

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
436001 2009 FR ₅₀	16.3	X	0.52393	28.66152	139.39788	7.94363	0.1159216	0.17196635	3.2026322	20	2 15.6	20.2
436002 2009 FF ₅₁	16.2	X	17.06992	132.70999	31.88044	15.45818	0.1938820	0.17588961	3.1548298	20	3 16.1	19.7
436003 2009 FQ ₅₆	15.3	X	14.07806	255.16475	259.20011	25.08469	0.1478181	0.17610204	3.1522922	20	2 5.8	19.5
436004 2009 FA ₅₉	16.7	X	346.31941	36.80197	194.51473	6.09757	0.0390143	0.18366424	3.0651588	20	4 18.4	20.8
436005 2009 FD ₇₁	15.6	X	255.95160	266.08148	28.88497	33.69294	0.1394393	0.17097168	3.2150416	20	3 21.6	21.0
436006 2009 FZ ₇₅	15.9	X	255.03867	172.39051	170.87349	10.97856	0.1133520	0.18636838	3.0354371	20	5 4.2	20.5
436007 2009 GS ₂	16.2	X	317.58736	205.11254	30.07568	10.85230	0.1525822	0.17510364	3.1642632	20	3 5.8	20.4
436008 2009 GG ₆	16.1	X	247.46526	107.16649	219.69848	15.12442	0.1172624	0.17402543	3.1773196	20	4 1.0	21.0
436009 2009 HN ₁	15.9	X	328.72705	168.56116	62.09841	13.10080	0.0853308	0.17424390	3.1746632	20	3 27.0	20.3
436010 2009 HF ₁₁	15.7	X	238.57115	280.48917	33.57833	11.26237	0.0311861	0.17417415	3.1755107	20	3 21.7	20.4
436011 2009 HR ₁₆	16.4	X	267.55611	141.33833	175.67209	10.62168	0.0673401	0.18301114	3.0724468	20	4 21.5	20.8
436012 2009 HH ₁₇	16.7	X	289.01592	79.99080	205.83431	24.62221	0.2688221	0.17280789	3.1922263	20	3 6.9	21.8
436013 2009 HN ₂₀	16.2	X	17.28651	127.12086	51.71588	6.11935	0.0961938	0.17582675	3.1555816	20	3 28.9	20.1
436014 2009 HX ₂₂	15.9	X	296.12823	103.58296	189.78230	15.30642	0.2431680	0.17555299	3.1588613	20	3 31.4	20.4
436015 2009 HS ₂₉	16.1	X	316.46900	169.04589	80.87801	8.64761	0.1056538	0.17807553	3.1289591	20	3 28.8	20.3
436016 2009 HA ₃₀	16.4	X	280.54959	126.38683	116.49185	6.99156	0.0859733	0.16766325	3.2571977	20	2 4.6	21.0
436017 2009 HZ ₃₀	15.9	X	68.14959	90.42295	29.03244	11.82926	0.0568603	0.17642951	3.1483903	20	3 24.7	20.2
436018 2009 HN ₃₄	16.3	X	61.05030	273.70909	205.06161	15.11211	0.2056795	0.17603420	3.1531020	20	3 29.2	20.3
436019 2009 HY ₃₈	15.8	X	122.96334	0.02363	86.77320	12.78809	0.0552752	0.17606199	3.1527702	20	4 23.2	20.5
436020 2009 HF ₅₃	16.4	X	247.47217	125.04633	193.55571	10.22885	0.0602302	0.17704159	3.1411296	20	3 29.8	21.1
436021 2009 HV ₅₅	16.1	X	345.15142	350.38520	220.20444	28.25010	0.1180271	0.17336878	3.1853375	20	3 8.9	20.6
436022 2009 HR ₆₂	16.4	X	6.12958	91.85173	104.64335	6.04146	0.1124176	0.17913604	3.1165976	20	4 3.3	20.2
436023 2009 HF ₆₅	16.3	X	325.43996	215.53785	73.53466	15.48323	0.2099317	0.18183441	3.0856879	20	5 16.5	19.8
436024 2009 HL ₆₇	15.9	X	322.99438	338.29394	257.85215	3.94047	0.1218331	0.17438308	3.1729739	20	3 12.0	20.0
436025 2009 HZ ₇₃	16.2	X	320.31503	55.98393	185.90517	27.23004	0.1737274	0.17123269	3.2117737	20	3 8.8	20.5
436026 2009 HN ₇₈	16.7	X	317.39322	183.70503	77.48450	4.53897	0.0657230	0.18010446	3.1054156	20	4 15.6	20.8
436027 2009 HP ₇₉	16.0	X	99.01079	346.73042	140.78901	10.60240	0.0555312	0.18630157	3.0361627	20	5 12.8	20.4
436028 2009 HJ ₈₁	15.8	X	21.70582	31.47665	122.25627	30.12503	0.2313901	0.17398336	3.1778318	20	3 12.0	19.5
436029 2009 HL ₉₀	16.1	X	30.27258	330.71803	201.18456	15.91391	0.0770066	0.17683112	3.1436215	20	4 4.8	20.1
436030 2009 JO ₂	19.3	X	132.84979	239.69600	203.44905	19.63132	0.4783501	1.17716877	0.8883353	20	5 18.3	18.2
436031 2009 JV ₂	16.0	X	311.78023	71.32708	175.36920	26.12846	0.2016533	0.17149147	3.2085418	20	2 27.9	20.5
436032 2009 JE ₅	15.3	X	353.66415	124.96441	90.52179	23.38498	0.0478342	0.17769402	3.1334361	20	4 20.8	19.9
436033 2009 KF ₁₁	15.6	X	220.51822	214.71157	65.95215	11.17452	0.0670323	0.15575181	3.4212172	20	1 20.5	20.9
436034 2009 KD ₁₆	16.2	X	279.23832	83.61838	204.83051	12.01803	0.0990642	0.17001842	3.2270478	20	3 24.0	20.8
436035 2009 KJ ₂₂	20.0	X	206.27879	51.35773	243.65645	5.73489	0.4357972	0.32335570	2.1022404	20	1 6.5	24.2
436036 2009 MK ₇	16.9	X	122.20983	96.57801	244.71912	26.02855	0.3427453	0.30325516	2.1941379	20	—	—
436037 2009 NJ	18.6	X	63.09911	132.73970	254.45286	8.19475	0.6582230	0.38519356	1.8707541	20	—	—
436038 2009 OR ₉	18.0	X	141.55544	68.07730	247.17274	4.15025	0.2237987	0.30830200	2.1701270	20	—	—
436039 2009 OE ₂₄	17.7	X	30.48375	25.23849	348.19061	2.82713	0.1086394	0.28779264	2.2720415	20	—	—
436040 2009 PO	18.0	X	76.72191	161.98037	169.97192	5.19252	0.1787201	0.29573240	2.2311911	20	—	—
436041 2009 PU ₇	17.9	X	144.15737	347.41350	299.99682	6.57771	0.1112194	0.30226337	2.1989349	20	—	—
436042 2009 PU ₈	18.5	X	156.53310	124.04917	167.28895	1.03915	0.2203131	0.30593055	2.1813272	20	—	—
436043 2009 PZ ₁₁	17.8	X	90.79341	28.69951	307.54165	4.25443	0.1431203	0.29751213	2.2222842	20	—	—
436044 2009 PM ₁₂	17.9	X	82.33544	188.18286	159.65272	4.63118	0.2097709	0.29689743	2.2253505	20	—	—
436045 2009 PD ₁₇	17.9	X	2.75262	240.60219	146.12682	4.04754	0.2174682	0.28282548	2.2985662	20	—	—
436046 2009 QB ₁₉	17.5	X	291.68492	280.51770	93.48741	2.61620	0.2322891	0.26204929	2.4185072	20	7 14.1	19.9
436047 2009 QM ₂₁	17.7	X	126.07677	194.20338	124.54525	3.79818	0.2202647	0.30432544	2.1889905	20	—	—
436048 Fritzhuber	18.0	X	177.34864	255.15672	336.67120	4.81411	0.0929054	0.29740304	2.2228276	20	—	—
436049 2009 QE ₃₀	17.7	X	29.73784	62.52929	208.72259	3.30364	0.1631177	0.28771549	2.2724451	20	—	—
436050 2009 QO ₄₂	18.2	X	103.39618	312.40601	0.15611	3.30235	0.1657852	0.29541819	2.2327730	20	—	—
436051 2009 QW ₄₅	17.3	X	3.95654	30.23094	338.81312	7.33729	0.1232574	0.28251487	2.3002507	20	12 12.9	19.9
436052 2009 RY ₅	17.3	X	284.81551	95.05318	339.09104	6.54810	0.0925520	0.27384834	2.3485293	20	10 22.9	19.9
436053 2009 RE ₆	17.1	X	93.89377	320.69373	25.81338	6.04600	0.1653292	0.29728681	2.2234069	20	—	—
436054 2009 RC ₁₄	17.6	X	266.25879	264.04554	185.21970	6.51083	0.0758354	0.27064436	2.3670280	20	10 20.6	20.2
436055 2009 RK ₂₆	17.8	X	124.01800	302.45082	38.99189	5.71548	0.1982446	0.30538052	2.1839457	20	—	—
436056 2009 RD ₂₇	17.7	X	134.48167	344.70958	292.90367	6.22048	0.1356496	0.29578231	2.2309402	20	—	—
436057 2009 RG ₃₄	14.3	X	298.32639	216.25263	209.79770	8.97930	0.0253870	0.08523274	5.1136590	20	10 5.1	21.1
436058 2009 RE ₄₁	17.0	X	199.43740	268.56428	228.88891	8.02415	0.1593995	0.26473023	2.4021513	20	9 12.9	20.8
436059 2009 RE ₅₄	17.8	X	343.52978	217.96906	187.13995	7.04976	0.0943102	0.27763937	2.3271016	20	12 25.8	20.4
436060 2009 RJ ₆₁	17.7	X	77.23103	66.93006	264.82061	4.32389	0.1880581	0.29193777	2.2504836	20	—	—
436061 2009 RR ₆₄	14.4	X	278.44736	52.57105	33.49678	7.97139	0.0954585	0.08471710	5.1343879	20	9 28.9	21.1
436062 2009 RC ₆₈	17.8	X	286.47872	224.40289	191.35318	6.04622	0.1145412	0.26663471	2.3906992	20	9 26.8	20.4
436063 2009 RG ₇₀	17.4	X	137.11161	333.44591	343.06709	7.24930	0.2548324	0.30321173	2.1943474	20	—	—
436064 2009 RK ₇₃	14.3	X	268.58667	242.81675	211.43195	8.87811	0.0624313	0.08378583	5.1723630	20	9 27.2	21.2
436065 2009 RZ ₇₃	14.0	X	148.65707	172.22694	29.99364	27.48866	0.0669266	0.08294296	5.2073451	20	10 4.6	21.3
436066 2009 RK ₇₅	14.2	X	137.50601	192.43118	17.00746	11.62564	0.0209161	0.08324162	5.1948821	20	9 22.6	21.1
436067 2009 SY ₈	17.1	X	243.36468	176.88431	318.78258	6.07419	0.0448165	0.28143289	2.3061426	20	11 25.5	20.0
436068 2009 SQ ₄₀	18.1	X	132.35100	297.11895	12.28185	3.73534	0.2120386	0.29864744	2.2166486	20	—	—
436069 2009 SH ₄₈	13.7	X	281.09649	218.69930	215.59649	26.21758	0.0905878	0.08140049	5.2729224	20	9 11.8	20.8
436070 2009 SW ₄₉	17.3	X	344.71204	6.69881	357.24613	13.04390	0.2030417	0.27331097	2.3516066	20	11 3.4	19.4
436071 2009 SC ₇₂	17.5	X	135.92057	283.83627	350.91036	7.90586	0.1578356	0.29376820	2.2411256	20	—	—
436072 2009 SA ₉₈	13.9	X	21.23941	75.24641	244.49453	6.39332	0.0147205	0.08129148	5.2776351	20	9 10.1	20.8
436073 2009 ST ₁₀₀	17.6	X	95.84884	62.54553	283.40218	6.64887	0.3017562	0.29632103	2.2282354	20	—	—
436074 2009 SX ₁₁₄	17.4	X	288.24304	208.91751	210.37699	6.24073	0.1036939	0.26943433	2.3741096	20		

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
436081 2009 SE ₁₅₇	17.9	X	58.27746	318.83337	31.04701	4.06716	0.1517092	0.28753193	2.2734147	20	—	—
436082 2009 SU ₁₅₇	14.1	X	296.03323	39.49839	25.46865	8.80064	0.1066419	0.08362545	5.1789741	20	9 24.9	20.7
436083 2009 SV ₁₅₈	17.3	X	302.06676	156.03209	228.56292	5.49298	0.1174552	0.26263665	2.4149001	20	9 4.0	19.9
436084 2009 SH ₁₇₇	14.1	X	274.64470	239.73261	198.97150	14.76822	0.1805836	0.08306434	5.2022711	20	8 30.6	21.1
436085 2009 SB ₁₈₀	14.2	X	316.58959	181.43909	211.04083	6.19042	0.0276556	0.08244365	5.2283491	20	9 17.6	21.1
436086 2009 SQ ₁₈₁	15.7	X	147.99832	341.26919	338.39772	2.15199	0.1879168	0.12240745	4.0172682	20	1 5.3	21.9
436087 2009 SL ₁₈₈	17.6	X	105.35673	277.91111	71.55353	4.76097	0.2205344	0.29937107	2.2130752	20	—	—
436088 2009 SY ₁₉₉	17.8	X	210.69952	120.35477	349.18289	6.13785	0.0809077	0.26040467	2.4286795	20	8 30.8	20.9
436089 2009 SX ₂₀₁	15.6	X	180.39395	248.65579	49.06852	5.92569	0.2559841	0.12385370	3.9859335	20	1 8.7	22.3
436090 2009 ST ₂₁₁	15.2	X	165.20986	181.45763	141.60791	5.61421	0.2081262	0.12550444	3.9509057	20	1 22.5	21.5
436091 2009 SX ₂₁₂	18.1	X	120.59903	256.24769	33.24394	3.20032	0.1410012	0.28884401	2.2665248	20	—	—
436092 2009 SQ ₂₁₄	17.7	X	306.95147	213.68765	175.34252	2.61246	0.1857437	0.26483792	2.4015001	20	9 16.3	19.7
436093 2009 SD ₂₁₅	17.8	X	10.32546	255.85307	97.54802	2.40121	0.2087079	0.27519281	2.3408738	20	12 13.2	20.3
436094 2009 SC ₂₂₉	19.0	X	165.45718	22.77461	295.25994	6.93087	0.4735651	0.31379794	2.1447137	20	1 14.4	22.9
436095 2009 SH ₂₃₄	18.1	X	123.64135	252.04144	67.95946	4.93826	0.1978393	0.29914067	2.2142113	20	—	—
436096 2009 SD ₂₄₅	18.0	X	76.60932	140.99368	173.58696	8.13088	0.1586131	0.28358702	2.2944494	20	—	—
436097 2009 ST ₂₄₆	13.5	X	329.54490	347.68577	32.90719	31.45333	0.1018262	0.08314641	5.1988471	20	10 1.3	20.2
436098 2009 SN ₂₅₁	17.7	X	129.48520	39.45282	239.25606	5.85477	0.1336250	0.28758025	2.2731600	20	—	—
436099 2009 SB ₂₅₃	17.6	X	15.77480	320.63968	69.19343	2.98187	0.2350983	0.27869145	2.3212413	20	—	—
436100 2009 SJ ₂₆₇	17.3	X	304.36681	166.20559	232.12941	4.36553	0.1041903	0.26524991	2.3990127	20	10 2.3	19.7
436101 2009 SM ₂₆₈	14.4	X	324.98765	19.70289	7.84476	8.88683	0.0833620	0.08634461	5.0696646	20	9 21.4	20.7
436102 2009 SC ₂₈₄	17.9	X	284.62326	3.10428	51.19986	6.40024	0.0802846	0.26627256	2.3928663	20	9 29.8	20.5
436103 2009 SP ₂₈₈	17.5	X	346.49585	357.25509	25.69659	7.32970	0.1233604	0.27603299	2.3361213	20	11 30.9	19.9
436104 2009 SA ₂₈₉	18.5	X	146.52728	133.45037	174.68575	5.31073	0.1934301	0.30167119	2.2018116	20	—	—
436105 2009 SM ₃₀₆	17.8	X	324.90246	297.59451	78.76160	2.55735	0.2014107	0.26887309	2.3774122	20	10 11.8	19.3
436106 2009 SV ₃₁₁	17.6	X	336.04119	260.94829	172.98969	6.52938	0.0612287	0.28826065	2.2695816	20	—	—
436107 2009 SR ₃₁₉	14.2	X	359.47719	119.65889	241.43926	6.66503	0.0274563	0.08461373	5.1385687	20	10 2.7	21.0
436108 2009 SU ₃₂₁	14.2	X	256.75141	295.13115	165.62508	9.53474	0.0669734	0.08193532	5.2499513	20	9 22.9	21.1
436109 2009 SF ₃₂₃	17.8	X	79.73479	208.95453	140.00971	3.54030	0.1870430	0.29386558	2.2406304	20	—	—
436110 2009 SB ₃₄₆	18.1	X	92.88929	268.62555	59.58609	3.97038	0.2151180	0.29266004	2.2467794	20	—	—
436111 2009 SY ₃₄₉	17.7	X	33.67368	247.38173	116.10324	10.67685	0.2326407	0.28253235	2.3001558	20	—	—
436112 2009 ST ₃₅₄	15.7	X	176.75459	102.19105	198.47790	1.42747	0.2451444	0.12437056	3.9748827	20	1 8.3	22.3
436113 2009 SF ₃₅₄	13.9	X	253.12472	46.97913	39.73651	19.09460	0.0690537	0.08078680	5.2995920	20	9 11.7	21.1
436114 2009 SF ₃₆₀	17.5	X	309.74712	351.23974	55.48101	7.19858	0.1530402	0.27153879	2.3618273	20	10 27.9	19.5
436115 2009 TZ ₁	17.6	X	14.58095	316.04861	31.84463	1.78705	0.2366772	0.27543842	2.3394820	20	12 16.4	20.3
436116 2009 TB ₃	21.2	X	101.99623	249.66698	22.13285	12.21937	0.2192704	0.65105844	1.3184269	20	—	—
436117 2009 TT ₁₁	17.8	X	80.18588	127.33224	171.75928	5.32246	0.1731193	0.28022209	2.3127808	20	12 19.5	21.3
436118 2009 TU ₁₄	17.8	X	47.53184	195.56947	178.54766	4.02649	0.1430880	0.28758051	2.2731587	20	—	—
436119 2009 TX ₂₀	18.0	X	95.30981	284.81619	70.84280	4.32924	0.2228310	0.29825226	2.2186062	20	—	—
436120 2009 TL ₂₂	17.0	X	224.20922	163.37986	304.03809	7.71338	0.1218862	0.26012200	2.4304386	20	9 4.5	20.5
436121 2009 TV ₂₂	17.3	X	68.95491	275.42892	71.81658	9.46191	0.1916633	0.28881926	2.2666542	20	—	—
436122 2009 TG ₂₆	18.2	X	141.26901	281.83759	35.55227	4.34105	0.2097038	0.30146752	2.2028032	20	—	—
436123 2009 TH ₂₈	17.9	X	27.48463	187.11125	185.57540	6.40301	0.1237244	0.28747537	2.2737129	20	—	—
436124 2009 TZ ₂₈	14.5	X	224.29342	304.23454	181.25025	7.55419	0.0400457	0.08502632	5.1219319	20	9 18.0	21.3
436125 2009 TM ₃₃	18.2	X	95.09178	258.32765	93.03732	4.67396	0.1761458	0.29841441	2.2178024	20	—	—
436126 2009 TE ₃₄	16.9	X	288.01232	153.44357	271.06699	11.00728	0.2169440	0.26566419	2.3965180	20	9 19.7	19.4
436127 2009 TW ₃₆	17.2	X	347.58436	319.59971	55.82603	7.46485	0.1396100	0.27201658	2.3590608	20	11 23.8	19.4
436128 2009 TT ₄₀	17.1	X	326.92961	276.38881	131.08871	12.99899	0.1621669	0.27188670	2.3598120	20	12 7.3	19.4
436129 2009 UX ₄	17.6	X	254.65202	36.39679	33.54566	5.78106	0.1194221	0.25889168	2.4381326	20	8 29.6	20.7
436130 2009 UT ₈	18.0	X	191.22346	77.69156	47.55846	7.25257	0.1744632	0.25732981	2.4479882	20	8 25.3	21.9
436131 2009 UG ₁₁	14.7	X	267.50144	29.76961	43.31226	13.74353	0.0560354	0.08162208	5.2633747	20	9 11.0	21.8
436132 2009 UG ₁₇	17.6	X	221.10175	210.93524	284.41959	5.63639	0.0700046	0.27095159	2.3652384	20	10 17.7	20.9
436133 2009 UL ₁₇	17.5	X	66.29722	247.06688	30.75201	8.63984	0.0589089	0.26750927	2.3854857	20	10 22.5	20.5
436134 2009 UB ₁₈	17.5	X	81.90255	254.83781	92.01206	6.95592	0.1897246	0.29440164	2.2379097	20	—	—
436135 2009 US ₂₅	17.4	X	22.10464	205.26669	150.32745	3.91054	0.2684096	0.27830938	2.3233652	20	—	—
436136 2009 UC ₂₆	17.8	X	23.15586	300.45072	60.48525	3.07555	0.2282101	0.27924853	2.3181531	20	—	—
436137 2009 UH ₃₃	17.7	X	66.99512	105.37286	214.35168	3.11275	0.2226577	0.28054412	2.3110106	20	—	—
436138 2009 UR ₃₆	17.8	X	352.64758	295.49859	48.81811	3.54183	0.1146925	0.26592352	2.3949598	20	10 14.4	20.1
436139 2009 UF ₃₇	13.6	X	74.16567	68.06032	227.77486	20.28981	0.0257288	0.08253690	5.2244104	20	10 15.6	20.6
436140 2009 UU ₅₇	13.4	X	197.18333	304.33751	229.48937	20.11713	0.0502126	0.08311171	5.2002941	20	10 9.9	20.6
436141 2009 UW ₆₉	18.1	X	52.38991	260.06496	103.36229	5.33851	0.0797059	0.28744030	2.2738978	20	—	—
436142 2009 UD ₇₆	14.0	X	294.93416	194.07141	215.52772	11.10739	0.0349086	0.08034987	5.3187868	20	9 8.8	21.0
436143 2009 US ₈₁	13.9	X	313.43835	192.91776	230.52738	6.04581	0.0374106	0.08618758	5.0758207	20	10 18.9	20.5
436144 2009 UF ₈₄	17.7	X	61.24340	158.85886	178.41965	1.91306	0.2208468	0.28227963	2.3015285	20	—	—
436145 2009 UV ₁₀₀	17.3	X	217.16141	80.51056	66.11910	6.75486	0.0662315	0.26656710	2.3911034	20	11 1.1	20.3
436146 2009 UN ₁₀₁	14.3	X	354.58726	289.70652	97.07340	6.39323	0.0230488	0.08557597	5.0999762	20	10 30.1	21.0
436147 2009 UK ₁₄₁	17.0	X	264.77416	31.22414	64.32179	7.93076	0.0701003	0.26723040	2.3871450	20	10 28.6	19.7
436148 2009 UZ ₁₄₁	17.9	X	33.29771	331.37282	350.95701	1.92931	0.2184523	0.27026720	2.3692297	20	12 2.3	20.9
436149 Edabel	17.2	X	9.72767	281.28692	81.72427	8.24893	0.2088039	0.27690658	2.3312053	20	12 26.0	19.8
436150 2009 VM ₆	17.7	X	139.60746	130.94013	7.52151	1.48651	0.2183575	0.24078704	2.5588646	20	7 23.1	21.9
436151 2009 VQ ₆	14.3	X	9.77686	66.34343	273.38879	1.33546	0.0079339	0.07977440	5.3443349	20	9 21.1	21.2
436152 2009 VR ₈	17.7	X	115.73226	308.01053	243.98270	3.98421	0.1514058	0.25268022	2.4779272	20	9 1.9	21.5
436153 2009 VE ₁₆	17.5	X	32.12857	309.96874	60.06907	5.88914	0.1733546	0.27844599	2.3226053	20	—	—
436154 2009 VG ₁₈	17.5	X	131.37091	200.30026	270.49679	3.86500	0.1230053	0.23320290	2.6140472	20</		

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
436161 2009 VA ₅₀	17.7	X	7.71980	340.69081	23.43641	2.57906	0.1868706	0.27351302	2.3504484	20	12 19.9	20.2
436162 2009 VG ₆₀	16.7	X	174.20072	269.67359	188.95361	27.06984	0.3258735	0.23928403	2.5695688	20	6 29.2	22.1
436163 2009 VO ₆₀	16.8	X	201.25738	2.58303	56.39258	24.64076	0.4045857	0.23756708	2.5819344	20	5 27.7	22.0
436164 2009 VJ ₆₁	17.1	X	171.05782	218.89627	239.45354	13.09416	0.1061340	0.23974211	2.5662945	20	6 26.7	21.1
436165 2009 VZ ₆₂	17.7	X	33.51831	93.76129	249.62251	3.54463	0.1472929	0.27255495	2.3559532	20	12 20.8	20.6
436166 2009 VM ₇₄	17.6	X	168.54326	1.32085	220.07773	6.40834	0.0616584	0.27732935	2.3288356	20	12 11.4	20.7
436167 2009 VQ ₇₉	17.2	X	189.55513	117.71522	317.74295	7.99738	0.1405922	0.24052799	2.5607015	20	6 16.9	21.3
436168 2009 VF ₈₂	17.0	X	35.06053	60.78795	244.98853	8.82355	0.1043100	0.26213652	2.4179707	20	10 22.0	20.0
436169 2009 VA ₈₄	17.6	X	32.47690	320.86467	31.86298	3.85945	0.2107422	0.27662373	2.3327942	20	—	—
436170 2009 VG ₉₅	17.5	X	352.52429	333.29057	54.38082	2.20321	0.1881903	0.27082751	2.3659607	20	12 27.9	19.6
436171 2009 VA ₁₀₃	17.3	X	143.73194	83.45447	28.12114	5.35175	0.1517652	0.23365425	2.6106797	20	6 18.4	21.5
436172 2009 VG ₁₁₀	17.1	X	338.26277	305.49843	80.32645	8.84989	0.1188225	0.27066325	2.3669179	20	11 21.1	19.3
436173 2009 VH ₁₁₀	16.9	X	131.94889	246.24392	231.49875	12.77851	0.2228307	0.23073989	2.6326165	20	6 19.1	21.4
436174 2009 VY ₁₁₄	16.2	X	116.54172	255.54591	278.92028	21.21526	0.0628580	0.23536369	2.5980235	20	7 28.4	20.1
436175 2009 WR ₇	15.9	X	77.27499	19.37666	148.67251	30.16205	0.1536862	0.21234914	2.7825034	20	6 22.4	20.3
436176 2009 WA ₉	17.2	X	352.51740	310.16114	59.63690	23.72042	0.1906723	0.27034359	2.3687833	20	11 29.8	19.3
436177 2009 WO ₁₀	17.0	X	303.96342	302.12559	81.15022	15.24970	0.1936542	0.25891478	2.4379876	20	9 7.4	19.6
436178 2009 WJ ₁₈	17.1	X	119.51158	324.61651	268.98691	5.31802	0.1651027	0.26182196	2.4199070	20	10 30.6	20.9
436179 2009 WD ₂₀	16.6	X	110.72217	274.58085	271.71323	10.40948	0.2497151	0.23783130	2.5800218	20	8 23.9	21.1
436180 2009 WJ ₂₂	17.7	X	168.16391	282.88237	195.94378	3.27366	0.1919869	0.23936509	2.5689886	20	7 21.0	21.9
436181 2009 WL ₂₉	17.8	X	219.43477	331.63560	74.05674	2.41907	0.1257647	0.24592815	2.5230773	20	6 9.6	21.6
436182 2009 WK ₃₀	18.0	X	194.22080	23.60500	73.17861	2.49193	0.1591150	0.24341875	2.5403879	20	7 18.9	22.1
436183 2009 WH ₃₈	17.8	X	30.06407	105.23433	277.20405	2.30597	0.1856410	0.28058839	2.3107675	20	—	—
436184 2009 WH ₄₁	17.0	X	291.03089	316.74963	69.83818	15.32265	0.1044815	0.25301042	2.4757709	20	8 30.5	20.2
436185 2009 WB ₄₄	17.3	X	140.75972	37.92906	62.50672	14.37294	0.2167920	0.23069804	2.6329348	20	6 4.5	21.6
436186 2009 WH ₄₇	16.7	X	168.36652	236.89076	206.49644	12.60060	0.2258721	0.23336618	2.6128277	20	6 7.9	21.4
436187 2009 WE ₅₃	16.9	X	210.25370	55.51809	7.28054	3.85618	0.2280722	0.24122257	2.5557837	20	6 15.9	21.2
436188 2009 WH ₆₉	17.0	X	150.19479	201.28487	269.41655	11.56981	0.1282209	0.23369619	2.6103673	20	6 22.7	20.9
436189 2009 WA ₇₇	16.9	X	264.59595	344.07686	20.00835	5.45703	0.2231589	0.24519933	2.5280745	20	5 22.9	20.5
436190 2009 WB ₉₁	17.3	X	151.50183	254.53540	241.49670	10.66591	0.2483146	0.23632368	2.5909829	20	7 26.7	22.0
436191 2009 WP ₁₀₇	17.7	X	224.51782	63.25079	65.38833	7.05680	0.0727121	0.26404521	2.4063041	20	10 17.2	20.9
436192 2009 WL ₁₂₇	16.9	X	119.29717	182.30132	74.70355	15.52904	0.1248333	0.26664659	2.3906282	20	11 30.3	20.4
436193 2009 WD ₁₃₁	17.2	X	150.17864	258.16409	246.37931	2.76571	0.1056815	0.24119839	2.5559544	20	8 4.6	21.1
436194 2009 WK ₁₃₁	17.3	X	175.40939	269.17774	203.74232	2.12176	0.1483445	0.24033920	2.5620424	20	7 20.8	21.2
436195 2009 WE ₁₃₄	17.3	X	194.97398	325.16582	125.64842	5.89089	0.2025025	0.24263923	2.5458259	20	7 9.5	21.6
436196 2009 WM ₁₆₄	17.7	X	233.66181	17.11059	64.77711	7.40756	0.0945597	0.25079594	2.4903232	20	8 21.8	21.1
436197 2009 WL ₁₆₆	16.8	X	195.34974	333.39596	111.08516	8.88624	0.1896089	0.23431557	2.6057652	20	7 2.2	21.0
436198 2009 WH ₁₆₉	17.5	X	15.32266	239.37670	96.89700	5.87324	0.1740559	0.26697769	2.3886512	20	11 20.2	20.1
436199 2009 WC ₁₇₁	17.2	X	160.16033	95.73514	39.82749	10.88650	0.2477360	0.24232657	2.5480153	20	8 9.9	21.8
436200 2009 WA ₁₈₄	16.1	X	265.61508	123.48247	254.92251	26.33767	0.1151942	0.24281929	2.5445672	20	6 26.2	19.7
436201 2009 WY ₁₈₇	17.5	X	69.11490	47.40244	285.05351	2.14314	0.2373298	0.28406058	2.2918986	20	—	—
436202 2009 WT ₂₁₇	17.6	X	48.35469	337.68594	4.16223	1.68243	0.2403307	0.27931163	2.3178040	20	—	—
436203 2009 WD ₂₂₆	14.2	X	337.00839	287.52341	95.94047	4.13088	0.0599785	0.08068485	5.3040555	20	10 3.8	20.9
436204 2009 WY ₂₄₅	13.2	X	43.36716	68.89636	269.79102	16.82136	0.0549604	0.08310528	5.2005624	20	10 30.1	20.1
436205 2009 WC ₂₄₈	17.8	X	43.66788	305.98759	41.73673	3.26167	0.2380839	0.27960096	2.3162047	20	—	—
436206 2009 WD ₂₄₈	17.4	X	285.94658	332.83977	89.34232	4.33911	0.0694382	0.26376484	2.4080090	20	10 13.5	20.1
436207 2009 WK ₂₄₉	16.7	X	233.00722	144.53909	257.97744	11.91160	0.1768636	0.24264550	2.5457821	20	6 15.1	20.5
436208 2009 XZ ₁₂	17.1	X	115.30518	29.33900	46.96208	4.22932	0.0790205	0.21884012	2.7272069	20	3 28.0	20.9
436209 2009 XO ₁₇	16.8	X	275.66461	229.82469	103.73657	7.21912	0.0409262	0.22607485	2.6687090	20	5 25.4	20.4
436210 2009 XV ₁₇	17.0	X	215.90167	325.52865	81.69933	4.79902	0.2456239	0.23544556	2.5974212	20	5 31.6	21.2
436211 2009 XA ₁₈	16.8	X	146.96803	58.74097	94.85902	9.21808	0.1221603	0.23657059	2.5891798	20	8 16.8	20.9
436212 2009 XG ₁₉	16.5	X	263.93100	255.85866	115.32450	12.90660	0.0532709	0.23262151	2.6184008	20	6 27.1	20.0
436213 2009 XP ₁₉	17.3	X	148.21536	242.43973	248.90047	2.37243	0.1550457	0.23130217	2.6283483	20	7 18.1	21.5
436214 2009 XR ₂₂	17.8	X	37.90250	280.08546	355.14171	0.77703	0.0580299	0.24728185	2.5138607	20	9 5.9	20.9
436215 2009 XB ₂₃	16.9	X	262.08673	277.29792	116.04862	15.16614	0.0707064	0.23880213	2.5730245	20	7 22.6	20.1
436216 2009 YD	17.2	X	184.28347	337.09042	127.82682	4.37301	0.1441200	0.23653889	2.5894112	20	7 19.4	21.4
436217 2009 YA ₈	17.0	X	266.18649	326.59605	102.18346	8.47001	0.0947075	0.25218793	2.4811509	20	9 18.5	20.1
436218 2009 YY ₂₂	17.3	X	107.07674	197.09596	266.54573	6.52797	0.2889076	0.21635586	2.7480436	20	5 15.9	21.7
436219 2009 YZ ₂₂	16.8	X	173.35751	219.77706	273.36054	7.09193	0.1162064	0.23889330	2.5723698	20	8 12.4	20.8
436220 2010 AA ₁₁	17.6	X	216.82067	5.91630	90.67216	12.02168	0.1495732	0.24439353	2.5336284	20	8 14.2	21.5
436221 2010 AZ ₁₁	17.1	X	130.47728	250.58123	244.91341	3.19344	0.1989071	0.22664129	2.6642606	20	7 8.9	21.5
436222 2010 AV ₁₆	17.6	X	183.36685	28.49568	45.11396	4.90847	0.0894335	0.23022185	2.6365642	20	6 8.3	21.6
436223 2010 AZ ₂₄	17.0	X	90.42270	183.56735	307.03888	12.65863	0.1162602	0.21484076	2.7609482	20	5 5.7	21.1
436224 2010 AJ ₂₆	16.8	X	106.52256	31.22798	131.83175	10.72066	0.2518880	0.22300185	2.6931698	20	7 26.0	21.2
436225 2010 AV ₃₁	16.9	X	160.37668	9.96049	130.64630	12.75149	0.1114324	0.23294354	2.6159871	20	8 11.2	20.8
436226 2010 AR ₃₂	16.6	X	199.61659	284.22789	98.86413	6.53001	0.0844570	0.21917717	2.7244103	20	4 25.4	20.7
436227 2010 AV ₄₀	17.2	X	161.19665	10.08591	115.70315	4.06806	0.1915691	0.23245002	2.6196885	20	7 24.3	21.5
436228 2010 AE ₄₁	17.4	X	145.00855	19.99827	120.33259	4.28147	0.0836536	0.23288853	2.6163990	20	7 23.9	21.1
436229 2010 AF ₅₂	16.9	X	356.08614	217.05257	149.53598	5.85490	0.1587515	0.25972994	2.4328838	20	11 26.9	19.5
436230 2010 AE ₅₄	17.1	X	100.06220	315.20977	220.08641	4.33271	0.1627297	0.22442814	2.6817473	20	7 25.3	21.1
436231 2010 AX ₅₅	16.2	X	56.24257	65.49550	126.79930	10.14739	0.0768548	0.21756250	2.7378734	20	6 10.4	19.8
436232 2010 AY ₆₁	16.6	X	250.51408	262.31897	107.59299	13.90124	0.0418869	0.22863690	2.6487349	20	6 10.2	20.2
436233 2010 AV ₆₃	16.5	X	79.68140	21.48100	109.18212	9.32629	0.1720705	0.20980804	2.			

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
436241 2010 AM ₈₉	14.0 ^m	X	305.27719	334.33624	75.08109	22.61934	0.0769482	0.08457435	5.1401635	20	10 2.7	20.9
436242 2010 AH ₉₀	16.4	X	32.05440	74.61672	110.60468	20.27504	0.0907339	0.20088159	2.8874155	20	5 4.8	20.4
436243 2010 AJ ₉₃	16.7	X	99.72040	76.29366	60.10420	8.53006	0.1637965	0.20944119	2.8081997	20	6 4.6	20.8
436244 2010 BO ₄	16.8	X	67.73228	220.62225	305.82759	5.96728	0.1502358	0.21473984	2.7618132	20	6 1.1	20.3
436245 2010 BE ₆	16.5	X	169.59315	228.51315	249.94827	11.74874	0.2390506	0.23237451	2.6202560	20	7 19.3	21.3
436246 2010 BK ₅₁	15.9	X	51.70012	15.30290	49.47551	28.85716	0.1564525	0.17565770	3.1576059	20	—	—
436247 2010 BX ₅₄	13.7	X	280.78678	0.41603	88.45282	20.12436	0.0853353	0.08348925	5.1846050	20	10 13.9	20.7
436248 2010 BW ₆₅	16.4	X	253.60675	315.25210	335.49710	18.77557	0.0770769	0.18594727	3.0400182	20	2 28.8	21.0
436249 2010 BM ₇₄	15.8	X	23.62721	113.29859	5.78830	26.95802	0.1413361	0.18067202	3.0989087	20	2 1.7	20.0
436250 2010 BR ₇₅	16.8	X	66.12692	346.96705	257.72598	6.98957	0.1576947	0.21915746	2.7245736	20	9 10.8	20.7
436251 2010 BC ₈₄	16.7	X	323.27476	82.53885	125.82272	8.97450	0.1087595	0.18365036	3.0653132	20	2 10.2	20.8
436252 2010 BR ₈₆	16.2	X	106.38902	353.87373	74.33650	8.81352	0.1278353	0.18754173	3.0227631	20	3 19.8	20.6
436253 2010 BE ₉₀	16.0	X	49.33762	319.31682	154.13432	12.63341	0.0634567	0.18309609	3.0714964	20	2 16.8	20.0
436254 2010 BY ₉₄	15.5	X	136.40828	282.38201	79.11441	26.95599	0.1814718	0.17308058	3.1888725	20	2 9.3	20.9
436255 2010 BV ₁₀₅	13.9	X	327.96380	330.34171	63.91282	24.03103	0.1260815	0.08247790	5.2269016	20	10 11.3	20.5
436256 2010 CK ₂	16.7	X	172.96130	319.46720	141.28938	14.22584	0.2245568	0.22904896	2.6455573	20	7 2.9	21.4
436257 2010 CM ₂	16.9	X	10.20216	190.37793	140.99875	10.77404	0.1087814	0.24311283	2.5425186	20	10 23.2	20.0
436258 2010 CQ ₂	16.7	X	73.95604	45.25929	143.25479	11.73710	0.1015319	0.21966443	2.7203799	20	7 3.1	20.4
436259 2010 CH ₄	16.7	X	158.02922	333.12337	150.57546	10.47088	0.1499726	0.22817532	2.6523059	20	7 17.0	21.1
436260 2010 CM ₇	16.2	X	23.87376	233.17768	277.08076	18.00965	0.2225258	0.18845112	3.0130308	20	2 20.3	19.6
436261 2010 CF ₈	15.9	X	13.03795	305.04721	197.15726	26.99021	0.1657049	0.18137728	3.0908704	20	1 24.6	20.0
436262 2010 CB ₁₁	16.8	X	34.02666	206.69122	56.69156	8.80310	0.1837796	0.21168187	2.7883478	20	9 2.8	20.3
436263 2010 CW ₂₀	17.1	X	50.89409	49.80861	150.04302	4.10006	0.0341606	0.21771936	2.7365582	20	6 6.3	20.7
436264 2010 CO ₂₄	17.6	X	101.99745	53.79872	163.62051	1.38212	0.0771003	0.23813859	2.5778018	20	9 14.0	21.2
436265 2010 CZ ₃₈	17.2	X	71.04503	56.96321	153.49266	8.78403	0.1433766	0.22183673	2.7025916	20	8 3.8	20.9
436266 2010 CO ₆₃	16.9	X	201.13472	85.91793	348.94550	13.72803	0.0674278	0.22422480	2.6833683	20	7 3.6	21.0
436267 2010 CU ₈₀	16.7	X	223.01905	76.96813	340.00493	11.48814	0.1056955	0.22608008	2.6686678	20	7 1.5	20.8
436268 2010 CW ₈₀	16.6	X	135.36987	330.30821	160.52591	9.01720	0.0613426	0.2202371	2.7157721	20	6 27.9	20.7
436269 2010 CF ₈₃	16.6	X	120.95906	350.88889	339.85553	13.53038	0.0942493	0.22271504	2.6954815	20	6 15.7	20.7
436270 2010 CX ₉₂	16.7	X	268.77496	12.48202	135.39078	6.47409	0.0866631	0.22375229	2.6871448	20	6 29.2	20.4
436271 2010 CJ ₉₃	17.2	X	59.41460	83.23090	123.24525	4.26505	0.1269031	0.21613192	2.7499414	20	7 10.9	20.5
436272 2010 CJ ₁₁₁	17.1	X	61.35845	253.14224	334.26412	10.67983	0.1401993	0.22509175	2.6764738	20	8 15.8	20.6
436273 2010 CC ₁₄₁	16.3	X	144.79455	30.87964	122.47072	11.94670	0.1292644	0.23013060	2.6372611	20	8 12.4	20.3
436274 2010 CF ₁₄₁	17.8	X	117.16152	154.64972	33.81869	1.55056	0.0734261	0.23353627	2.6115589	20	8 24.5	21.5
436275 2010 CT ₁₄₁	16.4	X	128.29202	127.14626	332.64620	5.18965	0.0631712	0.21225298	2.7833438	20	5 7.8	20.5
436276 2010 CJ ₁₄₄	16.5	X	166.41503	48.77967	61.52877	13.21062	0.1869471	0.23026862	2.6362072	20	7 9.8	21.1
436277 2010 CD ₁₄₅	16.4	X	167.82764	39.24596	77.56185	12.97027	0.1554661	0.23052029	2.6342882	20	7 19.7	20.8
436278 2010 CW ₁₆₃	16.7	X	136.92697	10.94519	105.54132	6.08400	0.0259124	0.22119323	2.7078306	20	6 8.1	20.5
436279 2010 CG ₁₇₀	17.2	X	99.64474	99.02560	54.74527	5.00932	0.2049902	0.21713875	2.7414342	20	7 3.0	21.3
436280 2010 CS ₁₇₁	17.0	X	260.24652	222.31657	119.43156	5.18056	0.0786018	0.21684220	2.7439330	20	5 11.1	20.6
436281 2010 CH ₁₈₁	17.0	X	55.32897	186.76677	346.02347	9.17868	0.1472043	0.21077525	2.7963378	20	5 19.1	20.8
436282 2010 CR ₁₈₄	17.3	X	156.85335	218.39973	225.17268	2.49419	0.2771363	0.22289000	2.6940707	20	5 31.3	21.9
436283 2010 CF ₁₈₅	16.3	X	32.62083	234.63917	338.52523	8.86156	0.0871802	0.21407120	2.7675611	20	6 1.0	19.8
436284 2010 CW ₁₈₅	15.9	X	193.03922	247.49752	79.52378	27.82033	0.0633869	0.17704067	3.1411404	20	2 18.9	21.1
436285 2010 CA ₂₁₄	15.6	X	236.98916	100.98900	177.65231	16.68357	0.1359594	0.17375329	3.1806363	20	1 24.5	20.9
436286 2010 CK ₂₂₁	16.2	X	356.13857	192.32870	342.48182	9.12564	0.0374722	0.18177277	3.0863855	20	2 21.5	20.2
436287 2010 CZ ₂₂₇	16.0	X	4.41251	309.56929	204.38186	26.40891	0.0791520	0.17925766	3.1151878	20	1 28.9	20.6
436288 2010 CW ₂₃₀	16.1	X	338.96990	332.13855	208.93881	27.32261	0.0952471	0.17923198	3.1154853	20	1 23.9	20.8
436289 2010 DV ₁₂	16.0	X	24.47026	229.95655	276.94949	20.42039	0.0687659	0.18206996	3.0830260	20	2 14.4	20.4
436290 2010 DV ₃₀	16.4	X	3.87875	69.40419	112.68598	14.75187	0.0582200	0.18388360	3.0627207	20	3 15.7	20.6
436291 2010 DL ₃₁	16.1	X	356.43877	53.73888	148.70934	15.87722	0.1423148	0.18765304	3.0215676	20	3 23.6	19.7
436292 2010 DO ₄₀	16.8	X	10.36648	214.39231	103.05971	10.02267	0.1698444	0.23914504	2.5705643	20	10 12.8	19.7
436293 2010 DT ₄₅	17.2	X	32.09713	331.64812	285.40875	3.04717	0.1669700	0.21912427	2.7248487	20	8 13.9	20.3
436294 2010 DP ₄₆	17.1	X	47.73842	51.24154	186.78629	7.30899	0.0308680	0.22183058	2.7026415	20	7 21.7	20.7
436295 2010 DT ₄₇	17.3	X	41.01838	63.09821	175.68281	6.01892	0.2066195	0.21553639	2.7550045	20	8 8.5	20.7
436296 2010 DQ ₄₈	17.5	X	116.76172	234.20207	305.08807	4.03089	0.2316014	0.22480473	2.6787514	20	8 22.2	21.9
436297 2010 DX ₅₂	16.1	X	163.34902	200.18026	163.80726	15.07293	0.0479591	0.17542894	3.1603503	20	2 21.6	20.7
436298 2010 DG ₆₁	16.6	X	13.46569	80.64847	86.65004	27.06156	0.1916000	0.18573908	3.0422894	20	3 19.0	20.5
436299 2010 EF ₅	16.1	X	283.72860	44.90154	220.15819	26.78940	0.1216747	0.17895936	3.1186485	20	2 19.7	21.2
436300 2010 EA ₁₁	16.4	X	6.47443	63.93303	97.47421	17.94908	0.1039090	0.17821890	3.1272808	20	2 20.6	20.5
436301 2010 EP ₁₁	15.5	X	300.49916	354.09161	225.70374	26.57020	0.1397799	0.17366689	3.1816912	20	1 14.9	20.6
436302 2010 EE ₂₂	16.7	X	89.32711	322.81141	140.59096	7.48755	0.0217943	0.19899077	2.9056776	20	3 23.9	20.7
436303 2010 EV ₃₃	16.1	X	256.35109	280.04886	359.33265	10.78950	0.0957283	0.18813438	3.0164116	20	2 20.1	20.7
436304 2010 EJ ₃₈	16.6	X	13.16786	230.70171	22.00411	9.18714	0.0856742	0.20965371	2.8063016	20	6 26.5	20.1
436305 2010 EN ₆₈	17.0	X	192.58893	334.11924	116.26325	4.35438	0.0231412	0.21971619	2.7199527	20	7 13.8	20.7
436306 2010 EQ ₆₈	16.6	X	74.11147	148.11041	17.25090	13.72383	0.1434583	0.20917057	2.8106213	20	6 5.5	20.6
436307 2010 EO ₆₉	16.9	X	86.71720	252.63602	261.03271	6.39444	0.1656470	0.21242669	2.7818262	20	6 12.5	20.6
436308 2010 EB ₈₉	17.5	X	142.25020	27.97761	125.60508	3.01283	0.1254106	0.23162352	2.6259167	20	8 9.3	21.3
436309 2010 EL ₉₆	17.1	X	18.27586	206.86414	19.96455	5.46844	0.1087797	0.21020004	2.8014369	20	5 29.7	20.4
436310 2010 EZ ₉₉	16.3	X	347.39110	101.89342	208.68221	10.27071	0.2007756	0.21286461	2.7780096	20	7 31.9	19.1
436311 2010 EY ₁₂₄	16.7	X	67.49700	56.96292	137.87874	8.55525	0.1534028	0.21381687	2.7697553	20	7 10.4	20.3
436312 2010 EN ₁₃₃	16.5	X	165.80572	62.77570	38.39041	12.19314	0.0448595	0.21367233	2.7710043	20	6 23.7	20.6
436313 2010 FQ ₁₄	16.8	X	231.27006	1.03889	55.44539	7.18938	0.0523038	0.21789438				

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
436321 2010 <i>FB</i> ₈₈	16.5	X	34.91180	143.40151	85.54757	8.76805	0.1757078	0.21018517	2.8015691	20	7 11.1	19.6
436322 2010 <i>FU</i> ₉₆	16.7	X	25.37336	135.85174	25.93233	13.38509	0.0267754	0.19116330	2.9844641	20	3 17.8	20.8
436323 2010 <i>FS</i> ₁₀₀	17.4	X	40.34379	101.47787	112.89453	1.60072	0.0070351	0.21056426	2.7982056	20	6 7.5	21.2
436324 2010 <i>GZ</i> ₆	19.4	X	335.06196	73.93552	199.44199	44.83906	0.1440707	0.59411440	1.4013803	20	4 19.1	18.1
436325 2010 <i>GR</i> ₇	18.4	X	359.89386	191.97883	157.57016	24.14173	0.8456439	0.39772230	1.8312575	20	—	—
436326 2010 <i>GP</i> ₃₂	17.0	X	106.29019	1.42931	145.15716	10.23832	0.1376398	0.21112319	2.7932647	20	6 23.1	21.2
436327 2010 <i>GV</i> ₃₂	16.7	X	43.89812	40.40826	160.40959	9.97178	0.1392781	0.21708868	2.7418557	20	6 11.9	20.1
436328 2010 <i>GV</i> ₅₈	16.5	X	139.24834	76.09969	83.46559	12.47326	0.1406811	0.23509063	2.6000349	20	8 18.9	20.8
436329 2010 <i>GX</i> ₆₂	20.1	X	6.78979	316.11518	207.90281	21.64996	0.7037841	0.19396251	2.9556807	20	—	—
436330 2010 <i>GQ</i> ₁₀₂	17.1	X	47.39252	6.04028	207.04986	8.60928	0.0906612	0.21037976	2.7998412	20	6 25.6	20.8
436331 2010 <i>GF</i> ₁₁₂	16.6	X	263.82407	342.34139	16.15010	6.63229	0.0793682	0.21573816	2.7532865	20	6 3.7	20.4
436332 2010 <i>GQ</i> ₁₂₇	16.1	X	59.83352	24.13860	85.65340	10.27760	0.0577444	0.18333860	3.0687872	20	3 2.1	20.4
436333 2010 <i>GD</i> ₁₄₅	16.2	X	298.76600	35.81740	263.56641	6.46386	0.2492271	0.18358776	3.0660100	20	4 6.8	20.5
436334 2010 <i>GH</i> ₁₅₉	16.1	X	335.33017	207.35885	65.30998	16.15054	0.1095360	0.20407116	2.8572504	20	5 20.9	19.6
436335 2010 <i>GB</i> ₁₇₂	16.1	X	13.34347	173.26870	104.01416	16.01489	0.0523300	0.22235616	2.6983810	20	7 30.9	19.5
436336 2010 <i>HA</i> ₁₄	15.8	X	311.59299	143.67295	127.12893	18.55035	0.1423808	0.18160277	3.0883113	20	4 15.1	20.2
436337 2010 <i>HR</i> ₂₃	15.2	X	233.27029	216.94870	63.24081	24.14214	0.1330175	0.17463079	3.1699725	20	1 29.6	20.6
436338 2010 <i>HM</i> ₄₀	16.0	X	233.97259	277.41721	65.91101	13.54753	0.1655875	0.17339388	3.1850301	20	4 11.7	21.2
436339 2010 <i>HY</i> ₄₂	16.9	X	305.43763	159.25393	152.09333	10.73319	0.3213060	0.18546329	3.0453047	20	4 26.2	21.0
436340 2010 <i>HX</i> ₁₀₃	16.8	X	308.98230	131.58149	128.48870	12.02983	0.1375304	0.18771296	3.0209246	20	3 25.5	20.9
436341 2010 <i>HW</i> ₁₀₄	18.2	X	275.58006	218.63275	85.97122	21.04560	0.0698772	0.38582628	1.8687083	20	4 13.4	20.7
436342 2010 <i>HF</i> ₁₀₈	16.5	X	258.94743	223.19694	56.42788	11.28290	0.0615133	0.18051374	3.1007199	20	3 1.4	21.2
436343 2010 <i>JL</i> ₃	15.6	X	276.26560	3.54460	249.26207	20.47952	0.2217765	0.17785019	3.1316016	20	1 19.2	20.9
436344 2010 <i>JP</i> ₁₄	15.8	X	80.88418	160.33397	70.52188	28.47894	0.0166598	0.23536768	2.5979941	20	9 14.5	20.0
436345 2010 <i>JZ</i> ₁₈	15.9	X	226.39594	248.16278	102.82243	7.12404	0.1434907	0.17144451	3.2091277	20	4 12.9	21.0
436346 2010 <i>JC</i> ₃₂	16.1	X	190.60257	103.63751	236.58532	14.77900	0.1311031	0.17901763	3.1179718	20	2 18.4	21.4
436347 2010 <i>JP</i> ₃₉	18.2	X	239.37316	108.87367	201.85114	20.53416	0.0811004	0.37641688	1.8997217	20	2 11.7	20.9
436348 2010 <i>JS</i> ₇₃	17.1	X	303.42992	47.41285	212.37565	2.33235	0.0553151	0.18858661	3.0115874	20	3 24.4	21.1
436349 2010 <i>JK</i> ₇₇	16.5	X	269.78536	85.06892	155.99310	25.87163	0.2535070	0.17448823	3.1716990	20	1 4.7	22.1
436350 2010 <i>JU</i> ₇₇	15.9	X	244.30439	92.62946	220.52612	14.42893	0.1370458	0.18240852	3.0792100	20	3 8.2	21.0
436351 2010 <i>JL</i> ₇₉	16.0	X	321.99624	104.40795	89.63397	17.32688	0.1779727	0.17866892	3.1220273	20	1 12.5	20.2
436352 2010 <i>JV</i> ₈₂	16.6	X	279.78780	80.09126	193.12211	13.27429	0.1566410	0.18504364	3.0499071	20	2 25.4	21.3
436353 2010 <i>JC</i> ₁₁₂	16.6	X	321.49008	191.74272	46.52187	0.32393	0.1892228	0.18678219	3.0309522	20	3 3.7	20.2
436354 2010 <i>JN</i> ₁₁₆	16.1	X	286.76317	201.22850	107.39658	9.71855	0.0971850	0.19212585	2.9744877	20	5 2.2	20.3
436355 2010 <i>JS</i> ₁₁₇	15.8	X	252.33509	188.14539	79.17889	6.57567	0.0946864	0.17451721	3.1713478	20	2 2.0	20.6
436356 2010 <i>JX</i> ₁₃₀	16.2	X	254.13905	171.69115	161.72967	11.85776	0.2047829	0.17363240	3.1821125	20	4 12.2	21.3
436357 2010 <i>JO</i> ₁₅₁	16.0	X	344.63196	295.48956	226.08038	15.68302	0.1862800	0.17864581	3.1222966	20	1 1.5	20.1
436358 2010 <i>JR</i> ₁₇₅	15.7	X	199.33624	241.40981	87.43303	16.55632	0.0474194	0.17795914	3.1303232	20	2 25.4	20.6
436359 2010 <i>KE</i> ₂	15.6	X	255.51984	203.60506	151.51101	15.74738	0.2913677	0.17627456	3.1502350	20	5 2.8	21.0
436360 2010 <i>KS</i> ₁₉	16.2	X	287.24303	141.37348	146.95106	17.58417	0.0876420	0.17283144	3.1919364	20	4 10.7	20.9
436361 2010 <i>KA</i> ₃₁	16.0	X	277.29420	133.84594	169.54303	14.15093	0.2846331	0.17458009	3.1705863	20	3 19.0	21.0
436362 2010 <i>KW</i> ₃₂	15.6	X	271.59071	150.71968	165.81217	16.42890	0.0914545	0.17478222	3.1681413	20	4 24.5	20.3
436363 2010 <i>KT</i> ₃₇	16.8	X	291.77214	53.15945	230.88674	2.53819	0.0729010	0.19161870	2.9797338	20	4 6.0	20.9
436364 2010 <i>KB</i> ₃₉	16.6	X	264.93121	270.87420	77.05883	12.90330	0.0184656	0.20056147	2.8904872	20	6 1.8	20.4
436365 2010 <i>KG</i> ₁₂₅	15.7	X	281.19394	124.32544	187.62996	13.51816	0.2891693	0.17548748	3.1596474	20	3 31.8	20.6
436366 2010 <i>LA</i> ₃₅	15.8	X	267.35752	127.99619	107.99501	11.03591	0.0480253	0.19285745	2.9669606	20	5 7.1	20.1
436367 2010 <i>LP</i> ₃₅	16.6	X	213.16331	140.86733	186.05913	10.20457	0.1323885	0.17554419	3.1589669	20	2 27.9	21.8
436368 2010 <i>LS</i> ₅₅	16.5	X	298.20676	142.96823	155.54097	14.89009	0.2523661	0.17699955	3.1416269	20	4 11.7	21.0
436369 2010 <i>LV</i> ₆₉	15.9	X	318.36208	88.87414	149.48379	24.46605	0.3299330	0.17512436	3.1640136	20	2 19.9	20.2
436370 2010 <i>ME</i> ₁₁₅	15.0	X	99.12397	290.33794	55.47953	3.71275	0.2412548	0.12583159	3.9440546	20	—	—
436371 2010 <i>NJ</i> ₃	15.5	X	283.16405	40.97296	262.76685	16.43336	0.2169651	0.17811686	3.1284750	20	3 24.9	20.5
436372 2010 <i>NU</i> ₃₂	14.7	X	313.48510	48.03640	272.88492	25.91957	0.1266802	0.17925221	3.1152510	20	6 18.1	18.7
436373 2010 <i>OT</i> ₄₁	15.5	X	213.62770	42.05554	280.49137	15.59053	0.2464816	0.17743583	3.1364750	20	2 15.9	21.2
436374 2010 <i>OY</i> ₆₀	16.1	X	39.41996	245.09132	221.00321	13.87738	0.2083993	0.18140891	3.0905111	20	1 29.6	19.7
436375 2010 <i>OA</i> ₇₇	16.3	X	192.42612	318.25529	47.62520	16.18130	0.0775766	0.18798417	3.0180183	20	4 2.2	21.1
436376 2010 <i>OG</i> ₁₀₁	15.8	X	282.42620	194.84124	145.41921	19.71466	0.3245281	0.18252172	3.0779367	20	5 7.4	20.8
436377 2010 <i>OF</i> ₁₀₆	16.4	X	288.04508	44.16927	209.34673	13.35766	0.0850322	0.18301503	3.0724033	20	2 19.3	21.1
436378 2010 <i>OH</i> ₁₀₉	15.5	X	227.13227	222.69613	94.66198	19.24440	0.1084591	0.18211667	3.0824988	20	3 11.0	20.6
436379 2010 <i>OT</i> ₁₁₇	16.2	X	339.48721	134.19055	57.70348	16.42888	0.1487266	0.18358076	3.0660879	20	2 14.2	20.3
436380 2010 <i>PB</i> ₇₀	15.1	X	97.69662	179.32524	180.51951	2.98682	0.2186607	0.12238898	4.0176722	20	1 5.6	20.8
436381 2010 <i>RP</i> ₇₄	14.2	X	278.12408	24.10674	46.37328	36.63283	0.0974390	0.08317687	5.1975778	20	10 1.5	21.4
436382 2010 <i>RQ</i> ₇₄	13.9	X	301.19952	359.38294	43.49761	27.73900	0.0513229	0.08380737	5.1714765	20	9 25.8	20.9
436383 2010 <i>RC</i> ₁₀₄	18.2	X	184.05352	186.02417	1.96639	7.32898	0.0652086	0.30486234	2.1864197	20	11 19.0	21.0
436384 2010 <i>TD</i> ₁₉	17.3	X	165.93329	257.22812	99.71967	31.63245	0.2775722	0.35043500	1.9924973	20	2 21.1	21.0
436385 2010 <i>TK</i> ₄₇	18.5	X	288.36983	36.17557	22.89908	5.83376	0.1258518	0.29627488	2.2284668	20	10 11.6	20.3
436386 2010 <i>TB</i> ₁₅₃	18.8	X	289.31415	345.50511	125.31454	3.24729	0.1659401	0.30856298	2.1689032	20	—	—
436387 2010 <i>VB</i> ₂₀	17.7	X	281.93517	214.29685	255.55948	6.44614	0.0757493	0.29812123	2.2192562	20	12 21.6	19.8
436388 2010 <i>VP</i> ₄₈	13.6	X	275.46686	7.51033	80.56569	15.96219	0.1200440	0.08212654	5.2417991	20	9 30.2	20.6
436389 2010 <i>VR</i> ₇₂	18.3	X	343.89316	344.08024	86.85549	4.13829	0.1702001	0.31015741	2.1614637	20	—	—
436390 2010 <i>VW</i> ₇₉	14.9	X	144.27939	97.53441	17.38889	8.54867	0.2150771	0.12451112	3.9718908	20	—	—
436391 2010 <i>VN</i> ₁₁₁	14.3	X	253.52784	289.29971	166.57608	6.63818	0.0846119					

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>		
436401	2010	WD ₁₃	14.0	X	239.24902	0.15534	77.83231	9.52590	0.0842608	0.08351149	5.1836843	20	9 25.5	21.1
436402	2010	WM ₆₂	18.2	X	284.50867	5.55995	85.45559	3.42640	0.0985514	0.29365485	2.2417023	20	11 25.3	20.3
436403	2010	WS ₆₆	13.8	X	341.12402	112.38101	259.95566	7.76395	0.0403790	0.08177107	5.2569794	20	9 21.5	20.6
436404	2010	XE ₁₈	17.5	X	155.55765	344.15462	257.04443	6.96030	0.0853226	0.29227371	2.2487588	20	12 23.3	20.5
436405	2010	XE ₃₁	14.2	X	284.62632	345.44997	83.78049	6.12725	0.0225659	0.08294563	5.2072332	20	9 26.9	21.1
436406	2010	XL ₃₈	17.8	X	242.84933	211.92770	297.21641	3.39041	0.1587989	0.28988641	2.2610881	20	11 28.7	20.1
436407	2010	XO ₄₀	17.9	X	324.66677	55.16159	17.80064	5.05914	0.1020473	0.30094681	2.2053434	20	—	—
436408	2010	XW ₄₁	17.4	X	201.14558	231.13654	284.75827	4.63027	0.1644650	0.27924041	2.3181980	20	10 11.2	20.8
436409	2010	XW ₈₁	14.2	X	311.48673	324.85474	73.12979	8.76321	0.0753677	0.08095215	5.2923733	20	9 19.2	21.0
436410	2011	AH ₁₀	17.8	X	176.94229	238.40785	289.96326	4.73321	0.1775346	0.27378997	2.3488630	20	10 1.4	21.5
436411	2011	AW ₁₃	17.7	X	260.93878	346.41959	89.56633	8.83354	0.1953006	0.27862135	2.3216306	20	9 8.4	20.5
436412	2011	AO ₂₀	17.7	X	231.21016	61.67810	86.09200	7.57080	0.1426304	0.28397105	2.2923803	20	11 13.6	20.5
436413	2011	AG ₂₃	18.1	X	289.91383	142.29093	320.37476	2.41945	0.1137904	0.29307384	2.2446640	20	12 21.6	20.0
436414	2011	AR ₄₄	18.3	X	179.14158	71.37876	98.36598	2.07161	0.1271204	0.27297694	2.3535246	20	10 11.9	21.6
436415	2011	AW ₄₆	18.2	X	316.54387	173.03702	272.75982	3.69161	0.0944875	0.29203329	2.2499929	20	—	—
436416	2011	AE ₅₉	18.3	X	192.65626	37.70373	124.30775	2.74684	0.1244669	0.27669957	2.3323679	20	10 17.4	21.7
436417	2011	AK ₆₀	17.8	X	133.47237	172.62652	128.09894	3.79100	0.0938001	0.30259989	2.1973043	20	—	—
436418	2011	AM ₆₀	18.3	X	161.76229	266.05479	296.09739	2.04396	0.1662054	0.27493264	2.3423503	20	11 1.4	21.9
436419	2011	AG ₆₂	18.3	X	162.76858	140.69092	59.11572	4.78567	0.0922904	0.27943732	2.3171089	20	11 5.2	21.6
436420	2011	AE ₆₄	17.8	X	176.79177	325.11774	302.32247	5.60654	0.0770769	0.30484276	2.1865133	20	—	—
436421	2011	AU ₆₄	17.7	X	124.59517	356.03505	306.67894	2.82413	0.1159833	0.30190813	2.2006595	20	—	—
436422	2011	AX ₆₅	18.3	X	171.58279	86.23748	100.73946	3.23996	0.1075592	0.27535900	2.3399318	20	10 28.3	21.5
436423	2011	BV ₁	18.0	X	321.02825	9.44858	64.27342	4.83932	0.1134917	0.29430108	2.2384195	20	—	—
436424	2011	BD ₁₀	17.8	X	216.05847	84.72804	100.59603	4.17866	0.1542218	0.28834652	2.2691310	20	12 12.2	20.6
436425	2011	BW ₁₁	17.1	X	249.90358	25.38535	115.76797	7.85179	0.0731438	0.28714094	2.2754780	20	12 12.5	19.6
436426	2011	BF ₁₂	17.6	X	348.95427	165.50530	268.49671	6.23152	0.0725862	0.30067139	2.2066899	20	—	—
436427	2011	BE ₁₇	18.5	X	228.83130	321.17865	156.98671	2.17517	0.1664685	0.27428206	2.3460528	20	9 24.2	21.6
436428	2011	BY ₂₅	17.9	X	143.54812	213.63949	99.20538	4.90262	0.1857831	0.31075421	2.1586954	20	—	—
436429	2011	BS ₂₇	17.6	X	278.89330	105.04924	352.31349	5.50880	0.1205549	0.28098659	2.3085839	20	11 15.8	20.0
436430	2011	BA ₂₈	17.3	X	195.93691	347.63689	143.81155	7.92763	0.1160380	0.26482381	2.4015854	20	9 9.8	20.7
436431	2011	BW ₄₇	17.5	X	185.92459	292.67130	276.76789	4.84702	0.1221583	0.28334217	2.2957710	20	12 10.8	20.6
436432	2011	BD ₅₂	17.3	X	130.40653	135.93357	69.37774	3.19412	0.0757716	0.26859705	2.3790408	20	10 6.6	20.7
436433	2011	BK ₅₂	17.9	X	212.45343	137.30769	13.13251	5.95966	0.1716188	0.27754572	2.3276250	20	10 17.0	21.3
436434	2011	BX ₅₃	17.9	X	169.27499	48.93084	13.37044	1.44495	0.1095928	0.24332981	2.5410069	20	5 9.6	21.8
436435	2011	BP ₈₇	18.0	X	146.16040	333.26486	263.84614	3.82965	0.2395635	0.27315152	2.3525217	20	11 29.1	21.9
436436	2011	BS ₈₈	17.5	X	115.11214	355.44794	263.58461	5.35517	0.0840728	0.28082268	2.3094821	20	11 29.3	20.6
436437	2011	BY ₉₇	17.8	X	115.06641	163.79471	33.07213	4.89338	0.0925497	0.26221400	2.4174943	20	9 8.5	21.2
436438	2011	BU ₁₆₁	18.3	X	195.72818	75.36734	98.04464	3.68565	0.1364201	0.27964162	2.3159802	20	11 4.1	21.6
436439	2011	CR ₃	18.0	X	184.04420	30.48053	164.47314	5.23774	0.1563427	0.27852797	2.3221495	20	11 17.4	21.4
436440	2011	CA ₈	17.8	X	195.93612	15.38397	171.38843	5.82900	0.0581082	0.28200357	2.3030303	20	12 1.6	20.8
436441	2011	CD ₂₅	18.3	X	218.97344	319.75714	187.83617	4.00049	0.1275768	0.27848482	2.3223894	20	10 28.3	21.1
436442	2011	CR ₂₅	16.9	X	283.10064	137.03786	307.45118	5.78246	0.0828333	0.28040011	2.3118018	20	11 7.7	19.3
436443	2011	CR ₂₇	17.9	X	150.64382	110.23500	67.91052	2.19120	0.1266297	0.26513436	2.3997097	20	9 22.7	21.5
436444	2011	CJ ₄₄	18.2	X	99.48666	31.13862	232.21880	5.86223	0.0863308	0.27489802	2.3425470	20	11 16.8	21.5
436445	2011	CG ₄₈	18.2	X	227.73330	141.03036	349.20994	5.95259	0.1743270	0.27834286	2.3231789	20	10 6.7	21.4
436446	2011	CC ₄₉	17.9	X	158.48653	328.66757	239.25405	2.13722	0.1678844	0.27500119	2.3419611	20	11 6.2	21.7
436447	2011	CE ₅₄	18.4	X	146.16203	354.88797	222.26486	0.59544	0.1380666	0.27267250	2.3552761	20	11 6.9	22.1
436448	2011	CZ ₆₇	17.5	X	166.06207	155.26721	75.58802	3.16291	0.1596294	0.28075903	2.3098311	20	12 13.5	21.0
436449	2011	CK ₆₉	17.4	X	213.73330	81.37327	4.17100	4.87551	0.2164040	0.26347321	2.4097856	20	7 21.2	21.2
436450	2011	CQ ₇₂	17.8	X	260.15700	28.68414	88.89790	4.27911	0.1793306	0.28496821	2.2870296	20	11 8.1	19.9
436451	2011	CT ₇₄	17.5	X	72.36944	4.12931	139.39120	6.32904	0.2356736	0.23240616	2.6200181	20	5 23.6	20.9
436452	2011	CE ₇₉	16.9	X	91.91179	151.75848	309.28470	10.53306	0.1581882	0.22903029	2.6457010	20	4 2.9	20.6
436453	2011	CD ₈₀	17.7	X	166.40237	278.17017	289.80621	6.01699	0.1544802	0.27422911	2.3463548	20	11 12.8	21.4
436454	2011	CK ₈₀	17.6	X	118.67077	351.77023	260.64896	3.62208	0.1071013	0.27352293	2.3503916	20	11 23.8	21.0
436455	2011	CN ₈₆	18.0	X	139.58253	339.30755	208.54433	2.15166	0.1787749	0.26231131	2.4168964	20	9 23.0	21.9
436456	2011	CY ₈₈	17.5	X	326.62880	147.87371	279.61249	5.62321	0.1387924	0.28783750	2.2718054	20	—	—
436457	2011	CZ ₈₈	18.1	X	173.65610	289.68267	237.11680	4.03280	0.1450243	0.26647733	2.3916403	20	9 27.9	21.9
436458	2011	CE ₈₉	17.4	X	197.48327	216.40814	305.36168	6.09977	0.0739362	0.27354051	2.3502909	20	10 23.1	20.7
436459	2011	CK ₉₇	18.4	X	258.02611	289.18696	185.84628	6.13010	0.0551676	0.27961724	2.3161148	20	11 18.9	21.0
436460	2011	CT ₁₁₃	18.4	X	263.43822	234.40559	239.45310	2.30997	0.0481413	0.27981572	2.3150194	20	11 25.1	21.1
436461	2011	DQ ₁	17.6	X	85.89616	359.25425	266.09711	1.75433	0.1847217	0.26150290	2.4218749	20	11 10.2	21.2
436462	2011	DZ ₁	18.1	X	168.96031	48.89618	139.29103	5.64384	0.1306563	0.27294990	2.3536801	20	10 26.3	21.7
436463	2011	DV ₇	17.2	X	338.16447	144.29110	158.74137	4.15541	0.1184578	0.24130809	2.5551798	20	7 8.8	19.9
436464	2011	DG ₁₁	17.5	X	230.12967	208.44235	316.53711	5.95019	0.1127394	0.28660046	2.2783378	20	12 8.8	20.1
436465	2011	DQ ₁₃	17.9	X	160.76126	279.76775	322.04919	0.93618	0.1808398	0.28283640	2.2985071	20	12 21.1	21.4
436466	2011	DZ ₁₄	18.3	X	157.33232	295.69999	195.61081	1.56786	0.1481912	0.25511344	2.4621461	20	7 27.9	22.2
436467	2011	DC ₁₇	18.4	X	238.36860	143.07390	329.87777	2.25816	0.1510137	0.27285060	2.3542511	20	9 29.8	21.2
436468	2011	DK ₁₈	18.0	X	80.57785	219.82459	47.97935	1.92956	0.1550670	0.25963631	2.4334687	20	11 5.4	21.6
436469	2011	DN ₂₅	17.8	X	179.72044	74.39297	117.38620	2.23912	0.1342870	0.27469464	2.3437031	20	11 9.4	21.1
436470	2011	DO ₂₈	18.5	X										

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
436481 2011 EZ ₁₄	17.7	X	232.69503	319.11253	160.72687	5.49063	0.1357097	0.27161119	2.3614075	20	10 6.3	20.8
436482 2011 EK ₂₂	17.8	X	110.24382	96.35323	108.12053	5.57510	0.1498275	0.25443852	2.4664982	20	9 17.3	21.6
436483 2011 EO ₂₂	17.4	X	223.32746	81.16742	37.59856	5.05511	0.1006506	0.26817331	2.3815462	20	9 27.7	20.6
436484 2011 ES ₂₂	17.9	X	211.71615	62.82607	86.31459	3.47528	0.1594295	0.27237250	2.3570052	20	10 17.5	21.3
436485 2011 EQ ₂₄	17.6	X	115.38428	139.89153	94.12824	2.31743	0.1491333	0.26027706	2.4294733	20	10 28.9	21.2
436486 2011 EU ₂₅	17.2	X	59.18202	100.41447	72.99464	6.04252	0.2259997	0.22846588	2.6500566	20	6 11.2	20.1
436487 2011 EX ₃₂	18.0	X	130.91042	32.26358	171.40549	2.20497	0.1639405	0.25930902	2.4355159	20	10 5.3	21.9
436488 2011 EM ₃₅	17.9	X	149.23697	70.51082	158.99036	2.80183	0.1501803	0.27182850	2.3601488	20	11 25.4	21.6
436489 2011 EF ₃₆	17.4	X	192.36681	167.57823	10.24298	7.47545	0.1105202	0.27119579	2.3638183	20	11 3.9	20.8
436490 2011 EO ₃₆	17.2	X	73.20852	166.65876	14.53978	10.85221	0.0365917	0.23582413	2.5946407	20	6 10.6	20.7
436491 2011 EF ₄₀	17.5	X	165.27163	164.54637	13.85597	5.77927	0.1423869	0.26448793	2.4036182	20	10 6.1	21.2
436492 2011 EA ₄₂	17.6	X	155.48802	80.00769	98.95749	4.25699	0.1353202	0.26120153	2.4237375	20	9 29.3	21.3
436493 2011 EL ₄₂	17.9	X	141.33596	141.43863	43.15238	3.70775	0.1384057	0.25835111	2.4415324	20	9 21.5	21.6
436494 2011 EX ₄₆	17.8	X	146.69461	104.37047	92.15120	6.24246	0.1574044	0.26463232	2.4027438	20	10 14.3	21.6
436495 2011 EB ₆₃	16.2	X	219.29537	193.13341	136.13989	17.32712	0.1221688	0.21768773	2.7368232	20	3 8.9	20.6
436496 2011 ET ₇₀	17.5	X	220.60914	204.14710	287.13622	2.61041	0.1241901	0.27044576	2.3681866	20	10 5.1	20.8
436497 2011 EA ₈₃	18.4	X	136.37970	48.69724	155.29308	5.60953	0.1472743	0.26175004	2.4203502	20	10 12.6	22.3
436498 2011 EH ₈₃	18.1	X	213.53940	114.09427	6.66102	4.89088	0.1833256	0.26660049	2.3909037	20	9 8.2	21.5
436499 2011 ET ₈₃	18.1	X	194.49620	88.62597	70.32177	2.19556	0.1271844	0.26854131	2.3793700	20	10 13.5	21.5
436500 2011 FU ₁	17.7	X	113.75458	78.97892	166.90047	10.11777	0.2215745	0.26087199	2.4257782	20	11 15.5	21.9
436501 2011 FX ₁	17.5	X	215.52335	351.31866	141.97354	10.43475	0.1947067	0.26917039	2.3756613	20	9 27.9	21.1
436502 2011 FZ ₁	17.3	X	120.72232	106.77818	119.87684	9.61175	0.2036634	0.25955094	2.4340023	20	10 29.8	21.5
436503 2011 FN ₅	17.8	X	99.56094	16.77188	149.52002	5.35063	0.1234549	0.24040487	2.5615757	20	7 9.7	21.5
436504 2011 FG ₇	17.9	X	160.63588	173.54372	8.55495	3.42999	0.1861604	0.26198572	2.4188984	20	10 4.8	21.8
436505 2011 FO ₁₀	18.0	X	114.00849	16.53057	200.78082	2.63851	0.1381220	0.25657848	2.4527647	20	10 4.2	21.7
436506 2011 FE ₁₂	16.4	X	62.77465	175.45912	32.92736	18.12018	0.1207286	0.23287315	2.6165142	20	7 24.3	20.2
436507 2011 FA ₁₇	17.3	X	202.05164	106.85060	73.33047	7.21667	0.0522053	0.27629556	2.3346410	20	11 29.2	20.1
436508 2011 FW ₂₇	17.6	X	130.62733	221.21586	355.94494	0.95377	0.1239618	0.26238743	2.4164290	20	10 20.8	21.1
436509 2011 FZ ₂₉	18.1	X	184.29261	94.82316	74.80672	2.99599	0.1376579	0.26649385	2.3915415	20	10 15.7	21.7
436510 2011 FZ ₃₆	17.3	X	33.53673	136.78343	112.79184	5.05971	0.2375363	0.23579872	2.5948271	20	8 22.2	20.0
436511 2011 FJ ₄₁	17.1	X	148.94143	142.32111	89.14768	8.77663	0.0718430	0.27406251	2.3473056	20	12 1.1	20.3
436512 2011 FC ₄₅	17.7	X	52.40000	224.26618	27.52749	8.71876	0.1248379	0.24473832	2.5312482	20	9 8.5	21.0
436513 2011 FM ₄₅	17.5	X	226.30719	311.48921	180.79185	6.64360	0.0698519	0.26597828	2.3946310	20	10 23.7	20.5
436514 2011 FP ₄₅	17.8	X	127.42146	135.92202	93.42027	3.60937	0.1522816	0.25932581	2.4354108	20	11 3.7	21.6
436515 2011 FO ₄₇	17.0	X	87.53895	3.06316	195.41211	9.24034	0.0530779	0.23712174	2.5851662	20	7 26.2	20.7
436516 2011 FA ₅₁	17.0	X	204.88494	24.85721	132.25914	6.19005	0.0689384	0.26603675	2.3942801	20	10 31.1	20.2
436517 2011 FY ₅₆	17.5	X	175.49707	317.46249	211.35022	5.81413	0.0877722	0.25997184	2.4313744	20	10 5.4	21.0
436518 2011 FQ ₆₃	17.9	X	153.90923	135.84235	36.33956	6.39537	0.1275746	0.25715582	2.4490923	20	9 18.9	21.6
436519 2011 FP ₈₀	17.7	X	55.52502	270.45946	1.48827	5.26391	0.1073895	0.25467031	2.4650014	20	10 4.6	20.9
436520 2011 FT ₈₂	17.9	X	94.95393	224.28337	48.91075	2.20958	0.1593087	0.26289792	2.4132998	20	11 27.0	21.4
436521 2011 FA ₁₂₁	17.6	X	246.10351	82.68911	6.18647	6.38577	0.0830099	0.26175452	2.4203226	20	9 17.5	20.7
436522 2011 FA ₁₂₆	16.5	X	344.67554	274.88591	5.96486	16.60014	0.0619648	0.23534028	2.5981958	20	6 19.1	20.0
436523 2011 FB ₁₂₇	16.6	X	330.34522	218.10917	62.48502	14.54957	0.1349719	0.23152067	2.6266943	20	5 19.9	19.5
436524 2011 FR ₁₂₇	16.8	X	15.31695	199.05256	119.11053	11.94702	0.0658777	0.26128370	2.4232293	20	10 12.4	19.9
436525 2011 FS ₁₂₈	18.3	X	176.37541	75.43228	191.60334	1.40847	0.1283043	0.29053386	2.2577276	20	—	—
436526 2011 FJ ₁₃₂	16.5	X	112.39262	173.58595	354.66136	27.69254	0.1501886	0.24317693	2.5420717	20	8 12.8	20.8
436527 2011 FE ₁₃₃	18.4	X	216.71405	139.05469	339.42997	2.08225	0.1550223	0.26711341	2.3878420	20	9 10.4	21.6
436528 2011 FW ₁₃₃	18.6	X	159.53842	221.20560	323.18451	0.93349	0.1175132	0.26458241	2.4030459	20	10 8.4	22.0
436529 2011 FW ₁₄₀	16.1	X	51.83591	189.79587	38.33419	16.32146	0.1255364	0.23439505	2.6051762	20	8 7.5	19.7
436530 2011 FC ₁₄₂	17.7	X	107.65513	140.95743	44.31887	11.35530	0.1510786	0.24355742	2.5394235	20	8 22.9	21.7
436531 2011 FD ₁₄₃	17.6	X	24.64618	261.90155	29.54690	11.03319	0.2827264	0.24007524	2.5639200	20	10 14.9	20.4
436532 2011 FM ₁₄₇	17.4	X	71.81270	176.04798	54.07693	8.20382	0.1755764	0.24288939	2.5440776	20	9 12.4	21.0
436533 2011 FD ₁₅₃	16.9	X	44.73228	162.11548	125.42604	6.82213	0.1125404	0.25655616	2.4529070	20	10 16.4	20.0
436534 2011 FN ₁₅₄	17.4	X	19.50945	234.52733	35.69732	8.72328	0.1423207	0.23522971	2.5990099	20	8 14.7	20.3
436535 2011 FO ₁₅₄	17.6	X	33.04089	45.09041	201.31316	1.02455	0.1808108	0.23284903	2.6166949	20	8 4.5	20.4
436536 2011 GO ₃	17.0	X	78.43100	192.57802	66.68584	3.97748	0.1820549	0.25188426	2.4831447	20	10 25.9	20.7
436537 2011 GW ₃	17.7	X	144.00656	36.27254	168.16725	5.03821	0.0986058	0.25965686	2.4333403	20	10 19.3	21.2
436538 2011 GJ ₄	18.0	X	115.70692	86.21232	181.24289	2.13720	0.2239844	0.26582375	2.3955589	20	12 11.2	22.0
436539 2011 GO ₆	17.2	X	230.15457	48.32871	60.27596	7.25087	0.0808165	0.26271479	2.4144212	20	9 26.8	20.4
436540 2011 GC ₂₈	17.5	X	154.15109	321.80004	204.23722	6.78225	0.1187837	0.25470564	2.4647734	20	9 6.2	21.4
436541 2011 GF ₃₃	17.5	X	164.88674	319.25694	220.60195	6.02644	0.0661692	0.26043862	2.4284684	20	10 8.7	20.8
436542 2011 GZ ₄₂	17.9	X	122.08369	182.61596	55.27731	2.23542	0.1399242	0.26596363	2.3947190	20	11 8.9	21.4
436543 2011 GK ₄₆	17.4	X	132.12645	167.19575	66.94545	5.85335	0.0850672	0.26573981	2.3960634	20	11 13.9	20.8
436544 2011 GV ₄₆	17.2	X	344.11290	63.16938	203.10197	11.50942	0.1599564	0.22337479	2.6901713	20	5 23.9	20.0
436545 2011 GZ ₄₈	17.3	X	109.49794	99.64533	16.88300	17.01399	0.1395518	0.22746517	2.6578234	20	5 12.9	21.3
436546 2011 GY ₅₆	16.6	X	0.09353	203.72430	38.69826	14.02435	0.0527893	0.22665870	2.6641241	20	5 18.4	20.0
436547 2011 GK ₅₈	17.3	X	121.74601	334.67703	188.52703	13.27354	0.1687904	0.24155928	2.5534081	20	8 1.1	21.5
436548 2011 GW ₆₉	17.4	X	124.02688	322.78727	195.51168	4.28412	0.1721540	0.24108980	2.5567219	20	7 29.9	21.5
436549 2011 GE ₇₈	17.3	X	47.50315	79.16399	173.79913	24.62148	0.0581825	0.24196397	2.5505602	20	8 16.3	20.9
436550 2011 GA ₇₉	18.0	X	159.46240	208.54139	350.87757	0.92598	0.1258785	0.26537769	2.3982426	20	10 27.5	21.7
436551 2011 GD ₈₃	17.0	X	94.92116	132.89165	58.67943	11.05531	0.0217853	0.24052168	2.5607463	20	7 27.6	20.6
436552 2011 GR ₈₅	16.8	X	125.66391	106.56306	121.97430	15.55939	0.1872593	0.26030588	2.4292939	20	11 7.1	21.1
436553 2011 GV ₈₆	17.7	X	90.40899	252.83896	23.10919	6.46327	0.1242686	0.2				

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>		
436561	2011	HY ₂₅	15.8 ^m	X	180.70033	18.81693	64.09788	22.82323	0.0352909	0.22947492	2.6422824	20	6 15.9	19.6
436562	2011	HY ₂₇	17.5	X	141.36659	164.71304	54.03026	2.13027	0.1421957	0.26185656	2.4196938	20	11 2.8	21.2
436563	2011	HJ ₃₁	17.6	X	72.37081	47.81312	175.59545	0.95046	0.0798493	0.24239938	2.5475050	20	8 16.1	20.9
436564	2011	HJ ₃₃	17.5	X	27.88214	77.50918	176.67746	8.67870	0.0802766	0.23415808	2.6069335	20	7 22.0	20.7
436565	2011	HJ ₄₃	16.5	X	273.93081	229.52827	109.14016	15.26713	0.1734540	0.21884495	2.7271668	20	5 14.4	20.6
436566	2011	HZ ₄₄	17.3	X	115.91070	323.74365	203.21275	11.68304	0.1172498	0.23902155	2.5714495	20	7 26.0	21.3
436567	2011	HL ₅₂	16.4	X	14.38177	174.15155	96.98519	14.76037	0.0228191	0.23348854	2.6119148	20	7 21.9	19.7
436568	2011	HB ₅₃	17.4	X	206.96836	351.07981	83.78744	30.04848	0.7035257	0.27100525	2.3649262	20	6 13.5	22.9
436569	2011	HH ₅₄	16.9	X	208.26971	319.02891	148.26998	8.12934	0.1004015	0.24734426	2.5134379	20	8 20.7	20.3
436570	2011	HP ₅₄	16.3	X	273.31121	274.95354	86.47157	22.86828	0.0353757	0.22859649	2.6490471	20	6 28.0	19.8
436571	2011	HR ₆₄	16.9	X	162.12741	24.33437	77.72735	13.73995	0.1419611	0.23759526	2.5817302	20	6 23.7	20.9
436572	2011	HV ₆₅	18.0	X	103.86330	41.18205	227.36746	0.64699	0.1992034	0.26181640	2.4199913	20	12 1.5	21.9
436573	2011	HL ₇₁	17.2	X	211.07250	235.73288	269.79775	5.39258	0.0751832	0.26129879	2.4231360	20	10 16.5	20.6
436574	2011	HY ₇₁	17.3	X	357.45480	152.59885	178.48919	3.67417	0.2448556	0.23864725	2.5741376	20	10 12.9	19.3
436575	2011	HV ₇₇	17.2	X	2.10979	240.45102	73.16635	8.08310	0.1946805	0.23632459	2.5909763	20	9 22.9	19.8
436576	2011	HR ₇₉	17.8	X	32.51129	154.85965	126.88417	5.81533	0.1238434	0.24022548	2.5628509	20	9 18.3	20.8
436577	2011	HZ ₈₄	16.6	X	34.71758	87.62135	178.27369	12.18752	0.0603876	0.23627977	2.5913039	20	8 15.3	20.0
436578	2011	HY ₉₁	18.4	X	87.50183	139.41602	146.42713	2.83663	0.2044820	0.25890569	2.4380446	20	12 8.4	22.2
436579	2011	HF ₉₇	17.6	X	9.19503	86.17709	200.41711	12.99539	0.1993320	0.23137036	2.6278318	20	8 16.8	20.4
436580	2011	HF ₉₈	17.4	X	144.10727	305.15536	217.58429	13.69587	0.0994143	0.24307303	2.5427961	20	8 17.6	21.6
436581	2011	HA ₉₉	17.7	X	132.64474	60.10356	117.21495	4.47134	0.1265469	0.24436528	2.5338237	20	9 1.4	21.5
436582	2011	HF ₁₀₀	17.3	X	233.78198	345.77019	132.41334	7.84331	0.0645801	0.25743325	2.4473387	20	10 16.1	20.5
436583	2011	HW ₁₀₀	16.7	X	23.31605	354.43875	520.50065	3.79590	0.3063699	0.24330070	2.5412095	20	11 21.5	19.8
436584	2011	JA ₂	17.1	X	140.36734	16.47805	119.87854	6.63270	0.1723396	0.24192651	2.5508235	20	7 18.6	21.2
436585	2011	JC ₇	17.3	X	84.88012	117.48009	62.62741	11.37380	0.1577855	0.23165217	2.6257001	20	7 16.5	21.1
436586	2011	JQ ₇	17.8	X	27.72624	209.86079	78.42757	9.98681	0.1516775	0.23861781	2.5743493	20	9 27.9	21.0
436587	2011	JW ₈	16.4	X	173.44185	342.13849	111.27882	13.88925	0.1401524	0.23306514	2.6150771	20	6 24.5	20.6
436588	2011	JJ ₁₀	16.0	X	186.36708	273.12737	204.73022	25.52110	0.1239351	0.24083128	2.5585513	20	8 1.8	20.5
436589	2011	JA ₂₁	17.0	X	85.09881	337.23115	174.27878	12.48037	0.1080961	0.22324204	2.6912377	20	5 31.9	20.9
436590	2011	JG ₂₁	16.8	X	338.63039	238.72077	106.94718	10.17654	0.2327679	0.23695603	2.5863713	20	9 21.3	18.9
436591	2011	JA ₂₇	16.9	X	343.08280	258.82337	41.13627	14.66063	0.1305311	0.23396195	2.6083902	20	7 16.2	19.9
436592	2011	JL ₂₇	16.5	X	2.55822	204.97909	67.31313	13.71993	0.1377261	0.22897002	2.6461653	20	7 10.5	19.4
436593	2011	JN ₂₇	17.0	X	10.51846	22.61801	272.76547	5.01440	0.2368111	0.23284751	2.6167063	20	9 9.7	19.4
436594	2011	KR ₂	17.2	X	57.49861	211.31343	72.10722	7.14681	0.1437496	0.24579125	2.5240140	20	10 29.0	20.6
436595	2011	KK ₃	16.6	X	78.00891	78.09769	149.19907	5.05936	0.1119609	0.23848038	2.5753383	20	9 2.8	20.0
436596	2011	KL ₃	16.5	X	164.86958	283.51827	216.62823	13.78569	0.0575748	0.23888167	2.5724533	20	8 10.4	20.5
436597	2011	KB ₅	16.8	X	46.48474	132.77818	148.86631	17.84749	0.2132192	0.23963193	2.5670811	20	10 25.6	20.6
436598	2011	KP ₅	16.6	X	218.96299	219.67335	224.65019	9.34047	0.1382977	0.24284488	2.5443885	20	7 26.1	20.6
436599	2011	KE ₇	16.1	X	344.92442	223.91353	131.70272	15.38996	0.1274279	0.24075285	2.5591069	20	10 17.9	19.1
436600	2011	KQ ₈	16.6	X	10.73902	57.78715	233.54122	14.19720	0.1120103	0.23625961	2.5914514	20	8 14.7	19.9
436601	2011	KJ ₁₀	17.3	X	103.39322	121.29853	81.75985	4.44205	0.0918134	0.24141806	2.5544038	20	8 31.8	20.9
436602	2011	KY ₁₁	16.4	X	50.25299	345.53360	245.22336	18.43967	0.0877138	0.22980096	2.6397825	20	7 19.7	20.1
436603	2011	KF ₁₂	16.3	X	49.78624	2.21394	253.00479	13.28282	0.1249669	0.23531605	2.5983741	20	8 27.7	20.0
436604	2011	KH ₁₇	16.4	X	342.40858	211.35127	89.28073	10.69431	0.0799954	0.22819056	2.6521878	20	7 14.5	19.4
436605	2011	KW ₂₀	16.7	X	69.41543	45.11322	96.64724	9.90087	0.0906098	0.21579793	2.7527781	20	4 26.9	20.4
436606	2011	KD ₂₆	16.0	X	132.83194	158.93304	217.67706	8.10377	0.0780229	0.18814363	3.0163128	20	2 2.6	20.5
436607	2011	KH ₂₆	16.9	X	236.28823	110.27633	247.13389	2.87480	0.1161289	0.21036921	2.7999349	20	4 27.0	21.1
436608	2011	KP ₂₆	17.7	X	100.32623	60.74855	147.03467	4.15927	0.1579467	0.24303239	2.5430795	20	9 8.9	21.3
436609	2011	KC ₂₇	16.9	X	12.78115	227.00891	67.64963	8.58016	0.1915632	0.23460060	2.6036542	20	9 15.5	19.7
436610	2011	KK ₂₇	16.6	X	44.97814	27.06909	260.40214	6.91558	0.2091873	0.24193121	2.5507904	20	10 23.0	20.0
436611	2011	KE ₃₂	16.9	X	22.76258	236.32577	72.19216	15.77893	0.1454169	0.24117918	2.5560902	20	10 19.9	20.2
436612	2011	KH ₃₂	17.6	X	63.54770	208.78583	72.59353	13.37579	0.1583618	0.24632480	2.5203680	20	11 5.9	21.3
436613	2011	KK ₃₃	17.3	X	53.52275	95.74886	163.30413	7.64929	0.1601477	0.23797313	2.5789966	20	9 21.5	20.5
436614	2011	KT ₃₃	17.3	X	68.22201	145.51901	110.54905	5.95172	0.2074578	0.24247601	2.5469682	20	10 14.7	21.0
436615	2011	KK ₃₅	16.8	X	84.70610	62.55136	185.22244	7.86259	0.1713130	0.24403223	2.5361285	20	10 15.5	20.6
436616	2011	LC ₁	17.3	X	35.54992	90.14618	194.26602	10.57859	0.3709047	0.23428104	2.6060213	20	11 2.5	20.8
436617	2011	LE ₂	17.3	X	336.39102	173.86920	142.15997	6.01467	0.1619606	0.22642031	2.6659937	20	7 21.5	19.8
436618	2011	LU ₂	15.5	X	192.67419	148.83693	227.92452	26.59989	0.1485241	0.17798259	3.1300482	20	4 5.8	20.9
436619	2011	LN ₉	17.9	X	67.19533	119.58427	181.47657	2.85979	0.2041789	0.25224550	2.4807734	20	12 7.2	21.6
436620	2011	LF ₁₂	17.1	X	43.35058	180.32723	104.89553	4.32732	0.1850514	0.24045618	2.5612114	20	10 18.6	20.4
436621	2011	LN ₁₃	17.1	X	307.10169	247.40422	85.47545	8.94130	0.0837603	0.22530886	2.6747542	20	7 1.3	20.2
436622	2011	LO ₂₂	16.3	X	352.11737	215.88400	119.33554	13.51269	0.1934473	0.23717354	2.5847897	20	10 6.7	19.0
436623	2011	LQ ₂₄	16.3	X	150.72923	8.27193	94.37626	13.35145	0.1240177	0.22399115	2.6852340	20	6 13.2	20.4
436624	2011	MD ₃	16.8	X	349.65191	197.19202	129.18449	15.01698	0.1061439	0.22312034	2.6922162	20	9 5.2	19.9
436625	2011	MX ₃	17.0	X	37.78780	136.32551	146.68947	14.02735	0.2591371	0.23015021	2.6371113	20	10 20.5	20.6
436626	2011	MP ₄	16.9	X	130.10647	39.96541	252.32325	10.22397	0.2326777	0.25945479	2.4346036	20	—	—
436627	2011	MF ₅	16.3	X	9.32228	12.61725	280.41819	13.08330	0.2374772	0.22485682	2.6783377	20	8 27.9	19.1
436628	2011	OC ₂	16.4	X	318.27459	341.30151	276.25529	9.24975	0.0619372	0.19132691	2.9827626	20	4 5.3	20.6
436629	2011	OE ₂	16.6	X	219.52617	219.61476	174.26996	12.26429	0.1482705	0.19616045	2.9335607	20	5 25.9	21.4
436630														

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
436641 2011 QM ₁₉	16.1	X	218.04179	165.09356	174.28194	18.00638	0.2177303	0.18202771	3.0835031	20	3 15.9	21.3
436642 2011 QG ₂₂	17.1	X	260.61514	153.47075	191.50789	9.99016	0.0794188	0.19721542	2.9230897	20	5 15.8	21.3
436643 2011 QS ₂₃	15.8	X	76.46311	195.86534	292.46348	10.27139	0.0698337	0.18371507	3.0645934	20	4 8.0	20.2
436644 2011 QG ₂₅	16.4	X	242.51220	350.30157	349.22671	11.92527	0.1136238	0.18624649	3.0367613	20	4 9.3	21.2
436645 2011 QV ₂₆	16.3	X	257.85080	165.27288	186.15634	7.05374	0.2295001	0.19967230	2.8990620	20	5 2.5	20.8
436646 2011 QJ ₃₁	15.9	X	199.50164	156.11367	231.39628	8.58921	0.1021671	0.18978001	2.9989490	20	4 27.9	20.6
436647 2011 QN ₇₆	16.6	X	225.37752	205.60536	137.88583	1.61753	0.1820530	0.18210912	3.0825840	20	3 28.6	21.7
436648 2011 QQ ₈₀	15.8	X	351.38516	266.07966	280.28794	7.86304	0.0286701	0.17472300	3.1688572	20	2 26.2	20.3
436649 2011 QX ₉₈	16.9	X	286.39708	104.05749	214.55069	16.38250	0.1561270	0.19636803	2.9314930	20	5 1.9	20.8
436650 2011 RB ₉	16.7	X	292.46764	91.27209	200.62221	10.79186	0.0496113	0.19139436	2.9820617	20	4 21.8	20.7
436651 2011 RC ₁₀	16.6	X	329.58862	40.30338	286.45875	2.90133	0.2064438	0.21167732	2.7883877	20	7 18.2	19.3
436652 2011 RK ₁₁	16.6	X	1.70575	9.78838	348.66823	15.15161	0.2863347	0.22651132	2.6652796	20	11 29.6	19.7
436653 2011 RV ₁₁	15.8	X	196.31291	165.93405	192.16537	9.89488	0.0856733	0.17252952	3.1956590	20	3 21.4	20.8
436654 2011 RR ₁₂	19.3	X	283.06770	182.48424	195.02365	7.08310	0.3267211	0.43024224	1.7377769	20	6 24.1	20.4
436655 2011 RC ₁₄	17.1	X	11.34986	48.04265	188.73412	16.15260	0.1905875	0.20226755	2.8742105	20	6 7.1	20.3
436656 2011 RR ₁₄	15.8	X	223.79235	323.25016	24.46017	14.47135	0.1768584	0.17965962	3.1105396	20	4 3.0	20.8
436657 2011 RK ₁₇	16.8	X	264.80976	122.42929	197.47026	9.41825	0.1061388	0.18964188	3.0004050	20	4 14.7	21.1
436658 2011 RO ₁₈	16.4	X	223.20156	242.15836	82.93993	1.85432	0.1472941	0.17481917	3.1676949	20	3 7.9	21.5
436659 2011 SU ₁	16.1	X	278.78661	264.83423	334.17507	5.20286	0.0748217	0.16791873	3.2538932	20	1 30.6	20.9
436660 2011 SF ₇	16.0	X	212.74231	98.38046	253.59656	8.33765	0.1110157	0.17781471	3.1320181	20	3 26.5	21.0
436661 2011 SX ₂₈	16.1	X	203.66035	156.46285	202.92840	15.62468	0.2890166	0.17568315	3.1573009	20	3 25.4	21.8
436662 2011 SX ₃₂	16.0	X	255.09252	146.85562	175.47475	10.09068	0.1439324	0.18534424	3.0466085	20	4 3.7	20.6
436663 2011 SF ₃₃	16.7	X	29.72314	171.54722	173.43610	13.01857	0.1808606	0.23261792	2.6184278	20	12 13.9	20.4
436664 2011 SZ ₃₃	16.4	X	89.16504	256.89158	216.46349	9.29695	0.1072076	0.17971073	3.1099498	20	4 16.1	20.7
436665 2011 ST ₅₂	16.6	X	258.73723	130.57192	187.02662	9.78957	0.0905194	0.18148139	3.0896882	20	4 7.6	21.1
436666 2011 ST ₅₄	16.4	X	252.84427	161.67562	159.97351	5.82831	0.1469837	0.18003609	3.1062018	20	3 31.7	21.3
436667 2011 SR ₆₀	16.8	X	293.20711	349.37334	280.47047	1.21093	0.1731066	0.18565790	3.0431761	20	3 7.4	21.1
436668 2011 SL ₆₃	15.3	X	14.28756	162.66364	229.89109	13.21213	0.2146885	0.12574617	3.9458407	20	12 23.1	20.2
436669 2011 SW ₆₆	16.1	X	302.15167	226.27087	63.56759	18.13872	0.1479023	0.18548802	3.0450340	20	4 23.8	20.3
436670 2011 SH ₆₉	16.8	X	257.94674	190.39128	145.87097	13.91304	0.1796843	0.18735362	3.0247860	20	4 12.9	21.9
436671 2011 SV ₇₁	18.0	X	52.55279	190.47966	80.61530	13.43053	0.6112029	0.23176505	2.6248475	20	11 24.8	23.0
436672 2011 SQ ₈₀	16.1	X	203.38657	170.64384	188.52905	10.18428	0.0768273	0.17735463	3.1374323	20	3 30.5	20.9
436673 2011 SF ₉₇	15.6	X	195.96439	84.55694	283.33131	10.77453	0.0873762	0.17630693	3.1498494	20	3 27.5	20.7
436674 2011 SM ₁₀₀	16.4	X	171.71155	155.94545	262.67628	7.12466	0.0960673	0.18760495	3.0220839	20	5 7.5	21.1
436675 2011 SL ₁₁₃	16.1	X	194.32605	190.94503	184.93329	15.02532	0.2207397	0.17685936	3.1432869	20	4 10.1	21.6
436676 2011 SJ ₁₁₆	16.0	X	232.56059	189.49857	166.60282	9.59983	0.1489684	0.18404832	3.0608930	20	4 22.9	20.9
436677 2011 SG ₁₂₀	16.3	X	161.66303	241.05083	162.99577	9.78225	0.0937048	0.17553585	3.1590672	20	4 13.5	21.2
436678 2011 SU ₁₂₂	16.2	X	248.68204	100.25189	207.35713	24.55381	0.2369430	0.17444525	3.1722199	20	2 27.0	21.8
436679 2011 SR ₁₂₆	16.2	X	226.36298	281.98247	47.96166	5.73316	0.1374640	0.17334358	3.1856462	20	3 18.5	21.3
436680 2011 SC ₁₃₈	16.5	X	260.07216	145.63610	189.85256	9.71176	0.1259704	0.18751437	3.0230571	20	4 27.3	21.0
436681 2011 SB ₁₄₁	15.8	X	246.21770	233.55400	22.60714	10.32153	0.0383415	0.15339346	3.4561943	20	1 22.8	21.0
436682 2011 SM ₁₄₃	16.4	X	220.61024	122.06423	194.78335	25.77132	0.2153976	0.17062517	3.2193929	20	2 18.1	22.2
436683 2011 SX ₁₄₄	16.3	X	234.32840	352.76597	2.62317	6.14566	0.1316752	0.18194690	3.0844160	20	4 21.2	21.0
436684 2011 SY ₁₄₇	16.2	X	224.35479	341.22030	6.30163	10.94635	0.1185919	0.17986289	3.1081956	20	4 3.5	21.0
436685 2011 SE ₁₅₇	16.5	X	218.45462	157.02932	182.15094	4.15533	0.1623773	0.17619037	3.1512385	20	3 18.2	21.7
436686 2011 SL ₁₆₈	16.8	X	267.71787	100.23481	216.31303	4.27272	0.1874482	0.18427136	3.0584226	20	4 3.0	21.4
436687 2011 SX ₁₈₀	16.8	X	280.61644	128.55020	201.97266	5.47283	0.1739125	0.19009450	2.9956404	20	5 7.8	21.0
436688 2011 SU ₁₈₅	16.3	X	279.74667	85.85802	211.90270	8.37997	0.0994264	0.1800455	3.1060945	20	4 4.9	20.7
436689 2011 SM ₁₉₄	16.8	X	276.75940	86.41804	223.62278	1.12343	0.0781405	0.18832554	3.0143700	20	4 19.9	21.1
436690 2011 SL ₁₉₆	16.8	X	303.50123	95.90515	181.76355	3.04957	0.1132011	0.18787018	3.0192390	20	4 8.9	20.9
436691 2011 SO ₁₉₈	16.6	X	227.99590	261.01456	58.36874	2.95938	0.0994548	0.17631643	3.1497363	20	3 8.6	21.5
436692 2011 SY ₁₉₉	16.6	X	300.94690	274.78774	25.01758	2.95284	0.0882129	0.19411169	2.9541662	20	5 6.5	20.5
436693 2011 SE ₂₁₅	16.0	X	177.52283	207.84233	188.23345	11.74322	0.1262926	0.17102754	3.2143415	20	4 19.6	21.2
436694 2011 SR ₂₂₅	16.1	X	255.17975	96.69141	209.72334	24.88368	0.2862111	0.17859571	3.1228805	20	3 4.2	21.5
436695 2011 ST ₂₄₇	15.5	X	224.66763	299.06386	63.89744	27.76772	0.2708204	0.17642533	3.1484401	20	4 25.7	21.2
436696 2011 SF ₂₅₆	16.4	X	216.35103	306.56799	43.14778	5.18859	0.1848802	0.17453959	3.1710768	20	3 29.6	21.7
436697 2011 SL ₂₅₆	16.3	X	253.03602	130.30207	189.76806	12.12635	0.1496055	0.17690524	3.1427434	20	3 28.5	21.2
436698 2011 SX ₂₆₉	15.8	X	235.80825	297.53027	52.85757	21.69238	0.1405870	0.17955768	3.1117168	20	4 23.3	20.8
436699 2011 SS ₂₇₄	15.9	X	220.31215	143.71300	176.61566	27.74581	0.1775912	0.17461903	3.1701149	20	2 25.1	21.3
436700 2011 SQ ₂₇₅	16.6	X	229.52073	169.89591	166.28583	2.90360	0.1457892	0.18178781	3.0862153	20	3 25.7	21.4
436701 2011 ST ₂₇₅	15.6	X	220.06712	243.92544	101.44911	17.07336	0.0855512	0.17327946	3.1864320	20	4 8.7	20.8
436702 2011 TZ ₁	15.8	X	245.61370	149.53133	210.96101	9.51055	0.3106121	0.18574291	3.0422475	20	4 24.9	21.0
436703 2011 TQ ₄	16.0	X	237.95333	180.26948	167.67458	11.60658	0.1575524	0.18541395	3.0458448	20	4 17.7	20.9
436704 2011 TO ₁₀	16.0	X	313.79470	70.38022	189.73571	26.70537	0.1264455	0.18208303	3.0828784	20	3 29.8	20.1
436705 2011 TB ₁₁	15.7	X	222.05761	164.51713	181.02673	13.34617	0.0686325	0.17672131	3.1449236	20	4 4.1	20.3
436706 2011 TZ ₁₂	15.8	X	262.01731	263.50132	45.93071	15.23114	0.1272819	0.17735794	3.1373932	20	4 2.5	20.6
436707 2011 TW ₁₅	16.1	X	178.13450	154.04552	213.04419	11.60171	0.1541027	0.17157085	3.2075521	20	3 13.6	21.4
436708 2011 TZ ₁₆	16.2	X	255.55579	261.08706	57.25776	9.79010	0.1546372	0.18096354	3.0955797	20	4 1.6	21.0
436709 2011 UT ₁₇	15.9	X	258.20429	258.68022	41.28267	14.16151	0.2883191	0.17874530	3.1211379	20	3 4.6	21.3
436710 2011 UY ₁₉	15.6	X	261.15774	279.72353	52.12030	26.90086	0.2207443	0.18104856	3.0946105	20	4 21.0	20.6
436711 2011 UH ₄₆	16.1	X	233.29375	103.53573	253.12946	8.78497	0.1706099	0.18005593	3.1059736	20	4 18.1	21.2
436712 2011 UM ₅₇	16.5	X	234.68049	220.92322	113.59793	2.59960	0.1852801	0.17573379	3.1566943	20	3 26.9	21.5
436713 2011 UU ₅₈	16.5	X	208.93319									

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
436721 2011 <i>UM</i> ₁₂₄	15.6	X	276.20310	230.95171	36.21579	16.29897	0.2012305	0.17315690	3.1879354	20	2 21.2	20.8
436722 2011 <i>UW</i> ₁₂₇	16.3	X	207.64274	287.84479	82.53928	7.40040	0.0979011	0.17482751	3.1675942	20	4 19.7	21.3
436723 2011 <i>UB</i> ₁₅₅	16.5	X	261.70174	176.88435	166.32651	9.95358	0.1751943	0.19091253	2.9870771	20	5 3.9	21.1
436724 2011 <i>UW</i> ₁₅₈	19.9	X	129.80916	8.77041	285.98885	4.57248	0.3764018	0.47769732	1.6206933	20	—	—
436725 2011 <i>UP</i> ₁₆₉	16.0	X	278.28816	268.08984	0.14109	14.41933	0.0943888	0.17018000	3.2250048	20	3 3.9	20.6
436726 2011 <i>UD</i> ₁₇₀	15.9	X	310.35276	13.89150	260.23280	7.75408	0.0873101	0.18232153	3.0801893	20	4 14.6	20.1
436727 2011 <i>UB</i> ₁₇₁	16.2	X	251.80963	80.26496	249.46533	8.26611	0.0454027	0.17999814	3.1066384	20	4 17.2	20.8
436728 2011 <i>UC</i> ₁₇₇	16.0	X	160.28455	83.40516	265.16739	2.75667	0.1032085	0.15058532	3.4990296	20	2 6.9	21.4
436729 2011 <i>UO</i> ₁₇₈	16.5	X	244.11092	240.87498	110.95694	4.37103	0.3129066	0.18307186	3.0717673	20	4 15.5	21.8
436730 2011 <i>UL</i> ₁₉₃	15.9	X	245.45451	110.76663	219.18187	14.63624	0.1617816	0.18015266	3.1048617	20	3 29.1	21.0
436731 2011 <i>UO</i> ₁₉₃	16.4	X	266.07201	270.32140	75.18170	6.17809	0.1591311	0.18996595	2.9969917	20	5 11.9	20.7
436732 2011 <i>UV</i> ₂₀₆	16.2	X	264.02950	244.87463	44.42417	26.76591	0.2503620	0.17471726	3.1689266	20	3 9.4	21.8
436733 2011 <i>UP</i> ₂₇₁	16.0	X	219.21105	74.84026	269.88317	5.66898	0.1817521	0.17181476	3.2045157	20	3 22.0	21.3
436734 2011 <i>UG</i> ₂₉₂	16.5	X	194.95180	192.16919	188.12077	15.86825	0.0855497	0.17384014	3.1795769	20	4 17.7	21.4
436735 2011 <i>UX</i> ₂₉₉	15.4	X	285.77863	64.48555	233.56964	25.63263	0.1966502	0.17493673	3.1662756	20	3 25.6	20.4
436736 2011 <i>UA</i> ₃₂₈	16.4	X	263.18318	207.65248	120.03428	5.91643	0.1369551	0.18176142	3.0865139	20	4 21.3	21.0
436737 2011 <i>UV</i> ₃₅₅	16.2	X	228.44565	173.01465	176.22663	7.45009	0.1462889	0.17787615	3.3132968	20	4 10.1	21.2
436738 2011 <i>UN</i> ₄₀₅	16.1	X	274.74770	111.39073	193.59460	14.86222	0.0752284	0.17818316	3.1276990	20	4 13.0	20.4
436739 2011 <i>UK</i> ₄₀₆	15.4	X	226.79978	223.11713	125.45377	16.51852	0.1510136	0.17644773	3.1481736	20	4 13.1	20.7
436740 2011 <i>VN</i> ₉	16.4	X	290.32489	148.66112	162.16940	14.66554	0.1084381	0.18390485	3.0624847	20	5 8.1	20.8
436741 2011 <i>VN</i> ₁₂	15.5	X	231.45199	98.41792	224.84733	14.98518	0.1396327	0.17607775	3.1525821	20	3 7.7	20.8
436742 2011 <i>VG</i> ₁₆	15.8	X	260.22083	254.67872	45.12266	16.10757	0.2525278	0.17500711	3.1654266	20	3 10.5	21.2
436743 2011 <i>VL</i> ₁₆	16.6	X	277.46611	277.99286	46.55367	10.53488	0.1540211	0.18450104	3.0558338	20	4 29.5	21.0
436744 2011 <i>VD</i> ₁₈	17.4	X	8.10280	248.08385	250.93187	19.04743	0.0763066	0.37228053	1.9137675	20	—	—
436745 2011 <i>WL</i> ₁₈	16.3	X	270.46778	85.15988	209.91248	15.30953	0.1325707	0.17646750	3.1479385	20	3 15.8	21.1
436746 2011 <i>WV</i> ₂₃	15.4	X	265.75236	68.37007	243.40541	25.28828	0.2074829	0.17201899	3.2019788	20	3 17.1	20.9
436747 2011 <i>WJ</i> ₄₅	17.6	X	177.05334	296.79583	78.63457	26.65798	0.0759745	0.38752798	1.8632337	20	3 22.8	20.6
436748 2011 <i>WQ</i> ₆₉	17.9	X	74.86129	325.12216	103.46923	23.88228	0.0992051	0.37280452	1.9119738	20	—	—
436749 2011 <i>WC</i> ₁₁₄	18.0	X	85.07474	353.62542	76.32328	21.72340	0.0826739	0.37743237	1.8963127	20	1 5.4	19.5
436750 2011 <i>WG</i> ₁₁₄	15.7	X	248.30432	254.96857	118.45343	18.10699	0.0995807	0.18709816	3.0275387	20	5 18.9	21.1
436751 2011 <i>WF</i> ₁₁₆	18.1	X	23.87732	97.51022	65.32605	23.20344	0.0155874	0.38481978	1.8719653	20	3 1.9	20.5
436752 2011 <i>WP</i> ₁₃₆	13.3	X	220.17147	46.43989	76.53558	20.16678	0.0648327	0.08241963	5.2293648	20	9 18.9	20.7
436753 2011 <i>WS</i> ₁₄₁	18.7	X	28.08799	92.28878	58.21139	22.51231	0.1021400	0.38223624	1.8803909	20	2 6.9	20.7
436754 2011 <i>YU</i> ₁₁	13.4	X	227.85472	215.12153	279.46092	19.48621	0.0643786	0.08239157	5.2305519	20	9 19.5	20.8
436755 2011 <i>YG</i> ₁₃	14.1	X	226.21114	54.72016	89.30280	11.09333	0.1220204	0.08254201	5.2241945	20	10 8.2	21.5
436756 2011 <i>YA</i> ₅₉	14.1	X	308.72663	299.60258	118.86460	18.12425	0.0917184	0.08301766	5.2042211	20	10 10.4	20.9
436757 2011 <i>YT</i> ₇₄	17.6	X	61.41358	25.27410	120.18533	23.98993	0.0746655	0.37741846	1.8963593	20	4 13.4	20.0
436758 2012 <i>AD</i> ₆	13.5	X	306.66840	122.25249	296.21623	17.81039	0.0968672	0.08373974	5.1742609	20	9 20.6	20.3
436759 2012 <i>BS</i> ₆₂	18.4	X	160.53306	282.79604	125.25781	20.90767	0.0137083	0.38326917	1.8770109	20	4 3.6	20.8
436760 2012 <i>BW</i> ₆₈	13.9	X	276.76217	349.87225	114.54541	8.44265	0.0763531	0.08295883	5.2066812	20	10 21.0	20.8
436761 2012 <i>DN</i>	18.1	X	226.83397	247.28534	143.30460	19.95035	0.5931014	0.29508000	2.2344786	20	5 9.4	23.3
436762 2012 <i>FP</i> ₂₃	18.0	X	6.73237	332.03881	213.28041	21.85926	0.0021145	0.36530471	1.9380540	20	2 18.8	20.6
436763 2012 <i>FN</i> ₅₂	18.0	X	12.72318	350.36747	93.11322	22.62377	0.6651743	0.35411580	1.9786661	20	—	—
436764 2012 <i>FE</i> ₅₇	19.4	X	309.56280	40.18966	121.60604	5.18713	0.3976957	0.34373479	2.0183062	20	—	—
436765 2012 <i>FE</i> ₈₁	17.8	X	250.83638	159.30551	132.84870	24.49421	0.0506961	0.35589155	1.9720788	20	2 10.9	20.0
436766 2012 <i>FG</i> ₈₃	17.6	X	359.68102	101.67711	88.29010	23.12918	0.0697794	0.36603077	1.9354902	20	2 25.4	19.9
436767 2012 <i>GW</i> ₁	17.8	X	194.51682	178.96520	189.06438	21.51661	0.0944804	0.36591032	1.9359150	20	3 16.4	20.2
436768 2012 <i>HT</i> ₂	17.7	X	69.78875	291.69087	172.13479	23.25235	0.0747096	0.35553105	1.9734117	20	2 4.3	19.7
436769 2012 <i>JQ</i> ₁	18.9	X	176.01166	92.44318	133.56143	1.81370	0.1421093	0.30647464	2.1787447	20	12 24.5	21.9
436770 2012 <i>JV</i> ₃	18.1	X	268.57229	12.51242	125.09979	5.60281	0.0684757	0.30712518	2.1756671	20	—	—
436771 2012 <i>JG</i> ₁₁	19.0	X	247.96967	280.38202	165.55322	24.72792	0.4325007	1.04418705	0.9622410	20	—	—
436772 2012 <i>JK</i> ₃₂	18.0	X	158.49885	137.46755	135.38664	4.98780	0.1615603	0.30775202	2.1727117	20	—	—
436773 2012 <i>JS</i> ₆₄	18.3	X	115.28100	157.26708	123.49389	1.48191	0.2206738	0.29275553	2.2462908	20	12 30.9	21.9
436774 2012 <i>KY</i> ₃	18.4	X	5.57114	87.27992	21.55076	21.39255	0.4865153	0.72072659	1.2320330	20	—	—
436775 2012 <i>LC</i> ₁	16.5	X	301.36283	52.43958	53.74688	34.39346	0.7643025	0.34586179	2.0100229	20	—	—
436776 2012 <i>MK</i>	19.4	X	210.54906	98.02331	167.42020	3.71811	0.2912579	0.31983486	2.1176403	20	—	—
436777 2012 <i>MQ</i> ₂	18.0	X	77.66996	302.24160	11.74827	4.55292	0.2883364	0.28045882	2.3114791	20	—	—
436778 2012 <i>MZ</i> ₃	18.0	X	90.67806	113.47769	194.27073	7.13855	0.2612515	0.28281495	2.2986233	20	—	—
436779 2012 <i>MY</i> ₅	18.1	X	149.01898	186.72362	133.19716	2.77199	0.2254747	0.30735680	2.1745738	20	—	—
436780 2012 <i>OT</i>	18.2	X	162.53458	133.92379	154.37813	3.06782	0.1812934	0.30256364	2.1974798	20	—	—
436781 2012 <i>OZ</i> ₃	17.7	X	0.82531	226.50703	182.18875	6.16525	0.1022526	0.28054427	2.3110098	20	—	—
436782 2012 <i>PU</i> ₂	17.9	X	101.27085	345.77476	293.25913	3.18229	0.0970753	0.27079313	2.3661610	20	12 8.5	21.2
436783 2012 <i>PY</i> ₄	18.1	X	86.20170	1.13524	287.48736	4.53764	0.1756826	0.27424086	2.3462878	20	12 10.9	21.7
436784 2012 <i>PE</i> ₁₀	18.1	X	56.10999	126.51525	170.96216	5.10909	0.1532971	0.26212341	2.4180513	20	11 18.0	21.4
436785 2012 <i>PT</i> ₁₀	18.0	X	80.68707	35.69100	270.65095	2.04709	0.1861477	0.27395355	2.3479279	20	12 28.4	21.5
436786 2012 <i>PX</i> ₁₄	17.5	X	1.51372	60.29519	236.61502	2.88592	0.0911044	0.24136644	2.5547679	20	8 11.2	20.3
436787 2012 <i>PM</i> ₁₇	17.5	X	21.06072	278.77225	88.99426	8.61800	0.1929910	0.27265814	2.3553588	20	—	—
436788 2012 <i>PS</i> ₂₀	17.5	X	222.15935	220.33408	174.22649	4.52492	0.1187393	0.21959816	2.7209272	20	5 30.2	21.7
436789 2012 <i>PH</i> ₃₀	16.5	X	297.85414	172.06141	149.88403	13.93046	0.2948921	0.22983169	2.6395472	20	5 3.1	20.2
436790 2012 <i>PN</i> ₃₀	17.5	X	60.89298	89.91814	248.68320	3.56267	0.2606079	0.27802699	2.3249382	20	—	—
436791 2012 <i>PS</i> ₃₂	17.4	X	75.87056	287.09528	73.05256	2.94718	0.2304208	0.28538369	2.2848093	20	—	—
436792 2012 <i>PM</i> ₃₇	17.5	X	19.49181	237.87897								

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>		
436801	2012	<i>QW</i> ₃₃	17.4	X	24.08166	121.09333	218.09594	4.11413	0.1982412	0.26032055	2.4292026	20	12 7.9	20.2
436802	2012	<i>QA</i> ₃₅	18.6	X	148.67913	27.52225	253.53475	3.11045	0.2824899	0.29322849	2.2438747	20	—	—
436803	2012	<i>QE</i> ₃₇	16.6	X	148.68392	297.80688	209.68309	13.79425	0.1111267	0.23226707	2.6210640	20	8 2.9	20.9
436804	2012	<i>QZ</i> ₃₇	17.5	X	44.12175	348.51613	348.16565	10.38612	0.1756436	0.26640271	2.3920869	20	12 28.1	21.0
436805	2012	<i>QM</i> ₄₀	17.8	X	128.61622	43.81597	259.98251	1.79939	0.2232810	0.29224575	2.2489023	20	—	—
436806	2012	<i>QK</i> ₅₁	18.0	X	88.58856	202.67784	98.93113	2.10972	0.1949453	0.27394605	2.3479708	20	12 30.2	21.6
436807	2012	<i>RR</i> ₂	17.5	X	21.59009	328.58244	359.49955	2.02352	0.2149431	0.25774551	2.4453554	20	11 20.7	20.3
436808	2012	<i>RB</i> ₄	17.3	X	20.62066	190.44478	151.99347	3.61104	0.1944798	0.26045643	2.4283577	20	12 7.2	20.1
436809	2012	<i>RF</i> ₇	17.6	X	45.20938	9.36570	353.32216	2.53947	0.1915245	0.27211830	2.3584729	20	—	—
436810	2012	<i>RT</i> ₇	17.1	X	77.82073	7.31615	315.29114	5.59373	0.2433705	0.27565809	2.3382389	20	—	—
436811	2012	<i>RJ</i> ₈	15.9	X	203.35682	134.45557	228.01777	14.12469	0.1583490	0.20461713	2.8521655	20	3 27.6	20.8
436812	2012	<i>RL</i> ₁₄	17.6	X	113.95770	76.42651	232.88976	5.09663	0.2063731	0.28365040	2.2941076	20	—	—
436813	2012	<i>RU</i> ₁₅	17.1	X	111.03416	55.89431	230.47345	8.33438	0.2295875	0.27697104	2.3308437	20	12 30.9	21.1
436814	2012	<i>RL</i> ₁₆	17.1	X	239.88618	125.90826	272.49095	3.35410	0.0216264	0.23393542	2.6085874	20	7 6.3	20.6
436815	2012	<i>RZ</i> ₂₃	16.9	X	318.13957	190.71660	179.39168	14.38199	0.1433548	0.23869888	2.5737664	20	9 7.2	19.6
436816	2012	<i>RD</i> ₂₄	16.1	X	130.76096	251.63204	175.83028	10.73359	0.0948958	0.18775372	3.0204873	20	4 7.9	20.6
436817	2012	<i>RR</i> ₂₄	16.7	X	239.84190	352.25971	26.62502	6.61910	0.0562364	0.21415465	2.7668421	20	6 3.7	20.6
436818	2012	<i>RK</i> ₂₆	17.6	X	21.65164	185.28631	134.05525	2.38497	0.1939065	0.25631994	2.4544138	20	11 6.5	20.4
436819	2012	<i>RS</i> ₂₆	18.0	X	50.91206	297.19329	22.46513	5.13859	0.2462576	0.26752277	2.3854055	20	12 21.2	21.6
436820	2012	<i>RL</i> ₂₇	16.8	X	356.00381	17.20008	286.41104	11.17366	0.1884283	0.24330576	2.5411743	20	8 14.7	19.1
436821	2012	<i>RO</i> ₂₇	17.6	X	62.41717	170.61287	150.53502	3.04225	0.2045828	0.26960563	2.3731038	20	12 30.2	21.1
436822	2012	<i>RX</i> ₂₇	18.2	X	174.84179	296.55851	0.33893	4.97693	0.1842872	0.30319996	2.1944042	20	—	—
436823	2012	<i>RB</i> ₂₉	17.8	X	50.97662	308.49811	20.62774	5.66630	0.2112731	0.26918123	2.3755976	20	12 30.0	21.3
436824	2012	<i>RO</i> ₃₃	17.5	X	103.15601	356.54274	286.90077	5.56234	0.1000781	0.27132515	2.3630669	20	12 16.5	21.0
436825	2012	<i>RM</i> ₃₄	15.9	X	57.12535	104.64171	1.08892	10.02754	0.0621661	0.17841568	3.1249809	20	2 21.8	20.1
436826	2012	<i>RX</i> ₃₅	17.1	X	294.56953	113.31551	204.89691	3.83492	0.0497063	0.21462967	2.7627582	20	5 28.4	20.8
436827	2012	<i>RB</i> ₃₆	16.9	X	6.16093	325.77856	36.61183	6.85394	0.1586039	0.25940874	2.4348917	20	12 5.2	19.6
436828	2012	<i>RZ</i> ₃₆	18.0	X	19.95630	220.77844	152.38768	3.75200	0.2481114	0.26569235	2.3963487	20	—	—
436829	2012	<i>SX</i> ₃	17.1	X	266.42850	187.22509	163.85731	5.24273	0.1016502	0.21653539	2.7465244	20	5 27.3	21.0
436830	2012	<i>SZ</i> ₄	17.1	X	256.95685	229.93960	188.87158	8.69652	0.1533461	0.23345518	2.6121636	20	8 3.9	20.8
436831	2012	<i>SK</i> ₇	16.3	X	247.27333	293.96182	349.50038	8.46023	0.0647590	0.19070914	2.9892005	20	2 16.6	20.7
436832	2012	<i>SM</i> ₇	16.9	X	250.06631	247.72465	131.45624	7.08225	0.1030386	0.22372954	2.6873269	20	6 12.6	20.7
436833	2012	<i>SH</i> ₉	16.2	X	258.37937	15.79354	15.14188	13.79539	0.1044000	0.22484391	2.6784402	20	7 10.8	20.2
436834	2012	<i>SJ</i> ₉	16.7	X	252.12443	6.48114	19.05040	10.93443	0.1934297	0.21815704	2.7328968	20	6 9.5	21.1
436835	2012	<i>SD</i> ₁₀	16.6	X	302.11865	162.64312	204.59881	32.32858	0.1541117	0.23226449	2.6210834	20	7 24.7	20.5
436836	2012	<i>SZ</i> ₁₁	18.0	X	50.36409	323.29696	354.34108	1.38919	0.1900589	0.26241902	2.4162350	20	12 10.6	21.3
436837	2012	<i>SL</i> ₁₂	16.6	X	115.95700	292.09384	186.88319	15.83930	0.1846568	0.20048931	2.8911807	20	6 3.9	21.4
436838	2012	<i>SO</i> ₁₂	17.7	X	39.59160	164.60541	163.09003	2.87641	0.1917827	0.26078143	2.4263397	20	12 11.6	20.9
436839	2012	<i>SW</i> ₁₂	16.6	X	235.37832	348.55803	15.03788	9.10694	0.1589364	0.21119827	2.7926027	20	4 28.7	21.1
436840	2012	<i>SA</i> ₁₃	17.0	X	277.16039	160.06400	167.30240	4.21188	0.0594002	0.21384081	2.7695486	20	5 16.1	20.7
436841	2012	<i>SF</i> ₁₆	16.9	X	232.18805	136.22551	249.78722	5.90091	0.0432277	0.21390152	2.7690245	20	6 6.2	20.8
436842	2012	<i>SX</i> ₁₆	16.1	X	53.00892	92.91844	6.37769	20.21603	0.1008853	0.17113599	3.2129833	20	2 18.9	20.5
436843	2012	<i>SQ</i> ₁₈	17.0	X	255.56421	30.87963	349.35686	5.81496	0.0528494	0.21860186	2.7291881	20	6 27.8	20.8
436844	2012	<i>SC</i> ₁₉	16.4	X	317.43680	40.57827	237.99387	5.01780	0.0323673	0.20514192	2.8472992	20	5 8.9	20.2
436845	2012	<i>SF</i> ₁₉	17.1	X	208.79472	192.52491	145.70016	3.92719	0.0920841	0.21883678	2.7272346	20	7 11.9	21.1
436846	2012	<i>SA</i> ₂₁	16.8	X	272.92481	206.46211	267.65953	12.77623	0.1350193	0.22654627	2.6650055	20	6 29.6	20.7
436847	2012	<i>SS</i> ₂₃	17.1	X	267.33035	135.57794	193.45969	6.02042	0.0384003	0.21096100	2.7946962	20	5 8.5	21.0
436848	2012	<i>SH</i> ₂₆	17.0	X	264.98604	5.40162	355.72210	6.68375	0.0345776	0.21953695	2.7214329	20	6 16.5	20.8
436849	2012	<i>SJ</i> ₂₆	17.3	X	306.50358	173.78184	190.18277	11.57807	0.0933577	0.23520292	2.5992072	20	8 10.4	20.5
436850	2012	<i>SZ</i> ₂₆	17.5	X	60.55681	136.11703	183.02663	3.02788	0.1400481	0.26619443	2.3933345	20	12 18.7	20.8
436851	2012	<i>SU</i> ₂₇	16.3	X	71.41105	354.92909	195.22337	9.49983	0.0840017	0.21750243	2.7383774	20	6 28.2	20.1
436852	2012	<i>SC</i> ₃₃	17.4	X	73.72601	35.26926	250.76096	4.94741	0.1403137	0.26485576	2.4013922	20	11 20.4	20.7
436853	2012	<i>SA</i> ₃₆	17.9	X	314.23959	326.13934	0.38465	2.46475	0.1087004	0.22989261	2.6390809	20	7 1.1	20.8
436854	2012	<i>SH</i> ₄₈	16.6	X	279.90395	170.26376	176.98969	12.08273	0.0871179	0.22290939	2.6939145	20	6 11.2	20.4
436855	2012	<i>SF</i> ₄₉	17.0	X	175.11289	355.08496	67.01239	1.24371	0.0564580	0.20895081	2.8125916	20	5 15.6	21.1
436856	2012	<i>SW</i> ₅₀	17.4	X	324.73982	147.54854	209.59344	14.35080	0.1349161	0.24363490	2.5388851	20	8 29.3	20.2
436857	2012	<i>SB</i> ₅₁	17.1	X	356.54779	335.75682	345.42224	5.78084	0.2059009	0.24257081	2.5463046	20	9 19.0	20.1
436858	2012	<i>SC</i> ₅₁	16.3	X	234.85964	169.23100	205.93548	12.77576	0.1892664	0.21231825	2.7827733	20	5 13.2	20.8
436859	2012	<i>SR</i> ₅₈	17.5	X	12.24789	250.98806	89.93285	3.10034	0.2348889	0.25714409	2.4491667	20	11 28.3	20.0
436860	2012	<i>SB</i> ₅₉	18.7	X	103.65825	62.85150	238.06895	1.19809	0.2341970	0.28031726	2.3122573	20	—	—
436861	2012	<i>SE</i> ₅₉	17.7	X	26.51774	248.88205	108.65060	2.22590	0.1975065	0.26401921	2.4064621	20	—	—
436862	2012	<i>SA</i> ₆₀	16.4	X	221.17566	175.20542	220.50762	13.86533	0.1240004	0.21236671	2.7823500	20	5 29.9	20.8
436863	2012	<i>SK</i> ₆₀	18.0	X	89.83681	119.81829	175.25232	4.78376	0.2197796	0.27291913	2.3538569	20	12 24.3	21.9
436864	2012	<i>SX</i> ₆₃	16.4	X	219.86666	338.63683	31.93311	11.66194	0.0861621	0.20873108	2.8145651	20	4 28.2	20.7
436865	2012	<i>TL</i> ₆	17.6	X	82.18488	205.70605	110.94390	2.33230	0.1968072	0.27290220	2.3539543	20	—	—
436866	2012	<i>TZ</i> ₁₀	16.3	X	172.48337	158.90646	213.92093	9.88707	0.1138416	0.18541579	3.0458248	20	3 13.2	21.1
436867	2012	<i>TU</i> ₁₁	17.0	X	357.37550	105.96900	207.17300	8.40738	0.1386850	0.23427121	2.6060941	20	8 28.3	19.9
436868	2012	<i>TX</i> ₁₃	16.9	X	250.26708	192.99117	221.58821	12.94925	0.1537502	0.22606461	2.6687895	20		

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>		
436881	2012	TZ ₂₆	16.7	X	196.27970	24.98420	36.04732	6.44747	0.0610840	0.21099228	2.7944199	20	6 6.7	20.9
436882	2012	TP ₂₈	17.3	X	263.94637	324.40777	20.62242	6.58589	0.0582523	0.21448146	2.7640308	20	5 19.7	21.2
436883	2012	TT ₂₈	17.1	X	281.17625	135.23553	191.48186	4.55057	0.1234449	0.21469289	2.7622158	20	5 10.5	20.9
436884	2012	TG ₃₀	17.0	X	163.37089	265.02458	185.32443	5.91748	0.0217570	0.21283427	2.7782736	20	6 6.8	20.9
436885	2012	TL ₃₀	17.4	X	336.83079	147.56913	191.42509	13.93217	0.1945203	0.24040406	2.5615816	20	8 26.5	19.8
436886	2012	TQ ₃₀	18.3	X	80.38842	156.70884	141.02208	1.89323	0.1834143	0.26565870	2.3965511	20	12 15.9	22.1
436887	2012	TS ₃₀	17.1	X	290.46691	163.26971	178.36000	3.94346	0.1325959	0.22333284	2.6905083	20	6 10.7	20.4
436888	2012	TO ₃₃	16.0	X	165.69680	158.40140	195.40184	10.43603	0.0667737	0.17844668	3.1246190	20	2 11.1	20.8
436889	2012	TC ₃₄	16.6	X	260.30342	356.11165	42.47988	6.61289	0.1357637	0.22645744	2.6657023	20	7 17.8	20.3
436890	2012	TX ₃₄	15.7	X	103.02380	72.15720	15.56740	21.47980	0.1641628	0.18391369	3.0623866	20	4 8.1	20.2
436891	2012	TT ₄₀	16.0	X	322.68838	258.94685	5.03084	21.99055	0.2456820	0.21404077	2.7678234	20	3 26.6	19.1
436892	2012	TQ ₄₁	16.4	X	190.18441	107.87848	280.96742	5.38466	0.0758027	0.20131309	2.8832881	20	4 18.2	20.9
436893	2012	TG ₅₀	16.9	X	203.56123	1 35721	352.39279	1.27513	0.0850352	0.19457070	2.9495183	20	3 22.6	21.2
436894	2012	TV ₅₀	17.5	X	302.96232	126.37956	213.70425	0.81941	0.1336306	0.22663772	2.6642885	20	6 27.6	20.7
436895	2012	TO ₅₁	17.0	X	223.72213	173.09290	200.28486	6.14269	0.0560231	0.20731825	2.8273378	20	5 10.1	21.2
436896	2012	TQ ₅₃	17.0	X	248.75057	0 55434	30.31013	5.91599	0.0880361	0.21919768	2.7242403	20	6 27.9	20.9
436897	2012	TZ ₅₄	17.2	X	331.56380	57.39827	302.95430	3.79171	0.1971630	0.23946261	2.5682910	20	9 18.8	19.2
436898	2012	TW ₅₅	16.4	X	104.13572	14.20590	34.40250	5.77102	0.1122349	0.17311850	3.1884068	20	2 19.6	21.0
436899	2012	TN ₆₄	17.6	X	337.17281	339.66877	318.79131	5.53963	0.1026433	0.22645144	2.6657494	20	7 1.0	20.5
436900	2012	TW ₆₇	17.1	X	274.92642	136.72219	211.89012	2.72486	0.2096879	0.21706266	2.7420748	20	5 18.2	21.0
436901	2012	TB ₆₈	17.6	X	103.18217	248.86411	42.39828	5.54016	0.2304747	0.26771814	2.3842448	20	12 30.2	21.6
436902	2012	TD ₆₉	16.0	X	76.22501	55.89382	37.12096	11.59687	0.1140322	0.17342723	3.1846218	20	3 12.5	20.4
436903	2012	TP ₇₀	16.2	X	120.99237	43.58425	337.38378	15.51507	0.2337184	0.17234192	3.1979777	20	2 18.8	21.2
436904	2012	TQ ₇₁	16.7	X	272.64937	93.32150	244.15040	5.67704	0.0973336	0.21399615	2.7682081	20	5 16.5	20.5
436905	2012	TS ₇₁	16.9	X	270.95238	126.24157	229.29352	5.84770	0.0573999	0.21642608	2.7474490	20	6 7.8	20.7
436906	2012	TG ₇₄	17.0	X	254.65111	24.25939	315.51476	2.78516	0.1019911	0.21041011	2.7995720	20	4 25.9	21.1
436907	2012	TG ₇₇	16.2	X	113.30846	195.95565	232.84301	15.92440	0.1002788	0.17488659	3.1668808	20	3 15.7	21.1
436908	2012	TA ₈₀	18.4	X	70.47365	141.34269	163.11561	1.72293	0.1777317	0.26507936	2.4000417	20	12 14.3	22.0
436909	2012	TD ₈₁	16.5	X	89.62473	72.64686	23.40635	10.37736	0.1309194	0.18604272	3.0389783	20	3 31.2	20.7
436910	2012	TA ₈₂	15.7	X	86.96010	246.40698	188.69162	15.83076	0.0856103	0.17952430	3.1121025	20	2 20.5	20.2
436911	2012	TP ₈₂	16.4	X	267.21842	358.84391	8.35312	6.49894	0.0282940	0.21919975	2.7242231	20	6 29.7	20.2
436912	2012	TC ₈₇	17.8	X	41.30424	344.35822	358.05768	1.83510	0.2512379	0.26435169	2.4044439	20	—	—
436913	2012	TD ₈₈	17.0	X	163.12224	193.44758	228.53613	1.11841	0.0593373	0.19984632	2.8973788	20	5 1.9	21.1
436914	2012	TA ₉₀	17.1	X	256.32187	277.32064	119.96823	4.03382	0.1245404	0.22719385	2.6599390	20	7 11.0	20.6
436915	2012	TR ₉₃	17.4	X	44.50187	271.42363	43.83219	5.08706	0.1365127	0.25677425	2.4515179	20	11 21.9	20.6
436916	2012	TY ₉₅	15.9	X	210.04708	290.41855	17.29357	11.13441	0.0692390	0.17835307	3.1257122	20	2 9.9	20.8
436917	2012	TG ₉₆	16.7	X	86.43682	232.83669	14.32879	6.83181	0.1917882	0.24419687	2.5349885	20	10 16.9	20.7
436918	2012	TH ₉₆	16.6	X	349.98196	40.05619	222.89282	5.93862	0.0712917	0.21203326	2.7852663	20	6 2.6	19.9
436919	2012	TE ₉₇	16.5	X	203.95681	242.63696	209.19280	21.30247	0.0499233	0.22376033	2.6870804	20	7 22.6	20.8
436920	2012	TZ ₉₇	18.0	X	65.78116	92.07370	220.94728	2.35422	0.1940517	0.26285295	2.4135751	20	12 21.2	21.6
436921	2012	TX ₉₉	16.9	X	344.95929	36.41742	286.25483	3.06815	0.2127039	0.23691029	2.5867042	20	8 22.1	18.8
436922	2012	TR ₁₀₀	18.1	X	82.58230	162.28178	122.12462	1.78379	0.1776507	0.26284213	2.4136413	20	11 30.9	21.7
436923	2012	TA ₁₀₁	16.6	X	283.45914	332.37207	8.63282	14.15061	0.1678696	0.21833577	2.7314051	20	5 20.3	20.6
436924	2012	TV ₁₀₂	18.9	X	115.69939	93.57726	212.33407	6.88096	0.2779464	0.28324615	2.2962899	20	—	—
436925	2012	TA ₁₀₄	16.3	X	80.24960	230.28881	220.42125	8.87939	0.0731249	0.18050609	3.1008075	20	2 28.7	20.7
436926	2012	TM ₁₀₅	16.1	X	165.36996	12.78691	13.54339	15.39747	0.0612099	0.19032336	2.9932385	20	3 24.0	20.5
436927	2012	TV ₁₀₈	16.7	X	200.15118	153.71084	270.78986	5.51049	0.0892427	0.21423197	2.7661764	20	6 15.1	20.8
436928	2012	TE ₁₁₁	16.2	X	214.16853	324.05718	353.99950	11.05707	0.1502353	0.18852797	3.0122119	20	2 21.2	21.1
436929	2012	TT ₁₁₂	17.0	X	341.23630	287.70743	328.49238	4.21598	0.0626191	0.20925269	2.8098858	20	5 8.9	20.6
436930	2012	TE ₁₁₆	15.9	X	17.44035	254.35258	237.73608	9.20331	0.0894981	0.17104432	3.2141313	20	1 25.5	20.1
436931	2012	TG ₁₁₆	16.6	X	17.93484	28.46306	227.60618	11.09033	0.0700777	0.22163473	2.7042334	20	7 6.2	20.1
436932	2012	TJ ₁₂₀	17.5	X	283.18667	35.01128	317.20828	4.47249	0.0594183	0.22113389	2.7083150	20	6 26.3	21.1
436933	2012	TC ₁₂₅	17.1	X	349.11808	125.52435	197.37507	13.33672	0.2656188	0.23916041	2.5704541	20	9 4.6	19.0
436934	2012	TF ₁₂₅	17.3	X	47.85012	266.19406	80.35319	3.76626	0.1876565	0.26493513	2.4009126	20	—	—
436935	2012	TO ₁₂₅	16.8	X	0.51623	295.83818	68.40014	5.42496	0.1265496	0.25604540	2.4561680	20	11 23.9	19.4
436936	2012	TB ₁₂₇	16.6	X	207.53339	259.40696	62.71115	3.61974	0.0921061	0.18852848	3.0122065	20	2 20.1	21.3
436937	2012	TE ₁₃₀	17.0	X	249.25090	161.61396	213.39665	15.60236	0.1410010	0.21728274	2.7402229	20	5 31.9	21.2
436938	2012	TK ₁₃₁	15.8	X	120.06732	29.88954	31.04545	18.11991	0.1217843	0.18328364	3.0694006	20	3 27.2	20.5
436939	2012	TS ₁₃₁	16.4	X	303.11310	60.19833	262.02107	6.64371	0.1997689	0.21622938	2.7491150	20	5 22.0	19.6
436940	2012	TU ₁₃₁	16.1	X	342.34642	64.95000	240.45647	9.85353	0.1271172	0.22233541	2.6985489	20	7 16.4	19.2
436941	2012	TE ₁₃₃	16.4	X	113.79284	246.35490	175.71518	11.28801	0.1315660	0.18540058	3.0459913	20	3 16.6	20.8
436942	2012	TO ₁₃₃	17.0	X	243.88404	245.19027	160.09395	7.30932	0.1081747	0.22558981	2.6725329	20	7 7.9	20.9
436943	2012	TX ₁₃₅	17.3	X	199.34185	319.13878	95.75758	4.88595	0.0949344	0.21227055	2.7831902	20	6 2.1	21.4
436944	2012	TZ ₁₃₅	16.6	X	323.61534	251.92659	31.70692	16.54005	0.2017511	0.22089949	2.7102306	20	4 30.4	19.7
436945	2012	TE ₁₃₈	17.3	X	25.87834	287.83970	18.27205	3.46595	0.1308783	0.24744683	2.5127433	20	10 12.3	20.1
436946	2012	TO ₁₃₈	17.2	X	326.18266	323.05486	7.13646	6.10102	0.0983228	0.23081629	2.6320356	20	7 30.6	20.2
436947	2012	TK ₁₄₀	17.7	X	119.69280	246.00500	66.23626	25.04706	0.2988283	0.28471576	2.2883812	20	—	—
436948	2012	TO ₁₄₂	17.0	X	346.39979	229.64827	110.51122	7.18126	0.2129828	0.24303331	2.5430731	20	10 1.7	19.1
436949	2012	TE ₁₄₇	17.2	X	63.52071	306.15316	12.81110	5.06135	0.2504660	0.26579226	2.3957482	20	—	—
436950</														

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>		
436961	2012	<i>TB</i> ₁₅₉	16.3	X	109.95063	225.31221	184.11509	12.80863	0.1678239	0.17659614	3.1464095	20	2 29.8	21.1
436962	2012	<i>TX</i> ₁₆₁	17.2	X	236.35466	285.88108	45.02683	2.33578	0.0579594	0.19773872	2.9179303	20	4 1.1	21.3
436963	2012	<i>TL</i> ₁₆₈	16.8	X	124.24960	203.94868	64.96502	9.88104	0.0689672	0.26148384	2.4219926	20	12 17.4	20.1
436964	2012	<i>TK</i> ₁₆₉	16.1	X	258.80145	258.62269	117.58172	6.15824	0.0687058	0.21616721	2.7496421	20	6 23.8	19.8
436965	2012	<i>TU</i> ₁₇₀	16.9	X	114.27804	284.54628	199.23966	9.42633	0.0319953	0.20439565	2.8542255	20	5 21.2	20.9
436966	2012	<i>TR</i> ₁₇₂	17.1	X	292.80487	329.41694	346.49320	3.47510	0.0597051	0.21318352	2.7752384	20	5 19.8	20.9
436967	2012	<i>TT</i> ₁₇₃	16.5	X	104.11751	37.81686	356.07824	7.68302	0.0482980	0.17149324	3.2085197	20	1 24.2	21.0
436968	2012	<i>TY</i> ₁₇₃	17.2	X	341.38171	85.39823	239.74130	4.26742	0.1117850	0.23598800	2.5934394	20	8 15.7	20.0
436969	2012	<i>TW</i> ₁₇₄	16.6	X	28.33314	272.40863	212.78698	7.38835	0.0820924	0.17441851	3.1725442	20	2 1.8	20.7
436970	2012	<i>TZ</i> ₁₇₄	16.5	X	37.15910	186.78505	32.40933	6.73217	0.0077351	0.21367316	2.7709971	20	6 8.8	20.3
436971	2012	<i>TH</i> ₁₇₅	16.8	X	187.32923	187.51510	185.63868	1.75242	0.1020362	0.19715082	2.9237282	20	3 29.6	21.4
436972	2012	<i>TC</i> ₁₇₆	18.1	X	71.15798	82.87159	214.87164	1.63982	0.1764460	0.26319287	2.4114965	20	12 6.1	21.7
436973	2012	<i>TN</i> ₁₇₉	17.7	X	83.02006	335.55296	295.53965	5.12596	0.1894863	0.25749097	2.4469666	20	11 13.3	21.5
436974	2012	<i>TV</i> ₁₈₄	16.1	X	20.19755	286.93986	231.99854	9.23749	0.0866192	0.18520790	3.0481035	20	2 28.8	20.2
436975	2012	<i>TV</i> ₁₈₆	16.2	X	131.40207	175.17574	237.18042	8.38243	0.0847397	0.17711702	3.1402377	20	3 16.0	21.0
436976	2012	<i>TH</i> ₁₈₉	16.6	X	103.42194	281.61772	161.29996	1.44229	0.1643024	0.18118985	3.0930016	20	4 4.2	21.0
436977	2012	<i>TH</i> ₁₈₉	17.4	X	334.56678	262.04423	34.46423	7.00620	0.3093929	0.22982283	2.6396151	20	5 27.4	19.4
436978	2012	<i>TO</i> ₁₉₄	17.4	X	102.08405	138.11453	187.79602	4.10749	0.2513659	0.27963566	2.3160131	20	—	—
436979	2012	<i>TV</i> ₁₉₆	16.3	X	147.94313	355.50871	30.21760	9.72366	0.0912932	0.17714685	3.1398852	20	3 9.8	21.1
436980	2012	<i>TH</i> ₁₉₈	16.8	X	354.71182	328.72792	295.25876	3.25389	0.0514513	0.21527225	2.7525777	20	6 11.6	20.1
436981	2012	<i>TN</i> ₁₉₉	16.2	X	69.65258	68.65402	26.03909	10.14990	0.1089288	0.18144870	3.0900593	20	3 2.9	20.3
436982	2012	<i>TO</i> ₁₉₉	17.9	X	62.01693	197.40766	115.52993	2.44644	0.1818782	0.26623383	2.3930984	20	12 16.9	21.5
436983	2012	<i>TH</i> ₂₀₂	17.8	X	97.93841	244.59002	44.09043	3.30791	0.1630353	0.26934869	2.3746128	20	12 20.2	21.4
436984	2012	<i>TV</i> ₂₀₂	16.6	X	38.52021	28.51968	178.42007	9.60250	0.1328757	0.21408080	2.7674784	20	6 10.3	20.0
436985	2012	<i>TP</i> ₂₀₆	16.0	X	82.77113	71.96825	359.47722	11.55394	0.0427332	0.17151144	3.2082928	20	2 12.8	20.5
436986	2012	<i>TZ</i> ₂₀₇	16.6	X	151.26321	171.17309	284.78625	5.13599	0.0210163	0.20464865	2.8518726	20	5 28.7	20.7
436987	2012	<i>TH</i> ₂₀₈	16.2	X	62.58423	114.59396	10.49172	12.87465	0.0798304	0.18160392	3.0882983	20	3 24.2	20.1
436988	2012	<i>TJ</i> ₂₀₈	17.2	X	288.75346	78.44091	272.20146	5.27339	0.0377936	0.21896697	2.7261535	20	7 4.7	20.7
436989	2012	<i>TW</i> ₂₁₁	17.9	X	30.21592	356.97220	355.14864	4.84861	0.2538590	0.26283035	2.4137135	20	—	—
436990	2012	<i>TH</i> ₂₁₄	16.8	X	315.15403	296.12904	11.75058	16.80799	0.1493308	0.21891285	2.7266029	20	5 24.8	20.3
436991	2012	<i>TQ</i> ₂₁₄	16.3	X	202.16342	332.26750	20.76514	16.07831	0.0422596	0.18950643	3.0018345	20	3 25.2	20.7
436992	2012	<i>TG</i> ₂₁₅	18.1	X	40.57386	273.33929	83.81886	2.89932	0.2158462	0.26532091	2.3985847	20	—	—
436993	2012	<i>TG</i> ₂₁₆	16.6	X	248.55337	99.23079	257.56413	5.05036	0.0792666	0.21152393	2.7897356	20	5 14.1	20.5
436994	2012	<i>TB</i> ₂₁₇	17.1	X	206.37094	194.06822	202.80122	6.34471	0.0534449	0.21421323	2.7663377	20	5 20.0	21.2
436995	2012	<i>TP</i> ₂₁₇	17.8	X	113.33762	172.70326	119.69187	3.42342	0.1896208	0.27699630	2.3307019	20	—	—
436996	2012	<i>TV</i> ₂₁₇	17.7	X	344.70664	250.32655	60.64573	6.55065	0.1258957	0.23432807	2.6056726	20	8 5.2	20.4
436997	2012	<i>TL</i> ₂₁₉	17.6	X	129.64988	148.62594	179.11453	8.13643	0.2949135	0.29311144	2.2444721	20	—	—
436998	2012	<i>TC</i> ₂₂₀	17.0	X	179.61614	252.09129	179.32679	5.32788	0.0666760	0.21146429	2.7902601	20	6 2.5	21.1
436999	2012	<i>TV</i> ₂₂₀	17.4	X	50.16228	246.00507	19.23856	12.86603	0.1298531	0.24240985	2.5474316	20	9 23.7	20.6
437000	2012	<i>TZ</i> ₂₂₀	17.0	X	253.18705	173.25790	182.09939	3.80424	0.1158399	0.21441924	2.7645655	20	5 15.1	20.9
437001	2012	<i>TX</i> ₂₂₅	17.0	X	18.75230	116.48967	154.46500	2.92553	0.0094464	0.22552636	2.6730342	20	7 25.1	20.5
437002	2012	<i>TT</i> ₂₂₇	17.0	X	103.60001	109.27884	41.04657	4.26663	0.0351314	0.21007083	2.8025856	20	6 10.3	20.8
437003	2012	<i>TP</i> ₂₃₂	16.4	X	20.16160	327.89960	337.15536	10.63393	0.1757806	0.24213733	2.5493427	20	10 3.2	19.3
437004	2012	<i>TG</i> ₂₃₆	16.5	X	118.18186	358.61906	53.22857	11.25655	0.0864171	0.18129129	3.0918477	20	3 9.8	21.1
437005	2012	<i>TE</i> ₂₄₄	16.5	X	359.16463	43.80875	189.72538	10.58170	0.0668272	0.20545520	2.8444041	20	5 9.3	20.1
437006	2012	<i>TF</i> ₂₄₅	17.4	X	49.03215	260.60901	48.24423	7.30608	0.1397876	0.25793887	2.4441331	20	11 19.0	20.5
437007	2012	<i>TU</i> ₂₄₇	17.1	X	41.00333	234.20638	354.67942	11.14975	0.0549628	0.21746158	2.7387204	20	7 6.0	20.8
437008	2012	<i>TX</i> ₂₄₉	16.4	X	67.55646	233.04827	251.84873	10.18075	0.0929627	0.18449843	3.0559126	20	3 26.7	20.6
437009	2012	<i>TR</i> ₂₅₈	17.1	X	279.83804	262.18972	95.14282	12.21928	0.0898535	0.22034101	2.7148082	20	6 23.5	20.6
437010	2012	<i>TL</i> ₂₆₄	16.4	X	163.98673	197.48044	194.43025	11.05728	0.1731147	0.18998940	2.9967450	20	4 1.6	21.1
437011	2012	<i>TN</i> ₂₆₅	17.1	X	287.81461	150.07136	170.09337	5.86160	0.0785083	0.21223183	2.7835287	20	5 18.3	20.9
437012	2012	<i>TO</i> ₂₆₅	16.3	X	35.99310	302.97569	193.02643	15.82465	0.0281337	0.18079462	3.0975076	20	2 22.4	20.7
437013	2012	<i>TV</i> ₂₆₅	16.2	X	100.28664	17.54654	36.54491	12.99246	0.1297876	0.17370806	3.1811885	20	2 27.8	20.9
437014	2012	<i>TW</i> ₂₆₅	16.5	X	159.04477	287.52348	172.36309	4.80656	0.0092469	0.21280392	2.7785377	20	6 13.2	20.3
437015	2012	<i>TE</i> ₂₆₆	17.1	X	287.02299	228.30743	63.78591	2.99989	0.0291962	0.20109877	2.8853363	20	4 17.6	21.0
437016	2012	<i>TL</i> ₂₆₈	16.6	X	27.88168	239.47522	274.23227	6.56881	0.0565861	0.18475590	3.0530729	20	3 4.5	20.7
437017	2012	<i>TA</i> ₂₇₁	17.0	X	221.28277	10.34701	26.82297	6.42140	0.0327134	0.21161903	2.7888997	20	6 7.5	21.0
437018	2012	<i>TK</i> ₂₇₁	16.9	X	284.99140	219.16965	113.39337	3.27087	0.0982950	0.21487360	2.7606669	20	5 27.1	20.5
437019	2012	<i>TJ</i> ₂₇₃	16.9	X	313.18276	115.07530	195.34575	6.67280	0.0803904	0.21690897	2.7433699	20	6 9.8	20.5
437020	2012	<i>TW</i> ₂₇₃	17.1	X	245.85551	298.03236	42.84052	2.55560	0.0762695	0.20324896	2.8649508	20	4 21.9	21.1
437021	2012	<i>TY</i> ₂₈₄	16.1	X	219.50293	31.95679	291.12851	8.05106	0.0553952	0.18845480	3.0129915	20	2 29.6	20.8
437022	2012	<i>TY</i> ₂₈₉	16.3	X	149.24188	205.77598	193.97116	12.13132	0.1276859	0.18502577	3.0501034	20	3 25.5	21.0
437023	2012	<i>TN</i> ₂₉₁	16.7	X	221.07392	322.38118	14.55319	2.15723	0.1390274	0.19274072	2.9681584	20	3 18.3	21.4
437024	2012	<i>TV</i> ₂₉₃	15.9	X	147.74042	1.12643	14.89766	8.96025	0.0924263	0.17485457	3.1672674	20	2 26.7	20.7
437025	2012	<i>TP</i> ₂₉₄	16.7	X	330.08500	82.59626	227.87816	12.59350	0.1177030	0.21965499	2.7204579	20	7 1.7	20.0
437026	2012	<i>TV</i> ₂₉₄	16.6	X	282.14008	298.31364	39.98651	14.79610	0.1370575	0.21218249	2.7839602	20	5 21.8	20.4
437027	2012	<i>TY</i> ₂₉₄	16.0	X	160.14303	167.52428	233.75338	7.65316	0.1153546	0.18608349	3.0385343	20	4 4.8	20.8
437028	2012	<i>TV</i> ₂₉₅	16.9	X										

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>		
437041	2012	TT ₃₁₆	16.8	X	308.29677	262.67946	115.15285	8.92106	0.2620634	0.23669475	2.5882743	20	8 16.1	19.0
437042	2012	TD ₃₁₇	16.6	X	270.80546	252.52534	139.64379	11.87008	0.1956197	0.22628110	2.6670871	20	7 11.8	20.2
437043	2012	TY ₃₁₇	15.6	X	91.00059	208.74478	244.57392	26.01251	0.1727833	0.17545035	3.1600932	20	3 27.2	20.5
437044	2012	TF ₃₂₀	16.5	X	339.87003	24.61037	304.18364	13.38788	0.1398248	0.23257523	2.6187482	20	8 16.4	19.3
437045	2012	UV	16.4	X	238.97431	347.65126	26.33935	12.46455	0.1756217	0.21281608	2.7784319	20	5 13.1	20.8
437046	2012	UV ₆	16.7	X	209.46671	323.53586	80.89336	6.09399	0.0529320	0.21106178	2.7938065	20	6 1.9	20.6
437047	2012	UJ ₉	17.1	X	37.18636	266.93629	68.50411	2.82009	0.2439225	0.26069435	2.4268800	20	12 25.3	20.5
437048	2012	UC ₂₇	16.9	X	295.91941	245.49879	74.34918	16.12203	0.1034346	0.21512825	2.7584879	20	5 25.3	20.4
437049	2012	UK ₂₈	16.1	X	281.68256	297.79473	50.44584	15.20112	0.0204399	0.21363987	2.7712849	20	6 22.9	20.0
437050	2012	UN ₃₂	17.0	X	299.02367	97.88323	219.18951	3.66484	0.0644700	0.21241164	2.7819576	20	5 30.8	20.7
437051	2012	UA ₃₅	16.9	X	6.81433	91.38321	221.25529	10.74658	0.1315280	0.23546092	2.5973082	20	9 12.9	19.9
437052	2012	US ₃₅	16.5	X	321.36927	314.38439	37.21834	15.37939	0.1520607	0.23149020	2.6269248	20	8 25.7	19.6
437053	2012	UT ₃₅	17.3	X	318.29315	124.17116	223.53819	1.40918	0.2022829	0.23049306	2.6344956	20	7 27.9	19.8
437054	2012	UK ₃₆	16.1	X	69.86046	288.23513	216.63536	11.07560	0.0482354	0.18691683	3.1029464	20	4 22.3	20.1
437055	2012	UA ₃₉	16.1	X	174.13429	333.14453	23.49392	15.84073	0.0364149	0.17881437	3.1203341	20	3 2.6	20.9
437056	2012	UY ₃₉	16.6	X	146.50347	192.49482	237.56717	8.13619	0.02729924	0.19189766	2.9768453	20	4 23.5	21.0
437057	2012	UF ₄₀	17.3	X	343.90856	308.62433	77.98821	3.19842	0.1963927	0.25685357	2.4510132	20	12 6.1	19.5
437058	2012	UH ₄₀	16.8	X	204.28807	313.73419	96.35206	7.13190	0.0640544	0.20932589	2.8092308	20	6 3.1	20.9
437059	2012	US ₄₀	17.1	X	355.85272	249.50567	51.64722	7.99547	0.0953549	0.22898598	2.6460423	20	8 11.3	20.2
437060	2012	UV ₄₀	17.2	X	315.93612	264.83844	57.79906	4.75466	0.0996332	0.22195468	2.7016340	20	6 28.9	20.5
437061	2012	UQ ₄₂	16.7	X	16.47058	56.70575	213.41921	11.99068	0.1263912	0.22547063	2.6734746	20	7 27.8	20.0
437062	2012	UZ ₄₅	17.2	X	339.56294	172.74058	113.05678	3.66012	0.0452178	0.21398022	2.7683456	20	6 19.1	20.8
437063	2012	UP ₄₆	17.8	X	25.72561	103.33961	202.17795	12.26999	0.1770324	0.24323317	2.5416799	20	10 17.9	20.8
437064	2012	UC ₄₇	16.8	X	325.29881	275.53539	61.06921	7.06112	0.0541144	0.22686226	2.6625302	20	8 10.6	20.1
437065	2012	UB ₄₈	16.9	X	315.57772	130.50473	192.82642	5.86796	0.0591457	0.21931541	2.7232653	20	7 3.0	20.4
437066	2012	UQ ₄₉	17.1	X	237.31557	242.61459	161.98777	3.69508	0.0860523	0.21687553	2.7436519	20	7 1.9	21.0
437067	2012	UJ ₅₀	16.1	X	120.38786	358.54766	57.54341	11.29441	0.0994073	0.17787712	3.1312854	20	3 19.3	20.8
437068	2012	UE ₅₂	16.7	X	311.90064	86.70067	205.79986	11.63609	0.0420818	0.20649224	2.8348727	20	5 19.9	20.5
437069	2012	UK ₅₄	16.9	X	311.26111	26.27267	304.06718	3.60915	0.0486749	0.21949361	2.7217911	20	7 8.4	20.4
437070	2012	UJ ₅₅	16.5	X	44.68817	332.03398	248.07562	6.61905	0.0278613	0.21031216	2.8004412	20	6 23.3	20.1
437071	2012	UU ₅₅	18.0	X	64.89634	71.38609	259.48682	3.88057	0.2878715	0.26844952	2.3799123	20	—	—
437072	2012	UZ ₅₆	16.4	X	32.71559	290.06520	245.98249	5.68874	0.1059073	0.18625047	3.0367181	20	4 14.1	20.1
437073	2012	UK ₅₉	16.1	X	4.80936	39.73133	227.94076	24.68674	0.0793510	0.21456412	2.7633209	20	6 28.3	19.9
437074	2012	UG ₆₀	16.7	X	22.16488	39.26813	343.41407	13.13476	0.1119585	0.26440518	2.4041196	20	—	—
437075	2012	UM ₆₃	16.9	X	309.98408	244.48007	92.63055	6.91894	0.0219877	0.21666521	2.7454272	20	7 18.9	20.6
437076	2012	US ₆₅	16.3	X	36.28076	83.72189	56.04591	9.48723	0.0392580	0.17465530	3.1696760	20	3 7.5	20.7
437077	2012	UT ₆₆	17.2	X	7.12352	264.70858	63.47692	5.54759	0.1736197	0.24038498	2.5617171	20	10 19.4	19.8
437078	2012	UL ₆₇	16.2	X	252.07462	211.19952	89.92733	9.97777	0.0684365	0.18616186	3.0376816	20	3 17.6	20.8
437079	2012	UK ₆₉	16.8	X	34.20821	316.93869	21.37211	8.13422	0.2317652	0.25980463	2.4324176	20	12 23.7	20.2
437080	2012	UH ₆₉	16.3	X	42.50916	292.87369	216.40103	6.68066	0.1206267	0.17932399	3.1144196	20	3 27.3	20.2
437081	2012	UH ₇₁	17.1	X	138.68885	23.47997	51.33152	3.83769	0.0406324	0.19478204	2.9473843	20	4 19.3	21.4
437082	2012	UU ₇₁	17.4	X	302.63426	146.92688	204.43929	7.62064	0.1370593	0.22795030	2.6540510	20	7 11.4	20.6
437083	2012	UZ ₇₁	17.6	X	338.93200	70.49627	263.83601	0.38424	0.1119802	0.23531934	2.5983499	20	8 26.7	20.4
437084	2012	UJ ₇₅	17.8	X	8.55667	273.78322	37.34732	17.30569	0.2526612	0.24153351	2.5535897	20	10 12.9	20.2
437085	2012	UY ₇₅	16.7	X	280.25406	315.95324	40.79009	12.91276	0.1467978	0.21931555	2.7232641	20	6 12.4	20.4
437086	2012	US ₇₆	17.4	X	355.14931	234.93532	69.29379	4.63991	0.2024970	0.23161451	2.6259848	20	8 19.9	19.6
437087	2012	UL ₇₇	16.6	X	299.11913	326.66518	27.17968	6.10399	0.0899871	0.21862384	2.7290052	20	7 18.9	20.1
437088	2012	US ₇₇	17.8	X	62.50536	282.56209	23.80472	12.33475	0.2899472	0.26203277	2.4186089	20	12 17.6	21.9
437089	2012	UA ₇₈	17.1	X	300.39872	312.89124	25.48983	5.52583	0.0690076	0.21912756	2.7248214	20	6 30.8	20.6
437090	2012	UM ₇₈	16.1	X	269.37325	47.02621	248.49407	9.86039	0.0864002	0.19287158	2.9668156	20	3 18.1	20.6
437091	2012	UK ₈₃	16.9	X	312.28089	294.70376	26.01310	13.17604	0.2495830	0.22011371	2.7166769	20	5 23.8	20.0
437092	2012	UU ₈₃	16.4	X	332.53539	18.52325	258.92023	10.98370	0.1084344	0.20428125	2.8552910	20	5 21.7	19.7
437093	2012	US ₈₄	17.9	X	64.48359	112.44047	119.67438	9.93064	0.2702615	0.27325159	2.3519473	20	—	—
437094	2012	UU ₈₆	16.7	X	232.64904	219.60996	144.24038	4.04405	0.0862191	0.21100377	2.7943185	20	5 5.9	20.8
437095	2012	UJ ₈₈	16.6	X	187.03766	94.69994	258.20731	1.78483	0.1421947	0.18098061	3.0953851	20	3 6.1	21.6
437096	2012	UZ ₈₈	15.5	X	269.45664	53.29923	230.49032	21.68392	0.0910073	0.18331180	3.0690863	20	2 29.8	20.5
437097	2012	UR ₉₁	16.7	X	54.89469	86.78452	24.56985	7.87452	0.1472999	0.17500455	3.1654575	20	3 6.6	20.6
437098	2012	UE ₉₇	16.7	X	270.08043	15.41797	312.81862	5.33940	0.0723887	0.20852550	2.8164147	20	5 2.8	20.6
437099	2012	UB ₉₉	16.7	X	43.71197	15.40988	220.45835	14.57718	0.0950610	0.21745883	2.7387435	20	7 19.0	20.5
437100	2012	US ₁₀₁	16.5	X	127.75917	12.82528	48.13934	11.53651	0.0194402	0.18296042	3.0730146	20	3 22.9	21.0
437101	2012	UO ₁₀₃	16.9	X	95.86019	118.46531	20.37928	2.09187	0.0253793	0.19923058	3.9033455	20	5 14.7	20.8
437102	2012	UK ₁₀₆	16.6	X	173.65299	118.30356	241.31652	3.59544	0.1544443	0.18228071	3.0806492	20	3 1.6	21.7
437103	2012	UJ ₁₀₉	17.3	X	21.46450	41.15663	212.27402	8.38110	0.1021251	0.21967421	2.7202992	20	7 11.5	20.6
437104	2012	UD ₁₁₀	17.0	X	162.62779	310.00102	129.32157	7.19556	0.0720659	0.20353936	2.8622250	20	5 25.7	21.3
437105	2012	UE ₁₁₀	16.7	X	294.14980	316.56102	59.76858	14.87288	0.0184953	0.23099158	2.6307038	20	8 28.9	20.5
437106	2012	UW ₁₁₀	16.3	X	4.93319	67.33499	215.94639	25.04529	0.0708632	0.22015422	2.7163436	20	7 18.1	20.3
437107	2012	UD ₁₁₃	17.2	X	204.76113	318.88361	74.51639	3.11995	0.1060745	0.20154201	2.8811044	20	5 11.2	21.5
437108	2012	UH ₁₁₃	15.9	X	20.04874	284.86818	214.26803	11.50312	0.0457795	0.17488932	3.1668477	20	2 5.4	20.4
437109	2012	UB ₁₁₆	16.5	X	156.66793	5.48732	17.48461	8.62873	0.0759498	0.18427304	3.0584040	20	3 12.3	21.1
437110	201													

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
437121 2012 <i>UL</i> ₁₃₇	17.7	X	329.02397	84.90072	246.77455	0.67557	0.1641382	0.22925024	2.6440085	20	7 30.6	20.0
437122 2012 <i>UN</i> ₁₃₇	16.9	X	162.99753	175.05187	222.52071	4.15140	0.1762338	0.18767569	3.0213245	20	4 7.1	21.9
437123 2012 <i>US</i> ₁₃₉	16.0	X	196.82549	331.57094	329.25180	10.97011	0.0382803	0.17079417	3.2172689	20	1 17.8	20.8
437124 2012 <i>UL</i> ₁₄₂	16.5	X	225.65526	223.15413	92.25791	7.06753	0.1006759	0.18635751	3.0355550	20	3 2.3	21.2
437125 2012 <i>UV</i> ₁₄₅	17.5	X	314.37609	208.59068	137.86618	5.32348	0.0459956	0.22607022	2.6687454	20	8 5.1	20.8
437126 2012 <i>UA</i> ₁₄₈	17.4	X	27.96764	114.29102	184.37970	7.55295	0.1629530	0.24085410	2.5583896	20	10 9.7	20.2
437127 2012 <i>UL</i> ₁₄₉	16.5	X	116.65107	60.03041	7.75574	4.63588	0.1512767	0.17910429	3.1169659	20	3 29.4	21.2
437128 2012 <i>UT</i> ₁₄₉	17.0	X	225.06287	68.47689	342.40505	3.30942	0.0737630	0.21359389	2.7716827	20	6 27.2	21.0
437129 2012 <i>UF</i> ₁₅₀	16.6	X	209.28904	331.14274	28.51511	9.9547	0.1089553	0.19332020	2.9622240	20	4 5.4	21.2
437130 2012 <i>UU</i> ₁₅₃	16.6	X	324.20893	258.18171	66.42172	5.63356	0.1614047	0.22162980	2.7042735	20	7 9.9	19.5
437131 2012 <i>UR</i> ₁₅₇	17.7	X	12.26570	255.87540	101.34197	3.35033	0.2270845	0.25416377	2.4682754	20	12 18.1	20.3
437132 2012 <i>UL</i> ₁₆₀	17.6	X	103.71726	29.67617	252.47570	3.16244	0.1984295	0.26510037	2.3999148	20	12 18.2	21.3
437133 2012 <i>UE</i> ₁₆₅	17.4	X	88.11860	19.14618	300.42307	9.58362	0.2557399	0.27209305	2.3586188	20	—	—
437134 2012 <i>UX</i> ₁₆₅	16.5	X	338.63427	292.03351	341.70014	3.35973	0.0660573	0.20956776	2.8070689	20	5 29.8	20.1
437135 2012 <i>UP</i> ₁₆₆	17.4	X	208.40428	30.92253	283.05583	7.02835	0.1480062	0.31230560	2.1515405	20	1 25.7	20.5
437136 2012 <i>UJ</i> ₁₆₈	16.7	X	301.12335	271.69031	105.25886	11.66152	0.1597581	0.23430591	2.6058368	20	8 17.2	19.6
437137 2012 <i>UG</i> ₁₆₉	17.2	X	315.49579	174.26559	169.25350	12.11814	0.1925567	0.23133795	2.6280773	20	7 15.6	20.1
437138 2012 <i>VN</i> ₃	17.0	X	203.01093	247.60497	153.33783	2.45311	0.0692048	0.20400931	2.8578278	20	5 20.6	21.3
437139 2012 <i>VV</i> ₇	17.2	X	207.90622	204.42728	210.32412	3.86920	0.0691523	0.21233550	2.7826226	20	6 12.5	21.2
437140 2012 <i>VA</i> ₈	16.9	X	197.56633	32.42104	49.13187	6.89717	0.0445772	0.21681708	2.7441450	20	7 7.6	20.9
437141 2012 <i>VK</i> ₁₀	17.3	X	264.41250	342.26794	14.03719	3.77476	0.1075205	0.20965725	2.8062701	20	5 28.9	21.3
437142 2012 <i>VM</i> ₁₀	16.0	X	267.06703	38.27643	244.76850	8.57197	0.0440681	0.18199311	3.0838938	20	3 6.9	20.6
437143 2012 <i>VH</i> ₁₂	17.0	X	238.68198	265.52285	90.47204	3.35981	0.0970990	0.20398508	2.8580541	20	5 1.5	21.1
437144 2012 <i>VG</i> ₁₃	17.5	X	349.68079	242.63378	73.86765	2.96840	0.2376209	0.23662765	2.5887636	20	8 29.1	19.3
437145 2012 <i>VZ</i> ₁₅	15.9	X	291.14501	12.98575	260.29029	9.50291	0.0343779	0.18600486	3.0393906	20	3 24.7	20.3
437146 2012 <i>VS</i> ₁₇	16.5	X	267.54518	80.21615	216.14513	8.94159	0.0154003	0.18454772	3.0553685	20	3 29.9	20.9
437147 2012 <i>VC</i> ₁₈	16.5	X	319.06695	265.86349	63.98900	14.15123	0.1387602	0.22086006	2.7105532	20	7 10.7	19.7
437148 2012 <i>VN</i> ₂₁	16.4	X	82.89750	246.83565	218.75141	9.99947	0.0643906	0.18038666	3.1021761	20	3 21.1	20.8
437149 2012 <i>VC</i> ₂₄	17.4	X	10.05648	269.75967	44.05871	4.83376	0.1768394	0.23910444	2.5708552	20	10 3.8	20.0
437150 2012 <i>VE</i> ₂₉	16.3	X	189.06569	338.14512	324.19826	4.12993	0.0989428	0.16892401	3.2409709	20	1 11.8	21.4
437151 2012 <i>VG</i> ₃₀	17.2	X	304.09957	108.47243	219.23653	5.04739	0.0574771	0.21699526	2.7426426	20	6 22.4	20.7
437152 2012 <i>VG</i> ₃₁	16.3	X	67.37195	68.49778	37.76135	15.95740	0.0763888	0.17484708	3.1673578	20	3 14.4	20.8
437153 2012 <i>VX</i> ₃₄	16.2	X	322.60700	276.88664	72.08966	13.78896	0.1839500	0.22933830	2.6433316	20	8 17.5	19.0
437154 2012 <i>VN</i> ₃₅	16.5	X	199.81658	256.47176	95.85874	2.86215	0.1695313	0.18752323	3.0229618	20	3 18.3	21.5
437155 2012 <i>VC</i> ₃₆	16.4	X	260.07051	140.31087	176.89994	5.07057	0.1783069	0.19787341	2.9166059	20	3 28.4	20.9
437156 2012 <i>VG</i> ₃₆	16.1	X	162.47255	310.32759	65.50017	12.47873	0.0873334	0.17778625	3.1323524	20	3 15.5	21.1
437157 2012 <i>VN</i> ₃₆	15.8	X	183.54316	316.33217	73.70056	9.76543	0.0948724	0.18993819	2.9972843	20	4 19.4	20.5
437158 2012 <i>VX</i> ₃₇	17.2	X	7.05122	171.52575	162.45755	11.79404	0.1498099	0.24511699	2.5284343	20	10 26.9	20.1
437159 2012 <i>VO</i> ₃₉	17.3	X	33.85059	274.00277	29.09399	3.85433	0.2216977	0.24280378	2.5446756	20	11 2.1	20.4
437160 2012 <i>VZ</i> ₃₉	15.5	X	202.27312	331.44533	44.75847	10.48718	0.0956083	0.19074392	2.9888371	20	4 19.4	20.2
437161 2012 <i>VB</i> ₄₀	16.5	X	313.23976	266.73681	20.94032	2.34707	0.0498399	0.19708424	2.9243866	20	5 13.0	20.2
437162 2012 <i>VJ</i> ₄₁	16.5	X	14.32079	293.63357	214.90069	14.39443	0.0382297	0.17451629	3.1713590	20	2 8.4	21.1
437163 2012 <i>VC</i> ₄₆	16.7	X	293.67248	267.70314	101.61701	6.16898	0.1840025	0.22230975	2.6987565	20	7 16.1	19.9
437164 2012 <i>VX</i> ₄₆	17.2	X	357.22437	153.89725	179.11003	3.92191	0.0587885	0.23863447	2.5742295	20	9 23.8	20.2
437165 2012 <i>VO</i> ₄₇	17.3	X	220.05161	220.26690	155.61506	2.38117	0.0776805	0.20407236	2.8572391	20	5 7.4	21.5
437166 2012 <i>VA</i> ₄₉	17.2	X	311.26065	132.19815	183.02429	2.50971	0.0683403	0.21650243	2.7468031	20	6 14.8	20.6
437167 2012 <i>VW</i> ₄₉	16.7	X	205.11613	323.20782	50.85634	12.82689	0.0734365	0.19768888	2.9184207	20	4 21.2	21.1
437168 2012 <i>VX</i> ₄₉	16.5	X	186.89159	325.44241	49.26563	16.16991	0.0732238	0.19090483	2.9871574	20	4 6.5	21.2
437169 2012 <i>VD</i> ₅₃	17.2	X	335.01763	293.54097	47.20279	3.87493	0.2649106	0.23581629	2.5946982	20	8 28.9	19.0
437170 2012 <i>VT</i> ₅₈	17.3	X	298.54540	271.09977	75.46924	3.08012	0.0404137	0.21662261	2.7457871	20	7 13.1	20.8
437171 2012 <i>VY</i> ₆₀	16.8	X	204.88921	318.78535	72.05703	6.53903	0.0722106	0.19800359	2.9153274	20	5 10.3	21.2
437172 2012 <i>VA</i> ₆₃	17.8	X	9.20523	133.38972	192.37913	4.74605	0.1823012	0.24244455	2.5471886	20	10 19.9	20.2
437173 2012 <i>VL</i> ₆₅	16.2	X	345.80920	326.45400	216.09029	9.77471	0.1328892	0.17693544	3.1423857	20	2 4.6	20.3
437174 2012 <i>VK</i> ₆₆	17.1	X	238.46421	323.94709	35.16350	2.47111	0.0837662	0.20291866	2.8680589	20	5 5.3	21.3
437175 2012 <i>VE</i> ₆₇	17.2	X	286.88130	131.90630	227.04068	11.51512	0.1639016	0.22138377	2.7062767	20	6 22.9	20.8
437176 2012 <i>VD</i> ₇₁	17.0	X	249.43559	315.96256	78.43706	5.31941	0.0783589	0.21504852	2.7591697	20	7 4.7	20.8
437177 2012 <i>VK</i> ₇₁	17.0	X	279.42301	285.82369	72.50355	5.93753	0.1760802	0.21714291	2.7413992	20	6 10.4	20.4
437178 2012 <i>VR</i> ₇₁	16.5	X	332.02786	250.80080	56.70447	10.29679	0.1971650	0.21994922	2.7180311	20	6 25.1	19.2
437179 2012 <i>UV</i> ₇₁	17.1	X	313.67702	270.19159	76.98954	3.02203	0.0904151	0.22236327	2.6983235	20	8 1.2	20.2
437180 2012 <i>VN</i> ₇₄	17.3	X	48.49971	43.04337	182.75849	4.08173	0.0461226	0.21307054	2.7762194	20	7 8.6	21.0
437181 2012 <i>VS</i> ₇₉	17.0	X	292.16124	243.01396	152.47324	2.82013	0.2226805	0.23304982	2.6151917	20	8 14.6	19.8
437182 2012 <i>VO</i> ₈₁	17.2	X	2.57301	86.71382	215.02059	11.75890	0.2010609	0.23055681	2.6340099	20	8 25.1	19.9
437183 2012 <i>VG</i> ₈₃	16.0	X	76.15371	32.62354	73.16642	10.60839	0.0638496	0.17375957	3.1805597	20	3 21.7	20.5
437184 2012 <i>VE</i> ₉₁	16.2	X	286.12310	194.52350	78.70776	7.51205	0.0949817	0.18382601	3.0633603	20	3 18.8	20.6
437185 2012 <i>VD</i> ₉₂	15.8	X	83.87312	276.59998	237.16836	13.43170	0.0147683	0.19286536	2.9668794	20	5 17.4	

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>		
437201	2012	WZ ₅	15.8 ^m	X	233.84761	76.22947	237.69654	9.75167	0.0774218	0.18002264	3.1063565	20	3 3.6	20.6
437202	2012	WC ₈	16.5	X	215.05584	4.48970	343.09542	3.30942	0.0645341	0.18317676	3.0705945	20	3 28.1	21.1
437203	2012	WT ₈	16.4	X	160.85351	311.77916	51.56544	11.49630	0.1226122	0.17337675	3.1852399	20	2 29.8	21.6
437204	2012	WY ₉	16.2	X	182.07311	296.15886	46.85531	10.16415	0.0965050	0.17429305	3.1740663	20	2 24.3	21.3
437205	2012	WB ₁₀	16.9	X	310.66607	32.51846	260.73884	3.64349	0.0908759	0.20259724	2.8710915	20	5 11.0	20.4
437206	2012	WY ₁₀	16.8	X	235.67135	300.50966	75.77140	3.20591	0.0739907	0.20383735	2.8594348	20	5 25.5	20.9
437207	2012	WA ₁₁	17.5	X	314.66719	237.96628	88.81002	3.08364	0.0800401	0.21577041	2.7530121	20	7 4.7	20.8
437208	2012	WD ₁₁	17.2	X	14.17157	203.08361	121.74055	2.70425	0.1943048	0.24117785	2.5560996	20	10 29.7	19.9
437209	2012	WH ₁₁	16.7	X	263.64288	262.70373	66.39000	12.84131	0.0627124	0.19767892	2.9185187	20	5 2.9	20.8
437210	2012	WB ₁₂	15.8	X	357.82722	308.43595	238.40345	25.99667	0.1684721	0.16919536	3.2375048	20	2 20.0	20.3
437211	2012	WF ₁₃	16.6	X	12.06566	203.04794	74.88349	10.57607	0.1408984	0.21830020	2.7317018	20	8 8.8	19.7
437212	2012	WS ₁₃	16.8	X	311.37088	250.57812	85.41320	7.41340	0.0629395	0.21556471	2.7547632	20	7 14.9	20.2
437213	2012	WB ₁₅	17.1	X	351.04217	257.68584	99.38234	5.14569	0.2123730	0.24203796	2.5500404	20	11 5.5	19.4
437214	2012	WE ₁₇	16.9	X	346.57474	308.21269	53.33638	11.08125	0.1894588	0.24195737	2.5506066	20	10 30.7	19.1
437215	2012	WV ₁₇	16.0	X	178.99868	116.65041	263.62026	8.54468	0.0356097	0.18346922	3.0673305	20	3 24.9	20.6
437216	2012	WS ₁₉	15.8	X	12.62072	309.44207	258.49553	11.21752	0.0932701	0.18660825	3.0328353	20	4 22.0	19.6
437217	2012	WZ ₂₂	17.4	X	291.78077	69.46749	295.12601	3.10498	0.1822208	0.22137875	2.7063176	20	7 6.4	20.7
437218	2012	WJ ₂₃	16.5	X	354.14726	266.53024	56.63815	17.64334	0.2337296	0.23248407	2.6194327	20	9 30.4	19.2
437219	2012	WP ₂₃	15.9	X	342.97784	282.94436	68.47054	8.12114	0.2038242	0.23610494	2.5925830	20	10 8.9	18.2
437220	2012	WX ₂₄	16.0	X	214.86448	132.77293	247.03510	10.11022	0.1778630	0.19314522	2.9640128	20	4 29.4	21.0
437221	2012	WF ₂₅	15.7	X	153.36329	309.94900	84.42636	17.20537	0.0882981	0.17351964	3.1834910	20	3 31.2	20.8
437222	2012	WM ₃₀	15.9	X	254.64993	273.49481	57.85349	4.24619	0.0668733	0.19212145	2.9745332	20	4 22.5	20.0
437223	2012	WO ₃₅	16.0	X	188.47307	269.71178	96.61457	16.90314	0.1698643	0.18075070	3.0980093	20	4 1.6	21.4
437224	2012	XW ₁	16.7	X	346.83260	300.21706	40.78706	5.66287	0.2087859	0.23493548	2.6011794	20	9 29.2	18.8
437225	2012	XT ₃	16.7	X	7.49355	233.64919	100.33319	5.00310	0.2896007	0.24241546	2.5473924	20	11 16.9	19.3
437226	2012	XJ ₄	16.2	X	357.91762	149.93833	205.63567	11.25235	0.2706466	0.24429674	2.5342975	20	11 26.8	18.6
437227	2012	XG ₅	17.0	X	320.36806	190.36172	148.47242	5.94648	0.1442986	0.22168409	2.7038320	20	7 24.5	19.9
437228	2012	XM ₅	16.2	X	186.84150	137.80882	226.01871	16.30522	0.0153864	0.17656764	3.1467480	20	3 13.2	20.9
437229	2012	XQ ₅	15.8	X	172.94859	173.96721	221.64873	13.44100	0.0334592	0.18332161	3.0689769	20	4 8.1	20.4
437230	2012	XV ₅	16.4	X	137.44793	237.36522	158.30716	6.44365	0.0740015	0.17135364	3.2102621	20	3 5.8	21.1
437231	2012	XX ₅	16.9	X	237.84684	260.10934	105.90331	9.97408	0.1053712	0.19940272	2.9016743	20	5 14.6	21.3
437232	2012	XX ₇	15.6	X	155.87427	321.17411	84.39357	12.62259	0.0365708	0.18125827	3.0922231	20	4 9.4	20.3
437233	2012	XL ₁₂	16.7	X	348.99229	213.15495	129.41696	5.96320	0.2298138	0.23699057	2.5861200	20	10 10.7	18.8
437234	2012	XM ₁₇	16.1	X	313.12001	209.91233	58.45554	11.68611	0.0424638	0.19108563	2.9852728	20	4 22.6	20.1
437235	2012	XB ₂₀	16.6	X	333.60970	45.71231	253.87242	7.79460	0.1237567	0.21099751	2.7943738	20	6 23.1	19.7
437236	2012	XO ₂₀	15.7	X	114.38697	357.20915	71.81190	10.20069	0.0579269	0.17395862	3.1781331	20	3 22.7	20.4
437237	2012	XG ₂₁	17.2	X	306.11156	96.93411	239.76539	5.54303	0.1718424	0.21786150	2.7353677	20	6 21.5	20.3
437238	2012	XV ₂₁	17.1	X	314.87594	264.09092	73.77515	7.39584	0.1009381	0.21871016	2.7282871	20	7 19.6	20.4
437239	2012	XB ₂₂	16.0	X	26.89658	115.11502	72.92656	14.44515	0.0151067	0.18559635	3.0438489	20	4 23.1	20.3
437240	2012	XM ₂₃	17.1	X	320.65880	265.80930	62.79816	3.86533	0.1650843	0.22056027	2.7130088	20	7 8.2	20.0
437241	2012	XH ₂₄	16.6	X	342.49895	268.92095	64.63229	8.11020	0.1455203	0.22987312	2.6392301	20	9 6.3	19.4
437242	2012	XZ ₂₅	17.4	X	99.03431	255.25983	68.85767	5.40941	0.1734049	0.27047256	2.3680302	20	—	—
437243	2012	XG ₂₇	16.2	X	124.13600	350.43400	67.76384	11.00224	0.0633103	0.17255633	3.1953281	20	3 22.1	21.0
437244	2012	XG ₂₈	17.1	X	251.80218	317.41948	45.54873	2.67786	0.0751235	0.20161920	2.8803690	20	5 27.0	21.2
437245	2012	XC ₂₉	16.1	X	244.30411	53.93330	259.24834	8.02520	0.1355752	0.18373093	3.0644170	20	3 8.7	21.1
437246	2012	XX ₃₈	16.6	X	256.24213	247.20848	100.05789	3.14546	0.0878455	0.19740061	2.9212612	20	5 11.7	20.7
437247	2012	XN ₄₉	15.9	X	12.00482	110.12680	63.16950	27.08625	0.1358680	0.17306461	3.1890687	20	3 29.3	20.3
437248	2012	XA ₅₀	16.6	X	356.30186	238.96253	106.71363	3.50611	0.1683112	0.23816248	2.5776295	20	10 23.0	19.1
437249	2012	XV ₅₁	15.9	X	6.87463	262.55140	64.40333	17.99688	0.1840293	0.23675870	2.5878082	20	10 23.9	18.9
437250	2012	XW ₅₉	17.1	X	5.78344	55.25759	217.17465	3.49622	0.0649760	0.21284396	2.7781893	20	7 10.4	20.4
437251	2012	XU ₆₅	15.8	X	353.06000	326.51768	228.45727	15.56440	0.0488970	0.17138010	3.2099316	20	3 7.1	20.4
437252	2012	XZ ₇₀	16.3	X	21.51828	219.23332	81.07496	14.05486	0.1938285	0.23318964	2.6141463	20	10 12.7	19.6
437253	2012	XF ₈₀	16.9	X	208.29223	173.88207	183.44837	7.23134	0.0969897	0.18854263	3.0120558	20	4 1.4	21.4
437254	2012	XS ₈₅	16.1	X	338.54119	251.35000	113.30648	14.05703	0.1970571	0.23654511	2.5893658	20	10 22.6	18.8
437255	2012	XV ₉₃	16.9	X	227.44735	341.50344	66.86069	4.90840	0.1003581	0.21266954	2.7797081	20	6 23.7	20.9
437256	2012	XZ ₉₃	16.3	X	9.99572	248.34732	90.34800	13.75098	0.1989115	0.24085333	2.5583951	20	11 14.9	19.2
437257	2012	XA ₉₆	16.2	X	125.37605	330.24865	93.50597	11.23470	0.0740307	0.17313442	3.1882113	20	3 31.5	21.0
437258	2012	XK ₉₆	16.3	X	202.45372	342.19330	56.36851	10.39711	0.0718501	0.19477411	2.9474643	20	5 16.4	20.7
437259	2012	XC ₁₀₅	17.3	X	350.40221	248.09856	65.22717	8.41459	0.2158116	0.23207885	2.6224809	20	8 26.6	19.6
437260	2012	XB ₁₀₈	16.1	X	162.57442	321.54497	74.61226	11.73184	0.1073038	0.17837983	3.1253997	20	4 8.7	21.1
437261	2012	XE ₁₁₀	16.5	X	331.18690	345.50452	27.47424	13.52846	0.2534876	0.24039045	2.5616782	20	10 13.7	18.1
437262	2012	XD ₁₁₅	16.4	X	136.28895	23.26473	52.68989	9.54199	0.0609605	0.18892719	3.0079670	20	4 21.5	20.7
437263	2012	XC ₁₁₇	15.7	X	133.15924	350.21466	70.55247	18.87726	0.1994069	0.17770856	3.1332652	20	4 19.3	21.0
437264	2012	XJ ₁₂₂	15.9	X	131.55074	300.97793	100.16564	17.28693	0.1854699	0.17216110	3.2002165	20	3 24.8	21.3
437265	2012	XG ₁₂₃	16.5	X	134.46870	309.84188	127.86138	10.42533	0.0969871	0.18155573	3.0888447	20	4 27.9	21.3
437266	2012	XG ₁₂₆	17.3	X	349.87336	280.79261	50.64896	4.65067	0.2484318	0.23786230	2.5797976	20	9 26.3	19.2
437267	2012	XK ₁₂₆	16.9	X	329.48674	262.08571	70.15744	6.08458	0.0544601	0.22238656	2.6981351	20	8 9.9	20.2
437268	2012	XW ₁₂₈	16.5	X	333.36524	35.41353	250.83740	3.88817	0.1317773	0.21120270	2.7925636	20	6 2.9	19.5
437269	2012	XC ₁₃₇	15.9	X	288.16222	231.41567	94.76139	16.09377	0.1528758	0.20446080	2.8536191	20	5 18	

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
437281 2013 AF ₂₅	16.9	X	261.83376	217.69866	138.20430	2.09344	0.1487874	0.20224053	2.8744665	20	5 20.9	21.2
437282 2013 AU ₉₄	16.8	X	357.37527	147.13083	212.03664	8.28576	0.2842305	0.24506489	2.5289990	20	12 3.2	19.1
437283 2013 AT ₉₆	14.1	X	252.50329	3.31017	90.40510	7.86816	0.0608915	0.08522941	5.1137919	20	9 14.3	21.0
437284 2013 AG ₁₀₃	16.3	X	225.23749	257.17383	119.37501	11.65957	0.1423723	0.18642638	3.0348074	20	5 12.7	21.2
437285 2013 AU ₁₃₁	13.0	X	292.84652	121.13565	308.61227	12.86212	0.0103663	0.08270898	5.2171613	20	9 28.9	20.0
437286 2013 AP ₁₃₂	13.9	X	293.19161	289.78065	129.21380	10.39788	0.0527837	0.08419089	5.1557596	20	9 22.2	20.7
437287 2013 AY ₁₃₂	13.7	X	263.90073	318.85152	131.32885	10.21154	0.0407088	0.08345462	5.1860393	20	9 24.9	20.6
437288 2013 AN ₁₃₃	14.4	X	241.35868	314.32305	162.67812	10.61347	0.2050278	0.08323134	5.1953098	20	9 9.8	21.6
437289 2013 AX ₁₄₀	16.5	X	325.79993	130.86232	178.99244	14.48277	0.2510870	0.19521354	2.9430395	20	6 8.4	19.9
437290 2013 BH ₁	14.0	X	267.46852	343.20189	90.32078	9.89686	0.0418243	0.08319803	5.1966963	20	9 11.2	20.9
437291 2013 BP ₂	14.1	X	229.95466	211.14283	265.89984	25.76852	0.1959134	0.08400395	5.1634055	20	8 18.9	21.9
437292 2013 BG ₁₇	14.0	X	225.65786	339.20762	139.97023	16.35324	0.0992704	0.08313850	5.1991767	20	9 9.2	21.2
437293 2013 BS ₂₁	15.9	X	195.12937	272.40774	115.41247	11.98192	0.1586268	0.17873849	3.1212173	20	4 29.1	21.2
437294 2013 BK ₃₁	14.3	X	202.25020	77.81432	75.81896	8.32739	0.0620952	0.08489259	5.1273093	20	9 29.2	21.4
437295 2013 BJ ₃₇	14.1	X	215.18800	212.16123	287.10551	4.79557	0.0625982	0.08556011	5.1006066	20	9 20.0	21.1
437296 2013 BK ₄₀	14.1	X	261.61377	313.61264	136.36919	10.16205	0.0626204	0.08317482	5.1976631	20	9 18.6	21.0
437297 2013 BS ₅₄	16.2	X	222.95076	267.64716	114.23277	10.30095	0.2200609	0.18636690	3.0354531	20	5 11.6	21.4
437298 2013 BR ₆₄	14.2	X	282.88062	333.03636	92.51135	3.49445	0.0559317	0.08359642	5.1801729	20	9 15.5	21.0
437299 2013 BY ₆₇	15.8	X	211.30126	265.67172	106.30212	15.44387	0.1744084	0.17769565	3.1334169	20	4 25.9	21.2
437300 2013 BR ₇₁	14.0	X	251.82324	316.41728	146.24263	12.23767	0.1388425	0.08393578	5.1662010	20	9 12.2	21.0
437301 2013 CW ₁₀	13.3	X	283.38792	282.90110	141.93405	37.11720	0.0852250	0.08271360	5.2169672	20	9 11.9	20.3
437302 2013 CK ₁₃	14.5	X	228.50160	73.30259	58.79851	2.41581	0.1389525	0.08295768	5.2067292	20	9 21.5	21.7
437303 2013 CJ ₁₅	15.7	X	157.36547	244.33687	137.95719	10.01826	0.1682835	0.15419089	3.4442678	20	3 20.1	21.3
437304 2013 CK ₃₄	14.1	X	319.99932	270.31778	128.99048	10.07988	0.0283082	0.08316241	5.1981803	20	10 4.6	20.9
437305 2013 CX ₃₉	14.3	X	180.31046	70.76739	119.89421	9.91334	0.0311808	0.08381124	5.1713176	20	10 18.9	21.4
437306 2013 CG ₈₅	16.0	X	252.29660	219.95905	125.54100	13.59824	0.2888679	0.18624076	3.0368235	20	4 19.8	21.3
437307 2013 CG ₁₀₄	14.5	X	316.46758	306.54633	102.38367	8.40008	0.0493635	0.08421875	5.1546226	20	10 9.9	21.2
437308 2013 CF ₁₃₃	14.3	X	206.62347	160.98524	0.54392	6.31378	0.1187187	0.08275515	5.2152206	20	10 3.7	21.6
437309 2013 CY ₁₉₉	13.9	X	325.34630	305.53816	89.31106	8.75398	0.0246558	0.08262019	5.2208987	20	10 6.5	20.8
437310 2013 CN ₂₀₆	14.4	X	263.40476	265.04438	198.13678	7.06890	0.0659820	0.08423408	5.1539971	20	10 2.1	21.2
437311 2013 CF ₂₁₇	14.0	X	277.87308	292.72499	161.62743	7.89042	0.0798106	0.08189806	5.2515437	20	10 8.6	20.8
437312 2013 DR ₁₄	14.0	X	56.31232	195.70456	116.63316	13.24580	0.0341152	0.08263574	5.2202437	20	10 22.6	21.0
437313 2013 EC ₇₃	13.2	X	51.01692	49.48823	141.15705	8.99935	0.5849807	0.02099855	13.0119752	20	8 4.9	24.1
437314 2013 JA ₁₅	13.9	X	313.67340	210.63819	210.88764	13.02613	0.0078259	0.08262482	5.2207036	20	10 19.3	20.7
437315 2013 NQ ₂₂	16.7	X	196.42123	190.88070	220.90441	13.97256	0.1171679	0.23169178	2.6254009	20	5 25.3	20.8
437316 2013 OS ₃	18.4	X	36.78645	224.61200	297.63863	29.90753	0.4676377	0.39828460	1.8295335	20	1 9.8*	17.3
437317 2013 PW ₂	17.7	X	175.88706	189.11686	156.07358	24.15212	0.0465056	0.37600682	1.9011027	20	1 14.4	20.1
437318 2013 PN ₆	18.2	X	41.52242	337.87318	125.28509	24.79157	0.0971563	0.36621318	1.9348475	20	—	—
437319 2013 PO ₆	18.2	X	21.93914	215.65654	279.03910	17.94150	0.0929855	0.36810525	1.9282117	20	—	—
437320 2013 PJ ₄₂	16.9	X	228.54959	61.00132	335.42590	14.25280	0.0942017	0.25857753	2.4401069	20	6 9.6	20.7
437321 2013 PG ₄₄	15.6	X	78.71389	12.12914	23.08917	27.39346	0.3001356	0.18403645	3.0610246	20	2 7.8	20.1
437322 2013 PE ₆₉	18.0	X	334.92934	53.60471	154.28867	23.20356	0.0211607	0.37491562	1.9047897	20	2 6.4	19.9
437323 2013 PF ₇₄	17.3	X	338.74237	322.93301	45.98842	12.11429	0.2365517	0.28411352	2.2916139	20	11 12.2	18.6
437324 2013 QP ₁₀	17.8	X	19.57405	198.92763	281.94775	18.29208	0.0584798	0.35981848	1.9577042	20	—	—
437325 2013 QV ₅₃	18.3	X	47.77543	110.80665	332.05440	17.39042	0.0998475	0.35084962	1.9909272	20	—	—
437326 2013 RD ₁	17.9	X	217.98548	196.07899	152.04697	23.51889	0.0626339	0.38320459	1.8772218	20	3 20.3	20.0
437327 2013 RK ₁	18.3	X	215.84112	332.71219	347.34612	18.67983	0.0538211	0.36882664	1.9256966	20	2 9.6	20.6
437328 2013 RM ₅	18.2	X	135.39454	229.34503	190.18882	21.99507	0.0867737	0.37118515	1.9175307	20	3 14.4	20.2
437329 2013 RV ₃₅	17.8	X	268.00077	311.93149	106.74751	3.08779	0.2031242	0.26966645	2.3727470	20	8 18.1	20.6
437330 2013 RG ₃₇	17.7	X	274.59005	354.01507	28.86513	1.94873	0.1957137	0.26469057	2.4023912	20	7 6.8	20.6
437331 2013 RZ ₄₇	16.9	X	108.21552	247.48403	184.04543	3.53198	0.0709464	0.21646074	2.7471558	20	3 10.2	20.7
437332 2013 RH ₅₃	17.8	X	31.82027	358.14811	23.43255	5.45418	0.1588223	0.30676330	2.1737778	20	—	—
437333 2013 RC ₅₇	17.8	X	296.67739	90.62278	346.01184	7.76009	0.1270190	0.29372970	2.2413214	20	11 21.2	19.9
437334 2013 RC ₉₄	16.2	X	43.28352	222.03893	194.51668	14.34140	0.2734917	0.17575732	3.1564126	20	—	—
437335 2013 SH	18.6	X	225.85993	150.23350	215.53952	22.24221	0.1284486	0.39101568	1.8521377	20	4 17.9	20.8
437336 2013 SY ₂₉	16.4	X	40.25983	72.48088	1.58603	16.03073	0.2911483	0.17420872	3.1750906	20	1 4.5	19.6
437337 2013 SR ₄₀	17.1	X	147.61633	160.35445	29.69753	6.87032	0.0413292	0.27045779	2.3681165	20	10 6.3	20.3
437338 2013 SK ₆₆	19.1	X	281.09820	117.38422	184.43919	21.64028	0.0872128	0.39158954	1.8503277	20	3 30.2	20.7
437339 2013 ST ₇₆	18.3	X	196.62417	334.48034	34.56194	22.37334	0.1125819	0.37443610	1.9064156	20	3 31.4	20.9
437340 2013 SM ₇₈	17.7	X	224.56682	60.08957	30.04605	4.93829	0.2058656	0.26573456	2.3960949	20	8 8.6	21.4
437341 2013 TX ₁₂	18.0	X	356.61285	202.58693	193.89179	5.32165	0.1643484	0.30272828	2.1966830	20	—	—
437342 2013 TU ₁₃	18.0	X	319.12615	184.72522	229.56714	5.13996	0.1501385	0.29030868	2.2588949	20	12 5.2	19.8
437343 2013 TM ₁₆	18.3	X	252.40437	57.07951	9.96829	4.68125	0.1326501	0.27113556	2.3641684	20	8 20.5	21.1
437344 2013 TR ₂₃	16.9	X	179.32828	216.08808	214.39339	17.03275	0.1510374	0.23529741	2.5985113	20	5 31.6	21.2
437345 2013 TO ₂₄	18.0	X	257.26717	279.60070	223.22695	5.97902	0.0833768	0.29853822	2.2171892	20	12 27.5	20.2
437346 2013 TM ₃₉	16.5	X	40.58907	42.16875	28.34224	5.56912	0.1174292	0.17939520	3.1135954	20	—	—
437347 2013 TK ₄₁	17.6	X	251.88105	50.23991	24.44539	1.59137	0.1357838	0.26827506	2.3809440	20	8 28.7	20.6
437348 2013 TF ₅₁	17.9	X	346.82486	191.59408	12.58543	20.17345	0.0423071	0.37203512	1.9146090	20	2 29.8	19.9
437349 2013 TA ₅₃	17.0	X	136.28817	46.06753	322.07262	5.86728	0.0743964	0.19648984	2.9302813	20	1 29.1	21.2
437350 2013 TC ₅₉	17.4	X	249.87369	12.73106	68.91294	3.20226	0.1737212	0.26964378	2.3728800	20	8 31.0	20.3
437351 2013 TL ₆₅	18.1	X	338.46136	46.14443	359.70597	4.89860	0.1508105	0.29663381	2.2266688	20	—	—
437352 2013 TQ ₉₁	18.5	X	318.93813	279.29549	178.60881	4.47484	0.0364896	0.31163397	2.1546308	20	—	—
437353 2013 TN ₁₀₂	18.3	X	345.08090	237.77136	200.82950	4.13509	0.0649847	0.31065945	2.1591344	20	—	—

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
437361 2013 UO ₂	18.2	X	231.31492	271.95273	48.10498	21.66011	0.0688873	0.36928956	1.9240870	20	3 8.9	21.0
437362 2013 UG ₃	17.8	X	257.33835	260.43887	5.44080	19.40793	0.0636565	0.35714793	1.9674512	20	1 17.4	20.6
437363 2013 UA ₄	17.0	X	322.02624	25.72503	50.54825	24.49036	0.1930011	0.29736151	2.2230346	20	—	—
437364 2013 UP ₄	18.2	X	308.95496	43.15826	236.09491	19.67942	0.0828875	0.38352994	1.8761600	20	4 2.2	20.2
437365 2013 UQ ₁₁	16.5	X	155.09672	136.32066	290.02124	12.36690	0.2419227	0.22641107	2.6660663	20	5 3.9	21.3
437366 2013 UK ₁₂	16.6	X	165.35206	192.46542	230.64722	13.33924	0.2306872	0.22483075	2.6785447	20	5 11.3	21.0
437367 2013 VU ₂	16.6	X	171.34880	122.74918	349.35078	9.43050	0.1932410	0.24142846	2.5543304	20	7 18.5	21.0
437368 2013 VP ₃	17.9	X	321.30263	328.45772	89.23013	7.33126	0.1662127	0.29012327	2.2598572	20	12 16.4	19.6
437369 2013 VZ ₆	16.2	X	39.45885	177.67233	262.10074	14.46996	0.2736286	0.17503937	3.1650377	20	1 4.3	19.1
437370 2013 VE ₇	16.8	X	236.93970	16.32628	355.56301	11.91507	0.1964567	0.23935083	2.5690906	20	5 4.3	21.1
437371 2013 VO ₉	17.8	X	226.31497	319.90525	40.44687	22.74230	0.0859463	0.37895658	1.8912245	20	4 19.3	20.0
437372 2013 VM ₁₅	17.2	X	218.98737	205.65777	201.19746	8.39809	0.1555462	0.23935731	2.5690443	20	6 8.8	21.3
437373 2013 VY ₁₇	16.8	X	206.31315	61.19130	48.06021	7.91468	0.1566740	0.24126766	2.5554652	20	8 19.5	20.8
437374 2013 VC ₂₀	17.4	X	284.21795	169.49702	63.20053	23.88885	0.0196808	0.34657667	2.0072579	20	1 4.1	19.9
437375 2013 VF ₂₀	17.5	X	264.38441	23.90074	52.00026	5.79647	0.1763344	0.26514557	2.3996421	20	9 13.1	20.3
437376 2013 WV ₁	15.8	X	60.00549	351.81735	82.08400	19.08877	0.1922273	0.17996026	3.1070743	20	2 1.0	19.7
437377 2013 WF ₆	17.5	X	308.38832	270.88023	143.79747	6.17361	0.1364048	0.27849528	2.3223312	20	11 10.6	19.5
437378 2013 WP ₁₁	16.0	X	175.26125	202.01732	244.04326	21.32693	0.0357143	0.23239651	2.6200906	20	6 14.8	19.7
437379 2013 WR ₁₈	17.5	X	339.61420	309.96161	104.54036	8.80027	0.0908448	0.28823895	2.2696956	20	—	—
437380 2013 WY ₂₁	16.9	X	147.20716	276.20181	217.66882	21.30213	0.0590678	0.24055090	2.5605390	20	7 11.6	21.0
437381 2013 WH ₂₄	17.1	X	76.61949	67.34100	296.34069	6.04243	0.1540282	0.31362940	2.1454820	20	—	—
437382 2013 WY ₂₉	18.0	X	300.84542	27.58353	68.94237	4.97545	0.0986800	0.28902709	2.2655675	20	12 31.7	20.0
437383 2013 WS ₃₁	18.2	X	227.30040	88.77084	66.49493	2.85215	0.1196247	0.28022107	2.3127864	20	11 19.5	20.8
437384 2013 WO ₃₇	16.9	X	112.26159	231.98910	282.64431	8.73742	0.0681771	0.22940502	2.6428191	20	7 2.6	20.4
437385 2013 WH ₃₉	15.7	X	114.21985	343.16016	53.82050	12.16486	0.1196957	0.18889449	3.0083142	20	2 19.6	20.2
437386 2013 WL ₄₀	17.4	X	301.66373	359.31955	56.89122	5.70381	0.1320169	0.27484714	2.3428361	20	10 27.9	19.6
437387 2013 WM ₄₀	17.1	X	285.46616	7.56530	58.53715	8.81055	0.1254010	0.27109738	2.3643903	20	10 14.1	19.5
437388 2013 WR ₄₁	17.5	X	158.11866	170.12599	295.60169	0.47768	0.0871199	0.23053952	2.6341417	20	6 23.0	21.3
437389 2013 WK ₄₃	17.0	X	229.02005	353.30844	59.03231	9.26712	0.1132961	0.24023238	2.5628018	20	6 30.3	20.7
437390 2013 WM ₄₇	17.5	X	299.31610	91.16949	290.73390	9.18236	0.1548482	0.26446010	2.4037868	20	8 19.9	19.9
437391 2013 WG ₄₈	16.9	X	119.74060	117.96688	13.55939	13.23343	0.2078517	0.22305868	2.6927124	20	6 24.9	21.4
437392 2013 WX ₅₄	17.7	X	262.99858	228.12111	202.74381	6.24171	0.0838419	0.26454213	2.4032898	20	9 14.1	20.6
437393 2013 WA ₅₇	17.8	X	76.28422	93.33924	63.39278	22.18655	0.0291719	0.37462308	1.9057812	20	5 12.1	19.4
437394 2013 WE ₅₇	18.0	X	58.10932	250.13866	122.41430	3.90235	0.1787113	0.31323878	2.1472653	20	—	—
437395 2013 WN ₆₂	16.6	X	174.92488	253.89024	189.39622	11.12434	0.1620222	0.22946984	2.6423214	20	6 12.9	21.1
437396 2013 WL ₆₃	17.0	X	199.94199	84.86222	68.92133	21.98311	0.1738106	0.27115195	2.3640731	20	10 19.2	20.9
437397 2013 WV ₆₃	17.1	X	157.23774	202.38366	220.70747	7.62415	0.2147448	0.21479724	2.7613211	20	5 4.5	21.7
437398 2013 WZ ₆₃	17.1	X	201.90291	328.93243	95.37320	11.26160	0.1374474	0.23332425	2.6131407	20	6 15.1	21.1
437399 2013 WR ₆₄	16.5	X	178.28533	182.89802	252.31603	12.63848	0.1629152	0.23177729	2.6247552	20	6 5.4	20.7
437400 2013 WM ₆₆	17.6	X	279.23515	195.33631	243.76814	4.74238	0.1949873	0.27478386	2.3431957	20	10 6.5	20.0
437401 2013 WK ₆₇	16.4	X	68.75017	86.21910	9.76771	24.12240	0.3396338	0.18212034	3.0824574	20	4 1.7	20.1
437402 2013 WK ₇₄	17.3	X	310.84879	326.82350	98.08053	6.84509	0.0598666	0.28197468	2.3031876	20	11 30.6	19.7
437403 2013 WU ₇₄	16.8	X	266.37977	338.97158	83.98323	7.15324	0.1270800	0.26354395	2.4093544	20	9 6.3	19.7
437404 2013 WU ₇₇	16.5	X	214.19786	152.70724	260.11147	13.34221	0.1282182	0.23739205	2.5832034	20	6 13.0	20.2
437405 2013 WN ₈₀	16.5	X	193.75247	327.36300	94.45900	13.00929	0.1784863	0.22226451	2.6991227	20	6 3.7	21.0
437406 2013 WC ₈₃	17.6	X	208.64964	42.20378	95.08700	3.7053	0.1694258	0.26183051	2.4198543	20	9 26.3	21.2
437407 2013 WM ₈₃	17.3	X	252.64255	269.34370	89.40986	3.68868	0.1963594	0.23614023	2.5923247	20	5 8.7	21.3
437408 2013 WQ ₈₃	17.3	X	279.43721	290.64939	235.00426	5.87534	0.1041781	0.27402637	2.3475119	20	10 30.2	19.6
437409 2013 WR ₈₆	16.8	X	183.88496	209.83835	241.20157	4.60191	0.0745520	0.26696693	2.3887154	20	10 21.2	20.0
437410 2013 WE ₉₁	17.4	X	237.19329	56.53764	59.38219	8.83436	0.1151763	0.26750505	2.3855109	20	10 11.7	20.5
437411 2013 WC ₉₄	17.5	X	245.65787	193.87567	266.69746	5.49125	0.0918734	0.26689069	2.3891703	20	9 28.5	20.5
437412 2013 WU ₉₆	18.1	X	253.92099	43.07283	35.72822	3.36688	0.0675291	0.26229795	2.4169785	20	9 17.5	21.1
437413 2013 WX ₉₇	17.7	X	190.15979	42.56849	61.07630	6.53914	0.0657309	0.24297354	2.5434901	20	7 29.8	21.4
437414 2013 WY ₉₉	17.3	X	168.64913	138.35714	38.28812	4.79083	0.0464549	0.26564769	2.3966173	20	10 12.9	20.4
437415 2013 WD ₁₀₂	16.1	X	324.27648	277.37060	259.95136	15.63159	0.1605044	0.17521126	3.1629673	20	—	—
437416 2013 WG ₁₀₃	17.7	X	341.85778	339.34042	85.84491	5.12768	0.1211704	0.29760582	2.2218178	20	—	—
437417 2013 WH ₁₀₃	16.6	X	58.25782	283.71132	182.34313	9.66409	0.1949705	0.18527815	3.0473330	20	3 5.8	20.2
437418 2013 WM ₁₀₆	16.6	X	213.97877	198.97802	220.84103	8.01951	0.1770270	0.23821419	2.5772564	20	6 18.4	20.8
437419 2013 XM ₂	16.3	X	181.34902	3.01903	82.71624	16.16723	0.1365261	0.23083783	2.6318718	20	6 21.5	20.3
437420 2013 XS ₂	16.5	X	186.67483	71.02970	19.92311	13.48726	0.1390051	0.24051505	2.5607934	20	7 5.7	20.8
437421 2013 XP ₃	15.9	X	115.05066	245.86499	278.93805	12.98870	0.0731770	0.22373836	2.6872562	20	7 18.4	19.8
437422 2013 XN ₁₁	17.6	X	320.29284	328.13693	76.01513	5.44726	0.2305173	0.27507312	2.3415528	20	11 19.5	18.7
437423 2013 XV ₁₇	16.6	X	269.10706	192.83103	155.38901	6.50537	0.0308590	0.21975879	2.7196012	20	6 6.5	20.4
437424 2013 XY ₁₇	16.7	X	209.49706	187.96039	230.75764	21.14637	0.1012766	0.23577267	2.5950182	20	6 15.8	20.8
437425 2013 XE ₂₀	15.4	X	305.10174	115.92284	122.84347	22.57071	0.0371235	0.17437579	3.1730623	20	3 10.3	20.1
437426 2013 XO ₂₀	16.6	X	79.42600	156.29600	347.40367	8.06444	0.0854213	0.21040543	2.7996135	20	5 5.3	20.4
437427 2013 XO ₂₂	15.4	X	4.65957	252.45415	216.39493	22.46609	0.3204247	0.15817853	3.3861356	20	—	—
437428 2013 XS ₂₂	16.0	X	207.36479	281.34915	106.98740	15.00560	0.2124965	0.22083094	2.7107914	20	5 8.5	20.8
437429 2013 XY ₂₂	16.6	X	292.46110	238.37627	92.80304	7.22043	0.0180741	0.22023664	2.7156659	20	6 16.5	20.2
437430 2013 XP ₂₃	16.1	X	141.13764	305.23793	92.34942	11.03689	0.0932872	0.18488409	3.0511615	20	3 17.9	20.8
437431 2013 XU ₂₄	17.2	X	232.28086	194.02625	288.53702	6.41663	0.1154546	0.26680008	2.3897112	20	10 6.5	20.5
437432 2013 XV ₂₄	16.6	X	185.82945	289.56389	138.00426	5.11044	0.2200882	0.22255788	2.6967503	20	6 2.9	21.2
437433 2013 XF ₂₅	17.3	X	267.53569	348.54918	79.35325	7.12346	0.1351454	0.26098381	2.4250852	20	9 13.8	20.2

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
437441 2013 YJ ₆	17.5	X	186.75888	35.00612	81.53540	2.61405	0.1336749	0.23507619	2.6001413	20	8 7.1	21.6
437442 2013 YK ₆	16.9	X	193.24579	11.63252	89.63627	3.04736	0.1757567	0.23128547	2.6284748	20	7 22.4	21.0
437443 2013 YN ₈	16.1	X	46.47240	26.41539	101.50327	17.89182	0.1744078	0.17791236	3.1308719	20	3 23.1	20.2
437444 2013 YG ₉	16.0	X	307.33481	323.07685	284.26370	13.13233	0.0419541	0.18887412	3.0085304	20	3 9.0	20.5
437445 2013 YN ₉	17.1	X	176.16443	206.64873	199.40405	1.49284	0.0679793	0.20352196	2.8623882	20	4 26.8	21.3
437446 2013 YX ₉	17.8	X	355.70951	260.94662	140.69446	2.44940	0.1391885	0.28322348	2.2964124	20	—	—
437447 2013 YA ₁₀	15.9	X	265.67012	135.97504	120.20410	10.41884	0.0314251	0.17500199	3.1654884	20	2 9.5	20.5
437448 2013 YB ₁₀	16.1	X	325.17577	296.21734	171.96747	8.55280	0.0364865	0.17888292	3.1195370	20	2 17.9	20.6
437449 2013 YE ₁₀	16.8	X	109.13587	326.66215	249.20726	1.88049	0.1359082	0.20230442	2.8738613	20	5 17.6	21.0
437450 2013 YL ₁₀	16.6	X	67.61119	358.11851	135.46217	6.34493	0.1055772	0.18661550	3.0327567	20	4 15.8	20.6
437451 2013 YY ₁₁	15.8	X	330.66940	269.57064	291.44332	15.32299	0.1282397	0.17658585	3.1465317	20	2 5.5	20.0
437452 2013 YZ ₁₂	16.9	X	86.73683	62.16944	67.60366	5.68612	0.1010929	0.21523195	2.7576018	20	5 28.8	20.7
437453 2013 YT ₁₃	16.0	X	218.58192	60.48385	293.56877	7.93500	0.0142194	0.18943143	3.0026268	20	4 8.2	20.5
437454 2013 YF ₁₄	18.0	X	77.52407	291.44164	90.93467	4.77974	0.1648771	0.31234512	2.1513591	20	—	—
437455 2013 YT ₁₄	17.3	X	297.92000	307.32283	112.41068	7.52334	0.0924164	0.26186179	2.4196616	20	10 28.5	20.0
437456 2013 YY ₁₅	16.7	X	210.42585	265.97735	112.14828	5.66287	0.1326372	0.21204616	2.7851533	20	5 9.3	21.2
437457 2013 YG ₁₆	17.4	X	354.42829	301.25441	118.16146	6.37002	0.1077403	0.28684189	2.2770593	20	—	—
437458 2013 YJ ₁₇	17.2	X	193.14612	306.86251	143.75911	2.80306	0.0670626	0.22453397	2.6809045	20	7 12.6	21.0
437459 2013 YK ₁₉	17.7	X	142.82093	161.67615	323.45497	2.39173	0.1175410	0.22933195	2.6433804	20	7 3.4	21.6
437460 2013 YR ₂₀	16.2	X	193.82129	336.34824	76.39911	13.97115	0.1728766	0.22144921	2.7057435	20	5 23.6	20.6
437461 2013 YN ₂₂	18.2	X	243.05446	53.96226	58.05747	3.61026	0.1298607	0.27113600	2.3641658	20	10 10.2	21.0
437462 2013 YV ₂₇	16.6	X	15.86960	54.60343	105.03475	11.14748	0.1766301	0.17558060	3.1585302	20	3 3.9	20.2
437463 2013 YD ₂₈	16.7	X	116.27581	31.01332	107.35826	10.59195	0.1062300	0.21332038	2.7740513	20	6 20.2	20.7
437464 2013 YU ₂₈	16.0	X	14.01703	224.24285	298.18005	6.26135	0.1722562	0.17651110	3.1474200	20	2 26.1	19.5
437465 2013 YO ₃₁	16.6	X	172.26714	175.01027	257.96780	5.00259	0.0443688	0.21121904	2.7924196	20	5 25.8	20.6
437466 2013 YM ₃₂	16.0	X	66.25525	1.98634	140.32231	10.84575	0.0528337	0.18634496	3.0356913	20	4 19.4	20.3
437467 2013 YA ₃₅	15.7	X	113.03986	107.89532	306.93646	9.46644	0.0850526	0.18141257	3.0904695	20	2 27.4	20.2
437468 2013 YN ₃₅	17.3	X	256.87967	296.96346	153.75442	6.78648	0.0709903	0.26677795	2.3898433	20	10 9.8	20.1
437469 2013 YJ ₄₀	16.3	X	92.28094	204.16497	274.47042	7.81578	0.0397080	0.19127828	2.9832681	20	4 13.4	20.5
437470 2013 YF ₄₂	16.0	X	77.13416	299.05814	269.40144	16.55367	0.2193923	0.23098509	2.6307531	20	8 13.3	20.1
437471 2013 YL ₄₂	16.6	X	198.92414	337.89218	126.62096	14.26888	0.2131871	0.23270048	2.6178084	20	7 29.5	21.0
437472 2013 YJ ₄₃	16.4	X	43.57548	30.99466	106.64644	5.65870	0.0870118	0.18097126	3.0954917	20	3 15.3	20.3
437473 2013 YA ₄₄	16.8	X	113.49899	60.33586	5.13684	3.11590	0.1092465	0.18974940	2.9992715	20	3 17.4	21.1
437474 2013 YO ₄₆	16.8	X	233.40133	319.85406	65.51144	6.34688	0.0802260	0.22335494	2.6903307	20	6 2.6	20.5
437475 2013 YV ₄₆	16.3	X	81.72457	128.20213	317.58521	9.42523	0.0552388	0.18002341	3.1063476	20	2 23.9	20.5
437476 2013 YA ₄₇	16.3	X	99.87672	305.24745	144.12901	8.66073	0.0844165	0.18476350	3.0529892	20	3 30.2	20.6
437477 2013 YP ₄₇	17.2	X	148.93008	39.76498	78.53854	3.32182	0.1546901	0.22538876	2.6741220	20	7 2.4	21.3
437478 2013 YN ₄₉	16.9	X	223.61248	151.52318	280.21156	7.23611	0.0960335	0.23420519	2.6065839	20	7 20.7	20.5
437479 2013 YT ₄₉	17.5	X	168.95653	332.84925	149.83978	1.55042	0.1358678	0.22898493	2.6460504	20	7 26.9	21.7
437480 2013 YZ ₅₀	17.8	X	167.01450	78.69678	100.33842	3.60059	0.1141372	0.26102443	3.2428337	20	10 11.2	21.3
437481 2013 YP ₅₁	16.3	X	21.75136	248.01680	271.23637	4.71496	0.2044290	0.17881260	3.1203547	20	3 8.1	19.6
437482 2013 YZ ₅₁	17.8	X	336.06130	11.46186	52.60669	7.48213	0.0704482	0.29050286	2.2578882	20	—	—
437483 2013 YP ₅₄	16.8	X	150.09285	4.72975	97.36497	16.99720	0.1919115	0.22131411	2.7068445	20	6 15.3	21.3
437484 2013 YD ₅₅	16.6	X	184.07495	299.57255	127.78473	9.86230	0.1124785	0.21640030	2.7476673	20	6 3.0	21.0
437485 2013 YP ₅₅	17.2	X	96.08719	257.80828	262.36591	6.83465	0.1555787	0.22131690	2.7068218	20	6 30.9	21.0
437486 2013 YZ ₅₅	16.6	X	267.01280	315.11673	88.37641	16.47574	0.0788225	0.24340027	2.5405164	20	8 16.7	20.1
437487 2013 YB ₅₇	17.0	X	229.80335	325.99189	45.03930	6.60705	0.0757295	0.21708421	2.7418933	20	5 10.9	21.1
437488 2013 YF ₅₈	17.8	X	306.47450	354.15882	42.51069	5.44026	0.1342408	0.26243317	2.4161482	20	10 4.4	20.0
437489 2013 YJ ₅₈	16.1	X	183.02339	92.28324	272.32920	7.40231	0.0542358	0.19024887	2.9940198	20	3 10.6	20.0
437490 2013 YT ₅₈	16.2	X	226.10166	150.00662	274.94382	14.69112	0.0917902	0.23606764	2.5928561	20	7 14.2	19.9
437491 2013 YZ ₅₉	16.8	X	240.34733	301.62091	77.18177	7.31021	0.0512019	0.22131601	2.7068291	20	6 6.0	20.5
437492 2013 YP ₆₀	17.2	X	43.52653	161.49554	75.33291	5.92571	0.0813870	0.22342470	2.6897707	20	7 24.1	20.5
437493 2013 YT ₆₁	17.2	X	15.93020	279.23031	333.10388	2.74119	0.0111138	0.22087268	2.7104499	20	6 26.0	20.8
437494 2013 YA ₆₂	16.9	X	190.52720	331.48784	95.58711	8.74579	0.2181070	0.22305679	2.6927276	20	6 5.9	21.5
437495 2013 YQ ₆₄	17.5	X	271.83764	344.56572	68.61641	7.28827	0.1176531	0.26151660	2.4217904	20	9 2.1	20.4
437496 2013 YQ ₆₈	16.9	X	135.57748	26.10681	117.74407	3.59462	0.0341972	0.21785379	2.7354323	20	7 13.2	20.6
437497 2013 YN ₇₀	18.0	X	26.90804	169.25178	222.24358	5.48752	0.0539107	0.30818995	2.1706530	20	—	—
437498 2013 YA ₇₂	16.0	X	38.97770	64.40266	46.50643	10.82239	0.1733686	0.17896614	3.1185697	20	2 12.0	19.7
437499 2013 YE ₇₂	16.3	X	129.24154	323.79644	71.81955	8.37741	0.0427192	0.19080654	2.9881831	20	2 23.2	20.6
437500 2013 YQ ₇₃	16.5	X	198.41606	318.32037	104.87218	7.35933	0.0533018	0.21709514	2.7418013	20	6 13.6	20.4
437501 2013 YM ₇₆	16.1	X	175.94367	266.31981	92.82168	12.54753	0.1235088	0.18724516	3.0259540	20	3 8.7	21.1
437502 2013 YV ₇₆	16.2	X	112.23004	62.69321	92.43901	13.73387	0.0772161	0.21766284	2.7370318	20	7 3.7	20.0
437503 2013 YF ₇₇	16.9	X	201.89156	349.81992	99.77749	16.13114	0.1334244	0.23329679	2.6133458	20	7 18.1	21.0
437504 2013 YP ₇₇	16.7	X	172.31905	324.82537	92.73130	7.22455	0.0701675	0.20699011	2.8303251	20	5 9.1	21.0
437505 2013 YJ ₇₈	16.0	X	41.85939	1.68333	122.51858	10.19289	0.0400317	0.17492876	3.1663717	20	2 16.6	20.3
437506 2013 YH ₇₉	17.8	X	175.40897	173.80296	324.60536	4.43273	0.0791044	0.24032558	2.5621392	20	8 24.9	21.5
437507 2013 YJ ₇₉	16.4	X	188.75706	330.98926	95.67074	14.93201	0.1198415	0.22037284	2.7145469	20	6 6.5	20.7
437508 2013 YR ₇₉	16.1	X	114.61440	25.92989	97.90023	11.03393	0.0666501	0.20990587	2.8040537	20	5 27.0	20.1
437509 2013 YQ ₈₀	17.0	X	214.33552	67.74853	318.61952	3.05410	0.0779035	0.21344887	2.7729379	20	5 12.3	21.0
437510 2013 YB ₈₁	17.0	X	57.02225	155.64194	94.22909	5.63188	0.1302266	0.23283514	2.6167990	20	9 10.4	20.4
437511 2013 YC ₈₃	16.3	X	281.00723	29.87478	273.02684	6.91915	0.0792884	0.20058194	2.8902905	20	4 12.4	20.4
437512 2013 YV ₈₃	16.7	X	45.08961	27.28635	131.25448	11.01916	0.0592915	0.18954221	3.0014567	20	4 12.0	20.8
437513 2013 YD ₈₈	16.7	X	357.34115	209.14654	103.06418	5.28756	0.0475453	0.23406960	2.			

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
437521 2013 YE ₁₀₃	16.4	X	138.04655	51.47369	117.96889	15.29133	0.1147676	0.23345364	2.6121751	20	8 28.0	20.5
437522 2013 YG ₁₀₄	17.1	X	322.47693	333.09900	96.56824	10.95083	0.0872632	0.27684378	2.3315579	20	12 25.3	19.5
437523 2013 YB ₁₀₅	15.6	X	244.20301	352.66611	311.46097	9.57089	0.0413586	0.18028370	3.1033570	20	3 7.1	20.2
437524 2013 YX ₁₀₅	15.4	X	309.23287	152.17585	285.40178	9.84959	0.2826805	0.12567077	3.9474187	20	10 7.1	20.2
437525 2013 YD ₁₀₆	16.7	X	298.25464	201.19749	115.89970	6.20253	0.1143336	0.22044355	2.7139663	20	5 23.4	20.1
437526 2013 YG ₁₀₆	16.9	X	269.71245	73.88449	277.87570	3.57409	0.0722055	0.22276604	2.6950701	20	6 4.6	20.5
437527 2013 YR ₁₀₆	16.8	X	253.59431	231.07131	126.03077	9.85299	0.0944498	0.21860897	2.7291290	20	5 22.0	20.8
437528 2013 YQ ₁₀₉	17.3	X	117.61104	234.92813	271.39378	2.87224	0.0407565	0.21725778	2.7404328	20	6 24.4	21.0
437529 2013 YZ ₁₁₀	15.8	X	301.45404	196.70289	123.70606	36.53904	0.1498451	0.21216438	2.7841186	20	6 7.4	20.1
437530 2013 YR ₁₁₁	16.8	X	73.52387	66.20154	125.78457	5.97765	0.0503052	0.21945463	2.7221134	20	6 29.2	20.5
437531 2013 YX ₁₁₁	16.2	X	4.13408	268.27499	275.95608	9.74366	0.1486687	0.18151556	3.0893004	20	3 4.5	19.9
437532 2013 YZ ₁₁₂	16.9	X	261.22736	321.65783	80.38028	8.64424	0.2088736	0.24485611	2.5304364	20	7 12.9	20.3
437533 2013 YE ₁₁₅	17.1	X	314.72631	247.94103	120.05241	14.49155	0.1211837	0.24707529	2.5152617	20	9 6.9	19.9
437534 2013 YM ₁₁₅	17.1	X	53.22472	110.64709	101.39392	0.44301	0.0091646	0.21548714	2.7554243	20	6 22.2	20.6
437535 2013 YZ ₁₁₅	16.1	X	258.94256	242.80023	112.88567	7.45100	0.0737844	0.20965848	2.8062591	20	5 28.3	20.1
437536 2013 YV ₁₁₆	16.8	X	304.02032	225.66078	108.66310	7.46728	0.0512815	0.21863700	2.7288957	20	7 2.5	20.2
437537 2013 YU ₁₁₇	17.0	X	219.08055	343.89201	108.04216	8.27755	0.0727066	0.23511211	2.5998765	20	8 16.7	20.7
437538 2013 YU ₁₁₇	16.9	X	181.96141	233.32130	159.37531	2.41526	0.0762241	0.20378903	2.8598868	20	4 17.2	21.2
437539 2013 YF ₁₁₉	15.7	X	79.05459	337.20208	114.50129	19.37224	0.0517095	0.18176976	3.0864195	20	3 4.9	20.2
437540 2013 YG ₁₂₁	17.3	X	101.37611	150.95204	139.79345	3.91249	0.1259014	0.27543185	2.3395192	20	12 25.7	20.9
437541 2013 YJ ₁₂₂	15.7	X	279.27400	334.79244	273.80332	10.97436	0.0565577	0.17732654	3.1377637	20	2 7.9	20.4
437542 2013 YP ₁₂₃	15.8	X	278.43584	353.12891	298.14734	10.26539	0.1125537	0.18714036	3.0270835	20	3 19.6	20.4
437543 2013 YV ₁₂₄	17.0	X	266.43748	0.09442	358.62837	6.24271	0.0716015	0.21422454	2.7662403	20	6 8.9	20.9
437544 2013 YK ₁₂₅	16.6	X	138.43449	304.53808	107.19924	5.10830	0.1606242	0.18808420	3.0169481	20	4 4.0	21.3
437545 2013 YN ₁₂₅	16.3	X	31.02058	59.80476	119.67108	17.36412	0.1320974	0.18457443	3.0550737	20	4 28.3	20.3
437546 2013 YT ₁₂₇	15.9	X	22.82923	352.84722	277.53151	17.37251	0.0743706	0.23018974	2.6368094	20	8 1.1	19.3
437547 2013 YK ₁₂₈	15.7	X	320.37309	122.24595	112.09870	13.90533	0.0681553	0.18478468	3.0527559	20	3 20.0	20.0
437548 2013 YL ₁₂₈	16.1	X	343.06802	263.26518	299.39724	5.73729	0.1234910	0.17795715	3.1303466	20	2 28.0	20.1
437549 2013 YP ₁₂₈	16.8	X	208.04941	359.07076	79.81262	5.30465	0.1731482	0.23283455	2.6168034	20	7 7.8	21.0
437550 2013 YB ₁₂₉	16.9	X	128.55281	190.42003	270.96220	4.02493	0.1267549	0.21529910	2.7570284	20	5 18.2	21.1
437551 2013 YJ ₁₃₈	16.3	X	25.52443	78.76852	57.09306	10.48568	0.0595376	0.17721566	3.1390723	20	2 17.2	20.6
437552 2013 YE ₁₃₉	16.3	X	250.28770	147.60005	268.43581	12.49524	0.1532439	0.24066389	2.5597375	20	7 22.7	19.9
437553 2013 YC ₁₄₄	17.5	X	63.58169	155.97103	113.88542	15.57167	0.0743209	0.24632619	2.5203585	20	10 14.7	21.2
437554 2013 YN ₁₄₇	16.1	X	168.06905	231.60725	127.93926	10.91449	0.0938229	0.17732483	3.1377838	20	2 26.6	20.9
437555 2013 YI ₁₄₈	17.1	X	130.14651	153.47239	303.11901	3.02772	0.1779063	0.21618174	2.7495189	20	5 18.3	21.5
437556 2013 YP ₁₄₉	17.5	X	279.09245	21.83361	99.37819	7.28684	0.0809658	0.28455888	2.2892223	20	12 28.4	19.6
437557 2013 YN ₁₅₀	16.3	X	172.27269	356.03114	94.20480	22.75989	0.0243876	0.22345469	2.6895300	20	6 18.5	20.1
437558 2013 YY ₁₅₀	16.3	X	99.67832	320.82750	102.35241	8.65540	0.2199884	0.18501319	3.0502417	20	3 17.8	20.8
437559 2014 AL ₁	17.0	X	116.32150	133.19138	2.49306	3.19139	0.0344245	0.21241074	2.7819655	20	6 7.2	20.9
437560 2014 AX ₃	16.8	X	56.53841	38.03084	104.99919	11.54817	0.1969777	0.18545795	3.0453631	20	4 27.8	20.7
437561 2014 AH ₄	15.9	X	131.63110	294.57310	108.49372	12.45896	0.0498603	0.17972723	3.1097594	20	3 8.9	20.5
437562 2014 AM ₄	16.3	X	15.19070	116.17947	77.20123	6.80491	0.0764359	0.19028581	2.9936323	20	4 12.6	20.1
437563 2014 AT ₄	16.9	X	136.35088	64.76477	57.08076	4.75394	0.0452556	0.21458231	2.7631647	20	6 15.5	20.8
437564 2014 AB ₇	16.9	X	45.54890	50.06589	82.84376	2.27101	0.1448865	0.17928552	3.1148651	20	3 16.7	20.6
437565 2014 AH ₈	16.7	X	17.24796	107.47489	60.32444	2.32394	0.1324451	0.17827103	3.1266712	20	3 13.4	20.2
437566 2014 AU ₈	16.5	X	67.61399	158.54016	322.03283	1.97850	0.1733145	0.18360186	3.0658530	20	4 5.5	20.4
437567 2014 AM ₁₄	16.8	X	190.23868	47.89086	57.81633	9.79922	0.1115325	0.23499540	2.6007372	20	7 30.6	20.9
437568 2014 AX ₁₄	16.8	X	162.42015	287.89728	175.19684	8.41092	0.2629772	0.22042201	2.7141431	20	6 27.3	21.8
437569 2014 AZ ₁₄	16.6	X	224.44279	289.72642	137.73163	22.35032	0.0583058	0.23199870	2.6230849	20	7 20.8	20.3
437570 2014 AA ₁₈	17.0	X	151.83140	10.03305	55.12690	2.83935	0.0412923	0.19920624	2.9035819	20	4 22.3	21.0
437571 2014 AL ₁₈	16.6	X	177.85203	325.72109	90.22031	3.72887	0.1437547	0.21060416	2.7978521	20	5 12.6	21.0
437572 2014 AC ₁₉	16.7	X	320.25680	247.09495	341.50433	2.13567	0.1056534	0.17922091	3.1156137	20	3 2.4	20.6
437573 2014 AK ₂₀	16.8	X	98.59141	141.62118	77.91549	8.17414	0.0694707	0.25747564	2.4470638	20	9 19.1	20.3
437574 2014 AV ₂₀	18.4	X	40.84667	310.52386	81.71670	4.39296	0.1127811	0.30765657	2.1731611	20	—	—
437575 2014 AA ₂₈	16.5	X	252.82273	190.88745	228.03573	7.81363	0.2048966	0.24377665	2.5379008	20	7 23.2	20.2
437576 2014 AO ₂₈	17.1	X	345.70043	87.01804	309.60524	5.21288	0.1132583	0.27211575	2.3584876	20	12 18.3	19.5
437577 2014 AX ₃₁	16.7	X	166.72370	348.32264	145.60295	13.61248	0.1309717	0.23054905	2.6340691	20	8 7.9	20.9
437578 2014 AR ₃₇	17.6	X	288.43498	314.22785	137.81467	3.91951	0.1169589	0.27828256	2.3235145	20	11 28.0	19.7
437579 2014 AR ₃₉	15.8	X	34.00361	226.16133	300.73785	8.71454	0.0478292	0.18177647	3.0863436	20	3 28.3	20.1
437580 2014 AQ ₄₀	17.0	X	335.91114	221.13845	351.42864	9.34064	0.0602734	0.18399571	3.0614764	20	3 9.2	21.1
437581 2014 AQ ₄₁	16.8	X	278.09320	50.31093	305.99001	5.02313	0.0456973	0.21864191	2.7288549	20	6 26.7	20.4
437582 2014 AW ₄₁	15.9	X	92.94393	309.32248	137.42105	18.97315	0.1441314	0.18101020	3.0950477	20	3 30.0	20.5
437583 2014 AS ₄₃	16.8	X	278.77011	347.85637	358.36662	5.94536	0.0726044	0.22519591	2.6756484	20	6 8.7	20.5
437584 2014 AZ ₄₃	17.1	X	254.18250	268.55493	137.20073	8.97757	0.1933067	0.23356878	2.6113166	20	7 10.2	20.8
437585 2014 AK ₄₄	17.3	X	18.69525	215.90129	114.28940	5.39622	0.1698879	0.26279021	2.4139592	20	11 15.6	20.1
437586 2014 AZ ₄₆	15.4	X	205.07592	6.38490	308.58596	16.89104	0.1842231	0.18125535	3.0922563	20	2 6.3	20.6
437587 2014 AC ₄₇	16.0	X	263.20600	165.48479	106.26397	10.24825	0.0301269	0.17932256	3.1144361	20	2 27.1	20.5
437588 2014 AU ₄₇	16.7	X	203.26691	112.61652	315.26662	5.56777	0.0537496	0.22056829	2.7129429	20	6 25.6	20.6
437589 2014 AV ₄₇	16.8	X	73.82215	98.56596	116.42648	13.59591	0.0979256	0.22117508	2.7079788	20	8 8.7	20.5
437590 2014 AZ ₄₉	16.0	X	98.48281	185.24608	268.83281	9.44776	0.0454612	0.17912315	3.1167471	20	3 21.6	20.7
437591 2014 AK ₅₀	16.3	X	100.85736	3.64556	62.74432	19.92079	0.0616231	0.17723497	3.1388443	20	3 9.3	21.1
437592 2014 AQ ₅₀	16.6	X	92.99719	289.10068	168.42472	5.54562	0.1444059	0.18879332	3.0093888	20	4 7.6	20.8
437593 2014 AU ₅₃	16.9	X	275.22515	219.9702								

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
437601 2014 BU ₅	17.0	X	216.61545	316.66492	119.89945	8.59016	0.1062741	0.22759727	2.6567948	20	7 18.3	21.0
437602 2014 BK ₆	15.5	X	81.29700	124.07793	321.63464	15.00555	0.1380466	0.17395402	3.1781891	20	3 4.0	19.9
437603 2014 BP ₆	17.2	X	77.19489	68.82098	126.70809	4.72088	0.0347649	0.21321951	2.7749261	20	7 6.2	20.9
437604 2014 BO ₇	16.7	X	237.51099	270.18553	123.64321	7.35838	0.0322177	0.21495872	2.7599380	20	6 24.9	20.5
437605 2014 BE ₈	16.4	X	47.84797	150.30467	348.60579	4.92839	0.0867419	0.17952387	3.1121074	20	3 20.0	20.5
437606 2014 BF ₁₁	15.6	X	255.69267	158.37385	129.38328	29.61542	0.1981656	0.17351592	3.1835365	20	2 19.8	20.8
437607 2014 BF ₁₂	16.4	X	315.35181	85.69042	132.81917	14.57944	0.0246829	0.17267676	3.1938422	20	2 25.9	20.9
437608 2014 BL ₁₂	17.1	X	315.75391	305.11501	82.60081	3.06341	0.1486426	0.25166649	2.4845770	20	10 5.5	19.4
437609 2014 BA ₁₃	17.3	X	286.03609	298.75091	90.09886	0.53607	0.1423065	0.24177572	2.5518839	20	8 9.5	20.0
437610 2014 BL ₁₃	16.5	X	339.55861	336.90546	333.50878	1.90311	0.0529619	0.22217764	2.6998262	20	7 23.9	19.7
437611 2014 BS ₁₃	16.8	X	114.75358	83.21121	86.02001	3.28976	0.0238667	0.21817790	2.7327226	20	7 19.9	20.6
437612 2014 BY ₁₃	17.1	X	249.30799	334.78162	85.12302	5.81127	0.2031506	0.23966634	2.5668354	20	7 23.6	20.7
437613 2014 BC ₁₄	16.7	X	274.38185	15.77957	30.24697	3.64191	0.1689176	0.24605843	2.5221866	20	8 13.4	19.7
437614 2014 BC ₁₄	16.3	X	141.93679	3.26604	91.33406	13.75107	0.1885850	0.21077994	2.7962964	20	5 30.3	21.0
437615 2014 BJ ₁₆	16.1	X	125.91365	80.62419	317.63784	14.35722	0.1752298	0.18372742	3.0644561	20	3 1.9	21.0
437616 2014 BN ₁₈	16.1	X	73.02430	337.39602	137.30516	10.23089	0.0161266	0.17973465	3.1096739	20	3 18.9	20.5
437617 2014 BX ₁₉	15.4	X	232.14315	350.28144	130.02885	15.00378	0.1518884	0.17161986	3.2069414	20	2 20.9	20.7
437618 2014 BG ₂₀	16.9	X	184.27699	48.55399	71.54879	6.83466	0.1100216	0.23410255	2.6073457	20	8 11.8	20.9
437619 2014 BU ₂₀	17.1	X	48.11841	221.40013	128.23341	7.52030	0.1174176	0.27001999	2.3706755	20	—	—
437620 2014 BG ₂₁	15.6	X	157.03305	90.89445	320.17001	9.41320	0.0375676	0.18666313	3.0322408	20	4 5.9	20.2
437621 2014 BG ₂₄	16.5	X	268.18938	135.09341	182.96458	9.58149	0.0075030	0.19151688	2.9807898	20	5 1.4	20.7
437622 2014 BN ₂₅	17.2	X	313.21285	348.86079	13.16615	0.43749	0.0580692	0.24183882	2.5514401	20	8 26.5	20.2
437623 2014 BY ₂₅	16.9	X	29.57527	340.99001	281.11634	3.49092	0.0626726	0.22624957	2.6673349	20	8 3.1	20.1
437624 2014 BJ ₂₆	16.8	X	185.69121	308.41012	116.74538	5.32808	0.0555890	0.21610496	2.7501701	20	6 1.5	20.7
437625 2014 BL ₂₇	17.5	X	161.42145	251.32924	248.29531	2.42224	0.1318766	0.23246678	2.6195626	20	8 9.6	21.5
437626 2014 BN ₂₇	17.2	X	129.54290	344.38194	149.45220	4.81866	0.1691807	0.21597847	2.7512438	20	7 3.6	21.5
437627 2014 BX ₂₈	16.1	X	234.61958	8.32099	286.72391	10.36285	0.1659760	0.17625843	3.1504273	20	2 7.8	21.3
437628 2014 BT ₃₀	16.6	X	78.48219	18.37409	231.95066	4.02218	0.1638546	0.22902423	2.6457477	20	10 7.1	20.6
437629 2014 BS ₃₁	16.2	X	224.13135	318.24380	123.40526	15.69743	0.0750372	0.23355223	2.6114399	20	8 7.6	19.9
437630 2014 BL ₃₃	16.8	X	47.46080	12.38288	134.91698	0.18295	0.1157760	0.18098443	3.0953415	20	4 2.8	20.5
437631 2014 BO ₃₃	17.3	X	195.88651	288.86037	169.54999	6.62682	0.0876845	0.22609152	2.6685778	20	7 23.9	21.3
437632 2014 BG ₃₄	16.1	X	271.13201	301.61085	341.94087	8.20837	0.0080670	0.17918370	3.1160450	20	3 19.9	20.6
437633 2014 BV ₃₄	15.5	X	65.53249	351.05615	124.56672	10.65444	0.0569898	0.17466398	3.1695710	20	3 16.8	19.9
437634 2014 BX ₃₄	15.8	X	20.68285	202.82519	330.93076	10.02704	0.0902729	0.17703909	3.1411591	20	3 21.3	19.9
437635 2014 BE ₃₅	16.1	X	187.65493	287.37267	140.69638	25.57235	0.1777742	0.21779439	2.7359296	20	6 10.0	21.1
437636 2014 BF ₃₅	15.6	X	44.50982	77.84753	83.56170	15.64612	0.0856423	0.18236966	3.0796473	20	4 21.0	19.8
437637 2014 BD ₃₆	17.0	X	175.18166	334.00571	119.49598	5.56290	0.0333056	0.21306338	2.7762816	20	6 25.5	20.9
437638 2014 BD ₃₇	16.1	X	73.52033	344.84836	153.51764	10.51428	0.0431459	0.18257793	3.0773050	20	4 22.1	20.4
437639 2014 BD ₃₈	16.3	X	132.65793	270.93519	148.42709	9.56043	0.0812714	0.17612871	3.1519739	20	3 31.6	21.0
437640 2014 BH ₃₈	16.4	X	291.06937	172.81105	147.45377	12.66765	0.0527896	0.19697835	2.9254345	20	5 28.5	20.6
437641 2014 BE ₃₉	16.6	X	15.02085	62.48524	168.57646	5.91052	0.0162876	0.19508589	2.9443231	20	5 28.0	20.7
437642 2014 BW ₄₀	16.5	X	357.86745	185.22001	89.10930	4.64488	0.0574632	0.21120766	2.7925199	20	6 30.9	19.8
437643 2014 BE ₄₄	16.6	X	217.38753	100.46394	0.54058	14.11850	0.0864042	0.24227056	2.5484080	20	8 28.6	20.3
437644 2014 BU ₄₇	16.9	X	1.01990	287.15466	305.32903	3.89523	0.0303036	0.19541780	2.9409883	20	5 8.2	20.9
437645 2014 BV ₄₇	17.0	X	222.21472	96.62082	303.41610	4.66954	0.0620689	0.21223063	2.7835392	20	6 10.3	20.9
437646 2014 BW ₄₈	16.0	X	266.78557	178.55472	163.54622	4.15008	0.0217910	0.19559461	2.9392158	20	5 27.5	20.1
437647 2014 BU ₄₉	16.2	X	66.78480	305.65272	315.91861	9.78437	0.2161828	0.24255088	2.5464441	20	10 13.0	20.1
437648 2014 BX ₅₁	16.5	X	107.24523	48.10668	26.47855	4.66949	0.1169384	0.18622184	3.0370292	20	3 23.5	20.7
437649 2014 BS ₅₂	17.2	X	139.77360	53.02104	86.13828	9.40670	0.1720917	0.22311640	2.6922479	20	7 21.7	21.5
437650 2014 BB ₅₅	16.1	X	315.53829	302.52435	295.92693	1.87390	0.0755998	0.17822944	3.1271575	20	3 11.6	20.4
437651 2014 BE ₅₉	16.4	X	42.60027	347.89532	161.42016	9.54612	0.0298982	0.17448140	3.1717817	20	3 23.4	20.7
437652 2014 BD ₆₁	15.8	X	107.71443	98.55369	121.62525	15.69958	0.0539418	0.23820418	2.5773286	20	9 28.6	19.7
437653 2014 BP ₆₃	15.6	X	26.15029	218.91536	302.93457	8.82554	0.0439013	0.17933443	3.1142987	20	3 11.8	20.0
437654 2014 BS ₆₃	15.6	X	109.96706	304.92719	123.76421	14.73552	0.1760386	0.17845816	3.1244849	20	4 1.3	20.5
437655 2014 CH ₂	16.5	X	162.23752	257.03891	162.95961	2.27870	0.0266213	0.19588824	2.9362777	20	4 27.6	20.7
437656 2014 CL ₂	15.9	X	190.97145	236.20306	109.26888	11.57194	0.1053114	0.17811804	3.1284613	20	3 5.6	20.9
437657 2014 CN ₃	16.0	X	145.87366	291.50957	132.72857	11.38868	0.1072384	0.18891340	3.0081134	20	4 24.3	20.8
437658 2014 CZ ₃	15.9	X	76.10259	131.96678	353.30426	9.28154	0.0512818	0.18116299	3.0933073	20	4 4.4	20.1
437659 2014 CX ₄	16.7	X	227.83506	7.77631	30.76569	4.67863	0.0735262	0.21175427	2.8777122	20	6 13.7	20.7
437660 2014 CT ₅	16.6	X	336.53952	182.27567	101.88061	7.22699	0.0330461	0.20908438	2.8113936	20	6 13.2	20.2
437661 2014 CE ₆	17.0	X	135.45746	183.65187	92.02950	5.93879	0.1113818	0.27094454	2.3652794	20	—	—
437662 2014 CS ₆	16.8	X	163.48572	2.71086	63.51461	3.07539	0.0395264	0.19854124	2.9100619	20	5 7.2	21.0
437663 2014 CE ₇	16.5	X	29.17903	213.68486	336.16301	9.10630	0.0389956	0.19045847	2.9918227	20	4 19.5	20.7
437664 2014 CJ ₇	16.8	X	282.96880	291.98514	111.36008	6.46535	0.1352396	0.24482037	2.5306826	20	8 29.2	19.7
437665 2014 CL ₉	17.1	X	326.39010	249.42660	23.41862	2.19927	0.0366253	0.19944915	2.9012240	20	5 13.4	20.8
437666 2014 CA ₁₀	16.3	X	41.70409	95.99254	74.52506	9.66613	0.1095579	0.18569196	3.0428040	20	4 26.6	20.1
437667 2014 CS ₁₀	16.6	X	197.78703	302.74186	74.19860	9.30155	0.0448576	0.19189408	2.9768823	20	4 18.7	21.0
437668 2014 CP ₁₁	15.7	X	144.06470	298.68208	135.08988	12.05653	0.0308658	0.18951569	3.0017367	20	4 27.8	20.2
437669 2014 CS ₁₂	16.1	X	220.62635	227.59266	100.75247	9.72621	0.0859767	0.17924118	3.1153787	20	3 15.3	21.0
437670 2014 CE ₁₅	15.9	X	346.62468	82.80275	137.52542	10.29146	0.0568046	0.17800104	3.1298319	20	4 7.5	20.1
437671 2014 CS ₁₅	16.5	X	260.58392	222.70991	198.74939	5.10003	0.2584055	0.24434852	2.5339395	20	7 29.2	20.2
437672 2014 CE ₁₆	15.6	X	32.85395	215.71663	320.79359	9.00307	0.0700131	0.18251843	3.0779737	20	4 9.6	19.8
437673 2014 CC ₁₆	17.0	X	226.31911	284.69125	155.31157	2.22230	0.0416091	0.22727348	2.6593176	20	8 10.8	20.5

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
437681 2014 DX ₁	15.9	X	254.20957	28.29956	290.27475	10.20045	0.0617945	0.18409462	3.0603798	20	3 31.7	20.6
437682 2014 DX ₃	16.2	X	279.16324	317.60133	340.03094	9.31800	0.1152415	0.18514099	3.0488379	20	3 30.4	20.7
437683 2014 DZ ₄	16.8	X	71.10674	80.71390	140.13912	5.11413	0.0188747	0.22029823	2.7151597	20	7 30.1	20.2
437684 2014 DT ₇	16.7	X	22.81959	295.67038	332.51079	10.84571	0.0945203	0.22020098	2.7159590	20	8 6.9	20.0
437685 2014 DL ₈	16.2	X	92.53017	318.39749	141.39975	13.63846	0.1102832	0.18556024	3.0442438	20	4 8.7	20.6
437686 2014 DW ₈	16.2	X	303.48749	293.41598	312.04147	4.71617	0.1214570	0.17593287	3.1543126	20	2 27.1	20.6
437687 2014 DK ₉	16.4	X	37.22675	20.30606	153.04857	9.72455	0.0718425	0.18371888	3.0645510	20	4 19.9	20.5
437688 2014 DV ₁₈	15.8	X	52.02146	355.14576	161.84738	16.28628	0.0175346	0.18185930	3.0854064	20	4 14.8	20.2
437689 2014 DM ₂₅	16.4	X	280.47739	196.53962	147.47555	7.66103	0.0696970	0.20825587	2.8188451	20	6 10.1	20.3
437690 2014 DR ₂₆	16.1	X	174.86221	94.50965	293.23268	1.99514	0.0248841	0.18050825	3.1007828	20	4 1.3	20.5
437691 2014 DF ₂₈	16.4	X	107.12665	345.11585	148.24612	12.84623	0.0577490	0.20039528	2.8920850	20	5 29.9	20.7
437692 2014 DR ₂₈	16.2	X	356.54843	233.67366	307.88128	5.48730	0.0578785	0.17057403	3.2200363	20	2 28.0	20.5
437693 2014 DN ₂₉	16.3	X	335.77603	104.22594	144.21533	9.98010	0.1370542	0.18364192	3.0654071	20	4 19.9	20.1
437694 2014 DQ ₂₉	16.9	X	223.64817	252.89512	162.95263	5.36639	0.0256927	0.21461681	2.7628685	20	7 6.6	20.8
437695 2014 DU ₂₉	16.1	X	224.44389	49.31311	317.02479	7.93408	0.0765741	0.19356203	2.9597562	20	4 26.3	20.7
437696 2014 DP ₃₁	15.4	X	13.81422	60.94924	91.02619	10.98565	0.0160024	0.15638056	3.4120407	20	2 23.1	20.3
437697 2014 DR ₃₂	16.5	X	339.65982	337.07504	17.29236	8.41203	0.02185454	0.23721494	2.5844890	20	10 2.7	18.4
437698 2014 DA ₃₆	15.6	X	68.04472	7.86901	153.68755	16.64458	0.0593663	0.18581795	3.0414285	20	5 17.8	20.1
437699 2014 DL ₃₆	16.0	X	254.33344	320.25954	351.07346	10.15065	0.0674084	0.17499498	3.1655730	20	3 26.6	20.6
437700 2014 DG ₃₇	16.4	X	332.16954	200.15630	146.81251	11.80290	0.1304819	0.22751987	2.6573973	20	9 1.3	19.0
437701 2014 DY ₃₇	16.5	X	99.61049	334.24935	129.89959	2.85106	0.1447142	0.18186658	3.0853240	20	4 24.3	20.9
437702 2014 DX ₄₂	16.5	X	271.37865	202.05585	150.79785	4.06212	0.0905945	0.21355603	2.7720102	20	6 11.3	20.2
437703 2014 DU ₅₃	16.2	X	154.70783	248.69804	170.16926	9.64944	0.0825596	0.17861969	3.1226010	20	4 23.3	21.0
437704 2014 DD ₆₂	15.9	X	201.52149	235.97486	149.94929	10.77534	0.0555020	0.18122799	3.0925676	20	5 4.0	20.6
437705 2014 DB ₇₆	16.4	X	248.02045	155.33923	172.06596	8.94782	0.0828944	0.17401647	3.1774286	20	4 9.8	21.2
437706 2014 DS ₈₀	16.5	X	308.74896	21.43881	281.14665	8.17934	0.0859505	0.19872752	2.9082431	20	5 20.9	20.4
437707 2014 DE ₈₁	16.8	X	255.70222	275.51193	132.26510	5.49517	0.0978034	0.22270368	2.6955731	20	7 28.1	20.5
437708 2014 DV ₈₁	17.1	X	9.35156	248.15090	13.21288	3.75285	0.0533495	0.20946108	2.8080219	20	6 30.8	20.6
437709 2014 DF ₈₅	16.3	X	226.10464	217.58897	153.50351	10.14044	0.0609302	0.18766257	3.0214653	20	5 12.2	20.9
437710 2014 DC ₈₈	16.5	X	347.60462	342.19937	336.92760	6.75060	0.1307574	0.22391531	2.6858403	20	8 19.9	19.1
437711 2014 DU ₈₈	16.9	X	289.36228	244.88129	158.33119	15.23481	0.1292660	0.24284175	2.5444103	20	9 7.8	19.8
437712 2014 DL ₈₉	17.2	X	6.76733	97.28976	217.63711	2.92904	0.1264323	0.22974918	2.6401792	20	9 17.6	20.5
437713 2014 DL ₉₄	17.0	X	219.49472	104.11532	303.47733	4.09225	0.1663387	0.21577253	2.7529941	20	6 8.6	21.2
437714 2014 DE ₉₉	16.5	X	264.26932	53.72890	263.75988	2.28238	0.0688522	0.19151997	2.9807577	20	4 14.4	20.7
437715 2014 DT ₁₀₂	16.3	X	52.22492	342.63501	162.14271	1.22541	0.1059947	0.18020318	3.1042814	20	4 6.0	20.2
437716 2014 DV ₁₀₂	16.8	X	295.94722	172.81785	158.67556	4.67136	0.0770051	0.21170336	2.7881591	20	6 13.3	20.4
437717 2014 DL ₁₀₃	16.6	X	349.11204	109.74820	160.40736	10.89664	0.0168346	0.19824664	2.9129442	20	6 13.3	20.7
437718 2014 DV ₁₀₃	16.6	X	281.43850	204.05676	128.32289	3.07291	0.1023552	0.19537860	2.9413817	20	5 21.8	20.5
437719 2014 DH ₁₀₅	16.4	X	154.46885	247.29746	162.59060	7.76304	0.1750329	0.18369306	3.0648381	20	4 17.3	21.4
437720 2014 DB ₁₁₀	14.3	X	248.47535	337.94226	133.07359	8.49303	0.0872567	0.08474903	5.1330980	20	9 25.2	21.3
437721 2014 DA ₁₁₁	16.1	X	333.67077	117.52063	84.02026	6.28643	0.0815775	0.16990151	3.2285280	20	2 23.4	20.4
437722 2014 DD ₁₁₁	16.5	X	102.93572	111.60636	359.74088	7.44545	0.1017478	0.19267384	2.9688452	20	4 27.4	20.8
437723 2014 DU ₁₁₄	16.4	X	51.10586	348.90105	167.41150	13.44101	0.1075645	0.17906420	3.1174312	20	4 22.5	20.5
437724 2014 DR ₁₁₆	16.0	X	301.53381	112.12825	177.30057	10.18667	0.0719733	0.18364527	3.0653699	20	4 29.3	20.2
437725 2014 DH ₁₂₀	16.4	X	52.53832	274.90804	216.49951	5.32567	0.2403930	0.17745260	3.1362775	20	4 6.6	20.0
437726 2014 DS ₁₂₀	16.0	X	95.45727	356.20229	120.87077	10.38047	0.0969926	0.18454072	3.0554457	20	5 1.9	20.5
437727 2014 DX ₁₂₁	16.0	X	189.17907	243.38655	174.31798	11.26040	0.0922710	0.19808159	2.9145620	20	5 27.4	20.6
437728 2014 DQ ₁₂₄	14.2	X	328.96983	216.93065	175.86964	6.29509	0.0244831	0.08216364	5.2402212	20	10 4.9	21.0
437729 2014 DH ₁₃₅	14.4	X	314.20071	282.10826	127.92960	7.93555	0.0327298	0.08545436	5.1048138	20	10 9.2	21.1
437730 2014 DO ₁₃₇	14.1	X	279.74766	293.45664	148.73699	8.10403	0.0342622	0.08471336	5.1345390	20	10 3.9	20.9
437731 2014 DP ₁₃₇	16.9	X	225.15167	330.02762	68.49515	3.04529	0.0716310	0.20154039	2.8811198	20	6 10.8	20.9
437732 2014 DE ₁₃₈	16.6	X	231.81211	266.94774	158.92060	12.70784	0.1835748	0.22465068	2.6799759	20	7 12.2	20.9
437733 2014 ET ₁	16.1	X	216.05110	293.88130	141.81624	13.56528	0.1427672	0.21966772	2.7203528	20	7 12.7	20.4
437734 2014 EF ₉	13.8	X	211.81079	134.70228	7.25320	12.99875	0.0173036	0.08392660	5.1665775	20	9 25.9	20.7
437735 2014 EF ₉	16.0	X	302.97255	141.34697	147.03887	14.90899	0.1178720	0.18247161	3.0785001	20	4 26.3	20.4
437736 2014 EC ₁₀	15.7	X	54.98489	230.52493	267.99999	7.82283	0.0457652	0.17417853	3.1754574	20	3 22.2	20.1
437737 2014 EN ₁₅	16.6	X	214.22367	237.60444	166.64140	10.42364	0.0929959	0.20100036	2.8862780	20	6 5.6	21.1
437738 2014 EV ₁₉	15.7	X	224.88627	287.55898	12.33039	9.52951	0.0666273	0.15324113	3.4584844	20	2 17.9	21.0
437739 2014 EF ₂₈	16.1	X	63.15473	17.64818	121.24071	10.40045	0.0314548	0.17508781	3.1644540	20	4 9.6	20.6
437740 2014 EQ ₂₉	14.2	X	197.67406	137.34493	17.91547	6.25940	0.0771507	0.08386663	5.1690402	20	9 22.7	21.3
437741 2014 EE ₃₁	15.5	X	148.06522	334.26482	33.56938	9.93585	0.0210783	0.14746533	3.5482110	20	2 15.2	20.7
437742 2014 EL ₃₄	16.6	X	1.54015	245.65097	48.07401	6.92660	0.1349340	0.20491732	2.8493794	20	8 9.3	19.8
437743 2014 EM ₃₅	16.0	X	131.32547	299.27934	136.85667	10.50132	0.0347702	0.17358633	3.1826755	20	4 16.1	20.7
437744 2014 EG ₄₀	15.9	X	212.92024	261.49037	117.94058	10.53426	0.1097047	0.18183511	3.0856800	20	5 6.2	20.8
437745 2014 EY ₄₃	16.0	X	322.55793	180.77948	79.07641	11.90649	0.1082469	0.16964900	3.2317309	20	4 19.9	20.4
437746 2014 FZ ₂	16.5	X	337.48248	318.34003	54.22885	12.00321	0.2641394	0.24078018	2.5589133	20	11 2.3	18.1
437747 2014 FH ₁₁	16.7	X	105.15558	294.45586	158.00763	4.18386	0.1078674	0.18242335	3.0790431	20	4 11.4	21.0
437748 2014 FS ₁₁	16.0	X	129.37120	241.16168	182.09421	10.87158	0.1981201	0.17411648	3.1762119	20	4 11.9	21.0
437749 2014 FL ₁₅	16.0	X	248.44583	181.66322	145.59442	10.00145	0.0399504	0.17941689	3.1133444	20	4 16.6	20.6
437750 2014 FR ₃₀	16.5	X	327.02563	273.92805	11.85234	24.94304	0.3392289	0.17666369	3.1456074	20	4 15.1	20.1
437751 2014 FK ₄₀	16.2	X	290.82055	168.81744	131.07639	12.40897	0.0993732	0.18074587	3.0980645	20	4 27.6	20.7
437752 2014 FR ₄₂	14.3	X	241.02860	59.63734	52.40309	7.50742	0.1576478	0.08197690	5.2481758	20	9 11.6	21.6
437753 2014 FW ₄₉	16.1	X	104.54540	316.47651	288.40256	1						

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
437761 2014 HG ₁₇₀	14.2	X	243.98458	337.71439	151.46480	10.75612	0.0914752	0.08253937	5.2243063	20	10 9.9	21.3
437762 2014 JD ₆₁	16.4	X	43.00889	149.84934	249.46817	11.93436	0.1615193	0.25371918	2.4711580	20	—	—
437763 2014 JX ₇₈	16.3	X	116.93819	345.85066	290.57596	12.64274	0.1726383	0.23935682	2.5690477	20	12 17.8	20.5
437764 2014 KJ ₄	15.4	X	108.31068	322.80952	359.76483	14.60342	0.2827034	0.23917288	2.5703648	20	—	—
437765 2014 WN ₄₉₃	15.3	X	250.66003	347.90132	236.39099	10.29239	0.0883304	0.17101235	3.2145319	20	—	—
437766 2015 AU ₂	17.9	X	327.97051	115.55915	80.97192	24.15420	0.1356622	0.38531311	1.8703671	20	—	—
437767 2015 AT ₁₀₉	17.9	X	124.04667	233.83957	278.62281	2.96160	0.1452634	0.25981610	2.4323460	20	7 22.3	21.4
437768 2015 AQ ₁₆₇	17.0	X	162.83654	79.66898	310.84926	5.46535	0.0160946	0.21979559	2.7192975	20	3 16.3	20.8
437769 2015 AD ₁₇₈	17.0	X	349.28042	156.25023	95.26602	4.30597	0.1558206	0.23439750	2.6051580	20	5 12.0	19.4
437770 2015 AP ₁₉₁	16.7	X	92.51232	349.42904	68.06241	2.97223	0.0654680	0.20122349	2.8841439	20	2 4.1	20.5
437771 2015 AC ₁₉₈	16.9	X	196.78974	248.28204	116.95023	6.46449	0.0810019	0.22701462	2.6613388	20	3 30.7	20.9
437772 2015 BO ₃₆	15.6	X	103.52857	133.64971	268.42900	10.52996	0.0777770	0.17507111	3.1646551	20	1 31.5	20.2
437773 2015 BR ₃₈	16.1	X	339.98987	28.94662	89.06034	15.23533	0.1466300	0.17389277	3.1789354	20	—	—
437774 2015 BL ₆₃	16.3	X	235.51462	226.18409	33.21644	5.62148	0.0936743	0.18021580	3.1041365	20	1 5.4	21.1
437775 2015 BS ₇₃	16.7	X	122.04081	318.26654	88.28284	4.79714	0.0981978	0.20988257	2.8042612	20	3 2.7	20.7
437776 2015 BB ₉₃	15.9	X	16.33840	133.72596	311.77248	9.33137	0.1333375	0.18195449	3.0843301	20	—	—
437777 2015 BH ₁₃₃	17.1	X	282.50910	277.83158	353.08149	4.83104	0.0767874	0.21291436	2.7775768	20	3 7.4	20.9
437778 2015 BN ₃₀₄	16.5	X	54.18056	209.31810	8.08292	12.62729	0.1335033	0.23142509	2.6274175	20	7 25.3	20.0
437779 2015 BT ₄₆₄	15.9	X	172.06974	136.28310	282.18132	21.24240	0.0380536	0.22723024	2.6596549	20	4 30.7	20.2
437780 2015 BR ₅₁₁	16.8	X	175.06370	304.27293	129.06781	10.08927	0.1840549	0.25695095	2.4503938	20	6 2.2	20.9
437781 2015 CS ₂	15.9	X	172.40685	353.31586	330.96232	10.18606	0.0204910	0.18496455	3.0507765	20	1 15.2	20.3
437782 2015 CT ₅	17.0	X	148.87530	263.54252	130.67108	6.63987	0.0879306	0.21906342	2.7253533	20	3 15.4	21.0
437783 2015 CV ₅	16.3	X	333.09273	197.15252	309.22995	2.51499	0.0520869	0.18007063	3.1058046	20	—	—
437784 2015 CH ₁₁	18.1	X	191.25419	48.67936	150.49145	5.98418	0.1191393	0.30247689	2.1979000	20	12 9.0	20.9
437785 2015 CA ₁₂	16.7	X	108.86098	305.59091	154.38318	4.08715	0.0559396	0.21302030	2.7766558	20	4 16.6	20.5
437786 2015 CB ₂₄	17.3	X	127.63994	82.69958	96.86041	3.32102	0.1124324	0.26119115	2.4238016	20	8 30.9	20.8
437787 2015 CC ₂₅	17.6	X	248.37353	137.40937	325.68108	2.07785	0.1913953	0.29478539	2.2359671	20	9 26.8	20.3
437788 2015 CH ₃₂	16.8	X	124.25777	259.83515	167.39951	10.48288	0.2690945	0.21694056	2.7431036	20	4 17.8	21.3
437789 2015 CU ₃₉	15.4	X	250.32427	94.14942	171.00058	16.04641	0.0367587	0.17325217	3.1867667	20	1 30.3	20.3
437790 2015 CP ₄₀	15.9	X	278.55128	85.32976	149.89323	9.52410	0.0319903	0.18336640	3.0684770	20	1 27.5	20.3
437791 2015 CT ₄₀	16.3	X	152.23701	300.82920	161.17538	22.19719	0.0467336	0.23449862	2.6044090	20	6 12.2	20.5
437792 2015 CV ₄₀	17.5	X	151.32021	33.03228	140.23294	7.62911	0.0994282	0.27339100	2.3511477	20	9 19.0	20.9
437793 2015 CD ₄₂	16.7	X	88.78192	264.00024	188.77345	2.91483	0.0651196	0.19776444	2.9176772	20	3 13.4	20.5
437794 2015 CD ₄₂	16.7	X	47.93885	261.78105	337.77387	5.23731	0.1158322	0.24298560	2.5434060	20	8 10.8	19.6
437795 2015 CE ₄₇	15.6	X	357.64769	332.84835	172.97710	12.78599	0.1079101	0.17648458	3.1477353	20	1 12.4	19.7
437796 2015 CS ₄₈	17.2	X	47.75648	119.66869	138.11786	6.88621	0.1436541	0.25210455	2.4816980	20	9 12.1	20.2
437797 2015 CR ₅₃	17.4	X	147.26162	354.21435	118.22903	3.61180	0.0894207	0.23518951	2.5993060	20	6 19.9	21.3
437798 2015 CL ₅₆	17.5	X	316.27981	102.16149	338.50348	3.16092	0.0320222	0.30736263	2.1745463	20	—	—
437799 2015 CM ₅₆	16.4	X	113.73626	128.51064	343.83937	12.22083	0.0713766	0.21873745	2.7280602	20	5 4.0	20.4
437800 2015 CP ₅₆	16.8	X	321.88211	223.73749	348.76404	17.06407	0.1711280	0.18237891	3.0795432	20	2 9.4	21.0
437801 2015 CH ₅₉	16.2	X	334.93561	207.44146	348.17862	14.32145	0.2123988	0.18365456	3.0652664	20	1 31.4	20.1
437802 2015 DH ₂₀	17.1	X	120.10332	202.63503	294.15624	2.36439	0.1109236	0.23522940	2.5990122	20	6 23.2	20.8
437803 2015 DF ₂₀	16.6	X	211.70500	315.74923	39.33603	5.59113	0.0645018	0.21391864	2.7688768	20	4 2.8	20.6
437804 2015 DU ₂₃	16.4	X	288.61625	192.17447	37.70851	1.87440	0.0971846	0.18125523	3.0925782	20	1 25.9	20.8
437805 2015 DG ₂₄	17.2	X	140.69144	327.00120	96.02140	1.86978	0.0610312	0.21359072	2.7717100	20	4 7.9	21.2
437806 2015 DK ₂₉	16.7	X	5.95654	205.85858	64.35602	5.56913	0.1403154	0.23993014	2.5649536	20	7 15.6	19.2
437807 2015 DG ₃₄	16.4	X	120.77194	304.15706	114.77355	3.18954	0.0671768	0.20051648	2.8909195	20	3 12.5	20.4
437808 2015 DQ ₃₄	17.6	X	150.41356	138.21995	13.37137	2.98374	0.1557221	0.26208523	2.4182861	20	8 18.8	21.1
437809 2015 DM ₃₆	17.5	X	69.03442	191.94892	90.18579	3.65755	0.2323866	0.27233645	2.3572132	20	11 22.0	21.1
437810 2015 DE ₄₁	16.5	X	353.92915	207.10754	21.36029	9.06201	0.0952281	0.21310364	2.7759318	20	4 19.7	19.8
437811 2015 DB ₄₂	16.9	X	46.79179	75.52068	19.12777	10.78389	0.2899227	0.19039169	2.9925222	20	2 16.2	19.8
437812 2015 DG ₄₅	16.8	X	356.21173	250.79244	6.35279	12.51065	0.1569704	0.22410183	2.6843498	20	5 30.8	19.8
437813 2015 DR ₉₄	16.7	X	31.94069	230.57370	358.79711	11.51099	0.1569299	0.23030563	2.6359248	20	7 6.8	19.8
437814 2015 DA ₉₉	17.4	X	127.58000	348.04368	214.81013	0.71455	0.1318986	0.26612872	2.3937285	20	9 30.3	20.9
437815 2015 DB ₉₉	16.6	X	173.40637	31.12986	0.58870	1.64238	0.0796559	0.20550537	2.8439411	20	4 5.8	20.8
437816 2015 DA ₁₀₆	16.0	X	278.98439	218.83993	345.62564	11.91363	0.0917337	0.17414969	3.1758080	20	—	—
437817 2015 DQ ₁₁₄	15.6	X	239.04743	232.93633	35.39392	9.77382	0.0238519	0.18768000	3.0212782	20	1 25.2	20.1
437818 2015 DB ₁₁₅	16.6	X	171.32978	182.36791	337.80425	23.90498	0.1269612	0.28493323	2.2872167	20	9 15.0	20.2
437819 2015 DN ₁₁₇	15.8	X	353.93560	320.31703	183.30142	10.62061	0.1257589	0.17285280	3.1916733	20	1 3.6	19.9
437820 2015 DM ₁₅₆	16.8	X	339.43295	180.91203	100.39157	6.52205	0.1703192	0.23223735	2.6212876	20	6 4.7	19.3
437821 2015 DE ₁₆₀	17.9	X	211.44114	30.50707	104.28710	5.02931	0.1078311	0.27971741	2.3155619	20	10 6.6	21.0
437822 2015 DZ ₁₆₅	17.3	X	134.42479	310.14513	145.85301	2.45512	0.0334164	0.21819736	2.7325601	20	5 9.8	21.1
437823 2015 DV ₁₆₆	17.3	X	101.03608	58.35255	107.40557	4.63863	0.0759870	0.23448141	2.6045365	20	7 4.7	20.8
437824 2015 DC ₁₆₈	15.8	X	13.29968	131.91242	3.60951	15.99289	0.1352272	0.18038523	3.1021924	20	1 29.4	19.7
437825 2015 DD ₁₉₇	16.0	X	11.78681	280.11457	201.80781	15.27812	0.2146189	0.17703628	3.1411924	20	—	—
437826 2015 DQ ₂₁₆	17.6	X	141.23918	84.30757	70.54299	2.14224	0.1130351	0.25867167	2.4395149	20	8 12.0	21.1
437827 2015 DW ₂₁₆	16.0	X	37.76425	289.91099	178.04102	12.84068	0.2004795	0.18593225	3.0401819	20	1 29.6	

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
437841 1998 <i>HD</i> ₁₄	21.0	X	226.11429	260.86468	183.81297	7.81033	0.3125640	1.04292522	0.9630170	20	—	—
437842 1998 <i>RB</i> ₅₆	16.8	X	303.14144	62.34981	305.68425	2.73557	0.2957369	0.22022099	2.7157945	20	7 10.9	19.4
437843 1998 <i>SY</i> ₁₉	18.5	X	93.85908	25.60771	345.94881	3.84814	0.1513494	0.28661436	2.2782642	20	—	—
437844 1999 <i>MN</i>	21.4	X	144.77318	9.73135	80.89231	2.02215	0.6654840	1.78188135	0.6738294	20	6 23.9	17.8
437845 1999 <i>RA</i> ₂₄	15.7	X	340.34653	218.61547	168.58022	33.35738	0.3065536	0.23721094	2.5845181	20	12 10.9	18.8
437846 1999 <i>RJ</i> ₂₇	19.4	X	264.00568	64.38088	170.29211	25.77876	0.3523364	0.54803598	1.4788700	20	—	—
437847 1999 <i>RE</i> ₁₁₄	16.1	X	296.66350	64.46557	278.58562	7.19773	0.2416878	0.18160503	3.0882856	20	6 2.9	20.1
437848 1999 <i>TQ</i> ₇₀	17.9	X	43.20619	338.78096	18.43503	3.72593	0.2171914	0.24212290	2.5494440	20	—	—
437849 1999 <i>TE</i> ₁₄₅	16.7	X	4.94776	131.15654	219.89427	2.36724	0.2483747	0.23767687	2.5811393	20	11 26.5	19.4
437850 1999 <i>TF</i> ₂₁₈	16.9	X	10.50662	339.41970	11.55729	6.56969	0.2699587	0.23795160	2.5791522	20	12 8.2	19.8
437851 1999 <i>TT</i> ₂₇₈	16.9	X	286.64696	179.33645	219.12732	12.83963	0.2859741	0.22873140	2.6480054	20	7 24.5	20.4
437852 1999 <i>TC</i> ₂₉₇	17.7	X	40.79074	306.41263	53.27078	4.76079	0.2741081	0.24281467	2.5445995	20	—	—
437853 1999 <i>VR</i> ₁₁₁	16.9	X	264.64288	171.35224	240.72751	12.05633	0.2947268	0.22599551	2.6693356	20	7 13.9	21.0
437854 1999 <i>XW</i> ₁₆	16.1	X	336.93799	112.28487	256.17511	29.20113	0.2870437	0.23194161	2.6235153	20	10 8.5	18.7
437855 1999 <i>YE</i> ₁₆	16.3	X	270.04043	274.08460	91.49074	10.08808	0.2817247	0.17514454	3.1637706	20	5 26.5	21.2
437856 2000 <i>AM</i> ₂₁₃	17.0	X	16.60910	263.02048	102.57886	8.53456	0.1822894	0.23199775	2.6230921	20	12 22.0	20.2
437857 2000 <i>EB</i> ₉₈	17.1	X	185.62449	72.72764	150.77592	21.84147	0.2527541	0.27265328	2.3553867	20	12 16.5	21.4
437858 2000 <i>LA</i> ₃₄	17.4	X	147.68514	136.73190	79.48613	8.67029	0.2244240	0.26440448	2.4041239	20	11 6.9	21.6
437859 2000 <i>QO</i> ₁₄₇	17.4	X	105.64291	145.86961	174.89407	16.70790	0.2876207	0.26303114	2.4124849	20	—	—
437860 2000 <i>SK</i> ₆₆	17.5	X	42.37173	148.03059	184.81918	5.94398	0.2410683	0.25356250	2.4721759	20	12 25.4	21.2
437861 2000 <i>SV</i> ₉₉	16.9	X	102.60587	56.27643	300.61905	22.25492	0.2925159	0.26579757	2.3957162	20	—	—
437862 2000 <i>SR</i> ₁₃₁	16.1	X	304.92496	21.94628	300.52494	12.87734	0.3749912	0.19085632	2.9876636	20	4 21.4	20.3
437863 2000 <i>SN</i> ₃₄₇	15.5	X	273.59534	99.01953	256.22923	16.91005	0.2833777	0.18876449	3.0096952	20	5 14.7	20.1
437864 2000 <i>TL</i> ₄₄	17.1	X	45.67940	295.06884	79.76088	6.92063	0.2114144	0.25792793	2.4442022	20	—	—
437865 2000 <i>UH</i> ₉₇	16.9	X	275.35697	167.27274	240.71803	13.14683	0.1826291	0.23981701	2.5657602	20	8 6.9	20.5
437866 2000 <i>WF</i> ₁₃₈	15.5	X	210.46777	145.79927	234.09096	16.58342	0.2124132	0.17758866	3.1346753	20	4 24.9	20.9
437867 2000 <i>YR</i> ₁₅	16.1	X	216.33571	193.27329	296.46700	31.79195	0.2371853	0.23542179	2.5975960	20	8 25.8	21.0
437868 2000 <i>YZ</i> ₂₄	16.7	X	21.22551	52.44514	286.50697	11.59814	0.2780678	0.24291715	2.5438838	20	12 11.5	19.9
437869 2000 <i>YZ</i> ₃₀	17.0	X	329.06688	145.32696	277.78128	8.54855	0.2086394	0.24569802	2.5246525	20	12 26.2	19.1
437870 2001 <i>DO</i> ₂₅	16.1	X	347.84395	64.30858	347.49057	11.00159	0.3164855	0.24530575	2.5273433	20	—	—
437871 2001 <i>FN</i> ₁₈₅	7.2	X	8.06275	14.30703	203.31861	21.72850	0.0758737	0.00353382	42.6880299	20	5 8.3	23.2
437872 2001 <i>OK</i> ₄₈	17.4	X	27.74778	102.83547	214.67119	7.53910	0.3720252	0.21344527	2.7729690	20	11 30.1	21.1
437873 2001 <i>OQ</i> ₁₀₁	17.3	X	93.22652	234.39647	99.04370	4.12909	0.2632228	0.27734719	2.3287357	20	—	—
437874 2001 <i>QV</i> ₃₉	17.5	X	86.24452	167.68340	167.71703	2.66857	0.2451625	0.27663971	2.3327044	20	—	—
437875 2001 <i>QR</i> ₁₂₆	16.0	X	356.71609	97.00949	257.70640	7.02667	0.3078176	0.21187109	2.7866874	20	11 15.5	18.5
437876 2001 <i>QE</i> ₁₂₉	17.2	X	88.08137	111.79524	235.69056	3.86011	0.2535056	0.27675355	2.3320646	20	—	—
437877 2001 <i>QE</i> ₂₂₇	17.6	X	117.45065	25.67991	298.56689	8.65370	0.1711037	0.27791283	2.3255748	20	—	—
437878 2001 <i>QX</i> ₂₇₅	17.6	X	86.83557	233.57455	99.32228	6.74997	0.2440458	0.27522401	2.3406968	20	—	—
437879 2001 <i>RX</i> ₁₁	17.7	X	37.68026	307.79860	343.71949	13.09303	0.5478462	0.21485703	2.7608088	20	11 27.0	22.4
437880 2001 <i>RJ</i> ₂₂	17.7	X	25.17994	14.30528	342.32541	3.84676	0.2132114	0.26812506	2.3818319	20	—	—
437881 2001 <i>RE</i> ₅₃	17.6	X	108.04569	3.42466	332.43552	4.71333	0.2581874	0.27854793	2.3220386	20	—	—
437882 2001 <i>RX</i> ₅₃	18.1	X	57.26395	249.38205	103.65541	3.43718	0.2058838	0.27244443	2.3565903	20	—	—
437883 2001 <i>RR</i> ₈₂	16.5	X	3.16393	38.54217	298.21587	7.52177	0.1530787	0.20981386	2.8048734	20	10 7.5	19.9
437884 2001 <i>RA</i> ₁₁₄	17.1	X	338.53025	350.87239	12.27199	4.94962	0.1836800	0.20884350	2.8135550	20	10 3.2	19.8
437885 2001 <i>RS</i> ₁₃₇	18.1	X	69.93740	204.65691	125.08208	1.93505	0.2066563	0.27195093	2.3594404	20	—	—
437886 2001 <i>SS</i> ₃₅	16.5	X	37.92371	309.28803	23.09472	11.96485	0.1948870	0.21271679	2.7792965	20	12 2.2	20.4
437887 2001 <i>SR</i> ₉₆	16.6	X	201.80919	210.82516	182.05735	15.01471	0.1830090	0.19148536	2.9811169	20	5 7.5	21.7
437888 2001 <i>SO</i> ₁₄₀	16.4	X	338.44223	37.68512	0.55057	9.20394	0.1738341	0.21084311	2.7957378	20	11 19.4	19.4
437889 2001 <i>SS</i> ₂₀₅	16.8	X	237.11888	331.89372	31.15591	1.41364	0.1602000	0.19361236	2.9592433	20	5 2.0	21.3
437890 2001 <i>SK</i> ₂₁₀	17.7	X	30.95273	206.51037	154.52933	1.81887	0.1896925	0.26821754	2.3812844	20	—	—
437891 2001 <i>SG</i> ₂₁₉	18.1	X	65.63426	175.23459	164.93442	1.62232	0.2042507	0.27110783	2.3643296	20	—	—
437892 2001 <i>SS</i> ₂₃₁	17.7	X	36.09202	319.71800	33.30804	5.65038	0.2038437	0.26712878	2.3877504	20	—	—
437893 2001 <i>SR</i> ₂₄₁	17.9	X	86.42477	332.01543	33.44669	4.10337	0.1952611	0.27577695	2.3375670	20	—	—
437894 2001 <i>SY</i> ₃₀₄	18.0	X	86.56955	5.58450	352.34832	3.44256	0.1579411	0.27530839	2.3402185	20	—	—
437895 2001 <i>TL</i> ₄	17.9	X	102.57170	112.97666	242.45489	2.86263	0.1788503	0.27649204	2.3335349	20	—	—
437896 2001 <i>TE</i> ₁₈₅	18.2	X	81.28284	34.78650	328.53274	2.28228	0.1816588	0.27439935	2.3453842	20	—	—
437897 2001 <i>UE</i> ₃₁	18.0	X	123.55577	127.42277	179.33804	5.03241	0.2486937	0.27567236	2.3381583	20	—	—
437898 2001 <i>UT</i> ₃₉	18.1	X	84.16817	321.92548	32.98970	4.66359	0.2319472	0.27406698	2.3472800	20	—	—
437899 2001 <i>UN</i> ₆₀	17.3	X	37.81473	191.54118	217.77440	5.10931	0.1415717	0.27385289	2.3485032	20	—	—
437900 2001 <i>UB</i> ₇₉	17.7	X	108.09435	303.84040	47.29294	3.05625	0.2340537	0.27676319	2.3320105	20	—	—
437901 2001 <i>UE</i> ₁₂₈	16.6	X	22.21323	130.16658	238.51093	13.04238	0.1372018	0.26581195	2.3956298	20	—	—
437902 2001 <i>UD</i> ₁₆₄	17.7	X	9.35629	242.37590	139.07260	2.98003	0.2248269	0.26543682	2.3978864	20	—	—
437903 2001 <i>VT</i> ₁₃₃	16.7	X	166.50658	262.40908	168.04521	10.99494	0.1769742	0.18657429	3.0332033	20	5 22.5	21.9
437904 2001 <i>WS</i> ₃₄	17.5	X	19.71563	249.54961	113.78275	3.03171	0.2195475	0.26329753	2.4108574	20	—	—
437905 2001 <i>XU</i> ₃₀	19.8	X	223.21349	106.58282	72.46655	8.91533	0.6672149	0.30375592	2.1917258	20	10 21.5	24.1
437906 2001 <i>XF</i> ₂₂₀	16.4	X	191.68128	132.53083	252.72259	12.21130	0.1875723	0.18449862	3.0559105	20	4 14.4	21.7
437907 2001 <i>XC</i>												

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
437921 2002 LH ₄₇	17.0	X	79.98397	113.03086	177.01716	16.55443	0.3212634	0.23572673	2.5953553	20	12 12.3	21.8
437922 2002 NJ ₄₄	18.3	X	130.61802	177.66162	156.31126	3.02762	0.2566997	0.29916013	2.2141153	20	—	—
437923 2002 NB ₇₀	17.1	X	49.96940	68.20903	256.76257	11.34193	0.3118273	0.22903653	2.6456530	20	12 25.9	21.3
437924 2002 OE ₁₆	16.7	X	19.88016	83.67229	259.23224	9.37659	0.2655774	0.22781439	2.6551065	20	12 8.8	19.8
437925 2002 PJ ₁₀₄	17.0	X	25.64386	54.60731	291.32643	9.90789	0.2683114	0.22723730	2.6595999	20	12 20.9	20.5
437926 2002 PH ₁₀₅	16.8	X	60.35790	358.35071	298.83262	13.44991	0.2413670	0.22803588	2.6533870	20	11 23.2	21.1
437927 2002 PC ₁₁₇	17.6	X	100.71202	34.35772	312.87694	5.80445	0.2705101	0.29321188	2.2439595	20	—	—
437928 2002 PM ₁₂₃	16.5	X	35.54117	348.22602	299.94334	11.94046	0.1096286	0.22179268	2.7029493	20	9 17.2	20.2
437929 2002 PY ₁₃₆	18.2	X	170.03728	359.01648	300.96282	5.72293	0.1829882	0.30077148	2.2062003	20	—	—
437930 2002 PR ₁₃₇	16.9	X	61.26657	134.64132	142.66822	15.85974	0.2691954	0.22661060	2.6645011	20	11 10.1	21.3
437931 2002 PX ₁₅₅	17.5	X	34.89131	302.63676	30.32468	2.53303	0.2080148	0.22821720	2.6519814	20	12 6.8	21.1
437932 2002 PG ₁₆₀	18.3	X	132.85785	4.95716	15.40244	2.70727	0.1840729	0.30420400	2.1895730	20	2 9.3	21.1
437933 2002 PX ₁₇₇	17.8	X	118.21229	323.95526	356.80919	6.18178	0.1284236	0.29541289	2.2327996	20	—	—
437934 2002 QU ₁	18.2	X	64.14131	70.47525	289.09145	4.12557	0.2246692	0.29024031	2.2592497	20	—	—
437935 2002 QH ₂₅	18.0	X	96.97379	13.86932	339.69163	4.14948	0.2510343	0.29384842	2.2407177	20	—	—
437936 2002 QH ₄₀	16.6	X	299.90697	86.98087	267.74433	11.52391	0.2140500	0.21312666	2.7757319	20	6 29.3	20.0
437937 2002 PG ₅₉	18.4	X	138.33248	64.96621	260.66858	4.73908	0.1803570	0.30007845	2.2095958	20	—	—
437938 2002 QQ ₈₁	17.4	X	178.94703	129.08558	124.37503	7.08730	0.0973148	0.29351330	2.2424229	20	—	—
437939 2002 QC ₁₁₂	18.6	X	175.03001	66.00049	233.48212	2.55826	0.1635791	0.30080397	2.2060415	20	—	—
437940 2002 QV ₁₂₉	17.7	X	334.07383	204.29644	127.40901	4.51542	0.1997082	0.21792477	2.7348383	20	8 6.9	20.2
437941 2002 QZ ₁₃₄	16.9	X	67.34221	131.14030	124.02963	7.16918	0.1764099	0.22353372	2.6888961	20	10 6.2	20.8
437942 2002 RW ₁₃₈	17.2	X	326.55173	271.90591	131.08749	12.80440	0.3105241	0.22136128	2.7064600	20	11 16.9	19.2
437943 2002 RW ₁₆₀	17.1	X	309.20804	198.97260	144.84858	4.03344	0.2180270	0.21434534	2.7652009	20	6 29.7	20.3
437944 2002 RL ₁₇₆	17.3	X	346.17629	182.35790	185.96123	11.01945	0.2001208	0.22217501	2.6998476	20	11 3.7	19.9
437945 2002 RS ₁₉₈	17.3	X	296.79952	332.18189	33.68626	2.92992	0.2201588	0.21395749	2.7685416	20	7 8.5	20.6
437946 2002 RX ₂₂₆	16.6	X	313.54206	5.77198	333.81689	8.47224	0.1643535	0.21414326	2.7669402	20	7 11.9	19.7
437947 2002 RT ₂₃₅	17.3	X	289.19501	145.86893	215.26530	3.68789	0.0860697	0.21228559	2.7830587	20	7 11.6	20.8
437948 2002 RJ ₂₅₆	17.6	X	27.36487	37.60734	321.63278	6.00247	0.2370796	0.22497608	2.6773912	20	11 11.8	21.0
437949 2002 RN ₂₆₃	17.3	X	329.45430	68.22893	246.29445	3.68259	0.1430915	0.21307986	2.7761384	20	7 5.5	20.3
437950 2002 RA ₂₆₆	17.2	X	294.75247	109.68527	262.63522	3.58555	0.2102903	0.21446395	2.7641813	20	7 16.3	20.5
437951 2002 SD ₁₅	16.9	X	32.50435	52.68565	268.69318	11.27834	0.2727625	0.22399404	2.6852109	20	11 27.5	20.4
437952 2002 SA ₁₉	17.7	X	33.43189	240.35613	120.83359	7.22851	0.3389789	0.22815649	2.6524518	20	—	—
437953 2002 SF ₆₄	18.4	X	238.21706	80.41821	132.56610	19.03447	0.1078748	0.37536867	1.9032567	20	6 21.4	20.8
437954 2002 TT ₅₇	16.5	X	24.90043	53.92544	261.06665	8.49833	0.0941144	0.22200208	2.7012494	20	10 8.3	20.0
437955 2002 TP ₆₀	16.7	X	350.02568	251.87537	125.33966	15.89946	0.3357991	0.22081384	2.7109313	20	12 15.4	19.2
437956 2002 TU ₆₇	17.9	X	223.36078	85.52613	291.80972	16.13149	0.0587161	0.36927765	1.9241283	20	5 3.6	20.4
437957 2002 TM ₃₀₅	18.3	X	182.17739	166.85618	98.23417	5.03524	0.2380595	0.29418179	2.2390246	20	—	—
437958 2002 TJ ₃₂₀	17.7	X	300.40049	74.25414	326.38700	1.40036	0.1981689	0.21792768	2.7348139	20	9 8.1	20.3
437959 2002 TK ₃₈₁	17.8	X	47.80936	292.79594	9.89718	11.23085	0.2845558	0.22482443	2.6785949	20	11 20.7	21.9
437960 2002 UQ ₅₉	16.8	X	50.79422	183.29523	91.17268	9.65133	0.1972180	0.21728229	2.7402267	20	10 14.8	20.7
437961 2002 VE ₁₄	17.5	X	161.70760	123.50556	251.21650	17.38614	0.0910753	0.35767800	1.9655069	20	2 7.6	20.3
437962 2002 XE ₁₄	18.0	X	213.45958	273.79014	114.04420	23.45101	0.1458687	0.36214041	1.9493271	20	5 17.5	21.2
437963 2002 XP ₄₁	15.9	X	146.66089	167.11807	262.46924	12.38240	0.2095569	0.19176510	2.9782170	20	5 1.3	20.9
437964 2002 XJ ₇₂	17.8	X	136.21709	129.48754	259.65367	18.26103	0.0816432	0.35461995	1.9767903	20	1 25.7	20.2
437965 2003 AL ₇₃	19.4	X	88.19731	336.39607	217.35097	9.63688	0.6937174	0.24306931	2.5428221	20	9 16.6	25.0
437966 2003 EE ₃₃	16.6	X	260.15411	271.44311	170.92388	22.99087	0.2312914	0.25991848	2.4317072	20	9 1.6	19.7
437967 2003 FP ₁₃₃	15.8	X	46.53430	60.74302	99.44391	7.76572	0.0396010	0.17535598	3.1612268	20	4 14.4	20.2
437968 2003 GJ ₄₁	17.6	X	119.26235	101.65922	163.51202	4.27786	0.1810670	0.25627072	2.4547281	20	12 9.4	21.6
437969 2003 HB ₅₈	16.4	X	300.93332	22.43497	225.58145	17.76959	0.0588831	0.16825197	3.2495953	20	3 2.6	21.2
437970 2003 ND ₁₂	16.7	X	4.27863	236.49853	141.95854	10.22663	0.1047067	0.24423444	2.5347285	20	12 13.9	19.9
437971 2003 OE ₄	16.1	X	336.88561	56.88979	294.41645	12.56072	0.1784480	0.23519642	2.5992552	20	9 9.9	18.7
437972 2003 QT ₁₀	17.4	X	41.38876	157.65369	159.37865	5.10874	0.2671892	0.24055536	2.5605073	20	12 6.3	21.1
437973 2003 QN ₂₄	16.9	X	315.03106	79.39652	287.67908	3.92520	0.3089058	0.22931976	2.6434741	20	8 2.7	18.8
437974 2003 QT ₅₅	17.0	X	49.98647	213.01360	90.52891	4.41617	0.2420856	0.23988614	2.5652673	20	11 25.2	20.7
437975 2003 RW ₇	16.4	X	67.64069	111.38039	201.44668	28.09554	0.4197978	0.24140124	2.5545224	20	—	—
437976 2003 RN ₂₂	17.8	X	46.60302	108.16642	242.96351	8.47042	0.3321637	0.24324746	2.5415803	20	—	—
437977 2003 SE ₂₄	16.5	X	345.08946	359.76614	338.26868	15.26393	0.1838489	0.23111054	2.6298010	20	9 12.2	18.9
437978 2003 SS ₄₁	17.5	X	357.75866	135.94997	228.76639	16.87558	0.3199040	0.23722831	2.5843919	20	12 14.1	20.1
437979 2003 SG ₄₃	17.7	X	23.54457	163.14016	180.40481	10.71975	0.2704015	0.23967206	2.5667946	20	12 18.6	21.2
437980 2003 ST ₅₆	16.6	X	243.20002	223.16482	183.38310	13.55058	0.2485014	0.22200571	2.7012200	20	6 22.8	21.2
437981 2003 SL ₁₁₇	17.5	X	18.85650	22.37839	343.35678	3.50426	0.2733959	0.23855607	2.5747935	20	—	—
437982 2003 SK ₁₂₅	17.0	X	15.93337	159.92686	205.46583	12.41268	0.1451534	0.23828651	2.5767349	20	12 16.5	20.4
437983 2003 SY ₁₄₅	17.1	X	34.37967	107.34480	247.23018	11.14882	0.1915183	0.24113548	2.5563990	20	—	—
437984 2003 SS ₁₅₃	17.2	X	50.26861	226.82064	98.91754	4.11530	0.2000688	0.24096412	2.5576109	20	12 17.5	20.7
437985 2003 SF ₂₈₈	16.5	X	55.18903	60.15919	243.53434	11.40166	0.1523058	0.23531657	2.5983703	20	11 17.9	20.0
437986 2003 SO ₂₉₆	16.2	X	196.02030	237.17991	223.33764	25.79811	0.2722519	0.21822732	2.7323100	20	7 12.1	21.5
437987 2003 SU ₃₀₇	17.5	X	357.83726	52.51992	287.29606	2.73452	0.2205840	0.23381172	2.6095074	20	10 19.7	19.8
437988 2003 SB ₄₀₈	16.8	X	4.37080	224.26063	100.51723	13.05724	0.1686224	0.22889779	2.6467220	20	10 11.7	19.9
437989 2003 SF ₄₂₃	17.4	X	34.99829	87.61023	210.50821	3.24146	0.2061620	0.23283185	2.6168237	20	10 23.9	20.6
437990 2003 TT ₁₇	17.4	X	38.30355	47.36888	290.88745	2.65836	0.2630578	0.23902994	2.5713894	20	12 27.6	20.9
437991 2003 TZ ₄₇	17.1	X	202.66027	304.28441	205.74114	12.32331	0.0671702	0.23459240	2.6037149	20	10 10.5	20.7
437992 2003 TC ₅₉	16.9	X	359.86059	219.79026	180.11637	10.30222	0.1153627	0.23955529	2.5676286	20	—	—
437993 2003 UT ₅	18.0	X	10.09209	108.17243	288.49230	3.68922	0.3402873	0.23916103	2.5704497	20	—	—
437994 2003 UL ₁₂												

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>		
438001	2003	UT ₁₈₂	18.2	X	359.20989	166.69686	228.80691	2.75632	0.3181939	0.23784232	2.5799421	20	—	—
438002	2003	UB ₃₀₈	16.7	X	251.27014	346.76834	43.68004	9.32515	0.2242220	0.21762581	2.7373423	20	6 12.0	20.9
438003	2003	UT ₃₂₅	17.2	X	347.08294	160.10234	240.57554	8.68933	0.0993066	0.24229314	2.5482497	20	12 14.7	20.1
438004	2003	UX ₃₇₅	18.3	X	7.53597	83.89653	345.11080	5.42245	0.0823415	0.30653209	2.1784725	20	—	—
438005	2003	WQ ₁	17.6	X	6.40900	111.05570	267.55799	1.86334	0.2543708	0.23572257	2.5953859	20	—	—
438006	2003	WZ ₃	16.5	X	234.95831	336.68810	66.20173	15.67263	0.0940382	0.21551232	2.7552096	20	6 25.1	20.6
438007	2003	WQ ₁₆	17.0	X	295.16967	140.01321	275.85170	1.72228	0.1149608	0.22887089	2.6469293	20	10 3.3	20.0
438008	2003	WR ₂₂	16.9	X	10.85279	97.49935	251.19468	24.97722	0.4355038	0.23514195	2.5996565	20	12 29.0	20.4
438009	2003	WU ₂₂	17.1	X	56.99745	263.02272	71.96565	5.13190	0.2874832	0.23956418	2.5675651	20	—	—
438010	2003	WT ₂₅	16.5	X	216.30949	244.83058	260.22042	21.68201	0.3166640	0.28487859	2.2875091	20	9 19.2	20.7
438011	2003	WU ₄₀	16.4	X	265.60726	127.80132	252.16010	16.30819	0.1742370	0.21752550	2.7381838	20	6 21.1	20.2
438012	2003	WK ₅₀	17.1	X	342.92422	144.82411	263.25960	12.75289	0.2730401	0.23472456	2.6027375	20	—	—
438013	2003	WV ₅₁	16.3	X	16.29862	236.98707	32.96640	13.90338	0.0642131	0.21848590	2.7301538	20	7 29.9	20.0
438014	2003	XH ₁₇	16.7	X	254.80738	152.88020	287.29780	10.59017	0.0861948	0.21907000	2.7252987	20	9 4.4	20.6
438015	2003	XV ₂₇	16.7	X	10.61905	37.02452	259.47726	10.78924	0.1829459	0.22225127	2.6992300	20	8 28.9	19.8
438016	2003	YH ₁	18.0	X	232.90751	68.61624	287.59826	16.35287	0.1143676	0.38460988	1.8726463	20	4 3.8	20.8
438017	2003	YQ ₃	18.6	X	134.64119	168.72129	291.38501	24.61013	0.3663055	0.56447413	1.4500179	20	6 13.3	20.7
438018	2003	YQ ₁₇	15.4	X	24.03109	76.47992	289.19000	26.61417	0.4247451	0.23289029	2.6163858	20	—	—
438019	2003	YU ₂₆	16.6	X	281.95781	327.61698	113.16073	15.40478	0.2761292	0.22419935	2.6835714	20	9 28.2	19.9
438020	2003	YH ₁₄₀	16.7	X	281.72274	139.84678	288.51672	11.40080	0.1523307	0.22346859	2.6894185	20	9 16.2	20.3
438021	2004	BW ₂	16.5	X	186.76929	286.69059	302.80423	22.81587	0.2471615	0.28540421	2.2846997	20	12 27.8	20.2
438022	2004	BN ₈	16.6	X	279.82163	232.18635	135.09571	10.90475	0.1448027	0.21057539	2.7981070	20	6 28.2	20.5
438023	2004	BV ₁₀₀	17.7	X	122.29063	312.45627	135.22413	6.68413	0.1098065	0.28357864	2.2944946	20	12 19.2	21.0
438024	2004	CD ₂₆	16.9	X	274.30455	304.11771	140.12411	13.71437	0.2398323	0.22267789	2.6957813	20	9 22.8	20.3
438025	2004	CA ₅₂	16.9	X	238.47161	44.95994	111.42197	22.25577	0.1749810	0.28174113	2.3044602	20	12 3.9	20.0
438026	2004	DJ ₆	17.5	X	294.77615	120.96692	340.62445	7.85202	0.0492083	0.28343824	2.2952522	20	12 27.6	20.1
438027	2004	EN ₈₅	17.9	X	192.53790	70.81923	154.75788	8.31094	0.2251601	0.28081370	2.3095313	20	12 26.7	21.5
438028	2004	EH ₉₆	7.9	X	30.53779	301.73959	226.18764	3.12713	0.2796845	0.00396546	39.5312362	20	4 30.9	22.8
438029	2004	FE ₂₉	16.8	X	63.20701	324.69507	185.78566	8.52302	0.1823831	0.18875356	3.0098114	20	5 11.8	20.7
438030	2004	FL ₁₁₁	17.9	X	227.29224	293.68357	267.83754	2.44475	0.1289529	0.28442540	2.2899384	20	—	—
438031	2004	FJ ₁₄₁	17.8	X	248.82764	348.33933	191.06601	3.03287	0.1964275	0.28453957	2.2893258	20	—	—
438032	2004	GF ₈	18.4	X	158.45997	38.02330	188.87454	5.08050	0.1146524	0.27450490	2.3447830	20	12 3.3	21.9
438033	2004	GY ₄₈	17.1	X	353.57359	195.12205	21.84433	1.00003	0.1050066	0.18400665	3.0613551	20	4 6.2	20.8
438034	2004	GH ₇₉	16.7	X	17.37774	37.35251	168.04600	4.93674	0.1912923	0.18700015	3.0285964	20	5 5.8	19.8
438035	2004	HT ₃	17.6	X	145.59418	304.32182	30.36447	10.68480	0.2817913	0.28652474	2.2787392	20	1 9.3	21.2
438036	2004	HS ₂₃	16.6	X	315.28572	232.46409	17.95217	5.47201	0.0974118	0.18183660	3.0856631	20	3 24.6	20.6
438037	2004	HC ₂₉	16.4	X	339.55484	41.09668	216.28945	8.60941	0.1216929	0.18702328	3.0283468	20	5 6.1	20.0
438038	2004	JJ ₅	17.7	X	133.29492	184.28650	46.79008	5.31274	0.1435020	0.26893918	2.3770227	20	11 11.3	21.3
438039	2004	JS ₇	18.4	X	201.67216	4.91706	205.49055	4.38410	0.1641371	0.27840554	2.3228302	20	12 23.6	21.6
438040	2004	JW ₁₁	18.0	X	332.39559	93.08499	116.19297	17.16485	0.1600877	0.36034027	1.9558139	20	1 14.8	19.6
438041	2004	KN ₂	17.3	X	147.03648	158.08536	54.69471	4.91625	0.0925300	0.26864972	2.3787299	20	11 2.9	20.7
438042	2004	KA ₈	18.2	X	137.34259	325.20982	304.71297	4.93553	0.2712610	0.27279414	2.3545759	20	12 31.1	22.3
438043	2004	LW ₅	18.2	X	74.65311	34.86524	111.01985	23.58089	0.0817079	0.36590346	1.9359392	20	5 10.7	20.7
438044	2004	NA ₁	17.8	X	132.18232	157.08527	141.25999	5.92820	0.2256526	0.27138548	2.3627167	20	—	—
438045	2004	NV ₇	17.4	X	25.88242	244.19396	305.93821	31.84366	0.1092208	0.35960732	1.9584705	20	3 8.7	19.9
438046	2004	NG ₃₁	15.3	X	294.46570	32.01865	301.49291	28.19475	0.2372807	0.17674327	3.1446631	20	5 14.5	20.2
438047	2004	OO ₁₀	15.4	X	259.85211	230.64102	116.59331	28.36626	0.2227519	0.17340253	3.1849241	20	5 11.5	20.9
438048	2004	OQ ₁₃	15.5	X	349.79149	291.87153	345.35767	17.30312	0.1668034	0.17871732	3.1214637	20	6 18.9	19.4
438049	2004	PH ₃₆	17.8	X	76.81492	78.65735	269.92824	4.06162	0.2497851	0.26461462	2.4028509	20	—	—
438050	2004	PR ₃₆	18.0	X	76.52724	101.99566	203.16922	3.81732	0.2401208	0.26121476	2.4236556	20	12 24.6	22.0
438051	2004	PV ₅₀	18.0	X	72.38253	223.89191	90.05222	3.09088	0.2134871	0.26160343	2.4212544	20	12 29.9	21.7
438052	2004	PV ₅₄	17.5	X	83.32604	295.85641	39.56059	3.18554	0.2062988	0.26487547	2.4012731	20	—	—
438053	2004	PN ₉₄	17.1	X	72.55233	197.95892	163.21874	13.04897	0.2127856	0.26622735	2.3931372	20	—	—
438054	2004	PJ ₉₇	17.4	X	105.52317	92.39032	247.50004	12.42664	0.3182684	0.26929948	2.3749021	20	—	—
438055	2004	PV ₁₀₆	16.6	X	280.66134	17.70893	323.36492	6.40170	0.1721747	0.17453915	3.1710820	20	5 19.3	21.2
438056	2004	QZ ₂₇	17.2	X	136.50741	320.39094	328.57226	6.47724	0.1030626	0.26758837	2.3850156	20	—	—
438057	2004	RY ₂	15.7	X	290.80193	112.66590	255.91753	24.43842	0.3053448	0.17621559	3.1509378	20	6 17.2	20.0
438058	2004	RF ₂₀	16.3	X	279.90601	250.86982	118.39615	14.61294	0.3007860	0.17507400	3.1646203	20	6 8.9	21.1
438059	2004	RM ₂₇	17.9	X	91.04191	229.39469	70.20082	1.90782	0.2499431	0.26187342	2.4195899	20	12 30.4	21.9
438060	2004	RD ₃₃	17.4	X	40.51055	314.86226	66.54183	2.51403	0.2047170	0.26198885	2.4188792	20	—	—
438061	2004	RH ₃₅	17.6	X	43.03086	344.13925	44.07793	3.20311	0.2161464	0.26288411	2.4133843	20	—	—
438062	2004	RK ₅₀	17.6	X	44.84386	359.63245	25.93603	1.80037	0.1889924	0.26276445	2.4141170	20	—	—
438063	2004	RM ₅₃	17.4	X	60.28158	287.93365	75.80936	3.24764	0.2259093	0.26324518	2.4111770	20	—	—
438064	2004	RB ₅₈	17.4	X	50.50814	332.73044	34.23038	3.31419	0.2048117	0.26096781	2.4251844	20	—	—
438065	2004	RD ₆₀	18.0	X	71.28740	121.35116	233.83949	0.58484	0.1900936	0.26377277	2.4079608	20	—	—
438066	2004	RM ₆₈	17.5	X	97.29167	182.26467	150.86312	4.83804	0.2582707	0.26534633	2.3984315	20	—	—
438067	2004	RN ₇₂	17.9	X	97.68321	25.36804	353.84913	2.36340	0.2158307	0.27071467	2.3666181	20	1 2.0	20.2
438068	2004	RJ ₈₉	17.2	X	95.83055	149.45220	188.45286	11.24744	0.2633300	0.26768700	2.3844297	20	—	—
438069	2004	RS ₁₁₁	15.5	X	285.99718	63.33037	272.09509	19.09508	0.2551594	0.17335188	3.1855446	20	5 5.6	20.4
438070	2004	RN ₁₁₃	17.8	X	88.71572	180.69157	183.25952	2.81749	0.2118270	0.26927801	2.3750283	20		

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
438081 2004 TP ₆₀	18.0	X	96.01354	319.89012	12.55481	3.67316	0.2478029	0.26458245	2.4030457	20	—	—
438082 2004 TB ₆₁	17.9	X	55.93030	280.18832	96.84509	3.61129	0.2629792	0.26215243	2.4178728	20	—	—
438083 2004 TF ₁₂₀	16.9	X	344.60456	131.38451	296.31143	6.26932	0.1820990	0.25585582	2.4573811	20	—	—
438084 2004 TE ₁₃₆	15.3	X	248.15059	182.47018	227.29479	17.01913	0.1231394	0.17227114	3.1988536	20	7 10.9	20.3
438085 2004 TA ₁₄₂	17.7	X	76.46705	288.35958	42.23179	2.92959	0.2078297	0.26040980	2.4286476	20	—	—
438086 2004 TJ ₁₇₄	15.9	X	296.12952	347.48415	28.67137	12.09018	0.1127960	0.17737579	3.1371828	20	8 10.6	20.2
438087 2004 TB ₂₇₃	16.7	X	245.72813	208.76541	230.06349	10.53244	0.1446451	0.23719756	2.5846152	20	8 15.9	20.6
438088 2004 TU ₂₇₆	17.0	X	284.51539	349.74573	44.73034	7.53416	0.1174885	0.23830258	2.5766191	20	8 22.8	20.2
438089 2004 TL ₂₉₉	17.2	X	44.88492	83.05397	283.19466	5.39072	0.1341691	0.25830378	2.4418307	20	—	—
438090 2004 TX ₃₆₆	17.1	X	25.62737	190.02067	195.63251	1.84541	0.1927346	0.25537803	2.4604452	20	—	—
438091 2004 VS ₃₇	17.6	X	73.09967	277.12529	44.59322	1.83590	0.1930106	0.25445401	2.4663981	20	—	—
438092 2004 XT	15.2	X	229.10947	130.76164	269.69437	22.53565	0.2268336	0.16703354	3.2653789	20	6 4.7	20.7
438093 2004 XL ₃₀	16.9	X	61.29923	131.42192	209.93040	3.24263	0.1909388	0.25464107	2.4651901	20	—	—
438094 2004 XP ₁₀₂	16.6	X	343.77124	77.10221	323.42440	6.91499	0.1792374	0.24451591	2.5327829	20	12 19.3	19.1
438095 2005 BW ₄	16.0	X	269.52431	153.55458	293.91933	21.49555	0.0306700	0.23555936	2.5965846	20	10 8.3	20.0
438096 2005 CX ₂₃	17.6	X	83.84257	102.39941	143.33814	30.94732	0.2226180	0.41450882	1.7814769	20	11 19.1	21.1
438097 2005 XT ₂₇	17.0	X	310.48180	308.13367	127.11352	12.69381	0.1585176	0.24067855	2.5596335	20	12 2.8	19.7
438098 2005 CS ₅₆	16.6	X	193.50776	9.73390	130.47540	33.85528	0.1582468	0.22904069	2.6456210	20	9 15.4	21.2
438099 2005 CH ₆₅	16.6	X	96.40543	59.35925	142.26865	17.09448	0.2604959	0.21563857	2.7541342	20	9 5.4	21.1
438100 2005 EZ ₂	16.6	X	344.19293	208.55765	136.26854	18.11249	0.1308423	0.22970078	2.6405500	20	9 26.8	19.6
438101 2005 EL ₁₇	16.0	X	262.67970	273.31716	170.64835	22.05473	0.0850723	0.22712208	2.6604993	20	9 28.9	19.4
438102 2005 EG ₁₀₇	16.1	X	63.49916	38.91757	195.31831	11.82439	0.2738051	0.21390197	2.7690206	20	9 11.4	20.2
438103 2005 EU ₁₉₃	17.1	X	257.37489	207.79358	183.75207	5.86416	0.0161011	0.21484360	2.7609239	20	7 19.2	21.0
438104 2005 FU ₁₄	16.7	X	150.00667	26.89593	127.76540	9.57048	0.2175886	0.21715506	2.7412969	20	8 20.2	21.3
438105 2005 GO ₂₂	18.7	X	277.52356	19.05462	61.79336	1.56427	0.8232009	0.37192433	1.9149892	20	7 6.3	22.0
438106 2005 GJ ₉₉	18.5	X	214.54057	352.02056	222.44240	4.04333	0.1052241	0.29953290	2.2122780	20	—	—
438107 2005 GY ₁₁₀	18.2	X	24.24917	169.12961	294.62558	12.66026	0.6871404	0.39231405	1.8480490	20	—	—
438108 2005 GE ₁₆₅	17.5	X	226.55302	97.49604	120.89622	23.44069	0.2372824	0.30136114	2.2033216	20	—	—
438109 2005 JM ₄₉	17.1	X	41.81061	107.22554	185.81008	4.36913	0.1414176	0.21363891	2.7712932	20	10 13.4	20.6
438110 2005 JF ₆₁	18.4	X	177.52371	190.43331	110.36656	6.23281	0.1843821	0.30257315	2.1974337	20	—	—
438111 2005 JX ₁₃₆	17.4	X	158.51445	221.78244	68.71427	8.78058	0.0545962	0.30324939	2.1941657	20	—	—
438112 2005 JL ₁₆₁	18.1	X	157.64189	194.88934	108.06319	4.00499	0.1830066	0.30010192	2.2094806	20	—	—
438113 2005 LM ₁₃	16.5	X	56.82314	311.16294	214.35308	11.42166	0.2844329	0.19833139	2.9121143	20	6 6.6	20.2
438114 2005 MN ₄₈	18.2	X	175.24241	57.46966	233.49613	4.67611	0.1961723	0.29548151	2.2324539	20	—	—
438115 2005 NS ₁₅	18.3	X	168.10214	215.76573	74.73141	1.28739	0.1988865	0.29507790	2.2344892	20	—	—
438116 2005 NX ₄₄	17.4	X	204.98061	215.06636	308.94490	36.63941	0.9073925	0.29915010	2.2141648	20	8 27.5	23.5
438117 2005 NL ₄₆	18.0	X	151.89537	166.94298	165.40028	4.81768	0.2042419	0.29686997	2.2254877	20	—	—
438118 2005 NR ₈₅	17.0	X	290.82060	266.24600	116.07368	9.12040	0.1641799	0.19772615	2.9180539	20	7 31.1	20.5
438119 2005 OU ₂₅	18.0	X	325.06222	159.44149	149.98832	21.12557	0.0649760	0.39041891	1.8540246	20	7 9.3	19.8
438120 2005 QW ₉	16.8	X	301.91804	119.20339	201.76722	6.63017	0.2349372	0.18824496	3.0152303	20	5 14.7	20.6
438121 2005 QL ₁₄	17.5	X	180.33032	353.69639	329.22690	6.71276	0.1550136	0.29876418	2.2160712	20	1 13.9	20.7
438122 2005 QM ₂₇	16.3	X	224.88549	272.86656	147.40952	9.55947	0.2424318	0.18160426	3.0882944	20	6 23.7	21.6
438123 2005 QT ₅₉	16.2	X	285.30085	344.43350	0.54665	10.59062	0.1223639	0.18469305	3.0537655	20	6 6.9	20.6
438124 2005 QL ₆₇	16.9	X	275.35077	260.29767	72.62309	2.95822	0.2137565	0.18362410	3.0656055	20	4 29.5	21.5
438125 2005 QS ₇₉	18.5	X	114.55375	322.48582	357.45957	3.21066	0.2197824	0.28649442	2.2789000	20	—	—
438126 2005 QO ₈₃	18.2	X	263.73870	155.63792	174.67402	22.61473	0.1027022	0.37995011	1.8879261	20	4 20.9	20.4
438127 2005 QU ₁₁₄	17.8	X	121.30085	10.06250	0.77402	5.79141	0.1965096	0.29192454	2.2505516	20	1 17.4	20.5
438128 2005 QV ₁₁₇	16.6	X	326.71168	39.33697	343.57876	8.61863	0.0836661	0.20080027	2.8881951	20	10 4.5	20.2
438129 2005 QF ₁₂₁	18.2	X	139.07576	335.67459	334.42124	4.85021	0.1819688	0.28905928	2.2653993	20	—	—
438130 2005 QC ₁₃₈	17.0	X	310.46373	308.22277	11.12425	5.07956	0.1695157	0.18686524	3.0300539	20	6 3.5	20.7
438131 2005 QU ₁₅₅	16.1	X	312.00784	191.37843	133.02394	14.64427	0.2218336	0.19030063	2.9934768	20	6 8.5	19.9
438132 2005 QE ₁₅₇	18.4	X	86.07830	120.67893	260.63713	4.54212	0.2229111	0.28594481	2.2818192	20	—	—
438133 2005 QB ₁₈₁	16.1	X	245.06534	172.00394	198.19788	17.29820	0.2123046	0.18121619	3.0927018	20	5 15.6	21.2
438134 2005 RE ₄	16.2	X	207.51189	128.74232	239.09810	9.46751	0.0358875	0.17571289	3.1569446	20	4 13.8	20.9
438135 2005 RA ₆	18.2	X	156.49215	156.23331	154.21715	2.92595	0.2198268	0.29267282	2.2467140	20	—	—
438136 2005 RA ₇	16.6	X	310.91543	24.64202	139.32513	6.79630	0.1801571	0.19051686	2.9912114	20	7 8.6	20.2
438137 2005 RP ₂₃	16.7	X	89.00672	88.25855	254.61712	9.52089	0.2517635	0.28070655	2.3101190	20	—	—
438138 2005 RC ₃₁	16.4	X	298.31057	203.49488	156.15686	14.72423	0.1276543	0.19065118	2.9898063	20	7 15.4	20.4
438139 2005 RF ₄₅	16.3	X	232.58947	162.97938	206.03484	10.35515	0.2300993	0.17901752	3.1179730	20	5 1.1	21.4
438140 2005 SH ₂	18.4	X	90.54248	169.01506	179.43525	10.42024	0.2383383	0.28543486	2.2845362	20	—	—
438141 2005 SL ₂₀	17.3	X	112.79346	82.09345	261.88922	7.25655	0.1656289	0.28594253	2.2818314	20	—	—
438142 2005 SN ₃₄	17.9	X	97.68740	213.01749	121.82076	3.07826	0.2382456	0.28211309	2.3024342	20	—	—
438143 2005 SW ₄₃	16.4	X	263.58622	58.21623	309.89191	1.98798	0.1330495	0.18170853	3.0871129	20	6 9.1	20.9
438144 2005 SS ₄₉	17.7	X	8.14292	201.50493	182.66672	2.33200	0.2156822	0.27088556	2.3656227	20	—	—
438145 2005 SB ₇₉	17.6	X	101.46810	141.00431	175.82563	8.73559	0.0727386	0.27927964	2.3179810	20	—	—
438146 2005 SP ₈₀	16.3	X	295.97148	120.24198	177.62092	10.56996	0.0879964	0.17847594	3.1242753	20	4 30.6	20.7
438147 2005 SW ₉₁	18.0	X	142.71929	292.94979	11.28742	3.08375	0.1778509	0.28503580	2.2866680	20	—	—
438148 2005 SB ₁₀₁	18.5	X	91.21181	118.81465	217.11718	5.83663	0.2223775	0.28097782	2.3086319	20	—	—
438149 2005 ST ₁₀₂	16.7	X	335.38046	329.33342	349.95413	9.05305	0.0831079	0.18704411	3.0281219	20	7 27.9	20.6
438150 2005 SV ₁₀₈	16.9	X	340.21631	89.40177	198.73616	8.61846	0.1055149	0.18331928	3.0690029	20	6 18.9	20.8
438151 2005 SW ₁₃₈	16.9	X	306.04388	4.20447	33.39919	5.06255	0.0848780	0.19573340	2.9378261	20	9 25.3	20.6
438152 2005 SC ₁₄₂	16.0	X	265.23022	7.97002	44.34031	4.45173	0.1386694	0.18880858	3.0092266	20	8 8.5	20.3
438153 2005 SN ₁₄₃	17.7	X	26.69424	325.97088	45.78700	3.51043	0.1977255	0.27395835	2.3479005	20	—	—
438154 2005 SR ₁₅₄	16.6	X	258.28170	184.25445	195.41586	10.76696	0.0949516	0.18375440	3.0641561	20	6 22.4	

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>		
438161	2005	SH ₂₅₀	18.1	X	134.05378	216.85648	134.17393	2.42926	0.2267146	0.29126448	2.2539505	20	1 9.4	21.1
438162	2005	SH ₂₅₅	17.8	X	82.48521	167.41938	231.03413	1.35351	0.2199136	0.28886883	2.2663949	20	—	—
438163	2005	SY ₂₆₃	18.0	X	16.87930	266.43962	119.86617	2.06431	0.1907171	0.27284589	2.3542782	20	—	—
438164	2005	SV ₂₆₉	15.6	X	224.80861	114.59472	306.44250	12.46667	0.2533898	0.17894485	3.1188171	20	6 24.5	20.9
438165	2005	SQ ₂₈₀	17.5	X	132.53753	142.63576	168.78741	9.93989	0.2798714	0.28542605	2.2845832	20	—	—
438166	2005	TC ₁₀	16.1	X	339.56703	347.68853	322.87304	9.50481	0.2822794	0.19062543	2.9900755	20	7 10.3	18.6
438167	2005	TM ₁₆	16.6	X	190.21111	153.00001	229.38158	1.41078	0.1442676	0.17203197	3.2018177	20	4 13.4	21.7
438168	2005	TW ₂₁	18.6	X	126.98537	199.78885	143.72404	1.53840	0.2412683	0.28923133	2.2645009	20	—	—
438169	2005	TJ ₂₄	17.1	X	309.27915	290.64842	44.49600	1.78024	0.2092773	0.18489017	3.0515946	20	6 17.8	20.8
438170	2005	TK ₂₆	16.3	X	288.54158	161.85384	202.26994	5.56902	0.2944189	0.18525455	3.0475918	20	6 11.7	20.4
438171	2005	TY ₂₈	16.3	X	267.00328	120.80964	267.51406	10.27825	0.1964411	0.18533804	3.0466765	20	6 30.0	20.6
438172	2005	TP ₃₄	17.0	X	334.21354	223.60465	76.64309	2.46352	0.1539197	0.18680853	3.0306672	20	6 21.9	20.2
438173	2005	TU ₃₈	16.6	X	281.25098	103.64208	232.97490	1.53391	0.2531115	0.18338216	3.0683012	20	5 4.6	21.0
438174	2005	TL ₇₁	16.3	X	284.43447	77.24184	284.46984	7.49999	0.1427948	0.18510274	3.0492579	20	6 26.4	20.4
438175	2005	TX ₇₇	16.8	X	290.90236	90.95524	283.51523	2.03592	0.3182341	0.18695778	3.0290541	20	6 24.4	20.8
438176	2005	TA ₉₂	16.3	X	236.00652	147.24821	258.74239	5.93561	0.1549280	0.18156280	3.0887645	20	6 23.6	21.0
438177	2005	TI ₁₂₆	16.9	X	273.25947	156.40531	200.30904	2.46612	0.1099882	0.18126108	3.0921912	20	6 10.0	21.1
438178	2005	TQ ₁₃₇	17.5	X	123.63862	217.96561	70.65254	3.47487	0.1958799	0.27800665	2.3250516	20	—	—
438179	2005	TS ₁₄₂	18.3	X	97.02727	253.20620	91.69310	2.83424	0.2174061	0.28301756	2.2975262	20	—	—
438180	2005	TG ₁₅₄	17.0	X	287.96134	151.97393	231.11843	7.90906	0.3005768	0.18746433	3.0235950	20	7 3.5	21.1
438181	2005	TB ₁₆₀	16.6	X	254.88349	122.89333	223.79497	9.11619	0.2385668	0.17810004	3.1286721	20	4 21.8	21.5
438182	2005	TL ₁₇₂	15.7	X	244.34931	97.62212	248.77807	14.74723	0.2748837	0.17668851	3.1453128	20	4 6.0	21.3
438183	2005	TR ₁₉₃	15.5	X	269.39707	64.95980	295.91276	12.40721	0.1640093	0.18147609	3.0897483	20	6 2.0	20.1
438184	2005	TS ₁₉₅	18.2	X	43.36910	207.75315	193.17065	7.57551	0.0833371	0.28015140	2.3131698	20	—	—
438185	2005	TC ₁₉₇	18.3	X	67.76992	280.58199	65.00977	2.28821	0.2154100	0.27791957	2.3255372	20	—	—
438186	2005	UE ₁₀	15.9	X	275.91570	280.21814	45.27703	14.30671	0.2588523	0.17944590	3.1130088	20	4 17.7	20.7
438187	2005	UT ₁₃	16.5	X	323.25893	92.45620	208.40789	9.36014	0.0899544	0.18109865	3.0940399	20	6 10.4	20.5
438188	2005	UK ₁₄	16.7	X	275.96673	131.17477	213.42498	8.99612	0.0763744	0.17800190	3.1298219	20	6 3.1	21.1
438189	2005	UB ₁₆	16.8	X	271.19668	214.68599	157.82493	1.55162	0.1750145	0.18196692	3.0841897	20	6 18.2	21.3
438190	2005	UC ₂₅	16.0	X	157.75935	261.24807	227.18531	7.75297	0.0491490	0.17980085	3.1089105	20	7 16.8	20.7
438191	2005	UX ₃₄	16.6	X	271.98015	307.09941	53.74905	2.57615	0.1765261	0.17947862	3.1126305	20	6 3.8	21.0
438192	2005	UF ₄₃	16.9	X	276.27770	178.26596	194.35917	4.68091	0.1962326	0.18354516	3.0664844	20	6 21.5	21.2
438193	2005	UV ₄₅	16.6	X	250.82426	307.45402	38.74284	2.76101	0.2542852	0.17696070	3.1420867	20	4 17.2	21.8
438194	2005	UR ₄₈	16.7	X	240.26941	125.68073	269.27376	3.98377	0.1348665	0.17795677	3.1303510	20	6 16.4	21.5
438195	2005	UT ₅₂	16.2	X	241.07315	269.27711	122.40289	4.27999	0.2119512	0.17931065	3.1145740	20	6 6.0	21.2
438196	2005	US ₅₇	18.7	X	191.88815	167.64994	215.06710	20.07781	0.0803210	0.37114853	1.9176568	20	4 1.8	21.0
438197	2005	UL ₆₀	16.5	X	264.47083	155.59911	231.64812	17.17823	0.2251624	0.18183076	3.0857292	20	6 20.6	21.3
438198	2005	UO ₇₄	16.4	X	282.35623	128.34506	254.10612	3.55479	0.3058158	0.18472322	3.0534330	20	6 25.5	20.7
438199	2005	UB ₈₁	17.1	X	287.83209	151.72478	191.38321	0.28124	0.1928965	0.18198200	3.0840193	20	5 29.8	21.4
438200	2005	UM ₈₅	16.3	X	293.94604	112.55821	206.84640	10.82984	0.2794985	0.18140289	3.0905795	20	4 24.9	20.5
438201	2005	UG ₁₂₈	16.0	X	316.33819	95.57192	228.07486	14.93669	0.1942605	0.18283969	3.0743671	20	6 15.7	19.8
438202	2005	UE ₁₂₉	17.7	X	245.14855	237.72385	227.35079	5.05700	0.1544298	0.25750538	2.4468754	20	9 23.8	20.9
438203	2005	UZ ₁₃₁	16.8	X	294.90924	173.43228	192.97836	16.41921	0.2799365	0.18546829	3.0452499	20	6 24.5	21.1
438204	2005	UN ₁₄₃	15.9	X	276.83700	102.44045	245.75759	16.20952	0.0731222	0.17521901	3.1628740	20	6 8.6	20.4
438205	2005	UO ₁₅₈	16.7	X	284.14866	160.86156	211.95182	6.00811	0.2468857	0.18534772	3.0465704	20	6 24.0	20.9
438206	2005	UA ₁₆₄	17.5	X	194.09747	280.56052	240.39107	4.48816	0.1489736	0.25960716	2.4336509	20	10 10.0	21.1
438207	2005	UB ₁₈₆	16.4	X	261.29072	156.71332	223.07180	4.68808	0.1859631	0.17941623	3.1133520	20	6 14.3	21.0
438208	2005	UO ₂₀₅	18.0	X	127.60479	108.31555	216.41490	5.42208	0.2343824	0.28313581	2.2968864	20	—	—
438209	2005	UZ ₂₁₃	16.8	X	105.48699	105.25351	262.81975	6.71601	0.2377867	0.28585469	2.2822988	20	—	—
438210	2005	UL ₂₂₈	16.9	X	281.58184	244.38626	112.25678	2.00237	0.1876767	0.18113633	3.0936108	20	6 9.0	21.3
438211	2005	UT ₂₃₅	16.6	X	297.23066	99.92947	113.37757	16.34747	0.2805380	0.17898010	3.1184076	20	4 20.6	21.0
438212	2005	UV ₂₃₆	17.4	X	124.48622	205.25918	106.62871	4.26770	0.1455054	0.27857807	2.3218710	20	—	—
438213	2005	UP ₂₄₁	18.0	X	115.28856	63.96649	263.98862	5.61111	0.1906744	0.27971907	2.3155527	20	—	—
438214	2005	UR ₂₄₂	15.8	X	276.06755	70.99754	246.71011	24.95911	0.2184662	0.17300261	3.1898305	20	4 4.9	21.0
438215	2005	UY ₂₆₇	15.8	X	263.62008	152.00976	247.35521	12.36972	0.0516216	0.17969194	3.1101666	20	7 26.9	20.4
438216	2005	UD ₂₈₂	18.1	X	137.39236	86.96742	223.09349	3.63211	0.2111355	0.28151795	2.3056780	20	—	—
438217	2005	UZ ₂₉₁	17.5	X	3.35328	354.99062	14.35041	4.91564	0.1021182	0.26557661	2.3970449	20	12 3.7	20.2
438218	2005	UJ ₃₀₉	18.1	X	134.19773	107.60942	199.96602	1.91022	0.2007092	0.28233530	2.3101259	20	—	—
438219	2005	UQ ₃₃₅	16.9	X	287.79319	80.83827	264.83600	6.77432	0.1496512	0.18025085	3.1037341	20	6 8.6	21.2
438220	2005	UH ₃₄₂	17.6	X	170.66957	280.67503	266.22881	6.44790	0.0365816	0.26142374	2.4223638	20	10 25.8	21.0
438221	2005	UV ₃₄₆	18.4	X	74.69374	98.92459	230.90796	1.40436	0.2236195	0.27408868	2.3471561	20	—	—
438222	2005	UN ₃₅₀	15.9	X	295.23119	103.70431	246.04313	14.03183	0.2694559	0.18339996	3.0681027	20	6 5.6	19.9
438223	2005	UK ₃₉₆	15.8	X	257.01181	269.68982	77.19056	16.87950	0.2620638	0.17792460	3.1307284	20	4 28.6	21.0
438224	2005	UV ₃₉₇	16.0	X	266.10291	128.65729	242.59272	16.34369	0.1473724	0.18100227	3.0951381	20	6 13.6	20.5
438225	2005	UT ₄₂₃	16.5	X	225.32291	7.52934	42.41383	1.90042	0.1943197	0.17795716	3.1303465	20	6 14.6	21.5
438226	2005	UE ₄₆₂	18.2	X	39.50873	164.71169	198.56883	5.81056	0.1210207	0.27277653	2.3546772	20	—	—
438227	2005	UM ₄₆₃	18.0	X	153.01700	90.45315	193.44753	5.72417	0.1395453	0.28027880	2.3124688	20	—	—
438228	2005	UH ₄₇₄	17.7	X	200.94086	129.56021	75.04240	3.24027	0.1439321	0.27153276	2.3618623	20	12 16.4	21.0
438229	2005	UK ₄₈₀	15.5	X	284.69472	79.19784	256.78196	20.53747	0.2359778	0.18342897	3.0677792	20	5 8.8	20.1
438230	2005	UC ₄₈₂	17.3	X	22.58625									

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
438241 2005 VK ₇₈	16.3	X	280.85025	132.30334	254.27243	14.18809	0.3093316	0.18418095	3.0594233	20	6 27.5	20.7
438242 2005 VO ₇₉	15.3	X	218.56619	145.82017	268.25111	17.10573	0.1499731	0.17583166	3.1555229	20	6 16.7	20.3
438243 2005 VA ₉₀	16.0	X	259.58338	119.28671	254.52032	15.45355	0.1827460	0.17749135	3.1358209	20	6 5.3	20.7
438244 2005 VX ₉₇	15.9	X	203.43081	139.44689	296.22898	14.44643	0.2177969	0.17555896	3.1587897	20	6 26.6	21.3
438245 2005 WU ₃	15.6	X	268.16557	93.99934	313.21374	20.08646	0.3518030	0.18285515	3.0741938	20	7 8.5	20.5
438246 2005 WZ ₁₉	16.1	X	255.73944	123.17697	258.63899	9.24876	0.1168028	0.17707431	3.1407426	20	6 19.3	20.8
438247 2005 WA ₃₃	17.4	X	48.84851	352.78234	53.86912	2.96392	0.1868089	0.27796175	2.3253019	20	—	—
438248 2005 WG ₃₇	16.7	X	239.16645	301.24060	98.62081	2.56899	0.1801322	0.17608952	3.1524415	20	6 16.7	21.7
438249 2005 WA ₄₀	17.3	X	56.97314	152.14272	252.63162	7.70977	0.1796352	0.27911785	2.3188766	20	—	—
438250 2005 WG ₅₆	17.6	X	1.90121	292.60177	89.66592	7.52722	0.1229514	0.26630047	2.3926992	20	12 23.6	20.2
438251 2005 WN ₅₈	16.2	X	215.30049	133.87767	284.67340	15.63125	0.1083560	0.16895695	3.2405496	20	6 22.3	21.2
438252 2005 WV ₆₃	15.3	X	198.68721	310.20791	103.21235	23.37583	0.1319116	0.17291904	3.1908582	20	6 2.7	20.6
438253 2005 WP ₆₅	17.9	X	13.29820	116.92009	295.20377	4.16116	0.0706552	0.27119615	2.3638162	20	—	—
438254 2005 WN ₉₈	18.5	X	80.51013	284.57862	58.43641	6.19922	0.2625472	0.27938718	2.3173861	20	—	—
438255 2005 WY ₁₁₄	15.9	X	284.19123	109.12799	270.97012	13.85127	0.1273815	0.17781842	3.1319745	20	7 19.4	20.3
438256 2005 WT ₁₁₅	17.8	X	49.02052	274.76653	131.34229	6.81422	0.1924416	0.27904855	2.3192605	20	—	—
438257 2005 WO ₁₁₈	16.3	X	324.20770	170.36585	309.30711	23.58309	0.2020431	0.26695328	2.3887968	20	—	—
438258 2005 WO ₁₃₆	16.7	X	317.25046	115.49953	218.27022	6.43808	0.0399182	0.18415632	3.0596962	20	7 18.5	21.0
438259 2005 WD ₁₄₅	16.0	X	221.17349	118.44837	278.12633	3.29527	0.1745239	0.17255963	3.1952873	20	5 26.8	21.2
438260 2005 WR ₁₅₄	17.9	X	94.17243	98.84076	261.76455	3.38056	0.2370922	0.27975653	2.3152958	20	—	—
438261 2005 WB ₁₆₃	17.7	X	357.73384	12.04668	246.28906	19.08936	0.0533605	0.37755713	1.8958949	20	6 10.6	18.9
438262 2005 WM ₂₁₁	17.3	X	128.42328	337.83687	253.84107	7.16555	0.0922698	0.25794946	2.4440662	20	11 3.6	20.9
438263 2005 XO ₃	15.0	X	301.28342	74.76202	263.84514	25.23008	0.2029283	0.18120435	3.0928366	20	6 10.8	18.8
438264 2005 XZ ₁₃	15.1	X	179.76303	209.90391	246.08095	15.14522	0.0546880	0.17368421	3.1814797	20	6 30.7	19.9
438265 2005 XE ₂₅	15.4	X	212.76051	190.38318	268.53097	16.85266	0.1628148	0.17844317	3.1246599	20	7 29.9	20.7
438266 2005 XG ₅₅	17.6	X	99.15348	63.36988	322.21044	2.20785	0.2079163	0.28441543	2.2899919	20	1 7.8	19.8
438267 2005 XC ₇₅	16.2	X	278.35862	325.98148	58.17437	5.79838	0.1043697	0.17686926	3.1431695	20	7 24.1	20.5
438268 2005 XX ₁₀₈	16.5	X	302.44893	203.26151	99.15527	2.19641	0.1708005	0.17300445	3.1898079	20	5 1.7	20.6
438269 2005 XD ₁₁₇	17.5	X	141.97792	26.64025	264.85461	9.24096	0.2003337	0.27366123	2.3495996	20	—	—
438270 2005 YZ	17.0	X	137.20598	72.32115	66.97638	28.95783	0.3402838	0.23409068	2.6074339	20	7 30.2	22.3
438271 2005 YL ₈	15.5	X	235.58353	123.40835	291.56638	13.45198	0.2536098	0.17832413	3.1260504	20	6 25.9	20.7
438272 2005 YV ₂₃	16.7	X	247.37321	100.26109	287.00802	23.65308	0.2779625	0.17372225	3.1810152	20	5 31.0	22.1
438273 2005 YC ₂₅	16.8	X	106.87321	232.08454	287.25837	13.35014	0.2329899	0.23093284	2.6311499	20	7 19.6	21.1
438274 2005 YE ₂₉	18.6	X	333.73024	96.49664	356.39213	1.04267	0.1443976	0.26689269	2.3891583	20	—	—
438275 2005 YC ₃₁	17.2	X	45.16512	103.91833	286.45769	9.99805	0.1537556	0.27032615	2.3688852	20	—	—
438276 2005 YR ₇₅	17.5	X	126.45898	222.65532	308.37008	3.65624	0.1730734	0.23872612	2.5735706	20	8 18.3	21.7
438277 2005 YC ₈₅	17.5	X	293.81345	21.03772	91.39682	7.53512	0.0741318	0.26439594	2.4041756	20	—	—
438278 2005 YP ₉₈	17.4	X	77.97530	68.62251	308.26815	6.30331	0.1229890	0.27451175	2.3447439	20	—	—
438279 2005 YJ ₁₀₂	15.7	X	266.78557	304.76780	105.41730	10.12348	0.0867188	0.17890837	3.1192411	20	8 14.8	20.1
438280 2005 YO ₁₁₁	17.9	X	227.68012	279.59152	107.21647	24.32974	0.1109448	0.37260826	1.9126451	20	6 1.6	20.5
438281 2005 YO ₁₃₀	17.5	X	138.24867	67.42999	119.08149	5.04376	0.1062124	0.24439807	2.5335970	20	9 19.1	21.3
438282 2005 YR ₂₀₉	15.8	X	240.55721	132.99833	282.01709	17.34857	0.2605501	0.17805998	3.1291413	20	6 29.3	21.0
438283 2005 YO ₂₁₂	16.0	X	256.13458	91.46945	306.69721	6.69356	0.2667470	0.17792554	3.1307173	20	6 22.3	20.9
438284 2006 AD ₆	16.1	X	144.85976	91.68096	79.80313	16.16082	0.1138535	0.23820589	2.5773163	20	9 12.7	20.4
438285 2006 AR ₃₂	17.5	X	77.01819	250.73361	128.72196	8.14324	0.2685415	0.27615199	2.3354501	20	—	—
438286 2006 AY ₃₄	17.3	X	310.97459	300.01671	107.51924	3.95025	0.1212091	0.25415217	2.4683505	20	10 28.3	19.7
438287 2006 AS ₅₉	16.3	X	302.18800	256.53916	113.62556	7.51684	0.1478366	0.17803308	3.1294564	20	8 2.2	20.1
438288 2006 AE ₆₇	17.3	X	92.73823	18.21279	192.96860	2.56317	0.1921194	0.23622455	2.5917078	20	9 6.8	21.3
438289 2006 AG ₇₉	15.7	X	231.81003	278.71327	131.50443	17.17854	0.1122202	0.16865479	3.2444190	20	6 29.2	20.8
438290 2006 AP ₈₆	15.3	X	205.68866	320.17982	118.58899	28.54059	0.1695012	0.17160709	3.2071004	20	7 4.8	20.6
438291 2006 AO ₉₃	17.7	X	179.76854	160.72891	130.44403	4.21496	0.1540384	0.23715331	2.5849368	20	7 23.2	21.7
438292 2006 BS ₂₂	17.5	X	133.55275	54.51765	124.97401	4.75165	0.0905629	0.2392130	2.5700179	20	9 2.8	21.2
438293 2006 BE ₃₃	17.3	X	80.90975	61.12093	141.23314	12.52660	0.1781370	0.22813865	2.6525901	20	8 11.5	20.9
438294 2006 BX ₆₀	17.3	X	184.04693	53.68614	56.29961	5.53931	0.2433327	0.23891239	2.5722328	20	7 24.5	21.8
438295 2006 BH ₂₃₂	15.7	X	181.08363	286.78598	122.53226	17.52271	0.1318094	0.15864627	3.3794768	20	5 13.9	21.4
438296 2006 BG ₂₇₇	17.2	X	42.28294	122.76402	163.25208	11.28580	0.2046920	0.23547674	2.5971919	20	10 21.2	20.7
438297 2006 CV ₃₈	16.8	X	251.13346	253.13754	159.58088	22.26266	0.0550331	0.23593069	2.5938593	20	8 4.0	20.5
438298 2006 CM ₆₇	17.6	X	168.99325	279.95688	251.40605	5.36716	0.2304098	0.24045511	2.5612190	20	9 22.8	22.1
438299 2006 DO ₃₆	17.3	X	129.41493	358.76250	174.95249	4.15031	0.1683806	0.23193194	2.6235882	20	8 23.5	21.5
438300 2006 DS ₃₇	17.4	X	132.02936	180.72314	9.14303	3.55943	0.2412497	0.23457922	2.6038124	20	9 19.1	21.7
438301 2006 DB ₅₀	16.6	X	157.56933	182.52955	303.33479	11.07873	0.1316957	0.23160880	2.6260280	20	7 20.4	20.5
438302 2006 DP ₁₃₉	17.6	X	109.18203	90.96644	148.80979	3.36213	0.1622790	0.24075512	2.5590908	20	10 28.5	21.6
438303 2006 DV ₁₄₆	16.8	X	319.80882	13.36836	344.43566	11.82143	0.1270483	0.23542725	2.5975559	20	8 26.9	19.5
438304 2006 DZ ₁₄₇	17.6	X	40.80948	93.22390	175.02630	16.83852	0.2509276	0.22811965	2.6527373	20	9 29.6	20.8
438305 2006 DY ₂₀₇	16.3	X	335.95692	52.41544	352.33951	13.77039	0.0694876	0.24676558	2.5173658	20	11 27.5	19.5
438306 2006 EF ₂₁	17.5	X	79.79245	283.96464	345.49813	3.13415	0.2133771	0.23953880	2.5677464	20	11 7.9	21.4
438307 2006 FG ₁₁	17.0	X	129.01169	137.61866	85.25965	3.44090	0.1275264	0.23901929	2.5714658	20	10 24.8	21.0
438308 2006 HC ₁₁	16.6	X	47.68218	58.08186	193.46543	16.58921	0.1916551	0.22387096	2.6861950	20	9 1.9	20.2
438309 2006 HS ₂₄	17.0	X	30.56899	202.90023	76.76279	4.95523	0.1970528	0.22328041	2.6909294	20	9 21.8	20.1
438310 2006 HM ₇₃	16.9	X	262.33934	298.01408	97.43098	6.30419	0.0243309	0.22304934	2.6927876	20	8 1.9	20.4
438311 2006 HN ₈₀	16.7	X	215.14589	220.50550	226.73676	21.07590	0.0430369	0.22514894	2.6760206	20	7 29.1	21.0
438312 2006 HW ₁₀₂	17.5	X	30.93752	204.75924	116.01273	3.31511	0.2100531	0.22915294	2.6447569	20	11 17.9	20.8
438313 2006 HX ₁₀₉	16.4	X	82.35518	350.04112	277.61565	14.02580	0.2291803	0.23221562	2.6214511	20	11 6.4	20.9

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>		
438321	2006	KU ₈	16.6	X	82.51428	19.74524	238.84730	13.15237	0.2171490	0.22970995	2.6404798	20	10 26.6	20.9
438322	2006	KB ₁₅	16.9	X	90.06270	138.65568	109.62749	8.60929	0.1879997	0.22944080	2.6425443	20	10 24.1	21.1
438323	2006	KO ₂₇	17.0	X	325.98260	172.96617	230.66182	9.16103	0.0996317	0.23720122	2.5845887	20	11 12.2	19.8
438324	2006	KE ₃₁	16.8	X	339.93776	269.27415	49.70842	9.95575	0.1843310	0.21941399	2.7224495	20	8 6.3	19.6
438325	2006	KA ₄₄	16.9	X	111.99836	71.83516	86.72771	13.94796	0.2100042	0.22352993	2.6889265	20	7 23.2	21.3
438326	2006	KN ₅₀	17.1	X	39.94184	228.33689	79.15569	4.43168	0.1576509	0.22972147	2.6403915	20	11 5.0	20.5
438327	2006	KF ₅₂	17.6	X	122.67453	28.71157	185.56007	4.31505	0.1531537	0.23124145	2.6288083	20	10 7.0	21.8
438328	2006	KP ₅₃	17.3	X	338.03575	239.54326	89.37886	8.54505	0.2470919	0.21820625	2.7324858	20	8 13.8	19.5
438329	2006	KL ₆₅	17.2	X	86.17083	170.08643	108.78032	11.19070	0.0834690	0.23709331	2.5853728	20	11 17.7	21.0
438330	2006	KN ₆₈	17.3	X	66.99820	208.07628	54.05638	6.71773	0.1114862	0.22762450	2.6565830	20	10 5.9	21.0
438331	2006	KC ₆₉	17.1	X	52.68533	69.08186	200.37706	12.93820	0.2373553	0.22670764	2.6637407	20	10 12.8	20.7
438332	2006	KQ ₁₀₃	16.6	X	157.96883	40.12902	95.95986	7.68892	0.0477945	0.22102609	2.7091956	20	8 1.6	20.4
438333	2006	KZ ₁₁₉	17.1	X	25.72653	204.44299	124.35288	8.88554	0.1981038	0.22815666	2.6524505	20	11 20.9	20.5
438334	2006	KL ₁₃₉	16.4	X	295.14796	118.02260	248.54510	12.25420	0.1944974	0.21764297	2.7371985	20	7 9.8	19.9
438335	2006	MC ₆	17.0	X	122.48005	105.36484	108.87287	13.30454	0.2058896	0.23228817	2.6209053	20	10 15.5	21.6
438336	2006	PH ₁₀	17.3	X	336.12333	171.96424	191.07713	2.37415	0.2097093	0.21410697	2.7672529	20	9 29.2	19.5
438337	2006	KF ₅₂	16.2	X	17.25333	40.40415	325.32852	15.23119	0.1641497	0.22362049	2.6882004	20	12 18.5	19.8
438338	2006	QX ₇₁	16.7	X	256.31166	338.27150	19.65307	1.95271	0.1151508	0.19684587	2.9267470	20	5 20.6	21.1
438339	2006	QU ₁₁₂	17.1	X	344.89546	48.86113	297.88681	6.80431	0.2357672	0.21284719	2.7781612	20	9 21.9	19.6
438340	2006	QV ₁₁₈	16.8	X	309.66635	248.47339	139.48598	13.18111	0.2541525	0.20956994	2.8070494	20	8 31.3	19.4
438341	2006	QX ₁₂₃	16.9	X	14.77258	121.16455	219.55144	11.17677	0.3011557	0.21760665	2.7375030	20	12 1.9	20.1
438342	2006	QQ ₁₆₉	19.1	X	198.63243	196.97991	111.85155	1.66023	0.2792307	0.32252006	2.1058700	20	1 14.6	22.5
438343	2006	RO	16.8	X	325.03920	153.84947	236.50367	7.76559	0.2954062	0.21322232	2.7749017	20	10 7.6	18.9
438344	2006	RJ ₂₄	16.4	X	207.66668	108.62316	272.90844	7.24010	0.0988424	0.19258697	2.9697378	20	4 27.3	21.1
438345	2006	RO ₂₇	17.8	X	76.39039	22.38499	346.35040	5.72394	0.1518844	0.30294525	2.1956340	20	—	—
438346	2006	RU ₆₆	16.6	X	45.20112	327.13350	13.54173	4.99740	0.1731219	0.22004614	2.7172330	20	12 22.1	20.5
438347	2006	RK ₉₄	17.5	X	24.08610	208.30618	216.74805	4.17988	0.1093360	0.30119137	2.2041494	20	—	—
438348	2006	RA ₁₁₀	16.7	X	303.67090	263.93711	32.57632	0.65410	0.0954394	0.19189272	2.9768963	20	5 5.4	20.6
438349	2006	RE ₁₁₃	17.0	X	13.22460	33.27539	154.82309	1.38493	0.1133969	0.18135217	3.0911557	20	3 31.9	20.8
438350	2006	SF ₉	16.1	X	166.29979	25.93586	18.90788	5.47140	0.1737888	0.18278347	3.0749975	20	4 18.9	21.2
438351	2006	SZ ₂₆	16.5	X	338.85047	158.73766	209.15688	10.50184	0.3036922	0.21173515	2.7878800	20	10 16.9	18.3
438352	2006	SW ₃₆	18.5	X	126.73695	92.31754	240.79648	2.64262	0.1665312	0.30794127	2.1718214	20	—	—
438353	2006	SC ₅₂	16.4	X	358.90452	18.73833	5.49744	13.58611	0.0999188	0.21943354	2.7222878	20	11 30.9	20.0
438354	2006	SF ₅₆	16.6	X	338.94708	266.59728	121.20089	9.02989	0.3096781	0.21312581	2.7757394	20	11 24.4	18.7
438355	2006	SO ₁₅₉	18.5	X	167.85996	149.06317	161.94369	2.05506	0.2134998	0.31291834	2.1487310	20	—	—
438356	2006	SX ₁₅₉	16.6	X	229.27616	319.66109	41.83970	6.18507	0.1381356	0.18708536	3.0276769	20	4 24.9	21.3
438357	2006	SH ₂₁₂	16.6	X	28.05805	89.05631	216.68171	18.37510	0.3262777	0.21354916	2.7720696	20	11 8.8	20.0
438358	2006	SJ ₂₅₄	16.8	X	34.77281	226.45598	34.66478	2.09007	0.0690871	0.20248752	2.8721285	20	8 9.6	20.4
438359	2006	SR ₂₅₄	16.7	X	310.07686	331.62375	15.30649	12.89487	0.1435710	0.20191430	2.8775618	20	7 20.6	20.4
438360	2006	SS ₂₅₉	16.7	X	175.47867	210.13859	200.51819	9.41178	0.0648505	0.18488784	3.0516203	20	5 3.2	21.2
438361	2006	SO ₂₇₁	17.2	X	286.87310	283.72895	33.26971	3.79245	0.1291888	0.19372885	2.9580568	20	5 3.8	21.1
438362	2006	SB ₂₇₃	16.9	X	32.24935	298.84291	23.96263	15.28546	0.3339303	0.21579709	2.7527852	20	12 3.1	20.9
438363	2006	SU ₃₁₄	16.0	X	126.46843	241.44412	187.20818	13.72000	0.2399951	0.17600237	3.1534821	20	4 19.5	21.2
438364	2006	SS ₃₁₆	16.5	X	207.23662	198.92794	178.14660	8.99443	0.1507180	0.18569041	3.0428210	20	4 23.8	21.4
438365	2006	SJ ₃₁₇	16.9	X	73.81837	121.87532	89.32253	3.08156	0.0338548	0.19716889	2.9235496	20	7 22.1	20.8
438366	2006	SL ₃₂₁	16.7	X	197.64422	324.47983	72.66095	4.85673	0.0360649	0.18743239	3.0239385	20	5 11.2	21.0
438367	2006	SW ₃₂₃	16.4	X	203.40692	346.04703	32.03085	11.31711	0.1084085	0.18540275	3.0459675	20	4 21.1	20.9
438368	2006	SM ₃₄₆	16.0	X	348.07322	24.41751	225.91861	9.52225	0.0862017	0.18930250	3.0039900	20	5 12.8	19.5
438369	2006	SR ₃₇₈	16.9	X	192.90572	269.76415	110.02843	11.24186	0.0830513	0.18150921	3.0893725	20	4 18.5	21.8
438370	2006	SY ₃₉₇	16.8	X	279.79637	275.74323	129.60998	12.93307	0.2822901	0.20080424	2.8881570	20	7 26.5	20.7
438371	2006	TT ₅	16.9	X	359.36686	335.74666	15.37117	9.08244	0.2876673	0.21147742	2.7901446	20	11 10.7	19.5
438372	2006	TW ₁₄	16.3	X	356.67155	38.01166	21.819980	10.58625	0.0852647	0.19109297	2.9851964	20	5 26.6	20.0
438373	2006	TF ₃₂	16.8	X	251.77692	156.13849	210.63316	4.80834	0.1585350	0.19171483	2.9787376	20	5 22.4	21.2
438374	2006	TF ₄₃	16.4	X	220.80670	144.82906	221.70215	9.98672	0.0766062	0.18270815	3.0758426	20	4 26.2	21.0
438375	2006	TF ₄₆	17.0	X	257.39000	308.32384	94.49786	1.74180	0.0950303	0.19586758	2.9364843	20	7 22.5	21.0
438376	2006	TZ ₅₉	16.5	X	172.80903	156.30919	236.73993	10.00459	0.0725523	0.17785599	3.1153535	20	4 5.7	21.4
438377	2006	TZ ₈₀	18.4	X	106.40909	70.85560	279.44929	3.15855	0.1274455	0.30393354	2.1908718	20	—	—
438378	2006	TK ₉₀	16.4	X	206.44002	1.45743	12.04327	3.18667	0.1083640	0.18113476	3.0936287	20	4 18.1	21.3
438379	2006	TH ₉₈	16.8	X	255.84057	308.35515	31.55780	1.85018	0.1482728	0.18886940	3.0085806	20	4 24.0	21.2
438380	2006	TV ₉₉	16.7	X	224.07274	50.46343	305.64012	3.14735	0.0765936	0.18345635	3.0674740	20	4 15.7	21.3
438381	2006	TH ₁₁₄	16.5	X	284.56144	194.95116	128.78003	10.88896	0.1197768	0.19080547	2.9881943	20	5 15.1	20.8
438382	2006	TV ₁₂₃	16.4	X	265.26767	287.59269	25.47190	9.43545	0.0512482	0.18166579	3.0875970	20	4 14.0	20.7
438383	2006	TF ₁₂₄	16.0	X	9.14652	319.26091	228.87742	15.88687	0.1316909	0.17485777	3.1672288	20	3 20.3	20.1
438384	2006	TZ ₁₂₄	15.9	X	279.06960	56.95493	239.02434	10.08362	0.0124242	0.17946611	3.1127751	20	4 12.9	20.3
438385	2006	UV ₆	16.1	X	214.57532	322.08713	53.45521	11.35232	0.2106546	0.18553581	3.0445110	20	4 26.2	21.2
438386	2006	UL ₁₂	16.6	X	324.39093	87.13316	203.10298	9.27249	0.1389371	0.19149562	2.9810104	20	5 24.0	20.2
438387	2006	UF ₂₀	17.0	X	266.75526	320.99176	17.17449	10.04971	0.1164832	0.19020843	2.9944440	20	5 5.7	21.4
438388	2006	UA ₃₃	16.1	X	195.25176	340.62665	41.08678	10.65766	0.0415771	0.18125612	3.0922476	20	4 19.8	20.7
438389	2006	UB ₃₄	16.4	X	331.73303	62.73190	208.42202	10.95524	0.1437914	0.18946813	3.0022391	20	5 9.7	20.0

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
438401 2006 <i>UE</i> ₁₈₉	15.7	X	131.92648	170.38435	248.50349	14.15388	0.2005905	0.17563234	3.1579098	20	4 3.5	21.0
438402 2006 <i>UU</i> ₂₀₀	16.0	X	256.63485	93.50584	239.72515	8.69852	0.1308210	0.18609219	3.0384397	20	4 17.0	20.6
438403 2006 <i>UC</i> ₂₁₀	15.9	X	148.51388	155.64017	262.16888	8.32393	0.1015200	0.17671975	3.1449421	20	4 11.6	20.8
438404 2006 <i>UW</i> ₂₁₂	16.1	X	219.36577	302.69270	44.71089	10.36882	0.0933463	0.17764083	3.1340615	20	4 4.3	20.9
438405 2006 <i>UY</i> ₂₅₄	16.5	X	206.17237	155.21911	221.21255	9.15330	0.0647780	0.18121179	3.0927519	20	4 23.1	21.0
438406 2006 <i>UZ</i> ₂₆₂	18.7	X	196.15307	227.52505	68.82185	1.97805	0.1576971	0.31107566	2.1572080	20	—	—
438407 2006 <i>UV</i> ₃₃₂	16.6	X	234.46959	213.66479	148.60475	10.65092	0.0780947	0.18603242	3.0390905	20	5 9.5	21.3
438408 2006 <i>UH</i> ₃₃₈	16.0	X	123.00807	199.47875	244.17317	9.25821	0.1037827	0.17458314	3.1705493	20	4 17.3	20.8
438409 2006 <i>VT</i> ₁₇	16.6	X	265.24583	102.13693	238.08650	10.31728	0.1133701	0.18739633	3.0243264	20	5 8.9	21.0
438410 2006 <i>VK</i> ₁₉	16.2	X	99.91533	201.76514	244.76407	10.28120	0.0317830	0.17169189	3.2060444	20	3 13.1	20.9
438411 2006 <i>VE</i> ₂₃	15.8	X	319.23766	17.41042	234.86081	9.77923	0.0218993	0.17694522	3.1422699	20	4 7.9	20.3
438412 2006 <i>VX</i> ₃₇	15.6	X	197.16443	135.30763	240.65915	27.81078	0.2355495	0.18076939	3.0977958	20	4 6.1	21.4
438413 2006 <i>VF</i> ₄₇	16.4	X	216.48254	331.85457	33.46358	5.54225	0.1606474	0.18254244	3.0777037	20	4 16.4	21.4
438414 2006 <i>VN</i> ₄₇	16.4	X	223.57345	312.91900	38.93908	11.42196	0.1035960	0.18092669	3.0960001	20	4 11.9	21.1
438415 2006 <i>VZ</i> ₄₈	18.1	X	17.31787	218.75184	247.99458	4.49820	0.1382750	0.30168923	2.2017238	20	—	—
438416 2006 <i>VZ</i> ₅₂	16.0	X	192.22932	350.68037	18.03776	8.57334	0.0932952	0.17614838	3.1517393	20	3 31.1	20.9
438417 2006 <i>VT</i> ₅₅	18.4	X	90.32920	170.28736	227.21520	5.96308	0.0502188	0.30575630	2.1821559	20	—	—
438418 2006 <i>VC</i> ₆₆	16.0	X	348.35038	54.67374	239.44305	10.76512	0.0724481	0.19102974	2.9858551	20	7 9.9	20.0
438419 2006 <i>VT</i> ₆₇	15.6	X	122.85888	196.72012	244.04561	16.51642	0.1620836	0.17236809	3.1976540	20	4 19.3	20.7
438420 2006 <i>VU</i> ₇₇	17.8	X	107.51215	251.06522	93.38353	3.84693	0.1648885	0.30195780	2.2004181	20	—	—
438421 2006 <i>VU</i> ₇₈	16.7	X	303.22879	174.00011	189.71930	4.20594	0.1559728	0.19824735	2.9129372	20	7 25.1	20.2
438422 2006 <i>VW</i> ₈₇	16.8	X	334.09572	93.71349	243.26224	13.59787	0.1715338	0.20160089	2.8805434	20	8 7.5	20.2
438423 2006 <i>VZ</i> ₉₄	15.8	X	198.51029	130.35768	242.53013	11.67356	0.0957991	0.17756264	3.1349816	20	4 7.3	20.8
438424 2006 <i>VD</i> ₁₀₀	16.3	X	219.61594	311.77172	58.46553	13.38933	0.1724575	0.18315638	3.0708223	20	4 26.9	21.3
438425 2006 <i>VK</i> ₁₀₈	16.5	X	176.12601	115.94832	267.20369	5.24167	0.1685842	0.17496140	3.1659779	20	3 28.7	21.4
438426 2006 <i>VB</i> ₁₃₅	15.3	X	280.40714	47.66152	242.80974	21.07734	0.0108631	0.17605346	3.1528720	20	4 5.4	20.1
438427 2006 <i>VF</i> ₁₃₇	16.4	X	243.68569	298.16280	60.71923	12.51141	0.1609254	0.18493992	3.0510472	20	5 5.5	21.1
438428 2006 <i>VR</i> ₁₆₉	15.0	X	358.23409	321.71840	289.08196	18.44281	0.0565580	0.17288073	3.1913296	20	5 29.2	19.5
438429 2006 <i>WN</i> ₁	18.9	X	207.30753	93.56223	239.19328	4.01630	0.4506244	0.32399130	2.0994900	20	2 18.2	23.3
438430 2006 <i>WL</i> ₃	19.9	X	153.33257	67.12878	81.32517	20.39128	0.2409303	0.62279085	1.3580254	20	10 5.7	21.6
438431 2006 <i>WW</i> ₃	15.2	X	311.88828	36.52992	292.16354	22.37356	0.2546499	0.18234364	3.0799403	20	6 7.0	19.1
438432 2006 <i>WO</i> ₂₇	18.7	X	130.67201	45.80203	279.60182	3.61555	0.2044640	0.30522850	2.1846708	20	—	—
438433 2006 <i>WU</i> ₅₅	17.5	X	243.01979	27.20905	84.24129	5.34408	0.2925026	0.26970865	2.3724995	20	9 16.5	20.9
438434 2006 <i>WH</i> ₆₉	17.0	X	245.85583	203.86317	259.09554	22.73116	0.2064711	0.27209724	2.3585945	20	9 4.5	20.9
438435 2006 <i>WP</i> ₇₁	18.2	X	240.28773	82.15261	43.97780	7.30089	0.1814809	0.27766545	2.3269559	20	10 19.0	20.9
438436 2006 <i>WC</i> ₉₇	16.3	X	235.06723	263.64927	60.92968	11.34913	0.0427789	0.17424557	3.1746429	20	3 30.7	21.1
438437 2006 <i>WS</i> ₉₈	16.6	X	222.43259	282.19058	71.61323	10.49656	0.0980955	0.17833854	3.1258820	20	4 15.8	21.5
438438 2006 <i>WD</i> ₁₁₅	16.5	X	62.08999	354.91611	215.43409	12.09534	0.0557078	0.18670364	3.0318022	20	7 5.4	20.9
438439 2006 <i>WD</i> ₁₃₁	15.8	X	165.81895	289.16661	127.95746	27.35146	0.2117493	0.17944790	3.1129858	20	5 14.8	21.6
438440 2006 <i>WS</i> ₁₄₁	16.3	X	233.09548	141.56768	217.27320	10.77832	0.0969246	0.18202064	3.0835829	20	4 28.7	21.0
438441 2006 <i>WX</i> ₁₆₀	16.3	X	263.36026	242.84600	99.78060	13.10867	0.1524905	0.18566309	3.0431195	20	5 9.9	21.0
438442 2006 <i>WC</i> ₁₆₉	18.1	X	53.80796	330.34687	49.16312	5.06912	0.2196673	0.29624260	2.2286286	20	—	—
438443 2006 <i>WJ</i> ₁₇₀	16.2	X	249.89217	114.79586	241.09859	8.09654	0.1090628	0.18383533	3.0632568	20	5 11.7	20.6
438444 2006 <i>WU</i> ₁₇₄	18.1	X	249.03111	51.84177	83.01759	5.84222	0.1049357	0.28000244	2.3139901	20	11 25.2	20.7
438445 2006 <i>WF</i> ₁₈₈	16.0	X	190.75996	130.94995	254.71082	11.11046	0.1393616	0.17762207	3.1342822	20	4 14.7	21.2
438446 2006 <i>XD</i> ₂₂	16.0	X	232.03722	296.57549	82.25243	14.82139	0.2178663	0.18481152	3.0524603	20	5 15.5	21.1
438447 2006 <i>XZ</i> ₄₃	16.5	X	256.76311	346.58878	109.12103	24.28560	0.2027948	0.27036666	2.3686485	20	10 6.2	20.0
438448 2006 <i>XL</i> ₅₂	17.7	X	330.81946	342.18598	96.70848	9.97820	0.2005572	0.28551453	2.2841112	20	—	—
438449 2006 <i>YB</i> ₂	16.0	X	177.06085	165.60142	279.03133	14.60881	0.0470417	0.17885642	3.1198450	20	6 15.8	20.6
438450 2006 <i>YV</i> ₆	17.7	X	339.33472	290.93366	130.65843	6.63548	0.1964176	0.28766486	2.2727143	20	—	—
438451 2006 <i>YV</i> ₈	17.3	X	236.61479	70.07027	99.04294	8.63736	0.2307498	0.27583141	2.3372593	20	12 3.4	20.1
438452 2007 <i>AS</i> ₁₂	19.2	X	130.81484	266.90082	126.29073	21.01209	0.2439919	0.53120174	1.5099517	20	1 25.2	18.6
438453 2007 <i>AZ</i> ₂₂	17.9	X	42.22623	294.21787	132.69210	5.53461	0.0986631	0.29517828	2.2339826	20	—	—
438454 2007 <i>BT</i> ₃₂	16.7	X	66.24458	359.67858	163.74429	0.86677	0.1048970	0.16857281	3.2454707	20	5 20.3	21.1
438455 2007 <i>BE</i> ₃₃	16.1	X	210.44675	306.41445	121.48687	10.89414	0.1025305	0.18111332	3.0938728	20	6 29.1	21.0
438456 2007 <i>BZ</i> ₃₄	16.2	X	228.30813	260.74645	119.09449	16.85625	0.2402704	0.17896737	3.1185555	20	5 14.9	21.7
438457 2007 <i>BK</i> ₆₁	18.2	X	238.81293	156.51369	321.19361	4.20433	0.1478366	0.27081164	2.3660532	20	10 5.9	21.3
438458 2007 <i>BM</i> ₆₂	18.3	X	277.69594	231.19977	293.44693	4.76391	0.0898121	0.28458635	2.2890749	20	—	—
438459 2007 <i>BN</i> ₆₉	17.8	X	172.23941	56.92356	138.57254	3.05532	0.1792099	0.26452430	2.4033978	20	11 2.7	21.6
438460 2007 <i>BY</i> ₁₀₀	16.1	X	257.83313	62.98985	303.91386	9.09029	0.0838329	0.17518587	3.1632729	20	6 6.9	20.8
438461 2007 <i>CC</i> ₃	16.0	X	241.05609	232.67891	147.02458	12.44157	0.1205485	0.17550041	3.1594923	20	6 2.2	21.0
438462 2007 <i>CG</i> ₃₄	15.5	X	106.64363	47.62474	143.62768	11.71397	0.0076264	0.18025650	3.1036692	20	8 1.5	19.8
438463 2007 <i>CY</i> ₃₆	18.1	X	192.05005	192.62382	337.86031	0.76519	0.1154362	0.26717059	2.3875013	20	10 25.5	21.5
438464 2007 <i>DH</i> ₃	17.0	X	211.12167	235.87932	338.07095	24.19357	0.2031586	0.27573299	2.3378154	20	—	—
438465 2007 <i>DS</i> ₁₁	15.7	X	146.64807	194.47072	301.21511	27.65394	0.1456376	0.17809478	3.1287336	20	7 20.6	20.6
438466 2007 <i>DJ</i> ₂₀	18.0	X	151.19105	95.91683	123.64600	1.93409	0.0810502	0.26504601	2.4002429	20	11 15.9	21.5
438467 2007 <i>DM</i> ₅₉	17.5	X	203.45472	253.59128	299.88153	1.82507	0.1816054	0.26988458	2.3714684	20	11 29.8	20.8
438468 2007 <i>DU</i> ₆₄	17.8	X	136.40776	135.59898	157.48679	4.90294	0.2058458	0.27461101	2.3441789	20	—	—
438469 2007 <i>DV</i> ₁₀₉	17.9	X	190.05528	335.50455	178.97505	2.32892	0.1639450	0.26018566	2.4300422	20	9 28.2	21.4
438470 2007 <i>EG</i> ₁₁	17.8	X	149.33319	216.95903	4.19771	3.34133	0.2776979	0.26190496	2.4193957	20	11 9.7	22.1
438471 2007 <i>EF</i> ₁₂	17.2	X	192.37737	211.42371	343.87437	9.32249	0.1518432	0.26848855	2.3796817	20		

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
438481 2007 ED ₁₉₅	18.1	X	186.76084	47.29881	163.79147	2.53262	0.0972957	0.26867618	2.3785737	20	12 13.7	21.4
438482 2007 EG ₁₉₇	18.0	X	168.85739	10.85549	206.40600	2.78526	0.1714767	0.26243821	2.4161173	20	11 25.7	21.9
438483 2007 EY ₂₂₁	17.6	X	29.78106	208.00777	184.39921	1.23569	0.2365487	0.28192452	2.3034608	20	—	—
438484 2007 EG ₂₂₄	18.1	X	148.37886	32.12899	209.72320	2.13988	0.1275581	0.26318637	2.4115362	20	12 8.6	21.6
438485 2007 FD ₂₅	17.9	X	134.83447	244.62632	20.73507	1.17698	0.1649898	0.26459272	2.4029835	20	12 24.0	21.8
438486 2007 FZ ₂₈	18.0	X	148.59240	261.65481	39.61914	2.73212	0.2239370	0.27431870	2.3458439	20	—	—
438487 2007 FO ₄₈	18.1	X	144.22994	121.68600	122.29248	0.24081	0.1764216	0.26275978	2.4141456	20	12 5.8	22.1
438488 2007 GM ₁₈	17.7	X	281.97036	298.08054	225.68720	4.87806	0.1104700	0.27536523	2.3398965	20	—	—
438489 2007 GS ₂₆	18.0	X	100.66007	135.86307	123.71104	3.92771	0.1873260	0.25432977	2.4672013	20	11 17.2	21.9
438490 2007 GG ₃₁	17.9	X	171.51587	7.64525	202.63790	2.37380	0.1315667	0.26098345	2.4250875	20	11 21.8	21.5
438491 2007 GG ₆₄	18.0	X	210.40817	320.20453	211.40601	1.75076	0.1764273	0.26236520	2.4165655	20	11 9.0	21.3
438492 2007 HB ₈₅	17.1	X	97.14818	192.63699	113.08785	2.22475	0.1835042	0.26003421	2.4309856	20	—	—
438493 2007 HN ₉₆	18.2	X	99.23180	145.19313	151.15446	3.00995	0.1766330	0.25792367	2.4442291	20	12 29.1	22.0
438494 2007 NR ₆	16.3	X	2.82343	296.22014	39.25787	13.51553	0.2062981	0.23651294	2.5896006	20	10 25.1	18.8
438495 2007 OY ₇	17.2	X	59.16562	101.96721	198.16962	12.69481	0.2085605	0.24017068	2.5632407	20	11 27.2	21.1
438496 2007 PH ₇	17.4	X	86.43933	200.57823	148.24134	7.57997	0.2773789	0.25253861	2.4788535	20	—	—
438497 2007 FO ₁₇	17.5	X	49.09628	188.09809	132.42218	15.93652	0.2705811	0.24263804	2.5458342	20	12 26.5	21.6
438498 2007 PP ₂₉	17.7	X	22.33212	132.99204	165.80833	2.76375	0.1334829	0.23193158	2.6235910	20	9 24.1	20.7
438499 2007 PO ₄₅	16.7	X	323.77990	278.48937	78.17021	13.44537	0.2881406	0.22602923	2.6690680	20	8 20.8	18.9
438500 2007 QO ₁	16.9	X	45.28110	172.97801	157.25417	15.27064	0.1255510	0.24566104	2.5249058	20	—	—
438501 2007 QY ₃	17.2	X	41.00738	28.61511	272.33146	4.34542	0.2615586	0.23477889	2.6023359	20	11 12.1	20.7
438502 2007 QG ₁₇	17.4	X	50.65762	13.75406	263.46556	2.83222	0.2625084	0.23368318	2.6104642	20	10 23.9	21.1
438503 2007 RX ₂₇	17.3	X	58.87978	207.18073	109.42891	7.31336	0.2660865	0.24181161	2.5516315	20	12 22.3	21.3
438504 2007 RV ₂₉	16.3	X	325.49687	59.14869	305.71051	9.21384	0.2114797	0.22716217	2.6601862	20	9 4.9	18.8
438505 2007 RM ₃₄	17.5	X	347.48977	172.94254	181.56001	5.07432	0.1947901	0.23113232	2.6296357	20	10 17.9	19.9
438506 2007 RG ₅₅	17.7	X	18.71459	178.31105	193.88172	14.40247	0.2138744	0.23813504	2.5778274	20	—	—
438507 2007 RG ₇₀	14.0	X	292.27290	330.83403	127.89204	5.14713	0.0563445	0.08404296	5.1618078	20	11 2.6	20.7
438508 2007 RP ₇₀	17.3	X	324.51873	240.82680	104.09901	2.47009	0.0889423	0.22361733	2.6882258	20	8 16.4	20.4
438509 2007 RO ₇₂	17.0	X	238.32912	33.50899	349.23549	5.88674	0.0793214	0.21325176	2.7746463	20	6 4.3	21.1
438510 2007 RQ ₉₈	17.3	X	24.33463	279.30265	68.07673	4.50808	0.1970587	0.23477816	2.6023413	20	12 11.8	20.5
438511 2007 RF ₁₄₄	17.2	X	349.61719	55.47318	284.13915	2.90622	0.2563215	0.22853317	2.6495364	20	10 2.3	19.2
438512 2007 RD ₁₅₃	17.3	X	46.05120	248.65119	331.47308	10.66654	0.1116500	0.21718765	2.7410227	20	7 9.6	20.8
438513 2007 RD ₁₅₄	17.9	X	337.18105	201.23743	184.54116	6.51004	0.0735566	0.23470271	2.6028990	20	11 5.9	21.0
438514 2007 RE ₁₇₇	17.2	X	256.83020	97.81565	357.50381	3.12023	0.0312665	0.22966433	2.6408294	20	10 12.2	20.6
438515 2007 RE ₁₉₄	18.0	X	354.94721	221.75855	164.93632	4.02954	0.2221845	0.23480597	2.6021358	20	12 23.0	20.7
438516 2007 RM ₂₂₉	16.6	X	10.75256	313.72036	351.97921	13.49573	0.1905965	0.22914192	2.6448417	20	9 19.9	19.1
438517 2007 RM ₂₄₅	17.1	X	347.81273	211.78727	119.80645	3.38664	0.2115035	0.22483344	2.6785234	20	9 13.2	19.3
438518 2007 RS ₂₆₅	17.2	X	354.86463	129.49196	213.38487	1.35904	0.2207020	0.23017847	2.6368955	20	10 18.2	19.3
438519 2007 RO ₂₆₉	16.3	X	308.06979	29.44389	326.40450	11.77204	0.1770344	0.21946638	2.7220163	20	7 24.9	19.3
438520 2007 RZ ₂₉₇	16.0	X	291.80982	71.71639	290.48859	7.89799	0.1518313	0.21863254	2.7289328	20	7 8.0	19.4
438521 2007 RZ ₃₀₉	16.5	X	264.42218	238.44239	139.30249	9.80210	0.1763032	0.21605624	2.7505835	20	6 18.0	20.6
438522 2007 RJ ₃₂₁	16.7	X	339.26104	201.03519	186.61986	11.85600	0.0970016	0.23430065	2.6058758	20	11 13.7	19.8
438523 2007 SC ₁₂	17.0	X	356.46572	152.72965	256.33921	13.42687	0.2508132	0.23944088	2.5684464	20	—	—
438524 2007 TQ	16.0	X	46.13997	78.15087	282.69813	11.45441	0.1799455	0.24198108	2.5504400	20	—	—
438525 2007 TU	17.6	X	56.85675	297.29528	29.97137	6.55447	0.3194113	0.23847297	2.5753916	20	—	—
438526 2007 TT ₃₄	17.0	X	280.60923	180.09528	206.24526	8.96991	0.1448557	0.21516851	2.7581438	20	7 22.8	20.7
438527 2007 TB ₄₂	17.6	X	320.85294	157.30502	184.61706	5.97066	0.0604559	0.22197280	2.7014870	20	8 5.5	21.0
438528 2007 TW ₅₅	17.5	X	318.41309	168.69257	226.05081	4.46157	0.1103825	0.22540886	2.6739630	20	10 13.3	20.5
438529 2007 TE ₆₄	16.4	X	296.13920	303.27282	52.49517	5.00627	0.1170397	0.21251488	2.7810565	20	7 11.4	19.8
438530 2007 TV ₆₅	16.7	X	8.63294	144.58993	262.12315	6.96036	0.4593363	0.23613086	2.5923933	20	—	—
438531 2007 TT ₇₀	17.3	X	5.51443	151.58887	201.61966	13.20588	0.2847403	0.23319018	2.6141423	20	12 5.8	20.2
438532 2007 TC ₈₃	16.3	X	198.11345	38.54085	15.49488	10.96934	0.1304635	0.20553949	2.8436263	20	5 26.4	21.0
438533 2007 TO ₈₅	16.3	X	328.39844	331.44568	10.35008	9.98112	0.2699991	0.21967985	2.7202526	20	8 8.0	18.6
438534 2007 TP ₁₀₉	16.5	X	300.36347	12.37548	331.51064	5.01092	0.1289904	0.21572569	2.7533926	20	6 29.6	20.0
438535 2007 TS ₁₁₁	16.7	X	305.12236	136.80386	223.72537	8.39826	0.1646900	0.21896844	2.7261413	20	7 22.9	19.9
438536 2007 TL ₁₅₈	17.9	X	19.75591	102.54911	266.77241	3.71639	0.2811118	0.23640454	2.5903921	20	—	—
438537 2007 TZ ₁₆₅	16.5	X	352.43225	335.65965	48.92028	13.79087	0.2905308	0.22924938	2.6440151	20	12 23.5	19.2
438538 2007 TW ₁₆₇	17.4	X	59.03931	22.03965	291.27029	2.93678	0.2715731	0.23771900	2.5808343	20	12 18.1	21.3
438539 2007 TC ₁₇₆	16.8	X	52.58378	313.47186	344.21818	3.47626	0.1911651	0.23015188	2.6370986	20	11 10.6	20.5
438540 2007 TV ₁₈₉	17.9	X	40.20657	144.79876	184.61694	2.34733	0.1136149	0.23787490	2.5797065	20	11 28.2	21.1
438541 2007 TA ₁₉₈	17.0	X	282.29126	115.14792	248.40522	3.49055	0.0895334	0.21288171	2.7778608	20	7 4.9	20.6
438542 2007 TM ₂₀₇	18.0	X	58.02336	157.45590	174.93196	0.30215	0.1922901	0.24145310	2.5541566	20	—	—
438543 2007 TN ₂₁₄	16.6	X	33.46149	70.35620	228.59995	11.82537	0.2693608	0.22700321	2.6614280	20	10 31.0	19.9
438544 2007 TL ₂₂₀	16.5	X	340.63107	320.83147	19.34573	6.10430	0.0388383	0.21828027	2.7318681	20	9 6.6	20.0
438545 2007 TV ₂₂₀	18.1	X	353.95531	225.36740	131.24871	3.51346	0.1209485	0.22547453	2.6734438	20	10 25.7	21.1
438546 2007 TK ₂₂₄	17.6	X	317.20193	348.69546	343.61854	20.24766	0.0773819	0.37761070	1.8957156	20	8 11.6	19.1
438547 2007 TN ₂₂₄	17.1	X	301.49922	348.04476	72.13371	3.87926	0.1334784	0.22704726	2.6610837	20	10 20.5	19.9
438548 2007 TJ ₂₃₀	17.0	X	213.24200	33.81755	75.12766	4.73965	0.0406527	0.21667979	2.7453040	20	9 3.5	20.8
438549 2007 TW ₂₄₃	17.6	X	21.86080	110.03430	271.30942	4.38697	0.2496455	0.23842842	2.5757124	20	—	—
438550 2007 TH ₂₄₈	17.4	X	34.61222	138.80670	128.06367	13.11496	0.2806162	0.23889880	2.5723303	20	—	—
438551 2007 TL ₂₆₇	16.7	X	167.76059	45.92128	27.73210	11.29732	0.0814817	0.20099894	2.8862916	20	5 20.3	21.2
438552 2007 TA ₂₆₉	17.6	X	358.76433	259.12101	62.24203	1.85064	0.1614257	0.22332292	2.6905879	20	9 16.7	20.3
438553 2007 TH ₂₇₅	16.8	X	282.82857	326.19348	50.02517	5.97193	0.1681013	0.21677223	2.7445235	20	7 11.9	20.3
438554 2007 TL ₂₉₄												

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
438561 2007 TC ₄₀₆	17.8	X	340.98714	226.45700	169.01308	2.67805	0.2143373	0.23044421	2.6348679	20	12 5.4	20.2
438562 2007 TW ₄₁₁	16.7	X	328.55662	21.08840	341.74188	12.89547	0.1004036	0.22389963	2.6859657	20	9 14.8	19.8
438563 2007 TC ₄₂₀	16.9	X	334.39133	91.39647	299.61024	13.60421	0.1081084	0.23025082	2.6363431	20	11 1.6	20.2
438564 2007 TX ₄₂₃	17.6	X	335.84950	92.44445	285.62492	0.30676	0.1141384	0.22806390	2.6531696	20	10 22.3	20.4
438565 2007 TU ₄₃₃	17.6	X	47.82608	110.36629	230.42932	6.09495	0.2200176	0.23831370	2.5765390	20	—	—
438566 2007 TN ₄₃₆	17.9	X	0.05550	218.36843	162.77429	4.73569	0.2444223	0.23547918	2.5971739	20	12 27.9	20.6
438567 2007 TW ₄₄₁	17.3	X	35.53171	86.33669	258.65655	11.20860	0.2012869	0.23578763	2.5949084	20	12 23.5	20.8
438568 2007 TV ₄₄₅	17.8	X	16.87745	112.65428	227.87457	2.41036	0.1281056	0.23008449	2.6376135	20	11 10.3	20.8
438569 2007 TL ₄₅₀	17.2	X	311.83135	187.53353	214.84542	5.95503	0.1166142	0.22636669	2.6664147	20	10 12.6	20.1
438570 2007 UM ₃	16.2	X	22.16029	64.73261	243.67005	16.12073	0.2129013	0.22685621	2.6625775	20	10 14.1	19.5
438571 2007 UJ ₆	16.7	X	352.02076	149.79280	215.13059	12.37222	0.1169936	0.22834474	2.6509938	20	11 1.8	19.6
438572 2007 UB ₇	17.3	X	356.58534	289.43436	106.90560	6.82294	0.3612108	0.23441133	2.6050555	20	—	—
438573 2007 UN ₇	16.0	X	174.30744	131.75259	292.96168	12.26761	0.1570840	0.19989499	2.8969085	20	5 17.5	20.9
438574 2007 UY ₁₁	16.5	X	347.57399	136.45048	242.43820	16.15424	0.2969677	0.23023054	2.6364979	20	12 6.9	18.7
438575 2007 UO ₂₁	17.8	X	75.05056	298.39481	39.23004	5.61693	0.2214915	0.24288200	2.5441292	20	—	—
438576 2007 UH ₅₂	17.5	X	46.34080	94.05669	238.44039	4.46153	0.2872956	0.23380307	2.6095717	20	12 29.9	21.4
438577 2007 UJ ₅₆	17.3	X	295.86591	269.48445	66.30693	1.35700	0.0828988	0.20820048	2.8193451	20	6 17.7	21.0
438578 2007 UM ₆₈	17.7	X	34.97272	291.33294	73.57370	9.19463	0.2611490	0.23820163	2.5773470	20	—	—
438579 2007 UB ₈₅	16.3	X	345.85291	283.64755	50.31951	14.99233	0.2376808	0.22075567	2.7114076	20	9 21.3	18.9
438580 2007 UP ₉₁	17.5	X	327.65449	141.49530	227.90744	4.31059	0.0680158	0.22010403	2.7167565	20	9 22.9	20.8
438581 2007 UG ₁₀₀	17.0	X	313.70479	85.03128	254.04601	2.73864	0.2038934	0.21270092	2.7794346	20	7 3.5	19.9
438582 2007 UC ₁₀₇	17.3	X	54.97093	292.14727	21.68222	2.42349	0.2016644	0.23108653	2.6299831	20	12 5.6	21.2
438583 2007 UH ₁₀₉	17.4	X	346.50401	327.29061	47.83261	2.29707	0.1502322	0.22722925	2.6596627	20	11 8.8	20.0
438584 2007 UD ₁₁₀	17.2	X	314.37641	228.59529	109.56061	0.24630	0.0827974	0.21392433	2.7688277	20	7 19.8	20.7
438585 2007 UA ₁₁₆	17.3	X	333.04805	177.03034	222.09516	11.55104	0.1933425	0.22738163	2.6584743	20	11 20.4	19.6
438586 2007 UZ ₁₁₇	16.8	X	34.14080	61.26222	234.09529	3.13164	0.0472824	0.22098208	2.7095553	20	9 20.9	20.3
438587 2007 VR ₂₃	16.9	X	30.93088	248.57751	96.72291	13.13203	0.3149136	0.23595037	2.5937151	20	—	—
438588 2007 VB ₃₂	17.0	X	264.17569	148.48328	283.04248	3.99953	0.0438102	0.22003800	2.7173000	20	9 15.5	20.7
438589 2007 VL ₃₄	17.4	X	63.32352	357.84125	261.59648	3.26827	0.0278293	0.21582834	2.7525195	20	9 8.8	21.1
438590 2007 VD ₄₂	18.0	X	334.55353	175.87978	200.79070	5.51576	0.0797048	0.22445050	2.6815692	20	10 16.6	21.2
438591 2007 VK ₄₆	16.4	X	328.93452	79.40632	253.00289	8.74573	0.1502668	0.21573292	2.7533311	20	7 28.0	19.5
438592 2007 VS ₄₇	17.2	X	307.33589	76.08654	299.33391	5.21033	0.0209287	0.21661312	2.7458673	20	9 2.7	20.8
438593 2007 VV ₅₁	16.8	X	11.56890	34.25228	281.77805	4.15947	0.0238035	0.21746044	2.7387299	20	9 12.9	20.4
438594 2007 VA ₅₂	17.7	X	320.51099	149.07761	255.82375	5.69942	0.1734771	0.22581827	2.6707301	20	10 29.4	20.2
438595 2007 VL ₅₃	16.4	X	161.62869	225.33065	212.84664	10.02234	0.0880046	0.19619607	2.9332056	20	5 22.9	20.8
438596 2007 VC ₆₆	17.4	X	323.09180	285.45388	25.39410	4.46442	0.0887504	0.21242533	2.7818381	20	6 24.7	20.8
438597 2007 VF ₇₅	17.0	X	210.27675	316.36443	78.67213	3.19505	0.0882185	0.20035234	2.8924983	20	5 19.8	21.4
438598 2007 VF ₉₃	16.3	X	351.71481	103.39183	272.53265	10.39314	0.2106627	0.22935900	2.6431726	20	11 27.2	18.9
438599 2007 VZ ₉₆	17.0	X	357.61166	20.25045	315.22373	4.07582	0.0055494	0.21833819	2.7313850	20	9 19.1	20.6
438600 2007 VB ₉₉	16.8	X	116.83988	169.44812	19.36456	10.80174	0.0665553	0.21631151	2.7484191	20	8 26.3	20.9
438601 2007 VH ₁₀₂	16.8	X	228.25862	311.36984	78.84649	3.07788	0.0956090	0.19918491	2.9037893	20	6 1.6	21.0
438602 2007 VV ₁₁₀	17.0	X	340.97065	55.82215	245.72835	8.02304	0.1712955	0.20912809	2.8110019	20	7 6.3	19.9
438603 2007 VL ₁₇₃	16.4	X	191.77951	357.19339	66.07534	19.76486	0.1595869	0.20031243	2.8928824	20	6 1.9	21.0
438604 2007 VA ₁₉₇	17.1	X	350.18898	107.86241	227.77763	5.50205	0.2654731	0.22397921	2.6853294	20	9 26.4	19.2
438605 2007 VM ₂₁₇	16.8	X	252.50678	158.29510	262.14487	5.06505	0.0205857	0.21146321	2.7902696	20	8 18.4	20.8
438606 2007 VJ ₂₄₂	17.3	X	313.22922	256.12073	155.85405	7.91898	0.2368668	0.22529200	2.6748876	20	10 24.6	19.5
438607 2007 VH ₂₄₈	16.6	X	27.05403	174.30972	129.89168	7.04377	0.0616835	0.21943154	2.7223044	20	9 28.9	20.1
438608 2007 VC ₂₇₅	16.2	X	247.23838	223.30949	101.88815	11.53933	0.0526914	0.19218094	2.9739192	20	4 12.7	20.7
438609 2007 VG ₂₉₀	16.7	X	174.68934	259.29590	238.04272	4.33091	0.0722106	0.20865780	2.8152241	20	8 18.3	21.0
438610 2007 VS ₂₉₇	16.9	X	308.69261	256.38289	100.66196	15.90469	0.2763356	0.21885425	2.7270895	20	7 8.6	19.7
438611 2007 VQ ₃₁₁	17.0	X	288.09673	301.72877	95.97235	4.54294	0.0940536	0.21376633	2.7701918	20	8 31.1	20.4
438612 2007 VL ₃₂₅	16.6	X	215.99386	197.94164	269.27037	8.43168	0.1733531	0.21392535	2.7688189	20	8 15.8	21.1
438613 2007 VE ₃₂₇	16.4	X	351.19864	111.17156	248.71457	14.24291	0.1570896	0.22292388	2.6937977	20	10 23.0	19.4
438614 2007 VX ₃₂₈	16.4	X	295.72459	323.09925	80.74507	15.78580	0.1874302	0.21862325	2.7290101	20	9 15.9	19.8
438615 2007 WT ₅₈	16.8	X	69.18638	357.57056	109.36412	12.92931	0.1823222	0.17431795	3.1737640	20	3 30.9	21.1
438616 2007 XW ₂	16.2	X	55.06457	40.07818	102.68193	9.64435	0.1336274	0.17701555	3.1414376	20	4 16.1	20.3
438617 2007 XM ₂₂	16.2	X	258.20732	22.43173	74.06788	10.91710	0.1495578	0.21700589	2.7425531	20	10 2.4	20.0
438618 2007 XE ₂₃	16.7	X	15.29189	128.64117	238.86926	12.63349	0.2063909	0.23127147	2.6285809	20	12 24.9	20.0
438619 2007 XE ₅₃	15.7	X	12.43912	287.68740	305.43876	12.81816	0.1752955	0.18295208	3.0731079	20	5 31.7	19.2
438620 2007 XM ₅₃	16.5	X	285.61569	122.34489	294.56852	14.63199	0.2261586	0.21365897	2.7711197	20	8 24.4	20.1
438621 2007 XT ₅₇	16.3	X	345.41495	145.41721	95.37332	12.61720	0.0624046	0.18379947	3.0636551	20	5 2.7	20.5
438622 2007 YN ₁₉	16.1	X	172.54355	302.00127	99.57779	13.45473	0.0228908	0.18466260	3.0541012	20	4 22.9	20.7
438623 2007 YP ₁₉	16.0	X	66.82213	201.45938	267.95345	4.44393	0.1402916	0.17503477	3.1650932	20	3 15.6	20.1
438624 2007 YY ₂₃	15.7	X	267.31208	35.77008	295.57275	9.20680	0.0724741	0.18980991	2.9986340	20	5 2.9	20.1
438625 2007 YN ₃₀	15.4	X	30.05550	137.91022	69.21914	13.29328	0.0427464	0.19108792	2.9852490	20	5 19.0	19.4
438626 2007 YD ₆₅	15.8	X	39.85038	48.97165	119.73362	17.00153	0.0196038	0.17660285	3.1463297	20	4 18.4	20.5
438627 2007 YN ₇₂	16.3	X	307.74782	64.60585	303.88131	11.26042	0.0848196	0.20684674	2.8316327	20	8 16.9	19.9
438628 2008 AL ₁	15.9	X	97.83180	88.06078	85.21765	10.78215	0.0302956	0.19285497	2.9669860	20	7 2.4	20.0
438629 2008 AD ₂₆	16.7	X	161.80365	99.73566	355.99031	3.82105	0.0356349	0.18672372	3.0315848	20	6 11.2	21.0
438630 2008 AP ₈₂	17.5	X	87.66368	33.12048	303.75752	8.93831	0.0244594	0.30585797	2.1816723	20	—	—
438631 2008 AL ₉₁	16.4	X	119.72584	353.53816	108.43136	16.40030	0.0467072	0.18237026	3.0796406	20	5 7.9	21.1
438632 2008 AV ₉₄	16.2	X	72.05359	251.18696	311.01568	12.47157	0.0599051	0.19068134	2.9894910	20	7 12.6	20.3
438633 2008 AA ₁₁₃	16.7	X	28.75595	194.13643	199.27561	14.26938	0.2					

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
438641 2008 CF ₅₈	16.5	X	55.55497	305.74360	186.87502	4.52242	0.1143235	0.17117591	3.2124838	20	3 27.9	20.6
438642 2008 CG ₈₉	17.7	X	221.71895	200.00409	342.80923	5.71176	0.1030132	0.29483777	2.2357023	20	12 26.4	20.4
438643 2008 CS ₁₀₀	16.0	X	291.97031	163.34312	100.35878	11.52601	0.0399748	0.17546436	3.1599249	20	3 24.5	20.6
438644 2008 CZ ₁₁₂	15.8	X	345.82592	100.19855	136.21132	26.23750	0.2144285	0.17244804	3.1966656	20	4 20.9	19.8
438645 2008 CY ₁₃₀	16.4	X	193.49828	101.93679	333.05176	9.26880	0.0754731	0.18782494	3.0197238	20	6 21.7	21.1
438646 2008 CL ₁₃₅	18.6	X	263.11395	10.27130	151.28568	5.87394	0.0623836	0.30276311	2.1965145	20	—	—
438647 2008 CK ₁₃₇	18.4	X	258.78389	230.70089	288.07539	2.57558	0.0889178	0.30104491	2.2048643	20	—	—
438648 2008 CR ₁₅₉	16.7	X	303.71833	268.54991	70.67714	6.07050	0.0203276	0.19190293	2.9767908	20	7 11.7	20.7
438649 2008 CS ₁₆₃	15.9	X	58.03467	198.60707	325.83173	16.64193	0.1591558	0.17602101	3.1532595	20	5 11.4	20.3
438650 2008 CR ₁₆₆	16.8	X	305.36530	154.44137	253.39781	8.47504	0.1964758	0.22050507	2.7134615	20	9 25.0	19.8
438651 2008 CL ₁₇₀	15.8	X	271.40745	336.49003	303.68298	7.44236	0.0406666	0.16867861	3.2441135	20	3 11.2	20.6
438652 2008 CW ₁₈₁	16.6	X	29.36863	61.84358	129.98229	14.62187	0.2029301	0.17171399	3.2057693	20	5 16.8	20.5
438653 2008 CS ₂₀₁	16.7	X	331.09067	202.07538	64.73043	6.27255	0.1342400	0.17634012	3.1494542	20	5 4.5	20.5
438654 2008 CZ ₂₀₃	18.5	X	236.11633	205.10096	13.38377	3.71359	0.1168894	0.30419062	2.1896373	20	—	—
438655 2008 DC ₅₁	16.2	X	88.22538	237.11011	239.39780	11.29994	0.0890699	0.17353395	3.1833160	20	4 14.8	20.7
438656 2008 DU ₆₁	16.5	X	313.19341	284.16319	132.13931	4.87480	0.0940763	0.20908067	2.8114268	20	11 2.9	19.9
438657 2008 DY ₆₁	18.2	X	264.96396	138.61794	355.61922	5.69984	0.1258426	0.29553999	2.2321595	20	12 22.3	20.3
438658 2008 DK ₆₆	15.8	X	330.89293	84.38394	196.11396	14.49256	0.0309071	0.17304694	3.1892858	20	5 31.9	20.3
438659 2008 DP ₈₄	16.2	X	137.11282	287.44251	199.73275	17.22034	0.1088201	0.18024646	3.1037845	20	6 26.1	21.3
438660 2008 DF ₈₉	18.3	X	195.08227	113.06126	100.25382	4.65208	0.1653113	0.29068460	2.2569470	20	12 22.8	21.3
438661 2008 EP ₆	19.4	X	125.57734	130.31396	303.25145	17.72319	0.2932632	0.74138078	1.2090432	20	2 23.2	18.3
438662 2008 EV ₂₄	16.3	X	75.72743	64.05851	111.50971	9.58277	0.0986910	0.17870380	3.1216211	20	6 15.8	20.6
438663 2008 EL ₃₈	15.9	X	49.84094	217.62792	34.19355	9.07557	0.0802487	0.18835090	3.0140995	20	8 22.4	20.1
438664 2008 EE ₁₁₇	16.4	X	162.27225	247.16063	166.09066	7.47054	0.1152902	0.17712585	3.1401333	20	4 25.8	21.3
438665 2008 EW ₁₂₄	18.3	X	171.55263	72.03886	179.29220	4.79074	0.1323650	0.29318090	2.2441175	20	—	—
438666 2008 EF ₁₂₅	16.0	X	352.46709	85.36151	137.34097	11.50707	0.2663982	0.17089219	3.2160385	20	4 6.0	19.2
438667 2008 EJ ₁₅₇	16.2	X	309.26511	328.11436	6.31206	9.75804	0.1389468	0.18016488	3.1047213	20	6 27.8	20.3
438668 2008 EK ₁₆₁	18.1	X	215.01591	17.43265	186.99833	2.63229	0.0985787	0.29442297	2.2378016	20	—	—
438669 2008 FL ₂₃	17.4	X	56.65831	246.98488	36.53862	13.22099	0.2350293	0.26939543	2.3743381	20	11 9.5	20.7
438670 2008 FF ₃₉	17.7	X	112.50515	260.83504	53.10316	7.81980	0.2244268	0.28835358	2.2690940	20	—	—
438671 2008 FQ ₅₆	18.8	X	142.91864	122.75929	170.75929	3.91645	0.2525373	0.29157578	2.2523459	20	—	—
438672 2008 FQ ₉₆	17.5	X	188.78405	193.67879	45.64924	8.93801	0.2237657	0.28987596	2.2611424	20	—	—
438673 2008 GY ₁₅	16.5	X	321.84141	88.24735	194.89691	16.57956	0.1045536	0.17024826	3.2241428	20	5 15.8	20.8
438674 2008 GQ ₃₁	16.7	X	80.08712	318.27216	42.29514	23.70044	0.2169233	0.29342204	2.2428879	20	—	—
438675 2008 GS ₄₃	16.1	X	87.33247	274.64385	168.99421	10.19919	0.0345662	0.15865138	3.3794043	20	2 29.1	20.9
438676 2008 GW ₈₂	18.0	X	132.91988	145.85672	164.58331	6.17622	0.2137252	0.29186644	2.2508503	20	—	—
438677 2008 GF ₈₉	18.4	X	242.77062	344.97252	177.40017	3.25070	0.1069052	0.29059146	2.2574293	20	12 26.6	20.9
438678 2008 GB ₉₈	17.6	X	150.25377	119.92553	149.80258	6.68296	0.0890531	0.28796729	2.2711228	20	—	—
438679 2008 GK ₁₁₅	18.2	X	195.28674	115.91913	147.73897	5.76954	0.1723047	0.29665078	2.2265838	20	—	—
438680 2008 GY ₁₃₄	18.3	X	143.11256	123.99833	158.52909	4.36999	0.2011901	0.28537122	2.2848721	20	—	—
438681 2008 GO ₁₄₀	16.0	X	201.40911	32.15096	58.23240	11.82044	0.0603655	0.18169220	3.0872979	20	7 22.3	20.7
438682 2008 HB ₂₂	13.4	X	309.49685	188.49348	98.13685	21.03711	0.0840925	0.08060550	5.3075358	20	5 13.6	20.4
438683 2008 HE ₂₆	18.7	X	171.07118	101.35822	177.32081	6.20207	0.1927624	0.29125842	2.2539817	20	—	—
438684 2008 HS ₃₆	18.1	X	173.66500	114.15522	98.53410	7.23634	0.1712822	0.28156127	2.3054415	20	11 28.5	21.5
438685 2008 JM ₇	17.4	X	137.09007	181.61245	155.24727	7.46124	0.1000193	0.29766453	2.2215256	20	—	—
438686 2008 JB ₁₄	18.0	X	202.83890	27.93363	175.05859	5.38155	0.1085799	0.28414913	2.2914224	20	12 24.3	21.0
438687 2008 JE ₃₇	15.8	X	270.89681	281.06218	129.69803	11.77602	0.1046158	0.18026072	3.1036208	20	8 17.3	20.1
438688 2008 LX ₁₀	17.5	X	155.78638	176.32932	80.91635	13.38500	0.1294804	0.28387038	2.2929223	20	—	—
438689 2008 LB ₁₇	17.8	X	153.97777	166.18080	123.80340	5.41724	0.2270245	0.28328909	2.2960578	20	—	—
438690 2008 OG ₂₀	16.9	X	141.45539	272.89115	335.49894	14.46187	0.1176755	0.26631087	2.3926368	20	12 9.5	20.8
438691 2008 PJ ₁₁	17.7	X	81.04920	184.17684	133.67900	2.15814	0.1899925	0.26872281	2.3782985	20	—	—
438692 2008 PO ₁₂	16.6	X	33.04171	63.18370	294.01173	10.78512	0.1113322	0.26514920	2.3996201	20	12 31.8	19.6
438693 2008 PL ₁₅	16.8	X	3.74535	176.18318	202.30215	5.80573	0.3287776	0.25872337	2.4391899	20	—	—
438694 2008 PZ ₁₉	15.6	X	201.75347	157.41574	145.04128	3.68932	0.1771705	0.12548588	3.9512953	20	1 27.3	22.0
438695 2008 QA ₈	17.9	X	67.52535	176.56935	153.23900	1.79271	0.1934089	0.26654268	2.3912494	20	—	—
438696 2008 QF ₂₆	15.7	X	182.30148	244.65688	71.78403	1.97227	0.2773082	0.12398471	3.9831252	20	1 30.0	22.5
438697 2008 QG ₂₇	17.7	X	142.77249	267.68054	35.35655	3.74404	0.2067014	0.27935019	2.3175907	20	—	—
438698 2008 QU ₃₆	18.1	X	46.37607	107.97958	227.80337	1.64301	0.2225497	0.26160958	2.4212165	20	—	—
438699 2008 RK ₃₂	17.9	X	69.67438	148.07737	155.99984	1.62062	0.1812659	0.26046280	2.4283181	20	12 12.5	21.5
438700 2008 RV ₄₉	18.3	X	58.10487	77.01461	295.13249	5.52895	0.1335293	0.27070362	2.3666826	20	—	—
438701 2008 RC ₅₈	17.6	X	42.57236	24.35841	357.20477	10.50710	0.1673747	0.26654763	2.3912198	20	—	—
438702 2008 RQ ₆₁	17.6	X	60.22072	160.76062	171.17498	10.60617	0.1926714	0.26438264	2.4042563	20	—	—
438703 2008 RX ₈₇	17.9	X	96.58582	66.86496	255.89585	5.05547	0.1082174	0.26662552	2.3907541	20	—	—
438704 2008 RU ₁₁₀	17.1	X	33.53391	289.37027	13.15442	10.60571	0.0316905	0.24647426	2.5193490	20	10 3.7	20.2
438705 2008 RM ₁₁₁	16.8	X	105.95195	173.19071	24.93070	12.11718	0.1119938	0.23820399	2.5773300	20	9 2.5	20.7
438706 2008 RA ₁₁₅	17.4	X	38.83776	331.01379	24.07146	12.63915	0.1047075	0.25592535	2.4569360	20	—	—
438707 2008 RB ₁₃₆	17.6	X	1.47721	173.31275	185.85280	12.23231	0.2106626	0.25368413	2.4713856	20	12 2.0	20.4
438708 2008 RW ₁₃₆	17.7	X	186.16763	240.20451	41.26426	5.64626	0.1559881	0.28094495	2.3088120	20	—	—
438709 2008 RS ₁₄₂	18.0	X	127.44139	164.33315	137.74255	4.46184	0.2476522	0.27468271	2.3437710	20	—	—
438710 2008 SP ₆	17.7	X	109.27109	210.99323	111.92405	2.95439	0.2015325	0.27183351	2.3601198	20	—	—
438711 2008 SG ₇	17.8	X	106.14484	115.08960	228.31174	1.15684	0.2322188	0.27491554	2.3424474	20	—	—
438712 2008 SD ₅₈	17.2	X	93.78768	165.36647	186.38031	6.55717	0.1225329	0.26950766	2.3736789	20	—	—
438713 2008 SJ ₅₉	17.1	X	8.71795	293.78688	36.83839	10.19577	0.1089915	0.24539568	2.5267257	20	10 17.3	20.0
438714 2008 SG ₈₄	17.8	X	51.19294	245.37478	138.71119	3.26568	0.2305143	0.26705727	2.3881766	20	—	—

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
438721 2008 SO ₂₁₁	17.1	X	216.69294	358.49890	79.60850	4.37412	0.0869319	0.22531030	2.6747427	20	7 22.9	20.9
438722 2008 SZ ₂₁₇	16.6	X	355.27265	255.54324	103.05628	9.37014	0.1582848	0.24352878	2.5396226	20	11 11.0	19.3
438723 2008 SH ₂₂₆	17.0	X	281.92441	358.11117	27.59075	8.75200	0.0082316	0.23523740	2.5989533	20	8 22.6	20.5
438724 2008 SL ₂₄₂	17.7	X	95.85603	128.22342	209.71459	2.04094	0.2401473	0.26917436	2.3756380	20	—	—
438725 2008 SU ₂₄₂	16.3	X	121.41863	99.77500	33.61122	13.93110	0.2174785	0.21561213	2.7543593	20	6 29.5	21.0
438726 2008 SL ₂₄₈	17.1	X	108.37760	354.82109	190.25749	9.65516	0.0665200	0.23394351	2.6085273	20	8 5.3	20.9
438727 2008 SR ₂₈₇	17.3	X	62.21844	111.19317	240.24185	5.40542	0.0741291	0.26138103	2.4226276	20	—	—
438728 2008 SZ ₂₉₇	17.9	X	79.15190	292.67710	49.11116	2.24514	0.2041885	0.26666622	2.3905108	20	—	—
438729 2008 SH ₃₀₅	17.0	X	86.82594	56.83176	180.69278	6.76575	0.0816982	0.23766694	2.5812112	20	9 22.6	20.5
438730 2008 SM ₃₀₅	17.4	X	283.74807	225.73893	168.08006	7.90391	0.1917089	0.23634787	2.5908061	20	8 2.3	20.5
438731 2008 SY ₃₀₆	17.6	X	67.19241	202.06147	126.72154	5.88440	0.2273847	0.26181382	2.4199571	20	—	—
438732 2008 SQ ₃₀₉	16.4	X	250.12250	348.97489	73.53321	16.67148	0.1228610	0.23090026	2.6313973	20	8 12.2	20.3
438733 2008 TO ₇	17.7	X	131.85482	120.56308	191.34015	4.58192	0.1637164	0.27417290	2.3466754	20	—	—
438734 2008 TL ₂₀	17.9	X	79.69906	324.88961	22.51944	2.91103	0.2089757	0.26558229	2.3970107	20	—	—
438735 2008 TL ₃₅	16.8	X	177.86011	89.95338	7.22114	12.70727	0.1759577	0.22605875	2.6688357	20	7 4.3	21.4
438736 2008 TE ₄₃	17.4	X	86.55722	80.87012	235.28560	9.66433	0.3027850	0.26594848	2.3948099	20	—	—
438737 2008 TR ₇₈	17.4	X	119.07883	278.33753	20.24772	7.18182	0.2210230	0.26957416	2.3732886	20	—	—
438738 2008 TX ₈₉	17.5	X	70.26543	307.91733	23.07740	7.20577	0.1446370	0.26008623	2.4306614	20	—	—
438739 2008 TM ₉₄	17.5	X	3.13554	316.03692	90.67936	4.54563	0.1694183	0.25765421	2.4459330	20	—	—
438740 2008 TY ₉₄	17.6	X	82.58993	301.67238	69.56819	4.75235	0.1701154	0.27175847	2.3605543	20	—	—
438741 2008 TG ₁₁₆	14.2	X	336.15863	281.91835	126.77085	10.24859	0.0322012	0.08260786	5.2214180	20	11 2.7	21.0
438742 2008 TR ₁₂₈	17.7	X	23.21732	347.87199	56.04011	3.39531	0.128916	0.26438756	2.4042264	20	—	—
438743 2008 TL ₁₅₆	17.4	X	335.29859	210.65650	242.51745	5.87161	0.0931604	0.26042882	2.4285293	20	—	—
438744 2008 TF ₁₆₁	17.7	X	335.25873	112.07101	43.31419	21.56161	0.0749251	0.36002789	1.9569450	20	—	—
438745 2008 TA ₁₇₀	17.2	X	146.66164	279.97306	220.27050	10.03014	0.1466716	0.22501934	2.6770479	20	7 24.7	21.6
438746 2008 TD ₁₇₂	16.7	X	92.32269	326.00170	215.20377	8.22150	0.1469941	0.21828415	2.7318357	20	7 21.0	20.8
438747 2008 TZ ₁₇₄	14.4	X	304.43774	147.07552	292.42601	6.35029	0.0184419	0.08497462	5.1240091	20	10 26.1	21.3
438748 2008 TS ₁₈₇	17.0	X	358.45147	317.39336	93.36948	8.44589	0.1111921	0.25723234	2.4486065	20	—	—
438749 2008 TX ₁₈₈	17.1	X	31.42143	111.19817	263.45157	6.18948	0.0620679	0.25789969	2.4443806	20	—	—
438750 2008 UB ₃₆	17.0	X	241.62214	214.10925	207.91359	13.75103	0.1707925	0.23205407	2.6226677	20	7 17.1	21.2
438751 2008 UP ₅₃	16.5	X	24.03308	85.27180	228.19315	7.11687	0.0959423	0.23941263	2.5686485	20	10 10.9	19.6
438752 2008 UR ₅₅	17.1	X	246.80031	50.21350	9.45517	11.78784	0.0531515	0.23623703	2.5916165	20	8 14.7	20.7
438753 2008 US ₅₆	18.2	X	107.55812	97.56508	205.49626	1.51999	0.2146354	0.27127164	2.3633776	20	—	—
438754 2008 UP ₅₇	18.0	X	102.18171	250.56595	71.96572	3.17687	0.2173136	0.26711734	2.3878186	20	—	—
438755 2008 UL ₆₂	17.3	X	107.49045	296.02941	17.04722	5.50614	0.1692460	0.26385729	2.4074466	20	—	—
438756 2008 UG ₇₅	17.0	X	140.69086	351.29904	264.36925	5.93514	0.1011765	0.25096809	2.4891843	20	12 16.3	20.8
438757 2008 UR ₉₇	17.2	X	42.16205	344.40674	64.84521	7.27912	0.1287647	0.26753743	2.3853184	20	—	—
438758 2008 UH ₁₀₉	16.5	X	254.54944	350.62336	52.45595	15.64462	0.2443356	0.22787480	2.6546372	20	6 30.2	20.7
438759 2008 UA ₁₃₃	16.9	X	62.33758	55.15362	224.61858	14.38692	0.1097038	0.24311022	2.5425367	20	10 21.4	20.4
438760 2008 UF ₁₃₇	17.3	X	201.27512	302.11451	120.94908	14.43254	0.1000500	0.24348448	2.5399306	20	10 23.4	21.0
438761 2008 UR ₁₆₃	17.1	X	98.07337	337.01568	13.33267	6.23772	0.2403877	0.27138450	2.3627224	20	—	—
438762 2008 UV ₁₇₇	18.0	X	26.90605	71.64454	328.90937	2.00351	0.1785047	0.26221491	2.4174888	20	—	—
438763 2008 UC ₁₇₉	16.7	X	179.44614	202.09662	242.15653	9.97989	0.1880057	0.21928168	2.7235446	20	6 17.3	21.3
438764 2008 UT ₁₈₆	17.8	X	19.02594	282.11291	107.46003	2.41621	0.1645879	0.25497938	2.4630091	20	—	—
438765 2008 UV ₂₁₂	17.2	X	135.99979	320.69090	212.16537	11.47041	0.0749075	0.23058906	2.6337643	20	8 20.7	21.2
438766 2008 UN ₂₂₃	16.4	X	304.38543	142.00786	237.29081	13.97402	0.1626664	0.23658001	2.5891111	20	8 21.2	19.7
438767 2008 UO ₂₂₉	16.7	X	227.16162	165.82736	261.03365	13.66696	0.0479970	0.22458487	2.6804994	20	7 20.9	20.6
438768 2008 UB ₂₆₄	17.1	X	101.38673	331.32617	39.43995	5.29154	0.1867248	0.28208063	2.3026108	20	—	—
438769 2008 UC ₃₁₃	16.7	X	155.98600	196.47637	253.68816	13.82860	0.1493034	0.21548360	2.7554545	20	6 2.9	21.0
438770 2008 UX ₃₂₉	17.4	X	270.15849	358.77345	40.71210	7.94452	0.1376312	0.23310455	2.6147824	20	8 3.3	20.9
438771 2008 UR ₃₄₂	16.6	X	116.48580	23.12059	253.06846	14.19577	0.1483283	0.25358700	2.4720167	20	12 18.3	20.4
438772 2008 UM ₃₄₃	17.4	X	40.23832	155.44959	211.99096	5.88378	0.1049003	0.25504016	2.4626177	20	—	—
438773 2008 UC ₃₄₉	16.8	X	292.63343	302.06361	89.09761	11.73620	0.0959769	0.23363543	2.6108199	20	9 4.4	20.1
438774 2008 UP ₃₄₉	16.5	X	242.80946	175.18856	249.33107	12.85481	0.0838936	0.23374652	2.6099296	20	8 1.0	20.3
438775 2008 UZ ₃₅₆	17.6	X	212.34262	13.19587	55.01049	12.09888	0.0537738	0.22174270	2.7033555	20	7 7.4	21.6
438776 2008 UV ₃₅₇	16.8	X	107.03811	90.30926	199.02500	5.66111	0.1841976	0.25328473	2.4739830	20	12 26.7	21.0
438777 2008 UQ ₃₅₈	18.1	X	287.75507	88.77012	232.87304	20.85220	0.0757097	0.38848355	1.8601771	20	5 15.4	19.4
438778 2008 UZ ₃₆₉	16.7	X	183.18181	27.82027	65.15687	14.96081	0.1912255	0.22123187	2.7075154	20	7 1.3	21.3
438779 2008 VR ₁₂	15.8	X	189.56425	348.54240	97.06929	17.87438	0.0802378	0.20914163	2.8108806	20	6 30.9	19.8
438780 2008 VK ₂₈	17.6	X	75.50977	233.53483	117.85498	3.36372	0.2132967	0.26566699	2.3965012	20	—	—
438781 2008 VF ₅₁	17.7	X	59.50148	357.92020	349.22944	1.18851	0.2051454	0.25740041	2.4475405	20	—	—
438782 2008 VO ₆₄	16.9	X	275.61211	269.94556	137.77216	13.52974	0.2675592	0.23435183	2.6054965	20	7 28.7	20.4
438783 2008 VX ₇₇	16.4	X	39.92589	151.98791	263.00616	20.91521	0.1602755	0.26661218	2.3908338	20	—	—
438784 2008 VH ₇₉	16.4	X	230.72681	223.98800	256.61853	12.07328	0.1142084	0.23108888	2.6299653	20	9 24.1	20.4
438785 2008 WP ₄₉	16.7	X	299.53504	185.24147	217.22163	14.36074	0.0527405	0.23896772	2.5718357	20	9 27.9	20.1
438786 2008 WF ₆₇	16.9	X	243.86307	341.12843	77.94744	5.24234	0.1085650	0.22762464	2.6565819	20	7 28.2	20.7
438787 2008 WM ₆₇	17.4	X	300.95827	154.90376	221.12121	5.64034	0.0565035	0.23151521	2.6267357	20	8 23.2	20.7
438788 2008 WR ₈₁	17.3	X	329.84462	250.98925	127.97498	3.11029	0.2004751	0.24133577	2.5549844	20	10 19.4	19.3
438789 2008 WP ₁₂₆	16.8	X	307.63465	307.80080	119.91768	12.97582	0.1700483	0.23633338	2.5909121	20	11 15.8	19.6
438790 2008 WV ₁₃₉	16.3	X	123.99009	63.26299	89.41034	13.01729	0.1505528	0.21531326	2.7569075	20	7 21.8	20.6
438791 2008 XT ₁	17.6	X	200.87461	157.24114	252.23269	19.53273	0.0955323	0.38724143	1.8641528	20	5 26.4	19.6
438792 2008 XO ₃	16.7	X	354.35952	86.61272	262.87276	15.27553	0.2432525	0.24243915	2.5472264	20	10 30.7	19.2
438793 2008 XO ₈	17.2	X	352.49214	169.72484	153.61968	5.15661	0.0373472	0.23112351	2.6297026	20	8 31.8	20.3
438794 2008 XC ₁₆	17.2	X	35.86237	272.50233	91.13925	7.58016	0.1513866	0.25459				

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>		
438801	2008	YR ₄₈	17.2	X	264.19636	43.72461	330.46613	3.24150	0.1122845	0.21384851	2.7694821	20	6 21.5	20.9
438802	2008	YC ₄₉	16.6	X	355.81885	77.47742	115.36610	22.58890	0.2878485	0.18173195	3.0868476	20	2 26.9	19.8
438803	2008	YM ₅₀	18.0	X	304.16702	20.63365	306.51308	18.60411	0.0802855	0.38308157	1.8776236	20	6 28.8	19.6
438804	2008	YD ₇₆	18.4	X	239.41421	84.24538	300.44349	19.02373	0.1079904	0.38500881	1.8713525	20	6 7.7	20.8
438805	2008	YB ₈₄	16.2	X	74.31951	303.97349	298.76163	12.25518	0.1545114	0.21971346	2.7199752	20	9 14.9	20.4
438806	2008	YR ₈₆	16.4	X	1.49544	254.68502	101.95263	15.30956	0.1992021	0.23967022	2.5668077	20	11 24.9	19.3
438807	2008	YN ₁₀₁	16.7	X	225.73596	280.97042	129.83219	5.62968	0.0645090	0.21347506	2.7727111	20	6 28.6	20.8
438808	2008	YR ₁₀₆	17.1	X	7.60900	262.70737	74.19106	3.37904	0.0714755	0.22720343	2.6598642	20	10 15.6	20.3
438809	2008	YV ₁₀₈	16.6	X	191.86359	301.64750	116.83894	5.74259	0.0344715	0.20424813	2.8555996	20	5 31.8	20.6
438810	2008	YO ₁₁₄	16.8	X	80.80880	104.90555	100.44127	8.66685	0.1600641	0.21085372	2.7956440	20	8 13.5	20.8
438811	2008	YJ ₁₂₅	17.2	X	222.86189	316.60627	100.75402	6.12025	0.0726108	0.21416705	2.7667353	20	7 3.0	21.1
438812	2008	YD ₁₃₅	16.3	X	68.76165	344.45931	249.50372	14.22912	0.0559963	0.22549298	2.6732979	20	8 13.3	20.2
438813	2008	YC ₁₄₂	16.4	X	307.93992	265.43607	109.83975	28.14655	0.1307440	0.22622213	2.6675506	20	9 3.2	19.9
438814	2008	YF ₁₄₄	17.4	X	36.13532	65.57521	294.84732	8.19645	0.1200453	0.24211669	2.5494876	20	—	—
438815	2008	YX ₁₄₈	16.5	X	165.67034	12.80384	87.89117	9.44600	0.1711343	0.21237693	2.7822607	20	6 25.7	21.1
438816	2008	YI ₁₅₃	18.7	X	338.62426	340.62344	304.52643	18.15658	0.0505833	0.38050150	1.8861018	20	6 24.9	20.3
438817	2008	YT ₁₅₈	17.2	X	238.74133	271.80293	135.05633	5.72222	0.0770028	0.21406325	2.7676297	20	7 7.6	21.2
438818	2008	YY ₁₇₁	16.1	X	133.41377	306.01754	289.64771	15.94467	0.1519162	0.22857005	2.6492514	20	11 7.0	20.6
438819	2009	AP	17.9	X	270.23061	209.61660	116.11706	23.98862	0.0682837	0.37698918	1.8977986	20	5 8.7	20.6
438820	2009	AV ₈	17.0	X	359.16440	293.05394	78.40326	6.30947	0.1604352	0.25222627	2.4808995	20	12 5.6	19.7
438821	2009	AB ₁₂	17.3	X	88.20731	132.48536	58.13964	0.74470	0.0118877	0.21162337	2.7888616	20	7 11.1	20.9
438822	2009	AG ₁₂	17.3	X	249.99265	303.88047	97.17745	2.88255	0.0900897	0.21716270	2.7412326	20	7 12.7	21.0
438823	2009	AZ ₁₃	17.1	X	98.84599	29.75148	134.47369	4.42978	0.0372847	0.20816782	2.8196399	20	6 23.4	20.9
438824	2009	AN ₁₅	18.0	X	227.41006	55.59284	286.56780	18.30865	0.0830151	0.37315398	1.9107799	20	3 7.6	20.8
438825	2009	AD ₂₇	18.3	X	46.73640	88.36845	115.22696	24.32677	0.1714000	0.37750915	1.8960556	20	6 10.3	20.4
438826	2009	BR ₁	15.9	X	170.18867	213.77609	303.67867	13.73686	0.1484588	0.22149984	2.7053312	20	9 3.7	20.5
438827	2009	BB ₂	17.4	X	337.64231	332.64321	277.21907	17.51935	0.0535062	0.37088842	1.9185533	20	4 5.7	19.7
438828	2009	BR ₇	16.2	X	134.60877	217.47713	298.39109	13.87083	0.1203928	0.21001423	2.8030891	20	8 1.0	20.5
438829	2009	BY ₇	16.2	X	202.92477	313.75907	121.28606	14.52558	0.1764721	0.21078929	2.7962137	20	6 27.6	20.9
438830	2009	BD ₂₉	17.0	X	35.47240	186.54688	353.13508	1.50301	0.1424226	0.19225957	2.9731084	20	4 27.8	20.5
438831	2009	BN ₄₀	16.8	X	118.82022	62.36873	122.74920	9.98468	0.0853621	0.21194002	2.7860831	20	8 21.9	20.9
438832	2009	BG ₄₂	16.8	X	21.02739	187.98927	131.80589	9.38550	0.0536430	0.22309237	2.6924413	20	10 12.0	20.4
438833	2009	BL ₄₃	17.1	X	353.87233	84.37914	320.00254	11.28350	0.3078401	0.24561509	2.5252208	20	—	—
438834	2009	BU ₇₇	16.9	X	336.30433	85.81145	354.58598	8.76983	0.2012541	0.24580370	2.5239288	20	—	—
438835	2009	BA ₈₄	17.5	X	343.26741	259.98450	128.43523	3.75854	0.0967612	0.23491841	2.6013055	20	11 20.5	20.4
438836	2009	BR ₁₀₄	17.2	X	79.71793	9.96653	139.39809	4.35475	0.1204492	0.19388785	2.9564394	20	5 23.2	21.2
438837	2009	BE ₁₀₆	16.7	X	65.34197	349.63847	141.81736	7.03387	0.1354070	0.18511900	3.0490793	20	4 14.3	20.7
438838	2009	BE ₁₀₉	16.9	X	359.28051	186.35239	124.51127	6.30186	0.1112966	0.21798367	2.7343456	20	8 28.6	20.0
438839	2009	BE ₁₂₁	16.9	X	274.51053	119.86665	219.54343	1.19674	0.0893543	0.20131079	2.8833101	20	5 23.1	20.7
438840	2009	BD ₁₂₄	17.0	X	308.05855	62.62118	139.04801	4.98911	0.3008941	0.21911058	2.7249622	20	9 12.1	20.5
438841	2009	BC ₁₆₀	17.8	X	264.55194	208.31069	313.13105	26.65900	0.0514079	0.37485243	1.9050037	20	5 26.2	20.6
438842	2009	BM ₁₇₁	16.9	X	324.55484	247.55844	139.45449	6.44815	0.1063951	0.22681021	2.6629375	20	10 17.7	19.9
438843	2009	BH ₁₈₄	17.6	X	10.46202	87.06132	128.50538	24.71250	0.0417099	0.36785832	1.9290745	20	5 4.7	20.1
438844	2009	CE ₈	16.3	X	77.55880	83.93889	130.94793	13.72072	0.1556021	0.21077692	2.7963231	20	8 20.7	20.2
438845	2009	CC ₂₅	17.1	X	244.79080	321.90895	140.44585	15.65195	0.1333529	0.22439452	2.6820151	20	9 24.0	20.9
438846	2009	CJ ₃₀	16.8	X	358.44627	157.28081	84.58947	3.41253	0.1263634	0.19234615	2.9722161	20	5 17.7	20.2
438847	2009	CR ₃₁	16.7	X	30.83100	130.87339	148.33540	6.84375	0.0422259	0.21091435	2.7951082	20	8 25.2	20.3
438848	2009	CL ₄₄	16.2	X	142.70300	279.36062	275.07891	8.78884	0.1121039	0.21882059	2.7273692	20	9 23.9	20.6
438849	2009	CA ₅₃	17.1	X	3.54099	207.18806	1.91966	2.43669	0.0743004	0.18777437	3.0202659	20	4 11.9	20.7
438850	2009	CB ₆₁	16.4	X	271.31981	66.92182	311.52236	6.24387	0.2189105	0.21633267	2.7482399	20	6 20.7	20.2
438851	2009	DO ₁₃	15.7	X	316.22808	323.42653	319.82890	10.34337	0.1459031	0.18859789	3.0114674	20	4 24.2	19.7
438852	2009	DG ₂₂	16.7	X	31.23807	150.53464	142.49907	12.22110	0.1638421	0.21838829	2.7309672	20	10 6.3	20.2
438853	2009	DB ₃₉	16.5	X	64.89371	20.58384	150.18694	17.81202	0.0534839	0.19436235	2.9516257	20	5 24.6	20.9
438854	2009	DX ₅₅	16.6	X	93.42366	357.66921	129.79779	5.08152	0.0800326	0.19009946	2.9955883	20	5 7.5	20.8
438855	2009	DR ₉₃	16.9	X	282.86653	220.70239	86.35445	4.76487	0.1017687	0.18549156	3.0449952	20	4 22.6	21.1
438856	2009	DL ₁₀₇	16.9	X	274.08142	217.67343	182.78783	6.72430	0.0653730	0.21054328	2.7983914	20	8 14.6	20.7
438857	2009	DF ₁₂₁	16.9	X	24.21968	69.66117	175.02697	8.45056	0.1957004	0.19446530	2.9505839	20	7 13.8	20.2
438858	2009	DA ₁₃₁	16.1	X	18.25177	56.78941	106.95916	27.76546	0.1872656	0.17771913	3.1331409	20	3 21.7	20.1
438859	2009	DY ₁₄₁	16.6	X	23.54874	311.87824	196.76630	15.17306	0.3772257	0.17869358	3.1217402	20	3 6.3	18.7
438860	2009	DG ₁₄₂	16.8	X	54.46137	356.71668	156.65852	4.74060	0.1047488	0.18286920	3.0740364	20	4 21.5	20.7
438861	2009	ER ₁₇	17.0	X	76.51516	71.22369	145.46722	8.94051	0.1210071	0.20464238	2.8519309	20	8 14.9	21.0
438862	2009	FX ₃₃	16.8	X	310.48745	127.98142	169.30819	12.34214	0.0480502	0.19318466	2.9636094	20	5 25.1	21.0
438863	2009	FY ₄₈	16.3	X	340.51528	52.28669	184.49731	27.56460	0.1221295	0.18064392	3.0992301	20	4 11.7	20.2
438864	2009	FY ₆₃	16.1	X	1.64640	104.29793	194.85221	16.67841	0.1418769	0.19644611	2.9307162	20	8 8.9	19.8
438865	2009	FR ₇₃	16.6	X	342.97767	339.80077	116.18985	0.27015	0.0820844	0.19053499	2.9910217	20	7 5.8	20.3
438866	2009	FC ₇₄	16.2	X	320.03886	262.64744	31.49295	10.89922	0.3327067	0.18109237	3.0941114	20	4 20.7	19.9
438867	2009	FB ₇₅	17.9	X	327.85898	7.68091	238.86695	4.19442	0.1253137	0.35469728	1.9765030	20	3 11.0	19.7
438868	2009	HF ₇	16.1	X	319.03406	174.69089	66.03980	10.13429	0.0330509	0.17445124	3.1721473	20	3 30.7	20.6
438869	2009	HT ₃₅	16.2	X	141.39917	248.58976	181.91338	9.22611	0.0743697	0.17444736	3.1721943	20	4 22.1	2

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
438881 2009 <i>RD</i> ₂₈	17.5	X	54.01394	120.73164	250.84700	5.48824	0.1699109	0.29268790	2.2466368	20	—	—
438882 2009 <i>SS</i> ₄₆	18.1	X	149.91573	319.69954	353.04963	4.99944	0.2118450	0.30369644	2.1920119	20	—	—
438883 2009 <i>SA</i> ₆₇	18.1	X	74.82149	350.35533	351.51381	1.54853	0.1676973	0.28535203	2.2849783	20	—	—
438884 2009 <i>SW</i> ₁₀₉	18.2	X	120.87386	41.26845	293.12026	4.87076	0.2138171	0.30304049	2.1951740	20	—	—
438885 2009 <i>SN</i> ₁₅₄	17.9	X	42.65569	208.28799	181.91726	5.88795	0.1751528	0.29147803	2.2528494	20	—	—
438886 2009 <i>SP</i> ₁₆₃	17.4	X	323.64980	23.69784	36.34955	5.72050	0.1864115	0.27428107	2.3460584	20	12 19.8	19.2
438887 2009 <i>SC</i> ₂₅₂	17.4	X	279.54750	52.27634	39.22958	7.16838	0.0683562	0.27145915	2.3622892	20	11 12.9	20.0
438888 2009 <i>SR</i> ₂₆₂	17.9	X	330.21789	59.99267	6.80396	7.27013	0.0749808	0.28076302	2.3098092	20	—	—
438889 2009 <i>SA</i> ₃₁₃	18.8	X	146.51749	177.82938	161.11975	3.77838	0.2346091	0.30883927	2.1676095	20	1 5.3	21.7
438890 2009 <i>SM</i> ₃₅₉	17.5	X	227.13871	9.25802	163.10173	6.31273	0.0613071	0.28163377	2.3050458	20	12 22.1	20.3
438891 2009 <i>TZ</i> ₃₄	15.8	X	210.28633	272.88113	165.49059	11.92725	0.1402328	0.15531805	3.4275839	20	7 7.5	21.4
438892 2009 <i>UO</i> ₁₁	18.1	X	194.63744	82.16810	123.85350	4.75542	0.0807976	0.28384489	2.2930595	20	12 22.1	21.0
438893 2009 <i>UT</i> ₃₁	18.1	X	133.92073	129.73178	212.79795	1.20648	0.2172561	0.30341092	2.1933869	20	—	—
438894 2009 <i>UL</i> ₅₅	18.5	X	197.16909	273.23762	30.10156	3.50916	0.2152346	0.31126246	2.1563449	20	1 5.9	21.9
438895 2009 <i>UZ</i> ₁₂₀	17.9	X	109.64907	108.35534	245.55861	5.67447	0.2172110	0.29962852	2.2118073	20	—	—
438896 2009 <i>VZ</i> ₁₀₂	16.3	X	147.61468	357.78277	254.01316	25.07823	0.2204606	0.27507308	2.3415530	20	12 17.6	20.2
438897 2009 <i>WN</i>	18.8	X	146.62409	236.15478	249.35591	32.78772	0.2214430	0.60779494	1.3802719	20	7 14.2	20.9
438898 2009 <i>WD</i> ₂₇	18.1	X	66.95812	172.67227	245.43768	6.15998	0.1541982	0.29827297	2.2185035	20	—	—
438899 2009 <i>WC</i> ₃₂	18.2	X	21.69611	154.88789	229.57620	4.47873	0.1078117	0.27754894	2.3276071	20	—	—
438900 2009 <i>WP</i> ₄₅	16.7	X	183.65470	247.39485	253.61490	13.44484	0.1172986	0.25325516	2.4741756	20	8 30.1	20.7
438901 2009 <i>WP</i> ₁₀₃	17.6	X	174.51581	99.47628	22.26908	7.97293	0.2164593	0.24361745	2.5390064	20	8 2.9	22.0
438902 2009 <i>WF</i> ₁₀₄	17.3	X	307.46273	94.09012	81.91603	17.00178	0.6576763	0.18265744	3.0764118	20	—	—
438903 2009 <i>WM</i> ₁₁₉	17.4	X	153.12675	163.12866	57.62438	8.33201	0.0348295	0.26873959	2.3781995	20	11 21.5	20.5
438904 2009 <i>WT</i> ₂₀₉	17.7	X	66.33423	319.23093	93.72969	7.52261	0.0391452	0.29154209	2.2525194	20	—	—
438905 2009 <i>WZ</i> ₂₁₀	17.2	X	283.81745	8.78190	77.45927	7.99078	0.0920420	0.26601540	2.3944082	20	11 11.0	19.7
438906 2009 <i>WG</i> ₂₄₅	17.2	X	146.38294	337.92237	265.90820	6.20727	0.0634352	0.27143467	2.3624312	20	12 12.9	20.4
438907 2009 <i>WC</i> ₂₆₃	17.1	X	344.06564	201.22280	261.34548	9.86763	0.0887724	0.28196362	2.3032478	20	—	—
438908 2009 <i>XO</i>	20.5	X	25.34782	140.71115	27.72684	0.35080	0.5423187	0.38873957	1.8593603	20	—	—
438909 2009 <i>XX</i> ₁₇	17.2	X	338.34603	11.61825	91.53129	7.91319	0.0563185	0.27646855	2.3336670	20	—	—
438910 2009 <i>XJ</i> ₁₉	17.4	X	325.71511	352.11922	109.46692	9.24945	0.0539333	0.27203578	2.3589498	20	—	—
438911 2009 <i>YG</i> ₅	17.1	X	138.04812	201.74588	301.53067	6.47938	0.1440161	0.23125716	2.6286893	20	7 23.4	21.1
438912 2009 <i>YH</i> ₁₃	17.3	X	188.74153	39.84816	146.87411	4.21086	0.1285871	0.25582005	2.4576102	20	11 10.4	20.9
438913 2010 <i>AE</i> ₈₁	17.0	X	146.85457	224.48985	246.96361	13.16464	0.2243092	0.22700263	2.6614325	20	6 23.9	21.6
438914 2010 <i>BU</i> ₆₅	17.2	X	151.46558	243.50495	294.83383	10.60303	0.2205530	0.22987857	2.6391884	20	9 13.8	21.9
438915 2010 <i>CJ</i> ₅	17.0	X	108.64306	62.37026	110.11078	4.92801	0.1104681	0.22338631	2.6900789	20	7 26.9	20.9
438916 2010 <i>CY</i> ₁₃	16.7	X	40.16451	219.43907	144.22738	32.13982	0.3325375	0.23523037	2.5990051	20	—	—
438917 2010 <i>CH</i> ₁₆	16.3	X	308.93148	235.82505	90.69403	27.68137	0.2327936	0.20274139	2.8697305	20	6 5.7	19.8
438918 2010 <i>CS</i> ₂₂	16.7	X	331.73481	2.98894	341.25683	14.81672	0.1197472	0.23378322	2.6097194	20	8 28.9	19.5
438919 2010 <i>CB</i> ₃₆	17.0	X	209.61456	306.05098	143.41772	14.14931	0.2430109	0.23520314	2.5992056	20	7 17.6	21.5
438920 2010 <i>CZ</i> ₄₂	17.1	X	260.70778	247.78582	249.89676	8.16245	0.1660844	0.26097895	2.4251153	20	12 1.9	19.6
438921 2010 <i>CK</i> ₅₉	16.3	X	118.11271	22.95817	157.49553	14.40002	0.2064210	0.22892600	2.6465045	20	8 23.9	20.6
438922 2010 <i>CQ</i> ₈₁	17.6	X	120.98491	12.15567	171.00689	3.68883	0.0459913	0.22960565	2.6412793	20	8 17.8	21.4
438923 2010 <i>CJ</i> ₈₄	16.9	X	77.50339	69.58390	151.32616	13.29736	0.2180388	0.22404498	2.6848039	20	9 6.8	20.9
438924 2010 <i>CL</i> ₈₉	16.9	X	124.57041	14.15539	155.67866	13.68545	0.0251809	0.23091056	2.6313191	20	8 1.9	20.5
438925 2010 <i>CC</i> ₁₀₃	16.9	X	74.10382	131.13187	142.39236	13.64567	0.0872632	0.24343604	2.5402676	20	10 31.1	20.7
438926 2010 <i>CW</i> ₁₀₃	16.7	X	221.01440	289.38346	161.77967	14.37326	0.0514390	0.23132991	2.6281381	20	8 17.2	20.5
438927 2010 <i>CL</i> ₁₆₆	17.2	X	61.76789	58.01028	175.55842	10.02457	0.0277133	0.22453921	2.6808628	20	8 3.6	20.9
438928 2010 <i>DQ</i> ₇₅	17.0	X	20.89916	264.30868	357.00200	9.99802	0.1042562	0.21764904	2.7371476	20	7 27.3	20.4
438929 2010 <i>EJ</i> ₃₉	16.6	X	33.51185	137.97962	74.16801	3.50749	0.1896776	0.20994767	2.8036815	20	6 15.7	19.5
438930 2010 <i>ET</i> ₄₄	16.6	X	92.38279	68.22016	88.59450	8.71623	0.1636431	0.21160842	2.7889929	20	6 23.2	20.5
438931 2010 <i>EB</i> ₁₃₉	16.6	X	56.13602	144.08464	67.37987	8.94074	0.1595145	0.21205800	2.7850497	20	7 19.5	20.3
438932 2010 <i>FZ</i> ₂	16.9	X	40.36026	179.11296	105.69123	5.35241	0.1550848	0.22971345	2.6404530	20	10 7.9	20.3
438933 2010 <i>FS</i> ₂₂	16.9	X	226.89218	299.84042	138.98921	4.50006	0.1263291	0.23019565	2.6367643	20	7 30.9	20.6
438934 2010 <i>FN</i> ₈₄	16.0	X	36.63788	64.50306	191.22869	24.73659	0.1338985	0.21723248	2.7406456	20	8 10.1	19.8
438935 2010 <i>GU</i> ₁₀₀	17.2	X	90.96093	23.21243	165.12459	8.89758	0.1882255	0.22288265	2.6941299	20	8 4.2	21.3
438936 2010 <i>GB</i> ₁₀₂	16.7	X	92.05643	153.40706	63.82422	13.94903	0.0974815	0.21817373	2.7327574	20	9 9.9	20.9
438937 2010 <i>GL</i> ₁₅₅	16.9	X	115.16389	68.25766	114.21147	13.89083	0.1986368	0.23154967	2.6264750	20	8 26.9	21.2
438938 2010 <i>GR</i> ₁₅₆	17.7	X	58.25449	296.12457	209.49944	20.89562	0.0830364	0.38904720	1.8583800	20	3 17.8	19.3
438939 2010 <i>GQ</i> ₁₆₁	16.1	X	340.10441	164.55714	137.92901	15.98449	0.1375149	0.20324729	2.8649665	20	7 8.4	19.5
438940 2010 <i>HP</i> ₄₈	15.9	X	249.31531	245.16358	118.88911	19.27982	0.1437867	0.18260201	3.0770343	20	5 23.7	20.9
438941 2010 <i>HY</i> ₅₆	15.6	X	271.60346	67.00638	249.28848	15.17097	0.0956150	0.17830048	3.1263269	20	4 16.2	20.3
438942 2010 <i>JC</i> ₃₁	17.0	X	148.19842	101.28855	91.38606	7.41234	0.0915786	0.23100283	2.6306184	20	10 7.3	21.1
438943 2010 <i>JB</i> ₄₅	16.9	X	32.69547	116.03536	186.01582	15.04872	0.0619868	0.22184103	2.7025566	20	10 1.8	20.3
438944 2010 <i>JX</i> ₇₂	17.0	X	45.16527	150.85211	110.81560	10.61230	0.1229876	0.21463356	2.7627248	20	9 7.2	20.7
438945 2010 <i>JW</i> ₇₆	16.3	X	48.47297	183.67884	79.52012	14.15767	0.0465845	0.21916334	2.7245249	20	9 6.3	20.2
438946 2010 <i>JG</i> ₁₃₅	16.4	X	290.78812	144.61935	194.46946	23.82034	0.3600426	0.18329222	3.0693048	20	5 5.7	21.0
438947 2010 <i>JG</i> ₁₄₉	17.4	X	51.69297	123.99328	138.36246	4.08297	0.1544789	0.21739276	2.7392983	20	9 19.9	20.9
438948 2010 <i>JL</i> ₁₅₄	16.9	X	107.39068	124.76284	69.12833	10.35422	0.1049761	0.21791598	2.7349118	20	8 26.1	21.1
438949 2010 <i>KR</i> ₈	17.5	X	308.92116	181.09330	73.93888	21.91522	0.0625219	0.38219171	1.8805370	20	3 20.3	20.0
438950 2010 <i>KS</i> ₃₅	16.9	X	68.98782	21.66147	176.71469	10.14156	0.1370770	0.21880198	2.7275238	20	7 13.8	20.7
438951 2010 <i>KT</i> ₃₈	17.5	X	50.21091	246.04717	48.63852	3.52191	0.2226152	0.22427664	2.6829548	20	11 8.5	21.1
438952 2010 <i>KA</i> ₁₀₅	16.8	X										

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
438961 2010 <i>LF</i> ₈₇	16.5	X	318.25285	52.64408	287.03313	7.27188	0.1515677	0.18823905	3.0152934	20	7 18.1	20.1
438962 2010 <i>LA</i> ₉₇	15.7	X	283.65319	58.49041	290.93376	12.74823	0.1571642	0.18048171	3.1010867	20	6 6.7	20.1
438963 2010 <i>LG</i> ₁₁₄	15.8	X	324.71006	9.24263	311.05078	11.55194	0.2197170	0.18672206	3.0316028	20	6 25.5	19.2
438964 2010 <i>MC</i> ₁	14.9	X	310.86526	24.68945	268.53194	27.49721	0.1644900	0.17461311	3.1701866	20	4 27.3	19.5
438965 2010 <i>MR</i> ₉	15.9	X	265.60187	104.91819	266.21030	16.89872	0.1457148	0.17926830	3.1150645	20	6 13.8	20.3
438966 2010 <i>ML</i> ₁₂	15.8	X	148.91241	315.98690	226.86732	16.21064	0.0693638	0.19823595	2.9130488	20	9 11.8	20.5
438967 2010 <i>MT</i> ₁₄	16.8	X	282.56761	257.59281	103.29072	4.08250	0.2670544	0.18110891	3.0939230	20	6 4.3	21.1
438968 2010 <i>ME</i> ₅₇	15.2	X	259.79197	203.26413	121.11016	26.70588	0.2762003	0.17584533	3.1553593	20	6 2.8	20.6
438969 2010 <i>MJ</i> ₇₁	15.3	X	195.09288	86.13203	253.37321	8.36528	0.1031312	0.15158937	3.4835621	20	2 26.1	20.9
438970 2010 <i>MQ</i> ₈₄	15.7	X	267.07199	64.34665	274.45579	12.31102	0.1092006	0.17131004	3.2108067	20	5 8.4	20.6
438971 2010 <i>MJ</i> ₉₇	16.2	X	264.86282	172.52323	199.92004	13.03211	0.1284538	0.17767207	3.1336941	20	6 16.6	20.9
438972 2010 <i>MW</i> ₁₀₁	16.3	X	279.21893	141.47528	205.14589	12.68778	0.1727713	0.17653831	3.1470965	20	5 27.2	20.9
438973 Masci	16.4	X	282.46852	211.51502	142.12259	11.66349	0.2398968	0.17826959	3.1266879	20	5 31.9	21.0
438974 2010 <i>NT</i> ₄₃	16.2	X	299.56849	133.70046	195.47013	12.57734	0.2425751	0.17884113	3.1200229	20	5 21.6	20.4
438975 2010 <i>NY</i> ₅₃	16.1	X	269.15906	355.90967	37.71404	10.44654	0.1798824	0.18096078	3.0956111	20	7 13.6	20.6
438976 2010 <i>NY</i> ₅₄	16.8	X	314.54469	182.63055	127.72086	3.97089	0.2895537	0.18034711	3.1026296	20	5 12.1	20.4
438977 2010 <i>QT</i> ₂₃	16.4	X	318.33644	276.56458	105.44498	8.98342	0.1548383	0.19158434	2.9800900	20	9 17.9	19.9
438978 2010 <i>OE</i> ₅₃	15.8	X	274.59277	111.69150	276.85902	8.58025	0.1819314	0.17949243	3.1124708	20	7 11.4	20.0
438979 2010 <i>OM</i> ₅₆	15.7	X	279.23165	293.78615	50.96011	15.79070	0.3001369	0.17492794	3.1663817	20	5 7.3	20.5
438980 2010 <i>OJ</i> ₆₃	15.8	X	280.75958	131.58389	213.57003	18.64347	0.1800089	0.17346392	3.1841726	20	5 25.8	20.4
438981 2010 <i>OE</i> ₇₆	16.5	X	299.97574	107.34879	268.34103	16.71609	0.3795389	0.18442199	3.0567570	20	6 28.1	20.4
438982 2010 <i>PU</i> ₃₆	15.8	X	289.76107	103.68068	265.73465	12.86188	0.0677097	0.17773530	3.1329509	20	7 21.6	20.1
438983 2010 <i>PT</i> ₅₂	16.0	X	303.84936	103.83445	295.59098	19.74934	0.2821122	0.18862432	3.0111860	20	8 17.5	19.6
438984 2010 <i>PD</i> ₆₃	15.9	X	297.72179	67.55334	275.93098	9.83257	0.1223734	0.18831237	3.0145107	20	6 24.4	19.7
438985 2010 <i>RP</i> ₄₀	16.3	X	225.37077	161.12676	237.85933	12.31630	0.1805990	0.17215367	3.2003086	20	6 2.5	21.4
438986 2010 <i>RR</i> ₄₅	16.5	X	293.30626	123.65205	241.95195	3.69251	0.2134884	0.18880883	3.0092240	20	7 2.8	20.3
438987 2010 <i>RC</i> ₆₅	16.4	X	275.22068	74.91797	295.85919	4.22647	0.1766369	0.18517358	3.0484801	20	6 20.8	20.5
438988 2010 <i>SP</i> ₉	16.6	X	237.85375	203.77424	183.67708	5.00058	0.1840926	0.17300097	3.1898507	20	5 31.5	21.6
438989 2010 <i>SO</i> ₁₂	17.0	X	3.18926	69.09271	196.13590	15.71053	0.3576668	0.19017486	2.9947964	20	7 8.9	19.4
438990 2010 <i>SG</i> ₁₃	18.3	X	268.94699	225.08545	252.98930	33.81794	0.7484762	0.70325968	1.2523496	20	—	—
438991 2010 <i>SB</i> ₃₆	16.0	X	226.81413	117.21983	288.93415	9.45855	0.0982195	0.17897644	3.1184501	20	6 19.9	20.8
438992 2010 <i>SO</i> ₃₈	16.0	X	285.66515	127.37784	232.88721	15.83486	0.2420524	0.17925832	3.1151802	20	6 10.2	20.3
438993 2010 <i>SW</i> ₄₁	16.3	X	286.97157	159.89437	199.55415	17.99035	0.2164441	0.18320716	3.0702548	20	6 14.8	20.8
438994 2010 <i>TW</i> ₁₉	16.4	X	311.56755	340.94097	322.22275	3.28809	0.1268244	0.17581258	3.1557511	20	5 20.8	20.6
438995 2010 <i>TL</i> ₂₅	15.8	X	263.89568	56.47720	322.38396	16.36863	0.1907001	0.17588830	3.1548454	20	6 16.1	20.7
438996 2010 <i>TN</i> ₉₉	15.9	X	332.80091	85.79236	188.96932	20.60480	0.1002254	0.17182774	3.2043543	20	5 22.3	20.3
438997 2010 <i>TC</i> ₁₅₄	16.2	X	318.20487	61.82108	228.10441	10.96348	0.0463364	0.17073158	3.2180551	20	5 24.5	20.5
438998 2010 <i>UM</i> ₁₆	17.5	X	294.06259	89.29345	217.93608	20.33540	0.0360290	0.36659585	1.9335008	20	5 10.8	19.2
438999 2010 <i>UL</i> ₁₀₆	16.2	X	286.18758	118.48628	265.84005	14.83961	0.2353986	0.17788204	3.1312277	20	7 11.4	20.4
439000 2010 <i>VL</i> ₂₉	16.5	X	278.52365	153.50404	236.86632	13.11930	0.1793086	0.17861438	3.1226629	20	7 16.3	21.0
439001 2010 <i>VE</i> ₈₂	16.0	X	282.82709	299.67013	57.25173	14.71796	0.3016010	0.17538073	3.1609294	20	5 24.6	20.5
439002 2010 <i>VX</i> ₁₀₄	13.9	X	280.54168	7.68297	66.51873	20.13793	0.0839479	0.08440032	5.1472268	20	9 28.2	20.9
439003 2010 <i>VV</i> ₁₃₈	14.0	X	245.07414	240.60361	231.92533	13.27098	0.1822436	0.08144914	5.2708225	20	9 5.1	21.5
439004 2010 <i>VJ</i> ₂₀₄	15.9	X	343.40901	311.11347	19.31177	11.71527	0.1064063	0.18302498	3.0722918	20	8 26.9	19.8
439005 2010 <i>WK</i> ₆₂	15.5	X	245.64056	76.77177	253.86971	8.81355	0.0974396	0.14731151	3.5506805	20	4 6.4	21.0
439006 2010 <i>WL</i> ₇₁	17.3	X	348.57077	336.70986	254.84872	17.98770	0.0571305	0.35574373	1.9726251	20	3 28.4	19.6
439007 2010 <i>XV</i> ₆₉	18.2	X	235.50755	316.85430	173.32319	6.43572	0.3686293	0.28366099	2.2940505	20	9 22.9	21.6
439008 2010 <i>YN</i> ₃	15.8	X	272.28522	94.50363	306.21355	24.27808	0.2345772	0.17179126	3.2048080	20	7 18.9	20.5
439009 2011 <i>AT</i> ₂₂	17.3	X	187.72754	245.83252	329.91688	7.41014	0.0361724	0.29100266	2.2553022	20	—	—
439010 2011 <i>AH</i> ₃₀	17.9	X	220.69864	71.03999	114.98872	6.36870	0.1102883	0.29178615	2.2512632	20	12 27.0	20.3
439011 2011 <i>AH</i> ₄₉	18.4	X	350.63098	354.89858	97.47209	5.77883	0.0508524	0.30605880	2.1807178	20	—	—
439012 2011 <i>AN</i> ₅₀	17.7	X	155.63917	200.23940	72.98485	5.25115	0.1975543	0.29893414	2.1523311	20	—	—
439013 2011 <i>AT</i> ₅₉	18.7	X	193.39404	75.82974	121.04968	6.87303	0.1937235	0.28368458	2.2939233	20	11 26.8	22.2
439014 2011 <i>BW</i> ₆	18.3	X	239.99527	280.11230	312.05609	3.94544	0.1682290	0.30827384	2.1702592	20	—	—
439015 2011 <i>BA</i> ₂₀	17.4	X	177.57076	282.73341	318.33489	5.21199	0.2334108	0.28282835	2.2985507	20	12 31.9	21.0
439016 2011 <i>BA</i> ₆₃	17.9	X	246.69905	345.65875	145.16189	7.12426	0.1190040	0.27905078	2.3192482	20	11 15.4	20.7
439017 2011 <i>CT</i> ₉	16.4	X	119.77589	102.33680	321.33306	21.49137	0.0494185	0.22688871	2.6623233	20	3 3.5	20.2
439018 2011 <i>DE</i> ₂₂	17.5	X	142.19271	108.49155	157.68802	6.09550	0.1658886	0.27704952	2.3304035	20	—	—
439019 2011 <i>DY</i> ₂₃	17.8	X	169.32678	182.07945	61.53783	4.66732	0.1470945	0.27849044	2.3223581	20	—	—
439020 2011 <i>DG</i> ₃₂	17.9	X	190.89494	47.66381	137.31161	0.62370	0.1525921	0.27514752	2.3411306	20	11 10.3	21.2
439021 2011 <i>DQ</i> ₃₆	18.0	X	179.49789	353.23269	287.95787	1.12928	0.1632896	0.29680114	2.2258318	20	—	—
439022 2011 <i>DL</i> ₄₀	17.9	X	151.73695	221.99776	355.30945	2.47277	0.1337853	0.26927601	2.3750401	20	11 11.3	21.5
439023 2011 <i>DY</i> ₄₂	18.1	X	148.69252	321.58173	265.43642	1.66116	0.1664094	0.27189043	2.3597904	20	11 20.6	21.7
439024 2011 <i>EF</i>	18.2	X	182.43225	144.48441	90.57820	3.00588	0.1711371	0.28025126	2.3126203	20	—	—
439025 2011 <i>EM</i> ₁₅	17.4	X	132.19259	271.36326	353.10641	8.30816	0.1964348	0.27584508	2.3371821	20	12 22.3	21.4
439026 2011 <i>ER</i> ₂₀	17.7	X	198.09545	108.50941	64.65902	7.02216	0.1389177	0.27507043	2.3415680	20	11 5.2	21.0
439027 2011 <i>EB</i> ₂₂	18.0	X	253.81168	136.53433	43.34174	3.10951	0.0925025	0.29319688	2.2440360	20	—	—
439028 2011 <i>EQ</i> ₃₉	17.9	X	210.08608	72.06071	134.72844	4.65321	0.1369953	0.28038344	2.3118934	20	—	—
439029 2011 <i>EZ</i> ₇₆	17.5	X	239.54284	102.79361	6.76655	6.03601	0.2434701	0.27269692	2.3551355	20	9 15.0	20.7
439030 2011 <i>EF</i> ₈₅	17.4	X	164.03988	54.11948	162.61055	6.22007	0.0640886	0.27154029	2.3618186	20	11 29.6	20.7
439031 2011 <i>FS</i> ₃	17.7	X	191.71508	133.67789	89.37616	3.76109	0.1614629	0.28082597	2.3094640	20	12 29.8	20.

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
439041 2011 FX ₈₁	17.8	X	144.34719	115.04159	127.21052	2.04388	0.1539180	0.27099624	2.3649785	20	12 6.0	21.6
439042 2011 FC ₈₈	17.8	X	141.61227	43.84070	193.76408	4.02887	0.1624418	0.26861965	2.3789074	20	11 27.6	21.5
439043 2011 FT ₁₂₀	17.9	X	209.36907	332.82699	193.41296	5.37073	0.1438169	0.27289064	2.3540208	20	11 7.6	21.0
439044 2011 FV ₁₃₀	17.7	X	157.31694	289.72683	350.87272	3.00675	0.1492515	0.28641673	2.2793121	20	—	—
439045 2011 FN ₁₃₂	18.0	X	215.68402	252.59179	339.05760	3.07002	0.1043409	0.29302570	2.2449099	20	—	—
439046 2011 FH ₁₄₂	17.1	X	132.54399	179.97526	102.94238	6.79090	0.2240992	0.27137162	2.3627971	20	—	—
439047 2011 FA ₁₅₇	16.5	X	331.80091	244.88364	31.98880	16.20108	0.1493649	0.22814808	2.6525170	20	5 11.5	19.4
439048 2011 GG ₄	17.9	X	171.33462	142.99742	107.80221	3.13533	0.1855515	0.27695880	2.3309123	20	—	—
439049 2011 GP ₃₇	17.9	X	176.09656	128.82510	113.61537	2.54913	0.1806754	0.28199071	2.3031003	20	—	—
439050 2011 GW ₅₆	17.5	X	127.24704	222.57932	93.26758	3.72627	0.1686117	0.28293958	2.2979483	20	—	—
439051 2011 GU ₇₁	17.1	X	146.14240	184.45469	61.50843	11.01385	0.1872599	0.26903948	2.3764319	20	12 9.9	20.9
439052 2011 GY ₇₅	18.1	X	213.11697	63.14173	156.02580	6.58768	0.0947514	0.28286604	2.2983465	20	—	—
439053 2011 HB ₆	16.9	X	120.65949	197.55833	69.66629	11.41840	0.2162415	0.26268406	2.4146095	20	12 13.6	21.0
439054 2011 HO ₆	17.0	X	167.72239	15.05178	197.80158	12.88053	0.1418689	0.26607197	2.3940688	20	11 22.5	20.7
439055 2011 HP ₇	18.2	X	129.71749	152.41376	82.91743	3.25809	0.1438233	0.26332239	2.4107057	20	11 13.1	21.9
439056 2011 HO ₁₆	18.0	X	343.83360	308.24179	172.50329	7.14330	0.0550531	0.29393147	2.2402956	20	—	—
439057 2011 HA ₁₈	18.2	X	272.17519	295.80814	226.72645	4.17600	0.1594904	0.28903660	2.2655179	20	—	—
439058 2011 HR ₂₉	17.9	X	235.50460	209.32199	64.72278	5.43112	0.1152497	0.30127106	2.2037607	20	1 4.2	21.0
439059 2011 HB ₄₁	16.7	X	277.84780	290.08431	79.84789	22.91109	0.0264161	0.23368190	2.6104737	20	7 19.4	20.4
439060 2011 HE ₅₅	17.5	X	171.90383	22.83448	162.91122	6.54518	0.0692863	0.25984256	2.4321808	20	10 27.6	21.0
439061 2011 HN ₆₆	17.2	X	353.68260	267.38789	67.09998	10.03236	0.0436676	0.24576464	2.5241962	20	9 26.7	20.4
439062 2011 HR ₆₇	18.2	X	139.46839	246.27083	37.30920	1.07651	0.2142263	0.27482121	2.3429834	20	—	—
439063 2011 HD ₇₄	17.4	X	118.31759	187.56491	94.76691	5.92328	0.2180057	0.26324663	2.4111682	20	12 30.2	21.4
439064 2011 HP ₇₄	18.1	X	178.66392	8.20075	152.28816	2.34386	0.1161034	0.25713400	2.4492308	20	9 27.6	21.8
439065 2011 HM ₈₉	18.4	X	137.98532	100.70795	194.77490	3.88175	0.1587684	0.27940712	2.3172759	20	—	—
439066 2011 HQ ₉₁	17.9	X	142.75367	187.07055	102.93051	3.38983	0.1764711	0.27778931	2.3262642	20	—	—
439067 2011 HR ₁₀₁	18.1	X	140.97415	94.10505	199.93667	4.69351	0.2367014	0.27851673	2.3222120	20	—	—
439068 2011 JM ₉	17.2	X	142.14579	178.48685	83.82797	13.33747	0.2280357	0.26730089	2.3867253	20	12 25.3	21.3
439069 2011 JU ₁₁	17.7	X	129.94535	7.05007	253.73132	4.39679	0.1912082	0.26348571	2.4097094	20	12 13.9	21.7
439070 2011 JV ₁₇	17.1	X	34.20430	141.17499	145.12878	12.59203	0.1775953	0.23864722	2.5741378	20	10 24.4	20.5
439071 2011 JU ₂₉	17.3	X	117.56763	239.83520	82.91204	7.41479	0.2729477	0.27234718	2.3571513	20	—	—
439072 2011 KM ₂	17.6	X	98.55426	205.12137	103.74892	3.30249	0.2420721	0.26214505	2.4179182	20	—	—
439073 2011 KR ₁₁	16.5	X	52.32662	149.97835	84.04787	13.75049	0.1101167	0.23263512	2.6182988	20	8 10.4	20.0
439074 2011 KK ₂₂	17.1	X	29.85010	195.50236	131.23512	7.71549	0.1764988	0.24727067	2.5139365	20	11 24.5	20.4
439075 2011 KZ ₂₈	17.2	X	30.85830	37.68442	252.41500	13.06107	0.2413314	0.23620785	2.5918299	20	10 8.5	20.5
439076 2011 KQ ₄₄	17.6	X	94.80793	234.51003	80.81856	6.30469	0.1223507	0.26646510	2.3917136	20	—	—
439077 2011 LB ₁₄	16.9	X	106.94055	357.31375	192.36575	4.43125	0.1614299	0.23784650	2.5799119	20	8 21.2	20.8
439078 2011 NU ₁	16.6	X	311.29825	96.53172	256.45160	11.94751	0.2155629	0.23135248	2.7755078	20	7 15.1	19.7
439079 2011 NC ₃	17.5	X	59.73519	85.64094	175.95565	4.00180	0.1420795	0.23300913	2.6154962	20	9 28.9	20.8
439080 2011 OV ₁	17.4	X	81.67036	36.90434	252.81272	6.63766	0.1899854	0.24177816	2.5518668	20	12 3.6	21.4
439081 2011 ON ₃₅	17.2	X	90.04270	166.41376	104.20715	8.13883	0.1626674	0.24445708	2.5331893	20	11 18.7	21.1
439082 2011 OS ₄₉	16.6	X	138.99829	262.12309	290.09034	12.90986	0.0382428	0.22798351	2.6537933	20	9 13.4	20.6
439083 2011 OC ₅₅	16.6	X	29.21251	219.09790	128.67184	10.68765	0.1159002	0.24110662	2.5566030	20	12 9.9	20.0
439084 2011 PO ₂	17.1	X	39.00445	79.10718	215.75637	7.81609	0.2248789	0.23217514	2.6217558	20	10 27.8	20.5
439085 2011 PN ₁₂	16.5	X	314.60352	245.33385	94.88519	9.95682	0.1759723	0.21527934	2.7571971	20	7 11.8	19.4
439086 2011 QP ₅	16.4	X	75.77178	313.48378	294.61160	14.46665	0.1312370	0.22893595	2.6464278	20	9 19.8	20.5
439087 2011 QZ ₁₀	16.7	X	216.47181	208.61944	166.76855	10.23583	0.1282828	0.18662268	3.0326789	20	5 2.3	21.6
439088 2011 QB ₁₆	17.4	X	6.11698	238.48109	46.41136	2.65433	0.1758071	0.21408921	2.7674059	20	8 8.2	20.2
439089 2011 QN ₂₈	16.6	X	7.83792	34.95058	304.65998	11.82310	0.2053031	0.22725087	2.6594940	20	10 30.3	19.7
439090 2011 QP ₃₉	17.9	X	45.69109	64.34965	269.32116	1.73528	0.1964854	0.23975147	2.5662277	20	12 21.6	21.5
439091 2011 QV ₄₆	15.8	X	274.66430	146.89186	225.68850	14.25729	0.1482667	0.20381205	2.8596714	20	6 25.6	19.9
439092 2011 QP ₅₉	17.5	X	79.27986	144.10957	165.45845	7.07049	0.1497746	0.24330934	2.5411494	20	12 22.4	21.4
439093 2011 QF ₉₄	16.3	X	201.89139	165.35659	314.76879	8.33590	0.1020487	0.21320291	2.7750701	20	8 25.4	20.5
439094 2011 RV ₁₂	16.5	X	9.61156	246.05135	341.64370	13.38586	0.2261887	0.19774829	2.9178361	20	5 15.2	19.5
439095 2011 ST ₆	17.0	X	203.19749	207.62694	185.73171	11.01435	0.0632754	0.18816717	3.0160612	20	5 12.9	21.6
439096 2011 SH ₁₁	16.1	X	177.62551	94.48420	281.24922	6.02829	0.0807384	0.17128004	3.2111817	20	3 21.1	21.2
439097 2011 SF ₁₂	16.6	X	350.49793	178.45866	214.22156	12.67393	0.2860232	0.22938726	2.6429555	20	12 29.7	19.3
439098 2011 SV ₁₅	17.0	X	46.93973	38.67879	290.73288	14.01145	0.1809320	0.23481794	2.6020474	20	12 15.1	20.8
439099 2011 SM ₂₄	16.5	X	247.35892	318.29312	8.14770	10.00569	0.1617135	0.17952632	3.1120791	20	3 29.3	21.4
439100 2011 SN ₃₀	17.0	X	14.12583	119.91398	232.80478	12.27805	0.2955355	0.22783707	2.6549303	20	12 17.7	20.2
439101 2011 SW ₅₆	17.0	X	352.19026	173.32382	155.14599	6.55244	0.0675106	0.21093089	2.7949621	20	9 5.9	20.4
439102 2011 SJ ₅₉	17.1	X	164.94985	196.76183	326.93110	5.39636	0.0067448	0.21854508	2.7296609	20	9 13.1	20.8
439103 2011 SQ ₆₃	17.3	X	28.64561	16.48760	336.36042	9.92685	0.1746897	0.23480015	2.6021788	20	12 21.6	20.8
439104 2011 SY ₆₆	17.0	X	42.59496	100.53045	229.03524	4.84375	0.3046183	0.23300351	2.6155383	20	12 24.8	21.0
439105 2011 SZ ₆₆	17.4	X	36.03098	51.24741	287.94992	2.63013	0.2996362	0.23247056	2.6195342	20	12 29.5	21.1
439106 2011 SN ₆₇	17.3	X	22.67778	70.09612	267.95336	4.12435	0.3132472	0.22778247	2.6553546	20	12 13.7	20.7
439107 2011 SZ ₆₇	16.8	X	8.13152	164.36489	194.80940	7.86065	0.2665472	0.22771683	2.6588648	20	12 13.2	19.8
439108 2011 SL ₆₉	16.0	X	189.47008	198.91141	186.76681	27.93750	0.1462394	0.17374598	3.1807256	20	4 18.5	21.3
439109 2011 SB ₇₅	16.1	X	258.26815	348.32467	305.56934	8.25330	0.0503044	0.17494316	3.1661980	20	3 10.3	20.9
439110 2011 SH ₇₈	16.7	X	324.65779	178.60321	186.73667	7.89443	0.0326554	0.21709469	2.7418051	20	9 14.1	20.3
439111 2011 SA ₈₉	16.1	X	216.39187	353.07641	353.67705	7.71434	0.0524728	0.17307055	3.1889957	20	3 29.3	20.9
439112 2011 SL ₈₉	16.6	X	331.84325	106.49325	244.43110	3.44706	0.0837225	0.21126212	2.7920400	20	9 1.9	19.9
439113 2011 SM ₉₆	17.5	X	335.17761	137.92458	226.70129	4.00041	0.1241941	0.22047953	2.7136710	20	9 28.9	20.3
439114 2011 SN ₉₆	17.3	X	68.3									

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
439121 2011 <i>SD</i> ₁₄₈	16.7	X	333.86937	58.50125	189.76119	8.00469	0.0404910	0.18313449	3.0710670	20	4 23.5	20.7
439122 2011 <i>SH</i> ₁₅₂	16.5	X	183.15575	0.42001	21.37362	5.33263	0.1609149	0.17482823	3.1675855	20	4 7.0	21.7
439123 2011 <i>SS</i> ₁₅₆	17.0	X	330.11342	330.63467	16.33218	4.74776	0.0749198	0.21228141	2.7830953	20	8 28.9	20.4
439124 2011 <i>SB</i> ₁₅₇	16.8	X	25.94727	115.31114	181.83799	4.96052	0.1350005	0.21767180	2.7369567	20	9 24.8	20.1
439125 2011 <i>SA</i> ₁₅₉	16.4	X	27.91944	357.28519	342.19384	8.24539	0.0844445	0.22936665	2.6431138	20	11 15.2	20.0
439126 2011 <i>SU</i> ₁₉₂	16.7	X	226.54411	165.81424	204.59103	3.83710	0.0947235	0.18719521	3.0264922	20	5 6.4	21.3
439127 2011 <i>SO</i> ₁₉₆	16.6	X	302.91080	79.82947	181.66551	11.86667	0.0292265	0.17974615	3.1095412	20	3 31.5	21.0
439128 2011 <i>SK</i> ₂₂₂	15.9	X	242.32918	110.86650	228.49922	14.79747	0.1085689	0.17816553	3.1279053	20	4 11.6	20.7
439129 2011 <i>SG</i> ₂₂₅	16.0	X	232.81530	114.49548	216.61485	13.82837	0.0335254	0.17464300	3.1698248	20	3 29.0	20.7
439130 2011 <i>ST</i> ₂₃₄	17.1	X	22.16232	254.46833	28.74471	4.31173	0.1791649	0.21288521	2.7778304	20	9 6.7	20.2
439131 2011 <i>SE</i> ₂₄₆	17.2	X	349.56901	118.13589	274.23411	10.46263	0.3057204	0.22920840	2.6443302	20	—	—
439132 2011 <i>ST</i> ₂₅₁	16.6	X	265.25018	132.40072	190.64925	9.64654	0.1034709	0.18649442	3.0340692	20	4 20.3	21.1
439133 2011 <i>SY</i> ₂₆₂	17.1	X	228.27717	350.04598	101.52140	2.05276	0.0301273	0.21453734	2.7635508	20	8 30.1	20.7
439134 2011 <i>TV</i> ₈	15.6	X	294.67074	315.29817	332.59803	12.05128	0.1230805	0.18668046	3.0320531	20	4 2.9	19.9
439135 2011 <i>TZ</i> ₈	16.1	X	206.94612	287.83221	87.29347	12.85693	0.1355976	0.17708251	3.1406456	20	4 25.6	21.3
439136 2011 <i>TA</i> ₁₂	15.4	X	194.52666	164.72843	206.50110	11.55628	0.0647920	0.17281712	3.1921127	20	4 4.3	20.2
439137 2011 <i>TP</i> ₁₂	17.2	X	262.99684	218.78477	139.04427	4.42255	0.1509177	0.19285960	2.9669385	20	5 25.1	21.5
439138 2011 <i>TA</i> ₁₅	17.2	X	27.99527	224.15014	131.96193	5.19103	0.2846625	0.23337056	2.6127950	20	—	—
439139 2011 <i>UK</i> ₂	17.0	X	335.39731	141.02876	229.57942	8.75872	0.2183726	0.21625674	2.7488831	20	10 7.4	19.6
439140 2011 <i>UP</i> ₃	16.2	X	221.55455	335.71408	26.92122	10.99974	0.2163264	0.17960080	3.1112187	20	4 14.9	21.4
439141 2011 <i>UR</i> ₂₇	16.4	X	219.67352	282.97514	97.52508	3.10687	0.1892857	0.18000227	3.1065908	20	5 6.5	21.5
439142 2011 <i>UV</i> ₂₈	15.9	X	218.51808	141.45833	237.02227	14.14722	0.1597256	0.17830270	3.1263008	20	5 2.9	20.9
439143 2011 <i>UX</i> ₄₇	16.4	X	231.45534	139.87807	230.93296	4.55142	0.2136084	0.18210126	3.0826727	20	5 2.3	21.4
439144 2011 <i>UM</i> ₇₈	16.6	X	327.39984	83.92584	236.60758	11.16386	0.0531833	0.19496145	2.9455759	20	7 14.1	20.6
439145 2011 <i>UK</i> ₁₀₁	16.5	X	192.78678	300.21083	149.38453	2.47695	0.1685665	0.18491940	3.0512730	20	7 5.3	21.5
439146 2011 <i>UA</i> ₁₀₈	17.1	X	38.78397	72.64025	306.02222	4.40899	0.2975340	0.23689019	2.5868505	20	—	—
439147 2011 <i>UH</i> ₁₁₀	16.3	X	259.28363	285.27786	62.42260	8.50537	0.2892148	0.18583546	3.0412374	20	4 24.6	21.2
439148 2011 <i>UZ</i> ₁₂₃	17.0	X	34.24305	243.82380	89.78794	12.07275	0.2555716	0.23155787	2.6264130	20	12 14.9	20.6
439149 2011 <i>UN</i> ₁₄₇	17.1	X	87.13944	310.57437	359.42254	11.55129	0.2626465	0.24110349	2.5566251	20	—	—
439150 2011 <i>UG</i> ₁₆₃	16.2	X	271.33345	84.12032	248.61089	9.57993	0.1387252	0.18024745	3.1037731	20	5 2.7	20.7
439151 2011 <i>UP</i> ₁₈₆	17.2	X	316.71902	231.43047	130.42383	5.72755	0.1401370	0.20596299	2.8397270	20	8 20.2	20.2
439152 2011 <i>US</i> ₂₁₁	16.5	X	108.16807	246.63846	358.19268	9.29443	0.1131790	0.21993113	2.7181802	20	10 23.4	20.7
439153 2011 <i>UM</i> ₂₂₅	16.8	X	345.92263	213.35981	99.86686	3.11494	0.0599504	0.20271638	2.8699665	20	8 5.2	20.4
439154 2011 <i>UK</i> ₂₃₅	15.9	X	303.80772	352.28098	273.47152	4.48389	0.1343294	0.17061860	3.2194756	20	3 20.8	20.4
439155 2011 <i>UO</i> ₂₄₈	16.7	X	271.20157	284.25845	53.33769	3.22689	0.2165384	0.18380482	3.0635957	20	4 29.9	21.4
439156 2011 <i>UU</i> ₂₅₁	17.1	X	341.99882	287.32134	93.78754	4.30573	0.2247598	0.21673685	2.7448221	20	11 12.9	19.5
439157 2011 <i>UR</i> ₂₅₄	16.3	X	309.44332	46.40653	228.64122	8.79843	0.0609323	0.17818930	3.1276271	20	4 20.2	20.7
439158 2011 <i>UX</i> ₂₆₃	15.5	X	262.96180	251.73071	78.14531	16.13005	0.0971178	0.17898788	3.1183173	20	5 1.9	20.2
439159 2011 <i>UF</i> ₂₆₇	16.0	X	215.19961	128.63659	232.25475	9.46911	0.0927209	0.17432568	3.1736703	20	4 11.3	20.9
439160 2011 <i>UV</i> ₂₈₅	16.8	X	338.72844	225.19359	102.03803	3.20929	0.0750341	0.20487597	2.8497628	20	8 13.4	20.2
439161 2011 <i>US</i> ₂₈₈	15.7	X	203.60207	316.10594	57.09356	16.15655	0.1829235	0.17513282	3.1639117	20	4 18.8	21.1
439162 2011 <i>UD</i> ₂₉₈	16.4	X	174.99895	253.67072	209.56279	9.61150	0.0563887	0.18748955	3.0233238	20	7 5.4	21.0
439163 2011 <i>UB</i> ₃₁₈	16.7	X	347.49016	133.19227	231.42001	15.39534	0.2714539	0.21651764	2.7466745	20	11 4.3	19.0
439164 2011 <i>UG</i> ₃₃₆	16.6	X	299.27234	343.79571	86.61849	11.28741	0.1593853	0.22134865	2.7065630	20	10 30.3	19.6
439165 2011 <i>UC</i> ₃₄₃	15.9	X	246.72527	134.78138	231.38433	8.33705	0.1715473	0.18285396	3.0742072	20	5 14.7	20.6
439166 2011 <i>UH</i> ₃₈₆	17.3	X	335.58084	132.85597	256.86572	6.70149	0.3263554	0.21763220	2.7372887	20	11 17.4	18.8
439167 2011 <i>UH</i> ₃₈₈	16.1	X	240.65720	284.83006	77.51152	10.29135	0.1646227	0.18134183	3.0912732	20	5 8.7	21.0
439168 2011 <i>UE</i> ₃₉₂	16.6	X	238.61905	252.46178	101.27284	6.00094	0.1603742	0.17888582	3.1195032	20	4 25.2	21.5
439169 2011 <i>UQ</i> ₄₀₄	16.6	X	49.05949	6.87332	287.04809	11.74240	0.2967424	0.22356311	2.6886604	20	11 13.2	20.7
439170 2011 <i>VP</i> ₂	16.1	X	264.03042	143.41767	200.88532	13.11426	0.0921915	0.18122070	3.0926505	20	5 17.5	20.6
439171 2011 <i>VZ</i> ₂	16.4	X	77.49279	337.14819	343.86184	13.00579	0.2565026	0.23849719	2.5752173	20	—	—
439172 2011 <i>WY</i> ₉	16.2	X	278.81412	57.88004	221.35860	10.95799	0.0578654	0.16762069	3.2577491	20	3 16.6	21.0
439173 2011 <i>VW</i> ₁₇	16.6	X	159.98226	40.97627	54.58704	1.54725	0.1272417	0.17638383	3.1489338	20	6 12.3	21.5
439174 2011 <i>WA</i> ₁₅	15.1	X	251.86530	80.52674	287.89024	8.20150	0.0077103	0.18111428	3.0938619	20	6 12.5	19.4
439175 2011 <i>WS</i> ₃₃	16.8	X	283.80077	240.68333	100.80330	2.74386	0.1679343	0.18885623	3.0087204	20	5 26.5	20.9
439176 2011 <i>WD</i> ₃₈	16.2	X	289.37156	96.27761	250.64379	9.57080	0.0789566	0.18744781	3.0237727	20	6 22.9	20.2
439177 2011 <i>WY</i> ₄₉	15.9	X	198.74341	207.47372	237.33870	15.43182	0.0789921	0.18326696	3.0695869	20	7 6.2	20.8
439178 2011 <i>WR</i> ₅₅	16.7	X	357.79000	166.80768	218.75530	12.47691	0.0698468	0.22450892	2.6811039	20	12 2.9	20.1
439179 2011 <i>WU</i> ₆₂	15.4	X	68.69943	269.89210	253.84279	16.92349	0.0878388	0.17034765	3.2228886	20	5 20.9	19.9
439180 2011 <i>WA</i> ₆₃	16.1	X	248.40281	251.11846	96.19414	17.35966	0.2371777	0.18043302	3.1016446	20	4 25.5	21.4
439181 2011 <i>WB</i> ₉₀	16.0	X	144.24890	230.14533	249.27522	15.18407	0.0324621	0.17645747	3.1480577	20	6 19.6	20.7
439182 2011 <i>WF</i> ₉₀	15.4	X	357.69919	14.43675	251.35504	16.80873	0.1660615	0.17842096	3.1249192	20	6 17.5	18.9
439183 2011 <i>WU</i> ₉₃	16.7	X	321.67434	227.03184	96.50043	3.76010	0.1924864	0.19332311	2.9621943	20	6 27.0	20.0
439184 2011 <i>WM</i> ₁₁₃	16.4	X	328.47726	281.52783	11.31565	10.61633	0.1157122	0.18605732	3.0388193	20	6 2.8	20.3
439185 2011 <i>WY</i> ₁₁₃	16.0	X	223.05361	294.41606	75.11293	15.46340	0.2435256	0.18058794	3.0998705	20	4 27.9	21.5
439186 2011 <i>WZ</i> ₁₂₂	16.2	X	278.73347	252.97049	68.56810	12.41107	0.0412303	0.17393168	3.1784612	20	5 14.5	20.6
439187 2011 <i>WG</i> ₁₃₆	16.2	X	233.93691	205.51812	206.80993	10.80599	0.1532427	0.18570793	3.0426296	20	6 28.6	21.1
439188 2011 <i>WK</i> ₁₄₄	16.0	X	292.31045	262.28341	73.72984	13.05346	0.2504389	0.19052386	2.9911381	20	5 19.2	20.1
439189 2011 <i>YX</i> ₂	15.6	X	275.64526	65.76903	301.12182	15.88271	0.1735749	0.18201307	3.0836684	20	6 17.7	20.1
439190 2011 <i>YR</i> ₁₇	16.4	X	240.06603	272.62810	140.27995	4.86397	0.2048970	0.18155175	3.0888899	20	7 1.2	21.2
439191 2011 <i>YK</i> ₂₉	15.4	X	239.60895	82.9762								

ELEMENTS AND OPPOSITION DATES IN 2020

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
439201 2012 <i>BL</i> ₁₃₄	18.1	X	302.33269	163.70278	146.15473	23.57689	0.0454755	0.39163550	1.8501830	20	6 3.8	20.4
439202 2012 <i>DC</i> ₅₄	18.0	X	175.85077	267.44631	155.19805	22.57439	0.1099433	0.38759711	1.8630122	20	5 21.5	20.9
439203 2012 <i>MO</i> ₁₁	17.1	X	112.96467	64.66676	221.09010	21.31210	0.2306190	0.28066506	2.3103467	20	12 29.6	21.4
439204 2012 <i>RR</i> ₁₃	17.7	X	23.46700	308.85836	44.71067	2.15238	0.1997367	0.26201628	2.4187103	20	12 26.6	20.8
439205 2012 <i>RD</i> ₁₈	17.7	X	208.28602	258.48430	350.14284	5.62694	0.0459266	0.28974292	2.2618345	20	—	—
439206 2012 <i>RE</i> ₂₃	17.3	X	281.93892	317.23172	66.65741	4.44112	0.0815599	0.22951439	2.6419794	20	8 5.9	20.6
439207 2012 <i>RK</i> ₂₃	17.0	X	273.80265	336.92278	45.89605	7.02520	0.1518071	0.22597798	2.6694716	20	7 11.4	20.5
439208 2012 <i>RQ</i> ₂₅	17.4	X	72.59966	327.24457	332.73318	7.33634	0.0899041	0.26804908	2.3822820	20	12 1.1	20.8
439209 2012 <i>SS</i> ₅	16.8	X	163.82877	233.86333	215.34445	4.17253	0.1303915	0.20975414	2.8054058	20	6 8.9	21.3
439210 2012 <i>SQ</i> ₁₂	18.6	X	84.60962	225.51492	92.61199	0.88501	0.1787572	0.27384927	2.3485239	20	—	—
439211 2012 <i>SQ</i> ₁₄	17.7	X	204.78502	13.45988	240.40408	7.28536	0.0940895	0.28935656	2.2638475	20	—	—
439212 2012 <i>SU</i> ₁₄	18.1	X	36.02993	112.71987	249.47615	4.36868	0.2413131	0.26692636	2.3889574	20	—	—
439213 2012 <i>ST</i> ₁₇	17.3	X	148.76955	63.44303	228.91611	7.07135	0.1296007	0.28372192	2.2937220	20	—	—
439214 2012 <i>SK</i> ₂₇	17.7	X	359.25323	18.22998	355.43386	3.92717	0.2500495	0.25850890	2.4405388	20	12 25.7	20.2
439215 2012 <i>SE</i> ₆₃	17.5	X	123.60095	60.44250	237.95780	3.81557	0.1502375	0.28241669	2.3007838	20	—	—
439216 2012 <i>TW</i> ₁₃	17.2	X	48.73561	116.25035	215.59502	12.30046	0.1344285	0.26130863	2.4230751	20	12 19.1	20.7
439217 2012 <i>TE</i> ₁₇	18.5	X	68.03723	133.97492	194.40597	5.60534	0.1319937	0.26886989	2.3774311	20	—	—
439218 2012 <i>TK</i> ₁₇	18.1	X	160.04659	69.09580	203.00547	1.30461	0.1663397	0.28481213	2.2878650	20	—	—
439219 2012 <i>TY</i> ₃₄	18.0	X	74.86938	122.22721	214.88287	4.88581	0.2084389	0.27468288	2.3437700	20	—	—
439220 2012 <i>TZ</i> ₃₄	17.7	X	60.00207	118.97466	285.09983	4.09945	0.1395614	0.28611984	2.2808886	20	—	—
439221 2012 <i>TK</i> ₃₆	16.8	X	209.39498	226.80128	211.24086	12.09373	0.1829105	0.22013260	2.7165215	20	7 4.8	21.4
439222 2012 <i>TZ</i> ₄₀	17.9	X	62.97114	152.62554	248.08786	4.72272	0.1557903	0.28706748	2.2758662	20	—	—
439223 2012 <i>TG</i> ₄₁	17.1	X	152.30395	228.03679	266.27685	5.41514	0.0655940	0.22361519	2.6882429	20	7 22.0	21.0
439224 2012 <i>TA</i> ₅₆	18.1	X	59.80194	120.87203	228.36174	5.49616	0.2087494	0.27258652	2.3557713	20	—	—
439225 2012 <i>TK</i> ₆₄	16.8	X	285.90922	27.85839	349.65946	5.18357	0.2153208	0.23038424	2.6353252	20	7 11.5	20.0
439226 2012 <i>TF</i> ₆₆	17.0	X	312.40282	157.58794	224.28468	7.00958	0.1204377	0.23814974	2.5777214	20	9 13.9	19.9
439227 2012 <i>TN</i> ₇₀	17.8	X	74.81404	252.49749	127.46548	4.00627	0.1416640	0.28230806	2.3013740	20	—	—
439228 2012 <i>TQ</i> ₉₅	17.2	X	209.49293	238.58991	212.49953	21.48456	0.0465178	0.22535883	2.6743588	20	7 28.1	21.5
439229 2012 <i>TD</i> ₉₇	17.1	X	202.84856	263.60829	211.86497	14.70053	0.0753153	0.23078941	2.6322399	20	8 20.8	21.2
439230 2012 <i>TN</i> ₁₀₀	17.3	X	43.04761	134.87466	208.52592	6.78104	0.1529236	0.26174148	2.4204030	20	12 26.3	20.7
439231 2012 <i>TS</i> ₁₁₄	17.0	X	78.04676	293.46706	219.11672	15.25958	0.1365471	0.20002992	2.8956056	20	5 26.9	21.0
439232 2012 <i>TD</i> ₁₂₂	17.2	X	172.15517	307.91139	283.46949	6.11429	0.0694769	0.26662987	2.3907281	20	12 25.2	20.5
439233 2012 <i>TK</i> ₁₂₉	18.1	X	178.02457	88.75687	199.30678	5.57274	0.2119601	0.29865617	2.2166054	20	—	—
439234 2012 <i>TG</i> ₁₃₂	16.7	X	271.09500	319.63944	56.94517	6.92413	0.0548536	0.21569760	2.7536317	20	7 13.8	20.4
439235 2012 <i>TV</i> ₁₃₃	17.8	X	40.44529	305.08997	101.91990	4.78885	0.0553925	0.28364719	2.2941249	20	—	—
439236 2012 <i>TV</i> ₁₃₄	18.6	X	77.62549	133.63435	195.34875	1.01757	0.2072522	0.27292635	2.3538154	20	—	—
439237 2012 <i>TC</i> ₁₃₅	17.5	X	157.72060	216.25088	71.71163	7.03645	0.1097389	0.28875765	2.2669767	20	—	—
439238 2012 <i>TW</i> ₁₄₄	18.1	X	92.08051	216.53539	91.41284	2.26158	0.1827630	0.27360065	2.3499464	20	—	—
439239 2012 <i>TX</i> ₁₆₆	18.1	X	187.62105	159.09516	162.35537	4.17176	0.2102441	0.30931241	2.1653984	20	1 19.2	21.5
439240 2012 <i>TV</i> ₁₆₉	16.9	X	245.70930	276.48334	143.05888	7.34035	0.1193463	0.22494074	2.6776715	20	7 27.8	20.7
439241 2012 <i>TH</i> ₁₇₃	17.3	X	159.75513	152.77182	311.95433	2.85382	0.0580083	0.21431624	2.7654511	20	6 22.2	21.2
439242 2012 <i>TP</i> ₁₉₁	17.5	X	57.76318	332.28599	355.70471	2.12644	0.2179454	0.26388756	2.4072624	20	—	—
439243 2012 <i>TS</i> ₁₉₁	16.6	X	241.17433	107.59222	279.15869	7.01318	0.0140721	0.21767816	2.7369034	20	6 22.7	20.2
439244 2012 <i>TO</i> ₁₉₅	17.1	X	330.29638	54.84395	307.69028	5.26346	0.2185284	0.24293583	2.5437534	20	9 19.1	19.0
439245 2012 <i>TF</i> ₂₀₁	18.2	X	100.91073	194.45405	96.77713	2.20094	0.1742654	0.27151230	2.3619809	20	12 26.9	22.0
439246 2012 <i>TY</i> ₂₄₂	16.9	X	118.84140	78.95578	42.99522	8.08477	0.0823824	0.20314724	2.8659071	20	5 28.6	21.1
439247 2012 <i>TD</i> ₂₅₂	16.8	X	210.98919	237.93515	220.48955	21.30226	0.0563430	0.22811392	2.6527818	20	8 6.8	21.1
439248 2012 <i>TA</i> ₂₅₈	18.5	X	191.40674	253.87355	60.63735	5.09091	0.2193202	0.30995183	2.1624193	20	1 15.6	21.9
439249 2012 <i>TZ</i> ₂₆₄	17.3	X	37.96130	247.64249	35.17156	14.87392	0.1075427	0.23964470	2.5669899	20	9 29.1	20.6
439250 2012 <i>TS</i> ₂₆₅	17.2	X	13.98349	204.32669	62.97874	6.14237	0.0217080	0.22165376	2.7040786	20	7 15.3	20.7
439251 2012 <i>TR</i> ₂₇₄	17.1	X	266.15569	119.15186	264.44985	3.80365	0.0765678	0.22400372	2.6851336	20	7 12.3	20.6
439252 2012 <i>TE</i> ₂₇₆	17.1	X	242.22625	99.61175	296.09298	3.85703	0.0884839	0.21938764	2.7226675	20	6 26.2	21.0
439253 2012 <i>TD</i> ₂₈₂	17.0	X	261.89600	202.63071	203.70484	4.55942	0.1437095	0.22637032	2.6663863	20	7 26.3	20.7
439254 2012 <i>TN</i> ₂₈₄	17.9	X	122.70131	214.39188	93.10175	4.79723	0.2491543	0.28270133	2.2992391	20	—	—
439255 2012 <i>TD</i> ₂₈₆	17.6	X	343.80883	278.58977	73.47623	4.54218	0.1670218	0.24129639	2.5552624	20	10 8.5	19.9
439256 2012 <i>TG</i> ₂₉₁	17.5	X	45.09127	249.44229	131.25639	4.61831	0.1095056	0.27180962	2.3602581	20	—	—
439257 2012 <i>TL</i> ₂₉₇	16.1	X	83.28161	28.27517	198.81520	28.61162	0.1098510	0.22930873	2.6435589	20	9 2.8	20.3
439258 2012 <i>TV</i> ₃₀₈	17.1	X	323.81297	72.01703	292.14718	2.83997	0.1083116	0.23849535	2.5752305	20	9 11.3	19.8
439259 2012 <i>TX</i> ₃₀₈	17.9	X	173.79817	221.70556	104.54737	2.56877	0.1732955	0.30828419	2.17202106	20	1 10.8	21.1
439260 2012 <i>TC</i> ₃₀₉	16.0	X	209.65244	211.34297	235.61949	11.77698	0.1009647	0.22068291	2.7120035	20	7 20.8	20.2
439261 2012 <i>TR</i> ₃₁₀	17.3	X	3.04049	249.29905	136.86621	5.38963	0.2024466	0.26129417	2.4231645	20	—	—
439262 2012 <i>TW</i> ₃₁₀	16.6	X	313.33620	345.02508	27.45819	8.33361	0.1969776	0.23548884	2.5971029	20	8 31.8	19.1
439263 2012 <i>TT</i> ₃₁₃	16.5	X	256.18811	293.48837	137.24131	12.56021	0.0931237	0.23440833	2.6050777	20	9 1.9	19.9
439264 2012 <i>TA</i> ₃₁₄	17.9	X	32.37799	279.72786	88.91325	2.45951	0.1974634	0.26316118	2.4116901	20	—	—
439265 2012 <i>UU</i> ₃	18.3	X	171.32465	239.38144	86.05994	1.96532	0.2135559	0.30624964	2.1798117	20	1 11.1	21.6
439266 2012 <i>UB</i> ₅	18.2	X	174.60400	244.93077	71.87459	5.57171	0.1395730	0.30288082	2.1959454	20	—	—
439267 2012 <i>UX</i> ₇	17.3	X	21.35220	212.28099	69.24132	4.33452	0.0599173	0.23092410	2.6312162	20	8 20.9	20.5
439268 2012 <i>UE</i> ₈	18.5	X	187.66604	257.16915	48.16226	3.77831	0.2203642	0.30585327	2.1816946	20	1 1.1	22.0
439269 2012 <i>UF</i> ₁₀	17.6	X	83.87353	214.09351	68.24143	2.13618	0.1888928	0.26050669	2.4280454	20	11 29.8	21.2
439270 2012 <i>UG</i> ₁₉	16.7	X	94.55435	136.65927	29.08168	17.51248	0.0535646	0.21307102	2.7762152	20	6 20.6	20.9
439271 2012 <i>UR</i> ₂₈	18.2	X	201.35129	267.30580	25.23197	5.11743	0.1464890	0.30472582	2.1870727	20	—	—
439272 2012 <i>UW</i> ₃₀	18.2	X	29.82880	195.22856	219.76154	2.675						

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
439281 2012 UR ₆₈	17.6	X	117.85749	176.63938	141.32671	3.41007	0.2708899	0.28137553	2.3064560	20	—	—
439282 2012 UG ₇₀	18.1	X	147.73632	54.94250	231.57774	3.45836	0.1567004	0.28117758	2.3075383	20	—	—
439283 2012 UQ ₇₇	15.6	X	29.31604	283.10080	243.56389	24.42938	0.2245709	0.17106830	3.2138309	20	4 1.8	19.4
439284 2012 UJ ₈₅	17.5	X	60.45718	84.78461	218.98893	5.76810	0.1104060	0.25812185	2.4429779	20	11 24.0	20.8
439285 2012 UN ₉₀	16.9	X	238.95187	249.42795	230.36363	7.47831	0.1376957	0.23650511	2.5896577	20	10 4.5	20.6
439286 2012 UJ ₁₀₀	17.3	X	104.37728	220.57406	80.76379	3.62331	0.1876381	0.26878721	2.3779186	20	—	—
439287 2012 UP ₁₁₂	16.3	X	286.33559	0.93417	21.29583	15.09332	0.1067452	0.22902543	2.6457384	20	8 12.3	19.9
439288 2012 US ₁₃₂	16.6	X	288.73381	197.73192	193.08969	8.78052	0.2013075	0.23035293	2.6355639	20	8 2.7	19.8
439289 2012 UF ₁₃₉	16.5	X	82.17443	321.53416	265.41353	10.48305	0.1317329	0.23441667	2.6050160	20	9 3.2	20.4
439290 2012 UB ₁₄₀	16.5	X	87.36296	200.84884	260.45528	9.96811	0.1350159	0.18297264	3.0728778	20	3 29.5	21.0
439291 2012 UJ ₁₄₅	17.3	X	47.55209	355.85162	66.78807	7.59844	0.0648349	0.28556361	2.2838494	20	—	—
439292 2012 UK ₁₅₁	17.3	X	278.62175	300.40281	67.64565	6.94582	0.0500632	0.21654983	2.7464022	20	7 13.2	20.9
439293 2012 UQ ₁₆₀	18.1	X	55.32095	104.98470	235.31444	3.83957	0.2414892	0.26741865	2.3860246	20	—	—
439294 2012 UF ₁₆₄	17.3	X	323.95597	340.66989	345.20661	1.42143	0.1050128	0.22039134	2.7143949	20	7 16.8	20.4
439295 2012 UC ₁₆₈	16.7	X	186.01025	18.32425	77.20690	15.84483	0.1360502	0.21455596	2.7633909	20	7 9.5	21.2
439296 2012 UZ ₁₆₈	17.5	X	76.82934	258.66659	114.76830	8.00880	0.1291664	0.28242225	2.3007536	20	—	—
439297 2012 VG ₁₂	17.3	X	104.84966	57.51244	205.96557	14.36946	0.1599829	0.25489645	2.4635433	20	11 24.2	21.3
439298 2012 VL ₁₇	15.5	X	355.09150	102.36203	244.76402	28.32898	0.1464079	0.23731611	2.5837545	20	10 11.9	18.8
439299 2012 VH ₁₈	17.0	X	5.24378	222.41087	109.00359	4.67022	0.1595972	0.23886553	2.5725692	20	10 18.8	19.7
439300 2012 VD ₂₁	17.2	X	225.08916	214.27076	197.57502	2.17446	0.0744907	0.21388601	2.7691584	20	6 28.1	21.3
439301 2012 VV ₂₆	17.3	X	325.73049	37.15487	28.45850	5.54911	0.0918089	0.25723340	2.4485998	20	12 18.1	19.9
439302 2012 VZ ₃₀	16.5	X	52.03721	225.55049	66.08514	6.55685	0.1456065	0.24069662	2.5595055	20	10 31.7	19.9
439303 2012 VJ ₃₄	16.7	X	300.17805	257.25908	136.57645	4.94280	0.1625602	0.23384362	2.6092701	20	9 7.5	19.5
439304 2012 VV ₃₅	15.8	X	343.85663	196.06663	78.22057	10.19395	0.1105529	0.20865305	2.8152668	20	6 6.4	19.0
439305 2012 VD ₄₂	16.1	X	218.96072	317.28888	67.35534	11.10137	0.0339974	0.19539163	2.9412509	20	5 20.7	20.4
439306 2012 VA ₄₇	17.2	X	75.36079	89.24705	183.04041	4.50502	0.1057455	0.24672730	2.5176262	20	10 29.7	20.6
439307 2012 VG ₅₈	17.1	X	261.43226	308.56938	63.81354	7.22804	0.0401174	0.21229633	2.7829649	20	6 26.1	20.9
439308 2012 VS ₅₈	17.7	X	257.01557	39.74732	78.08426	2.43771	0.1156407	0.24404483	2.5360412	20	11 3.0	20.8
439309 2012 VC ₆₄	18.0	X	137.88061	193.42518	129.53367	6.84408	0.2300591	0.28406754	2.2918612	20	—	—
439310 2012 VJ ₆₅	16.9	X	217.12229	25.34107	27.69968	6.38006	0.0551049	0.21476045	2.7616365	20	6 22.0	20.9
439311 2012 VB ₇₅	17.3	X	271.04735	224.07385	152.05270	2.95103	0.0979417	0.21421419	2.7663294	20	7 5.1	21.0
439312 2012 VH ₈₀	16.1	X	24.62667	357.73978	227.09592	12.50949	0.0732969	0.19548685	2.9402958	20	6 4.9	19.8
439313 2012 VE ₈₂	19.5	X	218.00912	186.44283	110.41916	9.92995	0.5441643	0.32161342	2.1098258	20	1 15.9	24.0
439314 2012 VG ₈₅	17.3	X	110.94590	213.90410	75.25695	3.27410	0.1155662	0.25997503	2.4313546	20	12 29.8	20.8
439315 2012 VL ₈₇	17.8	X	108.52917	21.30773	285.21340	2.61669	0.1339996	0.26600074	2.3944962	20	—	—
439316 2012 VB ₉₁	16.8	X	275.72525	161.33137	229.40606	9.29521	0.1432448	0.22188938	2.7021640	20	7 22.2	20.5
439317 2012 VE ₉₂	16.4	X	304.21338	247.78539	80.13735	9.17528	0.0556021	0.20933800	2.8091224	20	6 22.9	19.9
439318 2012 VS ₉₃	16.1	X	109.15638	11.79729	85.59012	11.13447	0.1065558	0.17998153	3.1068296	20	4 25.4	20.7
439319 2012 VG ₁₀₁	17.1	X	244.17806	196.11106	207.83880	4.76790	0.0532025	0.21731345	2.7399648	20	7 13.3	20.9
439320 2012 VM ₁₀₂	17.0	X	328.56424	289.89960	36.60197	4.94481	0.1054270	0.22281719	2.6946576	20	7 27.6	20.1
439321 2012 VA ₁₀₇	17.2	X	338.32677	29.01502	315.50219	1.25547	0.1198852	0.23318527	2.6141789	20	9 9.2	19.7
439322 2012 VL ₁₀₇	17.3	X	85.73234	127.53214	210.23708	11.91806	0.2422884	0.27077157	2.3662866	20	—	—
439323 2012 VV ₁₀₇	16.0	X	134.21865	180.48537	243.95313	8.03331	0.1069246	0.18042641	3.1017204	20	4 5.5	20.8
439324 2012 VO ₁₀₉	17.4	X	50.28423	188.70431	136.08052	3.90228	0.2383529	0.25233812	2.4801663	20	12 23.1	21.1
439325 2012 WY ₂	18.0	X	94.06369	82.81856	247.51065	7.19481	0.2492505	0.27509911	2.3414053	20	—	—
439326 2012 WS ₆	17.8	X	87.36391	89.26791	237.55668	5.09104	0.0937390	0.26488140	2.4012372	20	—	—
439327 2012 WE ₉	16.6	X	4.38829	268.87577	72.25720	7.75420	0.1700390	0.24057577	2.5603625	20	11 1.9	19.3
439328 2012 WA ₁₆	17.4	X	87.17558	107.15068	201.95149	4.45622	0.1066991	0.25580347	2.4577163	20	12 28.6	21.0
439329 2012 WQ ₁₆	16.6	X	358.51760	66.96659	252.97698	6.87053	0.1301519	0.22406973	2.6846062	20	9 6.2	19.7
439330 2012 WR ₁₆	16.6	X	184.68566	40.19112	98.33706	10.10267	0.1083124	0.21626659	2.7487997	20	9 5.1	20.9
439331 2012 WU ₁₆	15.4	X	120.48342	175.88948	254.53977	21.98620	0.1071598	0.17423540	3.1747665	20	3 23.3	20.5
439332 2012 WE ₂₂	17.0	X	285.24263	316.41724	48.61333	6.21179	0.1479347	0.21803001	2.7339582	20	7 2.8	20.5
439333 2012 WH ₂₅	16.5	X	153.99290	198.01559	239.13475	9.83326	0.1046424	0.19334017	2.9620199	20	5 13.4	21.0
439334 2012 WS ₂₇	17.6	X	88.32361	271.51275	95.28576	3.68562	0.2293545	0.27955268	2.1364714	20	—	—
439335 2012 WM ₃₅	16.4	X	229.06913	140.07351	237.62454	9.97355	0.1566932	0.19900877	2.9055024	20	5 12.3	20.9
439336 2012 WP ₃₅	16.0	X	200.08690	104.38116	277.83796	9.54876	0.0749913	0.18747938	3.0234332	20	4 19.8	20.8
439337 2012 XM	17.5	X	73.82028	77.13067	282.79311	4.97406	0.1302491	0.27275014	2.3548291	20	—	—
439338 2012 XU ₇	15.8	X	11.16551	321.48669	240.50333	23.43226	0.2247977	0.17875061	3.1210762	20	4 12.9	19.2
439339 2012 XB ₉	15.7	X	54.06971	273.57654	253.66381	10.68642	0.0538583	0.18535690	3.0464698	20	4 28.7	19.9
439340 2012 XE ₉	17.0	X	312.95010	316.66897	61.51921	9.55116	0.1968627	0.23327558	2.6135042	20	9 10.4	19.6
439341 2012 XM ₁₂	16.8	X	36.36680	29.94875	130.35920	7.39200	0.1035483	0.17425370	3.1745441	20	4 5.1	20.8
439342 2012 XY ₁₂	17.6	X	86.17847	5.22185	0.81139	4.90988	0.2389749	0.27953648	2.3165609	20	—	—
439343 2012 XD ₁₉	17.9	X	73.38365	328.82760	27.81936	1.19858	0.1661356	0.27028400	2.3691315	20	—	—
439344 2012 XE ₂₀	16.0	X	20.99572	24.37451	242.57853	8.47891	0.1186126	0.21410287	2.7672882	20	7 30.1	19.3
439345 2012 XD ₂₂	16.3	X	173.42857	270.01111	256.62239	11.28520	0.1111178	0.22648453	2.6654898	20	9 20.1	20.6
439346 2012 XS ₂₈	16.1	X	336.12133	357.50564	260.31948	10.52154	0.1010250	0.19208774	2.9748811	20	4 29.9	20.0
439347 2012 XR ₃₂	17.5	X	69.62886	256.86642	75.19804	5.58571	0.2480656	0.26374075	2.4081557	20	—	—
439348 2012 XS ₄₁	16.4	X	56.69290	325.84490	256.33066	3.72235	0.0139925	0.20564438	2.8426594	20	7 10.4	20.1
439349 2012 XR ₅₇	16.5	X	271.91553	144.75693	240.06879	10.42598	0.0716966	0.21855213	2.7296022	20	7 19.8	20.4
439350 2012 XB ₆₁	17.2	X	249.51799	234.17881	159.19414	6.19484	0.0716523	0.21042182	2.7994682	20	7 3.6	21.2
439351 2012 XN ₆₃	15.8	X	35.90736	72.13566	106.74627	13.03647	0.0650009	0.18257319	3.0773581	20	4 27.5	20.0
439352 2012 XU ₈₂	16.6	X	345.09504	231.74683	91.08778	13.10443	0.0379249	0.22108897	2.7086819	20	8 23.2	20.2
439353 2012 XJ ₈₄	17.0	X	9.56150	158.79413	187.72264	12.58591	0.2063182	0.24287242	2.5441961	20	11 24.4	20.0
439354 2012 XM ₉₅	16.8	X	16.78254	207.80994								

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
439361 2012 XO ₁₃₈	18.0	X	42.45777	257.89448	145.54625	3.12665	0.1839992	0.27198280	2.3592561	20	—	—
439362 2012 XW ₁₅₃	16.1	X	136.45885	303.71145	117.99445	11.74877	0.0999679	0.17672631	3.1448643	20	4 12.1	21.0
439363 2012 XY ₁₅₄	17.2	X	355.85360	314.25574	117.21295	15.92884	0.3117712	0.25570208	2.4583660	20	—	—
439364 2012 YP ₈	15.4	X	149.48572	317.90815	90.63715	23.74883	0.1159103	0.17496011	3.1659935	20	4 18.4	20.7
439365 2012 YB ₉	15.2	X	11.39320	212.55921	293.21420	8.78070	0.0320063	0.15026017	3.5040755	20	2 7.9	20.1
439366 2013 AR ₁	16.6	X	333.95554	318.24849	118.31671	11.97151	0.1755612	0.25680781	2.4513044	20	—	—
439367 2013 AW ₄	16.4	X	205.66884	260.57735	110.54004	11.89623	0.1677033	0.18074698	3.0980519	20	4 18.7	21.7
439368 2013 AU ₇	16.3	X	199.58621	275.33742	130.12842	11.85041	0.1611866	0.18353514	3.0665960	20	5 22.3	21.5
439369 2013 AP ₈	16.5	X	238.87819	81.93876	335.27946	5.17699	0.0316574	0.20327692	2.8646881	20	7 28.2	20.5
439370 2013 AA ₉	15.9	X	235.08236	275.93003	85.66611	12.56288	0.0975892	0.18403306	3.0610622	20	5 7.9	20.6
439371 2013 AV ₉	16.8	X	240.20689	290.95041	85.22740	3.20750	0.0776678	0.19784832	2.9168525	20	5 30.3	21.1
439372 2013 AL ₁₀	16.4	X	219.45515	273.56742	105.15357	13.05987	0.2011120	0.18697032	3.0289186	20	5 7.3	21.6
439373 2013 AS ₁₂	15.7	X	106.38845	235.59943	285.85355	14.61310	0.0445643	0.18833848	3.0142320	20	6 30.1	19.8
439374 2013 AO ₂₅	16.9	X	336.84620	145.66149	253.41261	3.31262	0.1166368	0.24380983	2.5376706	20	11 27.4	19.3
439375 2013 AS ₂₅	15.8	X	5.12461	106.09939	85.53695	20.49234	0.1241624	0.17065293	3.2190437	20	4 5.0	20.1
439376 2013 AZ ₆₃	15.8	X	49.41071	40.07169	133.84443	11.59271	0.1281730	0.16848086	3.2466514	20	5 16.6	20.2
439377 2013 AX ₆₉	16.1	X	22.71863	234.85708	354.48058	9.43963	0.0410387	0.18302881	3.0722490	20	6 3.9	20.4
439378 2013 AE ₇₄	16.9	X	331.04884	331.92086	78.24789	5.17400	0.1348193	0.23345083	2.6121961	20	11 30.8	19.5
439379 2013 AO ₇₈	16.9	X	242.46956	275.23831	162.59264	7.78942	0.1172095	0.21086761	2.7955212	20	8 15.8	20.9
439380 2013 AK ₈₃	17.0	X	37.14916	64.02487	338.84051	9.26542	0.0761143	0.25764677	2.4459800	20	—	—
439381 2013 AP ₉₁	16.9	X	341.90651	51.95150	317.82848	5.48809	0.0624129	0.22348169	2.6893135	20	10 15.1	20.3
439382 2013 AV ₉₁	16.4	X	218.85318	318.56385	131.65578	6.97471	0.1517839	0.20596919	2.8396700	20	8 1.9	20.7
439383 2013 AV ₉₃	16.6	X	204.40093	275.98410	128.42864	5.20218	0.1607215	0.18562699	3.0435140	20	5 23.3	21.5
439384 2013 AP ₉₆	16.5	X	304.52175	103.35504	307.47238	8.94119	0.0801752	0.22587633	2.6702724	20	10 10.2	19.9
439385 2013 AJ ₁₀₉	16.2	X	208.51854	125.39529	248.18254	7.07685	0.0823639	0.17409056	3.1765271	20	4 20.4	21.2
439386 2013 AB ₁₁₀	15.1	X	38.07719	278.27994	292.78289	20.74777	0.1439157	0.17512441	3.1640130	20	6 16.7	19.2
439387 2013 AO ₁₁₂	17.5	X	3.90384	155.82720	286.57717	5.58827	0.1208173	0.26544731	2.3978232	20	—	—
439388 2013 AE ₁₁₈	15.5	X	28.87595	119.29302	106.66616	16.44813	0.0253665	0.18012642	3.1051633	20	6 10.6	19.8
439389 2013 AM ₁₁₈	16.2	X	256.78022	255.03590	85.85053	9.44723	0.0889588	0.17657940	3.1466084	20	5 6.6	20.8
439390 2013 AF ₁₂₄	17.6	X	83.67861	42.98602	340.47952	5.11899	0.1199584	0.26526844	2.3989010	20	—	—
439391 2013 AU ₁₂₉	16.5	X	285.16013	248.99200	135.57242	13.58353	0.1954334	0.20932123	2.8092725	20	7 20.5	20.0
439392 2013 AX ₁₂₉	16.7	X	296.64869	271.70493	122.44266	5.18184	0.0798995	0.21499733	2.7596077	20	9 10.2	20.1
439393 2013 AN ₁₃₀	16.5	X	203.43313	100.85748	87.70339	8.63157	0.0829760	0.22884585	2.6471224	20	11 28.1	20.2
439394 2013 AZ ₁₃₀	15.7	X	147.03028	326.94655	95.37288	9.98675	0.0523141	0.18068749	3.0987318	20	4 19.3	20.4
439395 2013 AZ ₁₅₀	14.4	X	292.02845	176.96842	223.02866	10.09652	0.0609763	0.08181175	5.2552364	20	8 22.1	21.3
439396 2013 AY ₁₆₅	16.2	X	316.55111	98.08642	242.62586	11.52235	0.0512399	0.20018412	2.8941185	20	7 24.8	20.2
439397 2013 AL ₁₆₆	17.0	X	104.19956	339.41470	169.87227	10.02153	0.1005999	0.18141586	3.0904322	20	6 18.8	21.7
439398 2013 BO ₁₁	17.1	X	302.25544	9.86325	343.30921	0.84922	0.0662023	0.20003114	2.8955938	20	7 22.9	20.7
439399 2013 BC ₁₄	15.0	X	61.19525	273.20186	269.64166	24.43684	0.2042058	0.18142017	3.0903833	20	6 22.3	18.9
439400 2013 BZ ₂₉	16.7	X	1.23122	258.59355	105.03729	14.48682	0.1147289	0.22999419	2.6383038	20	11 19.9	20.0
439401 2013 BT ₄₀	15.9	X	32.02694	271.40999	311.52605	9.46665	0.0330828	0.17749395	3.1357903	20	6 9.1	20.3
439402 2013 BA ₄₆	13.4	X	255.85616	1.63411	94.84146	16.14895	0.0554491	0.08242936	5.2289531	20	9 25.4	20.5
439403 2013 BE ₄₆	15.6	X	231.72946	224.71501	76.82239	11.47809	0.1252633	0.15631216	3.4130360	20	2 24.0	21.1
439404 2013 BQ ₅₆	16.2	X	53.24656	106.48802	119.69350	17.47422	0.0116289	0.19252802	2.9703440	20	7 10.6	20.2
439405 2013 BQ ₆₆	16.8	X	41.07344	84.71380	161.25759	2.27582	0.0373045	0.19448712	2.9503632	20	7 23.2	20.7
439406 2013 BV ₆₉	16.9	X	84.01951	39.94282	158.92777	2.34312	0.0363545	0.19531428	2.9420274	20	7 18.7	21.0
439407 2013 BG ₇₆	16.7	X	332.57627	293.57518	123.54873	8.15947	0.1012490	0.23523482	2.5989722	20	12 12.4	19.7
439408 2013 CF ₁₇	15.7	X	274.31598	62.24388	110.27346	8.44415	0.0726823	0.18679470	3.0308168	20	7 8.4	19.9
439409 2013 CL ₂₀	16.5	X	290.20419	71.21983	300.84424	5.05955	0.0839617	0.20210207	2.8757792	20	7 28.2	20.3
439410 2013 CU ₃₀	15.9	X	334.63255	197.73866	107.39898	10.21265	0.0586048	0.18564275	3.0433418	20	7 6.0	19.8
439411 2013 CD ₄₃	16.0	X	353.52168	129.44703	117.69864	10.84821	0.0323769	0.17147442	3.2087545	20	5 22.1	20.5
439412 2013 CE ₅₅	15.8	X	327.79106	329.37890	327.75612	10.40011	0.0974558	0.17878310	3.1206980	20	6 10.9	19.9
439413 2013 CY ₆₃	16.2	X	304.52304	146.42141	163.93913	11.68007	0.0595823	0.17651140	3.1474165	20	6 1.1	20.7
439414 2013 CM ₆₆	16.3	X	160.48459	314.55404	153.19943	10.38431	0.1083413	0.18209516	3.0827415	20	6 27.5	21.3
439415 2013 CO ₇₁	16.3	X	11.56347	292.39264	291.86041	8.36999	0.0737543	0.16983785	3.2293347	20	5 13.1	20.6
439416 2013 CB ₇₆	16.6	X	275.93599	271.65196	155.12260	12.56819	0.1745232	0.21782825	2.7356461	20	9 8.5	19.9
439417 2013 CN ₈₆	17.5	X	321.28723	277.11374	138.97981	7.01187	0.2565080	0.22977876	2.6399526	20	11 22.7	19.5
439418 2013 CP ₁₀₁	16.1	X	282.51849	188.31067	153.15531	9.59430	0.0844194	0.18001036	3.1064977	20	6 7.4	20.6
439419 2013 CZ ₁₁₀	16.1	X	248.66242	258.81890	118.65428	12.82391	0.0690395	0.18205928	3.0831465	20	6 13.3	20.6
439420 2013 CZ ₁₅₀	16.2	X	324.46930	3.03687	357.44314	8.50445	0.1645611	0.19959571	2.8998036	20	8 31.1	19.2
439421 2013 CD ₂₀₂	16.8	X	285.52696	247.60064	143.79835	11.30795	0.1243485	0.20340576	2.8634782	20	8 10.4	20.3
439422 2013 DA ₁₂	15.7	X	191.73022	150.76496	258.93194	8.18908	0.0144028	0.16966610	3.2315136	20	5 19.6	20.4
439423 2013 DT ₁₃	15.8	X	181.94443	231.84927	172.87003	19.41529	0.1665129	0.17137028	3.2100542	20	5 6.3	21.3
439424 2013 EP ₁	16.5	X	357.29854	28.06050	2.18855	6.02201	0.0430278	0.22279174	2.6948628	20	12 3.4	20.1
439425 2013 EJ ₆	16.7	X	198.24039	213.16323	205.97317	2.24800	0.0413825	0.17276299	3.1927793	20	6 7.9	21.4
439426 2013 EL ₁₂	15.7	X	263.05436	196.70459	156.03798	18.86451	0.1295391	0.17113918	3.2129435	20	5 24.9	20.8
439427 2013 EL ₆₀	16.2	X	324.56768	19.16736	349.54990	1.38739	0.0837730	0.19824092				

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ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
439441 2013 UV ₁	17.8	X	127.99030	359.97832	73.99267	24.08679	0.0837314	0.36944750	1.9235386	20	4 13.9	20.5
439442 2013 VR ₁₆	16.1	X	124.66945	213.15427	257.90296	14.05427	0.2273366	0.22116467	2.7080637	20	6 5.2	20.5
439443 2013 WX ₃	16.7	X	151.66072	237.57948	244.31462	12.09345	0.2565752	0.22821588	2.6519916	20	7 10.4	21.5
439444 2013 WV ₂₄	17.5	X	306.39012	16.49746	281.38705	19.26460	0.0468277	0.38068087	1.8855093	20	5 8.5	19.7
439445 2013 WF ₄₄	16.1	X	192.20049	243.76382	244.10835	25.50470	0.1734866	0.24427454	2.5344511	20	8 12.7	20.8
439446 2013 WP ₈₁	16.4	X	28.63487	49.26427	80.48184	17.17848	0.2167216	0.17993213	3.1073981	20	2 21.3	20.0
439447 2013 XQ ₄	18.0	X	328.70301	245.44091	209.25781	4.79481	0.0988868	0.29809938	2.2193647	20	—	—
439448 2013 XT ₁₈	17.8	X	238.04431	78.53291	61.17337	6.37954	0.0769056	0.27762477	2.3271832	20	11 19.2	20.4
439449 2013 XS ₂₀	16.2	X	175.17355	33.39311	87.35023	34.27103	0.2394637	0.23199745	2.6230943	20	7 29.9	21.2
439450 2013 XN ₂₃	16.7	X	185.87624	166.30759	289.18789	10.16212	0.1011479	0.22726663	2.6593711	20	7 9.9	20.8
439451 2013 XK ₂₅	17.7	X	293.27843	4.51294	101.88660	5.13533	0.1351211	0.28745915	2.2737984	20	12 31.0	19.4
439452 2013 YB ₃	16.2	X	118.01349	269.45060	273.20769	26.18476	0.3659635	0.22673519	2.6635249	20	8 21.6	21.6
439453 2013 YD ₅	16.5	X	105.32512	181.07530	282.31278	9.80057	0.1372559	0.19749614	2.9203190	20	4 23.3	20.9
439454 2013 YO ₈	16.8	X	87.60146	55.78660	122.66256	2.78681	0.1613389	0.21247775	2.7813805	20	7 15.6	20.8
439455 2013 YF ₁₆	18.0	X	262.91135	286.53915	255.00205	1.45926	0.0959569	0.29098935	2.2553710	20	—	—
439456 2013 YH ₁₈	16.5	X	107.97806	275.14496	271.97086	12.11263	0.1779711	0.23563943	2.5959963	20	8 16.3	20.8
439457 2013 YJ ₂₈	17.8	X	326.56783	90.26595	215.79237	2.52947	0.0688975	0.26981700	2.3718643	20	11 24.2	20.4
439458 2013 YE ₃₁	16.1	X	221.49975	288.15797	191.77500	6.63348	0.1369318	0.25175749	2.4839782	20	9 17.3	19.7
439459 2013 YT ₃₄	17.1	X	164.14677	49.54765	69.22557	3.76362	0.1809393	0.22825592	2.6516814	20	7 18.3	21.5
439460 2013 YZ ₃₄	16.5	X	193.10117	178.16110	296.65069	13.98766	0.0310094	0.23818882	2.5774394	20	8 13.7	20.1
439461 2013 YP ₃₅	15.9	X	40.36729	158.09242	128.93972	15.05661	0.0256775	0.24764308	2.5114156	20	9 26.6	19.3
439462 2013 YX ₄₂	15.9	X	98.46214	191.80546	308.02379	14.24211	0.0827560	0.20647800	2.8350031	20	5 25.9	20.1
439463 2013 YO ₄₄	17.7	X	335.32618	317.61467	101.75200	4.55120	0.0612178	0.27526034	2.3404909	20	12 28.7	20.1
439464 2013 YM ₄₅	17.2	X	201.30237	286.04042	260.74700	5.44157	0.1117347	0.26354546	2.4093452	20	11 25.8	20.6
439465 2013 YW ₄₇	16.2	X	305.39350	113.96277	109.20299	9.72312	0.1546399	0.16959536	3.3234123	20	1 31.9	20.8
439466 2013 YT ₅₄	15.8	X	150.46106	334.14999	280.46294	23.59687	0.1893478	0.27173501	2.3606901	20	12 25.9	19.7
439467 2013 YW ₅₄	16.3	X	177.34181	161.03924	304.32678	11.56537	0.0432541	0.22697037	2.6616847	20	7 15.3	20.0
439468 2013 YD ₆₁	17.0	X	97.55886	259.86204	318.44982	7.99877	0.0597070	0.23871075	2.5736811	20	9 5.5	20.6
439469 2013 YF ₆₄	17.3	X	358.88299	302.71765	89.24078	7.66198	0.1199443	0.27396651	2.3478539	20	—	—
439470 2013 YM ₆₄	16.8	X	115.71199	161.66433	325.69383	7.89880	0.1951674	0.20976356	2.8053218	20	6 14.1	21.3
439471 2013 YE ₇₃	17.9	X	341.72694	303.09671	133.61826	5.66985	0.1476818	0.28874652	2.2670349	20	—	—
439472 2013 YJ ₇₄	17.1	X	166.36750	230.61748	241.11415	12.23655	0.2161014	0.23228725	2.6209122	20	7 8.9	21.8
439473 2013 YF ₈₃	16.9	X	173.51300	187.88132	263.52585	5.14474	0.0675270	0.21870066	2.7283661	20	6 20.9	20.7
439474 2013 YO ₈₄	17.1	X	160.78929	323.03009	270.16121	5.40637	0.1200253	0.26656714	2.3911032	20	12 11.0	20.6
439475 2013 YZ ₈₆	15.8	X	19.42690	45.06957	105.07350	19.17453	0.1719542	0.17165767	3.2064704	20	2 29.4	19.7
439476 2013 YM ₉₀	17.5	X	216.10122	51.05234	133.90310	7.31620	0.1364163	0.26598826	2.3945711	20	12 9.7	20.7
439477 2013 YO ₉₀	17.7	X	222.66100	245.74484	294.66601	5.47023	0.0674859	0.26934038	2.3746616	20	12 22.5	20.6
439478 2013 YW ₉₂	17.0	X	145.53630	219.86103	261.21698	5.02383	0.2341647	0.22186506	2.7023615	20	7 5.5	21.6
439479 2013 YA ₉₃	17.5	X	263.11390	65.48881	81.96605	8.27379	0.0206316	0.28197558	2.3031827	20	—	—
439480 2013 YF ₉₄	17.9	X	96.51465	283.62961	87.37770	1.86784	0.1415511	0.31281990	2.1491817	20	—	—
439481 2013 YJ ₉₅	17.5	X	214.62081	271.31514	290.47472	3.47236	0.0816611	0.27434456	2.3456965	20	—	—
439482 2013 YT ₁₀₅	16.1	X	46.86218	238.23883	252.45289	15.59904	0.2667710	0.17812722	3.1283538	20	3 23.7	19.8
439483 2013 YN ₁₁₁	17.8	X	240.02034	109.72530	235.86567	18.50194	0.0949270	0.37054385	1.9197425	20	4 4.9	20.4
439484 2013 YZ ₁₁₁	17.1	X	162.93238	171.67817	276.87725	7.90337	0.1792232	0.21782565	2.7356679	20	6 8.3	21.7
439485 2013 YS ₁₁₃	16.9	X	36.14975	243.30661	301.16457	9.06007	0.1622646	0.19207190	2.9750447	20	5 4.9	20.5
439486 2013 YX ₁₁₃	18.8	X	346.43766	32.27779	100.82681	3.72506	0.0988369	0.30883131	2.1676467	20	—	—
439487 2013 YN ₁₁₅	18.3	X	85.42553	270.61387	107.69393	1.38521	0.1416891	0.30882745	2.1676648	20	—	—
439488 2013 YB ₁₁₆	17.5	X	138.58454	114.23671	93.41311	3.89964	0.1431451	0.24104688	2.5570254	20	10 16.2	21.6
439489 2013 YZ ₁₂₃	17.0	X	191.31406	37.66248	113.31691	14.95036	0.1085982	0.24611176	2.5218223	20	10 13.1	20.7
439490 2013 YW ₁₂₅	17.4	X	254.68317	333.89971	94.56763	4.76957	0.0166949	0.23798854	2.5788853	20	9 9.9	20.7
439491 2013 YW ₁₄₇	16.9	X	174.17992	201.23977	271.17807	9.48481	0.0886686	0.22769138	2.6560627	20	7 18.1	21.0
439492 2013 YV ₁₄₇	17.5	X	201.01555	100.47342	104.90895	3.40707	0.1222617	0.27295438	2.3536543	20	12 20.7	20.5
439493 2013 YU ₁₄₉	17.2	X	222.00033	291.27689	168.78894	4.73997	0.1447917	0.24645892	2.5194536	20	8 21.3	20.7
439494 2014 AR ₈	17.7	X	192.86868	241.65237	316.82854	1.72528	0.1394903	0.26469500	2.4023645	20	11 28.1	21.0
439495 2014 AS ₁₁	17.2	X	199.47032	226.72163	255.96423	10.55823	0.0952693	0.24379081	2.5378026	20	8 25.6	21.2
439496 2014 AL ₁₄	17.8	X	35.73552	6.36456	29.92868	6.84888	0.1508997	0.30033154	2.2083543	20	—	—
439497 2014 AD ₁₈	17.2	X	93.12680	66.46299	111.90972	14.40700	0.0789952	0.21799707	2.7342336	20	7 11.2	20.8
439498 2014 AN ₁₉	16.4	X	88.75565	178.54836	292.08990	5.31920	0.1046249	0.18619428	3.0373289	20	4 9.2	20.7
439499 2014 AK ₂₈	16.1	X	53.82037	223.55318	288.93076	8.53669	0.1057965	0.18544949	3.0454558	20	4 13.3	20.1
439500 2014 AX ₃₇	17.7	X	342.96491	307.59738	118.24971	5.34339	0.1073981	0.29230703	2.2485879	20	—	—
439501 2014 AR ₄₂	16.8	X	179.81714	335.91483	116.02823	10.86526	0.1329227	0.22321356	2.6914667	20	6 28.4	21.1
439502 2014 AB ₄₆	16.2	X	143.04632	249.26536	260.98978	28.55575	0.2860036	0.23427294	2.6060814	20	7 29.9	21.4
439503 2014 AA ₄₈	16.7	X	132.24873	37.15542	108.73763	6.04807	0.0506181	0.22002618	2.7173973	20	7 13.3	20.4
439504 2014 AV ₅₃	17.4	X	86.52798	59.87930	112.92704	5.66781	0.1370402	0.21242720	2.7818217	20	7 3.5	21.2
439505 2014 BD ₈	17.8	X	193.11681	213.72992	338.99255	0.97060	0.1321449	0.25888333	2.4381850	20	11 21.1	21.2
439506 2014 BU ₁₁	17.4	X	152.00754	116.77302	135.81847	6.77853	0.0914385	0.26975303	2.3722393	20	12 28.6	20.7
439507 2014 BV ₁₃	16.0	X	21.81015	79.11033	112.20440	10.22188	0.1553704	0.18404571	3.0609219	20	4 26.3	19.6
439508 2014 BX ₁₃	16.3	X	70.08158	183.12080	354.94665	4.97177	0.0684388	0.20245764	2.8724111	20	6 7.3	20.2
439509 2014 BS ₂₂	16.8	X	180.89170	294.16480	300.46032	5.64391	0.0811306	0.27096538	2.3651581	20	—	—
439510 2014 BS ₂₆	17.8	X	169.72705	240.95969	344.79453	1.50015	0.1518247	0.26907797	2.3762052	20	12 8.9	21.2
439511 2014 BC ₂₈	16.0	X	333.44980	59.11427	133.27896	10.32751	0.0304134	0.17451797	3.1713387	20	2 14.9	20.3
439512 2014 BY ₃₀	17.6	X	304.49977	200.06599	288.59450	6.67752	0.0334005	0.28321462	2.2964603	20	—	—
439513 2014 BT ₃₁	17.1	X	125.18553	178.91170	14.75086	4.95889	0.1680264	0.22940970	2.6427832	20	9 15.2	

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
439521 2014 <i>BW</i> ₄₆	16.2	X	330.70971	7.35267	316.72333	13.62430	0.0903780	0.22064585	2.7123072	20	7 28.4	19.4
439522 2014 <i>BP</i> ₄₇	17.1	X	261.74194	242.90847	141.38406	9.60848	0.0725760	0.22181392	2.7027768	20	7 7.8	20.9
439523 2014 <i>BZ</i> ₄₈	16.7	X	155.57171	225.98223	317.97836	9.02015	0.1474685	0.23437212	2.6053461	20	9 26.0	21.1
439524 2014 <i>BE</i> ₅₁	17.0	X	73.04049	160.00672	70.04032	5.06216	0.1503691	0.22900612	2.6458872	20	9 6.9	20.7
439525 2014 <i>BX</i> ₅₃	17.5	X	140.13233	109.44931	124.88758	2.02488	0.1460568	0.25364159	2.4716619	20	11 19.9	21.3
439526 2014 <i>BK</i> ₆₀	17.4	X	150.35736	152.70532	288.75077	17.57245	0.0777853	0.35491816	1.9756829	20	5 3.9	20.2
439527 2014 <i>BZ</i> ₆₀	16.2	X	244.63892	129.26156	290.74006	12.02702	0.1396829	0.23444305	2.6048205	20	7 24.4	19.9
439528 2014 <i>BH</i> ₆₁	17.1	X	196.10505	285.93283	196.22967	6.00860	0.1575437	0.23827203	2.5768393	20	8 19.9	21.1
439529 2014 <i>BO</i> ₆₄	16.1	X	19.55944	186.04806	107.41554	15.07587	0.0838717	0.22537669	2.6742175	20	9 9.9	19.6
439530 2014 <i>CO</i>	16.3	X	238.87067	307.18112	105.06743	22.79597	0.0301745	0.22542758	2.6738150	20	7 22.5	19.9
439531 2014 <i>CX</i> ₁	16.9	X	192.62619	276.39422	264.92790	4.92695	0.1067334	0.25571403	2.4582894	20	11 7.2	20.3
439532 2014 <i>CW</i> ₂	16.1	X	176.21809	330.16437	145.00896	25.20544	0.0757759	0.21905407	2.7254308	20	7 24.8	20.3
439533 2014 <i>CA</i> ₉	16.5	X	15.79898	115.98134	100.49559	3.72986	0.1711787	0.18953359	3.0015478	20	5 16.5	19.7
439534 2014 <i>CR</i> ₁₁	17.7	X	206.19105	63.56971	106.92809	3.42238	0.1406626	0.25474451	2.4645227	20	11 6.9	21.3
439535 2014 <i>CH</i> ₁₅	17.5	X	72.40726	118.51907	127.44253	3.41733	0.0287182	0.23061533	2.6335643	20	9 7.9	21.1
439536 2014 <i>CH</i> ₁₆	18.0	X	242.99317	26.31890	165.53159	6.68933	0.0628846	0.27979582	2.3151292	20	—	—
439537 2014 <i>DO</i>	17.1	X	212.18360	224.65204	159.27386	24.54335	0.1403961	0.34978840	1.9949520	20	5 8.9	20.3
439538 2014 <i>DY</i>	16.5	X	71.63295	103.21697	154.02208	14.61344	0.0926840	0.23168362	2.6254626	20	10 3.9	20.2
439539 2014 <i>DW</i> ₁	16.8	X	116.90728	26.24885	180.80464	11.08367	0.0156932	0.23256177	2.6188493	20	9 10.8	20.3
439540 2014 <i>DZ</i> ₁	16.7	X	136.95404	250.09162	299.24753	12.34998	0.1260561	0.23022727	2.6365229	20	9 11.9	21.0
439541 2014 <i>DV</i> ₃	16.6	X	23.35831	112.01577	137.53655	15.60188	0.1204743	0.20616164	2.8379026	20	7 11.9	20.0
439542 2014 <i>DV</i> ₄	17.6	X	218.43943	11.05008	166.74812	1.55002	0.1231563	0.26452684	2.4033824	20	12 4.0	20.7
439543 2014 <i>DJ</i> ₅	17.5	X	270.79867	295.24381	208.35376	5.59479	0.0737777	0.27241011	2.3567883	20	—	—
439544 2014 <i>DT</i> ₅	16.1	X	65.82818	328.21232	300.13531	11.45728	0.1072667	0.23181821	2.6244463	20	10 3.2	20.0
439545 2014 <i>DR</i> ₁₁	16.9	X	185.46488	276.67113	185.80461	13.08339	0.0435470	0.21826218	2.7320191	20	7 17.8	21.1
439546 2014 <i>DS</i> ₁₃	15.9	X	23.93604	92.41713	127.69902	12.43825	0.0822167	0.19055106	2.9908535	20	5 31.9	19.8
439547 2014 <i>DO</i> ₁₆	15.6	X	278.94126	344.73971	287.00892	10.58718	0.0830394	0.17030748	3.2233953	20	3 2.3	20.4
439548 2014 <i>DP</i> ₁₈	18.4	X	265.08397	339.53657	161.86740	2.61803	0.1145241	0.26940733	2.3742682	20	12 24.9	20.9
439549 2014 <i>DA</i> ₂₆	16.6	X	93.32688	93.67448	140.72654	14.76882	0.1070963	0.22237698	2.6982126	20	10 1.5	20.7
439550 2014 <i>DG</i> ₂₆	17.5	X	160.65414	81.65549	162.12512	5.97153	0.0489268	0.26483719	2.4015045	20	12 28.7	20.7
439551 2014 <i>DZ</i> ₂₇	17.8	X	225.91011	232.09409	312.58834	4.77849	0.0892442	0.27101840	2.3648497	20	12 29.9	20.6
439552 2014 <i>DA</i> ₃₂	15.2	X	274.27880	302.35893	350.91561	17.30673	0.1257067	0.17511342	3.1641454	20	3 19.8	19.9
439553 2014 <i>DC</i> ₃₅	18.0	X	17.24198	313.19695	129.92542	3.16586	0.1113366	0.29427685	2.2385424	20	—	—
439554 2014 <i>DZ</i> ₃₅	16.1	X	328.11466	151.67272	128.47477	5.79146	0.0830449	0.19006909	2.9959074	20	5 23.2	19.9
439555 2014 <i>DJ</i> ₃₇	16.4	X	42.46260	61.04805	107.74435	2.53118	0.1181878	0.17909269	3.1171005	20	4 24.6	20.2
439556 2014 <i>DC</i> ₄₆	16.2	X	31.38726	80.08769	122.94582	9.26687	0.0138052	0.18633347	3.0358161	20	5 15.4	20.5
439557 2014 <i>DQ</i> ₅₀	16.1	X	188.18739	290.53597	114.69750	5.56681	0.0261819	0.18565650	3.0431915	20	5 11.6	20.5
439558 2014 <i>DM</i> ₅₆	16.3	X	257.10749	163.28410	155.06668	11.27765	0.0500593	0.17438273	3.1729781	20	4 14.6	21.0
439559 2014 <i>DM</i> ₅₇	17.0	X	145.67144	35.83606	139.96906	6.19186	0.1530795	0.22277388	2.6950068	20	9 10.9	21.3
439560 2014 <i>DY</i> ₅₈	16.9	X	28.24507	216.26374	86.71098	5.88275	0.0866995	0.22400366	2.6851340	20	10 3.7	20.3
439561 2014 <i>DE</i> ₆₁	17.1	X	97.41290	206.93761	41.53299	4.81632	0.1402858	0.22657435	2.6647852	20	10 23.4	21.1
439562 2014 <i>DR</i> ₇₂	16.7	X	130.76891	157.07431	101.29837	6.59822	0.1087034	0.24529844	2.5273934	20	12 8.9	20.4
439563 2014 <i>DC</i> ₇₃	17.1	X	74.28156	230.04226	109.07716	6.35386	0.1525679	0.25718799	2.4488880	20	—	—
439564 2014 <i>DM</i> ₇₈	16.4	X	236.32572	201.55219	143.94533	10.95251	0.0267058	0.17684347	3.1434751	20	4 26.8	21.1
439565 2014 <i>DR</i> ₈₀	17.5	X	140.21413	15.12703	241.85007	5.59303	0.0889873	0.26029661	2.4293516	20	12 19.5	20.9
439566 2014 <i>DX</i> ₈₀	16.9	X	36.67094	326.85324	206.90986	7.15411	0.0939077	0.18127351	3.0920498	20	4 18.4	20.8
439567 2014 <i>DS</i> ₈₄	16.3	X	349.74781	215.00658	39.03058	5.08942	0.1202869	0.18399706	3.0614615	20	5 18.2	20.0
439568 2014 <i>DL</i> ₈₅	17.3	X	59.69405	104.48937	168.00134	4.66263	0.0732119	0.22419374	2.6836161	20	10 2.0	20.8
439569 2014 <i>DH</i> ₈₉	16.7	X	184.39870	358.35160	153.52633	8.66459	0.0669256	0.22568676	2.6717675	20	9 22.8	20.5
439570 2014 <i>DK</i> ₈₉	15.1	X	203.71011	222.26888	69.98770	4.09284	0.2083835	0.12324355	3.9990785	20	1 18.6	21.7
439571 2014 <i>DP</i> ₈₉	16.8	X	167.22521	357.72816	159.35747	6.74672	0.0400443	0.21973327	2.7198117	20	9 8.4	20.4
439572 2014 <i>DP</i> ₉₀	16.8	X	53.41111	87.37193	188.47911	10.82879	0.1216630	0.22912257	2.6449906	20	10 5.8	20.3
439573 2014 <i>DK</i> ₉₅	17.6	X	354.12988	251.86206	224.09583	5.48242	0.0640316	0.29061458	2.2573095	20	—	—
439574 2014 <i>DF</i> ₉₈	17.1	X	86.06663	356.78405	238.82589	1.91427	0.0946541	0.22238826	2.6981214	20	9 17.8	21.0
439575 2014 <i>DM</i> ₉₈	16.9	X	336.33912	77.28949	263.99243	1.04386	0.0997062	0.22352277	2.6889839	20	8 29.9	19.7
439576 2014 <i>DX</i> ₉₉	16.5	X	69.42274	298.92601	298.57448	5.02032	0.2163532	0.21846392	2.7303369	20	9 14.8	20.5
439577 2014 <i>DP</i> ₁₀₃	16.3	X	198.41212	287.63776	158.28708	9.44040	0.1855446	0.21854740	2.7296416	20	7 5.9	20.9
439578 2014 <i>DL</i> ₁₀₅	16.4	X	273.90343	178.58982	162.20608	12.36209	0.0643939	0.19696240	2.9255925	20	5 30.2	20.7
439579 2014 <i>DQ</i> ₁₀₅	16.4	X	158.74347	239.14284	320.66275	7.99747	0.1072675	0.23773822	2.5806952	20	10 20.1	20.4
439580 2014 <i>DH</i> ₁₀₈	17.6	X	183.69668	145.21020	39.69418	0.19545	0.0392305	0.24635263	2.5201782	20	11 7.4	20.7
439581 2014 <i>DQ</i> ₁₀₈	16.5	X	320.40785	143.85936	176.69997	6.51399	0.0614434	0.20660654	2.8338270	20	7 5.7	20.2
439582 2014 <i>DS</i> ₁₀₈	16.3	X	354.46552	52.10067	180.25500	5.52780	0.1056126	0.17978743	3.1090653	20	4 29.7	20.1
439583 2014 <i>DP</i> ₁₁₀	16.7	X	38.00914	324.09050	310.34778	8.72213	0.1196671	0.21761939	2.7373962	20	9 6.5	20.3
439584 2014 <i>DH</i> ₁₁₃	16.8	X	2.49118	321.64366	302.95163	1.05668	0.0128957	0.20251273	2.8718902	20	6 23.3	20.6
439585 2014 <i>DZ</i> ₁₁₅	16.0	X	116.58410	310.40599	158.74284	9.51889	0.0415471	0.18278748	3.0749526	20	5 8.7	20.5
439586 2014 <i>DJ</i> ₁₁₆	17.4	X	132.39454	211.70169	88.35310	3.55764	0.1917967	0.26313366	2.4118583	20	—	—
439587 2014 <i>DN</i> ₁₁₈	17.9	X	263.54152	78.64522	69.69163	4.14330	0.0440495	0.26558589	2.3969890	20	—	—
439588 2014 <i>DQ</i> ₁₁₈	16.0	X	296.48733	147.95285	138.62325	10.85520	0.1158838	0.17564457	3.1577633	20	4 15.1	20.5
439589 2014 <i>DM</i> ₁₂₂	16.4	X	256.02397	150.51234	213.75690	1.06145	0.0344937	0.19868681	2.9086403	20	6 8.9	20.5
439590 2014 <i>DN</i> ₁₂₂	17.1	X	113.55013	99.24531	137.25905	4.39370	0.0904792	0.23507916	2.6001194	20	10 24.2	20.9
439591 2014 <i>DA</i> ₁₂₃	16.8	X	91.08494	124.79969	150.45294	7.74689	0.0749396	0.24121389	2.5558450	20	11	

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>		
439601	2014	ES ₁₇	16.2	X	306.93758	285.14881	20.75192	9.89357	0.0528633	0.19539147	2.9412525	20	5 26.1	20.2
439602	2014	ES ₁₉	17.0	X	121.72281	143.91010	122.18116	4.67332	0.1271370	0.24765117	2.5113609	20	12 10.2	20.8
439603	2014	EZ ₂₁	17.3	X	24.32010	343.33929	327.62205	1.94816	0.0725589	0.22852097	2.6496307	20	10 3.4	20.6
439604	2014	EF ₂₃	17.0	X	304.01658	200.77388	169.70956	5.34833	0.0889633	0.22334764	2.6903893	20	8 17.0	20.3
439605	2014	EH ₂₃	16.5	X	37.23430	90.36052	170.92168	14.97615	0.1485664	0.20709593	2.8293609	20	8 22.9	20.0
439606	2014	EE ₂₄	15.5	X	183.76481	314.76995	110.86256	14.97504	0.0521354	0.19296335	2.9658749	20	6 2.1	20.0
439607	2014	EE ₂₅	17.5	X	180.33710	88.85036	81.03524	6.49356	0.0885177	0.23863483	2.5742269	20	10 13.2	21.3
439608	2014	EC ₂₇	17.2	X	119.64752	65.72494	131.81757	5.58399	0.0936360	0.21974074	2.7197501	20	9 9.2	21.2
439609	2014	ET ₂₇	17.7	X	304.98625	323.04387	163.88295	6.21916	0.0574110	0.27994154	2.3143258	20	—	—
439610	2014	EL ₃₂	16.5	X	66.62422	95.94650	169.71703	6.22349	0.0260157	0.21957233	2.7211406	20	9 24.1	20.1
439611	2014	EQ ₃₂	16.4	X	248.54243	347.55447	359.10437	11.13453	0.0961890	0.18489842	3.0515038	20	4 26.7	21.1
439612	2014	EU ₃₂	17.5	X	353.13857	312.88877	142.92356	5.01524	0.0835747	0.28326823	2.2961705	20	—	—
439613	2014	EF ₃₅	16.1	X	255.77924	285.69524	152.33203	15.71731	0.0977733	0.23214295	2.6219981	20	9 9.9	19.5
439614	2014	EA ₃₉	16.6	X	201.32643	312.98452	125.61201	9.49274	0.2586591	0.21774098	2.7363770	20	6 26.9	21.5
439615	2014	EX ₄₄	16.9	X	357.66647	168.04588	163.06721	14.12363	0.1654215	0.22310216	2.6923625	20	9 30.7	19.7
439616	2014	ER ₄₅	16.5	X	185.07966	296.65092	129.67927	9.23541	0.1565823	0.20436571	2.8545043	20	6 2.2	21.2
439617	2014	EC ₄₆	16.0	X	21.85792	176.17753	359.17449	9.72813	0.0156489	0.17224281	3.1992043	20	3 26.1	20.4
439618	2014	EO ₄₆	16.5	X	339.19713	126.39463	146.14556	17.47755	0.2369923	0.18196677	3.0841914	20	5 20.4	20.1
439619	2014	EJ ₄₈	16.1	X	141.83248	319.19189	116.73924	10.64949	0.1349677	0.18548539	3.0450627	20	5 6.2	21.0
439620	2014	EH ₄₉	16.3	X	40.98262	88.92320	113.19108	13.99740	0.2182062	0.18277528	3.0750894	20	6 19.8	20.0
439621	2014	FZ ₃	16.1	X	251.97329	219.25264	121.44725	10.70540	0.0692458	0.18336340	3.0685105	20	5 4.5	20.7
439622	2014	FV ₉	18.7	X	74.38877	83.38494	376.50373	4.81313	0.0853795	0.31230113	2.1515611	20	—	—
439623	2014	FD ₁₆	16.4	X	332.50794	92.87664	133.33054	9.59398	0.2034119	0.17707908	3.1406862	20	5 4.4	20.0
439624	2014	FV ₁₈	17.0	X	117.01800	349.63001	252.33202	5.84001	0.1158836	0.24429103	2.5343370	20	11 3.6	20.9
439625	2014	FD ₁₉	17.5	X	228.20931	278.19733	244.11953	4.56674	0.1093811	0.26090947	2.4255458	20	11 27.1	20.2
439626	2014	FM ₁₉	16.2	X	216.26165	295.27082	169.66214	21.87402	0.0882910	0.23591475	2.5939762	20	8 25.5	20.0
439627	2014	FE ₂₀	17.2	X	101.54625	5.33666	219.56855	5.08172	0.1545533	0.22566209	2.6719622	20	9 27.5	21.4
439628	2014	FO ₂₈	17.1	X	195.34498	289.06172	236.34512	3.95661	0.0118845	0.24074381	2.5591710	20	10 28.8	20.3
439629	2014	FP ₂₉	17.2	X	122.51462	227.28132	115.50739	5.56616	0.2694023	0.28331147	2.2959369	20	—	—
439630	2014	FJ ₃₀	16.9	X	47.13409	172.62800	105.01930	10.95470	0.1828562	0.21535746	2.7565303	20	10 12.5	20.8
439631	2014	FX ₄₉	15.6	X	64.09280	7.68985	251.58790	13.34480	0.1042491	0.21209718	2.7847067	20	9 15.6	19.8
439632	2014	FS ₅₃	16.3	X	346.86004	228.85434	101.95035	6.89669	0.0769854	0.20401270	2.8577961	20	9 2.4	19.8
439633	2014	FX ₅₃	17.4	X	7.17036	249.21690	161.14874	6.13539	0.0593083	0.26515440	2.3995888	20	—	—
439634	2014	FS ₆₂	15.6	X	12.06939	25.53486	213.86626	17.23196	0.1476228	0.18181688	3.0858863	20	6 8.2	19.4
439635	2014	FS ₆₄	16.0	X	344.75035	234.71160	77.50083	3.09580	0.0709225	0.20405503	2.8574009	20	8 2.3	19.4
439636	2014	FA ₆₈	15.4	X	324.04166	202.69200	90.66337	10.62616	0.0750941	0.17933078	3.1143410	20	6 3.8	19.4
439637	2014	FV ₆₈	16.5	X	68.96365	193.64340	96.79207	13.82421	0.0776048	0.22672679	2.6635907	20	11 11.1	20.4
439638	2014	GY ₆	16.7	X	19.17765	14.96560	353.64057	1.15470	0.1804690	0.24618525	2.5213204	20	—	—
439639	2014	GF ₁₂	16.2	X	176.33381	248.53980	164.62940	9.66027	0.0461150	0.17908187	3.1172260	20	5 8.7	20.9
439640	2014	GH ₂₀	16.6	X	34.21001	262.04633	317.09014	4.07467	0.1185600	0.18385679	3.0630184	20	6 16.6	20.4
439641	2014	GQ ₂₀	16.9	X	38.57237	103.50991	204.60941	12.31089	0.0951553	0.22350735	2.6891076	20	10 23.4	20.3
439642	2014	GE ₃₇	16.5	X	325.92605	213.45257	78.26923	6.44275	0.1299293	0.18361096	3.0657517	20	5 29.1	20.3
439643	2014	GS ₃₈	17.2	X	118.38155	258.45497	44.55824	2.93864	0.2012242	0.25602506	2.4562980	20	—	—
439644	2014	GT ₃₉	17.0	X	5.15193	137.39758	173.83469	3.60284	0.0833423	0.21041045	2.7995690	20	9 2.8	20.3
439645	2014	GP ₄₅	16.2	X	149.40946	289.64730	279.91676	11.54522	0.1135236	0.23145278	2.6272079	20	10 21.1	20.5
439646	2014	GD ₄₇	16.9	X	349.11549	196.13968	200.28714	14.27305	0.1025236	0.23786063	2.5798097	20	12 11.4	20.1
439647	2014	HN ₈	16.4	X	76.23639	100.21212	82.42991	3.84967	0.1155577	0.18521453	3.0480307	20	6 29.1	20.7
439648	2014	HO ₈	17.4	X	228.17673	336.24230	143.19157	3.64477	0.0982193	0.22750886	2.6574831	20	9 28.4	21.0
439649	2014	HY ₁₁	16.3	X	325.72703	82.33572	202.69008	9.45782	0.0472071	0.17554276	3.1589841	20	5 29.1	20.6
439650	2014	HF ₂₅	15.7	X	260.05524	201.42022	47.83539	3.31656	0.1331573	0.12354618	3.9925452	20	1 22.1	21.6
439651	2014	HA ₂₉	16.8	X	268.86831	358.50126	78.67266	4.01860	0.1036068	0.22707409	2.6608741	20	9 26.4	20.2
439652	2014	HA ₃₀	16.4	X	11.81384	72.13759	195.51297	9.69329	0.10516709	0.18958972	3.0009553	20	7 9.9	20.6
439653	2014	HM ₃₀	16.1	X	5.32877	144.51471	192.18547	17.81609	0.2670066	0.20598027	2.8395682	20	11 2.0	19.0
439654	2014	HK ₃₁	16.9	X	330.71653	1.52621	56.60690	15.09882	0.1136897	0.24273173	2.5451791	20	12 11.3	19.7
439655	2014	HU ₃₃	16.8	X	275.10087	308.34816	121.78415	7.21463	0.1418587	0.22469722	2.6796059	20	9 20.4	20.1
439656	2014	HO ₃₇	15.7	X	128.62662	20.84038	78.85999	11.37855	0.0406113	0.16889077	3.2413961	20	5 11.3	20.4
439657	2014	HF ₃₈	17.0	X	17.20423	203.73964	145.34429	6.89236	0.0672380	0.22569751	2.6716827	20	11 14.8	20.5
439658	2014	HX ₄₀	16.7	X	63.29962	22.01497	174.78407	8.37649	0.0555488	0.18120462	3.0928335	20	6 21.2	21.0
439659	2014	HM ₅₅	16.7	X	254.13826	307.95260	160.27422	3.56776	0.1255546	0.23760194	2.5816819	20	10 14.6	20.0
439660	2014	HG ₇₅	16.8	X	282.07994	266.91765	107.89287	3.24451	0.0850041	0.19745576	2.9207172	20	7 20.0	20.5
439661	2014	HK ₇₇	17.1	X	316.75455	181.55838	176.41214	5.51103	0.0841912	0.20432934	2.8548430	20	8 17.9	20.7
439662	2014	HT ₇₈	17.1	X	205.50414	36.53106	90.72386	6.09433	0.0529514	0.21903511	2.7255881	20	9 17.7	21.1
439663	2014	HK ₈₂	16.9	X	318.22447	229.06721	187.73375	9.84168	0.1065264	0.23678097	2.5876460	20	11 18.9	19.8
439664	2014	HM ₁₁₅	16.6	X	98.28981	48.34960	105.91577	6.36104	0.0720260	0.17986728	3.1081450	20	6 14.2	21.0
439665	2014	HB ₁₂₂	15.9	X	293.41371	131.35351	200.43260	15.28377	0.0912349	0.17975854	3.1093983	20	6 7.5	20.3
439666	2014	HV ₁₂₂	16.3	X	316.84672	244.67372	79.55230	9.14360	0.1914074	0.18087242	3.0966193	20	6 18.4	20.0
439667	2014	HD ₁₂₇	16.8	X	64.88317	343.47634	219.85380	14.52096	0.0357662	0.18693282	3.0293237	20	6 27.3	21.2
439668	2014	HB ₁₅₂	16.9	X	9.45161	201.57864	134.91085	7.09054	0.0516714	0.22477042	2.6790240	20	10 16.8	20.4
439669	2014	HH ₁₆₀	16.2	X	282.85627	191.27408	151.38416	7.35555	0.0281258	0.18452332	3.0556378	20	6 16.9	20.5
439670	2014	HX ₁₆₆	1											

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
439681 2014 <i>JH</i> ₂₆	16.4	X	320.82859	155.71319	170.29926	10.41444	0.1087468	0.17986294	3.1081950	20	7 7.2	20.5
439682 2014 <i>JY</i> ₃₁	16.8	X	344.75247	139.56525	258.29585	3.29433	0.0303981	0.23484774	2.6018273	20	11 28.9	19.9
439683 2014 <i>JN</i> ₃₅	16.9	X	79.37668	201.78099	73.02908	6.24142	0.1354968	0.21551927	2.7551504	20	11 4.9	21.0
439684 2014 <i>JD</i> ₃₈	15.9	X	34.29123	170.26159	93.10997	9.93215	0.0485791	0.19097670	2.9864079	20	8 9.6	19.9
439685 2014 <i>JT</i> ₄₂	15.8	X	298.89879	255.33125	102.66752	11.09119	0.0458003	0.18703228	3.0282496	20	7 26.7	19.9
439686 2014 <i>JK</i> ₄₅	16.3	X	284.92727	129.55165	222.42278	16.84869	0.1074961	0.18244676	3.0787797	20	6 18.2	20.7
439687 2014 <i>JF</i> ₅₁	16.3	X	30.60313	13.25167	211.55389	9.78453	0.0860723	0.17571581	3.1569096	20	6 14.8	20.5
439688 2014 <i>JN</i> ₅₉	16.3	X	227.97661	236.53729	206.54316	14.31735	0.1189163	0.20355394	2.8620884	20	8 1.5	20.9
439689 2014 <i>JE</i> ₆₀	15.9	X	18.10318	51.96094	144.06588	4.16419	0.0149700	0.15365837	3.4522209	20	4 19.3	20.8
439690 2014 <i>JE</i> ₆₀	16.3	X	1.08258	242.80260	93.09605	6.06075	0.1067793	0.20317724	2.8656249	20	10 4.6	19.8
439691 2014 <i>JV</i> ₇₆	16.3	X	306.39415	246.97336	202.36604	21.47921	0.0547026	0.22944226	2.6425331	20	12 10.6	20.0
439692 2014 <i>KH</i> ₃	15.6	X	341.73192	183.21396	92.32493	10.57157	0.0543968	0.17471808	3.1689166	20	6 7.8	19.8
439693 2014 <i>KY</i> ₄	15.7	X	21.53262	29.58408	244.03444	12.99455	0.1217008	0.18470423	3.0536422	20	8 4.1	19.7
439694 2014 <i>KT</i> ₇	15.6	X	341.61521	31.22713	230.40410	17.88812	0.0886751	0.17073949	3.2179557	20	5 18.1	19.7
439695 2014 <i>KV</i> ₉	16.6	X	337.46680	254.71527	82.15301	3.37713	0.2288908	0.18579623	3.0416654	20	8 17.7	19.5
439696 2014 <i>KP</i> ₁₀	15.8	X	194.75484	189.24384	235.87412	14.85719	0.0696474	0.17242015	3.1970104	20	6 9.9	20.7
439697 2014 <i>KH</i> ₁₄	15.6	X	250.45803	255.55224	113.08589	12.92822	0.0883304	0.17498519	3.1656910	20	6 2.6	20.3
439698 2014 <i>KA</i> ₁₉	16.5	X	92.96164	320.36301	196.25392	3.70620	0.0607875	0.17484105	3.1674307	20	6 8.9	21.1
439699 2014 <i>KY</i> ₂₃	16.7	X	13.75639	239.63196	101.49004	7.37167	0.0482392	0.22538327	2.6741654	20	10 29.0	20.2
439700 2014 <i>KS</i> ₂₉	17.6	X	87.40540	323.30216	81.33779	7.55757	0.1002088	0.28053782	2.3110452	20	—	—
439701 2014 <i>KN</i> ₄₂	16.3	X	125.24676	130.97765	127.89467	15.57761	0.0896740	0.22861706	2.6488882	20	12 3.5	20.6
439702 2014 <i>KZ</i> ₄₇	15.6	X	332.09447	66.74826	91.12876	10.85504	0.1126904	0.17062334	3.2194159	20	5 24.3	19.6
439703 2014 <i>KO</i> ₇₃	15.8	X	299.44106	265.75051	95.32451	11.98147	0.0145841	0.18980411	2.9986951	20	8 5.7	20.0
439704 2014 <i>KB</i> ₇₄	15.7	X	32.53470	328.61847	235.20086	15.00046	0.1692632	0.17538447	3.1608845	20	5 30.0	19.4
439705 2014 <i>KB</i> ₈₀	15.8	X	254.28338	146.79225	242.89669	11.96093	0.0824748	0.18112663	3.0937212	20	7 1.0	20.3
439706 2014 <i>KB</i> ₈₈	16.6	X	348.48596	288.60981	77.61567	7.32321	0.0865313	0.21897282	2.7261050	20	10 26.6	19.9
439707 2014 <i>LT</i> ₄	16.5	X	13.01972	32.09861	231.37684	15.57146	0.2117019	0.17671179	3.1450366	20	7 14.9	20.2
439708 2014 <i>LF</i> ₆	16.0	X	67.78922	111.33273	88.51305	9.88188	0.0217303	0.17660654	3.1462860	20	6 25.9	20.4
439709 2014 <i>LH</i> ₁₁	15.9	X	276.55883	251.56068	101.90880	10.29952	0.0450360	0.17244194	3.1967410	20	6 19.7	20.5
439710 2014 <i>LK</i> ₁₁	15.6	X	109.34700	333.65079	266.44192	12.55594	0.1431958	0.21233903	2.7825917	20	10 18.3	20.1
439711 2014 <i>LM</i> ₁₄	16.9	X	44.28524	173.03446	235.99582	8.14682	0.1185215	0.25799371	2.4437868	20	—	—
439712 2014 <i>LS</i> ₁₇	16.2	X	304.75978	237.62622	130.70592	10.41979	0.0716672	0.19157598	2.9801767	20	8 15.1	20.0
439713 2014 <i>LQ</i> ₂₀	16.5	X	87.16722	157.47126	131.49361	6.22884	0.0225360	0.21932460	2.7231892	20	11 19.8	20.3
439714 2014 <i>MR</i> ₃₂	15.9	X	230.85496	206.52103	214.62092	16.43369	0.1855659	0.18364700	3.0653506	20	7 1.9	21.0
439715 2014 <i>MC</i> ₃₅	16.4	X	97.47120	18.72763	240.88748	8.35651	0.0229388	0.21070758	2.7969365	20	10 21.1	20.3
439716 2014 <i>MJ</i> ₄₂	16.0	X	278.61908	254.87654	129.96276	16.20123	0.1458247	0.18436570	3.0573791	20	7 17.9	20.3
439717 2014 <i>MX</i> ₄₂	15.9	X	5.45066	15.72916	245.41458	14.27921	0.2293639	0.17457761	3.1706163	20	6 28.4	19.2
439718 Danielcervantes	16.2	X	340.71415	98.34319	92.40588	17.17076	0.1818622	0.17287943	3.1913455	20	2 8.7	20.2
439719 2015 <i>DV</i> ₁₇₆	15.7	X	256.40023	106.96895	174.52194	16.67032	0.2284231	0.17723164	3.1388836	20	2 6.9	21.1
439720 2015 <i>DZ</i> ₂₀₅	17.3	X	103.74765	129.96470	121.75458	6.57190	0.0776749	0.26876071	2.3780749	20	11 7.4	20.7
439721 2015 <i>DY</i> ₂₀₆	16.0	X	298.51837	108.43101	153.78805	10.41770	0.0779510	0.18426735	3.0584670	20	3 20.8	20.3
439722 2015 <i>DB</i> ₂₀₈	17.2	X	2.27169	127.99221	130.33046	8.97769	0.1267822	0.21469600	2.7621892	20	6 17.8	20.3
439723 2015 <i>DQ</i> ₂₀₈	16.3	X	349.27364	199.31212	111.61489	7.36185	0.2156162	0.22771328	2.6558924	20	8 15.1	18.4
439724 2015 <i>DE</i> ₂₁₀	16.4	X	44.20802	87.08220	94.34093	11.58426	0.1204860	0.20344155	2.8631423	20	5 15.9	20.0
439725 2015 <i>DG</i> ₂₁₀	16.7	X	181.18261	345.98912	113.07981	11.27047	0.1282572	0.23635529	2.5907519	20	7 9.2	20.8
439726 2015 <i>DT</i> ₂₁₀	15.9	X	217.85129	221.61623	109.00936	10.18918	0.0577304	0.17632732	3.1496066	20	3 16.6	20.7
439727 2015 <i>DH</i> ₂₁₁	16.8	X	62.20881	182.83755	68.92417	8.37899	0.1756346	0.24046745	2.5611313	20	9 29.3	20.4
439728 2015 <i>DM</i> ₂₁₃	16.2	X	56.17913	101.82216	149.54007	9.20799	0.1297122	0.23795911	2.5790979	20	9 10.2	20.4
439729 2015 <i>DQ</i> ₂₁₄	17.9	X	116.24894	190.28850	350.41368	4.31853	0.2100421	0.24031308	2.5622280	20	8 24.9	21.0
439730 2015 <i>ED</i> ₆₅	14.8	X	303.57854	193.25034	27.82398	28.94755	0.1608386	0.17131942	3.2106896	20	2 7.8	19.9
439731 2015 <i>FN</i> ₃₉	14.0	X	162.04770	353.43693	208.94944	7.14944	0.0563342	0.08204004	5.2454828	20	10 8.4	21.1
439732 2015 <i>FM</i> ₇₅	13.4	X	226.77609	293.69624	204.04189	18.83513	0.0451857	0.08220095	5.2386351	20	10 2.4	20.5
439733 2015 <i>FY</i> ₁₆₂	16.6	X	129.66753	94.33315	39.83854	13.16018	0.2071023	0.23541786	2.5976249	20	7 8.9	21.1
439734 2015 <i>FS</i> ₁₇₄	16.8	X	315.60997	260.42067	80.61610	10.48756	0.0924980	0.23616267	2.5921605	20	7 28.9	19.9
439735 2015 <i>FX</i> ₁₇₄	16.5	X	18.50704	71.66391	102.14417	9.38022	0.1485072	0.18887730	3.0084967	20	3 26.6	20.0
439736 2015 <i>FC</i> ₁₇₆	16.7	X	13.66833	214.48654	92.74979	8.82890	0.1901668	0.24191984	2.5508704	20	10 7.2	19.5
439737 2015 <i>FM</i> ₂₁₂	16.3	X	338.32262	249.60438	64.84514	15.57734	0.1006319	0.23509282	2.6000187	20	7 31.4	19.5
439738 2015 <i>FD</i> ₂₁₃	16.0	X	265.26874	210.89151	100.85659	10.28389	0.1917311	0.18766439	3.0214457	20	3 31.1	20.8
439739 2015 <i>FC</i> ₂₈₆	15.4	X	160.47439	4.81293	98.26798	16.53260	0.0763942	0.22291679	2.6938548	20	6 22.0	19.3
439740 2015 <i>FU</i> ₂₈₆	18.1	X	51.50502	76.26260	53.76564	26.07425	0.1079398	0.37394696	1.9080777	20	3 8.6	20.4
439741 2015 <i>FK</i> ₂₈₇	16.1	X	55.37398	316.08027	268.21146	10.72856	0.1967049	0.22922246	2.6442222	20	8 7.2	19.7
439742 2015 <i>FM</i> ₂₉₄	15.9	X	294.56267	152.04636	172.25434	15.56899	0.1536058	0.20585327	2.8407360	20	5 23.2	19.9
439743 2015 <i>FL</i> ₂₉₆	15.3	X	69.38684	295.78230	183.36329	22.52638	0.0679164	0.18064416	3.0992273	20	3 23.4	19.3
439744 2015 <i>FA</i> ₂₉₇	16.6	X	85.50332	47.13687	175.10673	16.82245	0.0656915	0.23968530	2.5667000	20	8 27.8	20.3
439745 2015 <i>FT</i> ₂₉₉	16.1	X	53.51713	73.60351	150.97779	12.23881	0.1152623	0.22184357	2.7025360	20	7 24.9</	

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
439761 2015 FH ₃₃₇	16.9	X	25.76505	97.70542	200.38032	11.31926	0.1103167	0.23393666	2.6085782	20	9 23.4	20.1
439762 2015 FR ₃₃₈	17.8	X	175.60357	29.74528	173.26812	11.01367	0.1517921	0.27707645	2.3302524	20	11 20.1	21.4
439763 2015 FF ₃₃₉	17.1	X	155.97111	117.28928	117.75005	9.02100	0.0480319	0.27584685	2.3371721	20	12 15.5	20.3
439764 2015 FC ₃₄₃	16.1	X	332.67213	106.66704	93.83944	11.37091	0.1580868	0.17651456	3.1473789	20	2 10.2	20.2
439765 2015 FP ₃₄₃	15.9	X	306.19175	150.47368	110.02877	11.62492	0.1669048	0.18533511	3.0467086	20	3 18.8	20.1
439766 2015 FP ₃₄₄	17.1	X	94.73784	66.55944	121.99064	5.42690	0.1494655	0.23665078	2.5885949	20	8 6.8	20.8
439767 2015 GN ₅	16.2	X	6.24901	241.98067	43.61109	13.51796	0.1592597	0.22325436	2.6911387	20	8 15.1	19.3
439768 2015 GP ₅	16.5	X	69.25393	200.30088	40.15583	12.53265	0.1397294	0.23910412	2.5708575	20	9 19.3	20.2
439769 2015 GB ₈	15.8	X	298.59548	139.62765	95.90022	14.42036	0.2075042	0.17183894	3.2042151	20	1 31.9	20.6
439770 2015 GW ₈	16.9	X	75.49281	68.22720	134.24954	13.23773	0.1293378	0.23221456	2.6214591	20	7 29.1	20.5
439771 2015 GK ₉	15.9	X	349.31787	120.39788	76.73234	17.06353	0.2127093	0.18292740	3.0733844	20	3 2.9	19.6
439772 2015 GH ₁₈	15.3	X	236.76031	256.23100	62.37734	20.74717	0.0932726	0.17960084	3.1112182	20	3 27.1	20.4
439773 2015 GM ₂₃	16.4	X	352.26174	141.52978	119.54458	11.88744	0.2362891	0.20262985	2.8707834	20	5 31.7	19.1
439774 2015 GW ₂₃	16.9	X	94.96556	115.45081	91.40696	18.06427	0.1274902	0.23756834	2.5819253	20	9 5.0	21.0
439775 2015 GO ₂₄	16.4	X	271.86999	169.96583	113.35487	11.72906	0.0132666	0.18508976	3.0494004	20	3 26.4	20.9
439776 2015 GR ₂₄	15.8	X	251.42147	202.62895	100.00363	10.45101	0.0516349	0.18264877	3.0765092	20	3 20.9	20.4
439777 2015 GW ₂₄	15.6	X	190.90291	254.04945	96.24189	10.71688	0.0932267	0.17417768	3.1754678	20	3 12.3	20.7
439778 2015 GE ₂₅	16.6	X	301.88059	160.69950	165.15537	14.13253	0.0899042	0.21796487	2.7345028	20	6 13.5	20.4
439779 2015 GB ₂₆	17.0	X	75.89266	115.59654	63.27521	17.21974	0.2584261	0.22312208	2.6922023	20	7 18.0	21.1
439780 2015 GQ ₂₆	15.8	X	236.98640	187.93735	137.53538	12.36564	0.1713798	0.18010976	3.1053548	20	3 21.2	20.9
439781 2015 GF ₃₃	15.9	X	184.88802	283.64854	73.63922	12.11863	0.1058155	0.17664751	3.1457995	20	3 16.2	21.0
439782 2015 GL ₃₄	16.4	X	286.75322	148.62588	137.17506	12.44420	0.1970075	0.17808392	3.1288608	20	3 20.8	21.1
439783 2015 GJ ₃₆	17.9	X	159.12858	146.56592	86.18169	2.75173	0.1783125	0.28695406	2.2764658	20	12 9.4	21.3
439784 2015 GR ₃₆	16.0	X	36.82651	195.11216	78.19725	15.10635	0.1494534	0.23483913	2.6018908	20	9 23.5	19.5
439785 2015 GT ₄₀	17.6	X	140.11510	120.48014	102.69351	7.08563	0.0730882	0.27749029	2.3279350	20	11 12.9	20.7
439786 2015 GQ ₄₂	17.1	X	19.06226	213.22623	101.75983	7.43805	0.3017670	0.24343662	2.5402636	20	11 13.1	20.0
439787 2015 GQ ₄₃	17.7	X	257.38309	324.75268	124.27463	6.29279	0.0660275	0.27135864	2.3628724	20	10 10.8	20.5
439788 2015 GL ₄₄	16.8	X	64.55457	87.58892	99.26076	5.64404	0.2223713	0.22197201	2.7014934	20	7 7.3	20.3
439789 2015 GO ₄₅	17.3	X	120.80294	209.08255	70.91107	7.64927	0.0851587	0.29225962	2.2488311	20	—	—
439790 2015 HA ₁₆	17.6	X	156.38695	192.61727	84.96947	5.41612	0.1400962	0.29924039	2.2137194	20	—	—
439791 2015 HF ₃₈	17.7	X	151.37412	98.02249	171.53544	8.04245	0.1555329	0.29579256	2.2308886	20	—	—
439792 2015 HY ₄₂	17.5	X	157.47192	3.18657	239.77936	4.20362	0.1330190	0.28968589	2.2621313	20	12 23.7	20.8
439793 2015 HF ₄₉	16.5	X	293.31364	168.65133	100.49959	11.11745	0.0560993	0.18970387	2.9997513	20	3 29.4	20.8
439794 2015 HB ₅₇	17.9	X	164.92963	339.63024	261.61595	4.41112	0.1588469	0.28896288	2.2659032	20	12 27.0	21.0
439795 2015 HQ ₆₀	16.9	X	44.22592	132.95705	165.29319	11.05509	0.1866475	0.23833080	2.5764157	20	11 6.5	20.5
439796 2015 HS ₆₃	17.3	X	103.04996	7.49152	247.03931	0.65898	0.1550522	0.26517535	2.3994624	20	11 11.8	20.9
439797 2015 HF ₇₃	18.2	X	174.84077	127.39486	67.55811	3.40841	0.1500119	0.27944362	2.3170741	20	11 7.9	21.5
439798 2015 HK ₁₀₀	16.7	X	68.68588	6.05506	211.19896	12.26699	0.1050145	0.22865803	2.6485717	20	8 1.2	20.5
439799 2015 HN ₁₀₃	16.0	X	242.75638	227.48714	100.39079	11.82821	0.1012825	0.18890960	3.0081537	20	4 6.5	20.7
439800 2015 HN ₁₀₃	16.0	X	302.69698	40.36136	225.76649	16.84474	0.1242001	0.18393497	3.0621503	20	3 17.6	20.5
439801 2015 HN ₁₆₇	17.9	X	103.27938	146.81438	138.17865	2.72690	0.1945033	0.27327121	2.3518347	20	12 22.5	21.7
439802 2015 HG ₁₇₁	17.4	X	140.32653	57.59282	185.34902	9.24066	0.1696401	0.27623802	2.3349652	20	12 4.5	21.3
439803 2015 HF ₁₇₄	16.3	X	54.72404	57.59885	136.77542	10.04245	0.1011394	0.20935341	2.8089846	20	6 14.2	20.0
439804 2015 HP ₁₇₅	16.9	X	109.87623	210.21803	100.45522	7.24808	0.1683523	0.29474623	2.2361652	20	—	—
439805 2015 HB ₁₇₆	15.7	X	71.53201	206.99803	61.05948	14.44022	0.2098840	0.24361019	2.5390568	20	11 2.7	19.6
439806 2015 HA ₁₇₈	16.3	X	22.00799	142.01794	178.58936	15.78110	0.1688667	0.23931938	2.5693157	20	11 2.6	19.5
439807 2015 JP ₂	15.0	X	230.04485	219.64902	90.88602	22.83416	0.1094263	0.17195519	3.2027708	20	3 7.7	20.4
439808 2015 JR ₂	15.0	X	337.65817	310.43299	257.81186	10.52541	0.0637064	0.17295074	3.1904683	20	3 1.5	19.6
439809 2015 KZ ₇	16.1	X	190.60357	270.36408	119.77215	11.24361	0.0002913	0.18345078	3.0675360	20	4 28.9	20.6
439810 2015 KM ₉	15.7	X	327.14930	153.15034	93.66291	17.56018	0.0565270	0.18222690	3.0812556	20	4 19.1	20.2
439811 2015 KC ₁₆	15.9	X	79.40528	292.18259	196.10790	15.45391	0.0289171	0.17440274	3.1727354	20	4 12.6	20.2
439812 2015 KE ₁₈	15.6	X	319.69286	153.84678	102.93008	24.56090	0.1452030	0.18029028	3.1032815	20	4 14.2	20.1
439813 2015 KH ₂₂	16.5	X	38.56389	156.61584	112.49988	14.34029	0.1519462	0.22853931	2.6494889	20	9 16.3	20.0
439814 2015 KB ₂₅	16.3	X	6.31517	236.81643	87.11249	13.07535	0.1529732	0.23819368	2.5774043	20	10 14.2	19.3
439815 2015 KT ₃₂	17.5	X	160.75494	156.74911	46.91496	8.24514	0.0484400	0.26931687	2.3747998	20	11 7.9	20.4
439816 2015 KE ₃₃	16.3	X	130.17992	203.10838	251.18002	8.25423	0.0683469	0.19642237	2.9309523	20	5 4.9	20.6
439817 2015 KY ₃₃	17.8	X	243.20175	192.37415	285.65532	3.15024	0.1033178	0.27174726	2.3606192	20	10 20.1	20.6
439818 2015 KB ₃₅	15.9	X	316.67259	25.41705	254.03079	4.19423	0.1132054	0.19441404	2.9511025	20	4 28.3	19.7
439819 2015 KU ₅₈	16.4	X	21.23478	218.71372	68.75829	9.94228	0.1786905	0.23292446	2.6161300	20	9 19.2	19.5
439820 2015 KX ₅₉	15.5	X	146.64511	318.06716	107.20136	18.80227	0.0773061	0.17873526	3.1212548	20	4 28.6	20.5
439821 2015 KV ₆₇	17.2	X	27.50209	57.99722	190.10262	9.37649	0.1602270	0.21662507	2.7457663	20	7 21.1	20.4
439822 2015 KX ₇₁	17.0	X	72.23292	166.20512	148.38888	7.32773	0.1841442	0.26786827	2.3833539	20	12 29.3	20.7
439823 2015 KE ₇₃	16.5	X	316.62429	210.66305	108.97365	7.52544	0.0385414	0.21698827	2.7427015	20	7 2.2	19.9
439824 2015 KG ₇₃	16.8	X	314.16273	159.70862	162.12061	6.77083	0.0562778	0.21557156	2.7547049	20	6 29.4	20.5
439825 2015 KP ₇₃	16.0	X	87.22760	291.04262	183.63579	10.05494	0.0264525	0.18052398	3.1006027	20	4 5.0	20.2
439826 2015 KE ₈₃	15.8	X	343.77656	175.89218	113.62856	14.11424	0.0819606	0.21274637	2.7790388	20	6 29.6	19.2
439827 2015 KB ₉₂	16.2	X	339.71970	25.07573	199.56795	8.48854	0.1112190	0.17807561	3.1289582	20	3 24.3	20.0
439828 2015 KT ₉₅	17.4	X	49.79285	212.07142	126.68692	7.53792	0.1998049	0.26339965	2.4102342	20	—	—
439829 2015 KD ₉₆	16.0	X	80.87200	8.85403	116.53384	10.29882	0.1453321	0.18505219	3.0498131	20	5 1.1	20.3
439830 2015 KS ₁₁₇	16.9	X	6.20365	182.58154	114.08966	9.85547	0.1240071	0.22082027	2.7108787	20	8 22.9	19.9
439831 1994 RD ₇	17.6	X	41.05045	71.47455	257.90206	1.12739	0.1721591	0.23226932	2.6210470	20	12 5.9	21.2
439832 1995 OO ₅	18.8	X	161.32363	197.93870	129.44259	1.20489	0.2958776	0.29606866	2.2295014	20	1 12.4	22.2
439833 1995 SS ₇₃	18.1	X	159.61940	156.78227	189.63379	3.71127	0.1875680	0.29644838				

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
439841 1997 <i>TB</i> ₂₀	17.1	X	42.33602	311.05914	350.05021	6.31194	0.1222888	0.21678576	2.7444093	20	10 19.6	20.7
439842 1998 <i>KL</i> ₁₀	16.5	X	38.33912	135.33291	153.24516	9.51041	0.1462020	0.18933526	3.0036434	20	9 30.9	20.4
439843 1998 <i>QR</i> ₂₉	17.4	X	48.09904	64.24099	268.78332	3.58457	0.1902906	0.23242613	2.6198680	20	12 21.0	21.1
439844 1998 <i>RF</i> ₂₆	16.8	X	28.18176	337.53884	17.13711	5.63240	0.3267509	0.23088474	2.6315153	20	—	—
439845 1998 <i>RJ</i> ₅₄	17.7	X	121.85527	189.33593	195.24521	7.35524	0.3001389	0.28971163	2.2619974	20	2 16.1	20.9
439846 1998 <i>SL</i> ₆	17.4	X	20.48737	46.35157	355.44785	4.74053	0.2897196	0.23381861	2.6094561	20	—	—
439847 1998 <i>SY</i> ₇	16.4	X	280.70826	311.66111	50.77797	0.57283	0.2066491	0.17154536	3.2078698	20	6 12.2	20.8
439848 1998 <i>SF</i> ₁₁₀	17.5	X	60.71451	349.19971	351.33857	6.87283	0.3757806	0.23303420	2.6153086	20	—	—
439849 1998 <i>TB</i> ₃	15.8	X	274.27303	101.48981	255.93433	23.59411	0.1868574	0.21535758	2.7565293	20	6 1.1	19.5
439850 1998 <i>TK</i> ₃	16.6	X	8.81095	180.70085	214.10887	13.23388	0.2920725	0.22993674	2.6387432	20	—	—
439851 1998 <i>WP</i> ₂₅	17.8	X	92.06358	339.42674	46.46853	5.83666	0.1694330	0.28450243	2.2895250	20	—	—
439852 1998 <i>WX</i> ₂₉	17.8	X	116.17193	11.77624	333.91046	0.94410	0.2427492	0.28426500	2.2907997	20	—	—
439853 1998 <i>XD</i> ₄	18.2	X	103.81743	170.87725	226.34809	4.29859	0.1935932	0.28623245	2.2802903	20	1 26.9	20.7
439854 1998 <i>XA</i> ₅	18.7	X	350.18146	211.25586	274.18512	31.76591	0.3071996	0.50664122	1.5583645	20	—	—
439855 1998 <i>XF</i> ₇	17.3	X	35.91224	102.26639	236.82613	11.39781	0.2857661	0.22721660	2.6597614	20	12 25.4	21.2
439856 1998 <i>XR</i> ₉₈	18.1	X	92.66779	147.23047	232.23453	4.40479	0.2516632	0.28356104	2.2945895	20	—	—
439857 1998 <i>YJ</i> ₁₃	16.7	X	269.89266	330.15535	105.88107	10.20886	0.1475133	0.21536533	2.7564631	20	9 20.2	20.4
439858 1999 <i>ON</i> ₄	7.6	X	21.84051	187.44548	133.01168	3.18268	0.0473454	0.00350620	42.9119644	20	9 7.9	23.7
439859 1999 <i>RF</i> ₉	17.7	X	279.58799	211.18877	156.47075	1.15315	0.1884767	0.18070614	3.0985186	20	6 20.4	21.8
439860 1999 <i>SZ</i> ₂₀	18.2	X	37.52033	171.38157	209.40202	1.36883	0.2331194	0.24524735	2.5277445	20	—	—
439861 1999 <i>SW</i> ₂₂	17.2	X	285.37067	80.81027	9.80366	11.36944	0.1580060	0.23612355	2.5924468	20	10 29.3	20.0
439862 1999 <i>TT</i> ₄₅	17.9	X	30.62556	351.98384	8.42997	5.67935	0.2422152	0.24092301	2.5579017	20	—	—
439863 1999 <i>TH</i> ₅₀	16.2	X	107.77581	355.39533	188.14568	22.88731	0.0841027	0.17958631	3.1113860	20	7 30.0	21.2
439864 1999 <i>TL</i> ₅₄	16.4	X	251.33505	166.98524	215.75355	5.10143	0.1780118	0.17588320	3.1549063	20	6 8.4	21.3
439865 1999 <i>TB</i> ₇₂	18.8	X	176.66495	138.92514	109.54976	1.12079	0.1506375	0.30417559	2.8197094	20	1 14.9	21.8
439866 1999 <i>TN</i> ₂₉₆	16.2	X	216.47753	79.67724	350.83298	8.21913	0.1365466	0.17840376	3.1251201	20	7 7.2	21.2
439867 1999 <i>VC</i> ₈₅	16.1	X	323.49911	83.04635	225.32393	9.52179	0.1046928	0.17365331	3.1818571	20	6 26.3	20.6
439868 1999 <i>VA</i> ₁₀₂	17.3	X	359.85664	193.55115	227.16639	10.13970	0.2210752	0.24075032	2.5591248	20	—	—
439869 1999 <i>VZ</i> ₁₀₆	17.4	X	14.34814	349.24894	64.70882	7.79698	0.0779743	0.28947105	2.2632505	20	—	—
439870 1999 <i>VL</i> ₁₁₀	18.0	X	37.00382	324.89181	230.92362	10.20236	0.2540713	0.24235254	2.5478333	20	—	—
439871 1999 <i>VC</i> ₁₂₀	16.5	X	187.85908	64.75660	18.96512	5.60391	0.1020629	0.17326811	3.1865712	20	6 25.2	21.5
439872 1999 <i>VA</i> ₁₂₂	17.9	X	337.96208	338.36414	77.42308	3.74311	0.1403578	0.23726716	2.5841098	20	12 22.8	20.5
439873 1999 <i>VP</i> ₁₄₂	18.3	X	164.06404	248.44398	88.96102	3.65202	0.1618874	0.30156550	2.2023260	20	1 15.4	21.3
439874 1999 <i>VB</i> ₁₅₃	17.8	X	349.90086	311.56452	76.72750	3.24785	0.1244155	0.23599632	2.5933784	20	12 3.3	20.6
439875 1999 <i>VX</i> ₁₆₅	17.4	X	3.13985	345.31788	36.18774	5.42971	0.2717803	0.23785183	2.5798733	20	—	—
439876 1999 <i>VM</i> ₁₉₆	16.4	X	230.40578	225.89000	193.77296	11.71454	0.3035113	0.17487666	3.1670006	20	6 22.3	22.0
439877 1999 <i>XM</i> ₁₄₁	19.5	X	270.53563	105.71781	73.02169	21.62066	0.3693040	0.71695843	1.2363461	20	—	—
439878 1999 <i>XZ</i> ₁₄₅	18.2	X	319.17014	351.12619	73.02965	3.36999	0.1486481	0.23542292	2.5975877	20	11 29.1	20.5
439879 1999 <i>XC</i> ₁₄₆	18.1	X	113.41717	157.43302	236.19418	4.05454	0.1261553	0.30066719	2.2067105	20	1 22.4	20.5
439880 1999 <i>XV</i> ₂₂₃	17.8	X	17.11688	300.92851	97.94271	7.36693	0.3585234	0.23938216	2.5688664	20	—	—
439881 1999 <i>XE</i> ₂₅₀	16.9	X	346.47911	118.58098	252.23157	12.19249	0.2685272	0.23446259	2.6046758	20	11 18.4	18.9
439882 1999 <i>YZ</i> ₁₂	17.1	X	241.70534	168.31958	293.24779	11.19083	0.1292772	0.22481515	2.6786687	20	9 9.7	21.0
439883 2000 <i>AB</i> ₄	16.1	X	313.81189	158.89873	286.29044	21.06107	0.0978892	0.23358470	2.6111979	20	12 19.3	19.1
439884 2000 <i>AT</i> ₂₂₁	17.1	X	97.21192	150.70119	101.28144	7.20175	0.0619075	0.22419297	2.6836223	20	10 22.8	21.0
439885 2000 <i>CD</i> ₃₂	17.8	X	165.10746	29.86685	139.38440	24.47796	0.2328008	0.41130604	1.7907130	20	10 15.9	20.8
439886 2000 <i>KQ</i> ₁	16.1	X	277.18163	12.10351	211.08929	37.62646	0.2889461	0.23239704	2.6200867	20	—	—
439887 2000 <i>MO</i> ₆	17.2	X	117.06191	353.17058	313.63024	4.81914	0.3163008	0.26506305	2.4001401	20	—	—
439888 2000 <i>NO</i> ₁	18.2	X	175.68477	350.86910	237.06709	3.51978	0.0904699	0.26350590	2.4095863	20	12 21.9	21.5
439889 2000 <i>PG</i> ₅	20.1	X	208.15275	358.71294	309.74954	6.11889	0.4581161	0.32694668	2.0868189	20	1 23.7	24.2
439890 2000 <i>QA</i> ₁₃₃	17.9	X	63.51594	230.68370	138.57913	4.47779	0.3697149	0.26043907	2.4284656	20	—	—
439891 2000 <i>RG</i> ₈₄	16.8	X	79.03403	29.20706	310.46506	11.07638	0.2250220	0.26168320	2.4207623	20	—	—
439892 2000 <i>SF</i> ₁₄	17.1	X	78.38569	116.09699	262.34545	7.70587	0.2887601	0.26334714	2.4105546	20	—	—
439893 2000 <i>SN</i> ₁₈₄	18.0	X	76.98690	248.81689	153.51853	4.57334	0.2863177	0.26431018	2.4046957	20	1 10.1	19.9
439894 2000 <i>SZ</i> ₂₀₇	17.1	X	35.28974	201.93376	169.95336	0.83370	0.2037887	0.25482192	2.4640236	20	—	—
439895 2000 <i>ST</i> ₂₄₉	17.5	X	106.55125	176.29791	152.56888	5.55106	0.2674108	0.26225101	2.4172669	20	—	—
439896 2000 <i>SK</i> ₃₂₆	17.4	X	289.23844	8.29934	13.53338	5.73880	0.1779490	0.19043331	2.9920862	20	7 26.6	21.3
439897 2000 <i>TU</i> ₁	17.5	X	74.85507	218.75728	330.74714	19.10746	0.0201959	0.38693658	1.8651318	20	7 5.3	19.6
439898 2000 <i>TG</i> ₂	19.9	X	143.56051	200.39798	206.84526	12.00014	0.2454547	0.52512711	1.5215740	20	3 12.2	20.9
439899 2000 <i>UA</i> ₁₃	16.8	X	60.68344	74.14128	288.26965	6.43415	0.1337736	0.25690729	2.4506715	20	—	—
439900 2000 <i>WB</i> ₅	16.3	X	245.95650	181.94077	258.85155	13.04626	0.1344601	0.23898045	2.5717444	20	8 18.6	20.2
439901 2000 <i>WK</i> ₂₄	18.1	X	0.54163	123.60674	300.14932	1.57596	0.2357836	0.25324112	2.4742670	20	—	—
439902 2000 <i>WR</i> ₄₅	16.2	X	256.38128	141.11459	233.73169	19.24026	0.2845629	0.18356664	3.0662451	20	5 23.1	21.1
439903 2000 <i>WR</i> ₅₆	15.7	X	265.00665	129.61849	238.97410	18.52482	0.2848281	0.18444704	3.0564802	20	5 23.4	20.4
439904 2000 <i>WO</i> ₆₈	17.3	X	76.69880	120.08466	243.47666	8.10417	0.2577278	0.25832443	2.4417005	20	—	—
439905 2000 <i>WY</i> ₁₃₆	17.0	X	61.53165	332.77813	42.68898	6.35735	0.2081535	0.25710365	2.4494236	20	—	—
439906 2000 <i>WB</i> ₁₉₂	17.9	X	105.69785	236.01566	154.03602	8.28235	0.3170234	0.26593265	2.3949049	20	2 12.2	20.9
439907 2000 <i>XH</i> ₁₁	14.6	X	181.78648	2.06158	40.05423	11.69210	0.3215266	0.12402337	3.9822975	20	5 1.2	21.4
439908 2000 <i>XH</i> ₄₇	19.3	X	143.49636	104.73252	295.84942	16.94719	0.2252277	0.52305363	1.5255926	20	2 20.4	20.4
439909 2000 <i>YX</i> ₁₃₃	17.8	X	122.85519	186.57818	295.23845	18.99469	0.0568848	0.37417117	1.9073154	20	5 30.5	20.2
439910 2001 <i>AD</i> ₄₄	17.8	X	247.33489	114.08355	305.30333	19.20650	0.1259835	0.38543453	1.8699743	20	8 9.8	19.3
439911 2001 <i>DY</i> ₈	17.4	X	114.12047	306.92837	142.30145	24.42884	0.0781335	0.36576524	1.9364268	20	4 7.6	19.9
439912 2001 <i>FD</i> ₈₇	17.5	X	224.73467	13.16435	153.52008	7.62750	0.2205761	0.287				

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>		
439921	2001	QM ₁₇₂	17.4	X	94.51287	120.05438	269.58241	5.48495	0.1842956	0.28210601	2.3024727	20	1 1.9	19.7
439922	2001	QK ₂₁₁	18.2	X	125.22595	142.97122	184.24835	2.78733	0.2669535	0.27954978	2.3164874	20	—	—
439923	2001	QO ₂₁₆	17.8	X	145.63054	184.60962	131.46799	4.33342	0.2411562	0.28155827	2.3054579	20	—	—
439924	2001	QY ₂₂₅	17.1	X	2.70208	47.08913	293.62377	8.13240	0.2272801	0.20982008	2.8048179	20	10 22.1	20.1
439925	2001	QX ₂₅₅	16.3	X	29.03421	340.66439	346.18932	13.26747	0.1912917	0.21370622	2.7707112	20	11 10.4	20.1
439926	2001	QY ₂₆₄	18.0	X	98.66752	218.92693	144.72911	6.09809	0.2600974	0.28022972	2.3127388	20	—	—
439927	2001	QM ₂₉₀	18.4	X	120.34083	192.03868	169.26278	2.44046	0.2280480	0.28306134	2.2972893	20	1 7.9	21.2
439928	2001	RH ₁₂	18.5	X	111.93173	7.14264	1.78340	2.28990	0.3062035	0.28151201	2.3057105	20	1 20.4	21.3
439929	2001	RF ₂₄	18.1	X	144.76629	333.85250	354.39706	2.67373	0.2390414	0.28292326	2.2980366	20	—	—
439930	2001	RK ₂₉	17.2	X	18.40066	238.27914	153.73964	8.55729	0.2895261	0.21698204	2.7427540	20	—	—
439931	2001	RT ₄₆	17.6	X	195.61460	268.04418	151.82821	23.26411	0.3158897	0.34946673	1.9961760	20	6 3.2	21.6
439932	2001	RW ₅₉	17.7	X	139.69074	223.19076	90.51421	3.24460	0.2355265	0.28004784	2.3137400	20	—	—
439933	2001	RE ₁₂₉	16.4	X	359.57301	341.74858	5.77806	11.92355	0.1522261	0.20986862	2.8043855	20	10 17.6	19.7
439934	2001	RY ₁₄₅	16.9	X	336.03644	173.52407	215.26269	7.54855	0.2243415	0.21068035	2.7971775	20	11 7.1	19.1
439935	2001	SY ₃₄	17.6	X	116.28198	176.91895	172.00688	5.34556	0.1886517	0.27869575	2.3212174	20	—	—
439936	2001	SS ₃₇	17.7	X	137.31967	333.14754	19.98362	11.21977	0.2791411	0.28257432	2.2999281	20	1 27.0	21.3
439937	2001	SB ₃₈	17.9	X	104.17569	213.79327	156.87002	4.57060	0.1877036	0.27890139	2.3200763	20	—	—
439938	2001	SM ₃₈	16.9	X	17.38927	344.64492	16.73646	9.56466	0.2164520	0.21232892	2.7826801	20	12 16.3	20.5
439939	2001	SX ₇₇	18.2	X	117.53744	162.46030	161.19738	1.11666	0.2095166	0.27768178	2.3268647	20	—	—
439940	2001	SK ₁₂₁	17.3	X	328.05245	48.72591	274.16543	4.08790	0.2590733	0.20345518	2.8630145	20	7 1.2	19.6
439941	2001	SH ₁₂₇	17.3	X	354.78701	19.77067	335.50628	9.14034	0.1944451	0.20976202	2.8053355	20	10 22.3	20.3
439942	2001	SD ₁₃₂	18.4	X	110.95197	114.84375	218.91975	0.71781	0.2016070	0.27725583	2.3292473	20	—	—
439943	2001	SO ₁₅₂	17.6	X	56.78633	160.17718	203.79682	6.70829	0.2443417	0.27146500	2.3622552	20	—	—
439944	2001	SS ₁₇₄	16.6	X	6.17651	206.97513	172.50986	13.04056	0.1901062	0.21309337	2.7760210	20	12 20.2	20.1
439945	2001	SL ₂₂₅	16.8	X	23.48525	150.26889	178.44784	10.05820	0.2118090	0.21062203	2.7976938	20	11 14.8	20.3
439946	2001	SV ₂₄₆	17.6	X	124.59566	167.94506	175.73988	6.01629	0.2017621	0.27886270	2.3202908	20	—	—
439947	2001	SQ ₂₉₀	17.9	X	133.08385	280.24107	61.80143	3.03303	0.2458544	0.28082016	2.3094959	20	1 1.1	21.1
439948	2001	SD ₃₀₀	17.4	X	13.98679	23.42429	329.84783	7.01334	0.2759445	0.21202922	2.7847440	20	12 10.4	20.7
439949	2001	SG ₃₁₈	18.6	X	92.58364	355.67057	6.19726	1.38218	0.2065893	0.27702262	2.3305543	20	—	—
439950	2001	SK ₃₂₃	17.8	X	61.99278	165.18712	251.92857	3.90678	0.2024461	0.27827442	2.3235598	20	—	—
439951	2001	SD ₃₃₈	18.6	X	89.02913	13.21445	355.55022	1.23262	0.1960733	0.27716984	2.3297290	20	—	—
439952	2001	SB ₃₃₉	17.0	X	18.78655	105.60731	236.89019	7.54056	0.3052843	0.21328386	2.7743679	20	12 9.3	20.3
439953	2001	TV ₅₄	18.4	X	122.79930	148.73756	210.46100	4.42697	0.2787126	0.28144561	2.3060731	20	1 14.9	21.4
439954	2001	TJ ₅₅	17.4	X	200.07768	177.16149	216.22736	21.39181	0.1069543	0.34751617	2.0036385	20	5 1.9	19.7
439955	2001	TV ₁₀₄	18.1	X	63.85881	331.78511	52.78528	2.96169	0.2186029	0.27364994	2.3496642	20	—	—
439956	2001	TN ₁₇₃	18.2	X	69.57201	263.83875	127.21310	1.33656	0.1873793	0.27570010	2.3380014	20	—	—
439957	2001	TX ₁₇₃	16.9	X	26.57226	93.50050	355.06610	11.17360	0.1126940	0.27671675	2.3322714	20	—	—
439958	2001	TD ₁₈₆	18.5	X	133.53222	4.90626	338.26321	1.87137	0.2778300	0.28046916	2.3114223	20	1 7.3	21.7
439959	2001	TX ₁₈₉	17.6	X	78.48859	102.22854	273.81389	3.52282	0.2569975	0.27426218	2.3461662	20	—	—
439960	2001	TO ₁₉₉	16.5	X	358.05546	329.36855	36.76095	12.22276	0.2465970	0.21055651	2.7982742	20	11 22.8	19.4
439961	2001	UM ₅₃	16.4	X	17.38725	191.12547	189.82688	12.96492	0.2788574	0.21171811	2.7880296	20	—	—
439962	2001	UT ₅₅	18.7	X	72.09511	39.39652	5.25021	8.70594	0.2420960	0.27752405	2.3277462	20	—	—
439963	2001	UF ₁₃₆	16.7	X	259.14204	249.74448	214.64440	6.83442	0.2833939	0.20312044	2.8661591	20	9 13.5	20.9
439964	2001	UC ₁₄₈	18.6	X	92.80492	164.17608	204.47736	2.90203	0.2711153	0.27642126	2.3339332	20	—	—
439965	2001	UF ₁₄₉	17.3	X	32.12491	342.89876	60.88299	3.85046	0.1979507	0.26971239	2.3724770	20	—	—
439966	2001	UO ₁₅₉	17.6	X	112.18168	291.01794	53.22835	10.67422	0.2577466	0.27543397	2.3395072	20	—	—
439967	2001	UY ₁₉₇	16.8	X	340.38597	37.93456	340.19873	3.33732	0.1099024	0.20871463	2.8147130	20	10 23.9	20.1
439968	2001	UL ₂₂₉	17.3	X	332.30871	285.68825	100.44885	4.30306	0.1937348	0.20887013	2.8133159	20	10 25.7	20.0
439969	2001	VO ₃	18.6	X	52.49985	172.52873	241.54664	0.72443	0.1680132	0.27445355	2.3450754	20	—	—
439970	2001	VG ₈	16.4	X	277.54484	14.67445	50.27876	12.07621	0.1056535	0.20251498	2.8718689	20	9 22.4	20.3
439971	2001	VM ₂₃	15.9	X	308.43285	354.06272	50.63017	11.85819	0.1438464	0.20358509	2.8617964	20	10 8.2	19.2
439972	2001	UX ₂₆	17.4	X	129.66776	347.71700	55.45148	6.34994	0.1597695	0.28326672	2.2961787	20	3 8.7	20.5
439973	2001	VF ₆₀	17.2	X	60.04126	321.07054	20.86658	5.28052	0.2573443	0.26828458	2.3808877	20	—	—
439974	2001	WH ₁₅	16.7	X	116.22278	92.92660	263.00320	20.86212	0.3409527	0.27616856	2.3353567	20	1 9.8	20.0
439975	2001	WG ₂₁	18.2	X	98.61332	334.33033	38.45834	6.21064	0.1641326	0.27627849	2.3347372	20	—	—
439976	2001	WF ₃₂	18.2	X	38.63063	5.80323	68.86630	7.14876	0.2231142	0.27351814	2.3504190	20	—	—
439977	2001	WT ₅₃	18.4	X	77.29449	357.86749	44.49556	3.64779	0.1798129	0.27663658	2.3327220	20	—	—
439978	2001	WC ₆₅	17.6	X	130.47536	284.21076	52.06681	11.16911	0.2665020	0.27916836	2.3185969	20	—	—
439979	2001	WM ₆₅	17.8	X	94.03910	153.15892	218.45519	4.39982	0.1488306	0.27642250	2.3339262	20	—	—
439980	2001	WY ₆₇	17.8	X	133.36102	129.93074	207.02631	1.79273	0.2310311	0.27844586	2.3226060	20	—	—
439981	2001	WH ₆₈	17.9	X	99.36010	281.25268	63.15336	3.73112	0.2224079	0.27412437	2.3469524	20	—	—
439982	2001	WG ₆₇	18.2	X	88.35781	137.50659	258.84556	4.13523	0.2407788	0.27786552	2.3258388	20	1 11.4	20.4
439983	2001	WP ₉₁	17.6	X	89.12870	44.80064	338.16013	4.18276	0.2504180	0.27564858	2.3382927	20	—	—
439984	2001	XK ₅₁	17.3	X	22.94135	172.21291	243.85968	8.32444	0.1320489	0.26867322	2.3785911	20	—	—
439985	2001	XT ₇₅	16.1	X	304.59000	340.32923	63.66893	16.10919	0.1268192	0.20376306	2.8601299	20	10 6.5	19.8
439986	2001	XF ₁₁₀	17.7	X	74.95855	309.21707	92.93138	6.62520	0.2406186	0.27582125	2.3373167	20	—	—
439987	2001	XS ₁₄₆	14.8	X	128.25957	182.27235	266.07257	7.60032	0.1982599	0.12637803	3.9326774	20	5 9.2	21.0
439988	2001	XF ₁₆₉	17.4	X	49.38677	18.77813	93.74980	5.16843	0.2642498	0.27644973	2.3337729	20	2 21.2	18.7
439989	2001	XH ₂₃₀	16.9	X	39.70212	327.49177	74.76875	10.50604	0.0955412	0.26870876	2.3783814	20	—	—
439990	2001	XB ₂₃₅	17.5	X	110.93862	95.71854	159.98721	8.94216	0.2566522	0.27699324	2.3307191	20	1 14.5	20.2
439991	2001	YC ₁₆	17.8	X	60.96918	299.82704	85.28262							