0146495	21	5 5.8	20.6
499487 2010 <i>KM</i> ₁₂₅	17.7	X	359.83429	205.68460	161.35593	9.43296	0.2279112	0.27570314	3.0379842	21	12 3.7	19.9
499488 2010 <i>LY</i> ₆₇	18.5	X	116.10760	57.44816	176.59568	4.71019	0.1694507	0.29330502	2.2434844	21	10 26.1	21.8
499489 2010 <i>LQ</i> ₉₃	18.0	X	24.73754	163.72448	179.41838	5.16381	0.2481528	0.27742769	3.2382852	21	12 13.8	20.7
499490 2010 <i>MW</i>	18.9	X	36.64174	105.53512	246.29760	21.35290	0.4711322	0.28682169	2.2771662	21	—	—
499491 2010 <i>MN</i> ₅₂	18.0	X	291.24320	42.91572	11.60530	2.62310	0.1080204	0.26694485	2.3888471	21	9 19.4	20.5
499492 2010 <i>MZ</i> ₆₄	17.9	X	1.24663	357.21711	338.39204	4.58902	0.1337103	0.26856871	3.3792081	21	9 29.9	20.1
499493 2010 <i>MY</i> ₆₅	17.8	X	1.69421	85.65535	297.16073	9.28143	0.2530743	0.27627538	2.3347547	21	—	—
499494 2010 <i>MM</i> ₇₂	18.1	X	21.74159	84.43713	237.71182	2.17239	0.1930818	0.27179157	3.3603626	21	10 28.9	20.4
499495 2010 <i>MV</i> ₈₂	18.1	X	22.77038	44.10774	317.18961	8.19389	0.2448184	0.27834252	2.3231808	21	—	—
499496 2010 <i>MR</i> ₈₇	19.4	X	273.02541	132.48672	195.27757	34.99273	0.3908193	0.43173677	1.7337642	21	3 6.1	22.9
499497 2010 <i>MA</i> ₉₄	17.0	X	65.66498	335.36834	294.16749	12.49009	0.2501294	0.27384074	2.3485727	21	10 20.1	20.7
499498 2010 <i>MB</i> ₉₈	17.7	X	69.46604	296.35339	15.91012	6.04776	0.1878004	0.28179033	2.3041919	21	12 17.3	21.1
499499 2010 <i>NS</i> ₂	15.9	X	180.13022	103.99966	280.74317	17.45027	0.0446346	0.17493335	3.1663163	21	3 20.5	21.0
499500 2010 <i>NG</i> ₃₈	16.3	X	57.29302	169.44155	4.50826	4.80887	0.0598984	0.18298906	3.0726939	21	5 4.7	20.5
499501 2010 <i>NP</i> ₄₂	17.8	X	20.53227	208.85419	128.70742	7.16367	0.2515432	0.27376528	2.3490043	21	11 30.8	20.4
499502 2010 <i>NE</i> ₅₀	15.6	X	122.44906	59.31540	320.93620	4.19628	0.2138290	0.12336540	3.9964447	21	2 15.7	21.5
499503 2010 <i>NO</i> ₅₆	16.7	X	17.73551	257.57399	74.46536	7.49909	0.1033626	0.17869767	3.1216925	21	10 11.2	20.7
499504 2010 <i>NZ</i> ₈₆	18.2	X	26.90623	147.41181	180.82391	3.19205	0.2009466	0.27377229	2.3489642	21	11 18.1	20.7
499505 2010 <i>OW</i> ₁₁	18.1	X	7.81801	141.00687	211.62048	8.65615	0.2223618	0.27195543	2.3594144	21	11 24.4	20.2
499506 2010 <i>OU</i> ₁₄	18.2	X	23.33060	300.25786	51.25951	6.97596	0.2796311	0.27612928	2.3355782	21	12 27.5	21.0
499507 2010 <i>OX</i> ₂₆	15.9	X	182.11251	210.82173	104.97477	4.03234	0.2195200	0.12647494	3.9306683	21	1 24.0	22.4
499508 2010 <i>OC</i> ₃₈	16.2	X	293.44235	345.40815	320.72870	26.86159	0.1085421	0.17874844	3.1211014	21	4 7.9	21.2
499509 2010 <i>OX</i> ₃₉	18.0	X	1.29905	52.88982	335.27513	7.72062	0.2456891	0.27515019	2.3411155	21	—	—
499510 2010 <i>OR</i> ₈₅	15.7	X	331.51856	323.42288	50.48506	15.53123	0.0834022	0.17285923	3.1915941	21	9 27.0	20.0
499511 2010 <i>OF</i> ₈₈	17.9	X	50.62488	292.56877	27.51005	5.59502	0.2690514	0.27723939	2.3293393	21	12 16.4	

ELEMENTS AND OPPOSITION DATES IN 2021

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2021 JULY 5.0 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>
499521 2010 PK ₆₅	18.7	X	50.65715	155.29893	140.69484	2.76446	0.2217944	0.27763142	2.3271460	21	11 10.7	21.7
499522 2010 PL ₆₆	7.6	X	305.70100	95.83703	8.50382	24.27281	0.3806650	0.01006420	21.2462989	21	9 30.8	20.4
499523 2010 PV ₇₄	17.7	X	72.02779	184.41609	143.53504	5.91936	0.2150560	0.28909765	2.2651989	21	—	—
499524 2010 PZ ₇₆	18.1	X	59.41340	336.82027	346.50583	1.65542	0.2519671	0.28534986	2.2849899	21	12 28.9	21.5
499525 2010 PH ₇₇	17.9	X	14.89789	165.08533	164.44280	2.78243	0.2176922	0.27446538	2.3450081	21	11 2.9	19.9
499526 2010 RO ₁₁	16.7	X	106.03303	220.14764	253.72399	10.18971	0.1373760	0.23815310	2.5776971	21	4 28.1	20.2
499527 2010 RO ₁₆	17.8	X	349.48867	139.77016	266.71585	5.54884	0.1735919	0.28301127	2.2975602	21	—	—
499528 2010 RU ₅₀	18.8	X	52.58729	326.12999	3.43554	2.63412	0.2436001	0.28185744	2.3038262	21	12 28.7	22.1
499529 2010 RL ₅₁	18.1	X	330.85120	30.86060	8.00579	5.43997	0.2369606	0.27140947	2.3625774	21	11 9.1	19.5
499530 2010 RZ ₅₄	18.1	X	62.05071	141.50595	200.58114	5.33494	0.1737706	0.28640496	2.2793746	21	—	—
499531 2010 RK ₇₁	17.8	X	41.47907	191.13401	177.10371	5.99210	0.1784137	0.28727315	2.2747778	21	—	—
499532 2010 RP ₇₃	18.1	X	4.45427	277.68183	63.74760	3.22929	0.2039791	0.27345031	2.3508077	21	10 28.6	19.9
499533 2010 RF ₇₆	18.1	X	65.10389	77.36608	226.74327	5.63518	0.2342065	0.28284409	2.2984655	21	12 8.3	21.5
499534 2010 RU ₈₁	17.8	X	62.50610	341.70381	0.77582	10.55870	0.1661629	0.28625974	2.2801454	21	—	—
499535 2010 RJ ₈₃	16.9	X	346.85121	266.48050	103.03359	2.07263	0.1885975	0.18201684	3.0836258	21	10 10.7	20.1
499536 2010 RW ₈₈	18.5	X	3.01442	34.34120	328.93250	3.61071	0.2812583	0.27520168	2.3408235	21	12 11.6	20.6
499537 2010 RN ₉₄	18.2	X	323.95384	97.42397	310.31269	8.76084	0.1957065	0.27527640	2.3378527	21	11 4.1	20.3
499538 2010 RO ₉₉	18.2	X	38.18450	90.89786	206.42523	6.55241	0.1152815	0.26928440	2.3749907	21	10 5.8	20.8
499539 2010 RS ₉₉	18.3	X	344.95685	125.21870	265.54049	2.11971	0.1777752	0.27460228	2.3442286	21	11 29.2	20.2
499540 2010 RG ₁₀₃	18.2	X	9.19986	20.18388	310.70520	1.38060	0.1141061	0.26855807	2.3792710	21	10 6.2	20.5
499541 2010 RV ₁₀₈	18.1	X	354.69889	331.16777	29.04824	1.76335	0.2066044	0.27192724	2.3595774	21	11 4.9	19.7
499542 2010 RL ₁₁₀	18.0	X	114.62620	305.31048	347.73414	3.99369	0.1620521	0.29021906	2.2593600	21	—	—
499543 2010 RP ₁₁₁	18.2	X	340.73289	218.07266	145.93430	1.72476	0.2041320	0.26922678	2.3753296	21	10 7.3	19.6
499544 2010 RA ₁₁₄	18.0	X	346.70011	47.62446	320.08593	4.67485	0.2000256	0.27079940	2.3661244	21	10 25.5	19.7
499545 2010 RJ ₁₁₅	17.8	X	298.53044	288.04807	130.46115	3.01884	0.1724728	0.26744474	2.3858695	21	10 4.8	19.9
499546 2010 RM ₁₁₉	17.9	X	45.15643	6.34295	303.31963	1.68358	0.2118391	0.27718917	2.3296207	21	11 19.0	20.8
499547 2010 RP ₁₂₄	17.8	X	42.49750	142.08186	167.17206	5.66551	0.1579204	0.27331797	2.3515664	21	11 8.2	20.6
499548 2010 RU ₁₂₅	18.2	X	20.44172	265.36904	70.35748	3.01168	0.2347891	0.27470916	2.3436205	21	11 23.9	20.4
499549 2010 RA ₁₂₆	17.0	X	134.58739	138.02276	19.97938	12.87579	0.0622945	0.25450638	2.4660598	21	7 30.1	20.7
499550 2010 RF ₁₂₇	18.3	X	28.25792	223.83287	99.99409	2.45075	0.1925112	0.27378210	2.3489080	21	11 12.4	20.7
499551 2010 RQ ₁₃₈	18.5	X	47.62980	332.27315	15.23964	6.38175	0.2364900	0.28237722	2.3009982	21	—	—
499552 2010 RU ₁₃₈	18.2	X	25.00714	24.82983	322.70784	6.11427	0.1420713	0.27675551	2.3320536	21	12 1.1	21.0
499553 2010 RT ₁₄₁	18.2	X	324.20365	173.11262	232.73393	5.23705	0.2159151	0.27220174	2.3579908	21	11 3.9	19.4
499554 2010 RM ₁₄₃	18.4	X	7.27383	25.98292	316.94582	3.26995	0.2069053	0.27236126	2.3570701	21	11 3.4	20.4
499555 2010 RV ₁₄₄	18.3	X	21.97031	318.38048	354.25937	4.88381	0.1556311	0.26837719	2.3803399	21	10 7.4	20.6
499556 2010 RW ₁₄₅	17.8	X	26.12086	134.44195	196.39931	3.00417	0.2418257	0.27449554	2.3448363	21	11 27.3	20.3
499557 2010 RG ₁₄₆	17.5	X	5.24837	329.38815	4.58571	7.18993	0.1461840	0.26858128	2.3791339	21	10 7.4	19.6
499558 2010 RF ₁₄₇	18.5	X	314.96832	14.01962	22.52140	1.34044	0.1951992	0.26679518	2.3897400	21	9 25.9	20.1
499559 2010 RX ₁₅₀	18.0	X	354.33933	51.33723	349.03291	6.59512	0.1150430	0.28087933	2.3091715	21	12 25.7	20.4
499560 2010 RL ₁₅₄	18.1	X	306.54211	223.77393	219.23535	5.42104	0.1829951	0.27397097	2.3478284	21	11 24.7	19.7
499561 2010 RD ₁₅₅	18.0	X	33.63026	268.13527	64.11192	3.64339	0.2094501	0.27633933	2.3343945	21	12 4.2	20.6
499562 2010 RM ₁₅₉	18.3	X	339.83552	65.92493	353.94752	4.48743	0.1534277	0.28208019	2.3026132	21	—	—
499563 2010 RA ₁₇₅	18.2	X	47.62253	199.68870	181.41167	7.75472	0.1305511	0.28822708	2.2697578	21	—	—
499564 2010 RH ₁₈₁	17.7	X	292.37763	339.09870	101.01789	5.08115	0.2005645	0.26475816	2.4019824	21	10 17.8	19.9
499565 2010 SC ₈	18.4	X	323.16908	148.38828	287.81593	1.59297	0.1592159	0.28116459	2.3076094	21	12 24.3	20.0
499566 2010 SE ₁₉	18.3	X	15.58642	186.79086	164.02863	2.55663	0.2037361	0.27421390	2.3464415	21	12 2.4	20.6
499567 2010 SR ₂₀	18.9	X	38.54713	6.83608	1.62940	6.19947	0.1500410	0.28437611	2.2902030	21	—	—
499568 2010 ST ₂₂	17.6	X	32.69905	303.23175	9.71740	4.41477	0.2563260	0.27516831	2.3410127	21	11 12.8	20.2
499569 2010 SK ₂₆	18.1	X	48.69904	299.33906	15.72344	8.14880	0.1415590	0.27722104	2.3294421	21	11 18.6	21.1
499570 2010 SR ₂₇	18.3	X	23.85824	342.97422	13.51124	5.85378	0.2064071	0.27752077	2.3277646	21	12 23.6	21.0
499571 2010 SV ₂₇	18.3	X	34.26022	6.75943	296.18411	0.65383	0.1917188	0.26918225	2.3755915	21	10 20.9	20.9
499572 2010 SE ₃₀	18.0	X	348.96518	330.87893	39.31909	1.03078	0.2302207	0.27166465	2.3610977	21	11 10.9	19.6
499573 2010 SP ₃₅	18.0	X	0.78225	97.43988	249.98744	3.34839	0.2150965	0.27107699	2.3645089	21	10 29.4	19.8
499574 2010 SM ₃₆	17.9	X	295.94013	60.45256	351.84229	4.57880	0.2021400	0.26514206	2.3996362	21	9 8.7	20.1
499575 2010 TG	18.4	X	305.59818	63.14833	32.40287	2.07024	0.1409992	0.27709027	2.3301750	21	12 15.3	20.2
499576 2010 TA ₁	18.0	X	351.01455	278.85063	106.89796	5.53499	0.2091637	0.27504055	2.3417376	21	12 9.6	19.9
499577 2010 TB ₁	18.5	X	51.70302	133.70420	157.18478	1.07731	0.2197432	0.27407859	2.3472137	21	11 3.6	21.3
499578 2010 TR ₂	17.0	X	28.06106	263.23680	87.34765	6.48193	0.2511021	0.27672839	2.3322060	21	12 28.1	19.8
499579 2010 TL ₁₃	18.1	X	196.95470	177.98558	317.15085	4.59512	0.0580907	0.26324195	2.4111967	21	9 7.2	21.3
499580 2010 TT ₁₅	18.0	X	276.07342	215.11097	256.26724	5.83032	0.1974344	0.27227009	2.3575962	21	10 31.8	20.5
499581 2010 TK ₁₇	18.3	X	351.43206	54.09796	312.89407	3.70324	0.1610002	0.27136924	2.3628109	21	11 1.0	20.5
499582 2010 TH ₁₉	20.5	X	329.85838	201.50240	254.21947	6.82486	0.3100126	0.55621584	1.4643351	21	—	—
499583 2010 TG ₃₅	18.1	X	11.17909	116.20565	236.94172	1.67599	0.2190884	0.27349128	2.3505729	21	11 30.3	20.4
499584 2010 TH ₃₆	18.6	X	15.53435	33.52057	337.18967	5.23459	0.1773757	0.27807506	2.3246702	21	12 26.8	21.2
499585 2010 TF ₄₂	18.1	X	99.10426	257.33546	9.93088	6.96752	0.0966544	0.27462674	2.3440894	21	11 9.8	21.5
499586 2010 TB ₄₃	18.9	X	346.51103	95.94834	320.56239	1.51472	0.1985867	0.27876336	2.3208421	21	—	—
499587 2010 TX ₄₉	18.2	X	328.82041	264.68801	147.44814	2.64691	0.1874881	0.27274971	2.3548316	21	11 27.6	19.8
499588 2010 TX ₅₅	17.5	X	7.75370	36.80856	331.67252	3.74814	0.2121164	0.27457229	2.3443993	21	12 15.4	19.8
499589 2010 TV ₅₈	17.3	X	17.95171	343.93308	10.01922	9.32821	0.1193206	0.27293517	2.3537647	21	11 23.2	20.0
499590 2010 TS ₆₀	18.4	X	43.39390	45.56041	252.94811	1.27340	0.2117257	0.27386092	2.3484574	21	11 1.2	21.3
499591 2010 TA ₆₅	17.9	X	43.61539	20.70937	338.65935	7.10585	0.1413153	0.28338540	2.2955375	21	—	—
499592 2010 TV ₆₅	18.1	X	347.64280	155.63945	224.55716	3.54195	0.2079222	0.27410864	2.3470422	21	11 22.4	19.6
499593 2010 TL ₇₅	18.2	X	295.81840	77.60149	24.07768	9.26505	0.1737401	0.27569588	2.3380253	21	11 28.9	20.3
499594 2010 TQ ₈₇	18.2	X	35.89664	281								

ELEMENTS AND OPPOSITION DATES IN 2021

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2021 JULY 5.0 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>		
499601	2010	TF ₁₄₂	17.6	X	9.36715	344.03302	48.82677	13.25440	0.1963445	0.27796427	2.3252879	21	—	—
499602	2010	TK ₁₅₃	17.5	X	18.01394	78.04021	271.43660	5.79622	0.1373150	0.27359163	2.3499981	21	11 21.9	20.1
499603	2010	TD ₁₅₇	18.0	X	59.57392	245.73437	47.44527	2.36643	0.2394620	0.27595620	2.3365546	21	11 18.0	21.2
499604	2010	TL ₁₆₃	18.3	X	306.26466	315.35435	90.99500	2.52966	0.1815365	0.26608812	2.3939720	21	9 25.3	20.2
499605	2010	TK ₁₆₅	18.8	X	7.74181	183.52663	195.14189	1.89818	0.1959063	0.27636532	2.3342481	21	12 27.9	21.1
499606	2010	TK ₁₆₈	18.0	X	12.40215	343.24083	16.45333	4.51468	0.2408155	0.27485168	2.3428102	21	12 15.5	20.4
499607	2010	TV ₁₇₀	17.9	X	36.49261	128.42949	220.94400	4.45439	0.1719150	0.27832359	2.3232862	21	12 25.5	20.8
499608	2010	TA ₁₇₂	16.9	X	21.75016	20.88712	199.12491	7.63315	0.0936766	0.23824318	2.5770473	21	5 12.6	19.7
499609	2010	TF ₁₇₅	17.5	X	9.85344	355.79237	56.59118	8.74179	0.2042805	0.28545172	2.2844462	21	—	—
499610	2010	TK ₁₈₄	18.4	X	47.10439	202.75965	145.95894	5.25786	0.2375349	0.28291811	2.2980645	21	—	—
499611	2010	TD ₁₈₇	17.6	X	31.48559	326.20230	353.02351	11.21827	0.2300436	0.27313937	2.3525914	21	11 11.7	20.6
499612	2010	UF ₆	18.0	X	349.27472	227.26784	142.82799	3.27274	0.2133840	0.26818569	2.3814729	21	11 9.9	19.7
499613	2010	UP ₁₅	18.2	X	6.35996	227.55667	146.28014	1.78146	0.1998171	0.27483978	2.3428779	21	12 19.0	20.5
499614	2010	US ₂₄	18.4	X	28.85105	170.97520	176.74010	0.54506	0.1987576	0.27575696	2.3376800	21	12 17.0	21.1
499615	2010	UD ₂₈	17.9	X	2.34439	244.65337	90.08264	2.34441	0.1986477	0.26390742	2.4071417	21	10 10.8	19.8
499616	2010	UD ₃₆	17.4	X	312.62303	127.45053	308.99913	4.21797	0.1816870	0.26855110	2.3793122	21	11 24.9	19.2
499617	2010	UB ₄₁	18.0	X	326.18292	59.50355	354.66534	5.94909	0.0834188	0.26847154	2.3797822	21	11 18.6	20.6
499618	2010	UL ₅₀	18.6	X	315.03278	154.92837	243.69755	1.36794	0.2271083	0.26332895	2.4106656	21	9 23.5	20.1
499619	2010	UC ₅₂	17.6	X	14.89918	291.19256	60.88201	3.55034	0.1343105	0.27189656	2.3597549	21	11 20.6	20.1
499620	2010	UG ₅₃	18.1	X	30.16801	92.90567	240.16595	8.79399	0.2175826	0.27256420	2.3558999	21	12 1.4	20.9
499621	2010	UL ₅₅	18.3	X	284.48087	168.42428	247.64718	1.68227	0.1966467	0.25887469	2.4382393	21	8 24.2	20.9
499622	2010	UY ₅₅	17.8	X	315.93664	323.29194	101.17108	2.84870	0.1873785	0.27095733	2.3652049	21	11 15.9	19.4
499623	2010	UO ₆₅	17.9	X	337.60815	191.66684	219.61065	1.55933	0.1955146	0.27251592	2.3561782	21	12 16.9	19.6
499624	2010	US ₈₀	18.1	X	259.90773	182.73882	262.06252	6.08471	0.0811371	0.26351846	2.4095097	21	9 14.6	21.2
499625	2010	UD ₈₃	18.0	X	352.65388	222.26919	140.53755	2.72604	0.2385838	0.27038691	2.3685303	21	11 13.3	19.5
499626	2010	UN ₈₃	15.1	X	164.63662	29.90832	320.34998	1.87275	0.2265093	0.12417779	3.9789953	21	2 17.6	21.5
499627	2010	UO ₈₄	18.3	X	0.98486	86.16185	321.60405	3.32998	0.2247121	0.27723233	2.3293789	21	—	—
499628	2010	UO ₈₅	17.4	X	4.18222	136.09468	108.71831	3.36775	0.1086086	0.24146623	2.5540641	21	5 16.9	20.0
499629	2010	UU ₈₇	17.7	X	18.89952	210.79382	133.03593	2.94739	0.2298270	0.27339879	2.3511030	21	12 2.2	20.1
499630	2010	UT ₈₉	17.7	X	220.52657	160.85340	20.16338	7.18362	0.0545151	0.28128922	2.3069277	21	12 11.7	20.7
499631	2010	US ₉₈	18.3	X	328.60707	43.66222	347.91221	2.90311	0.1869550	0.26627053	2.3928785	21	10 19.9	20.1
499632	2010	UW ₉₈	17.3	X	264.69462	120.90510	256.83035	11.04385	0.1837232	0.24536995	2.5269024	21	6 7.1	20.8
499633	2010	UO ₉₉	17.3	X	328.19197	125.41305	292.25342	5.15939	0.0216282	0.27112998	2.3642008	21	11 27.4	20.1
499634	2010	US ₁₀₇	17.9	X	347.59833	46.50734	310.61719	5.96910	0.1375505	0.26555824	2.3971554	21	10 3.5	20.1
499635	2010	VD ₁₅	17.7	X	240.75014	214.37954	283.05000	5.55646	0.0662766	0.26888692	2.3773307	21	11 4.6	20.7
499636	2010	VS ₁₅	17.6	X	353.59688	94.71468	273.58877	5.35601	0.1380189	0.27074290	2.3664536	21	11 4.9	19.8
499637	2010	VP ₂₀	17.9	X	355.90696	334.64939	45.63788	3.01850	0.2132705	0.27433284	2.3457632	21	12 10.9	19.9
499638	2010	VU ₂₂	17.9	X	43.19931	99.41997	240.84669	3.97711	0.2697294	0.27692724	2.3310894	21	—	—
499639	2010	VQ ₂₄	17.9	X	324.15560	6.25011	20.12746	2.65088	0.1968978	0.26559905	2.3969098	21	10 1.1	19.6
499640	2010	VL ₂₆	18.4	X	357.46759	299.87670	72.31962	3.43028	0.2017679	0.26879972	2.3778448	21	11 28.5	20.4
499641	2010	VS ₃₂	18.0	X	60.35559	186.42699	120.42413	2.97940	0.2084315	0.27264881	2.3554125	21	12 2.7	21.2
499642	2010	VR ₄₈	18.2	X	323.18302	345.71028	85.38301	4.12910	0.1580088	0.26946178	2.3739483	21	12 12.0	19.8
499643	2010	VB ₄₉	17.9	X	343.59331	17.69358	2.16379	7.03411	0.1261103	0.26745596	2.3858027	21	10 31.5	20.3
499644	2010	VG ₅₃	18.6	X	312.70222	346.75067	80.16741	3.60005	0.1519063	0.26888489	2.3773427	21	11 13.6	20.4
499645	2010	VZ ₅₇	17.8	X	22.01118	300.42512	68.90074	3.64370	0.2239746	0.27566551	2.3381970	21	—	—
499646	2010	VW ₆₁	17.7	X	283.39451	92.54335	342.53596	5.55930	0.0737332	0.26264688	2.4148374	21	10 8.5	20.5
499647	2010	VP ₆₇	18.4	X	349.32023	9.69305	24.86699	3.00585	0.2182608	0.27479480	2.3431336	21	12 20.4	20.3
499648	2010	VC ₇₁	17.5	X	231.08142	332.61899	132.91627	5.61490	0.1817931	0.25407177	2.4688712	21	8 27.3	21.0
499649	2010	VA ₇₈	18.3	X	300.83987	330.36608	125.48090	1.76123	0.1368155	0.27169670	2.3609120	21	12 5.1	20.3
499650	2010	VM ₈₃	15.3	X	155.29022	311.18759	58.74176	6.03690	0.2067475	0.12372086	3.9887862	21	3 5.9	21.7
499651	2010	VL ₈₇	18.2	X	20.53542	323.42227	16.15268	2.81700	0.2050933	0.26929728	2.3749150	21	11 22.3	20.6
499652	2010	VN ₈₈	18.6	X	335.22798	43.22802	8.02338	1.58595	0.1662642	0.27019889	2.3696289	21	12 7.6	20.5
499653	2010	VX ₉₆	17.7	X	277.13171	218.47873	232.28075	7.97525	0.2051572	0.26321470	2.4113632	21	9 28.8	20.5
499654	2010	VY ₉₆	18.2	X	22.55893	330.03035	24.34375	1.80907	0.1988851	0.27443052	2.3452066	21	12 16.8	20.8
499655	2010	VL ₉₇	18.1	X	296.50140	10.53574	55.38146	3.39936	0.1597168	0.26430313	2.4047385	21	10 8.8	20.4
499656	2010	VP ₉₇	18.1	X	355.21547	153.19886	210.51364	1.26536	0.2174641	0.26883284	2.3776495	21	11 12.9	19.6
499657	2010	VK ₁₀₅	18.1	X	260.51305	331.40955	113.78325	2.62188	0.1368990	0.25822201	2.4423461	21	9 11.3	21.2
499658	2010	VU ₁₀₈	18.3	X	33.31557	254.51885	112.18532	3.57563	0.1305640	0.27827130	2.3235772	21	—	—
499659	2010	VY ₁₁₄	18.2	X	328.50752	40.69488	353.85154	6.94869	0.1967916	0.26803085	2.3823900	21	10 23.3	19.9
499660	2010	VC ₁₁₉	18.1	X	319.73335	12.88059	81.71435	3.13807	0.1679234	0.27445277	2.3450799	21	—	—
499661	2010	VE ₁₂₄	17.1	X	355.34814	30.22198	26.78970	4.57425	0.1703069	0.18544451	3.0455102	21	12 28.2	20.6
499662	2010	VM ₁₂₇	18.2	X	18.88618	19.44525	64.54927	22.98068	0.0943606	0.38057401	1.8858623	21	—	—
499663	2010	VT ₁₃₃	18.2	X	1.03120	302.67037	72.87028	3.56615	0.2418258	0.27244822	2.3565685	21	12 18.4	20.2
499664	2010	VD ₁₃₅	18.6	X	350.89126	356.70009	51.69857	3.18963	0.2334004	0.27462980	2.3440720	21	—	—
499665	2010	VK ₁₄₂	18.2	X	14.35320	243.39127	132.56277	3.33348	0.2393062	0.27629847	2.3346247	21	—	—
499666	2010	VD ₁₅₀	18.2	X	251.11503	52.58620	87.36981	5.90920	0.0479013	0.27031023	2.3689782	21	11 28.2	21.0
499667	2010	VZ ₁₅₆	18.2	X	331.33403	134.86104	268.84676	4.28463	0.1727675	0.26856951	2.3792034	21	11 16.2	20.0
499668	2010	VO ₁₆₁	18.2	X	355.88111	103.73856	267.54307	1.75484	0.1796044	0.26906904	2.3762579	21	11 20.3	20.3
499669	2010	VD ₁₆₄	18.9	X	358.09884	336.99804	40.64940	4.97115	0.2717522	0.27142793	2.3624703	21	12 20.8	20.9
499670	2010	VQ ₁₆₅	18.2	X	326.									

ELEMENTS AND OPPOSITION DATES IN 2021

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2021 JULY 5.0 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>
499681 2010 VM ₂₁₄	18.3	X	43.79977	335.82344	25.31046	7.23771	0.1265103	0.28079819	2.3096164	21	—	—
499682 2010 VO ₂₁₄	17.9	X	270.37244	187.51127	261.58296	1.54894	0.1774756	0.26170742	2.4206130	21	9 22.5	20.9
499683 2010 VZ ₂₁₇	18.3	X	274.35489	119.37411	334.11341	0.86175	0.1469634	0.26561207	2.3968315	21	10 11.3	21.0
499684 2010 VS ₂₁₉	17.6	X	175.49336	157.24559	49.44883	7.58593	0.0548157	0.27026868	2.3692210	21	11 17.9	20.8
499685 2010 WA ₁₆	17.8	X	355.56410	272.27506	123.10397	2.00062	0.1874573	0.27263061	2.3555174	21	12 28.4	19.9
499686 2010 WU ₂₂	18.4	X	261.85767	225.78201	252.83185	1.55995	0.1998405	0.26293332	2.4130832	21	10 18.3	21.3
499687 2010 WJ ₂₄	17.5	X	80.31456	351.14413	268.48253	2.75778	0.1479233	0.25719452	2.4488466	21	10 13.5	20.8
499688 2010 WZ ₂₈	18.0	X	321.00087	350.25118	65.91362	5.65899	0.1725508	0.26663786	2.3906803	21	11 13.4	19.7
499689 2010 WL ₄₅	18.4	X	305.35521	342.74196	71.93610	2.09639	0.1335478	0.26153359	2.4216855	21	10 11.2	20.8
499690 2010 WG ₄₈	18.1	X	250.58468	222.08094	255.83824	1.72675	0.1626835	0.25988433	2.4319202	21	10 7.1	21.2
499691 2010 WP ₄₉	18.4	X	257.23198	147.88348	325.86043	0.52749	0.1893403	0.26048246	2.4281959	21	10 6.8	21.3
499692 2010 WO ₇₃	18.2	X	346.98700	332.60069	69.35382	3.16028	0.2121896	0.27022237	2.3694916	21	12 24.4	19.9
499693 2010 XX ₁₂	17.1	X	231.84716	154.65376	333.26750	5.53630	0.0919305	0.25889656	2.4381020	21	10 5.5	20.3
499694 2010 XK ₃₃	17.6	X	346.50538	289.47828	122.88024	5.32847	0.1708041	0.27267961	2.3552352	21	—	—
499695 2010 XN ₅₃	17.9	X	349.66210	179.00201	242.64513	9.12893	0.1801179	0.27600187	2.3362969	21	—	—
499696 2010 XA ₇₇	18.3	X	259.53821	20.04912	101.65110	3.09923	0.1846000	0.26209103	2.4182504	21	10 23.8	21.1
499697 2010 XS ₈₈	17.1	X	229.69488	232.38797	207.27560	6.48314	0.1525681	0.24116713	2.5561753	21	7 22.5	21.1
499698 2010 YP ₃	16.7	X	233.01563	79.84821	7.89417	11.18024	0.1465510	0.24494401	2.5298310	21	8 12.9	20.6
499699 2010 YG ₅	17.9	X	272.74951	121.74959	336.94941	4.36244	0.1899811	0.25806080	2.4433632	21	10 6.5	20.7
499700 2011 AH	16.7	X	140.74299	240.26288	290.18004	14.06439	0.0558624	0.23845918	2.5754909	21	8 12.9	20.5
499701 2011 AR	17.5	X	236.84192	120.94848	358.52455	0.60208	0.1258967	0.25128232	2.4871086	21	9 27.1	20.8
499702 2011 AB ₂	18.2	X	287.45779	19.48846	43.93891	2.37215	0.1657995	0.25456371	2.4656895	21	9 16.0	20.7
499703 2011 AA ₈	18.0	X	253.32432	231.59240	233.32995	0.47872	0.1398550	0.25318771	2.4746150	21	9 26.4	21.1
499704 2011 AM ₂₀	17.6	X	156.01701	20.61605	318.15327	19.13233	0.0672889	0.38008730	1.8874718	21	—	—
499705 2011 AA ₂₁	16.8	X	7.28732	270.64229	308.15900	15.90694	0.1924709	0.21015721	2.8018176	21	4 3.1	20.1
499706 2011 AZ ₂₄	16.4	X	154.64309	261.17586	278.32960	12.32243	0.0785992	0.24210736	2.5495531	21	9 8.7	20.4
499707 2011 AH ₃₁	18.2	X	285.01674	153.11695	283.37281	0.86119	0.1564133	0.25403381	2.4691171	21	9 30.7	21.0
499708 2011 AN ₃₅	17.5	X	222.38414	111.81538	326.05792	8.03653	0.1930408	0.23657661	2.5891359	21	7 12.4	21.7
499709 2011 AN ₄₂	16.5	X	34.63872	272.07001	314.21655	11.21188	0.1060459	0.22253001	2.6969754	21	6 14.4	19.8
499710 2011 AV ₄₃	15.8	X	113.17454	19.94750	112.63362	8.75879	0.1495323	0.12497727	3.9620080	21	6 9.2	21.7
499711 2011 AJ ₅₆	17.3	X	150.14826	219.43951	308.63197	5.46055	0.0958937	0.23636159	2.5907059	21	8 25.7	21.1
499712 2011 AD ₅₉	18.6	X	325.29865	129.79008	282.39708	1.80163	0.1899019	0.26085191	2.4259027	21	11 13.8	20.3
499713 2011 AU ₆₁	17.8	X	346.96622	319.33309	115.85631	5.45099	0.1496481	0.27090063	2.3655349	21	—	—
499714 2011 AJ ₆₅	17.4	X	181.38885	25.10898	106.83285	4.40729	0.0743362	0.23696032	2.5863401	21	8 15.3	21.0
499715 2011 AA ₆₆	17.3	X	201.32906	347.76301	123.46954	12.20723	0.1806013	0.23820896	2.5772942	21	8 4.3	21.3
499716 2011 AQ ₇₃	16.7	X	110.22867	204.08262	302.59197	12.33843	0.1057636	0.22616207	2.6680228	21	6 15.0	20.5
499717 2011 AS ₇₅	18.3	X	314.17744	264.89484	316.33132	17.62316	0.0332213	0.38761623	1.8629509	21	1 4.4	20.3
499718 2011 AL ₇₇	17.0	X	253.50817	91.05694	30.92755	8.68698	0.1558477	0.25445260	2.664072	21	10 18.3	20.1
499719 2011 BM ₁	17.9	X	311.18355	282.16619	120.32704	2.90663	0.2211664	0.25615674	2.4554562	21	9 22.5	19.9
499720 2011 BV ₃	17.9	X	304.15734	306.76278	109.66222	3.70875	0.1782129	0.25625180	2.4548489	21	10 6.1	20.1
499721 2011 BQ ₆	17.9	X	267.48891	25.91008	20.84687	1.67367	0.1727603	0.24419840	2.5349778	21	7 22.1	21.3
499722 2011 BE ₇	17.2	X	126.32199	209.01298	302.31847	11.49270	0.1279566	0.22795903	2.6539833	21	7 12.9	21.2
499723 2011 BG ₇	17.6	X	224.54454	331.48077	110.81798	5.40442	0.1437833	0.23973165	2.5653692	21	7 23.3	21.5
499724 2011 BJ ₉	17.8	X	221.86118	123.59158	334.40905	3.07158	0.0266173	0.24078666	2.5588673	21	8 22.4	21.3
499725 2011 BS ₁₀	16.4	X	324.37332	36.24965	296.15988	27.64138	0.1200953	0.23517175	2.5994369	21	7 13.8	19.4
499726 2011 BA ₁₇	17.3	X	161.78888	173.25338	138.32339	8.42464	0.1230121	0.22969966	2.6405586	21	7 24.5	21.5
499727 2011 BA ₁₈	18.1	X	302.96420	104.41029	303.14165	1.64345	0.1717814	0.25211839	2.4816072	21	9 17.1	20.5
499728 2011 BK ₁₈	17.0	X	101.19255	238.23746	312.85773	10.75331	0.1422412	0.22713380	2.6604077	21	8 6.6	20.7
499729 2011 BK ₂₀	16.4	X	166.09417	184.90748	324.60555	13.51866	0.1099457	0.23161751	2.6259621	21	8 19.6	20.4
499730 2011 BJ ₂₂	17.3	X	108.97849	276.13570	258.47641	1.19332	0.1403354	0.22433662	2.6824766	21	7 24.4	21.3
499731 2011 BN ₂₅	17.8	X	249.54129	110.36713	16.33269	3.67612	0.1742129	0.25491391	2.4634308	21	10 15.8	20.9
499732 2011 BT ₂₅	17.3	X	37.76139	220.87113	24.65734	1.24692	0.1085400	0.22884397	2.6471369	21	7 18.3	20.2
499733 2011 BE ₂₉	17.6	X	15.76762	234.97242	7.93591	4.29935	0.0883982	0.22187989	2.7022411	21	6 3.5	20.8
499734 2011 BV ₂₉	17.4	X	250.51591	304.22223	100.82189	10.81889	0.0988086	0.23663114	2.5887382	21	7 8.4	20.9
499735 2011 BA ₃₆	17.1	X	31.32076	342.12306	311.01213	21.78336	0.0127294	0.23864198	2.5741755	21	8 25.7	20.6
499736 2011 BO ₃₉	17.5	X	272.72830	98.62775	357.29449	4.86597	0.1631460	0.25483594	2.4639332	21	10 7.3	20.3
499737 2011 BN ₄₆	17.5	X	316.59074	184.21707	209.39279	3.08234	0.2432114	0.25199413	2.4824229	21	9 13.9	19.2
499738 2011 BC ₅₉	16.4	X	33.01581	259.13678	340.80090	13.22913	0.1271641	0.21999134	2.7176842	21	7 6.6	19.7
499739 2011 BV ₆₁	16.8	X	84.16415	30.70715	131.83943	12.56826	0.1265422	0.21399832	2.7681894	21	6 7.9	20.7
499740 2011 BJ ₆₄	17.5	X	206.91619	132.92190	337.18891	15.60302	0.2120141	0.23531842	2.5983567	21	8 9.3	21.9
499741 2011 BG ₇₂	17.7	X	212.76526	236.59615	243.77438	3.35199	0.1693622	0.24046968	2.5611155	21	8 25.7	21.7
499742 2011 BW ₇₂	17.0	X	292.35427	73.10401	289.46213	10.95003	0.1919771	0.23151274	2.6267543	21	6 21.6	20.4
499743 2011 BQ ₇₄	17.2	X	358.57818	193.72470	156.50940	14.46442	0.1984999	0.24604716	2.5222637	21	10 26.5	19.7
499744 2011 BY ₇₆	17.4	X	319.45015	202.17210	152.20916	14.93368	0.1169753	0.23385159	2.6092108	21	8 4.1	20.3
499745 2011 BX ₈₀	17.7	X	223.79621	137.79008	301.05152	15.63043	0.1059051	0.23618757	2.5919783	21	7 21.4	21.5
499746 2011 BA ₈₂	17.8	X	260.14402	99.89980	355.88284	1.91480	0.1366985	0.25206757	2.4814907	21	9 23.6	20.7
499747 2011 BR ₉₁	17.6	X	100.33463	34.19126	165.58408	4.24019	0.1530795	0.22849683	2.6498173	21	8 17.9	21.4
499748 2011 BU ₉₁	17.7	X	336.27463	155.47564	240.55570	2.48031	0.2215134	0.25833580	2.4416289	21	11 15.7	19.2
499749 2011 BF ₉₃	18.5	X	307.46920	252.80734	314.16277	17.10844	0.0463823	0.38106380	1.8842459	21	—	—
499750 2011 BW ₉₆	16.6	X	10.01651	131.00933	126.96969	12.06560	0.0410580	0.22415825	2.6838994	21	6 16.5	20.1
499751 2011 BY ₉₉	17.5	X	307.57861	224.12975	200.95157	0.71367	0.1729474	0.25403426	2.4691143	21	10 24.5	19.5
499752 2011 BA ₁₀₀	17.4	X	257.49627	206.84072	222.95215	4.29330	0.2332100	0.24351188	2.5397401	21	7 30.7	21.2
499753 2011 BP ₁₀₀	17.7	X	212.35669	219.62386	243.75793	3.48461	0.2241857	0.23753714	2.5821514			

ELEMENTS AND OPPOSITION DATES IN 2021

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2021 JULY 5.0 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>
499761 2011 BH ₁₅₇	18.2	X	275.70967	179.54484	262.92144	1.71302	0.1842212	0.25069109	2.4910175	21	9 18.7	21.1
499762 2011 BK ₁₅₇	17.4	X	280.31876	245.27643	135.16897	11.10183	0.1041200	0.23502930	2.6004872	21	7 12.9	20.9
499763 2011 CJ ₂	17.4	X	260.29916	355.34703	129.55726	10.70621	0.1385365	0.26039205	2.4287579	21	11 8.5	20.5
499764 2011 CJ ₃	17.8	X	221.99784	171.25491	299.85138	13.07726	0.2377108	0.24381554	2.5376309	21	8 15.8	22.0
499765 2011 CJ ₆	17.8	X	351.33998	241.54359	203.16317	5.11583	0.0834877	0.27033722	2.3688205	21	—	—
499766 2011 CU ₈	16.9	X	135.42212	226.85577	306.97105	7.64506	0.0596594	0.23389559	2.6088836	21	8 14.5	20.5
499767 2011 CV ₁₀	17.0	X	31.25621	170.02296	113.92916	10.47731	0.0571057	0.23505923	2.6002664	21	8 28.2	20.2
499768 2011 CC ₁₃	17.4	X	256.02979	280.25449	113.72242	16.17548	0.1453595	0.23430229	2.6058637	21	6 24.8	21.3
499769 2011 CG ₁₃	17.1	X	343.41068	321.68266	356.25279	9.26232	0.1626710	0.23332586	2.6131287	21	7 27.3	19.7
499770 2011 CH ₁₃	17.8	X	249.38246	36.54207	66.43737	5.53097	0.1225991	0.24807418	2.5085052	21	9 24.0	21.1
499771 2011 CM ₁₈	17.9	X	346.06618	291.33239	147.26743	7.45080	0.2064650	0.26968073	2.3726633	21	—	—
499772 2011 CQ ₂₁	17.2	X	161.54606	24.65487	131.30991	9.05761	0.0469716	0.23516394	2.5994945	21	8 23.9	20.9
499773 2011 CE ₂₄	17.9	X	204.67473	4.96980	130.04977	4.96047	0.0898660	0.24139600	2.5545594	21	9 14.9	21.5
499774 2011 CZ ₂₄	16.4	X	110.98516	235.02558	311.75643	28.65045	0.0529772	0.23200436	2.6230422	21	8 2.5	20.0
499775 2011 CZ ₂₇	17.6	X	157.99500	319.46684	196.79401	3.84852	0.1896640	0.23307531	2.6150011	21	8 20.7	22.0
499776 2011 CZ ₃₁	16.3	X	78.30964	240.04050	314.62001	24.32080	0.0393438	0.22296005	2.6935064	21	7 2.6	20.2
499777 2011 CT ₃₈	17.5	X	309.92479	17.11114	330.87530	10.29197	0.1408644	0.23498632	2.6008042	21	7 8.8	20.6
499778 2011 CT ₃₈	17.3	X	29.81950	168.26979	74.70911	3.40983	0.0810861	0.22327192	2.6909976	21	6 27.8	20.4
499779 2011 CE ₃₉	18.3	X	211.13434	115.58982	151.26580	23.33357	0.0368061	0.37086636	1.9186294	21	—	—
499780 2011 CS ₃₉	17.9	X	305.59799	283.98332	125.54534	2.02028	0.1771908	0.25365804	2.4715551	21	9 26.8	20.1
499781 2011 CO ₄₂	17.4	X	38.85192	272.84866	294.86869	6.36152	0.1578468	0.21205769	2.7850523	21	5 31.6	20.5
499782 2011 CE ₄₉	17.9	X	168.40370	158.22119	10.05338	8.43130	0.1835457	0.23857701	2.5746428	21	9 16.7	22.1
499783 2011 CH ₄₉	17.4	X	234.20510	331.35486	100.31605	10.02569	0.1392011	0.23835754	2.5762230	21	7 20.4	21.2
499784 2011 CA ₅₃	16.2	X	335.48946	301.57826	329.02375	12.30987	0.1837791	0.21206317	2.7850044	21	4 18.5	19.6
499785 2011 CS ₅₃	17.3	X	325.81691	336.91988	332.79097	7.98154	0.0069504	0.22455683	2.6807226	21	6 24.8	21.0
499786 2011 CE ₅₃	17.5	X	38.56472	270.24819	337.89363	5.66775	0.0201595	0.22684399	2.6626731	21	7 13.4	21.0
499787 2011 CF ₅₃	17.3	X	172.73375	20.37591	122.28423	3.54425	0.0789448	0.23471074	2.6028396	21	8 18.9	21.1
499788 2011 CL ₅₄	17.3	X	8.11107	9.56788	328.62902	2.59580	0.1388339	0.24410490	2.5356251	21	10 13.3	19.8
499789 2011 CV ₅₄	17.1	X	80.34040	150.57238	140.34486	7.28067	0.1883204	0.24603516	2.5223456	21	11 28.2	21.0
499790 2011 CE ₅₆	17.2	X	34.58200	281.60821	316.95288	1.98547	0.0566261	0.22233032	2.6985901	21	6 26.8	20.4
499791 2011 CJ ₅₈	17.1	X	53.98968	228.29037	320.47624	12.16943	0.1477070	0.21284474	2.7781825	21	5 28.4	20.6
499792 2011 CK ₆₀	17.2	X	277.02057	220.03805	144.33711	7.50421	0.0204219	0.22641697	2.6662020	21	6 29.6	20.8
499793 2011 CE ₇₀	16.6	X	163.09291	11.32957	118.27318	14.56469	0.1944598	0.23050426	2.6344103	21	7 23.9	21.1
499794 2011 CB ₇₁	18.0	X	103.99808	19.27535	345.08977	20.47663	0.0402248	0.36632591	1.9344505	21	—	—
499795 2011 CT ₇₂	16.5	X	160.26779	221.76467	291.03439	13.14280	0.0928046	0.23276686	2.6173107	21	8 13.8	20.6
499796 2011 CX ₇₆	17.1	X	270.01988	263.03069	118.85682	10.75152	0.1040747	0.23113412	2.6296221	21	7 1.2	20.7
499797 2011 CD ₇₈	18.8	X	131.03891	251.94790	165.00714	24.86703	0.1722946	0.38949017	1.8569707	21	2 25.4	20.2
499798 2011 CL ₇₈	17.6	X	80.26664	343.77153	212.76108	2.81512	0.0325286	0.22317444	2.6917812	21	7 1.4	21.2
499799 2011 CY ₈₄	18.1	X	160.59076	19.49294	160.96189	5.45267	0.0943414	0.23880116	2.5730314	21	9 24.3	21.8
499800 2011 CD ₈₅	17.2	X	316.25107	36.86477	313.51304	5.58335	0.0658699	0.23099421	2.6306838	21	7 31.2	20.4
499801 2011 CX ₈₆	16.1	X	287.51342	76.66890	326.66974	34.44348	0.0145516	0.23694786	2.5864308	21	8 29.8	19.7
499802 2011 CX ₈₇	16.6	X	5.53968	296.03828	320.18727	13.14609	0.0234707	0.21847023	2.7302843	21	6 5.1	20.4
499803 2011 CE ₈₈	17.2	X	190.52582	351.38447	148.95634	22.25750	0.0143387	0.23701273	2.5859588	21	9 10.4	20.7
499804 2011 CE ₈₈	17.1	X	193.72602	141.91376	307.65706	10.88529	0.1527321	0.22789626	2.6544706	21	7 2.1	21.4
499805 2011 CB ₉₀	17.7	X	98.47152	352.01610	187.24714	3.01511	0.0479007	0.22317821	2.6917508	21	7 4.9	21.4
499806 2011 CZ ₉₀	17.7	X	294.30670	132.50246	207.06070	5.20699	0.0345893	0.22315474	2.6919396	21	6 18.2	21.2
499807 2011 CS ₉₁	16.9	X	63.81832	275.58601	315.81452	11.47152	0.1201012	0.22495049	2.6775942	21	8 9.3	20.3
499808 2011 CD ₁₀₁	17.2	X	185.88826	130.56485	304.77057	12.09507	0.0149850	0.21890400	2.7266763	21	6 4.9	21.2
499809 2011 CE ₁₀₅	18.0	X	214.66982	319.47251	171.87839	5.84209	0.0266143	0.24103272	2.5571255	21	9 27.6	21.3
499810 2011 CT ₁₀₇	17.7	X	121.92331	27.33776	157.57974	9.19237	0.0586806	0.22897856	2.6460995	21	8 12.7	21.5
499811 2011 CW ₁₀₇	17.4	X	237.71922	295.63600	150.79022	22.14131	0.0551172	0.23603846	2.5930698	21	8 23.1	21.0
499812 2011 CD ₁₀₈	17.7	X	85.09458	231.37302	340.91726	1.94252	0.0719619	0.22561725	2.6723162	21	8 5.5	21.1
499813 2011 CJ ₁₁₀	17.4	X	282.90378	33.89909	295.12639	5.50355	0.0234391	0.21574577	2.7532217	21	5 19.3	21.1
499814 2011 CT ₁₁₂	17.3	X	59.95572	325.55002	260.61737	4.31320	0.1097619	0.22299377	2.6932349	21	7 24.7	20.8
499815 2011 CR ₁₁₅	16.8	X	358.24382	113.22683	166.62148	14.05101	0.2745205	0.21627121	2.7487606	21	6 24.1	19.2
499816 2011 DP ₇	17.6	X	246.24914	83.19647	333.64085	11.18095	0.1393760	0.23225397	2.6211626	21	7 16.3	21.5
499817 2011 DL ₈	17.9	X	193.72297	140.96082	7.54415	3.47289	0.2101258	0.23740619	2.5831008	21	9 12.2	22.3
499818 2011 DX ₉	16.9	X	184.64091	137.68036	355.70367	28.91099	0.1813679	0.23145960	2.6271563	21	8 27.6	21.5
499819 2011 DR ₁₀	16.9	X	66.79552	210.03536	150.97154	13.01893	0.1042772	0.21552972	2.7550613	21	7 1.9	20.7
499820 2011 DF ₁₁	16.5	X	116.49277	199.83402	345.90631	21.67387	0.1177795	0.22538783	2.6741294	21	8 20.2	20.6
499821 2011 DK ₁₁	18.1	X	60.44118	132.89804	341.14482	19.74552	0.0661871	0.38501628	1.8713283	21	1 10.1	19.9
499822 2011 DT ₁₃	17.9	X	200.72910	10.86604	141.55187	2.64197	0.0721946	0.24447569	2.5330607	21	10 4.3	21.3
499823 2011 DN ₁₄	17.6	X	20.65989	136.67636	170.01641	3.84469	0.0682411	0.23708675	2.5854205	21	9 11.4	20.7
499824 2011 DE ₁₉	16.4	X	163.18556	205.17805	311.17383	12.21489	0.1804347	0.22977894	2.6399512	21	8 23.6	20.9
499825 2011 DB ₂₂	17.2	X	288.67181	120.71158	353.18547	21.94516	0.3169493	0.26138012	2.4226333	21	10 24.8	19.8
499826 2011 DS ₂₂	16.9	X	255.94930	286.64531	167.47750	13.80672	0.0520767	0.23808337	2.5782004	21	9 29.1	20.2
499827 2011 DW ₂₃	16.5	X	166.60590	118.87118	27.07283	14.72935	0.0428808	0.22582600	2.6706691	21	8 22.7	20.6
499828 2011 DY ₂₄	17.3	X	69.78529	301.16298	315.61601	14.19060	0.1031419	0.23798648	2.5789001	21	9 13.2	20.9
499829 2011 DE ₂₈	17.6	X	119.46839	11.46007	165.17839	2.59543	0.0694952	0.22791488	2.6543260	21	7 31.1	21.3
499830 2011 DS ₃₀	17.3	X	195.86316	17.46892	117.31510	12.76858	0.1229093	0.23940048	2.5687354	21	9 4.5	21.3
499831 2011 DK ₃₁	17.2	X	124.01398	66.36001	145.29701	7.93823	0.1131519	0.23486145	2.6017260	21	9 27.3	21.1
499832 2011 DH ₃₆	17.5	X	220.74953	243.02204	187.29294	1.18156	0.0488084	0.22625556	2.6672878	21	7 11.1	21.2
499833 2011 DV ₄₀	17.2	X	79.15830	248.57175	344.62200	5.42345	0.0519611	0.226				

ELEMENTS AND OPPOSITION DATES IN 2021

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2021 JULY 5.0 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>		
499841	2011	<i>EJ</i> ₁₃	17.2	X	169.91031	167.00863	354.29472	7.62208	0.1368546	0.23642954	2.5902095	21	9 8.8	21.2
499842	2011	<i>EN</i> ₁₄	15.8	X	280.90019	77.14655	122.70941	26.69280	0.1833116	0.17761495	3.1343659	21	—	—
499843	2011	<i>ER</i> ₂₃	17.2	X	154.36897	136.91381	0.35729	4.01275	0.0974971	0.22634678	2.6665711	21	7 23.2	21.3
499844	2011	<i>ES</i> ₂₃	17.1	X	240.12559	60.11843	351.48625	7.63991	0.1012197	0.22849586	2.6498248	21	7 5.4	21.0
499845	2011	<i>ET</i> ₂₃	16.9	X	75.41226	125.92866	155.02612	14.83937	0.0531326	0.24119286	2.5559935	21	10 26.6	20.6
499846	2011	<i>EX</i> ₂₅	17.0	X	54.05257	59.71408	159.75978	9.33579	0.0885216	0.21381286	2.7697900	21	7 3.6	20.7
499847	2011	<i>EE</i> ₂₇	17.2	X	130.65694	37.35786	164.02772	9.71920	0.1157945	0.22867902	2.6484097	21	9 19.5	21.2
499848	2011	<i>EH</i> ₂₉	17.3	X	20.61934	108.02943	148.84850	9.86288	0.0439086	0.22136688	2.7064144	21	6 29.9	20.8
499849	2011	<i>EA</i> ₃₀	18.1	X	74.26633	138.30732	318.16704	18.54672	0.0724486	0.38564657	1.8692888	21	1 4.5	19.7
499850	2011	<i>EZ</i> ₃₁	17.9	X	215.70812	336.99455	161.90466	4.30188	0.1894859	0.24303766	2.5430428	21	9 21.9	21.9
499851	2011	<i>EZ</i> ₃₄	17.5	X	177.68833	347.55642	166.07005	14.31029	0.1959897	0.23540158	2.5977447	21	9 4.3	21.7
499852	2011	<i>ER</i> ₄₂	16.1	X	0.61118	139.93607	154.76098	11.65571	0.1197684	0.21923109	2.7239635	21	7 22.4	19.2
499853	2011	<i>EF</i> ₄₃	16.5	X	62.23318	242.80337	294.29061	17.85261	0.2173977	0.21035122	2.8000945	21	6 8.8	20.1
499854	2011	<i>EW</i> ₄₃	17.7	X	179.04907	30.90437	143.39568	4.65675	0.1046571	0.23902150	2.5714499	21	10 6.5	21.5
499855	2011	<i>ET</i> ₅₈	16.3	X	11.02746	53.13932	109.14291	10.88535	0.0932603	0.19263075	2.9692878	21	2 12.9	20.0
499856	2011	<i>ET</i> ₆₇	17.8	X	173.95560	171.21507	335.71306	2.55282	0.0897706	0.23094130	2.6310856	21	8 25.1	21.5
499857	2011	<i>EB</i> ₆₉	17.1	X	326.83463	176.47620	84.84519	6.49692	0.2228803	0.19656508	2.9295335	21	3 28.8	20.7
499858	2011	<i>EH</i> ₇₀	17.3	X	106.77752	3.85190	179.69314	12.30710	0.0811027	0.21871514	2.7282458	21	7 24.1	21.4
499859	2011	<i>EH</i> ₇₃	17.3	X	168.98872	323.20709	177.14609	18.64368	0.0945564	0.22540239	2.6740141	21	8 8.0	21.6
499860	2011	<i>EE</i> ₇₄	16.5	X	82.20774	336.17164	206.05598	16.76554	0.1720475	0.21183363	2.8770158	21	7 3.9	20.7
499861	2011	<i>EL</i> ₇₆	16.6	X	143.85695	188.45496	14.13147	13.83181	0.1282543	0.23322643	2.6138713	21	10 4.8	20.5
499862	2011	<i>EU</i> ₇₆	16.6	X	118.94006	202.90935	12.26619	17.74905	0.1133437	0.23045385	2.6347944	21	9 26.3	20.5
499863	2011	<i>EZ</i> ₈₄	17.4	X	296.06162	260.37090	163.20420	5.99024	0.1163772	0.24021419	2.5629312	21	10 6.7	20.2
499864	2011	<i>EC</i> ₈₅	17.2	X	355.73092	169.12962	93.25365	3.57190	0.1397650	0.20933341	2.8091635	21	5 27.7	20.1
499865	2011	<i>FX</i> ₈₅	17.5	X	170.09208	50.21921	105.43213	6.10836	0.1869743	0.23203738	2.6227934	21	9 2.8	21.9
499866	2011	<i>FS</i> ₁₁	16.1	X	311.65693	289.55651	41.93005	13.09688	0.0461228	0.21171499	2.7880570	21	6 29.6	19.9
499867	2011	<i>FS</i> ₁₂	16.4	X	201.01944	317.17126	112.23049	7.75129	0.1011491	0.21330407	2.7741927	21	6 14.7	20.8
499868	2011	<i>FW</i> ₁₇	16.9	X	117.12940	192.92553	4.62737	12.14102	0.1064214	0.22537354	2.6742424	21	9 1.9	20.9
499869	2011	<i>FK</i> ₁₈	17.4	X	143.88828	137.31739	331.99169	6.66905	0.0462348	0.21042453	2.7994459	21	5 29.4	21.5
499870	2011	<i>FP</i> ₂₀	17.3	X	309.53452	216.97159	155.82334	6.15579	0.1354167	0.23069330	2.6329542	21	8 11.5	20.3
499871	2011	<i>FV</i> ₂₀	17.7	X	317.61118	238.39806	129.10417	2.93370	0.0506691	0.23062513	2.6334898	21	8 28.5	20.8
499872	2011	<i>FR</i> ₂₃	16.6	X	102.73991	124.71840	60.26323	9.36177	0.0657174	0.21545572	2.7556921	21	7 22.9	20.6
499873	2011	<i>FD</i> ₂₄	17.7	X	205.61975	320.10870	180.16915	15.14193	0.1255192	0.23709403	2.5853676	21	9 17.2	21.6
499874	2011	<i>FK</i> ₂₄	16.8	X	314.53224	335.32401	27.90992	3.59986	0.0300289	0.22645887	2.6656911	21	8 20.6	20.2
499875	2011	<i>FT</i> ₂₇	16.5	X	78.08385	278.55104	351.96581	12.37633	0.0202438	0.23631502	2.5910462	21	10 3.2	19.9
499876	2011	<i>FO</i> ₃₀	16.7	X	310.98623	326.51600	20.22056	14.17623	0.1044206	0.22138616	2.7062572	21	7 15.6	20.3
499877	2011	<i>FO</i> ₃₀	16.6	X	42.77472	190.35338	38.28331	14.50055	0.1257827	0.20941641	2.8084212	21	7 5.1	20.2
499878	2011	<i>FF</i> ₄₀	16.9	X	295.55189	78.75395	144.21953	5.90283	0.0960748	0.18168561	3.0873725	21	1 16.8	21.2
499879	2011	<i>FJ</i> ₄₆	16.7	X	4.26299	11.02757	307.02298	4.57801	0.0420907	0.22636779	2.6664061	21	8 28.6	20.0
499880	2011	<i>FQ</i> ₅₁	16.9	X	239.00932	20.76521	91.59380	7.66845	0.2087294	0.24279294	2.5447513	21	9 12.9	20.8
499881	2011	<i>FO</i> ₅₅	15.4	X	273.53923	99.53784	142.95974	11.29417	0.0775991	0.17968448	3.1102527	21	1 17.9	20.0
499882	2011	<i>FU</i> ₆₇	17.8	X	156.18299	69.68799	106.24856	5.21433	0.0220493	0.23179051	2.6246553	21	9 13.6	21.4
499883	2011	<i>FL</i> ₇₃	17.8	X	198.15435	320.67302	168.66429	4.18652	0.08112927	0.23403903	2.6078175	21	8 29.0	21.6
499884	2011	<i>FJ</i> ₇₈	18.7	X	100.53650	54.86748	18.89969	19.98361	0.0710658	0.38202972	1.8810685	21	1 22.8	20.8
499885	2011	<i>FJ</i> ₈₇	16.9	X	32.10296	230.96011	308.27821	5.90392	0.2506827	0.19923486	2.9033039	21	4 13.5	19.6
499886	2011	<i>FH</i> ₈₉	16.2	X	15.77667	158.87027	46.17555	13.47890	0.0805873	0.20140738	2.8823881	21	4 17.5	19.7
499887	2011	<i>FM</i> ₉₀	17.0	X	260.79901	32.68726	356.64256	6.89763	0.0489857	0.22147696	2.7055175	21	7 8.6	20.7
499888	2011	<i>FD</i> ₁₀₂	17.3	X	235.38089	145.91362	305.32597	10.57190	0.0956168	0.23736575	2.5833942	21	8 19.1	21.0
499889	2011	<i>FT</i> ₁₀₂	17.2	X	211.75889	25.66675	90.52188	6.45682	0.1684802	0.23642281	2.5902587	21	8 23.3	21.3
499890	2011	<i>FF</i> ₁₂₁	17.6	X	119.91149	255.88371	226.24784	1.21635	0.0190587	0.20687702	2.8313565	21	5 14.3	21.5
499891	2011	<i>FY</i> ₁₂₆	16.9	X	174.66476	333.52841	154.23405	30.58116	0.0969267	0.22655567	2.6649318	21	7 31.3	21.3
499892	2011	<i>FE</i> ₁₃₀	16.9	X	128.48689	172.05819	330.87110	10.24777	0.1353759	0.21920530	2.7241772	21	7 5.9	21.1
499893	2011	<i>FH</i> ₁₃₀	17.1	X	106.86282	205.47356	318.70557	8.18942	0.1610255	0.21728054	2.7402414	21	7 12.1	21.2
499894	2011	<i>FC</i> ₁₃₄	17.2	X	145.50223	135.19043	352.36527	4.45780	0.0613963	0.21962250	2.7207261	21	6 27.2	21.1
499895	2011	<i>FV</i> ₁₃₇	17.2	X	45.68917	268.28412	338.07999	1.50057	0.1368134	0.21831596	2.7315703	21	8 5.3	20.3
499896	2011	<i>FN</i> ₁₄₇	18.0	X	9.13928	293.41024	217.42271	22.71436	0.1158543	0.37713466	1.8973105	21	—	—
499897	2011	<i>FW</i> ₁₄₉	16.8	X	318.19702	239.02194	10.25004	4.79154	0.1910958	0.19118084	2.9842816	21	3 4.1	20.7
499898	2011	<i>FN</i> ₁₅₅	16.7	X	10.73026	220.32730	64.74501	5.78382	0.0887277	0.21937221	2.7227952	21	7 28.3	19.9
499899	2011	<i>FY</i> ₁₅₇	16.7	X	136.81624	58.15852	89.90474	7.64960	0.0343923	0.21836802	2.7311362	21	7 11.4	20.5
499900	2011	<i>GD</i> ₅	17.4	X	232.86708	39.48644	92.70807	11.62127	0.1641166	0.24404968	2.5360076	21	10 9.9	21.3
499901	2011	<i>GF</i> ₆	16.9	X	116.89801	178.58268	35.99994	13.06733	0.1246316	0.22881068	2.6473937	21	9 26.8	21.0
499902	2011	<i>GZ</i> ₂₀	16.6	X	10.04541	333.42432	238.31872	7.62450	0.1224023	0.19842089	2.9112385	21	4 11.5	20.0
499903	2011	<i>GV</i> ₂₃	15.9	X	290.55677	57.75328	5.88954	22.17723	0.0936896	0.23569832	2.5955639	21	9 28.9	19.0
499904	2011	<i>GG</i> ₂₇	17.2	X	94.95760	303.22083	263.45021	4.16639	0.0422292	0.21919019	2.7243024	21	8 4.5	20.8
499905	2011	<i>GG</i> ₃₂	17.0	X	31.33814	162.91816	98.01844	4.66136	0.0476588	0.21247137	2.7814362	21	7 22.5	20.6
499906	2011	<i>GE</i> ₃₅	17.2	X	85.16078	205.79509	351.88742	3.50267	0.1090668	0.21453171	2.7635992	21	7 22.6	21.0
499907	2011	<i>GX</i> ₃₉	17.4	X	83.48830	147.42282	58.76114	6.09383	0.0927232	0.21934424	2.7230267	21	7 30.4	21.1
499908	2011	<i>GB</i> ₅₁	17.9	X	246.92002	284.35974	199.1864							

ELEMENTS AND OPPOSITION DATES IN 2021

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2021 JULY 5.0 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>
499921 2011 HC ₈	17.6	X	178.41273	89.35177	208.10685	20.56891	0.0840183	0.35568231	1.9728521	21	—	—
499922 2011 HJ ₈	17.9	X	136.22240	23.15444	45.93587	22.38126	0.0812912	0.38553308	1.8696556	21	3 26.0	20.2
499923 2011 HK ₁₁	17.9	X	246.94693	359.78455	203.07536	21.29686	0.0636907	0.35104844	1.9901754	21	—	—
499924 2011 HO ₁₉	16.5	X	302.46176	211.01542	218.05070	13.35790	0.1425416	0.23227869	2.6209766	21	10 18.2	19.4
499925 2011 HN ₂₀	17.0	X	351.74395	298.31341	19.29643	6.11996	0.0237543	0.22194097	2.7017453	21	8 12.7	20.6
499926 2011 HQ ₂₂	17.0	X	358.09125	126.14610	76.32557	7.32545	0.1599722	0.18934032	3.0035900	21	3 14.3	20.5
499927 2011 HR ₂₂	17.0	X	353.68117	45.57982	199.30380	12.21513	0.1482590	0.19644687	2.9307086	21	4 30.3	20.2
499928 2011 HA ₂₆	16.6	X	101.08194	174.99833	52.62265	12.75925	0.1298014	0.22284412	2.6944405	21	9 27.8	20.8
499929 2011 HQ ₂₆	16.6	X	357.07936	68.80822	135.49816	16.84209	0.1829920	0.18815068	3.0162374	21	3 12.5	20.1
499930 2011 HT ₃₂	17.1	X	275.48901	73.93499	207.23445	16.94962	0.3921661	0.17753531	3.1353033	21	1 31.9	22.9
499931 2011 HK ₃₉	17.4	X	53.05977	316.88704	96.86621	24.52386	0.0991517	0.35330855	1.9816789	21	—	—
499932 2011 HS ₄₁	16.2	X	270.93496	345.12015	73.76362	13.09483	0.0457278	0.22367559	2.6877589	21	9 7.2	20.0
499933 2011 HU ₄₁	17.0	X	204.83532	291.00891	184.97054	12.08543	0.0833517	0.22299253	2.6932448	21	8 16.2	21.1
499934 2011 HW ₄₁	18.1	X	196.74133	84.98623	192.56702	21.16306	0.0597459	0.36346215	1.9445984	21	—	—
499935 2011 HA ₄₂	16.6	X	201.57280	318.99296	203.62637	31.39359	0.1516323	0.23414679	2.6070173	21	10 8.9	20.7
499936 2011 HX ₄₃	17.5	X	241.88519	48.96135	93.82432	7.92822	0.2068983	0.24483277	2.5305972	21	10 25.6	21.1
499937 2011 HB ₄₄	17.0	X	348.74918	49.26545	156.77763	3.80003	0.1724268	0.18810427	3.0167335	21	2 25.3	20.2
499938 2011 HU ₄₄	16.5	X	283.03049	182.28786	81.84564	11.33611	0.1525457	0.18031964	3.1029447	21	2 18.4	21.3
499939 2011 HC ₅₁	16.9	X	100.39935	124.91052	105.10037	11.80980	0.0740540	0.22111640	2.7084578	21	9 22.8	20.9
499940 2011 HF ₅₂	17.1	X	144.78648	331.38659	186.17956	15.57593	0.2034918	0.21857195	2.7294372	21	8 8.8	21.9
499941 2011 HH ₅₃	16.9	X	193.09890	307.87061	101.80876	13.05076	0.0545589	0.19889025	2.9066565	21	5 16.8	21.3
499942 2011 HC ₅₉	16.5	X	10.67763	71.87775	176.69122	14.28575	0.0661409	0.20207379	2.8760476	21	6 6.0	20.4
499943 2011 HO ₆₁	18.5	X	209.45963	108.09163	208.70891	22.34644	0.0516265	0.37492483	1.9047585	21	—	—
499944 2011 HP ₆₆	16.8	X	70.35420	169.48754	68.87101	9.65388	0.0804834	0.21433761	2.7652674	21	8 25.9	20.7
499945 2011 HU ₆₉	16.8	X	57.56127	169.24805	73.58402	9.39273	0.1647504	0.21463289	2.7627305	21	8 27.3	20.5
499946 2011 HN ₇₅	16.5	X	280.49874	305.06949	90.30836	14.13860	0.0309113	0.21796600	2.7344934	21	8 18.3	20.3
499947 2011 HW ₇₆	16.2	X	116.44106	349.56254	171.81838	9.69673	0.0953598	0.20932744	2.8092169	21	7 9.4	20.4
499948 2011 HR ₉₃	17.0	X	338.70089	230.16636	81.81674	6.07116	0.0702480	0.20836479	3.1878627	21	7 11.8	20.5
499949 2011 HE ₉₅	17.3	X	125.56927	135.75377	78.53296	12.18328	0.0785270	0.22736303	2.6586193	21	10 3.8	21.4
499950 2011 HE ₉₅	16.8	X	12.84426	228.20089	115.95338	9.15792	0.1620070	0.22782080	2.6550567	21	11 4.7	19.9
499951 2011 HA ₉₈	16.2	X	249.51796	164.73661	164.92147	18.35600	0.1717625	0.18622181	3.0370296	21	3 30.5	21.1
499952 2011 HP ₁₀₀	16.8	X	288.77595	225.92161	73.04477	13.30761	0.0491900	0.19193644	2.9764443	21	4 22.4	21.1
499953 2011 HU ₁₀₀	16.5	X	295.08636	91.86632	154.36589	17.93805	0.1828894	0.17839556	3.1252159	21	1 28.3	21.3
499954 2011 JT ₃	16.3	X	98.04929	338.01136	171.72881	11.29386	0.0116571	0.19924716	2.9031844	21	5 23.7	20.5
499955 2011 JM ₆	17.4	X	67.77080	128.27619	52.37195	2.80760	0.0560857	0.20491146	2.8494336	21	5 27.5	21.0
499956 2011 JR ₆	16.6	X	272.95631	235.46031	43.59317	15.64437	0.1991924	0.18294565	3.0731799	21	2 24.2	21.7
499957 2011 JE ₁₀	18.1	X	257.20170	83.82726	170.01616	22.70048	0.0765581	0.36831752	1.9274708	21	—	—
499958 2011 JN ₁₃	17.1	X	294.37505	116.98908	162.56003	16.38650	0.1971768	0.18484036	3.0521428	21	3 11.6	21.5
499959 2011 JN ₁₆	16.1	X	285.51690	110.75607	171.22974	16.84799	0.1899106	0.18498391	3.0505635	21	3 4.4	20.7
499960 2011 JQ ₁₇	16.4	X	281.82515	158.82963	99.03057	11.61509	0.1724525	0.17731432	3.1379077	21	2 5.9	21.2
499961 2011 JN ₂₁	17.6	X	140.17627	130.20388	56.86143	8.00609	0.1761279	0.22937713	2.6430333	21	9 17.1	22.0
499962 2011 JY ₂₇	16.4	X	338.99329	244.75830	349.69684	7.19754	0.2320274	0.18956260	3.0012415	21	3 9.4	19.7
499963 2011 JT ₃₀	16.3	X	310.01470	208.18766	71.79402	7.42808	0.1116205	0.18957069	3.0011561	21	4 14.9	20.4
499964 2011 KQ ₅	17.1	X	327.29704	90.17715	139.02303	1.44138	0.1792811	0.18528687	3.0472374	21	2 21.2	21.0
499965 2011 KS ₁₄	16.5	X	3.74881	126.55261	99.49493	4.55468	0.1172691	0.19282470	2.9672965	21	4 25.3	20.0
499966 2011 KP ₁₈	16.1	X	274.55234	238.76891	59.02917	9.90666	0.1138538	0.18320367	3.0729368	21	3 26.5	20.7
499967 2011 KQ ₂₂	17.0	X	313.43642	73.60420	167.61128	7.24328	0.2168902	0.18213960	3.0822401	21	2 11.5	21.3
499968 2011 KM ₂₂	16.3	X	83.02518	22.99847	101.02601	12.75554	0.0520713	0.18677219	3.0310603	21	4 12.4	20.7
499969 2011 KN ₂₃	16.4	X	242.03396	257.70593	59.10461	5.79109	0.1322382	0.18166093	3.0876521	21	3 12.3	21.3
499970 2011 KL ₂₄	17.4	X	328.21874	130.79467	78.43502	6.89839	0.0932270	0.27529165	2.3403134	21	1 22.9	20.3
499971 2011 KM ₂₅	16.9	X	89.18935	197.78276	30.28104	8.06790	0.1482594	0.21697827	2.7427858	21	9 13.6	20.9
499972 2011 KO ₂₅	16.5	X	320.07963	183.16977	61.62280	2.68826	0.1067825	0.18577306	3.0419184	21	3 14.4	20.6
499973 2011 KS ₂₅	16.7	X	117.61137	22.18318	155.97725	9.82218	0.0880375	0.21125338	2.7921170	21	7 31.8	20.8
499974 2011 KN ₂₆	16.6	X	292.27424	59.68101	224.07613	4.96880	0.0931565	0.18770178	3.0210445	21	3 25.9	21.0
499975 2011 KT ₃₀	16.0	X	301.12860	189.39337	86.32984	13.74929	0.1383076	0.18582978	3.0412994	21	3 29.9	20.5
499976 2011 KH ₃₈	17.0	X	318.02638	105.94766	149.46772	1.54927	0.1694349	0.18613488	3.0379751	21	3 14.7	21.0
499977 2011 KK ₄₄	16.7	X	270.95648	201.80577	116.75050	10.22179	0.0842930	0.18939620	3.0029991	21	4 20.0	21.2
499978 2011 KC ₄₈	16.8	X	343.33278	84.70251	156.34988	12.81830	0.1341546	0.18815455	3.0161960	21	4 11.7	20.5
499979 2011 LF ₁₀	16.2	X	309.55062	189.02749	54.68732	8.11334	0.0978853	0.18106710	3.0943993	21	3 4.0	20.6
499980 2011 LX ₁₈	16.6	X	287.66770	133.52309	169.86037	23.21615	0.1998268	0.18616446	3.0376533	21	4 3.2	21.1
499981 2011 LU ₁₉	16.4	X	290.97901	128.54620	125.25543	17.57190	0.2070236	0.17635252	3.1493066	21	2 5.3	21.1
499982 2011 LU ₂₇	17.2	X	352.40578	91.87246	107.67626	2.19265	0.1853536	0.18474366	3.0532077	21	2 23.0	20.7
499983 2011 MK ₃	16.4	X	261.79786	175.62858	133.81939	16.43941	0.2412246	0.17200052	3.2022080	21	3 14.7	21.8
499984 2011 MG ₆	15.7	X	285.83408	64.73392	277.28995	12.76506	0.1205289	0.18821306	3.0155709	21	5 27.7	19.9
499985 2011 MO ₆	16.0	X	6.94790	53.48377	209.47034	12.51065	0.1610890	0.19844655	2.9109875	21	6 19.2	19.3
499986 2011 NP	19.9	X	353.55757	355.00559	295.12783	39.04468	0.1952284	0.49056802	1.5922206	21	7 9.3	19.3
499987 2011 OW ₂	16.8	X	341.43556	25.68265	238.58272	6.78975	0.1392727	0.18068889	3.0987159	21	5 5.9	20.6
499988 2011 OM ₆	16.1	X	196.36916	78.63373	320.55790	11.18759	0.0634579	0.17784046	3.1317158	21	4 29.7	21.0
499989 2011 OM ₁₀	16.4	X	251.61045	62.96558	313.92662	15.44796	0.2751624	0.17862103	3.1225854	21	5 12.7	21.9
499990 2011 OH ₁₁	16.4	X	234.53378	214.49194	140.09249	9.98875	0.0772375	0.17604743	3.1529440	21	4 24.4	21.3
499991 2011 OA ₁₅	16.1	X	252.51323	245.74573	102.79571	27.32478	0.3064177	0.17380291	3.1800310	21	4 25.9	22.0
499992 2011 OP ₁₅	15.8	X	290.75210	349.27867	313.47622	15.89373	0.18212673	0.17863822	3.1223851	21	3 17.3	20.8
499993 2011 OJ ₃₄	16.3	X	279.29892	336.52416	320.34548	9.56983	0.1931813	0.17596419	3.1539382	21	3	