

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>
520001 2013 TH ₁₇₀	16.6	X	9.96715	58.77502	45.12102	11.23940	0.0514607	0.17998143	3.1068307	20	—	—
520002 2013 TM ₁₇₀	17.2	X	124.73711	3.89647	71.94577	4.93573	0.1827237	0.21297357	2.7770620	20	4 19.9	21.5
520003 2013 TN ₁₇₀	17.5	X	225.54855	215.10671	148.24679	4.31761	0.1061063	0.23172519	2.6251485	20	4 25.4	21.4
520004 2013 TP ₁₇₀	16.7	X	85.43823	329.21984	61.95531	1.24953	0.1886081	0.18191677	3.0847565	20	1 13.3	20.5
520005 2013 TU ₁₇₀	17.2	X	162.40332	2.89600	54.85549	12.13072	0.0516592	0.22198883	2.7013569	20	4 26.9	21.1
520006 2013 TZ ₁₇₀	17.4	X	127.79901	225.91273	217.44885	3.32793	0.0754265	0.21285622	2.7780825	20	4 19.2	21.4
520007 2013 TC ₁₇₁	16.7	X	189.14562	342.17043	52.97439	11.99967	0.1338827	0.22192849	2.7018465	20	4 28.2	21.0
520008 2013 UQ ₁₉	17.3	X	104.47579	23.30345	57.48031	4.27633	0.0733624	0.21056396	2.7982082	20	3 20.7	21.2
520009 2013 UJ ₁₉	17.6	X	288.33268	226.03513	67.82485	2.97849	0.0271528	0.22726018	2.6594214	20	4 20.5	21.2
520010 2013 UV ₁₉	17.5	X	102.46230	12.43985	94.84484	3.86062	0.1113148	0.21559187	2.7545318	20	4 25.9	21.3
520011 2013 UH ₂₀	17.9	X	169.61438	5.38870	64.59087	4.01166	0.1649776	0.22712576	2.6604705	20	5 21.9	22.0
520012 2013 UN ₂₀	17.5	X	173.25188	182.44815	230.10600	10.82339	0.1642676	0.22189447	2.7021227	20	5 3.1	21.8
520013 2013 UQ ₂₀	17.0	X	185.31571	331.17631	6.24957	2.26065	0.0066926	0.19927646	2.9028998	20	2 11.2	20.9
520014 2013 UT ₂₀	17.3	X	148.16908	238.37510	254.84610	9.75315	0.0812618	0.23844519	2.5755916	20	7 16.3	21.2
520015 2013 UY ₂₀	16.7	X	166.30826	321.76612	50.88569	14.19506	0.1695225	0.21268970	2.7795324	20	3 17.8	21.4
520016 2013 UZ ₂₀	17.6	X	140.37831	275.36952	184.46275	6.01316	0.0826424	0.22593424	2.6698161	20	5 26.9	21.5
520017 2013 UB ₂₁	17.6	X	172.23286	255.13026	214.11489	3.38057	0.1723390	0.23860368	2.5744510	20	7 12.6	21.8
520018 2013 UE ₂₁	17.3	X	211.65108	311.92241	78.55177	3.37651	0.0995091	0.23026907	2.6362038	20	5 14.6	21.1
520019 2013 UH ₂₁	17.3	X	204.74755	108.29511	262.86974	4.79576	0.0710631	0.21968683	2.7201950	20	4 11.3	21.3
520020 2013 UL ₂₁	17.4	X	184.83687	4.82660	28.92580	8.37594	0.0678459	0.21894535	2.7263330	20	4 19.9	21.5
520021 2013 UO ₂₁	16.8	X	173.74630	236.98688	133.15577	2.96631	0.0820189	0.20348054	2.8627766	20	3 12.0	21.0
520022 2013 UP ₂₁	17.2	X	205.05365	124.68357	230.60232	5.71194	0.0586276	0.21711823	2.7416069	20	3 23.1	21.2
520023 2013 UA ₂₂	16.8	X	248.59718	300.92369	65.22711	22.87677	0.0621229	0.23654778	2.5893463	20	5 28.6	20.4
520024 2013 UB ₂₂	17.0	X	161.49650	319.09110	98.98988	6.00205	0.1454489	0.21883636	2.7272381	20	5 1.1	21.3
520025 2013 UD ₂₂	17.2	X	199.95290	38.29286	40.89301	17.98724	0.1651799	0.24018063	2.5631699	20	6 30.5	21.6
520026 2013 VB ₂₇	17.3	X	226.06261	192.07465	139.69828	5.53319	0.1170243	0.22112907	2.7083544	20	3 17.1	21.4
520027 2013 VG ₂₇	15.8	X	130.03068	253.86110	80.13776	14.49356	0.0923407	0.17257753	3.1950663	20	—	—
520028 2013 VJ ₂₇	17.0	X	140.01190	359.68056	66.68190	5.93168	0.1064510	0.21319893	2.7751046	20	4 16.9	21.1
520029 2013 VU ₂₇	17.6	X	267.95320	260.51190	70.62907	3.96082	0.1073949	0.23049725	2.6344637	20	5 1.4	21.1
520030 2013 VY ₂₇	16.5	X	347.63198	1.76888	260.97245	11.23621	0.0948354	0.23282441	2.6168794	20	5 27.8	19.5
520031 2013 VZ ₂₇	16.4	X	124.01432	256.51682	103.67584	2.48933	0.1622798	0.18226031	3.0808790	20	1 18.3	21.0
520032 2013 VE ₂₈	17.1	X	142.62677	280.48176	104.68702	2.42990	0.1203457	0.19667258	2.9284659	20	3 1.6	21.6
520033 2013 VE ₂₈	16.8	X	232.77959	78.06406	248.83901	11.63747	0.1497643	0.21360821	2.7715587	20	3 9.3	21.5
520034 2013 VG ₂₈	16.6	X	260.72132	101.97181	247.78087	9.91844	0.1996142	0.23747068	2.5826331	20	5 2.9	20.4
520035 2013 VJ ₂₈	17.4	X	215.70731	311.10855	64.92541	2.56274	0.0886936	0.22233382	2.6985618	20	5 1.2	21.2
520036 2013 VK ₂₈	17.1	X	116.66343	35.17110	82.84870	4.39596	0.1501273	0.21536915	2.7564305	20	5 29.9	21.3
520037 2013 VP ₂₈	17.3	X	212.85146	221.39403	183.36508	9.34779	0.1270868	0.23437306	2.6053391	20	6 2.4	21.4
520038 2013 VT ₂₈	17.5	X	313.13920	224.37136	58.48015	2.27208	0.1668689	0.23584605	2.5944799	20	4 18.5	20.5
520039 2013 VU ₂₈	17.1	X	20.87672	151.98611	124.57272	5.55174	0.0412867	0.24984448	2.4966416	20	8 11.5	19.9
520040 2013 VV ₂₈	17.4	X	274.26681	299.55816	22.62412	2.21408	0.1851025	0.23312620	2.6146205	20	4 15.4	21.1
520041 2013 VA ₂₉	16.4	X	58.63136	231.66881	220.12919	9.87172	0.0725154	0.18852193	3.0122763	20	1 30.8	20.6
520042 2013 VE ₂₉	16.5	X	148.43549	29.75376	103.36039	13.07456	0.0606457	0.22004982	2.7172027	20	7 16.7	20.4
520043 2013 VJ ₂₉	16.9	X	350.04563	44.98433	222.10774	14.50249	0.1070711	0.23501122	2.6006205	20	6 7.4	19.9
520044 2013 VL ₂₉	16.7	X	115.83214	254.73212	97.82243	2.28917	0.2216649	0.18028747	3.1033138	20	1 8.3	21.3
520045 2013 VN ₂₉	17.1	X	297.24259	96.98886	202.07715	5.64093	0.0764953	0.22668933	2.6638842	20	5 2.0	20.4
520046 2013 VP ₂₉	17.0	X	59.88837	333.65823	194.54974	7.49190	0.1479733	0.21306225	2.7762913	20	5 24.3	20.4
520047 2013 VV ₂₉	17.6	X	150.78149	288.21235	153.81179	3.08827	0.1558694	0.22005240	2.7171815	20	5 19.9	22.0
520048 2013 VV ₂₉	16.5	X	232.13350	10.89312	258.13606	9.95508	0.1071901	0.18854241	3.0120581	20	1 9.6	21.3
520049 2013 VY ₂₉	17.6	X	176.37758	62.67135	30.65770	7.49173	0.0964067	0.23784433	2.5799276	20	6 27.3	21.6
520050 2013 VZ ₂₉	17.6	X	160.71676	179.21290	244.67208	4.64454	0.1225355	0.21948551	2.7218581	20	5 3.7	21.7
520051 2013 VA ₃₀	16.9	X	188.77180	156.25522	240.38394	12.41299	0.1899263	0.22285774	2.6943307	20	4 26.2	21.5
520052 2013 VE ₃₀	16.9	X	86.32366	204.84555	265.32523	2.84099	0.0604332	0.20904634	2.8117347	20	3 29.6	20.7
520053 2013 VF ₃₀	17.0	X	284.36089	28.71667	262.03488	3.83519	0.1278499	0.22428201	2.6829120	20	3 24.4	20.7
520054 2013 VK ₃₀	17.5	X	270.32829	126.78929	291.33385	9.28962	0.1269835	0.26563814	2.3967477	20	8 28.2	20.5
520055 2013 VO ₃₀	17.0	X	168.41592	55.62312	359.66115	11.90873	0.0772359	0.22072965	2.7116206	20	4 25.3	21.2
520056 2013 VQ ₃₀	17.1	X	285.28453	95.68114	244.25567	7.16995	0.1639729	0.24075841	2.5590675	20	5 26.4	20.3
520057 2013 VR ₃₀	16.1	X	221.16070	32.76933	251.93604	9.31452	0.0272354	0.18307520	3.0717300	20	1 19.8	20.7
520058 2013 VT ₃₀	17.1	X	236.24093	94.67846	241.62578	3.72057	0.10715920	0.21420920	2.7663723	20	4 3.4	21.1
520059 2013 WR ₁₁₁	17.1	X	204.33491	313.74859	58.65505	6.89119	0.0551237	0.21807765	2.7335600	20	4 17.1	21.1
520060 2013 WS ₁₁₁	16.0	X	112.43952	349.95661	54.34133	11.17778	0.0952214	0.19147787	2.9811946	20	2 22.5	20.4
520061 2013 WU ₁₁₁	16.0	X	141.64979	261.77188	77.43897	10.69875	0.1560298	0.18281555	3.0746378	20	1 11.3	20.8
520062 2013 WX ₁₁₁	16.7	X	24.39223	25.95101	110.46883	6.99649	0.0761456	0.18429838	3.0581236	20	2 12.1	20.5
520063 2013 WY ₁₁₁	17.5	X	152.61006	8.69734	100.42118	7.23932	0.1175746	0.22709887	2.6606805	20	6 22.7	21.5
520064 2013 WZ ₁₁₁	16.7	X	172.34711	238.23304	101.84045	4.08712	0.0585870	0.18691808	3.0294829	20	2 3.9	21.1
520065 2013 WB ₁₁₂	17.1	X	68.21917	299.34521	247.57356	6.43202	0.1441705	0.21989549	2.7184739	20	6 29.3	20.7
520066 2013 WH ₁₁₂	16.4	X	103.81756	261.21014	269.07496	22.86770	0.1915627	0.22516813	2.6758685	20	7 21.1	20.8
520067 2013 WP ₁₁₂	18.3	X	56.91789	129.32640	268.89800	2.65839	0.0212478	0.31302141	2.1482592	20	—	—
520068 2013 WQ ₁₁₂	16.9	X	179.18837	359.28165	49.26623	6.35217	0.0305143	0.21714406	2.7413895	20	5 2.5	20.6
520069 2013 WU ₁₁₂	17.1	X	155.48106	134.83007	268.23818	6.06814	0.0738337	0.20462306	2.8521104	20	3 28.3	21.5
520070 2013 WX ₁₁₂	17.2	X	93.23812	60.28592	115.69887	12.18264	0.0568128	0.22048594	2.7136184	20	7 5.1	20.9
520071 2013 WY ₁₁₂	17.3	X	286.22138	251.83733	82.23485	1.54471	0.1816760	0.23555610	2.5966086	20	5 16.9	20.6
520072 2013 WA ₁₁₃	16.6	X	233.25872	77.79551	271.35726	11.71098	0.1363804	0.21883674	2.7272350	20	4 6.9	21.1
520073 2013 WC ₁₁₃	17.4	X	196.43738	130.64781	307.41336	3.75142	0.0587560	0				

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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>
520081 2013 XG ₂₇	16.6 ^m	X	182.89091	62.92106	312.11111	11.10172	0.0628094	0.19766533	2.9186524	20	3 21.3	21.2
520082 2013 XL ₂₇	16.3	X	186.31985	337.12212	1.74487	9.44990	0.0710202	0.18218796	3.0816946	20	2 20.2	21.0
520083 2013 XN ₂₇	16.6	X	201.15656	115.29283	278.23238	9.60187	0.2101326	0.22487211	2.6782163	20	5 1.2	21.2
520084 2013 XR ₂₇	17.0	X	162.55848	16.09447	93.35748	4.54761	0.0509076	0.22105292	2.7089763	20	7 1.7	20.7
520085 2013 XS ₂₇	16.9	X	184.19683	179.77575	306.67997	13.73434	0.0610951	0.23098131	2.6307818	20	8 16.7	20.8
520086 2013 XT ₂₇	17.2	X	173.23755	19.32364	110.87104	4.59991	0.1330664	0.22746418	2.6578311	20	8 10.6	21.3
520087 2013 XW ₂₇	16.9	X	204.43137	260.51650	130.74751	13.62708	0.2287619	0.22398310	2.6852983	20	5 8.3	21.8
520088 2013 XZ ₂₇	16.8	X	225.96194	311.37081	164.74842	15.15770	0.0867221	0.23317117	2.6142843	20	9 24.0	20.4
520089 2013 YF ₈₈	16.8	X	141.28153	15.78296	98.45518	6.30562	0.1195345	0.21129550	2.7917459	20	6 17.3	21.1
520090 2013 YB ₁₀₄	16.6	X	75.84242	296.68410	237.94793	11.79054	0.0854652	0.22791113	2.6543551	20	6 14.1	20.1
520091 2013 YE ₁₄₆	17.2	X	262.39698	358.53669	40.94095	6.36381	0.1128468	0.24246628	2.5470364	20	7 27.1	20.6
520092 2013 YQ ₁₅₃	17.2	X	164.62470	43.07573	100.71276	6.08750	0.1327080	0.23501925	2.6005613	20	8 21.2	21.2
520093 2013 YR ₁₅₃	16.9	X	49.97722	288.55401	285.50623	5.19841	0.0670512	0.20881922	2.8137730	20	6 28.2	20.6
520094 2013 YS ₁₅₃	17.4	X	233.68071	255.97287	163.20239	3.58063	0.0815604	0.23010727	2.6374394	20	7 17.8	21.2
520095 2013 YU ₁₅₃	16.9	X	157.00114	350.06276	127.77355	14.73406	0.1885831	0.22227268	2.6990566	20	7 10.0	21.4
520096 2013 YW ₁₅₃	17.0	X	201.89936	255.67462	138.60889	4.38148	0.1104010	0.21150920	2.7898651	20	5 10.1	21.4
520097 2013 YA ₁₅₄	17.3	X	72.52670	315.34432	232.22502	3.89635	0.0882020	0.21401149	2.7680759	20	6 27.3	21.0
520098 2013 YD ₁₅₄	16.5	X	123.62548	255.28601	134.28346	10.40603	0.1094267	0.17492717	3.1663910	20	2 16.6	21.1
520099 2013 YE ₁₅₄	16.5	X	176.87338	93.66134	301.49516	9.32561	0.1626435	0.20456807	2.8526215	20	4 11.3	21.3
520100 2013 YF ₁₅₄	16.1	X	119.46286	255.48149	139.76690	10.45305	0.1001698	0.17361781	3.1822908	20	2 17.5	20.7
520101 2013 YK ₁₅₄	16.4	X	275.62871	310.32703	318.96637	10.33367	0.0536991	0.17419028	3.1753147	20	3 1.5	21.1
520102 2013 YL ₁₅₄	17.2	X	7.74457	8.99930	315.65830	14.11039	0.1359329	0.24302569	2.5431263	20	9 29.9	20.3
520103 2013 YR ₁₅₄	16.2	X	139.48186	240.97827	122.71813	11.14310	0.1933727	0.17498381	3.1657076	20	2 11.2	21.2
520104 2013 YU ₁₅₄	16.5	X	343.30827	69.37642	132.54298	5.81525	0.0642594	0.18069272	3.0986720	20	3 7.4	20.5
520105 2013 YV ₁₅₄	17.2	X	149.56230	107.14894	263.01135	9.63549	0.185453	0.20263923	2.8706949	20	4 30.2	21.9
520106 2014 AO ₉	16.3	X	143.95980	275.31588	84.00209	6.85291	0.1717639	0.18976374	2.9991203	20	2 7.7	21.1
520107 2014 AK ₂₂	16.2	X	232.35567	200.78030	112.12015	15.53500	0.1604754	0.18678739	3.0308959	20	3 3.7	21.3
520108 2014 AE ₄₂	17.3	X	140.34729	294.33573	299.08996	9.99264	0.0676122	0.25546250	2.4599028	20	11 17.1	20.9
520109 2014 AG ₄₃	17.1	X	26.34033	72.28828	83.50881	2.10159	0.0861050	0.18984426	2.9982722	20	3 9.9	20.8
520110 2014 AK ₄₇	16.7	X	246.68169	80.32451	306.56005	5.47108	0.0834460	0.22538566	2.6741465	20	6 20.8	20.4
520111 2014 AL ₅₈	18.1	X	227.32892	103.61970	60.75538	4.57275	0.1269137	0.26992369	2.3712393	20	11 27.9	20.8
520112 2014 AN ₅₈	16.9	X	54.98681	131.92696	105.42649	4.55684	0.0597120	0.22389993	2.6859633	20	8 7.1	20.4
520113 2014 AP ₅₈	17.0	X	220.90252	347.12198	83.51716	10.20892	0.1557675	0.23367389	2.6105334	20	7 11.5	21.0
520114 2014 AQ ₅₈	15.7	X	249.47083	346.67370	307.83009	7.17911	0.0556828	0.17931830	3.1144855	20	3 1.3	20.4
520115 2014 AY ₅₈	16.1	X	281.60107	179.15649	94.59013	11.78439	0.0613896	0.18041688	3.1018297	20	3 20.9	20.7
520116 2014 AZ ₅₈	16.6	X	23.49661	222.23298	273.62830	8.38224	0.0540324	0.17425817	3.1744899	20	2 7.3	20.9
520117 2014 AB ₅₉	16.6	X	92.34610	184.68243	297.17110	7.79804	0.0914625	0.18580510	3.0415686	20	4 25.5	21.0
520118 2014 AE ₅₉	16.2	X	32.54695	151.50167	76.35520	19.16078	0.1017171	0.17763001	3.1341888	20	6 22.6	20.2
520119 2014 AF ₅₉	18.3	X	219.93631	32.34018	153.82714	1.81673	0.1201949	0.26906230	2.3762975	20	12 18.3	21.1
520120 2014 AL ₅₉	17.0	X	166.09640	148.32358	328.81074	9.16019	0.1443247	0.21535020	2.7565922	20	7 18.2	21.5
520121 2014 AO ₅₉	17.6	X	157.65001	24.94546	135.26105	5.51573	0.0748616	0.23283557	2.6167958	20	9 3.2	21.4
520122 2014 AS ₅₉	17.1	X	101.96561	54.53874	162.52059	13.61465	0.1619531	0.22793573	2.6541642	20	9 21.8	21.1
520123 2014 AU ₅₉	17.1	X	231.64708	221.06260	243.75437	11.50075	0.1788770	0.24697224	2.5159613	20	8 29.2	21.0
520124 2014 AA ₆₀	17.0	X	199.43341	21.74103	136.76810	8.75354	0.1429049	0.23343275	2.6123309	20	10 14.4	21.1
520125 2014 AB ₆₀	17.0	X	205.72655	88.72284	81.40541	9.90276	0.0684669	0.23751780	2.5822916	20	11 12.4	20.6
520126 2014 AD ₆₀	17.2	X	136.04539	251.50313	304.62373	4.44061	0.1301791	0.23201951	2.6229280	20	9 24.0	21.4
520127 2014 BG ₃₉	17.9	X	215.66111	36.38685	158.84223	5.06137	0.1622291	0.26349676	2.4096420	20	12 17.5	21.1
520128 2014 BE ₆₆	16.3	X	109.60848	334.29505	112.29263	2.22278	0.1568444	0.18110643	3.0939512	20	4 15.3	20.8
520129 2014 BF ₆₇	17.8	X	200.24730	108.43823	103.21936	2.34708	0.1259005	0.26336025	2.4104747	20	12 25.1	21.1
520130 2014 BL ₆₇	17.4	X	170.85591	298.44271	301.44165	4.32311	0.1246653	0.26705953	2.3881631	20	12 29.8	20.8
520131 2014 BN ₆₇	17.0	X	90.37662	269.05048	206.02613	1.83835	0.1123518	0.18628858	3.0363038	20	4 20.8	21.3
520132 2014 BR ₆₇	16.7	X	73.93144	151.90357	110.34248	15.67872	0.1693676	0.23613806	2.5923406	20	10 27.7	20.8
520133 2014 BT ₆₇	17.0	X	91.70525	249.97141	331.24613	11.76484	0.1365232	0.22532308	2.6746416	20	9 9.4	20.9
520134 2014 BV ₆₇	16.2	X	111.43429	99.55363	330.40620	11.38122	0.1191543	0.17910062	3.1170085	20	3 18.8	20.9
520135 2014 BX ₆₇	18.1	X	234.30649	85.83710	80.22886	3.37857	0.1077435	0.26890913	2.3771998	20	12 12.6	20.9
520136 2014 BZ ₆₇	16.5	X	0.56102	39.96954	155.69085	10.89101	0.0428643	0.18040635	3.1019503	20	3 25.4	20.6
520137 2014 BC ₆₈	17.1	X	69.66693	282.86247	306.03300	11.54908	0.0230372	0.22277750	2.6949776	20	8 8.1	20.8
520138 2014 BD ₆₈	16.5	X	317.11835	301.60236	313.13528	7.53808	0.0179467	0.18726544	3.0257355	20	4 6.6	20.8
520139 2014 BG ₆₈	15.9	X	142.35707	138.46936	282.06764	14.48403	0.0868263	0.18330919	3.0691154	20	4 2.7	20.8
520140 2014 BH ₆₈	17.1	X	132.85078	282.34424	170.29690	13.20283	0.0510453	0.19343394	2.9610627	20	5 8.4	21.5
520141 2014 BK ₆₈	16.0	X	197.69809	197.85262	176.68243	11.35986	0.0909093	0.19076340	2.9886337	20	4 12.9	20.6
520142 2014 BT ₆₈	17.7	X	256.55411	353.14089	136.43977	6.00360	0.1001848	0.26259369	2.4151634	20	11 26.3	20.6
520143 2014 BU ₆₈	17.4	X	234.10169	306.16528	124.87307	4.05508	0.1452685	0.23235537	2.6203999	20	7 27.0	21.2
520144 2014 BX ₆₈	17.2	X	286.80115	347.62604	67.47149	7.53445	0.1089389	0.25127827	2.4871354	20	9 29.1	20.1
520145 2014 BZ ₆₈	17.5	X	193.25132	171.62320	317.13870	8.87870	0.0795933	0.23224562	2.6212253	20	8 30.1	21.3
520146 2014 BC ₆₉	17.1	X	213.20397	133.42390	318.48208	11.49895	0.0186595	0.22258366	2.6965420	20	8 12.2	20.7
520147 2014 BL ₆₉	17.1	X	62.16354	1.78468	266.93433	2.58453	0.1368451	0.23003057	2.6380257	20	10 8.4	20.6
520148 2014 BM ₆₉	17.4	X	249.30211	110.01513	314.61773	8.57754	0.1934700	0.23777431	2.5804340	20	7 30.8	20.9
520149 2014 BN ₆₉	17.2	X	233.50271	269.43041	159.19517	13.74061	0.0724541	0.22698663	2.6615576	20	7 30.3	21.0
520150 2014 BO ₆₉	16.6	X	116.12018	257.42246	268.89337	11.87523	0.1497803	0.21369241	2.7708306	20	7 27.1	21.0
520151 2014 BR ₆₉	16.7	X	56.72486	51.12541	187.70300	13.38217	0.1358603	0.21575923	2.7531072	20	8 18.8	20.6
520152 2014 BS ₆₉	16.4	X	99.27833	211.94951	238.93332	9.93370	0.0527763	0.17820833	3.1274044	20	3 20.8	21.0
520153 2014 CC ₂₅	15.7	X	339.64346	257								

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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>
520161 2014 CV ₂₅	17.1	X	160.72329	191.12534	310.38702	9.32037	0.0748554	0.22067968	2.7120300	20	8 10.4	21.0
520162 2014 CY ₂₅	16.8	X	69.25405	23.01051	123.81209	2.68456	0.1186459	0.18296021	3.0730169	20	5 5.6	20.8
520163 2014 CZ ₂₅	16.7	X	4.09240	228.08808	40.55671	6.13586	0.0337501	0.20159595	2.8805905	20	7 1.8	20.5
520164 2014 CA ₂₆	17.3	X	15.72286	266.59437	43.86583	9.98888	0.0743862	0.23641464	2.5903183	20	9 26.9	20.5
520165 2014 CH ₂₆	16.9	X	106.51479	115.98565	135.74137	14.69474	0.1870705	0.23806005	2.5783688	20	11 14.2	21.4
520166 2014 CJ ₂₆	18.0	X	198.57201	228.44882	356.71424	2.65028	0.1276829	0.26973167	2.3723645	20	—	—
520167 2014 CQ ₂₆	16.4	X	40.48004	243.50005	287.54968	8.03673	0.0694750	0.18073637	3.0981730	20	4 14.4	20.6
520168 2014 CW ₂₆	16.4	X	102.46828	51.86796	32.80181	11.29175	0.0914270	0.17924335	3.1153536	20	3 29.4	20.9
520169 2014 CC ₂₇	17.0	X	173.38489	264.07559	268.11663	8.14533	0.1705656	0.22450910	2.6811025	20	9 26.0	21.6
520170 2014 CE ₂₇	16.9	X	91.28123	52.41027	230.21924	14.14835	0.1155064	0.22613741	2.6682168	20	11 25.6	20.9
520171 2014 CF ₂₇	16.3	X	97.56476	292.07027	318.61016	12.77487	0.2063869	0.21332802	2.7739851	20	10 23.1	21.1
520172 2014 CK ₂₇	16.5	X	184.51305	65.18596	357.16886	9.65658	0.0885802	0.20033329	2.8926816	20	5 23.9	21.1
520173 2014 CM ₂₇	17.7	X	196.21273	14.13064	134.78339	6.79900	0.1108033	0.23834832	2.5762895	20	10 1.4	21.5
520174 2014 CN ₂₇	16.9	X	110.90225	142.26818	123.86368	8.25853	0.1822257	0.24188001	2.5511504	20	12 2.2	21.1
520175 2014 CP ₂₇	16.7	X	149.81718	201.66643	14.19435	15.71434	0.0482145	0.24526915	2.5275946	20	11 1.8	20.4
520176 2014 DT	18.5	X	242.29820	225.55888	313.00915	0.81132	0.1238665	0.27298320	2.3534886	20	—	—
520177 2014 DT ₈	17.3	X	218.42184	250.73603	174.20880	2.24732	0.0625221	0.22547075	2.6734737	20	7 8.9	21.2
520178 2014 DJ ₉	17.7	X	227.25958	262.73688	297.96184	3.32465	0.1602469	0.27439768	2.3453937	20	—	—
520179 2014 DS ₂₉	17.5	X	187.19199	326.26438	309.35670	5.80032	0.1777981	0.29002043	2.2603915	20	—	—
520180 2014 DG ₃₆	18.2	X	236.44683	55.24505	142.13181	6.44607	0.1061426	0.27869351	2.3212298	20	—	—
520181 2014 DH ₅₃	17.9	X	275.29242	138.23606	343.03055	0.87704	0.1406344	0.26147832	2.4220267	20	12 7.5	20.1
520182 2014 DM ₅₉	17.7	X	151.09552	164.26234	127.96281	7.93507	0.1225337	0.27082099	2.3659987	20	—	—
520183 2014 DM ₆₈	17.8	X	175.08363	173.33165	84.12807	5.06466	0.1498466	0.26269960	2.4145143	20	—	—
520184 2014 DS ₇₁	17.7	X	165.32007	223.40486	40.48983	6.33509	0.1681275	0.25947085	2.4345031	20	—	—
520185 2014 DT ₇₄	17.6	X	292.43364	78.52150	45.56973	7.72991	0.0786743	0.26547372	2.3976642	20	—	—
520186 2014 DQ ₇₉	18.0	X	194.15044	195.91657	42.16003	2.68997	0.1610838	0.26477692	2.4018689	20	—	—
520187 2014 DC ₉₈	18.1	X	235.87923	348.14602	182.46675	5.75289	0.1671590	0.26342441	2.4100832	20	12 10.7	21.1
520188 2014 DD ₁₀₈	18.0	X	209.42880	253.77915	327.70009	1.59441	0.1697551	0.26757746	2.3850804	20	—	—
520189 2014 DB ₁₁₈	18.1	X	175.93337	131.10640	128.45650	6.02243	0.1682581	0.26725826	2.3869791	20	—	—
520190 2014 DE ₁₂₃	16.0	X	322.90343	123.44947	163.17040	9.45584	0.1649551	0.18520499	3.0481355	20	5 14.9	19.8
520191 2014 DG ₁₄₉	17.8	X	182.88659	69.13767	184.04782	1.10973	0.1290727	0.26564742	2.3966189	20	—	—
520192 2014 DQ ₁₄₉	16.7	X	218.73205	46.65713	90.49136	11.57639	0.0920823	0.22704521	2.6610997	20	10 15.7	20.7
520193 2014 DR ₁₄₉	17.0	X	162.76673	135.83291	84.17595	15.98914	0.0701515	0.23161291	2.6259969	20	11 25.2	20.9
520194 2014 DT ₁₄₉	16.6	X	40.54666	117.00884	28.10531	5.49312	0.1400339	0.17452051	3.1713078	20	3 24.5	20.3
520195 2014 DW ₁₄₉	16.6	X	101.19662	130.95207	319.43071	16.71587	0.0682602	0.17942638	3.1132347	20	3 20.4	21.3
520196 2014 DY ₁₄₉	17.0	X	11.27613	69.90355	169.84118	11.59916	0.0760621	0.19624095	2.9327585	20	6 5.9	20.9
520197 2014 DZ ₁₄₉	16.1	X	115.08575	250.76073	173.67489	9.52086	0.0905545	0.17474459	3.1685962	20	3 17.6	20.7
520198 2014 DA ₁₅₀	17.5	X	177.21220	252.82115	261.49801	3.48060	0.2003225	0.23174903	2.6249685	20	9 9.5	21.9
520199 2014 DC ₁₅₀	17.1	X	133.02813	192.64080	348.18950	14.28420	0.1105667	0.22024818	2.7155710	20	9 3.2	21.2
520200 2014 DE ₁₅₀	17.1	X	169.86947	124.42884	16.67561	5.45088	0.1078301	0.22507313	2.6766214	20	8 22.8	21.2
520201 2014 DG ₁₅₀	16.1	X	167.62774	344.86032	60.78926	8.65555	0.0536899	0.18399558	3.0614778	20	4 19.6	20.7
520202 2014 DK ₁₅₀	16.0	X	229.10529	237.59364	114.84938	13.11152	0.0174245	0.18151848	3.0892673	20	4 29.3	20.6
520203 2014 DN ₁₅₀	17.8	X	255.61396	29.81882	117.22307	5.70807	0.0998463	0.26500288	2.4005034	20	12 18.4	20.4
520204 2014 DS ₁₅₀	16.7	X	315.48427	288.98728	347.44150	10.79071	0.0914039	0.18620918	3.0371669	20	4 22.4	20.8
520205 2014 DX ₁₅₀	15.8	X	153.84367	72.08687	352.29082	11.87567	0.1228002	0.17803105	3.1294802	20	4 24.8	20.8
520206 2014 DY ₁₅₀	16.8	X	152.17275	202.32103	353.43155	13.43864	0.0374045	0.22991286	2.6389260	20	10 7.9	20.7
520207 2014 DB ₁₅₁	18.0	X	261.99341	300.46983	172.54676	6.21085	0.0668049	0.25476612	2.4643834	20	11 14.6	21.0
520208 2014 DE ₁₅₁	17.3	X	83.05140	251.70548	335.41819	7.66132	0.1536195	0.21655819	2.7463316	20	9 9.9	21.1
520209 2014 DM ₁₅₁	17.0	X	246.51199	64.30565	326.93864	1.53178	0.0573007	0.20116217	2.8847300	20	6 29.1	21.2
520210 2014 DQ ₁₅₁	17.3	X	108.06807	27.84920	157.39339	3.16368	0.0192826	0.20805592	2.8206508	20	7 30.4	21.0
520211 2014 DS ₁₅₁	16.8	X	350.30389	208.97361	171.62456	2.98782	0.0481098	0.19448046	2.9504306	20	6 27.3	20.6
520212 2014 DT ₁₅₁	16.9	X	18.72196	157.84186	128.67555	4.84333	0.0706818	0.20821830	2.8191842	20	8 20.7	20.3
520213 2014 DU ₁₅₁	17.2	X	158.54739	353.56418	168.24406	2.23310	0.0933894	0.22094826	2.7098317	20	9 3.8	21.3
520214 2014 DV ₁₅₁	16.6	X	49.12681	196.73614	0.70159	8.76124	0.0727349	0.18476043	3.0530230	20	6 2.9	20.8
520215 2014 DY ₁₅₁	17.5	X	195.57315	288.33178	223.21860	2.98134	0.1643433	0.23481824	2.6020452	20	9 25.8	21.7
520216 2014 DZ ₁₅₁	17.6	X	151.66355	204.17472	320.90642	3.39977	0.1482855	0.21931636	2.7232574	20	8 31.9	21.9
520217 2014 DA ₁₅₂	16.7	X	188.05557	247.31279	194.88767	10.82265	0.0674819	0.19886800	2.9068733	20	6 24.4	21.2
520218 2014 DC ₁₅₂	16.7	X	40.42861	35.97279	166.81072	2.76550	0.0569556	0.18350938	3.0668829	20	5 28.9	20.8
520219 2014 DE ₁₅₂	16.6	X	195.83481	14.89524	52.13781	2.83126	0.0407674	0.19770224	2.9182892	20	6 15.3	20.8
520220 2014 DH ₁₅₂	18.0	X	127.76867	99.80203	131.95379	4.98402	0.1427938	0.23208776	2.6224138	20	11 3.6	22.2
520221 2014 DO ₁₅₂	16.3	X	128.85946	103.90769	9.46185	10.73678	0.1542456	0.18940807	3.0028737	20	6 3.8	21.2
520222 2014 DP ₁₅₂	16.7	X	11.48676	179.64456	54.26017	8.02589	0.0575643	0.18512546	3.0490084	20	5 26.6	20.6
520223 2014 DQ ₁₅₂	16.5	X	135.94171	73.20234	41.36047	10.23636	0.0413003	0.18984366	2.9982786	20	6 3.6	20.9
520224 2014 DU ₁₅₂	17.5	X	226.65007	65.80968	99.32129	8.67725	0.0790594	0.25501265	2.4627948	20	12 3.0	20.7
520225 2014 DY ₁₅₂	17.5	X	130.54702	30.24237	183.37342	13.86519	0.2014965	0.22890478	2.6466681	20	10 15.8	22.0
520226 2014 DA ₁₅₃	16.4	X	158.08092	240.85970	177.61997	16.61901	0.1141531	0.18223089	3.0812107	20	4 28.5	21.4
520227 2014 DB ₁₅₃	16.5	X	349.87760	312.92932	325.52111	3.89361	0.0953490	0.19452668	2.9499632	20	6 22.9	20.0
520228 2014 DD ₁₅₃	17.4	X	134.75450	353.47193	193.09331	4.20053	0.0716719	0.22222947	2.6994065	20	9 8.3	21.2
520229 2014 DE ₁₅₃	17.9	X	206.09118	212.44821	265.97019	1.02057	0.1543001	0.23052660	2.6342401	20	8 26.1	22.0
520230 2014 DF ₁₅₃	16.5	X	55.36298	343.19165	191.56240	9.30366	0.0105504	0.18260250	3.0770288	20	5 8.6	20.8
520231 2014 DG ₁₅₃	16.1	X	16.59885	24.21812	181.90110	17.08491	0.1370741	0.17622297	3.1508498	20	5 4.4	20.0
520232 2014 DH ₁₅₃	16.8	X	279.67111	97.49264	331.02258	14.01412	0.0612860	0.23782919	2.5800370	20	9 29.5	20.2
520233 2014 DL ₁₅₃	16.0	X	333.60089	224.72302	348.62575	11.95812	0.0646771	0.16208509	3.3315065	20	3 8.8	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>
520241 2014 DJ ₁₅₄	17.2	X	104.99613	269.93811	67.71722	7.00695	0.0992364	0.26564292	2.3966460	20	—	—
520242 2014 DL ₁₅₄	16.4	X	17.38102	54.79651	153.86646	12.54811	0.0740004	0.17117365	3.2125121	20	5 7.7	20.7
520243 2014 DN ₁₅₄	17.0	X	174.05079	21.33473	119.38444	5.16530	0.0655546	0.21577910	2.7529382	20	8 26.0	21.0
520244 2014 DR ₁₅₄	17.3	X	30.02980	194.99309	96.72715	3.06038	0.0135915	0.21629641	2.7485470	20	9 8.3	20.9
520245 2014 DT ₁₅₄	17.0	X	184.15989	328.98762	159.42315	12.67503	0.1403695	0.21727364	2.7402994	20	8 16.4	21.4
520246 2014 DU ₁₅₄	16.7	X	3.82386	125.20986	182.78589	5.79530	0.0581220	0.19977382	2.8980797	20	8 23.1	20.4
520247 2014 DV ₁₅₄	17.1	X	153.64769	209.49437	34.74277	13.37268	0.1210768	0.23759760	2.5817133	20	12 9.9	21.2
520248 2014 DW ₁₅₄	17.4	X	141.98510	114.10211	152.74468	8.06401	0.1666143	0.24057750	2.5603502	20	12 27.6	21.6
520249 2014 DZ ₁₅₄	16.4	X	28.52268	175.18719	87.61153	12.66413	0.0655260	0.19181170	2.9777346	20	8 2.5	20.4
520250 2014 DB ₁₅₅	17.5	X	213.13679	106.07985	82.13956	13.72812	0.0896821	0.24456802	2.5324231	20	12 10.9	20.8
520251 2014 DF ₁₅₅	17.1	X	139.34378	186.67790	79.49925	15.82778	0.0768234	0.24083554	2.5585211	20	12 25.6	20.9
520252 2014 EF ₁₃	16.9	X	225.23981	13.81618	48.21442	3.98108	0.1484499	0.21782480	2.7356750	20	7 4.8	21.1
520253 2014 EP ₁₃	18.0	X	232.63092	47.61538	117.60317	3.89154	0.1363098	0.25944382	2.4346722	20	12 2.9	21.1
520254 2014 ER ₁₉	18.0	X	183.45272	128.22275	132.88580	5.09851	0.2261447	0.26766371	2.3845680	20	—	—
520255 2014 ES ₃₀	17.4	X	192.44725	104.69957	150.38128	8.19482	0.0913544	0.27372713	2.3492225	20	—	—
520256 2014 EG ₃₈	17.7	X	203.23684	155.76226	57.58294	6.47287	0.1535041	0.26061194	2.4273916	20	12 26.4	21.2
520257 2014 EE ₃₉	17.7	X	241.86766	33.59483	153.40791	2.13821	0.1233914	0.26746865	2.3857273	20	—	—
520258 2014 EJ ₄₉	17.6	X	181.41862	223.85373	39.12826	3.23960	0.1822831	0.26281252	2.4138226	20	—	—
520259 2014 ES ₆₀	17.1	X	175.89114	179.56724	329.64513	12.28707	0.0914588	0.22748800	2.6576455	20	9 5.1	21.2
520260 2014 ER ₆₈	16.8	X	171.41911	224.98685	177.28584	15.96225	0.0740301	0.18210209	3.0826633	20	4 20.4	21.6
520261 2014 EA ₇₀	16.3	X	105.92051	169.90991	299.72227	7.12495	0.1414491	0.18393543	3.0621452	20	5 4.1	20.9
520262 2014 EY ₁₀₁	17.4	X	11.80249	163.84155	265.06819	4.42892	0.1543087	0.28784759	2.2717523	20	—	—
520263 2014 ET ₁₀₅	17.5	X	187.61766	212.62537	252.08021	4.40485	0.0606996	0.21517992	2.7580463	20	7 23.6	21.5
520264 2014 ER ₁₀₉	16.6	X	209.65794	124.50071	238.58256	9.15355	0.0327693	0.18353021	3.0666509	20	4 9.9	21.2
520265 2014 EB ₁₁₈	16.6	X	266.61710	142.37231	181.92039	6.57419	0.1088253	0.18488744	3.0516246	20	4 23.0	20.9
520266 2014 EZ ₁₂₁	17.0	X	258.48754	43.12859	328.91021	9.21627	0.1199665	0.20376878	2.8600763	20	6 9.6	21.3
520267 2014 EJ ₁₂₄	15.8	X	256.63764	21.31250	283.59422	9.78468	0.0429792	0.17603183	3.1531303	20	3 20.8	20.6
520268 2014 EQ ₁₂₄	16.4	X	207.14280	70.44278	278.15027	8.36236	0.1072412	0.17582337	3.1556220	20	3 16.6	21.5
520269 2014 EM ₁₃₆	16.4	X	346.85272	53.73799	198.21621	4.32880	0.1149389	0.18273751	3.0755131	20	5 12.1	20.0
520270 2014 ES ₁₄₃	16.6	X	262.31261	111.00367	217.40572	9.28325	0.1167034	0.18495358	3.0508971	20	4 20.5	21.2
520271 2014 EM ₁₅₆	16.6	X	307.34396	71.95957	221.63422	4.94014	0.1137521	0.18573182	3.0423687	20	5 4.6	20.5
520272 2014 ED ₁₆₃	16.7	X	331.62432	10.05042	255.43687	6.78731	0.0194783	0.19018872	2.9946510	20	5 12.3	20.7
520273 2014 EW ₁₆₇	16.7	X	7.54464	349.39781	308.88642	3.96880	0.1378246	0.21374426	2.7703826	20	8 24.6	19.7
520274 2014 EF ₁₇₂	17.7	X	51.73878	357.36933	263.79739	2.71367	0.0551059	0.21729979	2.7400796	20	8 31.2	21.3
520275 2014 EX ₁₉₉	18.3	X	309.77916	178.79432	206.43524	1.65731	0.1773088	0.23711086	2.5852453	20	9 10.4	20.6
520276 2014 EL ₂₁₁	16.1	X	204.41959	100.92964	314.52218	7.16405	0.0393492	0.19962797	2.8994912	20	6 10.5	20.3
520277 2014 EF ₂₁₂	17.1	X	201.00166	108.80484	276.76894	3.31732	0.1661515	0.18817586	3.0159683	20	4 24.9	22.1
520278 2014 EN ₂₁₃	18.1	X	324.49820	255.05743	171.07752	14.43165	0.0527521	0.25744939	2.4472301	20	12 16.2	21.3
520279 2014 ET ₂₂₆	16.3	X	225.65410	111.44324	219.70835	10.96302	0.0381688	0.17585679	3.1552222	20	3 19.8	21.1
520280 2014 ET ₂₃₃	17.7	X	295.30764	180.15605	217.92231	2.73491	0.0579226	0.23397584	2.6082869	20	9 16.1	21.0
520281 2014 EW ₂₄₈	16.7	X	15.63006	262.09325	354.90720	4.57958	0.2089219	0.18507027	3.0496145	20	7 17.5	19.9
520282 2014 EX ₂₄₈	16.4	X	14.69494	223.04514	5.06411	7.33499	0.1035613	0.17826987	3.1266847	20	5 24.3	20.3
520283 2014 EC ₂₄₉	16.5	X	337.88874	206.00425	71.20524	11.25376	0.0581170	0.18917310	3.0053597	20	6 3.5	20.3
520284 2014 ED ₂₄₉	16.4	X	43.96997	173.43857	113.88463	11.06889	0.0421226	0.23364043	2.6107827	20	10 2.2	20.0
520285 2014 EJ ₂₄₉	16.6	X	87.25209	130.19224	121.72722	6.05420	0.1164307	0.21954383	2.7213760	20	10 16.0	20.6
520286 2014 EN ₂₄₉	16.2	X	346.82981	95.84562	154.23475	11.48347	0.0330490	0.17680475	3.1439341	20	5 16.6	20.6
520287 2014 EP ₂₄₉	17.3	X	127.72453	127.54177	106.18930	10.18700	0.1205212	0.23207631	2.6225001	20	11 7.2	21.5
520288 2014 EQ ₂₄₉	16.0	X	54.48912	315.42780	233.99676	11.85900	0.0625317	0.18419123	3.0593095	20	5 31.6	20.0
520289 2014 ES ₂₄₉	17.2	X	63.50558	268.08014	20.56760	12.21141	0.0626800	0.22643240	2.6658989	20	10 24.4	20.9
520290 2014 FA ₃	17.5	X	220.08058	112.10513	104.23985	8.78914	0.0653346	0.27154682	2.3617807	20	—	—
520291 2014 FT ₁₈	15.8	X	298.83833	331.36868	273.18872	7.30568	0.0266700	0.17198129	3.2024467	20	3 2.4	20.4
520292 2014 FA ₁₉	17.8	X	196.92502	225.41451	246.74329	4.37344	0.1710948	0.23086494	2.6316657	20	8 6.9	22.1
520293 2014 FL ₂₇	17.9	X	250.25026	292.11017	208.50052	5.53023	0.1627320	0.25759512	2.4463070	20	11 19.9	20.7
520294 2014 FV ₂₈	16.1	X	162.02203	208.46077	201.42905	9.18761	0.0726244	0.17775919	3.1326702	20	4 17.7	20.8
520295 2014 FV ₃₀	17.2	X	51.17660	191.97767	122.76799	15.17994	0.1003667	0.23810686	2.5780308	20	11 25.3	21.0
520296 2014 FE ₄₈	18.3	X	221.71676	41.44694	164.86792	5.28084	0.1393485	0.26610328	2.3938810	20	—	—
520297 2014 FF ₅₀	17.5	X	209.34461	70.86836	154.58125	5.36845	0.1817261	0.26204116	2.4185573	20	—	—
520298 2014 FW ₆₈	16.8	X	170.38234	16.44175	194.19381	33.55801	0.1673180	0.23606553	2.5928715	20	11 15.4	21.4
520299 2014 FU ₇₄	17.9	X	156.87788	118.25667	134.48427	10.10666	0.1756271	0.23931346	2.5693581	20	12 23.6	22.2
520300 2014 FA ₇₅	16.2	X	324.81905	245.89273	35.52085	15.94572	0.0386791	0.18165569	3.0877114	20	5 19.8	20.5
520301 2014 FC ₇₅	17.1	X	357.26458	313.36822	66.04768	10.33709	0.0645175	0.24140040	2.5545283	20	11 27.5	19.9
520302 2014 FE ₇₅	16.3	X	118.55982	86.88053	77.26276	11.40902	0.0660225	0.19948171	2.9009082	20	7 22.5	20.6
520303 2014 FL ₇₅	16.9	X	114.14345	84.53480	164.79649	11.95770	0.1167717	0.22811689	2.6527587	20	11 11.3	21.1
520304 2014 FM ₇₅	17.6	X	116.45618	146.10575	120.95436	4.76542	0.1933455	0.23276839	2.6172993	20	12 6.0	22.0
520305 2014 FN ₇₅	17.6	X	238.32523	294.68987	181.22160	10.84043	0.1420521	0.23582051	2.5946672	20	9 30.6	21.0
520306 2014 FP ₇₅	17.8	X	155.86434	54.08324	189.74236	14.86431	0.0851717	0.24358113	2.5392587	20	12 16.5	21.9
520307 2014 FQ ₇₅	17.3	X	158.31236	94.64948	108.65479	3.11723	0.0917260	0.22915481	2.6447425	20	10 28.3	21.2
520308 2014 FT ₇₅	16.0	X	321.93453	240.16153	69.09813	11.26665	0.1113849	0.17888122	3.1195567	20	6 16.4	19.9
520309 2014 FU ₇₅	16.4	X	90.27945	350.79654	155.12099	10.80653	0.0810113	0.17616762	3.1515097	20	5 27.9	21.0
520310 2014 FV ₇₅	15.9	X	336.25505	171.08813	88.84315	12.64146	0.0727223	0.17793719	3.1305807	20	5 12.1	20.1
520311 2014 FY ₇₅	17.1	X	87.29654	111.63612	105.72375	3.12711	0.1520152	0.20082524	2.8879557	20	9 2.6	21.3
520312 2014 FB ₇₆	16.4	X	193.19393	269.18631	189.79581	26.14357	0.1713316	0.20567321	2.8423937	20	7 14.6	21.6
520313 2014 FD ₇₆	16.0	X	109.44186	71.30080	90.66759	10.92123	0.0445867	0.188512				

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>
520321 2014 GU ₅₉	17.2	X	139.98424	211.69182	34.52247	13.75865	0.0297546	0.23708070	2.5854645	20	11 29.2	20.9
520322 2014 GY ₅₉	17.4	X	114.08789	150.34197	124.40426	7.08399	0.2026912	0.23149157	2.6269144	20	12 13.2	21.9
520323 2014 GZ ₅₉	17.2	X	337.25231	144.60315	233.43570	5.52088	0.0493576	0.22246584	2.6974940	20	10 20.3	20.5
520324 2014 GA ₆₀	16.7	X	4.67674	113.53705	152.96486	2.82378	0.2089565	0.17714208	3.1399415	20	7 5.1	19.9
520325 2014 GC ₆₀	16.8	X	131.53908	347.80991	145.39322	4.50674	0.0678050	0.19091881	2.9870116	20	6 26.1	21.2
520326 2014 GH ₆₀	16.7	X	354.93663	310.41311	348.52019	6.06769	0.0364130	0.20114964	2.8848498	20	7 30.9	20.4
520327 2014 GJ ₆₀	17.6	X	111.43036	352.22101	273.34873	1.62737	0.1609445	0.23275240	2.6174191	20	11 28.0	21.6
520328 2014 GM ₆₀	16.7	X	177.09762	110.40679	17.64877	25.16114	0.1248021	0.21192417	2.7862220	20	8 23.9	21.5
520329 2014 GQ ₆₀	16.8	X	42.78047	228.89832	75.05227	2.50295	0.0649097	0.22052464	2.7133009	20	10 19.1	20.2
520330 2014 GT ₆₀	17.4	X	70.23684	289.12058	7.26989	12.50913	0.1035898	0.22788848	2.6545310	20	11 14.6	21.4
520331 2014 GV ₆₀	17.0	X	82.45312	334.35043	270.66534	3.63452	0.0749693	0.21317438	2.7753177	20	9 20.7	20.9
520332 2014 GW ₆₀	16.2	X	99.60065	341.46046	215.89295	14.51914	0.0770557	0.20439483	2.8542332	20	8 6.9	20.7
520333 2014 GX ₆₀	16.3	X	146.42046	279.11230	169.72084	11.53338	0.0064605	0.17238790	3.1974090	20	5 15.9	21.0
520334 2014 GA ₆₁	16.5	X	337.11046	239.73213	67.49606	10.53272	0.0555725	0.18811372	3.0166325	20	7 13.8	20.5
520335 2014 GD ₆₁	17.2	X	111.24602	18.72521	210.80878	5.62588	0.0941163	0.22308933	2.6924657	20	10 8.9	21.1
520336 2014 GJ ₆₁	16.2	X	136.85776	338.22264	145.26632	14.17738	0.2025147	0.19230080	2.9726834	20	6 29.5	21.3
520337 2014 GJ ₆₁	17.2	X	136.66714	113.81404	81.76181	9.21697	0.1294691	0.21795789	2.7345612	20	9 29.5	21.6
520338 2014 GB ₆₂	16.6	X	332.97299	277.93709	27.05416	10.67139	0.0687911	0.18455801	3.0552549	20	7 3.5	20.7
520339 2014 GC ₆₂	16.9	X	10.07442	44.43496	242.00799	2.10425	0.0234559	0.19542768	2.9408892	20	8 1.3	20.8
520340 2014 GE ₆₂	17.2	X	143.39754	338.83063	263.63143	3.48719	0.0919905	0.23494553	2.6011052	20	11 29.7	21.0
520341 2014 GG ₆₂	16.6	X	346.56497	266.00129	21.50921	10.06954	0.1943003	0.17726807	3.1384535	20	6 25.5	20.1
520342 2014 GH ₆₂	17.4	X	118.28044	237.57781	22.25198	10.48935	0.0632632	0.23077040	2.6323844	20	11 20.9	21.3
520343 2014 GL ₆₂	16.9	X	120.08132	345.19923	225.54014	5.83400	0.0169151	0.21152110	2.7897605	20	9 15.6	20.9
520344 2014 GR ₆₂	16.2	X	302.87580	94.37561	231.79879	15.11490	0.0733373	0.18041961	3.1017983	20	6 14.9	20.5
520345 2014 GS ₆₂	16.2	X	307.90600	357.74257	305.37346	3.53426	0.0350991	0.17370966	3.1811689	20	5 27.9	20.6
520346 2014 GT ₆₂	16.6	X	129.52749	87.51546	19.83368	10.93593	0.0623854	0.17310058	3.1886269	20	5 18.8	21.4
520347 2014 GU ₆₂	17.2	X	10.52514	17.66756	337.74639	4.80462	0.0798378	0.22386506	2.6862422	20	11 10.6	21.0
520348 2014 GV ₆₂	16.9	X	141.71821	293.38575	262.53502	5.22225	0.0757418	0.21560874	2.7543882	20	9 25.5	21.1
520349 2014 GB ₆₃	16.9	X	309.51947	189.08231	138.01914	2.68857	0.0548917	0.18761065	3.0220227	20	6 28.8	21.0
520350 2014 GD ₆₃	18.0	X	140.85651	124.99577	150.55046	3.70302	0.1765030	0.24513982	2.5284836	20	—	—
520351 2014 GK ₆₃	16.8	X	182.34560	269.15250	211.05089	10.60367	0.0629243	0.20339468	2.8635822	20	8 3.2	21.2
520352 2014 GM ₆₃	17.6	X	232.72191	84.42389	51.93944	10.05661	0.0636614	0.23324341	2.6137445	20	11 1.1	21.0
520353 2014 GO ₆₃	15.7	X	209.10583	347.36867	40.75494	25.51767	0.1108522	0.16899275	3.2400920	20	5 7.1	20.8
520354 2014 GQ ₆₃	16.4	X	343.05659	268.24513	51.43926	14.01406	0.1246089	0.19327689	2.9626665	20	8 13.7	20.1
520355 2014 GS ₆₃	16.9	X	353.34292	134.37187	180.88570	1.97506	0.1015934	0.19678043	2.9273958	20	8 18.8	20.5
520356 2014 GU ₆₃	17.8	X	116.69034	62.39580	201.81496	2.92850	0.1268746	0.23006177	2.6377872	20	11 29.9	21.8
520357 2014 GD ₆₄	16.6	X	3.65377	236.47524	26.09902	9.40500	0.0412124	0.18346474	3.0673804	20	6 21.9	20.8
520358 2014 GL ₆₄	17.3	X	119.29910	147.46021	121.15373	3.22683	0.1966681	0.23063127	2.6334430	20	12 8.9	21.5
520359 2014 GN ₆₄	16.3	X	88.52499	255.77719	265.78443	10.02892	0.0562252	0.18393673	3.0621308	20	6 8.8	20.6
520360 2014 GP ₆₄	16.7	X	326.37297	7.02729	264.64082	8.44173	0.1134820	0.17085589	3.2164940	20	5 3.0	20.8
520361 2014 HR ₇	16.6	X	67.28651	149.78607	50.14517	13.78582	0.0405289	0.18657160	3.0332324	20	6 28.1	21.0
520362 2014 HN ₁₁	17.8	X	152.11130	238.17356	35.73922	5.10571	0.1573685	0.25515734	2.4618637	20	—	—
520363 2014 HQ ₃₄	17.8	X	174.96996	26.80491	192.81060	12.78831	0.1154347	0.24140756	2.5544779	20	12 5.0	21.8
520364 2014 HV ₁₀₇	17.6	X	228.50327	79.91346	58.26384	12.14882	0.1257047	0.23581242	2.5947266	20	10 23.2	21.3
520365 2014 HK ₁₆₀	18.1	X	221.62073	39.11737	148.61631	6.12534	0.1574662	0.25322915	2.4743450	20	12 13.6	21.5
520366 2014 HW ₁₆₂	16.9	X	340.18720	138.24818	139.77761	8.97864	0.0280568	0.18054120	3.1004055	20	6 10.8	21.2
520367 2014 HS ₂₀₂	17.4	X	190.96646	123.76744	96.74702	13.51952	0.0921900	0.24461170	2.5321217	20	12 25.3	21.0
520368 2014 HP ₂₀₃	17.9	X	249.24703	303.40938	192.36406	12.07574	0.1754824	0.24357977	2.5392682	20	11 7.7	21.1
520369 2014 HR ₂₀₃	16.8	X	201.21223	13.44488	125.54897	15.09515	0.1491383	0.22099638	2.7094384	20	9 21.1	21.2
520370 2014 HF ₂₀₄	17.0	X	248.39934	92.74752	47.74458	9.56793	0.0647449	0.23604366	2.5930317	20	11 25.2	20.4
520371 2014 HL ₂₀₄	17.4	X	121.59648	61.79512	165.90743	9.98595	0.1562299	0.22310834	2.6923128	20	10 23.8	21.8
520372 2014 HM ₂₀₄	17.1	X	116.49709	114.46911	192.30142	8.25562	0.1925349	0.23967727	2.5667574	20	—	—
520373 2014 HP ₂₀₄	17.6	X	183.47286	237.65789	58.86267	3.23888	0.1210914	0.26956239	2.3733576	20	—	—
520374 2014 HT ₂₀₄	16.8	X	60.65656	224.66828	75.88400	7.03842	0.0419971	0.22442417	2.6817789	20	11 5.2	20.5
520375 2014 HU ₂₀₄	17.7	X	263.95019	303.67662	147.31429	5.83109	0.0449292	0.22531038	2.6747421	20	10 16.3	21.2
520376 2014 HA ₂₀₅	17.4	X	99.88717	164.51564	140.08088	6.34483	0.1910713	0.23404991	2.6077367	20	—	—
520377 2014 HC ₂₀₅	16.3	X	323.66925	218.12186	103.90284	11.65896	0.0604955	0.18681423	3.0306055	20	7 12.3	20.1
520378 2014 HK ₂₀₅	17.3	X	248.15016	1.32977	146.23102	15.43620	0.0471563	0.24114804	2.5631020	20	12 11.3	20.9
520379 2014 HN ₂₀₅	17.5	X	218.32843	70.37412	106.72643	2.75308	0.1045070	0.24033190	2.5620942	20	11 30.2	20.9
520380 2014 HA ₂₀₆	17.0	X	95.01623	251.46119	28.14686	18.80136	0.0321014	0.22879525	2.6475127	20	11 14.1	20.9
520381 2014 HE ₂₀₆	17.2	X	352.64155	88.79520	256.69666	5.17624	0.0312229	0.21268776	2.7795494	20	9 24.9	21.0
520382 2014 HG ₂₀₆	17.3	X	54.84766	311.72416	349.03123	2.75828	0.0556904	0.21868680	2.7284814	20	10 27.1	21.1
520383 2014 HK ₂₀₆	17.1	X	300.52137	336.98591	359.86009	1.16702	0.0730643	0.18364736	3.0653466	20	6 26.5	21.2
520384 2014 HL ₂₀₆	16.3	X	20.74945	6.96743	231.90720	9.81931	0.1629419	0.17785778	3.1315124	20	6 24.4	20.0
520385 2014 HO ₂₀₆	17.3	X	87.27408	159.80796	136.94079	9.55092	0.0386829	0.23827966	2.5767843	20	12 5.5	21.0
520386 2014 HY ₂₀₆	17.8	X	148.48143	223.78138	42.16820	10.62550	0.1417519	0.24272600	2.5452192	20	—	—
520387 2014 HA ₂₀₇	18.0	X	224.69175	240.08419	33.09092	7.65195	0.0993259	0.28040193	2.3117918	20	—	—
520388 2014 HB ₂₀₇	17.5	X	52.16624	19.94110	302.93490	1.70309	0.0780113	0.22425212	2.6831504	20	11 25.8	21.2
520389 2014 HF ₂₀₇	16.8	X	349.66612	344.90846	27.18947	6.48038	0.0487190	0.22002764	2.7173853	20	10 30.4	20.1
520390 2014 HO ₂₀₇	17.6	X	188.67097	120.24363	50.44375	13.99687	0.2010491	0.22749210	2.6576136	20	10 15.2	22.1
520391 2014 HY ₂₀₇	17.4	X	126.44875	33.21779	219.06416	4.09636	0.1297320	0.22680058	2.6630129	20	11 24.3	21.6
520392 2014 HZ ₂₀₇	15.8	X	71.71479	77.20300	56.79439	11.67725	0.1023444	0.15585393	3.4197226	20	4 23.3	20.5
520393 2014 HH ₂₀₈	17.5	X	129.09873	144.34072	151.48165	15.39775	0.1331395					

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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>
520401 2014 JY ₇₀	17.1	X	140.66623	8.97660	249.47698	9.16421	0.0841738	0.23726007	2.5841613	20	12 17.0	20.8
520402 2014 JY ₇₄	17.1	X	241.11528	128.85805	20.37277	8.37220	0.1317988	0.24211067	2.5495298	20	11 17.1	20.4
520403 2014 JX ₇₇	17.7	X	144.45615	55.53455	204.57619	8.10578	0.1346314	0.23992687	2.5649769	20	12 22.1	21.8
520404 2014 JB ₈₄	17.4	X	249.70238	357.21067	156.69808	4.01045	0.1031173	0.24281091	2.5446258	20	12 12.1	20.5
520405 2014 JB ₈₅	17.7	X	115.50550	172.29779	134.37961	5.82475	0.1342589	0.24073564	2.5592288	20	—	—
520406 2014 JA ₈₇	16.9	X	271.52668	66.73461	74.02188	5.90292	0.0980972	0.24439336	2.5336295	20	12 27.9	19.6
520407 2014 JM ₈₇	16.4	X	4.55251	179.79697	113.47312	6.19725	0.2413222	0.18417791	3.0594570	20	8 18.9	19.4
520408 2014 JN ₈₇	16.1	X	107.49220	69.35258	84.27830	11.59622	0.0638856	0.18146473	3.0898773	20	6 23.0	20.5
520409 2014 JO ₈₇	16.3	X	312.91003	205.44329	148.70805	10.46114	0.0928884	0.19141341	2.9818639	20	8 4.6	20.1
520410 2014 JR ₈₇	16.9	X	338.65377	291.71336	71.98561	7.21782	0.0339304	0.21579614	2.7527933	20	10 6.5	20.5
520411 2014 JY ₈₇	17.3	X	43.96683	200.70916	127.10432	5.78030	0.1203555	0.22097082	2.7096473	20	11 28.8	21.0
520412 2014 JZ ₈₇	17.2	X	48.72664	172.05444	135.36794	4.56588	0.0687077	0.21691703	2.7433020	20	11 1.2	20.9
520413 2014 JU ₈₈	17.1	X	101.54943	80.83919	164.22456	4.92972	0.0366292	0.21613422	2.7499219	20	10 13.1	20.9
520414 2014 JW ₈₈	16.5	X	27.57309	156.29667	125.91217	4.58395	0.0957006	0.19262281	2.9693695	20	8 29.7	20.2
520415 2014 JE ₈₉	16.0	X	322.87304	58.39261	264.30308	8.78209	0.0802566	0.18141167	3.0904798	20	7 8.9	20.1
520416 2014 JM ₈₉	16.9	X	258.51955	323.13420	131.77863	6.72671	0.0844019	0.21355520	2.7720174	20	10 6.8	20.7
520417 2014 JN ₈₉	17.2	X	103.25312	86.74380	137.59801	7.04139	0.0409314	0.20060062	2.8901111	20	9 17.6	21.4
520418 2014 JO ₈₉	16.3	X	158.57166	31.40632	95.58450	11.56796	0.0958732	0.18380747	3.0635662	20	7 19.8	21.1
520419 2014 JW ₈₉	16.3	X	257.04111	290.51923	114.47993	12.43130	0.1094842	0.18436288	3.0574104	20	7 22.0	20.5
520420 2014 JX ₈₉	16.4	X	46.77354	140.06845	114.44512	12.38670	0.0285302	0.18758363	3.0223129	20	8 11.4	20.5
520421 2014 JE ₉₀	16.7	X	140.30362	32.84052	165.27286	8.02429	0.0268162	0.21133003	2.7914418	20	9 28.6	20.5
520422 2014 JS ₉₀	17.0	X	100.71545	124.01293	109.77383	14.32906	0.1660031	0.21424320	2.7660797	20	10 15.7	21.6
520423 2014 JT ₉₀	17.1	X	140.02662	35.06403	217.89913	13.27492	0.1238556	0.23648821	2.5897811	20	12 9.2	21.2
520424 2014 JV ₉₀	17.9	X	140.72233	204.40242	77.30733	3.92096	0.0914037	0.24780022	2.5103537	20	—	—
520425 2014 JW ₉₀	17.2	X	63.14879	281.43773	57.84215	4.31315	0.0922540	0.23792249	2.5793625	20	—	—
520426 2014 JZ ₉₀	16.0	X	236.92765	215.79771	181.96107	19.84723	0.0361184	0.17597781	3.1537755	20	6 26.7	20.9
520427 2014 JF ₉₁	16.8	X	135.06259	16.14345	289.86611	12.34025	0.1110660	0.23475317	2.6025260	20	—	—
520428 2014 JG ₉₁	16.3	X	109.15956	41.37526	234.87451	12.81709	0.1901714	0.21048709	2.7988894	20	12 6.6	21.0
520429 2014 JO ₉₁	17.0	X	185.15096	75.87603	116.38979	14.65133	0.1021013	0.22436146	2.6822786	20	11 14.3	21.3
520430 2014 JT ₉₁	16.7	X	46.90750	128.44905	123.06805	16.79337	0.1615217	0.18511564	3.0491162	20	8 28.1	20.8
520431 2014 JU ₉₁	16.9	X	121.58985	24.06311	168.16042	15.24114	0.0069835	0.19254400	2.9701797	20	8 22.1	21.1
520432 2014 JV ₉₁	17.1	X	3.02206	276.96107	126.96751	12.26253	0.0409567	0.23397020	2.6083289	20	—	—
520433 2014 JX ₉₁	16.2	X	252.08916	252.33893	191.02793	10.76379	0.0182067	0.18124822	3.0923374	20	7 25.5	20.6
520434 2014 KN	16.6	X	81.62967	213.03477	75.65583	14.51284	0.1781294	0.22244093	2.6976955	20	11 28.8	20.7
520435 2014 KU ₂	17.5	X	168.79873	218.83313	97.55543	6.59154	0.2162740	0.26901788	2.3765591	20	1 2.6	21.0
520436 2014 KR ₄	17.2	X	208.18614	154.62641	66.20644	6.26335	0.1087395	0.25730845	2.4481236	20	—	—
520437 2014 KF ₁₆	17.6	X	123.12143	186.22758	95.95616	5.05078	0.1221296	0.23459513	2.6036947	20	12 27.9	21.4
520438 2014 KM ₂₈	17.6	X	218.58477	57.82476	122.66910	4.17578	0.1434825	0.24157932	2.5532669	20	11 30.3	21.1
520439 2014 KW ₃₂	17.4	X	178.36363	336.21715	209.86719	12.68957	0.1311209	0.22597158	2.6695219	20	10 23.9	21.5
520440 2014 KQ ₄₂	17.6	X	152.55097	215.66043	58.99230	13.99169	0.1593308	0.24349278	2.5398729	20	—	—
520441 2014 KW ₅₁	17.5	X	132.39350	140.16993	160.82644	15.08846	0.1402931	0.24301929	2.5431709	20	—	—
520442 2014 KM ₅₉	17.6	X	210.89783	5.07036	199.59394	9.81662	0.0960803	0.24247159	2.5469992	20	12 26.8	21.3
520443 2014 KK ₆₅	16.9	X	98.12746	87.13920	105.78322	6.63476	0.1270889	0.18897964	3.0074104	20	8 10.7	21.3
520444 2014 KJ ₇₃	16.9	X	72.71043	229.88579	89.09002	16.48229	0.1600532	0.22290111	2.6932643	20	12 23.8	21.0
520445 2014 KU ₉₀	17.3	X	167.64235	145.44807	106.29682	18.74692	0.1976829	0.24128665	2.5553311	20	12 30.8	21.4
520446 2014 KH ₉₄	17.4	X	117.23596	263.11461	43.82520	2.64414	0.1857091	0.23618809	2.5919744	20	—	—
520447 2014 KR ₉₉	17.4	X	122.92102	201.70651	111.28540	16.99574	0.1638110	0.24451989	2.5327554	20	—	—
520448 2014 KJ ₁₀₄	17.5	X	131.76755	234.96636	68.41714	7.50593	0.0882089	0.24671792	2.5176900	20	—	—
520449 2014 KC ₁₀₅	17.6	X	129.39784	98.45702	198.14901	14.51969	0.1318842	0.24240151	2.5474901	20	—	—
520450 2014 KQ ₁₀₅	17.0	X	101.76063	166.45304	163.90206	13.46959	0.1761930	0.22490858	2.6779268	20	—	—
520451 2014 KW ₁₀₆	17.2	X	68.07511	194.47926	85.71054	4.82705	0.0677957	0.21072088	2.7968188	20	10 20.9	21.0
520452 2014 KX ₁₀₆	17.3	X	163.07094	346.38081	203.89701	3.26568	0.0409905	0.21613422	2.7499219	20	10 15.2	21.2
520453 2014 KC ₁₀₇	17.3	X	323.59121	317.43755	163.81047	23.86005	0.1227357	0.25819840	2.4424950	20	—	—
520454 2014 KH ₁₀₇	16.7	X	297.67118	261.80940	63.29739	16.53811	0.0894543	0.17446489	3.1719818	20	6 3.5	20.9
520455 2014 KL ₁₀₇	17.7	X	184.58521	46.59133	252.28082	5.52217	0.1054102	0.26820844	2.3813382	20	—	—
520456 2014 KQ ₁₀₇	16.8	X	103.01339	85.63843	93.93224	2.40963	0.0710365	0.18347806	3.0672320	20	7 22.3	21.1
520457 2014 KU ₁₀₇	17.6	X	109.79948	206.31884	101.29856	4.02171	0.1570895	0.23501887	2.6005641	20	—	—
520458 2014 KV ₁₀₇	17.2	X	77.57055	196.89042	68.59882	3.09400	0.0254328	0.20740564	2.8265435	20	10 6.8	21.1
520459 2014 KY ₁₀₇	16.2	X	67.77478	322.43156	254.49675	9.37848	0.1008844	0.18326281	3.0696332	20	7 27.4	20.6
520460 2014 KA ₁₀₈	17.3	X	174.74164	255.51419	300.85393	1.11550	0.1386301	0.22563081	2.6722092	20	10 31.9	21.4
520461 2014 KE ₁₀₈	16.9	X	82.68300	99.29791	109.83235	4.67947	0.1766322	0.18952406	3.0016484	20	8 20.0	21.2
520462 2014 KJ ₁₀₈	16.3	X	87.55765	139.59997	78.14789	10.77288	0.0324654	0.19048285	2.9915674	20	8 20.6	20.7
520463 2014 KK ₁₀₈	17.0	X	22.70713	136.11380	239.09089	14.17952	0.0673679	0.22853388	2.6495309	20	12 23.3	20.6
520464 2014 KM ₁₀₈	17.1	X	185.70523	281.12510	220.04685	9.64605	0.0513308	0.20137657	2.8826821	20	9 3.1	21.5
520465 2014 KP ₁₀₈	17.6	X	115.87704	219.96957	63.65449	5.78026	0.0812240	0.23204984	2.6226995	20	12 20.8	21.4
520466 2014 KS ₁₀₈	16.8	X	99.22253	215.17332	67.03931	16.20785	0.0241475	0.22480537	2.6787463	20	11 25.8	20.6
520467 2014 KV ₁₀₈	16.4	X	137.59809	80.98498	82.94168	13.11481	0.0816734	0.19085394	2.9876884	20	8 16.1	21.1
520468 2014 KW ₁₀₈	17.4	X	190.76777	131.86071	97.74106	7.14549	0.0338969	0.24367941	2.5385760	20	—	—
520469 2014 KD ₁₀₉	16.5	X	230.24454	227.42739	173.69244	9.36098	0.1012594	0.17439935	3.1727765	20	6 17.1	21.4
520470 2014 KF ₁₀₉	17.0	X	150.13582	78.31691	112.19203	10.39170	0.0948021	0.21203885	2.7852173	20	10 5.3	21.4
520471 2014 KO ₁₀₉	17.8	X	144.54842	125.40551	152.20440	6.36142	0.1095788	0.23989660	2.5651927	20	—	—
520472 2014 KP ₁₀₉	17.5	X	221.64694	317.31889	190.39914	11.15003	0.1413235	0.22656867	2.6648298	20	10 21.1	21.3
520473 2014 KQ ₁₀₉	16.6	X	61.15393	62.09765	164.67017	9.46818	0.0866361	0.18316459	3.0707305	20	7 30.7	20.8
520474 2014 KD ₁₁₀												

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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>
520481 2014 KA ₁₁₁	16.6	X	152.89671	282.37264	284.32699	7.45707	0.0468737	0.21630764	2.7484519	20	10 20.7	20.7
520482 2014 KB ₁₁₁	17.4	X	115.18889	277.81949	3.06974	3.51323	0.1112603	0.22805870	2.6532100	20	12 17.0	21.4
520483 2014 KD ₁₁₁	17.0	X	76.42043	270.04468	27.63282	4.23833	0.1915538	0.21299433	2.7768815	20	12 2.8	21.3
520484 2014 KG ₁₁₁	16.1	X	38.79233	174.33583	94.25593	17.01240	0.1839157	0.17590888	3.1545994	20	9 15.1	20.5
520485 2014 KJ ₁₁₁	16.5	X	35.46836	66.91821	190.16947	8.27424	0.0684890	0.18045314	3.1014141	20	7 30.9	20.7
520486 2014 KL ₁₁₁	16.9	X	11.19689	223.59105	137.88197	10.42718	0.0409275	0.21498486	2.7597143	20	11 17.8	20.7
520487 2014 KM ₁₁₁	16.2	X	80.26488	353.61015	194.58304	15.88430	0.0017126	0.17077739	3.2174796	20	6 23.2	21.0
520488 2014 KR ₁₁₁	17.5	X	139.73433	123.72391	179.58179	11.65233	0.1858351	0.24228744	2.5482896	20	—	—
520489 2014 KT ₁₁₁	16.9	X	193.45053	346.61128	212.42620	14.03377	0.2095501	0.23384616	2.6092511	20	11 19.1	21.1
520490 2014 KD ₁₁₂	17.5	X	115.48756	96.24616	161.35667	6.18611	0.1151204	0.21962495	2.7207059	20	11 19.7	21.7
520491 2014 KH ₁₁₂	17.2	X	55.81307	167.53693	111.83682	3.83261	0.1258225	0.20180635	2.8785879	20	10 11.2	21.1
520492 2014 KP ₁₁₂	16.2	X	46.01003	42.65480	235.86433	9.97507	0.0691403	0.17795511	3.1303705	20	9 8.8	20.6
520493 2014 KQ ₁₁₂	16.1	X	198.94159	290.02964	262.35772	11.52297	0.1095394	0.21302587	2.7766074	20	11 20.1	20.3
520494 2014 KS ₁₁₂	15.7	X	58.29190	22.01863	241.17724	9.86207	0.0623923	0.17642930	3.1483928	20	9 4.1	20.3
520495 2014 KT ₁₁₂	17.0	X	240.32408	40.68340	249.23845	5.45126	0.1135571	0.26171171	2.4205865	20	2 1.5	20.6
520496 2014 LA ₁₁	17.6	X	130.50649	86.38331	187.92291	11.96180	0.1519084	0.23341128	2.6124911	20	12 24.8	22.1
520497 2014 LM ₁₁	16.6	X	101.37117	29.34969	226.65455	4.35200	0.1252497	0.21289978	2.7777037	20	11 1.6	20.8
520498 2014 LV ₁₂	17.5	X	165.71327	134.01865	107.99901	2.75782	0.1395329	0.23643996	2.5901334	20	12 19.7	21.4
520499 2014 LV ₂₀	17.4	X	135.85038	178.99214	90.37454	15.30832	0.2241144	0.23103866	2.6303464	20	12 23.3	22.0
520500 2014 LQ ₂₉	17.1	X	249.96380	313.05030	203.67199	13.04879	0.0958872	0.24140617	2.5544876	20	12 16.2	20.5
520501 2014 LR ₂₉	16.8	X	358.46597	186.24911	228.18279	14.37709	0.0769194	0.23413948	2.6070715	20	—	—
520502 2014 LL ₃₀	16.1	X	45.89286	103.79941	217.76241	7.33695	0.0746390	0.18176810	3.0864383	20	11 7.5	20.2
520503 2014 LQ ₃₀	16.2	X	71.89400	31.03489	172.31912	16.32485	0.1406314	0.17727667	3.1330523	20	7 21.6	20.8
520504 2014 LX ₃₀	16.1	X	59.12579	9.01391	266.35644	7.65926	0.0690706	0.18388907	3.0626599	20	9 23.2	20.5
520505 2014 LA ₃₁	16.5	X	359.92629	137.61175	228.78043	1.50056	0.0988767	0.19207210	2.9750426	20	11 5.3	20.2
520506 2014 LC ₃₁	16.8	X	38.50781	152.58282	168.94921	10.10239	0.1027136	0.19071742	2.9891140	20	11 6.2	20.9
520507 2014 LD ₃₁	16.4	X	282.41057	262.77422	158.70761	15.22736	0.0749886	0.17880801	3.1204081	20	9 20.6	20.6
520508 2014 LE ₃₁	16.5	X	138.92065	73.26505	196.31087	7.70387	0.1081662	0.21408939	2.7674043	20	12 23.6	20.9
520509 2014 LF ₃₁	16.6	X	157.96765	344.22404	262.18551	11.60316	0.0932981	0.21184585	2.7869087	20	12 14.8	20.9
520510 2014 LM ₃₁	16.7	X	15.94139	153.31091	160.61612	12.50803	0.1409462	0.17534631	3.1613431	20	9 26.1	20.6
520511 2014 LP ₃₁	16.9	X	59.94888	219.64619	197.00668	9.34085	0.0600799	0.24185888	2.5512990	20	—	—
520512 2014 LQ ₃₁	16.4	X	41.91474	88.05243	227.31766	9.32994	0.1552758	0.18598565	3.0395999	20	11 6.9	20.6
520513 2014 LS ₃₁	15.6	X	107.06677	254.57520	284.17748	14.01102	0.0917394	0.15430875	3.4425137	20	7 24.4	20.7
520514 2014 LT ₃₁	16.3	X	5.96828	86.21350	276.68248	9.74070	0.1929192	0.17653882	3.1470905	20	11 15.3	20.1
520515 2014 LA ₃₂	16.5	X	145.26356	169.54338	108.21791	14.38830	0.1397381	0.22709149	2.6607382	20	—	—
520516 2014 LC ₃₂	15.9	X	89.84285	158.65360	66.94826	11.64017	0.0478931	0.17957160	3.1115559	20	9 5.4	20.5
520517 2014 LG ₃₂	16.7	X	115.70215	340.59401	201.67928	9.72637	0.0738290	0.18616844	3.0376100	20	8 6.8	21.4
520518 2014 LJ ₃₂	17.1	X	231.71026	64.04581	262.58794	7.09164	0.0695631	0.28401224	2.2921587	20	3 8.5	20.4
520519 2014 LO ₃₂	16.6	X	42.63165	281.66732	11.92170	9.68167	0.0907971	0.18885171	3.0087684	20	10 2.9	20.6
520520 2014 LP ₃₂	17.1	X	111.21844	203.00249	79.82576	15.36741	0.0897598	0.22655931	2.6649033	20	12 14.2	21.1
520521 2014 MQ ₂	16.7	X	109.90085	167.45867	171.60165	16.67639	0.2609699	0.24570528	2.5246028	20	—	—
520522 2014 MT ₄	16.7	X	65.81576	150.66705	197.69287	17.32418	0.2553399	0.20783053	2.8226898	20	—	—
520523 2014 MF ₁₅	16.8	X	131.81424	32.71408	255.61805	10.99992	0.2899705	0.22598203	2.6694397	20	—	—
520524 2014 MV ₂₅	16.7	X	68.17203	225.64439	116.92190	14.17392	0.0381278	0.17137610	2.7394383	20	—	—
520525 2014 MG ₄₂	16.6	X	295.84733	35.32867	59.30371	22.86071	0.0583287	0.23564203	2.5959772	20	12 1.9	19.8
520526 2014 MO ₄₅	16.7	X	204.90321	1.10591	208.30251	17.25020	0.1101669	0.23990188	2.5651550	20	12 22.5	20.7
520527 2014 MH ₄₉	16.7	X	147.59758	160.60033	102.05710	15.33121	0.1481998	0.22506503	2.6766856	20	12 25.4	21.1
520528 2014 MD ₇₃	17.8	X	148.64667	102.83865	152.31244	1.95178	0.1833853	0.21955605	2.7212751	20	12 15.7	22.4
520529 2014 MV ₇₃	15.9	X	320.31623	166.87424	235.44650	10.69632	0.1118917	0.17746053	3.1361839	20	10 14.1	19.9
520530 2014 MA ₇₄	17.5	X	115.87473	181.12323	80.74886	10.89482	0.1812405	0.21142009	2.7906490	20	11 26.3	22.2
520531 2014 ME ₇₄	16.0	X	21.47729	4.72587	286.72382	10.12379	0.0926451	0.17733201	3.1376991	20	8 24.8	20.2
520532 2014 MO ₇₄	16.5	X	94.56776	142.23032	125.38687	15.98604	0.1232889	0.20229350	2.8739647	20	11 12.9	21.2
520533 2014 MW ₇₄	16.5	X	18.76322	333.10596	3.16821	9.90884	0.1012596	0.19360495	2.9593187	20	10 23.5	20.4
520534 2014 MX ₇₄	16.9	X	80.20163	209.86220	32.34517	9.61265	0.0850836	0.18440618	3.0569317	20	9 17.9	21.4
520535 2014 MY ₇₄	15.8	X	30.37705	311.13420	327.60063	14.63178	0.0494951	0.17537758	3.1609673	20	8 20.4	19.9
520536 2014 MB ₇₅	16.1	X	96.51144	170.31223	61.13163	11.11491	0.0521500	0.18508483	3.0494546	20	9 21.9	20.6
520537 2014 ME ₇₅	16.9	X	116.27282	85.17798	223.43162	5.56083	0.0400906	0.21743247	2.7389648	20	—	—
520538 2014 MG ₇₅	15.7	X	92.08193	347.69039	248.84769	4.80966	0.1265868	0.17445508	3.1721008	20	9 22.1	20.5
520539 2014 MJ ₇₅	16.6	X	51.47783	18.48914	304.94670	9.04696	0.0620785	0.19236055	2.9720678	20	11 14.4	20.9
520540 2014 MK ₇₅	16.2	X	287.57619	128.57798	294.09177	16.55464	0.0582350	0.18983639	2.9983551	20	9 21.4	20.6
520541 2014 MR ₇₅	16.1	X	31.23787	345.56845	305.62614	10.72059	0.0187169	0.18300684	3.0724949	20	8 31.2	20.4
520542 2014 MX ₇₅	16.1	X	26.00033	343.39356	302.18834	16.24389	0.1791258	0.17847230	3.1243199	20	9 1.3	20.1
520543 2014 MD ₇₆	17.3	X	74.42543	21.49633	334.00304	4.57174	0.0672908	0.22324801	2.6911897	20	—	—
520544 2014 MF ₇₆	16.2	X	124.73148	242.36307	307.38853	8.43966	0.1554484	0.17811951	3.1284440	20	8 31.7	21.2
520545 2014 MH ₇₆	16.6	X	74.34852	160.89429	94.59376	4.19526	0.0788170	0.18015866	3.1047928	20	9 23.4	21.0
520546 2014 MK ₇₆	17.4	X	40.62398	35.01515	359.12248	6.42198	0.0613935	0.22379408	2.6868102	20	—	—
520547 2014 MM ₇₆	16.6	X	76.62874	268.72787	339.90874	9.39927	0.0445750	0.17706352	3.1408702	20	9 10.3	20.9
520548 2014 MP ₇₆	17.4	X	57.65123	9.08645	338.00710	4.60241	0.0562548	0.21125779	2.7920781	20	12 27.2	21.3
520549 2014 MS ₇₆	16.3	X	77.45547	110.20140	130.94908	11.60113	0.0417423	0.17371431	3.1811122	20	9 4.3	20.8
520550 2014 MY ₇₆	17.1	X	107.40486	215.92575	84.91854	8.85065	0.2052773	0.21131313	2.7915906	20	—	—
520551 2014 MC ₇₇	18.1	X	237.60055	57.17187	165.53301	4.25345	0.0841745	0.24480938	2.5307584	20	—	—
520552 2014 MD ₇₇	17.0	X	348.68543	329.49910	173.19729	22.66674	0.0482402	0.23504608	2.6003634	20	—	—
520553 2014 MF ₇₇	17.4	X	229.26290	296.70787	276.48431	5.20403	0.1329926	0.23840035	2.5759146	20	—	—
520554 2014 MG ₇₇												

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>
520561 2014 MC ₇₈	17.3	X	185.22302	91.21052	191.19696	13.25015	0.1372888	0.23897810	2.5717613	20	—	—
520562 2014 NV ₁	17.0	X	172.65924	6.62735	224.53021	14.57563	0.1231462	0.23316603	2.6143227	20	12 13.3	21.1
520563 2014 NK ₁₈	17.4	X	208.59138	52.92029	138.76524	6.15037	0.1119273	0.23687322	2.5869740	20	12 6.1	21.2
520564 2014 NH ₃₅	16.8	X	77.76194	229.02517	83.43424	16.12184	0.1453070	0.20281230	2.8690615	20	12 15.7	21.2
520565 2014 NQ ₅₂	16.2	X	49.16045	271.98507	46.92497	16.38806	0.0833580	0.19086542	2.9875685	20	11 10.9	20.3
520566 2014 NX ₅₅	17.1	X	82.32803	232.22546	112.67042	14.57685	0.2237152	0.21412945	2.7670592	20	—	—
520567 2014 NR ₆₅	15.6	X	22.84242	202.72177	93.27257	18.07656	0.1735581	0.18077856	3.0976910	20	9 27.3	19.7
520568 2014 NM ₆₉	16.2	X	155.84016	265.20037	300.56597	9.70133	0.0600894	0.20357546	2.8618867	20	10 19.2	20.6
520569 2014 NR ₆₉	16.3	X	116.37681	147.91853	41.42892	8.98935	0.0292733	0.17414458	3.1758702	20	8 18.1	21.0
520570 2014 NS ₆₉	15.7	X	137.12619	215.43519	316.13736	26.82473	0.1452998	0.17961394	3.1110669	20	8 19.0	20.7
520571 2014 NC ₇₀	16.3	X	172.07698	247.19076	282.32053	9.18551	0.0444556	0.18821849	3.0155129	20	9 20.3	20.9
520572 2014 NJ ₇₀	16.8	X	143.68119	150.81526	107.15568	15.00110	0.1453361	0.22281220	2.6946978	20	12 16.9	21.3
520573 2014 NO ₇₀	16.9	X	59.73368	222.36228	56.34667	3.61007	0.0615069	0.18147530	3.0897573	20	10 2.3	21.1
520574 2014 NB ₇₁	16.7	X	41.58970	2.48253	296.25277	2.33740	0.0995777	0.18126690	3.0921520	20	10 6.6	20.9
520575 2014 NC ₇₁	16.7	X	342.44796	301.10590	90.35746	3.40930	0.2385032	0.18476937	3.0529245	20	11 17.2	19.4
520576 2014 NG ₇₁	17.4	X	82.60804	53.16257	262.10744	2.86934	0.0917904	0.20940758	2.8085002	20	12 20.2	21.4
520577 2014 NJ ₇₁	17.2	X	50.72697	292.74693	114.98543	6.26132	0.1156668	0.22133910	2.7066408	20	—	—
520578 2014 NB ₇₂	16.5	X	17.21976	303.95250	86.05978	4.59941	0.0349442	0.19856000	2.9098787	20	12 23.3	20.4
520579 2014 NE ₇₂	16.8	X	277.89584	82.06864	354.16028	7.16905	0.0310943	0.18543990	3.0455606	20	10 6.8	21.1
520580 2014 NM ₇₂	16.3	X	111.42225	242.56008	342.63739	14.97028	0.0880296	0.18104527	3.0946480	20	9 24.4	21.1
520581 2014 NP ₇₂	17.5	X	175.84294	153.06211	86.01953	5.90663	0.1081428	0.21785809	2.7353963	20	12 24.4	21.7
520582 2014 NR ₇₂	16.6	X	150.24478	126.01623	67.45144	10.26456	0.1331846	0.18305480	3.0719582	20	10 5.8	21.6
520583 2014 NT ₇₂	16.5	X	16.51999	319.36102	31.28822	10.70617	0.0520358	0.18894124	3.0078180	20	11 2.5	20.5
520584 2014 NZ ₇₂	16.5	X	100.26404	110.99488	102.64638	12.60955	0.2208196	0.17390258	3.1788158	20	9 19.9	21.8
520585 2014 OA ₂	21.3	X	317.89379	184.56870	118.76114	6.17962	0.2666240	0.48586426	1.6024805	20	4 26.8	21.5
520586 2014 OO ₃₆	17.3	X	166.61632	106.89905	110.82454	8.63817	0.1663497	0.21365206	2.7711795	20	11 18.9	21.9
520587 2014 OZ ₇₉	17.1	X	126.05649	174.11099	89.01320	10.53694	0.0749824	0.21289086	2.7777813	20	12 3.6	21.3
520588 2014 OC ₉₂	16.8	X	173.30576	325.28049	244.10772	6.73090	0.1603401	0.21352912	2.7722431	20	11 12.4	21.3
520589 2014 ON ₁₂₆	17.3	X	153.91340	135.85124	97.75437	3.74569	0.1375641	0.21244565	2.7816607	20	11 25.2	21.8
520590 2014 ON ₁₃₄	17.1	X	92.00805	207.61565	110.93469	7.96220	0.0414875	0.21857213	2.7294357	20	—	—
520591 2014 OJ ₁₉₁	16.8	X	42.56142	344.63368	4.86557	1.39529	0.1406587	0.18744237	3.0238312	20	12 17.5	20.9
520592 2014 OC ₂₃₉	16.6	X	16.53146	228.87639	123.21756	12.99663	0.0648130	0.19613460	2.9338185	20	11 13.2	20.7
520593 2014 OE ₃₈₁	17.5	X	151.93418	71.31658	237.65482	4.20111	0.1300766	0.24092686	2.5578745	20	—	—
520594 2014 OQ ₃₈₅	17.2	X	113.02021	128.13124	143.43035	15.07225	0.1487488	0.20943941	2.8082156	20	12 5.1	22.0
520595 2014 OM ₃₈₇	16.8	X	101.40313	275.79547	29.34187	4.32985	0.0857124	0.21429420	2.7656408	20	12 28.5	20.9
520596 2014 OM ₃₉₉	16.9	X	116.84977	169.11110	99.44108	3.28316	0.0612740	0.19614448	2.9337200	20	11 26.1	21.3
520597 2014 OZ ₄₀₄	15.7	X	208.63122	119.75514	315.37328	8.75601	0.0797149	0.14542041	3.5813970	20	7 7.2	21.1
520598 2014 OK ₄₀₅	17.5	X	120.76162	262.19388	7.36822	3.45799	0.0584976	0.21091199	2.7951291	20	12 3.3	21.6
520599 2014 OR ₄₀₅	17.3	X	105.72895	278.45832	85.85994	3.10530	0.0883248	0.23874866	2.5734086	20	—	—
520600 2014 OY ₄₀₅	17.5	X	182.60343	249.90268	10.91538	4.98060	0.0538044	0.23081898	2.6320150	20	—	—
520601 2014 OK ₄₀₆	16.8	X	123.56980	78.44447	139.95180	10.87937	0.0707706	0.18197741	3.0840712	20	10 5.4	21.5
520602 2014 OV ₄₀₆	17.5	X	139.10253	218.90456	35.05168	2.46356	0.0177136	0.20305266	2.8667969	20	12 2.6	21.5
520603 2014 OR ₄₀₇	17.2	X	211.18247	76.37720	136.04020	14.21573	0.0348478	0.21610754	2.7501482	20	—	—
520604 2014 OH ₄₀₈	16.7	X	62.06586	195.64652	100.82007	6.82938	0.1184855	0.18647697	3.0342585	20	11 5.8	21.1
520605 2014 OX ₄₀₈	17.4	X	121.16723	170.79654	122.69974	5.32865	0.1505710	0.21393804	2.7687094	20	—	—
520606 2014 OM ₄₀₉	16.4	X	153.28751	53.96536	145.55402	15.97648	0.0719113	0.18201472	3.0836497	20	10 15.3	21.3
520607 2014 OP ₄₀₉	16.7	X	130.56790	75.73382	134.50760	12.75005	0.1198278	0.18365582	3.0652525	20	10 6.6	21.7
520608 2014 OH ₄₁₁	16.5	X	301.26556	124.48023	304.12130	7.68221	0.0748815	0.18967526	3.0000529	20	10 22.8	20.5
520609 2014 OK ₄₁₁	17.1	X	5.70946	74.70259	340.05236	3.45662	0.0617235	0.21320920	2.7750156	20	—	—
520610 2014 OO ₄₁₁	17.4	X	60.79208	182.07937	173.01911	3.73619	0.1046137	0.21157179	2.7893148	20	—	—
520611 2014 OX ₄₁₁	17.8	X	129.57732	133.49103	179.49065	6.34709	0.0651531	0.22224724	2.6992626	20	—	—
520612 2014 OM ₄₁₂	17.5	X	35.28488	259.56911	151.72392	8.19988	0.1608829	0.21426320	2.7659075	20	—	—
520613 2014 ON ₄₁₂	17.1	X	124.64395	178.64003	63.56743	2.32203	0.1702338	0.19304456	2.9650431	20	11 6.9	22.1
520614 2014 OO ₄₁₂	17.1	X	171.37046	297.12304	338.76358	9.72999	0.0574894	0.22406782	2.6846215	20	—	—
520615 2014 OQ ₄₁₂	17.0	X	149.48471	354.31338	32.92218	10.19764	0.1345016	0.24167351	2.5526034	20	3 11.9	20.9
520616 2014 OR ₄₁₂	16.6	X	313.56144	49.91386	2.17112	9.45043	0.0657049	0.18368912	3.0648820	20	10 20.2	20.6
520617 2014 OU ₄₁₂	17.3	X	352.24669	179.05433	339.88756	10.95799	0.0781893	0.26556561	2.3971111	20	1 9.2	20.2
520618 2014 OA ₄₁₃	16.8	X	90.04767	135.97723	113.40572	10.15121	0.0692189	0.18113701	3.0936031	20	10 7.1	21.4
520619 2014 OB ₄₁₃	16.4	X	142.62099	193.05625	20.94860	7.08385	0.0399148	0.18581366	3.0414753	20	10 16.3	20.9
520620 2014 OC ₄₁₃	17.1	X	163.86382	72.98268	169.14211	8.83279	0.0515759	0.21484533	2.7609091	20	12 18.8	21.2
520621 2014 OK ₄₁₃	16.6	X	51.45212	220.92172	104.69217	2.81629	0.0720349	0.19059090	2.9904366	20	11 21.2	20.7
520622 2014 OS ₄₁₃	16.5	X	198.51145	112.91071	30.35658	10.57448	0.0554921	0.17493871	3.1662518	20	9 24.0	21.2
520623 2014 OD ₄₁₄	16.8	X	103.78438	259.89443	36.47652	3.98041	0.1725304	0.19871827	2.9083333	20	12 22.3	21.5
520624 2014 OE ₄₁₄	17.2	X	170.23433	314.13800	355.19818	3.75018	0.1620004	0.23431743	2.6057514	20	—	—
520625 2014 OJ ₄₁₄	17.1	X	114.91890	328.86856	40.27640	12.15126	0.0791262	0.24190832	2.5509514	20	—	—
520626 2014 OM ₄₁₄	17.7	X	219.22725	195.89654	112.57431	6.80126	0.0924323	0.25919267	2.4362447	20	2 6.9	21.2
520627 2014 OW ₄₁₄	16.0	X	37.22101	182.46194	129.79894	9.06902	0.1252160	0.17300741	3.1897716	20	10 24.9	20.4
520628 2014 OY ₄₁₄	17.5	X	323.33582	132.44845	97.19493	6.92470	0.0635169	0.26899289	2.3767063	20	3 6.3	20.3
520629 2014 OB ₄₁₅	17.1	X	131.58478	289.60945	24.84350	12.64452	0.1356215	0.21896706	2.7261528	20	—	—
520630 2014 OC ₄₁₅	17.0	X	64.53155	255.18521	89.19095	9.04725	0.0557223	0.19686273	2.9265799	20	12 28.0	21.0
520631 2014 PW ₁₂	16.4	X	195.09910	12.85209	138.81223	10.31348	0.0926855	0.18125584	3.0922508	20	9 28.3	21.2
520632 2014 PT ₆₇	16.7	X	135.83859	40.45032	244.90147	12.92501	0.2467701	0.22374215	2.6872259	20	—	—
520633 2014 PS ₇₂	17.2	X	116.11772	84.70744	171.22614	10.19000	0.0529120	0.18943938	3.0025428	20	11 10.3	21.7
520634 201												

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>
520641 2014 PQ ₇₆	16.5	X	110.10636	103.43612	146.18411	9.70492	0.1785873	0.18807173	3.0170815	20	11 5.8	21.5
520642 2014 PU ₇₆	16.4	X	309.85862	265.45459	152.08852	9.66306	0.0881416	0.18022908	3.1039840	20	10 25.4	20.4
520643 2014 PX ₇₆	16.6	X	139.34172	154.98504	97.62992	16.11998	0.1835948	0.20216768	2.8751570	20	12 4.5	21.5
520644 2014 PD ₇₇	16.4	X	356.03096	328.53600	82.58580	3.31903	0.0556904	0.19768954	2.9184141	20	12 23.7	20.2
520645 2014 PL ₇₇	17.0	X	94.66354	85.16584	199.00139	3.39653	0.0934012	0.19339842	2.9614252	20	11 23.2	21.4
520646 2014 PM ₇₇	16.9	X	79.61835	182.61357	180.29308	6.36158	0.0382614	0.21924870	2.7238177	20	—	—
520647 2014 PN ₇₇	16.3	X	351.02636	40.58193	27.95943	15.60588	0.1295633	0.20025215	2.8934629	20	—	—
520648 2014 PQ ₇₇	17.3	X	104.59116	98.05900	173.66503	4.00211	0.2012888	0.19997230	2.8961618	20	11 27.2	22.1
520649 2014 PX ₇₇	17.3	X	69.09000	176.11237	219.49903	3.48390	0.0667592	0.22718270	2.6600260	20	—	—
520650 2014 PY ₇₇	16.7	X	137.39165	218.21022	93.24617	12.09189	0.1719575	0.21819171	2.7326073	20	—	—
520651 2014 PZ ₇₇	17.2	X	132.57344	229.88476	128.68370	11.57106	0.1099505	0.23150648	2.6268017	20	1 11.5	21.0
520652 2014 PB ₇₈	16.1	X	341.04846	260.40671	135.55102	12.04188	0.0661298	0.17423555	3.1747647	20	11 12.9	20.4
520653 2014 PJ ₇₈	17.3	X	31.71891	109.56283	271.32033	4.89554	0.0690267	0.21081433	2.7959922	20	—	—
520654 2014 QX ₅₅	17.5	X	152.70347	88.25279	169.60721	9.42684	0.1200413	0.22035780	2.7146704	20	12 24.1	21.9
520655 2014 QW ₁₄₉	16.7	X	97.10270	274.08507	350.11368	9.72932	0.1157222	0.18469383	3.0537569	20	10 29.5	21.4
520656 2014 QG ₂₁₄	16.7	X	55.29173	177.69135	166.11997	11.71469	0.0993455	0.19944094	2.9013035	20	12 23.2	21.0
520657 2014 QO ₂₅₄	15.9	X	351.79879	253.59179	126.35850	12.63491	0.0800207	0.17622527	3.1342763	20	11 10.5	20.1
520658 2014 QH ₂₇₄	15.9	X	22.73783	216.19162	144.54796	13.16461	0.1675368	0.17782696	3.1318742	20	12 9.1	20.2
520659 2014 QY ₂₇₇	17.2	X	125.62484	146.97684	128.97572	5.93118	0.1319721	0.21314948	2.7755339	20	12 19.2	21.6
520660 2014 QZ ₃₃₆	16.9	X	86.84399	289.81304	13.87037	6.88740	0.1600164	0.19487748	2.9464220	20	12 13.4	21.6
520661 2014 QK ₃₈₁	16.7	X	126.71074	96.93083	187.79070	12.66070	0.2135604	0.20918460	2.8104956	20	12 29.7	21.7
520662 2014 QJ ₃₈₇	16.5	X	128.92404	227.28718	144.22626	13.01815	0.0853068	0.22880985	2.6474000	20	1 20.0	20.3
520663 2014 QN ₃₉₈	16.0	X	346.21789	187.22822	137.83998	14.51654	0.2049345	0.17060639	3.2196291	20	10 26.9	19.5
520664 2014 QM ₄₃₅	17.4	X	80.10328	350.82507	34.62676	5.65500	0.1713860	0.21776188	2.7362019	20	—	—
520665 2014 QL ₄₃₈	15.9	X	76.21804	255.34637	62.25797	15.70213	0.1854199	0.17812894	3.1283336	20	12 18.2	20.8
520666 2014 QB ₄₄₈	17.0	X	86.49534	152.06192	165.78986	2.26038	0.0605562	0.20194456	2.8772744	20	12 22.8	21.2
520667 2014 QP ₄₄₈	16.9	X	86.61569	269.14070	66.38930	8.26709	0.2277941	0.21081684	2.7959701	20	—	—
520668 2014 QC ₄₄₉	16.7	X	53.92260	156.14511	162.62926	10.09877	0.0806770	0.17563006	3.1579371	20	11 15.9	21.3
520669 2014 QN ₄₅₀	16.0	X	301.72353	250.36320	193.63424	9.86410	0.0847729	0.18724630	3.0259416	20	11 15.9	19.9
520670 2014 QO ₄₅₀	17.0	X	154.67093	52.11772	154.23581	9.15752	0.0615426	0.18318478	3.0705049	20	10 23.1	21.7
520671 2014 QU ₄₅₀	16.1	X	62.28538	218.57968	92.79063	17.57659	0.1924226	0.17731379	3.1379140	20	12 1.6	20.8
520672 2014 QQ ₄₅₃	16.1	X	138.11094	199.59660	37.82084	16.05709	0.1941932	0.19024933	2.9940149	20	11 10.8	21.2
520673 2014 QO ₄₅₆	16.1	X	16.59159	137.27027	199.95410	9.55465	0.0740490	0.17498118	3.1657393	20	10 17.7	20.3
520674 2014 QY ₄₅₆	16.2	X	88.09214	263.76030	12.01715	10.59932	0.0990172	0.18038277	3.1022207	20	11 1.5	20.9
520675 2014 QX ₄₅₇	16.1	X	316.61122	3.39049	46.73762	10.42033	0.0830458	0.17212238	3.2006965	20	10 23.1	20.2
520676 2014 QS ₄₅₇	16.9	X	59.78298	115.03284	192.59492	1.06310	0.0908325	0.18261545	3.0768834	20	11 9.9	21.1
520677 2014 QF ₄₅₈	17.2	X	138.48597	39.74360	272.64747	1.12847	0.1120526	0.22294837	2.6936005	20	—	—
520678 2014 QG ₄₅₈	16.5	X	344.61381	103.75251	296.49585	4.54850	0.0951918	0.18454222	3.0554291	20	11 22.2	20.3
520679 2014 QM ₄₅₈	16.7	X	347.93811	234.72151	194.85466	11.60570	0.1089150	0.20125054	2.8838855	20	—	—
520680 2014 QV ₄₅₈	16.5	X	317.87696	233.07471	181.72670	9.63490	0.0520738	0.17953675	3.1119586	20	11 2.9	20.6
520681 2014 QA ₄₅₉	16.6	X	171.39294	298.72247	305.16343	7.20401	0.1576654	0.21107838	2.7936600	20	12 21.6	21.1
520682 2014 QE ₄₅₉	16.8	X	61.95442	128.41139	175.23938	10.07531	0.1006640	0.19057941	2.9905568	20	11 12.5	21.1
520683 2014 QJ ₄₅₉	17.1	X	200.77323	68.68174	156.42145	5.46144	0.1944498	0.22477334	2.6790008	20	12 25.8	21.4
520684 2014 QZ ₄₅₉	16.9	X	152.20243	59.96508	162.68680	8.28944	0.0164376	0.18620081	3.0372580	20	11 9.1	21.3
520685 2014 QR ₄₆₀	16.9	X	152.23723	3.70778	239.47688	1.04798	0.0578742	0.19789615	2.9163825	20	12 3.4	21.2
520686 2014 QA ₄₆₁	16.7	X	39.28807	212.05619	124.05558	2.35102	0.0707725	0.18333865	3.0687867	20	11 17.2	20.8
520687 2014 QJ ₄₆₁	17.1	X	146.70803	248.00125	82.44665	5.85388	0.1081445	0.23238537	2.6201744	20	—	—
520688 2014 QP ₄₆₁	16.6	X	36.63679	357.30743	19.88559	11.47785	0.1018912	0.19740869	2.9211815	20	—	—
520689 2014 QG ₄₆₁	17.3	X	124.59255	322.08682	34.22507	5.33862	0.0459634	0.22990144	2.6390133	20	—	—
520690 2014 QU ₄₆₁	15.6	X	55.78067	219.06267	110.49353	12.21641	0.0677396	0.18292971	3.0733585	20	11 30.7	20.0
520691 2014 QW ₄₆₁	16.1	X	90.50010	231.99762	72.67818	10.54359	0.0520201	0.19018810	2.9946575	20	12 7.9	20.3
520692 2014 QO ₄₆₁	16.4	X	40.79912	188.56737	182.27042	15.35599	0.1403548	0.20372073	2.8605260	20	—	—
520693 2014 QT ₄₆₂	17.2	X	260.52053	262.68985	237.32753	2.75431	0.0541538	0.19596320	2.9355290	20	12 3.5	21.2
520694 2014 QY ₄₆₂	17.0	X	291.23767	310.22410	151.51780	2.08953	0.1331719	0.18575753	3.0420879	20	11 16.6	20.8
520695 2014 QG ₄₆₃	16.2	X	324.88822	288.24179	107.95310	11.02757	0.0781943	0.17516507	3.1635234	20	10 22.2	20.4
520696 2014 QL ₄₆₃	16.3	X	133.71679	122.73045	99.74266	10.32219	0.0680509	0.17586285	3.1551497	20	10 21.3	21.2
520697 2014 QT ₄₆₄	16.3	X	29.31505	234.38229	101.05261	10.12953	0.0848295	0.17916345	3.1162797	20	11 7.5	20.6
520698 2014 QV ₄₆₄	15.8	X	115.49364	187.59108	64.63281	10.50297	0.1441470	0.18444265	3.0565288	20	11 9.3	20.6
520699 2014 QX ₄₆₅	16.7	X	89.34212	115.91695	166.52347	12.42771	0.0658290	0.17894940	3.1187643	20	11 12.4	21.4
520700 2014 QZ ₄₆₅	16.3	X	79.87296	94.27756	172.79899	24.95558	0.2010527	0.17414819	3.1758262	20	10 29.9	21.5
520701 2014 QE ₄₆₆	16.6	X	48.13973	197.59366	109.02145	2.63577	0.1649484	0.17342259	3.1846786	20	11 3.9	21.0
520702 2014 QF ₄₆₆	17.3	X	173.99389	169.85356	162.49351	5.22734	0.0630338	0.24115358	2.5562711	20	1 18.7	21.0
520703 2014 QG ₄₆₆	16.5	X	17.72170	213.66853	173.66533	10.96693	0.1424472	0.18718212	3.0266334	20	12 31.3	20.6
520704 2014 QH ₄₆₆	16.3	X	353.04059	318.51800	134.72365	6.48033	0.0399066	0.20407974	2.8571702	20	—	—
520705 2014 QK ₄₆₆	16.6	X	51.60416	158.64268	157.37611	10.91822	0.2088130	0.17765561	3.1338877	20	11 27.5	21.3
520706 2014 QQ ₄₆₆	17.4	X	15.34298	78.23892	61.95622	5.76715	0.1409132	0.23725307	2.5842121	20	1 21.0	20.1
520707 2014 QU ₄₆₆	17.0	X	217.38340	118.86362	151.39728	10.28359	0.0811912	0.23068834	2.6330087	20	—	—
520708 2014 QZ ₄₆₆	16.5	X	354.44294	257.98473	159.03269	10.36163	0.1198279	0.18519973	3.0481932	20	12 31.2	20.4
520709 2014 QF ₄₆₇	16.3	X	7.77643	247.95398	141.17062	10.65637	0.0762642	0.17945709	3.1128794	20	12 11.2	20.5
520710 2014 QL ₄₆₇	16.8	X	157.46972	208.36510	101.22581	14.86589	0.1484123	0.23513108	2.5997366	20	—	—
520711 2014 QM ₄₆₇	16.5	X	112.15823	197.10224	103.79711	14.41442	0.1893615	0.21241341	2.7819421	20	—	—
520712 2014 QO ₄₆₇	17.9	X	192.76173	184.76057	115.70022	4.00357	0.0832063	0.24267804	2.5455545	20	1 1.4	21.7
520713 2014 QS ₄₆₇	16.8	X	65.61866	139.45402	164.57027	7.33689						

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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>
520721 2014 QF ₄₆₉	16.9 ^m	X	89.30125	247.22029	175.71357	12.72847	0.1824911	0.23465376	2.6032610	20	2 16.1	20.2
520722 2014 QG ₄₆₉	17.2	X	136.20331	175.21357	154.61426	6.64221	0.0403623	0.22053738	2.7131965	20	—	—
520723 2014 QN ₄₆₉	16.9	X	358.92174	119.88288	344.11034	8.54027	0.1187656	0.21849437	2.7300832	20	—	—
520724 2014 QX ₄₆₉	16.8	X	356.46065	14.14781	73.76608	6.51586	0.0926923	0.21740701	2.7391786	20	—	—
520725 2014 QF ₄₇₀	16.5	X	144.51022	101.44439	100.81389	6.42391	0.0920279	0.17833089	3.1259713	20	10 7.8	21.4
520726 2014 QG ₄₇₀	17.3	X	112.72316	226.60824	103.78190	6.37293	0.1206230	0.22159062	2.7045923	20	—	—
520727 2014 QX ₄₇₀	16.3	X	250.71248	283.49308	293.04268	8.34438	0.0366006	0.22642566	2.6659517	20	—	—
520728 2014 QJ ₄₇₁	16.8	X	92.77042	261.67387	139.18706	13.27867	0.1894524	0.22116949	2.7080244	20	1 27.9	20.2
520729 2014 QT ₄₇₁	16.8	X	58.69669	224.23181	149.29422	12.69642	0.0713420	0.19817403	2.9136556	20	—	—
520730 2014 QW ₄₇₁	16.5	X	65.77389	216.24994	152.50450	11.92878	0.1332636	0.19897422	2.9058387	20	—	—
520731 2014 QX ₄₇₁	17.3	X	157.62229	189.21825	169.67392	13.00549	0.1860714	0.24134053	2.5549508	20	2 12.2	21.4
520732 2014 QE ₄₇₂	17.2	X	157.52385	239.56010	97.66707	12.64412	0.0938145	0.22979893	2.6397981	20	1 11.9	21.1
520733 2014 QM ₄₇₂	16.6	X	125.29575	67.55610	264.33737	4.93491	0.0609586	0.22065313	2.7122475	20	—	—
520734 2014 QN ₄₇₂	16.9	X	70.44820	128.93545	200.90546	10.64749	0.1173865	0.19600347	2.9351269	20	12 23.9	21.4
520735 2014 QV ₄₇₂	16.8	X	334.00570	253.18507	192.39344	12.52896	0.1032486	0.19928082	2.9028575	20	—	—
520736 2014 QN ₄₇₃	16.4	X	355.04230	237.40475	172.34528	9.29428	0.0853271	0.17879709	3.1205352	20	12 18.4	20.5
520737 2014 QV ₄₇₃	16.4	X	341.89700	283.15670	161.12904	11.07815	0.1128891	0.18462170	3.0545522	20	—	—
520738 2014 QW ₄₇₃	17.2	X	114.49514	357.84342	94.17498	7.82393	0.0824824	0.25384899	2.4703155	20	4 17.2	20.6
520739 2014 QZ ₄₇₃	16.6	X	67.70946	198.50437	133.58590	9.10519	0.1411037	0.18184692	3.0855464	20	12 24.1	21.3
520740 2014 QB ₄₇₄	16.5	X	358.20072	270.99952	192.57990	11.87352	0.0701740	0.20084807	2.8877368	20	—	—
520741 2014 QD ₄₇₄	16.2	X	107.36129	218.87902	73.50328	12.16695	0.0791154	0.17638966	3.1488645	20	12 10.8	20.9
520742 2014 QE ₄₇₄	16.4	X	186.64951	165.56348	81.23157	13.29645	0.0785503	0.18960091	3.0008372	20	—	—
520743 2014 QJ ₄₇₄	16.2	X	59.41584	129.73289	208.44526	29.79306	0.1484558	0.17859184	3.1229256	20	12 18.9	21.3
520744 2014 QK ₄₇₄	16.8	X	110.63747	159.46786	153.87625	2.48426	0.0922693	0.19420470	2.9532229	20	—	—
520745 2014 QL ₄₇₄	16.8	X	36.10026	244.12350	178.31246	4.88777	0.0690239	0.20420118	2.8560374	20	—	—
520746 2014 QR ₄₇₄	17.2	X	86.61970	294.49894	130.48015	5.10098	0.0616114	0.22851262	2.6496952	20	1 30.9	20.6
520747 2014 RM ₁₀	16.5	X	117.86686	57.55859	203.44565	7.78578	0.1695708	0.18822031	3.0154935	20	11 22.7	21.5
520748 2014 RH ₅₉	16.7	X	327.35112	10.25261	42.69598	2.49553	0.0253644	0.18028013	3.1033980	20	11 12.0	20.9
520749 2014 RF ₆₅	16.0	X	339.75234	293.61389	113.58321	13.03769	0.0613456	0.18507981	3.0495097	20	11 26.6	20.2
520750 2014 RD ₆₆	16.5	X	69.24021	253.00624	71.87405	9.96650	0.1276514	0.18098478	3.0953375	20	12 30.2	21.5
520751 2014 RY ₆₆	17.2	X	104.61020	325.77315	7.03017	4.94787	0.2051581	0.21869486	2.7284144	20	—	—
520752 2014 RG ₆₇	16.3	X	73.76974	138.64282	179.90484	9.79734	0.1017886	0.18348196	3.0671885	20	12 10.9	20.9
520753 2014 RE ₆₇	16.5	X	237.18000	299.10536	278.09530	6.08130	0.0512448	0.21948776	2.7218395	20	—	—
520754 2014 RE ₆₈	16.8	X	202.27771	334.93835	286.52506	3.45054	0.0789481	0.21670732	2.7450715	20	—	—
520755 2014 RH ₆₈	16.2	X	318.45993	144.93972	287.64814	10.90066	0.1356979	0.18909053	3.0062345	20	11 22.5	19.8
520756 2014 RK ₆₈	15.6	X	38.28252	107.08139	227.65064	12.09603	0.0687855	0.18653322	3.0336484	20	11 14.1	19.7
520757 2014 RN ₆₈	16.8	X	58.86367	158.99750	91.28824	12.84142	0.1033525	0.18021471	3.1041489	20	12 29.6	21.5
520758 2014 RP ₆₈	16.2	X	143.34153	185.72093	96.57673	12.74301	0.0652184	0.18636844	3.0354364	20	—	—
520759 2014 RS ₆₈	16.0	X	118.41472	221.58383	90.62181	12.34914	0.1073347	0.18955766	3.0012936	20	—	—
520760 2014 RW ₆₈	16.4	X	92.89776	207.37730	136.86867	9.00567	0.0490977	0.18792826	3.0186168	20	—	—
520761 2014 RY ₆₈	16.4	X	105.46391	126.03710	144.62637	10.02714	0.0678705	0.17990529	3.1077072	20	11 16.4	21.2
520762 2014 RA ₆₉	16.8	X	5.64014	150.01608	85.76604	16.01069	0.0420172	0.26110361	2.4243434	20	5 22.9	19.7
520763 2014 RE ₆₉	16.7	X	29.98760	232.52881	180.43704	12.71034	0.1058820	0.21634386	2.7481452	20	—	—
520764 2014 RM ₆₉	16.3	X	325.40665	152.73495	276.03523	9.09026	0.0907274	0.18005178	3.1060213	20	11 27.9	20.2
520765 2014 RN ₆₉	17.0	X	39.02360	176.99238	255.89339	5.78709	0.1143377	0.21552569	2.7550957	20	—	—
520766 2014 RV ₆₉	16.3	X	339.50854	302.25162	98.63292	20.07621	0.1545566	0.17129822	3.2109545	20	11 20.6	20.3
520767 2014 SJ ₃₁	16.7	X	329.97628	256.12517	147.64251	10.27295	0.0630828	0.17962419	3.1109486	20	11 7.5	20.9
520768 2014 SM ₇₉	16.4	X	102.55316	186.36948	47.19000	9.02702	0.1621312	0.17987362	3.1080720	20	10 8.5	21.3
520769 2014 SQ ₁₁₈	16.7	X	285.12705	287.80724	165.87960	2.99639	0.0465432	0.17629315	3.1500135	20	11 5.8	21.0
520770 2014 SW ₁₃₄	16.0	X	82.33638	146.36845	171.77524	11.32847	0.1152796	0.18882656	3.0090356	20	12 21.5	20.7
520771 2014 SU ₁₄₅	16.7	X	68.47957	174.78618	125.42137	10.43894	0.0225084	0.18065232	3.0991340	20	11 5.5	21.2
520772 2014 SN ₁₅₇	16.7	X	54.08142	128.64729	207.16948	6.33068	0.1245736	0.18388484	3.0627069	20	12 11.9	21.1
520773 2014 SZ ₁₇₃	18.0	X	64.05215	167.64284	36.02928	5.22909	0.0461674	0.30354222	2.1927543	20	7 6.2	20.4
520774 2014 SE ₂₃₁	15.9	X	36.01561	307.03541	27.21185	10.83617	0.0997897	0.17447264	3.1718879	20	11 10.3	20.2
520775 2014 SR ₃₀₀	15.8	X	71.33094	278.71264	21.29590	16.06894	0.1769297	0.17402586	3.1773144	20	11 18.6	20.7
520776 2014 SJ ₃₂₂	16.6	X	79.92674	204.73408	91.40994	6.35609	0.1241118	0.18218626	3.0817137	20	11 23.5	21.2
520777 2014 SF ₃₃₅	16.3	X	72.88091	153.66110	153.75837	10.19262	0.0607745	0.17661416	3.1461955	20	11 22.1	21.0
520778 2014 SB ₃₅₅	16.6	X	72.06811	11.04777	296.82416	4.00060	0.1369583	0.17783497	3.1317802	20	11 28.2	21.2
520779 2014 SM ₃₅₅	15.9	X	95.51598	213.56725	55.61364	16.62590	0.1262646	0.17382442	3.1797687	20	11 7.4	20.7
520780 2014 SV ₃₅₆	16.6	X	167.28514	202.74259	95.45161	12.78912	0.1607798	0.22417351	2.6837776	20	—	—
520781 2014 SD ₃₅₇	17.5	X	116.50598	331.38298	72.75580	4.15650	0.0680841	0.24051417	2.5607997	20	2 13.4	20.8
520782 2014 SG ₃₅₇	16.2	X	60.08774	238.16809	78.92806	12.51231	0.0717533	0.17155146	3.2077937	20	11 18.7	20.7
520783 2014 SJ ₃₅₇	16.5	X	44.73731	250.41032	90.73142	12.90565	0.0984585	0.17681805	3.1437764	20	12 3.2	20.9
520784 2014 SO ₃₅₇	16.9	X	90.43119	225.00656	162.96367	15.34241	0.1322474	0.21237253	2.7822992	20	1 1.5	20.8
520785 2014 SQ ₃₅₇	16.6	X	59.16549	190.74156	135.42665	11.68590	0.1680895	0.17347140	3.1840811	20	12 10.9	21.4
520786 2014 SR ₃₅₇	16.9	X	102.44554	267.99082	150.71167	12.14625	0.0624934	0.22939700	2.6428807	20	2 12.5	20.2
520787 2014 SX ₃₅₇	17.4	X	95.72831	158.56395	226.95363	4.11413	0.0565806	0.22576318	2.6711646	20	—	—
520788 2014 SG ₃₅₈	16.4	X	308.15122	120.88150	313.41163	3.87090	0.0838929	0.17379544	3.1801221	20	11 6.9	20.6
520789 2014 SS ₃₅₈	17.2	X	88.88427	150.57487	198.67825	1.77661	0.1020567	0.20614706	2.8380364	20	—	—
520790 2014 SU ₃₅₈	16.2	X	110.04063	60.14169	197.85233	16.15298	0.1207301	0.17436076	3.1732445	20	11 7.9	21.2
520791 2014 SD ₃₅₉	16.8	X	76.53969	6.50875	15.72199	4.40901	0.0805817	0.21156625	2.7893635	20	—	—
520792 2014 SO ₃₅₉	16.8	X	111.99030	286.72733	56.55860	5.71562	0.0981354	0.21637602	2.7478728	20	—	—
520793 2014 ST ₃₅₉	16.7	X	76.90310	300.05662	48.82943	2.96376	0.0671101	0.20031643	2.8928439	20	—	—
520794 2014 SZ ₃₅₉	17.0	X	179.33251									

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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>
520801 2014 <i>SM</i> ₃₆₂	16.2	X	77.28156	104.11797	268.55620	10.79637	0.0899960	0.21185301	2.7868460	20	—	—
520802 2014 <i>SP</i> ₃₆₂	17.2	X	101.27439	76.94244	326.97417	4.98890	0.1052475	0.23077729	2.6323320	20	1 30.2	20.6
520803 2014 <i>SA</i> ₃₆₃	16.8	X	172.63883	47.81601	264.33371	14.20309	0.1327619	0.23345158	2.6121904	20	—	—
520804 2014 <i>SG</i> ₃₆₃	16.9	X	320.76184	102.79758	58.54926	9.71492	0.0922447	0.22506883	2.6766555	20	—	—
520805 2014 <i>TX</i> ₂₉	15.6	X	56.86631	249.35016	70.12564	18.17341	0.0852310	0.17166509	3.2063780	20	11 19.6	20.1
520806 2014 <i>TK</i> ₄₂	16.7	X	37.80670	170.62043	189.46316	3.78903	0.1724332	0.18218134	3.0817692	20	12 27.5	20.9
520807 2014 <i>TD</i> ₆₃	16.9	X	357.81853	223.07403	187.29014	1.81851	0.0603847	0.19440740	2.9511697	20	12 24.7	20.8
520808 2014 <i>TF</i> ₆₄	20.1	X	298.97518	114.23323	217.98191	52.67357	0.4182177	0.48099687	1.6132731	20	4 14.0	22.0
520809 2014 <i>TK</i> ₈₇	15.8	X	91.76468	225.58000	69.87009	24.46185	0.1395514	0.17559877	3.1583123	20	12 3.6	20.7
520810 2014 <i>TQ</i> ₉₀	16.0	X	66.27243	24.03781	283.93775	7.35335	0.1655473	0.17757377	3.1348505	20	11 25.3	20.8
520811 2014 <i>TP</i> ₉₁	17.2	X	123.55738	257.47606	246.89768	6.20454	0.0455795	0.29156340	2.2524096	20	7 2.3	19.9
520812 2014 <i>TA</i> ₉₂	16.1	X	66.44061	12.30325	57.01470	10.98264	0.0890484	0.19691512	2.9260607	20	1 19.2	20.0
520813 2014 <i>TB</i> ₉₂	16.7	X	79.27946	138.23542	205.97150	2.43785	0.0959162	0.19337195	2.9616954	20	—	—
520814 2014 <i>TG</i> ₉₂	16.4	X	65.47813	148.44174	164.82087	9.85721	0.0701416	0.17503556	3.1650836	20	11 21.1	21.0
520815 2014 <i>TL</i> ₉₂	16.1	X	250.31568	28.72349	142.03892	12.66558	0.0373335	0.18630319	3.0361451	20	12 28.2	20.4
520816 2014 <i>TP</i> ₉₂	16.8	X	115.15453	256.13776	75.10093	3.10205	0.0440855	0.20026606	2.8933290	20	—	—
520817 2014 <i>TD</i> ₉₃	17.0	X	86.45099	294.34435	138.63309	15.16008	0.0226131	0.22880658	2.6474253	20	2 4.5	20.4
520818 2014 <i>TH</i> ₉₃	16.9	X	108.90758	87.48536	272.88244	5.20480	0.0393131	0.21779277	2.7359432	20	—	—
520819 2014 <i>TQ</i> ₉₄	16.2	X	199.98393	176.79086	47.48402	10.78631	0.0594377	0.17382933	3.1797088	20	12 26.7	21.0
520820 2014 <i>TW</i> ₉₄	16.7	X	247.68352	5.08174	260.86522	15.99750	0.1002211	0.23809877	2.5780892	20	1 13.2	20.7
520821 2014 <i>TE</i> ₉₅	16.9	X	354.58219	2.96397	29.23281	3.31021	0.1758846	0.17225870	3.1990076	20	12 1.2	20.5
520822 2014 <i>UJ</i> ₈	15.1	X	38.34077	93.16544	232.87811	20.02753	0.1306795	0.17072336	3.2181584	20	11 8.4	19.4
520823 2014 <i>UJ</i> ₁₁₈	16.7	X	104.64273	118.02374	290.32141	13.39283	0.1031145	0.23699955	2.5860547	20	2 4.3	20.1
520824 2014 <i>UQ</i> ₂₀₁	16.0	X	56.24208	260.45012	49.76155	16.06879	0.2621684	0.17828896	3.1264615	20	11 28.3	20.7
520825 2014 <i>UB</i> ₂₁₆	16.0	X	29.55761	283.45099	79.87786	18.93960	0.3151932	0.18174426	3.0867082	20	—	—
520826 2014 <i>UH</i> ₂₁₆	16.1	X	35.70800	245.59694	103.44008	16.66683	0.2483952	0.17653225	3.1471686	20	12 21.8	20.4
520827 2014 <i>UU</i> ₂₁₆	15.5	X	61.76104	255.06397	68.00697	27.05328	0.1650826	0.17774522	3.1328343	20	12 7.4	20.1
520828 2014 <i>UU</i> ₂₃₂	16.4	X	64.92984	109.94753	220.50764	9.51329	0.1212095	0.18282987	3.0744772	20	12 31.9	21.2
520829 2014 <i>UC</i> ₂₃₄	16.7	X	168.11151	269.76403	335.31348	2.79589	0.0594495	0.18360709	3.0657948	20	12 19.3	21.2
520830 2014 <i>UD</i> ₂₃₄	16.7	X	156.93538	352.65119	254.66506	4.55658	0.0431571	0.17892931	3.1189977	20	12 9.7	21.2
520831 2014 <i>UN</i> ₂₃₄	17.0	X	337.03548	54.01650	53.97542	0.85447	0.1354767	0.18557518	3.0440804	20	—	—
520832 2014 <i>UP</i> ₂₃₄	16.9	X	314.06759	45.21836	80.28386	5.99818	0.1179185	0.18570336	3.0426795	20	—	—
520833 2014 <i>UT</i> ₂₃₄	17.1	X	24.32036	53.51204	47.25944	6.73912	0.0235144	0.21154170	2.7895794	20	—	—
520834 2014 <i>UU</i> ₂₃₄	17.3	X	208.19840	259.57966	56.00935	7.06801	0.1819469	0.24259886	2.5461083	20	2 7.9	21.6
520835 2014 <i>UA</i> ₂₃₅	17.0	X	19.22410	199.51815	205.04779	2.38744	0.1230665	0.18762632	3.0218544	20	—	—
520836 2014 <i>UB</i> ₂₃₅	17.4	X	93.33618	275.01130	105.33221	4.58843	0.1028542	0.21219268	2.7838711	20	—	—
520837 2014 <i>UK</i> ₂₃₅	16.8	X	15.31092	90.09051	293.15965	1.90380	0.0374963	0.17512712	3.1639804	20	12 6.9	21.2
520838 2014 <i>UN</i> ₂₃₅	17.4	X	230.05958	218.58956	82.62335	2.98204	0.1380629	0.24458804	2.5322849	20	2 8.9	21.4
520839 2014 <i>UU</i> ₂₃₅	17.0	X	66.95651	348.93524	20.98733	3.04346	0.1355307	0.19102563	2.9858979	20	—	—
520840 2014 <i>UF</i> ₂₃₆	16.6	X	291.12824	76.41265	47.56955	9.35445	0.0402624	0.17858689	3.1229834	20	12 20.0	20.9
520841 2014 <i>UT</i> ₂₃₆	17.8	X	60.66771	307.47863	274.02020	6.86652	0.0775133	0.29046853	2.2580661	20	7 30.3	20.3
520842 2014 <i>UQ</i> ₂₃₇	18.1	X	132.74353	53.03878	83.29675	6.25519	0.0955288	0.28400484	2.2921985	20	7 7.9	21.3
520843 2014 <i>UX</i> ₂₃₇	16.1	X	260.90990	52.51296	82.51619	11.72892	0.0262423	0.17359247	3.1826006	20	11 27.5	20.5
520844 2014 <i>UZ</i> ₂₃₇	16.3	X	288.17395	7.03548	116.52157	9.09907	0.1456540	0.17475063	3.1685231	20	12 5.7	20.4
520845 2014 <i>UA</i> ₂₃₈	17.0	X	98.51535	234.76671	160.26475	5.58839	0.0358125	0.22267412	2.6958117	20	1 5.6	20.6
520846 2014 <i>UC</i> ₂₃₈	17.7	X	65.48290	358.82795	103.23600	6.19053	0.2128518	0.23105371	2.6302322	20	3 13.5	20.6
520847 2014 <i>UP</i> ₂₃₈	16.6	X	220.68615	307.02117	253.86146	9.22999	0.0495412	0.18736964	3.0246136	20	12 26.5	21.0
520848 2014 <i>UW</i> ₂₃₈	17.3	X	165.83097	30.05357	298.61855	4.35676	0.0646804	0.22487283	2.6782106	20	1 8.6	21.1
520849 2014 <i>UX</i> ₂₃₈	16.2	X	144.12062	15.11674	261.96231	8.87938	0.0566367	0.18706610	3.0278846	20	—	—
520850 2014 <i>UC</i> ₂₃₉	15.6	X	198.30183	321.40334	304.05787	8.21015	0.0420091	0.17728665	3.1382343	20	—	—
520851 2014 <i>UD</i> ₂₃₉	16.4	X	9.26885	124.25976	68.46302	10.12932	0.1725207	0.21303626	2.7765172	20	4 1.5	19.3
520852 2014 <i>UN</i> ₂₃₉	16.3	X	49.65819	194.01973	154.20678	12.25878	0.0717713	0.17824950	3.1269229	20	12 14.2	20.9
520853 2014 <i>UN</i> ₂₃₉	15.8	X	345.55579	302.80695	100.61854	14.03392	0.0411758	0.17117456	3.2125008	20	11 25.6	20.3
520854 2014 <i>UZ</i> ₂₃₉	16.7	X	324.22131	309.85715	170.68219	9.84750	0.1766462	0.18762513	3.0218672	20	—	—
520855 2014 <i>UD</i> ₂₄₀	16.7	X	116.58302	40.38655	319.96871	8.25919	0.1081163	0.21493313	2.7601572	20	—	—
520856 2014 <i>UO</i> ₂₄₀	16.5	X	66.26293	194.22360	125.91070	10.94562	0.1905524	0.18088829	3.0964382	20	12 14.9	21.3
520857 2014 <i>UQ</i> ₂₄₀	16.5	X	94.17916	163.52907	159.36268	17.47319	0.1110293	0.18597312	3.0397364	20	—	—
520858 2014 <i>US</i> ₂₄₀	18.2	X	147.80356	114.54313	8.73795	4.31332	0.0957521	0.27528167	2.3403700	20	7 7.6	21.6
520859 2014 <i>VY</i> ₇	16.0	X	47.40810	289.30611	61.67009	16.78593	0.2139550	0.17530983	3.1617817	20	12 31.3	20.7
520860 2014 <i>VZ</i> ₆	16.0	X	69.75330	75.83592	234.69188	11.46753	0.0578058	0.17388587	3.1790195	20	11 18.8	20.4
520861 2014 <i>VE</i> ₃₉	16.2	X	90.89545	313.81082	78.31690	26.59957	0.1588528	0.21745175	2.7388029	20	1 9.4	19.9
520862 2014 <i>WG</i> ₇	20.6	X	311.30834	251.18032	56.55218	35.35111	0.2955529	0.47485983	1.6271431	20	4 29.7	22.0
520863 2014 <i>WB</i> ₇₀	16.8	X	186.45269	88.04468	312.53803	30.91842	0.1372358	0.24865960	2.5045664	20	4 10.6	21.6
520864 2014 <i>WC</i> ₉₀	17.0	X	320.54915	92.69622	62.20116	12.47224	0.0732404	0.20641220	2.8356055	20	—	—
520865 2014 <i>WG</i> ₉₂	16.4	X	177.57974	115.37905	124.18707	5.51864	0.0897221	0.17922474	3.1155693	20	12 20.2	21.1
520866 2014 <i>WO</i> ₁₀₁	16.4	X	197.91775	113.14175	112.04805	7.52501	0.0887813	0.18122566	3.0925941	20	12 24.6	21.1
520867 2014 <i>WB</i> ₁₀₅	16.5	X	111.72342	240.51411	41.08090	4.16192	0.1839711	0.19173191	2.9785607	20	12 11.2	21.4
520868 2014 <i>WS</i> ₁₂₄	15.9	X	190.33770	207.75212	54.05340	10.39070	0.0311070	0.19053259	2.9910468	20	—	—
520869 2014 <i>WJ</i> ₁₆₂	16.4	X	244.86707	359.30821	252.65502	11.33170	0.0691766	0.21834300	2.7313448	20	—	—
520870 2014 <i>WB</i> ₁₇₇	16.7	X	102.22715	115.09736	196.70070	9.57211	0.1019145	0.19219335	2.9737912	20	—	—
520871 2014 <i>WO</i> ₂₀₇	17.2	X	158.69796	275.07614	43.77796	4.39340	0.1962832	0.21944999	2.7221518	20	1 1.8	21.6
520872 2014 <i>WP</i> ₂₃₃	15.8	X	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>		
520881	2014	WO ₅₁₈	18.1	X	189.66566	264.19100	151.77897	7.87871	0.0949171	0.26356510	2.4092255	20	5 25.3	21.7
520882	2014	WR ₅₂₂	15.7	X	54.75064	227.48939	89.52102	28.77517	0.2254720	0.17438959	3.1728948	20	12 5.3	20.5
520883	2014	WV ₅₂₂	17.4	X	163.78793	302.71219	11.56357	1.94156	0.0621173	0.21588856	2.7520076	20	—	—
520884	2014	WB ₅₂₃	17.6	X	61.93302	87.83362	1.51877	1.73259	0.0459150	0.22058776	2.7127833	20	1 28.3	21.0
520885	2014	WE ₅₂₃	17.3	X	133.05073	257.06121	71.93524	3.02735	0.0746010	0.20058760	2.8902361	20	—	—
520886	2014	WQ ₅₂₃	18.2	X	190.22936	312.28590	93.61510	3.89300	0.0856395	0.26400419	2.4065534	20	5 11.5	21.5
520887	2014	WG ₅₂₄	16.6	X	71.00769	233.74508	273.86887	15.78514	0.0776215	0.24246885	2.5470184	20	4 24.2	20.1
520888	2014	WH ₅₂₄	16.9	X	64.11489	219.53314	283.40093	8.77047	0.0966128	0.23559277	2.5963391	20	4 11.0	20.2
520889	2014	WP ₅₂₄	18.2	X	173.68620	75.10531	48.69369	8.13514	0.0516841	0.28902752	2.2655653	20	8 12.6	21.3
520890	2014	WG ₅₂₅	16.6	X	179.99801	190.90944	133.72035	9.80139	0.1523134	0.22458952	2.6804624	20	1 23.5	20.8
520891	2014	WS ₅₂₅	17.1	X	117.47164	217.59262	157.61168	14.70945	0.1041056	0.21233254	2.7826484	20	1 15.8	21.1
520892	2014	WS ₅₂₅	16.3	X	141.16991	171.54320	135.24838	15.60436	0.0152536	0.18547650	3.0451600	20	—	—
520893	2014	WA ₅₂₆	17.2	X	60.21960	339.06952	142.69796	14.18381	0.1136412	0.22784034	2.6549049	20	3 17.9	20.4
520894	2014	WU ₅₂₆	17.9	X	187.72820	93.18406	9.74977	6.94859	0.0631037	0.27520156	2.3408241	20	7 28.8	21.2
520895	2014	WX ₅₂₆	15.5	X	110.16888	236.05717	90.70663	17.73895	0.2248142	0.17510451	3.1642528	20	—	—
520896	2014	WA ₅₂₇	18.3	X	196.98562	126.74285	2.35531	4.75113	0.0807142	0.29006371	2.2601666	20	9 13.4	21.2
520897	2014	WD ₅₂₇	16.2	X	57.12297	1.37290	43.20329	9.93719	0.0721474	0.19787181	3.1080928	20	—	—
520898	2014	WE ₅₂₇	16.3	X	119.89455	285.86392	51.96055	9.88845	0.0647127	0.17673811	3.1447243	20	—	—
520899	2014	WN ₅₂₇	17.4	X	137.75308	118.57357	344.05405	10.04566	0.1057817	0.24713180	2.5148782	20	5 25.8	21.3
520900	2014	WT ₅₂₇	18.1	X	154.94196	152.08463	352.61181	7.39966	0.0551012	0.27387728	2.3483638	20	8 15.1	21.2
520901	2014	WU ₅₂₇	17.1	X	120.18039	39.88394	26.58878	5.41488	0.1912424	0.22551707	2.6731076	20	4 2.9	21.0
520902	2014	WV ₅₂₇	16.3	X	70.29828	342.91028	42.26612	9.90374	0.0803074	0.17505137	3.1648931	20	—	—
520903	2014	WV ₅₂₇	17.5	X	152.73327	105.91668	331.64446	13.10943	0.0919271	0.24383230	2.5375146	20	5 5.3	21.5
520904	2014	WM ₅₂₈	17.5	X	166.59881	331.29059	348.94511	6.13833	0.0569413	0.21190202	2.7864162	20	1 1.1	21.6
520905	2014	WY ₅₂₈	16.5	X	69.34534	43.86529	36.70990	10.66960	0.1341592	0.19725376	2.9227109	20	2 15.4	20.3
520906	2014	WE ₅₂₉	17.1	X	49.68499	293.46351	191.34573	21.62433	0.0600194	0.22322336	2.6913879	20	2 22.5	20.7
520907	2014	WP ₅₂₉	17.0	X	79.45969	317.38680	63.81079	5.02847	0.0708759	0.20117308	2.8846257	20	—	—
520908	2014	WQ ₅₂₉	18.4	X	128.07412	21.21641	100.28611	6.03146	0.0652344	0.26686955	2.3892964	20	6 8.1	21.6
520909	2014	WZ ₅₂₉	16.0	X	348.25909	280.10282	199.80451	9.96718	0.0698764	0.17751549	3.1355366	20	—	—
520910	2014	WA ₅₃₀	16.1	X	8.48970	301.73594	240.97827	15.28392	0.1185491	0.20991993	2.8039285	20	3 5.2	19.7
520911	2014	WE ₅₃₀	16.7	X	142.35415	318.64068	26.46056	11.21415	0.1957096	0.21921258	2.7241168	20	1 20.3	21.1
520912	2014	WG ₅₃₀	17.3	X	50.46907	210.92443	136.99144	7.73984	0.0712982	0.24781846	2.5102305	20	4 21.2	20.4
520913	2014	WJ ₅₃₀	17.1	X	86.45513	286.82376	166.11287	14.66836	0.0650319	0.23297010	2.6157883	20	3 7.1	20.4
520914	2014	WM ₅₃₀	17.0	X	58.75109	346.17976	177.09020	10.19481	0.1075057	0.22157857	2.7046903	20	5 10.5	20.5
520915	2014	WY ₅₃₀	15.7	X	112.19992	208.74941	103.49189	19.58966	0.1788844	0.18457060	3.0551160	20	—	—
520916	2014	WC ₅₃₁	17.5	X	104.80462	342.56046	125.92512	8.93656	0.1074534	0.24434089	2.5339923	20	5 1.0	21.1
520917	2014	WG ₅₃₁	16.8	X	200.54052	260.56177	73.52885	7.40168	0.0592571	0.22295049	2.6935834	20	2 25.7	20.8
520918	2014	WH ₅₃₁	16.4	X	22.39511	354.71583	70.38007	4.47310	0.0294663	0.17651929	3.1473226	20	—	—
520919	2014	WK ₅₃₁	17.3	X	239.79824	56.58645	292.67428	5.51821	0.1146816	0.25295264	2.4761478	20	4 16.6	21.0
520920	2014	WQ ₅₃₁	16.3	X	247.52971	235.88870	330.40685	16.35148	0.1110596	0.17324345	3.1868736	20	—	—
520921	2014	WB ₅₃₂	16.5	X	17.49167	258.47042	199.35199	5.44398	0.1686589	0.18166258	3.0876335	20	—	—
520922	2014	WQ ₅₃₂	16.7	X	127.97399	322.84302	339.83141	8.89134	0.0683575	0.18371016	3.0646480	20	—	—
520923	2014	WV ₅₃₂	15.9	X	231.93247	168.09692	104.70246	10.34078	0.0905020	0.18377550	3.0639216	20	1 21.5	20.3
520924	2014	WV ₅₃₂	16.4	X	14.87991	300.75407	251.07526	11.48237	0.0536445	0.21417511	2.7666659	20	3 30.7	20.2
520925	2014	WL ₅₃₃	16.2	X	215.25750	76.72520	159.27820	10.40868	0.0774545	0.18155474	3.0888559	20	—	—
520926	2014	WS ₅₃₃	17.4	X	352.93743	120.25700	146.87430	15.50365	0.1046609	0.24254131	2.5465111	20	6 15.4	20.5
520927	2014	WA ₅₃₄	18.2	X	186.91418	132.14850	279.40411	4.90094	0.0996581	0.26254563	2.4154582	20	5 13.1	21.7
520928	2014	WD ₅₃₄	16.7	X	18.01692	305.83248	243.76667	8.63297	0.0825555	0.22673913	2.6634941	20	4 2.3	19.9
520929	2014	WM ₅₃₄	16.8	X	220.76712	22.04642	30.27413	6.72664	0.1086813	0.25422682	2.4678673	20	6 21.4	20.4
520930	2014	WX ₅₃₄	16.0	X	57.28396	0.37552	32.16198	10.14718	0.0928269	0.17912305	3.1167484	20	—	—
520931	2014	WC ₅₃₅	15.8	X	69.51990	309.81743	108.28829	17.27588	0.1087913	0.17274146	3.1930447	20	1 14.8	19.8
520932	2014	XT ₄₂	16.5	X	289.08996	196.79795	351.12144	12.80821	0.0626777	0.18297590	3.0728412	20	—	—
520933	2014	XV ₄₂	16.1	X	295.25933	189.39693	347.85909	16.56333	0.1626011	0.17488612	3.1668865	20	—	—
520934	2014	XY ₄₂	16.5	X	24.47515	43.03232	32.56207	12.58728	0.0477657	0.17943586	3.1131250	20	—	—
520935	2014	XZ ₄₂	17.3	X	131.83726	139.76574	2.70386	12.56241	0.0597473	0.26269139	2.4145646	20	7 14.5	20.8
520936	2014	XD ₄₃	16.4	X	338.75847	17.81308	268.60894	12.89643	0.1465693	0.24652902	2.5189759	20	6 13.0	18.7
520937	2014	XG ₄₃	16.9	X	52.17647	299.94539	266.58187	14.15005	0.0636095	0.24304458	2.5429945	20	6 21.4	19.8
520938	2014	XH ₄₃	16.6	X	41.58844	39.62082	179.46221	13.72528	0.1031158	0.24297995	2.5434454	20	6 28.2	19.9
520939	2014	XM ₄₃	16.1	X	279.69292	144.54298	96.55919	11.08548	0.0532183	0.19182379	2.9776095	20	2 3.5	20.4
520940	2014	XN ₄₃	16.9	X	99.12439	297.97665	192.03017	12.27168	0.1480267	0.22595567	2.6696473	20	5 26.5	20.8
520941	2014	XR ₄₃	16.5	X	4.72897	254.43407	186.88066	18.05341	0.0981359	0.18052256	3.1006189	20	—	—
520942	2014	XS ₄₃	17.5	X	215.62694	258.13290	77.94531	5.41331	0.0901935	0.24108269	2.5567721	20	3 12.7	21.3
520943	2014	XT ₄₃	17.3	X	266.91013	255.47709	73.97198	8.21295	0.1344298	0.26661863	2.3907952	20	4 24.6	20.5
520944	2014	XU ₄₃	16.3	X	95.77565	279.05594	63.79907	4.68289	0.1968562	0.19174987	2.9783747	20	—	—
520945	2014	YJ ₂	17.9	X	120.18398	261.81252	124.41117	25.14016	0.0937744	0.38223230	1.8804038	20	1 1.5	19.8
520946	2014	YH ₁₅	19.0	X	266.11865	213.41533	62.23322	22.70385	0.0925930	0.40568915	1.8072037	20	2 1.4	21.6
520947	2014	YG ₁₆	16.3	X	342.34205	355.56922	129.51864	2.42260	0.1445566	0.17630976	3.1498157	20	—	—
520948	2014	YP ₅₀	18.4	X	146.45035	203.92997	162.40027	23.37343	0.0572176	0.38154928	1.8826473	20	1 4.3	20.8
520949	2014	YA ₅₈	15.7	X	347.59317	226.21544	216.54466	15.63182	0.1031680	0.15469116	3.4368379	20	—	—
520950	2014	YL ₅₈	16.8	X	156.28536	255.75967	178.12457	21.86508	0.12672					

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>
520961 2014 YP ₆₀	17.2	X	164.66917	344.79782	8.73640	1.85075	0.0847327	0.20508904	2.8477886	20	2 11.2	21.3
520962 2014 YU ₆₀	16.7	X	224.01257	6.11055	284.61086	13.97567	0.1165821	0.20320542	2.8653599	20	1 24.2	21.2
520963 2014 YV ₆₀	17.4	X	2.98761	47.66564	127.94268	3.02595	0.0677153	0.21153486	2.7896395	20	2 25.9	20.8
520964 2014 YA ₆₁	16.7	X	357.44242	179.45329	77.54777	15.14180	0.2106429	0.23179618	2.6246125	20	6 5.7	18.7
520965 2014 YM ₆₁	17.2	X	153.79356	41.80705	342.39548	6.34197	0.0841904	0.22288085	2.6941444	20	3 5.3	21.0
520966 2014 YO ₆₁	16.8	X	176.48547	263.22886	88.83657	14.20420	0.1364158	0.21985399	2.7188160	20	2 27.5	21.3
520967 2014 YT ₆₁	16.4	X	72.88346	30.07928	352.08492	19.39767	0.0989480	0.17427728	3.1742578	20	—	—
520968 2014 YU ₆₂	16.6	X	160.41151	340.50573	21.84423	9.75295	0.2441428	0.21847214	2.7302684	20	2 29.7	21.3
520969 2014 YA ₆₃	16.2	X	151.45361	269.87865	121.25152	13.87556	0.1237698	0.19998836	2.8960067	20	3 21.8	20.9
520970 2014 YC ₆₃	17.0	X	23.80301	166.29308	95.51481	14.77107	0.1509072	0.23986201	2.5654393	20	8 10.4	19.9
520971 2014 YG ₆₃	16.9	X	18.38013	241.37895	64.68911	10.20769	0.0926612	0.26301990	2.4125537	20	10 3.6	19.8
520972 2014 YM ₆₃	16.5	X	300.54795	310.32771	23.18810	15.02595	0.0818422	0.23780248	2.5802302	20	6 21.7	20.0
520973 2014 YN ₆₃	16.0	X	235.13190	241.80033	35.69985	16.31984	0.0638076	0.17131752	3.2107133	20	2 3.4	21.1
520974 2014 YS ₆₃	17.3	X	111.69874	151.94461	58.55592	9.97099	0.1014391	0.26064065	2.4272133	20	9 26.5	20.9
520975 2014 YU ₆₃	18.1	X	246.35479	64.43643	12.83352	7.01457	0.0791842	0.28992453	2.2608899	20	9 7.5	20.8
520976 2015 AV ₁	15.9	X	75.27192	214.35636	108.55617	28.54919	0.1633666	0.17504133	3.1650140	20	12 24.0	20.9
520977 2015 AF ₃	15.8	X	53.26128	233.90602	90.85352	28.13216	0.2548158	0.17225607	3.1990402	20	12 13.7	20.6
520978 2015 AT ₃₅	14.9	X	0.37879	246.18202	99.90459	6.16051	0.1086247	0.12490098	3.9636212	20	10 1.4	20.0
520979 2015 AC ₂₈₅	16.6	X	55.55505	205.24011	308.20170	14.55956	0.1838151	0.22787967	2.6545995	20	4 22.7	20.0
520980 2015 AE ₂₈₅	16.8	X	0.25116	229.98275	1.19184	12.92416	0.2065502	0.22776623	2.6554808	20	4 25.6	19.3
520981 2015 AJ ₂₈₅	17.1	X	77.56704	128.59244	331.54599	26.57190	0.2208220	0.21653613	2.7465182	20	3 17.2	20.9
520982 2015 AN ₂₈₅	17.0	X	349.50860	164.08749	45.90018	10.14556	0.1199777	0.21871041	2.7282850	20	3 21.3	20.2
520983 2015 AR ₂₈₅	17.4	X	221.67396	314.23666	82.67141	16.72473	0.0467413	0.25160091	2.4850087	20	6 8.1	20.8
520984 2015 AS ₂₈₅	18.1	X	144.07978	347.63308	154.77558	1.95245	0.0877333	0.26608278	2.3940040	20	7 27.7	21.5
520985 2015 AE ₂₈₆	16.6	X	3.40238	260.73875	207.32551	8.95341	0.0626932	0.17438191	3.1729880	20	—	—
520986 2015 AH ₂₈₆	16.7	X	48.52343	263.46553	274.14388	12.77872	0.0711197	0.22858305	2.6491509	20	5 3.7	20.2
520987 2015 AJ ₂₈₆	16.6	X	135.12762	136.22856	213.66122	9.25250	0.0638849	0.18109043	3.0941335	20	1 5.2	21.2
520988 2015 AN ₂₈₆	17.2	X	14.74692	329.95651	195.79153	5.68447	0.0297549	0.20565222	2.8425871	20	2 29.7	21.1
520989 2015 AP ₂₈₆	17.1	X	207.44928	77.44832	269.53937	5.07309	0.0551890	0.21360456	2.7715903	20	3 15.1	21.2
520990 2015 AY ₂₈₆	17.3	X	66.97022	105.55641	26.33655	9.36433	0.1088075	0.21702026	2.7424320	20	4 8.9	20.7
520991 2015 AZ ₂₈₆	17.3	X	22.05236	186.03230	55.34567	12.79709	0.1305227	0.23962358	2.5671407	20	6 30.9	20.2
520992 2015 BM ₃	18.3	X	142.98032	274.03690	105.19088	23.38008	0.0786509	0.39436630	1.8416320	20	1 20.1	19.8
520993 2015 BB ₃₀₂	18.1	X	69.50416	298.15705	142.99033	25.48824	0.0683879	0.36659881	1.9334904	20	—	—
520994 2015 BD ₃₁₁	18.9	X	248.62840	175.86913	92.58169	22.54873	0.0488760	0.38643812	1.8667353	20	—	—
520995 2015 BJ ₃₂₅	16.9	X	244.33369	251.31787	57.20338	4.65556	0.0860927	0.21350029	2.7724926	20	3 11.2	21.1
520996 2015 BB ₃₇₃	17.4	X	201.72214	329.58236	352.36508	2.91895	0.0932447	0.21265122	2.7798677	20	2 10.6	21.7
520997 2015 BG ₅₁₄	17.9	X	301.39598	67.54148	171.22664	23.62752	0.0469396	0.39253576	1.8473530	20	1 24.2	20.2
520998 2015 BQ ₅₁₄	18.6	X	112.31024	245.10994	170.29682	23.02229	0.0930478	0.39406083	1.8425836	20	1 27.9	20.6
520999 2015 BJ ₅₁₅	17.8	X	184.22265	262.85010	91.75940	24.54020	0.0771005	0.38963336	1.8565157	20	2 17.4	20.3
521000 2015 BD ₅₂₀	18.1	X	20.86330	335.95881	144.06872	23.99512	0.0666579	0.36049742	1.9552454	20	—	—
521001 2015 BV ₅₄₅	16.2	X	169.21097	7.60437	356.59548	10.08755	0.0793549	0.18188841	3.0850771	20	3 2.7	20.8
521002 2015 BU ₅₄₆	17.3	X	311.35030	19.95881	247.74092	4.23944	0.0085794	0.22594422	2.6697375	20	4 17.2	20.9
521003 2015 BE ₅₄₇	16.2	X	55.94070	148.08414	328.20157	8.79659	0.0378639	0.18630153	3.0361631	20	2 26.1	20.3
521004 2015 BT ₅₄₇	15.9	X	125.43695	313.65683	22.20538	8.53354	0.3167387	0.19878254	2.9077064	20	1 7.7	20.6
521005 2015 BS ₅₅₂	17.1	X	255.03566	65.77811	189.50304	4.90330	0.1159333	0.18758997	3.0222448	20	1 15.7	21.8
521006 2015 CV ₃₆	15.6	X	142.13924	245.92731	100.34436	12.50159	0.0187748	0.18452983	3.0555659	20	1 4.3	19.8
521007 2015 CD ₆₅	16.7	X	33.42541	54.38909	21.00558	3.64741	0.1778347	0.17625746	3.1504388	20	—	—
521008 2015 CW ₆₅	17.5	X	65.73623	249.78938	325.92302	7.06681	0.0378430	0.25383440	2.4704101	20	7 22.6	20.5
521009 2015 CV ₆₆	15.6	X	197.54707	327.46586	348.47738	11.74050	0.1234088	0.17102459	3.2143785	20	2 6.6	20.8
521010 2015 CB ₆₇	17.1	X	166.10511	78.58038	341.98225	11.17641	0.1266527	0.23309470	2.6148561	20	4 30.5	21.4
521011 2015 CM ₆₇	17.0	X	161.37393	265.93870	117.03348	7.07770	0.1090540	0.21627322	2.7487435	20	3 17.4	21.2
521012 2015 CS ₆₇	16.8	X	359.08863	135.92924	120.34687	13.53856	0.1284419	0.24322246	2.5417545	20	6 10.7	19.5
521013 2015 CC ₆₈	15.9	X	198.16911	2.50335	278.26764	8.59657	0.0287424	0.17796903	3.1302073	20	—	—
521014 2015 CD ₆₈	15.9	X	103.21055	70.45227	322.01120	15.21514	0.1221219	0.18560370	3.0437686	20	1 29.2	20.2
521015 2015 CF ₆₈	16.8	X	26.93485	314.26358	158.19610	14.39355	0.0172985	0.17959230	3.1113168	20	1 15.0	21.3
521016 2015 CG ₆₈	17.9	X	274.54538	188.12495	126.88164	3.14715	0.0751647	0.23069649	2.6329466	20	4 23.5	21.4
521017 2015 CK ₆₈	16.4	X	232.88420	220.98598	73.40845	4.58131	0.0885663	0.18973986	2.9993720	20	2 12.7	20.9
521018 2015 CM ₆₈	17.4	X	136.82370	268.98291	176.80568	1.81815	0.0641723	0.22458407	2.6805058	20	5 2.0	21.0
521019 2015 CO ₆₈	16.8	X	278.71939	82.63649	150.25761	9.80063	0.0399624	0.18140830	3.0905180	20	1 24.2	21.2
521020 2015 CP ₆₈	16.8	X	134.81837	255.13715	161.51552	9.42597	0.1517270	0.21074656	2.7965916	20	4 3.8	21.1
521021 2015 CS ₆₈	16.5	X	352.92119	341.28272	164.90836	9.61447	0.0422463	0.17631097	3.1498013	20	1 12.0	20.8
521022 2015 CT ₆₈	16.3	X	287.53588	74.70139	127.82527	3.61985	0.0244988	0.16922543	3.2371213	20	1 3.2	20.8
521023 2015 CB ₆₉	16.6	X	344.08578	87.64042	163.98971	14.91975	0.1299018	0.21331264	2.7741184	20	5 8.0	20.0
521024 2015 CN ₆₉	16.2	X	112.35857	36.92186	74.52939	22.64298	0.0439373	0.22720772	2.6598307	20	5 9.3	20.1
521025 2015 CR ₆₉	17.1	X	299.85539	205.11219	74.16808	9.75291	0.0949914	0.22413219	2.6841074	20	4 10.6	20.7
521026 2015 CU ₆₉	17.1	X	294.82603	215.08953	94.67087	13.66967	0.0963991	0.23813627	2.5778186	20	5 13.7	20.5
521027 2015 CB ₇₀	16.6	X	205.67397	336.76862	350.81513	12.86380	0.1059494	0.19966314	2.8991507	20	2 24.2	21.1
521028 2015 CG ₇₀	16.9	X	145.57244	148.14831	284.80248	5.65750	0.0451506	0.22072614	2.7116494	20	4 21.1	20.7
521029 2015 CJ ₇₀	16.9	X	340.82155	111.33145	162.93619	8.07928	0.1569621	0.22955491	2.6416685	20	5 29.9	19.7
521030 2015 CL ₇₀	16.6	X	139.53736	226.78070	185.61785	5.78077	0.0514881	0.21096605	2.7946515	20	3 22.2	20.3
521031 2015 CO ₇₀	16.1	X	238.42953	133.14698	144.01690	11.04487	0.0381523	0.17935361	3.1140766	20	1 31.8	20.8
521032 2015 CP ₇₀	17.3	X	163.91488	290.29132	172.94192	14.87314	0.0854336	0.23717852	2.5847536	20	6 26.2	21.4
521033 2015 CR ₇₀	16.3	X	278.29279	298.49515	309.03809	0.20338	0.1476630	0.17367637	3.1815755			

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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>
521041 2015 <i>DG</i> ₂₃₅	18.4	X	70.66339	257.55025	331.03879	1.91344	0.1382320	0.26472604	2.4021766	20	9 1.5	21.4
521042 2015 <i>DT</i> ₂₃₅	17.1	X	284.03155	235.42309	106.32907	4.42922	0.1953554	0.24004848	2.5641105	20	5 23.1	20.3
521043 2015 <i>DU</i> ₂₃₅	17.1	X	110.66911	353.60223	69.07618	3.33549	0.0506346	0.19497624	2.9454269	20	3 3.7	21.1
521044 2015 <i>DV</i> ₂₃₅	16.9	X	282.54414	201.17706	111.15854	6.15279	0.0564171	0.22231384	2.6987235	20	5 4.8	20.5
521045 2015 <i>DX</i> ₂₃₅	17.0	X	198.88699	314.32235	41.38167	7.48948	0.0765392	0.20410858	2.8569011	20	3 22.6	21.3
521046 2015 <i>DD</i> ₂₃₆	17.9	X	244.91481	7.37138	38.36234	7.67696	0.0876788	0.25732852	2.4479963	20	7 16.8	21.3
521047 2015 <i>DG</i> ₂₃₆	17.6	X	39.90286	311.74293	282.39507	4.24109	0.1172031	0.24003663	2.5641949	20	7 19.8	20.6
521048 2015 <i>DH</i> ₂₃₆	16.1	X	232.64286	16.97647	291.59050	6.07691	0.0614303	0.19555477	2.9396149	20	2 26.5	20.5
521049 2015 <i>DL</i> ₂₃₆	16.2	X	177.88210	161.14851	157.52156	8.97719	0.0768723	0.17125394	3.2115079	20	1 17.1	21.2
521050 2015 <i>DO</i> ₂₃₆	17.5	X	310.48327	314.48310	355.13518	2.25589	0.1122195	0.23447424	2.6045896	20	5 30.0	20.7
521051 2015 <i>DS</i> ₂₃₆	16.4	X	284.03706	81.90054	164.73378	11.15135	0.0913281	0.18551391	3.0447507	20	2 7.9	20.9
521052 2015 <i>DV</i> ₂₃₆	17.4	X	357.31282	85.34687	165.46198	5.30826	0.0559294	0.22647194	2.6655885	20	5 29.4	20.7
521053 2015 <i>DA</i> ₂₃₇	17.2	X	37.22589	202.54999	356.73434	7.74940	0.0563169	0.22244263	2.6976817	20	5 15.7	20.7
521054 2015 <i>DC</i> ₂₃₇	17.8	X	150.70658	113.81115	7.17203	3.51293	0.0294166	0.24465826	2.5318003	20	7 2.9	21.2
521055 2015 <i>DE</i> ₂₃₇	16.9	X	209.57339	211.91915	134.50390	2.94597	0.0780105	0.20352275	2.8623808	20	3 20.7	21.3
521056 2015 <i>DJ</i> ₂₃₇	17.5	X	220.65499	354.96983	24.33530	5.56372	0.0385773	0.22756758	2.6570259	20	5 13.1	21.1
521057 2015 <i>DK</i> ₂₃₇	17.4	X	15.47690	125.95769	84.55941	3.62387	0.0352025	0.21720785	2.7408528	20	5 1.3	20.8
521058 2015 <i>DZ</i> ₂₃₇	17.6	X	172.63349	198.83862	261.32841	3.82167	0.0494780	0.24272898	2.5451984	20	7 2.1	21.0
521059 2015 <i>DA</i> ₂₃₈	18.4	X	187.61612	230.21851	310.61030	6.48632	0.0501617	0.28985806	2.2612355	20	11 12.3	21.4
521060 2015 <i>DC</i> ₂₃₈	16.9	X	183.59695	152.28690	199.63569	8.40231	0.0154416	0.18777023	3.2023103	20	2 25.5	21.3
521061 2015 <i>DJ</i> ₂₃₈	17.1	X	288.81655	85.72407	218.07467	2.80662	0.0795068	0.21110991	2.7933818	20	4 26.2	20.8
521062 2015 <i>DL</i> ₂₃₈	16.4	X	247.74931	332.60868	330.61694	3.05714	0.1239691	0.18646653	3.0343718	20	3 4.7	21.0
521063 2015 <i>DN</i> ₂₃₈	17.5	X	125.37851	271.15286	200.70977	1.39616	0.0288952	0.22047475	2.7137103	20	5 18.1	21.2
521064 2015 <i>DO</i> ₂₃₈	16.7	X	167.54048	222.55689	177.02955	5.81641	0.0816198	0.20569803	2.8421650	20	4 10.6	21.0
521065 2015 <i>DU</i> ₂₃₈	17.5	X	293.68519	177.19977	167.99687	5.18061	0.0962690	0.23659474	2.5890037	20	6 26.3	20.7
521066 2015 <i>DB</i> ₂₃₉	18.4	X	170.55855	150.57635	10.94679	1.25775	0.1144403	0.27220230	2.3579876	20	9 21.7	21.7
521067 2015 <i>DG</i> ₂₃₉	17.4	X	260.57294	14.05997	326.69984	5.19775	0.0141319	0.22044030	2.7139929	20	5 15.8	21.1
521068 2015 <i>DH</i> ₂₃₉	16.5	X	189.82293	157.60508	196.65827	9.17861	0.0827677	0.18947535	3.0021628	20	3 7.9	21.2
521069 2015 <i>DJ</i> ₂₃₉	17.9	X	18.42532	108.27635	210.14540	3.96999	0.1068433	0.26568942	2.3963663	20	10 17.9	20.6
521070 2015 <i>DK</i> ₂₃₉	17.4	X	163.43268	127.17845	323.92668	3.75695	0.0268459	0.22847690	2.6499714	20	6 7.2	21.1
521071 2015 <i>DL</i> ₂₃₉	17.7	X	223.20921	64.77650	7.63056	5.65403	0.1103658	0.25350361	2.4725587	20	7 23.3	21.2
521072 2015 <i>DP</i> ₂₃₉	15.8	X	16.87593	60.16174	95.98019	18.61860	0.0667998	0.17471683	3.1689318	20	3 3.9	20.3
521073 2015 <i>DQ</i> ₂₃₉	17.2	X	18.13189	129.72277	136.45331	14.89547	0.0835252	0.22593104	2.6698413	20	7 24.2	20.4
521074 2015 <i>DR</i> ₂₃₉	17.1	X	75.95649	123.25494	87.76486	13.90851	0.0709476	0.23142649	2.6274069	20	8 4.3	20.7
521075 2015 <i>DT</i> ₂₃₉	16.4	X	297.02881	141.18398	126.62664	15.25926	0.1845891	0.18083672	3.0970268	20	3 13.2	20.9
521076 2015 <i>DG</i> ₂₄₀	17.1	X	222.54480	358.58227	80.02918	7.22763	0.0713343	0.25900306	2.4374335	20	8 5.3	20.4
521077 2015 <i>DK</i> ₂₄₀	16.6	X	235.94291	261.82024	101.68978	11.92431	0.0332274	0.21849254	2.7300984	20	5 16.9	20.5
521078 2015 <i>DL</i> ₂₄₀	16.8	X	327.56982	219.97782	69.77875	12.78509	0.0793893	0.22078998	2.7111266	20	6 2.9	19.9
521079 2015 <i>DM</i> ₂₄₀	17.1	X	165.29519	29.45128	16.67358	6.59823	0.0745125	0.21810262	2.7333514	20	4 13.8	21.0
521080 2015 <i>DN</i> ₂₄₀	16.1	X	244.57643	175.73409	117.77865	12.11997	0.0585094	0.19212246	2.9745227	20	2 27.2	20.5
521081 2015 <i>DB</i> ₂₄₁	16.7	X	16.44089	120.09559	97.45861	10.47527	0.0198155	0.23093192	2.6311568	20	5 13.5	20.2
521082 2015 <i>DF</i> ₂₄₁	17.9	X	94.56110	335.66999	228.12674	12.47759	0.1490509	0.25796366	2.4439765	20	8 22.7	21.7
521083 2015 <i>DJ</i> ₂₄₁	17.0	X	49.67542	296.79978	224.55027	11.20755	0.0448023	0.22012462	2.7165871	20	4 12.1	20.5
521084 2015 <i>DK</i> ₂₄₁	16.6	X	300.54437	189.14504	161.25647	11.99310	0.1051673	0.24521755	2.5279492	20	7 13.0	19.7
521085 2015 <i>DQ</i> ₂₄₁	16.7	X	281.65829	230.69560	71.99111	16.12400	0.1433362	0.20139577	2.8824989	20	4 14.8	21.0
521086 2015 <i>DR</i> ₂₄₁	16.8	X	314.36953	183.06270	81.55447	16.78001	0.1634994	0.19755625	2.9197267	20	4 8.5	20.8
521087 2015 <i>DW</i> ₂₄₁	16.6	X	156.47099	51.04364	40.53237	22.46293	0.0331555	0.22475864	2.6791176	20	5 25.7	20.5
521088 2015 <i>DY</i> ₂₄₁	17.1	X	341.79558	70.24765	125.54727	5.90719	0.1168176	0.18817458	3.0159820	20	2 19.7	20.9
521089 2015 <i>DZ</i> ₂₄₁	16.0	X	95.66291	19.53445	23.87118	9.80667	0.0633182	0.17299857	3.1898802	20	1 28.3	20.6
521090 2015 <i>DL</i> ₂₄₂	17.3	X	331.55076	179.38341	135.39865	9.79254	0.0451018	0.24289818	2.5440162	20	7 18.7	20.5
521091 2015 <i>DQ</i> ₂₄₂	17.2	X	357.08731	73.82219	180.96299	13.64341	0.0965667	0.22536637	2.6742991	20	6 3.8	20.5
521092 2015 <i>DT</i> ₂₄₂	16.1	X	252.14703	278.33938	0.96089	15.51082	0.1955396	0.17557976	3.1585402	20	2 11.1	21.4
521093 2015 <i>DV</i> ₂₄₂	18.1	X	173.15865	45.27257	60.23464	2.04165	0.0488777	0.24416142	2.5352338	20	7 10.6	21.5
521094 2015 <i>DX</i> ₂₄₂	16.9	X	292.44409	90.12587	139.63939	7.51564	0.1934340	0.17181619	3.2044980	20	1 18.2	21.0
521095 2015 <i>DY</i> ₂₄₂	17.2	X	346.55596	171.35611	85.84778	4.66426	0.0450350	0.21828238	2.7318505	20	5 21.7	20.5
521096 2015 <i>DG</i> ₂₄₃	17.6	X	55.21836	344.27788	213.79922	7.74619	0.0979619	0.23142786	2.6273965	20	6 18.9	21.0
521097 2015 <i>DR</i> ₂₄₃	16.9	X	183.26738	132.44982	299.63379	14.02986	0.0805763	0.23514103	2.5996633	20	6 6.6	20.9
521098 2015 <i>DS</i> ₂₄₃	16.2	X	75.93700	178.03676	252.57582	16.11508	0.0223436	0.17258339	3.1949940	20	1 23.1	20.9
521099 2015 <i>DT</i> ₂₄₃	16.0	X	319.95822	300.29275	273.64156	16.43122	0.0921992	0.17723976	3.1387878	20	2 8.5	20.5
521100 2015 <i>DD</i> ₂₄₄	16.1	X	309.12695	96.83040	102.55844	9.47360	0.0424597	0.17948222	3.1125889	20	1 21.7	20.5
521101 2015 <i>DF</i> ₂₄₄	15.7	X	72.09315	119.15481	295.67254	16.72252	0.1170878	0.17167147	3.2062986	20	1 15.7	19.8
521102 2015 <i>DH</i> ₂₄₄	16.5	X	291.39710	15.61971	194.37058	16.63689	0.0725736	0.16974397	3.2305254	20	1 7.9	21.5
521103 2015 <i>DO</i> ₂₄₄	17.9	X	141.39600	313.47386	241.03542	13.92769	0.1158165	0.26767358	2.3845094	20	9 28.5	21.7
521104 2015 <i>DR</i> ₂₄₄	15.9	X	280.02513	322.01681	316.85665	19.54494	0.0877721	0.18261979	3.0768346	20	3 7.4	20.6
521105 2015 <i>DU</i> ₂₄₄	17.3	X	51.56305	124.68382	94.02191	4.45250	0.0549664	0.22468133	2.6797322	20	7 5.9	20.7
521106 2015 <i>DY</i> ₂₄₄	16.7	X	216.42866	185.89449	144.03364	9.73289	0.0576327	0.17744135	3.1364100	20	3 11.6	21.4
521107 2015 <i>DF</i> ₂₄₅	16.6	X	306.00048	192.41793	58.90360	11.85092	0.0402059	0.18322532	2.3070520	20	3 26.4	21.0
521108 2015 <i>DG</i> ₂₄₅	17.4	X	62.91372	172.33479	108.38644	7.08005	0.1164175	0.25487562	2.4636775	20	10 30.9	20.8
521109 2015 <i>DH</i> ₂₄₅	16.5	X	86.01828	347.96445	150.57722	9.77003	0.0534790	0.19970028	2.8987912	20	5 9.3	20.6
521110 2015 <i>DP</i> ₂₄₅	17.6	X	14.40030	358.23994	250.91969	4.51740	0.1558961	0.22967906	2.6407165	20	6 29.6	20.3
521111 2015 <i>DS</i> ₂₄₅	15											

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
521121 2015 DE ₂₄₇	16.8	X	169.57653	168.88938	295.07816	9.00461	0.0814548	0.24152249	2.5536674	20	7 4.3	20.5
521122 2015 DG ₂₄₇	18.0	X	144.45647	4.34072	204.96420	5.48604	0.0989867	0.27608205	2.3358445	20	10 27.6	21.4
521123 2015 DL ₂₄₇	17.5	X	329.23801	33.35387	238.35571	5.20894	0.0936830	0.21570589	2.7535611	20	5 9.8	20.9
521124 2015 DQ ₂₄₇	17.5	X	306.44540	339.72842	327.76181	1.28681	0.0764951	0.22123703	2.7074732	20	5 26.2	20.9
521125 2015 DR ₂₄₇	16.6	X	309.66488	32.70250	186.68783	11.72078	0.0384329	0.17853244	3.1236182	20	2 13.0	21.0
521126 2015 DT ₂₄₇	16.8	X	246.86542	298.78543	357.27273	4.97491	0.1154925	0.18004272	3.1061256	20	2 26.9	21.6
521127 2015 DW ₂₄₇	17.4	X	347.85953	228.78307	47.66451	4.13317	0.0906021	0.22972820	2.6403399	20	6 19.7	20.9
521128 2015 DK ₂₄₈	16.2	X	329.69023	158.06276	67.46837	13.45891	0.0770353	0.17469196	3.1692325	20	3 23.4	20.6
521129 2015 DM ₂₄₈	16.0	X	46.77599	66.60067	88.46597	11.97443	0.0687457	0.18014112	3.1049944	20	4 13.1	20.3
521130 2015 DN ₂₄₈	16.1	X	307.62222	173.91037	115.08781	11.27727	0.0291408	0.19020426	2.9944879	20	5 14.3	20.3
521131 2015 ET ₆	18.5	X	96.91802	262.05171	142.37995	23.54318	0.1267643	0.36202698	1.9497342	20	—	—
521132 2015 EF ₆₂	18.1	X	86.47550	270.86692	156.96435	23.49786	0.0906316	0.37679562	1.8984485	20	1 7.1	20.1
521133 2015 EG ₇₅	16.6	X	280.69036	184.86925	38.25495	1.20029	0.0803741	0.17468609	3.1693035	20	1 11.9	21.3
521134 2015 EN ₇₅	16.9	X	246.28913	103.92238	157.05587	13.06221	0.0546778	0.17660599	3.1462925	20	1 19.8	21.7
521135 2015 EP ₇₅	15.9	X	198.56437	257.78512	89.82966	17.08043	0.0637544	0.18766530	3.0214360	20	3 19.7	20.8
521136 2015 FS ₅	18.4	X	22.56959	356.94151	112.00911	23.04783	0.0695824	0.37262189	1.9125985	20	—	—
521137 2015 FD ₄₃	16.2	X	331.21145	29.16177	200.26230	15.03607	0.1533048	0.18227175	3.0807501	20	3 9.9	20.2
521138 2015 FK ₃₃₂	17.7	X	161.80471	248.69139	113.18637	24.61742	0.0866126	0.36154643	1.9514616	20	1 28.5	19.8
521139 2015 FX ₃₄₀	17.9	X	193.17527	234.72660	98.89131	24.35816	0.0864049	0.37680411	1.8984200	20	1 25.7	20.2
521140 2015 FZ ₃₄₅	18.0	X	166.91347	327.40390	359.84863	19.49263	0.0635151	0.36724799	1.9312112	20	—	—
521141 2015 FK ₄₀₅	17.6	X	200.81039	210.58273	32.45269	5.90257	0.0137124	0.30647958	2.1787214	20	—	—
521142 2015 FX ₄₀₅	16.6	X	24.65100	148.99928	355.20372	8.38659	0.1263097	0.18085645	3.0968016	20	2 24.4	20.2
521143 2015 FA ₄₀₆	16.6	X	358.20165	183.73525	73.05316	13.89188	0.0701158	0.21936676	2.7228403	20	6 6.8	19.9
521144 2015 FC ₄₀₆	16.4	X	263.81365	267.55710	21.25866	25.53130	0.2670840	0.17312104	3.1883756	20	3 4.3	21.9
521145 2015 FD ₄₀₆	18.2	X	152.54719	134.40374	100.56457	3.15930	0.0815013	0.28833259	2.2692041	20	12 11.5	21.2
521146 2015 FE ₄₀₆	16.3	X	187.24089	338.47164	15.64554	10.30115	0.1193612	0.18102907	3.0948326	20	3 11.0	21.3
521147 2015 FH ₄₀₆	17.3	X	21.22360	191.99340	56.00021	13.33421	0.0934416	0.23054804	2.6340768	20	6 29.6	20.8
521148 2015 FJ ₄₀₆	17.4	X	83.79567	117.66223	44.03213	4.21532	0.0314340	0.21297600	2.7770409	20	5 29.7	21.2
521149 2015 FM ₄₀₆	16.8	X	69.13271	315.63352	185.18963	10.72353	0.0164320	0.18992268	2.9974469	20	4 13.3	20.8
521150 2015 FO ₄₀₆	17.6	X	197.48353	299.08313	158.21574	7.40966	0.1027715	0.24232647	2.5478758	20	7 24.6	21.4
521151 2015 FR ₄₀₆	16.4	X	300.02420	188.13454	60.89319	10.32759	0.0360316	0.17709423	3.1405070	20	3 16.6	20.9
521152 2015 FG ₄₀₇	17.0	X	164.07894	348.66307	22.62688	15.44977	0.1680225	0.17969582	3.1101218	20	3 14.5	21.3
521153 2015 FJ ₄₀₇	16.1	X	138.96139	46.12918	79.97753	5.44127	0.1024186	0.23322500	2.6138820	20	6 29.5	20.9
521154 2015 FK ₄₀₇	17.3	X	297.88021	229.14106	79.30622	5.44286	0.0546295	0.21351109	2.7723992	20	5 19.4	21.0
521155 2015 FO ₄₀₇	16.6	X	356.54536	12.39389	187.73166	10.10708	0.0430125	0.18962567	3.0005760	20	3 21.9	20.7
521156 2015 FP ₄₀₇	17.0	X	186.71867	250.27638	170.53992	6.69725	0.1130982	0.22120950	2.7076979	20	5 27.8	21.3
521157 2015 FU ₄₀₇	16.9	X	339.84513	52.35164	168.23857	8.40436	0.0493799	0.18692595	3.0293979	20	3 26.3	20.8
521158 2015 FV ₄₀₇	16.3	X	262.97034	167.94266	111.50445	6.39919	0.1350248	0.17199095	3.0203269	20	2 23.4	21.1
521159 2015 FY ₄₀₇	16.5	X	252.94859	234.66743	89.29260	11.64732	0.1049564	0.18929197	3.0041014	20	4 12.1	21.1
521160 2015 FA ₄₀₈	16.4	X	269.55844	112.12206	171.35986	12.01163	0.1138378	0.17564990	3.1576994	20	3 5.9	21.0
521161 2015 FB ₄₀₈	16.5	X	264.17456	133.22517	148.57142	9.06232	0.0393624	0.17534155	3.1614003	20	3 8.6	21.0
521162 2015 FC ₄₀₈	16.3	X	115.71911	337.59466	99.11642	6.84020	0.0979538	0.18824042	3.0152787	20	4 4.8	20.7
521163 2015 FH ₄₀₈	17.7	X	114.43400	128.47716	128.33427	3.09889	0.0622295	0.26764966	2.3846515	20	11 23.3	21.0
521164 2015 FK ₄₀₈	17.1	X	53.61383	212.91392	47.67250	15.73621	0.0851183	0.23425090	2.6062448	20	9 19.7	20.8
521165 2015 FM ₄₀₈	16.5	X	320.85704	226.55496	43.65916	12.68733	0.0664961	0.18951634	3.0017299	20	4 30.1	20.5
521166 2015 FO ₄₀₈	15.9	X	18.58499	298.08364	233.70180	16.20333	0.1850986	0.17877257	3.1208205	20	3 14.5	19.6
521167 2015 FS ₄₀₈	16.7	X	323.51329	263.76041	73.42312	11.40394	0.2420454	0.21246770	2.7814683	20	7 17.4	19.4
521168 2015 FV ₄₀₈	17.5	X	48.76850	164.70520	105.12898	4.47901	0.1186213	0.23495437	2.6010400	20	9 24.1	20.8
521169 2015 FX ₄₀₈	17.1	X	38.37214	236.39155	285.81734	1.47726	0.0566322	0.19924566	2.9031990	20	3 31.5	20.9
521170 2015 FZ ₄₀₈	16.4	X	271.79239	28.62186	241.40528	2.41505	0.0693104	0.18377852	3.0638880	20	2 25.3	20.8
521171 2015 FH ₄₀₉	17.8	X	239.43277	66.62485	36.96580	7.41802	0.0724670	0.27300140	2.3533840	20	10 3.8	20.7
521172 2015 FM ₄₀₉	17.3	X	20.53776	196.92739	66.69987	12.57782	0.0276453	0.23453433	2.6041446	20	7 22.2	20.8
521173 2015 FY ₄₀₉	16.4	X	154.01435	143.08837	6.94464	13.34986	0.1194710	0.24107271	2.5568428	20	8 22.4	20.5
521174 2015 FB ₄₁₀	16.9	X	94.79741	321.12977	233.32799	17.69009	0.1626142	0.23210791	2.6222620	20	8 7.9	21.2
521175 2015 FF ₄₁₀	17.6	X	150.94440	349.05383	246.42721	4.56466	0.1123726	0.27467319	2.3438251	20	12 5.9	21.1
521176 2015 FG ₄₁₀	16.7	X	349.81755	220.71407	10.49655	5.21398	0.1366949	0.18671059	3.0317270	20	4 15.8	20.2
521177 2015 FL ₄₁₀	17.8	X	73.73200	318.28982	223.45126	1.49714	0.0891376	0.22664647	2.6642199	20	6 21.8	21.1
521178 2015 FV ₄₁₀	17.2	X	147.34032	342.44442	143.20322	15.38429	0.0421288	0.23778795	2.5803354	20	7 5.1	21.0
521179 2015 FW ₄₁₀	16.1	X	81.90298	107.67893	349.39500	10.09707	0.0407497	0.18340179	3.0680823	20	3 8.6	20.3
521180 2015 FZ ₄₁₀	17.3	X	152.10421	92.50874	81.48001	5.96087	0.0620854	0.26313099	2.4118746	20	9 21.0	20.7
521181 2015 FF ₄₁₁	16.6	X	221.28177	195.08023	152.10727	12.17695	0.0689959	0.19341350	2.9612712	20	4 6.6	21.1
521182 2015 FL ₄₁₁	16.1	X	267.59422	156.09377	151.37755	16.34880	0.1200081	0.18018811	3.1044545	20	4 4.9	20.8
521183 2015 FP ₄₁₁	16.9	X	66.81089	296.72121	277.75915	11.24342	0.2079285	0.22821914	2.6519663	20	8 10.8	20.6
521184 2015 FQ ₄₁₁	16.8	X	63.90751	322.29371	283.36209	13.81686	0.0451737	0.24039217	2.5616660	20	8 22.9	20.4
521185 2015 FR ₄₁₁	16.4	X	244.97704	196.48146	140.56206	10.57886	0.0804648	0.19165107	2.9793982	20	4 20.0	20.9
521186 2015 FT ₄₁₁	17.2	X	177.85367	313.93501	159.08233	8.79266	0.1156124	0.23951352	2.5679271	20	7 23.3	21.2
521187 2015 FU ₄₁₁	16.4	X	99.39446	303.07848	139.90042	9.15159	0.0616289	0.17692855	3.1424674	20	3 18.9	20.8
521188 2015 FX ₄₁₁	16.9	X	4.70143	57.61715	172.48418	10.36186	0.0610022	0.19901149	2.9054759	20	5 14.1	20.7
521189 2015 FY ₄₁₁	15.9	X	14.71483	87.90702	91.70267	13.06624	0.0547498	0.18023009	3.1039724	20	3 29.8	20.2
521190 2015 FL ₄₁₂	16.4	X	257.69830	155.35360	158.31158	14.96817	0.0447031	0.17902192	3.1179220	20	4 10.2	21.0
521191 2015 FM ₄₁₂	17.1	X	67.52626	84.79479	126.59880	13.25978	0.1086403	0.22090715	2.7101680	20	7 26.6	20.7
521192 2015 FN ₄₁₂	16.0	X	95.67316	297.07137	172.50615	17.26586	0.1380339	0.18333198	3.0688611	20	4 27.6	20.6
521193 2015 FP ₄₁₂	16.8	X	110.84666	25.								

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>
521201 2015 <i>FM</i> ₄₁₃	16.2	X	233.21285	247.66653	95.32680	17.48106	0.2278613	0.17530803	3.1618032	20	4 9.6	21.8
521202 2015 <i>FN</i> ₄₁₃	17.3	X	8.89086	178.71179	132.13886	14.15232	0.1952860	0.23109991	2.6298816	20	10 2.1	20.2
521203 2015 <i>FW</i> ₄₁₃	17.2	X	108.84930	83.17539	161.38406	7.71860	0.0520090	0.25534876	2.4606332	20	10 30.5	20.6
521204 2015 <i>FX</i> ₄₁₃	16.5	X	275.22339	153.79519	148.02053	10.46762	0.0598972	0.17919273	3.1159402	20	4 14.6	21.0
521205 2015 <i>FZ</i> ₄₁₃	16.8	X	9.66188	42.41904	170.09111	10.33848	0.0859017	0.18534639	3.0465850	20	4 29.2	20.7
521206 2015 <i>FA</i> ₄₁₄	16.9	X	293.80752	205.43488	147.25632	6.81648	0.0262796	0.21619013	2.7494478	20	7 15.7	20.6
521207 2015 <i>FC</i> ₄₁₄	17.3	X	69.42427	12.68224	193.17809	9.12513	0.0721320	0.21925850	2.7237365	20	7 14.1	21.1
521208 2015 <i>FE</i> ₄₁₄	16.9	X	329.69033	81.18597	186.19310	10.29938	0.0918094	0.19233663	2.9723142	20	5 7.9	20.7
521209 2015 <i>FF</i> ₄₁₄	16.9	X	328.48736	86.55581	180.41763	10.07936	0.0244178	0.19250079	2.9706242	20	5 12.4	21.0
521210 2015 <i>FG</i> ₄₁₄	16.8	X	61.28652	345.93857	200.29441	14.90380	0.0773763	0.20142875	2.8821842	20	6 8.3	20.9
521211 2015 <i>FH</i> ₄₁₄	16.5	X	112.91387	322.29322	154.16666	11.03396	0.0590613	0.19129250	2.9831202	20	5 15.8	20.9
521212 2015 <i>FJ</i> ₄₁₄	16.6	X	271.17064	183.17341	133.24723	11.00784	0.0231107	0.18582081	3.0413972	20	5 3.6	21.0
521213 2015 <i>FL</i> ₄₁₄	15.8	X	260.83450	0.07360	317.33001	11.36156	0.0890328	0.18862084	3.0112230	20	4 2.9	20.4
521214 2015 <i>GC</i>	16.5	X	109.05826	9.22075	102.74457	33.13243	0.1100718	0.23510315	2.5999425	20	5 22.1	20.8
521215 2015 <i>GS</i> ₃₁	18.1	X	183.47626	74.09026	38.77583	2.11849	0.1495620	0.25530207	2.4609332	20	7 30.7	21.8
521216 2015 <i>GL</i> ₅₂	17.4	X	135.39906	280.75529	200.52823	13.06268	0.1166608	0.22901404	2.6458262	20	6 19.6	21.7
521217 2015 <i>GO</i> ₅₂	17.3	X	57.08129	201.15910	358.18349	4.47647	0.0964637	0.22147114	2.7055649	20	6 23.2	20.7
521218 2015 <i>GQ</i> ₅₂	16.9	X	16.70632	218.66616	58.54937	15.65270	0.1147129	0.22599499	2.6693376	20	8 18.5	20.3
521219 2015 <i>GV</i> ₅₂	18.0	X	129.90463	191.93987	39.70238	6.40645	0.0532720	0.26905958	2.3763136	20	11 7.4	21.0
521220 2015 <i>GW</i> ₅₂	16.4	X	256.82867	248.90317	45.02907	16.54955	0.0843766	0.17126411	3.2113808	20	3 17.2	21.4
521221 2015 <i>GX</i> ₅₂	16.0	X	314.97861	205.21387	39.50053	18.00074	0.1261790	0.18008436	3.1056467	20	3 21.2	20.3
521222 2015 <i>GA</i> ₅₃	17.0	X	317.60059	188.72491	144.08284	14.92053	0.1092455	0.22377733	2.6869443	20	7 14.7	20.3
521223 2015 <i>GC</i> ₅₃	16.6	X	269.29727	261.04306	120.86538	14.17749	0.1119546	0.22509295	2.6764643	20	7 9.2	20.3
521224 2015 <i>GH</i> ₅₃	16.6	X	289.90472	182.34469	92.26871	13.29693	0.1073568	0.18709488	3.0275741	20	3 26.1	21.1
521225 2015 <i>GJ</i> ₅₃	16.8	X	254.41811	214.71947	127.67438	11.49868	0.0920324	0.20205403	2.8762350	20	5 6.3	21.2
521226 2015 <i>GK</i> ₅₃	16.2	X	195.19473	264.53512	103.52857	11.54914	0.1755797	0.18358496	3.0660412	20	4 6.2	21.5
521227 2015 <i>GL</i> ₅₃	17.3	X	203.06465	292.58846	141.21959	13.75493	0.1337161	0.23292596	2.6161188	20	6 28.8	21.6
521228 2015 <i>GU</i> ₅₃	16.4	X	343.14339	178.72080	47.06671	3.28374	0.1097842	0.18172707	3.0869028	20	4 2.0	20.1
521229 2015 <i>HD</i> ₁₉	16.4	X	315.47389	43.80158	199.70482	9.32388	0.0652183	0.18830072	3.0146350	20	3 17.5	20.5
521230 2015 <i>HT</i> ₁₂₆	18.0	X	190.89776	266.07146	223.03239	3.63362	0.1518867	0.25745327	2.4472055	20	8 25.9	21.8
521231 2015 <i>HT</i> ₁₇₉	18.6	X	339.33479	301.24762	201.48375	23.04894	0.0936569	0.34364530	2.0186566	20	—	—
521232 2015 <i>HX</i> ₁₈₆	16.1	X	43.65219	79.32932	92.89649	10.01065	0.0408355	0.18952840	3.0016026	20	4 25.6	20.2
521233 2015 <i>HO</i> ₁₈₈	16.0	X	284.09570	79.38463	207.25614	17.25095	0.1146804	0.18005853	3.1059437	20	3 24.0	20.5
521234 2015 <i>HX</i> ₁₈₈	16.1	X	175.48118	52.73166	334.56654	10.12373	0.0754034	0.18293286	3.0733232	20	3 31.1	21.0
521235 2015 <i>HO</i> ₁₈₉	16.6	X	46.95512	253.90877	262.51103	9.45838	0.0461501	0.18609394	3.0384206	20	4 1.7	20.8
521236 2015 <i>HK</i> ₁₈₉	17.4	X	294.15209	59.28499	293.89809	4.79360	0.0683904	0.22327535	2.6909701	20	7 12.1	20.6
521237 2015 <i>HL</i> ₁₈₉	17.3	X	270.88289	214.81554	260.34843	6.67025	0.0464291	0.28246932	2.3004980	20	12 8.9	19.7
521238 2015 <i>HN</i> ₁₈₉	17.2	X	67.42918	265.36628	348.91392	4.39790	0.0840874	0.24146747	2.5540553	20	9 20.9	20.5
521239 2015 <i>HO</i> ₁₈₉	16.2	X	81.76180	120.79122	1.69237	10.68305	0.0289051	0.17981201	3.1087819	20	4 5.6	20.5
521240 2015 <i>HS</i> ₁₈₉	16.9	X	308.74457	251.17251	137.71786	13.49190	0.1529841	0.23889328	2.5723699	20	9 21.9	19.6
521241 2015 <i>HT</i> ₁₈₉	16.6	X	308.07145	152.12536	138.86189	11.85300	0.1488143	0.18465774	3.0541547	20	5 1.7	20.8
521242 2015 <i>HX</i> ₁₈₉	17.4	X	36.50002	88.15998	171.47434	14.41462	0.0746827	0.23386603	2.6091034	20	8 11.1	20.7
521243 2015 <i>HY</i> ₁₈₉	18.3	X	128.55622	225.27151	8.16890	1.12096	0.1376477	0.26673606	2.3900935	20	11 9.2	21.8
521244 2015 <i>HA</i> ₁₉₀	16.6	X	5.05480	234.86993	65.55941	13.53313	0.1521471	0.22786264	2.6547316	20	9 5.4	19.7
521245 2015 <i>HO</i> ₁₉₀	16.7	X	323.25394	165.47026	86.58607	5.15917	0.1794354	0.18150075	3.0894689	20	3 28.9	20.5
521246 2015 <i>HU</i> ₁₉₀	18.0	X	42.05845	169.83403	159.88760	4.97212	0.0438858	0.27192664	2.3595809	20	11 29.2	20.9
521247 2015 <i>HX</i> ₁₉₀	16.8	X	4.64957	327.81625	301.33606	3.77077	0.0741039	0.21996439	2.7179062	20	7 5.7	20.0
521248 2015 <i>HY</i> ₁₉₀	17.2	X	121.62901	285.79387	234.23473	12.51163	0.1172332	0.23259816	2.6185761	20	7 22.2	21.3
521249 2015 <i>HZ</i> ₁₉₀	17.3	X	105.87388	242.35594	261.00821	3.10212	0.0485979	0.21108205	2.7936276	20	6 6.3	21.2
521250 2015 <i>HA</i> ₁₉₁	16.8	X	12.47427	14.54053	244.40870	7.16489	0.1257699	0.21579437	2.7528084	20	7 6.3	19.9
521251 2015 <i>HH</i> ₁₉₁	17.1	X	141.07292	173.01462	288.63737	4.70326	0.0231182	0.20506001	2.8480574	20	5 23.2	21.0
521252 2015 <i>HJ</i> ₁₉₁	16.1	X	159.64939	25.67352	24.44520	9.83686	0.1201230	0.18721750	3.0262520	20	4 16.9	20.8
521253 2015 <i>HO</i> ₁₉₁	16.7	X	257.69952	262.75848	66.03804	16.96235	0.0908700	0.18540429	3.0459507	20	4 25.1	21.3
521254 2015 <i>HP</i> ₁₉₁	16.6	X	128.86249	283.23881	181.74336	10.14121	0.1385672	0.20159210	2.8806271	20	5 26.5	21.1
521255 2015 <i>HQ</i> ₁₉₁	16.7	X	14.90164	356.57052	186.23555	10.40214	0.0200578	0.17561121	3.1581631	20	3 26.9	21.0
521256 2015 <i>HS</i> ₁₉₁	17.7	X	149.96213	80.25928	113.72567	7.55098	0.1026102	0.25841416	2.4411353	20	10 14.5	21.4
521257 2015 <i>HC</i> ₁₉₂	17.1	X	96.08084	317.80599	174.39065	9.89161	0.0352209	0.19096471	2.9865329	20	5 10.8	21.4
521258 2015 <i>HJ</i> ₁₉₂	17.0	X	32.59593	81.14923	143.19029	5.70856	0.0376386	0.20293013	2.8679508	20	6 13.5	20.8
521259 2015 <i>HK</i> ₁₉₂	16.0	X	180.85555	176.21272	213.11920	12.70735	0.1139171	0.17134671	3.2103486	20	4 12.5	21.0
521260 2015 <i>HL</i> ₁₉₂	16.8	X	287.71802	102.06467	212.72646	11.32466	0.1906914	0.18321616	3.0701542	20	4 23.8	21.0
521261 2015 <i>HN</i> ₁₉₂	16.8	X	215.71027	308.49286	83.22337	17.60953	0.0376430	0.19515839	2.9435939	20	5 27.2	21.1
521262 2015 <i>HP</i> ₁₉₂	16.2	X	266.14013	204.58293	68.90770	11.77866	0.0400859	0.16097915	3.3467476	20	3 7.2	21.2
521263 2015 <i>HQ</i> ₁₉₂	16.3	X	302.09180	177.77546	99.76547	12.25007	0.0481745	0.18502374	3.0501258	20	4 21.9	20.7
521264 2015 <i>HS</i> ₁₉₂	16.6	X	143.14749	132.46025	270.09031	8.98123	0.0571903	0.17584632	3.1553475	20	3 13.1	21.4
521265 2015 <i>HV</i> ₁₉₂	17.3	X	95.15637	290.58007	225.91397	3.43738	0.0093288	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>
521281 2015 <i>JN</i> ₁₄	17.2	X	351.54628	269.08429	329.31757	0.27250	0.0710568	0.19426104	2.9526519	20	5 2.4	20.7
521282 2015 <i>JO</i> ₁₄	16.5	X	308.55371	261.43330	33.24436	9.41283	0.0700545	0.19926980	2.9029645	20	5 11.9	20.2
521283 2015 <i>JS</i> ₁₄	17.0	X	45.92399	115.32027	95.42516	14.25668	0.1201130	0.21207067	2.7849388	20	6 25.2	20.3
521284 2015 <i>JU</i> ₁₄	16.7	X	46.56647	273.72518	243.71538	11.12259	0.0574511	0.18572194	3.0424765	20	4 4.4	20.9
521285 2015 <i>JV</i> ₁₄	16.8	X	207.89008	357.74567	32.65109	13.46534	0.0383323	0.19863930	2.9091041	20	5 11.5	21.0
521286 2015 <i>JX</i> ₁₄	18.2	X	148.34320	230.41082	14.69664	1.49044	0.0781768	0.28100075	2.3085063	20	12 18.3	21.2
521287 2015 <i>JZ</i> ₁₄	17.1	X	168.28457	256.35491	237.03514	11.90290	0.1303640	0.24039767	2.5616270	20	8 5.2	21.4
521288 2015 <i>JH</i> ₁₅	16.4	X	198.28745	226.73767	149.57599	14.67272	0.0861335	0.18091129	3.0961758	20	4 18.9	21.3
521289 2015 <i>JO</i> ₁₅	16.6	X	293.08849	114.82153	170.03487	10.87826	0.0740402	0.17615248	3.1516903	20	4 12.5	21.0
521290 2015 <i>JP</i> ₁₅	16.1	X	356.08229	82.50510	136.36340	11.29949	0.0577804	0.17827885	3.1265797	20	4 19.8	20.4
521291 2015 <i>JR</i> ₁₅	16.3	X	0.22070	62.42347	150.05518	13.13650	0.0928704	0.17703396	3.1412198	20	4 16.4	20.4
521292 2015 <i>JT</i> ₁₅	16.1	X	344.60083	28.81898	195.90327	17.08097	0.1525385	0.17540216	3.1606719	20	3 28.8	19.9
521293 2015 <i>JY</i> ₁₅	18.1	X	92.94046	23.66331	272.04917	5.16409	0.1070769	0.27141354	2.3625538	20	12 21.7	21.4
521294 2015 <i>JB</i> ₁₆	16.5	X	319.17883	1.77730	259.02083	16.54360	0.1592865	0.18175368	3.0866016	20	3 26.4	20.8
521295 2015 <i>JC</i> ₁₆	16.8	X	57.43001	274.54304	279.78968	8.00500	0.0693790	0.20439649	2.8542177	20	6 12.2	20.4
521296 2015 <i>JD</i> ₁₆	17.2	X	297.74877	31.26265	265.94847	3.95386	0.0767190	0.18876315	3.0097095	20	4 29.9	21.4
521297 2015 <i>KN</i> ₁₁₂	16.9	X	125.99737	307.00164	181.19314	9.95564	0.0836257	0.20268663	2.8702473	20	6 15.5	21.3
521298 2015 <i>KX</i> ₁₂₂	17.2	X	107.23792	7.56328	163.61197	13.90154	0.1697965	0.23019207	2.6367916	20	7 28.4	21.4
521299 2015 <i>KS</i> ₁₄₈	17.6	X	140.21823	267.40542	64.03400	9.54723	0.1376937	0.30084091	2.2058609	20	—	—
521300 2015 <i>KP</i> ₁₆₈	16.6	X	293.57914	153.53063	121.29873	11.59820	0.0621211	0.17621133	3.1509886	20	4 5.4	21.2
521301 2015 <i>KA</i> ₁₆₉	16.5	X	318.95282	66.31142	175.14360	11.40897	0.1861105	0.17133805	3.2104568	20	3 5.5	20.6
521302 2015 <i>KC</i> ₁₆₉	16.2	X	59.01678	322.20448	276.82194	10.58779	0.2011617	0.19926997	2.9029629	20	8 27.9	20.4
521303 2015 <i>KD</i> ₁₆₉	15.8	X	34.27219	336.95425	257.24445	9.90663	0.2251784	0.18287022	3.0740249	20	7 20.1	19.4
521304 2015 <i>KJ</i> ₁₆₉	16.4	X	289.55131	158.35734	127.22932	11.34948	0.0814724	0.17560902	3.1581894	20	4 10.7	21.0
521305 2015 <i>KM</i> ₁₆₉	16.1	X	223.99026	260.17207	90.72666	12.12802	0.1433305	0.17189477	3.2035212	20	4 13.6	21.3
521306 2015 <i>KP</i> ₁₆₉	18.2	X	177.56233	354.22949	190.16899	2.35243	0.1271489	0.26461255	2.4028634	20	10 27.3	21.8
521307 2015 <i>KQ</i> ₁₆₉	16.5	X	241.55775	299.37121	24.17678	10.82605	0.0820233	0.17791783	3.1308078	20	3 29.3	21.2
521308 2015 <i>KV</i> ₁₆₉	16.6	X	274.20898	232.26392	71.14843	12.87062	0.0353468	0.17905286	3.1175628	20	4 20.4	21.1
521309 2015 <i>KX</i> ₁₆₉	17.4	X	144.01841	294.54323	210.60172	5.48513	0.1659679	0.22996887	2.6384975	20	7 30.7	21.7
521310 2015 <i>KY</i> ₁₆₉	18.0	X	358.36800	121.64506	192.12504	4.70031	0.1975503	0.22158853	2.7046093	20	9 5.2	20.6
521311 2015 <i>KA</i> ₁₇₀	18.0	X	162.44467	355.21757	241.21223	4.99592	0.0552376	0.27986441	2.3147510	20	12 24.5	21.1
521312 2015 <i>KE</i> ₁₇₀	17.2	X	66.10371	162.46579	16.92628	0.89191	0.0142610	0.19566146	2.9385462	20	5 27.2	21.2
521313 2015 <i>KJ</i> ₁₇₀	17.3	X	25.56633	148.72612	109.87965	5.08932	0.0527026	0.21502479	2.7593727	20	7 21.9	20.6
521314 2015 <i>KK</i> ₁₇₀	17.5	X	6.10975	231.45849	127.49886	5.26237	0.0849545	0.25493378	2.4633028	20	11 20.7	20.4
521315 2015 <i>KP</i> ₁₇₀	17.3	X	196.06568	251.22348	208.47425	13.90116	0.0830921	0.22301650	2.6930519	20	7 23.3	21.6
521316 2015 <i>KY</i> ₁₇₀	17.0	X	321.64635	185.87314	127.38563	5.85734	0.1721012	0.23409298	2.6074168	20	9 17.5	19.5
521317 2015 <i>KB</i> ₁₇₁	17.9	X	316.09769	328.66651	138.47372	7.00427	0.0399852	0.29236859	2.2482723	20	—	—
521318 2015 <i>KC</i> ₁₇₁	16.7	X	272.81025	185.53825	117.49579	11.56346	0.0800552	0.17447134	3.1719037	20	4 12.6	21.4
521319 2015 <i>KE</i> ₁₇₁	15.9	X	352.66640	167.41751	75.46447	11.28813	0.0592350	0.17596002	3.1539881	20	5 13.3	20.0
521320 2015 <i>KL</i> ₁₇₁	16.4	X	151.35831	328.37529	122.76926	15.86347	0.0435324	0.19298172	2.9656867	20	5 28.8	21.0
521321 2015 <i>KM</i> ₁₇₁	16.0	X	63.00120	34.19983	127.38563	11.97968	0.0191657	0.18346199	3.0674110	20	5 6.0	20.4
521322 2015 <i>KQ</i> ₁₇₁	17.0	X	45.74549	123.33314	176.32114	10.15926	0.1261779	0.24135296	2.5548631	20	11 1.1	20.4
521323 2015 <i>KS</i> ₁₇₁	17.1	X	0.95791	197.15152	137.33816	15.53737	0.1221549	0.23081599	2.6320378	20	10 12.7	20.3
521324 2015 <i>KT</i> ₁₇₁	17.7	X	114.78866	349.48771	275.83073	9.16618	0.0910656	0.26951654	2.3736268	20	12 4.9	21.2
521325 2015 <i>KA</i> ₁₇₂	16.8	X	71.15565	256.09244	267.36472	9.25003	0.0582133	0.19929568	2.9027132	20	5 18.6	20.8
521326 2015 <i>KB</i> ₁₇₂	16.7	X	309.83167	335.90374	314.79540	9.94367	0.0927361	0.19138641	2.9821443	20	5 2.9	20.8
521327 2015 <i>KD</i> ₁₇₂	16.7	X	5.82505	266.32641	109.66664	15.62925	0.1155892	0.22378434	2.6868881	20	12 9.6	20.1
521328 2015 <i>LK</i> ₃₃	18.1	X	153.44022	210.14407	98.68775	9.43244	0.1814550	0.29167222	2.2518494	20	—	—
521329 2015 <i>LH</i> ₄₃	16.8	X	33.37716	0.96121	295.65937	6.06330	0.1636713	0.21043518	2.7993497	20	10 5.0	20.4
521330 2015 <i>LR</i> ₄₃	16.6	X	289.16215	170.62989	141.71027	16.87436	0.0877895	0.18281179	3.0746799	20	5 13.3	21.2
521331 2015 <i>LU</i> ₄₃	17.4	X	13.39726	150.21811	150.98248	5.58792	0.1660084	0.22384310	2.6864179	20	9 15.9	20.3
521332 2015 <i>LV</i> ₄₃	16.3	X	297.31175	130.27602	144.81103	8.77868	0.1171222	0.17275777	3.1928437	20	3 31.4	20.8
521333 2015 <i>LY</i> ₄₃	16.3	X	313.78355	135.85031	122.30198	12.44300	0.1942266	0.17416105	3.1756699	20	3 23.1	20.6
521334 2015 <i>LZ</i> ₄₃	17.9	X	213.42616	76.14828	120.02550	6.42534	0.0521511	0.28532139	2.2851419	20	—	—
521335 2015 <i>LH</i> ₄₄	17.9	X	96.52179	128.28724	129.79964	3.10978	0.1587460	0.25206442	2.4819613	20	11 9.4	21.6
521336 2015 <i>LJ</i> ₄₄	16.8	X	63.26096	339.95675	198.08802	4.40302	0.1838208	0.20054870	2.8906098	20	6 16.5	20.6
521337 2015 <i>LK</i> ₄₄	16.6	X	41.56176	99.94029	142.89706	12.72286	0.1661753	0.21249463	2.7812332	20	8 9.1	19.8
521338 2015 <i>LO</i> ₄₄	16.6	X	238.22489	247.05859	243.65948	13.07109	0.0313996	0.23014077	2.6371834	20	11 2.2	20.2
521339 2015 <i>LQ</i> ₄₄	16.2	X	254.04347	43.59672	307.16073	6.52362	0.0605912	0.16907995	3.2389779	20	5 14.8	21.0
521340 2015 <i>LU</i> ₄₄	16.1	X	182.58664	175.84120	239.95482	9.82736	0.0199492	0.18862819	3.0111448	20	5 16.2	20.4
521341 2015 <i>LV</i> ₄₄	17.0	X	323.09173	215.88194	131.89491	8.65167	0.2053365	0.21591342	2.7517964	20	8 6.0	19.6
521342 2015 <i>LX</i> ₄₄	17.5	X	198.57115	329.23746	183.85955	7.65599	0.1326115	0.25948958	2.4343860	20	10 8.2	20.9
521343 2015 <i>LC</i> ₄₅	16.2	X	251.58257	96.92752	300.25314	7.96705	0.1420388	0.18748703	3.0233509	20	7 1.6	20.6
521344 2015 <i>LD</i> ₄₅	17.7	X	108.77222	307.84669	299.45137	15.75343	0.1081537	0.24089188	2.5581221	20	10 25.9	22.0
521345 2015 <i>LE</i> ₄₅	16.1	X	286.01298	254.47338	104.39513	17.44980	0.2481068	0.18086827	3.0966667	20	6 10.5	20.4
521346 2015 <i>LH</i> ₄₅	16.7	X	247.80607	12.43558	109.38624	18.44474	0.1121975	0.24150657	2.5537796	20	11 3.7	20.4
521347 2015 <i>LJ</i> ₄₅	17.4	X	283.51800	62.80393	357.19460	1.34621	0.0652570	0.22462680	2.6801659	20	9 27.1	20.8
521348 2015 <i>LK</i> ₄₅	16.8	X	321.41362	135.12270	151.21069	11.09409	0.0695405	0.18890464	3.0082064	20	5 24.2	20.9
521349 2015 <i>LM</i> ₄₅	16.8	X	1.08512	216.51760	139.50805	10.05289	0.1419581	0.24171635	2.5523018	20	11 14.9	19.8
521350 2015 <i>LR</i> ₄₅	17.5	X	105.40220	48.45491	132.80864	4.98077	0.1446174	0.22346843	2.6894198	20	8 7.2	21.6
521351 2015 <i>LV</i> ₄₅	17.7	X	72.69133	2.08872	263.							

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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>
521361 2015 MN ₁₃₇	18.0	X	135.81744	156.38694	135.47065	7.13269	0.1210487	0.26732896	2.3865583	20	—	—
521362 2015 MH ₁₃₉	16.1	X	310.39093	27.34628	271.00218	9.17524	0.0681464	0.17575136	3.1564840	20	5 20.6	20.5
521363 2015 MJ ₁₃₉	17.3	X	305.55566	204.02280	151.76333	6.80015	0.0725626	0.19848439	2.9106176	20	7 29.5	21.2
521364 2015 MK ₁₃₉	17.2	X	17.41299	93.57575	202.05276	3.85534	0.0443811	0.20923220	2.8100693	20	8 26.5	20.9
521365 2015 MP ₁₃₉	16.7	X	243.17501	253.39445	145.75734	19.30779	0.1344981	0.18473984	3.0532499	20	6 26.3	21.6
521366 2015 MW ₁₃₉	16.5	X	247.27334	157.25777	223.76077	8.04520	0.1129466	0.17387963	3.1790955	20	6 9.3	21.3
521367 2015 MX ₁₃₉	16.2	X	332.60679	51.34666	244.79630	8.94514	0.0889627	0.18191782	3.0847446	20	6 18.4	20.1
521368 2015 MZ ₁₃₉	16.5	X	285.52219	21.84243	343.19755	14.53508	0.0589105	0.18516258	3.0486009	20	7 18.8	20.9
521369 2015 MF ₁₄₀	18.2	X	201.15020	199.26952	49.53047	2.99839	0.0857282	0.28359028	2.2944318	20	—	—
521370 2015 MN ₁₄₀	16.0	X	223.92453	346.81029	83.42329	11.13901	0.0733849	0.18002775	3.1062977	20	7 20.1	20.6
521371 2015 MU ₁₄₀	17.2	X	318.06345	213.30949	149.93217	4.82960	0.1146735	0.20958219	2.8069400	20	8 26.9	20.5
521372 2015 MV ₁₄₀	17.2	X	337.47591	200.00176	136.18965	6.90881	0.0669863	0.20912297	2.8110477	20	8 24.4	20.6
521373 2015 MD ₁₄₁	18.1	X	210.82793	109.81037	132.79135	6.54942	0.0377062	0.29171658	2.2516211	20	—	—
521374 2015 ME ₁₄₁	17.1	X	18.08874	144.86767	150.28813	4.58669	0.0871303	0.21055884	2.7982535	20	9 2.4	20.4
521375 2015 MF ₁₄₁	16.5	X	73.21280	348.37679	170.68971	4.26479	0.0996901	0.16824694	3.2496600	20	5 24.1	20.9
521376 2015 MJ ₁₄₁	17.4	X	69.27610	76.51708	237.40106	3.63893	0.0374976	0.24776641	2.5105821	20	12 5.8	20.8
521377 2015 MX ₁₄₁	16.2	X	355.79254	106.47285	154.47703	11.63733	0.0297527	0.17772221	3.1331047	20	6 10.3	20.6
521378 2015 ML ₁₄₁	16.6	X	260.99932	233.13248	149.59235	11.80844	0.2143743	0.17781702	3.1319909	20	6 15.2	21.5
521379 2015 MQ ₁₄₁	16.5	X	215.34270	106.65139	297.09099	9.24477	0.0591060	0.17236242	3.1977241	20	6 6.7	21.3
521380 2015 MS ₁₄₁	17.4	X	326.59096	186.90063	233.09393	2.90544	0.1127074	0.24368732	2.5385210	20	12 8.8	19.9
521381 2015 MT ₁₄₁	16.2	X	356.03006	351.68741	274.26439	10.98512	0.1018631	0.18143180	3.0902512	20	6 15.6	19.9
521382 2015 MA ₁₄₂	16.9	X	342.86242	233.42198	104.60918	5.14438	0.0697977	0.21609818	2.7502277	20	9 7.2	20.3
521383 2015 MB ₁₄₂	16.3	X	355.93516	123.19089	113.26248	10.42000	0.0868374	0.17400530	3.1775647	20	5 10.9	20.5
521384 2015 ME ₁₄₂	17.0	X	356.28559	149.89232	177.52270	2.85020	0.0815255	0.21622173	2.7491798	20	9 11.9	20.2
521385 2015 MH ₁₄₂	18.2	X	169.67344	191.12882	26.36357	1.60562	0.1245551	0.26198679	2.4188918	20	11 29.1	21.6
521386 2015 MT ₁₄₂	16.6	X	249.48539	288.23049	102.97750	3.84257	0.1501529	0.18125430	3.0922683	20	6 20.1	21.1
521387 2015 MV ₁₄₂	16.9	X	342.18740	270.26096	78.94791	5.19696	0.1121282	0.21394185	2.7686765	20	9 22.8	20.0
521388 2015 MX ₁₄₂	16.5	X	290.14131	11.33817	313.72640	9.55625	0.0802150	0.17335324	3.1855279	20	5 24.7	21.0
521389 2015 MY ₁₄₂	17.4	X	348.45269	221.85855	122.84344	5.64546	0.1446803	0.21607423	2.7504308	20	9 29.5	20.3
521390 2015 MZ ₁₄₂	17.5	X	97.67955	250.72076	86.07464	4.40148	0.0750410	0.26832175	2.3806678	20	—	—
521391 2015 MB ₁₄₃	17.2	X	79.22213	303.79383	347.29265	13.69438	0.1123960	0.23263855	2.6182730	20	11 19.5	21.3
521392 2015 MD ₁₄₃	16.0	X	73.07022	321.95771	274.56290	15.32344	0.0785112	0.19139929	2.9820105	20	8 21.3	20.5
521393 2015 MG ₁₄₃	16.6	X	301.73934	203.23168	131.66725	10.80037	0.0961406	0.18772734	3.0207702	20	6 23.1	20.6
521394 2015 MK ₁₄₃	17.3	X	334.44474	189.21402	164.36970	4.14069	0.1112520	0.21379773	2.7699206	20	9 12.2	20.3
521395 2015 MN ₁₄₃	16.5	X	329.75389	3.97368	269.36713	8.92108	0.1006592	0.17295572	3.1904070	20	5 12.2	20.6
521396 2015 MS ₁₄₃	17.5	X	108.74949	87.98474	162.41734	6.82840	0.1205147	0.23934350	2.5691431	20	11 8.2	21.4
521397 2015 MT ₁₄₃	15.7	X	186.91718	132.42254	296.22068	13.30531	0.0604341	0.17042001	3.2219761	20	6 6.0	20.7
521398 2015 MU ₁₄₃	16.8	X	152.32890	189.70280	81.74462	6.19703	0.1575833	0.25552241	2.4595182	20	—	—
521399 2015 MV ₁₄₃	16.0	X	222.16767	31.27189	106.58853	10.29940	0.0768868	0.20464331	2.8519223	20	10 18.0	20.3
521400 2015 MW ₁₄₃	16.8	X	44.51298	18.67071	202.76760	10.24298	0.0521642	0.20550720	2.8439242	20	6 27.1	20.7
521401 2015 MZ ₁₄₃	17.3	X	335.85186	186.23912	168.17973	4.71861	0.0842577	0.21331331	2.7741125	20	9 15.9	20.6
521402 2015 MC ₁₄₄	16.3	X	319.40949	171.04883	129.25221	9.87379	0.1675627	0.17845627	3.1245071	20	5 27.2	20.2
521403 2015 MF ₁₄₄	16.1	X	356.61970	357.82166	255.88931	13.35393	0.0836315	0.17389034	3.1789650	20	5 30.9	20.2
521404 2015 MG ₁₄₄	15.9	X	354.77977	75.80022	207.70958	18.17041	0.1488277	0.17151998	3.2081863	20	7 3.7	20.0
521405 2015 MN ₁₄₄	15.9	X	35.70378	6.88049	256.41010	9.35501	0.0706694	0.18006422	3.1058782	20	8 7.1	20.2
521406 2015 MO ₁₄₄	16.8	X	330.57449	115.67109	268.61433	9.67705	0.1594962	0.20227416	2.8741479	20	10 10.2	20.0
521407 2015 MQ ₁₄₄	15.6	X	270.53813	88.88652	304.18589	14.58431	0.0572847	0.17590754	3.1546154	20	7 30.4	19.8
521408 2015 MR ₁₄₄	16.3	X	340.18396	63.12791	237.97430	14.67944	0.2461762	0.17582209	3.1556373	20	6 25.5	19.5
521409 2015 MW ₁₄₄	16.2	X	297.51845	159.62987	277.29413	21.35014	0.0432359	0.22623801	2.6674257	20	11 7.9	20.0
521410 2015 MC ₁₄₅	16.4	X	355.77596	316.71677	343.06005	4.16079	0.1280356	0.18899390	3.0072592	20	8 2.9	19.8
521411 2015 MJ ₁₄₅	17.3	X	131.91466	343.31339	210.44997	3.62251	0.0259915	0.21570525	2.7535665	20	9 10.7	21.1
521412 2015 MH ₁₄₅	17.1	X	317.87861	281.82334	104.47914	3.59012	0.0914064	0.22424855	2.6831788	20	10 4.3	20.2
521413 2015 MT ₁₄₅	17.0	X	201.14421	323.03176	105.13255	9.28787	0.0211325	0.18357610	3.0661398	20	6 24.2	21.3
521414 2015 MG ₁₄₅	16.8	X	234.65675	113.66722	319.28787	4.83811	0.0549373	0.20265192	2.8705750	20	8 8.5	20.9
521415 2015 MO ₁₄₆	17.4	X	336.18985	29.00942	324.20493	3.99830	0.0805669	0.21281737	2.7784207	20	9 13.4	20.7
521416 2015 MR ₁₄₆	16.9	X	261.91723	68.09407	337.43763	5.89491	0.0594384	0.20061930	2.8899317	20	8 7.6	20.9
521417 2015 MX ₁₄₆	16.6	X	286.43117	243.19159	149.71506	6.18622	0.1742558	0.17934774	3.1141446	20	8 3.3	20.6
521418 2015 MB ₁₄₇	16.7	X	333.88792	264.84952	69.32294	3.41757	0.1255733	0.18060334	3.0996943	20	8 10.6	20.3
521419 2015 MG ₁₄₇	17.0	X	116.92834	245.87996	20.96849	14.17539	0.1291776	0.23115875	2.6294353	20	11 30.0	21.3
521420 2015 ML ₁₄₇	16.5	X	202.67116	243.61105	182.83035	12.70842	0.0982201	0.17423736	3.1747427	20	6 19.2	21.6
521421 2015 MM ₁₄₇	16.6	X	304.35077	123.90384	228.63003	9.49095	0.1189762	0.19074419	2.9888343	20	7 14.9	20.5
521422 2015 MN ₁₄₇	17.0	X	4.96692	134.35273	157.02617	12.43496	0.0256983	0.19777158	2.9176070	20	7 31.4	20.9
521423 2015 MZ ₁₄₇	17.2	X	204.37407	27.09081	159.44658	15.32562	0.0473027	0.24300259	2.5432874	20	12 5.7	21.0
521424 2015 ME ₁₄₈	17.4	X	324.88226	152.82951	242.39555	3.45880	0.1930094	0.21258181	2.7804728	20	10 20.5	19.9
521425 2015 MM ₁₄₈	16.4	X	234.82188	285.15814	143.79756	21.84826	0.1493271	0.18054583	3.1003524	20	7 21.2	21.3
521426 2015 MP ₁₄₈	17.4	X	79.59074	60.95524	219.48589	2.29678	0.0657206	0.22601711	2.6691634	20	11 4.5	21.2
521427 2015 MW ₁₄₈	17.6	X	355.80483	177.66688	185.30500	6.05298	0.0499776	0.21927928	2.7235644	20	10 28.9	20.9
521428 2015 MN ₁₄₉	16.2	X	247.93900	209.11065	190.67584	11.36751	0.0773768	0.18256197	3.0774842	20	7 6.9	20.9
521429 2015 MO ₁₄₉	17.2	X	93.71032	0.26330	265.25921	8.91763	0.1350134	0.23547208	2.5972262	20	11 8.5	21.2
521430 2015 MQ ₁₄₉	16.4	X	263.26956	175.32087	226.33961	9.48764	0.0996695	0.18959682	3.0008804	20	7 24.2	20.8
521431 2015 MR ₁₄₉	16.3	X	131.64946	292.18298	268.13654	11.70585	0.0770590	0.21663956	2.7456439	20	9 16.5	20.7
521432 2015 MT ₁₄₉	16.1	X	314.83078	53.76447	271.32323	14.48005	0.0728399	0.17947875	3.1126290	20	6 30.9	20.0
521433 2015 NZ ₈	18.4	X	135.43406									

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>
521441 2015 NG ₂₈	16.3	X	27.03081	24.45036	256.04286	4.85613	0.0400464	0.20244904	2.8724925	20	8 17.8	20.2
521442 2015 NH ₂₈	16.8	X	63.65139	21.40846	260.05248	3.38150	0.0988131	0.22408163	2.6845112	20	10 20.3	20.4
521443 2015 NJ ₂₈	17.8	X	79.81607	72.04432	306.70913	5.53782	0.0965789	0.27948616	2.3168389	20	—	—
521444 2015 NM ₂₈	17.4	X	359.91008	272.90589	132.48576	3.43401	0.1049898	0.24773671	2.5107827	20	—	—
521445 2015 NP ₂₈	17.3	X	10.99649	16.68896	333.96173	4.33036	0.0575333	0.21566765	2.7538866	20	10 31.4	20.8
521446 2015 OG ₁₁	18.1	X	305.01843	12.10375	115.90054	6.81019	0.0543288	0.27497123	2.3421312	20	—	—
521447 2015 OJ ₂₅	17.6	X	156.18861	346.10193	317.77890	2.73652	0.1696065	0.28639257	2.2794403	20	—	—
521448 2015 OT ₂₅	17.1	X	52.27925	331.46195	342.61050	8.92549	0.1326433	0.23870022	2.5737567	20	11 23.4	20.8
521449 2015 OM ₃₀	17.8	X	160.07708	325.69337	326.05753	6.29560	0.2548016	0.28014608	2.3131991	20	—	—
521450 2015 OX ₃₅	17.3	X	131.07212	353.34884	317.71670	4.28544	0.1047910	0.27200831	2.3591086	20	—	—
521451 2015 OX ₇₄	18.0	X	146.99355	340.83915	327.25612	2.92577	0.2293468	0.27832980	2.3232516	20	—	—
521452 2015 ON ₇₈	15.9	X	338.15343	175.38388	80.83763	16.23732	0.0951199	0.18706042	3.0279459	20	5 9.2	19.9
521453 2015 OU ₈₄	17.8	X	183.56276	166.38203	105.00282	8.93455	0.1064389	0.27609364	2.3357791	20	—	—
521454 2015 OJ ₈₆	17.8	X	249.16019	85.58347	97.73305	3.72451	0.1050585	0.27866125	2.3214090	20	—	—
521455 2015 OJ ₉₀	18.0	X	238.60335	139.83125	57.59573	3.52207	0.1120290	0.276377016	2.3342209	20	—	—
521456 2015 OY ₉₀	17.0	X	358.25557	339.38535	60.43358	9.62487	0.0530431	0.23680387	2.5874791	20	12 22.8	20.3
521457 2015 OG ₉₁	16.1	X	31.33709	27.86762	280.27030	24.70938	0.0512585	0.22103365	2.7091338	20	9 20.6	20.3
521458 2015 OJ ₉₁	16.4	X	276.61352	241.18260	113.02263	12.39543	0.1407946	0.17464459	3.1698055	20	6 8.0	21.0
521459 2015 OY ₉₁	17.4	X	332.94857	36.35156	339.16175	5.71783	0.0358425	0.22368845	2.6876560	20	10 9.6	20.8
521460 2015 OP ₉₁	16.0	X	317.68853	81.96403	258.50476	9.91318	0.0862947	0.18377017	3.0639808	20	7 22.7	20.0
521461 2015 OQ ₉₁	17.8	X	37.07038	196.55284	193.31969	7.54024	0.1203597	0.26239655	2.4163730	20	—	—
521462 2015 OS ₉₁	16.4	X	250.67077	187.21979	190.71895	10.99211	0.0744837	0.17612878	3.1519731	20	6 14.3	21.1
521463 2015 OY ₉₁	16.5	X	145.95388	278.87097	263.99874	8.36883	0.0742643	0.21911488	2.7249266	20	9 12.1	20.7
521464 2015 OW ₉₁	17.2	X	340.27443	175.11356	131.67271	11.23819	0.0659336	0.19188184	2.9770089	20	7 16.6	21.0
521465 2015 OY ₉₁	17.3	X	320.26567	35.16077	339.00491	5.58981	0.0291825	0.21694177	2.7430934	20	9 19.6	20.7
521466 2015 OA ₉₂	17.2	X	348.30792	283.57886	52.22316	4.35498	0.1015043	0.20973361	2.8055889	20	9 12.8	20.4
521467 2015 OD ₉₂	16.1	X	164.93254	295.17601	190.93324	15.20345	0.0465445	0.18284942	3.0742581	20	7 21.1	20.9
521468 2015 OF ₉₂	16.1	X	277.22358	144.23752	246.22867	9.79022	0.1033329	0.18865726	3.1018355	20	7 27.2	20.4
521469 2015 OH ₉₂	17.3	X	209.06207	246.75203	234.61969	11.93168	0.0184048	0.20350864	2.8625131	20	9 7.4	21.6
521470 2015 OK ₉₂	16.3	X	209.49899	137.59119	297.30296	12.20696	0.0335576	0.17427749	3.1742553	20	7 12.1	20.8
521471 2015 OM ₉₂	16.2	X	266.17233	143.35881	238.21615	8.25000	0.0494507	0.17573410	3.1566906	20	7 10.0	20.7
521472 2015 OT ₉₂	16.7	X	356.40136	279.61481	87.86094	7.32725	0.0553045	0.21656097	2.7463081	20	11 5.9	20.3
521473 2015 OV ₉₂	16.0	X	313.71121	118.76501	125.89676	16.45694	0.0993293	0.17804962	3.1292626	20	7 22.7	19.9
521474 2015 OW ₉₂	17.5	X	36.78806	288.98008	76.07465	10.11793	0.1222045	0.23767227	2.5811725	20	—	—
521475 2015 OY ₉₂	16.0	X	90.47756	138.82065	76.39753	11.25433	0.0574310	0.18814980	3.0162469	20	8 24.8	20.5
521476 2015 OZ ₉₂	15.9	X	69.55273	99.37445	117.06133	17.97353	0.1060394	0.17725216	3.1386414	20	8 1.9	20.2
521477 2015 OD ₉₃	16.8	X	59.77150	286.77247	22.55218	11.14180	0.0908743	0.22284074	2.6944677	20	11 17.3	20.6
521478 2015 OH ₉₃	16.3	X	11.25105	224.61062	52.02671	13.62258	0.1258510	0.17836642	3.1255563	20	7 31.3	20.3
521479 2015 OS ₉₃	16.2	X	226.70462	148.10042	273.19642	5.19167	0.0476088	0.18043640	3.0161059	20	7 13.5	20.6
521480 2015 OV ₉₃	15.9	X	320.03126	36.58762	286.16880	8.01709	0.0838361	0.17884998	3.1199199	20	7 5.2	19.9
521481 2015 OW ₉₃	16.1	X	324.75217	18.88064	289.28080	7.81300	0.0867474	0.17417654	3.1754817	20	6 22.6	20.1
521482 2015 OA ₉₄	17.2	X	253.50102	347.10502	153.77220	8.02123	0.0206554	0.24316845	2.5421308	20	12 12.4	20.6
521483 2015 OC ₉₄	16.5	X	25.06860	300.35774	314.46092	9.62631	0.1181330	0.18215241	3.0820956	20	7 21.3	20.2
521484 2015 OD ₉₄	17.4	X	77.64730	304.22306	315.22480	7.24436	0.1084901	0.21587569	2.7521170	20	10 6.6	21.5
521485 2015 OE ₉₄	16.7	X	262.05179	191.74493	229.27909	1.09572	0.0914807	0.19452923	2.9499374	20	8 21.0	20.6
521486 2015 OF ₉₄	16.3	X	14.92180	297.80721	320.82234	7.78163	0.0556425	0.17458246	3.1705575	20	7 4.6	20.5
521487 2015 OG ₉₄	15.8	X	54.69996	245.09333	335.81450	16.64438	0.0517770	0.17526984	3.1622626	20	7 14.3	20.3
521488 2015 OH ₉₄	17.8	X	118.12168	62.44819	172.30591	6.21961	0.1355264	0.22941249	2.6427617	20	10 28.1	21.9
521489 2015 OK ₉₄	17.3	X	19.96865	172.35319	164.72522	6.38953	0.0376254	0.22053965	2.7131779	20	10 28.6	20.8
521490 2015 OP ₉₄	16.4	X	232.94750	260.58719	144.02961	2.60937	0.0766396	0.16722766	3.2628515	20	6 26.3	21.2
521491 2015 OR ₉₄	16.9	X	93.75222	262.17572	336.51941	4.07366	0.1071362	0.21185221	2.7868529	20	9 30.3	20.9
521492 2015 OV ₉₄	16.3	X	47.20990	263.44049	329.86653	15.76384	0.0949521	0.17683450	3.1435814	20	7 25.6	20.6
521493 2015 OX ₉₄	17.8	X	160.51857	113.42078	143.64373	14.83546	0.1122046	0.25796025	2.4439981	20	—	—
521494 2015 OB ₉₅	16.4	X	267.59573	74.09105	297.64970	15.00698	0.1509981	0.17447000	3.1719198	20	6 16.8	21.1
521495 2015 OD ₉₅	16.3	X	288.12245	213.18348	154.96778	10.03664	0.0548010	0.18717937	3.0266630	20	7 22.1	20.4
521496 2015 OF ₉₅	16.7	X	316.41138	193.83180	168.13289	8.42863	0.0762248	0.19999086	2.8959826	20	8 23.1	20.3
521497 2015 OG ₉₅	17.0	X	351.89608	211.57508	168.90865	14.11196	0.1185478	0.21659473	2.7460227	20	11 22.6	20.5
521498 2015 OH ₉₅	17.7	X	56.00954	101.30894	311.63942	6.48802	0.1070282	0.27047792	2.3679990	20	—	—
521499 2015 OJ ₉₅	17.2	X	72.10497	138.28155	171.36405	11.87083	0.0765123	0.22905901	2.6454798	20	12 5.8	21.2
521500 2015 OM ₉₅	17.4	X	6.86794	188.91170	188.11678	4.81687	0.0414911	0.22458742	2.6804791	20	12 1.6	20.8
521501 2015 OR ₉₅	17.3	X	149.36659	29.07214	201.58739	5.92672	0.0150380	0.22347193	2.6893917	20	11 21.6	21.0
521502 2015 OV ₉₅	16.5	X	48.08170	304.46364	318.42360	7.62090	0.0721937	0.18629286	3.0362573	20	8 27.3	20.7
521503 2015 OX ₉₅	17.3	X	37.04039	144.93194	197.20770	6.14169	0.0491533	0.22175944	2.7032194	20	11 27.5	20.9
521504 2015 OA ₉₆	16.2	X	358.80925	338.18054	304.96573	4.12814	0.1458910	0.17203501	3.2017801	20	7 14.3	19.8
521505 2015 OC ₉₆	16.9	X	59.90971	91.37070	179.28108	10.69794	0.1276538	0.19971818	2.8986180	20	10 4.1	20.9
521506 2015 OD ₉₆	17.1	X	27.59160	355.40849	342.87845	5.78661	0.0719294	0.21362769	2.7713903	20	11 8.5	20.7
521507 2015 OL ₉₆	17.3	X	20.51133	6.16738	15.53747	2.04338	0.1038917	0.23274962	2.6174400	20	—	—
521508 2015 ON ₉₆	17.9	X	160.55606	115.68401	152.89760	6.83719	0.1424969	0.26014256	2.4303106	20	—	—
521509 2015 OO ₉₆	16.9	X	68.08731	307.82370	353.53385	8.55323	0.1435320	0.22289560	2.6940256	20	11 23.8	21.0
521510 2015 OQ ₉₆	16.9	X	8.91670	231.05129	105.36294	3.27317	0.0732056	0.20246181	2.8723717	20	10 12.4	20.5
521511 2015 OR ₉₆	17.9	X	176.83773	108.15801	163.40969	14.50138	0.1300924	0.26879077	2.3778976	20	—	—
521512 2015 OV ₉₆	16.6	X	300.35399	243.42377	114.86821	4.14426	0.1109415	0.17120128	3.2121665	20	7 18.7	20.9
521513 2015 OX ₉₆	16.7	X	175.82406	196.67428	308.97814	8.23180	0.0587757	0.18703341	3.0282374	20	8 28.2	21.3
521514 2015 OA ₉₇	16.3	X	176.									

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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>
521521 2015 OW ₉₇	17.2	X	338.70864	265.60399	125.72549	6.34566	0.1006895	0.21866889	2.7286304	20	11 13.9	20.4
521522 2015 OD ₉₈	16.8	X	21.31275	143.06344	137.23753	9.49868	0.0281975	0.18783031	3.0196661	20	8 9.0	20.6
521523 2015 OM ₉₈	16.6	X	146.11010	140.17511	344.48498	9.96638	0.0492145	0.16709241	3.2646120	20	7 1.2	21.5
521524 2015 OP ₉₈	17.0	X	61.58982	166.35566	114.15069	6.16003	0.1328530	0.21694230	2.7430890	20	10 24.3	20.9
521525 2015 OW ₉₈	16.3	X	334.82083	314.86684	352.17629	15.47705	0.0568783	0.17508390	3.1645010	20	7 12.2	20.7
521526 2015 OZ ₉₈	17.4	X	170.76940	188.11300	94.88764	8.29467	0.1086391	0.27740449	2.3284150	20	—	—
521527 2015 OE ₉₉	16.3	X	344.95235	339.53180	40.90379	12.11801	0.1228512	0.18945907	3.0023348	20	11 1.1	19.7
521528 2015 OL ₉₉	17.4	X	17.34298	207.92460	95.61561	3.19521	0.0555154	0.20701031	2.8301410	20	9 9.9	20.9
521529 2015 OR ₉₉	16.6	X	273.16291	157.96737	262.49059	9.26166	0.0521854	0.19831736	2.9122516	20	9 5.8	20.8
521530 2015 OW ₉₉	16.4	X	322.95091	52.87444	280.75034	7.94787	0.0974634	0.17777008	3.1325423	20	7 21.9	20.3
521531 2015 OX ₉₉	16.3	X	48.97988	295.43110	305.48653	11.33978	0.0620362	0.17514534	3.1637609	20	7 29.6	20.7
521532 2015 OB ₁₀₀	16.5	X	294.63326	63.07244	301.11507	0.83228	0.0790789	0.17596494	3.1539293	20	7 22.9	20.6
521533 2015 OC ₁₀₀	17.5	X	3.82660	74.63516	296.10322	3.69262	0.1657313	0.21866456	2.7286665	20	12 2.1	20.6
521534 2015 OK ₁₀₀	17.6	X	180.92737	271.65214	265.65753	2.65984	0.0375002	0.21634417	2.7481425	20	10 18.9	21.4
521535 2015 OL ₁₀₀	16.6	X	201.66264	293.46165	175.10897	10.47920	0.0194917	0.18608253	3.0385449	20	8 14.1	21.0
521536 2015 OO ₁₀₀	17.0	X	92.20973	115.84070	167.58700	14.92396	0.1013594	0.23087771	2.6315687	20	11 29.5	21.2
521537 2015 OP ₁₀₀	16.5	X	250.53201	107.62739	294.61363	7.85879	0.0645908	0.17356089	3.1829865	20	7 16.0	21.0
521538 2015 OQ ₁₀₀	17.1	X	84.24910	328.00687	267.61474	4.38745	0.0317046	0.19584386	2.9367214	20	9 2.4	21.2
521539 2015 OU ₁₀₀	16.7	X	2.23315	83.92365	193.94659	8.78871	0.0529113	0.17429884	3.1739961	20	7 8.8	21.1
521540 2015 OX ₁₀₀	16.3	X	258.93368	86.13450	305.07625	7.26575	0.1431923	0.16987381	3.2288789	20	7 1.8	20.9
521541 2015 OD ₁₀₁	16.3	X	287.24132	103.42506	255.37214	7.87745	0.0888067	0.17266522	3.1939846	20	7 3.3	20.6
521542 2015 OF ₁₀₁	16.8	X	173.97253	261.74324	285.74433	11.42720	0.1251067	0.22222687	2.6994275	20	10 15.7	21.3
521543 2015 OG ₁₀₁	16.0	X	256.38983	155.71523	249.18259	8.05363	0.0233494	0.18190523	3.0848870	20	7 30.5	20.4
521544 2015 OK ₁₀₁	16.0	X	314.44631	63.56401	285.94514	8.59491	0.0617562	0.18307881	3.0716896	20	8 2.1	20.0
521545 2015 OM ₁₀₁	16.5	X	26.90467	289.76479	320.82358	14.46981	0.0310622	0.16887274	3.2416268	20	7 10.7	21.0
521546 2015 ON ₁₀₁	16.6	X	313.36568	81.02443	252.95634	4.42588	0.1084909	0.17389236	3.1789404	20	7 6.3	20.7
521547 2015 OR ₁₀₁	16.1	X	91.65826	240.85714	317.38837	8.63547	0.0425298	0.17624734	3.1505594	20	7 28.4	20.6
521548 2015 OZ ₁₀₁	16.4	X	51.73686	11.06588	316.28105	10.32449	0.0734293	0.21598019	2.7512292	20	11 26.9	20.4
521549 2015 OF ₁₀₂	16.7	X	166.68014	307.65883	291.84663	11.29504	0.0435677	0.22808912	2.6529740	20	12 22.5	20.5
521550 2015 OH ₁₀₂	16.3	X	25.77341	25.21718	280.82681	8.53016	0.0335244	0.18479029	3.0526941	20	9 12.7	20.6
521551 2015 OK ₁₀₂	16.7	X	310.53094	96.56127	288.57853	6.70299	0.1405854	0.18464033	3.0543467	20	9 3.2	20.5
521552 2015 OU ₁₀₂	17.1	X	61.47102	81.66468	241.81576	13.37942	0.1980153	0.22396178	2.6854688	20	12 21.6	21.2
521553 2015 OP ₁₀₂	16.4	X	289.80614	75.28112	327.29702	17.97063	0.0817218	0.17967726	3.1103360	20	9 1.0	20.5
521554 2015 OX ₁₀₂	16.6	X	198.45520	275.90376	223.18681	9.02775	0.0187319	0.18575778	3.0420852	20	9 16.6	21.1
521555 2015 OY ₁₀₂	16.6	X	334.90801	217.17423	216.55454	8.67822	0.0492205	0.22491931	2.6778416	20	12 29.6	20.1
521556 2015 OC ₁₀₃	17.2	X	44.56853	130.44710	166.78520	12.86511	0.0482294	0.21410314	2.7672859	20	10 10.7	20.9
521557 2015 OH ₁₀₃	16.3	X	145.97295	197.27673	299.46541	7.35589	0.0193600	0.17590651	3.1546276	20	7 13.9	20.7
521558 2015 OU ₁₀₃	16.3	X	357.25464	287.86455	57.95143	15.54305	0.1654960	0.20431015	2.8550217	20	10 20.1	19.6
521559 2015 OW ₁₀₃	16.3	X	299.94106	278.65090	96.25737	16.78740	0.2906364	0.17857440	3.1231290	20	7 12.7	20.0
521560 2015 OY ₁₀₃	15.8	X	252.27915	97.15356	38.76473	26.18080	0.2307141	0.18251391	3.0780245	20	10 24.5	20.3
521561 2015 OG ₁₀₄	16.8	X	294.20305	246.24738	151.15672	2.68460	0.0859719	0.19893060	2.9062635	20	9 6.1	20.5
521562 2015 OM ₁₀₄	16.0	X	50.93512	313.10452	272.98551	10.05300	0.0813762	0.18565204	3.0432402	20	7 15.3	20.1
521563 2015 OO ₁₀₄	16.5	X	320.29095	331.43544	333.73031	3.42155	0.1222442	0.17364838	3.1819173	20	6 7.1	20.5
521564 2015 OR ₁₀₄	17.4	X	110.57218	292.43105	342.39964	13.25053	0.1456290	0.24490300	2.5295123	20	12 8.5	21.6
521565 2015 OT ₁₀₄	16.4	X	4.30435	178.12448	89.09698	3.50805	0.1384244	0.17877176	3.1208299	20	7 2.4	19.8
521566 2015 OU ₁₀₄	16.1	X	46.66600	89.35160	153.08445	9.08286	0.0297049	0.18490666	3.0514132	20	7 23.9	20.3
521567 2015 OW ₁₀₄	16.0	X	162.14616	196.33249	296.61302	8.98323	0.0326991	0.17861723	3.1226297	20	7 28.4	20.6
521568 2015 OA ₁₀₅	16.0	X	197.24666	303.08376	164.27444	17.27138	0.1135626	0.17609686	3.1523540	20	7 31.7	21.1
521569 2015 OG ₁₀₅	16.4	X	123.51842	353.74332	187.42294	12.14606	0.0647361	0.18584684	3.0411133	20	8 13.7	21.0
521570 2015 OJ ₁₀₅	16.7	X	162.01918	252.11437	297.66199	8.31924	0.0911897	0.21164466	2.7886746	20	10 7.1	21.2
521571 2015 OO ₁₀₅	15.8	X	32.97145	249.43754	356.08841	13.03487	0.1132783	0.17038099	3.2224680	20	7 22.9	20.1
521572 2015 PQ ₅	18.7	X	191.42211	147.34569	135.90490	4.48468	0.1892434	0.30190353	2.2006818	20	—	—
521573 2015 PQ ₃₀	18.1	X	108.36209	144.25005	208.47741	2.99272	0.1568417	0.27766181	3.2369762	20	—	—
521574 2015 PQ ₅₄	17.6	X	93.48351	234.53714	128.37598	9.56831	0.1106012	0.26872328	2.3782957	20	—	—
521575 2015 PR ₅₇	18.4	X	131.69663	143.99867	201.62526	1.31127	0.2437595	0.28506867	2.2864922	20	1 2.9	21.2
521576 2015 PX ₇₀	17.6	X	328.39294	348.59520	120.18200	7.41500	0.0499667	0.27714052	2.3298933	20	—	—
521577 2015 PK ₁₃₀	16.9	X	330.91263	285.10565	133.73547	10.35088	0.0651481	0.24244913	2.5471565	20	12 12.6	20.1
521578 2015 PU ₂₀₃	17.2	X	86.33007	218.89882	35.67405	8.77527	0.1104107	0.21930320	2.7233664	20	10 15.9	21.2
521579 2015 PK ₂₁₂	16.6	X	167.39160	336.58493	240.10161	14.57181	0.0023198	0.23540805	2.5976971	20	11 28.9	19.9
521580 2015 PD ₂₂₄	16.8	X	101.61827	77.68439	239.64867	10.98961	0.1900327	0.25670874	2.4519349	20	—	—
521581 2015 PG ₂₈₃	16.7	X	20.48901	223.17595	58.31064	9.31804	0.1902804	0.19573240	2.9378361	20	9 3.6	20.2
521582 2015 PS ₂₈₆	17.1	X	87.25196	272.22072	88.07736	8.08007	0.1434793	0.26646916	2.3916892	20	—	—
521583 2015 PT ₂₈₉	17.2	X	58.09995	277.71968	111.81889	13.26856	0.1260398	0.26164462	2.4210003	20	—	—
521584 2015 PZ ₃₀₁	17.6	X	138.20914	225.89545	95.28408	6.09721	0.1862443	0.27924874	2.3181520	20	—	—
521585 2015 PD ₃₀₂	17.4	X	186.53395	216.29389	49.17178	7.17999	0.1187041	0.27854455	2.3220573	20	—	—
521586 2015 PO ₃₀₉	17.3	X	91.01520	245.86466	103.32962	10.69043	0.2836381	0.26288053	2.4134063	20	—	—
521587 2015 PB ₃₁₁	17.1	X	55.89889	151.79154	219.36514	5.43830	0.2727542	0.23859929	2.5744825	20	—	—
521588 2015 PD ₃₁₄	17.2	X	73.74346	201.72061	156.35808	14.16261	0.1408705	0.24721881	2.5142881	20	—	—
521589 2015 PB ₃₁₆	17.0	X	149.48736	350.49589	229.24821	3.96816	0.1310297	0.23324428	2.6137380	20	11 7.2	20.9
521590 2015 PS ₃₁₆	16.3	X	318.53717	239.77687	165.53843	12.20482	0.0594562	0.19797521	2.9156061	20	10 24.0	20.1
521591 2015 PV ₃₁₆	16.9	X	36.65861	252.59374	67.39422	10.58847	0.0955282	0.23070510	2.6328811	20	11 8.5	20.3
521592 2015 PW ₃₁₆	17.1	X	299.76829	158.74964	217.73750	1.71704	0.1578851	0.19695573	2.9256585	20	8 6.2	20.7
521593 2015 PY ₃₁₆	17.5	X	188.63273	75.16164	136.97824	14.82475	0.0507613	0.25834883	2.4415468</			

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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>
521601 2015 <i>PW</i> ₃₁₇	16.6 ^m	X	25.80765	77.89179	175.57550	10.72787	0.0549812	0.17715058	3.1398411	20	7 11.4	20.9
521602 2015 <i>PB</i> ₃₁₈	16.2	X	311.10274	149.72080	180.24138	10.06012	0.0594588	0.17393894	3.1783728	20	7 2.9	20.6
521603 2015 <i>PA</i> ₃₁₉	16.9	X	266.18158	28.77851	359.30081	2.65154	0.0535583	0.17887282	3.1196543	20	7 20.1	21.1
521604 2015 <i>PO</i> ₃₁₉	16.5	X	308.03291	216.30405	138.55192	4.33802	0.0710943	0.17937609	3.1138165	20	7 30.9	20.4
521605 2015 <i>PP</i> ₃₁₉	16.4	X	303.52489	214.14213	144.93775	16.72768	0.1872712	0.17655672	3.1468778	20	7 13.5	20.4
521606 2015 <i>PS</i> ₃₁₉	16.1	X	160.44739	264.87012	242.20423	11.15994	0.0686462	0.18511681	3.0491034	20	8 10.2	20.9
521607 2015 <i>PX</i> ₃₁₉	17.7	X	341.73246	355.02574	117.74389	6.09635	0.0497966	0.27545206	2.3394048	20	—	—
521608 2015 <i>PZ</i> ₃₁₉	16.6	X	280.57257	87.78273	345.39532	21.81799	0.0125108	0.23003434	2.6379968	20	10 8.1	20.4
521609 2015 <i>PA</i> ₃₂₀	16.2	X	359.29355	259.91388	16.55832	10.29781	0.1000418	0.18812951	3.0164636	20	7 7.3	20.1
521610 2015 <i>PC</i> ₃₂₀	16.4	X	308.47589	292.51170	86.78395	11.24438	0.1291591	0.19420798	2.9531897	20	9 3.4	20.1
521611 2015 <i>PE</i> ₃₂₀	16.1	X	300.42577	220.31050	158.17341	8.28377	0.0564687	0.17826393	3.1267541	20	8 21.2	20.2
521612 2015 <i>PH</i> ₃₂₀	15.9	X	306.01967	198.76934	157.60051	9.84827	0.0649084	0.16926106	3.2366669	20	7 28.9	20.4
521613 2015 <i>PK</i> ₃₂₀	16.8	X	308.29580	241.08109	165.13291	11.59764	0.0570588	0.19692460	2.9259668	20	10 13.4	20.6
521614 2015 <i>PN</i> ₃₂₀	17.0	X	70.57305	214.07863	87.53638	4.90011	0.0528654	0.21368327	2.7709096	20	11 17.2	20.8
521615 2015 <i>PO</i> ₃₂₀	17.7	X	355.13050	322.03558	112.00697	5.34245	0.1528081	0.23531425	2.5983873	20	—	—
521616 2015 <i>PR</i> ₃₂₀	17.1	X	33.61436	243.30862	108.80061	5.66828	0.1241471	0.22069199	2.7119291	20	12 15.9	20.8
521617 2015 <i>PV</i> ₃₂₀	16.8	X	123.95285	119.09377	121.26790	3.11764	0.0150029	0.20302922	2.8670176	20	10 30.3	20.7
521618 2015 <i>PW</i> ₃₂₀	17.6	X	140.53310	161.91379	156.55872	9.13859	0.1337375	0.26521388	2.3992300	20	—	—
521619 2015 <i>PB</i> ₃₂₁	16.2	X	335.88920	203.89429	154.78856	16.05818	0.1192863	0.18128554	3.0919131	20	9 17.4	19.9
521620 2015 <i>PP</i> ₃₂₁	16.5	X	349.55570	215.13678	166.89093	17.67184	0.1322959	0.19798615	2.9154986	20	11 17.6	20.3
521621 2015 <i>PJ</i> ₃₂₁	16.8	X	354.25632	271.81572	175.19060	21.94657	0.0690497	0.23027109	2.6361884	20	—	—
521622 2015 <i>PK</i> ₃₂₁	16.7	X	124.39631	202.47654	348.61018	12.95824	0.0828382	0.19987375	2.8971137	20	9 3.1	21.0
521623 2015 <i>PN</i> ₃₂₁	16.5	X	189.03282	120.73463	333.85591	11.71069	0.0369661	0.17830517	3.1262720	20	7 14.6	21.2
521624 2015 <i>PQ</i> ₃₂₁	16.4	X	228.30034	7.68465	86.75701	11.79767	0.0657775	0.19310530	2.9644213	20	8 31.1	20.9
521625 2015 <i>PV</i> ₃₂₁	16.9	X	61.82985	354.85552	288.67322	3.34158	0.0347926	0.21143248	2.7905400	20	10 8.7	20.7
521626 2015 <i>PC</i> ₃₂₂	17.4	X	346.06681	14.18535	349.79695	3.90479	0.0828943	0.21141087	2.7907301	20	10 13.7	20.8
521627 2015 <i>PN</i> ₃₂₂	17.1	X	47.97911	212.70881	27.33822	4.14596	0.1398106	0.18760273	3.0221077	20	8 10.3	21.0
521628 2015 <i>PP</i> ₃₂₂	17.1	X	9.00805	200.03439	111.61349	3.14795	0.0407784	0.19793405	2.9160102	20	9 5.7	20.9
521629 2015 <i>PZ</i> ₃₂₂	16.7	X	167.88099	38.91203	124.68231	11.11573	0.0530153	0.19923956	2.9032582	20	9 18.2	21.1
521630 2015 <i>PE</i> ₃₂₃	16.8	X	187.93105	349.76854	118.61001	10.41897	0.0746290	0.17420291	3.1751612	20	7 26.8	21.6
521631 2015 <i>QW</i> ₁₄	17.8	X	109.73065	117.78981	217.00609	4.02333	0.1023619	0.26499119	2.4005739	20	—	—
521632 2015 <i>QZ</i> ₁₄	16.5	X	336.39802	236.46576	174.51616	10.94053	0.1201817	0.19693013	2.9259121	20	11 30.4	20.1
521633 2015 <i>QD</i> ₁₅	17.3	X	132.24418	34.14046	227.68531	2.85430	0.1496189	0.25513900	2.4619817	20	12 15.9	21.3
521634 2015 <i>QG</i> ₁₆	16.5	X	340.77415	334.45418	342.99168	7.58645	0.0733331	0.17826369	3.1267570	20	8 1.6	20.5
521635 2015 <i>QH</i> ₁₆	16.7	X	37.68003	298.23877	319.83369	3.83251	0.0957369	0.18011289	3.1053188	20	8 10.2	20.5
521636 2015 <i>QJ</i> ₁₆	16.2	X	13.17542	93.80948	181.98754	9.45578	0.0656113	0.17468301	3.1693407	20	7 22.4	20.5
521637 2015 <i>QK</i> ₁₆	17.4	X	39.32327	120.13051	188.40670	4.17323	0.0454937	0.20860825	2.8156699	20	10 14.7	21.2
521638 2015 <i>QL</i> ₁₆	17.8	X	120.92571	60.98630	201.04512	3.81073	0.0605529	0.23161884	2.6259521	20	11 29.6	21.5
521639 2015 <i>QU</i> ₁₆	16.6	X	41.99180	276.23979	334.04826	6.92214	0.0448970	0.17697599	3.1419057	20	7 31.4	20.8
521640 2015 <i>QV</i> ₁₆	16.8	X	13.06587	134.02631	210.41522	2.90090	0.1012555	0.21453753	2.7635492	20	11 2.4	20.1
521641 2015 <i>QW</i> ₁₆	16.4	X	317.84955	138.29333	186.22895	8.14668	0.0783493	0.17239351	3.1973396	20	7 3.5	20.7
521642 2015 <i>QX</i> ₁₇	16.4	X	245.42857	244.08028	190.09657	10.74900	0.1360699	0.18196899	3.0841664	20	8 7.7	21.2
521643 2015 <i>QY</i> ₁₇	16.8	X	303.11300	213.10212	184.36647	10.75139	0.0713187	0.19823657	2.9130428	20	9 20.2	20.4
521644 2015 <i>QP</i> ₁₇	16.9	X	304.36887	187.73094	207.26486	2.83210	0.0973536	0.19733573	2.9219015	20	9 15.7	20.6
521645 2015 <i>QR</i> ₁₇	16.8	X	231.33729	126.07115	323.17749	15.50317	0.1859265	0.17894760	3.1187851	20	8 9.3	21.6
521646 2015 <i>QS</i> ₁₇	16.4	X	278.72571	262.42333	156.91105	10.51843	0.0431593	0.18318803	3.0704685	20	9 17.4	20.6
521647 2015 <i>QB</i> ₁₈	16.3	X	348.40346	259.85223	77.73544	10.60109	0.1088231	0.18390778	3.0624521	20	9 14.9	20.2
521648 2015 <i>QJ</i> ₁₈	16.4	X	349.01426	190.71418	151.95207	8.70315	0.0478301	0.18068100	3.0988060	20	9 15.8	20.5
521649 2015 <i>QK</i> ₁₈	15.9	X	9.51631	286.85806	35.14711	27.07778	0.0568064	0.18269693	3.0759685	20	9 30.9	20.3
521650 2015 <i>QY</i> ₁₈	17.0	X	62.24999	218.59402	98.86261	6.51840	0.1854304	0.22191709	2.7019390	20	12 14.4	21.1
521651 2015 <i>QA</i> ₁₉	17.1	X	44.40781	238.86751	137.27991	12.86406	0.1320383	0.23467365	2.6031138	20	—	—
521652 2015 <i>QB</i> ₁₉	16.3	X	63.79704	208.26342	86.28201	10.54883	0.0783352	0.19872076	2.9083091	20	11 3.6	20.5
521653 2015 <i>RY</i> ₅	17.0	X	19.78960	234.25109	150.03105	9.81128	0.1358418	0.24751625	2.5122735	20	—	—
521654 2015 <i>RS</i> ₁₆	16.9	X	71.32329	59.19652	241.71299	5.35395	0.1649026	0.22644926	2.6657666	20	12 2.1	20.8
521655 2015 <i>RL</i> ₃₃	16.6	X	356.16755	304.49282	93.11767	15.80433	0.0920475	0.21863457	2.7289159	20	12 17.1	19.8
521656 2015 <i>RG</i> ₄₀	16.7	X	343.04310	112.62358	202.63903	4.94770	0.1998575	0.18238818	3.0794389	20	7 26.9	19.9
521657 2015 <i>RU</i> ₆₅	17.6	X	188.38665	237.24871	20.23613	2.68440	0.1521791	0.26875048	2.3781353	20	—	—
521658 2015 <i>RT</i> ₆₆	17.8	X	171.18956	202.12386	51.63920	1.97121	0.1436178	0.25548912	2.4597319	20	—	—
521659 2015 <i>RB</i> ₈₄	17.0	X	80.45127	154.68941	209.79342	9.93001	0.1776455	0.25631639	2.4544365	20	—	—
521660 2015 <i>RM</i> ₉₃	17.2	X	37.69477	252.09441	157.89264	12.71003	0.1801963	0.25842641	2.4410581	20	—	—
521661 2015 <i>RC</i> ₉₉	17.6	X	72.97877	164.98437	207.28123	4.48915	0.1148760	0.26011422	2.4304871	20	—	—
521662 2015 <i>RJ</i> ₁₀₃	17.6	X	82.61530	113.66574	247.35050	5.48596	0.1498435	0.26329205	2.4108909	20	—	—
521663 2015 <i>RC</i> ₁₀₉	17.4	X	100.52442	302.56752	51.38743	8.68210	0.1901567	0.26184611	2.4197582	20	—	—
521664 2015 <i>RK</i> ₁₁₅	17.1	X	93.39861	305.25155	50.74698	6.18194	0.1799185	0.26151693	2.4217883	20	—	—
521665 2015 <i>RB</i> ₁₁₆	17.6	X	125.66302	224.08793	118.98083	6.35630	0.2343886	0.27546287	2.3393435	20	—	—
521666 2015 <i>RV</i> ₁₄₂	17.7	X	102.14082	185.10616	94.02927	1.99300	0.1108908	0.23239727	2.6200849	20	12 3.1	21.6
521667 2015 <i>RB</i> ₂₀₀	17.8	X	118.17639	210.49270	115.11015	3.52424	0.0544352	0.25531218	2.4608682	20	—	—
521668 2015 <i>RU</i> ₂₀₃	16.7	X	3.74166	2.07107	27.11166	13.82397	0.0650176	0.22160146	2.7045041	20	12 12.2	20.4
521669 2015 <i>RZ</i> ₂₀₈	17.7	X	159.66707	163.15866	147.18466	3.44423	0.2076988	0.27843338	2.3226754	20	—	—
521670 2015 <i>RP</i> ₂₁₃	18.0	X	127.04631	141.66911	175.64330	4.80304	0.1573570	0.26795299	2.3828515	20	—	—
521671 2015 <i>RZ</i> ₂₃₅	16.7	X	137.69342	122.77768	137.34443	11.93014	0.0148584	0.21421699	2.7663053	20	12 12.9	20.7

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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>
521681 2015 RR ₂₆₁	17.4	X	343.11861	29.77551	352.41969	2.67949	0.0989696	0.21496359	2.7598964	20	11 4.5	20.7
521682 2015 RS ₂₆₁	17.5	X	63.56225	300.22243	4.44395	2.99731	0.0737429	0.22236660	2.6982966	20	11 15.4	21.3
521683 2015 RU ₂₆₁	15.8	X	0.58469	316.97803	339.71050	13.54505	0.0177590	0.17117633	3.2124786	20	8 3.6	20.3
521684 2015 RY ₂₆₁	16.8	X	1.20908	332.02171	13.02110	5.93058	0.0723035	0.20466062	2.8517615	20	10 10.6	20.2
521685 2015 RZ ₂₆₁	17.2	X	38.79369	192.26207	146.00628	5.58357	0.0751715	0.22253369	2.6969457	20	11 29.2	20.8
521686 2015 RC ₂₆₂	17.9	X	19.70701	130.08506	256.11387	2.34265	0.0632489	0.23898766	2.5716927	20	—	—
521687 2015 RD ₂₆₂	16.7	X	123.29320	203.65782	324.75125	4.44523	0.0288863	0.17430926	3.1738696	20	7 27.4	21.3
521688 2015 RH ₂₆₂	17.3	X	23.89748	25.74653	301.16578	3.40503	0.0716384	0.21250245	2.7811650	20	10 19.8	20.8
521689 2015 RL ₂₆₂	17.2	X	233.38246	189.92058	306.17065	1.57628	0.1224066	0.21755869	2.7379053	20	10 19.2	20.9
521690 2015 RM ₂₆₂	16.5	X	269.99186	219.18071	169.00355	8.59680	0.0746042	0.17641582	3.1485532	20	7 19.9	21.1
521691 2015 RT ₂₆₂	16.2	X	354.67792	89.87948	218.10102	8.76125	0.1059407	0.17996222	3.1070517	20	8 6.1	20.2
521692 2015 RY ₂₆₂	16.8	X	15.45532	102.16570	217.00899	10.62160	0.1272899	0.19688741	2.9263353	20	9 30.6	20.4
521693 2015 RZ ₂₆₂	16.4	X	42.38584	295.43902	340.46559	10.70477	0.1322033	0.18922860	3.0047721	20	9 14.2	20.4
521694 2015 RB ₂₆₃	16.8	X	41.86065	20.67110	314.59050	5.41640	0.0273214	0.21584303	2.7523946	20	11 18.1	20.5
521695 2015 RD ₂₆₃	17.1	X	152.14616	347.31233	275.31012	3.15234	0.1219218	0.24556076	2.5255932	20	—	—
521696 2015 RG ₂₆₃	16.3	X	184.69270	307.63820	187.54156	22.38219	0.0918430	0.17833992	3.1258659	20	8 21.6	21.4
521697 2015 RH ₂₆₃	16.3	X	171.28410	145.65374	349.78698	10.76938	0.0496733	0.17131112	3.2107933	20	8 14.1	21.1
521698 2015 RO ₂₆₃	16.5	X	344.13284	228.63779	112.83406	10.00464	0.0777502	0.18355998	3.0663194	20	9 10.4	20.5
521699 2015 RP ₂₆₃	16.1	X	352.62923	237.83832	83.58247	10.28390	0.1466351	0.18100240	3.0951367	20	8 30.8	19.8
521700 2015 RT ₂₆₃	16.2	X	22.34043	198.14611	101.41623	10.57870	0.1194692	0.18325513	3.0697190	20	9 19.6	20.2
521701 2015 RU ₂₆₃	16.8	X	68.30485	218.15317	99.09704	13.34584	0.1955261	0.22374865	2.6871739	20	12 21.6	20.9
521702 2015 RV ₂₆₃	16.0	X	338.73543	238.05269	94.90137	14.62286	0.1866794	0.17671379	3.1450128	20	8 17.7	19.5
521703 2015 RW ₂₆₃	16.8	X	345.03687	347.85656	30.75506	6.55161	0.0820857	0.21087158	2.7954862	20	11 1.2	20.1
521704 2015 RZ ₂₆₃	16.7	X	114.74041	228.86166	313.95729	11.06286	0.0300476	0.18404306	3.0609513	20	8 4.7	21.0
521705 2015 RA ₂₆₄	17.1	X	7.20165	21.19109	348.72347	5.88249	0.0411244	0.22458177	2.6805241	20	11 20.4	20.6
521706 2015 RF ₂₆₄	17.6	X	86.89874	100.64335	177.94508	5.41573	0.0264172	0.22078366	2.7111784	20	11 6.6	21.4
521707 2015 RM ₂₆₄	16.8	X	2.73295	201.87150	126.17058	2.98182	0.0648371	0.19952177	2.9005200	20	9 20.3	20.4
521708 2015 RO ₂₆₄	17.6	X	161.93379	217.10352	6.58839	5.93799	0.1250013	0.23697913	2.5862033	20	11 23.3	21.7
521709 2015 RP ₂₆₄	16.5	X	281.73865	27.52875	355.70123	10.14077	0.0451913	0.18076614	3.0978329	20	8 7.4	20.9
521710 2015 RV ₂₆₄	17.1	X	305.07719	264.11435	130.25920	2.96874	0.0706673	0.19945155	2.9012007	20	9 21.0	20.7
521711 2015 RL ₂₆₅	15.9	X	214.02893	107.74482	34.27984	9.84314	0.0425392	0.18838121	3.0137762	20	10 11.8	20.2
521712 2015 RY ₂₆₅	17.4	X	79.46707	162.61647	162.84216	5.62330	0.0297222	0.22158244	2.7046588	20	12 25.4	21.3
521713 2015 RU ₂₆₆	17.3	X	74.17632	52.12764	275.34219	2.11274	0.0891583	0.21967629	2.7202820	20	12 27.8	21.0
521714 2015 RY ₂₆₆	16.6	X	275.37980	24.63280	46.03065	6.75820	0.0459692	0.17961392	3.1110671	20	9 27.9	20.9
521715 2015 RZ ₂₆₆	17.8	X	333.75310	252.71770	214.10811	1.94409	0.0756664	0.23193040	2.6235998	20	—	—
521716 2015 RA ₂₆₇	16.6	X	269.33497	230.07425	213.39726	17.65222	0.0547704	0.18166863	3.0875648	20	9 29.9	20.9
521717 2015 RD ₂₆₇	16.8	X	284.40032	78.19481	21.47831	5.05185	0.0687385	0.19693965	2.9258170	20	11 12.4	20.6
521718 2015 RE ₂₆₇	16.6	X	286.07171	127.41418	33.81494	22.34954	0.0382249	0.23623063	2.5916633	20	—	—
521719 2015 RO ₂₆₇	17.4	X	286.71884	70.82462	63.70278	5.01713	0.0687369	0.21744479	2.7388613	20	—	—
521720 2015 RP ₂₆₇	16.7	X	105.93688	47.00466	207.14430	8.96049	0.0976096	0.18808434	3.0169466	20	10 29.6	21.1
521721 2015 RA ₂₆₈	16.9	X	337.22668	178.93870	321.25865	3.96201	0.1431855	0.24457261	2.5323914	20	—	—
521722 2015 RJ ₂₆₈	17.0	X	275.61588	191.88081	282.09683	4.15180	0.0319189	0.20571990	2.8419636	20	11 25.1	20.9
521723 2015 RV ₂₆₈	16.8	X	79.90699	23.00996	307.22903	4.01602	0.0719585	0.21795629	2.7345746	20	—	—
521724 2015 RX ₂₆₈	17.0	X	89.90025	233.17593	72.48258	15.11860	0.0647990	0.22753091	2.6573113	20	12 17.2	20.7
521725 2015 RC ₂₆₉	17.7	X	356.66274	197.56065	188.40701	6.23240	0.0992864	0.22160646	2.7044634	20	12 4.5	21.0
521726 2015 RH ₂₆₉	16.8	X	62.27581	49.93034	212.24288	1.24367	0.0797427	0.19625725	2.9325960	20	9 17.5	20.9
521727 2015 RJ ₂₆₉	17.7	X	295.35690	85.65172	350.79128	4.42697	0.1028626	0.21104921	2.7939174	20	10 28.4	21.0
521728 2015 RS ₂₆₉	16.3	X	12.36232	34.92398	245.90429	4.64053	0.0537141	0.17292407	3.1907963	20	7 27.4	20.6
521729 2015 RT ₂₆₉	16.4	X	214.62840	108.29397	344.70227	8.59130	0.0476742	0.17393026	3.1784785	20	8 10.2	21.0
521730 2015 RX ₂₆₉	17.5	X	318.41576	280.84037	187.63996	8.60980	0.1207134	0.23877158	2.5732440	20	—	—
521731 2015 RB ₂₇₀	16.7	X	55.17887	253.67710	2.83410	10.40345	0.0707455	0.18384844	3.0631111	20	9 1.2	20.9
521732 2015 RF ₂₇₀	17.3	X	39.97147	155.02271	172.52736	6.13076	0.0161338	0.21524155	2.7575198	20	11 7.4	21.0
521733 2015 RS ₂₇₀	16.3	X	14.08973	254.71898	7.08682	10.07349	0.0367852	0.15848318	3.3817949	20	7 6.2	21.1
521734 2015 RV ₂₇₀	17.3	X	82.93836	294.79052	357.29729	5.69881	0.0454447	0.21759715	2.7375827	20	11 17.3	21.1
521735 2015 RW ₂₇₀	16.6	X	146.72585	171.63495	7.12302	13.32315	0.0816577	0.18453601	3.0554977	20	9 11.8	21.2
521736 2015 RD ₂₇₁	17.7	X	132.52079	352.24598	237.68775	2.58509	0.1381089	0.21863508	2.7289117	20	11 1.4	22.0
521737 2015 RK ₂₇₁	16.3	X	203.11845	136.06705	352.51197	10.19000	0.0896430	0.18594501	3.0400428	20	9 7.1	20.9
521738 2015 RN ₂₇₁	16.8	X	133.52532	318.93018	223.00916	2.14850	0.0589445	0.18018016	3.1045458	20	8 26.9	21.5
521739 2015 RM ₂₇₂	16.9	X	85.09050	86.75170	176.59385	1.91756	0.0493620	0.20033785	2.8926377	20	10 14.3	21.0
521740 2015 RQ ₂₇₂	16.6	X	269.65687	260.36481	159.94432	8.34294	0.0912021	0.18212819	3.0823688	20	8 29.0	20.6
521741 2015 RR ₂₇₂	16.5	X	2.59724	289.06966	28.52280	9.48656	0.0944535	0.18442755	3.0566956	20	9 8.9	20.4
521742 2015 RS ₂₇₂	17.1	X	266.83104	329.50481	111.20853	3.09709	0.2379293	0.18247707	3.0784388	20	8 31.0	21.3
521743 2015 RT ₂₇₂	16.8	X	296.27921	28.10643	57.36937	7.20607	0.0172375	0.21518806	2.7579768	20	11 20.3	20.4
521744 2015 RU ₂₇₂	17.1	X	15.57470	231.24315	161.45078	9.26855	0.1115937	0.22682230	2.6628429	20	—	—
521745 2015 RM ₂₇₃	16.9	X	280.53528	309.21108	150.81027	13.09956	0.0545958	0.19542197	2.9409465	20	11 13.8	21.0
521746 2015 RN ₂₇₃	16.6	X	103.54456	342.09276	217.71783	8.61697	0.0332509	0.18847897	3.0127340	20	8 9.9	21.0
521747 2015 RO ₂₇₃	16.1	X	228.67957	72.18436	0.78527	18.13889	0.1175611	0.16984194	3.2292829	20	7 29.5	21.3
521748 2015 RP ₂₇₃	16.2	X	349.32097	292.92226	12.65652	10.65119	0.0364640	0.17584294	3.1553879	20	7 31.9	20.6
521749 2015 RC ₂₇₄	16.2	X	155.53299	329.00047	207.17430	11.57842	0.0695490	0.18484184	3.0521265	20	9 11.8	20.9
521750 2015 RF ₂₇₄	17.0	X	288.02015	170.43882	235.55791	3.46338	0.0962914	0.18388573	3.0626970	20	9 2.8	21.1
521751 2015 RN ₂₇₄	16.9	X	36.73526	309.68831	348.02313	1.36675	0.0678937	0.18977839	2.9989661	20	9 26.7	21.0
521752 2015 RO ₂₇₄	17.1	X	253.04984	56.37304	28.08164	1.32261	0.1564741	0.18018954	3.1044381	20	8 29.9	21.4
521753 2015 RP ₂₇₄	17.3	X	135.54516	191.34468	38.83459	2.42642	0.014					

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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>
521761 2015 RO ₂₇₆	16.8	X	206.88001	328.33159	171.66796	11.47844	0.0980502	0.18482161	3.0523491	20	9 24.1	21.4
521762 2015 RP ₂₇₆	17.9	X	243.69300	198.04141	38.16162	6.25765	0.0681985	0.27666510	2.3325616	20	—	—
521763 2015 RQ ₂₇₆	17.5	X	135.91853	201.82974	51.97182	5.77201	0.0509136	0.22143160	2.7058870	20	12 2.8	21.4
521764 2015 RS ₂₇₆	16.3	X	196.77096	56.98925	75.46392	11.38272	0.0414363	0.17204948	3.2016005	20	9 12.0	21.2
521765 2015 RW ₂₇₆	16.8	X	140.40082	112.16398	105.37710	11.85907	0.0040116	0.18796933	3.0181771	20	10 23.2	21.2
521766 2015 RZ ₂₇₆	16.7	X	198.14285	10.59925	156.55281	11.16741	0.0318250	0.18743187	3.0239441	20	10 26.6	21.2
521767 2015 SV	16.8	X	76.14031	257.54554	83.45914	30.06274	0.3169897	0.23313018	2.6145907	20	—	—
521768 2015 SA ₅	18.1	X	155.20320	58.29587	248.97983	3.56725	0.2431955	0.28157220	2.3053818	20	—	—
521769 2015 ST ₇	17.2	X	105.53493	105.29903	230.79824	5.41943	0.1218149	0.26015003	2.4302640	20	—	—
521770 2015 SP ₁₉	17.4	X	44.32507	282.35840	103.32534	9.44434	0.1700176	0.23821766	2.5772314	20	—	—
521771 2015 SG ₂₄	16.7	X	64.81839	260.73206	94.68968	9.08880	0.0843770	0.23955720	2.5676150	20	—	—
521772 2015 ST ₂₅	16.4	X	341.60952	307.07192	12.20234	9.27018	0.0834109	0.17770817	3.1332697	20	8 6.9	20.5
521773 2015 SZ ₂₅	16.8	X	24.19913	169.70838	164.37142	9.76541	0.0974843	0.21188311	2.7865820	20	11 6.6	20.5
521774 2015 SB ₂₆	16.9	X	287.13356	44.72426	0.51614	9.40427	0.0753031	0.19121514	2.9839247	20	9 7.9	20.9
521775 2015 SC ₂₆	17.0	X	211.91408	294.00160	185.31296	3.65628	0.1456687	0.17987079	3.1081046	20	8 28.9	22.0
521776 2015 SX ₂₆	16.4	X	239.60917	75.82966	7.41972	14.79336	0.0911728	0.18229552	3.0804823	20	8 26.6	21.0
521777 2015 SY ₂₇	16.2	X	297.39194	276.18848	87.01325	9.10573	0.0383390	0.17073317	3.2180351	20	7 31.9	20.6
521778 2015 SD ₂₇	17.0	X	120.83579	137.53238	156.99580	15.34136	0.1367163	0.24537206	2.5268879	20	—	—
521779 2015 SE ₂₇	16.8	X	265.65470	279.87935	158.30869	16.52072	0.2190820	0.18234727	3.0798994	20	8 27.7	21.2
521780 2015 SH ₂₇	16.7	X	87.50953	141.39334	103.27620	9.85031	0.0356911	0.18894706	3.0075762	20	9 24.9	21.1
521781 2015 SL ₂₇	16.6	X	324.49848	308.35791	81.07164	9.30283	0.1574159	0.19743418	2.9209301	20	10 14.4	19.9
521782 2015 SR ₂₇	16.2	X	36.35047	281.76030	67.85250	12.74742	0.0414801	0.21808968	2.7334595	20	12 3.0	19.8
521783 2015 SX ₂₇	16.1	X	26.52157	196.73978	284.88761	21.26934	0.1184351	0.23389086	2.6089188	20	1 14.1	18.8
521784 2015 SY ₂₇	16.3	X	359.21788	256.44812	65.01262	9.86349	0.1191275	0.18316955	3.0706750	20	9 11.5	20.1
521785 2015 SZ ₂₇	16.4	X	12.45711	234.46524	60.75208	10.55142	0.0737493	0.17504420	3.1649795	20	8 29.1	20.7
521786 2015 SF ₂₈	16.4	X	1.89702	206.41300	103.91823	10.20825	0.0970842	0.17519847	3.1631213	20	8 26.9	20.4
521787 2015 SH ₂₈	16.6	X	253.47140	263.67826	171.39368	10.84507	0.0436773	0.17640321	3.1487032	20	9 1.7	21.0
521788 2015 SM ₂₈	16.3	X	15.06925	248.17827	66.41265	11.62963	0.1274803	0.18429757	3.0581326	20	9 30.4	20.3
521789 2015 SC ₂₉	16.5	X	97.03499	64.65867	254.03174	12.05225	0.0856703	0.22090953	2.7101485	20	—	—
521790 2015 SF ₂₉	16.2	X	317.81097	164.19070	253.07184	10.55106	0.0587655	0.19041627	2.9922647	20	11 4.6	20.2
521791 2015 SM ₂₉	16.8	X	332.52039	98.64992	302.82090	8.84098	0.0969635	0.19057225	2.9906318	20	11 4.0	20.7
521792 2015 SW ₂₉	16.1	X	55.18926	76.88774	248.40967	13.62487	0.1588513	0.20327213	2.8647331	20	12 9.0	20.1
521793 2015 SC ₃₀	16.4	X	88.26645	26.44335	283.35585	11.89120	0.0755816	0.20534755	2.8453981	20	12 17.6	20.5
521794 2015 SK ₃₀	17.3	X	335.23382	84.68606	355.05322	21.98796	0.0605266	0.23481127	2.6020966	20	—	—
521795 2015 SL ₃₀	16.1	X	218.79763	256.03816	197.84054	12.86127	0.1132475	0.16929075	3.2362885	20	8 4.1	21.3
521796 2015 TN ₂	18.0	X	121.28898	349.89928	345.81974	0.79675	0.2042426	0.26987364	2.3715324	20	—	—
521797 2015 TA ₇	18.6	X	164.16964	176.88658	145.75495	6.30816	0.2062550	0.30018503	2.2090728	20	—	—
521798 2015 TG ₁₂	17.1	X	51.73987	254.76062	120.32710	15.64638	0.1447191	0.24321001	2.5418412	20	—	—
521799 2015 TU ₇₁	17.1	X	91.19045	99.98852	231.06377	10.12700	0.1073891	0.23301427	2.6154577	20	—	—
521800 2015 TR ₇₂	16.2	X	214.07832	257.89040	242.95726	5.52702	0.1688334	0.17386578	3.1792643	20	9 21.8	21.3
521801 2015 TO ₁₀₀	16.4	X	223.57236	80.52525	40.90336	15.45672	0.0662575	0.17519196	3.1631996	20	9 27.8	21.2
521802 2015 TN ₁₁₁	17.1	X	108.73525	117.49511	206.24804	12.77577	0.1239621	0.23158951	2.6261738	20	—	—
521803 2015 TR ₁₂₁	16.0	X	294.43086	304.35819	123.77643	18.47207	0.02221279	0.17344865	3.1843596	20	10 26.4	20.8
521804 2015 TJ ₁₂₄	17.0	X	278.66986	279.02613	164.82712	9.08468	0.0606779	0.18983846	2.9983333	20	10 18.3	21.0
521805 2015 TK ₁₂₅	16.7	X	263.97220	346.18286	116.46408	9.94038	0.0556044	0.19223095	2.9734034	20	10 25.9	20.9
521806 2015 TZ ₁₃₅	16.6	X	222.44695	331.94979	176.60801	14.58257	0.1027251	0.18632716	3.0358847	20	10 22.7	21.1
521807 2015 TL ₁₃₇	17.5	X	113.55228	143.10390	182.28352	14.75064	0.1312910	0.24369293	2.5384821	20	—	—
521808 2015 TL ₁₃₉	16.5	X	255.60369	2.13620	97.94984	13.85843	0.0811940	0.17997394	3.1069169	20	10 9.1	21.1
521809 2015 TF ₁₄₀	16.2	X	279.54317	328.67958	110.21288	13.03287	0.1558190	0.18117163	3.0932089	20	10 2.4	20.4
521810 2015 TM ₁₄₁	16.4	X	263.03802	337.12857	122.73337	9.76501	0.0700229	0.18888796	3.0083835	20	10 18.5	20.7
521811 2015 TD ₁₆₁	17.2	X	45.95627	5.58041	70.54475	7.19770	0.0918637	0.26761326	2.3848677	20	—	—
521812 2015 TV ₁₉₈	17.8	X	97.18926	266.07561	96.45776	3.40947	0.1918482	0.26314141	2.4118109	20	—	—
521813 2015 TB ₂₀₇	17.2	X	59.83851	200.22989	182.33655	14.03943	0.1797933	0.24414124	2.5353736	20	—	—
521814 2015 TG ₂₁₅	17.2	X	7.57904	138.78678	245.20526	1.51361	0.1448917	0.22159281	2.7045744	20	12 23.8	20.4
521815 2015 TB ₂₃₃	17.1	X	126.29511	266.42187	77.62319	2.30324	0.1893341	0.26953965	2.3734911	20	—	—
521816 2015 TE ₂₃₅	17.4	X	154.58397	182.33945	106.64650	5.98420	0.2092797	0.25820272	2.4424678	20	—	—
521817 2015 TE ₂₅₀	17.5	X	142.96339	77.09667	237.48457	8.81123	0.2364682	0.26747644	2.3856809	20	—	—
521818 2015 TJ ₂₅₉	15.9	X	338.07728	31.77946	304.49808	7.83042	0.0842239	0.17544659	3.1601383	20	8 18.3	20.0
521819 2015 TD ₂₇₅	16.0	X	335.71075	117.36239	211.91814	8.76654	0.0907410	0.17511771	3.1640937	20	8 3.5	20.1
521820 2015 TX ₂₉₃	17.0	X	292.64691	253.11983	186.88769	14.57381	0.1285408	0.20499868	2.8486254	20	10 28.3	20.4
521821 2015 TZ ₂₉₈	15.8	X	278.81643	148.67927	265.10230	10.83322	0.0438568	0.17607107	3.1526618	20	9 2.3	20.4
521822 2015 TK ₃₂₀	16.6	X	245.39269	273.00095	195.97972	15.51056	0.1834883	0.18595139	3.0399733	20	9 15.1	21.2
521823 2015 TT ₃₂₇	16.8	X	10.72120	280.60301	107.06946	12.51811	0.0974442	0.22104109	2.7090730	20	12 26.5	20.3
521824 2015 TR ₃₄₅	17.4	X	187.62962	60.18767	182.17059	4.92494	0.0913958	0.24221676	2.5487853	20	—	—
521825 2015 TR ₃₄₈	17.7	X	158.01487	113.82124	153.11334	4.88060	0.0800445	0.24022854	2.5628291	20	—	—
521826 2015 TB ₃₅₈	16.2	X	230.56355	286.99380	198.41411	10.06816	0.1313049	0.17903803	3.1177350	20	9 25.6	20.9
521827 2015 TP ₃₅₈	17.4	X	163.07267	67.24605	184.74513	8.69823	0.0783350	0.23369677	2.6103630	20	12 31.6	21.4
521828 2015 TG ₃₅₉	16.4	X	238.93132	349.96941	145.28879	10.63804	0.0454680	0.18541841	3.0457960	20	11 3.3	20.8
521829 2015 TH ₃₆₀	16.9	X	23.87234	323.62613	66.92683	7.07509	0.0432632	0.22179087	2.7029640	20	—	—
521830 2015 TL ₃₆₄	16.5	X	118.17170	92.66849	126.46292	9.88858	0.0203191	0.17131005	3.2108066	20	9 24.7	21.2
521831 2015 TR ₃₆₄	17.1	X	127.63554	210.32578	92.69649	10.02155	0.1580340	0.23835117	2.5762689	20	—	—
521832 2015 TK ₃₆₈	16.5	X	203.29001	79.17925	71.91981	4.22842	0.1343874	0.17782818	3.1318599	20	10 1.3	21.4
521833 2015 TP ₃₆₉	17.3	X	306.15616	350.58334	107.22597	1.44923	0.0289307	0.21453716	2.7635523	20	12 18.3	20.7
521834 2015 TB ₃₇₀	17.1	X	1.38356	286.61852	127.18203	12.14942						

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>
521841 2015 TQ ₃₇₁	16.5	X	138.38846	161.62251	35.03313	9.92163	0.0422361	0.17487352	3.1670385	20	9 22.7	21.2
521842 2015 TW ₃₇₁	16.4	X	51.06614	253.75056	28.80029	12.14523	0.0635439	0.17722653	3.1389439	20	9 27.8	20.8
521843 2015 TX ₃₇₁	17.0	X	283.02134	134.44444	307.90944	2.19756	0.0464070	0.19074125	2.9888650	20	10 20.8	21.0
521844 2015 TB ₃₇₂	16.7	X	42.99866	80.99814	215.66029	8.69039	0.0713623	0.18214914	3.0821324	20	10 1.5	20.9
521845 2015 TQ ₃₇₂	17.5	X	313.63338	320.18356	187.06852	5.13438	0.1345137	0.23567006	2.5957714	20	—	—
521846 2015 TT ₃₇₂	17.1	X	207.37735	222.10418	3.79418	5.00153	0.0838583	0.22790009	2.6544409	20	—	—
521847 2015 TV ₃₇₂	17.1	X	253.64467	350.76614	105.47940	3.65758	0.1067812	0.17465421	3.1696892	20	9 21.9	21.5
521848 2015 TE ₃₇₃	16.3	X	317.04340	303.75093	81.97383	10.00963	0.0713844	0.17524338	3.1625809	20	9 27.8	20.6
521849 2015 TG ₃₇₃	18.1	X	131.99347	197.22587	163.19694	7.09957	0.1118040	0.26743698	2.3859156	20	1 6.8	21.3
521850 2015 TJ ₃₇₃	16.6	X	73.26905	200.74953	88.39726	15.04805	0.1525620	0.19245114	2.9711350	20	11 16.3	21.2
521851 2015 TL ₃₇₃	16.1	X	86.81738	179.08061	83.37132	18.57898	0.1276260	0.17668438	3.1453618	20	10 28.6	21.1
521852 2015 TT ₃₇₃	17.0	X	337.22918	277.85533	190.22096	12.71649	0.1326771	0.22370885	2.6874926	20	—	—
521853 2015 TK ₃₇₄	16.4	X	121.05604	104.24960	133.47465	16.79018	0.0603817	0.17385256	3.1794255	20	10 26.8	21.4
521854 2015 TO ₃₇₄	16.4	X	40.28240	113.28507	172.82898	13.52708	0.0916874	0.17700741	3.1415339	20	9 18.5	20.4
521855 2015 TX ₃₇₄	16.1	X	163.20887	91.62802	80.32789	13.01948	0.0676709	0.17066096	3.2189428	20	9 23.2	21.2
521856 2015 TM ₃₇₅	18.5	X	336.47522	230.98557	210.06147	0.74889	0.1139321	0.27682767	2.3316483	20	1 5.9	21.0
521857 2015 TN ₃₇₅	16.7	X	170.69897	26.80414	327.00889	12.74284	0.1489232	0.23179783	2.6246001	20	—	—
521858 2015 TW ₃₇₅	17.4	X	138.24130	126.99745	132.84009	1.27687	0.0250854	0.21050550	2.7987262	20	12 10.9	21.3
521859 2015 TM ₃₇₆	17.1	X	215.77878	207.51441	355.83248	3.67941	0.0367107	0.21763256	2.7372857	20	—	—
521860 2015 TR ₃₇₆	16.1	X	310.85278	338.00313	74.09617	17.21422	0.0232120	0.18564036	3.0433678	20	10 28.8	20.5
521861 2015 TS ₃₇₆	16.9	X	10.23810	152.69714	184.25368	10.49677	0.0964687	0.18091238	3.0961633	20	10 12.4	20.8
521862 2015 TC ₃₇₇	16.6	X	320.33787	262.22790	138.63871	15.21927	0.0760582	0.18020590	3.1042501	20	10 22.9	20.8
521863 2015 TM ₃₇₇	16.5	X	197.47651	331.66237	191.53620	17.07070	0.1624741	0.17469755	3.1691649	20	10 5.9	21.6
521864 2015 TO ₃₇₇	17.6	X	278.93000	159.29292	59.15330	7.45551	0.0666034	0.27382030	2.3486896	20	—	—
521865 2015 TU ₃₇₇	17.5	X	50.85251	40.80199	35.41264	10.18453	0.0923137	0.26799381	2.3826095	20	—	—
521866 2015 TV ₃₇₇	16.4	X	283.19220	4.47529	45.50142	18.64359	0.0850458	0.17417750	3.1754700	20	9 14.1	21.0
521867 2015 TV ₃₇₇	17.5	X	333.95849	143.28362	288.81843	2.64975	0.0923445	0.22775521	2.6555484	20	12 30.9	20.5
521868 2015 TB ₃₇₈	16.7	X	102.18516	100.10623	112.86848	2.87928	0.0775902	0.17053041	3.2205854	20	9 1.7	21.4
521869 2015 TD ₃₇₈	17.2	X	354.33144	19.34534	355.94982	1.53963	0.0782391	0.20309177	2.8664289	20	11 8.9	20.6
521870 2015 TF ₃₇₈	16.5	X	201.11966	100.44990	40.56779	9.35836	0.0348013	0.18066648	3.0989720	20	9 26.9	21.1
521871 2015 TK ₃₇₈	16.9	X	262.29288	317.81427	126.95278	2.35482	0.1379789	0.17978667	3.1090740	20	9 13.5	21.2
521872 2015 TO ₃₇₈	15.8	X	21.30679	103.48552	208.11870	9.71308	0.0341385	0.17862068	3.1225895	20	9 15.5	20.2
521873 2015 TX ₃₇₈	17.2	X	246.57406	105.88842	12.47965	1.48030	0.1179785	0.18713336	3.0271591	20	10 9.1	21.3
521874 2015 TH ₃₇₉	17.2	X	340.82496	351.85347	69.18995	6.19711	0.0369714	0.21684642	2.7438974	20	12 19.2	20.6
521875 2015 TR ₃₇₉	17.0	X	274.89488	110.89994	43.80851	22.68145	0.0289544	0.23308393	2.6149366	20	—	—
521876 2015 TS ₃₇₉	16.9	X	64.93169	102.06333	205.87632	3.29992	0.0846839	0.20948072	2.8078464	20	11 21.1	20.8
521877 2015 TW ₃₇₉	16.0	X	297.31393	299.52838	85.55435	15.24567	0.2331106	0.17697108	3.1419638	20	8 3.3	20.0
521878 2015 TK ₃₈₀	17.0	X	307.17318	174.12039	341.63407	13.42803	0.0968804	0.23812181	2.5779230	20	—	—
521879 2015 TO ₃₈₀	16.5	X	304.55141	283.64296	138.22243	16.12664	0.0729800	0.18837944	3.0137951	20	10 28.8	20.7
521880 2015 TS ₃₈₀	16.2	X	175.79617	105.74884	57.16004	12.54407	0.0358083	0.17677788	3.1442526	20	9 26.8	21.0
521881 2015 TX ₃₈₀	17.6	X	300.91823	91.19917	53.91675	13.31983	0.1170496	0.23398317	2.6082325	20	—	—
521882 2015 TB ₃₈₁	16.5	X	83.38284	256.65368	67.50634	8.79168	0.0464754	0.22129527	2.7069981	20	12 30.1	20.3
521883 2015 TF ₃₈₁	16.4	X	247.25095	48.40476	66.42745	11.05654	0.0681796	0.18771511	3.0209015	20	10 17.3	20.8
521884 2015 TL ₃₈₁	16.7	X	289.79910	48.77853	60.13138	15.92466	0.1073100	0.20645282	2.8352335	20	11 30.5	20.1
521885 2015 TW ₃₈₁	16.2	X	82.68117	180.81068	68.82099	15.15166	0.1529893	0.17463185	3.1699598	20	10 10.7	21.2
521886 2015 TX ₃₈₁	16.3	X	260.75835	332.68609	107.13157	6.63784	0.0386476	0.17558979	3.1584200	20	9 21.5	20.7
521887 2015 TN ₃₈₂	16.5	X	97.19360	50.55287	209.21647	16.40807	0.0393363	0.18605060	3.0388924	20	10 20.1	20.7
521888 2015 TP ₃₈₂	16.8	X	261.62096	342.20009	155.27228	4.81850	0.0365109	0.20750121	3.8256755	20	12 7.4	20.6
521889 2015 TU ₃₈₂	16.6	X	248.42698	349.55207	102.49588	3.98821	0.0904137	0.17235876	3.1977694	20	9 12.3	21.1
521890 2015 TA ₃₈₃	17.4	X	31.36194	305.17367	71.51747	4.84938	0.0592414	0.22032344	2.7149525	20	—	—
521891 2015 TF ₃₈₃	16.5	X	338.30246	198.38835	195.76609	10.99170	0.0974377	0.19773193	2.9179970	20	11 10.5	20.0
521892 2015 TM ₃₈₃	17.1	X	2.73754	309.62154	94.92514	7.34018	0.0449860	0.21739200	2.7393047	20	12 28.9	20.5
521893 2015 TP ₃₈₃	17.5	X	3.91143	275.00339	98.29037	3.18385	0.0869110	0.20331173	2.8643610	20	11 22.4	21.1
521894 2015 TL ₃₈₃	17.1	X	297.62310	85.58194	344.46398	7.03043	0.1904582	0.19266616	2.9689241	20	10 7.9	20.7
521895 2015 TX ₃₈₃	16.4	X	274.41705	258.19774	165.29582	11.44550	0.0675786	0.18213053	3.0823424	20	9 12.5	20.5
521896 2015 TE ₃₈₄	16.4	X	1.20596	127.35911	186.99431	16.19452	0.2053675	0.18117833	3.0931327	20	9 2.9	19.8
521897 2015 TG ₃₈₄	16.5	X	214.67355	76.15257	53.84896	12.10097	0.0521561	0.18306263	3.0718706	20	9 29.9	21.1
521898 2015 TJ ₃₈₄	15.9	X	183.12462	71.31638	85.44047	8.47754	0.1802259	0.17185357	3.2040332	20	9 18.9	21.3
521899 2015 TN ₃₈₄	17.7	X	332.89124	291.01440	149.53556	8.18199	0.1958788	0.21704693	2.7422073	20	—	—
521900 2015 TY ₃₈₄	17.8	X	122.16901	240.78878	58.90624	12.38602	0.1857917	0.24292596	2.5438223	20	—	—
521901 2015 TC ₃₈₅	17.1	X	260.97567	281.63582	221.52751	10.16866	0.0626262	0.22900020	2.6459328	20	12 15.2	20.6
521902 2015 TG ₃₈₅	16.2	X	84.84434	100.26173	136.53941	11.97277	0.0872146	0.17799402	3.1299142	20	9 15.0	20.8
521903 2015 TN ₃₈₅	15.7	X	11.02087	214.98910	94.61516	15.12309	0.0353648	0.17591133	3.1545700	20	9 7.8	20.2
521904 2015 TO ₃₈₅	17.4	X	339.31033	17.17704	94.42396	15.09578	0.1705188	0.23808771	2.5781691	20	—	—
521905 2015 TP ₃₈₅	16.1	X	210.87224	23.43556	117.03340	13.84235	0.0575892	0.18505937	3.0497342	20	10 8.6	20.8
521906 2015 TQ ₃₈₅	16.9	X	292.55002	310.81113	111.09954	11.02088	0.0595199	0.18815761	3.0161633	20	10 12.5	21.1
521907 2015 TZ ₃₈₅	17.0	X	342.90304	289.97325	236.52508	11.90385	0.2020052	0.23110928	2.6298105	20	—	—
521908 2015 TC ₃₈₆	16.9	X	317.24204	85.21316	345.76403	8.16232	0.1633291	0.19656418	2.9295425	20	11 18.3	20.2
521909 2015 TG ₃₈₆	16.5	X	293.33251	284.05671	119.21182	13.35832	0.1080205	0.18024479	3.1038036	20	9 10.9	20.7
521910 2015 TH ₃₈₆	17.0	X	126.90912	53.88941	191.88199	15.19850	0.1052992	0.20658178	2.8340535	20	11 14.4	21.5
521911 2015 UY ₁₅	16.6	X	331.57754	23.74334	37.74113	10.28062	0.0626754	0.21945905	2.7220768	20	12 7.4	20.0
521912 2015 UP ₁₆	17.5	X	154.54493	192.82280	99.96587	3.77199	0.1851746	0.26560822	2.3968547	20	—	—
521913 2015 UZ ₂₀	17.9	X	162.24167	176.78385	117.25230	2.21928	0.1789584	0.26834626	2.380522			

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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>
521921 2015 UU ₇₅	16.9	X	78.13498	60.94218	268.84407	13.12358	0.1138945	0.22835776	2.6508930	20	—	—
521922 2015 UQ ₈₃	17.8	X	127.54503	186.81675	157.00668	2.44019	0.2333025	0.27260015	2.3556928	20	—	—
521923 2015 US ₈₃	17.6	X	103.30196	309.63373	42.81994	3.47584	0.2487148	0.26310905	2.4120086	20	—	—
521924 2015 UE ₈₈	17.4	X	352.60624	113.94322	18.01133	6.05423	0.0300525	0.26583789	2.3954740	20	—	—
521925 2015 UH ₈₈	17.0	X	58.75605	148.64487	190.76549	1.56996	0.0917350	0.22481675	2.6786560	20	12 26.6	20.9
521926 2015 UL ₈₈	18.0	X	317.21800	268.89017	186.10523	8.12368	0.1742763	0.21752747	2.7381673	20	12 31.6	20.8
521927 2015 UE ₈₉	17.5	X	343.92949	322.62670	158.89886	12.19424	0.0699239	0.24212391	2.5494369	20	—	—
521928 2015 UK ₈₉	16.6	X	290.80164	293.61648	166.95609	14.42481	0.2419120	0.18961825	3.0006542	20	11 3.9	20.1
521929 2015 UP ₈₉	17.4	X	301.45694	309.54210	187.49048	8.52387	0.1383881	0.23271443	2.6177038	20	—	—
521930 2015 UR ₈₉	17.3	X	85.32262	318.37746	350.71291	4.36661	0.0996381	0.22107233	2.7088178	20	12 18.8	21.3
521931 2015 UA ₉₀	16.1	X	142.29497	137.36596	67.36099	10.88447	0.0254415	0.17446345	3.1719993	20	10 7.9	20.8
521932 2015 UC ₉₀	17.0	X	102.15743	97.98326	244.46306	13.92265	0.1599191	0.24144055	2.5542451	20	—	—
521933 2015 UH ₉₀	15.9	X	264.77470	115.26408	347.98707	7.59796	0.1047326	0.15478938	3.4353840	20	10 7.6	20.8
521934 2015 UM ₉₀	16.1	X	75.49433	118.81894	147.25235	17.15606	0.0771310	0.18417510	3.0594881	20	10 11.8	20.7
521935 2015 UN ₉₀	16.5	X	88.33617	118.92427	181.54927	20.43815	0.1351985	0.21050176	2.7987594	20	12 13.3	21.2
521936 2015 UR ₉₀	16.1	X	238.52493	262.91662	230.99127	9.04334	0.0516758	0.18770716	3.0209867	20	10 27.1	20.5
521937 2015 VC	17.6	X	140.65568	143.22553	196.87783	12.93773	0.2866811	0.27616162	2.3353959	20	1 9.7	21.4
521938 2015 VT ₁	17.9	X	154.96741	181.05042	144.79037	9.48047	0.3074712	0.27766715	2.3269464	20	1 8.1	21.8
521939 2015 VQ ₆	17.0	X	76.49052	188.36480	175.11023	11.21054	0.1474755	0.24407466	2.5358346	20	—	—
521940 2015 VA ₃₂	16.0	X	236.61968	241.18683	237.50686	11.58027	0.2005270	0.17586427	3.1551328	20	9 11.2	21.1
521941 2015 VN ₃₈	16.2	X	290.48920	180.54920	238.13128	12.44600	0.0972276	0.18467793	3.0539321	20	9 19.5	20.4
521942 2015 VN ₆₅	17.6	X	140.65248	193.46286	147.64450	12.91113	0.2630401	0.27323748	2.3520283	20	1 10.3	21.3
521943 2015 VF ₇₂	16.1	X	243.73778	341.44413	118.70162	14.27218	0.0887556	0.17208040	3.2012170	20	9 20.3	20.9
521944 2015 VW ₇₄	16.7	X	82.65509	312.40995	35.38862	9.39006	0.1771000	0.23782938	2.5800357	20	—	—
521945 2015 VR ₇₈	17.4	X	126.47748	162.32948	166.54626	6.97392	0.2049364	0.26390715	2.4071433	20	—	—
521946 2015 VZ ₁₀₇	15.9	X	245.96102	183.29483	280.01208	7.64449	0.1136323	0.18114156	3.0935512	20	9 15.3	20.5
521947 2015 VU ₁₀₈	16.4	X	15.81623	305.10787	84.43651	13.55134	0.1879822	0.22439278	2.6820290	20	—	—
521948 2015 VF ₁₂₁	15.8	X	9.33049	301.98285	59.21384	18.85692	0.1000984	0.19220463	2.9736749	20	11 14.4	19.6
521949 2015 VP ₁₂₅	16.7	X	55.40044	263.48183	90.74845	9.00747	0.0725782	0.23083701	2.6318780	20	—	—
521950 2015 VP ₁₂₅	16.2	X	55.78926	271.11412	97.78385	22.45485	0.0439024	0.23781505	2.5801393	20	—	—
521951 2015 VR ₁₃₆	16.7	X	78.74498	289.61175	75.54684	17.97307	0.2468521	0.24057969	2.5603347	20	—	—
521952 2015 VG ₁₄₀	16.5	X	65.91398	91.94981	200.11341	7.87057	0.0402447	0.18843277	3.0132264	20	10 23.7	20.7
521953 2015 VQ ₁₄₀	16.2	X	280.83843	7.88740	61.60039	16.37660	0.0529577	0.18239333	3.0793809	20	10 8.8	20.6
521954 2015 VH ₁₄₆	17.3	X	98.49367	157.86897	173.66027	12.68820	0.1848130	0.24220331	2.5488797	20	—	—
521955 2015 VE ₁₄₉	17.1	X	112.15368	219.85562	93.33779	15.32645	0.1522332	0.23485926	2.6017422	20	—	—
521956 2015 VH ₁₅₆	16.4	X	241.20348	334.03961	147.40671	15.78951	0.0551930	0.17838749	3.1253102	20	10 18.7	21.1
521957 2015 VA ₁₅₇	16.6	X	82.09727	64.31100	222.73978	11.58263	0.0602749	0.19134731	2.9825505	20	11 8.6	20.7
521958 2015 VD ₁₅₈	16.8	X	94.66994	191.70758	140.12253	5.93557	0.1212158	0.23114276	2.6295566	20	—	—
521959 2015 VM ₁₅₈	15.9	X	259.60916	193.40182	262.68341	15.33464	0.0107985	0.18335486	3.0686058	20	10 5.8	20.6
521960 2015 VR ₁₅₈	15.6	X	171.39045	297.89148	239.27437	15.21784	0.1932370	0.17725679	3.1385867	20	9 23.9	21.1
521961 2015 VY ₁₅₈	16.2	X	356.34432	176.46623	262.06798	13.45462	0.0711566	0.22350841	2.6890991	20	—	—
521962 2015 VJ ₁₅₉	16.8	X	309.35618	298.19091	124.41303	10.54378	0.0549852	0.18813508	3.0164042	20	11 5.0	20.9
521963 2015 VM ₁₅₉	16.2	X	308.19667	110.55688	273.34710	15.36623	0.2477227	0.17747549	3.1360077	20	8 9.4	19.9
521964 2015 VQ ₁₅₉	15.4	X	98.55353	173.71736	62.10537	10.39852	0.0591139	0.17475386	3.1684840	20	9 28.4	20.1
521965 2015 VL ₁₆₀	16.4	X	302.18972	286.96260	123.73155	10.81747	0.2142470	0.17587952	3.1549504	20	9 19.6	20.1
521966 2015 VO ₁₆₀	17.0	X	314.18503	228.45909	156.95584	1.87507	0.1369169	0.17948859	3.1125152	20	9 12.8	20.6
521967 2015 VY ₁₆₀	15.8	X	157.35961	126.88010	64.31163	16.58599	0.0958134	0.17721666	3.1390605	20	10 11.9	20.9
521968 2015 VG ₁₆₁	17.0	X	337.54291	109.99189	301.92523	11.24466	0.1071907	0.19960141	2.8997484	20	11 30.8	20.6
521969 2015 VJ ₁₆₁	17.5	X	284.34193	59.27103	73.57070	4.38732	0.1771213	0.21464993	2.7625843	20	12 29.6	20.8
521970 2015 VM ₁₆₁	17.3	X	274.93431	52.68636	86.02339	5.85572	0.0181570	0.21448154	2.7640301	20	12 29.4	20.9
521971 2015 VE ₁₆₂	16.6	X	357.97635	176.20083	158.85354	4.04321	0.0385943	0.17602243	3.1532425	20	9 16.6	20.9
521972 2015 VB ₁₆₂	16.2	X	193.71823	132.07836	91.86185	11.65573	0.1170075	0.17068294	3.2186664	20	12 14.6	21.2
521973 2015 VH ₁₆₂	16.5	X	200.34593	279.37095	238.17981	5.24331	0.1679259	0.17415381	3.1757580	20	9 29.5	21.6
521974 2015 VK ₁₆₂	16.1	X	3.96305	266.99838	67.64533	12.63414	0.1395535	0.17712243	3.1401737	20	10 8.6	20.1
521975 2015 VQ ₁₆₂	16.5	X	101.69256	254.98175	73.86412	14.57543	0.0991190	0.23025348	2.6363228	20	—	—
521976 2015 VX ₁₆₂	17.7	X	46.34150	359.82737	103.41512	7.80600	0.0655038	0.27093544	2.3653323	20	1 14.9	20.1
521977 2015 VB ₁₆₃	17.5	X	90.05069	142.16374	194.13452	6.03897	0.0268352	0.22346899	2.6894153	20	—	—
521978 2015 VE ₁₆₃	16.3	X	352.01599	298.86278	57.89213	9.92990	0.0729033	0.18142739	3.0903012	20	10 11.9	20.3
521979 2015 VR ₁₆₃	16.7	X	310.29861	36.96244	357.46201	4.72136	0.0393080	0.17513083	3.1639357	20	9 25.7	21.0
521980 2015 VX ₁₆₃	16.8	X	302.24173	347.66322	138.55834	14.26800	0.1033445	0.21904624	2.7254958	20	—	—
521981 2015 WE ₁₆	15.9	X	311.80993	298.99976	101.88674	28.19493	0.1826360	0.17874457	3.1211465	20	10 10.5	20.2
521982 2015 WE ₁₉	15.7	X	93.60117	357.39553	265.98795	15.72007	0.1645863	0.18287969	3.0739189	20	10 29.4	20.7
521983 2015 WP ₁₉	17.2	X	323.99589	120.63376	27.97782	12.53683	0.1995932	0.21906564	2.7253349	20	—	—
521984 2015 WQ ₁₉	17.2	X	311.50703	153.05003	7.43133	10.45090	0.2073965	0.21622747	2.7491312	20	—	—
521985 2015 WZ ₁₉	16.6	X	85.49360	175.94552	135.10852	14.77588	0.1765865	0.21842855	2.7306316	20	12 27.8	21.1
521986 2015 WB ₂₀	17.2	X	38.39665	343.27858	69.09487	14.99032	0.0579244	0.23546115	2.5973065	20	—	—
521987 2015 WU ₂₀	16.1	X	341.84806	83.77727	273.69893	11.77677	0.1352896	0.17446582	3.1719705	20	9 15.8	20.2
521988 2015 WW ₂₀	16.8	X	99.49409	243.17643	91.12390	12.99744	0.1289985	0.23020497	2.6366931	20	—	—
521989 2015 WX ₂₀	16.3	X	37.28655	223.72919	105.38810	12.04042	0.0725661	0.18398003	3.0616504	20	11 10.2	20.6
521990 2015 WZ ₂₀	16.8	X	256.18390	175.33107	279.16079	1.98820	0.0923569	0.17389862	3.1788641	20	9 21.9	21.2
521991 2015 WB ₂₁	17.5	X	293.90273	264.78648	234.32314	2.40402	0.1403679	0.21638389	2.7478062	20	—	—
521992 2015 WH ₂₁	17.0	X	8.41954	15.30926	109.60141	15.81152	0.0953672	0.23061952	2.6335325	20	—	—
521993 2015 WS ₂₁	17.9	X	127.07877	135.05155	247.51116	6.18827	0.1197209	0.27380703	2.3487655	20	1 28.4	21.0
521994 2015 WY ₂₁	16.7	X	109.61782	240.29703	78.							

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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>		
522001	2015	<i>XS</i> ₇₉	17.1 ^m	X	173.68089	190.62586	85.82609	6.96389	0.1893083	0.23851966	2.5750555	20	—	—
522002	2015	<i>XN</i> ₉₂	16.5	X	146.13696	123.77023	90.76758	12.27528	0.0353988	0.17919372	3.1159288	20	10 25.5	21.2
522003	2015	<i>XD</i> ₁₁₇	16.4	X	350.90772	282.56745	112.30114	12.90926	0.0652987	0.19450253	2.9502074	20	11 29.2	20.3
522004	2015	<i>XY</i> ₁₃₂	17.2	X	21.55026	140.93579	231.48772	1.10846	0.0775653	0.20364966	2.8611914	20	12 14.2	21.0
522005	2015	<i>XT</i> ₁₃₃	17.2	X	65.67308	242.14859	93.51529	1.72342	0.0730189	0.20892346	2.8128371	20	12 23.9	21.2
522006	2015	<i>XH</i> ₁₃₅	17.2	X	109.19031	50.89657	273.63024	0.51771	0.1399388	0.23377311	2.6097947	20	—	—
522007	2015	<i>XV</i> ₁₄₃	16.7	X	24.99339	251.68574	76.12452	9.94455	0.0483483	0.17729516	3.1381338	20	10 18.9	21.1
522008	2015	<i>XK</i> ₁₆₆	17.4	X	48.64287	225.65945	133.23392	3.19337	0.0878686	0.21177368	2.7875418	20	—	—
522009	2015	<i>XS</i> ₁₈₈	15.7	X	147.53710	133.83017	89.63410	17.84526	0.1885565	0.17773448	3.1329605	20	11 8.6	21.2
522010	2015	<i>XW</i> ₁₉₈	16.2	X	233.42827	88.46623	50.02230	10.14411	0.0148471	0.18638235	3.0352854	20	11 2.2	20.4
522011	2015	<i>XJ</i> ₂₂₀	16.1	X	313.96585	173.69320	232.13229	8.41834	0.0697301	0.18031228	3.1030291	20	10 12.5	20.2
522012	2015	<i>XO</i> ₂₃₄	16.4	X	232.89960	246.10714	247.18501	7.98081	0.0524869	0.17484085	3.1674330	20	10 15.8	21.1
522013	2015	<i>XF</i> ₂₃₇	16.3	X	46.82442	266.99090	70.43767	10.24132	0.0275258	0.19100756	2.9860863	20	11 23.8	20.5
522014	2015	<i>XA</i> ₂₃₈	16.2	X	131.59256	174.51398	76.71654	3.79591	0.1379263	0.18677993	3.0309766	20	11 21.5	21.0
522015	2015	<i>XW</i> ₂₆₈	16.5	X	59.29002	75.98507	254.09706	10.64528	0.0508155	0.19740866	2.9211818	20	12 4.0	20.6
522016	2015	<i>XW</i> ₃₀₉	16.5	X	242.59041	88.11882	39.54552	3.01307	0.0803980	0.18333453	3.0688326	20	10 20.8	20.7
522017	2015	<i>XN</i> ₃₅₂	16.2	X	11.75108	124.21407	157.37233	5.77747	0.0425014	0.15187722	3.4805342	20	7 25.7	20.9
522018	2015	<i>XJ</i> ₃₉₄	16.3	X	291.28655	206.86894	236.96076	9.35831	0.1083020	0.18209173	3.0827802	20	10 24.8	20.3
522019	2015	<i>XZ</i> ₃₉₄	16.9	X	0.40985	347.19375	42.22865	2.51318	0.0892158	0.19664813	2.9287087	20	12 5.5	20.7
522020	2015	<i>XD</i> ₃₉₅	16.4	X	166.94746	77.41248	126.80584	9.26961	0.0876515	0.18259287	3.0771371	20	11 2.5	21.2
522021	2015	<i>XK</i> ₄₀₄	16.3	X	68.76350	228.23474	91.25064	14.48436	0.2060576	0.21078790	2.7962260	20	12 22.9	20.6
522022	2015	<i>XL</i> ₄₀₄	17.5	X	35.21556	300.84097	118.35296	4.16284	0.1182435	0.23741601	2.5830296	20	—	—
522023	2015	<i>XM</i> ₄₀₄	16.6	X	232.68389	50.65332	113.50468	11.75392	0.0447785	0.19553543	2.9398087	20	12 1.8	20.8
522024	2015	<i>XZ</i> ₄₀₄	16.5	X	308.49003	347.10765	98.00588	11.32280	0.1006379	0.18057917	3.0999709	20	11 25.5	20.5
522025	2015	<i>XD</i> ₄₀₅	16.5	X	341.48442	108.59500	284.60599	7.33999	0.0724379	0.17196353	3.2026672	20	11 3.3	20.8
522026	2015	<i>XJ</i> ₄₀₅	16.9	X	300.16928	107.57915	85.71671	18.12428	0.0290190	0.23671726	2.5881102	20	—	—
522027	2015	<i>XK</i> ₄₀₅	16.7	X	140.35594	263.29244	81.39184	15.76682	0.1803513	0.24471113	2.5314357	20	1 9.9	20.5
522028	2015	<i>XU</i> ₄₀₅	16.3	X	225.64605	42.70739	100.48436	5.24375	0.0627727	0.18074421	3.0980835	20	10 23.7	20.8
522029	2015	<i>XE</i> ₄₀₆	17.1	X	316.64461	332.12073	181.38589	13.32940	0.1214933	0.23045212	2.6348076	20	—	—
522030	2015	<i>XN</i> ₄₀₇	15.9	X	335.12454	264.14626	266.30942	26.65658	0.1113178	0.22640027	2.6661511	20	—	—
522031	2015	<i>XS</i> ₄₀₇	16.0	X	189.76468	220.65915	4.56122	16.74831	0.1572634	0.17834634	3.1257909	20	12 7.6	21.3
522032	2015	<i>XG</i> ₄₀₈	16.5	X	236.51118	305.67495	180.99827	17.53049	0.0462092	0.17231432	3.1983192	20	10 16.7	21.1
522033	2015	<i>XN</i> ₄₀₈	16.4	X	50.49267	225.72990	84.25957	13.57358	0.0780194	0.17892179	3.1190851	20	11 3.7	20.9
522034	2015	<i>XQ</i> ₄₀₈	17.0	X	287.20515	336.98627	186.81427	13.19470	0.1106052	0.20242445	2.8727251	20	—	—
522035	2015	<i>XS</i> ₄₀₈	16.7	X	289.18625	19.47211	90.84865	10.23482	0.1286651	0.17830762	3.1262433	20	11 24.1	20.7
522036	2015	<i>XX</i> ₄₀₈	17.7	X	42.59507	242.09819	157.41554	2.71579	0.1035240	0.23115119	2.6294926	20	—	—
522037	2015	<i>XW</i> ₄₀₉	16.5	X	163.72506	226.32040	33.51843	10.59127	0.0586223	0.18075547	3.0979548	20	12 31.9	21.3
522038	2015	<i>XH</i> ₄₁₀	16.5	X	235.80956	156.10971	42.10919	10.10295	0.0660209	0.18895958	3.0076233	20	—	—
522039	2015	<i>XQ</i> ₄₁₀	16.4	X	339.25829	327.14293	64.72726	8.35705	0.2349842	0.19065656	2.9897500	20	11 12.8	19.1
522040	2015	<i>XS</i> ₄₁₀	17.9	X	24.19799	15.51445	32.81708	3.21699	0.0775701	0.21989201	2.7185026	20	—	—
522041	2015	<i>XX</i> ₄₁₀	18.0	X	21.06742	337.99143	149.03935	2.92684	0.1455654	0.25551593	2.4595598	20	1 6.2	20.2
522042	2015	<i>XA</i> ₄₁₁	16.8	X	291.77923	317.12970	117.20663	2.41531	0.1421101	0.17770327	3.1333273	20	10 10.9	20.6
522043	2015	<i>XJ</i> ₄₁₂	16.9	X	272.12813	233.39591	248.61017	7.94381	0.0796586	0.18609288	3.0384322	20	11 20.4	20.9
522044	2015	<i>XS</i> ₄₁₂	16.8	X	303.08523	305.64472	246.68850	16.02993	0.1019895	0.21686464	2.7437438	20	—	—
522045	2015	<i>XZ</i> ₄₁₂	16.4	X	221.90168	11.73446	208.87169	17.42670	0.1615723	0.17691722	3.1426015	20	—	—
522046	2015	<i>XU</i> ₄₁₃	17.2	X	230.39693	93.85384	108.31100	4.77756	0.0358652	0.21250714	2.7811241	20	—	—
522047	2015	<i>XX</i> ₄₁₃	16.3	X	296.94789	195.89813	242.20510	9.87367	0.0865544	0.18069080	3.0986940	20	10 27.8	20.5
522048	2015	<i>XE</i> ₄₁₄	17.5	X	27.71626	252.16963	185.91650	7.38413	0.1401752	0.21910623	2.7249983	20	—	—
522049	2015	<i>XH</i> ₄₁₄	15.7	X	153.49734	343.12867	274.15570	18.97723	0.0581791	0.17008604	3.2261924	20	12 16.0	20.6
522050	2015	<i>XJ</i> ₄₁₄	16.7	X	245.57876	305.54712	229.61838	12.14557	0.1330763	0.17636258	3.1491868	20	12 11.6	21.2
522051	2015	<i>XL</i> ₄₁₄	17.2	X	358.10306	241.47261	244.98679	10.26380	0.2108078	0.22091967	2.7106655	20	—	—
522052	2015	<i>XY</i> ₄₁₄	16.1	X	301.39958	316.38108	153.25216	12.11168	0.0585435	0.17168465	3.2061344	20	12 14.8	20.6
522053	2015	<i>XB</i> ₄₁₅	16.8	X	325.23704	292.37282	272.28422	11.62046	0.1957289	0.23125612	2.6286972	20	1 15.9	20.1
522054	2015	<i>XL</i> ₄₁₅	17.2	X	17.97145	251.59787	208.80728	4.01137	0.0779539	0.21087650	2.7954427	20	—	—
522055	2015	<i>XN</i> ₄₁₅	16.6	X	308.65265	198.76452	285.35842	8.14617	0.1985586	0.18253341	3.0778053	20	—	—
522056	2015	<i>XO</i> ₄₁₅	17.4	X	1.32989	313.41026	258.69871	5.46753	0.0694805	0.26157035	2.4214585	20	4 4.2	20.1
522057	2015	<i>XQ</i> ₄₁₅	16.2	X	190.83500	94.01313	172.31372	11.11760	0.1377161	0.18145205	3.0900213	20	—	—
522058	2015	<i>XS</i> ₄₁₅	17.2	X	356.94421	292.12771	242.66077	6.23092	0.1467218	0.23420900	2.6065557	20	2 1.4	20.0
522059	2015	<i>XT</i> ₄₁₅	16.4	X	299.07777	322.07360	170.40689	12.30250	0.0545279	0.17485601	3.1672500	20	—	—
522060	2015	<i>XX</i> ₄₁₅	16.8	X	275.34219	324.34393	280.70237	9.44160	0.1386472	0.22678000	2.6631740	20	1 16.7	20.7
522061	2015	<i>XN</i> ₄₁₆	16.4	X	231.34011	148.37004	59.54567	15.22076	0.1333400	0.19033378	2.9931292	20	—	—
522062	2015	<i>XQ</i> ₄₁₆	16.9	X	321.67522	164.78956	21.06773	14.08994	0.0921212	0.23477543	2.6023615	20	1 5.1	20.6
522063	2015	<i>XP</i> ₄₁₇	16.4	X	147.48771	72.47091	248.46852	16.47675	0.1350523	0.20079910	2.8882063	20	—	—
522064	2015	<i>XU</i> ₄₁₇	16.2	X	235.72795	0.96692	262.70695	13.33012	0.1556396	0.21274302	2.7790680	20	1 1.8	20.8
522065	2015	<i>XV</i> ₄₁₇	16.8	X	157.49567	77.92048	202.25107	10.47337	0.0262782	0.18326585	3.0695993	20	—	—
522066	2015	<i>XW</i> ₄₁₇	16.4	X	194.01872	18.22703	236.63926	10.01219	0.1793411	0.17665485	3.1457123	20	—	—
522067	2015	<i>XA</i> ₄₁₈	17.3	X	39.12104	280.07433	197.96823	13.32972	0.0540487	0.23529435	2.5985339	20	1 26.9	20.8
522068	2015	<i>XC</i> ₄₁₈	16.8	X	289.27129	283.57989	211.87759	11.91910	0.1318826	0.17468093	3.1693659	20		

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
522081 2015 XA ₄₂₁	16.4 ^m	X	250.00962	36.05398	98.85054	13.72871	0.0339319	0.17901580	3.1179931	20	11 17.1	20.9
522082 2015 XL ₄₂₁	17.4	X	354.80996	347.36189	102.41453	4.61376	0.1672807	0.21687199	2.7436818	20	—	—
522083 2015 XM ₄₂₁	16.7	X	151.21548	190.86581	115.69706	14.43035	0.0587221	0.22417027	2.6838034	20	—	—
522084 2015 XN ₄₂₁	16.9	X	296.18116	194.83268	246.12495	3.62893	0.1417124	0.17951602	3.1121981	20	10 24.6	20.8
522085 2015 XO ₄₂₁	16.5	X	6.39314	288.91729	96.31847	10.96061	0.1004993	0.19188142	2.9770132	20	12 9.9	20.2
522086 2015 XP ₄₂₁	16.9	X	298.31890	88.30443	98.30470	14.00453	0.1260826	0.23373925	2.6100468	20	—	—
522087 2015 XQ ₄₂₁	15.5	X	105.62853	174.53312	97.34811	29.49390	0.1621375	0.17407896	3.1766682	20	11 28.9	20.9
522088 2015 XR ₄₂₁	15.9	X	64.15829	202.01172	109.42785	17.87855	0.1846219	0.18051899	3.1006598	20	12 4.2	20.7
522089 2015 YY ₂₄	17.2	X	54.22779	213.51851	332.19459	7.70889	0.1021008	0.27872573	2.3210510	20	5 29.9	19.9
522090 2015 YZ ₂₄	16.4	X	355.71193	23.39186	105.20668	11.42610	0.1369074	0.21495376	2.7599805	20	—	—
522091 2015 YD ₂₅	16.4	X	348.74505	292.24276	125.82768	10.67175	0.0108886	0.18392474	3.0622639	20	12 16.6	20.8
522092 2015 YE ₂₅	16.4	X	348.75638	125.72758	275.33203	14.13216	0.1438997	0.18191370	3.0847912	20	12 3.1	20.1
522093 2015 YH ₂₅	16.6	X	84.34629	219.60597	131.37762	12.49843	0.0875268	0.20589793	2.8403252	20	—	—
522094 2015 YJ ₂₅	16.2	X	36.53245	236.69068	97.99150	13.28105	0.1582337	0.18718062	3.0266495	20	11 27.1	20.4
522095 2015 YM ₂₅	17.3	X	297.70424	65.90562	99.54481	10.00489	0.1059661	0.21483963	2.7609579	20	—	—
522096 2015 YN ₂₆	16.3	X	153.21002	24.64252	247.64292	7.00856	0.0521117	0.19636814	2.9314919	20	—	—
522097 2015 YQ ₂₆	17.5	X	335.97630	101.53446	120.52574	6.84054	0.0758075	0.26904658	2.3763901	20	3 12.3	20.2
522098 2015 YR ₂₆	16.6	X	306.69585	106.02010	342.24617	14.09951	0.1755134	0.18101505	3.0949925	20	11 13.1	20.4
522099 2015 YW ₂₆	17.3	X	284.18351	352.97534	193.16556	4.82792	0.1007335	0.21465681	2.7625253	20	—	—
522100 2015 YY ₂₆	16.7	X	155.43166	205.58117	112.60402	4.45308	0.0637984	0.22348400	2.6892949	20	—	—
522101 2015 YD ₂₇	16.2	X	223.82871	138.31325	92.33674	10.93108	0.0481233	0.19052483	2.9911279	20	—	—
522102 2015 YE ₂₇	17.1	X	301.61443	221.69966	298.35106	4.04777	0.1010467	0.21146111	2.7902880	20	—	—
522103 2015 YG ₂₇	17.4	X	6.46344	30.75073	88.62892	7.44781	0.2183895	0.22900447	2.6458999	20	—	—
522104 2015 YL ₂₇	16.7	X	282.97247	124.21221	103.61213	15.86027	0.0541679	0.23796491	2.5790560	20	1 13.2	20.1
522105 2015 YN ₂₇	16.3	X	319.59360	317.08958	112.96960	11.15368	0.0847099	0.17949292	3.1124652	20	11 24.3	20.4
522106 2016 AC ₁₄	15.8	X	14.48580	252.91183	104.64802	15.12860	0.0779854	0.17155751	3.2077183	20	11 13.8	20.3
522107 2016 AF ₂₁₆	15.8	X	347.65308	242.49615	171.47776	19.95284	0.1722395	0.17690697	3.1427229	20	12 19.6	19.9
522108 2016 AJ ₂₃₈	16.6	X	294.85496	86.26413	40.32934	12.49651	0.1535885	0.18907347	3.0064154	20	12 21.8	20.3
522109 2016 AN ₂₃₈	16.4	X	335.10323	73.27434	353.82371	10.83474	0.0972895	0.18208340	3.0828743	20	12 10.6	20.4
522110 2016 AS ₂₃₈	16.7	X	280.56318	157.91987	43.64672	8.82627	0.1389048	0.21438731	2.7648399	20	—	—
522111 2016 AA ₂₃₉	16.7	X	38.10440	357.36339	49.26846	12.74696	0.0111633	0.19862583	2.9092357	20	—	—
522112 2016 AK ₂₃₉	17.4	X	42.61524	57.80501	57.80241	6.89845	0.0648997	0.25420729	2.4679937	20	1 31.8	20.3
522113 2016 AY ₂₃₉	16.9	X	65.42555	33.29222	24.59260	6.10015	0.1245525	0.24067175	2.5596817	20	—	—
522114 2016 AC ₂₄₀	16.6	X	228.69214	219.78942	338.60838	11.72813	0.1975605	0.18216138	3.0819944	20	12 12.5	21.4
522115 2016 AD ₂₄₀	17.0	X	21.17319	29.26267	84.51125	12.51105	0.1393640	0.23700459	2.5860180	20	—	—
522116 2016 AN ₂₄₀	16.3	X	98.30051	272.66499	84.57266	7.70115	0.0330502	0.21227233	2.7831746	20	—	—
522117 2016 AQ ₂₄₀	16.9	X	277.43791	171.93023	28.33321	6.61519	0.1018054	0.22359644	2.6883932	20	—	—
522118 2016 AR ₂₄₀	16.5	X	24.59010	47.25589	329.68441	14.39487	0.0604710	0.18196627	3.0835851	20	12 15.9	21.0
522119 2016 AS ₂₄₀	16.0	X	156.70995	253.77503	0.35570	10.91216	0.0495146	0.17880408	3.1204538	20	12 16.7	20.9
522120 2016 AG ₂₄₁	16.0	X	62.45849	32.68940	297.31484	16.98769	0.1698367	0.18025229	3.1037176	20	12 20.1	20.7
522121 2016 AN ₂₄₁	17.3	X	345.47736	346.91889	138.86274	4.00424	0.0870055	0.22164534	2.7041471	20	—	—
522122 2016 AB ₂₄₂	18.1	X	0.13695	243.08391	318.97171	1.18062	0.1232264	0.26985437	2.3716454	20	3 16.1	20.2
522123 2016 AG ₂₄₂	17.5	X	151.89235	234.73339	90.20697	4.61330	0.0853022	0.22769278	2.6560518	20	—	—
522124 2016 AC ₂₄₃	17.2	X	67.43766	279.45878	122.45388	7.00577	0.0748264	0.22394377	2.6856127	20	—	—
522125 2016 AF ₂₄₃	16.6	X	273.34689	6.51523	127.44821	11.75071	0.0406967	0.17930045	3.1146921	20	12 11.6	21.0
522126 2016 AP ₂₄₃	16.9	X	320.52713	336.60271	112.04878	2.61250	0.1502905	0.18579901	3.0416351	20	12 17.4	20.1
522127 2016 AV ₂₄₃	17.1	X	106.90688	238.05273	96.10283	3.29779	0.0691659	0.20199494	2.8767959	20	—	—
522128 2016 AC ₂₄₄	17.1	X	323.81326	300.53964	129.26595	2.67143	0.1683210	0.17806492	3.1290834	20	11 26.3	20.6
522129 2016 AS ₂₄₄	16.6	X	185.46866	322.25354	326.98202	7.29990	0.1777137	0.21531844	2.7568633	20	—	—
522130 2016 AG ₂₄₅	17.0	X	135.23897	347.99449	326.31665	7.87420	0.0584933	0.20526396	2.8461705	20	—	—
522131 2016 AN ₂₄₅	16.6	X	15.54277	355.04748	40.75870	2.91912	0.0763515	0.18752334	3.0229607	20	12 30.7	20.6
522132 2016 AE ₂₄₅	17.1	X	123.52106	325.38787	6.18838	3.69713	0.0985241	0.21296380	2.7771469	20	—	—
522133 2016 AW ₂₄₅	16.1	X	219.85468	260.46643	283.47438	10.12088	0.0234821	0.17813863	3.1282202	20	12 6.8	20.7
522134 2016 AX ₂₄₆	16.5	X	224.67525	79.31912	133.87429	10.25075	0.0678900	0.18163101	3.0879912	20	—	—
522135 2016 AZ ₂₄₆	16.2	X	309.78694	250.04655	339.75896	14.58949	0.0589997	0.23427170	2.6060905	20	2 20.1	19.7
522136 2016 AA ₂₄₇	17.3	X	337.97497	242.37379	338.39453	13.42350	0.1068865	0.24412369	2.5354950	20	3 8.2	20.2
522137 2016 AE ₂₄₇	17.2	X	188.68358	139.48012	125.85006	5.83758	0.0079052	0.21542544	2.7559504	20	—	—
522138 2016 AH ₂₄₇	16.5	X	188.97733	128.80146	109.05538	19.89930	0.1352041	0.18720403	3.0263971	20	12 28.1	21.2
522139 2016 AJ ₂₄₇	17.2	X	170.04278	13.42041	315.90804	3.52385	0.0014167	0.24154110	2.5535362	20	1 5.5	20.5
522140 2016 AU ₂₄₇	17.4	X	13.93445	32.69645	40.13355	8.58757	0.1516373	0.21664276	2.7456168	20	—	—
522141 2016 AV ₂₄₇	16.6	X	291.26223	105.15047	348.31883	15.87175	0.2303117	0.17662955	3.1460127	20	10 14.3	20.6
522142 2016 AC ₂₄₈	17.3	X	240.07397	75.48057	166.03467	13.99525	0.1478959	0.20929658	2.8094930	20	—	—
522143 2016 AG ₂₄₈	17.4	X	77.68688	199.99276	200.64177	5.87288	0.0616518	0.22260799	2.6963455	20	—	—
522144 2016 AW ₂₄₈	16.4	X	333.92230	279.58456	157.97887	9.30453	0.0676283	0.17541102	3.1605655	20	12 20.7	20.6
522145 2016 AG ₂₄₉	17.4	X	288.18003	57.51493	144.55389	9.55792	0.1552125	0.22310402	2.6923476	20	—	—
522146 2016 AH ₂₄₉	16.1	X	302.72718	189.07803	252.96402	9.66840	0.1657669	0.17369814	3.1813096	20	10 31.6	19.9
522147 2016 AY ₂₄₉	17.2	X	178.01342	48.60896	231.93292	3.45836	0.0275272	0.21150531	2.7898993	20	—	—
522148 2016 AV ₂₅₀	16.8	X	349.94078	245.59782	175.63501	3.08504	0.1102851	0.18786964	3.0192447	20	12 29.6	20.5
522149 2016 AS ₂₅₀	16.4	X	268.39915	89.09519	135.59665	13.94718	0.0581756	0.22735053	2.6587167	20	—	—
522150 2016 AZ ₂₅₀	16.1	X	148.63625	98.83873	163.93082	9.01801	0.0850308	0.17473006	3.16887718	20	12 18.1	21.1
522151 2016 AF ₂₅₁	17.7	X	232.62604	149.73391	132.41286	12.73271	0.1781391	0.23928746	2.5695442	20	1 17.3	21.9
522152 2016 AJ ₂₅₁	16.9	X	190.00955	156.23486	140.05238	10.57477	0.0815294	0.22528927	2.6749092	20	—	—
522153 2016 AP ₂₅₁	17.8	X	289.86314	109.80891	121.23401	5.08152	0.1630520	0.23616039	2.5921772	20	1 11.6	21.7
522154 2016 AR ₂₅₁	16.9	X	140.39991	142.19530	143.45642	10.13552	0.048					

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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>		
522161	2016	AH ₂₅₃	17.4	X	30.65331	256.98021	176.51580	6.14989	0.1386153	0.21359028	2.7717139	20	—	—
522162	2016	AL ₂₅₃	18.0	X	27.87420	226.04522	309.50649	5.75742	0.1309642	0.25826074	2.4421019	20	3 28.9	20.5
522163	2016	AO ₂₅₃	16.9	X	34.17722	101.40225	315.61214	11.25397	0.0516237	0.19529638	2.9422072	20	—	—
522164	2016	AY ₂₅₃	16.3	X	344.46814	285.68132	109.02467	8.47241	0.0842152	0.17254269	3.1954965	20	11 15.1	20.5
522165	2016	AL ₂₅₄	16.9	X	147.83738	86.62648	223.97701	3.25366	0.0547358	0.21438189	2.7648866	20	—	—
522166	2016	AT ₂₅₄	16.4	X	200.60391	114.58348	105.19793	11.78192	0.0992839	0.18232163	3.0801882	20	12 20.6	21.0
522167	2016	AC ₂₅₅	18.5	X	88.80548	336.38173	118.06210	4.03219	0.0769226	0.26777319	2.3839181	20	3 11.9	21.4
522168	2016	AM ₂₅₅	16.4	X	7.20294	305.88805	103.29983	12.34304	0.0867704	0.18905927	3.0065659	20	—	—
522169	2016	AT ₂₅₅	17.3	X	7.23760	234.42977	199.40590	1.36674	0.0470757	0.20108447	2.8854731	20	—	—
522170	2016	AV ₂₅₅	17.2	X	329.32186	354.42137	109.86504	3.21617	0.0265792	0.19810045	2.9143771	20	—	—
522171	2016	AX ₂₅₅	16.5	X	308.67454	293.38682	162.35541	12.98086	0.0810156	0.17599566	3.1535622	20	12 8.3	20.8
522172	2016	AY ₂₅₅	16.7	X	305.63822	241.09322	222.45756	9.67676	0.0587549	0.17467533	3.1694336	20	12 12.8	21.0
522173	2016	AC ₂₅₆	17.4	X	67.04040	304.21355	141.72073	15.20936	0.0520276	0.24563646	2.5250743	20	1 26.0	20.5
522174	2016	AF ₂₅₆	16.4	X	28.53730	244.92161	122.04499	10.17006	0.0763658	0.17421600	3.1750021	20	12 10.2	20.8
522175	2016	AQ ₂₅₆	17.0	X	280.54836	30.33466	127.08868	9.43940	0.0695515	0.19193551	2.9764539	20	—	—
522176	2016	AS ₂₅₆	16.8	X	322.25446	125.02236	316.98039	4.09991	0.1468408	0.18024177	3.1038383	20	12 9.5	20.3
522177	2016	AY ₂₅₆	16.3	X	288.31034	0.59672	106.36581	14.34037	0.0829992	0.16911806	3.2384913	20	11 23.5	20.8
522178	2016	AF ₂₅₇	17.3	X	52.31852	5.05533	18.52201	0.59185	0.0996486	0.19875883	2.9079377	20	—	—
522179	2016	AH ₂₅₇	15.9	X	79.81960	199.25417	124.65962	18.08946	0.1265038	0.17098831	3.2148331	20	12 24.1	20.9
522180	2016	AK ₂₅₇	17.5	X	107.96045	326.77549	65.31052	5.54865	0.0710436	0.23683584	2.5872463	20	1 18.0	20.9
522181	2016	AP ₂₅₇	16.8	X	352.61832	345.52743	86.63518	10.73406	0.0527649	0.18535272	3.0465156	20	—	—
522182	2016	AQ ₂₅₇	16.7	X	243.20872	106.70357	68.07488	5.63051	0.0401376	0.17612939	3.1519658	20	12 20.9	21.1
522183	2016	AR ₂₅₇	17.3	X	195.42971	176.96832	108.80027	8.16813	0.0435657	0.21683480	2.7439955	20	—	—
522184	2016	AU ₂₅₇	17.6	X	61.48423	333.12887	93.51909	6.01608	0.1115550	0.23011883	2.6373510	20	1 1.3	20.6
522185	2016	AB ₂₅₈	17.2	X	156.57913	247.00976	80.86327	6.77553	0.1531583	0.23070604	2.6328740	20	1 5.1	21.1
522186	2016	AJ ₂₅₈	17.3	X	295.55724	239.70847	321.92955	5.10915	0.1391313	0.22911849	2.6450220	20	—	—
522187	2016	AK ₂₅₈	17.0	X	216.54411	85.95011	125.61767	2.45398	0.1154040	0.18138896	3.0907376	20	12 25.4	21.6
522188	2016	AA ₂₅₉	17.0	X	310.66604	163.31647	353.75230	10.44145	0.0699178	0.20901885	2.8119812	20	—	—
522189	2016	AM ₂₅₉	18.2	X	9.09153	154.78545	67.23042	2.35170	0.0932926	0.28014494	2.3132054	20	5 4.7	20.2
522190	2016	AO ₂₅₉	16.9	X	205.45149	342.09240	322.43036	13.41931	0.1573453	0.23150928	2.6267805	20	1 23.9	21.1
522191	2016	AY ₂₅₉	17.3	X	188.56660	105.65288	188.48909	1.41108	0.0443012	0.21344658	2.7729577	20	—	—
522192	2016	AE ₂₆₀	17.4	X	256.79690	246.12104	342.71246	3.26307	0.0401977	0.21428787	2.7656953	20	—	—
522193	2016	AG ₂₆₀	17.4	X	281.61848	102.73112	136.14243	12.44973	0.1706492	0.22599294	2.6693538	20	1 12.9	21.4
522194	2016	AU ₂₆₀	17.1	X	280.03891	132.40513	127.50726	13.29030	0.1526307	0.22774466	2.6556485	20	2 8.7	21.0
522195	2016	AX ₂₆₀	16.5	X	306.63190	147.68321	58.55500	7.95217	0.1496239	0.21566829	2.7538811	20	1 5.7	20.3
522196	2016	AY ₂₆₀	16.4	X	197.72318	196.37471	69.57524	12.22781	0.1154586	0.18225658	3.0809211	20	—	—
522197	2016	AC ₂₆₁	16.3	X	65.62905	291.22843	99.40595	11.66852	0.0590306	0.18237363	3.0796026	20	—	—
522198	2016	AM ₂₆₁	16.1	X	18.15231	30.32041	33.83962	11.64782	0.0067487	0.17663996	3.1458891	20	—	—
522199	2016	AO ₂₆₁	16.7	X	200.31916	223.33220	41.67813	12.38248	0.0373848	0.18400714	3.0613496	20	—	—
522200	2016	AC ₂₆₂	18.4	X	72.96481	272.82559	274.49491	4.07385	0.0424499	0.29199364	2.2501965	20	6 23.2	20.8
522201	2016	AD ₂₆₂	18.0	X	348.91989	1.75822	202.30927	3.08555	0.1156568	0.24482325	2.5306628	20	3 2.6	20.6
522202	2016	AH ₂₆₂	16.5	X	223.25268	267.44278	323.53463	14.35592	0.2640232	0.16666093	3.2702442	20	—	—
522203	2016	AJ ₂₆₂	16.9	X	268.78667	60.23810	193.59900	7.92366	0.0851794	0.22058508	2.7128053	20	1 25.9	20.9
522204	2016	AS ₂₆₂	16.9	X	20.20280	187.04591	291.63538	6.09436	0.0972090	0.21472344	2.7619538	20	1 6.5	20.1
522205	2016	AT ₂₆₂	15.9	X	165.83185	6.76096	282.30497	8.70381	0.1025901	0.17545357	3.1600545	20	—	—
522206	2016	AU ₂₆₂	17.6	X	56.86547	293.54382	182.54455	12.07178	0.1339247	0.24072914	2.5592749	20	2 28.9	20.5
522207	2016	AV ₂₆₂	16.7	X	301.43680	268.55419	213.78234	7.78757	0.1831469	0.17252455	3.1957204	20	12 19.8	20.4
522208	2016	AZ ₂₆₂	17.6	X	315.60602	351.11165	239.50598	7.31304	0.0988797	0.23815379	2.5776922	20	2 17.3	21.1
522209	2016	AD ₂₆₃	17.2	X	67.43146	165.54799	297.05329	5.34869	0.0516333	0.23864083	2.5741838	20	2 17.9	20.4
522210	2016	AE ₂₆₃	16.7	X	44.86879	103.74609	308.63362	7.61872	0.0824360	0.19267560	2.9688271	20	—	—
522211	2016	AK ₂₆₃	16.9	X	54.71187	127.49731	309.57675	8.96669	0.1146174	0.21239386	2.7821129	20	1 9.6	20.2
522212	2016	AO ₂₆₃	16.9	X	317.09321	263.01459	324.00172	11.49788	0.1358173	0.22810687	2.6528364	20	2 14.0	20.1
522213	2016	AP ₂₆₃	16.1	X	162.90566	124.44420	176.29328	16.35124	0.1215783	0.17720273	3.1392250	20	—	—
522214	2016	AQ ₂₆₃	16.8	X	172.10556	160.29094	178.58088	3.98096	0.1065087	0.21300647	2.7767760	20	1 31.3	21.2
522215	2016	AR ₂₆₃	16.8	X	303.73029	243.28456	345.50906	12.62826	0.1273945	0.22194440	2.7017174	20	2 4.5	20.5
522216	2016	AS ₂₆₃	17.5	X	1.03477	284.67324	271.19079	2.26513	0.1499461	0.23991108	2.5650895	20	3 10.0	20.1
522217	2016	AT ₂₆₃	18.0	X	44.19931	214.19115	323.54534	1.83900	0.1333548	0.25935229	2.4352450	20	5 5.9	20.4
522218	2016	AV ₂₆₃	16.7	X	256.00531	46.45364	154.68080	0.46358	0.1192734	0.17422900	3.1748442	20	—	—
522219	2016	AW ₂₆₃	17.5	X	355.13085	288.01069	310.06144	6.88302	0.1057427	0.26372249	2.4082668	20	4 29.6	20.2
522220	2016	AG ₂₆₄	17.4	X	198.15792	108.49458	186.04916	12.56507	0.1754586	0.22600786	2.6692363	20	1 3.8	22.0
522221	2016	AO ₂₆₄	17.7	X	93.94627	297.15862	146.62693	7.88039	0.0878438	0.25605611	2.4560995	20	3 7.2	20.6
522222	2016	AR ₂₆₄	17.3	X	292.60866	139.79610	116.85001	7.75257	0.0932237	0.25162212	2.4848690	20	2 25.8	20.6
522223	2016	AB ₂₆₅	16.4	X	185.24583	157.85064	106.34653	5.97055	0.1019040	0.18419483	3.0592696	20	—	—
522224	2016	AM ₂₆₅	17.0	X	21.47332	78.28137	80.44130	13.23997	0.1223263	0.23843770	2.5756456	20	3 5.5	20.0
522225	2016	AQ ₂₆₅	15.9	X	167.38097	225.68093	62.34172	16.96492	0.0816072	0.17647387	3.1478626	20	—	—
522226	2016	AV ₂₆₅	16.2	X	160.15052	87.00534	235.33887	9.76050	0.1109245	0.20043194	2.8917323	20	1 1.5	20.7
522227	2016	AA ₂₆₆	17.2	X	358.20442	309.65067	235.83833	12.75118	0.0076722	0.24146837	2.5540490	20	2 24.9	20.8
522228	2016	AQ ₂₆₆	15.7	X	156.00417	40.13808	255.13576	11.97328	0.1424318	0.17371581	3.1810939	20	—	—
522229	2016	AH ₂₆₇	16.0	X	358.28194	138.46848	266.96508	13.51609	0.1098973	0.17256972	3.1951627	20	12 17.9	19.8
522230	2016	AM ₂₆₇	17.5	X	289.87646	31.53265	209.61533	9.05038	0.1776083					

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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>
522241 2016 AP ₂₇₁	16.5	X	330.65787	314.34789	270.28898	14.91143	0.1844969	0.23217705	2.6217414	20	2 15.3	19.9
522242 2016 AF ₂₇₂	16.7	X	44.14231	340.60209	113.06985	22.61327	0.0349365	0.22471411	2.6794716	20	1 7.5	20.1
522243 2016 AM ₂₇₂	16.5	X	190.44816	220.30460	2.42196	4.43904	0.0713032	0.17880438	3.1204504	20	12 14.6	21.2
522244 2016 AO ₂₇₂	16.5	X	37.72783	26.13608	338.14135	9.95154	0.0513881	0.17904151	3.1176945	20	12 14.6	21.0
522245 2016 AT ₂₇₂	16.5	X	219.29859	158.03873	44.56438	9.52984	0.1168697	0.18039002	3.1021375	20	12 16.7	21.2
522246 2016 AA ₂₇₃	16.1	X	223.89100	79.49362	107.01797	23.62164	0.1277241	0.17095257	3.2152812	20	12 5.2	21.2
522247 2016 AG ₂₇₃	16.2	X	182.88800	30.11049	236.30824	14.21647	0.2259037	0.17394685	3.1782764	20	—	—
522248 2016 AJ ₂₇₃	17.2	X	337.24828	322.18932	240.29016	14.14638	0.0460129	0.24318231	2.5420343	20	2 13.9	20.8
522249 2016 AK ₂₇₃	16.3	X	188.65012	53.17231	221.20138	16.09500	0.1637174	0.18296735	3.0729370	20	—	—
522250 2016 AP ₂₇₃	17.6	X	202.64590	69.14071	235.36615	3.97153	0.1217374	0.22809665	2.6529157	20	1 18.5	21.8
522251 2016 AQ ₂₇₃	16.6	X	267.36852	79.18111	157.77315	13.27479	0.1517129	0.21826836	2.7319675	20	—	—
522252 2016 AD ₂₇₄	17.2	X	147.70511	141.89859	193.39014	6.13621	0.0282230	0.21130641	2.7916498	20	—	—
522253 2016 AM ₂₇₄	17.4	X	38.16714	275.11468	176.06890	5.22151	0.0349818	0.21687099	2.7436902	20	—	—
522254 2016 AP ₂₇₄	16.6	X	4.22718	101.19166	315.70029	15.80382	0.1193296	0.17725546	3.1386024	20	—	—
522255 2016 AY ₂₇₄	17.0	X	175.80210	85.12621	196.88904	1.91572	0.1044429	0.18850815	3.0124230	20	—	—
522256 2016 AZ ₂₇₄	16.6	X	52.46945	227.44383	148.40936	3.45432	0.0301232	0.17748103	3.1359424	20	—	—
522257 2016 AD ₂₇₅	17.4	X	207.42212	74.34013	212.60934	2.49046	0.0578232	0.21693771	2.7431276	20	1 3.7	21.3
522258 2016 AE ₂₇₅	18.0	X	350.45219	300.48385	272.13529	2.02748	0.1348493	0.25580607	2.4576997	20	3 13.7	20.3
522259 2016 AG ₂₇₅	16.0	X	331.34915	252.59508	160.13630	10.23352	0.0929792	0.15544259	3.2457530	20	11 13.9	20.5
522260 2016 AL ₂₇₅	17.3	X	276.30120	290.43976	297.37398	9.20982	0.2246631	0.21001382	3.8030927	20	—	—
522261 2016 AT ₂₇₅	16.8	X	359.12320	278.60049	157.19665	12.53604	0.0367182	0.18523516	3.0478045	20	—	—
522262 2016 AV ₂₇₅	17.8	X	294.78919	85.98742	154.29909	13.78273	0.1054618	0.23913014	2.5706710	20	2 4.0	21.3
522263 2016 AY ₂₇₅	17.4	X	231.54279	10.29074	289.46558	5.20316	0.1638938	0.23960101	2.5673019	20	2 6.1	21.5
522264 2016 AA ₂₇₆	17.5	X	182.99476	146.22082	168.99943	5.39539	0.0400383	0.22375018	2.6871616	20	1 8.9	21.4
522265 2016 AC ₂₇₆	17.3	X	47.88654	167.95115	261.95502	3.09259	0.0467761	0.21428766	2.7656970	20	—	—
522266 2016 AQ ₂₇₆	17.2	X	20.62728	256.85268	218.28946	4.92474	0.1008604	0.22429631	2.6827979	20	—	—
522267 2016 AV ₂₇₆	16.8	X	102.89065	226.63008	142.73659	14.47731	0.1181367	0.22411903	2.6842125	20	—	—
522268 2016 AG ₂₇₇	17.5	X	353.43194	296.99733	287.66799	9.55536	0.1172633	0.27107187	2.3645386	20	4 1.4	20.0
522269 2016 AJ ₂₇₇	17.4	X	217.18321	100.62457	183.34318	1.67304	0.0346873	0.22942794	2.6426431	20	1 8.9	21.1
522270 2016 AO ₂₇₇	16.5	X	247.66860	227.47818	308.58112	10.43433	0.0787493	0.17783932	3.1317291	20	12 23.8	21.0
522271 2016 AR ₂₇₇	17.0	X	314.99848	8.71274	118.68712	2.74493	0.0314126	0.19296618	2.9658459	20	—	—
522272 2016 AX ₂₇₇	16.4	X	261.64231	111.18214	137.49325	14.19930	0.1091231	0.23034566	2.6356194	20	1 9.9	20.5
522273 2016 AA ₂₇₈	16.4	X	333.03614	35.07631	116.31163	10.05567	0.0274271	0.19009184	2.9956684	20	—	—
522274 2016 BC ₅	15.8	X	201.86528	98.02233	95.54230	23.07918	0.0611599	0.17303192	3.1894704	20	11 27.9	20.7
522275 2016 BN ₅	16.2	X	97.45220	172.98077	192.61038	12.66792	0.1013627	0.19804561	2.9149151	20	—	—
522276 2016 BX ₂₀	16.1	X	351.35121	268.86599	126.51171	17.63830	0.1964478	0.17699828	3.1416420	20	12 7.4	19.9
522277 2016 BD ₆₅	16.2	X	168.39845	300.06944	330.22278	4.82222	0.2062466	0.17600339	3.1534699	20	—	—
522278 2016 BQ ₉₄	15.8	X	164.36243	346.88628	280.92818	10.22130	0.0722579	0.18319493	3.0703915	20	—	—
522279 2016 BO ₉₅	16.3	X	344.87305	94.04902	13.67196	10.72271	0.0981044	0.18363179	3.0655198	20	—	—
522280 2016 BX ₉₅	16.1	X	207.89951	329.73472	273.79204	7.69965	0.0441208	0.17388601	3.1790177	20	—	—
522281 2016 BA ₉₆	16.9	X	320.47425	270.66419	319.23768	12.95659	0.1213856	0.23345335	2.6121772	20	2 21.9	20.1
522282 2016 BE ₉₆	16.6	X	359.72968	187.08742	328.80544	13.43463	0.1525503	0.22007696	2.7169793	20	1 19.3	19.7
522283 2016 BF ₉₆	15.7	X	345.50689	262.50239	208.78251	8.82249	0.0420712	0.17963737	3.1107964	20	—	—
522284 2016 BU ₉₆	16.7	X	184.06731	77.82718	179.43010	25.82762	0.2320844	0.17281502	3.1921384	20	—	—
522285 2016 BW ₉₆	17.6	X	320.33437	2.47506	209.64874	6.83930	0.1402973	0.23725592	2.5841914	20	1 25.8	21.0
522286 2016 BC ₉₇	17.6	X	307.57602	4.11264	254.35247	8.40780	0.1036367	0.26074400	2.4265719	20	3 9.8	20.9
522287 2016 BD ₉₇	18.9	X	126.11088	305.98694	183.60495	5.55441	0.0545787	0.30194109	2.2004993	20	6 16.2	21.7
522288 2016 BG ₉₇	17.3	X	147.34843	88.89365	271.50585	2.22825	0.0598915	0.23358666	2.6111833	20	1 24.3	20.8
522289 2016 BM ₉₇	15.5	X	138.50133	348.64657	303.76919	18.12871	0.1484776	0.17218939	3.1998659	20	—	—
522290 2016 BQ ₉₇	16.3	X	164.26871	359.73939	282.34946	3.57836	0.1066393	0.18172617	3.0869131	20	—	—
522291 2016 BW ₉₇	16.7	X	325.82056	140.38782	335.27101	9.05716	0.0636554	0.18622674	3.0369760	20	—	—
522292 2016 BY ₉₇	17.6	X	71.81968	74.38363	2.31352	2.20041	0.0496189	0.23026089	2.6362662	20	1 24.5	20.8
522293 2016 BF ₉₈	17.2	X	32.07660	173.87480	259.27190	0.97871	0.0484487	0.20260009	2.8710646	20	—	—
522294 2016 BH ₉₈	17.8	X	346.46323	307.62287	283.89963	5.74513	0.0705395	0.26731469	2.3866432	20	4 6.6	20.6
522295 2016 BL ₉₈	16.3	X	194.53613	230.48379	35.94689	8.36635	0.1267648	0.16974989	3.2304502	20	—	—
522296 2016 BV ₉₈	16.3	X	0.11925	342.97394	104.74673	11.63795	0.0410346	0.17536852	3.1610761	20	—	—
522297 2016 BC ₉₉	16.5	X	241.71705	251.64883	36.09000	13.64697	0.1499251	0.21103873	2.7940099	20	2 11.6	21.2
522298 2016 BE ₉₉	16.1	X	70.68306	328.80072	64.63994	9.37972	0.1109766	0.17971513	3.1098990	20	—	—
522299 2016 BN ₉₉	16.1	X	220.43236	122.52773	120.13485	12.69351	0.0849435	0.17490237	3.1666903	20	—	—
522300 2016 BR ₉₉	16.1	X	128.32476	201.05236	126.94260	11.88730	0.0477003	0.16902128	3.2397273	20	—	—
522301 2016 BT ₉₉	16.2	X	183.44736	92.14006	133.90131	10.77184	0.0612642	0.17586387	3.1551375	20	12 12.8	21.0
522302 2016 BV ₉₉	15.6	X	27.83133	232.90296	117.13946	10.46029	0.0318542	0.15293786	3.4630550	20	11 11.4	20.6
522303 2016 BC ₁₀₀	17.9	X	55.91327	221.53030	301.54489	3.47762	0.0676530	0.26571673	2.3962021	20	4 23.7	20.6
522304 2016 BD ₁₀₀	17.4	X	299.24328	290.02291	292.49150	6.91198	0.1481883	0.21809855	2.7333853	20	1 16.3	21.2
522305 2016 BF ₁₀₀	18.0	X	43.99889	2.12665	177.86400	5.98238	0.1125066	0.26474654	2.4020526	20	5 8.5	20.5
522306 2016 BL ₁₀₀	17.0	X	281.83080	351.23396	264.30683	12.86492	0.2097370	0.22503651	2.6769117	20	1 25.9	21.3
522307 2016 BD ₁₀₁	16.5	X	126.88063	163.23778	167.70326	9.31523	0.0111148	0.18265019	3.0764932	20	—	—
522308 2016 BJ ₁₀₁	17.1	X	336.03955	245.02643	340.70197	14.80559	0.0641721	0.24218674	2.5489959	20	3 16.1	20.2
522309 2016 BL ₁₀₁	18.0	X	88.20628	271.35625	228.26837	2.31924	0.1165405	0.26687937	2.3892378	20	5 18.8	21.0
522310 2016 BO ₁₀₁	17.5	X	60.88956	323.03036	155.69322	11.02075	0.1130354	0.23858590	2.5745788	20	3 11.2	20.5
522311 2016 BQ ₁₀₁	16.5	X	203.91515	259.82041	10.58704	9.74819	0.0840572	0.18433060	3.0577673	20	—	—
522312 2016 BR ₁₀₁	16.4	X	177.67280	311.40905	15.37600	7.05324	0.0315362	0.20820362	2.8193167	20	1 21.5	20.5
522313 2016 BS ₁₀₁	17.5	X	28.08461	163.30908	3.79330	6.16285	0.1210450	0.24426168	2.5345401	20	3 21.7	20.2
522314 2016 BU ₁₀₁	17.0	X	343.20356	309.49200	166.65467	1.23386	0.1648647	0.19113383	2.9847710	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>
522321 2016 BK ₁₀₂	15.7	X	8.13559	58.64184	349.61911	9.26008	0.0820559	0.17329260	3.1862709	20	—	—
522322 2016 BW ₁₀₂	18.2	X	159.16601	101.09723	331.34333	6.15929	0.0654048	0.29648891	2.2273942	20	5 5.9	21.2
522323 2016 BX ₁₀₂	17.4	X	316.59878	165.56538	12.98509	13.73770	0.1033756	0.23259566	2.6185949	20	—	—
522324 2016 BX ₁₀₃	16.8	X	91.45364	223.42745	138.96461	11.81863	0.1973300	0.21656867	2.7462430	20	—	—
522325 2016 BA ₁₀₄	18.4	X	149.34044	147.16769	257.91949	2.56916	0.0823993	0.27387365	2.3483846	20	3 21.2	21.7
522326 2016 BO ₁₀₄	15.9	X	323.33171	285.18504	143.70666	10.28179	0.0398372	0.17363571	3.1820721	20	11 27.2	20.3
522327 2016 BD ₁₀₅	17.5	X	135.23073	245.55021	93.56427	3.85072	0.0788872	0.21515684	2.7582435	20	—	—
522328 2016 BM ₁₀₅	17.8	X	308.52595	128.53144	93.05639	3.31973	0.0698359	0.24147397	2.5540095	20	2 4.2	21.0
522329 2016 BT ₁₀₅	16.5	X	241.26720	31.63861	154.31929	14.20199	0.0700648	0.17972337	3.1098040	20	12 29.0	21.1
522330 2016 BU ₁₀₅	17.5	X	89.34192	19.62940	108.49995	7.38768	0.0474592	0.27525600	2.3405155	20	4 25.9	20.4
522331 2016 CA ₉	17.4	X	312.82119	253.16500	303.42484	2.51670	0.2042570	0.22422274	2.6833847	20	—	—
522332 2016 CX ₁₅₆	17.1	X	34.59006	268.79604	147.01754	2.68922	0.0612693	0.20292842	2.8679669	20	—	—
522333 2016 CO ₂₂₂	15.8	X	310.61466	329.97264	138.79487	14.24877	0.0867332	0.17275552	3.1928714	20	12 25.0	20.1
522334 2016 CN ₂₆₄	16.4	X	153.45869	104.32742	176.39362	1.04314	0.1310245	0.17916852	3.1162210	20	—	—
522335 2016 CO ₂₉₀	17.9	X	327.58019	251.19506	12.85628	3.97270	0.1231262	0.27185352	2.3600040	20	4 18.6	20.4
522336 2016 CK ₂₉₁	17.6	X	6.66993	253.61479	323.93167	6.60520	0.1110585	0.26517011	2.3994940	20	4 19.5	20.2
522337 2016 CS ₂₉₁	18.0	X	329.31609	117.38715	140.55711	2.04725	0.1531686	0.25806049	2.4433651	20	4 10.8	20.6
522338 2016 CZ ₂₉₄	17.4	X	253.72883	259.63619	322.39959	5.55763	0.0130469	0.22431605	2.6826405	20	—	—
522339 2016 CH ₂₉₅	17.8	X	124.81483	212.78103	180.02605	1.77144	0.0411046	0.24079010	2.5588429	20	2 3.2	21.1
522340 2016 CN ₂₉₅	16.5	X	71.50793	77.98943	270.29853	4.49743	0.1186945	0.18336162	3.0685303	20	—	—
522341 2016 CF ₂₉₆	17.5	X	333.66905	77.91204	86.33409	5.87755	0.0584219	0.22299579	2.6932186	20	—	—
522342 2016 CQ ₂₉₆	16.5	X	154.42877	192.67312	114.60852	12.98018	0.0310869	0.19489932	2.9462019	20	—	—
522343 2016 CS ₂₉₆	16.2	X	189.95000	146.57352	100.46773	11.30041	0.0574626	0.17385414	3.1794062	20	—	—
522344 2016 CX ₂₉₆	16.6	X	202.49585	231.14732	73.73164	10.80666	0.1291221	0.21452031	2.7636970	20	1 23.0	21.1
522345 2016 CB ₂₉₇	16.0	X	258.67834	85.45952	98.31435	16.87314	0.0255100	0.17976692	3.1093017	20	—	—
522346 2016 CG ₂₉₇	16.2	X	141.79945	225.26039	71.37204	10.50138	0.0451431	0.17415921	3.1756923	20	—	—
522347 2016 CQ ₂₉₇	17.6	X	348.92542	71.20605	138.54312	5.40462	0.1562069	0.23964746	2.5669702	20	3 9.3	20.2
522348 2016 CS ₂₉₇	16.1	X	289.80282	298.94595	274.65688	11.10764	0.0613350	0.19782808	2.9170514	20	1 8.7	20.3
522349 2016 CT ₂₉₇	16.4	X	46.84146	181.33875	331.06182	11.72604	0.1066063	0.24145223	2.5541627	20	3 27.5	19.4
522350 2016 CV ₂₉₇	16.8	X	303.39217	336.06305	306.60717	12.80742	0.1618637	0.24453953	2.5326198	20	3 26.4	20.3
522351 2016 CG ₂₉₈	16.9	X	168.36425	319.87936	14.97374	5.37117	0.0773655	0.22164679	2.7041353	20	1 21.8	21.0
522352 2016 CJ ₂₉₈	18.0	X	335.91590	166.95364	74.47496	2.39249	0.1509782	0.25909115	2.4368811	20	3 29.8	20.5
522353 2016 CR ₂₉₈	17.2	X	30.82927	15.43446	103.56822	7.34456	0.0701086	0.22938443	2.6429773	20	1 21.1	20.4
522354 2016 CS ₂₉₈	17.8	X	40.68818	95.47768	97.29633	6.98626	0.0491083	0.27767170	2.3269210	20	5 14.5	20.4
522355 2016 CW ₂₉₈	16.0	X	176.88755	263.15151	11.76095	10.04724	0.1065695	0.17855986	3.1232985	20	—	—
522356 2016 CE ₂₉₉	17.2	X	331.96649	160.64513	10.05150	7.03496	0.0588803	0.21762919	2.7373140	20	1 7.1	20.9
522357 2016 CJ ₂₉₉	18.0	X	29.90268	154.02915	75.40823	6.66841	0.0602227	0.28921509	2.2645856	20	6 20.7	20.2
522358 2016 CK ₂₉₉	17.0	X	281.66851	166.56115	103.33669	5.98903	0.1017223	0.24260182	2.5460876	20	3 1.8	20.6
522359 2016 CN ₂₉₉	18.4	X	116.58210	24.26399	112.78058	7.14081	0.0352796	0.29004282	2.2602751	20	6 11.7	21.1
522360 2016 CP ₂₉₉	16.7	X	37.75593	253.34694	144.37323	19.32092	0.1364396	0.18607781	3.0385962	20	—	—
522361 2016 CE ₂₉₉	17.2	X	275.81021	271.42696	355.45954	14.36971	0.1535028	0.23508169	2.6001007	20	2 15.6	21.1
522362 2016 CK ₃₀₀	17.6	X	315.52213	152.70584	59.26190	4.86553	0.0872551	0.23423241	2.6063819	20	1 31.3	21.1
522363 2016 CU ₃₀₀	17.1	X	229.25919	323.43718	320.38397	5.52964	0.1871846	0.21457964	2.7631876	20	1 19.9	21.8
522364 2016 CV ₃₀₀	17.9	X	55.69111	284.69477	173.63982	9.46120	0.1723886	0.23824887	2.5770063	20	2 6.5	20.6
522365 2016 CX ₃₀₀	16.8	X	303.89925	183.17786	317.23368	8.26940	0.0610121	0.18333503	3.0688271	20	—	—
522366 2016 CD ₃₀₁	17.1	X	254.15281	316.82209	261.14742	0.46444	0.1148951	0.19284846	2.9670528	20	—	—
522367 2016 CO ₃₀₁	16.3	X	170.42889	133.08205	151.25037	10.10197	0.1006841	0.18186044	3.0853935	20	—	—
522368 2016 CQ ₃₀₁	16.4	X	78.51646	199.62580	150.51821	10.32495	0.0687698	0.17202863	3.2018592	20	—	—
522369 2016 CS ₃₀₁	16.4	X	96.48134	39.89645	345.90550	16.73939	0.1402470	0.21389367	2.7690923	20	1 12.6	20.3
522370 2016 CE ₃₀₂	16.9	X	200.25488	131.84138	166.69855	9.30307	0.0823532	0.20934257	2.8090815	20	1 10.9	21.4
522371 2016 CF ₃₀₂	17.2	X	351.77784	245.29235	341.52171	10.77017	0.1277355	0.25881971	2.4385845	20	4 3.5	19.7
522372 2016 CH ₃₀₂	17.3	X	247.97088	290.72594	343.11184	8.39756	0.1271934	0.22011616	2.1766567	20	1 28.6	21.5
522373 2016 CU ₃₀₂	17.6	X	248.79069	355.71214	328.58487	4.10113	0.0564044	0.25998002	2.4313234	20	3 31.7	21.0
522374 2016 CV ₃₀₂	17.5	X	285.03904	329.51188	305.14363	1.88597	0.1226333	0.24375546	2.5380479	20	3 4.7	20.9
522375 2016 CX ₃₀₂	17.2	X	320.52778	277.78348	343.83146	9.49640	0.1217229	0.25841739	2.4411149	20	4 1.5	20.0
522376 2016 CY ₃₀₂	18.3	X	84.71762	167.68496	348.69579	5.70127	0.0842962	0.28076373	2.3098053	20	5 31.2	21.1
522377 2016 CB ₃₀₃	16.5	X	199.00278	267.65285	5.60930	3.79907	0.1309491	0.18478358	3.0527680	20	—	—
522378 2016 CD ₃₀₃	18.1	X	310.54982	112.89257	116.55032	3.34107	0.1445388	0.23069125	2.6329865	20	2 7.1	21.5
522379 2016 CG ₃₀₃	16.1	X	66.29450	265.44253	95.07030	3.92562	0.0292331	0.16749800	3.2593397	20	—	—
522380 2016 CJ ₃₀₃	16.2	X	139.37933	209.23116	106.94309	4.84375	0.1184114	0.18045957	3.1013404	20	—	—
522381 2016 CK ₃₀₃	17.1	X	234.23553	302.26041	2.51286	12.55504	0.1862164	0.22954515	2.6417434	20	2 19.5	21.6
522382 2016 CF ₃₀₄	17.2	X	256.98503	270.25359	42.65317	11.79700	0.1254863	0.24226625	2.5484382	20	3 26.8	21.0
522383 2016 CN ₃₀₄	16.9	X	341.79179	142.54541	103.43523	8.44670	0.1085290	0.25172677	2.4841803	20	4 25.5	19.7
522384 2016 CX ₃₀₄	17.6	X	318.79698	124.02904	110.34718	7.16348	0.1815454	0.23050514	2.6344036	20	2 20.7	21.0
522385 2016 CK ₃₀₅	17.2	X	259.75128	199.09615	118.91154	12.38768	0.0733714	0.24222065	2.5487580	20	4 13.1	21.0
522386 2016 CT ₃₀₅	17.9	X	33.91129	303.64818	169.38883	12.70628	0.1106998	0.23596348	2.5936191	20	1 14.8	20.9
522387 2016 CJ ₃₀₆	18.4	X	68.94609	4.57303	174.39542	6.52252	0.0285193	0.28887857	2.2663440	20	6 3.0	21.1
522388 2016 CK ₃₀₆	17.8	X	345.									

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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>
522401 2016 <i>CN</i> ₃₀₉	16.1 ^m	X	113.34630	199.54048	148.89546	17.80199	0.1004955	0.17837155	3.1254963	20	—	—
522402 2016 <i>CR</i> ₃₀₉	16.5	X	173.41584	216.69038	120.83610	7.29615	0.0449065	0.21137784	2.7910208	20	1 28.4	20.5
522403 2016 <i>CX</i> ₃₀₉	17.4	X	195.32496	293.99050	356.02105	4.39908	0.0456491	0.21439490	2.7647747	20	—	—
522404 2016 <i>CZ</i> ₃₀₉	17.0	X	9.09116	2.91097	109.16201	5.83730	0.0272332	0.21420715	2.7663900	20	—	—
522405 2016 <i>CC</i> ₃₁₀	17.3	X	63.03049	120.35948	325.37052	2.59050	0.0277797	0.23158150	2.6262343	20	1 21.4	20.7
522406 2016 <i>CD</i> ₃₁₀	16.8	X	268.38163	17.72694	154.19147	9.47502	0.0028046	0.18580770	3.0415403	20	—	—
522407 2016 <i>CG</i> ₃₁₀	17.4	X	322.67300	109.09634	57.08224	1.64115	0.0118079	0.21491209	2.7603373	20	—	—
522408 2016 <i>CS</i> ₃₁₀	18.2	X	306.14550	254.31924	340.67129	11.70606	0.2071682	0.23323716	2.6137911	20	2 1.5	21.8
522409 2016 <i>CT</i> ₃₁₀	17.1	X	148.38088	259.66911	69.43592	2.95633	0.0664420	0.20585759	2.8406962	20	—	—
522410 2016 <i>CZ</i> ₃₁₀	17.7	X	263.07863	197.48527	87.31473	4.33230	0.1923112	0.23821682	2.5772375	20	2 17.6	21.7
522411 2016 <i>CA</i> ₃₁₁	16.1	X	351.31557	71.25227	2.92151	10.45735	0.0378100	0.17633504	3.1495146	20	—	—
522412 2016 <i>CB</i> ₃₁₁	16.3	X	60.38240	334.68925	9.60670	10.12095	0.0820278	0.15955159	3.3666809	20	12 17.2	21.3
522413 2016 <i>CL</i> ₃₁₁	17.3	X	292.09336	319.08849	274.29369	3.85782	0.0598592	0.21322824	2.7748503	20	2 2.3	21.0
522414 2016 <i>CM</i> ₃₁₁	16.4	X	307.63126	250.72745	274.48807	5.13039	0.1472774	0.18637826	3.0353298	20	—	—
522415 2016 <i>CN</i> ₃₁₁	17.4	X	304.58875	301.30294	322.82946	5.28499	0.1284018	0.23518591	2.5993325	20	3 15.0	20.7
522416 2016 <i>CW</i> ₃₁₁	17.1	X	261.79682	41.95758	242.53105	6.58222	0.1806510	0.23370756	2.6102827	20	2 13.1	21.2
522417 2016 <i>CH</i> ₃₁₂	17.2	X	86.73080	208.40640	198.85038	6.09123	0.0206592	0.21134335	2.7913244	20	1 5.5	21.0
522418 2016 <i>CJ</i> ₃₁₂	16.5	X	215.67608	21.05508	213.04302	5.02405	0.0929537	0.17479462	3.1679915	20	—	—
522419 2016 <i>CP</i> ₃₁₂	16.0	X	97.77942	17.74453	331.60910	10.40948	0.0662881	0.17958604	3.1113891	20	—	—
522420 2016 <i>CT</i> ₃₁₂	16.6	X	197.17739	53.26450	193.45889	8.27009	0.0281828	0.17908878	3.1171459	20	—	—
522421 2016 <i>CG</i> ₃₁₃	17.0	X	206.07514	32.12063	268.53312	3.71167	0.0968111	0.20871628	2.8146982	20	1 19.9	21.4
522422 2016 <i>CQ</i> ₃₁₃	16.5	X	191.19093	75.37440	196.65295	9.52312	0.0844410	0.17679865	3.1440064	20	—	—
522423 2016 <i>CB</i> ₃₁₄	16.5	X	238.94687	56.07287	194.85252	16.41259	0.0709458	0.18166470	3.0876094	20	—	—
522424 2016 <i>CE</i> ₃₁₄	17.4	X	325.84876	186.58394	50.48936	3.86721	0.1090093	0.23099857	2.6306507	20	3 16.8	20.5
522425 2016 <i>CF</i> ₃₁₄	17.1	X	315.62580	178.11947	59.45966	5.43992	0.0833179	0.22482225	2.6786123	20	3 8.1	20.6
522426 2016 <i>CH</i> ₃₁₄	17.4	X	290.31404	179.04788	71.97836	3.15148	0.1676689	0.21128865	2.7918062	20	2 9.7	21.5
522427 2016 <i>CM</i> ₃₁₄	17.1	X	299.64865	98.21733	109.43724	7.01431	0.0408908	0.19414680	2.9538100	20	1 17.6	21.2
522428 2016 <i>CQ</i> ₃₁₄	17.9	X	140.71278	35.40360	114.72470	5.45895	0.0391619	0.29023114	2.2592973	20	8 3.7	20.6
522429 2016 <i>CV</i> ₃₁₄	17.6	X	3.39565	193.00919	83.98329	7.13030	0.0985976	0.27437877	2.3455015	20	7 21.7	19.8
522430 2016 <i>CA</i> ₃₁₅	16.2	X	247.03987	194.87629	101.90440	16.90999	0.1077887	0.20934214	2.8090854	20	3 1.3	20.7
522431 2016 <i>CC</i> ₃₁₅	15.9	X	84.68770	271.43677	132.33923	26.76992	0.1320367	0.17696509	3.1420348	20	1 20.5	20.2
522432 2016 <i>CE</i> ₃₁₆	17.1	X	42.64778	24.43234	26.79432	3.86732	0.0607118	0.19747155	2.9205615	20	—	—
522433 2016 <i>CF</i> ₃₁₆	17.9	X	65.93007	93.98903	335.37032	3.98173	0.1704345	0.22970837	2.6404919	20	1 20.1	20.7
522434 2016 <i>CN</i> ₃₁₆	16.9	X	354.19425	72.15567	346.08127	4.59687	0.1618532	0.17568619	3.1572645	20	—	—
522435 2016 <i>CO</i> ₃₁₆	17.1	X	65.51901	268.81734	129.23447	2.28718	0.0089784	0.19611526	2.9340114	20	—	—
522436 2016 <i>CS</i> ₃₁₇	16.7	X	214.45209	217.34175	105.35187	10.81615	0.2290621	0.22003267	2.7173439	20	2 22.9	21.5
522437 2016 <i>CD</i> ₃₁₈	16.8	X	328.60837	149.02033	47.23568	14.27459	0.1242196	0.21019798	2.8014553	20	1 30.9	20.7
522438 2016 <i>CE</i> ₃₁₈	16.5	X	306.46329	217.20166	44.73819	14.44066	0.2298546	0.22439960	2.6819746	20	3 10.2	20.3
522439 2016 <i>CJ</i> ₃₁₈	17.3	X	91.80978	335.42028	128.47035	10.91297	0.0580678	0.23828892	2.5767176	20	4 1.1	20.8
522440 2016 <i>CH</i> ₃₁₈	17.1	X	299.21778	232.40416	47.71842	11.89991	0.1346214	0.23599024	2.5934230	20	4 3.6	20.5
522441 2016 <i>CV</i> ₃₁₈	17.9	X	35.05732	129.04978	43.32485	12.68451	0.1220217	0.24391620	2.5369327	20	4 14.6	20.5
522442 2016 <i>CC</i> ₃₁₉	17.1	X	260.98215	164.77466	134.95012	11.44718	0.0322975	0.23248591	2.6194189	20	3 25.5	20.8
522443 2016 <i>CG</i> ₃₁₉	17.2	X	120.28698	320.48532	119.69191	9.96579	0.0383398	0.23642166	2.5902671	20	4 4.6	20.8
522444 2016 <i>CM</i> ₃₁₉	16.0	X	346.87349	53.47435	64.12182	12.55606	0.0609383	0.17431263	3.1738287	20	—	—
522445 2016 <i>CN</i> ₃₁₉	17.4	X	11.46139	19.90836	124.23304	9.87786	0.1822377	0.21464172	2.7626548	20	1 20.5	20.2
522446 2016 <i>CO</i> ₃₁₉	16.9	X	295.53468	73.78249	146.27641	10.48545	0.0374614	0.20121778	2.8841985	20	1 26.2	20.9
522447 2016 <i>CP</i> ₃₁₉	16.4	X	289.43085	50.69332	148.94836	10.24818	0.0465067	0.18457291	3.0550905	20	—	—
522448 2016 <i>CQ</i> ₃₁₉	16.6	X	288.71675	114.31893	166.79496	13.57467	0.1795918	0.22427172	2.6829940	20	3 12.6	20.2
522449 2016 <i>CV</i> ₃₁₉	17.4	X	0.27324	165.09313	109.49854	12.42393	0.1220152	0.27069368	2.3667405	20	7 11.5	19.3
522450 2016 <i>CA</i> ₃₂₀	17.4	X	352.99544	127.95528	95.32055	9.76979	0.1101486	0.23820100	2.5773516	20	4 14.4	20.4
522451 2016 <i>CB</i> ₃₂₀	16.6	X	25.24812	62.54204	62.37547	15.65931	0.1032308	0.20322861	2.8651420	20	1 28.8	20.3
522452 2016 <i>CC</i> ₃₂₀	16.9	X	218.25630	129.75305	157.49335	13.00605	0.2235149	0.18382287	3.0633952	20	1 16.0	22.3
522453 2016 <i>CD</i> ₃₂₀	16.3	X	132.37425	276.56907	87.00983	11.83649	0.1017604	0.19041838	2.9922426	20	1 24.1	20.7
522454 2016 <i>CJ</i> ₃₂₀	15.9	X	183.73175	276.34577	49.12374	16.45777	0.2332420	0.18070031	3.0985853	20	2 10.1	21.5
522455 2016 <i>CN</i> ₃₂₀	17.0	X	58.12420	39.43155	79.38487	9.56518	0.1182774	0.22302919	2.6929497	20	3 14.0	20.3
522456 2016 <i>CQ</i> ₃₂₀	16.8	X	340.41086	262.95032	334.73961	8.41913	0.1309805	0.23950479	2.5679895	20	4 1.1	19.6
522457 2016 <i>CV</i> ₃₂₀	16.3	X	201.97129	285.52767	9.02986	18.99536	0.1723582	0.17671191	3.1450351	20	1 19.1	21.8
522458 2016 <i>CA</i> ₃₂₁	16.3	X	88.61670	187.52646	205.87218	21.35035	0.0063532	0.18038784	3.1021625	20	—	—
522459 2016 <i>CB</i> ₃₂₁	16.3	X	164.35410	105.67110	228.84868	9.02235	0.0500435	0.18783691	3.0195954	20	1 16.1	20.9
522460 2016 <i>CJ</i> ₃₂₁	16.5	X	285.52913	1.47402	266.39313	13.91859	0.0998747	0.23323255	2.6138256	20	2 23.2	20.4
522461 2016 <i>CK</i> ₃₂₁	16.1	X	273.35732	351.16434	272.46081	12.67792	0.1016469	0.22077573	2.7112433	20	2 7.4	20.2
522462 2016 <i>CN</i> ₃₂₁	16.3	X	256.85277	246.35020	316.86718	15.19681	0.1145264	0.17354201	3.1832174	20	—	—
522463 2016 <i>CP</i> ₃₂₁	17.3	X	8.96841	255.97594	288.89111	13.99858	0.0678545	0.24200621	2.5502635	20	3 5.6	20.6
522464 2016 <i>CR</i> ₃₂₁	17.1	X	232.75116	74.14804	240.67757	5.25410	0.0120906	0.22495721	2.6775408	20	3 5.8	20.8
522465 2016 <i>CT</i> ₃₂₁	16.2	X	267.61885	321.60504	257.26741	10.19308	0.0875111	0.18119710	3.0929190	20	—	—
522466 2016 <i>CU</i> ₃₂₁	16.3	X	78.01386	98.62053	354.44288	15.69539	0.0655945	0.21341200	2.7732573	20	3 1.1	20.0
522467 2016 <i>CV</i> ₃₂₁	17.3	X	323.20295	242.54451	9.60394	4.07798	0.1989225	0.23020938	2.6366594	20	3 18.1	20.3
522468 2016 <i>CX</i> ₃₂₁	16.8	X	5.44341	329.66605	202.21879	12.33337	0.1010823	0.21615012	2.7497871	20	2 17.8	20.3
522469 2016 <i>CP</i> ₃₂₂	16.8	X	323.68654	342.13696	268.72007	13.17599	0.1238056	0.24353715	2.5395645	20	3 19.0	20.2
522470 2016 <i>CU</i> ₃₂₂	16.0	X	157.32961	120.24742	260.05034	13.65189	0.0967630	0.21743174	2.7389709	20	2 27.9	20.5
522471 2016 <i>CW</i> ₃₂₂	16.0	X	44.68950	178.59831	343.68937	13.61802	0.1787857	0.24041025	2.5615376	20	4 14.7	18.8
522472 2016 <i>DO</i> 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>
522481 2016 EA ₁₃₀	16.9	X	110.99829	176.54708	200.86419	1.59347	0.1021766	0.20099693	2.8863108	20	1 12.9	20.7
522482 2016 EU ₁₄₄	15.9	X	174.66331	303.72415	14.20446	9.68763	0.0946996	0.19005198	2.9960872	20	1 14.3	20.6
522483 2016 EJ ₂₂₂	16.2	X	192.11437	170.85172	146.68849	6.16252	0.1245297	0.17653843	3.1470952	20	1 30.5	21.3
522484 2016 ER ₂₂₇	17.3	X	1.62854	26.55790	187.39090	13.17710	0.0567486	0.23009051	2.6375675	20	4 14.6	20.4
522485 2016 ES ₂₂₉	16.2	X	153.08110	291.86824	34.19921	4.34817	0.1018856	0.19913508	2.9042736	20	—	—
522486 2016 EU ₂₂₉	17.0	X	56.38656	313.70313	95.63759	3.19481	0.0622704	0.19784377	2.9168972	20	—	—
522487 2016 ED ₂₃₀	17.4	X	165.43126	280.78624	53.68567	7.17705	0.0311414	0.21475371	2.7616943	20	1 14.7	21.3
522488 2016 EG ₂₃₀	17.0	X	269.88018	30.90518	231.64992	12.61093	0.02173996	0.21833394	2.7314204	20	1 22.8	21.6
522489 2016 EL ₂₃₀	17.2	X	39.99714	119.62468	22.49497	6.46645	0.0898750	0.23773205	2.5807398	20	3 8.4	20.1
522490 2016 EN ₂₃₀	16.9	X	279.89799	89.13532	149.90278	5.40604	0.1113158	0.21070382	2.7969698	20	1 20.0	21.1
522491 2016 EW ₂₃₀	16.7	X	258.46816	18.36601	257.59984	7.82153	0.1600929	0.21657354	2.7462018	20	2 3.4	21.1
522492 2016 EZ ₂₃₀	17.9	X	64.59108	269.08238	288.82697	6.27532	0.0606470	0.28388189	2.2928603	20	6 29.3	20.6
522493 2016 ED ₂₃₁	15.6	X	333.99643	350.98668	131.72446	16.72784	0.1140720	0.17639579	3.1487915	20	—	—
522494 2016 EH ₂₃₁	16.9	X	243.93909	262.04612	46.17326	14.38829	0.1855584	0.23757455	2.5818803	20	3 6.0	21.3
522495 2016 EW ₂₃₁	16.2	X	248.36569	257.26958	326.42603	8.93750	0.1009698	0.17897290	3.1184913	20	—	—
522496 2016 EB ₂₃₂	16.6	X	130.69117	194.36834	177.23486	28.21041	0.0836632	0.22872524	2.6480529	20	1 20.5	20.9
522497 2016 EZ ₂₃₂	16.7	X	234.86316	43.26352	265.44884	9.36624	0.0451409	0.23176101	2.6248781	20	2 24.2	20.6
522498 2016 EH ₂₃₂	16.1	X	190.00085	340.95480	296.39003	9.05656	0.1475738	0.17163615	3.2067385	20	—	—
522499 2016 EO ₂₃₂	18.0	X	163.84820	46.37919	354.97424	2.27416	0.0320696	0.24697385	2.5159503	20	4 1.6	21.2
522500 2016 ES ₂₃₂	17.3	X	201.37356	129.68163	224.60336	7.86017	0.0843607	0.23564517	2.5959542	20	3 15.2	21.2
522501 2016 EV ₂₃₂	16.7	X	162.02079	321.88470	1.10627	2.96652	0.1367638	0.18093600	3.0958938	20	1 10.5	21.6
522502 2016 EC ₂₃₃	17.0	X	227.89617	31.56523	273.55016	3.53694	0.0985481	0.21256003	2.7806627	20	2 14.5	21.2
522503 2016 EE ₂₃₃	16.5	X	348.89757	284.30548	197.50458	9.04221	0.0277829	0.18107870	3.0942671	20	—	—
522504 2016 EH ₂₃₃	17.2	X	242.71141	90.13018	178.55682	1.04868	0.2765832	0.18849128	3.0126028	20	1 11.3	22.6
522505 2016 EN ₂₃₃	17.0	X	176.55741	162.32476	198.14216	5.42514	0.0366854	0.22075107	2.7114452	20	2 25.8	20.9
522506 2016 EO ₂₃₃	16.8	X	217.31520	142.54699	188.14426	8.86666	0.1305781	0.22004923	2.7172075	20	3 3.8	21.1
522507 2016 EP ₂₃₃	17.0	X	142.25790	8.88424	44.37156	4.50094	0.1665435	0.24070353	2.5594564	20	4 5.8	20.9
522508 2016 EQ ₂₃₃	16.8	X	73.75727	253.70662	149.11609	2.44007	0.0260040	0.18100055	3.0951578	20	—	—
522509 2016 ER ₂₃₃	16.3	X	273.29684	193.22060	29.03194	9.48779	0.0477613	0.19187221	2.9771086	20	1 4.2	20.7
522510 2016 ES ₂₃₃	16.8	X	178.02546	151.51815	204.61478	5.62255	0.0412572	0.21752462	2.7381912	20	2 22.4	20.7
522511 2016 EW ₂₃₃	17.8	X	1.91726	35.69333	201.81381	14.17883	0.0473922	0.26103514	2.4247673	20	5 17.6	20.7
522512 2016 EZ ₂₃₃	17.8	X	314.67344	59.73011	197.53327	13.65735	0.1689370	0.23778504	2.5803564	20	3 13.0	21.0
522513 2016 ED ₂₃₄	16.8	X	274.09707	175.45961	52.76656	11.28482	0.0435031	0.18833271	3.0142935	20	1 13.9	21.2
522514 2016 EH ₂₃₄	17.6	X	325.45595	179.94637	91.19509	7.06497	0.1968821	0.23898327	2.5717242	20	4 20.7	20.4
522515 2016 EO ₂₃₄	16.4	X	271.54876	67.83710	148.92527	9.30180	0.0372127	0.17535648	3.1612208	20	—	—
522516 2016 ER ₂₃₄	17.8	X	92.10867	25.96190	102.96542	7.73267	0.0498899	0.26693083	2.3889308	20	6 24.7	20.9
522517 2016 ES ₂₃₄	17.4	X	168.97984	298.79751	146.13196	6.68086	0.0800524	0.26220757	2.4175339	20	6 8.8	21.0
522518 2016 EA ₂₃₅	17.7	X	6.45452	164.25260	94.28443	8.58661	0.0808660	0.26132473	2.4229756	20	6 25.3	20.2
522519 2016 EF ₂₃₅	16.8	X	49.01534	83.20750	66.58810	10.62477	0.0351880	0.22478094	2.6789404	20	4 1.8	20.4
522520 2016 EL ₂₃₅	16.5	X	186.10097	293.24726	51.86500	10.95758	0.1091649	0.19880033	2.9075330	20	2 29.4	21.2
522521 2016 EP ₂₃₅	17.4	X	5.23991	142.86938	40.81256	4.41462	0.0826282	0.22366638	2.6878328	20	3 10.2	20.6
522522 2016 EQ ₂₃₅	17.0	X	275.69858	146.68846	57.79955	1.56906	0.1160414	0.17564725	3.1577311	20	—	—
522523 2016 EV ₂₃₅	18.1	X	101.47373	95.43482	91.73283	5.03451	0.0969074	0.28417877	2.2912631	20	8 11.7	21.1
522524 2016 EY ₂₃₅	16.8	X	224.42973	208.98915	48.90368	1.57496	0.1318884	0.16971590	3.2308815	20	—	—
522525 2016 EC ₂₃₆	16.1	X	267.93596	274.52722	301.53495	10.91407	0.0894491	0.18459898	3.0548029	20	—	—
522526 2016 EL ₂₃₆	16.7	X	21.72611	36.41587	100.58874	17.82845	0.0611060	0.20148142	2.8816820	20	2 7.2	20.5
522527 2016 EM ₂₃₆	16.6	X	217.05381	248.18398	116.04389	17.03064	0.2043767	0.22702016	2.6612955	20	4 19.4	21.4
522528 2016 EN ₂₃₆	16.3	X	128.86148	243.63930	133.72673	16.80679	0.0295748	0.18588017	3.0407497	20	1 26.7	20.6
522529 2016 ER ₂₃₆	16.8	X	259.22479	119.05781	149.36672	20.08396	0.1869202	0.19824827	2.9129281	20	1 27.9	21.6
522530 2016 EV ₂₃₆	16.4	X	293.60381	62.01521	132.27936	12.30717	0.0210373	0.17930113	3.1146843	20	—	—
522531 2016 EX ₂₃₆	17.0	X	107.95300	7.64616	94.71452	15.68279	0.0604575	0.23392454	2.6086683	20	4 24.6	20.8
522532 2016 EK ₂₃₇	17.5	X	283.71010	101.12927	219.65657	5.68987	0.1520064	0.25503788	2.4626324	20	4 29.1	20.7
522533 2016 EQ ₂₃₇	17.5	X	312.50930	68.58321	187.81097	12.50953	0.1551776	0.22960616	2.6412755	20	3 12.8	20.7
522534 2016 ET ₂₃₇	17.0	X	236.25771	109.91351	173.60199	8.97103	0.2999320	0.18498372	3.0505657	20	1 21.6	22.7
522535 2016 EV ₂₃₇	16.3	X	95.99259	233.92303	152.89658	12.00978	0.1148641	0.18402952	3.0611015	20	1 10.1	20.6
522536 2016 EX ₂₃₇	16.4	X	330.72103	1.24124	135.80600	10.45533	0.1331239	0.18283340	3.0744377	20	—	—
522537 2016 EA ₂₃₈	16.8	X	262.87147	166.59298	38.84149	4.98172	0.1365322	0.18433734	3.0576927	20	—	—
522538 2016 EL ₂₃₈	18.0	X	121.06928	33.59783	119.61250	6.04211	0.0627963	0.29764961	2.2215998	20	7 14.6	20.7
522539 2016 EN ₂₃₈	16.2	X	217.11320	111.51997	116.24535	14.22060	0.0769719	0.17653608	3.1471230	20	—	—
522540 2016 ES ₂₃₈	16.3	X	90.86678	250.61884	102.56859	10.58165	0.1550408	0.18130276	3.0917173	20	—	—
522541 2016 ED ₂₃₉	17.1	X	312.20464	303.13910	311.29562	11.41179	0.0990976	0.23173055	2.6251081	20	3 13.9	20.6
522542 2016 EE ₂₃₉	17.0	X	345.07186	281.10550	279.44943	10.49064	0.1358990	0.22449669	2.6812013	20	2 17.3	20.3
522543 2016 EH ₂₃₉	17.4	X	62.63416	216.68632	321.22691	9.32251	0.0478073	0.25620556	2.4551443	20	5 22.4	20.6
522544 2016 EK ₂₃₉	16.6	X	253.50601	51.34371	207.50244	7.97306	0.3032180	0.18200561	3.0837527	20	1 6.2	22.1
522545 2016 EM ₂₃₉	16.8	X	295.45130	125.33434	70.00570	3.96777	0.1682255	0.18362052	3.0656453	20	—	—
522546 2016 EN ₂₃₉	17.3	X	309.42944	123.40087	165.48548	2.51993	0.1843603	0.23766879	2.5811977	20	4 18.3	20.4
522547 2016 EP ₂₃₉	17.5	X	319.29533	80.87091	195.59568	8.30983	0.1436268	0.23838689	2.5760116	20	4 23.5	20.3
522548 2016 ES ₂₃₉	18.0	X	325.27937	75.22758	152.57236	3.36625	0.2336191	0.21659935	2.7459837	20	2 13.2	21.2
522549 2016 EA ₂₄₀	16.6	X	288.77613	153.99296	135.45448	17.54699	0.1320719	0.24421212	2.5348829	20	4 3.3	20.3
522550 2016 EC ₂₄₀	17.2	X	30.45489	21.21089	140.03432	18.19988	0.0954188	0.23821779	2.5772305	20	3 21.8	20.3
522551 2016 ED ₂₄₀	16.4	X	278.72775	64.58065	129.70252	17.80773	0.1875941	0.18204895	3.0832632	20	—	—
522552 2016 EA ₂₄₁	17.0	X	198.78396	317.09432	344.71541	14.35606	0.2424089	0.19102086	2.9859477	20	1 22.2	22.4
522553 2016 EF ₂₄₁	17.4	X	244.46441	335.57078	349.82823	6.22651	0.1662396	0.24624970	2.5208804	20	3 19.9	21.4
522554 2016 EL ₂₄												

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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>
522561 2016 ET ₂₄₃	17.9	X	18.06717	111.31042	120.86451	4.88461	0.0953816	0.26770250	2.3843377	20	6 7.5	20.3
522562 2016 EU ₂₄₃	17.1	X	283.24300	113.31010	126.95685	5.33265	0.0170202	0.21211425	2.7845573	20	2 7.4	20.9
522563 2016 EV ₂₄₃	17.5	X	100.70313	355.91892	91.30433	6.86895	0.0517455	0.23293636	2.6160409	20	3 20.6	21.0
522564 2016 EY ₂₄₃	18.2	X	67.38053	346.20799	165.88876	4.14880	0.0469241	0.25389024	2.4700479	20	4 26.6	21.2
522565 2016 EZ ₂₄₃	16.9	X	67.40212	328.62648	99.57408	3.17470	0.0511697	0.19825286	2.9128833	20	1 13.1	20.5
522566 2016 ED ₂₄₄	16.3	X	162.79091	105.90733	212.30590	12.28571	0.1045231	0.17217695	3.2000201	20	1 2.5	21.4
522567 2016 EF ₂₄₄	16.8	X	240.94638	298.34254	11.15214	17.22916	0.1893461	0.21040304	2.7996348	20	3 5.0	21.5
522568 2016 EK ₂₄₄	17.1	X	319.20160	225.60128	16.54929	12.47176	0.0858792	0.22142811	2.7059154	20	3 19.2	20.6
522569 2016 EP ₂₄₄	17.5	X	1.16527	256.76076	324.66699	7.52773	0.0816671	0.26230589	2.4169297	20	4 15.7	20.2
522570 2016 ER ₂₄₄	17.9	X	315.81242	351.52047	316.35967	3.04515	0.0921764	0.28549861	2.2841961	20	6 9.1	20.3
522571 2016 EX ₂₄₄	17.7	X	47.27340	268.37524	201.96014	1.24175	0.0435261	0.21884472	2.7271687	20	2 3.0	21.0
522572 2016 EY ₂₄₄	16.4	X	3.10407	303.97719	161.14165	8.84049	0.0827798	0.18238694	3.0794528	20	—	—
522573 2016 EZ ₂₄₄	16.6	X	161.12507	245.03085	127.98060	7.50310	0.0539043	0.22051106	2.7134124	20	2 28.1	20.5
522574 2016 EA ₂₄₅	17.5	X	327.35472	158.50716	130.48621	6.62833	0.0519157	0.27105471	2.3646384	20	6 6.0	20.2
522575 2016 EC ₂₄₅	16.0	X	337.62565	288.31021	281.81306	15.96289	0.1834242	0.21893509	2.7264182	20	2 10.4	19.5
522576 2016 EG ₂₄₅	16.6	X	251.74661	151.68004	151.22968	14.36728	0.0673019	0.22428188	2.6829130	20	3 12.9	20.4
522577 2016 EH ₂₄₅	16.4	X	65.89122	338.27723	108.69395	12.47949	0.0317369	0.20348216	2.8627614	20	2 1.6	20.2
522578 2016 EJ ₂₄₅	16.8	X	56.60032	341.10138	132.64520	13.86459	0.0950738	0.21994050	2.7181030	20	2 28.1	20.1
522579 2016 EO ₂₄₅	17.6	X	358.81120	234.48707	315.02301	5.15452	0.0373389	0.23696458	2.5863091	20	3 5.3	20.8
522580 2016 EQ ₂₄₅	17.5	X	100.67153	106.11570	313.88570	4.67448	0.0625949	0.22171201	2.7036050	20	2 13.1	20.9
522581 2016 EA ₂₄₆	17.5	X	282.64887	299.17622	350.58969	14.97059	0.1094746	0.24213427	2.5493642	20	3 21.8	21.1
522582 2016 EE ₂₄₆	18.1	X	322.56648	337.58315	301.91471	2.51268	0.1168354	0.26130950	2.4230698	20	5 4.2	20.6
522583 2016 EE ₂₄₆	18.1	X	343.20813	284.99707	337.80698	4.63073	0.0889144	0.26623170	2.3931112	20	5 18.4	20.7
522584 2016 EJ ₂₄₆	17.5	X	324.47729	246.75260	334.79901	4.74009	0.1025895	0.22786918	2.6546809	20	2 22.5	20.6
522585 2016 EL ₂₄₆	17.7	X	60.76429	164.01100	23.31863	2.40439	0.1152389	0.26978851	2.3720313	20	6 15.9	20.3
522586 2016 EO ₂₄₆	16.2	X	163.51603	94.98668	195.03653	11.76622	0.0400686	0.17295950	3.1903606	20	—	—
522587 2016 EV ₂₄₆	17.3	X	230.45203	222.16750	45.20413	3.97562	0.1575632	0.19176515	2.9782165	20	1 5.4	22.1
522588 2016 EX ₂₄₆	17.7	X	270.39307	267.12732	31.28319	4.57905	0.1632592	0.23651430	2.5895906	20	3 15.9	21.4
522589 2016 EY ₂₄₆	18.2	X	44.51309	92.41701	93.07836	2.33340	0.0691870	0.26252589	2.4155792	20	5 11.1	20.7
522590 2016 EA ₂₄₇	17.6	X	230.23958	78.88119	224.02246	1.67450	0.1661386	0.21991145	2.7183424	20	2 15.2	21.6
522591 2016 EF ₂₄₇	17.8	X	292.59271	302.32293	298.61675	1.99216	0.0453565	0.22285014	2.6943919	20	2 13.6	21.3
522592 2016 EO ₂₄₇	17.0	X	118.07237	228.86417	187.55818	11.98230	0.1496709	0.22459992	2.6803797	20	3 12.1	20.8
522593 2016 EQ ₂₄₇	18.3	X	112.13059	119.03138	39.09790	4.34591	0.0868878	0.28533185	2.2850860	20	7 13.1	21.2
522594 2016 ER ₂₄₇	17.1	X	213.87522	147.55394	183.64703	6.40107	0.0664115	0.21889810	2.7267253	20	3 3.6	21.0
522595 2016 ES ₂₄₇	17.8	X	6.41895	354.18791	196.86103	8.56288	0.1125812	0.23370755	2.6102827	20	3 16.2	20.6
522596 2016 EU ₂₄₇	16.8	X	219.14661	54.20402	211.87360	7.13609	0.0858874	0.17649964	3.1475562	20	—	—
522597 2016 EW ₂₄₇	17.3	X	233.94638	158.37638	129.21160	3.09596	0.1573464	0.19571050	2.9380553	20	1 30.8	22.1
522598 2016 EX ₂₄₇	17.0	X	246.82193	227.97306	63.06791	5.50593	0.0397340	0.21438599	2.7648513	20	2 25.9	20.9
522599 2016 EZ ₂₄₇	17.3	X	31.90018	92.68168	53.12163	5.88188	0.0581373	0.21908662	2.7251609	20	3 2.4	20.7
522600 2016 EM ₂₄₈	17.0	X	231.19059	242.19159	90.36880	8.27689	0.1263370	0.24036128	2.5618855	20	3 24.2	21.0
522601 2016 EU ₂₄₈	16.8	X	322.05179	44.12935	107.00265	7.74291	0.1866144	0.18521351	3.0480420	20	—	—
522602 2016 EY ₂₄₈	16.5	X	278.24547	7.34434	271.11399	11.73772	0.1381058	0.22239670	2.6980531	20	2 25.4	20.7
522603 2016 EA ₂₄₉	17.1	X	329.78493	13.99776	203.00550	7.06126	0.0839639	0.21714359	2.7413935	20	2 25.8	20.7
522604 2016 EB ₂₄₉	17.6	X	204.91028	223.55677	184.89651	14.30385	0.1050660	0.26158227	2.4213850	20	6 5.5	21.0
522605 2016 EE ₂₄₉	17.2	X	61.12976	336.77772	176.72707	8.92700	0.1037856	0.23952719	2.5678294	20	4 29.0	20.3
522606 2016 EF ₂₄₉	17.6	X	336.59364	60.16170	174.07443	11.61446	0.1364171	0.22930890	2.6435576	20	3 25.6	20.4
522607 2016 EG ₂₄₉	16.7	X	207.94387	305.16814	88.10777	11.83611	0.0548932	0.24283835	2.5444341	20	5 18.5	20.4
522608 2016 EH ₂₄₉	17.7	X	116.31758	342.04600	144.82505	8.71256	0.1101118	0.25721494	2.4487170	20	6 6.9	21.2
522609 2016 FC ₂₃	16.9	X	211.12197	265.23689	42.12602	4.21912	0.0821113	0.20887909	2.8132354	20	2 3.9	21.1
522610 2016 FP ₃₆	17.2	X	262.36416	89.24982	185.55698	4.12570	0.0836365	0.21771359	2.7366065	20	2 14.9	21.1
522611 2016 FZ ₆₄	16.9	X	298.92394	248.50332	294.08334	4.10961	0.0742393	0.18213026	3.0823454	20	—	—
522612 2016 FB ₆₅	17.0	X	188.42020	119.55181	231.67151	5.93699	0.0563061	0.21534535	2.7566337	20	2 28.1	21.2
522613 2016 FC ₆₅	17.6	X	177.79693	170.64869	231.97320	3.19470	0.0655608	0.24646363	2.5194215	20	4 21.7	21.0
522614 2016 FE ₆₅	16.1	X	17.85400	239.91870	217.00976	7.96320	0.0697216	0.17728580	3.1382443	20	—	—
522615 2016 FH ₆₅	17.4	X	91.32260	152.24697	334.37118	3.99160	0.0734204	0.24700925	2.5157100	20	4 26.6	20.7
522616 2016 FM ₆₅	17.7	X	230.67278	215.23741	109.62422	10.11592	0.1374455	0.23118303	2.6292512	20	3 13.9	21.9
522617 2016 FR ₆₅	16.8	X	193.38795	247.80754	127.35111	13.60206	0.0821502	0.24670285	2.5177925	20	4 10.3	20.7
522618 2016 FC ₆₆	16.7	X	227.18455	106.51708	164.08272	16.45769	0.1987685	0.17636224	3.1491908	20	1 5.9	22.2
522619 2016 FF ₆₆	18.0	X	69.06456	221.08604	10.03000	5.39595	0.0458274	0.29082013	2.2562458	20	8 24.8	20.6
522620 2016 FG ₆₆	17.7	X	312.80645	259.20783	28.54387	3.21040	0.1667453	0.23997375	2.5646428	20	4 23.9	20.5
522621 2016 FH ₆₆	17.1	X	343.48355	213.03615	29.77423	15.66850	0.1826364	0.23922708	2.5699765	20	4 13.6	19.4
522622 2016 FK ₆₆	18.1	X	55.42613	203.56267	39.73494	5.79939	0.0422189	0.28734703	2.2743898	20	8 22.7	20.8
522623 2016 FN ₆₆	16.5	X	235.60073	138.32076	160.04048	14.71012	0.1521717	0.19048853	2.9915080	20	2 13.5	21.3
522624 2016 FQ ₆₆	16.4	X	16.47363	321.12283	170.19738	14.19254	0.0093320	0.18210864	3.0825894	20	1 23.6	20.9
522625 2016 FR ₆₆	16.3	X	224.69995	212.86486	125.36503	16.42589	0.1510994	0.20596337	2.8397235	20	3 27.2	21.1
522626 2016 FS ₆₆	16.6	X	75.40304	291.56771	164.44501	15.24315	0.1123518	0.20431267	2.8549983	20	3 6.0	20.2
522627 2016 FZ ₆₆	16.3	X	273.55328	240.16551	74.85114	9.53567	0.1356675	0.22397886	2.6853323	20	4 16.8	20.2
522628 2016 FK ₆₇	16.0	X	131.62140	189.52617	146.57123	14.63522	0.0966870	0.17062525	3.2193920	20	—	—
522629 2016 FL ₆₇	17.7	X	290.85169	123.27095	146.76332	13.49846	0.1463833	0.22832669	2.6511335	20	3 6.4	21.3
522630 2016 FM ₆₇	16.0	X	161.38321	231.93273	102.54462	12.51914	0.3234490	0.17388241	3.1790616	20	2 3.9	21.7
522631 2016 FN ₆₇	17.9	X	42.82536	10.69095	148.62316	12.07816	0.1259182	0.24443730	2.5333259	20	4 11.3	20.8
522632 2016 FR ₆₇	16.5	X	262.26143	25.39531	206.67858	12.98837	0.0871341	0.18417741	3.0594626	20	—	—
522633 2016 FV ₆₇	16.9	X	174.48592	245.33774	99.10351	8.70699	0.0883304	0.20247527				

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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>
522641 2016 GH ₂₆₁	17.4	X	305.49704	69.07399	217.17702	1.88005	0.1723464	0.23602527	2.5931664	20	4 9.7	20.7
522642 2016 GT ₂₆₁	17.4	X	265.67008	194.24105	104.78773	4.76666	0.1772451	0.21662182	2.7457938	20	3 12.5	21.5
522643 2016 GU ₂₆₁	17.6	X	292.69741	164.56756	100.37948	4.66982	0.1531966	0.21719302	2.7409775	20	3 2.8	21.4
522644 2016 GX ₂₆₁	16.7	X	318.74710	119.83823	58.36315	17.16525	0.0411213	0.18641093	3.0349751	20	1 6.7	21.1
522645 2016 GY ₂₆₁	16.7	X	223.93990	89.26757	207.94094	15.72393	0.2396535	0.18068096	3.0988065	20	1 28.0	22.4
522646 2016 GZ ₂₆₁	18.1	X	162.01182	298.41766	191.77277	4.64589	0.0598085	0.29234483	2.2483941	20	8 1.5	21.0
522647 2016 GB ₂₆₂	16.3	X	206.91418	24.49347	286.88697	3.80924	0.1957918	0.18321219	3.0701986	20	2 4.2	21.5
522648 2016 GG ₂₆₂	16.9	X	347.12394	321.48794	211.71027	4.79604	0.0270728	0.20978548	2.8051264	20	2 1.7	20.6
522649 2016 GN ₂₆₂	17.4	X	92.89228	191.63786	335.25406	5.15378	0.0904360	0.28071908	2.3100502	20	6 30.1	20.3
522650 2016 GU ₂₆₂	17.3	X	294.89822	5.32642	284.93121	2.82767	0.1827092	0.23776077	2.5805320	20	3 28.3	20.8
522651 2016 GV ₂₆₂	16.5	X	357.67587	105.12921	16.16017	11.15791	0.0552546	0.18290776	3.0736043	20	—	—
522652 2016 GY ₂₆₂	17.7	X	303.84250	301.31306	331.08409	1.98749	0.1727894	0.23505276	2.6003141	20	3 19.4	21.1
522653 2016 GC ₂₆₃	16.0	X	177.98269	254.11280	69.60170	17.17654	0.2306394	0.17502786	3.1651765	20	2 1.8	21.7
522654 2016 GK ₂₆₃	17.0	X	286.64201	126.88397	174.58296	14.37350	0.1399530	0.22957173	2.6415395	20	4 12.5	20.6
522655 2016 GM ₂₆₃	17.0	X	256.41825	226.53782	106.16547	14.00529	0.1431566	0.23108302	2.6300098	20	4 21.4	21.2
522656 2016 GQ ₂₆₃	16.9	X	227.98209	147.77341	182.58821	13.52339	0.1905164	0.21467327	2.7623841	20	3 11.5	21.6
522657 2016 GS ₂₆₃	17.4	X	330.75603	64.54344	212.48308	16.20938	0.1874118	0.24036970	2.5618257	20	5 8.5	19.9
522658 2016 GT ₂₆₃	16.7	X	206.01100	119.69643	188.68536	10.52152	0.1013714	0.17724180	3.1387637	20	1 30.8	21.8
522659 2016 GW ₂₆₃	16.4	X	35.06480	274.23004	204.79241	9.19679	0.0522301	0.18665544	3.0323241	20	1 31.4	20.6
522660 2016 GE ₂₆₄	16.9	X	275.03848	99.55368	107.81167	2.32953	0.1274474	0.17895667	3.1186798	20	—	—
522661 2016 GL ₂₆₄	16.8	X	353.04772	1.92721	126.06353	3.86906	0.1065928	0.18342473	3.0678264	20	—	—
522662 2016 GP ₂₆₄	17.3	X	247.76907	257.85225	9.13040	0.95034	0.1604023	0.18942524	3.0026923	20	1 20.0	22.2
522663 2016 GQ ₂₆₄	17.3	X	241.52559	290.13535	39.89969	3.23555	0.0710950	0.23074746	2.6325589	20	4 2.6	20.9
522664 2016 GU ₂₆₄	18.1	X	44.68421	23.79952	203.90540	5.96568	0.0558842	0.27668259	2.3324634	20	7 10.3	20.8
522665 2016 GV ₂₆₄	17.1	X	174.68929	131.24183	206.63163	10.93557	0.0848576	0.19229031	2.9727915	20	1 31.6	21.9
522666 2016 GZ ₂₆₄	17.4	X	292.87333	190.51614	63.00927	4.79757	0.0623396	0.21881608	2.7274067	20	3 1.9	21.2
522667 2016 GB ₂₆₅	16.8	X	237.02454	64.31143	183.38770	2.04716	0.0532909	0.17848835	3.1241326	20	—	—
522668 2016 GC ₂₆₅	17.7	X	273.92471	91.57941	205.72714	4.19156	0.0999560	0.23075432	2.6325067	20	3 24.7	21.3
522669 2016 GX ₂₆₅	16.7	X	255.26716	45.45672	245.53034	14.41620	0.2148183	0.20561454	2.8429344	20	2 11.4	21.6
522670 2016 GB ₂₆₆	16.7	X	197.05475	188.84422	151.50774	12.53403	0.1413259	0.17856461	3.1232431	20	2 7.9	21.8
522671 2016 GG ₂₆₆	17.2	X	297.01759	116.76481	150.07901	13.38325	0.1764750	0.21383892	2.7695649	20	3 6.9	21.0
522672 2016 GH ₂₆₆	15.9	X	336.20033	279.85955	118.63072	9.76743	0.0546545	0.17644594	3.1481949	20	—	—
522673 2016 GW ₂₆₆	17.1	X	211.67441	114.89641	230.22753	4.21506	0.1487997	0.21696387	2.7429071	20	3 15.4	21.5
522674 2016 GY ₂₆₆	16.7	X	299.13650	337.97210	226.22119	2.93356	0.0400181	0.18960306	3.0008146	20	1 12.9	20.8
522675 2016 GG ₂₆₇	16.0	X	202.89374	243.49094	79.12444	13.59078	0.1624140	0.19190330	2.9767869	20	2 18.5	21.1
522676 2016 GH ₂₆₇	16.5	X	215.47253	239.53710	113.28690	13.19898	0.1133957	0.21217289	2.7840441	20	4 6.9	21.0
522677 2016 GN ₂₆₇	16.4	X	191.77689	214.28545	118.89505	10.10157	0.0491355	0.19016038	2.9949485	20	2 16.7	20.8
522678 2016 HH ₂₅	18.0	X	324.41917	208.27418	58.03128	8.61411	0.1129359	0.24218838	2.5489844	20	4 23.1	20.8
522679 2016 HJ ₂₅	16.4	X	124.66290	178.51115	208.37885	10.96833	0.1006625	0.19120968	2.9839815	20	2 7.4	21.0
522680 2016 HL ₂₅	17.3	X	274.11327	188.67846	97.78341	4.00691	0.0701432	0.22107138	2.7088256	20	3 18.8	21.1
522681 2016 HM ₂₅	17.5	X	268.08162	208.13447	95.95021	5.0610	0.2009863	0.21958916	2.7210015	20	3 18.9	21.7
522682 2016 HN ₂₅	17.1	X	235.16425	245.16033	86.14157	7.04202	0.1494522	0.21931441	2.7232736	20	3 25.8	21.4
522683 2016 HP ₂₅	16.4	X	169.92563	254.21113	96.81760	9.21095	0.1848625	0.18530530	3.0470353	20	2 21.4	21.4
522684 2016 JP	21.1	X	113.45265	255.66737	202.60264	11.32881	0.3835505	0.99418699	0.9942387	20	5 16.6	19.0
522685 2016 JY ₂₆	16.9	X	249.87946	76.02599	195.68723	24.85382	0.2872835	0.18002599	3.1063180	20	1 16.2	22.8
522686 2016 JC ₄₁	17.6	X	56.09396	92.10455	113.50836	6.91563	0.0375474	0.25889528	2.4381100	20	6 22.9	20.5
522687 2016 JR ₄₁	17.3	X	268.83163	240.97929	116.89864	15.22824	0.1418431	0.25280852	2.4770888	20	6 4.6	20.8
522688 2016 KK ₅	17.3	X	49.25177	19.53917	194.65201	8.89646	0.1281958	0.24171590	2.5523050	20	7 6.8	20.5
522689 2016 KL ₅	16.8	X	236.65065	158.00639	168.83920	10.92678	0.0970413	0.18305942	3.0719065	20	3 25.6	21.4
522690 2016 KN ₅	16.9	X	313.08323	83.35334	167.35661	13.92416	0.1882330	0.19613481	2.9338164	20	3 6.2	20.6
522691 2016 KS ₅	16.6	X	168.69304	235.61128	107.69405	10.62244	0.0788637	0.17450788	3.1714609	20	2 7.3	21.4
522692 2016 KT ₅	17.1	X	215.24060	271.47800	93.79890	9.95882	0.1487640	0.21716437	2.7412186	20	4 18.6	21.6
522693 2016 KV ₅	17.7	X	274.65236	102.71273	203.57086	8.99348	0.0977087	0.21930432	2.7233571	20	4 7.8	21.5
522694 2016 KZ ₅	16.5	X	205.89570	248.96943	94.18877	19.17654	0.2527389	0.18411148	3.0601929	20	3 18.9	22.2
522695 2016 LR ₂	16.5	X	56.92836	346.19737	150.04138	13.33263	0.0827324	0.22378201	2.6869068	20	3 29.2	19.9
522696 2016 LF ₅₉	17.0	X	265.07930	217.60479	90.08715	11.13799	0.1024267	0.21399997	2.7681752	20	4 4.3	21.2
522697 2016 LH ₅₉	17.6	X	354.31786	17.00396	297.99699	4.66300	0.1255601	0.23936797	2.5689680	20	5 12.6	20.0
522698 2016 LL ₅₉	16.7	X	263.51447	218.72821	146.52659	13.74918	0.1764043	0.24371541	2.5383260	20	6 2.7	20.5
522699 2016 LN ₅₉	15.6	X	193.94113	308.62839	60.11848	15.62965	0.1052333	0.17468309	3.1693398	20	4 8.1	20.7
522700 2016 LP ₅₉	17.2	X	297.44010	86.36893	198.95369	12.66553	0.1464270	0.21952892	2.7214993	20	4 2.2	20.6
522701 2016 LQ ₅₉	17.0	X	231.59745	140.05719	171.69712	10.64941	0.1273443	0.19328925	2.9625401	20	2 26.7	21.7
522702 2016 LU ₅₉	16.8	X	70.58364	303.18775	192.25648	24.85351	0.0873107	0.22060819	2.7126159	20	4 16.0	20.2
522703 2016 LV ₅₉	17.2	X	290.84491	150.11694	114.14020	6.03173	0.0815274	0.21018094	2.8016066	20	3 11.1	21.1
522704 2016 LX ₅₉	16.9	X	218.67028	116.98610	214.68799	6.95247	0.1983594	0.18970246	2.9997662	20	3 5.4	22.0
522705 2016 LZ ₅₉	17.3	X	38.40465	348.47541	180.13077	5.89445	0.0800918	0.21511787	2.7585767	20	4 5.7	20.9
522706 2016 LA ₆₀	16.6	X	158.62425	241.25394	133.77018	11.10958	0.1265224	0.18348223	3.0671855	20	3 8.4	21.4
522707 2016 LD ₆₀	16.4	X	225.94354	103.88621	248.18623	15.48487	0.1232773	0.18298238	3.0727687	20	4 6.6	21.5
522708 2016 LK ₆₀	16.0	X	26.16286	304.42901	240.62645	14.62780	0.0516244	0.18390869	3.0624420	20	4 10.9	20.3
522709 2016 LO ₆₀	16.1	X	281.82297	32.93185	248.62221	14.56947	0.0777335	0.17788433	3.1312008	20	3 16.2	20.9
522710 2016 LS ₆₀	16.8	X	216.23562	166.80204	194.36058	15.21820	0.1405101	0.18036478	3.1024269	20	4 12.5	21.6
522711 2016 LT ₆₀	16.9	X	214.52551	244.55497	108.32961	11.81382	0.1653015	0.20183346	2.8783301	20	4 4.1	21.8
522712 2016 LV ₆₀	17.2	X	275.41523	192.11816	149.55822	7.04637	0.1439947	0.23624400	2.5915640	20	5 20.6	20.8
522713 2016 LX ₆₀	18.3	X	134.64496	357.54032	162.18646	5.80025	0.0978196					

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>
522721 2016 LB ₆₂	16.8	X	276.35281	198.31342	169.64392	11.85351	0.0888821	0.22944342	2.6425242	20	7 3.0	20.5
522722 2016 LH ₆₂	16.9	X	276.94406	204.20260	150.59316	13.95541	0.1623573	0.21689092	2.7435221	20	6 6.9	20.9
522723 2016 LL ₆₂	16.5	X	251.62588	88.12394	244.79867	6.81967	0.0909677	0.18950965	3.0018006	20	4 15.5	21.0
522724 2016 LS ₆₂	16.6	X	227.58409	187.53056	173.76136	11.43878	0.1531335	0.18425910	3.0585582	20	4 24.1	21.5
522725 2016 LV ₆₂	16.4	X	228.18915	206.71101	153.88686	17.43559	0.1329877	0.18513726	3.0488788	20	4 27.8	21.4
522726 2016 LX ₆₂	16.3	X	220.51689	94.98644	276.94443	16.32974	0.1301695	0.18478907	3.0527075	20	4 24.4	21.4
522727 2016 LY ₆₂	16.8	X	96.77427	313.49533	172.72711	16.00235	0.0473485	0.18531425	3.0469372	20	5 6.9	21.3
522728 2016 LZ ₆₂	16.5	X	218.21985	139.86665	214.30301	10.69340	0.1035245	0.18159784	3.0883672	20	4 5.9	21.3
522729 2016 LA ₆₃	17.2	X	122.00871	247.74699	261.70989	13.23598	0.0605819	0.23050432	2.6344098	20	7 5.5	20.9
522730 2016 LD ₆₃	17.2	X	123.90325	265.38735	246.28996	10.13419	0.1396846	0.23150713	2.6267967	20	7 17.1	21.4
522731 2016 LG ₆₃	18.0	X	87.13811	8.50870	219.67722	5.88105	0.0717217	0.26314416	2.4117941	20	9 10.2	21.2
522732 2016 LJ ₆₃	17.0	X	222.65480	204.66230	161.45001	10.10184	0.1038282	0.18581193	3.0414942	20	4 28.9	21.8
522733 2016 LO ₆₃	16.0	X	177.27205	176.79965	239.42788	15.65640	0.0551848	0.17897501	3.1184668	20	5 10.7	20.8
522734 2016 LR ₆₃	16.8	X	220.77223	133.24075	243.46665	21.26354	0.0686955	0.23368440	2.6104551	20	5 7.5	20.7
522735 2016 LT ₆₃	16.8	X	350.20604	151.40242	128.99950	13.36866	0.1753799	0.23385133	2.6092127	20	6 27.4	19.4
522736 2016 LB ₆₄	16.2	X	302.79598	347.84652	259.56988	7.99809	0.0941270	0.17989313	3.1078472	20	2 29.1	20.7
522737 2016 LH ₆₄	15.9	X	258.80555	161.10261	124.18810	23.62960	0.0735192	0.17340246	3.1849250	20	3 6.0	20.8
522738 2016 LL ₆₄	17.5	X	9.58332	160.93435	126.49091	6.38141	0.0456256	0.25293674	2.4762516	20	8 10.4	20.2
522739 2016 LS ₆₄	15.9	X	304.74082	328.05784	283.17350	9.50311	0.0956549	0.18386467	3.0629309	20	3 5.8	20.3
522740 2016 LV ₆₄	17.4	X	303.65281	203.33492	116.95114	9.22225	0.0973874	0.22566162	2.6719659	20	6 7.4	20.8
522741 2016 LP ₆₄	16.9	X	289.71991	12.75137	291.73878	13.06615	0.1947429	0.22604726	2.6689261	20	4 2.7	20.9
522742 2016 LH ₆₄	17.7	X	100.83859	359.44609	177.76623	11.36756	0.0675384	0.26806522	2.3821863	20	7 19.1	21.1
522743 2016 LT ₆₄	17.3	X	289.28683	274.49379	85.52804	13.56884	0.1953100	0.22889065	2.6467770	20	6 23.9	20.5
522744 2016 LV ₆₄	17.3	X	336.46813	217.03253	130.97453	3.13273	0.1548311	0.25112579	2.4881421	20	9 16.8	19.5
522745 2016 MA ₄	17.5	X	58.21852	13.33332	153.15791	12.13168	0.0690966	0.23100040	2.6300369	20	5 9.9	21.0
522746 2016 MC ₄	16.8	X	214.81522	105.67695	249.43196	16.29060	0.1723460	0.17893619	3.1189177	20	3 27.4	22.2
522747 2016 MD ₄	16.8	X	260.82403	134.21438	168.47675	15.36318	0.1024814	0.18541100	3.0458772	20	3 21.5	21.4
522748 2016 MJ ₄	17.4	X	317.90766	135.53614	238.15826	7.25044	0.1308052	0.26451360	2.4034626	20	9 16.2	19.9
522749 2016 MK ₄	17.0	X	268.52275	232.45868	168.10179	12.27214	0.1809295	0.24391300	2.5369549	20	7 22.4	20.5
522750 2016 MO ₄	17.0	X	289.13332	56.78622	235.27671	10.61747	0.1747724	0.19824040	2.9130053	20	3 25.7	21.3
522751 2016 MP ₄	16.7	X	264.87487	87.85870	205.20139	9.66799	0.1062228	0.18019943	3.1043245	20	3 10.9	21.5
522752 2016 MU ₄	16.2	X	182.08982	214.84493	170.68699	16.37567	0.0353426	0.18278503	3.0749800	20	4 10.8	20.8
522753 2016 NV ₂₁	17.0	X	309.40760	84.59189	242.05637	11.05210	0.0874629	0.21418319	2.7665963	20	6 24.3	20.5
522754 2016 NZ ₂₅	17.4	X	56.89728	348.02592	210.85559	11.38788	0.1302847	0.23189892	2.6238373	20	6 26.8	20.8
522755 2016 NC ₄₄	16.8	X	282.64898	210.44135	193.12596	14.19119	0.0735836	0.22240039	2.6980232	20	6 25.6	20.6
522756 2016 NE ₇₅	16.6	X	29.10504	271.70985	298.95331	7.98274	0.1029505	0.21093559	2.7949206	20	5 24.6	20.0
522757 2016 NF ₇₅	17.0	X	346.94256	14.33395	277.88642	2.42659	0.1589376	0.24211658	2.5494883	20	7 9.2	19.4
522758 2016 NJ ₇₅	15.9	X	272.94667	357.53230	277.87140	9.26340	0.0726992	0.18062096	3.0994927	20	2 29.6	20.6
522759 2016 NP ₇₅	16.2	X	180.23045	251.72602	115.97030	8.64833	0.0665350	0.16948662	3.2337946	20	3 20.8	21.2
522760 2016 NQ ₇₅	17.1	X	201.25645	315.57857	111.54806	5.08163	0.0726735	0.22620006	2.6677241	20	6 21.0	20.8
522761 2016 NT ₇₅	16.6	X	187.51032	96.68691	293.52935	3.85935	0.1463617	0.18436169	3.0574235	20	4 18.4	21.7
522762 2016 NU ₇₅	17.6	X	299.09505	186.88108	120.08768	1.07256	0.0462109	0.21591653	2.7517700	20	5 19.8	21.3
522763 2016 NV ₇₅	17.2	X	309.05735	227.30620	119.41402	6.98349	0.1105945	0.24525582	2.5276862	20	7 22.6	19.8
522764 2016 NW ₇₅	16.6	X	231.24328	210.53221	115.71126	10.64236	0.0593965	0.17777073	3.1325346	20	3 26.0	21.4
522765 2016 NY ₇₅	17.4	X	253.63788	267.46461	108.69165	5.87745	0.1265366	0.22096946	2.7096584	20	6 9.6	21.4
522766 2016 NZ ₇₅	16.4	X	201.81573	88.48619	307.34842	12.19636	0.1347218	0.19622962	2.9328714	20	5 5.7	21.3
522767 2016 NG ₇₆	15.9	X	257.61498	182.57446	93.43499	8.92618	0.1803322	0.16998095	3.2275220	20	2 10.6	21.1
522768 2016 NO ₇₆	16.8	X	243.82172	54.98721	283.03095	10.45289	0.1174809	0.18979673	2.9987728	20	4 7.2	21.6
522769 2016 NP ₇₆	17.4	X	282.95166	179.65725	165.90390	5.22044	0.0573152	0.22446740	2.6814346	20	6 17.2	21.0
522770 2016 NQ ₇₆	17.3	X	2.69877	123.47077	133.84641	13.81598	0.1482075	0.23019061	2.6368028	20	6 19.1	20.2
522771 2016 NS ₇₆	16.8	X	254.48700	123.13053	204.10030	0.38701	0.1484397	0.19046019	2.9918047	20	4 7.0	21.4
522772 2016 NT ₇₆	16.7	X	260.47115	59.83184	244.80503	4.32393	0.0717130	0.18076165	3.0978842	20	3 24.1	21.2
522773 2016 NW ₇₆	16.3	X	196.11778	223.74144	139.68166	17.37085	0.0160689	0.17407902	3.1766675	20	4 3.2	21.1
522774 2016 NX ₇₆	16.9	X	214.24797	113.75439	280.37323	4.73440	0.0763359	0.20375026	2.8602496	20	5 22.8	21.1
522775 2016 NY ₇₆	17.6	X	315.09124	189.04594	161.89091	0.60053	0.1361060	0.24582062	2.5238130	20	8 6.0	20.2
522776 2016 NC ₇₇	16.5	X	196.07748	78.63973	295.43465	10.14706	0.0931044	0.17387142	3.1791956	20	4 4.5	21.6
522777 2016 NE ₇₇	17.0	X	12.24939	310.46336	315.66862	6.09431	0.1267436	0.23791617	2.5794082	20	7 20.3	19.5
522778 2016 NF ₇₇	16.8	X	296.08392	174.02558	107.50455	2.98105	0.0155440	0.18591410	3.0403797	20	4 19.1	21.1
522779 2016 NH ₇₇	17.1	X	319.86550	193.59618	126.20194	9.54559	0.1420822	0.23314351	2.6144911	20	6 27.0	20.0
522780 2016 NK ₇₇	16.9	X	181.03857	107.99750	298.46739	8.57612	0.1631059	0.17924335	3.1153536	20	4 30.9	22.2
522781 2016 NL ₇₇	16.6	X	181.46585	287.04502	123.38153	11.57062	0.1065659	0.18697112	3.0289100	20	5 12.7	21.5
522782 2016 NM ₇₇	16.5	X	359.71727	208.48826	82.83452	14.15717	0.0297352	0.23895960	2.5718940	20	7 31.4	19.9
522783 2016 NO ₇₇	15.9	X	138.94369	5.21348	72.56988	12.73000	0.0255553	0.18039715	3.1020558	20	4 26.2	20.4
522784 2016 NT ₇₇	16.9	X	203.56740	179.55758	190.97393	9.22429	0.1003421	0.18396074	3.0618643	20	4 13.0	21.5
522785 2016 NV ₇₇	17.0	X	255.69320	51.02311	331.21858	12.21150	0.1991950	0.22160828	2.7044486	20	6 9.3	21.3
522786 2016 NZ ₇₇	16.7	X	346.96898	273.17959	3.05026	9.47132	0.1254350	0.22877786	2.6476468	20	6 13.6	19.7
522787 2016 NA ₇₈	16.6	X	191.34061	303.17584	72.68010	11.10123	0.0526906	0.17833060	3.1259748	20	4 12.1	21.4
522788 2016 NE ₇₈	16.9	X	234.93101	269.55267	90.69814	11.00607	0.1440028	0.19296010	2.9659082	20	5 2.0	21.6
522789 2016 NF ₇₈	16.5	X	256.18665	343.76013	328.22131	11.60891	0.0666959	0.18070608	3.0985193	20	3 26.2	21.2
522790 2016 NJ ₇₈	17.7	X	356.17769	244.31558	10.02242	6.93326	0.1044401	0.21745829	2.7387479	20	5 29.1	20.9
522791 2016 NN ₇₈	17.4	X	3.85450	216.07863	70.01376	5.55753	0.1850456	0.24360706	2.5390785	20	8 11.6	19.7
522792 2016 NQ ₇₈	17.6	X	329.33111	269.98740	105.69386	7.77936	0.1253716	0.26636277	2.3923261	20	10 21.8	20.0
522793 2016 NW ₇₈	16.2	X	215.29434	261.23404	99.83494	9.99155</						

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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>		
522801	2016	NS ₇₉	16.5	X	168.76414	164.17442	239.52982	10.01065	0.0300530	0.18055172	3.1002851	20	4 12.8	21.0
522802	2016	NU ₇₉	17.5	X	0.93275	4.83828	255.29081	6.07514	0.1316253	0.22680482	2.6629797	20	6 17.6	20.3
522803	2016	NW ₇₉	16.6	X	115.74776	262.58929	196.69075	10.56338	0.0977492	0.17781294	3.1320389	20	4 30.9	21.3
522804	2016	NC ₈₀	17.3	X	311.85130	126.22502	177.27504	6.56488	0.0572717	0.21465856	2.7625103	20	6 1.7	20.9
522805	2016	NF ₈₀	16.8	X	276.41370	22.53426	275.51202	10.45485	0.1218312	0.18460705	3.0547139	20	3 24.4	21.4
522806	2016	NG ₈₀	17.6	X	277.00022	103.13941	318.61288	6.81799	0.1158132	0.26302737	2.4125080	20	9 16.3	20.4
522807	2016	NH ₈₀	16.8	X	206.29843	305.15894	125.75329	5.79870	0.0982261	0.21911166	2.7249533	20	6 29.8	21.0
522808	2016	NL ₈₀	17.6	X	272.68460	291.85127	130.03356	8.82499	0.1549552	0.25573471	2.4581569	20	9 7.1	20.5
522809	2016	NI ₈₀	16.6	X	222.46653	221.59600	137.41098	10.67836	0.1009285	0.18124403	3.0923852	20	4 21.7	21.5
522810	2016	NP ₈₀	16.1	X	31.24685	207.43907	322.08652	6.54094	0.1188494	0.17514475	3.1637681	20	4 3.6	20.0
522811	2016	NQ ₈₀	16.6	X	260.50790	169.90012	138.66191	10.69655	0.0781321	0.17786062	3.1314790	20	4 3.3	21.3
522812	2016	NS ₈₀	16.5	X	274.95595	319.53847	330.75227	8.01586	0.1087244	0.17938923	3.1136644	20	3 18.5	21.1
522813	2016	NT ₈₀	17.3	X	284.38804	244.47883	126.88517	11.30723	0.1724578	0.22942001	2.6427040	20	7 6.5	20.7
522814	2016	NU ₈₀	16.4	X	243.94837	192.07270	134.37147	11.26714	0.2136793	0.17557244	3.1586280	20	3 25.9	21.7
522815	2016	ND ₈₁	16.7	X	297.86346	260.77288	82.00163	5.99576	0.1720997	0.22103313	2.7091380	20	6 16.7	20.0
522816	2016	NF ₈₁	16.4	X	250.46645	196.96515	124.60519	11.73565	0.0493967	0.17685995	3.1432799	20	4 12.6	21.1
522817	2016	NG ₈₁	17.3	X	347.54119	182.21040	107.28349	5.53332	0.2005994	0.23260754	2.6185057	20	7 4.5	19.4
522818	2016	NH ₈₁	16.2	X	191.53100	57.55134	316.72140	9.44943	0.0935968	0.17450304	3.1715194	20	3 31.9	21.4
522819	2016	NI ₈₁	17.5	X	289.39778	257.44641	110.32830	5.57581	0.1801525	0.23470646	2.6028713	20	7 8.2	20.7
522820	2016	NT ₈₁	16.3	X	225.71446	10.43662	327.33073	9.38038	0.0214326	0.17841070	3.1250390	20	3 28.1	20.9
522821	2016	NW ₈₁	17.6	X	49.97370	184.12924	71.34973	6.00809	0.0956781	0.25672880	2.4518072	20	9 6.6	20.7
522822	2016	NY ₈₁	16.6	X	357.59901	137.13651	76.95596	3.65425	0.0397826	0.18949916	3.0019113	20	4 12.5	20.5
522823	2016	NZ ₈₁	17.4	X	269.89133	258.44573	103.82834	6.64169	0.0636558	0.22492983	2.6777581	20	6 20.8	20.8
522824	2016	NA ₈₂	17.6	X	236.15162	233.27281	103.82498	2.60813	0.1768660	0.18091529	3.0961301	20	3 31.6	22.7
522825	2016	NC ₈₂	17.4	X	327.37951	271.68025	18.82511	12.32512	0.2039235	0.22392837	2.6857359	20	5 15.5	20.3
522826	2016	NH ₈₂	17.2	X	279.85034	133.81540	278.14235	14.24719	0.0919320	0.24153191	2.5536010	20	9 1.1	20.7
522827	2016	NJ ₈₂	16.6	X	200.86772	147.70188	215.25436	11.12225	0.0471516	0.18200172	3.0837966	20	3 30.9	21.3
522828	2016	NK ₈₂	16.6	X	249.35318	122.18271	175.60103	12.83846	0.1189797	0.17250285	3.1959884	20	2 29.8	21.6
522829	2016	NL ₈₂	16.6	X	225.89781	114.19116	241.29395	12.36450	0.0695377	0.190556209	2.9907925	20	4 16.1	21.2
522830	2016	NI ₈₂	17.1	X	317.52243	245.68147	91.78296	5.12493	0.1788873	0.22916605	2.6446868	20	7 12.9	19.6
522831	2016	NU ₈₂	16.1	X	39.91966	341.85733	281.97440	11.43732	0.1410729	0.22574386	2.6713169	20	8 27.7	19.7
522832	2016	NZ ₈₂	16.3	X	172.93245	198.59708	233.20041	11.90713	0.1500663	0.19235901	2.9720836	20	5 27.3	21.1
522833	2016	NO ₈₃	16.6	X	136.72836	276.84271	169.08599	9.29590	0.0994057	0.17783788	3.1317461	20	5 8.7	21.4
522834	2016	NQ ₈₃	16.5	X	268.84577	358.18749	303.37920	10.16321	0.1301823	0.17995912	3.1070874	20	3 19.8	21.3
522835	2016	NR ₈₃	16.9	X	173.80419	259.61232	162.27947	13.70642	0.1764648	0.17972386	3.1097983	20	5 19.4	22.3
522836	2016	NS ₈₄	17.4	X	317.24988	76.43682	223.79965	3.47394	0.0469144	0.21228724	2.7830443	20	6 5.6	21.0
522837	2016	NT ₈₄	16.5	X	33.93335	289.36854	247.81490	3.49878	0.0842816	0.17985212	3.1083197	20	4 16.9	20.8
522838	2016	NE ₈₄	16.4	X	313.24520	320.34455	296.89361	10.12777	0.0692554	0.18027024	3.1035115	20	3 27.9	20.5
522839	2016	NH ₈₄	18.0	X	206.10986	204.01358	313.11412	7.04896	0.0419836	0.28655432	2.2785824	20	11 3.6	21.0
522840	2016	NL ₈₄	16.8	X	233.71045	28.40684	61.67684	6.83473	0.1097282	0.23749568	2.5824519	20	8 29.6	20.5
522841	2016	NI ₈₄	17.7	X	244.65476	59.76376	5.34851	11.83126	0.0951463	0.23032576	2.6357712	20	8 12.2	21.5
522842	2016	NU ₈₄	16.4	X	316.20725	162.70334	104.39063	8.02973	0.1206882	0.18617150	3.0375766	20	4 15.9	20.4
522843	2016	NT ₈₄	17.2	X	310.14337	263.83939	128.89701	14.96556	0.0991162	0.25691699	2.4506098	20	10 11.9	20.1
522844	2016	NA ₈₅	16.9	X	289.37930	229.21241	117.31336	6.25914	0.0703134	0.21365993	2.7711115	20	6 25.1	20.5
522845	2016	NF ₈₅	17.6	X	286.30028	293.24173	105.98239	5.80003	0.1112208	0.24409327	2.5357057	20	9 1.6	20.5
522846	2016	NG ₈₅	17.0	X	272.43178	293.43222	83.11702	4.58005	0.2060854	0.21695824	2.7429546	20	6 21.2	20.6
522847	2016	NH ₈₅	17.0	X	298.22107	334.64232	66.20248	8.47303	0.1109835	0.25276176	2.4773943	20	9 28.6	19.8
522848	2016	NW ₈₅	17.6	X	279.28537	4.15071	33.62775	10.03457	0.1899366	0.23148432	2.6269693	20	8 6.9	21.0
522849	2016	NI ₈₆	16.8	X	297.34458	217.89197	172.98069	12.14372	0.0908656	0.18380444	3.0635999	20	4 25.0	21.1
522850	2016	NF ₈₆	17.0	X	237.52885	270.19929	131.23699	9.03709	0.1079119	0.20986056	2.8044573	20	6 25.6	21.2
522851	2016	NH ₈₆	16.4	X	302.52268	150.72788	136.02097	16.70643	0.0436870	0.18469411	3.0537538	20	5 5.3	20.9
522852	2016	NL ₈₆	17.4	X	22.36726	10.20120	257.21910	4.60083	0.1466369	0.24544928	2.5263579	20	8 11.0	20.0
522853	2016	NM ₈₆	16.5	X	277.39434	348.14874	301.04234	9.84092	0.0459294	0.17958755	3.1113717	20	3 25.6	21.1
522854	2016	NO ₈₆	16.8	X	233.93273	200.08150	144.29198	8.88934	0.0626923	0.18708062	3.0277279	20	4 17.9	21.3
522855	2016	NP ₈₆	17.8	X	314.89595	186.06373	144.31312	2.87328	0.1410078	0.23173642	2.6250637	20	7 3.3	20.6
522856	2016	NU ₈₆	16.9	X	261.36162	37.41898	333.05186	14.62904	0.1559589	0.20365827	2.8611109	20	6 5.1	21.4
522857	2016	NX ₈₆	16.6	X	267.99450	62.74226	335.92758	13.29002	0.1435229	0.24748950	2.5124544	20	7 30.7	19.8
522858	2016	NC ₈₇	17.1	X	285.73688	331.02926	338.98284	2.78998	0.2373276	0.19159455	2.9799841	20	4 7.5	21.5
522859	2016	NF ₈₇	17.6	X	279.53382	182.65286	149.02218	6.68064	0.0556979	0.21587280	2.7521416	20	5 26.1	21.4
522860	2016	NJ ₈₇	16.9	X	202.60852	221.98244	137.60381	7.58540	0.1605367	0.17200549	3.2021463	20	3 31.3	22.2
522861	2016	NN ₈₇	17.6	X	211.04360	291.74601	141.74130	5.71923	0.1351013	0.23413455	2.6071082	20	7 5.9	21.6
522862	2016	NS ₈₇	16.8	X	270.16577	122.54152	192.43300	21.70154	0.2626489	0.18202408	3.0835440	20	3 26.6	21.7
522863	2016	NV ₈₇	17.1	X	249.43387	118.72799	285.70427	3.80961	0.1160314	0.22713484	2.6603996	20	7 13.2	20.7
522864	2016	NC ₈₈	17.5	X	242.70456	90.87967	270.23553	1.01343	0.0861281	0.20258598	2.8711979	20	5 12.5	21.5
522865	2016	NE ₈₈	16.9	X	187.82228	283.05790	115.42891	3.98559	0.0976602	0.18707346	3.0278052	20	5 1.9	21.5
522866	2016	NG ₈₈	16.9	X	145.57982	264.47554	155.93759	10.70050	0.0333748	0.17663787	3.1459139	20	4 12.1	21.5
522867	2016	NH ₈₈	16.9	X	246.05759	206.91712	127.03425	12.06410	0.0494320	0.18698368	3.0287743	20	4 22.3	21.5
522868	2016	NI ₈₈	16.7	X	285.17659	100.70967	163.08677	0.70776	0.1336429	0.17382330	3.1797824	20	2 26.9	21.3
522869	2016	NW ₈₈	17.0	X	239.20879	250.29048	148.28987	9.04089	0.1678090	0.21434314	2.7652198			

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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>
522881 2016 OO ₇	16.0	X	63.48768	327.18594	252.50945	6.60725	0.0264026	0.18140263	3.0905824	20	7 15.8	20.3
522882 2016 OP ₇	16.5	X	228.35731	189.89080	239.48776	9.18511	0.0855227	0.18817138	3.0160162	20	7 19.9	21.2
522883 2016 OT ₇	17.0	X	38.98094	58.64884	239.00219	3.18146	0.0675017	0.22781646	2.6550904	20	10 5.1	20.5
522884 2016 OU ₇	16.4	X	166.72651	167.06548	329.93943	11.03951	0.1017122	0.18992349	2.9974383	20	8 10.8	21.0
522885 2016 OW ₇	16.1	X	208.31629	236.14394	159.16157	27.98623	0.2659976	0.17346886	3.1841123	20	5 16.4	22.1
522886 2016 OD ₈	17.8	X	41.08106	340.05147	325.17620	5.99688	0.1185772	0.27241336	2.3567696	20	11 2.5	20.8
522887 2016 OH ₈	16.3	X	126.18955	298.59264	201.14931	15.00907	0.0893927	0.20382695	2.8595321	20	6 29.2	20.9
522888 2016 OJ ₈	16.2	X	208.04284	119.03681	290.58944	9.87495	0.0534594	0.19245535	2.9710918	20	6 6.4	20.6
522889 2016 OK ₈	17.1	X	337.06424	288.67091	57.82552	7.81162	0.0695011	0.23701325	2.5859550	20	9 15.4	20.2
522890 2016 OQ ₈	17.1	X	350.56406	235.51776	91.60909	8.41852	0.0702774	0.23375480	2.6099310	20	9 9.2	20.3
522891 2016 OS ₈	15.9	X	315.36774	227.46973	73.92330	13.17510	0.0706708	0.18818023	3.0159216	20	6 1.5	19.7
522892 2016 OU ₈	16.8	X	357.24518	237.93584	85.29560	13.49747	0.0965905	0.23525074	2.5988550	20	9 20.6	20.1
522893 2016 OV ₈	16.1	X	259.95233	348.03006	113.33534	9.73509	0.0615033	0.18495817	3.0508466	20	3 18.3	20.7
522894 2016 PW ₁	18.2	X	89.99164	290.80394	312.59815	24.67671	0.0832526	0.38800106	1.8617189	20	—	—
522895 2016 PV ₁₀₃	16.9	X	234.78827	294.19904	38.91473	2.23909	0.0562205	0.18224356	3.0810679	20	4 3.1	21.3
522896 2016 PC ₁₀₄	16.8	X	96.54196	12.64543	108.86281	2.88776	0.0784509	0.18722744	3.0261449	20	5 2.8	21.0
522897 2016 PJ ₁₀₄	17.2	X	274.17878	286.57044	96.80703	4.71919	0.1872559	0.22970721	2.6405007	20	7 5.2	20.6
522898 2016 PK ₁₀₄	16.8	X	179.65107	311.49495	102.08910	7.85425	0.1391695	0.18696720	3.0289523	20	5 13.2	21.7
522899 2016 PM ₁₀₄	16.3	X	162.99004	344.06783	29.76336	4.38955	0.0650688	0.15295000	3.4628717	20	3 9.4	21.5
522900 2016 PT ₁₀₄	17.0	X	210.12167	65.15557	345.73074	11.45755	0.2457964	0.19619150	2.9332512	20	5 28.8	22.3
522901 2016 PY ₁₀₄	16.6	X	260.88735	293.68495	73.94158	8.73017	0.0859855	0.20143786	2.8820974	20	6 11.9	20.5
522902 2016 PB ₁₀₅	16.1	X	300.18894	163.52409	130.38329	14.01790	0.0590435	0.18036084	3.1024721	20	5 8.4	20.6
522903 2016 PF ₁₀₅	16.1	X	273.99006	197.54483	116.56216	12.97198	0.0855349	0.17434326	3.1734569	20	4 27.3	20.8
522904 2016 PG ₁₀₅	17.0	X	291.00695	215.20726	91.26399	12.33357	0.2329491	0.18921629	3.0049024	20	4 17.2	21.4
522905 2016 PB ₁₀₆	16.2	X	185.23485	344.33950	98.04683	12.69003	0.0719286	0.19830272	2.9123949	20	6 22.2	20.5
522906 2016 PP ₁₀₆	17.0	X	55.76337	0.02069	239.35466	11.43142	0.1292935	0.24107775	2.5568071	20	8 17.4	20.6
522907 2016 PK ₁₀₇	16.6	X	164.05712	63.73474	1.86091	9.33556	0.0781414	0.18448600	3.0560498	20	5 5.8	21.3
522908 2016 PL ₁₀₇	18.1	X	231.03985	24.50599	103.74926	7.34475	0.0446010	0.28277505	2.2988395	20	11 2.9	20.9
522909 2016 PM ₁₀₇	16.5	X	246.25977	325.25732	0.96351	9.20813	0.1147575	0.17776918	3.1325528	20	3 31.4	21.4
522910 2016 PN ₁₀₇	16.5	X	252.32343	208.91155	126.39378	15.36967	0.0455838	0.18943227	3.0026179	20	5 2.9	21.1
522911 2016 PZ ₁₀₇	17.0	X	205.67376	41.28683	60.73641	5.17356	0.1475038	0.23619035	2.5919579	20	8 7.9	21.1
522912 2016 PK ₁₀₈	16.5	X	221.24393	290.32536	66.66948	9.51485	0.0992396	0.17681388	3.1438258	20	4 17.5	21.4
522913 2016 PL ₁₀₈	16.7	X	205.37583	305.26641	86.34946	11.15963	0.0632487	0.18866398	3.0107640	20	5 14.0	21.2
522914 2016 PM ₁₀₈	16.4	X	239.11817	294.51391	66.46094	10.79967	0.1203611	0.19108741	2.9852543	20	5 7.1	21.0
522915 2016 PO ₁₀₈	18.2	X	243.86896	45.12554	79.48200	8.98388	0.0418740	0.28667914	2.2779210	20	11 15.9	20.9
522916 2016 PP ₁₀₈	16.5	X	237.86437	253.04760	90.54757	9.96667	0.1099360	0.17900621	3.1181044	20	4 18.7	21.4
522917 2016 PS ₁₀₈	16.6	X	186.25066	329.67298	69.49843	10.51788	0.0874836	0.17677775	3.1442542	20	5 2.5	21.4
522918 2016 PV ₁₀₈	16.1	X	229.48651	339.17570	13.95318	10.56079	0.1455751	0.17784208	3.1316967	20	4 13.4	21.0
522919 2016 PX ₁₀₈	17.5	X	114.32903	138.41892	88.74159	5.91693	0.1024867	0.27628822	2.3346824	20	10 21.0	20.8
522920 2016 PB ₁₀₉	17.3	X	85.52136	111.60550	62.74963	6.58952	0.0517978	0.21110902	2.7933897	20	6 21.4	21.0
522921 2016 PF ₁₀₉	17.6	X	184.68046	139.92060	0.22095	8.64656	0.1245557	0.25971626	2.4329692	20	9 8.0	21.1
522922 2016 PT ₁₀₉	16.7	X	305.73896	229.88188	45.23315	5.27445	0.0491776	0.18076379	3.0978598	20	4 18.6	21.0
522923 2016 PA ₁₁₀	16.7	X	282.63185	230.37307	54.30446	6.95960	0.1309365	0.17586784	3.1550901	20	3 23.5	21.2
522924 2016 PK ₁₁₀	15.9	X	18.63199	165.95668	12.77029	10.29843	0.0281757	0.15855985	3.3807047	20	3 28.8	20.5
522925 2016 PS ₁₁₀	16.4	X	144.04112	77.17525	26.88334	10.09094	0.0693156	0.18914185	3.0056908	20	6 1.6	20.9
522926 2016 PJ ₁₁₁	16.9	X	186.79950	56.31977	3.71683	11.01369	0.2036958	0.17653660	3.1471169	20	5 21.9	22.4
522927 2016 PP ₁₁₁	17.6	X	262.83013	114.71211	313.57224	2.13814	0.1369936	0.23070056	2.6329157	20	8 28.9	21.1
522928 2016 PS ₁₁₁	17.5	X	236.49042	258.32495	208.01580	3.96829	0.0284548	0.24629315	2.5205839	20	10 2.9	20.7
522929 2016 PT ₁₁₁	17.0	X	153.56163	183.85529	334.65166	4.95695	0.0348379	0.22395351	2.6855349	20	8 24.9	20.7
522930 2016 PU ₁₁₁	17.3	X	319.85468	205.29620	166.09014	14.68580	0.1584043	0.23841807	2.5757869	20	9 13.6	19.7
522931 2016 PW ₁₁₁	17.1	X	293.67235	210.93765	150.14962	9.26691	0.1199181	0.21411247	2.7672055	20	7 13.3	20.6
522932 2016 PX ₁₁₁	17.8	X	266.95687	346.40294	140.10374	6.02602	0.1085101	0.27844430	2.3226147	20	12 11.3	20.2
522933 2016 PY ₁₁₁	16.1	X	222.46444	240.93816	164.62144	17.36352	0.1432394	0.18495263	3.0509075	20	6 12.3	21.2
522934 2016 PZ ₁₁₁	17.5	X	305.43481	272.54527	156.78941	7.56701	0.0895237	0.26525870	2.3989597	20	11 23.7	20.1
522935 2016 PC ₁₁₂	16.8	X	230.66002	322.83772	94.46988	3.30956	0.0551443	0.20263672	2.8707186	20	7 14.0	20.8
522936 2016 PF ₁₁₂	17.2	X	215.99679	289.73225	126.68462	2.28653	0.1299499	0.18533038	3.0467604	20	6 18.6	22.0
522937 2016 PH ₁₁₂	17.2	X	283.42889	218.98345	164.60300	6.38664	0.0493212	0.21751702	2.7382549	20	8 8.7	20.9
522938 2016 PQ ₁₁₂	17.3	X	332.81264	220.09134	119.00438	2.58200	0.0921719	0.22482372	2.6786006	20	8 22.2	20.2
522939 2016 PS ₁₁₂	16.6	X	266.48347	269.00215	125.00435	4.91075	0.1050182	0.20913360	2.8109525	20	7 21.8	20.2
522940 2016 PT ₁₁₂	16.8	X	167.10207	15.71605	107.83235	3.18044	0.0086809	0.20317090	2.8656845	20	7 24.7	20.7
522941 2016 PV ₁₁₂	17.3	X	261.26209	283.82291	147.17788	4.90362	0.0746189	0.22990762	2.6389661	20	9 10.6	20.6
522942 2016 PX ₁₁₂	16.3	X	113.98354	347.46376	151.22744	10.85854	0.0581328	0.17301987	3.1896184	20	6 12.4	21.1
522943 2016 PY ₁₁₂	16.9	X	153.68060	105.02570	63.52385	6.13717	0.0950980	0.22646352	2.6656547	20	9 11.3	21.0
522944 2016 PB ₁₁₃	17.7	X	240.03564	7.65269	139.42829	6.74477	0.0568003	0.27401712	2.3475648	20	12 5.4	20.6
522945 2016 PC ₁₁₃	16.4	X	3.10846	172.09298	75.87811	6.41860	0.0874434	0.18218628	3.0817136	20	6 2.7	20.1
522946 2016 PD ₁₁₃	17.4	X	331.39718	274.46384	67.53942	6.53601	0.0479005	0.22485332	2.6783655	20	8 28.3	20.8
522947 2016 PE ₁₁₃	16.8	X	290.36730	211.05633	131.63015	6.62597	0.1302717	0.19954862	2.9002598	20	6 12.3	20.6
522948 2016 PF ₁₁₃	16.0	X	268.69537	183.73291	168.18313	16.81353	0.0512347	0.18599615	3.0394856	20	6 8.4	20.6
522949 2016 PM ₁₁₃	17.1	X	308.29002	247.53748	146.36669	14.97467	0.1335022	0.24176404	2.5519662	20	10 1.4	19.9
522950 2016 PO ₁₁₃	16.3	X	297.52108	160.31217	142.46802	10.18925	0.0756097	0.17485212	3.1672970	20	5 12.1	20.8
522951 2016 PY ₁₁₃	16.4	X	293.61230	143.67327	172.17903	10.58749	0.0691662	0.17522166	3.1628421	20	5 23.1	20.9
522952 2016 PZ ₁₁₃	17.4	X	322.15612	263.04570	111.18885	4.92336	0.1364605	0.23671037	2.5881605	20	9 25.9	20.0
522953 2016 PB ₁₁₄	16.6	X	270.97633	188.21920								

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>
522961 2016 PY ₁₁₄	16.8 ^m	X	276.97159	213.18445	132.61016	10.15732	0.0759540	0.18355347	3.0663919	20	6 7.2	21.2
522962 2016 PZ ₁₁₄	17.1	X	275.68879	74.68657	356.83642	13.41761	0.1828143	0.23724782	2.5842502	20	9 16.2	20.2
522963 2016 PK ₁₁₅	17.2	X	330.69038	290.31498	356.70448	1.96378	0.0591495	0.21643261	2.7473938	20	6 5.9	20.6
522964 2016 PM ₁₁₅	17.3	X	198.32871	313.34998	110.56733	4.22189	0.0561036	0.21133892	2.7913635	20	6 14.1	21.3
522965 2016 PO ₁₁₅	17.7	X	10.16689	116.79538	143.69258	2.55223	0.1292489	0.23114140	2.6295669	20	7 6.4	20.4
522966 2016 PR ₁₁₅	16.9	X	134.55016	282.27096	215.39645	4.13517	0.0543248	0.22037124	2.7145600	20	7 4.9	20.8
522967 2016 PW ₁₁₅	16.5	X	188.54165	93.50431	304.78619	8.82092	0.0981650	0.17980842	3.1088232	20	4 27.5	21.5
522968 2016 PL ₁₁₅	15.9	X	164.49792	137.47215	307.16922	8.81778	0.1308682	0.19259871	2.9696172	20	6 2.8	20.7
522969 2016 PA ₁₁₆	17.1	X	285.30428	107.76010	235.56688	3.11835	0.1113455	0.21290174	2.7776866	20	6 8.5	20.8
522970 2016 PD ₁₁₆	17.0	X	269.98700	143.09898	168.97637	3.37355	0.0804602	0.18337890	3.0683376	20	4 15.2	21.3
522971 2016 PF ₁₁₆	16.8	X	190.19112	233.12298	220.01649	3.64160	0.0270020	0.21971979	2.7199229	20	7 13.5	20.6
522972 2016 PH ₁₁₆	17.7	X	279.00423	200.49395	198.51715	5.33834	0.0913631	0.24426632	2.5345079	20	8 19.4	20.7
522973 2016 PL ₁₁₆	16.2	X	51.07526	217.49600	310.37205	9.66691	0.0635606	0.18471364	3.0535385	20	4 23.9	20.4
522974 2016 PU ₁₁₆	17.0	X	281.20356	192.61542	100.40575	3.16592	0.1462557	0.18498420	3.0505604	20	3 27.7	21.4
522975 2016 PX ₁₁₆	17.9	X	210.26973	186.00485	319.07253	6.59434	0.0410734	0.28124791	2.3071536	20	10 22.3	20.9
522976 2016 PP ₁₁₇	17.0	X	242.96333	244.37840	151.97875	9.68887	0.1003034	0.21895006	2.7262939	20	6 26.4	21.1
522977 2016 PH ₁₁₇	17.6	X	272.69653	46.74813	326.01345	5.05985	0.0702695	0.22600710	2.6692422	20	7 8.7	21.2
522978 2016 PA ₁₁₈	17.4	X	239.30626	8.48765	143.02675	7.88800	0.0604587	0.28734423	2.2744046	20	12 13.3	20.1
522979 2016 PD ₁₁₈	16.7	X	240.61842	323.50065	80.06049	16.24250	0.1012618	0.20241160	2.8728467	20	7 1.9	20.9
522980 2016 PE ₁₁₈	17.6	X	280.98881	334.89118	79.06092	11.12531	0.1914015	0.23259809	2.6185766	20	9 2.9	20.9
522981 2016 PJ ₁₁₈	16.6	X	143.76936	40.05785	49.55655	11.19056	0.0528390	0.19091029	2.9871004	20	5 14.1	20.9
522982 2016 PS ₁₁₈	16.4	X	285.85247	297.02228	81.31400	14.97419	0.1791698	0.22645522	2.6657197	20	7 18.3	19.8
522983 2016 PV ₁₁₈	17.5	X	129.65213	68.63065	77.18660	8.09581	0.0817206	0.22916586	2.6446575	20	7 13.8	21.3
522984 2016 PX ₁₁₈	16.8	X	320.00305	203.92064	59.00736	9.90451	0.0376948	0.19146200	2.9813593	20	4 24.6	20.8
522985 2016 PA ₁₁₉	16.6	X	174.68753	301.34057	105.03963	10.58909	0.0981641	0.17483878	3.1674580	20	5 1.5	21.7
522986 2016 PB ₁₁₉	17.5	X	138.16033	39.73143	110.24697	15.28977	0.0294617	0.23193683	2.6235514	20	7 25.8	21.1
522987 2016 PD ₁₁₉	17.5	X	263.86322	52.16695	2.59235	10.53735	0.1198138	0.24339204	2.5405737	20	8 20.4	20.8
522988 2016 PL ₁₁₉	16.6	X	81.15200	63.65168	64.79251	10.36947	0.0490370	0.17131162	3.2107870	20	4 20.9	21.2
522989 2016 PU ₁₁₉	16.5	X	238.43109	258.47096	87.28338	12.09099	0.0874704	0.17695695	3.1421311	20	4 24.6	21.3
522990 2016 PY ₁₁₉	16.9	X	257.96264	35.42900	31.90747	11.13862	0.1064784	0.24370895	2.5383708	20	9 2.8	20.3
522991 2016 PA ₁₂₀	16.7	X	239.72141	326.34708	26.59790	15.80251	0.0375388	0.18148381	3.0896607	20	5 2.1	21.1
522992 2016 PD ₁₂₀	16.7	X	87.34949	123.60801	79.44005	11.18211	0.1340286	0.23084540	2.6318142	20	8 18.8	20.6
522993 2016 PL ₁₂₀	16.5	X	262.24969	254.92586	74.66636	12.89040	0.0871247	0.17931239	3.1145539	20	4 30.4	21.1
522994 2016 PO ₁₂₀	17.6	X	138.28491	338.67430	133.67984	1.27616	0.0229778	0.21362816	2.7713862	20	6 3.7	21.3
522995 2016 PQ ₁₂₀	16.7	X	143.56956	255.32680	176.98973	8.77723	0.0883095	0.17515013	3.1637032	20	4 28.1	21.5
522996 2016 PT ₁₂₀	16.5	X	276.70158	98.77041	185.56229	4.64158	0.0915035	0.17515732	3.1636167	20	3 18.0	21.1
522997 2016 PV ₁₂₀	16.9	X	168.72175	190.39078	222.03490	8.59453	0.0490676	0.17961932	3.1110048	20	4 26.4	21.5
522998 2016 PZ ₁₂₀	16.2	X	136.89353	113.89458	358.31701	12.68704	0.0385936	0.18821179	3.0155844	20	5 31.1	20.8
522999 2016 PE ₁₂₁	17.1	X	271.91803	269.17020	45.21409	1.26371	0.1475001	0.18440590	3.0569348	20	4 10.8	21.7
523000 2016 PG ₁₂₁	17.5	X	283.78507	221.72681	148.99977	4.52159	0.1218409	0.22316464	2.6918599	20	7 12.3	20.8
523001 2016 PH ₁₂₁	16.8	X	289.92743	231.96877	100.39959	3.24216	0.0602068	0.20454665	2.8528206	20	6 8.1	20.6
523002 2016 PK ₁₂₁	16.6	X	259.04747	15.41927	2.12055	6.06454	0.0752964	0.21023065	2.8011650	20	6 24.9	20.5
523003 2016 PL ₁₂₁	16.5	X	210.00074	61.77594	343.61591	8.93550	0.0590099	0.19297295	2.9657766	20	6 1.5	21.0
523004 2016 PM ₁₂₁	16.7	X	321.84068	208.20424	78.37241	3.31939	0.0697440	0.19733669	2.9218920	20	5 22.4	20.3
523005 2016 PO ₁₂₁	18.0	X	178.46898	18.75541	159.49843	7.14103	0.0343623	0.27153083	2.3618734	20	10 30.9	21.1
523006 2016 PP ₁₂₁	17.0	X	214.05623	336.05482	29.78357	9.69347	0.0716637	0.17989449	3.1078315	20	4 18.9	21.7
523007 2016 PX ₁₂₁	17.0	X	298.85956	286.32902	56.81151	15.29235	0.1409515	0.22203076	2.7010168	20	6 22.8	20.4
523008 2016 PY ₁₂₁	16.5	X	22.71232	158.93085	94.22900	15.64363	0.0289582	0.21880885	2.7274667	20	7 7.8	20.1
523009 2016 PZ ₁₂₁	17.6	X	335.43576	288.36569	41.35653	12.94079	0.1142480	0.24005861	2.5640384	20	8 21.8	20.6
523010 2016 PR ₁₂₂	17.8	X	328.54796	79.85614	272.20321	2.41555	0.1865938	0.23432150	2.6057213	20	8 29.0	19.9
523011 2016 PS ₁₂₂	17.2	X	238.67256	66.94355	342.77483	6.37237	0.0432766	0.20246635	2.8723287	20	7 16.8	21.3
523012 2016 PV ₁₂₂	17.6	X	45.54137	49.21252	230.32092	5.16774	0.1015059	0.24028783	2.5624075	20	9 26.5	21.0
523013 2016 PY ₁₂₂	17.3	X	276.63372	33.90328	339.35088	5.07407	0.0304201	0.20339821	2.8635490	20	7 20.0	21.1
523014 2016 PZ ₁₂₃	16.7	X	212.02507	58.38811	343.55138	4.70536	0.1346981	0.17137798	3.2099581	20	5 26.4	21.8
523015 2016 PH ₁₂₃	16.9	X	143.30086	246.91435	274.03716	2.91335	0.0415002	0.21036107	2.8000071	20	8 13.3	20.9
523016 2016 PM ₁₂₃	17.4	X	247.23121	150.68912	275.02455	1.83726	0.1541341	0.21271946	2.7792732	20	8 1.3	21.3
523017 2016 PW ₁₂₃	17.1	X	326.07833	110.24761	218.43153	2.16987	0.0995863	0.21150049	2.7899417	20	7 23.3	20.3
523018 2016 PX ₁₂₃	16.6	X	326.97425	287.85319	4.13884	11.58993	0.0419489	0.18149438	3.0895408	20	6 6.5	21.0
523019 2016 PZ ₁₂₃	16.3	X	235.59430	1.43364	17.19365	10.67240	0.1349479	0.17466040	3.1696143	20	5 19.7	21.4
523020 2016 PE ₁₂₄	16.6	X	283.12864	45.62264	324.28126	1.05441	0.0809225	0.20397605	2.8581385	20	7 15.9	20.4
523021 2016 PF ₁₂₄	16.6	X	325.98369	328.91857	321.54766	1.06174	0.1096020	0.18497966	3.0506103	20	5 29.2	20.4
523022 2016 PK ₁₂₄	16.5	X	195.87595	236.97858	195.45253	9.05517	0.0965591	0.17628100	3.1501583	20	6 19.5	21.5
523023 2016 PL ₁₂₄	16.1	X	164.59516	184.35113	256.11095	4.43890	0.0417318	0.16202081	3.3323877	20	5 26.6	21.0
523024 2016 PP ₁₂₄	16.8	X	179.47097	115.13805	332.95790	11.59973	0.1913529	0.17426130	3.1744520	20	6 22.2	22.3
523025 2016 PQ ₁₂₄	16.6	X	204.12836	124.60736	331.90003	4.89574	0.0399786	0.21267866	2.7796286	20	8 4.7	20.5
523026 2016 PV ₁₂₄	17.9	X	180.44134	224.08247	1.90036	7.09625	0.0616437	0.29225226	2.2488689	20	—	—
523027 2016 PW ₁₂₄	16.8	X	154.00625	337.62151	186.41903	12.64149	0.0761076	0.21904335	2.7255198	20	8 30.3	20.9
523028 2016 PZ ₁₂₄	16.4	X	160.88908	19.08713	78.64615	17.60704	0.1677279	0.17533406	3.1614903	20	6 16.6	21.6
523029 2016 PL ₁₂₅	17.8	X	63.50535	16.53296	254.39719	2.63520	0.1123237	0.26613689	2.3936795	20	10 15.8	21.0
523030 2016 PN ₁₂₅	17.9	X	49.65551	111.41281	186.21255	6.79645	0.1188065	0.26872983	2.3782571	20	11 6.9	21.0
523031 2016 PT ₁₂₅	16.8	X	298.40330	312.79405	84.17272	12.45038	0.1704565	0.23425160	2.6062396	20	9 14.1	19.8
523032 2016 PV ₁₂₅	16.4	X	259.61231	238.48642	126.72982	11.68271	0.1735060	0.18616782	3.0376167	20	5 29.4	21.1
523033 2016 PY ₁₂₅	16.3	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>
523041 2016 PA ₁₂₇	16.3	X	20.74332	37.23984	185.22927	7.62161	0.0203687	0.18047491	3.1011647	20	5 24.9	20.6
523042 2016 PG ₁₂₇	16.1	X	147.60322	116.01963	356.07965	16.04167	0.0859682	0.17980624	3.1088484	20	6 18.1	21.1
523043 2016 PH ₁₂₇	17.1	X	233.53376	119.58855	0.16897	14.80701	0.0749303	0.25295576	2.4761275	20	10 8.5	20.3
523044 2016 PM ₁₂₇	16.4	X	218.16533	185.62299	178.20757	14.78380	0.0779837	0.15958690	3.3661843	20	4 23.7	21.6
523045 2016 PT ₁₂₇	16.5	X	212.09967	81.96685	318.59611	10.88749	0.1572701	0.17673138	3.1448042	20	5 22.3	21.7
523046 2016 QN ₁	17.9	X	15.02162	261.73228	228.72623	20.72383	0.1152278	0.38271202	1.8788321	20	—	—
523047 2016 QE ₇	16.6	X	45.44604	278.07449	246.63350	1.91137	0.0305867	0.17844296	3.1246624	20	4 12.9	20.8
523048 2016 QH ₄₇	17.7	X	56.55700	289.22812	155.35241	23.31746	0.1266175	0.36794652	1.9287662	20	—	—
523049 2016 QD ₈₀	17.5	X	101.55339	7.50709	173.95100	3.03455	0.0447992	0.22572579	2.6714595	20	7 21.3	21.1
523050 2016 QQ ₈₅	18.0	X	160.49251	233.28783	121.94577	22.97089	0.0683764	0.37171197	1.9157185	20	1 12.2	19.8
523051 2016 QP ₉₀	16.8	X	274.49280	263.58930	117.16997	3.18074	0.0744349	0.20385100	2.8593072	20	7 19.4	20.7
523052 2016 QO ₉₀	16.7	X	271.93037	256.54338	111.49634	3.62927	0.1149342	0.19297948	2.9657096	20	6 22.4	20.7
523053 2016 QR ₉₀	17.1	X	287.23649	41.01660	336.09460	2.17971	0.2282252	0.21026803	2.8008330	20	7 8.8	20.7
523054 2016 QS ₉₀	16.9	X	324.33105	247.21931	82.34985	5.25519	0.1576806	0.21025798	2.8009223	20	7 17.1	19.9
523055 2016 QT ₉₀	15.8	X	246.31485	333.24992	45.72314	13.63514	0.0574878	0.17422564	3.1748850	20	6 10.5	20.5
523056 2016 QX ₉₀	16.7	X	359.45023	196.32806	145.29629	15.51443	0.1337805	0.23888262	2.5724465	20	10 23.1	19.8
523057 2016 QE ₉₁	16.5	X	233.81573	4.94521	46.10466	19.66850	0.1864240	0.18460961	3.0546856	20	6 22.9	21.6
523058 2016 QC ₉₁	16.6	X	44.28672	150.17957	150.40762	14.63326	0.0903743	0.23608491	2.5927296	20	10 27.6	20.2
523059 2016 QE ₉₁	16.4	X	296.44576	203.46159	119.76764	11.91694	0.1491773	0.18882630	3.0090384	20	5 25.6	20.5
523060 2016 QF ₉₁	16.3	X	280.70439	310.22800	111.23151	15.16373	0.0796817	0.23613310	2.5923769	20	10 7.2	19.8
523061 2016 QG ₉₁	16.4	X	308.08381	280.91471	130.23604	14.17303	0.1192541	0.24575686	2.5242496	20	10 30.8	19.4
523062 2016 QH ₉₁	16.1	X	252.59532	278.65126	116.88602	13.36829	0.0898287	0.19240864	2.9715726	20	7 7.4	20.4
523063 2016 QO ₉₁	17.1	X	221.92915	7.34339	28.74808	5.19551	0.2880981	0.18556661	3.0442835	20	5 19.7	22.6
523064 2016 QT ₉₁	16.9	X	212.41401	181.49437	289.35164	11.19825	0.1322868	0.23679104	2.5875726	20	8 21.6	20.9
523065 2016 QA ₉₂	17.3	X	306.18953	230.39075	111.95249	1.65541	0.0814446	0.20938660	2.8086878	20	7 12.5	20.7
523066 2016 QE ₉₂	16.6	X	213.67701	39.19740	12.66118	9.28547	0.1088583	0.18222902	3.0812317	20	6 10.8	21.5
523067 2016 QG ₉₂	17.7	X	225.72519	6.32807	130.67033	5.47449	0.0517478	0.26252251	2.4156000	20	11 1.5	20.8
523068 2016 QP ₉₂	16.8	X	303.87597	286.36640	40.32173	2.55191	0.0687684	0.20300787	2.8672186	20	6 18.9	20.6
523069 2016 QR ₉₂	17.1	X	308.73351	298.20143	345.91699	4.12110	0.2125327	0.18762846	3.0218315	20	4 7.8	21.1
523070 2016 QT ₉₂	17.2	X	268.61688	106.47983	286.06994	2.78370	0.1417340	0.21633299	2.7482372	20	7 17.5	20.9
523071 2016 QU ₉₂	17.4	X	317.43519	81.32328	259.39365	3.96227	0.0685444	0.22245355	2.6975934	20	7 29.3	20.8
523072 2016 QW ₉₂	16.3	X	323.48878	303.49882	304.88805	7.46380	0.1253487	0.18489496	3.0515418	20	3 24.9	20.3
523073 2016 QX ₉₂	16.8	X	173.67976	78.62559	329.66807	12.46368	0.2038127	0.15572229	3.4216496	20	4 25.7	22.8
523074 2016 QC ₉₃	16.9	X	285.29344	7.96684	25.07592	10.07351	0.2201532	0.21023929	2.8010883	20	8 1.9	20.6
523075 2016 QH ₉₃	16.8	X	310.38008	48.81223	235.34526	10.41400	0.1148197	0.18859014	3.0115499	20	4 25.0	20.7
523076 2016 QK ₉₃	16.8	X	23.66009	8.77551	258.19172	10.14567	0.0463857	0.22049534	2.7135413	20	7 27.0	20.4
523077 2016 QL ₉₃	17.1	X	216.42643	171.00039	295.76665	12.33701	0.0980289	0.23120559	2.6298001	20	8 23.5	21.1
523078 2016 QM ₉₃	15.7	X	158.90438	165.61297	285.00157	13.17874	0.1725927	0.17113555	3.2129889	20	6 6.8	21.1
523079 2016 QN ₉₃	17.5	X	297.84182	233.01264	188.93368	6.05298	0.1066563	0.25543144	2.4601022	20	10 25.8	20.1
523080 2016 QQ ₉₃	16.7	X	239.77268	130.11940	4.39827	7.55381	0.0723291	0.26978018	2.3720801	20	11 10.7	20.5
523081 2016 QW ₉₃	16.7	X	300.87249	301.11495	47.55369	7.73934	0.1485919	0.21762991	2.7373080	20	7 4.2	20.0
523082 2016 QX ₉₃	17.2	X	236.88540	10.91976	95.73991	8.25120	0.1736963	0.24138565	2.5546324	20	9 16.9	20.9
523083 2016 QA ₉₄	16.3	X	291.21918	221.48960	101.27326	10.94349	0.0759537	0.19128691	2.9831783	20	5 27.7	20.4
523084 2016 QJ ₉₄	15.9	X	328.27717	125.08738	121.51230	17.19572	0.1811935	0.17447219	3.1718933	20	4 4.0	20.1
523085 2016 QK ₉₄	16.6	X	226.23529	323.62863	64.43947	12.10066	0.1054187	0.18391405	3.0623825	20	5 26.7	21.2
523086 2016 RV ₂	17.7	X	168.83333	248.21735	314.17423	5.51857	0.0706341	0.27110293	2.3643580	20	11 12.7	21.1
523087 2016 RF ₂₈	16.6	X	330.60591	31.58489	311.25874	13.71856	0.1984559	0.23183703	2.6243042	20	8 16.7	19.0
523088 2016 RS ₄₁	16.9	X	193.84565	304.15553	183.12559	13.83197	0.1044145	0.23113142	2.6296426	20	8 26.6	21.0
523089 2016 RO ₄₂	18.1	X	313.60188	309.79083	221.56800	21.52677	0.0546541	0.36205186	1.9496449	20	—	—
523090 2016 RF ₄₇	17.5	X	276.62185	311.59192	97.44743	3.95319	0.1329228	0.22952055	2.6419321	20	8 24.9	20.7
523091 2016 RH ₄₇	16.5	X	345.26119	324.71428	317.18029	4.73943	0.0447716	0.19556848	2.9394775	20	6 21.8	20.3
523092 2016 RL ₄₇	16.5	X	147.24735	327.43053	219.61692	13.45682	0.0260726	0.22021320	2.7158586	20	9 18.9	20.4
523093 2016 RO ₄₇	17.5	X	315.49169	172.71605	187.08826	7.51496	0.1615452	0.23277729	2.6172326	20	8 13.4	20.2
523094 2016 RY ₄₇	17.3	X	276.06572	317.94645	52.42854	5.04099	0.0875160	0.21188341	2.7865794	20	7 6.4	21.0
523095 2016 RB ₄₈	16.6	X	282.03860	72.35307	260.21158	8.89425	0.1188760	0.18444166	3.0565397	20	5 19.0	20.9
523096 2016 RD ₄₈	16.0	X	333.31056	193.98732	74.53662	16.67454	0.0439617	0.18100990	3.0950511	20	5 19.9	20.2
523097 2016 RG ₄₈	16.7	X	245.98746	294.79193	97.75820	10.90890	0.1146300	0.20165504	2.8800276	20	6 22.7	20.8
523098 2016 RM ₄₈	17.2	X	225.54236	345.45060	90.04356	14.76802	0.1099796	0.21164156	2.7887019	20	7 27.2	21.4
523099 2016 RR ₄₈	17.3	X	306.23167	296.13620	85.95871	14.38920	0.1752330	0.23006355	2.6377735	20	9 5.8	20.4
523100 2016 RT ₄₈	17.0	X	313.99487	266.84962	55.91457	3.44603	0.1294734	0.20118264	2.8845343	20	6 20.9	20.3
523101 2016 RW ₄₈	17.1	X	253.42141	225.82531	204.15625	15.06514	0.1179786	0.22967860	2.6407200	20	8 17.1	21.1
523102 2016 RY ₄₈	17.5	X	273.61613	13.36065	23.60916	6.25134	0.0512657	0.22626231	2.6672347	20	8 17.6	21.0
523103 2016 RZ ₄₈	16.9	X	246.49057	31.87301	358.60020	9.11887	0.0859027	0.20095886	2.8866754	20	6 24.5	21.2
523104 2016 RC ₄₉	16.7	X	322.66342	282.01569	26.90804	11.26299	0.0065402	0.18975139	2.9992505	20	6 28.2	21.0
523105 2016 RE ₄₉	16.6	X	305.44832	48.67535	230.56313	4.68352	0.1004091	0.17136284	3.2101472	20	4 15.2	20.9
523106 2016 RZ ₄₉	17.4	X	318.10488	93.50916	247.11746	4.31000	0.0432181	0.21523893	2.7575422	20	7 31.4	20.9
523107 2016 RA ₅₀	17.6	X	280.96623	114.88540	293.14393	4.21908	0.0543250	0.23363569	2.6108180	20	9 7.9	21.1
523108 2016 RG ₅₀	17.0	X	69.84397	147.81101	138.02323	13.79544	0.0245361	0.24163686	2.5528616	20	11 2.3	20.7
523109 2016 SP	18.9	X	343.63092	307.38624	211.31518	20.14463	0.0478032	0.37404184	1.9077550	20	—	—
523110 2016 SU ₅₁	17.2	X	241.36996	210.48710	287.97075	9.41046	0.0544874	0.27609087	2.3357948	20	11 23.8	20.2
523111 2016 SW ₅₁	17.4	X	251.32424	29.62224	351.46531	7.41982	0.1206685	0.19675691	2.9276291	20	6 12.6	21.8
523112 2016 SX ₅₁	16.3	X	219.89634	60.61413	334.68220	8.68196	0.0827069	0.18128388	3.0919320	20	5 29.1	21.1
523113 2016 SF ₅₂	16.7	X	49.96585	136.17436	93.16197	15.20169	0.069					

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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>
523121 2016 SB ₅₃	16.5	X	255.13244	274.08450	98.28064	10.61215	0.0971145	0.18152279	3.0892184	20	6 10.1	20.9
523122 2016 SD ₅₃	17.0	X	239.18426	324.15223	91.39758	10.19554	0.0428044	0.20167530	2.8798348	20	7 24.8	21.0
523123 2016 SL ₅₃	17.2	X	219.37438	74.00232	0.04507	8.90818	0.1214718	0.20394515	2.8584272	20	7 17.9	21.7
523124 2016 SM ₅₃	18.3	X	50.36468	317.79524	4.70037	5.74687	0.1080207	0.27804141	2.3248578	20	12 9.2	21.4
523125 2016 SN ₅₃	16.9	X	348.38603	35.77537	227.10569	3.71110	0.1403968	0.19140480	2.9819532	20	5 27.9	20.7
523126 2016 SQ ₅₃	17.4	X	350.45180	127.44422	184.57548	8.65287	0.0636046	0.22086545	2.7105091	20	8 9.7	20.7
523127 2016 SS ₅₃	17.3	X	203.05979	49.44698	51.71465	4.29596	0.0520616	0.21241459	2.7819319	20	8 9.5	21.3
523128 2016 ST ₅₃	17.1	X	227.57063	337.57104	93.08033	2.84353	0.1347746	0.20055319	2.8905668	20	7 18.9	21.6
523129 2016 SW ₅₃	17.1	X	217.52178	278.20140	141.18842	4.80445	0.1050627	0.19107579	2.9853754	20	6 25.9	21.7
523130 2016 SZ ₅₃	16.7	X	246.24891	168.67765	190.90070	11.26543	0.1355153	0.17987079	3.1081045	20	5 11.5	21.5
523131 2016 SB ₅₄	17.0	X	284.32292	126.17202	187.65514	10.87688	0.2059184	0.17688672	3.1429627	20	4 17.9	21.5
523132 2016 SD ₅₄	16.1	X	350.27311	210.43693	47.41272	17.97157	0.1686013	0.18151544	3.0893017	20	5 20.6	19.6
523133 2016 SH ₅₄	17.6	X	95.01988	244.21269	50.90722	11.84732	0.0221922	0.27599043	2.3363615	20	12 17.7	20.6
523134 2016 SI ₅₄	17.3	X	235.65541	46.53229	65.71522	9.00143	0.2017769	0.22449311	2.6812298	20	9 17.9	21.4
523135 2016 SL ₅₄	16.8	X	302.07703	240.70421	128.04429	7.05090	0.0393605	0.21134091	2.7913460	20	8 17.7	20.5
523136 2016 SM ₅₄	17.0	X	337.29293	251.57169	87.76220	7.81617	0.1106437	0.22097206	2.7096372	20	9 1.9	20.1
523137 2016 SN ₅₄	17.2	X	328.95196	236.69548	109.14660	8.00328	0.1295358	0.22001049	2.7175265	20	8 24.6	20.1
523138 2016 SO ₅₄	17.1	X	264.76674	287.18459	167.76841	15.01624	0.0796808	0.24211712	2.5494845	20	10 22.1	20.4
523139 2016 SR ₅₄	16.5	X	299.30003	223.70845	102.41672	11.16993	0.0897031	0.18416103	3.0596440	20	6 9.3	20.7
523140 2016 SW ₅₄	17.3	X	279.07638	327.23957	75.00110	5.83929	0.0559729	0.22053481	2.7132176	20	8 31.5	20.8
523141 2016 SX ₅₄	16.7	X	333.42137	145.13629	145.31880	10.48114	0.1321821	0.18707973	3.0277375	20	6 10.2	20.4
523142 2016 SY ₅₄	17.7	X	302.60153	317.42102	141.84522	8.08885	0.0451960	0.27960207	2.3161986	20	—	—
523143 2016 SZ ₅₄	16.7	X	168.50787	51.38355	113.99390	14.69703	0.0936624	0.22853550	2.6495184	20	9 26.4	20.9
523144 2016 SA ₅₅	16.6	X	226.71291	303.84354	108.71924	14.94737	0.0931197	0.18790905	3.0188226	20	6 28.6	21.2
523145 2016 SE ₅₅	17.9	X	272.90678	83.35828	50.99143	2.04923	0.0564616	0.28763283	2.2728830	20	—	—
523146 2016 SG ₅₅	17.2	X	291.20356	261.71891	96.33985	3.19752	0.0844432	0.20253282	2.8717003	20	7 10.9	20.7
523147 2016 SK ₅₅	16.6	X	296.59755	278.34492	134.90474	12.77155	0.1891914	0.23300661	2.6155151	20	9 29.2	19.4
523148 2016 SM ₅₅	16.2	X	136.54364	102.92126	33.07417	16.15603	0.0977576	0.17598152	3.1537312	20	7 8.7	21.3
523149 2016 SN ₅₅	17.0	X	295.83720	211.09576	126.71098	2.57936	0.1221694	0.18697403	3.0288785	20	6 14.1	20.9
523150 2016 TR	18.1	X	346.18530	299.88536	219.29331	20.32664	0.0496451	0.36536714	1.9378332	20	—	—
523151 2016 TR ₈	16.4	X	270.53157	287.45914	56.01225	6.78515	0.1673364	0.18106666	3.0944043	20	5 12.8	20.8
523152 2016 TU	18.2	X	167.63875	93.06578	124.09888	21.30790	0.0350507	0.35451004	1.9771989	20	—	—
523153 2016 TJ ₁₉	17.4	X	122.42888	278.65910	21.26637	23.62265	0.1105898	0.37647206	1.8995361	20	1 29.9	18.9
523154 2016 TT ₄₇	16.9	X	297.77967	231.88303	150.54454	5.43389	0.1305482	0.21216084	2.7841496	20	8 17.5	20.3
523155 2016 TA ₅₅	17.9	X	228.38219	40.24187	238.61026	19.45725	0.0618117	0.37345962	1.9097372	20	—	—
523156 2016 TB ₅₅	18.2	X	228.42578	60.50635	225.23035	20.42428	0.1005439	0.38049075	1.8861373	20	—	—
523157 2016 TJ ₅₇	15.9	X	226.85335	137.05632	250.03484	9.02395	0.1242614	0.17542254	3.1604271	20	5 24.5	20.7
523158 2016 TA ₉₀	18.5	X	245.16458	335.30617	198.49428	3.95959	0.1087608	0.28084778	2.3093445	20	—	—
523159 2016 TK ₉₇	16.8	X	236.21255	70.55595	48.36127	22.47280	0.0570380	0.23189413	2.6238734	20	10 20.5	20.5
523160 2016 TR ₉₇	17.5	X	259.88438	355.84693	136.48162	12.53363	0.1437217	0.24028835	2.5624038	20	11 24.6	20.8
523161 2016 TX ₉₇	16.3	X	162.69652	190.08727	264.53670	10.70070	0.0473541	0.17735694	3.1374051	20	6 11.5	20.8
523162 2016 TX ₉₇	17.3	X	321.19451	224.95812	136.70993	4.00317	0.1688875	0.22445586	2.6815264	20	8 29.0	19.7
523163 2016 TB ₉₈	16.2	X	285.98525	54.49478	269.96896	8.61337	0.0759094	0.17797314	3.1301591	20	5 20.1	20.7
523164 2016 TN ₉₈	16.5	X	309.72396	78.25639	246.63666	14.99915	0.1519170	0.19842958	2.9111535	20	6 13.2	20.0
523165 2016 TT ₉₈	17.2	X	16.71824	171.53539	152.79141	3.96732	0.1785115	0.24226054	2.5484782	20	10 31.3	20.0
523166 2016 TW ₉₈	17.0	X	198.46701	143.91122	21.73546	12.58024	0.1108409	0.23319159	2.6141317	20	10 20.8	20.8
523167 2016 TY ₉₈	16.8	X	252.73710	59.24216	36.95725	22.52671	0.0472192	0.22469011	2.6796624	20	10 12.1	20.5
523168 2016 TB ₉₉	16.5	X	267.40800	50.30226	312.48912	9.82320	0.0817546	0.18289180	3.0737832	20	6 14.5	20.9
523169 2016 TD ₉₉	16.8	X	322.77060	184.76568	153.88218	5.32463	0.0764112	0.21674000	2.7447955	20	8 3.2	20.1
523170 2016 TE ₉₉	16.1	X	218.39285	313.94053	76.13442	10.89455	0.0853851	0.15372784	3.4511807	20	5 23.6	21.3
523171 2016 TF ₉₉	16.2	X	244.74779	134.93991	251.50579	9.75469	0.0557465	0.17635090	3.1493258	20	6 19.8	20.8
523172 2016 TG ₉₉	16.4	X	299.93000	218.29804	100.55507	16.93536	0.1528958	0.18037263	3.1023369	20	5 25.4	20.7
523173 2016 TJ ₉₉	17.2	X	321.99902	239.42919	123.84450	15.22767	0.0218187	0.21627664	2.7487145	20	9 13.6	21.0
523174 2016 TL ₉₉	16.1	X	346.48753	318.67627	308.15041	8.26027	0.1810580	0.18479725	3.0526175	20	5 25.6	19.5
523175 2016 TM ₉₉	16.5	X	254.19270	47.40199	324.74395	9.75405	0.0964635	0.18155513	3.0888515	20	6 7.3	21.2
523176 2016 TN ₉₉	16.7	X	348.68507	304.65288	356.39010	12.13396	0.0846584	0.20446841	2.8535483	20	7 27.5	20.3
523177 2016 TO ₉₉	17.0	X	234.04690	168.23169	278.10103	2.26963	0.0623288	0.21250607	2.7811334	20	8 24.1	20.9
523178 2016 TP ₉₉	16.6	X	325.13167	282.35026	57.49539	9.25566	0.1803687	0.21101137	2.7942514	20	8 3.8	19.6
523179 2016 TQ ₉₉	16.4	X	282.00830	151.33427	205.99420	10.32609	0.0830263	0.18189702	3.0849798	20	6 25.4	20.8
523180 2016 TR ₉₉	16.8	X	227.85509	298.68043	132.84055	18.70142	0.1286259	0.18307137	3.0717729	20	7 19.5	21.6
523181 2016 TU ₉₉	16.8	X	214.40118	91.12746	50.82237	14.27324	0.1320213	0.22694243	2.6619031	20	10 11.5	20.8
523182 2016 TV ₉₉	16.5	X	277.05143	168.87380	194.22155	10.89466	0.0893147	0.18188944	3.0850656	20	6 25.5	21.0
523183 2016 TW ₉₉	18.0	X	290.60833	58.97923	73.45034	6.83716	0.0621176	0.28372678	2.2936958	20	—	—
523184 2016 TY ₉₉	16.2	X	244.77295	96.59705	293.57572	8.11065	0.1313052	0.17417219	3.1755345	20	6 15.8	21.0
523185 2016 TC ₁₀₀	16.9	X	277.05573	237.92463	202.25278	21.51288	0.0526365	0.22933824	2.6433321	20	10 17.8	20.3
523186 2016 UG ₅	18.8	X	286.94053	32.08197	211.34399	20.62937	0.0381732	0.38026702	1.8868771	20	1 10.6	21.4
523187 2016 UJ ₅₅	19.1	X	204.18373	92.61253	212.77501	21.02128	0.0833764	0.37023654	1.9208046	20	—	—
523188 2016 UC ₁₂₄	18.0	X	322.03914	72.91697	40.48962	8.50278	0.0914316	0.29231531	2.2485455	20	—	—
523189 2016 US ₁₄₈	18.1	X	290.25189	295.80912	230.71532	4.06762	0.0476842	0.30296538	2.1955367	20	—	—
523190 2016 UV ₁₄₈	17.9	X	300.04592	105.17898	355.98412	6.51683	0.0588226	0.27668936	2.3324253	20	—	—
523191 2016 UX ₁₄₈	17.0	X	234.87874	300.79801	152.56364	5.58115	0.0967037	0.21397357	2.7684029	20	8 31.0	20.8
523192 2016 UC ₁₄₉	16.9	X	283.27306	106.73693	261.50318	7.58674	0.0708477	0.19410408	2.9542434	20	7 13.6	20.9
523193 2016 UD ₁₄₉	16.4	X	270.29923	1.50165	27.96837	9.72551	0.0640893	0.19179288	2.9779294	20	7 29.4	20.7
523194 2016 UE<												

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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>
523201 2016 VC ₂₀	17.4	X	39.10845	137.43490	202.94324	6.71630	0.0457123	0.24485561	2.5304398	20	12 2.7	20.7
523202 2016 VE ₂₀	17.2	X	334.75283	289.65070	97.94985	5.03908	0.0644266	0.23598900	2.5934321	20	11 5.0	20.3
523203 2016 VF ₂₀	16.7	X	282.48655	266.79319	155.08386	6.48008	0.0471346	0.21826385	2.7320051	20	10 1.2	20.2
523204 2016 VG ₂₀	17.6	X	239.03936	292.12990	214.60795	16.05404	0.1588075	0.23368275	2.6104675	20	11 7.9	21.0
523205 2016 VH ₂₀	16.9	X	344.39361	158.42006	161.50238	8.80240	0.0755854	0.18988679	2.9978245	20	8 8.7	20.8
523206 2016 VL ₂₀	16.7	X	208.52220	110.84988	13.24696	12.75832	0.0767850	0.17877373	3.1208070	20	9 10.7	21.4
523207 2016 VM ₂₀	16.6	X	244.48720	40.30872	34.22237	12.04567	0.1350688	0.17569964	3.1571034	20	8 14.9	21.5
523208 2016 VP ₂₀	16.1	X	295.02572	18.11541	7.09539	12.73785	0.1006818	0.17639307	3.1488239	20	8 22.1	20.3
523209 2016 VR ₂₀	16.5	X	312.58352	86.02934	308.60878	8.03206	0.0419411	0.18719072	3.0265406	20	9 27.1	20.7
523210 2016 VU ₂₀	16.8	X	307.48139	326.07952	87.45102	11.95270	0.0667569	0.20028595	2.8931374	20	10 24.8	20.7
523211 2016 VY ₂₀	16.3	X	162.08589	105.21905	55.71205	11.99588	0.0658445	0.17187816	3.2037276	20	9 8.0	21.3
523212 2016 VB ₂₁	16.9	X	280.21875	95.85657	349.08103	9.05966	0.1020641	0.21207199	2.7849272	20	10 15.2	20.5
523213 2016 VC ₂₁	17.1	X	240.40306	147.20262	347.50506	6.79099	0.0740399	0.21340024	2.7733592	20	10 30.4	20.9
523214 2016 VE ₂₁	17.1	X	9.81353	1.13325	9.61997	6.21058	0.0488585	0.22355924	2.6886914	20	11 25.9	20.7
523215 2016 VF ₂₁	16.5	X	172.97411	336.01777	203.10387	5.17703	0.0197004	0.18799608	3.0178908	20	10 8.9	20.6
523216 2016 VM ₂₁	16.5	X	59.21355	186.67522	125.74269	16.38076	0.1345919	0.20336855	2.8638275	20	11 29.1	20.9
523217 2016 VP ₂₁	16.5	X	149.72405	222.39379	319.51504	9.54397	0.0860663	0.19687764	2.9264321	20	9 13.9	21.1
523218 2016 WF ₁₁	15.6	X	187.84329	102.74095	308.88968	14.03457	0.0942133	0.17821781	3.1272936	20	5 12.9	20.7
523219 2016 WZ ₂₆	17.8	X	223.27182	179.70802	17.23801	2.40577	0.1571123	0.26385799	2.4074423	20	12 30.1	20.7
523220 2016 WW ₃₃	18.0	X	41.17130	120.30546	310.15711	0.99539	0.0666876	0.31888783	2.1218308	20	—	—
523221 2016 WY ₄₅	16.9	X	197.61443	270.58796	261.72893	11.65789	0.1219537	0.22934622	2.6432708	20	10 24.2	21.1
523222 2016 WR ₅₃	17.3	X	249.22212	80.69343	47.73208	12.58138	0.2211898	0.22799953	2.6536690	20	10 20.3	20.9
523223 2016 WJ ₅₇	16.2	X	219.28510	313.06710	146.34396	11.45421	0.1216883	0.18488563	3.0516445	20	8 15.0	20.9
523224 2016 WK ₅₇	16.6	X	350.68080	188.05482	188.24999	12.72826	0.1353845	0.24068785	2.5595676	20	11 22.6	19.5
523225 2016 XO ₂	16.6	X	172.42462	333.87926	236.43223	6.75298	0.1429837	0.23725749	2.5841800	20	11 17.7	20.4
523226 2016 XQ ₄	17.3	X	309.68744	245.29398	231.37281	1.53062	0.1383311	0.26785212	2.3834497	20	—	—
523227 2016 XC ₁₄	16.2	X	252.08440	224.68264	256.28219	13.60908	0.0664252	0.22982860	2.6395709	20	11 1.5	19.8
523228 2016 XN ₂₄	17.3	X	259.04355	301.24855	161.10120	7.30242	0.2318017	0.21724029	2.7405799	20	9 23.5	21.0
523229 2016 XY ₂₄	15.2	X	163.00093	244.55949	276.89840	14.07021	0.1788749	0.17910532	3.1169540	20	8 28.1	20.7
523230 2016 YZ ₄	16.1	X	7.92485	25.74045	263.16921	10.41553	0.0962392	0.18242203	3.0790579	20	8 1.9	20.0
523231 2016 YF ₁₂	16.4	X	201.62182	93.76246	48.53052	14.74768	0.1666493	0.18024242	3.1038308	20	9 22.6	21.6
523232 2016 YO ₁₃	17.4	X	158.59473	203.64733	50.17497	15.56115	0.0770967	0.23830328	2.5766140	20	12 30.6	21.4
523233 2016 YG ₁₃	16.7	X	201.70731	352.97918	161.92523	11.64267	0.1087412	0.18350110	3.0669752	20	10 7.3	21.5
523234 2016 YU ₁₃	16.9	X	112.78822	235.20199	53.20185	15.14204	0.1270195	0.22592173	2.6699147	20	12 22.9	21.2
523235 2016 YY ₁₃	16.8	X	257.48261	108.62315	30.26526	13.07107	0.0733770	0.22209340	2.7005089	20	11 28.9	20.4
523236 2016 YZ ₁₃	16.4	X	190.38958	306.98318	177.92754	26.75928	0.1689372	0.17407692	3.1766931	20	8 12.0	21.9
523237 2016 YA ₁₄	16.3	X	274.21467	32.07342	13.87388	9.36701	0.0723338	0.17537781	3.1609645	20	8 22.7	20.7
523238 2016 YD ₁₄	16.6	X	188.53852	335.85024	193.25230	9.24250	0.0374595	0.18556505	3.0441912	20	10 14.2	21.0
523239 2016 YE ₁₄	17.5	X	314.06540	279.50100	170.77346	12.29781	0.1329083	0.23593121	2.5938556	20	12 26.3	20.5
523240 2016 YF ₁₄	17.2	X	169.16980	68.70523	166.79370	8.68698	0.1318731	0.21394491	2.7686502	20	12 12.2	21.7
523241 2016 YH ₁₄	16.9	X	314.51102	1.54963	105.28795	13.15274	0.0284720	0.24050481	2.5608661	20	—	—
523242 2017 AF ₁	17.2	X	212.24042	122.63827	60.62630	14.41277	0.0703479	0.22254976	2.6968159	20	11 30.3	20.9
523243 2017 AW ₅	17.1	X	122.65927	250.44848	59.21245	4.20956	0.1431801	0.26014257	2.4303105	20	—	—
523244 2017 AG ₈	16.1	X	205.64414	28.80723	111.23630	18.42737	0.1924465	0.18347787	3.0672341	20	9 21.7	21.4
523245 2017 AJ ₈	16.7	X	317.88083	66.73995	12.93877	4.96145	0.1054979	0.22599360	2.6693486	20	12 14.2	19.8
523246 2017 AM ₁₀	16.5	X	40.60700	126.47171	251.42234	13.15248	0.0636347	0.22657968	2.6647435	20	—	—
523247 2017 AZ ₁₂	16.6	X	324.94617	318.15774	114.14789	15.76149	0.1437277	0.23638770	2.5905151	20	12 23.1	19.3
523248 2017 AB ₂₂	17.1	X	144.77543	69.92875	167.19558	13.93032	0.1376836	0.19365441	2.9588148	20	11 20.5	22.1
523249 2017 AB ₂₂	16.7	X	165.09800	10.46007	196.87958	6.54800	0.0851525	0.18814508	3.0162972	20	11 2.5	21.3
523250 2017 AK ₂₂	15.7	X	174.11843	338.62346	229.94752	16.19867	0.0414111	0.18568435	3.0428872	20	11 14.1	20.2
523251 2017 AO ₂₂	16.1	X	71.67126	52.68309	244.02158	9.36822	0.0738707	0.18826500	3.0150163	20	11 8.5	20.3
523252 2017 AO ₂₂	16.3	X	163.65571	321.49829	234.36422	4.27853	0.1113402	0.17600514	3.1534490	20	10 14.4	21.3
523253 2017 AR ₂₂	16.5	X	190.46140	261.23078	282.95263	8.77399	0.0566948	0.18886893	3.0085855	20	10 30.3	21.0
523254 2017 AR ₂₂	16.4	X	335.46827	101.45555	270.94388	9.63681	0.0744266	0.17927932	3.1149369	20	9 27.7	20.7
523255 2017 AY ₂₂	17.4	X	12.09559	128.13745	284.67461	4.44290	0.1027307	0.23085273	2.6317585	20	—	—
523256 2017 AC ₂₃	17.7	X	1.88802	20.76089	60.07444	4.17349	0.1187177	0.24616367	2.5214677	20	—	—
523257 2017 AD ₂₃	16.7	X	272.43969	28.00997	59.58631	5.70232	0.1468113	0.17478425	3.1681168	20	9 30.1	20.9
523258 2017 AE ₂₃	16.9	X	167.35328	141.48635	126.63412	6.18016	0.1246959	0.21277088	2.7788254	20	—	—
523259 2017 AJ ₂₃	16.4	X	207.12783	282.14863	217.66165	11.75303	0.1437211	0.17440332	3.1727283	20	9 15.0	21.6
523260 2017 AO ₂₃	17.4	X	292.30960	293.13381	192.02245	12.75586	0.2077584	0.22920252	2.6443755	20	12 25.8	20.2
523261 2017 AQ ₂₃	17.1	X	216.98547	257.59373	293.48508	11.75866	0.0222487	0.21291038	2.7776114	20	12 21.2	20.9
523262 2017 AT ₂₃	17.1	X	339.24155	165.01056	259.37508	2.75699	0.1385741	0.22161250	2.7044143	20	12 30.8	20.0
523263 2017 AV ₂₃	16.3	X	130.83187	316.06334	310.05608	14.64057	0.2092056	0.18404767	3.0609001	20	12 8.4	21.7
523264 2017 AW ₂₃	16.9	X	260.79793	313.05800	106.87434	9.48158	0.1983993	0.18490262	3.0514576	20	8 3.1	21.3
523265 2017 AB ₂₄	16.6	X	77.22358	264.61575	53.80458	6.76100	0.0623122	0.20889954	2.8130518	20	12 14.4	20.7
523266 2017 AC ₂₄	18.1	X	296.91828	134.67693	55.49583	7.03176	0.0552807	0.28084703	2.3093486	20	—	—
523267 2017 AJ ₂₄	16.8	X	321.10812	181.39353	300.50626	15.99955	0.0557725	0.23934796	2.5691112	20	—	—
523268 2017 AL ₂₄	16.5	X	168.98515	161.54658	72.11857	11.59667	0.0275050	0.19660275	2.9291593	20	12 11.0	20.6
523269 2017 AO ₂₄	16.2	X	5.27096	277.47035	111.65969	11.59782	0.0305157	0.18866030	3.0108032	20	12 5.8	20.4
523270 2017 AP ₂₄	17.7	X	263.94081	112.20096	66.91913	12.36207	0.1310328	0.22588385	2.6702131	20	—	—
523271 2017 AR ₂₄	16.9	X	277.75015	56.35348	114.88684	14.60842	0.1096391	0.22654545	2.6650119	20	—	—
523272 2017 AW ₂₄	17.9	X	258.56545	211.33960	288.25957	2.87970	0.1879442	0.22484533	2.6784290	20	11 17.0	21.1
523273 2017 AX ₂₄	17.0	X	272.15526	213.26495	332.72711	12.74956	0.1067643	0.23494641	2.6010988	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>
523281 2017 BY ₁₉	17.4	X	345.56275	309.52427	139.18717	7.18596	0.0736160	0.25383798	2.4703869	20	—	—
523282 2017 BR ₂₅	16.9	X	27.28164	300.92420	93.56062	6.60812	0.0805820	0.23989373	2.5652131	20	—	—
523283 2017 BP ₂₈	16.4	X	199.09657	94.53864	149.09044	25.13798	0.1477415	0.22693846	2.6619342	20	—	—
523284 2017 BM ₃₄	16.3	X	240.03843	339.74458	121.65986	9.90969	0.0514497	0.17475919	3.1684196	20	9 21.4	20.9
523285 2017 BW ₃₆	17.0	X	209.43314	73.97807	98.12728	8.69386	0.0830603	0.21254944	2.7807550	20	11 12.9	21.1
523286 2017 BX ₃₇	17.0	X	327.83140	328.03251	104.65137	14.56396	0.0794534	0.22893390	2.6464436	20	12 22.2	20.1
523287 2017 BE ₃₉	17.7	X	26.29719	305.36180	119.91239	10.56409	0.0856458	0.27569208	2.3380467	20	—	—
523288 2017 BE ₄₀	16.5	X	195.40827	35.43255	119.07860	17.98632	0.1741868	0.17771255	3.1332183	20	9 30.3	21.9
523289 2017 BJ ₄₈	16.6	X	151.43319	89.76563	112.38428	10.76958	0.0222201	0.18279541	3.0748637	20	10 16.5	21.2
523290 2017 BT ₄₈	17.2	X	335.31383	74.78443	335.61422	8.17096	0.1414749	0.22370488	2.6875244	20	12 4.4	20.2
523291 2017 BD ₆₂	16.7	X	275.44272	76.17702	353.23450	8.42396	0.0435913	0.19122093	2.9838645	20	9 24.9	20.8
523292 2017 BC ₆₄	17.2	X	114.73878	216.10941	80.29531	7.35400	0.0318682	0.23790717	2.5794733	20	—	—
523293 2017 BY ₆₇	17.0	X	45.87450	253.72840	96.06095	7.68041	0.0946910	0.22622647	2.6675164	20	12 25.1	20.7
523294 2017 BB ₈₀	16.4	X	145.59415	355.67335	241.68339	4.64865	0.0161139	0.20091307	2.8871139	20	11 19.8	20.4
523295 2017 BP ₈₀	17.2	X	58.17133	203.55924	132.02786	5.27725	0.0717544	0.213667923	2.7709446	20	12 16.4	21.2
523296 2017 BG ₈₂	16.5	X	220.85625	21.41172	121.88883	3.05392	0.0510239	0.18824732	3.0152051	20	10 20.0	20.7
523297 2017 BK ₈₂	15.9	X	1.83020	40.04805	134.95879	7.25657	0.0242010	0.18670156	3.0318247	20	10 18.7	20.1
523298 2017 BJ ₈₄	15.5	X	184.91286	269.67604	249.66302	12.45674	0.0603095	0.17441764	3.1725546	20	9 19.1	20.5
523299 2017 BW ₈₄	16.5	X	302.29041	210.88985	210.79844	10.13422	0.1433880	0.20460049	2.8523202	20	10 15.2	19.8
523300 2017 BE ₁₀₀	16.7	X	118.79755	200.94760	70.77826	4.68857	0.0613600	0.21415245	2.7668610	20	12 5.1	20.8
523301 2017 BA ₁₀₄	16.2	X	152.10000	140.68450	79.39006	10.39553	0.02114581	0.18125765	3.0922302	20	11 5.4	21.6
523302 2017 BN ₁₀₄	16.5	X	161.11728	186.83801	77.00834	12.28656	0.0902379	0.24132397	2.5550677	20	—	—
523303 2017 BZ ₁₀₄	17.2	X	141.62600	198.91822	96.20350	7.66189	0.1291415	0.25734660	2.4478817	20	—	—
523304 2017 BH ₁₀₅	16.5	X	159.59412	143.04967	104.58768	10.34760	0.0538483	0.22859286	2.6490751	20	12 23.7	20.3
523305 2017 BZ ₁₀₅	17.6	X	38.57340	290.18530	103.64437	14.90011	0.1166858	0.25903477	2.4372346	20	—	—
523306 2017 BC ₁₀₆	17.3	X	337.76886	332.62227	91.53024	16.37456	0.1231557	0.23518007	2.5993756	20	12 31.4	20.1
523307 2017 BS ₁₀₉	15.8	X	37.57164	53.55069	269.48438	9.02044	0.0083519	0.18155879	3.0888100	20	10 16.9	20.3
523308 2017 BD ₁₁₁	16.5	X	333.59521	119.72285	268.90911	8.94571	0.1089246	0.19207018	2.9750625	20	10 20.4	20.2
523309 2017 BH ₁₁₁	16.2	X	111.35871	55.09825	197.98071	15.36254	0.0814339	0.17237544	3.1975631	20	10 30.9	21.0
523310 2017 BE ₁₁₆	15.8	X	228.03365	46.53427	64.36818	26.09719	0.1354887	0.17340705	3.1848688	20	9 21.2	21.1
523311 2017 BD ₁₂₁	16.0	X	208.26663	258.95057	252.35681	10.70636	0.1064391	0.17639177	3.1488394	20	10 2.4	21.0
523312 2017 BF ₁₂₄	16.1	X	344.01951	286.17382	93.99436	11.51753	0.0702959	0.18945617	3.0023654	20	11 1.6	20.1
523313 2017 BH ₁₂₆	17.1	X	338.69406	281.22771	153.16842	12.28183	0.1585204	0.23734581	2.5835389	20	—	—
523314 2017 BA ₁₂₇	17.2	X	280.28062	233.92089	229.30055	3.48381	0.0200285	0.21234329	2.7825546	20	11 21.2	20.8
523315 2017 BB ₁₂₈	16.4	X	335.49389	177.27930	181.58020	2.65033	0.0290073	0.17528080	3.1621308	20	9 15.3	20.7
523316 2017 BU ₁₃₂	17.1	X	133.96103	220.16111	67.44981	3.39490	0.0409422	0.22829202	2.6514019	20	—	—
523317 2017 BX ₁₃₆	16.6	X	107.58700	124.02805	140.59686	11.06605	0.0640055	0.18578545	3.0417831	20	11 12.9	21.3
523318 2017 BG ₁₃₇	16.2	X	127.42535	27.62280	220.95840	4.71830	0.1646981	0.17587302	3.1550281	20	11 14.0	21.4
523319 2017 BV ₁₃₇	16.1	X	68.93536	161.98458	151.01571	6.45096	0.0953239	0.18143203	3.0902485	20	11 28.5	20.6
523320 2017 BG ₁₃₈	17.3	X	318.88300	144.85846	293.85197	14.28108	0.1746560	0.21629200	2.7485844	20	12 12.5	20.2
523321 2017 BJ ₁₃₈	17.6	X	321.88040	112.08438	310.67117	2.41475	0.0733890	0.21891587	2.7265778	20	11 25.6	21.0
523322 2017 BL ₁₃₈	16.8	X	160.13442	264.53549	343.86346	7.09050	0.0550294	0.21144128	2.7904626	20	12 21.1	21.0
523323 2017 BO ₁₃₈	16.5	X	307.76276	164.87747	269.36198	7.99974	0.0790565	0.19204497	2.9753228	20	11 11.0	20.3
523324 2017 BX ₁₃₈	15.9	X	349.85757	124.19230	255.22636	8.33735	0.1079461	0.17957278	3.1115423	20	11 2.5	19.8
523325 2017 BT ₁₃₈	16.3	X	138.98737	306.72594	322.39802	8.91066	0.0723617	0.19083671	2.9878682	20	12 18.9	20.9
523326 2017 BW ₁₃₈	17.5	X	263.65393	359.08211	196.39987	3.91661	0.1927604	0.23409489	2.6074026	20	—	—
523327 2017 BX ₁₃₈	16.3	X	250.21551	1.20951	84.40291	10.10935	0.1379338	0.17596290	3.1539537	20	9 3.2	21.0
523328 2017 BY ₁₃₈	18.3	X	38.52179	69.63366	357.24620	4.15367	0.1102282	0.27606302	2.3359519	20	—	—
523329 2017 BZ ₁₃₈	16.9	X	214.97374	233.43580	342.28135	15.71776	0.1215671	0.22463034	2.6801377	20	—	—
523330 2017 BB ₁₃₉	17.0	X	197.03413	167.88309	12.70000	3.70988	0.0227183	0.18799897	3.0178598	20	11 7.5	21.2
523331 2017 BE ₁₃₉	16.9	X	134.99991	169.96970	104.69423	6.72431	0.0385165	0.21049881	2.7987855	20	12 25.3	21.0
523332 2017 BF ₁₃₉	17.3	X	175.25139	198.16090	21.69088	1.89672	0.0117441	0.20511870	2.8475141	20	12 4.6	21.3
523333 2017 BH ₁₃₉	16.7	X	17.96072	309.23075	140.09212	6.65716	0.0872872	0.27017846	2.3697484	20	—	—
523334 2017 BO ₁₃₉	17.2	X	91.22418	134.16937	153.91497	10.10921	0.0663359	0.17473532	3.1687083	20	11 20.1	21.0
523335 2017 BU ₁₃₉	17.0	X	182.69526	230.26496	14.06970	4.25660	0.0491523	0.21656133	2.7463050	20	—	—
523336 2017 BV ₁₃₉	17.6	X	13.32378	331.21582	75.32901	2.96596	0.1063870	0.22499534	2.6772383	20	—	—
523337 2017 BX ₁₃₉	16.3	X	190.76701	210.77297	329.37085	9.97004	0.0144444	0.17397323	3.1779552	20	10 25.1	21.1
523338 2017 BY ₁₃₉	16.1	X	211.04958	278.06578	271.68915	9.60641	0.0850892	0.18700392	3.0285558	20	11 27.9	20.5
523339 2017 BC ₁₄₀	17.5	X	0.03846	187.54307	281.75511	3.94703	0.1449957	0.25398348	2.4694434	20	—	—
523340 2017 BL ₁₄₀	17.3	X	260.83417	274.83366	263.20136	11.60736	0.1403936	0.23494742	2.6010913	20	—	—
523341 2017 BN ₁₄₀	16.1	X	44.40601	71.10184	262.50188	8.87724	0.0967073	0.18250864	3.0780838	20	11 22.8	20.4
523342 2017 BO ₁₄₀	16.5	X	258.24173	339.38778	234.23053	8.08082	0.0729050	0.22258492	2.6965319	20	—	—
523343 2017 BS ₁₄₀	17.2	X	46.17465	18.57505	345.31366	4.42286	0.0166877	0.21205950	2.7850365	20	12 28.7	21.0
523344 2017 BT ₁₄₀	16.8	X	311.98522	69.02511	25.89808	5.26733	0.0084630	0.20892116	2.8128577	20	12 21.0	20.6
523345 2017 BV ₁₄₀	16.9	X	191.37681	92.55605	140.92687	25.01800	0.0524362	0.21524147	2.7575205	20	—	—
523346 2017 BW ₁₄₀	17.8	X	272.91038	140.48263	93.65272	4.14719	0.0960573	0.28077137	2.3097634	20	—	—
523347 2017 BD ₁₄₁	16.2	X	113.03819	135.01183	155.20820	8.69080	0.0472802	0.17295051	3.1904712	20	12 12.5	21.0
523348 2017 BE ₁₄₁	17.1	X	213.52813	203.62680	61.26496	3.46676	0.1486822	0.22840584	2.6505209	20	—	—
523349 2017 BF ₁₄₁	16.0	X	180.46932	80.42024	144.28607	11.60832	0.0628595	0.17440581	3.1726981	20	12 8.2	20.9
523350 2017 BL ₁₄₁	16.3	X	108.80216	55.17969	199.68077	12.44351	0.0905016	0.17444363	3.1722395	20	10 31.2	21.1
523351 2017 BQ ₁₄₁	15.9	X	90.14949	153.53387	123.63572	19.30246	0.0797971	0.17058166	3.2199403	20	11 11.4	21.0
523352 2017 CK ₂	16.5	X	250.64380	242.06059	239.09773	4.91072	0.0899881	0.19706708	2.9245564	20	10 22.4	20.5
523353 2017 CB ₃	16.8	X	158.27112	15.03028	232.69368	3.28363	0.0543801	0.21170470	2.7881473	20	12 18.3	20.7
523354 2017 CT<												

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>
523361 2017 CS ₂₀	16.6	X	120.74638	163.94419	131.80343	26.92896	0.0776106	0.22898634	2.6460396	20	—	—
523362 2017 CA ₂₈	17.4	X	293.08605	12.75913	97.34228	3.19301	0.0343275	0.21991729	2.7182942	20	12 17.5	20.7
523363 2017 CC ₃₃	16.6	X	61.09015	324.46757	355.90918	4.94826	0.0122593	0.21040875	2.7995841	20	11 20.4	20.5
523364 2017 CE ₃₃	17.6	X	291.10102	21.40674	102.34128	6.61329	0.0788064	0.23684651	2.5871686	20	—	—
523365 2017 CE ₃₄	15.5	X	6.34816	268.58409	101.10238	20.83108	0.0617726	0.17708739	3.1405880	20	11 18.9	20.0
523366 2017 CO ₃₄	16.3	X	328.26585	163.52499	243.88824	8.49453	0.0546411	0.18032321	3.1029037	20	11 5.4	20.5
523367 2017 CU ₃₄	16.5	X	19.56275	289.58847	86.49313	12.92152	0.0552685	0.18451284	3.0557535	20	12 8.8	20.5
523368 2017 CW ₃₄	16.7	X	176.70070	218.47354	57.30007	14.38925	0.1687775	0.21282037	2.7783946	20	—	—
523369 2017 CZ ₃₄	16.8	X	182.12782	282.37732	342.58567	3.82016	0.0185864	0.21204915	2.7851271	20	—	—
523370 2017 CD ₃₅	17.7	X	236.00904	87.57514	176.31044	6.69911	0.0978484	0.27099657	2.3649766	20	—	—
523371 2017 CQ ₃₅	16.6	X	304.19870	132.52177	317.03091	10.59830	0.0532932	0.18933973	3.0035962	20	11 25.5	20.8
523372 2017 CR ₃₅	16.9	X	194.70861	294.74950	326.70087	8.43881	0.1395031	0.21709424	2.7418089	20	—	—
523373 2017 CU ₃₅	16.0	X	218.52141	261.57966	279.05063	11.98475	0.2052129	0.17969498	3.1101315	20	11 8.9	21.0
523374 2017 DH ₁	16.5	X	309.77029	289.93033	137.34280	13.23793	0.0342599	0.19748682	2.9204110	20	11 14.8	20.6
523375 2017 DC ₂	17.4	X	214.83103	85.48056	133.44393	12.73925	0.0596662	0.23512527	2.5997795	20	—	—
523376 2017 DJ ₂	17.0	X	235.32414	119.38103	22.26264	2.18857	0.0415223	0.19409667	2.9543185	20	11 4.9	21.2
523377 2017 DN ₂	16.4	X	44.99464	266.59510	59.66802	2.67034	0.0151799	0.18943853	3.0057538	20	11 5.5	20.6
523378 2017 DS ₅	16.4	X	241.68136	3.98037	130.22521	15.41856	0.1235406	0.19322752	2.9631711	20	10 29.5	20.9
523379 2017 DV ₅	16.8	X	352.41503	275.68845	133.46035	14.90009	0.1433798	0.22549397	2.6732901	20	—	—
523380 2017 DB ₁₂	16.8	X	316.39081	9.00467	7.429612	7.04190	0.0582217	0.21515937	2.7582219	20	12 13.7	20.2
523381 2017 DF ₁₃	16.3	X	7.53003	334.30013	39.58374	14.14095	0.0346779	0.19480500	2.9471528	20	11 18.0	20.2
523382 2017 DA ₁₇	16.7	X	168.41971	155.15443	41.29025	4.89959	0.0843862	0.18632333	3.0359263	20	10 23.2	21.3
523383 2017 DE ₂₃	17.6	X	149.54147	89.57605	172.19943	3.23843	0.0237073	0.21983599	2.7189644	20	12 28.5	21.3
523384 2017 DL ₂₆	17.1	X	212.05554	275.17219	306.85338	4.97957	0.1500086	0.22783397	2.6549544	20	—	—
523385 2017 DF ₂₈	16.9	X	109.45665	62.34676	234.22919	3.14460	0.0794738	0.21392110	2.7688555	20	12 25.9	21.1
523386 2017 DQ ₃₉	16.0	X	53.05176	169.20989	142.71663	20.10499	0.0780809	0.18449586	3.0559410	20	11 11.9	20.7
523387 2017 DY ₄₁	16.4	X	135.63158	103.95478	131.49418	16.91671	0.0185344	0.18503782	3.0499710	20	11 8.9	21.1
523388 2017 DW ₄₄	16.3	X	216.67850	61.67773	76.11080	2.70101	0.1151994	0.17768077	3.1335919	20	9 29.8	20.9
523389 2017 DD ₄₇	16.3	X	224.88939	1.31232	133.59497	11.89520	0.0482308	0.17295564	3.1904080	20	10 15.7	21.1
523390 2017 DN ₅₁	15.7	X	109.55125	181.62887	99.55635	9.07759	0.1504284	0.18249148	3.0782766	20	12 6.8	20.7
523391 2017 DC ₅₆	16.2	X	44.67767	277.72260	50.54968	10.01544	0.0526353	0.18159442	3.0884059	20	11 10.9	20.4
523392 2017 DK ₅₈	15.9	X	307.87425	322.90952	93.20355	11.30687	0.0821420	0.18134129	3.0912793	20	10 23.5	20.0
523393 2017 DZ ₆₁	16.5	X	208.01125	9.71137	136.47440	10.66285	0.0647983	0.17206867	3.2013625	20	10 7.3	21.4
523394 2017 DL ₆₂	15.8	X	55.01385	250.41555	73.16298	11.09350	0.0403663	0.18031749	3.1029693	20	11 17.4	20.1
523395 2017 DS ₆₅	17.5	X	106.64095	161.14180	161.53626	2.72331	0.0882136	0.23100542	2.6305987	20	—	—
523396 2017 DA ₈₀	15.6	X	185.48342	32.39490	148.10194	10.61170	0.0465702	0.17667582	3.1454634	20	10 25.7	20.4
523397 2017 DA ₈₃	16.3	X	230.25001	69.48865	72.75301	11.58896	0.0399267	0.18604786	3.0389223	20	11 1.9	20.7
523398 2017 DX ₈₄	16.1	X	247.25603	355.44322	122.12382	13.73620	0.1930257	0.17927259	3.1150149	20	10 3.4	20.9
523399 2017 DH ₁₀₀	16.6	X	58.31072	23.93384	336.98637	20.17344	0.1019901	0.20981895	2.8048281	20	—	—
523400 2017 DX ₁₀₄	15.8	X	47.98047	264.86056	63.48837	7.04506	0.1177198	0.18998824	2.9967573	20	11 25.9	21.0
523401 2017 DU ₁₀₉	16.2	X	220.82198	268.24230	221.85571	8.93847	0.1887732	0.17734327	3.1375663	20	9 13.3	21.3
523402 2017 DU ₁₁₃	15.8	X	167.35942	151.73540	61.11741	12.70458	0.1280331	0.18952246	3.0016653	20	11 10.7	20.5
523403 2017 DL ₁₁₄	15.9	X	139.78134	187.72901	50.69402	2.96375	0.0777272	0.17781799	3.1319795	20	11 11.2	20.6
523404 2017 DB ₁₁₆	16.4	X	281.69162	350.87169	136.95189	22.51359	0.0494980	0.22522691	2.6754029	20	12 26.9	20.2
523405 2017 DC ₁₁₆	16.6	X	233.31834	330.71692	148.99464	12.62480	0.2461653	0.18871381	3.0102340	20	9 12.7	21.4
523406 2017 DL ₁₁₈	16.8	X	215.72948	324.29940	267.16055	13.04145	0.1190977	0.23328328	2.6134467	20	—	—
523407 2017 DG ₁₂₁	15.9	X	103.78032	146.04675	131.35231	10.26166	0.0902406	0.17902192	3.1179220	20	11 23.9	20.8
523408 2017 DV ₁₂₁	16.9	X	322.82812	263.23331	137.85003	10.40616	0.1068006	0.18764756	3.0216264	20	10 25.9	20.7
523409 2017 DZ ₁₂₁	16.7	X	135.27669	252.23564	29.30340	7.89552	0.2736510	0.17998588	3.1067795	20	12 29.5	22.3
523410 2017 DD ₁₂₂	16.7	X	295.05129	248.07795	215.61242	2.32252	0.0745584	0.19377491	2.9575881	20	12 2.3	20.4
523411 2017 DE ₁₂₂	17.1	X	230.44914	218.30237	342.34161	3.43307	0.0415243	0.21131780	2.7915495	20	—	—
523412 2017 DJ ₁₂₂	16.2	X	162.38602	266.65301	345.96103	14.69842	0.0760419	0.18358655	3.0660234	20	12 22.1	21.1
523413 2017 DN ₁₂₂	16.2	X	213.50184	67.04173	125.64316	13.52776	0.0485240	0.19673820	2.9278147	20	12 12.9	20.5
523414 2017 DQ ₁₂₂	16.1	X	56.22564	89.61634	262.62892	9.42353	0.1349796	0.19196184	2.9761818	20	—	—
523415 2017 DR ₁₂₂	17.1	X	220.80608	237.17148	344.13208	7.78080	0.1461840	0.21140924	2.7907445	20	—	—
523416 2017 DU ₁₂₂	16.1	X	356.75778	336.26154	42.05869	11.08141	0.0622663	0.17473031	3.1687688	20	11 8.4	20.1
523417 2017 DW ₁₂₂	17.0	X	154.60009	239.20890	94.58901	7.87797	0.1243884	0.26081670	2.4261210	20	1 2.6	20.2
523418 2017 DX ₁₂₂	15.9	X	15.29194	313.27348	79.98690	13.07737	0.0647026	0.19718063	2.9234335	20	12 27.9	19.7
523419 2017 DZ ₁₂₂	16.3	X	128.29811	269.25726	28.89323	10.98079	0.0889611	0.17540553	3.1606315	20	—	—
523420 2017 EP ₄	16.0	X	218.06670	283.13361	215.77543	11.50586	0.1791982	0.17564790	3.1577233	20	9 22.2	21.1
523421 2017 EC ₅	16.7	X	303.60409	216.27407	309.27480	11.57268	0.1200242	0.24316412	2.5421610	20	—	—
523422 2017 EW ₅	15.8	X	268.12528	314.81840	148.04073	17.51723	0.1751090	0.17985934	3.1082365	20	10 12.5	20.2
523423 2017 EE ₁₂	15.3	X	286.17764	355.14257	94.99380	28.43372	0.0957118	0.17831381	3.1261710	20	11 9.9	19.9
523424 2017 EE ₁₃	16.3	X	221.80344	11.30484	144.06197	9.93833	0.0170746	0.18163318	3.0879666	20	11 9.9	20.8
523425 2017 EW ₁₃	15.6	X	90.45310	118.43114	181.01255	9.37508	0.0440933	0.18482429	3.0523197	20	12 1.1	20.1
523426 2017 EE ₁₄	16.1	X	168.45360	91.57943	131.69775	16.98711	0.0978900	0.17474239	3.1686227	20	11 25.6	21.3
523427 2017 EH ₁₉	16.0	X	123.99925	179.42139	74.42924	9.31850	0.1452818	0.17607667	3.1525949	20	11 17.3	21.0
523428 2017 EH ₂₄	16.9	X	238.10431	126.59725	96.06003	13.60414	0.1216421	0.23234772	2.6204574	20	—	—
523429 2017 EJ ₂₄	15.8	X	330.79671	356.42279	55.13950	21.73555	0.0315648	0.16870687	3.2437512	20	11 13.4	20.2
523430 2017 EK ₂₄	17.0	X	146.05999	186.01006	83.94299	3.01018	0.1573803	0.19011795	2.9953941	20	12 25.8	22.0
523431 2017 EL ₂₄	17.7	X	267.52837	178.31002	38.67788	2.52080	0.1166842	0.25393712	2.4697439	20	—	—
523432 2017 ES ₂₄	17.3	X	311.76698	31.61280	80.57087	7.54423	0.1976894	0.22193152	2.7018220	20	—	—
523433 2017 ET ₂₄	16.5	X	182.23783	215.94613	68.28299	12.43871	0.2251272	0.21140999	2.7907379	20	—	—
523434 2017 EW ₂₄	17.0	X	21									

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
523441 2017 FM ₅	16.6 ^m	X	248.02233	317.11617	177.71272	9.58281	0.0464917	0.18840481	3.0135245	20	11 12.7	20.9
523442 2017 FL ₇	17.2	X	251.39181	23.71843	89.01844	2.35377	0.1513291	0.17878487	3.1206774	20	10 3.3	21.6
523443 2017 FE ₉	17.3	X	331.76418	316.82628	130.18937	13.28733	0.0632391	0.21347040	2.7727515	20	—	—
523444 2017 FJ ₉	16.0	X	138.43140	152.09904	133.14989	19.20010	0.3215609	0.18117708	3.0931469	20	—	—
523445 2017 FV ₁₀	16.8	X	337.46074	227.76125	179.54634	13.14743	0.0430491	0.19251470	2.9704810	20	11 23.7	20.9
523446 2017 FK ₁₁	16.3	X	112.34681	88.10041	180.62152	10.19803	0.0798803	0.17722182	3.1389995	20	11 20.6	21.1
523447 2017 FZ ₁₄	17.4	X	297.57941	315.55444	160.68877	2.27777	0.0194782	0.20306893	2.8666437	20	12 27.3	21.1
523448 2017 FR ₂₄	17.7	X	26.58587	138.88039	278.71765	2.80208	0.0465107	0.23524625	2.5988881	20	—	—
523449 2017 FX ₂₄	15.5	X	94.22995	351.08771	251.17931	6.26695	0.1743892	0.12473525	3.9671315	20	9 29.7	21.5
523450 2017 FO ₄₂	15.8	X	35.65870	184.81163	165.95430	18.02358	0.0849495	0.17164202	3.2066653	20	12 1.8	20.5
523451 2017 FE ₅₈	17.3	X	281.21473	71.26522	79.35968	10.20051	0.1015115	0.21965126	2.7204886	20	—	—
523452 2017 FQ ₅₈	17.4	X	290.12947	119.17397	43.11118	13.80506	0.1937885	0.23823731	2.5770897	20	—	—
523453 2017 FU ₅₈	15.9	X	345.26649	262.08748	135.76364	15.53251	0.1021817	0.17934121	3.1142202	20	11 24.6	20.1
523454 2017 FH ₆₈	16.3	X	70.12323	267.69281	61.71727	11.10162	0.1186374	0.19226165	2.9730869	20	12 22.4	20.7
523455 2017 FM ₆₈	15.9	X	6.44747	269.24657	121.39378	12.90169	0.0652623	0.19720170	2.9232253	20	12 14.7	19.9
523456 2017 FC ₆₉	15.8	X	90.30885	176.47428	123.34734	11.48073	0.0799963	0.18230680	3.0803552	20	12 5.2	20.5
523457 2017 FR ₇₅	15.7	X	94.29660	161.10689	131.25421	23.13782	0.0309246	0.18202775	3.0835026	20	11 30.1	20.6
523458 2017 FX ₇₉	16.2	X	37.20774	244.25372	100.81037	12.53980	0.1216267	0.17281363	3.1921556	20	12 1.5	20.6
523459 2017 FN ₈₃	15.3	X	17.90990	205.58753	175.64520	18.46620	0.1401185	0.17180727	3.2046089	20	12 20.3	19.8
523460 2017 FO ₈₄	16.1	X	36.58580	252.09960	86.04397	13.67585	0.1113212	0.18050514	3.1008185	20	11 23.0	20.4
523461 2017 FM ₈₅	15.5	X	64.04906	243.59492	59.85964	9.39292	0.1085827	0.15316318	3.4596577	20	11 7.7	20.4
523462 2017 FT ₉₂	16.4	X	191.81916	347.55150	293.45171	12.09828	0.1664832	0.23726816	2.5841025	20	—	—
523463 2017 FG ₉₄	16.1	X	194.69547	315.57400	256.54799	10.11652	0.0239476	0.19197758	2.9760191	20	12 14.4	20.4
523464 2017 FK ₁₀₄	16.0	X	295.74505	286.82367	151.73265	20.09095	0.1550711	0.17335943	3.1854521	20	10 24.5	20.2
523465 2017 FD ₁₀₇	16.0	X	6.80510	266.06354	111.66791	17.79289	0.1205021	0.18424613	3.0587018	20	12 4.2	20.1
523466 2017 FX ₁₀₇	17.0	X	169.41794	225.58942	58.23354	12.53044	0.1590882	0.22182710	2.7026697	20	—	—
523467 2017 FT ₁₁₇	17.4	X	189.15712	30.26069	70.15293	6.15232	0.1717380	0.19617982	2.9333676	20	12 25.7	22.2
523468 2017 FK ₁₂₀	15.7	X	54.99744	261.94273	27.51371	10.59709	0.0948828	0.18568655	3.0428631	20	12 14.6	20.1
523469 2017 FP ₁₂₆	16.6	X	50.14924	282.30626	82.52147	13.80486	0.1047165	0.21159658	2.7890970	20	—	—
523470 2017 FA ₁₆₂	17.6	X	267.97333	78.28452	94.41769	2.07849	0.0154388	0.21651419	2.7467036	20	—	—
523471 2017 FB ₁₆₂	17.4	X	225.25492	197.57389	51.71193	2.30471	0.1883343	0.23006365	2.6377728	20	—	—
523472 2017 FJ ₁₆₂	17.3	X	161.57696	336.44676	324.79905	1.15600	0.0551120	0.22185722	2.7024251	20	—	—
523473 2017 FK ₁₆₂	16.8	X	191.88689	252.52252	335.32361	0.25478	0.1120310	0.18473983	3.0532500	20	12 20.1	21.4
523474 2017 FL ₁₆₂	16.0	X	131.32945	284.30914	20.81645	15.00461	0.2498323	0.17857208	3.1231560	20	—	—
523475 2017 FM ₁₆₂	17.2	X	224.38719	13.91692	230.28811	4.59583	0.0193036	0.22829995	2.6513405	20	—	—
523476 2017 FO ₁₆₂	16.8	X	184.51661	206.02784	45.69904	6.32666	0.1863533	0.18566603	3.0430873	20	—	—
523477 2017 FQ ₁₆₂	16.1	X	123.41265	161.65118	144.47923	7.90194	0.0926893	0.17273740	3.1930946	20	—	—
523478 2017 FR ₁₆₂	16.3	X	217.58226	13.07056	190.86112	17.19843	0.1454411	0.17855660	3.1233365	20	12 13.8	21.3
523479 2017 FS ₁₆₂	16.4	X	58.60591	330.02971	75.09950	13.84076	0.1117827	0.23358824	2.6111715	20	—	—
523480 2017 FT ₁₆₂	17.1	X	145.38072	252.00000	23.20434	12.25739	0.0461739	0.19666433	2.9285478	20	—	—
523481 2017 FU ₁₆₂	16.2	X	140.45955	157.24667	139.16347	9.47464	0.1322206	0.18033183	3.1028048	20	—	—
523482 2017 FW ₁₆₂	17.3	X	340.50410	242.89559	242.05359	5.11439	0.1017168	0.22554189	2.6729114	20	—	—
523483 2017 FX ₁₆₂	16.6	X	171.94683	51.27175	215.68095	5.57594	0.0671531	0.18729617	3.0254045	20	—	—
523484 2017 GG ₃	16.9	X	164.53346	64.67371	178.04147	12.66522	0.1273586	0.17593816	3.1542493	20	12 9.9	22.1
523485 2017 GV ₉	17.0	X	336.69145	256.23688	222.66890	10.90211	0.1077341	0.22327349	2.6909850	20	—	—
523486 2017 GY ₉	16.7	X	148.20525	49.37428	239.17092	4.31522	0.1191484	0.18094563	3.0957840	20	—	—
523487 2017 GF ₁₀	17.1	X	192.34986	112.25955	175.00793	5.59174	0.0823237	0.21967454	2.7202964	20	—	—
523488 2017 GL ₁₀	16.4	X	224.99545	83.94312	92.30366	8.64104	0.1344789	0.17307125	3.1889871	20	11 20.8	21.2
523489 2017 GM ₁₀	15.9	X	139.55284	345.26920	303.37333	7.79530	0.0601149	0.17361476	3.1823282	20	—	—
523490 2017 GR ₁₀	16.7	X	295.14460	340.11359	181.97219	12.33431	0.1063038	0.21270334	2.7794136	20	—	—
523491 2017 GV ₁₀	15.7	X	96.78589	184.36402	148.94965	15.21784	0.0988652	0.17373722	3.1808325	20	—	—
523492 2017 HQ ₈	16.5	X	17.61523	228.62191	158.84541	9.80143	0.1113505	0.18820551	3.0156515	20	12 27.8	20.6
523493 2017 HM ₁₆	16.3	X	118.10496	202.01110	103.74857	4.11480	0.0764607	0.17449756	3.1715859	20	—	—
523494 2017 HQ ₂₃	16.5	X	181.46259	211.41415	74.46706	15.40021	0.1611742	0.22751223	2.6574568	20	—	—
523495 2017 HE ₂₅	15.7	X	162.39315	62.18922	203.49516	15.56886	0.0499521	0.17305122	3.1892332	20	—	—
523496 2017 HX ₄₀	17.1	X	175.52748	133.51734	178.19400	2.64731	0.1394161	0.21486350	2.7607534	20	1 4.8	21.4
523497 2017 HG ₆₂	17.2	X	220.05865	84.85509	120.27045	16.25204	0.1966360	0.17808670	3.1288282	20	12 13.8	22.2
523498 2017 HH ₆₂	17.1	X	233.80320	121.54268	68.15901	2.52909	0.0924263	0.18633101	3.0358429	20	12 22.9	21.4
523499 2017 HJ ₆₂	17.4	X	117.27400	282.26948	81.89198	3.79939	0.1223069	0.22656912	2.6648263	20	1 2.9	20.8
523500 2017 HL ₆₂	16.7	X	169.15396	105.01435	164.14653	0.91336	0.1484191	0.18024001	3.1038585	20	—	—
523501 2017 HP ₆₂	17.7	X	109.45224	124.87136	273.99473	0.76785	0.1369642	0.24684948	2.5167953	20	2 4.9	20.8
523502 2017 HS ₆₂	16.5	X	77.50348	247.13569	121.43049	11.80726	0.0621001	0.18229213	3.0805205	20	—	—
523503 2017 HW ₆₂	16.3	X	147.80678	155.16717	149.81824	18.34114	0.1520579	0.17902899	3.1178399	20	—	—
523504 2017 JV ₃	15.6	X	130.70352	50.12187	257.12960	15.21430	0.0799420	0.18057572	3.1000104	20	—	—
523505 2017 JM ₄	15.7	X	142.06358	64.12476	221.66090	15.63362	0.2105078	0.17186173	3.2039317	20	—	—
523506 2017 JK ₆	16.7	X	194.03896	62.03174	245.05546	9.63925	0.0634907	0.22499577	2.6772349	20	1 11.1	20.8
523507 2017 KO ₃₆	16.4	X	117.81394	168.81163	149.23466	2.38257	0.0282130	0.16948414	3.2338261	20	—	—
523508 2017 KP ₃₇	16.8	X	160.28756	281.07674	48.50313	4.12201	0.0949513	0.21198094	2.7857246	20	1 8.7	21.0
523509 2017 LJ	16.7	X	222.97669	163.29777	183.26211	32.35932	0.1520253	0.23425482	2.6062157	20	3 28.5	20.8
523510 2017 NB ₁	17.5	X	279.01854	289.54763	119.86591	5.92686	0.1228975	0.22391305	2.6858584	20	1 29.5	21.4
523511 2017 NT ₂	16.2	X	167.53992	34.34566	310.72046	10.24569	0.0809841	0.18315893	3.0707937	20	2 5.4	20.8
523512 2017 NQ ₄	17.0	X	302.03294	121.75950	129.91514	14.71940	0.1772487	0.23944183	2.5684397	20	2 19.9	20.5
523513 2017 OE ₆	17.4	X	171.88407	346.80267	98.35869	7.29791	0.1148338	0.26835755	2.3804560	20	6 12.4	20.8
523514 2017 OW ₉	17.1	X	180.77517	112.86297	277.10021	11.81036	0.1636694	0.23329716	2.6133430	20	4 6.3	21.6

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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>
523521 2017 OA ₄₃	17.2	X	199.24635	145.75476	260.95003	6.00966	0.1157628	0.25212954	2.4815340	20	5 20.4	21.0
523522 2017 OC ₄₄	16.6	X	227.83723	31.76045	257.14709	5.30607	0.1904475	0.18980443	2.9986917	20	1 25.2	21.6
523523 2017 OR ₄₅	16.5	X	321.85283	355.48041	237.89764	8.10755	0.1635199	0.22789848	2.6544534	20	2 21.0	19.9
523524 2017 OA ₅₁	17.5	X	266.74136	352.19806	297.08529	4.15373	0.1624203	0.22669373	2.6638496	20	2 27.6	21.6
523525 2017 OJ ₅₉	16.0	X	186.78218	17.99070	333.51201	10.83134	0.0663593	0.19227787	2.9729197	20	3 1.8	20.6
523526 2017 OB ₆₀	17.6	X	144.70946	72.98196	354.43393	1.71759	0.0645282	0.22149602	2.7053623	20	4 16.7	21.5
523527 2017 OH ₆₁	16.5	X	235.89544	296.77689	339.22930	11.43129	0.1205222	0.17748111	3.1359416	20	1 25.8	21.5
523528 2017 OR ₆₄	16.9	X	110.17642	233.38216	204.43348	1.35316	0.0185469	0.20475338	2.8509001	20	3 14.3	20.7
523529 2017 OR ₆₅	16.4	X	277.61531	251.30248	347.91226	16.26575	0.0809249	0.17574456	3.1565654	20	1 31.9	21.2
523530 2017 OA ₆₆	16.8	X	298.13589	137.97883	166.92241	15.08165	0.0688649	0.23586465	2.5943435	20	5 15.3	20.4
523531 2017 OR ₆₆	16.1	X	216.35629	156.20388	171.56292	16.44217	0.06464791	0.17007314	3.2263556	20	3 8.1	20.9
523532 2017 PY ₅	17.5	X	178.18375	251.84824	141.51342	2.66687	0.0964944	0.22309979	2.6923816	20	4 13.8	21.5
523533 2017 PA ₆	17.0	X	185.07411	235.78706	138.49534	4.21486	0.1068108	0.21299825	2.7768475	20	3 29.4	21.3
523534 2017 PA ₇	16.8	X	211.43730	309.86282	354.04812	2.93864	0.0985399	0.18022615	3.1040177	20	2 2.5	21.5
523535 2017 PC ₂₁	17.2	X	38.06352	91.42817	93.26418	4.22730	0.1011885	0.24108160	2.5567799	20	5 4.6	20.0
523536 2017 PZ ₂₃	16.5	X	282.43876	224.89369	0.15193	5.42736	0.0971317	0.16953688	3.2331555	20	1 15.7	21.2
523537 2017 QZ ₃	17.6	X	293.12346	132.46932	164.29906	6.81911	0.1209380	0.26232537	2.1668101	20	4 15.3	20.6
523538 2017 QA ₂₁	17.0	X	48.55436	294.35172	197.12176	4.08816	0.0707034	0.21055992	2.7982440	20	3 5.9	20.5
523539 2017 QZ ₂₂	18.0	X	113.08518	265.36656	189.10026	1.60615	0.0460763	0.23591791	2.5939531	20	4 10.6	21.5
523540 2017 SP ₂₂	16.0	X	194.59317	29.59955	327.04951	8.46329	0.0897652	0.17743275	3.1365113	20	3 15.8	20.9
523541 2017 SJ ₂₉	17.3	X	289.75492	215.24905	120.20508	8.20207	0.1720289	0.24067855	2.5596335	20	5 27.2	20.6
523542 2017 SN ₃₀	16.6	X	332.16621	192.73744	44.60069	9.74574	0.0216518	0.17815304	3.1280514	20	4 10.8	21.0
523543 2017 SF ₃₄	17.8	X	270.62006	113.81460	200.63131	10.09789	0.1396432	0.24108373	2.5567648	20	4 6.5	21.4
523544 2017 SC ₃₇	16.7	X	227.73447	19.58649	297.70779	11.73329	0.1005393	0.18903316	3.0068427	20	2 27.7	21.5
523545 2017 UH ₃₀	17.4	X	321.77434	14.52822	260.66255	4.26071	0.1655254	0.23137657	2.6277848	20	4 5.8	20.5
523546 2017 VP ₉	16.6	X	228.40624	14.30839	319.16319	7.99229	0.0772335	0.17893307	3.1189541	20	3 22.3	21.3
523547 2017 VH ₁₁	16.4	X	122.30942	30.32540	45.75756	9.45592	0.1273777	0.18485890	3.0519388	20	4 13.7	20.9
523548 2017 VN ₂₁	16.6	X	104.80995	241.65735	231.94257	9.15642	0.0801684	0.18105174	3.0945743	20	5 1.8	20.9
523549 2017 VK ₂₄	16.2	X	274.61042	38.26027	240.15040	9.61083	0.1857008	0.17870493	3.1216079	20	2 21.8	21.1
523550 2017 VZ ₂₇	17.9	X	151.97118	239.72950	263.97846	2.10794	0.1254651	0.25165706	2.4846391	20	8 6.9	21.7
523551 2017 VJ ₃₁	17.9	X	255.51163	255.54401	172.99912	5.47323	0.0543666	0.29351722	2.2424030	20	9 10.4	20.2
523552 2017 WP ₂₅	16.0	X	137.28020	332.17402	127.99411	18.28047	0.1740900	0.17574406	3.1565714	20	6 3.2	21.4
523553 2017 XH ₃	15.9	X	143.80341	194.31320	240.22214	14.62408	0.1685450	0.17276768	3.1927216	20	5 4.0	21.0
523554 2017 XS ₁₂	17.3	X	12.49577	139.08978	112.03832	1.11205	0.0441926	0.22780486	2.6551805	20	6 21.3	20.4
523555 2017 XV ₁₇	16.9	X	44.96182	191.97149	356.38089	2.48900	0.0494691	0.18621076	3.0371497	20	5 14.2	20.9
523556 2017 XY ₂₁	17.3	X	129.09217	142.80499	6.45860	4.05517	0.0292999	0.23485625	2.6017644	20	7 13.6	20.8
523557 2017 XZ ₂₈	16.9	X	151.04230	348.62967	98.15567	1.87641	0.1691482	0.18590303	3.0405004	20	5 26.3	21.8
523558 2017 XQ ₃₀	16.8	X	245.45326	266.25891	68.64499	10.42576	0.0435679	0.18049918	3.1008867	20	4 22.0	21.3
523559 2017 XM ₄₅	16.7	X	207.33330	146.21269	232.56271	8.15143	0.0160549	0.17868111	3.1218854	20	4 29.5	21.2
523560 2017 XM ₅₅	17.3	X	101.39727	134.00648	47.89152	6.49420	0.1704799	0.22706241	2.6609654	20	8 1.8	21.2
523561 2017 YH ₂	16.4	X	255.85240	286.77129	99.67329	13.57610	0.1867456	0.23286012	2.6166119	20	6 18.1	20.3
523562 2017 YR ₀	17.5	X	233.90608	358.56274	85.19039	6.92020	0.0645507	0.27788860	2.3257100	20	9 1.2	20.5
523563 2017 YM ₁₁	17.1	X	294.94126	202.08132	141.78978	6.21788	0.1205525	0.23808715	2.5781732	20	6 22.8	20.2
523564 2018 AF ₁₄	16.9	X	266.96435	122.44838	289.76937	14.30558	0.1275759	0.23206844	2.6225594	20	8 10.4	20.4
523565 2018 CA ₆	16.6	X	222.23862	68.81302	35.33267	10.00638	0.0976900	0.24124309	2.5556387	20	9 6.8	20.3
523566 2018 CS ₁₁	17.5	X	115.92862	58.31487	185.60370	5.80938	0.1374165	0.24265797	2.5456948	20	11 7.8	21.4
523567 2018 CW ₁₅	17.1	X	182.74593	61.86466	128.73590	14.51046	0.1795870	0.24269847	2.5454116	20	11 7.5	21.4
523568 2018 CD ₁₆	16.9	X	188.50308	242.89737	251.66846	8.25819	0.1474431	0.21825893	2.7320462	20	8 24.9	21.4
523569 2018 DH ₂	16.8	X	167.61935	16.88317	156.26810	13.71237	0.1086917	0.22695566	2.6617997	20	9 30.9	20.9
523570 2018 DL ₂	16.2	X	70.86033	286.33476	303.78644	5.89190	0.0844856	0.18393096	3.0621948	20	8 16.9	20.5
523571 2018 DY ₂	17.3	X	200.16248	233.64864	253.40609	2.30546	0.0366646	0.21381090	2.7698069	20	9 7.2	21.3
523572 2018 DD ₃	16.0	X	148.98328	277.00357	228.99557	2.52747	0.1156389	0.17118136	3.2124157	20	8 1.0	21.0
523573 2018 EM ₆	16.1	X	158.69363	45.13427	101.47486	8.42794	0.1580768	0.17874123	3.1211853	20	8 15.1	21.2
523574 2018 EX ₆	16.0	X	99.02731	255.43350	352.50379	24.04899	0.3366681	0.17941892	3.1133209	20	10 21.5	21.8
523575 2018 EY ₆	16.5	X	213.82372	348.94112	138.84500	13.22258	0.1238314	0.22768417	2.6561187	20	9 21.8	20.5
523576 2018 ED ₇	17.5	X	220.21978	96.98648	73.96034	7.82283	0.1260946	0.27039277	2.3684960	20	11 28.2	20.3
523577 2018 EW ₇	17.0	X	230.40514	45.75416	63.65719	12.01625	0.1554571	0.23176332	2.6248606	20	9 16.9	21.0
523578 2018 EO ₈	16.3	X	114.59063	116.75301	117.31498	26.27935	0.3397891	0.17924231	3.1153657	20	11 6.2	22.4
523579 2018 EN ₉	17.1	X	195.75343	161.67374	348.88159	8.24395	0.2579440	0.22630818	2.6668743	20	9 18.2	21.5
523580 2018 FP	18.2	X	78.01275	28.51599	9.53954	21.54483	0.0788532	0.37595800	1.9012672	20	—	—
523581 2018 FL ₅	17.1	X	161.10106	101.24688	163.99726	27.72045	0.4082840	0.23617266	2.5920874	20	—	—
523582 2018 FN ₅	17.9	X	34.10402	287.25630	159.94732	24.06450	0.0535785	0.36939183	1.9237318	20	—	—
523583 2018 FZ ₂₁	18.0	X	194.61424	182.23644	76.35939	4.23046	0.1761496	0.31088904	2.1580712	20	—	—
523584 2018 FE ₂₇	16.9	X	178.48108	210.83321	351.68315	12.59072	0.2165306	0.23793473	2.5792741	20	11 4.9	21.5
523585 1998 MW ₅	19.0	X	212.97216	26.76734	80.24219	6.29141	0.3628504	0.95191156	1.0234618	20	—	—
523586 1999 LK ₁	22.1	X	229.76009	223.59900	239.96264	11.92690	0.3326885	1.14115363	0.9069290	20	—	—
523587 1999 VQ ₁₁	17.5	X	129.28924	353.23897	26.68528	7.94700	0.5972155	0.20974704	2.8054691	20	3 20.1	23.2
523588 2000 CN ₁₀₅	5.6	X	127.73987	6.74471	28.83053	3.42051	0.0971841	0.00333076	44.4058628	20	3 12.6	22.3
523589 2001 HA ₄	17.7	X	137.06687	95.50634	354.24162	17.17616	0.7944110	0.22390764	2.6859016	20	6 11.3	24.3
523590 2001 QC ₉₆	20.9	X	4.80719	277.44782	142.96310	20.58542	0.3796609	0.63862453	1.3354849	20	—	—
523591 2001 QD ₂₉₈	6.4	X	65.89747	202.42840	70.57113	5.02426	0.0609254	0.00350654	42.9091951	20	9 10.5	22.6
523592 2001 SK ₂₇₆	17.5	X	90.00290	119.43716	197.69311	20.74317	0.5929197	0.17303058	3.1894868	20	3 29.5	23.4
523593 2001 TZ ₁	19.0	X	204.52149	149.29193	289.87236	39.60410	0.4394410	0.34562431	2.0109435	20	2 22.4	23.5
5235												

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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>
523601 2003 UY ₄₁₃	5.4 ^m	X	47.86636	344.66690	341.14922	20.71585	0.2121910	0.00302921	47.3059891	20	10 20.3	21.7
523602 2004 LH	18.8	X	308.59162	341.46857	248.68632	39.54685	0.3269460	0.42040656	1.7647766	20	—	—
523603 2004 QJ ₇	18.6	X	307.48369	63.59304	25.54757	14.50715	0.3302012	0.56826590	1.4435605	20	—	—
523604 2004 QB ₁₇	18.4	X	152.18243	148.81480	289.04979	4.82617	0.5043503	0.28422992	2.2909882	20	5 27.4	23.2
523605 2004 RX ₁₀	21.3	X	148.75472	334.09049	173.62901	5.95675	0.3512956	1.11719872	0.9198474	20	—	—
523606 2005 CJ	20.2	X	241.85001	81.92356	357.87543	1.08222	0.5254142	0.42573885	1.7500100	20	7 15.5	22.8
523607 2005 CS ₆	17.9	X	194.73139	268.91101	313.95790	23.50580	0.5503339	0.23324680	2.6137192	20	11 21.7	23.7
523608 2005 EZ ₂₉	20.3	X	324.74688	22.05443	158.46824	6.85447	0.4236953	0.38233512	1.8800667	20	—	—
523609 2005 PJ ₂	19.4	X	47.03223	128.86212	326.46427	17.42220	0.6595874	0.75162364	1.1980339	20	—	—
523610 2005 TG	18.1	X	129.95632	190.86832	230.92159	11.10915	0.5402626	0.22629469	2.6669803	20	4 30.2	23.5
523611 2005 UY ₅	18.6	X	192.96113	261.93338	56.53746	7.13240	0.4174280	0.29649924	2.2273424	20	1 30.4	23.1
523612 2006 BH	18.2	X	153.79184	249.22111	306.09900	31.08034	0.6448453	0.16919202	3.2375474	20	9 19.1	25.6
523613 2006 SJ ₁₉₈	17.7	X	103.24359	212.29308	266.85467	2.43329	0.4560838	0.32618236	2.0900776	20	6 17.9	21.3
523614 2006 TH ₇	19.1	X	124.94820	336.79158	162.69481	17.66983	0.8354496	0.24579964	2.5239567	20	8 3.8	25.4
523615 2006 UO ₃₂₁	7.5	X	48.43425	262.70817	65.95222	2.32843	0.0411835	0.00339440	43.8490925	20	10 15.1	23.8
523616 2007 LC ₁₅	18.6	X	246.59952	341.18181	107.07581	28.38111	0.7384405	0.65481449	1.3133804	20	7 15.5	20.0
523617 2007 PS ₄₅	5.6	X	34.29590	189.43188	130.90246	19.50812	0.2005509	0.00298369	47.7859559	20	10 10.1	21.7
523618 2007 RT ₁₅	6.8	X	34.36334	275.00643	82.17420	12.94615	0.2305514	0.00398926	39.3738144	20	11 16.1	22.0
523619 2007 RX ₁₉	18.5	X	190.37547	97.06009	349.48923	40.44565	0.5328726	0.36024273	1.9561669	20	7 6.6	23.5
523620 2007 RH ₂₈₃	8.7	X	159.88294	329.56157	286.35829	21.40214	0.3417457	0.01554261	15.9020593	20	11 28.5	22.0
523621 2007 TK ₈	21.0	X	316.60228	171.95970	217.03876	3.09720	0.1597238	0.53828439	1.4966774	20	—	—
523622 2007 TG ₄₂₂	6.5	X	0.49066	285.49668	112.82523	18.62480	0.9273627	0.00009115	488.9854648	20	12 7.1	22.4
523623 2008 CB ₂₂	19.7	X	154.07759	33.28295	51.37707	7.29247	0.6548643	0.27139771	2.3626457	20	6 8.2	25.2
523624 2008 CT ₁₉₀	5.8	X	7.92389	47.80325	103.78941	38.90077	0.3397027	0.00258755	52.5464961	20	3 19.9	21.3
523625 2008 DG ₁₇	19.6	X	320.69263	215.01605	324.38405	41.10395	0.4493679	0.39572953	1.8374001	20	—	—
523626 2008 PH ₉	16.6	X	170.41372	247.92141	341.27259	35.61859	0.5605120	0.19826975	2.9127178	20	11 2.5	23.4
523627 2008 QB ₄₃	6.0	X	339.71229	75.11149	320.36420	26.30953	0.0969476	0.00363858	41.8647375	20	9 21.9	21.9
523628 2008 RT ₂₆	19.5	X	165.56802	30.79864	7.07157	2.22216	0.4618418	0.29311714	2.2444430	20	4 15.7	24.0
523629 2008 SP ₂₆₆	5.9	X	5.64746	236.18777	141.07498	19.48477	0.1220404	0.00374597	41.0607235	20	10 23.9	21.5
523630 2009 OG	16.2	X	143.09850	114.17800	309.40406	48.38720	0.8584542	0.22166532	2.7039846	20	5 8.6	23.4
523631 2009 SX ₁	18.9	X	230.64689	115.35249	335.04248	8.28965	0.4470321	0.43592185	1.7226496	20	7 31.1	21.2
523632 2009 UX ₁₇	21.5	X	331.19679	278.41043	216.12749	10.80436	0.0834882	0.76000675	1.1892078	20	—	—
523633 2009 XR ₂	18.6	X	290.40491	131.05970	271.49610	26.72135	0.2888403	0.54121538	1.4912689	20	—	—
523634 2010 AH ₂	5.8	X	318.63522	57.45113	127.67405	18.07077	0.0425809	0.00384629	40.3436178	20	2 10.2	21.7
523635 2010 DN ₉₃	4.8	X	43.27799	31.36859	91.30255	40.59760	0.1827332	0.00241274	55.0549038	20	4 12.9	21.8
523636 2010 EX ₁₁₉	19.3	X	293.85834	22.28965	211.84876	15.56514	0.5950719	0.37532009	1.9034209	20	—	—
523637 2010 LT ₁₀₈	19.7	X	179.17910	9.44639	161.14090	31.87385	0.3707257	0.62896961	1.3491170	20	11 26.0	21.4
523638 2010 MQ ₁	20.4	X	273.24624	285.57288	284.46378	37.33886	0.5075754	0.36518995	1.9384600	20	—	—
523639 2010 RE ₆₄	4.4	X	322.10105	20.07092	67.35015	13.54528	0.4454792	0.00184219	65.9041508	20	9 30.8	21.5
523640 2010 RO ₆₄	5.2	X	7.74814	311.44448	60.78493	17.06761	0.1239516	0.00306157	46.9721301	20	10 21.3	21.4
523641 2010 RO ₈₂	16.9	X	121.27194	66.46850	21.33198	18.10056	0.6087803	0.24825923	2.5072585	20	5 25.4	22.3
523642 2010 SS ₄₃	5.9	X	320.23372	110.84842	341.29586	34.43887	0.2150078	0.00323525	45.2755483	20	10 9.2	21.9
523643 2010 TY ₅₃	5.7	X	326.59216	3.15616	111.21165	22.46285	0.4576714	0.00405845	38.9250830	20	11 5.3	20.3
523644 2010 VX ₁₁	6.4	X	347.94055	292.41365	170.49123	22.30972	0.2814649	0.00401207	39.2244524	20	12 15.3	21.0
523645 2010 VK ₂₀₁	5.0	X	171.44039	89.53961	156.30883	28.83862	0.1154791	0.00348379	43.0958075	20	11 26.5	21.9
523646 2010 VL ₂₀₁	5.9	X	336.71697	343.88066	104.00478	5.53278	0.0421374	0.00449868	36.3423434	20	11 26.4	21.3
523647 2010 VV ₂₂₄	6.0	X	342.88851	216.56749	225.23026	25.12959	0.1545933	0.00337703	43.9993425	20	11 21.3	21.7
523648 2010 WP ₈	18.3	X	98.88305	218.12118	269.88866	18.19029	0.4420855	0.34754359	2.0035331	20	6 25.2	21.5
523649 2010 XZ ₇₈	13.2	X	139.19385	228.60793	252.30912	39.17852	0.2925266	0.04647979	7.6611374	20	6 23.5	23.0
523650 2011 GQ ₆₁	18.4	X	212.78547	155.07270	333.51707	65.16146	0.4124084	0.49153374	1.5901344	20	8 27.5	20.8
523651 2011 GA ₆₂	18.9	X	201.29155	12.48215	264.28547	9.97573	0.4982808	0.28486131	2.2876017	20	—	—
523652 2011 LZ ₂₈	7.1	X	351.98297	99.83841	315.19073	13.47695	0.5590576	0.00195486	63.3470066	20	10 10.5	21.8
523653 2011 OA ₆₀	5.1	X	24.83877	142.58835	129.45589	23.00463	0.1476689	0.00372839	41.1896758	20	7 28.5	20.7
523654 2011 SR ₅	20.7	X	243.84191	305.51556	180.14115	29.11386	0.7058803	0.77062459	2.1782591	20	—	—
523655 2011 VJ ₂₄	5.9	X	348.74231	121.27183	12.74274	9.53807	0.1877294	0.00399038	39.3664632	20	1 19.6	21.0
523656 2011 WO ₄	19.2	X	238.11792	236.01423	225.18455	60.92900	0.4973468	0.43031671	1.7375764	20	7 17.6	23.7
523657 2012 DJ ₄	20.4	X	207.16984	271.42774	155.30922	7.84279	0.3399280	0.40973151	1.7952977	20	6 16.1	23.4
523658 2012 DW ₉₈	6.0	X	355.45728	0.98799	209.72596	19.01844	0.0352027	0.00373202	41.1629677	20	4 15.1	22.0
523659 2012 HG ₈₄	5.4	X	323.32399	23.43771	266.45375	10.84830	0.0935317	0.00345665	43.3210694	20	5 26.9	21.4
523660 2012 KY ₄₁	18.1	X	180.65425	144.15469	220.89739	23.05249	0.4718226	0.34028439	2.0319267	20	3 9.2	22.6
523661 2012 LF ₁₁	20.8	X	222.85823	263.54495	222.18321	11.65594	0.4832093	1.16032023	0.8969140	20	—	—
523662 2012 MU ₂	20.8	X	248.62880	16.61157	250.32556	11.22034	0.5140548	0.33448033	2.0553652	20	—	—
523663 2012 OZ	20.1	X	173.94850	224.75303	123.67604	21.84506	0.3959448	0.31808430	2.1254027	20	2 21.8	24.2
523664 2012 OD ₁	18.6	X	260.96777	224.36350	303.74311	42.27420	0.5025735	1.30626205	0.8287989	20	—	—
523665 2012 RF ₁₅	19.9	X	226.99659	297.89171	219.93638	5.36898	0.4072745	0.33462848	2.0547585	20	2 25.1	23.9
523666 2012 RS ₁₆	21.2	X	204.75741	99.62688	219.01693	5.02674	0.4357658	0.32380209	2.1003078	20	1 31.7	25.6
523667 2012 TM ₁₃₉	19.7	X	197.27402	45.58633	283.89294	4.49410	0.4420294	0.32027480	2.1157006	20	2 10.1	24.1
523668 2012 UV ₂₇	19.7	X	224.									

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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>
523681 2014 BV ₆₄	4.7	X	264.26601	348.32739	279.37673	15.46237	0.1475316	0.00319884	45.6185308	20	2 19.0	21.5
523682 2014 CN ₂₃	8.8	X	262.53779	10.91571	359.85929	14.13886	0.3063266	0.01484588	16.3957801	20	5 18.8	21.5
523683 2014 CP ₂₃	6.1	X	357.80982	21.90798	145.87701	28.53833	0.2683742	0.00262057	52.1041965	20	3 5.3	21.9
523684 2014 CQ ₂₃	5.7	X	302.90556	237.99667	30.62053	8.69917	0.1615283	0.00315819	46.0091533	20	4 4.9	22.0
523685 2014 DN ₁₁₂	20.1	X	236.38640	145.84278	260.23574	4.30082	0.4939654	0.39207707	1.8487936	20	5 30.2	23.6
523686 2014 DB ₁₄₃	9.1	X	65.62050	340.08563	207.84287	21.32855	0.0911929	0.01081125	20.2559233	20	6 13.6	22.1
523687 2014 DF ₁₄₃	5.5	X	97.10918	69.95725	35.60212	23.71293	0.0453490	0.00353104	42.7104838	20	4 19.4	21.8
523688 2014 DK ₁₄₃	5.5	X	90.84811	337.61966	153.59073	10.86615	0.1565550	0.00356257	42.4581007	20	5 22.7	21.9
523689 2014 DL ₁₄₃	6.2	X	337.78975	209.67630	18.89325	9.37610	0.2200951	0.00306162	46.9715871	20	4 3.5	22.0
523690 2014 DN ₁₄₃	5.3	X	282.36097	321.27408	303.81828	6.79312	0.0707231	0.00305421	47.0475517	20	3 16.9	22.0
523691 2014 DO ₁₄₃	5.7	X	352.15297	332.19530	180.52613	4.18838	0.0978055	0.00302792	47.3194636	20	2 11.5	22.0
523692 2014 EZ ₅₁	3.8	X	268.92143	329.81169	27.57994	10.27299	0.2284101	0.00259337	52.4677948	20	5 20.3	21.2
523693 2014 FT ₇₁	5.0	X	239.05597	350.15976	346.50453	27.96567	0.1439057	0.00342141	43.6179965	20	4 1.9	21.8
523694 2014 GF ₅₀	20.7	X	11.42278	202.87268	86.26060	8.18482	0.2147992	0.51477607	1.5419033	20	11 12.9	21.4
523695 2014 GS ₅₃	6.4	X	112.60395	333.97834	132.41336	15.17439	0.0945807	0.00507368	33.5418737	20	5 13.3	21.9
523696 2014 GW ₅₃	5.5	X	297.02802	238.25697	54.86559	21.88876	0.0867855	0.00369915	41.4064509	20	5 3.7	21.5
523697 2014 GY ₅₃	6.8	X	37.75844	22.73865	137.42130	16.18773	0.2930217	0.00397132	39.4923255	20	5 10.5	21.9
523698 2014 GD ₅₄	6.6	X	2.41207	302.80295	253.36177	4.74354	0.6122264	0.00116696	89.3510626	20	4 17.1	22.0
523699 2014 GH ₅₄	6.1	X	358.64444	200.48539	31.78824	27.00528	0.3806799	0.00212105	59.9932573	20	5 5.0	21.8
523700 2014 GM ₅₄	7.1	X	22.00020	73.09354	159.95454	54.19927	0.3934237	0.00391214	39.8896333	20	7 13.5	21.6
523701 2014 HT ₁₉₉	7.3	X	355.35793	173.07776	73.54738	14.43492	0.2465633	0.00395852	39.5774432	20	5 20.7	22.1
523702 2014 HW ₁₉₉	6.0	X	28.98457	341.42724	222.73425	15.46083	0.1813329	0.00310452	46.5378694	20	5 26.9	22.0
523703 2014 HX ₁₉₉	7.1	X	358.05797	132.96882	109.93386	14.72643	0.2320928	0.00391545	39.8671096	20	5 23.8	22.0
523704 2014 HB ₂₀₀	7.5	X	0.51154	187.01390	39.69500	8.98313	0.2458707	0.00394683	39.6555551	20	5 7.4	22.2
523705 2014 HE ₂₀₀	6.5	X	342.18201	36.27590	231.39647	9.38842	0.3574987	0.00256716	52.8242924	20	5 9.2	22.1
523706 2014 HF ₂₀₀	5.9	X	349.15820	253.63957	21.54719	9.71890	0.4247962	0.00203675	61.6373762	20	5 25.6	21.6
523707 2014 JH ₂₅	21.3	X	340.39493	206.10996	93.37332	8.48166	0.1911655	0.50342465	1.5649954	20	9 14.8	20.8
523708 2014 JB ₈₀	10.9	X	10.24136	153.73578	131.58206	13.35399	0.3464170	0.01154102	19.3927741	20	7 31.9	21.9
523709 2014 JD ₈₀	9.2	X	345.90310	241.49103	109.01075	39.02672	0.2536958	0.00766583	25.4739631	20	8 22.7	22.1
523710 2014 JF ₈₀	9.0	X	1.84139	83.72364	261.01453	13.79971	0.4502996	0.00493860	34.1507608	20	9 8.2	21.8
523711 2014 JH ₈₀	6.9	X	352.48685	27.50219	306.08315	47.31926	0.2230874	0.00340954	43.7192367	20	8 5.7	22.3
523712 2014 JS ₈₀	5.8	X	0.71756	175.33530	125.91170	15.04808	0.1757997	0.00291375	48.5475773	20	7 25.2	21.8
523713 2014 JX ₈₀	6.2	X	6.55676	50.15805	196.38294	28.86537	0.3627445	0.00233974	56.1941606	20	6 11.3	21.9
523714 2014 KR ₁₀₁	11.4	X	16.48973	156.76516	128.36631	9.12215	0.2841290	0.01735406	14.7752687	20	8 10.3	21.6
523715 2014 KU ₁₀₁	6.2	X	50.20474	104.10316	62.01367	6.18174	0.1384239	0.00393152	39.7584394	20	5 10.7	21.9
523716 2014 KW ₁₀₁	6.0	X	48.60307	55.96054	200.25122	19.31668	0.0874347	0.00374554	41.0638275	20	8 1.4	21.9
523717 2014 KY ₁₀₁	6.4	X	46.91487	93.62966	96.32757	9.64501	0.2012561	0.00394818	39.6464938	20	6 7.9	21.9
523718 2014 KZ ₁₀₁	6.4	X	1.99271	82.14643	161.18008	18.64694	0.7326136	0.00069757	125.9149398	20	6 14.5	21.8
523719 2014 LM ₂₈	9.9	X	0.18997	38.44517	246.19304	84.74947	0.9411821	0.00020466	285.1811842	20	6 11.2	22.5
523720 2014 LN ₂₈	8.3	X	354.74860	158.93257	197.15000	8.70151	0.5553991	0.00444403	36.6396707	20	8 27.1	20.5
523721 2014 LR ₂₈	5.3	X	150.77345	24.66064	146.72725	1.46772	0.4093990	0.00334623	44.2688930	20	8 17.8	22.0
523722 2014 LV ₂₈	5.7	X	350.75270	26.70516	316.73441	10.66802	0.5101886	0.00168150	70.0386869	20	8 4.4	21.3
523723 2014 MY ₆₉	5.8	X	126.53881	206.91486	1.06761	17.40572	0.0511911	0.00380550	40.6313814	20	9 5.3	22.0
523724 2014 MA ₇₀	5.2	X	39.93558	91.31852	200.13091	4.27941	0.0894232	0.00339707	43.8261585	20	8 31.1	22.0
523725 2014 MC ₇₀	6.2	X	11.67930	281.91243	25.61151	7.68461	0.1333093	0.00321318	45.4826656	20	8 18.7	22.2
523726 2014 MJ ₇₀	6.2	X	358.46664	252.77647	95.89096	15.49894	0.6973365	0.00070849	124.6173804	20	9 4.4	22.0
523727 2014 NW ₆₅	6.6	X	302.07243	233.01297	215.85690	20.45237	0.5171616	0.00882013	23.1999040	20	8 17.9	20.2
523728 2014 ON ₃₄₄	22.5	X	160.60194	335.93060	127.07404	25.69355	0.3418773	0.98017245	1.0036934	20	7 22.9	21.4
523729 2014 OX ₃₉₃	11.1	X	13.20703	330.39693	45.92512	14.70988	0.5319835	0.00763081	25.5518550	20	11 28.0	22.4
523730 2014 OH ₃₉₄	6.1	X	319.54417	74.13179	290.21949	9.66489	0.1684579	0.00313550	46.2308560	20	7 31.3	22.2
523731 2014 OK ₃₉₄	6.2	X	30.89125	247.57565	128.38514	4.13964	0.1633256	0.00358868	42.2519054	20	11 22.2	21.8
523732 2014 PG ₅₁	20.6	X	200.80030	294.05837	275.81779	3.79285	0.4526064	0.74466677	1.2054839	20	—	—
523733 2014 PR ₇₀	10.5	X	1.13416	52.35763	337.32588	7.61423	0.7951181	0.00167120	70.3263178	20	11 9.6	22.2
523734 2014 QV ₄₄₁	8.7	X	1.46556	234.20953	159.12251	26.47024	0.4060708	0.00553562	31.6488924	20	11 6.4	21.5
523735 2014 QX ₄₄₁	5.5	X	30.99075	295.84183	43.88211	26.00512	0.0432501	0.00411213	38.5855882	20	10 14.9	21.2
523736 2014 QA ₄₄₂	5.5	X	348.25066	280.96904	109.25312	27.40290	0.1845311	0.00346319	43.2664890	20	10 17.9	21.1
523737 2014 RC ₁₁	20.6	X	288.74009	243.20329	172.14696	19.53465	0.2446662	0.50600748	1.5596654	20	—	—
523738 2014 SH ₃₄₉	5.4	X	100.29830	96.58047	202.59301	17.28738	0.1556407	0.00347764	43.1465616	20	11 19.9	22.0
523739 2014 TZ ₃₃	11.3	X	7.66141	159.00236	171.74132	85.92837	0.7545818	0.00415526	38.3181076	20	10 17.1	22.7
523740 2014 TV ₈₅	9.6	X	357.98130	270.10064	257.05056	12.22453	0.3230104	0.00979037	21.6406329	20	2 25.5	21.3
523741 2014 TY ₈₅	6.6	X	6.39028	8.64929	42.41192	19.13727	0.2042652	0.00376705	40.9074001	20	11 21.7	21.7
523742 2014 TZ ₈₅	4.8	X	156.67358	333.39172	336.90581	14.95556	0.2588035	0.00343806	43.4770481	20	1 19.6	22.2
523743 2014 TA ₈₆	6.0	X	39.65244	140.04657	219.29392	9.30360	0.1080514	0.00359186	42.2269770	20	11 10.9	21.9
523744 2014 TC ₈₆	5.8	X	33.59139	19.46626	65.25680	1.27293	0.0606216	0.00339454	43.8479009	20	1 23.0	22.0
523745 2014 TD ₈₆	5.4	X	158.48619	268.91517	52.70175	1.69434	0.0139515	0.00352270	42.7778172	20	1 21.4	21.8
523746 2014 UT ₁₁₄	9.0	X	359.38561	119.42903	319.52760	15.21517	0.4716733	0.00597725	30.0701167	20	12 12.6	21.0
523747 2014 US ₁₉₂	18.8	X	228.66529	340.61117	175.02296	14.65527	0.7594337	0.30154260	2.2024375	20	9 17.4	23.6
523748 2014 UP ₂₂₄	6.0	X	274.61908	351.46372	178.73487	18.37040	0.0832348	0.00380514	40.6339227	20	12 9.0	22.1
523749 2014 UR ₂₂₄	5.5	X	347.25399	207.99549	244.24000	10.68852	0.2173651	0.00277688	50.1300857	20	12 4.9	21.5
523750 2014 US ₂₂₄	5.0	X	284.25274	177.92796	317.89225	11.03810	0.1127253	0.00309433	46.4000226	20	11 6.5	21.7
523751 2014 UU ₂₂₄	7.1	X	0.90000	265.54195	167.08798	15.26439	0.2222109	0.00399008	39.3684775	20	12 8.7	22.0
523752 2014 VU ₃₇	5.1	X	202.82628	342.15357	248.16493	28.66555	0.0468660	0.00381064	40.5948371	20	12 3.6	21.4
523753 2014 WV ₅₀₈	9.5	X	0.31136	110.94778	34.266							

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>		
523761	2014	WU ₅₀₉	5.9	X	286.96639	336.29871	193.13303	19.60015	0.0703932	0.00370967	41.3281265	20	12 20.4	22.0
523762	2014	WX ₅₀₉	6.2	X	18.64244	154.40907	333.71906	12.01852	0.1411781	0.00355763	42.4973719	20	2 22.1	21.8
523763	2014	WZ ₅₀₉	5.5	X	194.13829	61.32571	251.36545	15.89624	0.0980928	0.00388261	40.0915798	20	2 7.9	22.0
523764	2014	WC ₅₁₀	7.2	X	342.99131	289.17686	194.46415	19.54157	0.2472381	0.00401038	39.2354871	20	12 26.7	22.1
523765	2014	WD ₅₁₀	6.0	X	10.03654	11.58831	79.40806	19.06667	0.3382906	0.00224507	57.7629277	20	1 12.9	21.9
523766	2014	WF ₅₁₀	7.0	X	21.80219	196.57889	197.09604	26.06736	0.2221513	0.00400151	39.2934320	20	12 1.4	22.1
523767	2014	WH ₅₁₀	6.6	X	5.21294	213.28180	269.55378	18.64795	0.5701072	0.00148625	76.0458354	20	2 7.9	21.9
523768	2014	WQ ₅₁₀	5.6	X	153.38881	15.99371	334.50101	22.93431	0.1607431	0.00399081	39.3636681	20	2 20.9	22.2
523769	2014	WS ₅₁₀	5.6	X	32.74644	268.93591	161.81980	8.92074	0.3706949	0.00242828	54.8197474	20	2 6.5	21.8
523770	2014	XO ₄₀	8.0	X	354.90983	24.05604	212.10313	26.87692	0.7248180	0.00218728	58.7759337	20	3 31.3	20.7
523771	2014	XP ₄₀	7.1	X	357.96129	294.52919	258.86043	11.51924	0.7285269	0.00094993	102.4882157	20	3 9.6	21.7
523772	2014	XR ₄₀	5.2	X	268.83672	281.70559	3.12649	24.87423	0.1452844	0.00350918	42.8876249	20	3 19.2	21.6
523773	2014	XS ₄₀	5.4	X	35.53045	261.35473	186.55916	27.57142	0.1627118	0.00359320	42.2164447	20	2 2.4	21.1
523774	2014	XV ₄₀	6.1	X	351.52799	63.37614	93.36702	36.43829	0.4197809	0.00209872	60.4180325	20	2 4.6	21.7
523775	2014	YB ₃₅	19.0	X	3.07582	188.63613	3.75406	12.63892	0.4831236	0.38336171	1.8767088	20	—	—
523776	2014	YB ₅₀	6.1	X	347.16317	36.88620	104.07613	28.68400	0.0903879	0.00370353	41.3738078	20	1 25.9	21.9
523777	2014	YF ₅₀	5.4	X	359.19733	87.17675	72.94030	18.20246	0.5488828	0.00139940	79.1604012	20	3 4.2	21.0
523778	2014	YK ₅₀	5.9	X	359.25697	169.61456	27.88583	29.62842	0.6709162	0.00076513	118.3888878	20	4 6.9	21.8
523779	2015	AX ₁₆	17.9	X	150.84214	221.01555	182.19626	9.25438	0.5555599	0.25640159	2.4538928	20	4 20.5	23.2
523780	2015	AN ₂₈₁	5.2	X	266.26334	127.73461	53.31494	17.46309	0.1446321	0.00364137	41.8432894	20	3 19.4	21.6
523781	2015	BV ₉₂	19.9	X	187.54886	169.25528	320.16598	12.62781	0.2895080	0.46015205	1.6616331	20	8 30.0	21.9
523782	2015	BD ₅₁₈	9.4	X	8.01133	168.74801	344.06532	17.20466	0.2990361	0.00880949	23.2185794	20	3 6.8	21.5
523783	2015	BG ₅₁₈	12.0	X	15.33909	11.28122	213.63965	1.81704	0.3059455	0.01754536	14.6676742	20	6 5.4	22.1
523784	2015	BJ ₅₁₈	8.3	X	284.59419	325.24724	328.56614	6.43731	0.3154500	0.00987321	21.5194124	20	3 20.3	21.7
523785	2015	CM ₃	12.8	X	37.20372	163.27307	130.95843	16.76373	0.6053916	0.01864727	14.0839961	20	4 13.4	23.1
523786	2015	DP	18.4	X	260.51864	93.18247	145.34405	59.47529	0.3658625	0.35140148	1.9888422	20	—	—
523787	2015	DV ₂₂₄	7.8	X	14.18448	277.76149	209.32348	29.45381	0.6062862	0.00234847	56.0548620	20	3 27.3	22.2
523788	2015	FP ₁₁₈	19.4	X	210.74005	108.10827	201.37600	2.67818	0.5502265	0.31919208	2.1204823	20	1 26.4	24.0
523789	2015	FN ₃₄₅	6.2	X	323.09004	117.52685	172.62861	27.97276	0.0992989	0.00360108	42.1548558	20	5 29.4	22.2
523790	2015	HP ₉	10.4	X	38.39389	36.33707	140.85145	3.06884	0.2711661	0.01266095	18.2316132	20	5 22.3	22.1
523791	2015	HT ₁₇₁	12.4	X	50.76620	140.62266	58.72220	33.22174	0.2909497	0.02504486	11.5697424	20	6 30.9	22.6
523792	2015	MR ₁₀₁	18.4	X	284.72119	188.87509	274.93257	32.14339	0.5224877	0.63845785	1.3357173	20	—	—
523793	2015	OV ₇₉	6.0	X	282.21924	307.04820	117.45720	30.27846	0.0860570	0.00378622	40.7691962	20	9 3.6	22.1
523794	2015	RR ₂₄₅	3.8	X	324.69934	260.60856	211.71889	7.56306	0.5831373	0.00133324	81.7579332	20	10 1.4	21.7
523795	2015	TQ ₁₇₈	20.4	X	204.19412	46.77260	262.86768	3.70717	0.4826824	0.31541485	2.1373778	20	1 23.3	24.8
523796	2016	LE ₅₁	20.0	X	350.03565	342.83911	91.87460	30.94071	0.6614149	0.85945514	1.0956048	20	—	—
523797	2016	NM ₅₆	11.4	X	2.73903	345.48654	349.98537	144.00565	0.8537216	0.00161468	71.9579879	20	7 28.9	22.8
523798	2017	CX ₃₃	11.2	X	1.82053	163.02461	315.88754	72.07217	0.8573020	0.00157345	73.2095293	20	2 5.8	21.9
523799	2017	DO ₃₆	17.7	X	271.89072	227.94202	138.25144	57.31122	0.3680746	0.42389764	1.7550738	20	6 9.7	21.5
523800	2017	KZ ₃₁	10.2	X	3.16227	301.15621	144.78239	161.71175	0.7964916	0.00249179	53.8842450	20	2 29.9	21.1
523801	1993	TQ ₂	19.9	X	160.65705	77.61030	13.35794	6.03670	0.4198678	0.35219589	1.9858504	20	6 15.2	23.8
523802	1998	KH ₉	18.5	X	252.44016	185.41152	82.64140	17.67435	0.4594464	0.30137253	2.2032661	20	—	—
523803	1999	RV ₂	18.7	X	149.76810	45.09218	334.24786	4.75471	0.5110739	0.25926305	2.4358038	20	3 19.6	23.7
523804	2000	YF ₂₉	20.3	X	210.73131	27.94414	124.84993	6.30016	0.3713592	0.54113406	1.4914183	20	11 15.5	20.2
523805	2001	QA ₁₄₃	19.9	X	166.01748	98.58665	305.31938	6.82949	0.4931579	0.29028349	2.2590256	20	4 21.2	24.7
523806	2002	WW ₁₇	17.4	X	91.00621	91.26802	71.59496	18.32937	0.6498209	0.18606571	3.0387280	20	8 18.2	23.7
523807	2003	LG	18.5	X	174.46760	18.83186	124.48276	11.89485	0.7350979	0.37271154	1.9122918	20	8 23.6	23.1
523808	2007	ML ₂₄	19.3	X	60.68567	201.45146	281.88471	33.44026	0.3586707	1.49169870	0.7586043	20	—	—
523809	2007	TV ₁₈	23.8	X	119.37712	289.33704	353.25112	0.93267	0.3482516	0.71511472	1.2384702	20	—	—
523810	2008	RG ₉₈	17.1	X	171.40561	168.49051	340.04679	10.71409	0.7667856	0.30353244	2.1928014	20	8 25.9	22.5
523811	2008	TQ ₂	20.8	X	204.34530	235.35108	225.40969	3.87233	0.4194681	0.39366285	1.8438253	20	7 23.8	24.0
523812	2008	TY ₃	23.9	X	248.70180	327.49186	25.41299	3.24801	0.3918509	0.39533203	1.8386316	20	4 5.8	26.9
523813	2008	VB ₁	20.5	X	252.33893	136.90085	50.38005	10.31646	0.2750097	0.68253858	1.2775696	20	—	—
523814	2008	WN ₂	20.7	X	242.06367	283.29990	227.14737	3.74725	0.3120559	0.58379752	1.4178422	20	—	—
523815	2009	HW ₄₄	17.5	X	141.88737	296.56986	37.86070	41.08142	0.5923360	0.22375414	2.6871299	20	2 26.1	23.8
523816	2009	ST ₁₀₃	18.1	X	130.46842	234.22742	226.99204	15.82664	0.7207775	0.22284734	2.6944145	20	6 20.5	24.3
523817	2009	TK	22.3	X	38.53939	181.43621	192.74080	20.17138	0.2041029	0.65901045	1.3077995	20	—	—
523818	2010	SH ₁₃	21.3	X	263.32693	10.94877	190.59672	13.86135	0.1369542	0.74421634	1.2059702	20	—	—
523819	2010	VB ₇₂	20.9	X	281.00197	337.81319	196.83854	16.05942	0.0672880	0.73355737	1.2176244	20	—	—
523820	2011	GN ₄₄	18.3	X	198.35789	319.35651	16.93219	55.00676	0.5980204	0.29311343	2.2444619	20	3 26.9	24.0
523821	2011	RF	20.5	X	263.15060	107.62279	233.51889	9.52302	0.2958962	0.41989420	1.7662119	20	4 4.2	22.9
523822	2012	DG ₆₁	18.2	X	123.23594	186.16008	69.99993	15.33532	0.7379523	0.16802410	3.2525326	20	12 2.4	25.4
523823	2015	BG ₃₁₁	18.1	X	154.43531	127.18486	238.91468	5.73250	0.5681381	0.23954208	2.5677230	20	3 8.6	23.6
523824	2016	RO ₁	19.5	X	264.42064	187.54758	261.60467	13.68273	0.3330898	0.50843715	1.5546926	20	—	—