

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>
512001 2015 KZ ₁₅₃	16.7	X	168.22111	235.70318	251.33346	6.45692	0.1548777	0.23253764	2.6190304	20	7 30.0	20.9
512002 2015 KE ₁₆₀	17.0	X	61.16583	162.10496	112.22068	13.82895	0.1817555	0.23877384	2.5732277	20	10 29.8	21.0
512003 2015 KM ₁₆₀	16.1	X	265.97828	12.38146	257.31504	7.90419	0.0232584	0.17993830	3.1073271	20	2 21.7	20.6
512004 2015 KX ₁₆₄	17.0	X	128.77165	73.43383	80.03424	26.09765	0.1453053	0.22530184	2.6748097	20	7 29.1	21.5
512005 2015 KO ₁₆₅	17.0	X	3.63894	33.32298	258.50497	2.06638	0.0705145	0.22351584	2.6890395	20	8 4.6	20.2
512006 2015 KR ₁₆₅	17.0	X	75.76189	159.57173	74.84979	15.85172	0.0561561	0.23120400	2.6290922	20	9 8.9	20.9
512007 2015 LO ₁	15.8	X	263.46889	180.01530	141.31569	18.93155	0.2078005	0.18020981	3.1042053	20	4 8.9	20.9
512008 2015 LY ₁	17.8	X	184.87826	92.28214	113.59964	22.69807	0.1547728	0.28466508	2.2886528	20	12 7.1	21.4
512009 2015 LE ₁₂	16.4	X	73.50802	177.92454	91.63171	15.56901	0.1977724	0.24352567	2.5396443	20	11 7.9	20.5
512010 2015 LV ₂₁	17.2	X	36.56854	159.66817	139.31727	12.71724	0.1650705	0.23790815	2.5794662	20	10 27.1	20.7
512011 2015 LW ₂₂	18.3	X	183.10650	5.26673	211.50504	4.35995	0.1156948	0.28200328	2.3030318	20	12 17.7	21.4
512012 2015 LA ₂₄	16.0	X	356.71331	39.91146	287.93474	23.62662	0.1178287	0.21183516	2.7870025	20	8 30.8	19.8
512013 2015 LM ₂₆	17.3	X	289.05110	216.28904	165.89422	6.24962	0.0675596	0.22528886	2.6749124	20	8 13.2	20.6
512014 2015 LT ₃₀	17.2	X	152.20683	153.01439	114.23220	5.23152	0.0998250	0.27451230	2.3447408	20	—	—
512015 2015 LJ ₃₁	17.3	X	210.19895	326.49750	205.64700	1.59484	0.1721209	0.25997811	2.4313353	20	11 9.6	20.6
512016 2015 LV ₃₁	15.7	X	184.30296	318.79764	114.87310	18.73929	0.0711278	0.17430351	3.1739393	20	6 12.2	20.7
512017 2015 LA ₃₂	16.9	X	300.72861	47.56896	300.41968	10.58960	0.1992139	0.18733727	3.0249621	20	6 23.7	20.7
512018 2015 LC ₃₃	16.7	X	358.89505	186.50093	93.67059	9.91126	0.0574168	0.19129682	2.9830753	20	7 9.6	20.6
512019 2015 LD ₃₃	16.7	X	347.85818	240.14619	93.00424	10.17669	0.0895248	0.21098944	2.7944450	20	9 11.1	20.2
512020 2015 LO ₃₅	16.6	X	302.23974	162.88034	121.26658	10.10442	0.1063110	0.18452737	3.0555931	20	4 21.0	20.9
512021 2015 LG ₄₁	16.2	X	108.61287	311.99097	242.88270	34.52713	0.1261909	0.22677263	2.6632318	20	8 9.6	21.0
512022 2015 LB ₄₂	17.1	X	14.76518	185.32685	114.04315	12.34717	0.1722241	0.22408096	2.6845165	20	9 14.8	20.3
512023 2015 ML ₁	15.9	X	355.05698	210.57427	113.64020	33.83614	0.1780587	0.23288679	2.6164121	20	10 1.4	19.5
512024 2015 MH ₇	16.8	X	164.03056	34.84349	129.73832	14.84714	0.1327477	0.22526467	2.6751039	20	9 16.0	21.2
512025 2015 MW ₉	17.3	X	175.42970	80.50206	128.93531	5.26847	0.1727030	0.26253341	2.4155331	20	11 24.0	21.1
512026 2015 MV ₂₄	17.3	X	28.84815	57.28474	253.72225	10.76695	0.0949687	0.24719834	2.5144269	20	10 13.9	20.6
512027 2015 ME ₄₄	16.5	X	227.75662	253.06071	195.93989	21.53853	0.0668232	0.22620503	2.6676850	20	8 16.7	20.7
512028 2015 MS ₄₇	16.8	X	82.70222	144.25980	103.96100	9.80693	0.0934594	0.21554290	2.7549491	20	10 5.1	20.9
512029 2015 MG ₅₂	17.2	X	66.36467	325.21646	294.25742	9.66790	0.1855412	0.22241222	2.6979275	20	10 2.8	20.3
512030 2015 MK ₅₈	16.6	X	343.31609	338.60178	329.44958	6.17223	0.0850673	0.19602950	2.9348670	20	7 24.4	20.1
512031 2015 MG ₅₉	15.9	X	269.56773	213.23638	116.42401	26.34948	0.2114611	0.16088752	3.3480182	20	5 1.6	21.5
512032 2015 ME ₆₅	17.3	X	81.33093	25.07206	238.28787	4.82762	0.1580644	0.23486873	2.6016723	20	10 27.1	21.3
512033 2015 MU ₆₆	16.5	X	56.94578	184.45109	118.96335	19.61357	0.2090386	0.23584594	2.5944807	20	12 1.9	20.6
512034 2015 MF ₆₆	16.3	X	359.57041	170.13001	131.08288	9.94679	0.0910928	0.20216311	2.8752003	20	8 10.9	19.6
512035 2015 MX ₆₆	16.4	X	22.34764	197.30458	84.72567	11.67033	0.2620153	0.21851679	2.7298965	20	9 25.5	19.6
512036 2015 MY ₆₆	16.3	X	78.84001	155.86960	96.37775	15.79255	0.0731955	0.24043388	2.5613697	20	10 10.5	20.2
512037 2015 MO ₆₇	17.0	X	135.83686	283.33359	295.00631	6.27592	0.1200019	0.24245173	2.5471333	20	10 21.9	21.0
512038 2015 MR ₆₇	16.8	X	3.21382	220.34902	98.64922	4.29146	0.0986830	0.21248286	2.7813360	20	9 14.8	20.1
512039 2015 MS ₆₈	16.9	X	339.30469	84.50460	254.74903	4.28602	0.0805450	0.21275247	2.7789856	20	8 28.8	20.4
512040 2015 MX ₆₉	16.8	X	58.71538	155.45483	123.26634	14.20328	0.2477648	0.23006806	2.6377391	20	11 7.7	21.0
512041 2015 MS ₇₆	16.9	X	161.67969	262.10113	260.60268	9.09836	0.2372513	0.22863268	2.6487676	20	9 3.4	21.7
512042 2015 MK ₇₇	17.5	X	105.82633	105.00205	159.54249	7.26184	0.1296472	0.24703851	2.5155113	20	11 24.2	21.4
512043 2015 MS ₇₉	16.8	X	32.31995	102.62579	134.67129	12.12531	0.0775730	0.18925509	3.0044916	20	7 3.8	20.7
512044 2015 MU ₇₉	17.1	X	91.01110	16.75118	218.15478	4.23578	0.0604357	0.22023240	2.7157007	20	9 17.7	21.0
512045 2015 MO ₈₁	16.6	X	231.84093	145.43155	268.39963	7.89507	0.0388558	0.19050649	2.9913200	20	7 11.3	20.8
512046 2015 MU ₈₁	17.4	X	3.38129	255.77574	128.22277	10.55932	0.3143038	0.23157619	2.6262745	20	—	—
512047 2015 ML ₈₅	16.6	X	48.14446	263.36888	291.15815	6.28863	0.2048521	0.18027613	3.1034439	20	6 18.5	20.4
512048 2015 MM ₈₅	16.3	X	329.21223	185.37679	121.84088	11.04151	0.0811198	0.18610685	3.0382801	20	6 29.2	20.3
512049 2015 MZ ₈₈	16.3	X	286.28052	206.89760	124.97262	13.83147	0.0739039	0.17468747	3.1692869	20	6 3.0	20.9
512050 2015 MH ₈₉	17.1	X	78.63581	323.25512	257.86127	5.21444	0.1181964	0.20883496	2.8136317	20	8 21.0	21.1
512051 2015 MX ₉₁	16.8	X	76.45819	141.80953	111.07996	15.61699	0.1969225	0.22347431	2.6893726	20	10 20.0	21.2
512052 2015 MK ₉₂	17.2	X	102.12417	141.64233	100.81374	7.84977	0.0814538	0.25482166	2.4640253	20	10 23.5	20.8
512053 2015 MK ₉₃	16.0	X	319.97106	174.30226	106.09380	10.46417	0.1141956	0.18667063	3.0321596	20	5 9.8	20.0
512054 2015 MA ₉₅	16.8	X	96.51807	65.06439	187.11097	13.10969	0.0639568	0.24246885	2.5470184	20	10 23.8	20.4
512055 2015 MH ₉₉	16.4	X	242.92877	256.40867	120.64195	9.10438	0.0560186	0.17332279	3.1859009	20	6 7.2	21.1
512056 2015 MW ₁₀₂	16.2	X	308.90484	257.75451	151.39025	22.34603	0.0537647	0.22905142	2.6455383	20	10 29.0	20.0
512057 2015 MH ₁₀₃	16.9	X	294.96720	278.96204	48.71571	1.77951	0.1646649	0.17515250	3.1636748	20	5 23.8	21.0
512058 2015 MJ ₁₀₃	16.3	X	71.31711	119.90019	101.49711	10.45503	0.0580477	0.20035209	2.8925006	20	8 6.4	20.3
512059 2015 MY ₁₀₅	16.8	X	10.62526	208.21300	116.63565	6.20144	0.1245634	0.22054565	2.7131287	20	10 10.7	20.0
512060 2015 MR ₁₁₁	16.8	X	349.86924	177.46172	111.76727	10.34275	0.0883395	0.18898330	3.0073716	20	7 7.5	20.5
512061 2015 MB ₁₁₅	16.5	X	139.38950	294.57520	259.33500	12.05131	0.1989563	0.23025143	2.6363384	20	9 22.1	21.2
512062 2015 MF ₁₁₇	16.3	X	220.15470	344.65774	144.80810	22.29024	0.0269979	0.22810272	2.6528686	20	10 16.7	20.3
512063 2015 MH ₁₁₈	16.2	X	316.68232	192.20937	109.88677	14.16231	0.1061118	0.17403085	3.1772537	20	6 2.5	20.4
512064 2015 MA ₁₂₃	17.2	X	335.09785	129.24785	167.86102	7.98149	0.2110231	0.18525258	3.0476134	20	6 14.2	20.5
512065 2015 MQ ₁₂₃	17.6	X	114.07720	101.21749	142.85166	15.52134	0.2184410	0.24337137	2.5407176	20	11 13.5	22.2
512066 2015 MC ₁₂₅	15.8	X	322.22895	163.66715	144.36317	24.10190	0.0962528	0.17862690	3.1225169	20	6 20.8	20.2
512067 2015 MW ₁₂₆	16.3	X	268.69903	306.50239	97.73396	10.96618	0.1039848	0.19939106	2.9017874	20	8 9.0	20.3
512068 2015 MG ₁₃₂	16.6	X	347.34718	358.03337	310.89102	8.04950	0.0935499	0.20235733	2.8733603	20	7 31.9	19.8
512069 2015 MZ ₁₃₃	17.0	X	35.23808	259.75852	46.65275	3.79544	0.1417394	0.21469862	2.7621667	20	10 22.1	20.4
512070 2015 MD ₁₃₄	17.2	X	59.44887	288.86044	337.44367	3.26703	0.0813125	0.22070988	2.7117826	20	9 22.6	20.8
512071 2015 ME ₁₃₄	15.7	X	284.14279	56.63283	305.03432	17.23401	0.1133712	0.18114667	3.0934930	20	7 2.3	20.0
512072 2015 MN ₁₃₄	16.4	X	324.10749	222.80516	100.29371	10.62843	0.0733873	0.17507652	3.1645900	20	6 15.9	20.5
512073 2015 MR ₁₃₄	16.1	X	309.31298	224.24158	10							

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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>
512081 2015 NR ₁₁	17.2	X	259.15162	237.29976	259.60937	6.03358	0.0581420	0.27942300	2.3171881	20	12 19.4	19.6
512082 2015 NQ ₁₂	16.1	X	357.12582	337.30427	317.84069	10.80535	0.1109154	0.18857405	3.0117211	20	7 29.3	19.7
512083 2015 NV ₁₄	15.9	X	292.83975	36.44976	291.47610	15.54156	0.1337098	0.17125789	3.2114585	20	5 24.5	20.5
512084 2015 NT ₂₃	18.0	X	98.59378	46.51053	284.06160	4.93672	0.2166011	0.26946800	2.3739118	20	—	—
512085 2015 NW ₂₃	16.8	X	37.30155	169.84432	143.71451	14.10523	0.1257361	0.22984559	2.6394408	20	11 8.4	20.5
512086 2015 NV ₂₅	16.6	X	41.73719	359.20588	277.56744	6.53341	0.2054978	0.23028946	2.6360481	20	9 30.5	20.0
512087 2015 OF ₃	15.7	X	307.59860	11.00246	330.89148	13.49147	0.1070479	0.18179933	3.0860849	20	7 11.9	19.8
512088 2015 OH ₃	15.9	X	344.34282	39.09295	271.51786	13.63809	0.1811736	0.18803511	3.0174731	20	7 22.6	19.1
512089 2015 OO ₇	15.9	X	185.81371	150.00495	292.03392	26.49415	0.1284144	0.17277480	3.1926339	20	6 23.3	21.1
512090 2015 OS ₇	16.4	X	242.71314	225.48097	161.89565	11.65273	0.0924659	0.17612897	3.1519708	20	6 15.3	21.2
512091 2015 OP ₈	16.5	X	300.44621	271.55441	152.13814	22.20379	0.0382360	0.23203076	2.6228433	20	11 6.7	20.3
512092 2015 OA ₁₂	16.2	X	151.55183	357.88474	125.36425	15.95364	0.0825490	0.18312525	3.0711702	20	7 6.8	21.0
512093 2015 OE ₁₂	17.4	X	125.89664	261.31347	2.48517	0.75427	0.1638473	0.25662579	2.4524633	20	12 12.8	21.3
512094 2015 OO ₁₂	17.2	X	85.22820	147.52591	107.25078	7.18743	0.1602780	0.22911864	2.6450208	20	10 23.9	21.3
512095 2015 OA ₁₉	17.6	X	134.91423	207.33285	48.80202	2.02948	0.1484637	0.25531932	2.4608224	20	12 11.3	21.4
512096 2015 OX ₂₂	16.3	X	134.03531	290.73662	286.52512	12.47111	0.1170661	0.23350374	2.6118014	20	10 14.4	20.7
512097 2015 OY ₂₄	17.6	X	118.81866	77.22371	211.05471	8.65713	0.1615195	0.25862522	2.4398069	20	—	—
512098 2015 OG ₂₅	16.5	X	69.65315	18.75711	279.15284	13.96941	0.1085212	0.23166956	2.6255688	20	11 19.6	20.4
512099 2015 OQ ₂₅	15.9	X	118.72015	62.26701	109.97148	18.40845	0.0837631	0.20270303	2.8700925	20	8 3.8	20.2
512100 2015 OS ₂₉	16.5	X	83.45184	281.57683	341.00533	23.58373	0.2168993	0.21971923	2.7199276	20	10 20.2	21.2
512101 2015 OC ₃₀	17.8	X	150.24642	298.75478	25.93920	6.67339	0.1891737	0.28593820	2.2818544	20	—	—
512102 2015 OZ ₃₂	16.1	X	317.14241	223.78994	115.61396	12.29424	0.0824183	0.18379386	3.0637175	20	7 23.6	19.9
512103 2015 OU ₃₄	17.0	X	349.58880	349.52626	359.07370	5.92852	0.0619425	0.21334417	2.7738451	20	9 28.6	20.2
512104 2015 OZ ₄₄	16.4	X	289.30922	266.48953	96.67764	10.52011	0.0927308	0.19114990	2.9846037	20	7 13.2	20.3
512105 2015 OE ₄₇	16.6	X	96.08451	173.90300	105.56424	15.36238	0.1225454	0.23835659	2.5762298	20	12 2.1	20.6
512106 2015 OV ₆₂	16.3	X	51.28483	163.05580	89.53883	17.24031	0.0355966	0.18683841	3.0303440	20	8 19.3	20.7
512107 2015 OW ₆₃	15.8	X	289.66718	263.31755	111.63239	19.78815	0.1156695	0.17872257	3.1214025	20	7 25.1	19.9
512108 2015 OH ₆₅	15.8	X	325.46350	22.08990	324.84246	12.67460	0.0297245	0.19065528	2.9897634	20	8 19.1	19.6
512109 2015 OV ₆₆	15.8	X	323.42601	12.89343	285.47990	10.89005	0.0912628	0.18108326	3.0942152	20	6 6.8	19.8
512110 2015 OM ₆₈	16.7	X	317.86583	283.2521	292.96308	10.63212	0.1575978	0.18360885	3.0657753	20	6 15.2	20.4
512111 2015 OR ₇₂	16.8	X	326.43720	167.26499	143.65058	11.55036	0.1087751	0.18611694	3.0381703	20	6 27.4	20.7
512112 2015 OS ₇₄	16.3	X	312.60537	185.83061	134.10675	12.20927	0.0769627	0.18059417	3.0997992	20	6 21.8	20.5
512113 2015 OS ₇₄	16.2	X	318.09271	22.91051	324.52538	11.13919	0.1239391	0.18482742	3.0522852	20	8 2.2	19.8
512114 2015 OB ₇₇	16.6	X	74.33534	334.60032	330.89805	12.05123	0.2490130	0.23418059	2.6067664	20	12 19.8	21.0
512115 2015 OS ₈₃	16.1	X	335.97533	345.54442	312.27965	11.19918	0.0495881	0.17234743	3.1979096	20	6 29.4	20.5
512116 2015 OP ₈₄	15.6	X	359.92909	5.92293	276.12675	9.34813	0.0766020	0.17193384	3.2030359	20	7 12.1	19.6
512117 2015 OQ ₈₄	16.2	X	30.05893	355.59933	285.68565	7.10993	0.0606079	0.19216404	2.9240936	20	8 23.7	20.2
512118 2015 OV ₈₄	15.3	X	17.32433	278.25993	34.43736	15.42583	0.1266853	0.19932617	2.9024171	20	10 2.9	18.9
512119 2015 OX ₈₄	16.7	X	50.69203	56.02062	230.90589	7.72033	0.0593052	0.21589117	2.7519854	20	10 2.4	20.5
512120 2015 OC ₈₅	16.8	X	308.03793	224.88362	93.13263	3.65202	0.0357288	0.17577928	3.1561497	20	6 16.9	21.1
512121 2015 PU ₃	17.4	X	142.69975	24.93772	296.94166	6.01619	0.1630033	0.28333013	2.2958361	20	—	—
512122 2015 PB ₅	16.7	X	77.93384	308.41947	293.93802	10.48965	0.1213749	0.21596315	2.7513739	20	9 14.7	20.9
512123 2015 PY ₅	16.9	X	318.91653	68.83411	291.25763	5.19516	0.1286859	0.20299062	2.8673810	20	8 19.8	20.1
512124 2015 PK ₆	16.5	X	291.20776	114.83114	251.50544	4.51133	0.1933553	0.18567978	3.0429371	20	7 3.7	20.4
512125 2015 PU ₁₃	18.3	X	130.40955	289.91210	336.49014	3.73814	0.2759758	0.26559003	2.3969642	20	12 20.8	22.6
512126 2015 PQ ₁₇	16.6	X	29.85381	11.71404	320.40057	10.99853	0.0928239	0.23340519	2.6125365	20	11 8.9	20.2
512127 2015 PN ₂₉	16.1	X	11.43416	317.99768	307.99118	17.74372	0.1093951	0.18231240	3.0802922	20	7 14.2	19.9
512128 2015 PL ₃₀	16.6	X	322.33600	94.38397	226.77290	5.68153	0.1672756	0.17992321	3.1075009	20	6 27.0	20.3
512129 2015 PR ₃₀	16.1	X	328.01291	356.02318	315.64037	7.33847	0.0686888	0.17718063	3.1394860	20	7 4.5	20.2
512130 2015 PF ₃₁	16.4	X	63.65263	330.76630	307.12541	7.82204	0.1174566	0.21572498	2.7533986	20	10 14.1	20.4
512131 2015 PD ₃₂	17.5	X	93.91895	346.88313	304.28660	5.92631	0.2135044	0.24627525	2.5207060	20	12 18.4	21.6
512132 2015 PA ₃₅	16.2	X	42.59697	89.17748	136.71746	11.60310	0.0301185	0.18186187	3.0853773	20	6 27.9	20.6
512133 2015 PO ₃₆	16.5	X	265.71179	54.47177	343.39457	18.60617	0.1110264	0.18711190	3.0273905	20	7 29.7	21.0
512134 2015 PY ₄₁	16.6	X	337.33111	277.91635	12.98718	9.99199	0.0664496	0.17489604	3.1667666	20	6 19.8	20.9
512135 2015 PO ₄₇	16.2	X	161.98301	134.40460	356.33694	11.93779	0.0497026	0.18292796	3.0733781	20	7 30.6	20.9
512136 2015 PP ₄₉	16.9	X	111.70378	141.45440	70.55396	9.86746	0.2014284	0.21626560	2.7488081	20	9 30.3	21.5
512137 2015 PX ₆₀	15.9	X	287.72309	268.98986	119.16943	12.06840	0.0837335	0.19311952	2.9642757	20	8 16.1	19.8
512138 2015 PS ₆₂	16.9	X	331.64856	221.98607	147.90343	5.99603	0.0392873	0.22360224	2.6883467	20	10 4.4	20.3
512139 2015 PR ₆₃	17.3	X	90.64333	357.02242	241.54373	2.42233	0.1471553	0.22640777	2.6660922	20	10 3.3	21.3
512140 2015 PG ₈₂	17.2	X	11.22814	178.62494	142.27647	3.11646	0.0897034	0.21556103	2.7547946	20	9 28.8	20.4
512141 2015 PW ₁₀₁	17.2	X	68.73947	126.19379	120.24548	8.86335	0.1597608	0.21508819	2.7588304	20	9 23.6	21.2
512142 2015 PQ ₁₁₂	16.8	X	315.44672	343.85857	347.10459	5.64969	0.0374124	0.18856702	3.0117960	20	7 15.7	20.9
512143 2015 PY ₁₁₅	17.0	X	228.03054	0.82474	47.67952	2.50516	0.0530705	0.17901713	3.1179776	20	6 28.6	21.6
512144 2015 PW ₁₁₈	17.3	X	95.67556	317.75888	348.40490	6.13493	0.1106830	0.25538679	2.4603890	20	—	—
512145 2015 PB ₁₂₄	16.3	X	0.88751	303.00152	326.53582	9.92143	0.1135380	0.18356190	3.0662980	20	6 30.2	20.0
512146 2015 PQ ₁₃₀	16.7	X	109.82549	108.44793	136.60794	12.61671	0.0994145	0.23262733	2.6183572	20	11 3.1	20.8
512147 2015 PJ ₁₃₁	16.3	X	291.77118	55.43225	316.56407	6.83166	0.1374975	0.18975806	2.9991802	20	7 22.3	20.0
512148 2015 PR ₁₇₈	16.7	X	355.57490	285.14975	359.40559	9.09004	0.1117357	0.18424879	3.0586723	20	7 12.6	20.5
512149 2015 PS ₂₅₆	17.1	X	36.23069	294.66450	330.18678	1.26499	0.0197851	0.20297041	2.8675713	20	8 9.8	20.7
512150 2015 PL ₂₆₉	16.9	X	104.45620	129.59117	128.91381	13.82161	0.1378442	0.23457312	2.6038575	20	11 16.9	21.2
512151 2015 PR ₂₇₁	15.9	X	284.69795	229.55905	131.79531	10.80435	0.0690415	0.17908278	3.1172156	20	7 6.9	20.2
512152 2015 PR ₂₉₄	15.8	X	311.12456	264.00066	70.90730	11.11344	0.0973176	0.18576833	3.0419700	20	7 6.8	19.8
512153 2015 PF ₂₉₈	15.8	X	310.42409	188.90405	149.89586	30.37167	0.1943592	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>
512161 2015 RW ₃₀	16.3	X	327.97200	38.55244	320.93222	8.66013	0.1328010	0.18429669	3.0581423	20	8 31.8	19.8
512162 2015 RK ₃₉	18.1	X	68.40807	88.36475	305.25732	2.09975	0.1544398	0.26525048	2.3990093	20	—	—
512163 2015 RS ₄₈	16.7	X	100.20542	309.26320	344.18552	15.08468	0.1538201	0.23877997	2.5731837	20	12 22.8	21.1
512164 2015 RR ₆₃	16.8	X	347.47206	235.69365	69.43277	0.70902	0.1732031	0.17825837	3.1268192	20	7 23.7	20.1
512165 2015 RQ ₇₅	17.9	X	113.04063	79.24809	247.51156	0.71389	0.1963692	0.26077479	2.4263809	20	—	—
512166 2015 RJ ₈₅	15.6	X	28.46265	335.25680	290.49394	10.28339	0.0800940	0.18100475	3.0951099	20	8 2.9	19.6
512167 2015 RN ₈₅	15.6	X	313.45666	97.35215	238.28927	8.00317	0.0836519	0.17440876	3.1726623	20	7 10.5	19.8
512168 2015 RD ₈₈	16.0	X	337.99453	356.56313	313.50730	7.78102	0.0970433	0.17338870	3.1850936	20	7 15.9	20.0
512169 2015 RT ₉₁	17.9	X	146.66511	88.93921	235.84630	5.73829	0.1436647	0.28646629	2.2790492	20	—	—
512170 2015 RF ₉₅	16.1	X	4.05041	318.66689	315.24742	12.02359	0.1385292	0.17538285	3.1609040	20	7 12.8	19.8
512171 2015 RS ₉₉	16.3	X	351.85463	127.35153	182.17413	2.40111	0.1159630	0.18334367	3.0687306	20	8 6.8	20.0
512172 2015 RW ₉₉	16.6	X	75.47053	265.12888	0.34738	8.72992	0.1974627	0.21511765	2.7585785	20	10 23.2	20.8
512173 2015 RT ₁₀₀	16.1	X	310.30534	50.45344	311.28736	9.47259	0.0925449	0.18488667	3.0516331	20	8 10.3	19.8
512174 2015 RW ₁₀₃	17.7	X	46.68900	175.70723	224.48783	5.25809	0.1875729	0.25789200	2.4444293	20	—	—
512175 2015 RC ₁₀₄	17.8	X	137.25103	253.45080	55.82185	2.00988	0.2203869	0.27489497	2.3425643	20	—	—
512176 2015 RF ₁₀₄	16.1	X	307.95976	47.33377	319.72447	8.98665	0.0720326	0.18717601	3.0266992	20	8 16.5	20.1
512177 2015 RC ₁₁₄	16.1	X	282.29720	198.94491	199.81596	22.96303	0.0885199	0.17403851	3.1771604	20	8 12.6	20.9
512178 2015 RL ₁₁₇	16.2	X	320.43719	208.96033	148.86129	16.35565	0.1363363	0.17918180	3.1160670	20	8 16.7	20.0
512179 2015 RL ₁₁₉	16.1	X	275.92091	183.17767	209.18350	7.48008	0.0659516	0.18201782	3.0836147	20	8 2.7	20.4
512180 2015 RR ₁₂₀	16.7	X	54.82694	298.95451	336.99755	6.73026	0.2602022	0.21033489	2.8001151	20	10 13.9	20.7
512181 2015 RD ₁₃₄	16.4	X	297.24039	10.42036	340.20137	2.55166	0.1534741	0.17190675	3.2033724	20	6 27.9	20.6
512182 2015 RA ₂₀₂	16.2	X	137.40161	161.82636	32.51636	10.16161	0.0381461	0.18561019	3.0436977	20	9 20.1	20.7
512183 2015 RG ₂₀₂	16.1	X	277.34931	16.50497	27.13134	11.79585	0.0743953	0.17672901	3.1448322	20	8 25.7	20.6
512184 2015 RA ₂₁₃	17.5	X	154.50046	21.81234	341.86703	4.19825	0.1805890	0.26337668	2.4103744	20	—	—
512185 2015 RU ₂₁₈	16.6	X	352.56160	275.50047	28.50556	1.26385	0.1398930	0.17969029	3.1101856	20	8 15.5	20.1
512186 2015 RC ₂₂₁	17.7	X	74.97784	287.44236	86.89170	3.45406	0.2231542	0.25619635	2.4552031	20	—	—
512187 2015 RG ₂₃₆	17.7	X	0.37064	276.80782	154.50802	12.97924	0.2545355	0.22546616	2.6735100	20	—	—
512188 2015 RX ₂₃₆	17.3	X	165.59841	218.97084	97.39535	8.38799	0.2531610	0.28110713	2.3079238	20	1 1.1	21.0
512189 2015 RC ₂₄₃	16.2	X	332.51841	56.86688	268.08178	3.98358	0.1236120	0.18280392	3.0747682	20	7 24.6	19.8
512190 2015 RM ₂₄₃	17.6	X	139.15871	224.12353	160.50322	6.06088	0.1866166	0.27980763	2.3150641	20	1 11.1	20.8
512191 2015 RO ₂₅₂	16.0	X	348.06523	233.60697	84.78146	12.65835	0.1034324	0.17532171	3.1616388	20	8 16.0	20.0
512192 2015 RO ₂₅₂	16.8	X	107.15306	278.14229	1.01344	12.16986	0.2013994	0.23019238	2.6367893	20	12 10.3	21.4
512193 2015 RX ₂₅₂	16.4	X	56.58176	348.78896	252.97741	3.84958	0.1320228	0.17881811	3.1202907	20	8 19.0	20.6
512194 2015 SH ₃	16.7	X	306.45996	123.18522	228.13560	13.19707	0.3004582	0.17554756	3.1589265	20	6 18.8	20.7
512195 2015 SR ₁₀	16.0	X	226.01391	96.38648	341.62488	8.83059	0.0529323	0.17429908	3.1739931	20	8 4.3	20.6
512196 2015 SW ₁₃	15.7	X	55.89644	272.95696	322.88747	8.46719	0.0639175	0.17729465	3.1381398	20	8 2.8	19.9
512197 2015 SC ₁₄	17.2	X	52.19765	56.38776	231.19812	7.12079	0.1878713	0.21228187	2.7830913	20	10 24.9	21.1
512198 2015 SY ₁₅	16.4	X	23.89927	54.14021	210.32656	9.55256	0.0930254	0.17588850	3.1548430	20	7 25.2	20.6
512199 2015 TF ₁₁	15.6	X	81.82747	295.85967	266.37260	7.68395	0.0399664	0.17342596	3.1846373	20	7 18.5	20.2
512200 2015 TF ₁₁	16.2	X	66.07591	0.14825	261.02885	6.91590	0.1796227	0.21017083	2.8016965	20	10 4.2	20.4
512201 2015 TE ₂₂	16.0	X	24.70121	291.52999	346.73363	8.75636	0.0757246	0.17852924	3.1236556	20	8 16.9	20.1
512202 2015 TW ₄₂	16.7	X	47.58726	289.45299	31.56718	3.11872	0.0713936	0.20973724	2.8055565	20	11 13.6	20.5
512203 2015 TV ₄₅	17.9	X	71.30932	160.50141	226.06093	0.60191	0.1911115	0.26202332	2.4186670	20	—	—
512204 2015 TV ₅₀	16.4	X	346.65890	86.22518	216.86411	4.67709	0.1310514	0.17807043	3.1290188	20	7 18.5	20.2
512205 2015 TM ₅₂	15.9	X	308.57381	95.81091	350.81210	8.33806	0.0840800	0.17560043	3.1582923	20	7 17.4	20.2
512206 2015 TP ₅₅	16.1	X	280.59273	53.08679	328.16273	9.21498	0.0644151	0.17387931	3.1790994	20	7 29.2	20.5
512207 2015 TQ ₇₆	17.3	X	288.89151	238.11516	170.53678	0.29360	0.1717251	0.17510074	3.1642981	20	8 28.1	21.4
512208 2015 TZ ₁₃₉	15.9	X	95.08981	184.27649	77.03762	22.51695	0.1834199	0.19190958	2.9767220	20	11 10.5	20.9
512209 2015 TY ₁₅₁	17.0	X	113.38487	257.83084	9.49855	5.69898	0.1610928	0.22833623	2.6510597	20	11 30.2	21.3
512210 2015 TP ₁₆₀	16.2	X	289.12354	174.74217	188.13795	19.52416	0.1204286	0.17305746	3.1891565	20	7 5.1	20.9
512211 2015 TL ₁₆₅	17.8	X	120.99057	261.54530	74.29346	1.90259	0.1837186	0.26212954	2.4180136	20	—	—
512212 2015 TE ₁₉₀	17.3	X	62.99640	31.81094	313.01144	5.41649	0.2163184	0.23895755	2.5719087	20	—	—
512213 2015 TN ₁₉₁	17.8	X	141.91660	76.35254	223.44562	4.08315	0.1900723	0.26474944	2.4020351	20	—	—
512214 2015 TS ₁₉₂	15.9	X	349.63614	158.08892	183.39775	8.52606	0.0691264	0.18932032	3.0038015	20	9 14.9	19.7
512215 2015 TZ ₁₉₅	16.3	X	91.54677	339.11010	320.92552	14.02052	0.0853169	0.22375972	2.6870852	20	12 13.9	20.5
512216 2015 TE ₁₉₉	16.0	X	348.24023	197.44636	117.52411	2.30904	0.0976018	0.17288084	3.1913282	20	8 7.7	20.0
512217 2015 TJ ₁₉₉	16.7	X	307.50493	278.58281	82.90989	1.85052	0.2337331	0.17398816	3.1777734	20	7 16.7	20.4
512218 2015 TJ ₂₁₅	17.9	X	34.87921	67.39756	356.13153	3.92147	0.1419753	0.25553059	2.4594658	20	—	—
512219 2015 TC ₂₄₂	16.4	X	310.84282	59.65149	303.86854	4.35367	0.1855141	0.17327976	3.1864283	20	8 1.2	20.0
512220 2015 TH ₂₄₃	17.1	X	347.55995	36.94786	49.35080	7.20857	0.2398672	0.22904774	2.6455667	20	—	—
512221 2015 TW ₂₆₀	15.8	X	59.52234	21.18184	275.62836	26.06346	0.1787262	0.21899487	2.7259219	20	11 12.3	20.2
512222 2015 TU ₂₆₆	15.3	X	183.06200	82.39994	327.13567	7.08399	0.1067984	0.12606545	3.9391756	20	5 7.9	21.5
512223 2015 TP ₃₀₂	17.8	X	56.24667	247.18954	150.73312	7.63288	0.1997513	0.25074043	2.4906908	20	—	—
512224 2015 TY ₃₀₂	15.9	X	42.85654	167.44737	104.51703	16.25758	0.1640054	0.18374240	3.0642895	20	9 23.0	20.2
512225 2015 TJ ₃₄₅	17.4	X	216.38981	49.86725	187.51916	6.54044	0.0620708	0.25498666	2.4629622	20	—	—
512226 2015 UP ₂	16.0	X	64.42736	248.15773	13.92413	10.32411	0.0462812	0.18296102	3.0730079	20	9 16.3	20.3
512227 2015 UP ₂₀	16.5	X	12.62287	84.86849	196.09010	15.85356	0.2413296	0.17558634	3.1584613	20	8 11.7	20.1
512228 2015 UQ ₄₃	15.8	X	21.67311	217.70540	95.84425	10.68612	0.2040079	0.18940176	3.0029404	20	10 20.3	19.6
512229 2015 UG ₇₃	15.9	X	275.09444	199.02730	201.37957	11.35452	0.0422288	0.17464318	3.1698226	20	8 13.7	20.5
512230 2015 UC ₈₃	16.1	X	339.68302	236.53286	111.31388	11.87031	0.0884630	0.18735729	3.0247465	20	9 13.5	20.0
512231 2015 VW ₁₄	18.1	X	209.62041	70.26782	206.56169	1.70869	0.2181993	0.29166334	2.2518951	20	—	—
512232 2015 VU ₂₄	16.7	X	310.86170	215.06103	183.65552	8.83196	0.2346878	0.18519700	3.0482231	20	9 13.7	19.9
512233 2015 VW ₂₅	15.8	X	344.13484	282.07275	69.36266	15.29723	0.1437652	0.18063315	3.0993532	20	9 29.6	19.7
512234 2015 VO ₆₆	20.6	X	33.7836									

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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>
512241 2015 <i>XP</i> ₁₉₅	16.4	X	15.65449	149.45555	258.08340	11.24823	0.1057074	0.21515964	2.7582196	20	—	—
512242 2015 <i>XZ</i> ₂₆₁	18.2	X	212.17197	203.44734	84.63842	31.45738	0.3138603	0.48797808	1.5978494	20	—	—
512243 2015 <i>XZ</i> ₃₈₅	17.9	X	6.03666	211.85126	155.97028	23.85657	0.0536176	0.36947436	1.9234453	20	12 31.6	20.4
512244 2015 <i>YE</i> ₁₈	17.8	X	175.44803	80.57343	256.73038	31.02734	0.5409151	0.93278923	1.0374019	20	—	—
512245 2016 <i>AU</i> ₈	19.9	X	284.97966	21.59137	303.00886	9.18522	0.2000462	1.01265281	0.9821150	20	2 4.8	17.4
512246 2016 <i>AW</i> ₅₃	13.4	X	261.06219	50.29446	294.13664	27.99216	0.0571614	0.08485090	5.1289887	20	5 15.9	20.6
512247 2016 <i>BY</i> ₉	17.7	X	357.32961	305.81159	301.61817	5.70361	0.0834935	0.27301639	2.3532979	20	5 20.9	20.3
512248 2016 <i>BU</i> ₈₁	18.5	X	322.67258	252.03360	169.84380	21.76166	0.1568466	0.37649011	1.8994754	20	—	—
512249 2016 <i>BD</i> ₈₂	18.5	X	109.30340	279.86865	338.15007	17.36531	0.0780133	0.35285595	1.9833731	20	12 3.8	21.4
512250 2016 <i>CF</i> ₂₄	16.1	X	13.66859	86.53125	329.87932	8.68968	0.0685177	0.19951107	2.9006236	20	—	—
512251 2016 <i>CU</i> ₁₃₈	18.1	X	151.37947	285.82902	329.54232	18.56016	0.0305856	0.38840405	1.8604309	20	—	—
512252 2016 <i>CP</i> ₁₉₃	17.5	X	342.75751	268.10811	112.84760	23.62019	0.0855423	0.36788526	1.9289803	20	12 21.2	19.3
512253 2016 <i>CU</i> ₂₁₃	16.6	X	353.34680	313.40473	139.79964	10.55287	0.0748706	0.19075045	2.9887689	20	—	—
512254 2016 <i>CM</i> ₂₆₅	18.8	X	324.38256	40.31714	26.36652	21.04838	0.0948150	0.37122832	1.9173820	20	—	—
512255 2016 <i>CC</i> ₂₆₈	18.2	X	319.50397	62.64992	28.49395	21.10321	0.0956401	0.38483270	1.8719234	20	—	—
512256 2016 <i>EK</i>	17.8	X	21.82244	76.34127	303.86151	19.24761	0.0832070	0.38699959	1.8649293	20	—	—
512257 2016 <i>EL</i> ₆₀	15.8	X	111.86779	103.29393	242.90149	9.44568	0.1015466	0.19477206	2.9474850	20	—	—
512258 2016 <i>ER</i> ₆₅	17.8	X	52.89658	221.70167	351.18833	5.91709	0.1580843	0.27665629	2.3326112	20	7 21.6	20.4
512259 2016 <i>ED</i> ₁₂₂	17.1	X	25.80350	235.24401	18.37224	22.44517	0.2398735	0.27776928	2.3263760	20	9 2.8	19.8
512260 2016 <i>EJ</i> ₁₂₄	17.8	X	352.40865	267.91798	334.47520	5.79624	0.1467621	0.26119627	2.4237700	20	4 29.1	20.2
512261 2016 <i>ED</i> ₁₂₉	17.8	X	344.88064	282.77557	341.01697	2.21828	0.1373453	0.26851409	2.3795308	20	5 20.4	20.0
512262 2016 <i>EH</i> ₁₄₈	18.7	X	243.74264	146.21286	20.44706	21.16158	0.0408910	0.37966596	1.8888680	20	—	—
512263 2016 <i>EG</i> ₁₅₀	18.1	X	341.59931	204.08492	71.08824	5.32847	0.1392704	0.26442970	2.4039710	20	6 1.7	20.0
512264 2016 <i>EW</i> ₁₇₈	17.8	X	8.33553	14.21112	243.64593	3.68031	0.1755838	0.27410264	2.3470765	20	7 5.2	19.5
512265 2016 <i>EB</i> ₁₈₁	17.7	X	341.60380	92.78043	198.47229	6.27107	0.1434985	0.27798051	2.3251973	20	6 28.2	19.8
512266 2016 <i>EY</i> ₁₈₁	17.0	X	285.15204	92.88578	206.85496	9.07939	0.1795511	0.23738382	2.5832631	20	3 29.5	20.7
512267 2016 <i>EK</i> ₁₉₃	17.6	X	32.52968	216.80872	60.43540	6.12926	0.2168294	0.28834340	2.2691474	20	10 7.1	20.1
512268 2016 <i>EN</i> ₂₀₀	17.8	X	69.96762	208.79324	55.40036	6.00445	0.1559344	0.30540875	2.1838111	20	10 28.9	20.6
512269 2016 <i>EQ</i> ₂₀₃	18.7	X	31.11236	177.52322	179.89157	22.89802	0.0662643	0.37032552	1.9204969	20	—	—
512270 2016 <i>EQ</i> ₂₀₅	18.8	X	322.80692	259.10797	215.79293	21.37233	0.0868828	0.39316044	1.8453957	20	—	—
512271 2016 <i>EZ</i> ₂₀₆	18.6	X	18.96930	190.10008	211.62799	21.07373	0.0853353	0.38071587	1.8853938	20	—	—
512272 2016 <i>FU</i> ₇	18.3	X	250.81950	337.37218	186.50802	26.87723	0.0609655	0.38640094	1.8668551	20	—	—
512273 2016 <i>FD</i> ₂₀	17.5	X	4.11807	214.11908	351.20081	9.92697	0.2099079	0.24355458	2.5394433	20	3 25.7	19.5
512274 2016 <i>FH</i> ₃₆	17.6	X	9.98808	34.45321	188.69274	6.17753	0.0845936	0.25785492	2.4446636	20	5 10.0	20.2
512275 2016 <i>FK</i> ₄₁	17.9	X	268.30745	142.04285	11.33055	21.97447	0.0699599	0.38982064	1.8559210	20	—	—
512276 2016 <i>FU</i> ₅₃	17.6	X	25.24327	175.46322	338.61993	4.01738	0.1273155	0.23215889	2.6218781	20	2 28.3	20.3
512277 2016 <i>FA</i> ₆₁	18.4	X	106.34274	95.44553	205.11877	20.25409	0.0491523	0.35821894	1.9635277	20	—	—
512278 2016 <i>FC</i> ₆₁	18.1	X	291.60209	44.58774	62.28210	22.75453	0.0909927	0.37131174	1.9170948	20	—	—
512279 2016 <i>FK</i> ₆₁	17.6	X	356.56595	267.88562	129.80564	26.16934	0.0270268	0.35799908	1.9643315	20	—	—
512280 2016 <i>FL</i> ₆₂	15.8	X	184.74336	193.23893	156.22141	18.34351	0.1986037	0.17894690	3.1187933	20	3 2.6	21.0
512281 2016 <i>GN</i> ₂₁	18.7	X	17.98485	342.58492	320.11576	3.16441	0.1892085	0.31068027	2.1590379	20	10 16.8	20.8
512282 2016 <i>GC</i> ₁₂₄	13.5	X	224.85406	302.05758	196.41809	30.24550	0.0148933	0.08432774	5.1501801	20	10 5.5	20.4
512283 2016 <i>GY</i> ₁₂₄	15.7	X	205.21650	268.17366	20.10787	15.75035	0.1367233	0.18406450	3.0607136	20	1 11.1	20.9
512284 2016 <i>GP</i> ₁₂₆	17.0	X	275.26309	56.59441	210.22188	13.02489	0.1725714	0.21199457	2.7856052	20	2 6.8	21.5
512285 2016 <i>GK</i> ₁₂₉	18.0	X	21.96802	44.72741	170.97213	1.69952	0.1834478	0.25894935	2.4377706	20	5 27.8	20.0
512286 2016 <i>GX</i> ₁₃₃	16.5	X	187.79857	170.28311	160.11910	18.66376	0.1249960	0.18019010	3.1044316	20	2 9.2	21.6
512287 2016 <i>GY</i> ₁₆₅	17.7	X	281.05806	219.85857	49.21980	4.88042	0.1838247	0.21588682	2.7520224	20	2 20.2	21.9
512288 2016 <i>GC</i> ₁₈₃	17.4	X	335.96622	245.33567	101.75680	7.07247	0.2272297	0.29756761	2.2220080	20	10 5.7	18.6
512289 2016 <i>GJ</i> ₁₉₁	17.2	X	333.27949	66.50249	185.39331	14.54420	0.0518249	0.23358672	2.6111828	20	4 24.7	20.5
512290 2016 <i>GY</i> ₂₁₆	17.8	X	65.29456	88.29403	55.86193	3.20757	0.1461561	0.25989308	2.4318656	20	4 26.2	20.4
512291 2016 <i>GJ</i> ₂₂₀	16.8	X	247.69983	144.71777	146.56712	8.61496	0.2039807	0.21370021	2.7707633	20	2 11.3	21.2
512292 2016 <i>GG</i> ₂₂₁	18.3	X	218.32701	75.50124	149.32662	23.41488	0.0086278	0.39839332	1.8292007	20	—	—
512293 2016 <i>GG</i> ₂₂₅	16.6	X	247.88571	238.34773	20.61530	16.40698	0.3693443	0.18044395	3.1015194	20	1 1.8	22.6
512294 2016 <i>GD</i> ₂₃₄	18.3	X	291.34911	283.12833	216.58666	20.68605	0.0785048	0.38259343	1.8792204	20	—	—
512295 2016 <i>GH</i> ₂₃₈	17.2	X	277.85693	147.28653	193.26178	13.36862	0.1807603	0.23897418	2.5717894	20	5 16.4	20.8
512296 2016 <i>GT</i> ₂₄₁	17.1	X	276.67270	222.31673	90.69256	9.36277	0.1584270	0.22909900	2.6451720	20	4 15.1	20.9
512297 2016 <i>GM</i> ₂₄₂	17.1	X	284.04159	86.81377	226.71029	4.10226	0.2740863	0.24280765	2.5446486	20	4 1.9	20.7
512298 2016 <i>GS</i> ₂₄₆	18.1	X	76.40254	179.29395	9.42457	5.46045	0.1007375	0.27945424	2.3170154	20	7 11.0	20.9
512299 2016 <i>GJ</i> ₂₄₇	17.0	X	282.92055	47.20431	245.11929	2.43824	0.1671005	0.23017550	2.6369182	20	3 19.5	20.8
512300 2016 <i>GG</i> ₂₅₂	18.3	X	148.94160	171.54509	112.70672	23.76177	0.0542226	0.37477847	1.9052544	20	—	—
512301 2016 <i>GZ</i> ₂₅₄	17.5	X	330.98095	183.79091	52.68654	2.85684	0.1403447	0.23004314	2.6379296	20	3 19.2	20.5
512302 2016 <i>GS</i> ₂₅₅	16.7	X	284.93062	145.12487	136.19376	21.28191	0.1153207	0.21026171	2.8008892	20	3 23.5	20.9
512303 2016 <i>HV</i>	18.0	X	23.44751	210.53216	65.54429	3.92555	0.2320635	0.28165330	2.3049393	20	9 21.1	20.1
512304 2016 <i>HW</i>	16.5	X	307.80794	24.41806	212.17207	35.24007	0.1120200	0.21526241	2.7573417	20	2 10.4	21.1
512305 2016 <i>HG</i> ₃	17.4	X	33.87390	94.57785	264.62824	16.98535	0.0846918	0.35138039	1.9889218	20	—	—
512306 2016 <i>HA</i> ₁₅	18.1	X	58.68395	220.09249	51.58785	4.81779	0.1574192	0.30870815	2.16			

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>
512321 2016 KE ₁	18.1	X	87.35361	263.44702	116.92300	23.14234	0.1093766	0.38829132	1.8607910	20	—	—
512322 2016 KX ₂	17.6	X	4.86984	199.33348	94.75833	8.29964	0.2398808	0.26908523	2.3761625	20	9 12.3	19.5
512323 2016 KC ₃	17.7	X	169.61991	134.79513	90.02653	24.06558	0.0622431	0.35754386	1.9659984	20	—	—
512324 2016 KK ₃	16.3	X	295.81773	219.43751	96.07239	14.28487	0.2881958	0.22814232	2.6525616	20	4 25.3	20.1
512325 2016 LJ	17.5	X	274.77696	203.57484	112.28331	15.01791	0.3044136	0.22191470	2.7019585	20	4 1.6	22.1
512326 2016 LP ₈	18.0	X	275.03770	288.31853	233.28933	20.88324	0.0803083	0.37750882	1.8960567	20	—	—
512327 2016 LY ₁₁	18.5	X	91.29406	270.05254	109.56174	23.90894	0.0880297	0.39517105	1.8391309	20	—	—
512328 2016 LJ ₁₂	15.6	X	186.78069	234.76183	102.54204	12.96043	0.0883032	0.18154099	3.0890119	20	2 19.7	20.5
512329 2016 LU ₁₃	16.5	X	261.84720	249.18194	105.56038	13.00802	0.2846152	0.23218994	2.6216444	20	5 7.1	20.9
512330 2016 LJ ₂₂	16.7	X	215.38668	198.68242	134.12884	6.53316	0.1484911	0.19585623	2.9365977	20	3 8.9	21.5
512331 2016 LX ₂₅	18.7	X	62.66432	141.78078	135.98968	3.68064	0.1568223	0.30405699	2.1902788	20	11 8.2	21.5
512332 2016 LW ₂₉	17.0	X	219.76828	217.34431	138.12883	6.54665	0.0520672	0.21889496	2.7267514	20	4 14.2	20.9
512333 2016 LC ₄₁	16.8	X	288.64040	222.69054	98.26323	15.54217	0.2898625	0.22660830	2.6645191	20	4 24.3	20.9
512334 2016 LQ ₄₅	16.1	X	232.24356	208.10724	134.17202	17.49290	0.2368343	0.18072096	3.0983492	20	4 3.9	21.6
512335 2016 LV ₄₉	17.0	X	251.13816	168.26910	171.42108	15.37286	0.1312728	0.23025948	2.6362770	20	4 22.0	21.0
512336 2016 LL ₅₄	16.4	X	238.00161	91.65530	239.26629	8.73707	0.2357589	0.17811510	3.1284957	20	3 17.6	21.8
512337 2016 LQ ₅₄	17.2	X	244.16574	161.96081	181.08876	9.50963	0.1536644	0.18862400	3.0111894	20	4 18.7	21.9
512338 2016 LW ₅₄	16.9	X	231.98497	222.15384	147.22294	15.19511	0.3289640	0.18256327	3.0774696	20	4 29.1	22.6
512339 2016 LB ₅₆	16.9	X	236.56363	169.39979	165.95342	8.80384	0.0763659	0.17744587	3.1363567	20	4 7.6	21.6
512340 2016 LE ₅₆	15.8	X	309.20820	84.45012	204.41002	11.48619	0.0894990	0.17941860	3.1133247	20	5 5.7	19.9
512341 2016 LF ₅₆	16.7	X	222.28255	160.09996	204.97483	11.60230	0.1348966	0.18553458	3.0445244	20	4 22.8	21.4
512342 2016 MR ₆	16.6	X	302.03602	37.65499	316.24895	14.33771	0.3339360	0.21714587	2.7413743	20	6 10.9	20.0
512343 2016 ML ₂	17.8	X	28.07729	221.65005	112.95419	5.87531	0.1717846	0.30913752	2.1662150	20	12 15.5	20.4
512344 2016 MC ₃	17.8	X	149.04462	40.47376	271.14290	17.96720	0.0608248	0.36824119	1.9277371	20	—	—
512345 2016 MD ₃	16.3	X	234.53548	61.35558	262.78465	14.65102	0.2208735	0.17641213	3.1485971	20	3 4.3	21.9
512346 2016 NW ₁	17.1	X	10.05943	224.14593	107.37239	7.52486	0.1292678	0.27588957	2.3369309	20	11 2.1	19.6
512347 2016 NE ₂	16.4	X	18.69024	312.24078	281.53432	25.71771	0.3016911	0.23791364	2.5794265	20	7 5.2	18.0
512348 2016 NG ₂	18.0	X	197.57870	350.95715	286.42669	17.57366	0.0733615	0.37476770	1.9052908	20	—	—
512349 2016 NR ₅	16.6	X	308.11328	178.72350	127.96023	15.03348	0.1968523	0.21565205	2.7540194	20	5 15.2	20.2
512350 2016 NK ₇	17.0	X	264.36578	85.80799	246.85053	8.40761	0.2156064	0.19065603	2.9897556	20	4 13.8	21.7
512351 2016 NK ₁₈	17.1	X	299.33694	243.24224	119.51167	12.61763	0.2094377	0.24315099	2.5422525	20	7 13.1	19.7
512352 2016 NS ₁₈	17.6	X	23.75071	40.80523	248.49918	22.16436	0.1386802	0.28393626	2.2925676	20	9 10.7	20.7
512353 2016 NC ₂₀	16.9	X	250.62075	108.68710	232.34465	13.41521	0.1279090	0.22574864	2.6712793	20	4 18.8	21.0
512354 2016 NS ₂₀	16.4	X	200.23721	204.21744	111.03102	11.04205	0.0697608	0.18343187	3.0677469	20	2 4.9	21.0
512355 2016 NO ₂₂	18.1	X	274.38693	263.79919	267.01468	15.65406	0.1564523	0.37151635	1.9163909	20	—	—
512356 2016 NU ₂₇	17.2	X	265.87732	162.71150	214.84732	11.36590	0.0314158	0.23671651	2.5881157	20	7 9.5	20.9
512357 2016 NT ₂₉	15.9	X	270.24726	26.35454	298.79172	15.11689	0.2147630	0.18385200	3.0630716	20	4 5.6	20.9
512358 2016 NH ₃₀	16.8	X	227.39228	133.14027	286.05167	13.32471	0.0771809	0.22416483	2.6838468	20	7 10.7	20.4
512359 2016 NU ₃₃	16.2	X	282.75745	28.49035	318.50705	14.11175	0.0890631	0.21156260	2.7893956	20	6 13.6	20.1
512360 2016 NA ₃₉	17.2	X	351.49417	50.86734	294.67897	0.36825	0.2025909	0.25571137	2.4583065	20	10 20.3	19.1
512361 2016 NY ₄₅	16.4	X	242.39669	276.31242	130.19918	22.55533	0.0803025	0.23287412	2.1650707	20	7 12.9	20.1
512362 2016 NV ₄₇	17.2	X	50.97159	348.96349	255.97391	5.98261	0.0919864	0.25357140	2.4721180	20	8 16.5	20.4
512363 2016 ND ₄₉	17.1	X	302.16798	217.54645	147.57998	9.02310	0.1816234	0.23189555	2.6238627	20	7 24.9	20.0
512364 2016 NV ₄₉	17.7	X	46.72200	170.81040	156.37337	5.17115	0.1653998	0.28991802	2.2609237	20	12 22.1	20.8
512365 2016 NV ₅₃	16.4	X	63.64172	328.54616	268.03544	17.00992	0.0972786	0.23572168	2.5953924	20	8 15.8	20.2
512366 2016 NW ₅₃	16.8	X	266.64521	153.29238	252.36619	14.00297	0.1119902	0.22798591	2.6537747	20	8 1.7	20.6
512367 2016 NA ₅₄	16.2	X	260.23666	159.26965	244.83228	13.49955	0.0770762	0.22436730	2.6822320	20	7 27.6	20.1
512368 2016 NV ₅₄	18.2	X	59.83335	24.73699	293.21559	6.79623	0.2338988	0.29594510	2.2301220	20	—	—
512369 2016 NS ₅₆	18.3	X	322.09725	27.51585	123.65754	24.17804	0.0560120	0.37443751	1.9064108	20	—	—
512370 2016 NV ₅₆	18.1	X	322.53916	9.61944	137.71800	23.93056	0.0382428	0.35920080	1.9599478	20	—	—
512371 2016 NE ₅₇	18.0	X	230.25849	306.00884	293.62448	17.88664	0.0441990	0.36929839	1.9240563	20	—	—
512372 2016 NZ ₅₈	17.4	X	253.31723	294.22533	110.32783	3.36032	0.0988439	0.24591523	2.5231657	20	7 22.3	20.6
512373 2016 NG ₆₀	17.0	X	265.88271	171.67072	250.94937	11.70803	0.1631464	0.23943950	2.5684563	20	8 16.8	20.7
512374 2016 NN ₆₀	17.3	X	212.70463	206.09054	170.37877	14.12032	0.1599387	0.18783755	3.0195885	20	4 28.9	22.4
512375 2016 NP ₆₁	16.2	X	209.80873	87.32500	304.42227	14.09395	0.2489370	0.17499541	3.1655677	20	5 3.7	21.9
512376 2016 NB ₆₃	17.7	X	322.79970	301.80639	39.84312	8.12399	0.2006404	0.23573823	2.5952710	20	8 2.7	20.2
512377 2016 NF ₆₃	16.9	X	202.07823	27.79052	34.18743	9.78264	0.2476855	0.18450376	3.0558538	20	6 5.9	22.3
512378 2016 NQ ₆₄	16.9	X	214.24196	15.84343	8.42113	1.00493	0.2067847	0.17247382	3.1963470	20	5 4.5	22.2
512379 2016 NC ₆₅	16.8	X	252.73905	268.28455	119.33023	6.28833	0.1400620	0.1824130	2.7321933	20	6 21.5	20.6
512380 2016 NH ₆₅	17.4	X	246.05766	300.06491	116.85595	13.57428	0.1943329	0.22719946	2.6598952	20	7 15.6	21.3
512381 2016 NM ₆₅	16.8	X	308.12416	309.88792	11.79904	6.04049	0.0381007	0.20895080	2.8125917	20	6 22.4	20.5
512382 2016 NN ₆₅	16.5	X	129.23170	68.31098	71.53008	10.06908	0.0753179	0.20443750	2.8538359	20	7 3.3	20.7
512383 2016 NP ₆₅	17.1	X	246.54762	256.54412	139.90825	3.30120	0.1871254	0.21937114	2.7228040	20	6 20.1	21.1
512384 2016 NR ₆₅	16.7	X	359.75814	267.62440	12.29020	4.12157	0.0166298	0.21293313	2.7774136	20	7 11.6	20.3
512385 2016 NC ₆₆	16.1	X	230.63506	274.52372	93.68921	11.93042	0.1658759	0.19178431	2.9780181	20	5 6.0	21.0
512386 2016 ND ₆₆	18.4	X	42.70102	265.21301	57.29931	6.97118	0.0262286	0.28758146	2.2731536	20	11 20.1	21.0
512387 2016 NG ₆₆	16.5	X	2.56912	42.43431	271.90137	15.72242	0.1608905	0.24218331	2.5490200	20	9 5.9	19.6
512388 2016 OB												

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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>
512401 2016 PA ₅₃	16.2	X	238.07461	228.84254	105.42782	14.91364	0.2039645	0.17882834	3.1201717	20	4 3.1	21.6
512402 2016 PC ₆₀	17.1	X	219.79421	349.75306	88.56584	9.48923	0.2013541	0.21456938	2.7632757	20	7 15.7	21.6
512403 2016 PC ₆₁	17.1	X	266.69412	345.90864	79.25641	17.80251	0.1014864	0.24073049	2.5592653	20	9 17.7	20.8
512404 2016 PS ₆₁	17.4	X	267.29480	266.00565	91.04631	7.10864	0.0562034	0.21829620	2.7317352	20	6 11.3	20.9
512405 2016 PM ₆₇	16.3	X	250.40639	125.73818	193.82542	16.18466	0.2393160	0.17742418	3.1366123	20	3 16.2	21.5
512406 2016 PE ₆₈	17.4	X	331.33912	97.94030	270.79958	5.26495	0.2603231	0.25259381	2.4784924	20	10 6.4	19.0
512407 2016 PR ₇₁	17.4	X	280.39840	38.33624	38.18997	8.08515	0.0482278	0.27783619	2.3260025	20	10 28.7	19.7
512408 2016 PE ₇₂	16.3	X	340.28920	205.24493	28.19054	11.61892	0.1300587	0.18621768	3.0370744	20	4 5.8	19.9
512409 2016 PK ₇₂	16.4	X	307.20910	217.43844	81.23618	10.62394	0.0626890	0.20071751	2.8889889	20	5 19.6	20.3
512410 2016 PA ₇₅	16.4	X	285.36258	358.63156	1.86304	1.68789	0.0827953	0.20281735	2.8690138	20	7 6.2	20.2
512411 2016 PX ₇₅	16.2	X	333.28418	336.20826	341.97865	12.82462	0.1647632	0.21949705	2.7217627	20	7 21.9	19.1
512412 2016 PL ₇₇	16.5	X	312.91137	11.39525	328.04304	17.82294	0.3092896	0.22463875	2.6800708	20	6 15.0	19.6
512413 2016 PY ₇₇	17.0	X	55.28818	311.41217	327.77681	6.12499	0.1048987	0.26025863	2.4295880	20	10 12.4	20.2
512414 2016 PY ₈₁	16.4	X	223.90667	273.21181	103.34925	26.58979	0.2759114	0.17354614	3.1831669	20	5 11.0	22.3
512415 2016 PK ₈₃	17.0	X	325.25275	317.65193	13.54697	8.80908	0.2040268	0.22102893	2.7091724	20	7 19.6	19.8
512416 2016 PM ₈₃	16.7	X	224.07971	293.58890	100.32438	2.24398	0.1463710	0.17713031	3.1400806	20	5 28.8	21.7
512417 2016 PF ₈₆	16.9	X	289.21177	14.08661	357.11371	13.52451	0.1626862	0.23101554	2.6305219	20	7 20.0	20.3
512418 2016 PV ₈₆	15.8	X	157.17446	177.99121	261.55578	26.95425	0.1503069	0.17408848	3.1765525	20	5 22.3	21.0
512419 2016 PZ ₈₈	17.4	X	318.45843	185.29953	176.63240	5.34925	0.1849601	0.22741112	2.6582444	20	8 20.5	19.8
512420 2016 PC ₈₉	17.0	X	331.38005	13.16998	318.06212	3.58771	0.0630793	0.22194612	2.7017035	20	8 8.7	20.3
512421 2016 PE ₈₉	17.1	X	253.26853	3.44512	45.30156	4.93213	0.0653760	0.20955212	2.8072085	20	7 31.9	21.0
512422 2016 PF ₈₉	17.3	X	261.48759	214.88241	186.45465	4.15115	0.0733751	0.21484026	2.7609526	20	7 29.2	21.2
512423 2016 PG ₈₉	16.4	X	282.36589	345.51685	40.47440	6.38559	0.0868199	0.21267239	2.7796832	20	8 8.2	20.1
512424 2016 PK ₈₉	16.8	X	245.88150	303.83025	100.47687	15.36802	0.1241056	0.22516727	2.6758753	20	7 7.5	20.6
512425 2016 PO ₈₉	17.0	X	287.68442	8.43415	13.51033	7.20541	0.0655257	0.21945709	2.7220931	20	8 14.6	20.5
512426 2016 PR ₈₉	16.5	X	228.35873	123.52190	320.84468	16.39909	0.1008940	0.22495597	2.6775507	20	8 12.0	20.2
512427 2016 PS ₈₉	17.3	X	234.82000	296.19348	133.89043	13.83937	0.1399061	0.22440514	2.6819305	20	7 26.3	21.3
512428 2016 PY ₈₉	16.3	X	308.38419	255.28239	37.64018	9.76937	0.0841877	0.17605621	3.1528391	20	5 8.7	20.6
512429 2016 PB ₉₀	16.5	X	217.17040	357.82765	35.53905	9.70890	0.0866633	0.17556650	3.1586992	20	5 23.6	21.3
512430 2016 PF ₉₀	17.6	X	341.63346	180.07822	183.04300	3.26998	0.1264340	0.26587559	2.3952475	20	10 22.9	19.8
512431 2016 PK ₉₀	16.1	X	149.03797	89.66599	344.08270	23.96768	0.1529121	0.17592506	3.1544060	20	4 25.8	21.6
512432 2016 PU ₉₀	16.4	X	179.39936	29.94409	89.42204	15.43728	0.0334853	0.22278008	2.6949568	20	8 7.8	20.4
512433 2016 PV ₉₀	17.3	X	238.43193	337.26454	103.65299	5.86539	0.1466479	0.23633889	2.5908718	20	8 15.8	21.0
512434 2016 PX ₉₀	17.6	X	7.05055	275.93572	17.63376	3.96905	0.1537021	0.22674358	2.6634592	20	8 23.2	20.3
512435 2016 PE ₉₁	17.2	X	37.91278	44.82277	231.12285	2.35640	0.0429811	0.22335191	2.6903550	20	8 31.1	20.6
512436 2016 PF ₉₁	16.7	X	130.38208	204.18729	5.95582	15.42821	0.0737997	0.23986013	2.5654527	20	10 5.6	20.5
512437 2016 PG ₉₁	16.7	X	88.56375	133.94365	85.67245	15.73822	0.0576577	0.23037818	2.6353174	20	9 4.3	20.6
512438 2016 QT	17.7	X	253.99046	65.62055	333.52484	6.77175	0.2341847	0.21679704	2.7443141	20	6 26.3	22.0
512439 2016 QJ ₃	17.6	X	30.19637	168.44098	146.12938	3.16983	0.1823980	0.27522388	2.3406976	20	11 15.0	20.4
512440 2016 QC ₆	16.9	X	282.68720	75.81671	277.16784	8.03600	0.1549120	0.21578355	2.7529004	20	6 11.0	20.4
512441 2016 QV ₁₁	16.3	X	227.40843	49.64620	314.75343	14.49957	0.2694991	0.17801457	3.1296734	20	4 11.4	22.0
512442 2016 QA ₁₃	16.7	X	271.13271	145.96388	160.80903	14.55352	0.3120606	0.18414864	3.0597812	20	3 14.5	21.6
512443 2016 QV ₁₄	16.6	X	255.80429	175.15835	156.59419	3.23140	0.1893964	0.18929701	3.0040481	20	4 10.8	21.4
512444 2016 QW ₁₄	18.1	X	36.02400	171.86451	161.04503	5.11407	0.1763641	0.29108747	2.2548641	20	12 19.0	21.0
512445 2016 QX ₁₆	16.7	X	188.32007	198.62339	224.91320	7.83836	0.0881346	0.19432102	2.9520442	20	6 1.3	21.1
512446 2016 QK ₂₀	16.6	X	192.62866	255.99685	186.48245	14.89256	0.1262205	0.20601458	2.8392529	20	6 27.7	21.4
512447 2016 QG ₂₁	15.9	X	156.81229	174.47907	267.81836	8.06035	0.1385022	0.17726425	3.1384986	20	5 24.1	20.9
512448 2016 QF ₂₂	16.8	X	100.68925	273.97281	292.31832	7.11662	0.0733025	0.24375496	2.5380514	20	8 25.9	20.4
512449 2016 QS ₂₃	16.4	X	251.80544	16.47121	313.50132	9.74813	0.2253420	0.17843574	3.1247467	20	3 27.5	21.6
512450 2016 QN ₂₄	16.5	X	236.31185	124.04328	274.18878	7.90687	0.0787968	0.20866070	2.8151980	20	6 23.2	20.4
512451 2016 QB ₂₅	16.7	X	226.86280	192.93072	206.57385	12.02410	0.1474606	0.19870138	2.9084981	20	6 7.6	21.4
512452 2016 QG ₂₆	16.8	X	330.86651	65.36598	239.77825	5.01227	0.0236660	0.21620372	2.7493326	20	7 3.6	20.4
512453 2016 QE ₂₇	17.2	X	39.58593	40.37745	272.68400	6.02929	0.1263077	0.27019190	2.3696698	20	11 13.4	20.2
512454 2016 QM ₂₉	17.6	X	355.89542	266.32224	94.67562	6.39910	0.1450857	0.27477482	2.3432471	20	11 20.9	19.9
512455 2016 QE ₃₃	16.6	X	225.44711	250.36590	129.79656	6.37403	0.0720691	0.18888960	3.0083660	20	5 20.6	21.2
512456 2016 QL ₃₆	17.5	X	68.78340	78.14471	177.15057	1.29271	0.1643913	0.26775949	2.3839993	20	10 9.8	20.6
512457 2016 QE ₄₀	17.2	X	294.32131	59.23882	288.61527	2.20699	0.2058376	0.21680483	2.7442483	20	6 12.5	20.5
512458 2016 QW ₄₀	16.6	X	330.66346	350.96497	332.21146	10.46264	0.1470633	0.22727526	2.6593037	20	7 24.8	19.4
512459 2016 QJ ₄₅	17.7	X	322.25487	226.53622	120.21469	3.85413	0.1757270	0.23627168	2.5913631	20	8 9.3	19.9
512460 2016 QJ ₄₆	16.3	X	302.31474	218.55960	120.74813	14.56865	0.1047819	0.22341753	2.6898283	20	6 30.2	19.6
512461 2016 QO ₄₆	17.5	X	352.90975	347.84686	347.45966	2.79611	0.1910715	0.25546096	2.4599127	20	10 5.1	19.6
512462 2016 QF ₄₆	16.6	X	293.31132	202.17673	145.95119	13.27903	0.2145267	0.21728375	2.7402144	20	6 11.9	20.3
512463 2016 QB ₄₇	17.9	X	202.55671	34.54260	135.61088	7.44371	0.0282336	0.28492601	2.2872553	20	11 23.7	20.8
512464 2016 QR ₄₇	17.4	X	313.81222	241.64556	106.74572	4.08078	0.1824960	0.23129602	2.6283949	20	7 23.1	19.9
512465 2016 QD ₄₈	17.2	X	286.77141	337.78143	24.41025	6.54798	0.0435445	0.22046185	2.7138161	20	7 18.9	20.9
512466 2016 QW ₅₂	17.0	X	244.21323	107.30444	329.45282	9.85815	0.0692573	0.23695562	2.5863743	20	8 26.6	20.5
512467 2016 QJ ₅₃	17.5	X	325.82877	204.16924	136.40605	4.75129	0.1224872	0.23375641	2.6099190	20	8 10.8	20.0
512468 2016 QP ₅₃	17.7	X	55.07853	351.83086	258.92534	4.06610	0.1903930	0.25282803	2.4769614	20	9 15.9	21.0
512469 2016 QV ₅₃	17.0	X	299.93461	125.37936	180.52458	14.96367	0.1529178	0.20387959	2.8590399	20	5 6.2	20.9
512470 2016 QX ₅₃	17.4	X	26.72604	73.73633	239.50630	5.57755	0.1606685	0.26829304	2.3808376	20	11 1.2	20.1
512471 2016 QK ₅₅	17.1	X	291.87787	80.34297	273.47629	7.84826	0.1596204	0.22279689	2.6948213	20	6 25.1	20.4
512472 2016 QL ₅₆	17.9	X	72.63901	7.54136	294.04061	9.05552	0.1004997	0.29604176	2.2296365	20	12 11.8	20.9
512473 2016 QF ₅₇	17.0	X	158.99551	203.84142	294.27856	11.						

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
512481 2016 QM ₇₆	16.6	X	270.54431	206.66417	221.51943	13.32984	0.2326967	0.24576535	2.5241914	20	8 20.8	20.0
512482 2016 QP ₇₆	17.6	X	75.82579	330.37249	314.81998	6.38344	0.0985574	0.28661995	2.2782346	20	11 19.9	20.7
512483 2016 QO ₇₇	16.8	X	314.50177	50.62791	307.88489	15.31418	0.2224828	0.23387988	2.6090003	20	8 3.1	19.1
512484 2016 QT ₇₇	16.9	X	303.69382	26.21660	317.79640	16.19384	0.2289808	0.21952648	2.7215194	20	6 20.0	20.3
512485 2016 QV ₇₇	15.9	X	267.57779	44.54188	293.12280	11.08120	0.1637231	0.18918681	3.0052145	20	4 28.1	20.6
512486 2016 QD ₇₈	15.8	X	287.09366	32.62434	284.06059	8.94164	0.0990424	0.18843483	3.0132045	20	5 6.2	20.1
512487 2016 QR ₈₂	17.1	X	237.05735	170.94010	171.25575	5.80097	0.1448092	0.18233982	3.0799834	20	4 9.7	22.0
512488 2016 QL ₈₃	17.6	X	2.97140	194.80961	121.45466	3.29843	0.2142366	0.25648226	2.4533781	20	10 3.5	19.6
512489 2016 QM ₈₃	18.1	X	18.97424	194.04116	118.02712	3.19081	0.2074075	0.26598900	2.3945667	20	10 28.3	20.6
512490 2016 QO ₈₄	17.6	X	143.95236	296.71943	296.31156	6.20809	0.0865609	0.29573295	2.2311884	20	11 29.7	20.7
512491 2016 QV ₈₇	15.3	X	267.51853	263.60700	76.86833	17.78178	0.1217371	0.17610653	3.1522386	20	5 15.3	19.9
512492 2016 QX ₈₇	16.1	X	124.84176	231.00541	264.95676	9.12688	0.0699318	0.19185089	2.9773291	20	6 22.1	20.3
512493 2016 QB ₈₈	17.5	X	27.96766	161.00881	142.36388	15.55023	0.1196050	0.24431362	2.5341808	20	10 15.1	20.8
512494 2016 QD ₈₈	16.5	X	238.82616	324.63183	59.51839	12.46825	0.1059067	0.19220144	2.9737078	20	6 3.6	20.9
512495 2016 RC	17.8	X	119.20846	278.66908	9.56004	8.90634	0.1460143	0.30705163	2.1760145	20	—	—
512496 2016 RN ₂	16.9	X	195.24646	165.37244	256.39601	14.21713	0.2448613	0.18234390	3.0799374	20	6 1.9	22.2
512497 2016 RS ₂	17.9	X	60.12999	192.85131	101.65595	3.21746	0.1981681	0.27367709	2.3495088	20	11 25.5	21.3
512498 2016 RM ₃	16.7	X	318.41922	25.90985	298.47925	4.16224	0.1396986	0.22090591	2.7101780	20	6 30.8	19.5
512499 2016 RE ₄	16.3	X	244.04262	233.51771	99.46370	15.84356	0.1437209	0.17806029	3.1291376	20	4 12.7	21.4
512500 2016 RE ₆	15.8	X	256.03757	55.02344	321.66660	20.79266	0.1118274	0.18305039	3.0720075	20	6 15.3	20.6
512501 2016 RR ₆	17.7	X	24.43577	40.55806	284.98616	6.07916	0.1163810	0.27697238	2.3308361	20	11 8.6	20.4
512502 2016 RS ₆	16.9	X	274.21459	118.34261	182.32065	12.08381	0.1781838	0.18517449	3.0484702	20	3 23.5	21.3
512503 2016 RW ₉	17.1	X	259.74185	164.13578	169.47227	7.70662	0.1326524	0.18953584	3.0015240	20	4 24.3	21.6
512504 2016 RP ₁₁	17.1	X	309.54680	251.12559	113.00733	9.62659	0.1809311	0.23838848	2.5760001	20	8 10.1	19.6
512505 2016 RJ ₁₃	16.2	X	138.07790	147.49168	308.73501	14.07239	0.0861651	0.18349599	3.0670322	20	5 18.8	21.1
512506 2016 RR ₁₄	17.7	X	8.95708	87.52558	262.12191	4.92840	0.0681975	0.27819044	2.3240274	20	11 13.2	20.3
512507 2016 RE ₂₁	17.5	X	333.92600	69.23548	316.22159	5.83723	0.1203219	0.26792445	2.3830207	20	11 7.5	19.8
512508 2016 RQ ₂₃	16.0	X	284.33344	255.36515	49.72648	10.06938	0.1095321	0.17831497	3.1261575	20	4 21.2	20.3
512509 2016 RT ₂₃	16.6	X	8.76399	181.00101	121.28693	8.51785	0.1994520	0.24433083	2.5340618	20	9 20.7	19.1
512510 2016 RJ ₂₄	16.6	X	332.51291	174.45752	132.19421	8.25571	0.1103197	0.21691381	2.7433291	20	7 2.9	19.7
512511 2016 RU ₂₄	16.5	X	221.45495	126.64907	272.63109	8.88633	0.2347630	0.17665649	3.1456928	20	5 26.4	21.9
512512 2016 RN ₂₅	17.7	X	57.73736	30.17536	304.95195	4.41904	0.1207169	0.29788261	2.2204412	20	—	—
512513 2016 RT ₂₅	17.2	X	181.57349	11.90122	48.15214	12.70990	0.0227228	0.19794669	2.9158860	20	5 19.3	21.4
512514 2016 RX ₂₆	16.9	X	320.04791	195.77629	142.96758	15.26676	0.2660903	0.22669596	2.6638322	20	7 7.7	19.5
512515 2016 RZ ₂₆	16.2	X	246.14402	34.44300	339.38224	15.70332	0.2946962	0.18549586	3.0449481	20	5 5.9	21.7
512516 2016 RF ₂₇	17.5	X	14.13546	115.02714	201.54615	1.97576	0.2025803	0.25606891	2.4560176	20	10 21.8	19.9
512517 2016 RN ₃₁	17.4	X	237.60455	165.80588	308.01229	14.05082	0.0635069	0.25282537	2.4767988	20	10 2.4	21.0
512518 2016 RO ₃₁	16.7	X	201.77187	213.45541	252.03426	12.42371	0.1456557	0.21301795	2.7766763	20	7 31.6	21.3
512519 2016 RV ₃₁	17.1	X	286.91134	315.71884	30.10592	2.60853	0.0600101	0.20497153	2.8488769	20	6 21.9	20.8
512520 2016 RF ₃₂	17.0	X	272.66891	333.07567	30.65785	2.28419	0.0887071	0.20549864	2.8440032	20	6 21.9	20.8
512521 2016 RL ₃₂	16.3	X	231.26327	224.42227	151.01032	3.06468	0.1633882	0.18042056	3.1017875	20	5 12.6	21.2
512522 2016 RZ ₃₄	17.5	X	255.59929	113.00249	286.18127	3.00710	0.0768775	0.21357243	2.7718683	20	7 18.9	21.4
512523 2016 RA ₃₅	16.6	X	270.40254	13.23241	335.63411	7.36809	0.1170135	0.19312764	2.9641927	20	5 24.2	20.9
512524 2016 RF ₃₅	16.8	X	315.71121	4.81873	331.88129	3.10671	0.1091451	0.22448890	2.6812634	20	7 18.4	19.9
512525 2016 RM ₃₅	17.5	X	10.06828	338.99259	345.06934	4.61136	0.1998725	0.25870596	2.4392993	20	10 23.6	20.0
512526 2016 RP ₃₅	17.9	X	43.54984	309.68647	1.21297	6.43798	0.1201467	0.27432498	2.3458081	20	11 14.8	21.0
512527 2016 RQ ₃₆	16.6	X	252.48081	272.30130	106.55460	3.03439	0.1130444	0.20013421	2.8945996	20	6 12.8	20.7
512528 2016 RL ₃₇	17.9	X	32.21855	322.95756	351.97991	2.51302	0.2408208	0.27236398	2.3570544	20	11 24.7	20.9
512529 2016 RE ₄₂	17.2	X	228.51978	258.86678	181.87269	11.05615	0.1045049	0.22065086	2.7122661	20	8 3.9	21.3
512530 2016 RN ₄₃	16.0	X	192.40582	56.88652	0.37067	26.18810	0.1860871	0.17510630	3.1642311	20	5 16.2	21.7
512531 2016 RQ ₄₃	16.0	X	322.89112	203.94901	56.83531	18.41418	0.1510551	0.17860687	3.1227500	20	4 17.2	20.1
512532 2016 RW ₄₄	17.0	X	8.54418	202.70840	87.27217	1.77633	0.0424168	0.21264639	2.7799098	20	8 7.9	20.6
512533 2016 RX ₄₄	17.4	X	267.83228	85.79568	115.89217	4.18510	0.10701213	0.22247047	2.6974566	20	8 9.7	20.7
512534 2016 RY ₄₄	16.5	X	182.79783	150.14713	282.40790	8.39797	0.0558753	0.17779531	3.1322459	20	6 6.5	21.2
512535 2016 RA ₄₅	16.7	X	254.29078	277.56841	132.94033	10.78769	0.2177056	0.19188428	2.9769837	20	7 11.5	21.2
512536 2016 SN ₄	15.8	X	286.32373	45.96688	242.15393	15.54418	0.2196961	0.17765694	3.1338721	20	3 10.3	20.8
512537 2016 SY ₄	16.1	X	265.84938	83.07837	251.18324	14.58629	0.0537507	0.18230535	3.0803715	20	5 9.8	20.6
512538 2016 SC ₇	16.4	X	201.69699	134.46603	286.67044	14.92517	0.1990154	0.17925287	3.1152433	20	6 7.7	21.8
512539 2016 SU ₇	16.9	X	337.26589	16.00400	155.0962	13.64589	0.1690212	0.23397402	2.6083005	20	8 16.5	19.3
512540 2016 SZ ₇	17.0	X	357.72906	0.84274	320.17058	14.73639	0.1413779	0.24175203	2.5520507	20	9 8.9	19.7
512541 2016 SF ₈	16.2	X	252.29933	174.35346	260.32086	11.09348	0.1655900	0.22860852	2.6489542	20	8 14.3	20.1
512542 2016 SK ₈	16.0	X	235.49957	63.39199	301.76262	16.60731	0.1514867	0.17482106	3.1676721	20	4 28.0	21.4
512543 2016 SN ₈	16.3	X	216.35294	94.33378	294.15592	12.31030	0.1161235	0.17611393	3.1521502	20	5 13.7	21.4
512544 2016 SE ₉	16.5	X	288.37077	310.36870	38.76605	14.59879	0.1604986	0.21412247	2.7671193	20	6 10.6	20.2
512545 2016 SG ₁₀	16.9	X	239.64511	53.68274	325.29226	10.96389	0.1062523	0.19135692	2.9824506	20	5 27.8	21.6
512546 2016 SH ₁₀	17.1	X	304.65504	231.82871	150.55238	5.38014	0.2359204	0.23268616	2.6179158	20	8 16.9	19.6
512547 2016 SK ₁₀	16.4	X	215.23301	245.38304	178.86897	1.96962	0.0492186	0.20256451	2.8714007	20	7 4.5	20.5
512548 2016 SS ₁₀	17.1	X	236.37922	33.79845	340.07539	1.16139	0.2217665	0.18103445	3.0947713	20	5 9.5	22.3
512549 2016 SO ₁₁	16.6	X	188.96688	322.35971	127.46221	4.39240	0.1806475	0.18488155	3.0516895	20	7 1.9	21.6
512550 2016 SR ₁₂	17.7	X	15.52332	257.43649	118.66204	6.86053	0.1106988	0.28098744	2.3085792	20	—	—
512551 2016 SH ₁₄	18.0	X	73.11640	144.33367	173.21571	5.89408	0.1434346	0.29632444	2.2282183	20	—	—
512552 2016 SU ₁₄	17.1	X	209.35471	81.00395	9.52441	3.83356	0.0914997	0.21217193	2.7840525	20	7 30.1	21.2
512553 2016 SK ₁₇	17.1	X	315.82258	67.73093	271.70673	10.25890	0.2935801	0.22302489	2.6929844	20	6 23.7	19.5

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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>
512561 2016 <i>SN</i> ₂₁	16.3	X	353.77527	157.02957	152.83726	10.58364	0.1337970	0.21653043	2.7465663	20	8 15.8	19.3
512562 2016 <i>SM</i> ₂₂	17.2	X	322.17384	269.11447	88.03129	5.16675	0.0130574	0.23116917	2.6293563	20	9 5.9	20.6
512563 2016 <i>SR</i> ₂₃	18.3	X	65.90235	83.48711	212.55945	2.43002	0.1826471	0.27650313	2.3334725	20	12 1.9	21.6
512564 2016 <i>SH</i> ₂₄	17.1	X	271.10641	26.00237	350.96140	4.52209	0.1032943	0.20477974	2.8506555	20	7 5.9	21.0
512565 2016 <i>SQ</i> ₂₄	16.2	X	157.70130	302.83253	155.33804	8.69447	0.2023166	0.17008965	3.2261468	20	6 16.4	21.7
512566 2016 <i>ST</i> ₂₄	16.4	X	252.43489	316.43495	32.39056	6.66232	0.1525566	0.17983683	3.1084958	20	4 30.8	21.2
512567 2016 <i>SD</i> ₂₅	16.7	X	232.90385	352.25027	74.06500	4.98253	0.0834561	0.21400476	2.7681339	20	7 26.7	20.7
512568 2016 <i>SU</i> ₂₅	18.5	X	110.46373	220.46767	92.45154	1.43893	0.1160049	0.31956693	2.1188238	20	—	—
512569 2016 <i>SV</i> ₂₈	15.6	X	20.43102	11.99078	193.23403	19.33981	0.0225351	0.15434698	3.4419453	20	5 4.0	20.5
512570 2016 <i>SY</i> ₂₈	17.5	X	22.71777	250.87553	56.79664	2.85957	0.2195375	0.25704573	2.4497914	20	10 26.9	20.2
512571 2016 <i>SD</i> ₃₁	16.0	X	186.92033	333.57102	112.78686	16.39054	0.0524764	0.17937590	3.1138186	20	6 29.3	20.7
512572 2016 <i>SJ</i> ₃₁	17.5	X	254.36802	30.84970	21.61318	4.78655	0.1512284	0.21642222	2.7474818	20	7 26.1	21.4
512573 2016 <i>SH</i> ₃₂	15.7	X	222.32014	223.12993	169.36756	10.60036	0.0574602	0.17184100	3.2041895	20	6 2.7	20.6
512574 2016 <i>SX</i> ₃₂	17.2	X	0.31797	186.26312	130.29113	6.56301	0.2162073	0.23743060	2.5829238	20	9 24.4	19.5
512575 2016 <i>SC</i> ₃₄	16.4	X	214.99318	47.44689	358.82809	12.54946	0.1026200	0.18580187	3.0416039	20	6 4.6	21.3
512576 2016 <i>SP</i> ₃₅	16.5	X	247.62169	107.50108	327.44578	28.10756	0.3506995	0.23717073	2.5848102	20	7 30.6	20.9
512577 2016 <i>SD</i> ₃₇	16.3	X	292.68515	327.63974	346.50685	10.03632	0.1011922	0.18269994	3.0759347	20	5 8.9	20.7
512578 2016 <i>SH</i> ₃₇	16.0	X	178.69779	221.34697	216.88780	10.39444	0.1259516	0.17309709	3.1886697	20	6 9.3	21.2
512579 2016 <i>ST</i> ₃₈	17.2	X	305.90553	167.90228	180.81600	9.40909	0.1797442	0.21746572	2.7386856	20	7 6.3	20.5
512580 2016 <i>SL</i> ₃₉	17.3	X	165.28531	301.11954	175.75882	2.17287	0.0450484	0.20090746	2.8871677	20	7 13.3	21.4
512581 2016 <i>SE</i> ₄₀	18.1	X	30.68095	167.60465	157.15004	1.75099	0.1989056	0.26978170	2.3720712	20	11 29.9	20.9
512582 2016 <i>SJ</i> ₄₀	17.4	X	322.72314	275.98057	53.01240	2.45592	0.0645116	0.21462909	2.7627632	20	7 22.6	20.7
512583 2016 <i>SO</i> ₄₀	17.1	X	235.15303	247.59102	178.62056	9.37091	0.0428192	0.21514138	2.7583757	20	7 31.7	21.0
512584 2016 <i>SA</i> ₄₁	18.0	X	76.88318	135.14538	165.67587	5.77859	0.1619933	0.28795435	2.2711908	20	12 19.2	21.4
512585 2016 <i>SY</i> ₄₁	17.1	X	288.89834	341.06182	38.49138	4.65151	0.1363415	0.22108275	2.7087327	20	8 1.2	20.4
512586 2016 <i>SM</i> ₄₂	17.5	X	191.27128	115.69821	17.74473	13.95988	0.0268132	0.23299008	2.6156388	20	9 14.0	21.2
512587 2016 <i>SL</i> ₄₅	17.6	X	37.43923	82.56493	217.87629	3.79119	0.1425620	0.25997293	2.4313676	20	10 25.8	20.6
512588 2016 <i>SB</i> ₄₇	16.8	X	298.19010	156.77235	205.72492	8.45783	0.1168283	0.22419818	2.6835807	20	7 21.9	20.2
512589 2016 <i>SX</i> ₄₈	17.3	X	210.36298	8.39669	127.09142	14.56745	0.1048508	0.23361803	2.6109495	20	10 2.9	21.3
512590 2016 <i>SD</i> ₄₈	15.6	X	274.92236	230.63572	107.85375	15.99233	0.2111100	0.17664686	3.1458072	20	5 11.7	20.5
512591 2016 <i>SA</i> ₄₉	15.4	X	286.14422	236.05913	93.58452	17.29966	0.1213073	0.18339364	3.0681732	20	5 24.8	19.7
512592 2016 <i>SB</i> ₄₉	17.1	X	165.91816	318.12850	175.74639	4.37437	0.0139426	0.20853639	2.8163167	20	8 5.0	21.0
512593 2016 <i>SD</i> ₄₉	16.3	X	239.44117	323.96447	118.96772	22.84212	0.0418727	0.22675335	2.6633827	20	9 6.4	20.2
512594 2016 <i>SE</i> ₄₉	16.6	X	324.28621	270.93050	73.28923	12.62356	0.1567698	0.21975658	2.7196194	20	8 13.5	19.7
512595 2016 <i>TL</i> ₁	16.1	X	258.89056	42.09267	305.91296	11.46581	0.1609049	0.17822642	3.1271928	20	5 1.9	21.0
512596 2016 <i>TW</i> ₁	16.3	X	250.38537	174.57390	220.46587	13.02338	0.1848898	0.20423666	2.8557066	20	6 21.3	20.8
512597 2016 <i>TG</i> ₃	15.9	X	261.30795	321.29982	28.45408	17.73744	0.2117545	0.17445454	3.1721072	20	5 2.4	20.8
512598 2016 <i>TX</i> ₄	16.6	X	149.78110	118.03568	356.80204	11.52435	0.0872715	0.18921553	3.0049105	20	6 25.1	21.4
512599 2016 <i>TS</i> ₅	16.5	X	277.65476	309.42209	181.53706	22.80323	0.2143159	0.27950376	2.3167417	20	12 24.7	19.1
512600 2016 <i>TD</i> ₇	16.4	X	286.05973	128.37432	179.58606	15.93684	0.0872712	0.17540326	3.1606588	20	5 1.2	21.0
512601 2016 <i>TU</i> ₇	16.6	X	259.44124	313.35811	38.72988	12.67730	0.1832822	0.17832885	3.1259952	20	5 8.1	21.4
512602 2016 <i>TZ</i> ₈	16.8	X	304.72095	76.12032	289.66116	8.74495	0.0812329	0.22350184	2.6891518	20	8 10.9	20.1
512603 2016 <i>TM</i> ₉	16.7	X	310.16714	34.77683	308.82395	1.55712	0.1176497	0.20575895	2.8416040	20	7 15.8	20.1
512604 2016 <i>TB</i> ₁₄	15.4	X	315.79007	12.25774	256.83127	11.57067	0.0662524	0.17196726	3.2026209	20	4 18.7	19.9
512605 2016 <i>TJ</i> ₁₅	16.3	X	38.55647	27.06681	174.12411	9.74106	0.0189093	0.17311002	3.1885109	20	5 21.9	20.8
512606 2016 <i>TL</i> ₁₅	17.0	X	273.38885	347.91468	93.26732	6.11947	0.2003580	0.24241770	2.5473767	20	9 27.2	20.0
512607 2016 <i>TN</i> ₁₅	16.0	X	203.38319	270.26908	135.77765	9.66156	0.0770305	0.17435500	3.1733144	20	5 28.8	21.0
512608 2016 <i>TR</i> ₁₅	17.1	X	53.01700	165.28237	124.46493	7.28301	0.0799142	0.25469172	2.4648632	20	10 25.3	20.4
512609 2016 <i>TT</i> ₁₅	16.1	X	357.85068	339.49301	294.80010	10.28745	0.1065408	0.19965667	2.8992133	20	7 1.6	19.4
512610 2016 <i>TH</i> ₁₆	16.9	X	278.20291	297.32382	86.58973	6.82345	0.0783128	0.21450861	2.7637976	20	7 30.4	20.5
512611 2016 <i>TK</i> ₁₆	15.9	X	128.53099	82.76766	49.86018	12.19966	0.1711189	0.17080566	3.2171246	20	6 30.1	21.2
512612 2016 <i>TP</i> ₁₆	16.2	X	189.63690	173.70938	330.24752	21.77359	0.0170521	0.22782165	3.6550501	20	9 13.4	20.1
512613 2016 <i>TV</i> ₂₀	16.9	X	347.08286	330.15041	356.54617	6.11192	0.1279321	0.22640044	2.6661497	20	8 31.2	19.6
512614 2016 <i>TJ</i> ₂₃	16.4	X	172.65474	105.16927	357.70398	11.07881	0.0684710	0.18630118	3.0361669	20	7 5.5	21.1
512615 2016 <i>TW</i> ₂₃	16.8	X	334.44219	64.97763	240.79635	5.22565	0.1306165	0.20844277	2.8171598	20	7 2.7	19.9
512616 2016 <i>TQ</i> ₂₅	16.4	X	211.74904	166.14537	230.88639	11.38463	0.0766854	0.17242739	3.1969209	20	5 24.8	21.2
512617 2016 <i>TA</i> ₃₄	16.2	X	105.08122	233.27169	293.30258	8.96132	0.0427043	0.17669337	3.1452551	20	7 4.3	20.6
512618 2016 <i>TZ</i> ₃₆	16.9	X	196.27013	199.41709	263.83212	3.32005	0.0656697	0.20898488	2.8122859	20	7 31.3	20.9
512619 2016 <i>TK</i> ₃₇	17.3	X	213.38979	166.01734	305.28605	5.70174	0.1050128	0.22503307	2.6769390	20	8 27.6	21.3
512620 2016 <i>TM</i> ₃₈	16.2	X	39.46316	224.24416	350.53889	8.70890	0.0289903	0.17965325	3.1106132	20	6 7.5	20.6
512621 2016 <i>TJ</i> ₃₉	17.0	X	243.92307	17.57254	359.75124	10.15291	0.1438451	0.18426327	3.0585121	20	5 25.8	21.8
512622 2016 <i>TU</i> ₃₉	16.5	X	214.59007	42.46021	350.50821	11.59706	0.1101808	0.17337672	3.1852402	20	5 16.7	21.7
512623 2016 <i>TT</i> ₄₁	17.5	X	70.49287	274.85637	15.93676	6.05723	0.0792940	0.26403499	2.4063662	20	11 14.5	20.8
512624 2016 <i>TZ</i> ₄₁	17.2	X	209.96865	70.45189	18.94578	6.82110	0.0779679	0.20368206	2.8608880	20	7 31.1	21.5
512625 2016 <i>TD</i> ₄₂	17.1	X	259.06791	152.52775	193.84047	0.52404	0.1949770	0.17775385	3.1327329	20	4 30.6</	

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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>
512641 2016 <i>TS</i> ₅₂	16.6 ^m	X	282.79871	68.98429	302.06600	11.94199	0.2137542	0.21083931	2.7957714	20	6 27.2	20.4
512642 2016 <i>TA</i> ₅₄	15.9	X	171.42610	170.30312	295.45931	9.79983	0.1009691	0.17219808	3.1997583	20	7 6.1	20.9
512643 2016 <i>TB</i> ₅₄	16.2	X	176.67256	120.93259	335.14471	10.47081	0.1121288	0.16854432	3.2458364	20	6 30.1	21.4
512644 2016 <i>TT</i> ₅₆	16.3	X	32.34382	341.53108	314.65200	11.58079	0.2497041	0.24032400	2.5621504	20	10 19.8	19.7
512645 2016 <i>TE</i> ₅₈	16.3	X	351.28200	12.01358	296.55729	10.96778	0.1388820	0.22338606	2.6900809	20	8 8.4	19.2
512646 2016 <i>TC</i> ₅₉	17.1	X	283.52492	51.22358	320.66905	5.33574	0.0719207	0.21348187	2.7726521	20	7 21.8	20.6
512647 2016 <i>TG</i> ₆₀	15.9	X	235.67619	55.73989	310.29463	15.14385	0.2564958	0.17484768	3.1673505	20	4 20.8	21.6
512648 2016 <i>TG</i> ₆₀	17.2	X	329.81687	128.05613	207.08327	3.41778	0.1072263	0.22152433	2.7051318	20	8 8.0	20.4
512649 2016 <i>TR</i> ₆₀	16.7	X	304.37845	339.59791	0.50270	1.74586	0.1046580	0.20457585	2.8525492	20	7 3.4	20.2
512650 2016 <i>TF</i> ₆₁	17.1	X	307.27549	328.07437	23.62747	6.21674	0.0353869	0.21178604	2.7874334	20	8 4.2	20.8
512651 2016 <i>TY</i> ₆₁	16.2	X	81.15528	327.61139	191.74717	11.48483	0.0394800	0.16805366	3.2521512	20	5 26.4	20.9
512652 2016 <i>TB</i> ₆₂	17.2	X	277.11928	17.41986	12.85601	6.10599	0.0552436	0.21864918	2.7287944	20	8 11.6	20.8
512653 2016 <i>TZ</i> ₆₄	15.7	X	280.62187	79.07081	267.78670	8.82964	0.0917594	0.19137982	2.9822127	20	6 9.5	19.9
512654 2016 <i>TH</i> ₆₅	16.5	X	277.06971	261.00059	103.45222	11.90103	0.0995497	0.19070641	2.9892290	20	6 26.8	20.6
512655 2016 <i>TW</i> ₆₇	16.4	X	173.09851	301.91070	232.66297	14.37118	0.0716018	0.24488610	2.5302297	20	10 6.3	20.3
512656 2016 <i>TC</i> ₆₈	17.1	X	284.38039	124.38417	239.97203	5.12968	0.0406561	0.21188303	2.7865827	20	7 15.6	20.8
512657 2016 <i>TR</i> ₆₈	16.9	X	238.63220	160.38262	204.52565	2.78047	0.1821829	0.17875079	3.1210740	20	5 4.7	21.8
512658 2016 <i>TO</i> ₇₀	16.5	X	228.01218	194.84113	203.20948	4.74482	0.1175405	0.18456759	3.0551492	20	6 9.3	21.3
512659 2016 <i>TN</i> ₇₁	16.5	X	170.18705	17.15847	101.59857	3.24452	0.0095188	0.20308220	2.8665189	20	7 22.4	20.3
512660 2016 <i>TY</i> ₇₁	16.2	X	308.60601	20.22064	297.65807	11.19069	0.0777471	0.19003897	2.9962239	20	6 12.7	20.2
512661 2016 <i>TE</i> ₇₂	16.1	X	283.43240	27.08509	305.44849	7.92735	0.0904530	0.18427787	3.0583505	20	5 24.3	20.4
512662 2016 <i>TR</i> ₇₂	16.3	X	237.64644	199.32603	182.83581	14.61878	0.2127670	0.17933798	3.1142576	20	5 23.7	21.5
512663 2016 <i>TS</i> ₇₂	16.6	X	321.52474	264.33745	69.17606	6.20128	0.0712108	0.21086798	2.7955180	20	7 27.0	20.1
512664 2016 <i>TV</i> ₇₂	16.4	X	283.25610	230.39816	136.14434	6.15683	0.1315716	0.20487995	2.8497258	20	7 3.4	20.1
512665 2016 <i>TH</i> ₇₄	17.2	X	222.25375	85.19043	9.08778	4.77299	0.0636888	0.22187975	2.7022422	20	8 23.3	20.9
512666 2016 <i>TZ</i> ₇₄	16.7	X	279.49642	296.80467	50.43814	2.92343	0.1139865	0.19493795	2.9458126	20	6 4.9	20.7
512667 2016 <i>TE</i> ₇₆	17.1	X	327.49273	102.98535	274.77691	4.43278	0.1143385	0.23793888	2.5792440	20	10 6.6	20.0
512668 2016 <i>TO</i> ₇₈	17.2	X	10.56887	328.28233	59.74387	4.85613	0.1234403	0.27331450	2.3515864	20	—	—
512669 2016 <i>TR</i> ₇₈	17.3	X	83.15571	226.30267	78.98586	6.26211	0.2001128	0.29359593	2.2420022	20	—	—
512670 2016 <i>TE</i> ₇₉	16.6	X	45.81830	12.95559	256.49553	11.19780	0.1620984	0.23204165	2.6227612	20	9 17.3	20.3
512671 2016 <i>TH</i> ₇₉	16.4	X	293.86734	31.00103	299.57820	8.57702	0.1169829	0.18752837	3.0229066	20	6 1.6	20.5
512672 2016 <i>TQ</i> ₇₉	15.7	X	135.10784	119.99512	323.74335	9.29222	0.2849833	0.12586341	3.9433899	20	5 13.7	22.3
512673 2016 <i>TN</i> ₇₉	16.4	X	231.30676	151.02461	332.89647	6.85589	0.0932041	0.23943067	2.5685195	20	10 6.6	20.0
512674 2016 <i>TB</i> ₈₀	17.4	X	319.45188	162.46390	206.05390	1.37966	0.0772497	0.23531981	2.5983464	20	9 11.9	20.3
512675 2016 <i>TF</i> ₈₀	16.7	X	230.27949	23.42618	3.17568	0.22454	0.1869230	0.17839748	3.1251935	20	5 22.4	21.6
512676 2016 <i>TE</i> ₈₁	17.7	X	122.56421	42.55433	241.96770	6.77284	0.1714021	0.30337688	2.1935510	20	—	—
512677 2016 <i>TT</i> ₈₂	16.6	X	201.45176	198.87112	292.82209	8.64185	0.0054725	0.23222255	2.6213990	20	9 17.1	20.4
512678 2016 <i>TZ</i> ₈₂	17.1	X	57.14025	13.67153	302.43998	4.11064	0.2105096	0.27984267	2.3148708	20	12 21.7	20.5
512679 2016 <i>TD</i> ₈₅	16.3	X	63.35419	180.25444	85.89676	5.84107	0.0230601	0.21587793	2.7520979	20	9 22.2	20.0
512680 2016 <i>TP</i> ₈₇	16.8	X	247.70376	104.71774	307.00171	4.93064	0.0545346	0.20468780	2.8515090	20	7 28.2	20.8
512681 2016 <i>TS</i> ₈₉	17.1	X	282.59231	182.13046	157.02831	1.75437	0.1824948	0.18134595	3.0912264	20	5 19.9	21.5
512682 2016 <i>TZ</i> ₉₀	17.1	X	349.81339	164.34112	200.67604	6.04361	0.0296088	0.23934546	2.5691290	20	10 25.1	20.3
512683 2016 <i>TE</i> ₉₁	16.4	X	249.33406	178.30419	202.25735	8.83185	0.0903184	0.17418615	3.1753648	20	6 13.8	21.1
512684 2016 <i>TN</i> ₉₆	16.5	X	249.96790	317.08992	143.17262	12.12669	0.1052177	0.23186599	2.6240857	20	10 3.2	20.1
512685 2016 <i>TO</i> ₉₆	16.6	X	220.19414	255.65935	225.86773	12.27563	0.1218167	0.22042414	2.7141256	20	9 12.1	20.8
512686 2016 <i>UU</i>	17.2	X	301.90686	344.77143	27.61763	2.40461	0.0923725	0.22167042	2.7039432	20	8 17.8	20.5
512687 2016 <i>UY</i>	16.2	X	352.07519	266.90696	11.10301	9.66219	0.0048489	0.18626671	3.0365415	20	6 26.8	20.6
512688 2016 <i>UF</i> ₁	16.8	X	176.97444	230.61359	222.52644	11.02263	0.1598060	0.17304189	3.1893478	20	6 24.7	22.1
512689 2016 <i>UK</i> ₁	16.7	X	261.04042	7.06294	13.22944	17.49939	0.1160778	0.19197304	2.9760660	20	6 24.2	21.3
512690 2016 <i>UL</i> ₁	17.3	X	331.74448	117.32443	264.48899	5.26971	0.0871371	0.24725762	2.5140250	20	10 22.5	20.1
512691 2016 <i>UD</i> ₂	17.1	X	308.74851	236.64977	125.32986	7.03933	0.0383855	0.21934934	2.7229844	20	8 19.4	20.5
512692 2016 <i>UB</i> ₃	16.2	X	242.18623	220.94161	150.54355	10.84999	0.1036455	0.17660638	3.1462879	20	5 26.2	21.1
512693 2016 <i>UD</i> ₃	17.0	X	287.98670	296.54644	171.71520	7.42080	0.0984060	0.23788418	2.5796394	20	9 27.9	20.1
512694 2016 <i>UM</i> ₃	17.4	X	281.29933	113.60106	217.18773	2.38249	0.0516672	0.21599053	2.7511414	20	8 7.1	21.1
512695 2016 <i>US</i> ₅	16.7	X	305.81397	297.37450	70.52011	15.60846	0.2489699	0.24124735	2.5556086	20	7 30.5	19.4
512696 2016 <i>UL</i> ₆	18.1	X	94.26036	344.21679	319.34784	5.85027	0.1559670	0.29113609	2.2546130	20	—	—
512697 2016 <i>UN</i> ₆	16.6	X	297.64242	38.95700	296.04136	2.97547	0.0333474	0.18960377	3.0008071	20	6 25.7	20.6
512698 2016 <i>UR</i> ₆	17.1	X	68.13974	306.65900	302.52761	5.27779	0.0094336	0.21956583	2.7211943	20	8 30.3	20.7
512699 2016 <i>UY</i> ₆	15.8	X	322.56396	277.13598	12.71084	16.27167	0.1173362	0.17867944	3.1219049	20	5 16.8	20.0
512700 2016 <i>UW</i> ₇	17.0	X	98.89059	5.69337	255.65017	9.15206	0.1975883	0.27885338	2.3203426	20	11 20.4	20.7
512701 2016 <i>UO</i> ₈	16.7	X	249.53063	93.74806	293.78879	10.70039	0.0672131	0.19423618	2.9529038	20	6 26.9	20.9
512702 2016 <i>UY</i> ₈	17.0	X	4.25113	342.70808	334.10640	12.65605	0.1765929	0.23675409	2.5878418	20	9 20.1	19.6
512703 2016 <i>UJ</i> ₉	16.0	X	205.40930	214.30920	253.06216	14.19060	0.0351384	0.21516751	2.7581524	20	8 13.7	20.2
512704 2016 <i>UB</i> ₁₀	16.9	X	195.43670	255.42259	251.31515	13.71232	0.1595520	0.22764437	2.6564284	20	9 13.4	21.4
512705 2016 <i>UG</i> ₁₀	15.9	X	122.24611	245.53081	204.06739	4.09521	0.2755964	0.12379589	3.9871744	20	5 13.4	22.2
512706 2016 <i>UT</i>												

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>
512721 2016 UF ₁₈	17.1	X	104.07151	283.61892	282.54129	11.88396	0.0972739	0.21596687	2.7513423	20	8 26.5	21.4
512722 2016 UH ₁₈	16.1	X	175.81043	182.50572	271.77502	9.92208	0.0539310	0.18012699	3.1051567	20	6 26.1	20.7
512723 2016 UL ₁₈	17.9	X	111.41822	328.89503	323.54555	7.94118	0.1694371	0.30053105	2.2073768	20	—	—
512724 2016 US ₁₈	17.5	X	94.68452	346.10665	281.08428	6.36707	0.1675096	0.26553647	2.3972864	20	11 19.4	21.2
512725 2016 UM ₂₀	16.7	X	202.63318	43.38299	33.06785	9.94294	0.1725863	0.17456657	3.1707500	20	6 27.9	22.0
512726 2016 UN ₂₀	17.6	X	8.80097	67.34301	258.19805	1.55586	0.1023301	0.23412509	2.6071784	20	10 4.5	20.6
512727 2016 UZ ₂₀	16.7	X	224.07563	333.18171	61.18485	8.13228	0.1088309	0.17158741	3.2073457	20	5 31.7	21.5
512728 2016 UQ ₂₁	18.1	X	125.08007	79.71013	185.22401	1.13832	0.0713796	0.27639072	2.3341051	20	12 17.1	21.1
512729 2016 UF ₂₃	16.7	X	282.27369	179.79818	196.294938	1.59717	0.0789310	0.20330923	2.8643846	20	7 22.7	20.4
512730 2016 UR ₂₄	17.4	X	341.57912	233.81327	124.88430	6.61714	0.2202431	0.24345581	2.5401301	20	10 19.9	19.5
512731 2016 UY ₂₄	17.2	X	5.57359	93.62066	221.15868	2.64312	0.0854421	0.22147637	2.7055223	20	9 9.6	20.3
512732 2016 UL ₂₆	16.2	X	262.30508	345.53191	18.07727	11.49801	0.1011401	0.17921290	3.1157065	20	6 4.1	20.8
512733 2016 UZ ₂₆	16.5	X	89.53933	247.60986	334.41859	3.48508	0.0443409	0.20989865	2.8041180	20	8 28.1	20.5
512734 2016 UE ₂₇	16.1	X	273.57369	299.73656	47.47650	11.91227	0.1783222	0.18378611	3.0638036	20	5 18.4	20.6
512735 2016 UJ ₂₇	16.7	X	225.46398	315.53589	107.27276	2.85092	0.2461532	0.18318523	3.0704999	20	6 26.8	21.9
512736 2016 UW ₂₇	17.0	X	20.08630	286.91774	19.51659	8.17534	0.2132509	0.23975179	2.5662255	20	10 14.9	19.8
512737 2016 UT ₂₈	16.0	X	171.23910	131.12658	16.09985	12.14252	0.1222356	0.17163776	3.2067184	20	6 12.9	21.2
512738 2016 UU ₂₈	16.2	X	192.32913	79.47671	340.92213	15.42830	0.2058178	0.16593346	3.2797953	20	5 26.3	22.0
512739 2016 UW ₂₈	17.2	X	206.31848	93.77189	44.84760	14.12423	0.1470582	0.22579296	2.6709297	20	9 28.1	21.4
512740 2016 UH ₂₉	16.3	X	243.08447	54.26047	331.77615	15.73908	0.1320145	0.18043738	3.1015947	20	6 7.5	21.3
512741 2016 UK ₂₉	16.9	X	13.39938	345.46093	314.07492	2.82313	0.1264032	0.22229586	2.6988689	20	9 6.1	20.0
512742 2016 UV ₂₉	16.6	X	27.57891	356.38592	295.80428	14.24269	0.1180521	0.23004325	2.6379287	20	9 11.7	20.1
512743 2016 UX ₃₀	16.2	X	216.04654	115.30260	320.06091	14.28593	0.1780507	0.18301155	3.0724534	20	7 10.9	21.2
512744 2016 UY ₃₀	16.2	X	167.22323	168.44176	315.96998	16.42351	0.1504068	0.17807954	3.1289121	20	7 26.7	21.3
512745 2016 UG ₃₁	16.0	X	330.09495	230.81232	99.34051	32.86724	0.2781315	0.23381151	2.6095090	20	7 18.2	18.0
512746 2016 UU ₃₁	16.4	X	333.98678	72.27571	260.29219	25.75447	0.2944114	0.23330890	2.6132554	20	7 21.9	18.7
512747 2016 UE ₃₂	16.3	X	321.52526	41.44685	274.89449	11.96227	0.1035746	0.20390822	2.8587722	20	6 27.8	19.8
512748 2016 UM ₃₃	16.2	X	150.20537	282.32291	230.15864	9.51416	0.0401483	0.18833202	3.0143009	20	8 5.9	20.8
512749 2016 UP ₃₃	15.8	X	274.15684	110.53655	240.51965	10.31245	0.1109482	0.17037958	3.2224859	20	6 3.7	20.3
512750 2016 UF ₃₅	16.5	X	285.39230	310.90868	52.447197	11.01830	0.0658181	0.18673120	3.0315039	20	7 12.7	20.7
512751 2016 UB ₃₉	16.2	X	191.16341	48.15333	10.67470	10.01104	0.0624803	0.15917199	3.3720314	20	5 27.4	21.4
512752 2016 US ₃₉	16.4	X	21.84470	28.09131	220.86137	8.26777	0.0408554	0.17432091	3.1737282	20	6 28.9	20.8
512753 2016 UP ₄₂	16.1	X	250.84998	82.23802	268.72502	8.37712	0.0944276	0.18130918	3.0916443	20	5 7.1	20.8
512754 2016 UE ₄₅	16.0	X	137.15260	211.20372	276.56580	9.79245	0.0302310	0.17570064	3.1570914	20	6 22.3	20.4
512755 2016 UO ₄₅	16.5	X	313.25209	7.31624	302.63127	5.36028	0.0945445	0.18591848	3.0403320	20	6 6.2	20.5
512756 2016 UY ₄₅	16.8	X	285.31374	103.89201	287.64900	8.14665	0.0972795	0.21753777	2.7380808	20	8 13.8	20.3
512757 2016 UM ₄₆	16.6	X	162.41877	179.10578	338.03058	7.27650	0.0185708	0.21722659	2.7406951	20	9 2.1	20.3
512758 2016 UP ₄₆	16.7	X	292.45353	45.18714	292.38970	6.05236	0.1182113	0.18827563	3.0149028	20	6 9.3	20.8
512759 2016 UV ₄₆	16.3	X	313.96691	0.34748	312.33571	7.68331	0.0988683	0.18581134	3.0415006	20	6 10.5	20.2
512760 2016 UJ ₄₈	17.3	X	211.96472	166.62570	7.37222	3.61053	0.1559251	0.25687765	2.4508600	20	11 14.2	20.8
512761 2016 UQ ₄₉	16.6	X	263.97238	1.82827	7.50471	7.29930	0.1022809	0.18259964	3.0770610	20	6 14.9	21.1
512762 2016 UO ₅₁	16.2	X	292.36700	284.47480	53.68203	3.31136	0.2908759	0.19063922	2.9899314	20	5 14.3	20.2
512763 2016 UL ₅₃	17.1	X	276.24229	272.92018	124.47963	6.17145	0.0625074	0.22414073	2.6840392	20	8 18.0	20.6
512764 2016 UF ₅₃	16.0	X	230.82497	332.22914	46.20387	23.58079	0.0856233	0.17228869	3.1986363	20	5 18.6	20.9
512765 2016 UJ ₅₄	16.5	X	241.12730	326.36974	86.38161	6.58137	0.1173550	0.18768774	3.0211951	20	7 12.4	20.9
512766 2016 UY ₅₄	16.2	X	215.67513	249.66857	181.92475	6.43119	0.0904319	0.17986565	3.1081638	20	7 9.2	21.0
512767 2016 UP ₅₇	16.1	X	235.07203	354.92299	24.10694	28.13038	0.1607497	0.17505388	3.1648628	20	5 10.8	21.5
512768 2016 UT ₅₇	17.3	X	298.85710	358.98867	305.98481	4.49681	0.1666041	0.20913775	2.8109153	20	7 6.7	20.7
512769 2016 UA ₅₈	15.9	X	264.01583	31.96400	358.69343	6.84864	0.1486874	0.17522293	3.1628268	20	4 30.9	20.8
512770 2016 UB ₅₈	15.7	X	283.15238	30.29934	298.96274	9.79296	0.1016149	0.17941545	3.1133610	20	5 17.4	20.2
512771 2016 UK ₆₁	16.4	X	232.35837	298.58946	88.14990	6.27035	0.1680914	0.17791615	3.1308274	20	5 26.8	21.4
512772 2016 UO ₆₂	16.4	X	151.41479	119.33987	48.11461	15.36367	0.0545643	0.22163569	2.7042256	20	9 11.9	20.6
512773 2016 UF ₆₂	16.6	X	276.50193	10.29813	49.51562	14.01286	0.1606635	0.22962247	2.6411504	20	9 11.4	20.1
512774 2016 UM ₆₄	16.5	X	292.32381	220.50876	144.41495	6.25094	0.0697801	0.20860530	2.8156964	20	7 23.8	20.1
512775 2016 UY ₆₄	17.1	X	34.24489	330.46787	315.35641	5.39428	0.0370990	0.22224576	2.6992745	20	9 6.9	20.7
512776 2016 UA ₆₅	17.0	X	21.23035	333.78546	332.71861	8.16584	0.1157814	0.23405338	2.6077109	20	9 27.4	20.2
512777 2016 UR ₆₆	17.1	X	38.99651	194.53620	107.28265	6.41573	0.1562402	0.24363372	2.5388933	20	10 31.6	20.4
512778 2016 US ₆₉	16.0	X	136.19977	250.63543	183.22638	3.22594	0.2118874	0.12363979	3.9905297	20	5 2.3	22.2
512779 2016 UY ₆₉	16.7	X	3.85504	99.18967	216.17140	11.52351	0.1459918	0.23116895	2.6293579	20	9 12.5	19.7
512780 2016 UE ₇₀	17.1	X	311.49778	84.84996	257.84203	0.97160	0.0826018	0.20430224	2.8550954	20	7 20.6	20.4
512781 2016 UN ₇₀	18.0	X	306.93494	255.42898	201.79584	1.75819	0.1840379	0.27023143	2.3694387	20	—	—
512782 2016 UP ₇₀	16.5	X	45.90105	177.46618	41.39155	3.36509	0.0145631	0.17755422	3.1350807	20	6 20.9	20.7
512783 2016 UV ₇₀	16.9	X	225.46337	26.25109	35.31279	10.52104	0.0969855	0.18866137	3.0107918	20	7 9.2	21.6
512784 2016 UW ₇₁	16.0	X	146.06358	137.43262	280.92999	1.58917	0.2233812	0.12323273	3.9993125	20	4 22.1	22.4
512785 2016 UL ₇₂	16.3	X	251.43666	196.72970	217.17323	14.85099	0.1232968	0.20474977	2.8509336	20	7 21.6	20.7
512786 2016 UQ ₇₂	16.0	X	89.64923	150.48071	22.88073	9.44518	0.0258466	0.17428330	3.1741847	20	6 20.3	20.6
512787 2016 UT ₇₂	17.7	X	316.38834	31.39931	27.87065	7.69432	0.0739612	0.25854480	2.4403129	20	11 22.2	20.4
512788 2016 UT ₇₃	17.1	X	166.72734	125.86573	29.40158	3.84804	0.0252172	0.21982891	2.7190228	20	9 7.0	20.9
512789 2016 UU ₇₃	16.8	X	345.94178	279.82087	24.78315	6.12773	0.0740327	0.20335373	2.8639666	20	7 25.7	20.4
512790 2016 UV ₇₃	17.1	X	217.98405	271.14934	213.56846	20.20364	0.1592673	0.22353257	2.6889053	20	9 9.6	21.5
512791 2016 UO ₇₆	16.3	X	273.17199	189.07105	161.73831	10.01836	0.0802933	0.17490991	3.1665992	20	6 7.8	20.9
512792 2016 UJ ₇₇	15.3	X	229.25737	297.10353	79.69924	18.99253	0.0996434	0.14678503	3.5591656	20	5 20.3	20.8
512793 2016 UK ₈₁	16.5	X	103.78093	45.19689	134.49191	1.66865	0.0443992	0.18				

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
512801 2016 UA ₈₇	17.0	X	351.49545	62.94363	235.27349	1.20067	0.0933922	0.20420886	2.8559657	20	7 23.6	20.3
512802 2016 UC ₈₈	17.2	X	218.11781	75.67765	346.49495	1.21712	0.0691772	0.18309355	3.0715247	20	7 2.9	21.6
512803 2016 UP ₈₈	16.9	X	345.22186	273.42494	29.84416	2.05823	0.0786577	0.19726285	2.9226211	20	7 20.6	20.4
512804 2016 UV ₈₉	16.9	X	196.02320	113.01290	345.09923	1.76677	0.0749334	0.19286926	2.9668394	20	7 24.0	21.3
512805 2016 UX ₈₉	16.3	X	129.72340	101.37184	31.14589	10.76733	0.0241955	0.17362773	3.1821696	20	6 17.6	21.0
512806 2016 UK ₉₀	17.1	X	63.07969	243.33155	25.70694	6.32183	0.1375610	0.23605009	2.5929846	20	10 12.7	20.6
512807 2016 UX ₉₀	16.7	X	200.72298	228.02140	208.00585	6.97429	0.0469131	0.18307715	3.0717082	20	7 1.3	21.3
512808 2016 UY ₉₀	17.1	X	232.77342	277.41988	209.94935	4.25009	0.0238137	0.24599927	2.5225910	20	10 27.6	20.5
512809 2016 US ₉₁	17.3	X	168.63372	328.79002	210.26625	4.86165	0.1337330	0.23455531	2.6039893	20	10 6.0	21.4
512810 2016 UL ₉₃	17.3	X	42.45580	66.34381	205.47018	5.45800	0.0330828	0.21482480	2.7610850	20	8 28.6	21.1
512811 2016 UP ₉₃	16.6	X	88.56832	197.46805	40.16261	9.83045	0.0536893	0.22317696	2.6917609	20	9 23.6	20.4
512812 2016 UX ₉₄	17.3	X	50.25546	257.27071	17.65750	4.59803	0.1904982	0.23992443	2.5649943	20	10 12.3	20.6
512813 2016 UH ₉₆	17.1	X	359.13019	284.85091	29.52411	8.46601	0.1054659	0.22214456	2.7000942	20	9 5.4	20.2
512814 2016 UC ₉₉	16.9	X	124.44532	353.53225	204.64437	5.88516	0.0591337	0.21522402	2.7576696	20	9 9.1	20.8
512815 2016 UR ₉₉	17.3	X	159.82379	321.21894	225.93796	7.98143	0.0741956	0.23233151	2.6205793	20	10 7.4	21.3
512816 2016 UO ₉₉	17.3	X	332.89232	339.49105	343.02975	1.27982	0.0702472	0.20484478	2.8500520	20	7 28.1	20.9
512817 2016 UE ₁₀₀	17.5	X	237.80905	65.89779	27.58138	4.36355	0.0586511	0.22451436	2.6810606	20	9 11.9	21.1
512818 2016 UZ ₁₀₀	16.5	X	12.06749	188.04931	132.89771	14.30027	0.2900269	0.22959828	2.6413359	20	11 7.7	19.7
512819 2016 UQ ₁₀₁	16.5	X	220.10771	148.83155	243.08703	8.19150	0.2468297	0.17782815	3.1318602	20	5 16.2	21.9
512820 2016 UA ₁₀₂	16.5	X	343.11396	4.11044	304.05407	1.08636	0.0547595	0.20279670	2.8692086	20	7 24.4	20.0
512821 2016 UQ ₁₀₃	17.6	X	110.90191	138.33616	114.95594	1.60918	0.1955610	0.26187847	2.4195589	20	11 19.2	21.4
512822 2016 UL ₁₀₅	16.8	X	47.31659	13.08835	246.83882	3.16030	0.0710313	0.21287369	2.7779306	20	8 25.0	20.5
512823 2016 UR ₁₀₅	17.3	X	265.42046	202.76457	254.83507	3.59923	0.0833287	0.24746935	2.5125908	20	10 22.5	20.3
512824 2016 UV ₁₀₅	17.0	X	82.07684	309.51530	305.68807	1.69758	0.1345449	0.24225922	2.5484875	20	10 16.1	20.7
512825 2016 UM ₁₀₆	16.5	X	271.36046	206.06211	150.18583	10.33843	0.1478629	0.18337086	3.0684273	20	6 3.3	21.0
512826 2016 UN ₁₀₇	16.7	X	324.50914	60.12590	249.29571	0.54494	0.0978230	0.19315755	2.9638867	20	6 23.3	20.2
512827 2016 US ₁₀₇	17.7	X	5.79786	66.44223	258.36265	0.81381	0.0823460	0.23249061	2.6193836	20	9 26.4	20.8
512828 2016 UD ₁₀₉	16.3	X	225.74480	194.76328	131.19481	8.84090	0.0672126	0.17904353	3.1176711	20	6 23.1	21.0
512829 2016 UH ₁₁₁	17.1	X	272.02309	129.10370	229.00927	8.17162	0.0840846	0.18293642	3.0732833	20	6 13.9	21.4
512830 2016 UU ₁₁₁	16.5	X	176.11679	284.14886	227.11953	3.16858	0.1497910	0.21081822	2.7959578	20	9 4.9	21.1
512831 2016 UY ₁₁₁	17.5	X	64.86061	282.51816	10.61839	1.95072	0.2376694	0.26486453	2.4013392	20	11 30.1	21.1
512832 2016 UC ₁₁₂	17.2	X	350.42601	243.13586	71.73491	1.28590	0.0669438	0.21318852	2.7751951	20	8 15.7	20.6
512833 2016 UM ₁₁₄	16.9	X	169.48015	76.17443	50.92026	5.07940	0.2437120	0.18109741	3.0940540	20	7 31.9	22.3
512834 2016 UM ₁₁₇	17.3	X	342.72197	91.18690	224.16873	4.94921	0.0769124	0.20927509	2.8096854	20	8 1.0	20.7
512835 2016 UK ₁₁₈	17.0	X	41.95938	255.93236	13.12114	2.82782	0.0942390	0.21465174	2.7625689	20	9 4.9	20.5
512836 2016 UM ₁₂₂	16.6	X	315.82329	295.00652	24.54223	9.88943	0.0688358	0.19160319	2.9798945	20	6 26.7	20.6
512837 2016 UD ₁₂₃	16.7	X	165.44665	83.06303	39.45182	10.83479	0.0731193	0.18728108	3.0255670	20	7 23.5	21.4
512838 2016 UA ₁₂₄	16.8	X	229.24701	146.30138	341.83847	6.72322	0.0916921	0.23606051	2.5929083	20	10 9.6	20.3
512839 2016 UQ ₁₃₅	16.6	X	105.51609	9.99905	190.96006	8.00397	0.0906551	0.19458485	2.9493753	20	8 22.3	21.0
512840 2016 UB ₁₃₉	15.8	X	235.47746	137.27988	248.84727	26.80288	0.2251686	0.17247860	3.1962879	20	5 23.7	21.0
512841 2016 UW ₁₄₂	16.6	X	93.10118	290.54118	325.89501	13.75411	0.0949016	0.23698909	2.5861307	20	10 18.6	20.6
512842 2016 UN ₁₄₃	16.1	X	243.16999	345.37195	14.95121	12.79349	0.1228507	0.17428073	3.1742159	20	5 5.5	21.0
512843 2016 UT ₁₄₃	17.2	X	214.16236	308.03814	198.79201	5.64533	0.0758331	0.25406012	2.4689467	20	10 23.6	20.5
512844 2016 UB ₁₄₅	17.6	X	294.50848	156.57325	208.72736	3.70568	0.0913979	0.21613299	2.7499323	20	7 24.5	21.1
512845 2016 UO ₁₄₅	15.8	X	233.90459	142.64880	274.47824	26.69268	0.1303119	0.18122124	3.0926444	20	7 5.8	20.6
512846 2016 UP ₁₄₅	18.2	X	84.00023	88.81110	205.24564	2.55673	0.1807351	0.27912626	2.3188300	20	12 17.0	21.6
512847 2016 UM ₁₄₆	17.1	X	355.74575	57.25086	281.85187	6.27110	0.0719844	0.22938153	2.6429996	20	9 25.4	20.4
512848 2016 UY ₁₄₆	16.7	X	43.25579	12.49312	288.96457	8.48949	0.1207596	0.24324250	2.5416149	20	10 24.6	20.2
512849 2016 VP ₃	15.8	X	229.27564	90.23161	269.56883	24.22230	0.2962338	0.17643099	3.1483726	20	4 4.3	21.8
512850 2016 VQ ₈	16.5	X	244.48857	343.18337	49.49384	12.43640	0.0684993	0.18068381	3.0987739	20	6 25.7	21.1
512851 2016 VT ₈	18.8	X	336.07105	209.62830	184.30368	1.58254	0.1831065	0.25327589	2.4740405	20	11 28.0	20.7
512852 2016 VY ₈	16.6	X	231.38804	347.20429	50.24743	10.13335	0.0812855	0.17412031	3.1761653	20	6 14.5	21.4
512853 2016 VG ₉	16.1	X	195.99265	204.60073	227.70522	14.52196	0.0613267	0.16922909	3.2370745	20	6 19.8	21.1
512854 2016 VJ ₁₁	16.0	X	169.38368	111.32132	26.11775	13.13648	0.2303075	0.18033267	3.1027952	20	8 17.3	21.6
512855 2016 VZ ₁₁	17.1	X	200.81568	152.93988	4.82288	14.21560	0.0985011	0.23062504	2.6334904	20	10 12.4	21.0
512856 2016 VD ₁₄	16.5	X	346.23615	64.87471	306.12934	11.15733	0.0212254	0.23822367	2.5771880	20	10 20.9	20.1
512857 2016 VN ₁₄	17.2	X	177.65930	26.82260	95.32343	2.98306	0.0980340	0.18816390	3.0160962	20	8 2.7	21.8
512858 2016 VR ₁₅	16.8	X	320.24348	308.57322	55.29619	6.50637	0.0860756	0.22337058	2.6902052	20	9 8.5	20.0
512859 2016 VV ₁₅	16.3	X	215.41056	107.64775	315.27564	9.74315	0.0540249	0.17539175	3.1607971	20	7 2.8	21.0
512860 2016 VO ₁₆	16.9	X	332.84137	50.01292	270.17978	2.23309	0.0903127	0.20017571	2.8941995	20	7 22.6	20.3
512861 2016 VS ₁₆	17.0	X	334.91873	85.79160	258.55436	3.56519	0.0790728	0.21325993	2.7745754	20	8 29.2	20.3
512862 2016 VR ₁₇	17.4	X	58.95945	163.37745	158.21515	2.96962	0.1140347	0.25986459	2.4320433	20	12 15.7	20.8
512863 2016 VG ₁₈	15.4	X	106.37677	86.29349	67.38194	9.20047	0.0539764	0.15155624	3.4840696	20	6 19.5	20.5
512864 2016 VC ₁₉	15.7	X	318.92911	216.04854	101.37571	28.49058	0.1352413	0.17849154	3.1240954	20	6 22.2	19.6
512865 2016 VD ₁₉	16.5	X	344.25098	240.77363	89.12981	7.15322	0.0666097	0.21006579	2.8026304	20	8 28.5	20.4
512866 2016 VE ₁₉	16.8	X	165.32901	163.23426	19.50199	4.57778	0.0507864	0.21977808	2.7194420	20	10 8.7	20.5
512867 2016 VF ₁₉	17.4	X	341.07538	183.16462	183.57390	13.11531	0.1923964	0.23978241	2.5660070	20	10 26.4	19.7
512868 2016 VJ ₁₉	16.8	X	59.76347	189.17680	130.94007	9.01772	0.1223035	0.25317475	2.4746994	20	12 14.9	20.4
512869 2016 WB ₄	16.4	X	194.30989	70.46458	30.36982	11.85220	0.0374596	0.18894896	3.0077360	20	7 31.3	21.0
512870 2016 WR ₅	15.7	X	258.00457	322.11985	63.57822	15.17740	0.0200755	0.17511037	3.1641821	20	7 11.3	20.3
512871 2016 WA ₆	17.4	X	20.19484	180.44924	157.49385	0.71859	0.1381786	0.24417656	2.5351291	20	11 17.0	20.2
512872 2016 WN ₁₀	16.4	X	211.75431	6.72486	63.13735	10.34110	0.0686199	0.17910665	3.1169386	20	7 5.5	21.1
512873 2016 WE ₁₂	16.0	X	238.01889	120.08763	3							

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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>
512881 2016 <i>WD</i> ₁₉	18.1	X	352.63332	173.20522	256.66014	4.04840	0.1566243	0.27930268	2.3178535	20	—	—
512882 2016 <i>WQ</i> ₁₉	16.1	X	40.38630	357.62638	242.94439	15.26104	0.0569695	0.17329992	3.1861812	20	7 12.8	20.6
512883 2016 <i>WQ</i> ₂₁	16.4	X	306.60640	262.35468	102.96956	10.12970	0.1785044	0.20871865	2.8146769	20	8 2.6	19.5
512884 2016 <i>WV</i> ₂₂	17.0	X	344.69331	132.32418	211.43565	5.03449	0.0529154	0.21571083	2.7535190	20	9 13.4	20.5
512885 2016 <i>WJ</i> ₂₃	16.5	X	259.12955	205.61343	206.40374	25.37819	0.1367035	0.21910286	2.7250262	20	7 25.5	20.9
512886 2016 <i>WR</i> ₂₃	16.2	X	221.56047	104.21356	279.19246	24.75012	0.2860856	0.17409144	3.1765165	20	4 30.8	22.2
512887 2016 <i>WA</i> ₂₅	17.1	X	247.47051	318.64938	74.28029	2.14859	0.1707306	0.17519406	3.1631743	20	6 17.5	22.0
512888 2016 <i>WL</i> ₂₆	16.1	X	281.39884	301.56428	59.00315	9.97778	0.0908546	0.17653313	3.1471581	20	6 28.0	20.5
512889 2016 <i>WZ</i> ₂₇	16.5	X	291.30692	284.82817	104.96227	8.93802	0.0547204	0.20482715	2.8502156	20	8 30.4	20.3
512890 2016 <i>WH</i> ₂₉	16.2	X	273.69177	254.11324	123.22374	10.80017	0.1160096	0.18375631	3.0641348	20	7 6.2	20.5
512891 2016 <i>WD</i> ₃₁	16.4	X	257.88121	19.61076	88.12386	22.93680	0.0304239	0.23146684	2.6271015	20	11 9.8	20.2
512892 2016 <i>WN</i> ₃₁	15.1	X	174.44264	268.91634	145.16624	10.11208	0.2045122	0.12596755	3.9412161	20	5 11.9	21.6
512893 2016 <i>WE</i> ₃₂	17.1	X	188.95163	94.69224	17.96861	14.94797	0.2121139	0.17829658	3.1263724	20	8 3.2	22.6
512894 2016 <i>WV</i> ₃₃	16.2	X	274.79270	134.01948	246.49600	9.69324	0.0125886	0.18330074	3.0692098	20	7 24.4	20.6
512895 2016 <i>WJ</i> ₃₆	16.2	X	278.28849	79.86015	302.75577	3.22866	0.0804581	0.18830254	3.0146155	20	7 25.0	20.2
512896 2016 <i>WM</i> ₃₇	16.8	X	359.75027	265.53643	54.98196	10.72423	0.1379933	0.21125241	2.7921255	20	9 18.2	20.1
512897 2016 <i>WU</i> ₃₈	16.3	X	32.02834	36.48942	239.95769	1.13100	0.0921564	0.19537972	2.9413704	20	8 26.9	20.1
512898 2016 <i>WF</i> ₄₂	15.8	X	222.88270	169.72580	268.00246	8.55514	0.0727446	0.18416845	3.0595618	20	7 25.9	20.4
512899 2016 <i>WN</i> ₄₄	16.8	X	53.00595	17.06886	291.26995	4.70927	0.1076097	0.24229207	2.5482571	20	11 15.6	20.3
512900 2016 <i>WX</i> ₄₇	15.8	X	234.03183	113.43825	257.97842	10.84361	0.1090442	0.15048954	3.5005142	20	5 13.7	21.1
512901 2016 <i>WZ</i> ₄₇	17.4	X	336.05424	46.51363	316.04158	2.79245	0.3149754	0.23680265	2.5874880	20	10 8.8	18.5
512902 2016 <i>WG</i> ₄₈	16.6	X	219.08570	59.45006	28.29413	5.41156	0.1635156	0.18581810	3.0414269	20	7 29.7	21.5
512903 2016 <i>WZ</i> ₄₈	15.8	X	54.80646	3.08548	232.11232	13.25199	0.0194987	0.17752098	3.1354720	20	7 20.5	20.4
512904 2016 <i>WN</i> ₄₉	16.0	X	190.49585	49.02846	70.06122	11.90200	0.0759604	0.18623037	3.0369365	20	8 17.1	20.8
512905 2016 <i>WQ</i> ₄₉	16.7	X	38.09408	239.87866	65.18536	15.54412	0.1254009	0.23335229	2.6129314	20	10 20.1	20.2
512906 2016 <i>WW</i> ₄₉	16.4	X	215.60848	359.58560	58.28373	11.18045	0.0719317	0.17298616	3.1900327	20	6 23.5	21.2
512907 2016 <i>WX</i> ₅₀	17.8	X	30.75761	77.58514	270.25525	6.18282	0.1362650	0.25707696	2.4495931	20	12 17.9	20.7
512908 2016 <i>WL</i> ₅₂	16.5	X	308.90365	2.40452	61.45723	14.78449	0.0461820	0.23607945	2.5927696	20	11 14.4	19.7
512909 2016 <i>WA</i> ₅₄	18.3	X	3.54749	161.63958	260.03199	1.33508	0.1890911	0.28076841	2.3097797	20	—	—
512910 2016 <i>XB</i> ₄	15.9	X	261.26591	311.59201	85.18536	12.40941	0.1327154	0.18134914	3.0911901	20	7 13.5	20.3
512911 2016 <i>XE</i> ₄	16.4	X	14.15396	294.90582	58.26102	3.99734	0.0711769	0.23894606	2.5719912	20	11 17.3	19.3
512912 2016 <i>XL</i> ₄	15.7	X	245.92851	324.84009	69.43033	11.71781	0.1366840	0.17234959	3.1978829	20	6 20.9	20.5
512913 2016 <i>XT</i> ₄	16.1	X	196.73809	5.82335	89.05630	11.38726	0.1129853	0.17075772	3.2177266	20	7 17.9	21.2
512914 2016 <i>XF</i> ₅	15.7	X	150.31926	26.14333	42.72081	1.43866	0.2407743	0.12350439	3.9934458	20	5 8.5	22.3
512915 2016 <i>XP</i> ₅	16.0	X	285.55661	61.91583	294.37930	2.19706	0.0263347	0.17477542	3.1682235	20	7 7.6	20.4
512916 2016 <i>XR</i> ₅	15.8	X	168.08086	251.31868	248.65713	15.38117	0.1836551	0.18129786	3.0917730	20	8 7.4	21.3
512917 2016 <i>XY</i> ₅	15.8	X	57.00937	47.53886	247.55603	24.56955	0.1927622	0.24037558	2.5617838	20	11 15.2	19.6
512918 2016 <i>XA</i> ₆	15.9	X	250.98363	127.83804	269.16650	8.80645	0.0614577	0.17896455	3.1185882	20	7 9.8	20.5
512919 2016 <i>XN</i> ₇	16.5	X	245.68644	51.23067	29.93903	9.50089	0.1108413	0.20581893	2.8410520	20	8 29.9	20.6
512920 2016 <i>XB</i> ₉	16.0	X	278.59737	301.87790	63.19046	6.03711	0.1530134	0.17742089	3.1366511	20	6 20.8	20.3
512921 2016 <i>XJ</i> ₁₀	15.9	X	278.20869	113.50171	254.81113	13.37963	0.1432573	0.17595204	3.1540835	20	6 25.3	20.3
512922 2016 <i>XQ</i> ₁₁	15.5	X	172.60257	226.49514	259.42141	14.51165	0.0481745	0.16861794	3.2448917	20	7 27.2	20.5
512923 2016 <i>XA</i> ₁₄	15.5	X	63.03977	150.10910	91.28186	28.38025	0.0841383	0.17723297	3.1388679	20	8 30.4	20.4
512924 2016 <i>XF</i> ₁₄	16.2	X	186.44943	30.90746	105.01003	16.37314	0.0213651	0.18956819	3.0011826	20	9 7.2	20.7
512925 2016 <i>XW</i> ₁₉	15.0	X	6.73768	21.28195	292.82591	20.25639	0.0137984	0.17022594	3.2244246	20	8 21.4	19.8
512926 2016 <i>XA</i> ₂₀	15.9	X	38.88755	338.64038	291.25558	13.03107	0.1370692	0.19586516	2.9365085	20	8 29.2	19.8
512927 2016 <i>XR</i> ₂₀	16.5	X	34.72272	6.65004	280.66140	4.66059	0.0383503	0.20003400	2.8955662	20	9 5.9	20.5
512928 2016 <i>XC</i> ₂₃	16.4	X	302.55203	74.52765	297.14570	13.64888	0.1661026	0.20308020	2.8665377	20	8 2.4	19.7
512929 2016 <i>WF</i> ₂₃	16.4	X	249.43987	231.73399	159.36621	6.58917	0.1649205	0.17087857	3.2162094	20	6 18.2	21.4
512930 2017 <i>AA</i> ₄	16.3	X	311.84253	280.40530	93.35183	15.15195	0.2157342	0.22925764	2.6439516	20	8 28.7	19.1
512931 2017 <i>AR</i> ₆	15.7	X	318.74343	260.40855	98.26862	7.01957	0.0338803	0.16836295	3.2481671	20	8 25.0	20.1
512932 2017 <i>AW</i> ₈	15.6	X	265.17621	65.00144	331.69949	20.44670	0.0297648	0.16812193	3.2512708	20	8 5.4	20.3
512933 2017 <i>AD</i> ₁₃	12.9	X	175.98507	269.23448	123.48264	28.14843	0.0318790	0.08278773	5.2138525	20	4 26.0	20.3
512934 2017 <i>AG</i> ₁₉	15.4	X	224.66726	232.86265	134.90498	29.10977	0.2638914	0.15807347	3.3876358	20	5 1.0	21.7
512935 2017 <i>BX</i> ₃	18.4	X	55.45746	139.23591	285.56852	2.11219	0.0871928	0.30024162	2.2087952	20	—	—
512936 2017 <i>BE</i> ₆	13.3	X	324.68408	187.65772	78.56627	29.78289	0.0501088	0.08566589	5.0964070	20	5 14.2	20.1
512937 2017 <i>BA</i> ₁₁	16.1	X	280.63258	84.64834	325.46675	9.96354	0.1099823	0.17601060	3.1533838	20	8 26.6	20.4
512938 2017 <i>BT</i> ₁₂	13.6	X	250.26400	21.68523	295.92877	20.49132	0.0841137	0.08363597	5.1785396	20	3 24.5	20.9
512939 2017 <i>BM</i> ₁₆	13.4	X	114.75047	158.36799	311.81051	20.18950	0.0314298	0.08311746	5.2000542	20	4 28.8	20.7
512940 2017 <i>BC</i> ₄₅	15.5	X	221.82163	310.95064	155.92162	5.32797	0.1293086	0.17180263	3.2046665	20	8 25.1	20.4
512941 2017 <i>BB</i> ₅₉	17.9	X	23.80797	237.01068	224.55704	4.71808	0.0732320	0.30044251	2.2078105	20	—	—
512942 2017 <i>BC</i> ₆₈	18.4	X	60.55014	193.74694	245.89196	4.54296	0.0776018	0.30719160	2.1753534	20	—	—
512943 2017 <i>BQ</i> ₈₈	16.0	X	123.51557	256.90466	331.56901	9.44214	0.0320072	0.18792884	3.0186106	20	10 8.2	20.4
512944 2017 <i>BE</i> ₉₃	13.3	X	269.13647	200.12327	128.92701	30.37822	0.0726221	0.08105621	5.2878428	20	5 18.8	20.7
512945 2017 <i>BF</i> ₉₃	13.1	X	290.81336	189.10242	120.12118	31.05471	0.1160443	0.08177035	5.2570102	20	5 16.9	20.3
512946 2017 <i>CK</i>	13.5	X	7.32610	138.07273	82.24294	28.32878	0.0320727	0.08206781	5.2442996	20	5 14.9	20.5
512947 2017 <i>CZ</i>	13.7	X	317.73658	199.37243	78.94833	30.54694	0.0417710	0.08406641	5.1608477	20	5 18.9	20.6
512948 2017 <i>CD</i> ₃₂	15.8	X	269.65982	246.86058	109.03510	32.94904	0.1098894	0.16974288	3.2305391	20	6 11.5	20.7
512949 2017 <i>DU</i> ₁	17.2	X	325.95203	289.47188	143.56989	4.74064	0.1629076	0.22570083	2.6716564	20	12 21.9	19.8
512950 2017 <i>EL</i> ₅	13.0	X	346.18516	169.67566	94.27741	29.25451	0.0470122	0.08156035	5.2660300	20	6 3.9	19.8
512951 2017 <i>FH</i> ₅₄	15.4	X	147.64277	295.92157	312.69846	13.70804	0.1440710	0.17318559	3.1875833	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>
512961 2017 SB ₂₉	16.7	X	244.18929	260.32236	106.73680	7.31026	0.0559167	0.21332439	2.7740165	20	5 27.1	20.6
512962 2017 SW ₃₃	17.3	X	198.14917	158.41660	277.46267	4.56600	0.0746286	0.24993602	2.4960320	20	6 29.6	20.9
512963 2017 SQ ₃₅	17.8	X	281.84938	264.39844	76.39656	7.35110	0.1634569	0.26028082	2.4294498	20	5 23.3	20.7
512964 2017 SV ₃₆	16.8	X	242.83214	43.42226	309.05874	14.67245	0.1568124	0.23515796	2.5995385	20	4 15.9	21.2
512965 2017 SB ₃₇	16.2	X	137.28399	122.98246	292.45313	11.60013	0.1230592	0.17855402	3.1233666	20	3 26.8	21.2
512966 2017 SX ₃₉	16.9	X	231.40110	159.04624	195.91236	12.23996	0.2164807	0.23391560	2.6087347	20	4 11.9	21.0
512967 2017 SX ₄₂	16.6	X	186.32377	284.11688	103.69316	11.76291	0.1821883	0.18686090	3.0301009	20	4 21.6	21.9
512968 2017 TO ₇	16.7	X	248.72243	298.73134	30.56469	12.10535	0.3157822	0.22997171	2.6384758	20	3 23.2	21.4
512969 2017 TR ₇	16.9	X	229.03683	304.52952	47.61511	4.08507	0.3131052	0.22491959	2.6778394	20	4 2.9	21.7
512970 2017 TU ₇	18.1	X	289.38154	160.24116	189.63294	6.96087	0.2586450	0.28710222	2.2756825	20	5 31.5	20.7
512971 2017 TG ₈	17.4	X	241.93199	221.82718	194.36424	24.36705	0.2229877	0.27434085	2.3457176	20	7 5.5	21.5
512972 2017 TM ₁₀	17.3	X	222.78992	57.21087	329.33230	6.73033	0.1943446	0.23416777	2.6068616	20	5 12.1	21.6
512973 2017 TY ₁₁	16.4	X	277.64022	302.14597	4.36437	12.06227	0.2730208	0.23909994	2.5708875	20	3 19.9	20.4
512974 2017 TU ₁₁	18.2	X	310.16868	8.53030	1.24808	4.26667	0.2033052	0.31534635	2.1376873	20	9 2.3	19.1
512975 2017 TA ₁₄	16.2	X	199.92873	45.43641	300.59813	9.41025	0.2241958	0.178886043	3.1197984	20	3 6.0	21.7
512976 2017 UQ ₈	18.1	X	284.33968	76.50726	213.87125	6.26608	0.1770665	0.29690752	2.2253001	20	8 9.2	19.8
512977 2017 UY ₈	17.1	X	244.42703	315.88479	33.38374	10.95856	0.3096879	0.22662400	2.6643961	20	3 30.3	21.8
512978 2017 UA ₉	17.3	X	212.97799	57.23079	341.65260	4.72752	0.1741881	0.24198426	2.5504177	20	5 20.7	21.5
512979 2017 UA ₁₀	17.7	X	310.50432	13.13896	323.59764	7.36565	0.2614774	0.29341491	2.2429242	20	6 16.9	19.6
512980 2017 UC ₁₂	17.6	X	263.46066	197.74637	166.11849	1.41026	0.1924816	0.25725451	2.4484658	20	5 26.9	21.0
512981 2017 UD ₁₂	17.1	X	253.46113	156.31733	196.79694	4.34122	0.2332006	0.24109356	2.5566953	20	4 27.9	21.1
512982 2017 UG ₁₄	16.5	X	199.80807	3.68203	337.20333	6.20046	0.1368939	0.18567767	3.0429601	20	3 3.6	21.3
512983 2017 UV ₁₄	17.0	X	219.80521	206.89262	155.59497	8.86504	0.2189274	0.21416838	2.7667239	20	4 14.2	21.7
512984 2017 UM ₁₅	16.5	X	135.91725	257.30736	178.05618	11.49282	0.2073181	0.19018717	2.9946672	20	5 3.4	21.5
512985 2017 UT ₂₇	16.7	X	143.29848	231.78674	185.36629	12.23500	0.1638773	0.18095777	3.0956456	20	4 14.5	21.6
512986 2017 UY ₂₈	16.7	X	150.63760	216.80067	186.40828	8.06813	0.1918472	0.18065933	3.0990538	20	4 5.6	21.7
512987 2017 UG ₃₄	18.3	X	225.19679	42.28857	42.30080	4.87747	0.1849409	0.27928169	2.3179696	20	8 4.9	21.7
512988 2017 UZ ₃₄	16.9	X	265.59589	323.99058	9.95895	13.32625	0.1861435	0.23625058	2.5915174	20	4 17.8	20.8
512989 2017 UG ₃₅	16.3	X	140.07702	109.37013	327.49748	7.81223	0.1143857	0.18506919	3.0496264	20	4 26.4	21.1
512990 2017 UB ₃₆	18.0	X	255.38572	39.82281	4.29917	9.62433	0.2074486	0.27893245	2.3199041	20	7 12.2	21.2
512991 2017 UK ₃₆	15.9	X	156.33653	358.49413	68.62259	11.89844	0.2163059	0.17637254	3.1490682	20	5 11.0	21.2
512992 2017 UJ ₃₇	18.0	X	286.84805	315.90620	44.78813	3.62795	0.1903614	0.27801256	2.3250186	20	6 23.9	20.5
512993 2017 UV ₃₇	16.5	X	178.13288	185.77108	220.88371	7.95083	0.0994376	0.18377745	3.0638999	20	4 30.7	21.3
512994 2017 UY ₃₇	17.3	X	247.87296	347.48763	53.47502	12.34652	0.1824703	0.25633623	2.4543099	20	6 28.8	21.0
512995 2017 UB ₃₈	16.7	X	193.43415	208.25357	216.97653	5.03480	0.1204808	0.22858017	2.6491732	20	6 8.2	20.9
512996 2017 UG ₃₉	18.0	X	233.73118	274.32524	143.58660	3.08035	0.2128800	0.25917386	2.4363625	20	7 2.9	21.6
512997 2017 UL ₄₀	16.5	X	264.96374	29.00555	269.74322	12.04008	0.1054546	0.19115068	2.9845956	20	3 12.9	21.1
512998 2017 UZ ₄₁	16.3	X	204.63728	112.70749	295.39929	13.23269	0.1162288	0.22322370	2.6913851	20	5 27.3	20.7
512999 2017 UF ₄₂	16.1	X	285.83965	89.35704	228.88553	9.96479	0.2025875	0.22993332	2.6387694	20	4 20.8	19.9
513000 2017 UK ₄₂	16.6	X	201.32080	333.82939	49.99423	8.90656	0.0686754	0.18726656	3.0257234	20	4 27.9	21.2
513001 2017 UT ₄₂	16.9	X	173.65452	178.41862	233.71549	3.32799	0.1472700	0.18457772	3.0550374	20	5 3.7	21.8
513002 2017 UV ₄₄	16.7	X	274.27821	212.81133	128.46883	14.08525	0.3143715	0.24463450	2.5319643	20	4 29.5	20.9
513003 2017 UL ₄₅	18.3	X	231.47915	47.10126	23.66660	6.27836	0.1872407	0.26057879	2.4275975	20	7 22.5	21.9
513004 2017 UM ₄₅	16.9	X	244.60454	291.10638	68.13770	5.76834	0.3228909	0.23618618	2.5919884	20	4 21.9	21.4
513005 2017 UN ₄₅	17.1	X	242.36143	188.21394	185.91316	5.86221	0.2973594	0.24094438	2.5577505	20	5 9.6	21.5
513006 2017 UB ₄₆	18.5	X	204.93648	325.68862	154.79343	5.29190	0.0918548	0.29087484	2.2559629	20	9 10.0	21.3
513007 2017 UK ₄₆	17.9	X	279.98723	208.29321	123.28639	5.28148	0.2125080	0.24507966	2.5288974	20	5 2.6	21.4
513008 2017 UO ₄₆	17.2	X	68.00242	141.06336	84.60086	7.75015	0.0717264	0.26853886	2.3793845	20	8 17.9	20.2
513009 2017 UP ₄₆	16.7	X	170.22896	223.96358	190.18980	10.45691	0.1133419	0.19073154	2.9889664	20	5 3.7	21.4
513010 2017 UR ₄₆	17.3	X	191.23386	289.55271	131.28577	5.74662	0.0557081	0.22073433	2.7115823	20	6 2.6	21.2
513011 2017 UO ₄₇	17.5	X	281.14937	237.80755	107.51838	7.53397	0.2678523	0.26248631	2.4158221	20	5 14.3	20.8
513012 2017 UV ₄₇	16.7	X	298.66090	220.53629	70.96235	18.67969	0.1478231	0.21556857	2.7547303	20	4 21.4	20.6
513013 2017 UZ ₄₇	16.2	X	249.09203	231.47968	100.10951	10.42319	0.1046421	0.19106459	2.9854920	20	4 23.2	20.6
513014 2017 UJ ₄₈	17.6	X	176.26801	26.51033	94.90332	12.00624	0.1665405	0.25054111	2.4920116	20	8 4.2	21.7
513015 2017 UL ₄₈	16.5	X	251.81332	174.59341	139.21962	12.12345	0.0635566	0.17770453	3.1333125	20	4 1.8	21.2
513016 2017 UX ₄₈	17.2	X	177.60238	350.13184	107.44947	8.72148	0.1408046	0.22896571	2.6461985	20	7 3.3	21.3
513017 2017 UL ₄₉	16.8	X	184.97405	238.00606	201.39568	21.40260	0.0681508	0.22308252	2.6925205	20	6 17.1	21.2
513018 2017 UY ₄₉	16.4	X	163.39141	270.70315	138.33715	11.14042	0.1052221	0.17333279	3.1857784	20	4 23.7	21.5
513019 2017 UX ₅₀	16.0	X	100.46859	75.76068	25.91689	10.30721	0.0708312	0.15702339	3.4027222	20	4 12.6	20.7
513020 2017 UY ₅₀	17.1	X	65.67309	341.17065	266.77833	4.31149	0.1152290	0.29016937	2.2596179	20	9 19.6	19.9
513021 2017 VS	16.7	X	196.97838	0.01388	38.70798	18.47853	0.3520285	0.20415242	2.8564921	20	5 3.9	22.1
513022 2017 VD ₁	18.1	X	359.23986	328.42619	2.08980	6.19561	0.2286220	0.32233380	2.1066812	20	11 5.5	19.8
513023 2017 VT ₂	17.0	X	274.47529	232.05273	84.21313	12.64546	0.1944826	0.23337410	2.6127686	20	4 13.5	21.0
513024 2017 VF ₃	17.1	X	233.76096	326.41087	59.02873	13.22836	0.2048300	0.23643643	2.5901592	20	5 22.2	21.0
513025 2017 VN ₃	15.2	X	230.63992	60.33262	254.72491	24.82853	0.1659101	0.17255615	3.1953303	20	2 18.3	20.9
513026 2017 VP ₃	15.5	X	208.29640	58.77443	294.43626	13.50878	0.0791383	0.17231353	3.1983290	20	3 21.3	20.7
513027 2017 VS ₃	16.3	X	192.28056	49.00991	339.62730	11.05032	0.1089802	0.18972597	2.9995184	20	4 17.9	21.2
513028 2017 VV ₃	16.0	X	185.08519	80.70520	306.44563	8.70673	0.1238346	0.18117540	3.0931661	20	4 9.9	21.2
513029 2017 WV ₃	15.9	X	194.05090	98.56872	273.04289	11.12728	0.1117700	0.17638617	3.1489060	20	3 30.1	21.1
513030 2017 VZ ₃	15.8	X	313.20432	335.25757	297.42468	8.86438	0.0615287	0.19391008	2.9562135	20	4 18.0	20.0
513031 2017 VM ₄	16.3	X	180.08551	59.25441	327.49935	13.52062	0.2272180	0.17840796	3.1250711	20	4 4.6	21.9
513032 2017 VT ₄	16.6	X	243.89151	290.67734	71.01219	7.21342	0.1935485	0.22690355	2.6622072	20	5 4.7	20.7
513033 2017 VV ₄	17.0	X	247.94276	270.51869	73.94768	13.82504	0.3190514	0.22923				

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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>
513041 2017 VT ₅	15.7 ^m	X	77.47033	0.39048	185.19023	25.26326	0.0558651	0.21794459	2.7346725	20	6 25.5	20.0
513042 2017 VA ₆	16.8	X	170.72451	51.40889	46.65980	12.25756	0.1650125	0.22279569	2.6948310	20	6 26.9	21.4
513043 2017 VG ₆	18.7	X	264.38459	18.54047	30.79019	3.30535	0.1980629	0.28416269	2.2913495	20	8 1.8	21.3
513044 2017 VM ₇	16.5	X	272.63292	282.29515	8.19606	9.08631	0.0770219	0.18086638	3.0966882	20	3 23.1	20.8
513045 2017 VN ₇	17.2	X	221.21376	115.24570	269.07599	5.23552	0.0298592	0.21852386	2.7298375	20	5 21.9	20.9
513046 2017 VR ₇	16.6	X	225.33758	62.39559	266.64392	3.22855	0.1308997	0.17792936	3.1306725	20	3 12.4	21.5
513047 2017 VV ₇	16.5	X	153.37177	183.80497	238.45311	5.07665	0.0772170	0.18241923	3.0790894	20	4 22.4	21.0
513048 2017 VN ₉	17.0	X	198.50776	154.70771	269.67629	13.66275	0.0921531	0.23246327	2.6195890	20	6 13.5	20.8
513049 2017 VA ₁₀	16.6	X	159.96676	70.23915	347.69610	15.45824	0.2353448	0.17953258	3.1120668	20	4 25.6	22.2
513050 2017 VE ₁₀	16.3	X	233.49003	34.26499	292.36455	16.23672	0.1190101	0.18105083	3.0945846	20	3 10.8	21.5
513051 2017 VL ₁₀	16.4	X	258.19218	77.85728	279.01949	20.84920	0.0280504	0.22982174	2.6396235	20	6 3.5	20.1
513052 2017 VM ₁₀	15.4	X	143.31620	67.50692	11.81838	26.31712	0.1813369	0.17830559	3.1262671	20	5 1.1	20.8
513053 2017 VS ₁₀	17.8	X	255.80729	288.79548	100.78255	10.63750	0.222440	0.26177106	2.4202207	20	6 18.1	21.3
513054 2017 VE ₁₂	17.8	X	260.64335	337.07459	63.31916	6.25534	0.2220479	0.27354788	2.3502487	20	7 9.4	21.0
513055 2017 VO ₁₂	17.4	X	213.51001	222.49980	258.20156	22.02303	0.2671805	0.28711143	2.2756339	20	8 19.9	21.6
513056 2017 VK ₁₄	17.0	X	236.20146	78.90924	60.48432	22.31022	0.2709641	0.28354733	2.2946635	20	10 26.7	20.3
513057 2017 WJ ₁₂	18.2	X	67.08433	105.51345	215.51752	20.36967	0.0817207	0.36833897	1.9273959	20	—	—
513058 2017 WF ₁₄	16.9	X	183.20597	274.22158	196.43643	27.62426	0.3486690	0.23040731	2.6351492	20	7 16.5	22.5
513059 2017 WW ₁₆	17.6	X	248.56988	300.53667	70.21094	8.73053	0.2030985	0.24002352	2.5642883	20	5 18.9	21.6
513060 2017 WQ ₁₇	17.5	X	238.69019	9.95589	50.50760	2.14082	0.1702767	0.25680557	2.4513185	20	7 16.9	21.0
513061 2017 WR ₁₇	18.0	X	234.27039	190.93318	258.41743	1.88981	0.1936192	0.27511187	2.3413329	20	8 17.4	21.4
513062 2017 WS ₁₇	18.3	X	324.91665	133.55399	239.44524	1.00663	0.1730783	0.31531896	2.1378111	20	10 19.9	19.2
513063 2017 WU ₁₇	16.4	X	278.66151	357.37493	328.22843	1.91131	0.0651407	0.21696095	2.7429317	20	5 12.9	20.0
513064 2017 WG ₁₈	17.1	X	218.73358	355.92504	35.88544	7.00711	0.0572432	0.21788935	2.7351347	20	5 25.9	21.0
513065 2017 WH ₁₈	18.0	X	99.24537	340.42911	252.38671	4.66831	0.1085003	0.30440470	2.1886105	20	10 11.7	21.0
513066 2017 WU ₁₈	16.5	X	190.43136	343.96135	38.89428	13.24308	0.0904898	0.17838590	3.1253287	20	4 16.3	21.3
513067 2017 WN ₁₉	16.1	X	21.49736	89.41203	98.73143	10.06370	0.0196070	0.17462246	3.1700734	20	4 16.2	20.6
513068 2017 WO ₁₉	16.5	X	197.36831	307.91775	80.62259	12.75654	0.0349353	0.19423763	2.9528891	20	5 3.4	20.9
513069 2017 WW ₁₉	15.8	X	200.00137	260.22250	101.94449	26.59483	0.2784649	0.18214148	3.0822189	20	4 9.4	21.8
513070 2017 WH ₂₀	16.9	X	250.81916	299.02708	61.47237	16.15728	0.1735632	0.23573443	2.5952988	20	5 12.1	20.7
513071 2017 WL ₂₀	16.7	X	225.42407	298.99806	85.55703	7.84147	0.1860947	0.22729967	2.6591133	20	5 16.5	21.0
513072 2017 WM ₂₀	16.9	X	257.67160	328.68318	67.82852	5.85187	0.0700221	0.25583661	2.4575041	20	7 23.4	20.0
513073 2017 WQ ₂₀	18.1	X	216.46086	193.16979	252.24746	1.49242	0.1348712	0.25395470	2.4696300	20	7 28.5	21.8
513074 2017 WX ₂₀	17.2	X	148.04156	75.17166	9.64207	0.80659	0.1631102	0.19030538	2.9934270	20	5 20.4	22.1
513075 2017 WA ₂₁	16.6	X	217.35976	282.98779	155.73003	13.21546	0.1364216	0.24306690	2.5428388	20	7 19.0	20.6
513076 2017 WC ₂₁	17.7	X	210.58605	85.87419	31.25711	23.48899	0.2648555	0.28012865	2.3132950	20	9 7.3	21.9
513077 2017 WE ₂₁	17.0	X	248.00515	326.39935	37.32290	12.31135	0.1905621	0.23572627	2.5953587	20	5 8.7	21.1
513078 2017 WF ₂₁	16.5	X	221.19869	108.80086	280.72711	4.94030	0.0302893	0.22268285	2.6957413	20	5 28.9	20.3
513079 2017 WG ₂₁	16.0	X	199.98238	328.16595	23.05160	10.19285	0.2207332	0.17693346	3.1424091	20	3 18.6	21.4
513080 2017 WJ ₂₁	17.1	X	268.27993	93.48127	227.52020	15.94968	0.3952114	0.23794624	2.5791909	20	3 12.4	21.9
513081 2017 WK ₂₁	16.2	X	141.06918	5.29176	68.23060	11.09074	0.1136277	0.17025289	3.2240843	20	4 30.0	21.2
513082 2017 WL ₂₁	16.5	X	197.99783	7.51647	64.11350	15.42142	0.1488513	0.22838009	2.6507202	20	6 18.5	20.8
513083 2017 WM ₂₁	16.9	X	190.55793	346.76510	98.91937	3.72694	0.1762671	0.22992965	2.6387975	20	6 29.7	21.3
513084 2017 WP ₂₁	16.3	X	267.66236	281.99177	61.83185	11.09717	0.0539163	0.22045385	2.7138818	20	5 24.9	19.9
513085 2017 WR ₂₁	16.8	X	251.95543	288.84651	63.59839	6.56084	0.2279942	0.22883548	2.6472024	20	4 27.5	21.0
513086 2017 WS ₂₁	17.1	X	245.50527	297.36078	70.47247	3.95387	0.2592596	0.23573489	2.5952954	20	5 7.0	21.3
513087 2017 WV ₂₁	17.7	X	244.47047	145.04141	259.58639	5.52173	0.1233813	0.25598125	2.4565783	20	7 7.3	21.1
513088 2017 WY ₂₁	17.9	X	326.74415	147.64487	179.83449	5.69148	0.1906533	0.28054200	2.3110222	20	7 21.2	19.5
513089 2017 WZ ₂₁	16.4	X	153.97802	257.92091	232.07429	22.70720	0.2087836	0.21748047	2.7385618	20	7 16.1	21.5
513090 2017 WC ₂₂	17.4	X	268.62262	287.96724	85.23935	6.67242	0.2027913	0.25528125	2.4610670	20	6 13.3	20.6
513091 2017 WD ₂₂	17.2	X	248.55993	250.98539	141.28828	1.64445	0.1075889	0.24300252	2.5432879	20	6 27.5	20.7
513092 2017 WG ₂₂	17.9	X	219.62442	219.28334	225.35456	2.09538	0.1485087	0.25625465	2.4548307	20	7 29.4	21.6
513093 2017 WL ₂₂	15.3	X	153.53821	173.42075	243.38676	13.94178	0.0831250	0.16072789	3.3502346	20	4 15.3	20.5
513094 2017 WQ ₂₂	17.5	X	302.80035	308.44298	75.51771	11.61250	0.0605307	0.29037361	2.2585582	20	9 26.4	20.1
513095 2017 WV ₂₂	17.4	X	213.64979	347.61690	71.43469	8.23042	0.1989061	0.22796905	2.6539055	20	6 15.6	21.7
513096 2017 WF ₂₃	16.2	X	235.80214	230.84856	105.38385	12.03922	0.0523778	0.18305834	3.0719186	20	4 13.9	20.9
513097 2017 WM ₂₃	16.5	X	38.27913	63.93328	126.72996	11.42366	0.0524683	0.18821832	3.0155148	20	5 12.9	20.7
513098 2017 WQ ₂₃	16.4	X	153.52565	261.46455	166.18491	14.49447	0.0611767	0.17835964	3.1256355	20	5 2.7	21.2
513099 2017 WT ₂₃	17.0	X	248.42656	152.28357	199.08187	13.63621	0.2259404	0.22011134	2.7166963	20	4 22.8	21.3
513100 2017 WV ₂₃	15.8	X	99.13092	40.22040	85.12059	17.21504	0.0642965	0.17852935	3.1236543	20	5 13.1	20.4
513101 2017 WY ₂₃	15.4	X	194.07810	318.04663	63.21653	8.29587	0.1107426	0.17644898	3.1481587	20	4 18.6	20.4
513102 2017 WF ₂₄	17.9	X	231.28315	149.23145	272.56189	5.63324	0.1748218	0.26018774	2.4300292	20	7 9.4	21.6
513103 2017 WK ₂₄	18.0	X	288.68304	311.92341	75.22742	7.71805	0.1134045	0.28296572	2.2978067	20	8 25.8	20.5
513104 2017 WO ₂₄	18.0	X	306.10490	125.71373	244.78871	2.28216	0.1909697	0.29263674	2.2468987	20	8 17.6	19.7
513105 2017 WS ₂₄	16.5	X	228.16195	98.49885	235.27965	11.09601	0.2978328	0.18542812	3.0456897	20	3 9.3	22.2
513106 2017 WZ ₂₄	16.9	X	313.67365	329.72250	333.93676	5.90470	0.1202500	0.25249690	2.4791265	20	5 24.1	19.7
513107 2017 WO ₂₅	17.2	X	221.32963	272.49980	156.94375	12.31057	0.2562850					

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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>
513121 2017 <i>WR</i> ₂₇	17.3	X	237.86607	225.25834	162.26597	4.21337	0.3012128	0.23494177	2.6011330	20	5 22.1	21.7
513122 2017 <i>WU</i> ₂₇	18.3	X	276.51533	77.18406	302.73395	1.70024	0.2301798	0.27403729	2.3474496	20	6 29.7	21.2
513123 1996 <i>CG</i> ₆	16.8	X	206.88620	268.67739	145.57260	16.83915	0.2927626	0.17892234	3.1190787	20	6 3.3	22.6
513124 1996 <i>JJ</i> ₃	17.3	X	152.26965	121.64312	91.34761	4.56301	0.1288624	0.22158553	2.7046337	20	11 1.7	21.5
513125 1997 <i>GC</i> ₃₂	18.4	X	328.46258	150.13411	177.22794	5.92009	0.6534145	0.34040799	2.0314348	20	4 9.9*	20.4
513126 1998 <i>QP</i>	21.2	X	24.99352	78.42387	326.46380	9.35298	0.5822799	0.41303866	1.7857017	20	—	—
513127 1998 <i>VR</i> ₂	17.4	X	314.85486	327.77347	46.08124	5.31807	0.2454411	0.26578377	2.3957992	20	9 6.9	19.0
513128 1999 <i>UJ</i> ₃₂	17.0	X	284.38651	7.58968	43.32908	5.26092	0.1408233	0.23087695	2.6315745	20	9 8.9	20.1
513129 1999 <i>UD</i> ₄₁	17.3	X	263.32917	7.93583	25.24070	17.89251	0.2293415	0.22707812	2.6608427	20	6 29.6	21.5
513130 2000 <i>BH</i> ₃₃	17.9	X	238.59053	29.31553	135.17173	3.17431	0.1281129	0.27805794	2.3247656	20	12 16.2	20.6
513131 2000 <i>SJ</i> ₁₁	17.7	X	38.14446	239.57284	183.66920	22.21120	0.1022890	0.36365405	1.9439142	20	—	—
513132 2000 <i>SH</i> ₁₃₆	18.1	X	3.45675	42.23376	324.43274	3.66501	0.3191510	0.30103951	2.2048906	20	—	—
513133 2000 <i>SV</i> ₂₄₈	16.6	X	229.65869	207.43516	171.26788	14.42347	0.2754410	0.18324101	3.0698767	20	5 9.5	22.1
513134 2000 <i>TF</i> ₁	16.6	X	222.31065	32.06396	24.65887	33.48051	0.2318558	0.23402693	2.6079073	20	6 9.4	21.6
513135 2001 <i>BF</i> ₂₁	16.8	X	285.82587	70.05533	308.72880	27.92805	0.3723781	0.23562374	2.5961116	20	6 21.1	20.7
513136 2001 <i>FA</i> ₆₅	17.3	X	183.60636	328.45156	165.87989	13.77540	0.2680483	0.22765905	2.6563142	20	8 19.3	22.0
513137 2001 <i>RF</i> ₄₂	16.9	X	88.13066	290.71209	334.89042	26.05979	0.3034787	0.21713026	2.7415056	20	11 3.5	22.2
513138 2002 <i>CY</i> ₅₈	20.9	X	241.22238	39.98829	341.57757	8.28799	0.3843964	0.61712236	1.3663287	20	4 29.8	22.7
513139 2002 <i>CM</i> ₂₇₄	17.2	X	145.92025	196.67444	338.69670	7.63599	0.1998204	0.18751216	3.0230808	20	9 6.8	22.4
513140 2002 <i>EQ</i> ₄	16.4	X	66.91988	228.31013	349.78320	15.73103	0.1588658	0.17833305	3.3259461	20	8 12.9	20.9
513141 2002 <i>EH</i> ₁₃	17.0	X	131.98228	233.22493	354.77672	29.53920	0.2151009	0.24283915	2.5444284	20	10 20.2	21.8
513142 2002 <i>PM</i> ₁₆₉	17.1	X	124.77052	109.96928	140.77602	12.10959	0.2463717	0.23320731	2.6140142	20	11 27.0	21.9
513143 2002 <i>RM</i> ₁₇₉	17.3	X	285.32042	194.41751	188.45881	4.27628	0.0804867	0.21358690	2.7717431	20	8 5.2	20.9
513144 2002 <i>TU</i> ₃₃₇	17.1	X	25.91023	272.37824	33.71548	13.12731	0.1700862	0.21969421	2.7201341	20	10 14.9	20.3
513145 2002 <i>XY</i> ₆₉	17.7	X	219.89795	102.38849	8.62380	22.04026	0.3684367	0.26198683	2.4188916	20	8 25.2	22.3
513146 2003 <i>BZ</i> ₇₀	18.0	X	251.24664	325.11033	136.76767	5.88153	0.2209500	0.26343824	2.4099988	20	9 22.2	21.0
513147 2003 <i>EL</i> ₁₆	17.8	X	228.60995	241.95241	6.50970	33.32606	0.1227542	0.39021228	1.8546790	20	—	—
513148 2003 <i>RW</i> ₃₇	17.0	X	150.83370	186.27401	22.37507	25.71348	0.2923563	0.19964255	2.8993500	20	10 19.8	22.2
513149 2003 <i>KO</i> ₈	17.6	X	142.94779	93.29295	141.36702	7.98034	0.1433364	0.25372458	2.4711229	20	11 24.5	21.6
513150 2003 <i>OV</i> ₇	16.8	X	50.38307	62.64251	250.87152	4.31085	0.2463469	0.24272525	2.5452244	20	12 8.4	20.4
513151 2003 <i>QL</i> ₃₇	16.5	X	1.69896	197.78878	144.63854	20.45936	0.2677393	0.23692914	2.5865670	20	11 18.1	19.6
513152 2003 <i>QA</i> ₁₀₄	16.7	X	304.07448	17.76314	19.41184	7.14069	0.2566624	0.23065000	2.6333005	20	9 7.3	19.1
513153 2003 <i>SF</i> ₄₂	17.6	X	150.31568	289.74561	12.93336	22.40190	0.1753464	0.37298606	1.9113534	20	—	—
513154 2003 <i>SQ</i> ₆₀	16.7	X	319.41185	6.07639	347.55325	13.95634	0.1708425	0.22883089	2.6472377	20	8 17.1	19.4
513155 2003 <i>SG</i> ₁₁₅	16.4	X	267.40538	302.13535	170.72559	26.70027	0.0955284	0.23919431	2.5702112	20	11 17.2	20.1
513156 2003 <i>SF</i> ₃₁₄	16.9	X	267.33212	262.76277	129.66777	6.10434	0.3721880	0.16209061	3.3314309	20	6 14.1	22.2
513157 2003 <i>SU</i> ₄₀₁	17.0	X	264.65877	286.59817	138.98879	13.07063	0.1915363	0.22459408	2.6804262	20	8 19.5	20.4
513158 2003 <i>UP</i> ₈	17.1	X	299.74226	355.91615	2.81297	14.23453	0.2690182	0.22459014	2.6804575	20	6 27.1	20.5
513159 2003 <i>UC</i> ₂₉₇	17.1	X	291.90547	297.89871	71.24867	14.05957	0.2831325	0.22425718	2.6831100	20	6 25.1	20.4
513160 2003 <i>UV</i> ₃₂₁	17.3	X	37.89961	292.38666	3.16131	3.22961	0.1080904	0.23095923	2.6309494	20	10 8.4	20.4
513161 2003 <i>WX</i> ₁₉₄	18.2	X	339.62598	213.43095	181.63380	0.99910	0.0899996	0.29244072	2.2479026	20	12 9.7	20.2
513162 2003 <i>YD</i> ₁₅	17.5	X	227.54634	12.12513	73.29590	7.48731	0.3267914	0.21745950	2.7387378	20	7 22.2	22.3
513163 2003 <i>YT</i> ₁₂₄	20.6	X	238.97988	118.36465	326.50189	5.47035	0.4769367	0.27818925	2.3240340	20	7 20.1	24.7
513164 2004 <i>BY</i> ₁₆₃	13.7	X	195.46297	329.27222	50.85531	6.90614	0.0403940	0.08127025	5.2785540	20	5 14.5	20.8
513165 2004 <i>CK</i> ₃₉	18.9	X	222.13484	268.72954	355.92032	12.24295	0.8318625	0.28399852	2.2922325	20	—	—
513166 2004 <i>DY</i> ₃₈	18.4	X	225.12619	165.28070	342.24820	7.23030	0.1668140	0.28001394	2.3139268	20	10 26.7	21.6
513167 2004 <i>RC</i> ₂₃	17.7	X	234.15055	132.57545	2.59737	24.62815	0.2382410	0.27842053	2.3227468	20	10 7.9	21.1
513168 2004 <i>EA</i> ₄₂	17.4	X	186.10209	197.95876	355.61439	23.74344	0.1751153	0.27650890	2.3334400	20	11 2.9	21.5
513169 2004 <i>EY</i> ₇₈	17.6	X	175.28333	179.66397	45.06598	3.14801	0.1540104	0.27922875	2.3182626	20	12 14.9	21.1
513170 2004 <i>KH</i> ₁₅	19.7	X	185.77379	350.08270	78.09975	35.07185	0.1701381	1.04589108	0.9611955	20	6 10.5	15.7
513171 2004 <i>MD</i> ₆	20.4	X	146.41070	231.42433	263.86963	29.32488	0.5629958	1.06303596	0.9508326	20	8 10.1	22.1
513172 2004 <i>RC</i> ₆₁	15.4	X	207.48349	33.15313	9.83623	29.66600	0.2708500	0.16553839	3.2850115	20	5 6.7	21.6
513173 2004 <i>RQ</i> ₁₁₀	17.4	X	263.07418	67.36685	338.33149	28.49686	0.3539532	0.23732210	2.5837110	20	7 8.1	21.9
513174 2004 <i>RF</i> ₂₃₉	16.5	X	144.24700	342.83367	180.98870	10.00983	0.0074704	0.17991129	3.1076381	20	8 12.5	21.0
513175 2004 <i>RW</i> ₂₄₆	15.9	X	316.83937	5.45907	335.85141	27.95356	0.1831654	0.17630916	3.1498228	20	7 24.0	20.0
513176 2004 <i>TU</i> ₂₄	16.3	X	248.15589	28.09074	7.10365	19.94439	0.1580298	0.17163243	3.2067848	20	6 22.1	21.5
513177 2004 <i>TX</i> ₁₅₉	17.5	X	282.55692	16.63676	26.87471	13.40305	0.1224747	0.23964876	2.5669610	20	9 4.1	20.7
513178 2004 <i>XU</i> ₆	17.6	X	271.80508	98.63856	297.74750	4.26540	0.3484830	0.23550458	2.5969872	20	6 27.3	21.4
513179 2004 <i>XT</i> ₁₃₀	16.7	X	250.61699	26.49036	64.42107	34.23142	0.2281275	0.23519572	2.5992603	20	9 24.4	21.2
513180 2004 <i>XU</i> ₁₄₆	16.4	X	253.98930	324.90540	117.03596	34.34386	0.2324376	0.23359884	2.6110925	20	8 25.2	20.5
513181 2005 <i>BS</i> ₂₇	20.4	X	70.93245	48.79602	324.13809	16.69960	0.3852737	0.83526050	1.1166612	20	—	—
513182 2005 <i>CV</i> ₃₈	20.2	X	288.30199	62.82886	146.43857	11.87007	0.4362079	0.37905938	1.8908825	20	—	—
513183 2005 <i>EK</i> ₁₆	17.5	X	149.75594	28.53123	156.12174	5.94502	0.0958085	0.22397416	2.6853698	20	9 25.2	21.6
513184 2005 <i>EB</i> ₁₃₄	17.2	X	182.91418	336.88421	194.04115	13.21237	0.1923589	0.22670213	2.6637839	20	10 6.3	21.6
513185 2005 <i>EF</i> ₂₆₀	18.1	X	197.74133	210.45241	22.07135	8.16995	0.1436932	0.30036437	2.2081934	20	—	—
513186 2005 <i>GD</i> ₁₄	17.8	X	171.77942	29.95935	168.28099	7.94827	0.2232891	0.22904026	2.6456243	20	10 30.8	22.3
513187 2005 <i>GJ</i> ₃₂	19.1	X	268.91130	119.88664	4.75391	1.90858	0.1846359	0.30001922	2.2098867	20	12 8.4	20.6
513188 2005 <i>GQ</i> ₃₈	18.1	X	129.33409	299.16802	350.73590	5.06516	0.1773795	0.29593883	2.2301535	20	—	—
513189 2005 <i>GD</i> ₄₅	17.1	X	121.32682	356.51574	217.37170	8.81169	0.1790950	0.21890078	2.7267031	20	10 3.2	21.6
513190 2005 <i>GP</i> ₄₅	17.5	X	171.95977	90.32483	109.36443	7.53989	0.2679993	0.22704936	2.6610673	20	10 31.8	22.3
513191 2005 <i>GO</i> ₉₅	18.4	X	183.30037	178.84708	72.03266	2.85672	0.1152007	0.30004778	2.2097464	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>
513201 2005 SX ₃₃	17.6	X	270.37577	344.86269	83.02954	3.39913	0.1883587	0.25858591	2.4400542	20	9 6.4	20.4
513202 2005 SH ₁₅₇	16.9	X	242.72454	357.11113	28.99009	10.02781	0.0957283	0.18036184	3.1024607	20	6 11.2	21.6
513203 2005 SF ₁₈₈	17.9	X	211.53452	354.81705	176.71626	2.50923	0.1243476	0.26842289	2.3800698	20	11 18.4	20.9
513204 2005 TC ₂	17.4	X	324.15433	352.91378	10.53087	11.35059	0.2567964	0.25995050	2.4315075	20	9 13.6	18.7
513205 2005 TO ₄₁	16.1	X	174.88069	252.77013	174.39748	18.04169	0.1903106	0.17465204	3.1697154	20	5 26.3	21.7
513206 2005 TF ₇₉	18.3	X	281.25641	43.42237	26.99255	0.62269	0.1782054	0.26049284	2.4281314	20	9 28.8	20.5
513207 2005 TH ₈₂	16.8	X	201.86891	227.32745	210.97427	9.59420	0.0680055	0.18196014	3.0842664	20	7 3.6	21.5
513208 2005 TH ₁₃₆	18.2	X	283.34223	318.32779	108.78397	2.17859	0.1566691	0.26226121	2.4172042	20	10 2.8	20.6
513209 2005 UB ₄₀	17.2	X	232.32226	321.93037	76.68319	2.45886	0.1744524	0.17613214	3.1519330	20	6 8.9	22.3
513210 2005 UV ₄₇	16.3	X	248.74265	329.62670	48.42484	18.51776	0.2145336	0.17866955	3.1220200	20	5 24.6	21.3
513211 2005 UX ₅₅	17.0	X	199.11801	330.83388	97.70062	2.46620	0.1620873	0.17448528	3.1717347	20	6 15.5	22.2
513212 2005 UU ₉₄	18.3	X	269.16839	98.71368	333.95729	3.42549	0.1579293	0.25767886	2.4457770	20	9 13.8	21.1
513213 2005 UJ ₁₁₈	16.8	X	292.66744	126.38936	227.35045	7.00446	0.0657896	0.18199768	3.0838422	20	7 7.5	21.1
513214 2005 US ₂₀₂	16.5	X	169.81428	268.01281	215.94551	9.08764	0.0813652	0.17945130	3.1129464	20	7 24.2	21.4
513215 2005 UD ₂₂₈	17.9	X	21.02884	157.33305	172.96492	1.07590	0.1802375	0.26354060	2.4093748	20	11 19.6	20.5
513216 2005 UP ₂₄₆	16.7	X	161.36883	333.35594	139.42820	2.11254	0.1408504	0.17401907	3.1773971	20	7 4.9	21.8
513217 2005 UQ ₂₄₈	18.3	X	255.22923	13.89484	80.84761	2.42689	0.1494966	0.25798883	2.4438176	20	9 27.7	21.4
513218 2005 UU ₂₅₅	18.0	X	256.63219	283.78347	154.45051	2.37971	0.1640772	0.25475042	2.4644846	20	9 2.5	21.0
513219 2005 UW ₂₆₇	18.1	X	242.14141	31.09358	80.83259	3.15459	0.1564534	0.25817405	2.4426486	20	10 5.5	21.3
513220 2005 UG ₂₈₀	16.7	X	218.13766	333.89663	76.53238	1.96844	0.2476107	0.17636766	3.1491263	20	6 5.8	22.1
513221 2005 UD ₃₀₆	18.4	X	272.77122	52.49615	22.57506	1.70796	0.1528061	0.25888409	2.4381802	20	9 25.2	21.1
513222 2005 UJ ₃₁₉	16.7	X	217.50884	184.70219	235.91467	6.55857	0.1274438	0.17764398	3.1340245	20	6 24.9	21.6
513223 2005 UR ₃₇₀	18.0	X	241.32210	36.86394	78.34839	4.72410	0.1523522	0.25820259	2.4424686	20	10 7.6	21.2
513224 2005 UA ₃₉₄	18.3	X	352.39395	202.31210	148.52679	1.84162	0.1847530	0.26310401	3.1120394	20	10 31.5	20.3
513225 2005 UR ₃₉₅	16.6	X	237.51828	345.69177	34.15100	11.39375	0.2189525	0.17816457	3.1279166	20	5 16.5	21.8
513226 2005 UO ₃₉₇	17.7	X	5.10810	242.15616	109.14671	3.23498	0.2269843	0.26638175	2.3922124	20	12 2.8	20.1
513227 2005 UQ ₅₂₄	16.9	X	202.83280	283.14829	156.78868	9.75395	0.1798982	0.17787581	3.1313008	20	7 1.7	22.1
513228 2005 VO ₁₀	16.8	X	183.81681	41.16583	62.42967	17.48204	0.1367026	0.17639780	3.1487676	20	7 16.2	22.1
513229 2005 VJ ₄₂	16.0	X	266.01475	295.76825	80.37606	17.27415	0.2293431	0.18048554	3.1010429	20	6 9.5	20.7
513230 2005 VT ₅₃	17.7	X	291.05202	332.20278	90.27562	3.06172	0.1792767	0.25986236	2.4320572	20	10 7.1	20.0
513231 2005 VU ₇₀	15.9	X	300.48515	296.92171	72.39314	10.84479	0.1050946	0.18357446	3.0661581	20	8 7.6	20.0
513232 2005 VT ₁₂₄	18.8	X	238.94521	184.62723	272.67284	1.69294	0.2396838	0.25274589	2.4774980	20	8 25.5	22.5
513233 2005 WE ₂	18.4	X	116.97581	280.86813	79.21141	23.98650	0.1516641	0.42062747	1.7641586	20	—	—
513234 2005 WC ₅₆	18.1	X	288.88689	328.16603	76.45119	4.94810	0.1679142	0.25480033	2.4641628	20	9 7.4	20.7
513235 2005 WD ₆₆	17.4	X	180.46776	30.53553	78.48928	3.19191	0.1852627	0.17461015	3.1702224	20	7 17.9	22.7
513236 2005 WA ₁₃₂	18.2	X	298.98678	316.47413	69.97699	4.01255	0.1849947	0.25458929	2.4655243	20	8 26.3	20.6
513237 2005 WG ₁₆₈	18.4	X	273.52336	330.44596	81.65317	1.69721	0.2202419	0.25271033	2.4777304	20	8 11.7	21.2
513238 2005 WV ₁₉₁	16.1	X	234.40995	343.29265	81.05593	24.70637	0.1419705	0.17868507	3.1218392	20	7 15.9	21.1
513239 2005 XO ₂₄	16.4	X	249.93083	120.38376	276.09123	9.28564	0.0652881	0.17238009	3.1975056	20	7 7.4	21.0
513240 2005 YY ₁₆₀	16.5	X	210.30910	200.69478	256.44781	7.61204	0.0404284	0.17472642	3.1688158	20	8 6.3	21.3
513241 2006 AE ₃₇	16.9	X	149.59688	192.51011	325.25143	4.62145	0.1508789	0.17089566	3.2159949	20	8 17.9	22.2
513242 2006 AL ₃₉	16.6	X	156.67542	241.34330	299.40829	11.26616	0.2664845	0.17480536	3.1678618	20	9 16.1	22.4
513243 2006 AT ₇₅	17.9	X	175.74963	166.41921	40.21820	2.19527	0.1401750	0.25307528	2.4753478	20	11 28.9	21.5
513244 2006 BU ₁₁	15.7	X	209.66867	148.31795	308.03822	13.32277	0.0322853	0.17195960	3.2027160	20	8 4.5	20.3
513245 2006 BW ₄₀	17.1	X	236.99797	279.10184	137.24480	15.92935	0.2063941	0.24001758	2.5643306	20	7 4.6	21.2
513246 2006 CB ₁₁	16.9	X	176.26919	163.96998	305.57179	9.42994	0.1966005	0.16976168	3.2303006	20	7 15.1	22.3
513247 2006 DA ₂₉	16.8	X	20.99696	350.94522	4.28511	12.25658	0.1290017	0.24640985	2.5197880	20	12 8.1	20.1
513248 2006 DJ ₈₈	17.8	X	222.91349	282.66645	169.59205	9.50496	0.1754253	0.23866973	2.5739760	20	8 7.2	21.9
513249 2006 DG ₁₂₄	17.6	X	168.75539	211.85102	338.19386	7.10183	0.0867423	0.24428412	2.5343848	20	10 20.9	21.4
513250 2006 DW ₂₀₉	17.5	X	188.55768	93.62896	72.15702	1.96881	0.0904774	0.24295499	2.5436197	20	10 15.1	21.2
513251 2006 ER ₂₆	14.4	X	289.34280	136.19248	158.68402	3.00389	0.0602804	0.07963134	5.3507339	20	4 25.5	21.3
513252 2006 ET ₄₈	16.7	X	39.06395	322.99218	357.85568	11.58666	0.1614415	0.24411314	2.5355681	20	11 19.9	20.2
513253 2006 EK ₇₁	13.5	X	343.10309	275.48440	331.10030	25.70481	0.0903689	0.08290084	5.2091089	20	4 20.7	20.4
513254 2006 HV ₆₇	16.6	X	262.24643	55.43271	42.53199	22.90227	0.0390739	0.23688745	2.5868705	20	10 27.1	20.0
513255 2006 HO ₆₈	16.7	X	114.46527	5.25256	206.86199	10.97448	0.0114438	0.22956871	2.6415627	20	9 11.6	20.4
513256 2006 HH ₈₀	17.6	X	130.33442	175.85587	46.77211	13.75527	0.1873695	0.23483797	2.6018994	20	10 27.3	22.0
513257 2006 HZ ₉₁	17.3	X	56.66679	190.78344	86.37033	9.18989	0.0840304	0.22924818	2.6440244	20	10 10.9	21.0
513258 2006 JS ₄₉	17.6	X	145.64097	101.94783	138.16990	5.06925	0.1447917	0.23988208	2.5652962	20	11 30.3	21.7
513259 2006 PR ₁₁	16.7	X	69.72306	148.41230	140.81905	14.45621	0.2544326	0.22392938	2.6857278	20	11 28.5	21.2
513260 2006 RT ₇₇	18.6	X	346.20742	308.86852	178.80089	21.90280	0.0698243	0.38055772	1.8859161	20	—	—
513261 2006 RP ₁₀₈	18.6	X	241.51549	151.01015	4.65287	2.82820	0.0579845	0.29295486	2.2452717	20	12 23.5	21.1
513262 2006 SE ₁₈	18.4	X	299.17950	332.74150	87.58803	3.87348	0.2651183	0.28339884	2.2954650	20	10 18.5	19.5
513263 2006 SP ₄₄	16.6	X	205.16578	226.97334	155.68368	21.55728	0.2946929	0.18757663	3.0223881	20	4 28.2	22.4
513264 2006 SA ₇₅	18.1	X	330.65882	1.99779	29.83762	7.11565	0.1081301	0.28469025	2.2885180	20	11 16.6	20.3
513265 2006 SE ₁₂₁	17.8	X	99.68974	339.02154	29.50196	21.50510	0.0822001	0.37937116	1.8898464	20	—	—
513266 2006 SE ₁₉₄	17.1	X	326.78570	354.15380	351.25112	5.78196	0.1028658	0.20425238	2.8555600	20	8 18.3	20.5
513267 2006 SP ₂₄₉	17.4	X	322.24355	72.93487	3.33339	6.74614	0.0667491	0.29235619	2.2483359	20	—	—
513268 2006 SJ ₂₉₄	18.4	X	302.23468	207.34164	210.08567	2.21853	0.1564928	0.28440216	2.2900631	20	10 31.2	20.0
513269 2006 ST ₃₃₇	16.5	X	184.82968	213.35810	179.43038	15.97247	0.1800661	0.18383317	3.0632808	20	4 23.3	21.7
513270 2006 SW ₃₄₆	16.8	X	6.12859	318.12276	6.88891	22.64631	0.1906582	0.28049598	2.3112750	20	10 16.8	19.2
513271 2006 SL ₃₅₈	18.6	X	348.14648	59.17047	316.83886	1.99190	0.2328805	0.28819852	2.2699078	20	12 16.7	20.5
513272 2006 TH ₂₅	18.5	X	265.71977	71.76469	28.31881	2.57349	0.1638425	0.28111340	2.3078895	20	10 22.8	20.7
513273 2006 TJ ₄₃	19.0	X	303.64629	186.49303	214.92339	5.84526						

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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>
513281 2006 WO ₈₄	16.9	X	262.16165	196.60135	205.16468	11.57584	0.1742032	0.19648642	2.9303153	20	7 13.1	21.3
513282 2006 WG ₁₅₆	18.0	X	283.54933	124.81401	67.98972	22.52097	0.0695066	0.37493602	1.9047206	20	—	—
513283 2006 WY ₁₈₅	16.6	X	264.50877	106.94406	274.13672	11.96082	0.2477972	0.19504803	2.9447041	20	6 11.9	21.0
513284 2006 WS ₂₀₇	16.9	X	201.70574	354.48143	107.06623	8.72359	0.2075852	0.18656028	3.0333551	20	7 26.7	22.0
513285 2006 WT ₂₀₇	16.5	X	184.36568	306.09098	132.59374	5.57958	0.1676935	0.17871173	3.1215288	20	6 15.0	21.7
513286 2006 XG ₁₂	17.5	X	69.55934	354.62686	80.05440	24.16253	0.0275879	0.37884372	1.8916001	20	—	—
513287 2006 XU ₄₇	18.2	X	293.92684	151.94126	289.07988	5.19631	0.1284526	0.27770098	2.3267574	20	11 18.3	20.3
513288 2006 YM ₄₆	16.1	X	253.25458	238.08279	132.95952	16.92777	0.2386509	0.18184012	3.0856234	20	5 24.9	21.3
513289 2007 AC ₁₅	16.3	X	231.28203	278.78958	119.23988	10.67992	0.0459301	0.18029026	3.1032817	20	6 20.5	20.8
513290 2007 AT ₃₁	17.5	X	302.98645	146.36462	280.51774	5.90770	0.0622592	0.27358047	2.3500620	20	11 15.9	20.2
513291 2007 BW ₁₆	16.9	X	179.30453	176.87002	307.40971	11.75088	0.1818633	0.18475698	3.0530610	20	8 4.1	22.0
513292 2007 BA ₅₁	18.2	X	261.00265	5.31218	101.11206	6.01334	0.1819077	0.27223050	2.3578248	20	10 22.3	20.8
513293 2007 BJ ₆₁	18.1	X	316.45297	301.08485	95.12275	3.83013	0.1780699	0.27390937	2.3481804	20	10 26.6	19.9
513294 2007 BA ₆₃	16.5	X	250.30913	251.44256	141.71752	16.81547	0.1198869	0.18019538	3.1043710	20	6 27.9	21.3
513295 2007 BD ₆₃	16.6	X	169.65993	201.60989	310.02967	7.62455	0.0392351	0.18573651	3.0423175	20	8 29.1	21.0
513296 2007 BN ₆₈	17.5	X	165.45890	70.63869	149.56919	11.00925	0.1807963	0.26757234	2.3851109	20	11 28.6	21.5
513297 2007 BF ₇₁	17.9	X	185.71960	54.96813	153.68107	8.16849	0.1506692	0.27029591	2.3690619	20	12 5.4	21.5
513298 2007 BR ₇₈	16.2	X	25.85460	308.52947	336.55582	13.98392	0.0462210	0.18150701	3.0893974	20	8 23.7	20.3
513299 2007 BW ₇₉	16.5	X	150.10834	27.98751	132.42919	11.54085	0.0675710	0.18356519	3.0662613	20	8 21.1	21.0
513300 2007 CN ₃	16.2	X	174.93636	317.49056	155.88682	6.31424	0.1374536	0.17944984	3.1129633	20	7 17.9	21.3
513301 2007 CV ₃	18.0	X	260.04161	59.04319	59.07081	3.30298	0.1468246	0.27395127	2.3479409	20	11 10.0	20.3
513302 2007 CD ₅	17.9	X	189.13965	55.16449	139.27283	2.74539	0.1366880	0.26864739	2.3787436	20	11 21.4	21.3
513303 2007 CN ₈	17.4	X	176.03742	1.32098	103.63231	3.27337	0.1349382	0.18046207	3.1013118	20	7 9.4	22.4
513304 2007 CA ₁₀	16.7	X	301.57125	70.43944	303.93268	7.12658	0.0284298	0.18714505	3.0270330	20	8 20.5	20.8
513305 2007 CV ₁₀	16.6	X	285.91170	67.18191	317.42089	11.02215	0.1257408	0.18628803	3.0363098	20	8 1.1	20.5
513306 2007 CW ₂₀	18.3	X	230.88526	240.80438	259.99623	0.54346	0.1299741	0.27065150	2.3669864	20	10 31.6	21.2
513307 2007 CA ₆₆	16.7	X	136.54251	69.62640	126.00986	6.65757	0.2411246	0.18217265	3.0818672	20	9 26.9	22.1
513308 2007 DX ₁₀	16.1	X	45.79905	101.38226	164.96513	25.61171	0.1606911	0.17456748	3.1707390	20	9 10.7	20.2
513309 2007 DV ₁₅	16.5	X	179.09509	125.06719	344.45791	16.17657	0.1545203	0.17891640	3.1191477	20	7 22.2	21.8
513310 2007 DJ ₃₃	17.8	X	223.43146	6.92923	151.05696	6.90529	0.1258873	0.26796290	2.3827927	20	11 16.5	21.0
513311 2007 DZ ₃₅	18.2	X	175.61209	77.71519	155.85334	2.31069	0.1725923	0.26972528	2.3724020	20	12 22.9	21.8
513312 2007 DM ₄₁	22.0	X	63.65064	274.45361	1.73685	2.26455	0.5277188	0.76767158	1.1812788	20	—	—
513313 2007 DX ₄₇	16.1	X	67.95699	60.05192	163.12969	11.49671	0.0663608	0.17359223	3.1826035	20	7 31.2	20.6
513314 2007 DM ₅₀	18.1	X	199.33922	91.89767	95.44734	3.51566	0.1676477	0.27228822	2.3574916	20	11 20.6	21.4
513315 2007 DK ₇₂	18.1	X	279.83964	277.88097	156.43108	6.25510	0.2361238	0.26708187	2.3880300	20	9 24.7	20.3
513316 2007 DH ₁₁₃	16.0	X	229.37438	50.40556	349.92612	29.01486	0.3118333	0.17687836	3.1430617	20	5 19.4	22.1
513317 2007 DJ ₁₁₃	16.0	X	260.12471	29.52069	349.45545	30.39008	0.0381709	0.17186967	3.2038331	20	7 11.5	21.1
513318 2007 EB ₂	16.4	X	220.87839	73.61738	355.01520	8.64699	0.0986275	0.17558110	3.1585241	20	7 12.9	21.3
513319 2007 EF ₂	16.5	X	260.48101	239.70159	174.07596	10.27203	0.0165701	0.17930236	3.1146701	20	8 17.9	21.0
513320 2007 EJ ₄	18.6	X	245.71934	144.47363	329.62819	1.07217	0.1210771	0.26830576	2.3807624	20	10 15.8	21.5
513321 2007 EJ ₁₉	16.9	X	116.16216	170.74948	358.38669	10.01872	0.0784211	0.17342078	3.1847007	20	7 27.4	21.7
513322 2007 EV ₄₂	15.9	X	83.11112	233.34137	4.70340	26.41719	0.1257736	0.17523386	3.1626954	20	9 20.1	20.5
513323 2007 EN ₄₈	16.1	X	122.40993	183.89970	23.62593	15.53216	0.2041519	0.17662778	3.1460337	20	9 28.7	21.3
513324 2007 EA ₅₅	18.4	X	255.19418	359.94955	90.61971	3.48131	0.1789037	0.26331453	2.4107537	20	9 18.5	21.3
513325 2007 EY ₁₃₅	18.3	X	147.44464	41.09906	178.26302	1.00311	0.1323505	0.26127899	2.4232584	20	11 9.5	21.9
513326 2007 EP ₂₁₀	17.8	X	242.41928	179.87829	305.39028	2.03584	0.1499712	0.26807687	2.3821174	20	10 21.5	20.7
513327 2007 EA ₂₁₁	17.9	X	200.38571	199.03818	332.43278	0.85382	0.1330950	0.26630445	2.3926753	20	11 3.0	21.3
513328 2007 FH ₂₁	16.1	X	13.21317	310.72522	340.76214	9.60464	0.0692147	0.17802133	3.1295941	20	8 16.4	20.2
513329 2007 FB ₂₄	17.6	X	151.00210	180.16214	41.72243	2.62140	0.1804953	0.26022365	2.4298057	20	11 14.2	21.6
513330 2007 FL ₄₀	18.0	X	172.10551	213.25606	14.22278	7.53762	0.2368259	0.26500652	2.4004814	20	12 5.8	22.1
513331 2007 GG ₄₁	18.2	X	101.81328	36.49370	218.13165	0.91094	0.1557142	0.25263139	2.4782465	20	11 8.9	21.9
513332 2007 GV ₅₈	16.3	X	128.24457	358.41111	188.27247	10.67343	0.1673483	0.17730410	3.1380283	20	9 1.6	21.4
513333 2007 HL ₁₆	16.0	X	88.85499	249.79875	2.24431	25.39335	0.2839708	0.17884903	3.1199309	20	10 17.0	21.4
513334 2007 HX ₃₉	18.0	X	137.93152	140.74775	82.18792	5.30827	0.0986333	0.25716207	2.4490525	20	11 5.3	21.7
513335 2007 HF ₇₅	18.0	X	209.84747	56.60222	93.80741	2.47141	0.1318313	0.25745199	2.4472136	20	10 17.5	21.5
513336 2007 HJ ₉₄	18.0	X	131.58370	230.05679	28.34291	1.62756	0.1561568	0.26309682	2.4120834	20	12 12.4	21.8
513337 2007 LH ₁	16.2	X	169.02661	296.44400	231.30220	14.94738	0.1976448	0.17661062	3.1462375	20	9 10.6	21.8
513338 2007 ME ₁	17.8	X	199.13745	22.38017	150.80276	6.26754	0.1738377	0.25762649	2.4461084	20	10 31.9	21.5
513339 2007 PT ₁₄	16.8	X	44.06084	189.09330	131.31423	14.03998	0.2957064	0.24004688	2.5641219	20	12 17.3	20.8
513340 2007 PC ₄₉	17.4	X	264.54126	11.03892	356.08096	5.46082	0.3185274	0.21505079	2.7591502	20	5 15.4	21.9
513341 2007 QJ ₄	16.8	X	303.95769	16.63006	334.85535	17.40806	0.2254388	0.22133319	2.7066890	20	7 4.5	20.2
513342 2007 QA ₈	16.4	X	22.74161	343.88670	346.24957	33.20534	0.1874309	0.23437395	2.6053325	20	10 24.4	20.3
513343 2007 RN ₃₆	18.2	X	327.36576	154.61653	186.86819	2.95889	0.2548848	0.30085436	2.2057951	20	8 18.5	19.0
513344 2007 RT ₂₁₈	17.5	X	261.95771	262.29612	161.14204	4.93169	0.1054304	0.22231583	2.6987073	20	8 25.3	21.1
513345 2007 RS ₂₄₉	17.0	X	41.23948	359.79744	316.51785	14.69482	0.1774847	0.23410426	2.6073330	20	11 16.4	20.9
513346 2007 RV ₃₁₉	17.3	X	354.48356	357.05573	345.73534	6.42479	0.1786351	0.22922306	2.6442175	20	10 9.6	19.8
513347 2007 TQ ₄₂₈	16.7	X	306.53846	279.52477	73.34811	18.08999	0.2305204	0.21842921	2.7306261	20	7 5.9	19.8
513348 2007 TG ₄₅₅	17.2	X	197.78161	37.53155	70.47403	10.21513	0.1839680	0.20877834	2.8141404	20	8 4.8	21.9
513349 2007 VM ₄₃	17.3	X	182.22289	280.53574	220.28303	6.25961	0.1262445	0.21309499	2.7760070	20	8 28.7	21.8
513350 2007 VX ₁₂₃	18.5	X	338.17585	162.42303	243.33094	5.82354	0.1355079	0.30767297	2.1730839	20	—	—
513351 2007 VG ₂₀₃	17.3	X	242.84259	279.33507	153.44032	4.24847	0.0774665	0.21437325	2.7649608	20	8 16.1	21.2
513352 2007 VV ₃₃₇	15.4	X	305.71139	309.99846	14.20918	3.59222	0.1329069	0.12696332	3.9205819	20	6 7.7	20.6
513353 2007 WZ ₄₅	17.2	X	349.67974	11.16936	330.19865	4.71778	0.					

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>
513361 2008 CX ₁₈₂	17.1	X	174.66346	274.92126	0.55860	18.89781	0.2334635	0.29909635	2.2144301	20	—	—
513362 2008 CX ₂₀₃	18.7	X	295.58773	260.26105	196.50186	3.02738	0.1156157	0.29658280	2.2269241	20	12 24.8	20.6
513363 2008 DT ₅	17.1	X	220.81952	199.27442	312.77187	27.04089	0.1452117	0.29368046	2.2415719	20	10 20.0	20.8
513364 2008 DJ ₁₂	18.1	X	151.83262	135.27530	120.74206	4.22618	0.1289065	0.29644164	2.2276309	20	—	—
513365 2008 DT ₅₂	18.2	X	218.06663	6.61187	192.37237	4.94827	0.1377959	0.29471727	2.2363116	20	—	—
513366 2008 DX ₆₅	17.6	X	76.22818	167.49528	134.32347	7.81116	0.1284728	0.28319240	2.2965804	20	12 16.6	21.0
513367 2008 DF ₇₇	19.0	X	262.68573	72.32308	56.85097	1.86783	0.1420645	0.29473071	2.2362437	20	12 7.7	20.7
513368 2008 DW ₈₀	17.5	X	119.73664	60.45428	165.59384	8.94205	0.2684447	0.19662701	2.9289183	20	10 21.7	22.7
513369 2008 DT ₈₈	18.2	X	265.38803	221.24233	359.16997	20.90352	0.0202166	0.39472544	1.8405148	20	—	—
513370 2008 EU ₈₆	16.5	X	220.63968	17.46458	98.26289	3.19979	0.0366460	0.19625301	2.9326383	20	9 18.5	20.6
513371 2008 ER ₁₁₆	17.3	X	128.50133	22.37796	173.19311	9.43196	0.1967564	0.19205262	2.9752438	20	9 17.2	22.3
513372 2008 EA ₁₂₁	16.8	X	133.36832	344.11466	174.61603	8.19247	0.1922282	0.18770870	3.0209702	20	8 5.9	21.9
513373 2008 EU ₁₂₁	18.5	X	250.30872	308.06320	192.20438	3.61492	0.0756893	0.29011868	2.2598811	20	12 11.9	20.9
513374 2008 EQ ₁₃₇	16.9	X	95.36614	200.41013	22.87432	11.40582	0.0441531	0.19028424	2.9936487	20	9 8.4	21.3
513375 2008 EX ₁₄₉	17.3	X	182.72394	118.97372	7.36623	7.03594	0.1504459	0.19205706	2.9751979	20	8 13.7	22.1
513376 2008 EJ ₁₇₁	16.8	X	82.38869	101.62332	144.36403	6.82654	0.1904720	0.18366978	3.0650971	20	10 6.3	21.5
513377 2008 EF ₆₂	16.9	X	242.84647	266.68599	168.16487	12.13212	0.0259808	0.19480413	2.9471615	20	8 23.2	21.0
513378 2008 FS ₇₃	16.8	X	43.50693	144.43872	106.16555	3.61688	0.0961339	0.17953527	3.1119757	20	8 9.5	20.8
513379 2008 FL ₁₃₇	16.5	X	64.81015	167.48883	52.77580	19.07994	0.0380509	0.17829864	3.1263483	20	7 24.8	21.2
513380 2008 GL	16.2	X	88.30480	235.22430	9.54780	22.05696	0.2216451	0.18934695	3.0035199	20	10 9.7	20.9
513381 2008 GZ ₇	15.7	X	25.25835	254.27415	32.56102	17.25869	0.1851565	0.18100677	3.0950869	20	9 19.1	19.7
513382 2008 GU ₂₇	17.3	X	131.96487	8.14075	182.09132	15.61280	0.1664825	0.19313953	2.9640710	20	9 11.3	22.1
513383 2008 GH ₄₃	16.5	X	345.84825	322.77934	27.84878	10.28402	0.0785098	0.19139878	2.9820158	20	9 25.8	20.3
513384 2008 GL ₇₀	18.2	X	127.37042	150.45318	125.78813	6.49663	0.2601387	0.28023390	2.3127158	20	—	—
513385 2008 GR ₇₁	18.7	X	338.06464	82.67396	91.25264	21.00500	0.1085088	0.38386701	1.8750615	20	—	—
513386 2008 GK ₁₃₁	16.8	X	101.58378	44.26706	158.66230	7.64268	0.1198386	0.18514292	3.0488166	20	8 24.4	21.4
513387 2008 GY ₁₃₃	13.9	X	29.45587	125.31926	72.61031	14.50933	0.1281976	0.08244154	5.2284385	20	5 16.6	20.3
513388 2008 HZ ₅	18.8	X	182.09516	22.93899	195.72372	5.50618	0.1970715	0.28717493	2.2752984	20	12 12.2	22.2
513389 2008 HQ ₁₄	18.5	X	179.14950	341.42971	248.22396	3.15708	0.1245823	0.28879822	2.2667644	20	12 30.3	21.5
513390 2008 HP ₂₂	18.7	X	232.59040	303.67540	228.13910	2.61921	0.1096331	0.29088996	2.2558847	20	12 24.1	21.2
513391 2008 HP ₂₉	16.2	X	71.94463	141.78261	93.79682	13.81171	0.1213615	0.18196259	3.0842386	20	9 6.3	20.8
513392 2008 HA ₅₈	16.5	X	18.37518	66.90001	219.01604	4.24846	0.0929533	0.18315238	3.0708670	20	8 16.0	20.5
513393 2008 HB ₆₂	15.7	X	338.42911	244.75428	72.73349	15.81980	0.1704444	0.17419578	3.1752478	20	7 28.1	19.8
513394 2008 HE ₆₉	14.0	X	15.06368	76.32953	141.96909	17.54888	0.1278635	0.08263518	5.2202670	20	5 21.8	20.5
513395 2008 HF ₇₁	14.1	X	83.32555	94.31818	39.99583	19.94120	0.0460632	0.08249524	5.2261689	20	4 30.5	21.0
513396 2008 JM ₄	18.3	X	178.48013	116.07854	115.79032	6.33130	0.1423598	0.28510673	2.2862887	20	12 29.8	21.4
513397 2008 JV ₂₂	16.0	X	271.63042	318.23185	66.30734	28.01056	0.1055377	0.17748725	3.1358692	20	7 13.8	20.8
513398 2008 KM ₁₀	14.0	X	20.53202	79.39012	134.17319	21.34779	0.0662676	0.08072447	5.3023199	20	5 22.5	20.9
513399 2008 KE ₁₄	16.5	X	121.18367	64.94075	100.25794	17.24931	0.0657474	0.17689965	3.1428096	20	7 24.8	21.2
513400 2008 KS ₁₅	16.1	X	306.47781	253.83203	106.82026	16.72350	0.0485283	0.17781709	3.1319901	20	8 9.9	20.4
513401 2008 KH ₂₃	13.6	X	21.06033	139.80668	74.81050	29.43094	0.0522404	0.08175537	5.2576522	20	5 22.0	20.4
513402 2008 KH ₄₀	16.1	X	83.50186	153.79553	75.83424	18.46525	0.2495300	0.18162229	3.0880900	20	10 1.9	21.3
513403 2008 KO ₄₃	13.6	X	212.38710	271.46035	117.09711	18.99076	0.0895824	0.08136894	5.2742850	20	5 21.2	21.1
513404 2008 PR ₁₈	17.2	X	93.98990	327.63217	343.28801	12.71896	0.2175148	0.27036441	2.3686617	20	—	—
513405 2008 RP ₇	17.3	X	305.04005	200.25712	190.74378	5.43861	0.0842104	0.25141619	2.4862257	20	9 22.6	20.0
513406 2008 RB ₁₀	17.5	X	253.77487	267.77033	168.09089	14.77535	0.0727156	0.24441953	2.5334487	20	9 8.1	20.5
513407 2008 RL ₁₀	18.1	X	253.99089	36.84927	4.62970	4.88542	0.2559626	0.23373708	2.6100629	20	6 26.9	22.1
513408 2008 SK ₁₀₆	17.6	X	222.36895	69.91377	28.90941	13.25553	0.2411921	0.23224762	2.6212103	20	8 16.3	22.1
513409 2008 SX ₁₁₇	17.8	X	233.51597	79.69082	19.13765	10.69659	0.1606947	0.23763730	2.5814258	20	9 4.1	21.6
513410 2008 SQ ₁₃₂	17.6	X	302.93402	354.62164	21.49922	15.27768	0.1119294	0.23766294	2.5812401	20	8 31.8	20.8
513411 2008 SK ₁₉₅	17.7	X	262.97671	255.41995	161.35678	1.46815	0.2116148	0.23531962	2.5983479	20	8 2.4	21.1
513412 2008 SL ₂₃₅	18.0	X	86.85660	219.75410	58.07050	3.19362	0.1648170	0.25713009	2.4492556	20	11 24.5	21.8
513413 2008 SU ₂₄₆	17.8	X	278.73073	60.96199	354.95288	11.90625	0.1754523	0.24097838	2.5575099	20	9 2.4	20.7
513414 2008 SV ₂₆₇	15.9	X	154.71732	354.22916	66.16771	3.70372	0.2539038	0.12520123	3.9572819	20	5 3.3	22.4
513415 2008 SP ₂₇₂	18.1	X	67.45855	160.32026	220.49723	5.50937	0.1387449	0.35232723	1.9853568	20	—	—
513416 2008 SN ₂₇₇	17.3	X	158.39356	134.05359	78.40798	7.53788	0.0980836	0.25139559	2.4863616	20	11 12.5	21.0
513417 2008 SV ₃₀₄	18.0	X	236.01079	123.58268	323.34294	2.30659	0.1820354	0.23546616	2.5972697	20	8 14.9	21.8
513418 2008 TP ₇₂	18.0	X	270.40379	57.44846	0.41326	3.00401	0.1044900	0.23767967	2.5811190	20	9 1.7	21.1
513419 2008 TB ₈₈	17.5	X	296.52930	237.64306	168.18478	5.97966	0.1915298	0.24243521	2.5472540	20	9 14.8	20.0
513420 2008 TD ₉₀	16.9	X	270.47230	206.69149	222.60678	12.44546	0.1245141	0.23732780	2.5836696	20	9 8.9	20.3
513421 2008 TH ₁₂₁	17.5	X	254.51746	321.10896	104.86765	7.04145	0.2847439	0.23414529	2.6070284	20	7 26.2	21.4
513422 2008 TH ₁₈₅	17.2	X	238.84497	12.91032	60.49434	12.85637	0.1678719	0.23318587	2.6141745	20	8 6.1	21.3
513423 2008 UF ₄₁	18.1	X	264.24359	22.79541	29.80918	4.16139	0.2695484	0.23289231	2.6163708	20	7 22.1	21.7
513424 2008 UT ₅₃	17.6	X	253.58094	17.01185	52.46750	15.45995	0.1087777	0.23275928	2.6173675	20	9 1.2	21.4
513425 2008 UV ₅₄	17.3	X	269.44436	331.51523	46.87756	13.68138	0.2952193	0.22916673	2.6446508	20	6 6.1	21.4
513426 2008 UU ₅₆	18.2	X	28.79606	62.09007	5.84434	19.26006	0.1066201	0.35823345	1.9634746	20	—	—
513427 2008 UO ₈₉	17.3	X	222.41246	226.68330	231.95808	10.26123	0.0646171	0.23639513	2.5904609	20	8 24.2	21.1
513428 2008 UA ₁₂₉	17.9	X	264.61773	175.22239	251.82574	3.48972	0.1704066	0.23744579	2.5828136	20	8 23.9	21.2
513429 2008 UM ₁₄₁	17.6	X	285.47141	332.78919	50.34027	2.12169	0.2160428	0.23375832	2.6099048	20	7 18.3	20.8
513430 2008 UB ₁₅₁	16.0	X	160.47066	197.09274	222.29593	1.98034	0.2021376	0.12420110	3.9784976	20	5 4.1	22.4
513431 2008 UY ₁₇₂	17.5	X	214.69848	98.44779	36.39234	3.78860	0.0844696	0.23929617	2.5694818	20	10 5.4	21.1
513432 2008 UK ₂₀₂	17.4	X	311.18961	231.17479	138.05541	5.69228	0.2875648	0.23944121	2.5684441	20	8 2.6	19.3
513433 2008 UO ₂₅₉	15.8	X	159.87340	14.58270	55.33122	4.84308	0.2814788	0.12518046	3.9577196	20	5 17.8	22.5

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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>
513441 2008 <i>UT</i> ₃₆₄	17.4	X	259.44971	268.37536	143.64461	13.41298	0.2738196	0.23160957	2.6260221	20	7 13.5	21.4
513442 2008 <i>UR</i> ₃₆₇	17.4	X	265.63070	286.48791	141.33465	5.79985	0.2665590	0.23597943	2.5935022	20	8 12.8	20.8
513443 2008 <i>VQ</i> ₂₈	15.9	X	159.07068	51.91812	0.19308	15.20768	0.2901059	0.12591323	3.9423496	20	4 22.8	22.7
513444 2008 <i>VX</i> ₄₃	16.2	X	166.81504	119.01437	301.00719	8.02081	0.3050349	0.12542725	3.9525264	20	5 9.6	23.1
513445 2008 <i>VE</i> ₆₁	17.1	X	133.90282	195.47908	65.51234	6.98671	0.1090000	0.25439766	2.4667623	20	12 16.3	20.9
513446 2008 <i>VY</i> ₈₁	17.1	X	255.07580	291.38040	118.63976	5.83927	0.1005847	0.22216176	2.6999549	20	7 30.2	20.6
513447 2008 <i>WO</i>	17.3	X	274.73573	296.00730	117.74739	5.97847	0.2523431	0.23648643	2.5897941	20	8 8.8	20.6
513448 2008 <i>WA</i> ₈₀	17.7	X	278.13279	84.30865	71.96234	24.97526	0.0429823	0.34320725	2.0203739	20	—	—
513449 2008 <i>WN</i> ₁₃₀	17.7	X	247.69215	323.31944	121.63256	6.37431	0.3079387	0.23167970	2.6254922	20	8 9.9	21.6
513450 2008 <i>WF</i> ₁₃₄	17.3	X	307.33940	324.11835	66.48227	16.31719	0.1229505	0.23893438	2.5720749	20	10 1.4	20.5
513451 2008 <i>XC</i> ₄₉	17.1	X	207.93805	29.96435	102.09831	12.60582	0.1503938	0.22853974	2.6494856	20	9 21.1	21.4
513452 2008 <i>XB</i> ₅₆	16.8	X	218.50815	179.43052	279.22648	13.97450	0.1759401	0.22540741	2.6739745	20	8 7.0	21.2
513453 2008 <i>YL</i> ₆₇	17.1	X	279.15523	279.41288	101.29405	17.33212	0.2278198	0.22345213	2.6895506	20	7 2.6	20.5
513454 2008 <i>YV</i> ₇₀	16.7	X	197.74297	249.50155	309.81564	12.37215	0.1619524	0.23634346	2.5908384	20	11 25.2	20.9
513455 2008 <i>YG</i> ₁₀₅	17.7	X	214.70363	339.81714	123.71397	4.21541	0.0762447	0.22149214	2.7053939	20	8 24.1	21.5
513456 2008 <i>YE</i> ₁₂₁	17.7	X	277.24758	335.82320	91.33522	6.17206	0.1486586	0.23241320	2.6199652	20	9 20.3	20.9
513457 2008 <i>XB</i> ₁₄₂	17.5	X	275.99476	305.53862	106.76370	3.32261	0.0583584	0.22581622	2.6707462	20	9 8.6	20.8
513458 2008 <i>YB</i> ₁₆₅	17.2	X	237.81381	123.24249	309.61605	10.84189	0.1414474	0.21897677	2.7260722	20	8 2.2	21.1
513459 2008 <i>AP</i> ₃₀	17.6	X	307.58512	94.09823	283.76728	5.27746	0.1092068	0.22886503	2.6469745	20	8 30.3	20.6
513460 2009 <i>AE</i> ₄₀	17.4	X	300.85689	92.91271	282.53636	5.13786	0.0302268	0.22112510	2.7084162	20	8 24.2	21.0
513461 2009 <i>AE</i> ₄₉	17.1	X	228.60254	71.57515	25.94426	12.98230	0.2349830	0.22390342	2.6859354	20	8 20.4	21.6
513462 2009 <i>BR</i> ₃₄	16.8	X	200.05418	231.57423	323.12274	12.03980	0.1244197	0.23441568	2.6050233	20	11 24.8	20.9
513463 2009 <i>BB</i> ₄₅	17.3	X	177.48307	169.47419	326.68347	4.07667	0.0978753	0.21497126	2.7598308	20	8 21.6	21.4
513464 2009 <i>BV</i> ₄₇	17.7	X	197.55358	40.60875	118.87462	3.08621	0.1075768	0.22758801	2.6568669	20	10 13.9	21.6
513465 2009 <i>BP</i> ₆₆	17.6	X	196.88200	320.51238	178.97935	3.98690	0.1080611	0.22124429	2.7074140	20	9 15.3	21.7
513466 2009 <i>BJ</i> ₉₈	17.7	X	222.08460	10.59354	95.74055	5.28120	0.1363058	0.22461662	2.6802468	20	8 31.4	21.6
513467 2009 <i>BL</i> ₁₇₅	17.0	X	187.83610	356.94591	113.43524	9.06561	0.1389561	0.21284464	2.7781834	20	7 29.4	21.5
513468 2009 <i>BL</i> ₁₇₇	17.3	X	55.76125	120.13933	142.37938	4.58951	0.0604924	0.21354210	2.7721307	20	9 10.3	20.9
513469 2009 <i>BG</i> ₁₈₁	16.8	X	282.39871	268.06535	146.08149	11.93626	0.2984704	0.22894908	2.6463267	20	8 10.9	19.8
513470 2009 <i>BJ</i> ₁₉₂	17.3	X	177.21522	48.37838	138.27982	14.00290	0.1118501	0.22680575	2.6629725	20	10 29.9	21.6
513471 2009 <i>CU</i> ₄	17.5	X	287.57586	281.16352	81.93442	5.99901	0.2739144	0.22990861	2.6389585	20	6 12.8	20.7
513472 2009 <i>CS</i> ₅	19.4	X	42.11715	316.66891	320.48927	30.09690	0.6571111	0.55052721	1.4744052	20	12 28.0	23.1
513473 2009 <i>CR</i> ₃₈	18.4	X	202.54054	178.13478	300.96372	0.85119	0.3261044	0.22157563	2.7047142	20	8 12.9	23.3
513474 2009 <i>DC</i> ₆	16.7	X	256.39353	315.51634	131.53343	15.82765	0.1253076	0.22734804	2.6587361	20	9 21.3	20.4
513475 2009 <i>DK</i> ₇	17.7	X	159.99698	148.85453	23.66333	1.65657	0.1008030	0.21584202	2.7524032	20	9 18.8	21.7
513476 2009 <i>DL</i> ₂₅	17.0	X	275.93667	295.93427	143.97579	12.55790	0.0819260	0.22660097	2.6645766	20	10 15.8	20.5
513477 2009 <i>DR</i> ₂₆	17.4	X	210.40306	153.89996	321.24573	2.77472	0.0449647	0.22097549	2.7096092	20	9 5.0	21.2
513478 2009 <i>DG</i> ₃₇	17.2	X	250.57001	98.82125	323.25224	3.59413	0.0565941	0.21589030	2.7519928	20	8 15.4	20.9
513479 2009 <i>DK</i> ₃₉	17.2	X	249.77075	73.52613	349.91287	27.48878	0.3790853	0.22438755	2.6820706	20	7 16.6	22.2
513480 2009 <i>DW</i> ₄₅	16.9	X	192.06922	8.35994	158.67730	13.72070	0.1908651	0.22394257	2.6856223	20	10 12.7	21.4
513481 2009 <i>DB</i> ₅₆	17.2	X	199.11304	2.85971	154.47970	14.75208	0.1385660	0.22242012	2.6978637	20	10 11.7	21.5
513482 2009 <i>DN</i> ₅₈	17.5	X	213.22611	320.97578	148.35747	8.74402	0.1875206	0.21716729	2.7411940	20	8 18.1	22.0
513483 2009 <i>DT</i> ₅₉	16.7	X	205.43775	340.87805	156.45238	26.21674	0.0908759	0.22116231	2.7080830	20	9 26.8	20.8
513484 2009 <i>DC</i> ₆₁	17.2	X	77.27547	116.32730	142.61285	9.69248	0.1851264	0.21055932	2.7982493	20	10 21.2	21.5
513485 2009 <i>DK</i> ₆₆	17.2	X	144.91673	266.96448	300.17020	1.84079	0.1908410	0.21916708	2.7244939	20	10 16.3	21.9
513486 2009 <i>DE</i> ₆₈	17.4	X	245.59813	277.85605	142.45590	7.85713	0.2273771	0.22297850	2.6933579	20	7 9.9	21.8
513487 2009 <i>DS</i> ₉₆	17.3	X	152.97710	53.52077	150.75428	14.01563	0.0824086	0.22309482	2.6924216	20	10 26.3	21.5
513488 2009 <i>DM</i> ₉₈	16.7	X	19.75304	241.37985	61.54880	4.82115	0.0867811	0.21053851	2.7984337	20	9 17.9	20.2
513489 2009 <i>EV</i>	20.0	X	51.52489	250.24338	138.57011	17.00334	0.5232035	0.43369289	1.7285470	20	—	—
513490 2009 <i>EH</i> ₂₃	16.8	X	149.40078	179.25511	22.81474	17.19333	0.1570898	0.21474394	2.7617781	20	10 14.6	21.3
513491 2009 <i>FM</i>	16.9	X	205.63947	149.90675	6.90773	14.25309	0.1873491	0.22562463	2.6722580	20	10 8.4	21.0
513492 2009 <i>FA</i> ₁₄	18.0	X	180.18805	21.38802	126.89836	17.43689	0.3977730	0.21805319	2.7337644	20	9 2.9	23.4
513493 2009 <i>FF</i> ₄₈	17.2	X	116.98651	34.73446	176.50560	12.21794	0.1158629	0.20940936	2.8084842	20	9 22.8	21.4
513494 2009 <i>FC</i> ₅₇	16.7	X	128.64483	84.84488	150.10155	29.91844	0.3701101	0.21182187	2.7871190	20	11 15.7	22.6
513495 2009 <i>HB</i> ₃₂	17.2	X	154.02606	128.42267	60.99692	8.61731	0.1495284	0.21181589	2.7871715	20	10 6.6	21.8
513496 2009 <i>HM</i> ₅₇	16.9	X	126.29880	195.30725	40.98378	17.27794	0.2635981	0.21241188	2.7819556	20	11 5.9	21.9
513497 2009 <i>HB</i> ₈₂	17.7	X	150.09129	301.53622	316.68882	10.97692	0.5995309	0.21513759	2.7584080	20	12 13.9	23.9
513498 2009 <i>HH</i> ₈₄	17.2	X	153.92081	350.53468	202.48000	12.59737	0.2239159	0.21062550	2.7976631	20	10 6.1	22.1
513499 2009 <i>HX</i> ₁₀₈	17.1	X	33.17722	92.62947	204.99732	4.40240	0.1019700	0.20342041	2.8633408	20	9 28.2	20.6
513500 2009 <i>KE</i> ₃₇	13.6	X	305.56019	182.73703	90.82738	22.42824	0.1245851	0.08430473	5.1511171	20	4 22.3	20.5
513501 2009 <i>OY</i> ₂₀	16.2	X	350.78205	320.13266	344.63233	7.45779	0.2408951	0.17706834	3.1408132	20	8 1.4	19.1
513502 2009 <i>OB</i> ₂₃	16.1	X	349.02792	170.73211	143.53864	12.02660	0.0967338	0.17596557	3.1539217	20	8 7.6	20.1
513503 2009 <i>PD</i> ₉	16.4	X	336.16921	326.15120	355.11982	6.14215	0.1669923	0.17114676	3.2128486	20	7 24.9	20.0
513504 2009 <i>QD</i> ₅	15.9	X	340.81174	327.94084	335.21304	25.40511	0.2060108	0.17285756	3.1916147	20	7 13.3	19.7
513505 2009 <i>QO</i> ₂₁	17.7	X	350.13821	14.95250	349.71158	6.24682	0.2019733	0.27723552	3.2923610	20	11 21.6	19.8
513506 2009 <i>QK</i> ₂₈	16.0	X	49.26693	302.12855	329.85453	15.40572	0.1941040	0.18545989	3.0453419	20	9 22.8	20.3
513507 2009 <i>QE</i> ₃₂	16.2	X	240.34632	291.97152	147.83692	15.78719	0.0672466	0.17876474	3.1209117	20	8 20.2	20.5
513508 2009 <i>QD</i> ₅₉	18.8	X	306.71784	8.09274	17.06959	2.69753	0.2463271	0.26611946	2.3937840	20	9 1.9	20.3
513509 2009 <i>RH</i> ₅₂	18.1	X	312.91573	355.86955	53.55306	2.02276	0.1702660	0.27075863	2.3663620	20	11 6.0	20.0
513510 2009 <i>RL</i> ₅₈	17.5	X	337.18612	359.59026	2.05032	10.80649	0.2110735	0.26893436	2.3770511	20	10 11.6	19.1
513511 2009 <i>RY</i> ₅₈	16.3	X	4.65057	26.53520	272.78797							

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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>
513521 2009 VS ₅	18.3	X	19.20979	35.93073	44.95200	19.09052	0.0586565	0.38685160	1.8654049	20	—	—
513522 2009 VE ₂₀	18.0	X	44.14065	348.43723	345.74146	2.55103	0.2287327	0.27933647	2.3176666	20	—	—
513523 2009 WW ₁₈	18.1	X	150.89623	149.70258	80.09387	6.49326	0.0998105	0.27178156	2.3604205	20	11 29.0	21.4
513524 2009 WW ₃₂	18.1	X	269.76896	350.78897	69.65726	6.46359	0.2108219	0.25611881	2.4556986	20	8 22.8	21.1
513525 2009 WF ₃₇	18.0	X	280.70255	55.67592	20.15408	2.65895	0.1795929	0.26235822	2.4166083	20	10 6.2	20.4
513526 2009 WG ₁₂₇	18.6	X	259.13350	192.59509	245.07165	1.05646	0.1490842	0.25619507	2.4552113	20	9 7.1	21.7
513527 2009 WJ ₁₈₁	18.1	X	266.08769	334.68371	111.29050	3.55962	0.1963573	0.25996280	2.4314308	20	9 24.6	20.9
513528 2010 AH ₆₁	14.9	X	124.76574	206.54668	255.36628	13.21763	0.1933102	0.12518449	3.9576347	20	5 22.2	21.0
513529 2010 CR ₁	18.5	X	191.72907	70.68336	313.01165	25.75785	0.7333504	0.61357606	1.3715883	20	3 24.3	22.1
513530 2010 CY ₁₆	17.1	X	190.41444	65.14790	124.69353	12.15116	0.2126255	0.24005401	2.5640711	20	11 9.7	21.5
513531 2010 CW ₁₀₀	18.5	X	300.25332	71.16400	141.85134	24.50488	0.0488755	0.38394159	1.8748187	20	—	—
513532 2010 DC ₂	16.6	X	180.96892	154.94170	325.10444	12.67813	0.1756053	0.23286412	2.6165819	20	8 5.2	20.9
513533 2010 DW ₆	17.5	X	353.20765	41.58589	342.29504	24.33818	0.1924326	0.34877063	1.9988312	20	—	—
513534 2010 EB ₂₂	18.2	X	357.43464	298.56955	177.42481	21.92888	0.0992857	0.37299518	1.9113222	20	—	—
513535 2010 EW ₃₅	18.1	X	326.48661	337.86665	176.46920	21.69446	0.0440957	0.37221441	1.9139941	20	—	—
513536 2010 EA ₇₆	17.3	X	187.05625	314.07515	189.05689	11.48812	0.1370394	0.23502154	2.6005444	20	9 7.8	21.5
513537 2010 ED ₁₀₄	18.0	X	186.70662	192.46517	14.57985	19.45779	0.0728699	0.34863516	1.9993489	20	—	—
513538 2010 FP ₉₁	17.8	X	187.39471	96.05260	81.69382	6.07962	0.2144212	0.24121874	2.5558107	20	10 21.5	22.0
513539 2010 GK ₃₂	17.8	X	154.80335	49.34701	165.38985	12.82107	0.2961274	0.23770219	2.5809560	20	11 6.9	22.7
513540 2010 JZ ₄	16.9	X	183.51510	239.06324	74.50245	10.40106	0.0849565	0.24351584	2.5397126	20	9 17.4	20.9
513541 2010 JF ₄₃	17.3	X	141.40853	28.44765	183.32596	13.13001	0.1801393	0.23066154	2.6332126	20	10 22.8	21.7
513542 2010 JG ₄₃	17.9	X	169.89943	215.53457	55.93442	23.53215	0.0484342	0.35007152	1.9938762	20	—	—
513543 2010 JY ₇₅	16.8	X	33.53544	225.22453	73.47621	15.23915	0.2012104	0.21951527	2.7216072	20	10 25.8	20.4
513544 2010 JC ₁₀₄	16.7	X	54.63858	191.37065	81.60386	13.53659	0.0638213	0.23705559	2.5856471	20	10 3.9	20.4
513545 2010 JB ₁₂₂	17.2	X	144.14337	138.31786	87.55169	5.19546	0.1648574	0.23432952	2.6056618	20	11 11.0	21.4
513546 2010 LZ ₁₄	17.1	X	195.33001	352.41820	184.11761	13.72208	0.1703645	0.23582682	2.5946209	20	10 29.2	21.2
513547 2010 MG ₄₀	16.4	X	214.15137	100.73569	334.15369	14.70859	0.0578298	0.18119478	3.0929455	20	7 18.9	21.1
513548 2010 ML ₉₄	16.3	X	310.64644	326.78968	358.69600	27.91530	0.1406040	0.18107115	3.0943531	20	6 14.6	20.9
513549 2010 MA ₁₁₆	16.2	X	258.57526	62.63987	305.20292	15.83740	0.2681002	0.18050792	3.1007866	20	5 14.5	21.4
513550 2010 NG ₃	17.2	X	145.45707	194.38822	64.12436	26.96901	0.5675826	0.23450219	2.6043826	20	12 11.6	23.0
513551 2010 NQ ₃₆	16.3	X	306.79675	332.42562	357.13644	16.37273	0.1211156	0.17890007	3.1193376	20	6 18.9	20.7
513552 2010 NN ₆₆	16.7	X	61.20642	157.64798	116.45300	9.26335	0.1973421	0.21023524	2.8011242	20	10 24.7	20.9
513553 2010 ND ₁₀₄	15.7	X	253.53898	19.36654	12.47661	18.07798	0.1433421	0.17655476	3.1469011	20	6 26.5	20.7
513554 2010 OS ₄₅	16.1	X	255.07355	35.88669	5.66491	12.37666	0.0956956	0.17762535	3.1342436	20	7 20.2	20.8
513555 2010 OK ₇₉	16.0	X	270.30616	291.67305	69.90853	27.40223	0.2358609	0.17459019	3.1704640	20	5 27.2	20.7
513556 2010 OY ₈₅	15.7	X	251.84341	68.17492	334.27578	14.88495	0.0754628	0.17606209	3.1527690	20	7 20.2	20.3
513557 2010 PE ₇₄	16.5	X	66.88882	304.14404	340.89266	10.62144	0.2700322	0.21261501	2.7801833	20	11 13.7	21.1
513558 2010 RJ ₈₇	16.4	X	220.88437	86.95314	326.76169	5.89123	0.1344615	0.17369766	3.1813155	20	6 19.6	21.5
513559 2010 RP ₁₃₃	16.0	X	260.03134	52.78361	339.46599	21.54050	0.2021289	0.18016288	3.1047443	20	6 30.2	21.0
513560 2010 RT ₁₄₇	15.9	X	303.06036	344.80956	18.24468	15.28371	0.0184558	0.18300479	3.0725178	20	8 17.4	20.4
513561 2010 RL ₁₈₈	13.7	X	314.54948	355.84190	294.63791	6.17785	0.0171618	0.08133418	5.2757877	20	5 23.1	20.6
513562 2010 TX ₅₈	16.8	X	11.79246	16.17489	284.15739	5.97350	0.1279856	0.18907683	3.0063798	20	8 28.3	20.5
513563 2010 TP ₆₀	16.4	X	255.20590	137.65244	231.07674	9.13847	0.1078160	0.17381473	3.1798868	20	6 3.6	21.0
513564 2010 TM ₆₆	16.4	X	354.43657	317.30306	551.25311	10.63067	0.0983937	0.18937569	3.0032160	20	8 14.1	20.1
513565 2010 UD ₇	18.3	X	346.39889	86.17630	318.59891	4.36759	0.1027417	0.30784280	2.1722845	20	—	—
513566 2010 UO ₁₂	18.3	X	11.33691	3.59187	4.68466	1.73760	0.1738301	0.30636707	2.1792547	20	—	—
513567 2010 UC ₁₀₂	16.7	X	279.91375	309.51916	55.01362	12.08306	0.0811328	0.17411095	3.1762791	20	7 2.8	21.2
513568 2010 UQ ₁₀₈	16.5	X	69.57083	231.72292	51.43472	6.06072	0.1022712	0.19751966	2.9200873	20	10 27.6	20.7
513569 2010 UU ₁₀₈	16.4	X	221.94336	58.53295	17.68410	5.41359	0.1698186	0.17265000	3.1941722	20	7 16.6	21.5
513570 2010 VY ₁₂	16.2	X	264.08368	310.52373	72.99202	12.06903	0.2273774	0.17709326	3.1405185	20	6 16.2	20.9
513571 2010 VW ₂₆	17.8	X	259.71061	56.66792	61.38154	24.23983	0.1641640	0.29256884	2.2472463	20	11 14.6	20.1
513572 2010 VX ₃₉	19.1	X	344.22740	15.36963	77.15051	11.31379	0.4221438	0.41041644	1.7932997	20	—	—
513573 2010 VN ₉₃	16.0	X	134.57941	112.52982	57.50393	10.74896	0.0345990	0.17486527	3.1671381	20	8 16.5	20.8
513574 2010 VC ₁₀₁	16.2	X	94.20689	164.53200	55.79936	12.71122	0.0688280	0.17661867	3.1461419	20	9 7.2	21.0
513575 2010 VF ₁₇₉	15.8	X	309.96003	301.61029	58.59129	11.19632	0.0659291	0.17755906	3.1350237	20	8 15.2	20.1
513576 2010 VS ₁₉₁	16.4	X	358.20917	69.10119	230.83046	7.00900	0.0138318	0.17245331	3.1966005	20	7 29.8	21.0
513577 2010 VH ₂₁₃	16.3	X	299.10560	23.65063	356.65292	11.27613	0.0931083	0.18544661	3.0454872	20	8 22.1	20.2
513578 2010 VX ₂₁₇	16.2	X	338.40855	280.49055	36.89906	15.41092	0.1014695	0.17792443	3.1307303	20	7 31.5	20.4
513579 2010 VB ₂₁₉	16.0	X	198.40654	209.73267	261.10108	9.22110	0.0662802	0.17862198	3.1225743	20	8 7.5	20.9
513580 2010 WW ₂	18.4	X	352.52049	296.23676	93.94413	1.86723	0.1501226	0.30172550	2.2015474	20	—	—
513581 2010 WT ₆₂	18.6	X	303.48423	199.99109	247.20414	4.54230	0.1265385	0.29818377	2.2189459	20	12 26.3	20.5
513582 2010 XA ₅₀	15.4	X	180.26564	36.94956	82.23126	24.26533	0.0878184	0.16988463	3.2287418	20	8 3.2	20.7
513583 2010 YW ₂	15.9	X	116.58980	263.75370	341.81243	9.20343	0.0463486	0.17763871	3.1340864	20	10 20.8	20.6
513584 2011 AF ₃₈	18.6	X	307.83207	356.65396	50.50233	3.84884	0.1333823	0.28372630	2.2936984	20	10 28.3	20.3
513585 2011 AS ₆₀	18.2	X	290.79005	4.58536	84.64648	2.84856	0.1021051	0.28893882	2.2660289	20	12 2.0	20.2
513586 2011 CQ ₃	17.7	X	195.74097	295.07280	291.20511	5.76814	0.1897678	0.28957094	2.2627300	20	—	—
513587 2011 CD ₁₄	17.7	X	169.54708	277.66340	318.20762	6.75932	0.1602996	0.28517923	2.2859012	20	12 24.4	21.2
513588 2011 CP ₂₇	18.5	X	291.90067	100.87422	349.90398	4.68133	0.1437486	0.28660089	2.2783356	20	12 1.7	20.4
513589 2011 CB ₃₆	18.5	X	292.51015	331.38731	110.37412	5.33747	0.1934633	0.28684417	2.2770472	20	11 17.5	20.0
513590 2011 JC ₅₄	18.4	X	313.80428	99.75979	327.57846	4.54412	0.1088693	0.28548721	2.2842569	20	12 10.1	20.5
513591 2011 CC ₉₂	18.1	X	194.70704	346.49594	196.55095	4.67457	0.1150446	0.27810987	2.3244763	20	11 17.0	21.2
513592 2011 DW ₇	17.9	X	146.82159	256.56099	358.87550	6.50890	0.1914260	0.27479755	2.3431179	20	12 23.6	21.8
513593 2011 DR ₂₄	18.1	X	241.97640	22.39185	109.93686	6.88951	0.2238209	0.28064753	2.3104428	20	10 25.8	21.0

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>
513601 2011 <i>FB</i> ₈₂	18.0	X	156.73000	178.49669	43.89082	2.24057	0.1253696	0.27061306	2.3672105	20	11 23.7	21.5
513602 2011 <i>FU</i> ₁₄₅	17.3	X	178.78105	246.45166	355.14821	22.99229	0.2402762	0.27601509	2.3362223	20	—	—
513603 2011 <i>FX</i> ₁₅₂	17.8	X	175.35705	84.93003	114.08109	22.09104	0.2705682	0.26728391	2.3868264	20	11 12.8	22.3
513604 2011 <i>GY</i> ₁₂	18.1	X	190.76103	329.45237	227.26201	3.76107	0.1690207	0.27235941	2.3570807	20	11 22.9	21.5
513605 2011 <i>GA</i> ₃₀	18.4	X	249.40733	70.48487	75.49094	3.16351	0.1516921	0.28017408	2.3130450	20	12 3.5	20.8
513606 2011 <i>GL</i> ₃₄	18.1	X	133.01481	47.65181	207.33969	4.66626	0.1453800	0.26824965	2.3810943	20	12 10.9	21.8
513607 2011 <i>GV</i> ₄₂	18.5	X	233.62891	80.48344	48.22940	2.41233	0.1346877	0.27398531	2.3477465	20	10 19.3	21.2
513608 2011 <i>GW</i> ₅₅	17.9	X	239.65198	39.92030	106.28014	6.70586	0.0674693	0.26934105	2.3746577	20	11 30.7	20.7
513609 2011 <i>HW</i> ₅₈	18.0	X	167.96762	188.97084	40.53883	3.02996	0.1937803	0.27056821	2.3674721	20	12 9.3	21.6
513610 2011 <i>GO</i> ₆₇	17.6	X	178.34583	180.18812	57.72998	8.49749	0.2134805	0.27592694	2.3367198	20	12 28.6	21.2
513611 2011 <i>GV</i> ₆₇	17.7	X	119.22169	212.41630	49.58691	11.74806	0.2205391	0.26303853	2.4124397	20	12 5.6	21.9
513612 2011 <i>GZ</i> ₇₃	18.1	X	146.31965	246.19829	350.03151	0.95691	0.1758558	0.26530420	2.3986854	20	11 28.5	21.8
513613 2011 <i>HX</i>	18.4	X	283.76953	48.43872	136.14489	23.21969	0.0642229	0.40331174	1.8142988	20	—	—
513614 2011 <i>HG</i> ₃₁	17.4	X	92.44151	300.68246	23.69966	7.58084	0.1379882	0.27547803	2.3392577	20	—	—
513615 2011 <i>HA</i> ₅₃	18.2	X	86.92908	320.93471	41.35659	22.35900	0.1377384	0.39282474	1.8464469	20	—	—
513616 2011 <i>HS</i> ₆₆	17.8	X	109.47316	178.19148	83.74010	3.42654	0.1685523	0.25728017	2.4483030	20	11 26.6	21.8
513617 2011 <i>HS</i> ₆₈	18.1	X	222.22102	41.43648	121.21661	2.98874	0.1466774	0.27152369	2.3619148	20	11 17.6	21.0
513618 2011 <i>HW</i> ₆₈	17.8	X	60.49730	233.82024	76.11723	3.94807	0.1843484	0.25738334	2.4476487	20	12 10.1	21.2
513619 2011 <i>HG</i> ₇₅	17.8	X	136.48730	16.69897	242.40379	1.81344	0.1805187	0.26954087	2.3734840	20	12 18.5	21.5
513620 2011 <i>JE</i> ₁₆	17.9	X	213.09075	86.09386	96.01731	3.11918	0.1174460	0.27170520	2.3608628	20	12 5.5	21.0
513621 2011 <i>JH</i> ₁₆	18.0	X	147.26501	38.09866	200.27548	5.35417	0.1805067	0.26473629	2.4021146	20	12 2.4	21.9
513622 2011 <i>JS</i> ₂₄	17.6	X	93.32106	168.56021	135.34761	7.23766	0.1339540	0.26858764	2.3790964	20	—	—
513623 2011 <i>KH</i> ₈	17.5	X	146.80386	150.79854	92.00216	5.54965	0.1588428	0.26306218	2.4122951	20	12 7.5	21.1
513624 2011 <i>KV</i> ₁₁	17.7	X	154.26199	307.68064	290.63887	6.36403	0.2096447	0.26687461	2.3892662	20	12 6.8	21.8
513625 2011 <i>KD</i> ₁₅	17.7	X	145.04005	92.89115	155.00271	21.30406	0.2727482	0.26384124	2.4075442	20	12 12.1	22.4
513626 2011 <i>KC</i> ₃₀	16.3	X	14.24956	277.51806	43.52738	11.28056	0.2889020	0.23788240	2.5796523	20	11 7.3	18.8
513627 2011 <i>KU</i> ₄₇	15.9	X	336.53949	253.34719	99.18071	29.83973	0.3237086	0.23209821	2.6223351	20	10 17.3	18.6
513628 2011 <i>LM</i> ₈	17.9	X	173.86022	74.33005	139.06242	2.03808	0.1280442	0.26492539	2.4009715	20	11 29.1	21.3
513629 2011 <i>OU</i> ₅	16.9	X	229.65942	180.56559	258.75109	8.16478	0.1011062	0.21439859	2.7647429	20	8 2.9	21.0
513630 2011 <i>OU</i> ₂₂	17.2	X	16.85510	0.65135	318.52516	5.57240	0.2312594	0.23052340	2.6342645	20	10 25.6	20.2
513631 2011 <i>OH</i> ₂₉	18.5	X	99.53047	229.74083	115.71351	21.96305	0.0530091	0.37774788	1.8952566	20	—	—
513632 2011 <i>OR</i> ₅₂	17.2	X	71.93067	138.85284	143.87497	11.07682	0.1093301	0.24070863	2.5594203	20	11 10.3	21.0
513633 2011 <i>OU</i> ₅₈	13.6	X	262.91926	1.05418	323.79642	35.41418	0.0539248	0.08272984	5.2162843	20	4 7.6	21.1
513634 2011 <i>OP</i> ₆₀	13.9	X	294.95128	327.86064	327.58589	14.44955	0.0419058	0.08360387	5.1798653	20	4 27.8	20.9
513635 2011 <i>QQ</i> ₂₅	17.5	X	93.81766	291.41993	346.61023	12.89390	0.1928584	0.23907850	2.5710412	20	11 27.1	21.9
513636 2011 <i>QW</i> ₄₃	17.5	X	107.12256	300.72944	298.36077	11.33781	0.0927131	0.23172509	2.6251493	20	10 12.2	21.6
513637 2011 <i>QF</i> ₄₆	18.9	X	344.81074	307.42648	165.99337	23.74578	0.1334595	0.37140832	1.9167625	20	—	—
513638 2011 <i>QF</i> ₅₇	18.6	X	197.22057	138.11151	159.14751	21.91947	0.0567880	0.38811416	1.8613572	20	—	—
513639 2011 <i>QF</i> ₆₂	16.9	X	281.42751	31.55167	333.13879	14.54318	0.1525257	0.20415145	2.8565011	20	6 27.0	21.0
513640 2011 <i>QR</i> ₇₃	14.0	X	332.40208	303.94437	323.50484	18.17991	0.0801222	0.08260909	5.2213663	20	5 7.8	20.9
513641 2011 <i>QS</i> ₇₇	17.2	X	52.01500	309.84214	348.93733	10.52336	0.2542827	0.23204856	2.6227091	20	11 17.5	21.2
513642 2011 <i>QE</i> ₉₃	18.3	X	57.18805	63.54666	335.27026	19.45232	0.1049995	0.36873021	1.9260323	20	—	—
513643 2011 <i>RV</i> ₄	17.6	X	311.00540	173.80048	193.30080	5.29435	0.1011659	0.21481497	2.7611692	20	8 20.5	20.8
513644 2011 <i>RX</i> ₈	17.7	X	87.20745	85.13317	181.85958	8.52088	0.0736150	0.22998061	2.6384077	20	10 30.7	21.4
513645 2011 <i>RG</i> ₁₀	17.1	X	256.98913	213.22094	188.98202	9.01616	0.1289402	0.20586559	2.8406226	20	7 15.0	21.3
513646 2011 <i>SO</i> ₆	17.3	X	319.12754	154.42291	197.34105	4.75235	0.1761982	0.21275291	2.7789819	20	8 4.6	20.3
513647 2011 <i>SX</i> ₂₁	17.9	X	143.51935	179.39693	153.68286	24.27135	0.0451021	0.37801990	1.8943473	20	—	—
513648 2011 <i>SP</i> ₃₁	18.3	X	17.14922	79.64842	5.82267	19.88532	0.0650815	0.36855021	1.9266594	20	—	—
513649 2011 <i>SE</i> ₃₈	16.3	X	24.20248	296.31790	31.31441	14.27894	0.2307721	0.22353576	2.6888797	20	11 15.6	19.7
513650 2011 <i>SE</i> ₄₅	17.1	X	338.09545	20.72928	316.20278	3.81518	0.0897509	0.21446028	2.7642128	20	8 25.5	20.3
513651 2011 <i>SS</i> ₆₆	16.7	X	179.07898	99.22014	306.75502	9.05040	0.2044408	0.17934239	3.1142065	20	4 28.9	22.3
513652 2011 <i>SW</i> ₈₉	17.8	X	110.57180	296.29852	7.70953	18.96711	0.0547911	0.35499292	1.9754055	20	—	—
513653 2011 <i>SX</i> ₁₀₇	16.7	X	71.97951	272.73920	17.21082	14.98546	0.1315381	0.23155451	2.6264384	20	11 12.3	20.7
513654 2011 <i>SA</i> ₁₄₆	17.0	X	301.52317	156.85144	227.88529	3.74670	0.0876065	0.21453961	2.7635313	20	8 31.0	20.4
513655 2011 <i>SL</i> ₁₅₀	16.8	X	235.16351	87.46157	14.06531	9.20517	0.1338671	0.21328518	2.7743565	20	9 8.7	20.8
513656 2011 <i>SB</i> ₁₅₅	17.4	X	330.82136	192.87271	160.69116	4.65280	0.0831029	0.21433266	2.7653099	20	9 6.6	20.7
513657 2011 <i>SO</i> ₂₃₅	17.0	X	350.13444	332.85315	2.44786	9.13696	0.1750343	0.21347469	2.7727143	20	9 18.3	19.5
513658 2011 <i>SO</i> ₂₅₄	17.5	X	353.61022	53.38201	268.36733	6.19789	0.0934154	0.21851607	2.7299025	20	8 28.4	20.9
513659 2011 <i>TO</i> ₈	17.9	X	334.22636	279.21669	168.47943	23.46012	0.1151057	0.35498844	1.9754221	20	—	—
513660 2011 <i>UC</i> ₁₁	17.4	X	316.26008	359.84874	354.69431	7.06820	0.0994579	0.21202003	2.7853822	20	8 15.3	20.7
513661 2011 <i>UU</i> ₉₅	17.7	X	220.86237	263.79217	183.68557	1.78629	0.0289767	0.20260439	2.8710240	20	8 12.8	21.7
513662 2011 <i>UN</i> ₁₁₃	16.2	X	224.46203	335.64742	55.25239	10.39750	0.2479627	0.18311857	3.0712449	20	5 18.4	21.5
513663 2011 <i>UL</i> ₁₅₈	16.7	X	173.05567	14.94444	78.19415	14.61356	0.2435553	0.17996003	3.1070770	20	6 22.1	22.1
513664 2011 <i>UX</i> ₂₅₀	16.7	X	242.48630	321.37740	67.67493	12.65858	0.1567488	0.18520979	3.0480827	20	6 8.6	21.5
513665 2011 <i>UD</i> ₃₁₅	17.0	X	204.10862	335.98812	101.98665	4.03670	0.2070048	0.18553514	3.0445183	20	6 29.6	22.2
513666 2011 <i>UK</i> ₃₃₇	16.8	X	200.05541	253.57769	188.14242	14.53047	0.3139675	0.18395045	3.0619786	20	6 26.3	22.6
513667 2011 <i>UQ</i> ₃₄₃	16.7	X	234.76190	237.86113	146.34860	12.64249	0.2641342	0.18665087	3.0323736	20	5 21.0	22.0
513668 2011 <i>UV</i> ₃₅₁	17.0	X	263.50969	338.15666	38.23964	10.40271	0.1019489	0.19313030	2.9641654	20	6 24.1	21.3
513669 2011 <i>UN</i> ₃₅₉	16.6	X	239.80556	329.83419	62.95403	10.60882	0.2229441	0.18517877	3.0484231	20	6 4.2	21.5
513670 2011 <i>UQ</i> ₃₆₃	17.0	X	324.41464	329.72703	49.37379	4.67318	0.1107135	0.21454447	2.7634896	20	10 2.4	20.1
513671 2011 <i>VZ</i> ₁	16.7	X	227.87801	149.52154	280.55784	4.86579	0.0753187	0.19831018	2.9123219	20	7 23.9	20.9

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>		
513681	2011	YY ₃₂	15.4	X	72.71469	313.64417	266.71845	10.04244	0.0569223	0.17450574	3.1714868	20	7 30.9	19.9
513682	2011	YR ₇₉	16.2	X	267.67547	269.80153	123.11328	9.87681	0.1435866	0.18380634	3.0635788	20	7 14.4	20.5
513683	2012	AJ ₁	15.3	X	258.03663	70.15228	289.93423	24.85430	0.2875168	0.17561084	3.1581676	20	4 29.8	21.0
513684	2012	AY ₁₄	16.6	X	216.36446	306.19441	129.46234	12.88641	0.1067190	0.17518015	3.1633417	20	7 14.1	21.4
513685	2012	BQ ₂₀	16.2	X	314.73348	65.86101	299.44898	8.22315	0.0298628	0.18201835	3.0836088	20	8 24.9	20.5
513686	2012	BU ₂₇	16.6	X	236.23475	297.31768	127.35041	8.65766	0.2152280	0.18059855	3.0997491	20	7 10.8	21.5
513687	2012	BF ₅₅	16.2	X	190.79704	331.12919	144.39919	18.22614	0.1024397	0.17053143	3.2205726	20	8 5.5	21.3
513688	2012	BS ₅₅	16.0	X	153.78478	348.31254	132.19972	11.15537	0.0622418	0.16036323	3.3553116	20	7 3.8	21.1
513689	2012	BY ₆₇	16.4	X	217.54870	134.45261	293.13260	10.57210	0.2042785	0.17588862	3.1548416	20	6 28.9	21.7
513690	2012	BZ ₈₉	16.8	X	191.20291	350.66726	106.65321	3.12675	0.1661708	0.17098348	3.2148937	20	7 13.1	22.0
513691	2012	BL ₉₄	16.5	X	153.88455	16.44905	135.78724	29.01630	0.1384342	0.17506084	3.1647790	20	8 15.4	21.6
513692	2012	BF ₁₀₀	15.9	X	337.24899	350.47311	330.61591	9.78449	0.0302735	0.17214011	3.2004767	20	8 1.8	20.2
513693	2012	BS ₁₀₂	16.7	X	161.09409	24.16259	120.26510	11.78404	0.1687647	0.17690505	3.1427456	20	8 13.9	21.9
513694	2012	BL ₁₁₁	16.0	X	229.73654	127.02045	116.05074	10.60486	0.1050564	0.17796034	3.1303092	20	8 7.5	20.7
513695	2012	BG ₁₃₅	16.4	X	141.99048	32.60685	108.68021	5.26103	0.0947447	0.17118864	3.2123246	20	7 19.1	21.4
513696	2012	BC ₁₄₀	16.2	X	182.63096	311.98947	161.13175	9.31219	0.1793113	0.16968211	3.2313105	20	7 23.1	21.6
513697	2012	BN ₁₄₁	16.4	X	97.51513	106.63656	107.80431	12.23413	0.1954635	0.17300770	3.1897757	20	9 15.1	21.6
513698	2012	BM ₁₅₆	16.1	X	98.24131	129.41574	137.23724	17.24427	0.2614260	0.17955347	3.1117654	20	11 21.4	21.7
513699	2012	CT ₂₄	16.4	X	214.33029	251.23060	181.45774	8.53219	0.1782286	0.17053361	3.2205451	20	7 2.6	21.7
513700	2012	CQ ₄₀	16.7	X	131.88764	69.29793	129.18911	11.24907	0.1382906	0.17531010	3.1617783	20	9 22.9	21.8
513701	2012	CA ₄₂	16.6	X	144.82705	194.12687	329.92847	11.09026	0.0998710	0.17254467	3.1954720	20	8 19.6	21.4
513702	2012	CL ₄₂	16.0	X	346.37812	347.40392	335.97568	16.56909	0.0145056	0.17270244	3.1935256	20	8 17.9	20.5
513703	2012	CS ₄₂	15.7	X	94.20601	255.64988	344.56190	14.53608	0.1713878	0.17387533	3.1791479	20	10 1.2	20.7
513704	2012	CB ₄₃	16.3	X	207.47853	359.18140	103.13357	10.21737	0.0916064	0.17751241	3.1355729	20	8 10.0	21.1
513705	2012	CA ₄₄	16.0	X	53.62072	27.14406	218.61749	7.36949	0.0226876	0.17133844	3.2104520	20	7 31.2	20.6
513706	2012	CK ₅₁	16.1	X	223.03192	296.17066	154.41360	24.61879	0.1025621	0.17549099	3.1596052	20	8 8.5	21.1
513707	2012	DL ₃₀	16.5	X	144.02234	219.96711	295.86702	9.03907	0.0327614	0.17557437	3.1586049	20	8 4.0	21.1
513708	2012	FC ₁₁	16.2	X	117.85892	286.09620	252.40316	2.98798	0.1779169	0.15755518	3.3950611	20	8 13.3	21.6
513709	2012	JS ₄₅	18.2	X	172.84984	191.64970	75.28941	5.40816	0.2034028	0.31021006	2.1612191	20	—	—
513710	2012	MF ₉	17.7	X	24.53715	238.96102	103.31757	6.85118	0.1761439	0.27953034	2.3165948	20	12 14.3	20.5
513711	2012	PC ₂₀	21.3	X	80.41326	290.20394	330.16118	14.40855	0.1841079	0.64425178	1.3276970	20	—	—
513712	2012	RR ₂₉	16.0	X	165.18072	158.21995	151.37017	12.08111	0.1698007	0.17680228	3.1439633	20	—	—
513713	2012	SL ₂	17.3	X	350.08293	10.28067	341.78723	14.42626	0.1232379	0.25199487	2.4824180	20	10 10.4	20.1
513714	2012	SC ₁₁	17.2	X	300.14182	75.04130	318.26732	4.75014	0.1215103	0.24029580	2.5623509	20	9 10.3	19.9
513715	2012	SM ₂₀	17.8	X	257.27414	160.94821	274.44443	3.01980	0.1421614	0.23528605	2.5985950	20	8 29.8	21.1
513716	2012	ST ₃₀	17.3	X	86.82779	349.60699	314.83856	8.70669	0.2389160	0.27482986	2.3429343	20	—	—
513717	2012	SE ₅₆	17.4	X	149.35458	358.14203	274.92054	4.94125	0.2456140	0.28203155	2.3028779	20	—	—
513718	2012	SH ₆₆	17.5	X	64.00959	350.55648	318.38090	4.18688	0.2328839	0.26828485	2.3808861	20	12 19.2	21.1
513719	2012	SJ ₆₈	15.9	X	77.07073	185.39754	14.39507	10.90032	0.0235999	0.19134789	2.9825445	20	7 11.2	20.2
513720	2012	TB ₄	17.1	X	248.06074	272.27732	158.41755	15.05890	0.1619281	0.22946636	2.6423481	20	8 8.2	21.0
513721	2012	TM ₁₀	17.5	X	317.35677	339.91297	27.56247	14.20259	0.1774181	0.23654089	2.5893966	20	9 7.9	20.2
513722	2012	TK ₃₈	17.5	X	191.64150	241.06608	294.94389	3.56325	0.0854902	0.25336769	2.4734429	20	10 31.6	21.0
513723	2012	TK ₄₄	17.6	X	222.97672	205.99996	310.05261	6.22759	0.0735950	0.25763967	2.4460250	20	11 14.5	20.9
513724	2012	TR ₉₂	17.4	X	271.40625	337.22833	94.49282	3.82758	0.1462469	0.24206279	2.5498660	20	9 18.2	20.4
513725	2012	TT ₁₁₇	17.9	X	110.14727	15.36229	270.09363	2.69226	0.1649280	0.27015011	2.3699142	20	12 27.6	21.4
513726	2012	TB ₁₂₀	17.7	X	187.07861	294.76283	280.43640	4.58205	0.1497120	0.26714612	2.3876471	20	12 13.1	21.2
513727	2012	TB ₁₃₆	17.0	X	213.53245	348.42676	127.94281	6.05375	0.0986493	0.23877458	2.5732224	20	9 8.9	20.6
513728	2012	TW ₁₇₃	17.6	X	220.23660	109.54231	6.59770	14.82465	0.0372157	0.24190078	2.5510044	20	9 24.4	21.0
513729	2012	TM ₁₈₇	16.7	X	342.28099	287.67110	54.14592	14.45027	0.1314917	0.23202163	2.6229121	20	9 22.7	19.7
513730	2012	TS ₂₀₈	17.8	X	257.82153	121.27189	300.91200	3.88255	0.1951086	0.22896415	2.6462105	20	8 5.0	21.5
513731	2012	TZ ₂₃₁	17.2	X	310.31186	339.18603	63.53716	9.68336	0.1387569	0.24702576	2.5155979	20	10 19.1	19.7
513732	2012	TY ₂₄₄	18.0	X	297.46120	256.76782	127.67103	3.03827	0.2343445	0.23774625	2.5806370	20	8 6.8	20.7
513733	2012	TT ₂₆₇	17.6	X	314.90907	253.25714	123.86468	5.78588	0.1399338	0.23923384	2.5699281	20	9 15.9	20.2
513734	2012	TS ₃₂₄	13.8	X	43.56294	168.73270	31.72600	12.89083	0.0223390	0.08271229	5.2170223	20	5 24.2	20.7
513735	2012	TR ₃₂₆	16.6	X	153.80227	251.99066	228.78164	11.65533	0.1808030	0.20913532	2.8109371	20	7 8.1	21.5
513736	2012	TT ₃₂₆	17.3	X	201.54066	332.15836	146.24941	6.23341	0.2003560	0.22965978	2.6408643	20	8 18.8	21.7
513737	2012	UT ₁	18.0	X	268.69160	289.57952	134.81245	3.69726	0.1430704	0.23724536	2.5842681	20	9 2.2	21.1
513738	2012	UO ₅	17.8	X	88.00099	216.01014	73.13678	3.33341	0.2119202	0.26542268	2.3979715	20	12 14.0	21.7
513739	2012	UJ ₅₃	17.6	X	274.45625	50.60184	327.59735	7.28611	0.2998783	0.22502405	2.6770106	20	6 12.2	21.5
513740	2012	UR ₅₉	17.8	X	263.00626	65.77980	339.34658	3.31308	0.2383515	0.22512559	2.6762056	20	7 14.1	21.5
513741	2012	UC ₇₆	17.1	X	221.63265	60.85683	47.47721	11.82827	0.1474144	0.22953875	2.6417925	20	9 6.0	21.2
513742	2012	UC ₈₁	17.5	X	260.60060	215.59993	223.17749	4.17871	0.1603262	0.24116003	2.5562255	20	9 5.5	20.9
513743	2012	UM ₈₈	17.0	X	270.05254	22.28062	49.57543	5.22842	0.1061579	0.23389062	2.6089205	20	9 21.8	20.2
513744	2012	UQ ₈₈	17.9	X	306.37447	138.16840	235.35201	4.10149	0.2260984	0.23206667	2.6225727	20	8 6.6	20.6
513745	2012	UM ₁₀₅	17.2	X	279.39484	81.84668	318.65264	4.28633	0.1878024	0.23158928	2.6261755	20	8 6.9	20.4
513746	2012	UE ₁₀₉	17.5	X	322.50173	337.19666	23.59285	9.36160	0.1745709	0.23787423	2.5797114	20	9 5.8	20.0
513747	2012	US ₁₁₆	17.4	X	243.58189	86.19338	15.41876	17.58498	0.0644594	0.24098131	2.5574892	20	10 2.1	20.7
513748	2012	UJ ₁₃₃	16.9	X	267.52759	114.04745	332.94172	8.98454	0.1019247	0.23988532	2.5652731	20	10 4.0	20.2
513749	2012	UV ₁₆₃	17.3	X	319.43659	60.54017	305.11107	3.62392	0.1353978	0.23334856	2.6129592	20	9 2.7</	

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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>
513761 2012 <i>WJ</i> ₃₆	16.3	X	194.44081	340.79772	70.82871	11.01251	0.1298877	0.19250702	2.9705601	20	5 23.1	20.9
513762 2012 <i>XM</i> ₂	16.7	X	338.58739	90.96850	290.02489	1.98180	0.1935129	0.24219615	2.5489299	20	11 9.5	18.8
513763 2012 <i>XP</i> ₂₇	17.4	X	216.26565	224.43800	257.29684	7.91814	0.2323509	0.22287496	2.6941919	20	8 29.3	21.9
513764 2012 <i>XA</i> ₃₀	17.7	X	225.67127	199.31670	258.79175	4.85719	0.2318030	0.22065242	2.7122533	20	8 10.5	22.0
513765 2012 <i>XZ</i> ₄₄	17.4	X	38.92980	227.44206	66.40932	5.67252	0.0565783	0.22769448	2.6560386	20	10 2.5	20.8
513766 2012 <i>XL</i> ₄₅	16.7	X	295.38700	96.34913	335.57072	6.93352	0.1120122	0.24022929	2.5628238	20	10 26.9	19.7
513767 2012 <i>XN</i> ₄₆	17.3	X	222.42134	198.17950	235.76582	5.95920	0.2475026	0.21185603	2.7868194	20	7 7.7	22.1
513768 2012 <i>XP</i> ₆₆	17.5	X	254.55561	225.22272	195.16063	8.48581	0.1095155	0.22088148	2.7103779	20	8 8.2	21.4
513769 2012 <i>XH</i> ₈₁	17.2	X	228.15096	263.23769	174.31807	5.12332	0.1439649	0.21715303	2.7413140	20	7 27.0	21.4
513770 2012 <i>XR</i> ₈₄	17.1	X	280.51133	278.91008	125.63922	13.94639	0.1805730	0.22682516	2.6628205	20	8 16.2	20.4
513771 2012 <i>XM</i> ₁₀₀	17.0	X	221.86677	176.75833	285.07420	8.28234	0.1335660	0.22072106	2.7116910	20	8 19.9	21.1
513772 2012 <i>XP</i> ₁₁₆	16.2	X	44.05529	213.44672	110.08784	12.32390	0.1748986	0.24485507	2.5304435	20	12 7.1	19.7
513773 2012 <i>YG</i> ₄	16.2	X	240.67502	209.55468	291.17429	12.30295	0.1131971	0.23190238	2.6238112	20	11 3.8	20.0
513774 2012 <i>YD</i> ₁₀	17.0	X	277.22711	40.41134	3.75551	4.06125	0.0671044	0.21300071	2.7768261	20	8 26.9	20.6
513775 2012 <i>YK</i> ₁₀	17.2	X	178.75660	50.46247	101.62248	6.11207	0.0642815	0.21101379	2.7942301	20	9 16.2	21.4
513776 2013 <i>AA</i> ₂	18.2	X	207.06408	259.70872	155.67587	6.85718	0.5475744	0.20402284	2.8577015	20	5 26.9	24.3
513777 2013 <i>AP</i> ₃	16.5	X	268.83457	355.46760	109.06957	22.85608	0.0284842	0.22648196	2.6655009	20	11 18.8	20.5
513778 2013 <i>AC</i> ₉	16.9	X	180.62718	72.88476	89.09272	14.81148	0.0697397	0.21683241	2.7440157	20	10 6.7	21.2
513779 2013 <i>AU</i> ₁₄	16.2	X	159.78361	142.40010	310.08174	18.01853	0.2005658	0.1865615	3.0432411	20	6 11.3	21.6
513780 2013 <i>AN</i> ₃₆	17.2	X	141.81152	69.67672	103.78717	12.46416	0.0668337	0.20537810	2.8451159	20	9 2.8	21.6
513781 2013 <i>AX</i> ₄₀	17.2	X	252.25728	315.43625	135.86966	5.75055	0.0834899	0.21666763	2.7454067	20	9 23.4	20.9
513782 2013 <i>AZ</i> ₄₁	16.6	X	280.09370	66.47718	334.38207	12.41055	0.1069889	0.20957211	2.8070300	20	8 20.0	20.1
513783 2013 <i>AO</i> ₇₀	17.0	X	143.21508	86.78491	121.41792	13.47078	0.1662631	0.21051599	2.7986332	20	10 21.7	21.8
513784 2013 <i>AN</i> ₇₇	16.3	X	124.04416	142.12720	69.18739	7.85619	0.0618625	0.20912743	2.8110078	20	9 30.6	20.5
513785 2013 <i>AS</i> ₇₈	17.2	X	192.09698	255.56302	196.73845	5.86044	0.1927238	0.19717714	2.9234680	20	7 6.9	22.2
513786 2013 <i>AY</i> ₁₂₄	16.9	X	253.38254	317.75051	95.82160	10.76636	0.2166883	0.20984924	2.8045581	20	7 16.0	21.1
513787 2013 <i>BS</i> ₉	16.1	X	159.57945	109.21212	321.92901	8.72098	0.0803683	0.17833705	3.1258994	20	5 7.9	21.0
513788 2013 <i>BL</i> ₄₅	18.0	X	47.12170	69.96460	298.11206	17.93329	0.1226299	0.37933552	1.8899648	20	—	—
513789 2013 <i>BN</i> ₄₆	17.2	X	151.22870	112.58976	70.51973	8.77472	0.1546106	0.20957104	2.8070306	20	9 27.0	21.9
513790 2013 <i>BH</i> ₆₁	16.1	X	100.21939	199.93426	320.73288	16.09686	0.1978432	0.17732764	3.1377506	20	7 12.7	21.0
513791 2013 <i>BB</i> ₈₃	16.7	X	184.20024	313.10631	150.40248	10.24827	0.0465932	0.18707895	3.0277460	20	7 17.2	21.3
513792 2013 <i>BH</i> ₈₃	16.2	X	61.17807	173.63127	70.24007	6.22814	0.0884521	0.17805727	3.1291730	20	8 25.9	20.6
513793 2013 <i>CH</i> ₄	17.5	X	224.61057	284.77235	159.33456	8.15579	0.0553724	0.20171170	2.8794883	20	8 9.3	21.5
513794 2013 <i>CN</i> ₃₉	17.2	X	136.63941	121.18127	98.00100	2.72710	0.1354265	0.21055042	2.7983282	20	10 23.6	21.6
513795 2013 <i>CB</i> ₄₃	17.2	X	215.62926	321.52053	124.00908	10.01989	0.2297718	0.20202306	2.8765290	20	7 17.7	22.1
513796 2013 <i>CD</i> ₅₈	16.1	X	242.09444	231.86572	165.46425	16.26038	0.0787516	0.18531033	3.0469802	20	6 28.2	20.9
513797 2013 <i>CJ</i> ₇₆	16.9	X	128.39133	88.31296	141.09450	5.72795	0.1026217	0.20881247	2.8138337	20	10 27.8	21.3
513798 2013 <i>CA</i> ₉₂	17.2	X	262.80770	264.63679	151.48557	11.60373	0.2094531	0.20927343	2.8097003	20	7 29.9	21.3
513799 2013 <i>CP</i> ₉₂	16.9	X	139.53972	280.57673	294.69426	2.78510	0.1327801	0.20892026	2.8128658	20	10 18.9	21.3
513800 2013 <i>CK</i> ₁₀₃	16.4	X	276.45253	300.37062	122.63983	9.60534	0.1406796	0.21411149	2.7672139	20	9 11.3	19.9
513801 2013 <i>CV</i> ₁₄₉	16.6	X	97.68107	225.87433	357.97384	12.64387	0.1893973	0.18924529	3.0045954	20	9 22.5	21.3
513802 2013 <i>CT</i> ₁₆₁	16.5	X	258.71303	230.40540	161.18417	10.41519	0.0558347	0.18455633	3.0552735	20	7 13.4	20.9
513803 2013 <i>CO</i> ₁₆₃	17.2	X	136.41076	194.70368	353.47948	4.05597	0.1630728	0.19318452	2.9636107	20	9 13.9	22.0
513804 2013 <i>CJ</i> ₁₇₄	17.2	X	174.06942	293.70525	187.20567	4.35510	0.1369455	0.18930609	3.0039521	20	7 26.5	22.1
513805 2013 <i>CU</i> ₁₇₄	16.8	X	154.85009	318.74384	162.23729	12.25021	0.1121607	0.18109977	3.0940271	20	7 7.6	21.8
513806 2013 <i>CC</i> ₁₇₅	15.7	X	63.38015	230.48648	341.80502	26.42326	0.1849415	0.17260172	3.1947678	20	8 8.6	20.4
513807 2013 <i>CX</i> ₂₀₇	16.3	X	204.92587	322.26379	139.00943	11.05429	0.0588974	0.19048511	2.9915438	20	8 7.5	20.8
513808 2013 <i>CJ</i> ₂₂₄	16.9	X	149.24331	136.42717	1.51590	10.35238	0.0606238	0.18418046	3.0594288	20	7 24.8	21.6
513809 2013 <i>CM</i> ₂₂₄	16.9	X	117.40865	64.44012	150.18335	1.53063	0.0889679	0.19332220	2.9622036	20	9 23.6	21.3
513810 2013 <i>CA</i> ₂₂₅	16.1	X	64.37316	58.67188	173.90341	16.77712	0.1762068	0.17694792	3.1422380	20	8 23.7	20.6
513811 2013 <i>CE</i> ₂₂₅	16.8	X	175.57443	296.72380	178.24296	8.50225	0.1408063	0.18475198	3.0531160	20	7 19.9	21.9
513812 2013 <i>DF</i> ₄	17.3	X	199.18533	98.43778	328.67315	13.10273	0.2616069	0.18927740	3.0042555	20	6 10.2	22.8
513813 2013 <i>DV</i> ₁₅	16.9	X	198.34534	266.82037	181.40785	13.15117	0.0807963	0.18893429	3.0078917	20	7 11.5	21.7
513814 2013 <i>DN</i> ₁₆	18.6	X	4.65526	313.69703	160.56346	23.09237	0.0618256	0.39435917	1.8416542	20	—	—
513815 2013 <i>EN</i> ₃	16.3	X	79.47237	249.59052	339.34193	25.16855	0.2761894	0.17929858	3.1147138	20	9 14.1	21.3
513816 2013 <i>EV</i> ₃	17.2	X	163.90711	155.25662	332.83401	8.68590	0.1052319	0.18722292	3.0261936	20	7 28.1	22.0
513817 2013 <i>EZ</i> ₄	18.1	X	218.15509	112.64875	89.59911	23.67472	0.0521721	0.36792065	1.9288566	20	—	—
513818 2013 <i>EX</i> ₉	17.0	X	162.11875	284.62888	200.18686	9.34452	0.0919823	0.18739859	3.0243021	20	7 18.2	21.9
513819 2013 <i>EE</i> ₁₀	17.6	X	134.54672	314.24832	203.23576	11.79503	0.2170443	0.18290344	3.0736527	20	8 4.5	23.0
513820 2013 <i>EE</i> ₁₅	16.8	X	104.90313	53.05418	161.68605	2.22386	0.0718341	0.19338899	2.9615215	20	9 7.9	21.2
513821 2013 <i>EO</i> ₁₇	16.1	X	90.21382	46.39929	145.39655	10.58980	0.0494909	0.17266013	3.1940473	20	7 17.7	20.7
513822 2013 <i>ES</i> ₂₀	16.4	X	143.18904	311.95780	176.85336	17.44333	0.2548824	0.18198580	3.0839764	20	7 11.4	22.0
513823 2013 <i>EB</i> ₂₁	16.8	X	124.14987	333.44349	209.34135	8.78414	0.0333548	0.19256497	2.9699640	20	8 13.9	21.2
513824 2013 <i>ET</i> ₃₂	18.3	X	224.05901	224.60436	350.23656	19.34835	0.0500916	0.37306199	1.9110940	20	—	—
513825 2013 <i>EC</i> ₃₅	17.1	X	96.32556	69.97182	158.49740	12.89164	0.2452472	0.18528250	3.0472852	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>
513841 2013 GC ₁₀	16.6	X	101.98392	64.00888	147.00481	5.69926	0.0950012	0.18384527	3.0631463	20	9 1.9	21.0
513842 2013 GP ₁₈	17.0	X	98.92784	140.67784	74.54467	9.53282	0.2214933	0.18375244	3.0641779	20	9 20.9	22.1
513843 2013 GC ₂₃	18.1	X	244.51602	76.01582	161.78406	22.83696	0.0831515	0.38097570	1.8845364	20	—	—
513844 2013 GM ₅₃	16.2	X	156.23719	105.73715	54.23416	13.85021	0.0946614	0.18241330	3.0791562	20	9 2.9	21.2
513845 2013 GD ₅₇	16.6	X	160.63894	344.08058	168.85509	9.43154	0.0974906	0.18659912	3.0329342	20	8 21.7	21.3
513846 2013 GE ₇₄	16.8	X	126.81543	107.02983	77.96775	12.89066	0.1699033	0.18515860	3.0486445	20	9 7.3	21.9
513847 2013 GJ ₇₄	16.4	X	140.11963	51.71274	142.63444	13.16607	0.0954619	0.19270966	2.9684773	20	9 25.7	21.1
513848 2013 GP ₇₆	15.8	X	43.40336	201.86628	48.41033	21.97297	0.0918869	0.17054481	3.2204042	20	8 17.1	20.6
513849 2013 GQ ₇₇	18.2	X	61.16398	359.49506	18.84203	21.25884	0.0865633	0.36894141	1.9252972	20	—	—
513850 2013 GN ₇₉	18.3	X	242.16760	80.38057	148.01544	22.28051	0.0862469	0.37914069	1.8906122	20	—	—
513851 2013 GM ₈₀	18.0	X	230.00186	176.85004	51.80349	22.78895	0.0522500	0.37238845	1.9133977	20	—	—
513852 2013 GL ₉₆	16.7	X	120.37123	110.10716	94.84714	2.63461	0.2134313	0.18563971	3.0433749	20	9 23.1	21.7
513853 2013 GX ₉₇	16.5	X	110.43049	195.53863	15.63826	7.48137	0.2013153	0.18128917	3.0918718	20	9 20.9	21.5
513854 2013 GE ₉₉	16.7	X	125.98773	111.90161	60.92031	6.77065	0.1869782	0.17914725	3.1164677	20	8 20.1	21.8
513855 2013 GA ₁₀₀	16.2	X	57.95594	183.02832	89.30482	10.94336	0.2023335	0.17520995	3.1629831	20	10 15.2	20.9
513856 2013 GS ₁₀₇	16.3	X	102.48365	25.16321	184.53252	11.22780	0.1428462	0.17627429	3.1502383	20	9 2.9	21.2
513857 2013 GJ ₁₁₂	16.2	X	143.84518	329.80158	203.37006	10.65636	0.1006546	0.18336800	3.0684592	20	8 27.3	21.2
513858 2013 GZ ₁₃₂	16.6	X	148.41750	20.00634	141.11094	8.13416	0.1221486	0.18431334	3.0579581	20	8 21.3	21.3
513859 2013 GD ₁₃₃	16.4	X	67.08480	341.88464	254.93240	3.79902	0.1065733	0.17798148	3.1300612	20	8 22.5	20.8
513860 2013 GN ₁₃₈	18.3	X	206.36312	195.01356	53.02947	22.39066	0.0645155	0.36395430	1.9428450	20	—	—
513861 2013 HY ₁₄	17.8	X	164.48687	172.07161	155.73699	22.36416	0.0998931	0.38113781	1.8840020	20	—	—
513862 2013 HJ ₁₆	16.5	X	96.32222	178.54681	77.65381	4.01126	0.2188636	0.18743080	3.0239556	20	11 2.1	21.4
513863 2013 HP ₄₂	16.6	X	160.33686	143.23377	358.30205	8.60232	0.0264980	0.17515727	3.1636173	20	8 9.2	21.2
513864 2013 HB ₄₅	16.7	X	94.79248	267.84020	304.22431	4.47849	0.0536119	0.17572366	3.1568156	20	8 18.7	21.3
513865 2013 HQ ₅₇	16.6	X	161.46406	161.28688	5.79136	10.12075	0.0420319	0.18750934	3.0231111	20	9 12.2	21.0
513866 2013 HC ₁₁₈	16.9	X	165.00909	72.69978	34.15350	15.77322	0.2287979	0.17265520	3.1941081	20	7 3.1	22.6
513867 2013 HR ₁₂₄	16.8	X	60.65072	262.83480	351.69157	11.79870	0.1150037	0.17707852	3.1406929	20	9 9.4	21.0
513868 2013 JU ₇	17.7	X	98.16357	260.83433	125.24942	20.91561	0.0913264	0.38002784	1.8876687	20	—	—
513869 2013 JE ₂₄	15.3	X	57.01488	160.32376	100.04334	29.03236	0.1606485	0.17439667	3.1728090	20	10 2.1	20.4
513870 2013 JQ ₂₇	15.8	X	97.21516	70.41025	163.07167	27.04425	0.0831329	0.17697097	3.1419652	20	9 23.5	20.5
513871 2013 JY ₃₇	18.3	X	215.13626	104.26103	150.69919	24.83096	0.1024807	0.37445498	1.9063515	20	—	—
513872 2013 JZ ₄₀	16.2	X	126.11168	34.20623	165.73321	13.07460	0.0787146	0.17524766	3.1625293	20	9 11.9	20.9
513873 2013 JI ₄₉	17.0	X	149.80642	38.95295	135.14608	3.08862	0.1754700	0.18408360	3.0605019	20	9 8.9	21.9
513874 2013 JY ₅₂	16.1	X	104.72253	174.58175	20.44558	16.78147	0.1426834	0.17345322	3.1843036	20	8 27.6	21.2
513875 2013 JF ₆₀	16.0	X	61.22368	190.81801	54.55127	11.72755	0.0408548	0.16949720	3.2336601	20	8 22.8	20.7
513876 2013 KS ₆	18.0	X	139.87871	223.41171	104.75122	24.79274	0.0850027	0.36288103	1.9466739	20	—	—
513877 2013 KQ ₈	16.3	X	96.12451	14.09505	222.75841	9.96015	0.1636353	0.18165148	3.0877591	20	10 1.3	21.2
513878 2013 KK ₁₁	16.0	X	81.61301	152.18096	101.99920	18.13245	0.2062388	0.17469345	3.1692145	20	10 22.4	21.2
513879 2013 KU ₁₃	16.5	X	118.24417	37.17028	155.66056	9.58504	0.1519707	0.17437016	3.1731305	20	8 31.5	21.4
513880 2013 LE ₂₁	15.4	X	102.00867	123.72639	94.68857	32.99549	0.0935674	0.17083242	3.1267886	20	9 24.3	20.9
513881 2013 LC ₂₉	18.3	X	232.78460	144.17498	100.52534	24.64078	0.0423679	0.36931009	1.9240156	20	—	—
513882 2013 MH ₁	16.7	X	96.36395	103.81765	121.43220	9.57429	0.1834869	0.17410676	3.1763301	20	9 24.8	21.7
513883 2013 OW	18.0	X	252.70743	162.35448	280.47988	10.47473	0.1708826	0.28565267	2.2833747	20	8 31.4	21.0
513884 2013 OF ₁₁	18.0	X	195.79747	94.87920	164.79406	23.14059	0.0253893	0.34839731	2.0002588	20	—	—
513885 2013 PE ₄₂	18.9	X	324.91949	121.79578	299.80978	3.37894	0.0913056	0.30540080	2.1838490	20	12 28.5	20.7
513886 2013 RR ₂₂	18.4	X	321.88106	79.97237	339.27924	5.48041	0.1242327	0.29875151	2.2161338	20	12 19.8	20.3
513887 2013 SJ ₁₀₁	17.6	X	297.05782	23.46416	24.05510	8.04873	0.0837123	0.28381037	2.2932455	20	10 11.6	19.7
513888 2013 SL ₁₀₁	16.7	X	188.67677	185.89891	229.04456	13.94681	0.1665174	0.2259191	2.6699353	20	5 20.6	21.1
513889 2013 TS ₂₄	16.9	X	338.71315	12.89289	19.88930	25.23875	0.1549997	0.28970059	2.2620548	20	12 2.9	19.6
513890 2013 TW ₃₉	18.8	X	282.02786	291.42888	143.34757	0.76597	0.1874475	0.27920931	2.3183702	20	10 10.3	20.6
513891 2013 TY ₆₀	13.8	X	258.52524	60.37578	258.43314	10.30006	0.0680646	0.08220766	5.2383502	20	4 12.9	20.9
513892 2013 TR ₈₄	18.2	X	318.08660	115.70771	287.23541	2.74154	0.2280228	0.28685957	2.2769657	20	11 14.7	19.4
513893 2013 TX ₉₁	18.2	X	21.60828	344.80402	11.63909	2.61707	0.1894318	0.30064041	2.2068415	20	—	—
513894 2013 TG ₉₃	17.7	X	225.20399	356.23271	195.86379	5.27158	0.0428869	0.30787126	2.1721507	20	—	—
513895 2013 TJ ₁₂₉	17.8	X	356.27802	208.92750	158.66161	5.41390	0.2590678	0.29106790	2.2549652	20	12 24.8	20.0
513896 2013 UJ ₈	18.0	X	315.02739	301.15531	102.44030	7.19162	0.2362667	0.28233801	2.3012112	20	11 9.2	19.2
513897 2013 VJ ₂₅	17.8	X	224.61620	118.34358	51.31783	4.38679	0.0891650	0.28385510	2.2930045	20	12 10.7	20.4
513898 2013 VK ₂₅	16.8	X	219.31172	312.19323	141.18989	11.17843	0.1551345	0.23307270	2.6150206	20	8 7.8	20.8
513899 2013 WD ₃₄	18.3	X	288.61165	190.31696	250.23690	1.15913	0.1271778	0.27783146	2.3260289	20	11 8.6	20.2
513900 2013 WP ₉₁	18.4	X	290.08915	141.15971	295.34517	1.68498	0.1804266	0.27639565	2.3340773	20	10 28.9	20.1
513901 2013 XU ₂₆	17.0	X	231.59945	295.54350	171.87438	11.92471	0.1292006	0.23501206	2.6006143	20	9 12.3	20.6
513902 2013 YQ ₄	17.6	X	21.15393	270.29746	108.59836	5.74687	0.1176262	0.28498550	2.2869370	20	—	—
513903 2013 YP ₁₄	16.6	X	246.49178	289.44328	110.86424	16.13185	0.1890322	0.23632341	2.5909849	20	6 25.8	20.5
513904 2013 YG ₂₆	17.3	X	335.10764	285.01437	96.26222	5.92700	0.2155967	0.27154773	2.3617754	20	11 18.1	18.9
513905 2013 YE ₃₀	18.3	X	240.15151	229.75678	251.73759	2.95747	0.1972621	0.25927254	2.4357443	20	10 4.0	21.6
513906 2013 YA ₅₄	18.1	X	283.21677	139.98623	295.44604	1.58442	0.1641309	0.27081299	2.3660453	20	10 13.8	20.3
513907 2013 YU ₆₃	17.5	X	256.75328	26.34925	87.24532	6.83395	0.1345254	0.26161245	2.4211988	20	10 30.9	20.3
513908 2013 YS ₇₇	17.8	X	227.51599	62.96125	93.41641	9.73498	0.1494342	0.26595497	2.3947709	20	11 16.1	21.0
513909 2013 YN ₉₄	18.1	X	236.56911	46.77416	87.50590	2.17669	0.1102055	0.26267155	2.4146862	20	11 1.7	21.0
513910 2013 YX ₁₁₅	17.8	X	252.88837	20.99858	108.47708	3.81120	0.1154745	0.26592910	2.3949262	20	11 18.6	20.4
513911 2013 YF ₁₁₇	18.0	X	207.30388	136.95706	32.75378	1.65976	0.1278399	0.25799389	2.4437856	20	11 7.8	21.2
513912 2013 YE ₁₂₆	17.9	X	209.86788	91.50946	66.99755	0.48234	0.1388708	0.25870401	2.4393116	20	10 26.4	21.4
513913 2013 YC ₁₄₆	18.2	X	9.43113	14.16515	352.13309	5.98281	0.1464456	0.27684341	2.3315600	20	12 19.9	20.9
513914 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>
513921 2014 BO ₃₄	18.1	X	178.28759	213.35212	4.54232	2.18846	0.1577008	0.26022464	2.4297995	20	12 5.3	21.9
513922 2014 BO ₄₂	17.0	X	207.64579	271.24882	283.51475	6.55552	0.0598793	0.26992140	2.3712527	20	12 23.1	20.0
513923 2014 BO ₅₈	17.3	X	193.96640	27.10475	147.21659	16.01057	0.0146397	0.25389659	2.4700067	20	11 15.9	20.9
513924 2014 BK ₆₆	16.9	X	172.91603	189.83607	327.47530	12.06024	0.0409423	0.24521763	2.5279487	20	9 14.7	20.5
513925 2014 CK ₇	17.6	X	223.26573	54.21019	91.28987	3.57159	0.1502233	0.25582623	2.4575706	20	10 24.4	21.0
513926 2014 CA ₁₂	17.6	X	189.87619	10.72930	140.27958	16.76259	0.1852821	0.24104562	2.5570343	20	9 24.0	21.9
513927 2014 CD ₂₂	17.1	X	152.28470	2.33323	150.50558	14.59293	0.1839629	0.22256358	2.6967042	20	8 18.3	21.7
513928 2014 DQ ₄	16.8	X	70.52389	58.04898	241.25908	6.25573	0.2079600	0.24663179	2.5182761	20	12 7.4	20.5
513929 2014 DU ₄	17.7	X	164.95894	60.72797	128.46195	6.21379	0.2523772	0.23628678	2.5912527	20	10 15.5	22.3
513930 2014 DZ ₁₉	17.1	X	134.37499	224.77997	353.12463	12.55507	0.2233553	0.22981172	2.6397001	20	10 18.9	21.7
513931 2014 DO ₄₁	17.6	X	255.04762	269.06599	205.08135	0.92239	0.1327068	0.25788046	2.4445022	20	10 25.8	20.5
513932 2014 DA ₄₄	17.6	X	154.27127	101.88594	114.40888	7.04447	0.1747172	0.24330390	2.5411873	20	11 10.6	21.8
513933 2014 DB ₅₅	17.3	X	114.05880	101.65198	150.51642	7.52214	0.1445229	0.23542179	2.5975960	20	11 16.4	21.5
513934 2014 DR ₅₆	17.5	X	256.93955	62.01430	11.82395	11.62933	0.1768562	0.23625632	2.5914754	20	8 28.3	21.1
513935 2014 DL ₆₀	17.5	X	164.19677	106.96807	62.10662	5.78435	0.0974729	0.22838245	2.6507020	20	9 22.9	21.5
513936 2014 DT ₆₆	17.4	X	226.29789	316.90084	161.47807	22.46200	0.0227474	0.23209840	2.6223337	20	10 8.4	21.2
513937 2014 DJ ₇₆	17.6	X	241.15673	103.03415	353.30209	12.52666	0.1243143	0.23576775	2.5950543	20	9 11.1	21.0
513938 2014 DN ₇₉	17.3	X	243.36646	68.07733	17.90255	22.28088	0.0382903	0.22527711	2.6750055	20	9 19.0	21.1
513939 2014 DM ₈₃	17.1	X	317.14905	240.59147	149.62382	7.80302	0.1459656	0.24265884	2.5456888	20	10 11.2	19.6
513940 2014 DP ₈₇	16.9	X	236.16949	274.43361	164.66795	14.95752	0.0740503	0.22818191	2.6522548	20	8 16.6	20.7
513941 2014 DD ₈₈	17.8	X	279.43181	91.09802	316.41997	6.66256	0.1920115	0.24342118	2.5403709	20	8 16.9	20.8
513942 2014 DR ₉₆	17.9	X	138.12499	117.65164	91.24396	3.41506	0.1370828	0.23145303	2.6272060	20	10 15.7	22.1
513943 2014 DC ₁₀₅	17.8	X	218.08951	111.94465	353.07980	2.43466	0.1950557	0.23554302	2.5967046	20	8 18.8	21.9
513944 2014 DJ ₁₀₇	17.5	X	149.56118	246.93223	332.92615	4.37640	0.1476936	0.24154809	2.5534869	20	11 6.9	21.7
513945 2014 DJ ₁₁₀	17.2	X	99.79566	267.98006	6.24682	16.01037	0.2203852	0.22987310	2.6392303	20	11 26.7	21.9
513946 2014 DE ₁₁₇	17.4	X	200.41119	41.47110	96.36816	5.45122	0.0781596	0.23489748	2.6014600	20	9 24.6	21.2
513947 2014 DZ ₁₂₃	17.0	X	100.47238	234.97220	359.35387	11.26031	0.1560629	0.22316086	2.6918904	20	10 7.3	21.3
513948 2014 DZ ₁₂₉	17.6	X	274.51367	269.08686	153.37964	9.36864	0.0877847	0.23676234	2.5877817	20	9 17.7	20.8
513949 2014 DB ₁₃₉	17.7	X	153.52263	18.75276	174.66381	13.58747	0.0940165	0.23501833	2.6005681	20	10 12.4	21.6
513950 2014 DO ₁₄₀	17.2	X	118.21771	279.21825	349.59668	11.62991	0.3009693	0.23816698	2.5775970	20	12 10.9	22.1
513951 2014 DS ₁₄₆	16.3	X	176.31711	246.10970	156.01245	11.80228	0.1581733	0.18318313	3.0705233	20	4 28.0	21.5
513952 2014 DC ₁₄₇	17.0	X	165.84689	218.25486	325.66499	11.00220	0.1223001	0.23553766	2.5967440	20	10 5.4	21.3
513953 2014 DJ ₁₄₇	17.3	X	271.44180	2.29884	35.35914	6.07729	0.0518191	0.22560103	2.6724443	20	9 9.5	20.8
513954 2014 DO ₁₄₇	17.3	X	209.03686	346.64214	119.61560	4.61599	0.0520370	0.21582034	2.7525875	20	8 22.9	21.1
513955 2014 EO ₄	17.7	X	175.10010	29.55062	164.30500	13.09627	0.2126289	0.24004289	2.5641503	20	10 31.3	22.1
513956 2014 EM ₄₃	17.8	X	161.71749	232.56553	343.89411	4.93106	0.1773709	0.24236467	2.5477483	20	11 13.0	22.0
513957 2014 ED ₉₉	17.0	X	130.20911	253.82737	314.55738	15.11686	0.0475021	0.23530613	2.5984471	20	9 24.6	21.0
513958 2014 EG ₁₂₃	16.7	X	184.16419	174.67412	276.98030	8.06921	0.1140803	0.21490906	2.7603632	20	7 2.2	20.8
513959 2014 EF ₁₇₀	17.6	X	271.29004	209.59884	224.89497	3.94380	0.2236499	0.24668117	2.5179400	20	9 5.4	20.7
513960 2014 ES ₁₈₈	16.2	X	153.78115	183.86476	215.58399	10.24213	0.1171288	0.17956935	3.1115819	20	3 27.6	21.1
513961 2014 EB ₁₉₄	17.7	X	226.41758	163.80009	286.19127	3.09004	0.2683427	0.23677543	2.5876863	20	7 31.0	21.8
513962 2014 EM ₂₂₆	17.3	X	221.10904	128.33383	330.07668	11.80767	0.2230216	0.23348026	2.6119765	20	8 11.4	21.4
513963 2014 EO ₂₄₈	17.3	X	169.74826	176.06383	30.50090	13.91981	0.1812655	0.23298786	2.6156554	20	11 6.4	21.7
513964 2014 FT ₈	17.6	X	171.44460	13.43479	209.15620	5.31781	0.1468910	0.25825292	2.4421512	20	12 5.6	21.4
513965 2014 FO ₁₂	16.9	X	277.35620	66.76454	353.97422	11.05436	0.0984594	0.23342703	2.6123736	20	9 15.9	20.1
513966 2014 FW ₁₅	17.2	X	299.67227	25.40091	350.52696	5.76261	0.0605942	0.22151125	2.7052383	20	8 23.2	20.5
513967 2014 FJ ₂₀	16.8	X	22.58181	353.12637	318.26990	13.30470	0.1501623	0.23280695	2.6170102	20	10 6.6	20.2
513968 2014 FF ₄₀	17.4	X	141.57052	138.09412	93.96567	7.09468	0.1158100	0.24300066	2.5433009	20	11 18.1	21.3
513969 2014 FD ₄₃	16.9	X	104.97107	281.85398	353.68895	12.15613	0.2680139	0.23046636	2.6346991	20	12 6.9	21.8
513970 2014 FZ ₅₂	17.8	X	183.22864	120.02741	40.07986	4.26859	0.1596310	0.23238624	2.6201678	20	9 27.2	22.0
513971 2014 FH ₅₅	17.1	X	117.27035	228.85961	25.93870	13.65350	0.2157526	0.23238574	2.6201716	20	11 19.4	21.6
513972 2014 FU ₅₆	17.0	X	128.01247	112.99506	151.82832	13.79908	0.1309983	0.24475914	2.5311047	20	12 15.2	21.2
513973 2014 FN ₆₇	17.6	X	194.08088	67.85068	102.25468	9.62659	0.1387778	0.23932661	2.5692640	20	10 26.0	21.6
513974 2014 FA ₇₃	17.5	X	165.35738	327.10504	194.16686	8.48217	0.1615024	0.22033054	2.7148943	20	9 7.7	22.1
513975 2014 GO ₆	17.6	X	97.31597	267.45589	346.66009	3.08361	0.1753334	0.22391552	2.6858386	20	10 31.1	21.8
513976 2014 GG ₁₄	17.5	X	144.61525	32.73950	171.90491	5.66117	0.0858032	0.22446002	2.6814933	20	10 14.9	21.5
513977 2014 GA ₁₆	17.8	X	169.41654	80.08452	89.92674	3.21064	0.2472676	0.22974173	2.6402363	20	9 24.4	22.4
513978 2014 GT ₂₅	16.8	X	172.66914	133.60605	355.83865	10.98678	0.1192823	0.21485694	2.7608096	20	8 11.3	21.2
513979 2014 GC ₄₃	17.8	X	117.44309	29.66968	192.50773	3.32884	0.1608729	0.21537363	2.7563923	20	10 10.1	22.1
513980 2014 GH ₄₄	17.0	X	164.52805	166.81517	74.62161	13.34613	0.1592640	0.24460300	2.5321817	20	12 17.8	20.9
513981 2014 GH ₄₇	17.4	X	131.85341	81.60941	149.12145	12.12528	0.1738558	0.23211538	2.6222058	20	11 8.5	21.9
513982 2014 GY ₅₆	16.0	X	280.94932	261.44922	119.75427	10.84408	0.0948344	0.19036850	2.9927653	20	7 24.9	20.0
513983 2014 GG ₅₇	16.9	X	339.81547	335.48928	31.98418	6.47450	0.0366208	0.21885321	2.7270982	20	10 11.0	20.3
513984 2014 GH ₅₇	17.2	X	108.56685	5.53349	218.42115	7.10077	0.0730195	0.21237658	2.7822638	20	9 24.2	21.3
513985 2014 GN ₅₇	17.4	X	195.64810	282.43930	205.48802	7.02195	0.1181522	0.21531265	2.7569127	20	8 26.9	21.8
513986 2014 GD ₅₈	17.1	X	245.52585	277.89353	178.19803	4.34376	0.0227758	0.21782454	2.7356772	20	9 28.4	20.6
513987 2014 HN ₁	16.6	X	254.36912	65.59529	22.65858	22.28319	0.0503024	0.22789647	2.6544689	20	10 2.3	20.2
513988 2014 HY ₁₀	17.7	X	209.79324	79.77451	50.01624	13.06205	0.2170424	0.23041409	2.6350975	20	9 15.5	22.2
513989 2014 HV ₃₁	17.5	X	134.04283	88.08424	109.88423	4.72742	0.0319498	0.21462522	2.7627964	20	9 22.6	21.4
513990 2014 HZ ₄₂	17.0	X	137.90884	106.74666	131.68319	13.17796	0.1243019	0.22744645	2.6579692	20	11 21.9	21.4
513991 2014 HN ₄₈	17.6	X	228.83853	79.02202	34.98242	12.84404	0.1635140	0.23072149	2.6327565	20	9 18.9	21.6
513992 2014 HK ₅₄	17.3	X	97.45750	207.42587	50.14711	7.17236	0.2214542	0.21933426	2.7231092	20	11 8.3	21.6
513993 2014 HZ ₈₂	17.4	X	219.									

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>		
514001	2014	<i>HB</i> ₁₅₉	16.8	X	134.18827	178.78913	25.17353	13.24017	0.1287087	0.22170342	2.7036748	20	10 5.1	21.1
514002	2014	<i>HJ</i> ₁₇₂	17.1	X	56.42808	138.13951	146.62014	7.18692	0.0635659	0.21265014	2.7798771	20	10 12.2	20.9
514003	2014	<i>HV</i> ₁₇₉	17.8	X	165.14384	158.01717	46.78358	6.46978	0.1020236	0.23755698	2.5820076	20	11 6.0	21.8
514004	2014	<i>JC</i> ₁₀	17.5	X	117.34082	58.94581	175.49241	4.85897	0.0559315	0.21767808	2.7369042	20	10 19.9	21.3
514005	2014	<i>JF</i> ₁₁	17.0	X	86.73693	202.48369	75.84797	7.87059	0.0655519	0.22104349	2.7090534	20	11 10.8	20.8
514006	2014	<i>JG</i> ₁₈	17.0	X	89.86094	188.24342	43.63360	5.44869	0.1018637	0.21224691	2.7833969	20	9 20.4	21.0
514007	2014	<i>JR</i> ₄₇	17.0	X	56.98869	108.36958	142.39837	7.02246	0.1018469	0.19052101	2.9911680	20	8 30.6	20.9
514008	2014	<i>JE</i> ₄₈	15.8	X	350.06234	226.09876	88.17702	15.98229	0.1265463	0.18284284	3.0743318	20	8 15.4	19.6
514009	2014	<i>JK</i> ₅₅	16.5	X	227.65673	24.86020	57.42144	33.98728	0.2125608	0.23455588	2.6039851	20	8 5.3	21.3
514010	2014	<i>JB</i> ₅₉	17.5	X	210.18444	32.34990	103.76886	13.54281	0.2138522	0.22885156	2.6470784	20	9 23.1	22.0
514011	2014	<i>JZ</i> ₅₉	16.3	X	15.77263	198.75202	81.36032	11.06276	0.0809097	0.18761285	3.0219990	20	8 8.4	20.3
514012	2014	<i>JW</i> ₆₂	17.6	X	200.09011	355.31432	174.41251	13.43714	0.1778291	0.23507546	2.6001467	20	10 25.2	21.7
514013	2014	<i>JA</i> ₇₉	16.2	X	109.73927	170.77684	108.24799	34.02592	0.1578609	0.23060680	2.6336293	20	12 17.6	20.7
514014	2014	<i>JG</i> ₈₄	17.1	X	80.59272	131.21361	150.43357	12.81891	0.0982336	0.22389076	2.6860367	20	11 14.4	21.2
514015	2014	<i>JL</i> ₈₄	17.1	X	133.23519	359.42663	220.31693	7.22297	0.1327385	0.21759291	2.7376183	20	10 20.6	21.3
514016	2014	<i>JT</i> ₈₄	16.3	X	146.86731	347.04136	148.71441	11.35234	0.0580347	0.17988261	3.1079685	20	7 15.1	21.0
514017	2014	<i>JU</i> ₈₄	16.7	X	177.97144	321.76916	136.77484	10.42918	0.0425171	0.17602416	3.1532219	20	7 3.8	21.4
514018	2014	<i>JZ</i> ₈₄	16.5	X	58.60248	95.17494	136.30038	11.25414	0.0175576	0.18261996	3.0768327	20	7 24.2	20.7
514019	2014	<i>JP</i> ₈₅	16.4	X	35.29862	214.86766	66.72392	11.77253	0.1172089	0.19596452	2.9355158	20	9 18.8	20.4
514020	2014	<i>JS</i> ₈₅	16.0	X	190.60960	350.89290	93.33788	17.19719	0.0729570	0.17546411	3.1599280	20	6 29.4	20.9
514021	2014	<i>JD</i> ₈₆	16.6	X	144.10059	36.02465	137.80414	14.18543	0.0729831	0.19700801	2.9251410	20	9 2.6	21.0
514022	2014	<i>KP</i> ₇	17.4	X	138.64525	342.16487	247.12376	5.03459	0.0860068	0.22883424	2.6472119	20	11 7.0	21.2
514023	2014	<i>KS</i> ₂₂	16.6	X	69.99407	194.65557	98.95685	14.96296	0.1614116	0.22231817	2.6986884	20	11 24.2	20.8
514024	2014	<i>KU</i> ₂₂	17.0	X	139.78994	143.96301	112.22649	14.43405	0.1433721	0.23776400	2.5805086	20	12 14.3	21.2
514025	2014	<i>KK</i> ₂₆	16.3	X	301.72051	236.53835	94.69116	10.12164	0.0880497	0.17469498	3.1691960	20	6 18.6	20.6
514026	2014	<i>KE</i> ₃₄	17.2	X	161.80609	42.71079	159.51030	15.68893	0.0589727	0.22562506	2.6722545	20	11 3.1	21.3
514027	2014	<i>KR</i> ₄₂	16.0	X	14.05383	160.11193	126.54410	16.65559	0.2424681	0.18359760	3.0659004	20	9 1.5	19.3
514028	2014	<i>KH</i> ₅₃	17.7	X	145.31238	116.16819	95.33132	10.54552	0.2257616	0.22014015	2.7164593	20	10 27.4	22.6
514029	2014	<i>KF</i> ₆₈	16.6	X	96.14286	117.95581	89.08547	10.02816	0.0373599	0.19254195	2.9702007	20	8 17.4	20.9
514030	2014	<i>KL</i> ₇₂	16.6	X	175.42800	309.35669	197.07013	10.84794	0.0374908	0.19813191	2.9140685	20	8 29.9	20.9
514031	2014	<i>KY</i> ₇₅	16.4	X	99.57030	263.87121	6.81629	27.04618	0.4055067	0.23348574	2.6119357	20	11 27.3	21.9
514032	2014	<i>KD</i> ₉₃	16.6	X	93.83782	136.97802	75.41246	18.05087	0.1914688	0.19540062	2.9411608	20	9 15.8	21.5
514033	2014	<i>KQ</i> ₉₆	17.3	X	109.18966	128.34809	122.72905	5.97617	0.1170997	0.21657618	2.7461795	20	11 5.9	21.6
514034	2014	<i>KN</i> ₁₀₄	15.6	X	352.44153	179.84871	115.02751	19.68163	0.2221999	0.17948033	3.1126107	20	7 19.6	18.7
514035	2014	<i>LT</i> ₁₇	17.0	X	128.90581	92.01236	127.05966	9.78765	0.0873521	0.21153833	2.7896090	20	10 17.6	21.4
514036	2014	<i>LO</i> ₂₂	16.2	X	2.44888	35.96229	260.59046	11.49252	0.1505618	0.18132895	3.0914196	20	8 5.1	19.9
514037	2014	<i>LH</i> ₂₉	16.7	X	86.08318	165.23751	113.13307	9.60641	0.1987599	0.19863476	2.9091485	20	11 20.4	21.4
514038	2014	<i>ME</i> ₁₃	16.1	X	346.30977	356.73717	328.57231	12.84560	0.1718089	0.17441102	3.1726349	20	8 18.7	19.6
514039	2014	<i>MZ</i> ₁₄	15.9	X	35.57717	145.12927	135.04166	11.61131	0.1283871	0.17578971	3.1560248	20	9 11.6	20.0
514040	2014	<i>MQ</i> ₁₇	17.1	X	126.08996	107.96956	143.83371	26.31427	0.2691731	0.22464112	2.6800520	20	12 1.8	22.4
514041	2014	<i>MQ</i> ₁₈	15.5	X	45.57269	332.91594	347.29799	35.07275	0.5993514	0.19976216	2.8981925	20	—	—
514042	2014	<i>ME</i> ₂₆	16.3	X	28.15955	342.70070	299.21350	16.13475	0.1843920	0.17451495	3.1713752	20	8 30.9	20.4
514043	2014	<i>ME</i> ₃₅	15.7	X	162.60824	243.81201	252.06637	9.92949	0.0110743	0.18428866	3.0582311	20	7 30.1	20.1
514044	2014	<i>MM</i> ₅₀	17.9	X	31.11682	95.90232	174.07163	18.78890	0.0787633	0.38028240	1.8868262	20	—	—
514045	2014	<i>ML</i> ₅₂	15.8	X	18.16289	1.20380	277.85928	14.49751	0.1773696	0.16639818	3.2736859	20	8 9.7	19.8
514046	2014	<i>ML</i> ₆₃	17.7	X	115.84973	80.17158	169.18949	9.08707	0.2363202	0.21966722	2.7203569	20	11 16.0	22.5
514047	2014	<i>NM</i> ₂₄	15.9	X	47.00629	5.15089	274.01146	14.44383	0.1090187	0.18214341	3.0821971	20	9 13.5	20.4
514048	2014	<i>ON</i> ₃₇	16.2	X	106.87692	255.95360	308.59510	15.31713	0.1871903	0.18036495	3.1024250	20	9 1.6	21.3
514049	2014	<i>OK</i> ₇₀	16.1	X	73.24985	132.89132	140.71445	15.35619	0.2383754	0.18988767	2.9978153	20	11 8.1	21.1
514050	2014	<i>OK</i> ₁₀₄	16.1	X	37.30624	149.46256	131.11550	9.55212	0.1791343	0.17364207	3.1819945	20	9 22.4	20.2
514051	2014	<i>OE</i> ₁₁₁	15.9	X	5.46998	193.29487	111.89298	17.01237	0.0721054	0.17259429	3.1948595	20	8 24.1	20.2
514052	2014	<i>OC</i> ₁₁₉	16.1	X	59.33173	312.90415	311.12548	7.70370	0.0433289	0.17925333	3.1152379	20	9 6.2	20.5
514053	2014	<i>OM</i> ₁₂₉	16.4	X	356.21367	136.37930	163.60325	10.30289	0.1095016	0.18147733	3.0897342	20	7 31.0	20.2
514054	2014	<i>OH</i> ₁₃₅	16.6	X	68.30144	308.21905	319.44413	8.20615	0.1929451	0.18949405	3.0019653	20	10 12.6	21.2
514055	2014	<i>OR</i> ₁₈₅	16.3	X	18.16424	188.87438	116.50383	15.03579	0.1872681	0.17224580	3.1991673	20	9 28.7	20.4
514056	2014	<i>OQ</i> ₂₀₈	16.7	X	40.52365	77.93343	188.64305	0.65104	0.1474477	0.17400065	3.1776213	20	8 31.9	20.7
514057	2014	<i>OZ</i> ₂₁₂	15.9	X	103.25044	253.01958	307.37259	15.28348	0.1495451	0.17807102	3.1290120	20	8 21.9	20.8
514058	2014	<i>OL</i> ₂₉₈	18.1	X	182.23775	293.42401	344.62348	19.59364	0.0614788	0.39528580	1.8387749	20	—	—
514059	2014	<i>OZ</i> ₃₅₂	16.1	X	76.81578	309.06880	291.91878	7.73567	0.1652220	0.18033088	3.1028157	20	9 14.6	20.8
514060	2014	<i>OX</i> ₃₇₅	16.4	X	41.72690	319.43629	325.30749	11.93002	0.1461021	0.17970932	3.1099661	20	9 21.9	20.6
514061	2014	<i>OM</i> ₃₈₂	16.3	X	50.44013	297.02537	311.14014	15.29144	0.0980933	0.17082284	3.2169089	20	8 13.1	20.6
514062	2014	<i>OT</i> ₃₉₄	14.0	X	258.19006	207.68256	94.42587	10.16088	0.0505001	0.08263501	5.2202744	20	4 4.1	21.1
514063	2014	<i>OF</i> ₄₀₁	16.7	X	99.30886	99.08982	131.68403	8.14102	0.0398845	0.17579094	3.1560101	20	9 18.2	21.3
514064	2014	<i>PB</i> ₂	16.2	X	83.75399	118.74393	112.85564	12.66495	0.0319254	0.17692589	3.1424988	20	8 31.2	20.7
514065	2014	<i>PO</i> ₆	16.0	X	87.79986	287.64747	294.02211	12.40072	0.0398789	0.17044731	3.2216321	20	8 16.9	20.7
514066	2014	<i>PD</i> ₃₉	16.2	X	102.26977	237.31115	350.59306	21.86475	0.2880844	0.17873242	3.1212879	20	10 2.2	21.7
514067	2014	<i>PU</i> ₆₅	16.5	X	50.42464	19.71515	246.05613	3.13748	0.2351875	0.17817131	3.1278376	20	9 26.1	20.8
514068	2014	<i>QG</i> ₄₁	1											

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514081 2014 UN ₅₆	18.0	X	175.35541	227.05815	43.64519	21.18831	0.0824704	0.37892564	1.8913274	20	—	—
514082 2014 UG ₉₈	14.1	X	239.38235	165.79514	165.86083	7.65317	0.0877793	0.08254579	5.2240351	20	4 10.3	21.3
514083 2014 UL ₁₆₀	13.9	X	262.62876	54.87895	257.79970	7.37899	0.0112198	0.08335679	5.1900960	20	4 18.5	20.9
514084 2014 UR ₂₂₅	14.0	X	229.92019	272.85539	69.56763	8.58541	0.0432110	0.08449379	5.1434303	20	4 17.7	21.0
514085 2014 VO	18.1	X	115.83488	255.95737	89.74964	22.91232	0.1403904	0.38235990	1.8799855	20	—	—
514086 2014 VB ₂	18.2	X	4.96895	268.86170	173.50498	22.37800	0.1202129	0.37183961	1.9152800	20	—	—
514087 2014 VC ₂	18.4	X	168.91867	184.44314	80.19103	23.57497	0.0404537	0.37026664	1.9207006	20	—	—
514088 2014 VE ₁₀	18.0	X	168.28988	123.82578	161.77937	22.58927	0.0711585	0.37347539	1.9096835	20	—	—
514089 2014 WS ₁₃₇	13.7	X	280.76677	234.40392	65.97608	15.33221	0.1488731	0.08386827	5.1689728	20	4 15.4	20.7
514090 2014 WL ₃₅₅	15.7	X	265.98566	343.82457	226.31287	8.85844	0.0243176	0.17729545	3.1381304	20	—	—
514091 2014 WL ₃₇₀	18.4	X	332.32581	36.04324	90.17606	25.73304	0.1433403	0.36680481	1.9327664	20	—	—
514092 2014 WF ₃₇₁	18.8	X	116.86335	197.06535	164.74073	23.70421	0.0909802	0.38453125	1.8729016	20	—	—
514093 2014 WD ₄₉₂	17.1	X	169.19684	80.34652	41.92327	13.05815	0.1025626	0.27599720	2.3363233	20	8 4.1	20.7
514094 2014 WY ₅₁₀	17.9	X	11.89611	351.78209	96.91655	24.40582	0.0921328	0.35841170	1.9628236	20	—	—
514095 2014 WF ₅₁₁	13.4	X	284.99539	246.38220	69.50059	39.01117	0.0580444	0.08431626	5.1506476	20	5 19.9	20.3
514096 2014 WQ ₅₁₁	18.3	X	298.28950	140.16375	7.53066	19.15901	0.0586284	0.35174721	1.9875388	20	—	—
514097 2014 XW ₂₀	14.0	X	273.92544	46.37733	260.08640	5.13687	0.0559000	0.08263196	5.2204027	20	4 19.0	21.0
514098 2014 XE ₃₃	13.5	X	211.94435	309.06147	64.37950	11.04886	0.0861903	0.08223928	5.2370073	20	4 30.6	20.8
514099 2014 XL ₄₀	14.2	X	244.38390	260.11984	83.31354	2.46032	0.1201107	0.08239479	5.2304159	20	4 24.3	21.4
514100 2014 YY ₅₄	16.4	X	216.82054	287.22470	87.41708	15.76393	0.0732304	0.22207472	2.7006604	20	5 6.9	20.6
514101 2015 AO ₁	17.5	X	118.95258	288.28921	51.10407	22.18538	0.1209291	0.35853426	1.9623762	20	—	—
514102 2015 AT ₄₄	18.2	X	68.18080	257.73179	97.97164	13.12322	0.2537105	0.35021919	1.9933157	20	—	—
514103 2015 AO ₂₈₁	18.7	X	304.27893	170.97591	330.98205	17.40623	0.0798138	0.35311672	1.9823965	20	—	—
514104 2015 AA ₂₈₂	18.0	X	10.95690	289.48589	158.70627	22.52400	0.1091801	0.36081324	1.9541043	20	—	—
514105 2015 BT ₉₂	19.1	X	343.72695	38.50653	261.86800	8.96401	0.0730955	0.45117918	1.6835913	20	8 6.6	19.7
514106 2015 BG ₃₀₁	17.8	X	140.65168	239.12210	37.20170	3.78567	0.1481440	0.30555077	2.1831343	20	—	—
514107 2015 BZ ₅₀₉	16.0	X	134.93352	257.39071	307.74154	163.12714	0.0787291	0.08484185	5.1293536	20	6 5.9	24.2
514108 2015 BJ ₅₄₁	16.2	X	135.66465	0.14312	68.58126	11.40326	0.0748548	0.19234723	5.2272049	20	4 15.8	20.7
514109 2015 CD	17.8	X	158.59745	4.47659	2.20105	21.22218	0.0264418	0.38807832	1.8614718	20	1 27.0	20.1
514110 2015 CU ₅₄	18.7	X	246.71429	150.47810	350.70888	3.87438	0.1379303	0.30403940	2.1903632	20	11 30.6	20.8
514111 2015 DX ₉₈	17.8	X	146.39200	124.52206	143.01794	6.35000	0.1976789	0.30003089	2.2098294	20	—	—
514112 2015 DJ ₁₆₅	18.0	X	131.63491	117.73273	155.21791	6.63355	0.1524377	0.29871518	2.2163135	20	—	—
514113 2015 DA ₁₆₈	18.1	X	151.37987	123.97333	120.73947	5.12911	0.0740786	0.29776306	2.2210355	20	12 25.5	21.1
514114 2015 DF ₂₀₅	17.6	X	151.89641	115.33829	142.27654	7.12478	0.0971207	0.29693098	2.2251829	20	—	—
514115 2015 DV ₂₃₀	17.9	X	46.71191	193.05136	127.19071	10.12807	0.0685507	0.27251719	2.3561708	20	11 28.1	21.0
514116 2015 EB ₇₅	16.8	X	256.10882	42.22558	351.64560	6.53076	0.1380355	0.24440513	2.5335482	20	7 6.1	20.3
514117 2015 FH ₁₀₅	18.3	X	308.92421	222.36446	229.54984	5.86024	0.0710868	0.30718575	2.1753810	20	—	—
514118 2015 FL ₁₄₁	18.1	X	170.67916	208.58016	49.65628	2.41921	0.1225451	0.30934014	2.1652690	20	—	—
514119 2015 FR ₁₇₃	18.5	X	127.24762	177.54022	92.90461	6.91043	0.1033985	0.28971032	2.2620042	20	12 29.1	21.5
514120 2015 FL ₁₇₅	17.7	X	69.63279	181.22849	109.70972	9.64250	0.1183021	0.26648351	2.3916034	20	11 22.9	21.1
514121 2015 FJ ₂₄₉	17.4	X	49.36363	186.14357	153.57164	7.08368	0.1476708	0.29072267	2.2567500	20	—	—
514122 2015 FQ ₃₃₁	16.9	X	96.04846	215.04381	91.67701	8.85637	0.1240084	0.27775694	2.3264449	20	—	—
514123 2015 FW ₃₃₈	17.2	X	10.93791	202.68962	119.72400	7.60642	0.2412380	0.23050837	2.6343789	20	10 28.1	20.1
514124 2015 FS ₃₄₃	17.2	X	168.97214	176.33536	22.99310	4.94838	0.0997572	0.27736870	2.3286153	20	11 9.0	20.4
514125 2015 FO ₄₀₂	17.5	X	75.02131	200.69671	88.02316	7.58626	0.1310629	0.25769022	2.4457051	20	11 24.3	21.0
514126 2015 FR ₄₀₃	17.3	X	16.76956	183.69677	138.61654	7.50850	0.1161875	0.24125870	2.555285	20	10 20.5	20.3
514127 2015 GD ₁₈	18.5	X	161.95583	41.58681	214.53510	3.35263	0.1755160	0.30201249	2.2001525	20	—	—
514128 2015 GB ₂₉	17.5	X	95.29991	295.42062	3.05958	7.91439	0.1644705	0.28892585	2.2660968	20	—	—
514129 2015 GX ₃₀	18.5	X	140.77677	197.58530	48.71574	1.45475	0.0514733	0.29059314	2.2574205	20	12 14.5	21.5
514130 2015 GY ₃₉	18.1	X	232.97922	42.58749	136.85116	6.61926	0.0796068	0.30660106	2.1781458	20	—	—
514131 2015 HY ₂₇	18.2	X	156.85737	96.55154	170.19662	5.52673	0.1415140	0.30018151	2.2090901	20	—	—
514132 2015 HS ₁₁₀	16.6	X	319.85894	222.52544	124.84919	14.54682	0.2061525	0.23100031	2.6306375	20	7 31.2	18.7
514133 2015 HY ₁₃₃	17.9	X	252.11087	263.26503	206.96566	7.20823	0.0674610	0.27365461	2.3496375	20	10 30.3	20.5
514134 2015 HL ₁₃₄	18.1	X	219.20030	5.36882	207.99702	5.83220	0.1616273	0.30848304	2.1692779	20	—	—
514135 2015 HS ₁₅₂	17.9	X	114.43283	348.91209	281.15458	1.71281	0.1950440	0.27086522	2.3657411	20	12 13.4	21.8
514136 2015 HX ₁₅₂	17.9	X	150.44690	93.08561	148.97522	2.15547	0.1494017	0.27992310	2.3144274	20	12 13.2	21.4
514137 2015 HQ ₁₅₃	18.3	X	297.72114	273.94800	173.25640	7.09096	0.0663514	0.27932742	2.3177166	20	12 10.2	20.8
514138 2015 HW ₁₇₃	17.9	X	180.38559	139.54494	132.69947	4.12092	0.1906853	0.30960852	2.1640175	20	—	—
514139 2015 HO ₁₇₅	18.2	X	209.20230	137.85537	78.91384	6.32247	0.1284481	0.30739003	2.1744171	20	—	—
514140 2015 HM ₁₇₆	17.9	X	114.50813	256.05611	2.71280	5.38348	0.2003329	0.27109383	2.3644109	20	11 28.9	21.8
514141 2015 HL ₁₈₆	18.0	X	241.24600	327.79713	149.45497	6.96712	0.0644287	0.26678636	2.3897931	20	10 25.9	21.0
514142 2015 HK ₁₈₇	16.7	X	355.36166	38.00212	298.32728	4.91854	0.1816326	0.23700182	2.5860382	20	10 3.4	19.2
514143 2015 JK ₂	17.8	X	145.01708	186.24616	47.76187	2.55340	0.1643178	0.27534709	2.3399993	20	11 26.5	21.6
514144 2015 JV ₁₃	17.7	X	217.94831	79.71065	56.50836	6.42040	0.0812119	0.26583325	2.3955019	20	10 17.3	20.9
514145 2015 KO ₂₆	18.3	X	231.59003	160.33292	27.98517	4.37399	0.0730208	0.30062190	2.2069321	20	—	—
514146 2015 KD ₄₂	18.2	X	135.13208	180.67716	71.20086	2.37667	0.1540709	0.27315638	2.3524938	20	12 9.5	21.7
514147 2015 KN ₄₂	18.0	X	201.65648	124.77478	56.52714	6.22141	0.1005313	0.27807822	2.3246526	20	11 23.7	21.1
514148 2015 KL ₄₃	17.4	X	317.47529	174.43321	253.99977	5.15467	0.0259819	0.27360323	2.3499317	20	12 11.6	20.1
514149 2015 KN ₅₂	17.6	X	130.59977	228.77366	80.55331	5.07778	0.1561130	0.29313080	2.2443732	20	—	—
514150 2015 KJ ₅₇	21.4	X	149.52967	336.42920	14.40101	2.62753	0.4039652	0.50635679	1.5589480	20	1 18.7	22.3
514151 2015 KA ₉₂	17.5	X	15.28429	261.43698	107.10659	7.42895	0.1265796	0.26747801	2.3856716	20	12 25.6	20.4
514152 2015 KQ ₉₄	18.4	X	119.45087	97.48372	179.50019	5.34349	0.2277378	0.27343769	2.3508800	20	12 26.3	22.5
514153 2015 KQ ₁₁₆	17.8	X	134.10267	72.19147	177.12204	5.12699	0.2082507	0.27057140	2.3674535	20	12 5.2	21.8
514154 2015 KW ₁₂₅	17.6	X	98.81001	200.97096	69.69746	6.18064	0.1903232	0.26467704	2.4024731	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>
514161 2015 <i>LM</i> ₃₀	17.1	X	16.38100	172.77337	123.57192	4.70270	0.1108761	0.21150208	2.7899277	20	9 5.4	20.4
514162 2015 <i>LA</i> ₃₇	18.2	X	141.49753	34.85222	215.43281	4.46103	0.1800129	0.27823997	2.3237516	20	12 13.7	21.9
514163 2015 <i>LD</i> ₃₈	17.9	X	185.93732	28.49638	205.46948	4.68311	0.1328484	0.29431554	2.2383462	20	—	—
514164 2015 <i>LV</i> ₄₁	17.3	X	349.12771	206.07746	127.19080	3.16942	0.0811026	0.21412934	2.7670601	20	9 9.3	20.4
514165 2015 <i>LM</i> ₄₂	17.1	X	70.40578	198.32435	58.38489	3.12218	0.0294098	0.21947775	2.7219223	20	9 18.8	20.7
514166 2015 <i>MV</i> ₆	17.8	X	150.13909	34.02042	222.55046	5.60794	0.1967111	0.27079007	2.3661788	20	12 26.4	21.8
514167 2015 <i>MY</i> ₇	18.1	X	172.59824	69.91742	141.32497	6.90353	0.1667723	0.26045263	2.4283813	20	11 23.2	22.0
514168 2015 <i>MY</i> ₉	17.3	X	321.81496	222.58275	147.20221	6.88722	0.0312806	0.21761570	2.7374272	20	9 18.8	20.7
514169 2015 <i>MU</i> ₁₅	16.8	X	80.12384	17.82444	221.44478	8.19999	0.0683073	0.21381947	2.7697328	20	9 8.4	20.7
514170 2015 <i>MT</i> ₁₆	17.8	X	174.58384	312.27121	293.70873	4.67928	0.1381331	0.29779276	2.2208879	20	—	—
514171 2015 <i>MZ</i> ₁₇	18.3	X	200.93889	302.41075	292.77717	4.87048	0.1496644	0.30689039	2.1767766	20	—	—
514172 2015 <i>MG</i> ₂₉	18.7	X	197.50387	259.57649	304.40068	1.27912	0.1220106	0.28996587	2.2606750	20	12 18.8	21.4
514173 2015 <i>MA</i> ₃₁	17.7	X	335.20354	200.39493	157.61328	9.19074	0.1809309	0.23972070	2.5664473	20	9 28.4	19.9
514174 2015 <i>MS</i> ₄₆	17.1	X	67.64009	175.91596	87.82886	5.30970	0.1415054	0.21888867	2.7268037	20	10 11.5	21.0
514175 2015 <i>MC</i> ₄₇	17.7	X	139.70886	231.99048	31.57262	2.77287	0.1635499	0.25990100	2.4318162	20	12 25.4	21.6
514176 2015 <i>MN</i> ₄₉	17.1	X	95.15696	191.75708	86.16528	13.71083	0.1160836	0.23720058	2.5845934	20	11 27.5	21.0
514177 2015 <i>MC</i> ₅₂	17.7	X	161.90111	3.83569	241.45071	1.99469	0.1945889	0.27259188	2.3557405	20	12 23.7	21.5
514178 2015 <i>MM</i> ₅₄	18.2	X	98.63568	175.76004	97.58256	6.62331	0.2124197	0.26006160	2.4308149	20	12 3.8	22.2
514179 2015 <i>MX</i> ₅₇	17.2	X	91.57118	198.28749	99.61939	7.53564	0.1157160	0.25335985	2.4734940	20	12 19.9	20.8
514180 2015 <i>MC</i> ₅₉	17.7	X	168.85595	139.23371	101.15033	5.22808	0.1106481	0.27157642	2.3616091	20	12 30.3	20.9
514181 2015 <i>MK</i> ₆₁	17.9	X	143.83397	190.23728	85.85503	4.16226	0.1820152	0.27705539	2.3303706	20	—	—
514182 2015 <i>MT</i> ₇₆	17.7	X	129.58712	105.96994	144.84789	7.45046	0.1818016	0.25640717	2.4538571	20	12 1.9	21.8
514183 2015 <i>MC</i> ₇₇	16.6	X	270.51371	224.41278	137.19820	15.06863	0.1864281	0.17729699	3.1381122	20	6 4.9	21.4
514184 2015 <i>MX</i> ₇₈	17.2	X	147.65582	40.30590	144.06725	10.18626	0.0357561	0.22197293	2.7014859	20	9 22.9	21.0
514185 2015 <i>MN</i> ₇₉	17.3	X	358.20715	89.67428	238.54502	4.44757	0.0640864	0.21526069	2.7573563	20	9 12.7	20.8
514186 2015 <i>MQ</i> ₇₉	17.3	X	344.73792	208.93052	147.66062	6.70144	0.0645801	0.22227221	2.6990604	20	10 6.6	20.6
514187 2015 <i>ML</i> ₈₁	17.6	X	123.76587	335.56673	127.83407	5.83177	0.0797867	0.23893384	2.5720788	20	10 27.9	21.1
514188 2015 <i>MO</i> ₈₅	16.7	X	284.48963	235.81191	122.91823	22.33043	0.1317431	0.18349703	3.0670205	20	6 26.0	21.5
514189 2015 <i>MX</i> ₉₆	16.8	X	306.01193	243.27489	102.46607	16.12872	0.1714445	0.20585473	2.8407226	20	7 3.9	20.0
514190 2015 <i>MX</i> ₉₈	16.7	X	347.99904	224.53526	148.72343	11.10322	0.0852027	0.23070504	2.6328816	20	11 8.3	20.0
514191 2015 <i>MX</i> ₉₈	17.3	X	342.09140	210.35435	130.06008	6.05431	0.0651202	0.21068439	2.7971417	20	9 7.7	20.8
514192 2015 <i>MO</i> ₁₀₁	17.4	X	119.84884	149.94125	130.96180	6.58558	0.1254360	0.26370649	2.4083642	20	12 29.1	21.0
514193 2015 <i>MN</i> ₁₀₅	17.2	X	96.51223	250.65809	32.00178	1.40194	0.2009216	0.25158979	2.4850819	20	12 10.5	21.2
514194 2015 <i>MJ</i> ₁₀₈	16.6	X	254.69445	130.66657	295.70043	10.87745	0.0455190	0.21076892	2.7963939	20	8 23.6	20.5
514195 2015 <i>MV</i> ₁₁₀	17.6	X	145.20972	63.93553	175.99175	1.27719	0.1402657	0.25689026	2.4507798	20	12 1.8	21.4
514196 2015 <i>MD</i> ₁₁₁	17.4	X	94.25262	285.09483	171.19865	3.92124	0.1137719	0.22772156	2.6558280	20	10 7.7	21.4
514197 2015 <i>MH</i> ₁₁₁	17.6	X	103.23434	198.13230	92.43166	2.46483	0.1803309	0.25586338	2.4573327	20	12 25.6	21.6
514198 2015 <i>MW</i> ₁₁₄	16.9	X	335.43217	151.16346	176.71515	12.05673	0.0659826	0.19842186	2.9112290	20	8 5.3	20.8
514199 2015 <i>ML</i> ₁₁₈	17.7	X	187.28803	182.87668	33.01902	3.99574	0.1986713	0.26875361	2.3781168	20	12 9.4	21.2
514200 2015 <i>ML</i> ₁₃₃	18.0	X	115.61824	218.55672	16.52046	3.20963	0.1901346	0.24044442	2.5612949	20	10 28.2	22.0
514201 2015 <i>MO</i> ₁₃₄	16.5	X	326.84429	236.00698	74.43120	10.64506	0.0568951	0.17528201	3.1621161	20	7 1.1	20.6
514202 2015 <i>MS</i> ₁₃₅	16.6	X	260.60385	293.18307	102.98059	5.93776	0.1290332	0.18933869	3.0036072	20	7 12.5	20.7
514203 2015 <i>MB</i> ₁₃₆	17.0	X	264.66700	286.89285	144.10753	7.07895	0.0673066	0.21981635	2.7191263	20	9 15.8	20.6
514204 2015 <i>MG</i> ₁₃₆	17.2	X	90.00041	74.14716	186.45657	9.03850	0.0372863	0.23043765	2.6349180	20	10 21.3	20.7
514205 2015 <i>MJ</i> ₁₃₆	17.2	X	342.55847	231.42667	101.61823	5.53179	0.0761162	0.21287021	2.7779609	20	8 30.2	20.5
514206 2015 <i>MK</i> ₁₃₆	17.2	X	342.54115	229.34841	122.97106	7.20585	0.0475899	0.22262300	2.6962243	20	9 27.9	20.7
514207 2015 <i>MA</i> ₁₃₇	15.9	X	281.40158	240.52382	113.66824	13.04873	0.1125924	0.18533082	3.0467556	20	6 17.9	20.2
514208 2015 <i>MH</i> ₁₃₇	16.7	X	128.96408	240.39055	7.72111	11.59225	0.1620953	0.23058395	2.6338033	20	11 19.3	21.1
514209 2015 <i>NN</i> ₇	16.3	X	242.21771	135.98697	261.27176	9.04250	0.1178217	0.18106292	3.0944469	20	6 23.2	20.8
514210 2015 <i>NU</i> ₈	16.6	X	126.45409	299.17236	279.16491	4.53849	0.0773528	0.22998519	2.6383726	20	10 9.6	20.5
514211 2015 <i>NJ</i> ₁₆	17.1	X	109.30696	308.34101	304.90072	9.66503	0.0981390	0.23299370	2.6156117	20	11 4.2	21.2
514212 2015 <i>NP</i> ₂₃	17.0	X	31.83348	190.69328	107.63451	5.21598	0.2029111	0.22086556	2.7105081	20	10 19.5	20.3
514213 2015 <i>NN</i> ₂₆	16.7	X	357.78137	84.50115	231.80220	1.17719	0.0486530	0.20239942	2.8729620	20	8 25.8	20.4
514214 2015 <i>OU</i> ₄	17.2	X	109.73438	105.14263	148.68038	14.98649	0.0696557	0.24117499	2.5561198	20	11 13.3	21.2
514215 2015 <i>OE</i> ₆	16.2	X	224.91701	179.09056	240.81152	9.46441	0.0976734	0.18373023	3.0644248	20	7 3.8	20.9
514216 2015 <i>OB</i> ₁₁	17.5	X	131.64899	124.23992	82.72656	3.62540	0.0887242	0.22665150	2.6641806	20	10 5.1	21.5
514217 2015 <i>OT</i> ₁₂	16.9	X	350.84234	214.19579	105.16102	10.73260	0.0697490	0.20352042	2.8624026	20	8 24.0	20.5
514218 2015 <i>OU</i> ₁₂	16.9	X	21.38697	230.77078	97.84425	7.46790	0.0694144	0.22568395	2.6717897	20	10 26.2	20.4
514219 2015 <i>OH</i> ₁₄	16.5	X	257.45728	257.34154	123.19794	10.18949	0.1415761	0.17598632	3.1536738	20	6 17.3	21.2
514220 2015 <i>OK</i> ₂₁	16.9	X	278.40485	70.62076	289.49030	9.47495	0.1498145	0.18162766	3.0880292	20	6 15.1	21.2
514221 2015 <i>ON</i> ₂₃	16.9	X	92.66117	89.13753	214.90269	3.17635	0.2478921	0.25278460	2.4772450	20	—	—
514222 2015 <i>OA</i> ₄₆	17.0	X	84.57835	281.48762	338.97349	11.66820	0.1440221	0.23208795	2.6224124	20	10 20.5	21.1
514223 2015 <i>OE</i> ₅₉	16.1	X	279.54315	347.90043	41.20078	10.87177	0.1195549	0.18831380	3.0144953	20	8 2.3	20.3
514224 2015 <i>OC</i> ₆₄	16.8	X	88.11429	219.12677	65.79067	15.23451	0.0947911	0.22978366	2.6399151	20	11 24.1	20.7
514225 2015 <i>OE</i> ₇₀	17.1	X	80.27248	340.39581	298.23640	13.59549	0.1056763	0.23544882	2.5973972	20	11 4.6	21.2
514226 2015 <i>OV</i> ₇₃	17.3	X	97.22565	133.13986	137.70358	5.95669	0.1329407	0.24182423	2.5515427	20	11 22.7	21.2
514227 2015 <i>OV</i> ₇₃	17.0	X	76.39544	108.72104	171.08805	13.85159	0.2707492	0.23156549	2.6263554	20	11 24.7	21.5
514228 2015 <i>OO</i> ₈₄	17.1	X	37.63849	168.87359	121.11577	3.13369	0.0386940	0.20296082	2.8676617	20	9 17.6	21.0
514229 2015 <i>OF</i> ₈₅	17.1	X	2.85530	100.63169	236.12844	5.36325	0.0328974	0.21721751	2.7407715	20	9 29.2	20.6
514230 2015 <i>OF</i> ₈₅	16.7	X	57.85680	121.48142	151.45167	2.45730	0.0508007	0.19627425	2.9324267	20	9 22.3	20.6
514231 2015 <i>OH</i> ₈₆	16.7	X	293.26798	71.57899	355.09402	14.06396	0					

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>
514241 2015 PO ₂	16.5	X	99.13515	138.97286	138.61993	40.94627	0.0438933	0.23781408	2.5801464	20	12 6.7	21.1
514242 2015 PM ₃	16.9	X	81.74753	211.19151	94.13259	7.41598	0.1202575	0.24287385	2.5441861	20	12 17.1	20.5
514243 2015 PH ₈	16.2	X	294.42472	199.73022	200.13271	9.73243	0.1147097	0.20004402	2.8954695	20	9 3.1	19.9
514244 2015 PY ₃₀	17.3	X	118.96419	306.45621	316.06120	8.47768	0.1981106	0.24557245	2.5255131	20	12 3.2	21.7
514245 2015 PZ ₃₇	17.2	X	133.41812	246.88464	334.10975	13.87805	0.0874866	0.22889622	2.6467341	20	10 16.2	21.5
514246 2015 PC ₅₀	16.5	X	307.09830	277.27644	58.51163	5.59030	0.1710819	0.17696691	3.1420132	20	6 20.6	20.3
514247 2015 PD ₅₁	16.6	X	93.28961	216.44809	77.25874	12.24805	0.1721234	0.24277176	2.5448993	20	12 17.5	20.5
514248 2015 PP ₅₂	16.6	X	352.98784	297.45775	17.84505	18.26738	0.0903580	0.19490780	2.9461164	20	8 27.9	20.5
514249 2015 PG ₆₂	17.0	X	67.52510	170.32744	151.34531	12.65123	0.1889659	0.24136504	2.5547778	20	12 28.8	21.1
514250 2015 PH ₉₄	17.2	X	50.35452	167.64854	133.55259	4.42985	0.1946596	0.22930509	2.6435869	20	11 15.4	20.9
514251 2015 PK ₉₄	16.7	X	287.30133	230.56525	133.59677	11.99684	0.0834010	0.18869580	3.0104256	20	7 12.4	20.7
514252 2015 PX ₁₁₉	16.8	X	141.85695	234.53545	334.38921	13.10973	0.0466275	0.22849466	2.6498341	20	10 10.0	20.8
514253 2015 PO ₁₂₁	16.4	X	296.41323	248.94871	120.11899	11.32944	0.1197815	0.19216116	2.9741234	20	7 27.7	20.2
514254 2015 PB ₁₂₃	17.0	X	68.42847	275.02765	348.15409	2.82600	0.0793039	0.21767341	2.7369433	20	9 29.6	20.6
514255 2015 PK ₁₄₄	17.5	X	159.61688	176.64404	74.11237	5.32449	0.1674479	0.26719014	2.3873849	20	12 28.9	21.1
514256 2015 PS ₂₅₄	15.9	X	317.53937	58.50378	272.40814	8.96643	0.0805254	0.16921381	3.2726959	20	7 11.1	20.0
514257 2015 PP ₂₈₉	16.4	X	33.46593	166.91795	92.22141	11.96027	0.0916803	0.18297871	3.0328097	20	8 7.4	20.5
514258 2015 PU ₂₉₅	17.3	X	75.28702	157.30590	137.19944	15.09874	0.2684241	0.23356359	2.6113553	20	12 11.0	21.9
514259 2015 PV ₃₀₄	16.9	X	26.07501	226.67654	104.61497	7.13467	0.0289606	0.21446536	2.7641691	20	10 28.3	20.7
514260 2015 PF ₃₀₉	17.0	X	1.86428	185.60253	140.67873	11.08660	0.2831576	0.20418793	2.8561609	20	10 15.2	19.7
514261 2015 PV ₃₁₄	17.1	X	36.24534	141.25871	141.89795	8.66861	0.0470076	0.19824853	2.9129257	20	9 7.3	21.0
514262 2015 PK ₃₁₅	16.0	X	292.40158	331.30988	9.94268	10.89268	0.1400888	0.18118894	3.0930120	20	6 9.1	20.4
514263 2015 QA ₁₁	16.6	X	30.75075	317.64750	320.67506	11.44082	0.0125749	0.19345114	2.9608871	20	8 17.7	20.7
514264 2015 RC ₁₉	16.0	X	293.52423	26.79644	345.42389	13.40842	0.1602763	0.17884111	3.1200231	20	7 24.2	20.2
514265 2015 RK ₂₆	15.9	X	277.76451	104.14878	285.73341	7.94580	0.0963031	0.17915831	3.1163393	20	7 29.5	20.3
514266 2015 RA ₅₇	16.4	X	26.66197	105.63034	185.43051	9.50914	0.0625304	0.18614160	3.0379019	20	9 1.3	20.4
514267 2015 RJ ₅₈	16.6	X	34.37051	80.35084	181.83945	10.48871	0.0467085	0.17369444	3.1813548	20	8 1.7	21.0
514268 2015 RF ₆₁	16.2	X	80.82847	236.82180	357.65823	9.39684	0.0551083	0.18556378	3.0442051	20	9 2.9	20.5
514269 2015 RG ₆₄	15.7	X	3.40231	276.11076	3.17607	10.82865	0.1238822	0.17087775	3.2162197	20	7 19.4	19.8
514270 2015 RN ₈₆	15.9	X	280.33666	158.21361	222.60510	8.71756	0.0806650	0.17533401	3.1613707	20	7 21.9	20.4
514271 2015 RA ₈₇	15.5	X	294.80580	86.72078	279.12357	10.15919	0.0527877	0.17451213	3.1714094	20	7 26.8	19.9
514272 2015 RJ ₈₉	15.2	X	276.99913	119.37282	267.56416	9.19703	0.0287309	0.16991666	3.2283360	20	8 1.3	19.8
514273 2015 RK ₉₂	16.6	X	303.17949	10.89331	330.96963	6.96495	0.2214165	0.17547714	3.1597715	20	6 14.5	20.6
514274 2015 RH ₉₃	16.8	X	99.78969	313.30503	320.83634	6.51849	0.1614820	0.23598930	2.5934299	20	11 27.2	20.9
514275 2015 RT ₁₀₃	16.8	X	64.21109	111.37608	172.04112	9.16372	0.1652610	0.21841416	2.7307515	20	11 3.9	20.8
514276 2015 RA ₁₀₅	16.0	X	321.07786	352.90841	326.63051	10.67584	0.1048915	0.17010424	3.2259623	20	7 1.2	20.2
514277 2015 RN ₁₁₆	15.8	X	342.80217	285.56501	41.40928	16.23455	0.1001662	0.17882090	3.1202582	20	8 24.3	20.0
514278 2015 RS ₁₁₆	15.6	X	326.56495	240.80429	103.81332	12.68806	0.1435124	0.17834574	3.1257979	20	8 11.3	19.3
514279 2015 RS ₁₁₇	16.1	X	325.72310	221.88638	136.07304	15.00112	0.1515766	0.18219122	3.0816579	20	8 27.5	19.6
514280 2015 RG ₁₂₂	16.2	X	326.52410	337.63959	32.13849	9.87161	0.1072860	0.19854988	2.9099775	20	9 22.0	19.7
514281 2015 RK ₁₉₂	16.1	X	339.67111	307.22663	13.54896	15.67045	0.1066651	0.17469591	3.1691847	20	8 8.2	20.3
514282 2015 RL ₂₁₆	16.0	X	209.44726	95.22498	15.72584	12.62705	0.0456039	0.17861878	3.1226116	20	8 30.5	20.7
514283 2015 RP ₂₄₄	16.7	X	73.85618	115.63255	170.63823	11.17667	0.1809695	0.21990326	2.7184099	20	11 19.7	21.0
514284 2015 RV ₂₅₂	16.5	X	342.42286	293.90750	32.14547	5.48411	0.1744510	0.18574449	3.0422303	20	8 15.8	19.8
514285 2015 RF ₂₅₅	16.3	X	308.15270	230.33607	146.05104	10.46198	0.0569880	0.17298783	3.1900123	20	8 29.9	20.4
514286 2015 RZ ₂₅₆	16.4	X	43.84808	238.03236	35.75958	11.79715	0.2319607	0.18430283	3.0580744	20	10 3.2	20.5
514287 2015 SP ₁	16.2	X	276.85638	96.24486	277.76212	10.49894	0.0480679	0.17719676	3.1392955	20	7 15.0	20.5
514288 2015 SB ₂₄	16.1	X	91.45181	36.23327	171.62666	10.31624	0.0360808	0.17583436	3.1554905	20	8 5.9	20.7
514289 2015 TS ₁	15.9	X	186.08519	75.73589	323.72832	2.55019	0.2037456	0.12259045	4.0132691	20	4 30.4	22.5
514290 2015 TW ₅	16.6	X	35.95021	309.89895	339.15013	12.46860	0.1887481	0.21437804	2.7649197	20	10 2.1	20.2
514291 2015 TY ₁₆	16.6	X	65.51239	177.21673	118.07453	15.96129	0.1780816	0.21830082	2.7316966	20	11 23.9	20.9
514292 2015 TV ₁₇	16.1	X	259.04585	353.03588	59.98198	21.93036	0.0359165	0.17584269	3.1553909	20	8 24.1	21.0
514293 2015 TO ₂₆	16.4	X	63.72760	241.46160	4.44317	10.10410	0.0330769	0.18125021	3.0923148	20	8 24.6	20.7
514294 2015 TN ₄₇	15.9	X	347.94889	12.13458	291.70845	1.49629	0.0633691	0.17417863	3.1754563	20	7 23.3	19.9
514295 2015 TD ₈₁	16.5	X	121.78552	49.31021	233.26762	12.23439	0.1713981	0.22343904	2.6896556	20	12 24.9	21.1
514296 2015 TZ ₁₀₄	16.0	X	74.77920	183.45890	81.80471	16.97776	0.0562653	0.17346432	3.1841678	20	10 10.1	20.9
514297 2015 TR ₁₂₇	16.0	X	71.47832	156.94779	89.12571	15.24500	0.1704811	0.17222255	3.1994552	20	9 26.6	20.9
514298 2015 TT ₁₉₄	17.5	X	356.36811	106.27827	308.33627	5.77392	0.2109199	0.22458378	2.6805081	20	—	—
514299 2015 TT ₁₉₇	16.9	X	77.78870	260.10988	16.29627	8.96775	0.1670046	0.21031903	2.8003802	20	11 4.3	21.2
514300 2015 TA ₁₉₈	16.6	X	346.58902	232.46016	87.59136	2.43951	0.2200785	0.18116068	3.0933336	20	8 13.4	19.5
514301 2015 TU ₂₁₃	16.1	X	120.16007	28.84365	204.48692	14.92804	0.0921300	0.20593042	2.8400264	20	10 21.3	20.3
514302 2015 TS ₂₃₃	15.9	X	297.51108	85.74281	284.78414	9.25153	0.0746739	0.17141560	3.2094885	20	8 2.5	20.2
514303 2015 TR ₂₅₇	16.8	X	79.93474	345.69978	314.25889	13.86072	0.2655769	0.23398588	2.6082123	20	12 19.4	21.3
514304 2015 TR ₂₈₄	15.8	X	164.07156	135.40873	320.31852	2.58382	0.0350371	0.14015858	3.6704804	20	6 13.3	21.1
514305 2015 TR ₂₉₂	16.0	X	354.99248	332.37070	342.62106	10.49561	0.1022790	0.17539672	3.1607374	20	8 20.7	19.8
514306 2015 TK ₂₉₄	16.1	X	145.61477	345.79785	181.96619	9.35613	0.0342369	0.17616264	3.1515691	20	8 20.3	20.7
514307 2015 XM ₁₂₆	15.8	X	45.40342	184.85659	118.97469	20.13200	0.0552856	0.16969009	3.2312091	20	10 20.0	20.7
514308 2015 XG ₃₈₆	13.6	X	217.67536	189.32656	164.39282	26.72511	0.1003318	0.08348743	5.1846804	20	4 14.9	21.0
514309 2015 XL ₃₈₆	13.8	X	229.49960	250.58891	107.03197	8.24992	0.0160138	0.08109973	5.2859506	20	5 6.6	20.9
514310 2015 YA ₂	14.1	X	63.94241	305.38391	224.26259	9.66222	0.1124513	0.08348512	5.1847762	20	5 26.9	20.8
514311 2016 AJ ₉₂	16.0	X	326.97743	116.69052	277.97478	8.61296	0.1083782	0.18902276	3.0069531	20	10 16.1	19.9
514312 2016 AE ₁₉₃	8.1	X	12.98355	171.12452	292.41617	10.27521	0.4640344	0.00576480	30.8044227	20	2 7.7	20.5
514313 2016 CX ₂₉	18.3	X	74.18638	221.659								

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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>
514321 2016 <i>LE</i> ₅₇	17.4	X	8.68403	120.46728	150.34806	15.25723	0.0851448	0.23538173	2.5978908	20	7 15.6	20.6
514322 2016 <i>NO</i> ₁₄	15.9	X	196.74243	248.58144	129.78341	27.78097	0.2538657	0.17482429	3.1676330	20	4 23.2	21.9
514323 2016 <i>NT</i> ₅₆	18.4	X	166.92211	336.57841	323.83605	19.96822	0.0371367	0.36469100	1.9402276	20	—	—
514324 2016 <i>NZ</i> ₆₆	16.8	X	268.36352	255.49859	144.58781	12.16986	0.1905309	0.23346471	2.6120925	20	7 20.3	20.3
514325 2016 <i>NN</i> ₆₇	17.4	X	282.25881	73.49874	35.25768	6.72194	0.0781005	0.29050628	2.2578705	20	12 17.3	19.6
514326 2016 <i>NS</i> ₆₇	16.0	X	201.92208	173.13009	285.42888	10.74613	0.0571362	0.18639115	3.0351899	20	7 29.8	20.6
514327 2016 <i>NU</i> ₆₇	18.0	X	298.41029	283.57539	121.99593	6.98163	0.1117934	0.27037649	2.3685911	20	10 8.6	20.4
514328 2016 <i>NN</i> ₆₈	16.2	X	305.03576	53.38062	304.37491	26.14244	0.1506099	0.22244282	2.6976801	20	7 24.9	19.2
514329 2016 <i>NS</i> ₆₈	16.1	X	202.50337	170.04518	279.65904	13.71392	0.0707430	0.19758529	2.9194406	20	7 19.1	20.6
514330 2016 <i>NO</i> ₇₀	18.1	X	59.59813	244.83139	66.42781	7.48485	0.0556204	0.28626896	2.2800964	20	12 1.3	20.9
514331 2016 <i>OQ</i> ₅	17.9	X	233.60296	48.31875	184.41869	22.69579	0.0570569	0.35271321	1.9839082	20	—	—
514332 2016 <i>OQ</i> ₆	16.6	X	260.28509	115.87915	287.94592	8.24831	0.1575628	0.21656756	2.7462524	20	7 19.1	20.5
514333 2016 <i>OS</i> ₆	16.9	X	268.45476	264.04140	112.55318	9.33997	0.2440631	0.21557769	2.7546526	20	6 12.0	20.9
514334 2016 <i>PV</i> ₄	17.9	X	274.07206	47.07452	347.96842	7.60888	0.1961800	0.23504113	2.6003999	20	7 23.3	21.3
514335 2016 <i>PX</i> ₇₃	16.3	X	235.40155	36.25884	345.97791	8.66505	0.1361941	0.18038433	3.1022028	20	5 24.2	21.2
514336 2016 <i>PE</i> ₇₆	17.7	X	25.82974	321.23369	10.80358	6.82469	0.1375809	0.26153450	2.4216798	20	11 19.3	20.6
514337 2016 <i>PP</i> ₇₇	17.6	X	22.11869	16.59299	325.56703	5.85922	0.2640078	0.28436866	2.2902430	20	12 25.5	20.6
514338 2016 <i>PP</i> ₈₉	17.1	X	272.44237	235.95286	174.25810	9.22817	0.0940203	0.22347799	2.6893431	20	8 22.8	20.6
514339 2016 <i>PQ</i> ₈₉	17.0	X	240.37506	246.24626	180.25692	9.11191	0.2152763	0.21898815	2.7259777	20	7 17.6	21.4
514340 2016 <i>PZ</i> ₈₉	17.7	X	0.11820	307.37651	52.27837	4.03732	0.1446698	0.26193963	2.4191822	20	11 20.8	20.1
514341 2016 <i>PZ</i> ₉₀	16.9	X	323.99955	339.66155	24.67533	12.52416	0.1543207	0.23254377	2.6189844	20	9 15.7	19.6
514342 2016 <i>PN</i> ₉₁	16.5	X	187.70556	343.20967	88.73129	16.32809	0.2268689	0.17976610	3.1093111	20	6 9.4	22.0
514343 2016 <i>PN</i> ₉₂	16.8	X	167.64117	282.19486	180.20794	9.87480	0.1887297	0.17310519	3.1885703	20	6 28.3	22.3
514344 2016 <i>PQ</i> ₉₂	16.5	X	217.04108	249.73635	158.67865	7.93017	0.2612876	0.18191736	3.0847499	20	6 3.1	21.9
514345 2016 <i>PA</i> ₉₃	16.7	X	303.99969	5.46808	23.02355	6.63823	0.1810111	0.25395663	2.4696174	20	9 17.2	19.3
514346 2016 <i>PJ</i> ₉₃	17.1	X	333.64600	191.13764	172.27348	15.43545	0.1394103	0.24331207	2.5411304	20	10 3.3	19.5
514347 2016 <i>PF</i> ₉₄	16.9	X	270.75783	303.18006	76.06464	14.65926	0.2047048	0.21591299	2.7518000	20	6 22.3	20.7
514348 2016 <i>PM</i> ₉₄	17.5	X	262.66892	206.74762	213.94570	3.62526	0.0715729	0.22151221	2.7052305	20	8 26.5	21.2
514349 2016 <i>PN</i> ₉₄	16.7	X	157.88153	176.13744	0.20332	11.72092	0.1191555	0.22617619	2.6679118	20	9 22.2	20.8
514350 2016 <i>PQ</i> ₉₄	17.3	X	246.17460	9.77432	25.27257	13.14828	0.1545861	0.21411768	2.7671605	20	6 20.7	21.6
514351 2016 <i>PF</i> ₉₆	17.8	X	170.27670	283.24652	318.64837	4.16278	0.0531676	0.29862522	2.2167586	20	—	—
514352 2016 <i>PL</i> ₉₆	18.2	X	166.36128	288.28192	297.78226	1.25563	0.0835835	0.29057708	2.2575037	20	12 15.8	21.3
514353 2016 <i>PR</i> ₉₇	16.7	X	172.61984	38.46877	101.71573	17.71106	0.1300140	0.21811440	2.7332529	20	8 25.9	21.2
514354 2016 <i>PN</i> ₉₈	17.0	X	287.25581	65.94694	5.24844	11.37053	0.1420516	0.24178550	2.5518152	20	10 10.0	19.7
514355 2016 <i>QO</i>	17.4	X	269.57803	259.64711	164.85445	15.57815	0.2462513	0.24557628	2.5254868	20	8 16.1	20.7
514356 2016 <i>QB</i> ₉	17.0	X	299.45683	97.08354	284.76681	8.05280	0.1981177	0.24141985	2.5543911	20	8 10.7	19.6
514357 2016 <i>QF</i> ₉	17.5	X	298.71945	348.18544	37.80586	6.12821	0.1227221	0.24596232	2.5228436	20	9 2.9	20.3
514358 2016 <i>QO</i> ₁₅	18.1	X	65.34363	47.52793	280.46342	8.77932	0.1978008	0.30668566	2.1777452	20	—	—
514359 2016 <i>QO</i> ₂₃	18.3	X	359.53036	134.08393	229.94581	5.15728	0.0868297	0.27660609	2.3328934	20	11 22.3	20.7
514360 2016 <i>QP</i> ₂₄	17.7	X	30.30127	112.49423	238.03252	5.69810	0.1314297	0.29070576	2.2568375	20	12 28.3	20.4
514361 2016 <i>QH</i> ₃₁	17.7	X	19.27559	251.41299	82.86973	2.31751	0.2089032	0.27412406	2.3469542	20	11 29.8	20.2
514362 2016 <i>QH</i> ₄₈	16.9	X	338.64291	336.25512	356.31886	11.98022	0.1984470	0.23476587	2.6024321	20	8 27.0	19.1
514363 2016 <i>QU</i> ₄₈	16.7	X	182.25728	306.09559	151.54244	3.28474	0.2007859	0.18452426	3.0556275	20	7 5.2	21.9
514364 2016 <i>QR</i> ₅₄	17.4	X	263.59493	46.60422	328.99128	12.79646	0.2089723	0.21120296	2.7925613	20	6 8.0	21.8
514365 2016 <i>QT</i> ₇₀	18.4	X	50.25093	139.66062	203.96594	4.47160	0.2010997	0.30647146	2.1787598	20	—	—
514366 2016 <i>QR</i> ₈₃	16.4	X	241.49859	92.72215	298.51380	12.48837	0.2857139	0.18907318	3.0064185	20	5 28.8	21.7
514367 2016 <i>QE</i> ₈₇	17.8	X	326.24107	120.81346	288.13068	6.52736	0.0843922	0.26860780	2.3789773	20	11 28.1	20.3
514368 2016 <i>QM</i> ₈₇	17.1	X	316.32654	36.46679	338.09997	2.36479	0.1259867	0.22527155	2.6750495	20	9 10.4	19.8
514369 2016 <i>QE</i> ₈₈	16.8	X	246.77193	284.73663	177.28199	10.15692	0.1378635	0.23079611	2.6321890	20	9 22.5	20.3
514370 2016 <i>QG</i> ₈₈	16.1	X	257.92299	284.06963	96.09052	11.28137	0.1150038	0.19152280	2.9807284	20	6 20.7	20.2
514371 2016 <i>QH</i> ₈₈	15.8	X	236.25376	278.82725	111.51568	14.31418	0.1836195	0.17902871	3.1178431	20	6 4.3	20.9
514372 2016 <i>QS</i> ₈₈	17.4	X	276.21028	172.56897	224.75926	5.31747	0.0627184	0.21505586	2.7591069	20	8 13.6	21.1
514373 2016 <i>QZ</i> ₈₈	16.6	X	314.84391	301.26993	27.43565	14.59161	0.1072578	0.21442110	2.7645495	20	7 5.8	20.2
514374 2016 <i>QF</i> ₈₉	17.2	X	351.25886	242.32912	101.45505	2.41069	0.1059724	0.22839520	2.6506033	20	10 2.1	20.1
514375 2016 <i>RC</i> ₆	16.8	X	194.38312	81.71196	352.99912	18.26762	0.1230096	0.18288823	3.0738232	20	6 20.4	22.0
514376 2016 <i>RK</i> ₇	17.8	X	257.27655	224.02987	204.27019	7.08416	0.1704031	0.23837089	2.5761268	20	8 14.9	21.4
514377 2016 <i>RT</i> ₁₂	17.1	X	298.04868	92.97485	276.60252	14.14461	0.1813649	0.23341529	2.6124612	20	7 22.3	20.1
514378 2016 <i>RJ</i> ₂₇	17.6	X	267.97594	51.21545	343.30673	4.02897	0.1201631	0.21863444	2.7289170	20	7 23.9	21.2
514379 2016 <i>RP</i> ₂₇	15.7	X	256.24015	0.90729	315.70004	25.00994	0.0211982	0.17444822	3.1721839	20	3 27.4	20.8
514380 2016 <i>RV</i> ₃₀	17.6	X	327.44512	221.08200	156.02771	3.12349	0.1741173	0.25307870	2.4753255	20	10 13.7	19.6
514381 2016 <i>RD</i> ₃₁	17.6	X	15.40449	356.77390	9.93393	8.09213	0.1359214	0.28450908	2.2894893	20	12 30.5	20.4
514382 2016 <i>RJ</i> ₃₃	16.4	X	265.02522	277.82795	89.14599	17.15483	0.2447424	0.17983407	3.1085277	20	5 28.6	21.3
514383 2016 <i>RR</i> ₃₈	16.7	X	230.05350	112.45676	332.86572	14.39410	0.1524969	0.21968553	2.7202057	20	8 10.8	20.7
514384 2016 <i>RK</i> ₄₃	16.3	X	213.32078	81.48467	325.81672	24.92655	0.2307750	0.17867899	3.1219100	20	5 25.9	22.1
514385 2016 <i>RT</i> ₄₄	16.7	X	308.69651	69.01542	302.87787	8.98447	0.0894106	0.22714915	2.6602879	20	8 25.1	19.9
514386 2016 <i>RJ</i> ₄₅	16.5	X	164.83952	56.47242	104.34747	16.23644	0.0903810	0.22586313	2.6703765	20	9 16.9	20.8
514387 2016 <i>RS</i> ₄₅	17.6	X	271.16435	346.60200	65.36809	4.60005	0.1308799	0.22034538	2.7147723	20	8 20.9	21.1
514388 2016 <i>SF</i> ₁₁	17.4	X	262.27909	210.02850	194.38642	7.69038	0.1454542	0.21813165	2.7331088	20	7 22.8	21.3
514389 2016 <i>SM</i> ₁₃	17.3	X	256.82359	104.53704	329.67311	7.13593	0.1251615	0.23852555	2.5750131	20	8 31.4	20.5
514390 2016 <i>SW</i> ₁₄	17.5	X	296.78071	270.88798	152.87783	6.72803	0.0792091	0.25617380	2.4553472	20	10 30.8	20.3
514391 2016 <i>SQ</i> ₁₅	17.8	X	356.02705	248.56706	125.87734	3.12459	0.0919119	0.2679				

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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>
514401 2016 <i>SB</i> ₅₀	16.4	X	156.76122	9.16698	111.72249	17.07621	0.0106108	0.17435586	3.1733040	20	7 6.3	20.9
514402 2016 <i>SG</i> ₅₀	16.2	X	186.94059	36.29419	55.92954	14.92022	0.0428412	0.17988876	3.1078976	20	7 6.9	20.9
514403 2016 <i>TG</i> ₅	18.0	X	355.54149	153.00133	205.43632	2.30319	0.1594786	0.26340990	2.4101717	20	11 14.0	20.3
514404 2016 <i>TK</i> ₇	17.1	X	230.44127	2.53892	65.16614	4.52249	0.0744559	0.20943332	2.8082700	20	7 26.4	21.1
514405 2016 <i>TH</i> ₈	17.2	X	301.04347	316.01419	84.84577	5.57845	0.2538214	0.23189696	2.6238520	20	9 7.4	19.7
514406 2016 <i>TF</i> ₄₅	16.9	X	257.72826	150.96477	293.04709	11.18730	0.1423503	0.23840168	2.5759050	20	9 7.0	20.6
514407 2016 <i>TW</i> ₄₆	17.3	X	49.65244	27.94631	299.86362	3.89080	0.1166944	0.26864080	2.3787825	20	12 14.9	20.5
514408 2016 <i>TE</i> ₄₇	17.0	X	309.40326	7.83396	14.25988	5.15619	0.0087207	0.22405826	2.6846978	20	9 19.6	20.4
514409 2016 <i>TA</i> ₄₉	17.7	X	45.73175	3.25133	347.74500	5.19768	0.1193905	0.27937984	2.3174267	20	—	—
514410 2016 <i>TW</i> ₅₆	17.3	X	68.65559	174.50514	136.86716	7.13378	0.2366785	0.27996857	2.3141768	20	12 28.6	21.0
514411 2016 <i>TB</i> ₆₃	17.8	X	305.30038	340.39683	31.57088	4.11394	0.1339293	0.22671182	2.6637079	20	8 19.2	20.7
514412 2016 <i>TW</i> ₇₃	17.3	X	252.92235	85.99916	349.47453	4.40371	0.1751260	0.22518427	2.6757407	20	8 20.5	20.9
514413 2016 <i>TW</i> ₇₅	17.0	X	99.36621	240.68878	20.17228	22.67082	0.1732220	0.27245051	2.3565553	20	11 11.3	20.9
514414 2016 <i>TX</i> ₈₁	16.6	X	233.60592	85.09487	14.32480	22.16161	0.0652214	0.22636972	2.6663910	20	9 19.0	20.4
514415 2016 <i>TE</i> ₈₈	17.1	X	244.23531	181.88877	213.31680	9.11079	0.1034204	0.18198613	3.0839726	20	6 24.2	21.7
514416 2016 <i>TM</i> ₈₈	16.3	X	250.99324	337.07441	45.42322	10.05638	0.0833810	0.17839346	3.1252404	20	6 18.3	21.0
514417 2016 <i>TR</i> ₉₆	15.9	X	186.35958	308.83884	146.70385	12.64461	0.0368300	0.17510088	3.1642965	20	7 9.6	20.7
514418 2016 <i>TU</i> ₉₆	16.0	X	338.22976	235.29820	74.83801	12.20722	0.0798501	0.18826814	3.0149828	20	7 18.7	19.9
514419 2016 <i>TX</i> ₉₆	16.8	X	345.89000	100.54220	242.46969	4.80695	0.0226915	0.21541430	2.7560454	20	9 12.5	20.5
514420 2016 <i>TU</i> ₉₆	17.7	X	43.40250	329.61379	353.35126	7.28143	0.1200007	0.26028255	2.4294391	20	11 27.7	20.9
514421 2016 <i>TD</i> ₉₇	15.9	X	320.85088	305.64721	355.00674	12.44650	0.1124378	0.17871540	3.1214861	20	5 31.8	20.1
514422 2016 <i>TE</i> ₉₇	16.3	X	135.14149	37.85410	111.71252	11.18332	0.0277847	0.17607593	3.1526037	20	7 17.4	20.8
514423 2016 <i>UH</i> ₂	17.5	X	355.66736	252.07555	118.59578	7.02560	0.1323151	0.26231951	2.4168461	20	11 29.1	20.1
514424 2016 <i>UQ</i> ₂	15.6	X	106.40156	39.09421	76.30799	2.76237	0.2116202	0.12618306	3.9367274	20	5 23.3	21.5
514425 2016 <i>UR</i> ₂	17.4	X	289.78326	190.13261	191.17826	4.29445	0.0815025	0.21333195	2.7739509	20	8 9.4	20.9
514426 2016 <i>UH</i> ₉	17.2	X	315.40481	44.77261	337.92593	10.52223	0.0951298	0.23675381	2.5878438	20	9 22.1	20.1
514427 2016 <i>UH</i> ₁₀	17.7	X	321.86270	156.63529	207.58796	6.49527	0.1150844	0.23290955	2.6162417	20	9 5.5	20.7
514428 2016 <i>UB</i> ₁₁	17.7	X	6.62998	139.35740	208.26535	5.29848	0.1143114	0.25631991	2.4544140	20	11 9.2	20.3
514429 2016 <i>UB</i> ₁₂	18.3	X	118.06603	339.55196	329.09017	2.48249	0.1348822	0.31547160	2.1371215	20	—	—
514430 2016 <i>UU</i> ₁₄	17.7	X	179.87937	192.36066	31.84408	4.10354	0.1297158	0.28272516	2.2991100	20	12 22.2	20.9
514431 2016 <i>UU</i> ₁₉	17.8	X	27.21842	189.00043	159.37836	8.13797	0.1205063	0.27253007	2.3560966	20	12 15.9	20.9
514432 2016 <i>UG</i> ₂₂	16.6	X	306.19911	225.37109	134.28647	6.38570	0.0906008	0.22244039	2.6976998	20	8 5.8	19.8
514433 2016 <i>UU</i> ₂₂	16.9	X	279.97440	231.78498	139.63405	5.79908	0.0562279	0.20959928	2.8067874	20	6 30.3	20.6
514434 2016 <i>UK</i> ₂₂	16.8	X	288.01386	308.50451	66.83795	7.09130	0.0929652	0.21850756	2.7299733	20	7 31.8	20.3
514435 2016 <i>UZ</i> ₂₂	18.1	X	62.45912	195.13952	144.39589	4.44780	0.2319618	0.29478984	2.2359446	20	—	—
514436 2016 <i>UU</i> ₂₃	17.0	X	265.70323	30.35454	32.67885	10.28866	0.0283358	0.22001481	2.7174909	20	9 15.5	20.7
514437 2016 <i>UV</i> ₂₄	18.3	X	82.87356	281.28303	35.30425	3.30805	0.1959928	0.29185599	2.2509040	20	—	—
514438 2016 <i>UX</i> ₂₄	17.0	X	325.87390	110.29923	216.84008	11.31232	0.0642610	0.19828476	2.9125708	20	7 19.7	21.0
514439 2016 <i>UF</i> ₃₃	16.8	X	355.34992	308.00767	3.02812	6.33282	0.0540773	0.20984854	2.8045644	20	8 18.9	20.4
514440 2016 <i>UG</i> ₃₃	17.1	X	344.71275	14.78653	309.40624	3.18211	0.0693040	0.21295990	2.7771808	20	8 18.5	20.6
514441 2016 <i>UL</i> ₃₃	17.0	X	326.24455	160.36097	233.82019	0.66397	0.0801548	0.23958271	2.5674327	20	10 30.7	19.7
514442 2016 <i>UU</i> ₃₃	17.4	X	86.03765	325.36755	23.13226	4.64459	0.1290161	0.31386149	2.1444242	20	—	—
514443 2016 <i>UV</i> ₄₅	16.6	X	275.51523	10.09332	350.50345	10.37476	0.1253138	0.19106433	2.9854947	20	6 15.2	20.9
514444 2016 <i>UM</i> ₄₇	17.0	X	281.53761	142.95002	260.48411	5.17668	0.0373890	0.22270274	2.6955807	20	9 2.5	20.6
514445 2016 <i>UR</i> ₅₁	17.4	X	318.68463	338.74939	60.55285	3.19811	0.1283428	0.23788425	2.5796389	20	10 24.8	20.0
514446 2016 <i>UV</i> ₅₃	17.8	X	158.42652	184.33452	36.17488	8.13405	0.0495856	0.26011374	2.4304901	20	11 23.9	21.2
514447 2016 <i>UC</i> ₅₄	18.0	X	58.35461	227.38115	107.84668	6.07839	0.1278919	0.28772262	2.2724101	20	—	—
514448 2016 <i>UM</i> ₆₀	16.9	X	313.07735	324.04097	36.52070	4.87994	0.0848277	0.21172852	2.7879382	20	8 20.1	20.3
514449 2016 <i>UZ</i> ₆₈	16.9	X	258.50145	298.39843	119.65751	0.19638	0.0582971	0.21466045	2.7624941	20	8 20.2	20.4
514450 2016 <i>UW</i> ₇₀	16.9	X	1.35018	289.99136	30.80704	13.10143	0.1851290	0.23429747	2.6058994	20	9 29.9	19.5
514451 2016 <i>UM</i> ₇₄	17.6	X	142.91508	310.61412	253.90573	1.41436	0.0428733	0.23745495	2.5827472	20	10 12.5	21.2
514452 2016 <i>UJ</i> ₈₀	16.2	X	275.98852	283.33419	76.74189	10.62753	0.1098077	0.17610612	3.1522435	20	6 17.3	20.6
514453 2016 <i>UE</i> ₈₁	17.2	X	294.16080	7.39857	356.84632	1.56716	0.0822959	0.20285601	2.8686493	20	7 24.3	20.8
514454 2016 <i>UB</i> ₈₂	16.8	X	242.05282	191.14043	212.10305	9.88056	0.1344405	0.18690723	3.0296001	20	7 1.4	21.4
514455 2016 <i>UM</i> ₈₆	17.3	X	230.14755	83.99274	22.83828	6.18930	0.0582525	0.22813998	2.6525798	20	9 20.4	20.8
514456 2016 <i>UB</i> ₈₉	16.9	X	144.48331	319.61209	210.10894	4.36321	0.0935090	0.20533647	2.8455004	20	8 26.9	21.3
514457 2016 <i>UW</i> ₈₉	17.3	X	273.95199	35.90945	30.23051	22.66257	0.0573180	0.23272997	2.6175873	20	10 2.5	20.8
514458 2016 <i>UV</i> ₉₂	17.4	X	51.74922	75.52522	200.55879	4.95502	0.0244118	0.22634549	2.6665812	20	9 17.2	21.0
514459 2016 <i>UJ</i> ₉₇	17.4	X	252.46358	216.66758	231.65682	4.51377	0.0730628	0.22782902	2.6549929	20	9 18.9	20.9
514460 2016 <i>UP</i> ₉₈	17.3	X	154.88504	330.39934	201.73267	5.93434	0.0615186	0.22236486	2.6983107	20	9 11.7	21.2
514461 2016 <i>UE</i> ₉₉	17.2	X	207.38536	250.06490	235.83889	3.21476	0.0784675	0.22244288	2.6976797	20	9 11.1	21.1
514462 2016 <i>UG</i> ₁₀₆	18.3	X	77.03182	353.21561	308.47707	2.53892	0.2166793	0.28060395	2.3106821	20	12 22.8	21.9
514463 2016 <i>UJ</i> ₁₀₆	17.5	X	229.00992	252.39083	204.46684	3.16036	0.0473554	0.22014961	2.7163816	20	9 3.4	21.3
514464 2016 <i>UR</i> ₁₁₈	17.2	X	172.57598	313.81024	224.72902	5.38228	0.0381806	0.24203869	2.5500352	20	10 14.9	20.8
514465 2016 <i>UF</i> ₁₂₄	16.0	X	219.46583	35.97372	27.93952	10.71627	0.2283961	0.17584951	3.1553093	20	6 23.9	21.4
514466 2016 <i>UT</i> <												

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
514481 2016 VF ₁₇	16.4	X	275.94740	234.93130	116.42160	8.76954	0.2195358	0.18092251	3.0960478	20	5 23.9	21.0
514482 2016 VK ₁₈	17.1	X	127.48908	180.24457	68.01823	9.65453	0.0731143	0.24728340	2.5138503	20	11 22.9	20.7
514483 2016 VS ₁₈	16.9	X	333.13017	25.78497	339.03586	8.45149	0.1752009	0.23823175	2.5771298	20	9 28.4	19.2
514484 2016 VO ₁₉	15.8	X	231.99839	267.97625	153.34951	10.05949	0.0368133	0.18621384	3.0371163	20	7 21.0	20.1
514485 2016 VP ₁₉	16.6	X	20.16967	206.16166	74.46179	10.92203	0.0330440	0.18840837	3.0134866	20	8 12.1	20.8
514486 2016 WJ ₄	16.7	X	306.71533	190.78361	212.40267	5.54622	0.0704134	0.22951810	2.6419510	20	10 9.1	19.7
514487 2016 WS ₄	16.3	X	22.10429	266.14025	62.20345	9.53809	0.1264718	0.23928321	2.5695746	20	11 5.4	19.4
514488 2016 WY ₅	15.9	X	252.62730	150.77352	235.97633	9.40194	0.1123871	0.17543954	3.1602230	20	6 22.0	20.5
514489 2016 WM ₁₀	17.3	X	270.86289	359.39085	64.36844	5.51289	0.0995951	0.22019145	2.7160374	20	9 11.4	20.8
514490 2016 WQ ₁₁	16.5	X	202.45646	55.94641	42.17152	10.52204	0.1603635	0.17696344	3.1420543	20	7 27.6	21.7
514491 2016 WA ₁₂	17.2	X	0.66617	28.44035	309.77338	11.22600	0.1446430	0.24203962	2.5500288	20	10 9.4	20.1
514492 2016 WG ₁₄	17.3	X	255.59469	48.09045	19.04451	2.00575	0.0526413	0.20557837	2.8432678	20	8 28.9	21.3
514493 2016 WZ ₁₄	17.0	X	7.30909	294.96204	43.90123	4.15042	0.1583187	0.23724645	2.5842602	20	10 30.1	19.6
514494 2016 WA ₁₆	16.9	X	350.16278	101.99819	241.02078	4.84221	0.0558781	0.22228525	2.6989549	20	9 21.2	20.3
514495 2016 WL ₁₈	17.2	X	133.76128	5.48686	212.85600	5.41641	0.0360636	0.22791539	2.6543221	20	10 17.9	21.0
514496 2016 WS ₁₈	16.7	X	173.42322	47.12230	55.97091	10.34112	0.0503473	0.17418783	3.1753445	20	7 4.7	21.5
514497 2016 WB ₁₉	17.0	X	307.99251	355.20165	50.71512	5.25756	0.1606076	0.23031329	2.6358664	20	10 14.9	19.9
514498 2016 WL ₁₉	16.6	X	179.86584	69.51849	46.65848	5.05405	0.1092340	0.17375928	3.1805632	20	7 28.4	21.6
514499 2016 WU ₁₉	16.8	X	348.28026	3.28426	338.38786	5.99599	0.0672788	0.21530313	2.7569940	20	9 17.0	20.3
514500 2016 WE ₂₁	16.9	X	300.57355	235.73866	135.22249	8.15167	0.0942515	0.20296019	2.8676676	20	8 10.2	20.3
514501 2016 WS ₂₃	15.9	X	161.53216	160.59536	330.06586	16.55885	0.1540522	0.17531246	3.1617500	20	7 30.6	21.1
514502 2016 WB ₂₄	15.9	X	139.98665	205.90939	305.06860	16.37401	0.1634972	0.17437726	3.1730444	20	8 1.1	20.9
514503 2016 WD ₂₄	16.7	X	94.07195	301.78379	322.51693	13.97646	0.0661860	0.24317627	2.5420763	20	10 28.3	20.6
514504 2016 WU ₂₄	16.8	X	329.79590	22.69642	335.57308	15.10759	0.1296574	0.22384471	2.6864050	20	9 9.0	19.6
514505 2016 WM ₂₅	16.5	X	349.63533	281.21357	19.67726	4.10972	0.0816796	0.17986958	3.1081185	20	7 23.7	20.4
514506 2016 WA ₃₀	17.2	X	352.38815	190.38821	158.91057	7.18596	0.2709048	0.23864171	2.5741775	20	11 4.7	19.3
514507 2016 WK ₃₀	16.2	X	226.56687	263.34765	165.52945	7.90115	0.0686832	0.18047529	3.1011603	20	7 19.9	20.9
514508 2016 WR ₃₁	17.2	X	271.11024	49.62912	351.55479	3.91497	0.0694406	0.21038834	2.7997652	20	8 13.5	20.9
514509 2016 WT ₃₃	17.2	X	98.45360	45.31458	259.18679	5.09792	0.0850710	0.27353449	2.3503254	20	—	—
514510 2016 WP ₃₆	16.8	X	180.92695	121.58148	56.58685	14.03601	0.1240010	0.21850358	2.7300064	20	10 20.5	21.1
514511 2016 WT ₃₆	16.9	X	256.66983	118.90535	285.37152	4.15727	0.1079751	0.18654576	3.0335126	20	7 20.6	21.0
514512 2016 WC ₃₇	15.9	X	173.39281	47.95981	60.08342	12.67547	0.0275555	0.16721088	3.2630698	20	7 11.0	20.8
514513 2016 WT ₃₇	16.4	X	233.78142	355.90931	59.56384	12.37638	0.0772506	0.17666998	3.1455327	20	7 12.2	21.1
514514 2016 WR ₃₉	16.6	X	56.93919	246.02757	47.91715	10.04000	0.2043197	0.23877233	2.5732386	20	11 14.8	20.3
514515 2016 WR ₄₄	16.3	X	117.26243	282.50812	246.98936	7.79181	0.0372895	0.17300440	3.1898086	20	7 19.8	21.1
514516 2016 WW ₄₄	16.3	X	303.45395	276.73832	53.70251	9.73069	0.0991137	0.17455382	3.1709043	20	6 17.7	20.6
514517 2016 WL ₄₆	17.3	X	289.08450	87.22569	310.43176	3.36059	0.0776201	0.21033062	2.8002774	20	8 31.3	20.8
514518 2016 WS ₄₆	17.5	X	91.30693	230.15844	91.70077	3.30099	0.1279263	0.28787506	2.2716078	20	—	—
514519 2016 WH ₄₇	16.2	X	240.75544	322.39528	84.32202	11.78016	0.0953484	0.17568932	3.1572270	20	7 6.2	20.9
514520 2016 WL ₄₇	16.0	X	268.60507	136.58042	241.31122	8.76264	0.0731569	0.17544834	3.1601174	20	7 5.2	20.5
514521 2016 WJ ₄₈	17.3	X	338.23661	244.98254	118.22188	2.97016	0.0923375	0.22563848	2.6721486	20	10 6.1	20.4
514522 2016 WJ ₅₁	16.4	X	344.79291	19.13333	354.88239	7.76950	0.1975518	0.23874756	2.5734165	20	11 9.2	18.8
514523 2016 WH ₅₂	15.9	X	320.31446	313.23113	46.84228	9.69639	0.0359470	0.19636830	2.9314903	20	9 4.1	19.9
514524 2016 WO ₅₂	16.1	X	178.84741	232.93178	271.33965	8.76142	0.0768420	0.19159723	2.9799564	20	8 27.6	20.8
514525 2016 WV ₅₅	16.2	X	323.30710	268.46334	31.19464	10.51277	0.0958396	0.17214105	3.2004650	20	6 6.2	20.4
514526 2016 WU ₅₆	16.4	X	217.35079	327.98432	120.55360	11.52526	0.1480982	0.18032016	3.1029387	20	7 28.3	21.3
514527 2016 XY ₂	16.1	X	294.23901	304.63289	47.39306	10.80926	0.1117983	0.17895749	3.1186703	20	7 2.0	20.3
514528 2016 XS ₃	16.9	X	27.59191	310.86097	36.53850	4.05694	0.0825252	0.24577549	2.5241219	20	12 1.2	20.0
514529 2016 XB ₁₁	17.0	X	208.72115	132.73823	0.93971	3.82117	0.0460169	0.21372121	2.7705817	20	9 26.4	21.0
514530 2016 XN ₂₁	16.3	X	9.36175	30.63768	276.72649	10.36788	0.0792303	0.21352984	2.7722368	20	8 30.0	19.9
514531 2016 YT ₆	15.8	X	191.20434	217.62710	287.66500	9.94200	0.1839342	0.18107529	3.0943060	20	9 4.0	21.1
514532 2016 YA ₇	17.2	X	13.97797	263.29548	73.51268	4.71617	0.1570428	0.23591882	2.5939464	20	11 7.6	20.0
514533 2016 YZ ₁₁	16.4	X	356.94413	251.97817	134.91876	16.00893	0.1125932	0.21964992	2.7204997	20	12 9.4	19.9
514534 2017 AG ₁₇	15.5	X	68.03941	330.41641	288.78033	9.37847	0.0332016	0.17466568	3.1695504	20	9 7.0	20.2
514535 2017 BX ₂₇	13.5	X	284.85585	169.29165	153.65075	29.16971	0.0765240	0.08261432	5.2211457	20	5 24.9	20.7
514536 2017 BE ₃₁	13.8	X	119.93359	48.84242	66.47105	20.87909	0.0375471	0.08451511	5.1425653	20	5 20.0	20.8
514537 2017 BK ₃₅	16.0	X	115.66633	291.55668	118.29722	7.34403	0.0321194	0.18698021	3.0288118	20	10 25.8	20.5
514538 2017 BB ₅₇	16.3	X	231.64780	188.94047	295.05496	7.33927	0.0931856	0.18647255	3.0343065	20	9 27.9	20.9
514539 2017 BM ₈₄	15.9	X	145.38265	301.56108	261.88132	9.78286	0.0710903	0.17225567	3.1990451	20	10 1.1	20.9
514540 2017 BJ ₉₁	13.2	X	315.08470	291.70856	339.21542	37.75703	0.0593413	0.08343675	5.1867797	20	4 4.6	20.4
514541 2017 BZ ₉₆	14.3	X	63.71111	84.15672	81.79663	10.79173	0.1574320	0.08243016	5.2289193	20	5 28.8	21.0
514542 2017 CV	13.8	X	245.49909	241.54148	96.15111	30.86054	0.0739393	0.08250545	5.2257378	20	5 6.8	21.2
514543 2017 DL ₁	13.5	X	275.08888	4.13879	324.65973	29.14864	0.0689630	0.08461083	5.1386858	20	5 3.7	20.8
514544 2017 DF ₁₁₀	14.0	X	144.42865	249.49164	202.69251	8.41106	0.0254327	0.08189432	5.2517033	20	5 18.9	21.1
514545 2017 EO ₁₈	15.5	X	169.19070	89.36040	102.54121	25.10182	0.0399996	0.17467808	3.1694004	20	10 30.1	20.7
514546 2017 SK ₂₃	17.2	X	237.80950	47.74336	170.46954	2.49755	0.0898239	0.21278217	2.7787270	20	3 12.2	21.2
514547 2017 TS ₈	17.1	X	201.21142	232.73467	246.23161	4.74635	0.2129175	0.21343202	2.7730838	20	4 18.4	21.9
514548 2017 UR ₄₄	17.9	X	179.19474	342.49480	238.24113	20.86670	0.0354176	0.37752714	1.8959953	20	—	—
514549 2017 VP	18.2	X	316.71213	329.74574	119.03809	23.96106	0.0823054	0.38547651	1.8698385	20	—	—
514550 2017 VV ₃₁	16.8	X	195.90772	277.74671	163.44240	5.39541	0.1241629	0.24002732	2.5642613	20	7 1.0	20.7
514551 2017 VP ₃₃	15.8	X	207.68054	295.67705	83.33513	17.74087	0.1155143	0.18472756	3.0533851	20	5 2.8	20.8
514552 2017 WW ₂	16.9	X	268.59325	258.31432	86.53502	7.20305	0.0757171	0.22199993	2.7012668	20	5 25.3	20.5
514553 2017 WS ₄	16.6	X	276.26145	80.22468	258.79959	8.17681	0.2271218	0.23813752	2.5778096	20	5 2.3	

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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>
514561 2017 XE ₃	16.3	X	268.64004	56.73710	300.53937	16.17160	0.4139797	0.22865220	2.6486168	20	4 21.6	21.2
514562 2017 XF ₄₀	16.4	X	147.77625	256.01460	254.18343	11.25286	0.1998909	0.23116689	2.6293736	20	8 7.8	21.1
514563 2017 XB ₅₉	17.0	X	217.23716	278.12378	146.93522	14.22841	0.1856119	0.23671325	2.5881394	20	6 28.3	21.4
514564 2017 XC ₅₉	17.5	X	207.47723	30.83821	114.27695	24.76662	0.2036527	0.28104638	2.3082564	20	10 14.4	21.5
514565 2017 XE ₆₁	16.6	X	226.99922	123.14359	323.18878	30.96067	0.2377357	0.22474421	2.6792324	20	8 4.1	21.0
514566 2017 YK	15.9	X	155.59009	83.19978	65.57337	26.55877	0.2390029	0.17201306	3.2020524	20	8 24.9	21.9
514567 2017 YW ₂	17.2	X	226.76870	241.41386	207.08733	7.85578	0.1090659	0.23539728	2.5977764	20	8 12.4	21.0
514568 1994 RC	19.2	X	210.56005	286.55462	344.28942	4.75655	0.6033295	0.28910180	2.2651772	20	—	—
514569 1995 OJ ₁₂	17.3	X	52.16899	183.34110	133.06325	6.19025	0.2239740	0.24360101	2.5391206	20	12 11.9	21.1
514570 1995 VK ₁₁	17.1	X	248.55794	25.30761	54.36971	15.19413	0.1636693	0.23163750	2.6258110	20	8 30.7	21.1
514571 1996 RY ₃	20.4	X	317.24757	288.39801	174.23616	36.56920	0.1385564	0.75431682	1.1951806	20	—	—
514572 1997 SU ₂₁	18.8	X	334.24865	51.70281	347.59661	5.80878	0.2528887	0.30310938	2.1948414	20	—	—
514573 1997 WG ₆	15.7	X	99.22861	233.09322	61.45610	21.97777	0.2776564	0.17571565	3.1569116	20	12 16.7	21.3
514574 1999 TM ₃₀₉	17.8	X	66.97069	295.66494	19.40793	13.32009	0.1655533	0.24072859	2.5592788	20	12 16.4	21.9
514575 1999 UY ₂₈	17.4	X	287.02526	24.96431	30.99775	9.52794	0.1775687	0.23284654	2.6167136	20	9 16.6	20.4
514576 1999 VZ ₁₃₁	18.7	X	336.82974	341.34894	48.49643	2.22002	0.2227598	0.28314617	2.2968303	20	12 10.4	20.2
514577 2000 CR ₉₉	17.6	X	182.39843	12.83294	140.45519	7.02805	0.1412177	0.21994785	2.7180424	20	9 17.8	22.0
514578 2000 EP ₅₁	18.2	X	210.16185	243.43608	303.67168	0.90084	0.1264120	0.27417555	2.3466604	20	12 7.4	21.0
514579 2000 SS ₃₆₄	17.5	X	283.59923	359.40843	37.30661	7.30933	0.3394132	0.24236463	2.5477485	20	7 15.2	20.8
514580 2001 PL ₂₁	17.1	X	108.88381	158.32162	129.81593	11.10384	0.2604713	0.22263646	2.6961157	20	12 24.9	22.0
514581 2001 PC ₅₃	17.9	X	126.05078	161.09518	143.11553	5.12529	0.2528399	0.27929075	2.3179195	20	—	—
514582 2001 RX ₁₉	16.8	X	44.75389	338.79176	333.18104	12.68717	0.2240545	0.21462365	2.7628098	20	11 17.9	20.9
514583 2001 SL ₃₆	18.4	X	107.17497	9.13564	8.21862	20.28650	0.0996470	0.38594166	1.8683358	20	—	—
514584 2001 SV ₂₄₃	17.8	X	56.66397	339.25645	9.22130	4.85393	0.1696899	0.27010828	2.3701588	20	—	—
514585 2001 TR ₁₈₀	17.8	X	26.47840	104.66453	261.82375	3.84479	0.2392825	0.26662228	2.3907734	20	—	—
514586 2001 UO ₁₇	18.4	X	352.30235	263.86691	205.70803	21.30227	0.1534593	0.37936041	1.8898821	20	—	—
514587 2001 WK ₁₀₄	14.1	X	183.56642	294.24248	107.50536	8.80244	0.0185175	0.08190427	5.2512781	20	5 6.3	21.2
514588 2001 XS ₆₂	16.6	X	240.05539	174.80054	242.31399	4.15829	0.2290553	0.24549621	2.5260359	20	7 5.8	20.5
514589 2001 YJ	18.0	X	86.35746	107.61545	276.32278	19.19438	0.1245529	0.37912991	1.8906480	20	—	—
514590 2001 YQ ₄₈	17.7	X	289.04555	163.29910	177.83615	8.55245	0.0717676	0.25598723	2.4565401	20	11 5.8	20.7
514591 2002 AR ₃₁	18.6	X	10.05742	342.81877	117.16318	24.91750	0.0605414	0.37497353	1.9045935	20	—	—
514592 2002 OM ₁₈	17.2	X	141.18920	148.81479	161.69847	12.23963	0.2676999	0.24195074	2.5506532	20	—	—
514593 2002 SQ ₇₅	15.3	X	72.93198	58.04544	244.92116	22.40389	0.1774893	0.17241059	3.1971285	20	12 7.3	20.4
514594 2002 VG ₈₆	17.1	X	295.01441	58.55938	35.37097	22.98006	0.2485949	0.27594802	2.3366008	20	11 24.5	18.9
514595 2002 WF ₂₂	18.0	X	324.06260	330.14570	64.97313	2.20099	0.1897105	0.27306230	2.3530341	20	11 10.6	19.5
514596 2003 FG	19.6	X	106.32999	312.87412	7.00814	15.66346	0.7150232	0.71235315	1.2416689	20	—	—
514597 2003 MD ₇	20.2	X	145.12019	185.30818	200.46898	5.79157	0.5943954	0.55460384	1.4671712	20	3 19.3	22.3
514598 2003 OK ₃₃	17.0	X	15.49526	215.47056	149.28807	13.21433	0.1955800	0.24143429	2.5542893	20	12 24.6	20.4
514599 2003 SE ₇₀	17.2	X	353.12468	193.17276	172.10142	3.61832	0.1774446	0.23530968	2.5984210	20	11 13.9	19.8
514600 2003 SF ₁₃₀	17.1	X	357.51831	149.56309	196.10975	13.51908	0.1361320	0.23425364	2.6062245	20	10 19.4	19.7
514601 2003 ST ₁₈₆	17.2	X	33.09802	214.21256	125.23492	4.85882	0.2335252	0.23939415	2.5687806	20	12 19.6	20.6
514602 2003 SN ₂₂₁	17.1	X	28.32533	338.68834	359.16193	4.57636	0.2429365	0.23753024	2.5822014	20	12 12.0	20.5
514603 2003 SF ₂₄₆	18.2	X	130.89754	333.10135	7.82143	18.43582	0.0499525	0.37245542	1.9131683	20	—	—
514604 2003 SQ ₂₇₆	17.2	X	27.96120	343.22285	341.51175	13.73786	0.1681200	0.23563747	2.5960107	20	11 6.9	20.8
514605 2003 SC ₃₂₈	16.2	X	330.37978	37.71199	19.15907	28.47968	0.1192890	0.23560008	2.5962854	20	11 27.5	19.7
514606 2003 SU ₃₃₄	17.1	X	164.73628	232.39267	9.52466	15.02498	0.0586225	0.24420021	2.5349654	20	12 25.9	21.0
514607 2003 SO ₃₄₆	16.9	X	70.19886	266.49041	3.45806	9.43363	0.2096661	0.17758317	3.1347399	20	10 19.4	21.6
514608 2003 SO ₄₂₉	17.1	X	35.92293	327.05121	13.38268	13.81294	0.0974372	0.23658297	2.5890895	20	11 30.2	20.7
514609 2003 TY ₇	18.8	X	153.43330	2.97695	24.11854	50.07721	0.0839792	0.44062439	2.7103711	20	3 28.4	21.7
514610 2003 TL ₄₅	17.0	X	296.60563	37.16764	356.18156	11.97707	0.1869082	0.22775698	2.6555527	20	8 28.4	20.0
514611 2003 UK ₂₀	17.0	X	288.48009	18.33662	21.33872	12.63825	0.2404876	0.22594261	2.6697501	20	8 16.9	20.3
514612 2003 UJ ₃₁₇	17.5	X	14.50020	301.15264	24.26557	11.94210	0.1229743	0.23340525	2.6125361	20	10 16.9	20.6
514613 2003 UW ₃₃₂	17.9	X	270.90292	103.37496	333.04778	2.89978	0.1713674	0.23154602	2.6265026	20	9 15.3	21.2
514614 2003 WD ₆₁	17.4	X	294.19782	19.10102	62.32086	4.98543	0.1706591	0.23047832	2.6346079	20	11 2.6	20.0
514615 2003 XJ ₂₁	16.6	X	317.44624	314.90715	64.55201	7.76393	0.3601008	0.22548067	2.6733952	20	8 27.1	18.4
514616 2004 BX ₁₆₃	13.4	X	271.43227	248.41801	78.89561	26.75086	0.0866819	0.08440084	5.1472057	20	5 14.4	20.4
514617 2004 CU ₅₃	17.1	X	141.54497	96.31106	149.89266	18.78281	0.2412766	0.21659127	2.7460520	20	12 2.5	22.3
514618 2004 EC ₂₄	17.2	X	142.06963	41.83620	176.86480	9.80723	0.2355472	0.21156155	2.7894049	20	10 29.9	22.1
514619 2004 FJ ₈	17.8	X	255.67573	41.32531	115.30168	4.00450	0.0992685	0.28417724	2.2912713	20	—	—
514620 2004 KO ₁₉	15.3	X	298.22638	197.52228	137.71961	11.55371	0.1845583	0.12467916	3.9683211	20	6 5.9	20.7
514621 2004 PF ₆₈	17.4	X	86.29999	98.98952	217.52476	3.33880	0.2395742	0.26304133	2.4124226	20	—	—
514622 2004 PL ₁₀₆	17.3	X	91.37696	128.09941	172.01327	15.00685	0.2601632	0.26245977	2.4159849	20	12 31.2	21.7
514623 2004 RA ₂₄₆	16.5	X	192.43842	304.44975	159.77843	10.39816	0.1870524	0.17357962	3.1827576	20	7 20.8	21.8
514624 2004 RD ₂₆₅	19.0	X	48.96600	264.16141	96.35563	1.34539	0.1481982	0.32339902	2.1020526	20	—	—
514625 2004 RA ₃₀₃	16.4	X	280.64908	140.92337	258.57910	7.05137	0.0553664	0.18180236	3.0860506	20	8 19.1	20.7
514626 2004 SO ₄	16.2	X	306.41153	46.27547	328.64482	9.24777	0.1190192	0.18209780	3.0827117	20	8 19.3	19.8
514627 2004 SQ ₂₃	17.8	X	67.73840	328.26857	357.28241	1.10139	0.2050314	0.25719035	2.4488730	20	—	—
514628 2004 TG ₃	16.7	X	67.31502	266.90563	17.67231	10.35188	0.0564922	0.18558450	3.0439785	20	10 16.7	21.1
514629 2004 TR ₃₆	17.6	X	113.98555	282.47490	19.63825	12.18689	0.2115088	0.26220382	2.4175569	20	—	—
514630 2004 TC ₆₂	17.1	X	47.54031	326.06763	22.55113	6.69315	0.1480001	0.25778524	2.4451041	20	—	—
514631 2004 TQ ₁₅₄	16.6	X	224.82430	48.19368	21.47410	16.21545	0.0569208	0.17253238	3.1956238	20	7 26.1	21.6
514632 2004 TM ₁₉₈	16.5	X	336.24794	299.86046	42.34966	1.34341	0.1725994	0.17873765	3.1212270	20	8 23.1	19.8
514633 2004 TD ₂₁₃	16.4	X	343.06418	293.01410	42.12164	10.73181	0.2132752	0.17840278	3.1251315	20	9 1.4	19.7
514634 2004 TD ₂₃₃	16.1	X	26.72156	300.44623	29							

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>
514641 2005 <i>ES</i> ₁₉₉	17.1	X	140.55403	237.67355	354.85204	10.54029	0.2155511	0.22649412	2.6654146	20	11 10.1	21.8
514642 2005 <i>GD</i> ₄₀	17.2	X	152.34772	219.14205	28.67634	10.55605	0.1672843	0.22865103	2.6486258	20	12 10.6	21.6
514643 2005 <i>GE</i> ₈₆	18.2	X	141.31048	131.24125	146.80030	2.65595	0.2059983	0.29681616	2.2257567	20	—	—
514644 2005 <i>GS</i> ₁₀₆	17.9	X	218.03047	305.25945	201.29468	1.36450	0.1500142	0.22741490	2.6582150	20	10 13.8	21.8
514645 2005 <i>JD</i> ₇₀	17.3	X	96.02411	232.77374	43.79276	12.79997	0.1457774	0.22053636	2.7132048	20	11 22.7	21.6
514646 2005 <i>LK</i> ₂₇	18.1	X	195.92341	145.14594	110.72884	7.45665	0.0942158	0.30092558	2.2054471	20	—	—
514647 2005 <i>MT</i> ₄₈	18.1	X	140.16917	145.71483	150.17002	6.84718	0.1930858	0.28949822	2.2631089	20	—	—
514648 2005 <i>NN</i> ₇₀	18.3	X	99.18244	190.77671	127.48991	2.90869	0.1742521	0.28430144	2.2906040	20	—	—
514649 2005 <i>QW</i> ₁₈₀	16.4	X	201.78344	243.67177	181.86293	19.35951	0.2442619	0.17898951	3.1182984	20	6 12.1	22.1
514650 2005 <i>RK</i> ₁₅	17.1	X	266.56277	46.32709	347.22054	12.25208	0.1311101	0.18946625	3.0022590	20	7 19.6	21.5
514651 2005 <i>ST</i> ₂₇	17.4	X	77.89012	355.14866	344.43308	7.37045	0.1449675	0.27870205	2.3211824	20	—	—
514652 2005 <i>SC</i> ₇₁	18.3	X	235.64175	117.85010	196.53569	32.38232	0.3826860	0.37335506	1.9100938	20	2 5.8	22.6
514653 2005 <i>SM</i> ₉₃	16.7	X	187.00006	241.19893	204.11796	14.64539	0.2311350	0.17560444	3.1582444	20	6 22.8	22.4
514654 2005 <i>SN</i> ₁₁₃	17.0	X	237.30290	77.41003	1.48213	1.31509	0.0741392	0.18966352	3.0001767	20	8 15.9	21.3
514655 2005 <i>SN</i> ₁₄₇	17.6	X	19.06706	341.16720	26.21694	7.54907	0.1265184	0.27070681	2.3666640	20	12 30.7	20.5
514656 2005 <i>SP</i> ₁₇₄	17.7	X	137.15532	37.48850	232.01384	6.76739	0.2171950	0.27994097	2.3143289	20	12 31.9	21.6
514657 2005 <i>SO</i> ₂₂₇	18.6	X	284.55155	289.32354	136.76109	1.24309	0.1921777	0.26187569	2.4195760	20	9 26.8	21.0
514658 2005 <i>SJ</i> ₂₈₀	17.7	X	116.88270	213.33992	111.35831	3.52111	0.1850942	0.28231518	2.3013353	20	—	—
514659 2005 <i>TH</i> ₃₄	18.0	X	316.16872	299.01361	108.89765	2.38187	0.1345083	0.26608611	2.3939840	20	11 10.3	20.0
514660 2005 <i>TD</i> ₁₃₂	17.7	X	103.77124	275.68143	41.59953	5.91803	0.1831433	0.27926468	2.3188638	20	—	—
514661 2005 <i>TS</i> ₁₆₈	18.0	X	12.43410	50.55954	24.06332	16.40053	0.0563552	0.34704624	2.0054468	20	—	—
514662 2005 <i>UE</i> ₁₄	16.4	X	228.82612	189.16316	213.77300	11.79086	0.1999885	0.17834315	3.1258281	20	6 9.1	21.6
514663 2005 <i>UM</i> ₃₅	16.9	X	269.56569	3.78507	47.30125	6.71568	0.129162	0.18596138	3.0398643	20	8 17.5	21.2
514664 2005 <i>UE</i> ₈₆	18.3	X	302.34603	243.29869	193.37260	4.70442	0.0716051	0.26598253	2.3946055	20	11 28.4	20.8
514665 2005 <i>UZ</i> ₉₃	16.9	X	184.46715	120.85486	333.69062	4.34026	0.1065594	0.17672945	3.1448270	20	7 5.6	21.8
514666 2005 <i>UZ</i> ₂₆₂	15.5	X	352.33300	125.49984	184.84040	8.71496	0.2167787	0.12371537	3.9889042	20	7 31.7	20.0
514667 2005 <i>UM</i> ₂₆₇	17.8	X	275.78963	11.20021	91.77520	2.75035	0.1806501	0.26229492	2.4169971	20	11 7.3	20.0
514668 2005 <i>UG</i> ₂₇₁	17.4	X	10.43302	324.08597	64.99455	10.96594	0.0891953	0.27165288	2.3611659	20	—	—
514669 2005 <i>UM</i> ₂₈₂	17.5	X	130.71913	226.82731	80.90554	3.18045	0.2085302	0.28265994	2.2994636	20	—	—
514670 2005 <i>UT</i> ₃₀₅	17.8	X	124.53600	277.15058	23.31803	2.31804	0.2125230	0.27961792	2.3161111	20	—	—
514671 2005 <i>UA</i> ₃₁₈	16.7	X	40.95517	263.39131	37.65466	8.87386	0.1872603	0.19497438	2.9454457	20	10 25.8	20.6
514672 2005 <i>UX</i> ₃₃₂	18.4	X	242.94593	37.75323	87.11572	2.39457	0.1216143	0.26233617	2.4167437	20	10 26.9	21.4
514673 2005 <i>UR</i> ₃₄₃	16.7	X	0.76085	302.08114	18.38602	10.59480	0.0871374	0.18987147	2.9979859	20	9 9.9	20.5
514674 2005 <i>UE</i> ₃₆₉	17.4	X	229.55258	319.54590	122.74461	2.98503	0.1640614	0.18196832	3.0841739	20	7 31.4	22.0
514675 2005 <i>UD</i> ₅₂₂	17.2	X	53.39563	132.26153	173.78797	12.37316	0.0337802	0.19709878	2.9242427	20	10 28.3	21.3
514676 2005 <i>UM</i> ₅₃₂	16.4	X	287.34552	155.12929	226.16027	8.64042	0.0714908	0.18240541	3.0792450	20	8 2.4	20.7
514677 2005 <i>VX</i> ₄₅	18.2	X	216.22103	95.80552	51.45609	6.85920	0.0810004	0.26079994	2.4262249	20	10 27.6	21.5
514678 2005 <i>WM</i> ₅₄	16.4	X	204.06077	72.87486	0.09975	25.21581	0.3223268	0.17560425	3.1582466	20	6 18.1	22.6
514679 2005 <i>WC</i> ₇₅	17.8	X	292.82038	14.12594	39.02398	7.08923	0.1296699	0.25847849	2.4407302	20	10 3.4	20.3
514680 2005 <i>WB</i> ₈₃	16.3	X	243.23120	162.94572	241.73991	10.10323	0.0691405	0.17741467	3.1367244	20	7 8.1	21.0
514681 2005 <i>WY</i> ₁₁₀	16.5	X	332.08610	96.72370	245.42828	9.29475	0.0781286	0.18351629	3.0668060	20	8 15.2	20.6
514682 2005 <i>WW</i> ₁₃₈	17.1	X	218.27011	17.40372	47.56446	1.67908	0.1635005	0.17534070	3.1614105	20	6 28.8	22.2
514683 2005 <i>XB</i> ₄₂	17.6	X	121.24821	301.54200	10.40002	3.05144	0.2487404	0.28080626	2.3095721	20	—	—
514684 2005 <i>XA</i> ₅₅	18.3	X	268.82321	28.44938	58.57383	2.09141	0.1447565	0.25701945	2.4499585	20	10 7.5	21.1
514685 2005 <i>XF</i> ₆₁	17.3	X	187.86189	120.82786	5.70962	0.66935	0.1153505	0.18039866	3.1020385	20	8 17.0	22.2
514686 2005 <i>YK</i> ₂₁	18.1	X	240.50186	146.94574	342.69617	0.78954	0.1391776	0.25436498	2.4669736	20	10 24.4	21.3
514687 2005 <i>YL</i> ₂₅	17.1	X	218.08763	315.69582	121.21700	2.27366	0.1488521	0.17220726	3.1996446	20	7 14.1	22.1
514688 2005 <i>YD</i> ₇₉	17.8	X	196.79373	128.27158	76.57972	2.22647	0.1230158	0.25858218	2.4400777	20	12 11.7	21.2
514689 2005 <i>YE</i> ₂₃₀	16.1	X	241.36299	330.04153	84.93639	15.37957	0.1388848	0.17704977	3.1410328	20	7 9.4	21.0
514690 2006 <i>BT</i> ₂₆	16.5	X	185.31423	8.27907	117.65690	11.29184	0.0419732	0.17247058	3.1963870	20	8 17.3	21.2
514691 2006 <i>BC</i> ₇₃	16.6	X	117.16372	241.14662	332.63493	16.96183	0.0957920	0.17266496	3.1939877	20	9 15.3	21.6
514692 2006 <i>BV</i> ₈₁	13.7	X	0.03635	250.63564	344.56221	29.69446	0.0979997	0.08214547	5.2409939	20	4 29.6	20.8
514693 2006 <i>BE</i> ₁₀₈	18.0	X	170.92022	149.96810	74.28235	2.18937	0.1336543	0.25324182	2.4742624	20	12 6.7	21.8
514694 2006 <i>BP</i> ₁₆₃	16.5	X	156.21393	204.48477	318.36510	10.78999	0.0212985	0.17208923	3.2011075	20	8 26.0	21.2
514695 2006 <i>CW</i> ₄₅	18.1	X	172.47006	220.25871	7.09868	1.86600	0.1340534	0.25460037	2.4654528	20	12 12.1	21.8
514696 2006 <i>DA</i> ₁₃₄	13.9	X	282.66135	179.04762	137.67039	9.97190	0.0902566	0.08254232	5.2241817	20	5 10.7	20.9
514697 2006 <i>EP</i> ₅₁	17.7	X	247.24409	337.15235	126.60500	4.44692	0.1064594	0.24491582	2.5300251	20	10 4.5	21.0
514698 2006 <i>GE</i> ₂₈	17.9	X	152.98359	35.07310	175.13688	4.84391	0.1623735	0.23857095	2.5746864	20	10 31.5	22.0
514699 2006 <i>JK</i> ₃₆	17.1	X	102.45086	114.14101	172.27141	13.02138	0.2543218	0.23673243	2.5879996	20	12 20.1	21.8
514700 2006 <i>KX</i> ₅₄	17.3	X	115.10844	21.02981	228.78517	13.61193	0.1057522	0.23503111	2.6004738	20	11 10.4	21.1
514701 2006 <i>KL</i> ₁₁₃	17.0	X	122.42837	172.38731	87.97334	14.67785	0.2378588	0.23810590	2.5780378	20	12 5.2	21.6
514702 2006 <i>MP</i> ₆	18.7	X	175.46391	26.61139	270.00532	7.11404	0.3178177	0.31842621	2.1238810	20	—	—
514703 2006 <i>QE</i> ₇₆	17.2	X	34.24139	182.50927	147.46692	9.78469	0.0956413	0.22050621	2.7134522	20	11 17.0	20.9
514704 2006 <i>QY</i> ₈₄	17.1	X	127.62819	108.36130	153.55629	16.67285	0.1431327	0.22868964	2.6483277	20	12 9.6	21.7
514705 2006 <i>RU</i> ₁₁	17.2	X	359.36993	19.02135	341.55760	7.55793	0.2265501	0.21681879	2.7441306	20	11 16.2	20.2
514706 2006 <i>SX</i> ₁₇	16.9	X	64.35345	295.52302	19.30371	14.33682	0.2104491	0.22088505	2.7103487	20	12 13.8	21.3
514707 2006 <i>SM</i> ₄₁	17.0	X	76.59901	293.48311	15.65245	10.38611	0.1771388	0.22312027	2.6922168	20	12 16.8	21.4
514708 2006 <i>SU</i> ₁₃₆	16.4	X	122.74117	291.40225	7.64431	29.83420	0.2912411	0.23455255	2.6040098	20	—	—
514709 2006 <i>SP</i> ₂₂₁	18.7	X	316.61612	61.90018	356.50985	2.55158	0.1530649	0.28843596	2.2686619	20	12 4.9	20.5
514710 2006 <i>SB</i> ₂₃₀	17.2	X	314.07811	45.08297	333.96831	5.87219	0.2014351	0.20883870	2.8135981	20	9 16.5	21.0
514711 2006 <i>SY</i> ₂₅₆	17.4	X	33.76160	78.75702	216.88545	4.66283	0.1763521	0.21054732	2.7983556	20	10 8.9	

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
514721 2006 <i>UU</i> ₃₃₅	18.2	X	311.27255	29.86912	48.95620	7.19013	0.1062882	0.28691197	2.2766884	20	12 23.4	20.3
514722 2006 <i>VL</i> ₆	16.7	X	157.61675	326.15143	228.45349	14.17213	0.0866294	0.20458738	2.8524420	20	10 9.3	21.1
514723 2006 <i>VR</i> ₄₇	18.2	X	17.65520	30.41804	60.54383	23.30103	0.0878141	0.37588463	1.9015146	20	—	—
514724 2006 <i>VL</i> ₆₇	18.0	X	309.46572	354.30464	61.75981	6.77009	0.1975127	0.28019204	2.3129462	20	11 12.4	19.4
514725 2006 <i>VE</i> ₈₃	16.7	X	269.97830	16.33442	41.62903	6.39148	0.0551868	0.20112100	2.8851237	20	9 6.6	20.7
514726 2006 <i>VQ</i> ₁₀₄	16.3	X	1.58228	296.75606	81.77486	10.29924	0.1058472	0.21451891	2.7637091	20	12 1.0	19.6
514727 2006 <i>WK</i> ₃₆	18.0	X	351.42078	248.51393	129.16562	4.07016	0.1770512	0.28359624	2.2943997	20	12 14.4	20.2
514728 2006 <i>WV</i> ₁₁₃	17.1	X	214.47609	37.71808	18.66401	17.30365	0.4093819	0.18877937	3.0095370	20	5 30.2	23.1
514729 2006 <i>WZ</i> ₁₈₁	18.3	X	291.79623	2.04623	71.00907	6.63410	0.2290564	0.27888727	2.3201546	20	10 25.1	19.9
514730 2006 <i>WM</i> ₂₀₀	17.3	X	266.31943	249.46360	178.84894	1.86739	0.0498506	0.19935364	2.9021505	20	9 12.4	21.2
514731 2006 <i>XR</i> ₅₁	18.3	X	328.26060	343.27067	75.58537	6.74936	0.0873848	0.28488436	2.2874783	20	12 22.1	20.5
514732 2006 <i>YG</i> ₅₅	17.1	X	191.73631	89.51655	60.28146	4.91980	0.0860190	0.19272108	2.9683600	20	9 23.6	21.6
514733 2007 <i>AY</i> ₃₀	16.6	X	142.10935	223.12706	302.67189	7.95948	0.0813542	0.18362496	3.0655959	20	8 17.1	21.3
514734 2007 <i>BJ</i> ₄₁	17.2	X	131.22957	278.18626	278.73810	0.55715	0.1959179	0.18603002	3.0391166	20	9 20.2	22.2
514735 2007 <i>BP</i> ₄₇	16.3	X	233.94944	104.92258	339.48531	11.81037	0.0586183	0.18476505	3.0529721	20	8 21.5	20.6
514736 2007 <i>BV</i> ₆₈	16.7	X	181.73891	0.14215	153.00581	6.25982	0.1384499	0.18722571	3.0261635	20	9 12.8	21.5
514737 2007 <i>BL</i> ₁₀₀	16.9	X	161.62447	16.35837	119.31357	7.61044	0.1123520	0.18127960	3.0919806	20	8 2.6	21.7
514738 2007 <i>CQ</i> ₁₂	18.2	X	243.62429	30.49961	127.57096	5.81307	0.0333696	0.27663727	2.3327181	20	12 28.4	20.9
514739 2007 <i>CP</i> ₂₉	16.4	X	109.10751	306.62272	311.17649	8.30500	0.1825674	0.19239950	2.9716667	20	11 9.3	21.4
514740 2007 <i>CT</i> ₃₃	18.2	X	212.91971	252.62896	293.27721	0.53166	0.1318352	0.27356146	2.3501709	20	12 8.4	21.0
514741 2007 <i>CD</i> ₃₇	17.2	X	181.69927	170.68912	322.62738	2.35394	0.1292536	0.18524237	3.0477254	20	8 18.9	22.1
514742 2007 <i>CA</i> ₅₂	16.6	X	195.86571	111.99034	352.91933	12.82156	0.2738224	0.18416645	3.0595839	20	7 26.6	22.2
514743 2007 <i>CS</i> ₇₀	16.8	X	232.59373	292.11179	131.04384	9.88112	0.1282175	0.18225992	3.0808835	20	7 13.9	21.5
514744 2007 <i>DX</i> ₁	16.0	X	198.70217	308.83040	168.14689	18.81499	0.1958877	0.18539593	3.0460422	20	8 9.9	21.2
514745 2007 <i>DD</i> ₄₂	17.6	X	198.94284	216.72362	322.00618	10.22144	0.1511906	0.26832910	2.3806243	20	11 5.2	21.3
514746 2007 <i>DE</i> ₄₄	16.8	X	117.33595	73.57632	168.49831	17.23525	0.2499028	0.18444501	3.0565026	20	11 6.5	22.3
514747 2007 <i>DQ</i> ₇₆	18.2	X	160.64907	159.72873	162.87627	23.15444	0.0884434	0.36342788	1.9447206	20	—	—
514748 2007 <i>DR</i> ₈₅	16.9	X	128.25310	51.92779	155.54765	11.85350	0.0192567	0.18602349	3.0391877	20	9 22.5	21.2
514749 2007 <i>DS</i> ₁₁₁	16.1	X	192.45165	103.84833	354.36266	17.19067	0.0765403	0.17550227	3.1594699	20	7 24.5	21.1
514750 2007 <i>DS</i> ₁₁₃	18.3	X	203.17807	20.18675	172.90633	6.84121	0.0536158	0.27148858	2.3621184	20	12 16.6	21.5
514751 2007 <i>DP</i> ₁₁₈	16.6	X	138.40919	201.33043	11.45215	4.37393	0.1996951	0.18330079	3.0692092	20	10 14.3	21.8
514752 2007 <i>EE</i> ₇	16.7	X	284.39896	225.50938	163.02873	5.26319	0.0340689	0.17990165	3.1077491	20	8 15.3	21.0
514753 2007 <i>EJ</i> ₁₇	18.1	X	148.58827	81.71023	173.00732	1.50498	0.1590665	0.26767858	2.3844797	20	12 24.1	21.9
514754 2007 <i>EX</i> ₂₂	17.2	X	204.52002	310.60196	166.79130	8.75845	0.2159869	0.18446939	3.0562333	20	8 15.0	22.4
514755 2007 <i>EH</i> ₃₇	17.6	X	151.58478	252.74394	351.30850	11.68391	0.1547473	0.26553979	2.3972665	20	12 12.6	21.6
514756 2007 <i>EK</i> ₃₉	19.0	X	290.29614	80.47506	178.67287	27.60224	0.0750853	0.44891172	1.6892558	20	1 24.4	21.3
514757 2007 <i>EJ</i> ₅₀	17.0	X	81.91187	59.28524	178.28953	10.55693	0.1723838	0.17617790	3.1513872	20	9 20.2	21.6
514758 2007 <i>EH</i> ₅₅	16.1	X	266.23932	244.34049	154.08069	10.94956	0.0754054	0.17661143	3.1462279	20	7 28.4	20.6
514759 2007 <i>ET</i> ₆₄	16.7	X	231.76967	298.95076	166.61288	14.70888	0.0562457	0.18374264	3.0642868	20	9 13.8	21.1
514760 2007 <i>EA</i> ₆₆	16.9	X	187.09108	10.74203	122.26353	3.35495	0.1270707	0.18092375	3.0960335	20	8 24.2	21.8
514761 2007 <i>EV</i> ₉₄	18.8	X	158.21771	138.60107	171.14659	23.48389	0.0425028	0.35857162	1.9622399	20	—	—
514762 2007 <i>EH</i> ₉₉	13.6	X	303.37087	285.75383	3.77027	28.36560	0.0542967	0.08482362	5.1300884	20	4 23.9	20.6
514763 2007 <i>EB</i> ₁₁₄	16.2	X	213.43269	310.81267	156.96227	16.86537	0.1712092	0.18422452	3.0589409	20	8 14.4	21.2
514764 2007 <i>EV</i> ₁₁₄	17.9	X	128.69618	213.15331	27.34722	15.01375	0.0508386	0.25903041	2.4372620	20	11 12.6	21.4
514765 2007 <i>EL</i> ₁₁₅	16.3	X	98.97691	199.81297	39.55038	10.76211	0.1309944	0.17631950	3.1496997	20	10 8.5	21.1
514766 2007 <i>EY</i> ₁₂₄	17.1	X	164.76385	129.55322	29.03211	5.27218	0.1381896	0.17774367	3.1328525	20	9 4.1	22.1
514767 2007 <i>EL</i> ₁₂₆	18.6	X	278.10060	144.45932	328.50543	3.97617	0.1921946	0.27470093	2.3436673	20	11 27.4	20.5
514768 2007 <i>ET</i> ₁₃₇	16.5	X	174.11481	155.22984	8.39688	20.65744	0.1333512	0.18382392	3.0633835	20	9 20.8	21.4
514769 2007 <i>EG</i> ₁₈₃	19.9	X	215.76135	321.51875	153.49861	10.22677	0.1581394	0.18638277	3.0352808	20	8 27.8	21.7
514770 2007 <i>EO</i> ₁₈₃	17.1	X	156.04362	144.30241	17.11075	5.29042	0.0900693	0.18099662	3.0952025	20	8 29.8	21.8
514771 2007 <i>ER</i> ₂₂₅	13.9	X	351.63441	242.25260	8.39750	29.41297	0.0647253	0.08408849	5.1599443	20	5 8.7	20.8
514772 2007 <i>ET</i> ₂₂₅	14.1	X	350.98161	249.08673	350.98947	15.27178	0.1263906	0.08300115	5.2049111	20	4 30.1	20.6
514773 2007 <i>FW</i> ₃₇	18.5	X	243.96046	120.38032	12.23118	2.51791	0.1412669	0.26651245	2.3914302	20	11 4.1	21.4
514774 2007 <i>FR</i> ₄₄	18.3	X	173.43416	27.79362	175.34023	1.38536	0.1359986	0.26180475	2.4200130	20	11 14.7	22.0
514775 2007 <i>FL</i> ₄₅	18.3	X	185.77184	199.63876	8.42148	5.74653	0.1444356	0.26699623	2.3885406	20	12 2.2	21.9
514776 2007 <i>FU</i> ₄₅	18.5	X	227.10219	324.23877	178.60296	1.47669	0.1378421	0.26581051	2.3956385	20	10 27.9	21.7
514777 2007 <i>GO</i> ₇₀	17.9	X	207.13959	2.66971	187.99470	1.01039	0.1271816	0.26619834	2.3933111	20	12 6.7	21.2
514778 2007 <i>GL</i> ₅	13.7	X	315.93012	268.56933	16.55760	25.65487	0.1385618	0.08318342	5.1973051	20	4 28.9	20.4
514779 2007 <i>GG</i> ₁₆	18.1	X	148.63522	264.78931	16.21999	4.92401	0.1767508	0.26679326	2.3897519	20	—	—
514780 2007 <i>GL</i> ₁₈	17.0	X	168.81068	103.73334	146.24914	12.82085	0.1966473	0.26566668	2.3965031	20	—	—
514781 2007 <i>GS</i> ₁₈	18.1	X	145.07735	225.61190	24.72221	2.61940	0.1512542	0.26093620	2.4253802	20	12 14.4	22.0
514782 2007 <i>GC</i> ₄₀	18.0	X	183.22670	165.16551	51.27629	5.36996	0.1460219	0.26376126	2.4080308	20	12 10.0	21.5
514783 2007 <i>GQ</i> ₅₄	16.2	X	160.64992	145.07440	45.66698	22.86122	0.0689827	0.18051148	3.1007459	20	10 15.3	21.1
514784 2007 <i>GP</i> ₇₀	18.4	X	182.17238	196.85815	34.96393	1.81822	0.1381470	0.26895250	2.3769442	20	12 30.6	21.7
514785 2007 <i>GX</i> ₇₀	16.3	X	139.16083	1.31682	192.42870	27.35606	0.0284856	0.17914698	3.1164708	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>
514801 2007 RV ₂₄₇	17.3	X	335.14578	351.89605	357.68806	12.50339	0.1371023	0.22785828	2.6547656	20	9 11.6	19.9
514802 2007 RP ₂₅₃	17.2	X	357.60576	184.48359	172.11036	15.10609	0.2615886	0.23443491	2.6048808	20	11 24.6	20.0
514803 2007 RL ₂₈₅	17.4	X	106.15215	238.19453	19.78358	11.22742	0.2415627	0.23805244	2.5784238	20	11 16.6	22.0
514804 2007 RD ₂₉₈	17.3	X	347.05499	227.95919	132.58619	3.26330	0.2186561	0.23006635	2.6377521	20	10 29.1	19.5
514805 2007 RU ₃₀₈	17.7	X	321.75404	100.97046	273.61667	2.54054	0.0456209	0.22691334	2.6621307	20	9 23.0	21.0
514806 2007 SV ₃	16.4	X	8.82781	314.77396	21.66299	16.76058	0.2022311	0.22861586	2.6488974	20	10 29.9	19.2
514807 2007 SP ₂₁	17.1	X	276.81094	220.83274	188.77350	12.16750	0.1955227	0.22268333	2.6957374	20	8 10.2	20.7
514808 2007 TK ₁₄₅	16.8	X	327.41973	8.44293	22.26244	15.04235	0.1202080	0.22757665	2.6569553	20	10 23.4	19.6
514809 2007 TF ₂₄₅	17.0	X	338.55342	21.23337	342.01496	11.65306	0.2060855	0.22610086	2.6685043	20	10 4.1	19.5
514810 2007 TO ₂₆₆	17.5	X	256.78953	267.84655	169.02149	11.72639	0.1960206	0.22446118	2.6814841	20	8 21.8	21.2
514811 2007 TE ₂₈₀	15.7	X	64.67871	139.60960	159.03808	31.76124	0.2784318	0.16558354	3.2844143	20	11 29.9	21.4
514812 2007 TJ ₃₁₁	17.4	X	350.11511	330.48583	25.17776	7.88160	0.1278333	0.22793401	2.6541775	20	10 17.2	20.3
514813 2007 TQ ₃₈₀	17.3	X	338.77943	332.39392	40.28823	6.00169	0.1196286	0.22414095	2.6840375	20	10 20.1	20.0
514814 2007 TM ₄₂₀	17.2	X	246.60447	71.97336	353.30747	23.75946	0.3102941	0.21293579	2.7773905	20	7 21.7	22.1
514815 2007 TA ₄₃₆	16.8	X	314.51524	356.59071	43.24695	15.74443	0.1049622	0.22642655	2.6659448	20	10 19.1	19.8
514816 2007 TH ₄₃₉	17.5	X	216.14790	306.73843	155.49472	5.63281	0.1264519	0.21338543	2.7734875	20	8 16.9	21.7
514817 2007 UE ₉₄	17.4	X	251.32940	177.16206	258.76112	2.56984	0.1028351	0.21737069	2.7394838	20	8 26.7	21.2
514818 2007 UA ₁₄₁	17.7	X	268.71883	114.88532	314.22839	3.23602	0.0810661	0.21794523	2.7346671	20	9 13.7	21.3
514819 2007 VY ₁	17.0	X	249.91397	163.79360	252.81571	7.03087	0.2149624	0.21359885	2.7716397	20	7 14.9	21.2
514820 2007 VB ₁₁₆	17.0	X	256.72151	351.25022	81.57434	10.81515	0.1420024	0.21454398	2.7634938	20	8 29.7	21.0
514821 2007 VZ ₁₇₉	17.8	X	347.49359	298.98036	61.69134	7.16368	0.0644451	0.22409863	2.6843754	20	10 16.2	21.2
514822 2007 VX ₂₂₅	17.5	X	170.27632	135.12877	52.70355	2.34111	0.0809586	0.22425895	2.6830959	20	10 20.5	21.3
514823 2007 VU ₂₄₂	17.0	X	327.88685	241.62241	143.54918	7.93016	0.2701725	0.2251539	2.6759806	20	10 21.0	18.9
514824 2007 VD ₃₃₈	16.4	X	253.66441	150.46612	316.22968	8.01384	0.1082094	0.20958385	2.8069252	20	10 4.3	20.4
514825 2007 WV ₆₁	16.5	X	317.04728	116.44465	250.27378	11.83005	0.0685863	0.21491012	2.7603542	20	8 27.8	20.3
514826 2007 XS ₅₄	17.0	X	209.29816	49.84243	104.84943	6.02986	0.0976165	0.21428855	2.7656894	20	10 21.1	21.1
514827 2008 AK ₁₈	18.5	X	284.48099	5.73582	113.27532	6.66153	0.1033280	0.30046416	2.2077045	20	—	—
514828 2008 AS ₂₅	16.8	X	160.30542	55.50002	126.54058	15.76779	0.0885219	0.20405040	2.8574441	20	10 5.4	21.4
514829 2008 AQ ₅₄	17.3	X	143.66341	126.15848	106.44466	3.91149	0.0806099	0.21417998	2.7666240	20	11 15.5	21.5
514830 2008 AO ₅₈	17.2	X	85.05132	131.06876	143.14947	3.58289	0.0046518	0.21197455	2.7857806	20	10 25.4	21.0
514831 2008 AY ₁₁₅	17.2	X	149.32413	221.08201	322.98402	14.24642	0.0907301	0.20133374	2.8830909	20	9 14.9	21.8
514832 2008 CG ₁₈	18.6	X	128.46053	16.10415	333.22374	20.63123	0.0080678	0.39260000	1.8471515	20	—	—
514833 2008 CS ₃₄	17.1	X	115.83199	88.72587	140.60661	6.42773	0.1993151	0.19991002	2.8967633	20	10 19.9	21.9
514834 2008 CB ₃₈	17.1	X	165.22236	186.92518	354.13052	6.87388	0.2504190	0.20302551	2.8670525	20	9 29.4	22.1
514835 2008 CO ₉₁	18.9	X	228.81957	233.54199	327.34009	2.54809	0.0752697	0.30116747	2.2042660	20	—	—
514836 2008 CT ₁₂₇	17.3	X	242.88001	297.50638	157.79717	2.39728	0.0273802	0.20306402	2.8666900	20	9 21.2	21.1
514837 2008 CR ₁₃₈	18.2	X	214.99441	220.86538	351.10884	4.99924	0.1278092	0.29837288	2.2180082	20	—	—
514838 2008 CC ₁₄₂	18.1	X	204.45158	45.63143	148.34482	3.12630	0.1787487	0.28838256	2.2689420	20	12 6.4	21.3
514839 2008 CN ₁₅₉	18.1	X	285.85822	324.73080	121.39534	5.68228	0.1535189	0.29133156	2.2536045	20	11 15.9	20.0
514840 2008 CY ₁₉₃	16.4	X	65.34410	283.17664	352.02278	8.68751	0.1162432	0.19359801	2.9593895	20	10 10.6	20.6
514841 2008 DL ₁₅	17.9	X	269.87165	346.24297	166.83119	23.55440	0.1778553	0.29915606	2.2141354	20	—	—
514842 2008 DV ₁₇	17.0	X	94.52095	112.48135	150.59471	7.77445	0.2622801	0.19830492	2.9123734	20	11 14.4	22.0
514843 2008 DE ₃₇	17.6	X	141.76170	266.62301	354.47283	22.70235	0.2319302	0.28556920	2.2838197	20	12 29.4	21.9
514844 2008 DN ₆₀	18.9	X	218.46657	101.09510	101.30601	1.79339	0.0914014	0.29761146	2.2217897	20	—	—
514845 2008 EB ₇	17.0	X	154.49247	99.75171	86.25585	2.78426	0.1674951	0.20002557	2.8956476	20	9 29.3	21.7
514846 2008 EQ ₇	22.6	X	84.55483	65.43907	142.42726	5.96738	0.2230761	0.58799055	1.4110936	20	10 11.9	23.6
514847 2008 EM ₁₂	17.1	X	165.66649	31.11449	127.79747	5.38379	0.0716720	0.19603273	2.9348348	20	9 6.9	21.6
514848 2008 EA ₁₄	18.1	X	213.37386	186.95736	45.33665	5.23525	0.1181916	0.30027409	2.2086360	20	—	—
514849 2008 EF ₆₇	16.5	X	52.66211	299.83529	335.33991	11.18178	0.0922617	0.19348676	2.9605237	20	9 20.4	20.5
514850 2008 EN ₉₉	18.7	X	332.72446	311.43976	187.55988	21.15451	0.0805619	0.39054532	1.8536245	20	—	—
514851 2008 EK ₁₅₀	19.3	X	196.54655	298.91366	270.99563	7.74011	0.1643934	0.29029215	2.2589807	20	12 20.0	22.2
514852 2008 EL ₁₅₃	18.3	X	201.22517	138.62425	50.63839	7.05533	0.0417374	0.28764959	2.2727947	20	12 13.9	21.1
514853 2008 EA ₁₅₄	16.9	X	92.52961	87.18640	159.93562	6.01218	0.0206466	0.19571177	2.9380426	20	9 29.5	20.9
514854 2008 EV ₁₆₄	16.9	X	194.09136	68.53737	59.27732	0.86095	0.0221366	0.19361713	2.9591946	20	9 1.3	21.0
514855 2008 FS ₁₃	18.0	X	10.68941	203.51727	199.79226	4.54472	0.1693339	0.29773685	2.2211658	20	—	—
514856 2008 FA ₂₁	16.5	X	3.83335	185.97954	131.21108	7.45619	0.0885462	0.18737348	3.0245722	20	9 8.1	20.2
514857 2008 FH ₅₆	18.4	X	151.75949	236.17477	18.16680	3.12040	0.0986887	0.28781274	2.2719357	20	—	—
514858 2008 FL ₆₅	18.5	X	172.92911	88.21733	171.02837	2.86849	0.1931836	0.29027067	2.2590921	20	—	—
514859 2008 FB ₇₃	18.5	X	275.23259	39.77659	101.73724	3.97528	0.2165638	0.29698659	2.2249051	20	—	—
514860 2008 FT ₁₂₁	16.7	X	101.44372	154.30019	64.77297	8.95371	0.0723672	0.18970794	2.9997084	20	9 13.9	21.2
514861 2008 FC ₁₂₇	16.3	X	84.83103	24.52743	205.98310	16.71516	0.1370318	0.18365503	3.0652612	20	9 7.5	21.1
514862 2008 FX ₁₃₁	16.8	X	57.51748	175.67712	80.26453	2.16113	0.1559913	0.18520790	3.0481035	20	9 14.7	21.0
514863 2008 GE ₄₉	17.3	X	163.64199	59.85381	131.77237	4.03498	0.0986959	0.20278489	2.8693201	20	10 15.9	21.8
514864 2008 GP ₅₁	17.0	X	138.96048	153.68439	39.48467	5.14141	0.1172379	0.19323914	2.9630523	20	9 22.5	21.6
514865 2008 GV ₇₂	17.1	X	83.81609	48.30135	181.09400	4.60792	0.0954213	0.18811776	3.0165893	20	9 3.3	21.4
514866 2008 GU ₉₂	17.5	X	192.12613	32.39650	187.50764	24.23956	0.1523063	0.28874862	2.2670239	20	12 27.6	21.2
514867 2008 GF ₁₃₁	16.9	X	124.85713	125.23784	85.61094	4.57700	0.1076412	0.18841875	3.0133759	20	9 29.4	21.5
514868 2008 GT ₁₃₃	17.5	X	136.06300	220.01291	60.90640	10.26872	0.2191300	0.28388330	2.2928527	20	—	—
514869 2008 GV ₁₃₃	14.0	X	343.72132	142.97938	118.40052	12.77904	0.1058313	0.08170333	5.2598844	20	5 24.3	20.5
514870 2008 GX ₁₃₃	16.4	X	188.84209	92.75625	57.73571	10.62727	0.1293710	0.19219514	2.9737728	20	9 21.9	21.2
514871 2008 GT ₁₄₁	14.1	X	296.08116	156.50770	142.57378	14.23390	0.0536049	0.08101765	5.2895203	20	5 12.2	21.1
514872 2008 HF ₁	16.6	X	120.93276	122.86041	105.21707	10.00860	0.1582440	0.19109909	2.9851327	20	10 21.8	21.6
514873 2008 HK ₂₂	17.0	X	81.19017	68.98048	191.61616	17.40147	0.2469016	0.18513823	3.0488681	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>
514881 2008 KH ₁₄	16.7	X	30.90172	128.80396	145.80500	11.28191	0.1249591	0.17755021	3.1351278	20	8 25.9	20.7
514882 2008 KQ ₁₆	14.0	X	75.58084	46.23429	116.09070	16.06230	0.0817463	0.08303175	5.2036322	20	5 31.4	20.9
514883 2008 KG ₂₇	18.4	X	172.48832	145.26487	135.24285	5.96499	0.2242755	0.29234012	2.2484183	20	—	—
514884 2008 LD ₇	17.0	X	136.04663	65.82466	160.77630	9.69626	0.1805367	0.19238344	2.9718321	20	11 1.1	22.0
514885 2008 LR ₇	16.7	X	106.97966	44.06343	197.44279	11.21582	0.1075653	0.18797132	3.0181559	20	10 16.2	21.3
514886 2008 MJ	16.9	X	138.01673	322.77211	226.97556	10.61221	0.2441613	0.18825954	3.0150746	20	9 15.7	22.3
514887 2008 QO ₁	17.6	X	59.88177	226.75647	118.06040	3.03405	0.2259861	0.26674641	2.3900317	20	—	—
514888 2008 QA ₁₀	18.1	X	128.24608	308.06933	344.63875	2.00690	0.2081882	0.27358276	2.3500489	20	—	—
514889 2008 QH ₂₆	17.6	X	69.79604	213.74880	117.81947	3.08950	0.1884232	0.26737337	2.3862940	20	—	—
514890 2008 RQ ₃	17.6	X	52.52609	163.17098	192.55761	4.04202	0.0765046	0.26460333	2.4029192	20	—	—
514891 2008 RU ₂₁	17.3	X	61.10484	4.62456	343.74955	6.37858	0.1505892	0.26813815	2.3817544	20	—	—
514892 2008 RC ₉₆	17.8	X	127.68665	114.04624	173.15311	8.77206	0.2173823	0.27355924	2.3501836	20	—	—
514893 2008 RE ₁₁₀	15.6	X	59.35040	245.81316	5.80078	13.80300	0.0327767	0.15794377	3.3894902	20	8 25.3	20.4
514894 2008 RO ₁₁₁	17.9	X	60.66861	309.07361	37.13302	3.64006	0.1973349	0.26454904	2.4032480	20	—	—
514895 2008 RU ₁₁₅	17.8	X	120.12609	288.97242	7.29226	2.30720	0.2163295	0.27159973	2.3614740	20	—	—
514896 2008 RS ₁₄₀	17.7	X	102.96494	62.56515	239.83460	2.21925	0.1855644	0.26849757	2.3796284	20	—	—
514897 2008 SB ₇	16.8	X	272.55097	48.26268	12.25617	31.79490	0.3709218	0.23639768	2.5904422	20	8 15.3	21.0
514898 2008 SH ₁₀	16.1	X	61.86047	314.14152	356.57647	10.60096	0.3173710	0.17704435	3.1410969	20	12 10.5	21.3
514899 2008 SJ ₁₂	18.0	X	286.77117	239.79819	152.35066	4.65686	0.2114264	0.23749320	2.5824699	20	8 2.5	20.9
514900 2008 SC ₄₇	18.5	X	204.00648	98.59853	192.91014	21.65082	0.0771553	0.36730533	1.9310102	20	—	—
514901 2008 SS ₇₀	17.4	X	95.90932	157.85198	168.98006	6.84299	0.1329467	0.27045560	2.3681292	20	—	—
514902 2008 SR ₈₈	18.0	X	97.58838	169.26565	191.24084	21.79844	0.0721176	0.35658428	1.9695239	20	—	—
514903 2008 SA ₁₃₅	15.9	X	73.95848	285.27746	350.08868	25.19791	0.2214775	0.17446215	3.1720150	20	10 20.7	21.1
514904 2008 SY ₁₄₅	17.9	X	89.63690	125.93518	198.49438	1.60468	0.2155014	0.26550227	2.3974923	20	—	—
514905 2008 SS ₂₀₅	17.6	X	240.41546	28.56621	96.39181	5.46581	0.1847239	0.24259492	2.5461359	20	10 12.5	21.1
514906 2008 SJ ₂₁₁	16.1	X	153.61035	60.62289	7.80462	6.52287	0.2845136	0.12630650	3.9341622	20	5 10.4	22.9
514907 2008 SJ ₂₂₅	18.2	X	128.05366	278.30803	20.22566	3.51666	0.1794022	0.26857178	2.3791900	20	—	—
514908 2008 SU ₂₂₆	18.4	X	157.69066	152.53370	186.56257	22.28754	0.0784545	0.37036486	1.9203609	20	—	—
514909 2008 SY ₂₃₅	17.7	X	237.41523	32.52116	39.02175	5.45682	0.3159043	0.22718395	2.6600162	20	7 14.1	22.2
514910 2008 ST ₂₈₁	17.8	X	273.78358	295.99311	147.63291	1.68012	0.1851053	0.24045905	2.5611910	20	9 30.4	20.5
514911 2008 SY ₂₉₀	17.2	X	50.56226	335.41545	12.08779	14.93222	0.1450760	0.25910039	2.4368231	20	—	—
514912 2008 SY ₂₉₈	17.6	X	302.41231	353.64893	50.11160	6.02269	0.1500208	0.24478240	2.5309443	20	10 2.1	20.1
514913 2008 TD ₅	17.4	X	64.42933	315.48149	18.33366	4.10429	0.1658664	0.26200362	2.4187883	20	—	—
514914 2008 TN ₂₆	20.0	X	292.53384	22.37977	253.59864	9.41376	0.6332758	0.39997680	1.8243697	20	1 13.0	23.8
514915 2008 TO ₃₈	17.8	X	252.02265	206.13420	266.99170	3.43391	0.2008508	0.24350287	2.5398028	20	10 4.5	21.2
514916 2008 TY ₅₄	17.2	X	82.76388	281.52584	16.50691	13.78450	0.0710200	0.25579733	2.4577557	20	12 4.2	20.9
514917 2008 TX ₁₁₁	17.8	X	256.88313	173.12652	331.69827	6.79081	0.3209919	0.23178340	2.6247090	20	6 25.9	22.0
514918 2008 TC ₁₄₉	17.7	X	326.65802	14.84745	37.47388	5.81880	0.0905338	0.25364906	2.4716134	20	11 29.2	20.3
514919 2008 TW ₁₆₃	18.3	X	278.56383	86.88072	318.70029	0.70526	0.1695168	0.23720283	2.5845770	20	8 16.4	21.4
514920 2008 TQ ₁₉₁	17.6	X	80.25778	185.75112	196.83887	20.27620	0.1088288	0.36371779	1.9436871	20	—	—
514921 2008 UQ ₁₀₈	15.6	X	166.23988	32.27381	25.75202	9.47052	0.3295214	0.12507188	3.9600099	20	5 8.1	22.6
514922 2008 UJ ₁₁₁	18.0	X	248.98760	183.62831	251.36694	4.78691	0.3004271	0.23284891	2.6166959	20	7 28.4	22.2
514923 2008 UB ₁₁₇	17.6	X	98.78489	298.22450	353.66748	6.05986	0.1264752	0.25546299	2.4598997	20	12 20.6	21.4
514924 2008 UX ₁₂₂	16.0	X	318.38753	328.71715	15.41085	9.83769	0.0809625	0.14603651	3.5713171	20	7 31.9	20.8
514925 2008 UJ ₁₃₅	17.0	X	119.19915	224.29749	41.57565	15.14795	0.0925779	0.25292395	2.4763351	20	12 4.8	20.8
514926 2008 UT ₁₄₃	16.0	X	161.00835	354.76160	69.16540	3.81068	0.2220328	0.12568949	3.9470268	20	5 10.7	22.5
514927 2008 US ₁₆₆	17.2	X	110.86207	235.18443	58.42191	6.72657	0.1348434	0.25910864	2.4367714	20	—	—
514928 2008 US ₁₈₅	18.0	X	33.12581	260.62838	57.41668	12.51855	0.0963453	0.24234247	2.5479038	20	11 3.8	19.9
514929 2008 UX ₂₁₅	17.7	X	287.80678	135.19355	49.42013	22.10204	0.0521007	0.35327715	1.9817963	20	—	—
514930 2008 UH ₂₄₆	17.2	X	273.88492	315.06583	98.94105	5.45887	0.1571275	0.23496082	2.6009924	20	8 25.1	20.4
514931 2008 UU ₂₄₉	17.9	X	237.03239	49.87417	60.09060	4.16288	0.1527308	0.23964284	2.5670032	20	9 21.9	21.4
514932 2008 UQ ₂₆₀	17.7	X	227.11226	270.60992	202.42162	10.91872	0.1582762	0.23678658	2.5876051	20	9 8.4	21.5
514933 2008 US ₂₇₇	17.7	X	260.41180	36.11327	38.50896	5.52526	0.1708896	0.23788420	2.5796393	20	9 2.2	21.0
514934 2008 UR ₃₀₄	17.7	X	270.57939	254.18663	167.60456	4.69486	0.2770904	0.23618868	2.5919702	20	8 8.5	21.2
514935 2008 UB ₃₃₀	17.4	X	266.32658	26.20260	44.56804	15.74673	0.1201565	0.23801318	2.5787072	20	9 19.8	20.9
514936 2008 UZ ₃₄₁	17.9	X	257.22279	137.34936	329.52855	2.65523	0.1277408	0.24366252	2.5386933	20	10 15.6	21.1
514937 2008 UG ₃₆₅	17.1	X	299.41488	67.55737	344.46389	12.56903	0.2220407	0.24282800	2.5445063	20	9 22.5	19.4
514938 2008 VH ₂₉	17.7	X	265.44168	68.15652	345.17057	3.28493	0.1730717	0.23343241	2.6123335	20	8 7.9	21.2
514939 2008 VS ₃₈	17.6	X	0.68532	42.26096	0.50416	2.87755	0.1008166	0.25272326	2.4776459	20	—	—
514940 2008 VM ₅₂	18.5	X	232.62326	231.98193	28.61647	21.90213	0.0269409	0.36417327	1.9420661	20	—	—
514941 2008 VA ₅₄	17.5	X	43.07764	304.10861	4.54784	3.99505	0.1783298	0.24711893	2.5149656	20	11 14.9	20.9
514942 2008 VK ₇₉	16.9	X	235.21574	156.82773	286.23643	12.79557	0.2148479	0.22948616	2.6421961	20	8 2.1	21.0
514943 2008 WN ₅	17.6	X	257.39845	349.79117	64.62505	4.85156	0.2272189	0.23260443	2.6185290	20	7 22.2	21.3
514944 2008 WS ₂₃	17.7	X	268.84394	24.42640	43.44516	6.43981	0.2831270	0.23623705	2.5916163	20	8 17.7	21.2
514945 2008 WB ₁₀₀	18.4	X	260.36132	213.98783	208.96165	3.90623	0.1685329	0.23415074	2.6069880	20	8 12.6	21.9
514946 2008 XY ₄₀	18.0	X	258.25070	28.13713	53.78625	4.60887	0.1144080	0.23250261	2.6192935	20	9 16.9	21.5
514947 2008 XU ₄₂	17.0	X	307.67332	318.93623	76.03757	7.05080	0.1298421	0.23418686	2.6067199	20	9 30.3	19.8
514948 2008 YG ₄₃	16.8	X	45.38783	63.72382	258.93393	5.22812	0.1142591	0.24452565	2.5327156	20	11 26.9	20.2
514949 2008 YE ₁₁₇	17.6	X	279.49294	317.13469	89.54034	2.52378	0.2100760	0.22901645	2.6458076	20	8 12.4	20.7
514950 2008 YO ₁₂₂	17.4	X	175.75997	73.36271	119.65986	13.76309	0.1353851	0.23171304	2.6252403	20	11 5.1	21.7
514951 2008 YD ₁₂₈	17.4	X	248.13474	322.23035	115.69473	8.58407	0.2638259	0.22614792	2.6681341	20	8 6.4	21.5
514952 2008 YZ ₁₄₅	16.9	X	279.09627	105.69062	303.38447	12.37620	0.1656719	0.22604705	2.6689278	20	8 18.2	20.4
514953 2008 YJ ₁₆₉	17.7	X	255.56924	320.30707	130.10452	2.52527	0.1091279	0.23020006	2.6367306	20	9 23.8	21.1
514954 2008 YA ₁₇₅	17.0	X	173.41762	34.51371	123.96738	10.14305	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>
514961 2009 BZ ₅₈	17.6	X	255.42901	9.11609	110.82365	15.64217	0.0377314	0.23657707	2.5891326	20	11 18.4	21.2
514962 2009 BU ₆₅	17.9	X	261.54522	287.85571	146.75916	4.62531	0.1941554	0.22515559	2.6759678	20	8 26.9	21.5
514963 2009 BG ₉₈	16.9	X	331.21295	273.52865	104.82214	12.39403	0.1547783	0.23308019	2.6149645	20	10 23.6	19.8
514964 2009 BE ₁₂₈	17.2	X	206.74775	114.95374	357.26740	8.26886	0.1533172	0.21826092	2.7320296	20	8 20.7	21.4
514965 2009 BJ ₁₃₁	17.3	X	184.07581	195.89871	4.04215	7.58876	0.1410509	0.22727191	2.6593298	20	11 12.6	21.5
514966 2009 BZ ₁₄₉	17.5	X	213.99685	304.05491	156.20347	7.96073	0.1935008	0.21704513	2.7422225	20	8 6.3	22.0
514967 2009 BC ₁₇₁	17.5	X	256.63830	290.61813	117.43255	10.43041	0.2122598	0.21902923	2.7256369	20	7 13.1	21.4
514968 2009 BA ₁₈₄	17.5	X	206.87670	118.93881	22.91744	8.65442	0.2988124	0.22574575	2.6713020	20	9 17.0	22.2
514969 2009 CS ₂	16.5	X	213.30194	123.69269	307.13668	15.09332	0.2207920	0.21487972	2.7606145	20	6 30.4	21.2
514970 2009 CZ ₁₅	16.6	X	281.80482	109.65967	330.98794	21.50105	0.0374204	0.22550922	2.6731696	20	10 13.3	20.6
514971 2009 CH ₁₈	16.6	X	92.00159	307.14288	304.84196	12.59271	0.1437530	0.21964940	2.7205040	20	10 14.5	21.0
514972 2009 CT ₄₆	17.7	X	171.25663	151.87657	52.77401	3.00246	0.1348748	0.23029075	2.6360383	20	11 9.2	21.7
514973 2009 CH ₆₀	17.3	X	290.31890	255.05125	135.34805	4.00753	0.0684247	0.21810812	2.7333054	20	8 27.1	20.8
514974 2009 CA ₆₂	17.8	X	222.49674	295.52555	191.10907	3.00764	0.1788532	0.22354433	2.6888110	20	9 19.3	21.7
514975 2009 CZ ₆₆	17.2	X	274.98925	254.53661	193.45477	1.47257	0.0358417	0.22579353	2.6709252	20	10 26.7	20.7
514976 2009 DQ ₂₄	17.5	X	228.48262	16.30072	126.18013	3.90443	0.1238198	0.22588231	2.6702252	20	10 25.3	21.3
514977 2009 DJ ₂₅	17.9	X	134.10203	78.27971	127.37259	3.55997	0.1600233	0.21733987	2.7397427	20	10 6.9	22.4
514978 2009 DM ₃₅	16.7	X	100.27337	271.60715	4.20601	13.41480	0.1617947	0.21817589	2.7327394	20	11 24.3	21.3
514979 2009 DA ₅₂	17.3	X	206.95202	72.34227	137.99469	6.54830	0.1023395	0.23988158	2.5652997	20	12 28.5	20.8
514980 2009 DA ₆₀	17.2	X	115.07204	263.89003	6.00884	12.86470	0.1620626	0.22352917	2.6889326	20	12 2.4	21.8
514981 2009 DB ₈₅	17.2	X	191.43400	16.95401	153.00458	2.53886	0.1587543	0.22092052	2.7100586	20	10 15.1	21.5
514982 2009 DH ₁₂₃	16.6	X	144.69765	244.47182	355.55262	11.05356	0.1526436	0.22378478	2.6868847	20	11 22.5	21.2
514983 2009 EL ₂₃	16.5	X	158.73815	209.37139	16.38670	13.93373	0.0994002	0.22187549	2.7022768	20	11 18.7	20.8
514984 2009 FN ₁₄	16.8	X	135.53381	231.17395	7.14411	8.77796	0.0769644	0.22308867	2.6924710	20	11 11.9	20.9
514985 2009 FK ₂₈	17.4	X	185.01453	129.25210	14.53144	8.68285	0.2389757	0.21582666	2.7525337	20	9 5.1	22.2
514986 2009 FB ₃₀	17.5	X	203.17580	314.47500	191.01595	6.41066	0.1921996	0.21967774	2.7202700	20	9 22.1	21.8
514987 2009 FZ ₃₈	16.7	X	205.43592	33.74664	160.40116	14.45209	0.0319973	0.22989488	2.6390636	20	12 14.6	20.6
514988 2009 FR ₄₁	17.0	X	164.21126	168.82811	20.11126	10.30210	0.1641460	0.21759635	2.7375894	20	10 13.2	21.4
514989 2009 FH ₆₉	17.5	X	125.81508	164.36646	39.58739	3.22635	0.1342574	0.21173753	2.7878591	20	9 24.9	21.9
514990 2009 HY ₄	17.0	X	208.64192	121.02260	32.65119	14.84504	0.0805957	0.21951663	2.7216009	20	10 20.0	20.8
514991 2009 HN ₁₄	17.3	X	160.52678	18.73614	172.21202	14.57531	0.1290946	0.21621901	2.7492030	20	10 13.7	21.7
514992 2009 HH ₂₇	17.3	X	158.87462	181.24728	27.90403	3.84338	0.1308019	0.21670160	2.7451198	20	10 31.6	21.6
514993 2009 HR ₅₉	17.0	X	107.04511	225.54269	46.10654	13.97208	0.2187220	0.21371801	2.7706094	20	11 29.6	21.7
514994 2009 HP ₆₃	17.3	X	83.45897	110.67048	169.48267	1.97899	0.1867942	0.20976620	2.8052982	20	11 18.7	21.6
514995 2009 KF ₁	17.3	X	135.78657	85.11553	146.73459	10.09523	0.2503927	0.21296367	2.7771480	20	11 11.0	22.3
514996 2009 KT ₇	17.0	X	155.71046	148.92352	44.24982	8.68024	0.1561920	0.21297541	2.7770460	20	10 11.3	21.5
514997 2009 KP ₁₄	14.3	X	297.80915	131.31244	152.07299	18.15788	0.1282575	0.08287219	5.2103094	20	4 17.3	21.2
514998 2009 KH ₂₈	17.2	X	164.91731	4.19142	195.58798	7.94707	0.1383460	0.21168412	2.7883280	20	10 26.2	21.7
514999 2009 ON ₁₄	15.7	X	307.27223	185.26530	157.05193	28.64102	0.1929695	0.17169218	3.2060408	20	6 28.7	20.3
515000 2009 PC ₈	16.5	X	23.79453	141.69083	171.13080	11.76655	0.2005341	0.18472766	3.0533840	20	10 18.0	20.3
515001 2009 PL ₁₉	16.6	X	317.57026	189.98149	169.34820	3.31420	0.1369825	0.17342233	3.1846818	20	8 12.7	20.4
515002 2009 QS ₄	18.2	X	135.72825	163.42469	147.78591	7.69520	0.2352175	0.30599830	2.1810052	20	—	—
515003 2009 QR ₂₀	17.6	X	75.15933	354.79531	353.91406	6.25209	0.1744640	0.29589923	2.2303524	20	—	—
515004 2009 QH ₃₁	15.8	X	328.09264	168.59314	168.56198	28.11253	0.1632538	0.17243407	3.1968383	20	7 28.5	20.0
515005 2009 QA ₄₉	18.0	X	355.71532	262.01399	109.55157	3.03056	0.2374973	0.27764324	3.3270800	20	12 21.1	20.1
515006 2009 QA ₅₇	16.6	X	131.30014	32.06287	191.03716	15.46648	0.0971757	0.18472572	3.0534054	20	10 18.3	21.3
515007 2009 QU ₆₅	16.8	X	37.77396	123.67421	179.48570	5.34627	0.1018707	0.18306020	3.0718978	20	10 9.6	20.7
515008 2009 QV ₆₅	16.3	X	354.96800	159.97072	194.46571	9.99733	0.0457456	0.18216763	3.0819239	20	10 7.9	20.5
515009 2009 RE ₃₃	18.0	X	155.51330	290.04569	14.79888	4.65428	0.1725134	0.30176808	2.2013403	20	—	—
515010 2009 SK ₂	18.9	X	316.23360	257.12139	23.93949	38.23073	0.4717564	0.43723989	1.7191860	20	3 11.9	22.0
515011 2009 SF ₂₃	16.3	X	0.11017	35.80291	290.31906	8.54680	0.1007429	0.18161082	3.0882200	20	9 7.5	20.3
515012 2009 SG ₆₈	16.5	X	336.57492	9.14202	335.10768	9.08682	0.0841088	0.17415534	3.1757394	20	8 27.9	20.6
515013 2009 SN ₆₉	18.1	X	332.41823	207.35718	122.57002	3.29593	0.3085495	0.26614999	2.3936009	20	9 15.1	18.6
515014 2009 SP ₇₈	18.0	X	280.01931	278.49175	242.48362	6.53811	0.0265586	0.29022094	2.2593502	20	—	—
515015 2009 SQ ₁₁₂	18.1	X	144.50533	18.72464	282.03023	3.28928	0.1969844	0.30222921	2.1991006	20	—	—
515016 2009 SK ₁₁₇	16.5	X	277.37375	215.85589	207.54369	9.61399	0.0130060	0.17649823	3.1475731	20	9 20.4	20.9
515017 2009 SJ ₁₁₈	15.9	X	90.26315	226.56856	5.19921	17.96482	0.1317970	0.17367099	3.1816412	20	9 19.4	20.6
515018 2009 SB ₁₃₀	17.8	X	283.53861	256.04245	187.58282	12.87662	0.1383216	0.27092087	2.3654172	20	11 2.9	20.2
515019 2009 SC ₁₇₄	16.1	X	21.39261	318.34336	341.18092	9.77635	0.0992549	0.17598453	3.1536952	20	9 8.6	20.0
515020 2009 SD ₂₂₁	16.4	X	45.15444	26.78936	243.22948	5.50194	0.1904198	0.18025798	3.1036523	20	9 16.9	20.6
515021 2009 SL ₂₃₆	15.4	X	31.87013	281.09751	18.75480	26.23961	0.2106808	0.18240521	3.0792473	20	10 12.1	19.2
515022 2009 SU ₂₄₆	15.8	X	339.33462	345.87344	354.16896	28.21547	0.1547402	0.17450474	3.1714989	20	9 2.6	19.6
515023 2009 SY ₂₈₄	18.4	X	299.79221	58.68745	356.03920	3.52425	0.1890720	0.27095887	2.3651960	20	10 12.4	20.2
515024 2009 SK ₃₀₃	17.1	X	34.65246	135.27877	192.44571	5.11076	0.0748856	0.18639358	3.0351635	20	11 2.2	21.1
515025 2009 SP ₃₀₇	18.2	X	337.76509	307.72405	76.07281	3.40665	0.1928545	0.27308541	2.3529014	20	11 24.8	20.0
515026 2009 SH ₃₅₄	15.7	X	280.26810	15.37618	22.71107	21.01444	0.1431442	0.16987265	3.2288936	20	8 16.8	20.5
515027 2009 SW ₃₅₇	18.8	X	293.38268	110.20133	335.89956	8.04798	0.1499066	0.27358138	2.3500568	20	11 22.9	20.8
515028 2009 TW ₂₇	17.5	X	317.30646	327.32479	82.79085	6.04827	0.2155066	0.27015060	2.3699113	20	11 19.1	18.9
515029 2009 UG ₁₂₉	16.4	X	5.86428	170.60265	183.35668	10.64688	0.1759579	0.18439489	3.0570565	20	11 7.3	20.0
515030 2009 UM ₁₃₀	17.3	X	315.19168	327.17493	53.56554	11.87693	0.3341487	0.26396839	2.4067710	20	9 13.8	18.6
515031 2009 VS ₃₀	16.0	X	334.45023	331.45621	36.07181	12.97979	0.0922817	0.16985396	3.2291305	20	9 28.2	20.2
515032 2009 VZ ₅₀	18.1	X	295.63926	341.21330	83.58424	3.89774	0.2187112	0.26563505	2.3966933	20	10 16.9	20.0
515033 2009 VF ₉₁	17.2	X	336.09069	251.76634	144.65255	22.7						

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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>
515041 2010 CU ₁₉	17.8	X	200.99676	289.81392	212.34826	56.55328	0.3592326	0.24466216	2.5317735	20	9 5.8	23.4
515042 2010 CU ₆₂	17.9	X	194.16637	93.12470	120.80160	2.58601	0.1316942	0.25523407	2.4613703	20	12 18.6	21.2
515043 2010 CW ₁₄₈	18.0	X	182.93553	220.72709	349.79929	1.94858	0.1521811	0.25615008	2.4554987	20	11 30.4	21.6
515044 2010 CM ₁₈₁	17.4	X	175.46028	85.07432	147.95473	4.64600	0.1479035	0.25547058	2.4598509	20	12 21.4	21.1
515045 2010 DB ₇₅	17.9	X	142.60585	48.68558	167.96261	2.31154	0.0610126	0.24250961	2.5467330	20	10 30.0	21.4
515046 2010 EA ₇₂	17.6	X	107.75747	81.87631	173.20053	8.40092	0.1336685	0.23985175	2.5655124	20	11 13.8	21.6
515047 2010 EN ₈₃	18.0	X	350.05272	139.92793	5.68566	20.36174	0.0690108	0.37683835	1.8983050	20	—	—
515048 2010 EL ₁₂₉	16.5	X	278.37883	67.02817	20.55796	22.11929	0.0081355	0.23784752	2.5799045	20	10 30.8	20.0
515049 2010 FL	19.3	X	270.70264	214.09817	66.64618	11.40807	0.6548947	0.37149380	1.9164684	20	1 13.6	23.7
515050 2010 FT ₈₅	17.5	X	171.49503	185.13293	0.89165	3.28687	0.0535535	0.23861524	2.5743678	20	10 21.9	21.1
515051 2010 GA	17.5	X	103.54072	103.16785	180.09221	11.77204	0.2088721	0.22689873	2.6622449	20	12 14.1	22.2
515052 2010 GA ₉₉	18.0	X	170.69391	68.01821	142.82222	2.35508	0.1434538	0.24260360	2.5460751	20	11 18.2	21.8
515053 2010 GZ ₁₀₁	17.2	X	120.87348	185.61179	55.12188	14.71624	0.1588059	0.23163158	2.6258558	20	11 7.9	21.3
515054 2010 GM ₁₄₀	18.3	X	354.85405	245.62808	205.91439	20.50605	0.1021592	0.36021508	1.9562670	20	—	—
515055 2010 JA ₃₁	17.7	X	128.19764	149.33927	89.01203	4.62451	0.2617957	0.23316479	2.6143320	20	11 13.6	22.4
515056 2010 JQ ₄₃	17.5	X	129.79731	129.95046	95.00694	8.25698	0.0896105	0.22949142	2.6421558	20	10 27.8	21.6
515057 2010 JU ₁₁₅	17.0	X	75.93123	125.65600	158.06932	13.19704	0.2526626	0.22496133	2.6775081	20	11 26.7	21.6
515058 2010 JY ₁₇₅	17.4	X	121.08915	127.67562	151.84934	12.37124	0.2683237	0.23721558	2.5844844	20	12 25.8	22.3
515059 2010 LQ ₂₀	17.2	X	95.28621	155.07740	109.14395	11.76717	0.0977223	0.24025960	2.5626083	20	11 12.1	21.1
515060 2010 LO ₅₅	16.0	X	289.21071	87.73998	275.35492	21.19227	0.1218267	0.18540241	3.0459712	20	7 6.6	20.1
515061 2010 LM ₇₁	16.4	X	282.42498	35.58909	354.79115	15.79010	0.1494066	0.18947128	3.0022058	20	8 5.6	20.6
515062 2010 LV ₇₂	16.5	X	211.35909	91.84795	322.00161	13.84003	0.2589147	0.17189963	3.2034608	20	6 2.8	22.3
515063 2010 MO ₆₁	16.9	X	85.70330	284.76097	2.27963	8.70709	0.2548715	0.21376688	2.7701871	20	12 2.9	21.7
515064 2010 MO ₆₂	17.0	X	64.49959	297.18066	5.46486	9.03538	0.2145046	0.20999774	2.8032359	20	11 27.5	21.4
515065 2010 MT ₆₄	16.5	X	331.07035	75.16066	286.55896	10.87103	0.0733309	0.19495795	2.9456112	20	9 8.9	20.4
515066 2010 MG ₇₂	16.7	X	121.98834	40.68115	217.74693	8.26901	0.1236436	0.21275439	2.7789690	20	11 25.1	21.1
515067 2010 NH ₆₀	16.6	X	263.46859	60.37318	357.43508	12.55865	0.1017891	0.18642228	3.0348519	20	8 20.8	20.9
515068 2010 NO ₁₁₃	16.5	X	218.49177	85.00572	357.36457	9.49186	0.2089600	0.17557687	3.1585749	20	7 19.3	21.8
515069 2010 OG ₃₂	16.5	X	294.75254	200.80512	171.19746	12.45145	0.1956124	0.18254773	3.0776443	20	7 14.9	20.6
515070 2010 OA ₃₄	16.3	X	288.80687	248.75879	132.91136	6.52072	0.1201808	0.18286571	3.0740755	20	8 1.0	20.2
515071 2010 OU ₃₄	16.6	X	357.20154	302.88837	21.04956	13.49571	0.0394135	0.18769214	3.0211479	20	9 8.1	20.7
515072 2010 OF ₅₈	16.4	X	251.99491	64.75438	348.73994	15.12821	0.0416080	0.18039402	3.1020917	20	8 9.7	20.9
515073 2010 OL ₁₁₁	16.2	X	318.12386	330.95605	31.24409	19.63125	0.1155853	0.18572866	3.0424032	20	9 2.5	20.3
515074 2010 PX ₆₄	16.9	X	287.98534	126.44617	277.21761	0.91059	0.0963576	0.19647490	2.9304299	20	9 2.7	20.6
515075 2010 PZ ₆₇	16.1	X	323.66753	1.21812	333.32799	11.17524	0.0751519	0.17774256	3.1328656	20	7 29.5	20.2
515076 2010 RY ₈₅	16.9	X	282.01237	221.75979	154.44775	10.20735	0.0867113	0.18623396	3.0368975	20	7 18.4	21.2
515077 2010 RQ ₁₄₈	16.8	X	292.54290	53.06692	304.31017	4.24349	0.1462704	0.18329510	3.0692727	20	7 1.7	20.7
515078 2010 RE ₁₅₅	16.0	X	31.23346	6.04918	309.80305	8.88228	0.0330664	0.20058931	2.8902197	20	10 5.2	20.1
515079 2010 SF ₄	16.4	X	276.06041	119.13811	245.49983	6.43719	0.1175461	0.17947829	3.1126343	20	6 22.3	20.7
515080 2010 SN ₁₂	16.3	X	281.74557	172.64713	196.80676	14.83210	0.1516884	0.18354971	3.0664337	20	6 29.8	20.8
515081 2010 SZ ₄₃	16.2	X	208.88153	55.70869	29.47061	16.35670	0.1966214	0.17239372	3.1973370	20	7 15.5	21.7
515082 2010 TM ₃	20.6	X	215.23129	25.49669	30.03131	8.60442	0.2175213	0.57817984	1.4270113	20	6 15.9	21.6
515083 2010 TS ₃₂	16.8	X	74.43560	51.81687	194.03196	9.39874	0.0470633	0.18824828	3.0151947	20	9 4.6	21.1
515084 2010 TX ₉₈	17.0	X	13.98283	311.44565	17.88146	10.80613	0.1239841	0.19873725	2.9081482	20	10 13.7	20.5
515085 2010 TO ₁₁₅	16.1	X	61.27186	231.36277	23.01466	15.04906	0.0472885	0.18656552	3.0332984	20	9 7.4	20.5
515086 2010 TS ₁₅₅	16.9	X	316.32010	186.87266	177.33696	9.64272	0.1016652	0.18895572	3.0076642	20	8 21.6	20.6
515087 2010 TN ₁₆₅	16.6	X	286.86396	204.92325	200.83816	8.53937	0.1008115	0.18776210	3.0203974	20	8 30.9	20.6
515088 2010 TN ₁₉₃	16.4	X	297.04255	220.80745	188.20035	10.24732	0.0218452	0.18931451	3.0038629	20	9 30.6	20.4
515089 2010 UT ₄	18.2	X	29.37613	36.20258	321.83505	2.14286	0.1799285	0.30842209	2.1695636	20	—	—
515090 2010 UH ₄₃	18.5	X	326.87667	11.86393	53.07419	5.87815	0.1087617	0.30617311	2.1801750	20	—	—
515091 2010 UV ₅₆	16.2	X	225.37927	35.05134	47.37159	14.85958	0.2498591	0.17108425	3.2136312	20	7 22.6	21.8
515092 2010 VU ₆₉	18.2	X	14.87112	342.64642	37.46867	5.26882	0.1273590	0.30823966	2.1704182	20	—	—
515093 2010 UP ₇₉	15.6	X	165.58734	245.03053	252.44578	15.74919	0.1072840	0.17195599	3.2027608	20	8 1.8	20.9
515094 2010 UT ₁₀₈	16.5	X	149.04399	148.30089	19.12048	6.98912	0.0500606	0.18018520	3.1044879	20	8 29.5	21.1
515095 2010 VZ ₂₅	16.8	X	342.90378	279.34851	70.44508	3.04603	0.1654627	0.18588694	3.0406758	20	9 18.8	20.0
515096 2010 VX ₆₁	16.1	X	140.05523	289.31928	274.16760	9.92852	0.0884074	0.18463277	3.0544301	20	9 27.0	21.1
515097 2010 VY ₈₇	16.1	X	342.05236	280.30716	47.06619	9.47968	0.0652952	0.17722738	3.1389339	20	8 19.5	20.3
515098 2010 VW ₉₉	16.4	X	247.87631	38.39670	19.53856	16.88169	0.2353154	0.17509317	3.1643893	20	7 15.3	21.7
515099 2010 VT ₁₄₀	16.7	X	85.85418	88.00537	209.99393	14.47697	0.1504332	0.20361216	2.8615428	20	12 7.5	21.3
515100 2010 VD ₁₅₃	16.7	X	261.79361	126.19480	259.63828	9.67406	0.0372308	0.17353958	3.1832471	20	7 11.7	21.2
515101 2010 VQ ₁₆₁	16.7	X	263.44000	22.58197	47.36720	10.56521	0.1005971	0.18249651	3.0782202	20	9 6.8	21.1
515102 2010 VU ₁₆₃	15.6	X	259.15599	342.79064	59.84586	27.03822	0.0855349	0.17297493	3.1901708	20	7 28.7	20.6
515103 2010 VR ₁₇₈	16.1	X	239.92445	9.74228	53.21752	9.69835	0.0623581	0.17363800	3.1820441	20	8 1.7	20.8
515104 2010 VW ₂₀₈	16.6	X	1.70453	92.49207	238.07186	9.54418	0.1149021	0.19217733	2.9739565	20	9 19.1	20.3
515105 2010 VD ₂₀₉	16.6	X	222.33982	48.93069	27.57896	24.62077	0.1274206	0.17337470	3.1852650	20	7 27.9	22.0
515106 2010 VQ ₂₀₉	16.5	X	259.62694	348.99614	52.45756	12.41101	0.0996524	0.17423044	3.1748267	20	7 23.9	21.2
515107 2010 WJ ₁₁	16.7	X	226.25383	105.86778	346.90818	8.55315	0.0663738	0.17811998	3.1284385	20	8 21.5	21.2
515108 2010 WS ₃₃	16.0	X	160.03667	83.94432	74.81452	11.10459	0.0833299	0.17381909	3.1798337	20	9 2.4	21.0
515109 2010 WV ₆₁	16.7	X	221.43833	18.22308	62.65653	2.04450	0.1162284	0.16879966	3.2425624	20	7 25.4	21.6
515110 2010 XR ₁₄	16.2	X	337.21858	50.94986	279.49383	11.17695	0.1499120	0.18431764	3.0579106	20	8 5.9	19.8
515111 2010 XH ₇₃	18.4	X	331.26061	323.58077	93.37652	5.70439	0.1405540	0.30153271	2.2024857	20	—	—
515112 2011 AS ₂₇	18.5	X	292.76988	155.83785	283.85824	3.44896	0.1080728	0.28656794	2.2785102	20	11 19.0	20.5
515113 2011 BW ₈₈	18.8	X	276.85566	354.64829	135.87361	3.61440	0.1720213	0.29132058	2.2536611			

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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>
515121 2011 EX ₆₇	17.9	X	201.13985	341.43030	221.64614	0.90469	0.1251080	0.28028666	2.3124256	20	12 19.2	20.8
515122 2011 EF ₇₀	18.6	X	281.19164	86.00061	32.36711	1.97365	0.1767620	0.28316325	2.2967380	20	12 19.2	20.2
515123 2011 EW ₇₀	18.3	X	260.82119	152.59626	345.96548	7.30761	0.1682295	0.28406075	2.2918977	20	12 9.7	20.6
515124 2011 EE ₈₅	18.2	X	246.67524	135.97651	350.37522	5.34414	0.1761463	0.27519673	2.3408515	20	10 25.1	21.1
515125 2011 FX ₅	17.2	X	3.97480	13.83247	20.85661	26.03312	0.2111503	0.28509963	2.2863267	20	—	—
515126 2011 FN ₁₃	18.0	X	156.26186	91.23993	183.08643	7.85236	0.1983043	0.27940658	2.3172788	20	—	—
515127 2011 FQ ₁₃	18.5	X	254.40863	313.92086	181.94225	4.86424	0.1716581	0.27840517	2.3228323	20	11 24.3	21.0
515128 2011 FR ₁₃	18.0	X	203.09307	31.99639	181.29299	4.71089	0.1883265	0.27958302	2.3163038	20	12 26.1	21.3
515129 2011 FS ₁₇	17.2	X	285.93851	176.22960	296.42279	5.68706	0.1175845	0.28123718	2.3072123	20	12 24.5	19.3
515130 2011 FN ₃₂	18.3	X	176.44823	168.15486	87.84419	3.30963	0.1451940	0.28138739	2.3063912	20	—	—
515131 2011 FO ₈₂	17.9	X	117.68500	279.79848	12.39835	1.51332	0.1936445	0.27405542	2.3473461	20	—	—
515132 2011 FO ₈₇	17.8	X	183.01380	269.47790	352.73806	8.41561	0.2301536	0.28577946	2.2826993	20	—	—
515133 2011 FD ₉₁	18.3	X	125.55724	252.95004	16.97479	2.21672	0.1914293	0.27163949	2.3612435	20	12 22.6	22.2
515134 2011 GP ₁₂	18.3	X	131.49798	298.81857	317.90275	1.62195	0.1689898	0.26778963	2.3838205	20	12 10.9	22.0
515135 2011 GY ₄₈	18.6	X	180.88842	250.23814	4.49646	3.13931	0.2050662	0.28094478	2.3088129	20	—	—
515136 2011 GB ₆₂	17.8	X	239.28671	91.44974	73.64107	23.53703	0.2856277	0.28436657	2.2902542	20	11 26.2	20.6
515137 2011 GL ₇₀	17.5	X	148.03188	214.39231	48.10953	12.19463	0.1877252	0.27034029	2.3688026	20	—	—
515138 2011 HZ	17.3	X	214.12813	100.74549	106.22531	23.04115	0.1813539	0.27628596	2.3346951	20	12 31.7	20.3
515139 2011 HX ₁₃	17.9	X	228.15249	17.53040	157.41584	5.32456	0.1699514	0.27687745	2.3313689	20	12 9.2	20.7
515140 2011 HT ₂₅	17.9	X	145.65727	165.45653	119.19849	6.95119	0.1958611	0.27469058	2.3437262	20	—	—
515141 2011 HG ₃₉	17.8	X	100.29229	222.34460	105.81902	5.87980	0.1768661	0.27112508	2.3642293	20	—	—
515142 2011 HO ₄₃	17.9	X	229.69023	345.14265	190.54734	5.69831	0.1971789	0.27738216	2.3285400	20	12 8.1	20.7
515143 2011 HZ ₇₂	18.3	X	245.83057	324.07104	197.19733	4.20944	0.1693565	0.28172765	2.3045337	20	12 17.2	20.6
515144 2011 HN ₇₇	18.2	X	177.46921	124.38270	108.99399	3.14891	0.1842076	0.27179404	2.3603483	20	12 23.3	21.8
515145 2011 HK ₈₄	18.0	X	172.87520	131.98509	100.43237	3.22777	0.1613427	0.27045135	2.3681540	20	12 20.6	21.5
515146 2011 HO ₁₀₀	18.4	X	148.34618	126.27700	132.63179	4.89695	0.1402856	0.26891179	2.3771841	20	12 30.0	22.0
515147 2011 JU ₁₂	16.4	X	94.66162	262.59702	56.94224	26.06762	0.1317003	0.26932697	2.3747057	20	—	—
515148 2011 JH ₁₇	18.2	X	180.91686	145.15852	107.49598	2.04477	0.1529347	0.27702688	2.3305299	20	—	—
515149 2011 KK ₂₁	16.9	X	162.37054	172.80050	97.12370	7.58885	0.0960679	0.27300175	2.3533820	20	—	—
515150 2011 KQ ₂₇	18.4	X	166.47048	337.31074	259.01415	1.29441	0.1790400	0.26782296	2.3836227	20	12 16.9	22.2
515151 2011 KJ ₃₃	17.6	X	151.50700	146.39863	126.75424	8.77858	0.1909677	0.27049040	2.3679261	20	—	—
515152 2011 LV ₉	17.8	X	176.90382	100.89764	103.55034	5.21804	0.0757597	0.26254427	2.4154665	20	11 25.5	21.2
515153 2011 LR ₂₀	17.0	X	49.54075	173.19342	158.73262	34.40201	0.2400313	0.23417789	2.6067864	20	12 30.6	21.6
515154 2011 MC ₄	17.4	X	44.26578	170.20055	133.87830	14.54203	0.2333232	0.23541774	2.5976258	20	11 21.5	21.3
515155 2011 MK ₁₁	13.8	X	259.77267	54.02748	282.11685	10.00473	0.1435815	0.08561768	5.0983199	20	4 24.7	20.9
515156 2011 OY ₇	17.7	X	159.43620	165.18753	88.77372	2.33841	0.1504774	0.25994487	2.4315426	20	—	—
515157 2011 OH ₉	17.4	X	284.02215	250.12154	209.46561	8.07888	0.1293237	0.23789038	2.5795947	20	11 17.0	20.1
515158 2011 PK ₁₃	17.3	X	107.36504	304.64454	353.76661	4.59526	0.1656369	0.25302016	2.4757073	20	—	—
515159 2011 PA ₁₄	16.9	X	4.24713	186.07894	160.02356	8.47783	0.2484286	0.22695637	2.6617942	20	11 17.3	19.8
515160 2011 PC ₁₆	16.3	X	96.45411	116.48835	332.21072	12.76778	0.0466238	0.17351901	3.1834987	20	3 14.6	20.8
515161 2011 QO ₁₂	18.6	X	172.45709	142.04524	161.37695	23.60869	0.0969906	0.38419342	1.8739994	20	—	—
515162 2011 QH ₂₈	18.4	X	98.65659	197.60706	153.21867	23.03632	0.0805266	0.37249372	1.9130372	20	—	—
515163 2011 QN ₃₃	16.4	X	328.45410	191.58600	188.56035	13.43907	0.2491216	0.21959656	2.7209404	20	10 8.9	18.2
515164 2011 QO ₃₈	16.8	X	25.63382	189.63262	130.81908	7.17230	0.2102439	0.23056631	2.6339376	20	11 12.2	20.1
515165 2011 QX ₄₁	17.3	X	186.58920	248.22057	356.75850	8.11664	0.1842524	0.26336900	2.4104212	20	—	—
515166 2011 QV ₄₅	19.0	X	39.31434	239.95211	164.96745	23.40407	0.1192424	0.36748307	1.9303875	20	—	—
515167 2011 QJ ₆₆	17.8	X	157.07305	191.09024	126.19929	5.78006	0.2787493	0.26890082	2.3772488	20	—	—
515168 2011 QW ₉₉	17.0	X	286.07665	211.52722	181.98087	8.00235	0.2228566	0.21003452	2.8029086	20	7 28.3	20.7
515169 2011 RK ₁	17.7	X	78.10108	28.03769	256.71653	3.96071	0.2499010	0.23681495	2.5873984	20	11 28.5	21.8
515170 2011 SA ₄₃	17.5	X	266.81574	80.93462	356.27524	8.33186	0.1224561	0.21804637	2.7338215	20	9 16.9	21.1
515171 2011 SY ₅₄	17.4	X	297.68644	303.57669	120.17264	3.15474	0.0645789	0.22091195	2.7101287	20	10 24.2	20.7
515172 2011 SE ₅₆	17.0	X	287.69137	17.49814	59.48166	6.18296	0.0952665	0.22079050	2.7111224	20	10 23.7	20.2
515173 2011 SE ₆₇	16.4	X	39.08191	332.75734	14.91020	17.93346	0.2377751	0.23268870	2.6178968	20	—	—
515174 2011 SU ₉₄	17.3	X	27.34005	314.69357	6.28159	9.32844	0.0991218	0.22507166	2.6766331	20	10 22.8	20.7
515175 2011 SD ₁₂₀	16.9	X	357.66868	355.45906	324.46819	8.53903	0.0879296	0.21317403	2.7753207	20	9 2.2	20.2
515176 2011 SA ₁₄₁	16.4	X	174.81410	217.71112	16.09972	14.59901	0.1343174	0.23973126	2.5663720	20	12 18.4	20.6
515177 2011 SB ₁₇₉	17.2	X	189.24437	74.74248	10.41288	15.95046	0.3143931	0.18417699	3.0594673	20	6 24.0	23.1
515178 2011 SU ₂₄₁	17.3	X	348.70797	311.21311	43.34934	2.95611	0.1395468	0.22107354	2.7088079	20	10 12.8	20.1
515179 2011 SN ₂₄₉	16.6	X	27.56285	295.26707	48.65284	15.94868	0.1931310	0.22778245	2.6553547	20	12 7.1	20.1
515180 2011 SL ₂₇₈	17.0	X	153.08892	17.70230	205.49343	13.40908	0.1212269	0.23063418	2.6334208	20	11 15.8	21.2
515181 2011 TB ₁₅	16.4	X	309.70757	317.53698	47.46572	9.33148	0.3215696	0.21126050	2.7920542	20	7 15.3	19.3
515182 2011 TL ₁₇	16.6	X	70.19419	24.76805	255.87162	10.82389	0.1185775	0.22892511	2.6465113	20	10 29.5	20.4
515183 2011 UJ ₆₆	16.9	X	227.76394	50.75673	63.03269	9.90548	0.1212308	0.20938141	2.8087342	20	9 19.6	21.1
515184 2011 UM ₆₉	16.8	X	336.87224	14.36299	337.20993	8.75038	0.1694060	0.21457191	2.7632540	20	9 12.0	19.5
515185 2011 UZ ₇₈	17.1	X	358.40759	345.55796	21.04438	6.42657	0.0441603	0.21897319	2.7261019	20	11 3.5	20.6
515186 2011 UZ ₉₃	16.6	X	177.23454	197.06952	26.48975	14.47130	0.2123430	0.23623897	2.5916023	20	11 30.6	21.1
515187 2011 UC ₉₅	17.0	X	149.59343	216.77692	30.95790	11.98347	0.1481323	0.23558943	2.5963636	20	12 9.4	21.3
515188 2011 UH ₁₀₃	17.2	X	1.07121	265.73924	89.46479	3.16592	0.1631076	0.21754788	2.7379960	20	11 7.1	20.1
515189 2011 UW ₁₆₇	17.3	X	214.92650	10.80448	45.74137	2.25992	0.2119755	0.18557568	3.0440749	20	6 12.5	22.3
515190 2011 UW ₁₆₈	18.5	X	6.61539	57.20910	11.37258	22.25498	0.1509739	0.35907967	1.9603886	20	—	—
515191 2011 UK ₁₉₈	17.0	X	320.79427	343.05461	57.95451	7.25029	0.0722768	0.21450397	2.7638374	20	10 27.2	20.4
515192 2011 UZ ₂₂₃	17.2	X	239.24755	47.42962	40.33784	6.57706	0.0217711	0.20937200	2.8088183	20	9 11.2	21.1
515193 2011 UA ₂₂₆	17.3	X	323.01658	201.57998	189.77905	5.79976	0.0490252	0.21859268	2.7292646	20	10 18.0	20.5
515194 2011 UL ₂₄₆	18.2	X	167.77090	253.59629</								

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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>
515201 2011 <i>UO</i> ₄₁₄	16.7	X	71.62014	229.43270	82.87320	14.12661	0.2087837	0.23213859	2.6220310	20	12 21.1	20.8
515202 2011 <i>UV</i> ₄₁₄	16.6	X	65.18381	222.37745	25.98821	6.32907	0.0353065	0.19529052	2.9422661	20	8 30.9	20.6
515203 2011 <i>VJ</i> ₂	17.8	X	118.19207	122.79722	223.44955	19.21575	0.0706451	0.36654277	1.9336874	20	—	—
515204 2011 <i>WB</i> ₂₆	17.5	X	272.65638	334.36331	88.02856	3.21784	0.0668447	0.20612457	2.8382428	20	9 13.6	21.2
515205 2011 <i>WD</i> ₅₆	17.4	X	305.83717	210.37922	214.45884	3.53028	0.0915036	0.21599808	2.7510773	20	11 2.5	20.6
515206 2011 <i>WZ</i> ₅₉	17.3	X	298.93095	347.80649	88.05952	7.57135	0.0278470	0.21478120	2.7614586	20	11 12.8	20.9
515207 2011 <i>WG</i> ₆₄	16.9	X	248.21947	348.25542	64.65903	10.93633	0.1219375	0.19024237	2.9940880	20	7 21.8	21.4
515208 2011 <i>WY</i> ₆₄	17.5	X	219.77684	64.70264	353.47443	2.47416	0.2761908	0.18317643	3.0705982	20	6 14.6	22.8
515209 2011 <i>WX</i> ₈₇	16.7	X	148.87745	75.27664	75.65225	25.73458	0.3065536	0.17994289	3.1072743	20	8 21.7	22.8
515210 2011 <i>WX</i> ₁₀₂	16.9	X	324.33095	241.35310	146.41497	6.76801	0.0692277	0.21284420	2.7781871	20	10 15.6	20.3
515211 2011 <i>WB</i> ₁₂₉	17.9	X	250.58932	315.76558	83.13287	2.43836	0.2079420	0.18953746	3.0015069	20	6 24.3	22.5
515212 2011 <i>YR</i> ₂₇	16.7	X	289.32414	67.96150	285.38021	6.81400	0.0580856	0.17258336	3.1949344	20	7 4.2	21.0
515213 2011 <i>YQ</i> ₃₄	16.3	X	203.72531	7.05416	95.06400	11.31280	0.1274278	0.18123219	3.0925198	20	8 3.6	21.2
515214 2011 <i>YJ</i> ₄₃	16.6	X	244.80641	331.82601	103.01254	6.23244	0.1544793	0.18958552	3.0009996	20	8 10.1	21.0
515215 2012 <i>AV</i> ₈	16.3	X	229.87830	115.84231	295.18558	17.45067	0.1822691	0.17590468	3.1546496	20	6 22.5	21.4
515216 2012 <i>AT</i> ₁₇	16.5	X	197.38051	82.00755	357.32732	15.55028	0.2310219	0.17227836	3.1987642	20	6 25.5	22.2
515217 2012 <i>BL</i> ₄	16.0	X	100.73669	302.24770	100.50243	8.44016	0.0617203	0.18666593	3.0322104	20	9 12.9	20.6
515218 2012 <i>BF</i> ₉	15.7	X	258.14877	282.53246	149.70428	11.08153	0.0529396	0.18048155	3.1010886	20	9 4.9	20.0
515219 2012 <i>BN</i> ₂₃	17.2	X	220.73360	75.24678	16.93620	14.97069	0.2049381	0.18411914	3.0601081	20	8 6.6	22.4
515220 2012 <i>BB</i> ₃₈	16.5	X	294.97356	38.71573	312.26087	11.00416	0.1162100	0.17392973	3.1784850	20	7 1.8	20.7
515221 2012 <i>BW</i> ₄₀	16.6	X	207.21493	356.55500	109.35602	8.34307	0.0435059	0.18076168	3.0978839	20	8 18.5	21.2
515222 2012 <i>BM</i> ₅₀	16.4	X	340.66590	31.28057	290.68329	9.05749	0.0066775	0.17812444	3.1283863	20	8 5.2	20.8
515223 2012 <i>BC</i> ₆₅	16.5	X	181.35174	11.34924	134.34662	11.57115	0.0894363	0.18482489	3.0523130	20	9 6.3	21.2
515224 2012 <i>BK</i> ₇₀	16.1	X	146.47486	207.91185	327.79459	10.37887	0.0268326	0.17976289	3.1093481	20	8 31.9	20.5
515225 2012 <i>BD</i> ₇₄	16.4	X	172.16821	301.04727	135.56343	29.44673	0.3583144	0.16616957	3.2766877	20	6 9.8	22.9
515226 2012 <i>BY</i> ₇₄	16.9	X	195.32020	64.77706	65.43054	10.66610	0.2547076	0.18305521	3.0719537	20	8 26.9	22.4
515227 2012 <i>BP</i> ₈₀	17.2	X	207.43194	98.75776	32.45693	2.03719	0.1658425	0.18758283	3.0223215	20	9 8.8	21.9
515228 2012 <i>BH</i> ₉₄	16.1	X	142.73790	215.67876	316.85880	13.78378	0.1517255	0.17204154	3.2016991	20	8 26.8	21.4
515229 2012 <i>BW</i> ₉₆	18.0	X	135.55102	235.52489	103.97745	24.33908	0.0891779	0.35387872	1.9795497	20	—	—
515230 2012 <i>BZ</i> ₉₉	16.4	X	237.91626	295.18308	122.26001	12.00800	0.1284670	0.17576669	3.1563004	20	7 12.4	21.1
515231 2012 <i>BS</i> ₁₀₁	17.1	X	168.60635	32.71875	126.76706	2.13005	0.1080443	0.18223353	3.0811809	20	9 8.0	21.8
515232 2012 <i>BH</i> ₁₀₆	16.7	X	163.74985	14.49612	108.38681	17.96453	0.1755070	0.16980369	3.2297678	20	7 20.0	22.0
515233 2012 <i>BU</i> ₁₀₆	16.8	X	186.53797	324.89768	129.59313	15.69131	0.2332865	0.17036966	3.2226110	20	7 4.4	22.4
515234 2012 <i>BA</i> ₁₁₅	16.3	X	299.62388	211.76406	135.29081	14.19361	0.0792928	0.17068558	3.2186333	20	7 7.1	20.8
515235 2012 <i>BE</i> ₁₂₁	16.5	X	173.03947	343.43586	158.95699	9.69103	0.0378092	0.17432243	3.1737097	20	8 21.8	21.1
515236 2012 <i>BC</i> ₁₃₇	17.0	X	159.84191	296.63004	126.29791	0.22708	0.1135255	0.17518750	3.1632533	20	8 21.1	21.9
515237 2012 <i>BE</i> ₁₄₂	17.3	X	178.96818	280.75194	28.94882	20.93967	0.0783496	0.35046612	1.9923793	20	—	—
515238 2012 <i>BP</i> ₁₅₆	16.6	X	215.79984	293.72320	156.79224	10.39677	0.0309751	0.17261368	3.1946202	20	8 6.9	21.3
515239 2012 <i>BT</i> ₁₅₆	16.2	X	174.35623	86.55102	49.71952	9.27942	0.1631964	0.17282696	3.1919914	20	8 18.3	21.6
515240 2012 <i>CQ</i> ₇	16.0	X	129.45041	258.66816	302.05889	9.20890	0.1387741	0.17737238	3.1372230	20	9 15.6	21.2
515241 2012 <i>CR</i> ₁₁	16.8	X	241.56452	305.23449	129.27116	10.24990	0.0374034	0.17667465	3.1454773	20	8 19.9	21.2
515242 2012 <i>CQ</i> ₁₆	17.0	X	232.91770	322.21550	113.99311	4.50139	0.1781105	0.17786154	3.1314683	20	7 25.7	21.9
515243 2012 <i>CV</i> ₁₇	16.5	X	160.87013	21.94784	143.42911	9.42464	0.1026369	0.17806232	3.1291139	20	9 7.9	21.4
515244 2012 <i>CU</i> ₂₂	16.3	X	229.25863	248.65255	164.86791	10.84174	0.1149041	0.16932447	3.2358589	20	6 29.3	21.4
515245 2012 <i>CT</i> ₂₇	16.6	X	322.60687	29.52454	331.34384	11.15603	0.1222264	0.18467319	3.0539844	20	8 26.6	20.3
515246 2012 <i>CN</i> ₃₃	16.1	X	99.17156	283.01626	313.78989	15.49274	0.1712682	0.17449631	3.1716010	20	9 28.3	21.3
515247 2012 <i>CV</i> ₃₇	16.2	X	135.34899	53.78839	152.01720	17.28144	0.1703125	0.17932017	3.1144638	20	10 6.5	21.5
515248 2012 <i>CB</i> ₄₇	16.1	X	302.01016	245.22218	151.38183	16.58217	0.0469016	0.18297217	3.0728830	20	9 20.7	20.3
515249 2012 <i>CF</i> ₅₁	16.2	X	77.39479	100.36040	156.10869	27.27236	0.0773293	0.17633695	3.1494920	20	9 29.6	20.9
515250 2012 <i>CS</i> ₅₂	16.4	X	90.21669	284.74530	329.00402	7.53233	0.1315790	0.17886792	3.1197113	20	10 11.0	21.2
515251 2012 <i>DW</i> ₆₃	16.4	X	222.27634	268.62867	150.09118	12.17006	0.1698274	0.17090676	3.2158558	20	6 24.7	21.7
515252 2012 <i>DZ</i> ₇₀	16.3	X	160.32446	220.98580	298.32995	9.71730	0.1065380	0.17343306	3.1845504	20	8 25.2	21.0
515253 2012 <i>DB</i> ₈₃	16.3	X	120.78612	62.98748	154.54223	16.33476	0.0480461	0.17808024	3.1289040	20	9 28.3	21.0
515254 2012 <i>DD</i> ₉₆	16.0	X	139.10898	116.14370	98.01191	27.01442	0.2539627	0.17497101	3.1658621	20	10 30.2	22.0
515255 2012 <i>EA</i> ₁₁	16.3	X	159.46140	357.04338	168.39947	5.33172	0.1031406	0.17037879	3.2224958	20	9 4.2	21.3
515256 2012 <i>FB</i> ₈₂	16.1	X	153.26886	143.39073	38.73897	11.09269	0.1496437	0.17235078	3.1978680	20	9 23.7	21.4
515257 2012 <i>JS</i> ₁₉	18.3	X	182.57325	107.57164	147.61537	2.94801	0.1227823	0.31394241	2.1440557	20	—	—
515258 2012 <i>PF</i> ₃	18.3	X	354.03034	223.99182	171.68719	5.00740	0.1190416	0.26705637	2.3881820	20	12 29.3	20.9
515259 2012 <i>PK</i> ₄₂	15.5	X	33.30431	133.98760	154.47695	4.35561	0.1526006	0.12721841	3.9153393	20	9 12.6	20.5
515260 2012 <i>QM</i> ₅₂	15.0	X	58.19289	215.02072	29.73923	3.25430	0.1619171	0.12353277	3.9928341	20	8 26.3	20.4
515261 2012 <i>RC</i> ₄	16.9	X	31.54044	15.66219	31.01855	16.50179	0.2561322	0.26298760	2.4127512	20	12 18.8	20.4
515262 2012 <i>RH</i> ₁₆	17.6	X	59.83931	152.94696	196.74579	7.35747	0.1420162	0.28082356	2.3094772	20	—	—
515263 2012 <i>RR</i> ₂₂	17.6	X	258.41459	212.91039	184.80028	4.14436	0.3068106	0.22627414	2.6671418	20	6 20.2	21.7
515264 2012 <i>RC</i> ₃₀	17.6	X	26.82847	195.97119	141.51884	7.92386	0.2110723	0.26213710	2.4179671	20	12 12.4	20.7
515265 2012 <i>RJ</i> ₄₀	17.0	X	1.49988	5.71883	13.34269	12.04927	0.2688892	0.26210585	2.4181593	20	—	—
515266 2012 <i>SJ</i> ₃	17.8	X	46.40578	297.49669	33.67550	3.34361	0.1987808	0.26388129	2.4073006	20	12 24.9	21.2
515267 2012 <i>SA</i> ₁₅	17.2	X	276.88217	46.63944	352.95088	12.73031	0.1671069	0.23228126	2.6209572	20	8 9.8	20.6
515268 2012 <i>SS</i> ₃₀	17.4	X	150.47222	353.09914	320.94806	6.32917	0.1675997	0.29649781	2.2273496	20	—	—
515269 2012 <i>SP</i> ₄₀	18.1	X	154.77616	87.17587	199.68765	4.70226	0.1300460	0.28992449	2.2608901	20	—	—
515270 2012 <i>SD</i> ₆₈	18.0	X	182.55456	170.32752	58.23323	2.94574	0.0582296	0.27374456	2.3491228	20	—	—
515271 2012 <i>TX</i> ₁₈	17.0	X	281.70926	356.50937	54.48551	14.91303	0.2392985	0.23470946	2.602849			

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>
515281 2012 TV ₁₆₉	17.5	X	287.93785	308.46220	112.88533	5.23682	0.1839423	0.24037880	2.5617610	20	9 25.1	20.2
515282 2012 TC ₁₉₁	18.2	X	136.69486	297.39481	350.99691	10.84589	0.2975157	0.28647116	2.2790233	20	—	—
515283 2012 TV ₁₉₃	17.5	X	221.22709	288.66593	190.24245	2.83275	0.2685486	0.22917385	2.6445961	20	8 30.9	21.7
515284 2012 TZ ₂₀₂	17.2	X	252.09731	92.46352	34.19084	6.91997	0.0870243	0.25719635	2.4488350	20	11 13.7	20.2
515285 2012 TL ₂₂₃	17.6	X	31.04196	229.58727	98.31210	10.09669	0.2072495	0.25503875	2.4626268	20	12 3.3	20.8
515286 2012 TO ₂₂₅	18.0	X	155.86636	228.38542	38.50669	4.84396	0.1614572	0.27955456	2.3164610	20	—	—
515287 2012 TR ₂₂₇	18.3	X	150.33972	95.88016	177.22677	4.94311	0.1854273	0.28104068	2.3082876	20	—	—
515288 2012 TM ₂₃₂	17.5	X	355.42168	252.72664	163.45849	6.36463	0.1762250	0.26546427	2.3977211	20	—	—
515289 2012 TD ₂₃₇	17.8	X	91.63216	210.74496	89.56671	4.73386	0.1215866	0.26641094	2.3920376	20	12 25.9	21.4
515290 2012 TM ₂₄₂	17.8	X	4.02413	358.51233	39.39686	6.19201	0.0632797	0.26410230	2.4059574	20	—	—
515291 2012 TO ₂₇₅	17.7	X	132.90857	298.65442	324.92879	5.92404	0.1422731	0.26794885	2.3828761	20	12 21.2	21.4
515292 2012 TC ₃₀₄	16.7	X	292.45157	27.82379	25.63580	18.70686	0.2672419	0.23704691	2.5857102	20	9 14.3	19.5
515293 2012 TS ₃₀₅	17.5	X	356.55842	21.48461	6.18028	5.15237	0.1084127	0.25925154	2.4358758	20	12 18.1	20.2
515294 2012 TT ₃₁₂	18.2	X	48.71048	229.00052	132.55815	1.97266	0.1966132	0.27322304	2.3521111	20	—	—
515295 2012 TW ₃₂₆	16.9	X	106.28641	216.72687	94.95894	7.51343	0.1229967	0.27080972	2.3660644	20	—	—
515296 2012 UB ₃₉	17.4	X	252.78258	62.66078	14.29159	9.13192	0.1140268	0.23256136	2.6188523	20	9 3.8	20.9
515297 2012 UR ₄₁	17.8	X	268.54766	248.68377	200.79212	4.89686	0.1939590	0.24133348	2.5550005	20	9 27.7	21.0
515298 2012 UA ₅₁	17.7	X	259.67204	242.44865	189.75094	1.66000	0.1058236	0.23243538	2.6197985	20	9 4.2	21.1
515299 2012 US ₆₁	16.8	X	290.78824	285.62156	95.11567	14.27372	0.3092593	0.23166414	2.6256098	20	7 6.2	19.9
515300 2012 UA ₈₄	17.2	X	271.58176	21.89588	31.42367	14.25391	0.2534239	0.22805764	2.6532182	20	8 8.8	21.0
515301 2012 UV ₈₇	17.3	X	9.11614	78.37239	274.31107	0.79666	0.0294639	0.24359357	2.5391723	20	11 4.9	20.5
515302 2012 UC ₁₁₉	17.1	X	1.77506	277.04409	60.93493	5.97017	0.0676102	0.23596423	2.5936135	20	10 10.7	20.2
515303 2012 UT ₁₃₂	17.5	X	293.57616	282.04473	128.11982	4.87479	0.1902074	0.23711902	2.5851859	20	9 16.5	20.2
515304 2012 UK ₁₃₃	17.5	X	103.92668	352.37113	326.77364	9.62310	0.2229291	0.27986130	2.3147681	20	—	—
515305 2012 VK ₁	17.7	X	287.77067	273.01845	51.50618	11.85897	0.1165635	0.24240981	2.5474320	20	10 10.8	20.7
515306 2012 VD ₂₂	18.1	X	252.72333	47.17473	58.87251	1.44182	0.0959435	0.24175448	2.5520335	20	10 14.4	21.3
515307 2012 VQ ₂₆	18.2	X	131.70832	284.82906	28.40288	4.57986	0.1156899	0.28342521	2.2953226	20	—	—
515308 2012 VS ₅₂	17.6	X	79.14403	312.86147	46.53493	8.85075	0.1409464	0.27594431	2.3366218	20	—	—
515309 2012 VL ₅₈	17.6	X	98.31980	180.03131	70.94882	5.10786	0.0894263	0.24041518	2.5615025	20	10 26.3	21.3
515310 2012 VX ₈₃	16.8	X	98.32694	186.81371	71.23851	4.30732	0.0955540	0.24076374	2.5590297	20	11 4.2	20.5
515311 2012 VO ₁₀₅	16.6	X	347.03586	336.58012	17.64485	15.62989	0.1513989	0.24059648	2.5602156	20	10 13.7	19.1
515312 2012 WP ₅	17.8	X	326.88921	62.51658	310.25955	0.43174	0.0819572	0.23487149	2.6016519	20	9 30.5	20.6
515313 2012 WN ₃₄	16.8	X	142.12743	312.00874	250.06077	13.84344	0.0540639	0.22785755	2.6547712	20	10 2.3	20.9
515314 2012 XL ₅	17.2	X	336.73446	218.46930	144.40214	5.54894	0.2136429	0.23808189	2.5782111	20	10 10.9	19.2
515315 2012 XQ ₆	16.7	X	213.17114	67.83737	48.80479	26.93983	0.3251674	0.21590346	2.7518810	20	9 1.6	22.1
515316 2012 XM ₇	17.4	X	273.59764	356.06547	66.76228	8.22245	0.3002556	0.23029678	2.6359923	20	8 14.0	20.9
515317 2012 XQ ₁₅	17.0	X	25.74573	285.22351	25.64637	7.42518	0.0424079	0.23038437	2.6353242	20	10 3.7	20.3
515318 2012 XW ₁₅	16.6	X	202.35022	220.10236	274.79830	13.93809	0.0724486	0.22696125	2.6617560	20	9 11.5	20.8
515319 2012 XM ₄₃	17.1	X	8.95753	293.93005	66.46941	5.74583	0.0992305	0.24260747	2.5460481	20	11 24.2	20.1
515320 2012 XN ₆₁	17.3	X	102.17224	163.92978	149.23521	7.01062	0.1459901	0.26342161	2.4101003	20	—	—
515321 2012 XB ₇₆	17.4	X	335.96982	250.59897	140.84258	4.46191	0.0665305	0.24410995	2.5355902	20	11 13.9	20.4
515322 2012 XS ₁₁₆	16.8	X	293.54766	157.85187	245.03528	11.52840	0.0835841	0.23059524	2.6337173	20	9 11.5	20.3
515323 2012 XT ₁₃₉	17.7	X	243.76826	308.48873	134.42700	4.57636	0.1967866	0.22318443	2.6917008	20	8 15.7	21.6
515324 2012 XZ ₁₄₄	17.2	X	172.47017	90.82499	104.55583	13.27196	0.2148315	0.21988539	2.7185572	20	10 30.9	22.0
515325 2012 XO ₁₅₄	16.8	X	280.58037	268.21169	168.49756	14.02973	0.1473479	0.23740172	2.5831332	20	10 9.2	19.8
515326 2012 XC ₁₅₅	17.4	X	290.67596	156.61743	249.49821	4.66537	0.3031639	0.23376573	2.6098496	20	8 11.0	20.2
515327 2012 YF ₅	16.6	X	350.78757	231.72905	156.64695	6.67737	0.2564533	0.24602849	2.5223913	20	12 27.5	19.0
515328 2013 AE ₈	17.0	X	180.84081	69.57487	124.15990	6.82749	0.1586831	0.22003094	2.7173581	20	11 4.7	21.4
515329 2013 AD ₁₃	16.6	X	163.29487	42.16579	114.19810	17.27954	0.2242334	0.20462181	2.8521220	20	9 4.4	21.7
515330 2013 AL ₂₇	16.6	X	218.84877	29.14534	84.99162	33.88696	0.2329555	0.22490073	2.6779891	20	9 9.7	21.7
515331 2013 AQ ₄₄	17.2	X	206.77148	53.40682	100.91063	4.58424	0.1338588	0.21685223	2.7438485	20	10 14.0	21.4
515332 2013 AB ₄₉	17.5	X	215.27895	296.15303	170.87374	11.18594	0.2536248	0.21196183	2.7858920	20	8 10.1	22.2
515333 2013 AP ₅₂	17.1	X	174.59582	109.12396	60.58942	8.91880	0.1590540	0.21264365	2.7799337	20	10 1.6	21.7
515334 2013 AN ₅₅	16.1	X	28.70286	235.18418	89.54082	14.49492	0.2028079	0.22512154	2.6762377	20	11 20.5	19.6
515335 2013 AW ₆₀	18.8	X	60.00544	278.56347	127.85319	28.17082	0.4191952	0.40846053	1.7990200	20	—	—
515336 2013 AY ₉₈	17.2	X	172.17536	79.28417	104.72401	8.66324	0.1557786	0.21534875	2.7566046	20	10 17.2	21.8
515337 2013 AD ₁₂₈	17.7	X	217.70433	114.49548	4.22592	7.02675	0.1398238	0.21648071	2.7469868	20	9 9.3	21.7
515338 2013 AP ₁₃₆	16.9	X	62.90194	154.04743	124.34241	6.42054	0.0333655	0.21322596	2.7748701	20	10 8.4	20.7
515339 2013 AE ₁₄₃	17.0	X	175.48682	352.60546	212.92858	13.38959	0.1872503	0.22321570	2.6914494	20	11 10.9	21.4
515340 2013 AD ₁₇₀	17.3	X	11.33653	195.08680	169.47008	9.79911	0.0948045	0.23228502	2.6209289	20	12 1.5	20.7
515341 2013 AX ₁₈₄	17.4	X	249.50927	247.75429	212.47818	5.44122	0.0875113	0.21753165	2.7381322	20	9 27.7	21.2
515342 2013 BT ₁₀	17.3	X	122.22373	129.14620	115.60062	1.69874	0.0580370	0.22319946	2.6915800	20	11 7.9	21.0
515343 2013 BK ₁₄	16.9	X	148.99277	313.32440	269.26717	11.85186	0.1269890	0.23304305	2.6152424	20	11 8.2	21.1
515344 2013 BC ₁₅	17.2	X	308.72213	288.79063	123.34513	9.11002	0.0496461	0.22528339	2.6749558	20	10 29.7	20.7
515345 2013 BH ₃₈	17.0	X	254.41027	126.63924	289.85805	8.86102	0.1155325	0.20887246	2.8132949	20	8 2.0	20.9
515346 2013 BV ₃₉	17.4	X	305.08562	276.09323	134.50841	7.04380	0.0675100	0.22085654	2.7105819	20	10 19.1	20.8
515347 2013 BK ₆₁	16.7	X	309.68063	267.20486	125.15787	14.09282	0.1486806	0.21692813	2.7432084	20	9 26.3	19.9
515348 2013 BT ₆₇	16.8	X	326.90225	331.28972	34.45421	5.33229	0.1230558	0.21643878	2.7473416	20	9 18.2	19.7
515349 2013 BV ₇₀	17.2	X	254.84982	305.27518	122.36692	8.74495	0.1610377	0.21405480	2.7677025	20	8 13.6	21.0
515350 2013 CY ₉	17.4	X	262.29369	300.38394	139.75582	6.45152	0.1085138	0.21764514	2.7371803	20	9 18.3	20.9
515351 2013 CH ₃₂	17.4	X	198.35824	55.05122	139.72997	9.33565	0.1369072	0.22164717	2.7041322	20	11 24.5	21.6
515352 2013 CA ₅₄	17.0	X	60.25383	334.91256	313.61810	5.18729	0.0211089	0.20874782	2.8144147	20	10 9.8	20.9
515353 2013 CL ₆₁	17.3	X	192.14927	359.59935	162.14880	13.47371	0.1150291	0.21069276	2.7970676	20	10 9.4	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>
515361 2013 <i>CJ</i> ₁₆₂	16.7	X	111.89129	79.17417	139.21934	2.86363	0.0368556	0.19711971	2.9240358	20	9 18.5	20.7
515362 2013 <i>CC</i> ₁₇₈	16.8	X	196.30963	355.35550	181.60731	9.32312	0.0956352	0.21772003	2.7365525	20	11 3.2	20.9
515363 2013 <i>CM</i> ₁₈₈	16.9	X	194.47128	312.62722	123.46872	11.72276	0.2879834	0.19138587	2.9821499	20	6 18.3	22.4
515364 2013 <i>CY</i> ₂₀₄	17.0	X	312.39741	265.14150	130.22018	5.50373	0.1220103	0.21548946	2.7554045	20	10 4.2	20.1
515365 2013 <i>CW</i> ₂₂₄	16.5	X	126.19056	39.17231	169.33881	11.24668	0.0595304	0.17703071	3.1412582	20	9 21.8	21.1
515366 2013 <i>DE</i> ₁	18.3	X	178.70949	288.26469	11.97274	18.51554	0.0666957	0.39341741	1.8445921	20	—	—
515367 2013 <i>EZ</i> ₂₅	16.7	X	179.33648	149.24924	11.89406	2.05081	0.0320840	0.19977099	2.8981071	20	9 25.7	20.9
515368 2013 <i>ER</i> ₂₈	16.8	X	85.07901	292.09858	341.72290	16.51599	0.0594196	0.20619502	2.8375962	20	10 21.4	21.1
515369 2013 <i>EE</i> ₃₈	16.4	X	284.73569	23.27150	21.69258	9.74547	0.0221692	0.19668019	2.9283904	20	9 13.7	20.4
515370 2013 <i>EJ</i> ₃₈	16.3	X	310.37151	315.30557	26.16358	9.62645	0.0357625	0.18045585	3.1013831	20	7 23.7	20.6
515371 2013 <i>EC</i> ₄₁	18.9	X	269.70866	219.13813	351.93452	19.26866	0.0394283	0.39269280	1.8468605	20	—	—
515372 2013 <i>EO</i> ₅₈	15.6	X	19.77274	292.02926	1.69622	14.98358	0.2098942	0.18168280	3.0874043	20	9 15.9	19.1
515373 2013 <i>EZ</i> ₆₀	17.0	X	122.89604	36.78184	171.81866	11.48254	0.1674294	0.19294553	2.9660575	20	9 27.4	21.9
515374 2013 <i>EV</i> ₇₂	17.4	X	211.95536	345.76044	150.51354	2.45015	0.0172919	0.20658901	2.8339874	20	10 6.9	21.4
515375 2013 <i>EN</i> ₇₃	17.4	X	149.68732	21.17583	151.03971	7.69972	0.1448725	0.19432070	2.9520475	20	9 6.9	22.2
515376 2013 <i>EJ</i> ₇₆	16.7	X	50.98634	127.01993	158.30065	10.02921	0.0869037	0.19616982	2.9334673	20	10 6.4	20.7
515377 2013 <i>EW</i> ₈₁	17.5	X	193.51199	140.53136	1.48024	7.98879	0.1796854	0.20164053	2.8801659	20	9 9.9	22.1
515378 2013 <i>EH</i> ₈₇	16.4	X	61.16365	131.79849	134.46811	10.67746	0.0516512	0.19093372	2.9868561	20	9 20.0	20.6
515379 2013 <i>ED</i> ₁₀₈	16.7	X	249.20731	67.89672	325.97392	9.72359	0.1617685	0.18768233	3.0212532	20	6 22.4	21.3
515380 2013 <i>EH</i> ₁₅₅	17.3	X	106.42000	240.67084	10.31286	3.10603	0.0981426	0.20209082	2.8758859	20	10 27.4	21.7
515381 2013 <i>EJ</i> ₁₅₅	17.1	X	152.82088	152.89827	27.62919	2.68015	0.0602767	0.19162146	2.9797051	20	9 18.6	21.4
515382 2013 <i>EN</i> ₁₅₅	16.9	X	338.51429	124.70440	242.43037	1.10173	0.0797663	0.20322862	2.8651419	20	10 4.9	20.4
515383 2013 <i>ER</i> ₁₅₅	16.5	X	151.53879	27.88307	119.66255	11.61054	0.0701637	0.18255689	3.0775414	20	8 6.3	21.1
515384 2013 <i>FD</i> ₄	18.3	X	35.52375	250.87795	176.22381	22.50820	0.1304961	0.38561736	1.8693832	20	—	—
515385 2013 <i>FT</i> ₂₁	17.1	X	110.96796	190.98185	44.10861	1.79936	0.1663287	0.19166030	2.9793026	20	10 17.3	21.9
515386 2013 <i>GP</i> ₃	17.9	X	13.24032	287.13321	184.90844	22.32351	0.1009413	0.38799202	1.8617478	20	—	—
515387 2013 <i>GG</i> ₁₅	17.2	X	104.15349	34.98056	191.17316	8.78761	0.2334438	0.18602639	3.0391561	20	10 4.6	22.2
515388 2013 <i>GU</i> ₂₃	16.6	X	258.67399	223.02138	207.51242	9.01375	0.0607052	0.19030311	2.9934508	20	9 7.8	21.0
515389 2013 <i>GF</i> ₂₈	16.3	X	109.70281	166.51583	51.85375	11.67292	0.1903201	0.18897293	3.0074816	20	10 2.4	21.3
515390 2013 <i>GG</i> ₃₄	17.0	X	140.70225	16.39686	193.29400	14.76836	0.0914308	0.20563906	2.8427084	20	10 13.8	21.3
515391 2013 <i>GZ</i> ₄₂	17.0	X	64.23652	83.87762	189.83687	4.70354	0.1674909	0.18328345	3.0694027	20	10 15.6	21.4
515392 2013 <i>GQ</i> ₄₇	17.0	X	72.40696	146.59823	111.92572	3.56367	0.1984037	0.18236848	3.0796606	20	10 11.3	21.5
515393 2013 <i>GU</i> ₆₅	16.9	X	64.15930	231.99970	52.70338	7.22193	0.1249209	0.18949935	3.0019093	20	10 25.2	21.2
515394 2013 <i>GX</i> ₆₉	16.3	X	78.99886	185.37901	48.78186	18.13962	0.1648171	0.17495914	3.1660053	20	9 21.8	21.3
515395 2013 <i>GV</i> ₇₆	16.6	X	305.34199	349.57506	22.47396	9.88291	0.0201385	0.18688000	3.0298944	20	8 29.4	20.8
515396 2013 <i>GN</i> ₈₀	18.1	X	180.63707	271.24080	55.50989	23.46079	0.0463728	0.38925446	1.8577203	20	—	—
515397 2013 <i>GJ</i> ₈₈	16.2	X	114.28312	83.36962	99.95871	11.21834	0.1061110	0.17559691	3.1583345	20	8 14.2	21.0
515398 2013 <i>GU</i> ₁₀₅	16.2	X	69.43295	279.93905	16.85301	15.91561	0.3553664	0.18480368	3.0525466	20	12 3.5	21.6
515399 2013 <i>GV</i> ₁₁₆	16.6	X	266.87578	265.93294	188.88528	19.31425	0.0896737	0.20669174	2.8330483	20	10 14.2	20.3
515400 2013 <i>GQ</i> ₁₂₀	16.7	X	97.49106	54.97298	145.29507	1.92262	0.1241739	0.17504789	3.1649350	20	8 16.5	21.4
515401 2013 <i>GS</i> ₁₃₃	17.2	X	138.29509	34.17152	183.41465	8.50820	0.1861205	0.19955309	2.9002165	20	10 23.0	22.0
515402 2013 <i>GM</i> ₁₃₅	16.6	X	86.48371	62.08467	195.15531	15.58137	0.0971154	0.18573858	3.0422949	20	10 11.9	21.0
515403 2013 <i>GE</i> ₁₃₉	16.4	X	70.63263	228.42348	24.02213	6.52213	0.1400946	0.17770023	3.1333631	20	9 23.6	20.9
515404 2013 <i>HB</i> ₂	16.8	X	93.52813	98.58777	129.92839	9.79754	0.0617753	0.17764884	3.1339673	20	9 11.5	21.3
515405 2013 <i>HU</i> ₇	18.4	X	226.59663	219.69930	53.90997	21.87363	0.0617241	0.38781451	1.8623159	20	—	—
515406 2013 <i>HB</i> ₈	18.3	X	282.88406	65.39318	154.10320	24.23514	0.0244005	0.39049685	1.8537779	20	—	—
515407 2013 <i>HX</i> ₁₈	18.2	X	220.45342	105.90906	171.33148	22.74379	0.0587028	0.38168944	1.8821864	20	—	—
515408 2013 <i>HN</i> ₂₄	16.4	X	85.32895	235.76210	32.88767	7.11578	0.1740545	0.18630278	3.0361496	20	11 1.1	21.0
515409 2013 <i>HS</i> ₂₆	16.6	X	218.76197	60.53840	48.21344	14.37976	0.1063357	0.18961254	3.0007145	20	9 5.1	21.3
515410 2013 <i>HN</i> ₃₂	16.5	X	56.30493	273.79021	348.94943	9.25539	0.2034667	0.17555348	3.1588555	20	9 24.7	20.9
515411 2013 <i>HO</i> ₃₃	15.8	X	280.31962	11.57591	5.05936	19.75818	0.1703627	0.17103292	3.2142741	20	7 9.4	20.6
515412 2013 <i>HT</i> ₃₇	17.0	X	52.20607	322.61865	316.25479	4.72389	0.1094451	0.18202675	3.0835139	20	9 26.3	21.3
515413 2013 <i>HB</i> ₄₁	17.2	X	76.49235	247.89468	7.81791	9.52170	0.10716705	0.18402079	3.0611983	20	9 25.2	21.6
515414 2013 <i>HH</i> ₅₀	16.8	X	41.26278	295.15487	13.21988	11.05447	0.1343103	0.18577898	3.0418538	20	10 23.3	20.9
515415 2013 <i>HV</i> ₆₀	16.7	X	54.05449	254.04232	6.76184	10.95782	0.0335471	0.17954446	3.1118695	20	8 31.1	21.0
515416 2013 <i>HS</i> ₆₆	16.3	X	8.12820	35.22856	284.20814	4.03053	0.1754882	0.17810167	3.1286530	20	9 20.3	19.9
515417 2013 <i>HM</i> ₈₈	16.7	X	310.20482	330.88922	18.33429	5.90060	0.0783559	0.17325344	3.1867511	20	7 27.6	20.9
515418 2013 <i>HF</i> ₉₂	16.8	X	180.19008	257.51568	207.20813	18.65318	0.2303474	0.17952839	3.1120552	20	7 8.5	22.5
515419 2013 <i>HX</i> ₁₀₀	16.9	X	284.47258	358.64967	20.82168	10.06241	0.0823264	0.17576297	3.1563450	20	7 31.9	21.3
515420 2013 <i>HM</i> ₁₀₆	17.0	X	173.28527	67.98075	35.96806	1.82819	0.1161726	0.17031797	3.2232629	20	7 5.4	22.1
515421 2013 <i>HC</i> ₁₂₂	17.2	X	187.14838	105.59669	25.31755	13.79241	0.1126862	0.18583608	3.0412307	20	8 28.5	22.1
515422 2013 <i>HA</i> ₁₂₄	16.8	X	359.23824	351.24685	355.77615	11.46925	0.1136901	0.18981157	2.9986165	20	10 7.9	20.6
515423 2013 <i>HE</i> ₁₂₄	17.0	X	123.50162	343.24292	223.39576	11.60798	0.2155064	0.18679391	3.0308253	20	9 23.4	22.2
515424 2013 <i>HL</i> ₁₃₅	16.3	X	62.74287	29.49531	210.87085	9.74544	0.0592517	0.17297067	3.1902232	20	8 12.3	20.9
515425 2013 <i>HK</i> ₁₄₂	17.1	X	13.17955	140.20537	188.48640	6.38296	0.1267346	0.18457351	3.0550838	20	10 9.7	20.7
515426 2013 <i>HQ</i> ₁₄₆	16.8	X	36.43643	299.57554	341.59456	1.19591	0.1630583	0.17502187	3.1652487	20	9 16.3	20.9
515427 2013 <i>HE</i> ₁₅₇	17.1	X	92.37439	109.05875	142.19219	11.13135	0.1209665	0.18170080	3.0872005	20	10 16.7	21.9
515428 2013 <i>JS</i> ₃₅	16.8	X	105.21934	71.44734	155.07887	3.27031	0.1378441	0.17983091	3.1085641	20	9 28.4	21.5
515429 2013 <i>JA</i> ₄₇	16.7	X	124.63731	63.12715	154.45518	10.65407	0.1923880	0.18073363	3.0982044	20	10 11.3	21.9
515430 2013 <i>JO</i> ₄₈	16.3	X	115.59288	334.23609	218.12186	9.71746	0.1707235	0.17471425	3.1689630	20	8 26.1	21.5
515431 2013 <i>JG</i> ₅₄	16.6	X	93.74259	163.58749	83.23220	6.44353	0.0902900	0.18179748	3.0861058			

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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>
515441 2013 TX ₃₃	15.3	X	7.34447	171.18426	130.75025	2.34641	0.2334553	0.12440939	3.9740556	20	8 24.5	19.6
515442 2013 TW ₉₀	14.1	X	173.89382	37.35787	9.16904	12.77740	0.0263807	0.08370466	5.1757062	20	4 25.1	21.1
515443 2013 TZ ₁₃₁	18.4	X	309.75690	28.93767	16.17854	6.38027	0.2355363	0.28332059	2.2958876	20	10 22.1	19.5
515444 2013 TQ ₁₄₁	18.8	X	278.74454	303.08014	136.81837	2.70315	0.1961543	0.28147526	2.3059111	20	10 11.9	20.7
515445 2013 TW ₁₅₉	14.1	X	227.37840	340.17266	31.95569	12.40345	0.0427301	0.08311249	5.2002616	20	5 13.5	21.1
515446 2013 UG ₅	20.3	X	84.43953	79.86889	37.70532	23.33258	0.2883506	0.50702069	1.5575868	20	4 28.9	20.2
515447 2013 UY ₁₅	13.6	X	224.34095	328.66898	60.38769	18.29735	0.0406222	0.08239398	5.2304502	20	5 30.5	20.7
515448 2013 VK ₂₄	13.4	X	252.09921	65.67150	275.57099	13.23666	0.0924789	0.07996981	5.3356255	20	4 28.4	20.7
515449 2013 VM ₂₄	13.6	X	242.25176	72.47513	280.64691	20.45090	0.0877900	0.08122725	5.2804170	20	4 30.9	21.1
515450 2013 WB ₃₆	13.7	X	143.63387	15.82559	82.16466	21.73956	0.0346106	0.08407900	5.1603325	20	5 27.1	20.7
515451 2013 WU ₅₀	17.4	X	326.02327	14.61578	8.82208	8.17643	0.2759439	0.27903096	2.3193580	20	10 30.8	18.3
515452 2013 WX ₅₅	18.7	X	288.92762	47.35334	47.74322	4.89593	0.1887380	0.28228742	2.3014861	20	11 27.1	20.1
515453 2013 WR ₁₀₀	17.7	X	343.82677	320.56812	53.95673	10.04127	0.2235747	0.28158719	2.3053000	20	11 30.1	19.3
515454 2013 WG ₁₀₆	17.4	X	327.12504	298.53478	78.52474	8.86465	0.2627678	0.27739016	2.3284952	20	10 28.6	18.6
515455 2013 WH ₁₁₀	14.2	X	210.68979	270.34196	117.74733	6.34979	0.1091742	0.08291021	5.2087164	20	5 14.2	21.5
515456 2013 XP ₂₆	18.1	X	352.56127	286.10142	129.28963	3.94236	0.0862794	0.28940153	2.2636129	20	—	—
515457 2013 YX ₁₀	17.7	X	267.91539	351.08534	135.60581	8.04981	0.0706485	0.27023132	2.2669439	20	12 15.2	20.5
515458 2013 YU ₁₅	18.0	X	271.24666	350.19424	110.91029	3.42471	0.1687434	0.26696292	2.3887393	20	10 31.2	20.3
515459 2013 YW ₂₇	18.2	X	242.14703	49.14882	104.75768	4.12388	0.1532316	0.27172778	2.3607320	20	12 1.4	20.9
515460 2013 YX ₃₂	18.7	X	266.16065	78.74812	57.43583	1.46220	0.1383704	0.28503732	2.2866598	20	12 21.8	20.7
515461 2013 YM ₅₀	18.2	X	215.01574	319.46800	201.88440	1.99290	0.1621075	0.25952750	2.4341488	20	11 2.3	21.6
515462 2013 YR ₅₃	18.1	X	249.86214	188.27095	303.47270	1.99020	0.1270152	0.27546927	2.3393073	20	11 16.0	20.8
515463 2013 YR ₆₂	17.8	X	254.93546	306.18960	155.24919	1.64485	0.1328450	0.25938194	2.4350594	20	10 8.8	20.5
515464 2013 YK ₉₆	18.5	X	273.84560	158.69699	286.08793	1.92958	0.1926784	0.26190067	2.4194221	20	10 3.5	21.0
515465 2013 YN ₁₀₂	17.9	X	332.37100	306.84241	115.10626	6.09322	0.1465574	0.27898178	2.3196306	20	—	—
515466 2013 YX ₁₀₉	18.5	X	244.47985	354.60272	123.92793	2.40081	0.1872296	0.26094830	2.4253052	20	10 10.1	21.4
515467 2013 YL ₁₁₃	17.9	X	14.40639	305.28468	104.64218	5.48429	0.0716254	0.29035767	2.2586409	20	—	—
515468 2013 YS ₁₂₅	17.9	X	193.95909	216.59620	11.15193	2.41910	0.1611190	0.27235717	2.3570937	20	—	—
515469 2013 YF ₁₅₂	17.5	X	202.77964	315.97933	201.38387	1.89585	0.0492526	0.25377966	2.4707654	20	10 26.4	20.8
515470 2013 YF ₁₅₂	18.3	X	216.25182	185.96159	353.59029	1.18175	0.1247419	0.26478427	2.4018245	20	12 2.9	21.4
515471 2014 AK ₆	18.1	X	242.89424	113.16990	30.42089	1.69057	0.1298095	0.26831401	2.3807136	20	11 20.3	20.8
515472 2014 AN ₁₀	17.1	X	153.02081	66.88432	146.71900	10.80358	0.1278796	0.25385878	2.4702520	20	11 9.9	21.1
515473 2014 AO ₁₆	16.8	X	282.96446	345.60826	120.01712	25.93926	0.1989988	0.27870577	2.3211618	20	12 6.9	19.4
515474 2014 AD ₁₉	18.0	X	243.40835	202.27019	306.40578	1.85940	0.1459588	0.26837322	2.3803634	20	11 25.3	20.9
515475 2014 AM ₂₆	18.3	X	253.26931	214.26723	265.19585	4.68244	0.1640780	0.27267010	2.3552899	20	10 26.9	21.1
515476 2014 AF ₅₇	16.8	X	179.88710	183.73359	4.97755	7.47164	0.1595819	0.23120623	2.6290753	20	10 25.7	21.1
515477 2014 BN ₆	18.2	X	290.35605	19.38863	104.04152	2.95581	0.0753674	0.27684788	2.3315349	20	—	—
515478 2014 BL ₁₅	18.1	X	243.89289	112.21147	17.16937	2.58773	0.1348541	0.26378861	2.4078644	20	10 31.2	20.9
515479 2014 BX ₂₅	18.1	X	222.18990	352.02127	157.80476	1.89711	0.1333909	0.26020669	2.4299112	20	10 30.9	21.2
515480 2014 BF ₂₆	17.7	X	228.25938	269.00973	290.34535	5.63967	0.1039008	0.28119780	2.3074277	20	—	—
515481 2014 BZ ₂₆	18.0	X	233.68244	339.95100	150.83766	2.58293	0.1596207	0.26098853	2.4250560	20	10 16.7	21.3
515482 2014 BK ₂₈	18.1	X	258.33488	308.69195	196.59116	2.58892	0.1158645	0.27571594	2.3379119	20	12 21.2	20.5
515483 2014 BD ₃₅	18.2	X	237.45808	54.17840	104.42738	3.72296	0.1303161	0.26481560	2.4016350	20	12 2.8	21.1
515484 2014 BB ₄₄	17.9	X	219.88382	189.03740	334.77589	0.63079	0.1259041	0.26143673	2.4222836	20	11 15.9	21.2
515485 2014 BS ₄₄	18.3	X	253.64128	203.40349	261.88113	0.66130	0.1477894	0.25531101	2.4608758	20	10 8.1	21.1
515486 2014 BP ₆₅	17.6	X	268.45437	339.19470	148.95392	5.34133	0.0545810	0.26482061	2.4016047	20	12 17.7	20.4
515487 2014 CR ₁	18.1	X	284.10773	4.21168	89.07445	2.52674	0.1360630	0.26608014	2.3940198	20	11 15.5	20.5
515488 2014 DQ ₇	17.4	X	148.10730	200.29865	37.02289	3.23489	0.1416517	0.25729341	2.4482191	20	11 30.8	21.1
515489 2014 DB ₈	17.8	X	33.46254	232.73741	151.98322	6.34277	0.1181365	0.28740481	2.2740850	20	—	—
515490 2014 DN ₈	17.9	X	195.46887	310.52766	239.40923	0.43129	0.1314024	0.26107639	2.4245119	20	11 20.9	21.3
515491 2014 DV ₂₆	18.2	X	231.14640	289.41090	232.63903	1.85621	0.1104961	0.26498300	2.4006234	20	12 1.5	21.1
515492 2014 DU ₃₂	17.5	X	165.22914	76.38627	107.27656	5.90151	0.0778849	0.23892277	2.5721583	20	10 14.6	21.3
515493 2014 DE ₅₉	17.8	X	238.62697	26.65577	87.43749	5.62352	0.0599183	0.23974639	2.5662640	20	10 13.8	21.2
515494 2014 DS ₆₂	17.8	X	132.13767	256.38775	47.89397	1.66908	0.2204854	0.26218163	2.4176933	20	—	—
515495 2014 DV ₆₆	17.9	X	249.87247	32.51131	56.74086	6.11577	0.2386103	0.24137354	2.5547178	20	8 30.2	21.5
515496 2014 DD ₆₉	17.8	X	287.10726	345.56434	118.59089	6.00123	0.0751671	0.25501905	2.4627536	20	12 8.8	20.5
515497 2014 DB ₇₂	18.1	X	208.96779	88.90941	57.28275	5.14066	0.1319833	0.23887146	2.5725266	20	10 9.1	21.8
515498 2014 DK ₈₈	18.1	X	305.14346	114.25580	325.53308	3.98627	0.1767680	0.26726519	2.3869379	20	12 4.4	20.0
515499 2014 DL ₉₈	18.1	X	164.87640	76.19999	188.32392	2.00861	0.1806264	0.26426091	2.4049945	20	—	—
515500 2014 DA ₁₀₆	17.6	X	120.52027	271.45836	341.64804	2.77167	0.1876110	0.23932768	2.5692563	20	11 22.4	21.9
515501 2014 DJ ₁₁₃	17.9	X	133.29867	78.39202	161.06703	7.99450	0.1541735	0.24265692	2.5457022	20	11 19.7	22.1
515502 2014 DP ₁₁₃	17.8	X	269.62820	310.37429	170.62110	5.52634	0.1085899	0.26336192	2.4104645	20	12 3.3	20.5
515503 2014 DP ₁₁₄	17.8	X	221.00526	89.14207	18.22100	10.98607	0.1960121	0.23643861	2.5901433	20	8 28.9	21.9
515504 2014 DL ₁₁₆	17.0	X	0.79159	219.34959	152.88829	12.17780	0.0612655	0.24620709	2.5211712	20	11 26.9	20.3
515505 2014 DP ₁₄₇	17.0	X	172.15030	53.37983	102.17901	9.40089	0.0921383	0.21398189	2.7683311	20	9 14.0	21.3
515506 2014 DJ ₁₄₈	17.6	X	106.49869	110.39619	173.28771	3.72629	0.1439888	0.24578616	2.5240489	20	12 17.1	21.5
515507 2014 DK ₁₄₈	17.6	X	184.90203	152.89007	20.47648	8.36071	0.0539333	0.23891715	2.5721986	20	10 21.5	21.1
515508 2014 ED ₇	17.2	X	178.50133	251.80654	1.18933	10.14403	0.2125915	0.26221064	2.4175150	20	—	—
515509 2014 EO ₁₄	17.7	X	252.78952	264.20986	157.94407	7.91770	0.1820646	0.23215666	2.6218949	20	7 31.2	21.3
515510 2014 EX ₁₉	17.2	X	31.58051	217.77047	140.13895	7.89558	0.1140720	0.25541546	2.4602048	20	12 28.0	20.4
515511 2014 EQ ₂₁	17.9	X	164.18549	171.19037	22.88446	4.52201	0.1062439	0.24046927	2.5611184	20	10 22.5	21.7
515512 2014 EY ₂₆	17.6	X	156.07629	49.13544	144.26844	8.11299	0.1073091	0.23425649	2.6062033	20	10 15.8	21.7
515513 2014 ER ₃₀	17.5	X	309.49029	312.51915	150.33852	7.45136	0.0754803	0.26637395	2			

ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
515521 2014 FG ₄	17.4	X	300.17860	39.06041	62.70050	7.90400	0.0822671	0.26275553	2.4141716	20	12 28.2	19.9
515522 2014 FQ ₅	17.6	X	170.44153	188.57359	12.09180	9.69065	0.0699541	0.24690240	2.5164357	20	11 7.1	21.2
515523 2014 FL ₉	17.4	X	181.30233	277.37483	308.82014	2.16079	0.1215046	0.26485359	2.4014054	20	12 23.3	20.8
515524 2014 FL ₃₅	17.2	X	168.14094	197.48913	20.73729	12.34108	0.2396792	0.23751203	2.5823334	20	11 16.0	21.8
515525 2014 FC ₅₇	17.3	X	163.78881	24.71824	176.32225	14.63978	0.0453397	0.23897830	2.5717598	20	11 5.4	21.1
515526 2014 FK ₆₄	17.0	X	122.68512	284.76653	2.99787	12.86944	0.2953031	0.24215475	2.5492204	20	—	—
515527 2014 FJ ₇₃	17.5	X	172.60824	247.62611	289.44214	0.94762	0.1177678	0.22933658	2.6433449	20	10 7.6	21.7
515528 2014 FW ₇₃	17.2	X	127.14951	167.39744	79.96159	5.41479	0.1957230	0.22888360	2.6468313	20	11 21.1	21.6
515529 2014 FX ₇₃	17.0	X	161.99365	111.38851	37.86304	14.17033	0.1760702	0.21403844	2.7678435	20	8 29.3	21.8
515530 2014 GG ₅	16.7	X	174.44985	184.74725	9.49636	30.14256	0.0329760	0.23960242	2.5672919	20	10 25.9	20.7
515531 2014 GG ₆	17.3	X	175.09175	345.17653	200.39320	3.96838	0.0561515	0.23076236	2.6324455	20	10 25.2	21.1
515532 2014 GN ₇	17.8	X	124.86400	79.62216	167.30169	4.62059	0.1082211	0.23621478	2.5917792	20	11 18.2	21.7
515533 2014 GS ₇	17.4	X	104.89025	86.09163	186.37804	11.53947	0.0591905	0.23984833	2.5655368	20	11 27.3	21.2
515534 2014 GS ₁₃	17.3	X	110.44980	248.51046	9.13296	14.78579	0.0756428	0.23408585	2.6074697	20	11 8.5	21.3
515535 2014 GC ₁₄	17.3	X	187.70512	122.72353	30.56245	12.38801	0.2336765	0.23010974	2.6374205	20	9 21.8	21.8
515536 2014 GU ₂₅	17.2	X	110.33653	238.16599	4.74018	8.19002	0.0906134	0.22325986	2.6910945	20	10 23.0	21.2
515537 2014 GU ₂₈	17.5	X	187.95219	108.65696	40.04944	11.45238	0.1213105	0.22148093	2.7054851	20	9 22.1	21.8
515538 2014 GJ ₃₀	17.6	X	189.06507	25.36261	172.65723	1.66831	0.1655091	0.24258236	2.5462238	20	11 18.3	21.4
515539 2014 GO ₃₇	18.4	X	168.93992	142.08589	76.65015	5.37617	0.2339294	0.24236379	2.5477544	20	11 21.5	22.7
515540 2014 GB ₄₃	17.6	X	199.64923	134.88935	43.93925	6.38771	0.2099376	0.23965459	2.5669193	20	10 31.6	21.6
515541 2014 GD ₄₃	17.5	X	132.47820	349.25382	215.45046	2.05161	0.1459836	0.21720430	2.7408826	20	10 1.7	21.8
515542 2014 GU ₄₅	17.3	X	86.39453	181.60200	67.74697	5.94031	0.0651783	0.22023985	2.7156395	20	10 5.8	21.1
515543 2014 GL ₅₃	17.4	X	173.43940	347.49241	210.17495	13.43860	0.1891644	0.23908887	2.5709668	20	11 1.7	21.5
515544 2014 GJ ₅₆	17.5	X	77.62218	104.56606	182.70209	2.19272	0.1120629	0.22466443	2.6798666	20	11 16.4	21.5
515545 2014 GK ₅₆	17.4	X	68.94557	112.64292	178.28210	5.24849	0.0356166	0.22360134	2.6883539	20	11 1.6	21.0
515546 2014 GA ₅₇	17.2	X	137.61195	212.64404	28.57139	15.40313	0.0601695	0.23447754	2.6045651	20	11 18.7	21.1
515547 2014 GC ₅₇	16.9	X	270.71573	66.28190	14.04633	22.26448	0.0458202	0.22783123	2.6549757	20	10 8.8	20.1
515548 2014 GK ₅₇	17.6	X	91.25326	248.70450	43.46388	4.25755	0.1279926	0.23275130	2.6174274	20	12 8.8	21.5
515549 2014 GM ₅₇	17.3	X	32.68059	158.67598	165.98044	5.19875	0.0431824	0.22331235	2.6906728	20	10 30.6	20.8
515550 2014 GZ ₅₇	17.1	X	153.26560	333.12686	219.30258	4.12388	0.0286490	0.21953892	2.7214166	20	10 6.1	21.0
515551 2014 GB ₅₈	16.2	X	123.80150	64.35054	30.62638	13.28787	0.1699441	0.17306709	3.1890382	20	5 8.7	21.3
515552 2014 HC ₂	16.7	X	151.77136	31.85600	207.90078	32.44862	0.1627575	0.23266685	2.6180607	20	12 1.1	21.4
515553 2014 HA ₈	17.1	X	150.07406	112.30909	120.05167	12.63944	0.0519452	0.23071346	2.6328175	20	11 27.6	21.1
515554 2014 HO ₁₃	17.7	X	134.84244	56.87737	166.41827	2.61724	0.1425885	0.22401737	2.6850245	20	10 28.5	21.9
515555 2014 HD ₁₆	17.1	X	1.70202	298.45060	34.36413	6.49043	0.0499115	0.21459875	2.7630236	20	9 27.5	20.7
515556 2014 HJ ₂₂	16.9	X	125.22849	145.79085	105.87958	6.38800	0.2224097	0.22895655	2.6462690	20	11 25.7	21.5
515557 2014 HT ₂₂	16.6	X	115.55838	141.85296	133.75963	14.40436	0.1540430	0.23215346	2.6219190	20	12 15.2	21.0
515558 2014 HY ₂₂	17.5	X	157.60682	80.66893	115.08465	12.24332	0.2364259	0.22492922	2.6777630	20	10 19.8	22.4
515559 2014 HD ₂₃	17.0	X	103.19883	138.12943	133.75307	12.44151	0.1707521	0.22319643	2.6916044	20	11 30.1	21.5
515560 2014 HF ₂₃	16.9	X	106.60241	134.65730	118.81049	11.80899	0.2749178	0.21701364	2.7424877	20	11 16.9	21.9
515561 2014 HK ₂₃	17.3	X	172.73006	136.59296	38.30735	18.17837	0.1116818	0.23068565	2.6330291	20	10 11.2	21.4
515562 2014 HK ₂₄	17.4	X	182.96869	162.22264	24.12186	7.66851	0.1191118	0.23803940	2.5785179	20	10 30.4	21.2
515563 2014 HU ₂₇	17.5	X	207.14625	114.58949	48.81189	3.65320	0.0398571	0.23596864	2.5935813	20	11 6.5	21.1
515564 2014 HA ₃₁	17.8	X	183.48329	46.56683	110.33548	5.75019	0.1574291	0.22481514	2.6786687	20	9 23.9	22.1
515565 2014 HJ ₃₃	17.4	X	48.88524	175.33414	138.23927	4.24207	0.1893264	0.21778132	2.7360391	20	11 25.7	21.3
515566 2014 HY ₃₈	17.4	X	214.99918	339.94543	196.57586	14.57426	0.1177489	0.24291618	2.5438906	20	11 25.3	21.1
515567 2014 HU ₄₀	17.4	X	38.78421	182.49233	152.00304	4.92407	0.0992886	0.22653849	2.6650665	20	11 28.8	20.9
515568 2014 HB ₄₃	16.8	X	149.94400	7.96488	199.23905	13.11566	0.1130788	0.22509894	2.6764168	20	10 23.1	20.9
515569 2014 HL ₄₇	17.2	X	34.21548	212.23750	84.68117	5.57117	0.0415460	0.21305809	2.7763275	20	9 25.8	20.9
515570 2014 HA ₉₈	17.3	X	102.72708	167.83211	139.42545	5.41215	0.2104802	0.23822200	2.5772001	20	—	—
515571 2014 HG ₁₀₀	17.4	X	8.75652	265.86327	65.25241	6.54846	0.0376154	0.21638216	2.7478209	20	10 5.7	21.0
515572 2014 HC ₁₀₂	17.3	X	30.53820	216.20013	92.70803	4.72936	0.0566880	0.21501317	2.7594721	20	10 8.3	20.9
515573 2014 HV ₁₃₁	17.1	X	140.99485	67.40455	171.80234	14.15291	0.0701772	0.22727280	2.6593229	20	11 24.6	21.3
515574 2014 HA ₁₃₆	17.4	X	226.25029	47.21418	44.86251	5.03133	0.0255494	0.20987303	2.8043462	20	8 29.9	21.3
515575 2014 HX ₁₃₇	17.3	X	76.79712	167.58287	89.48602	6.98360	0.0206257	0.21468427	2.7622897	20	9 27.9	21.2
515576 2014 HW ₁₅₁	17.2	X	78.81059	151.35979	159.18759	10.37225	0.0884319	0.24160773	2.5530667	20	12 17.7	21.0
515577 2014 HF ₁₆₃	17.9	X	208.28157	174.62735	345.59688	8.23523	0.1924556	0.24387175	2.5372410	20	10 15.7	21.9
515578 2014 HG ₁₆₇	17.3	X	54.76731	176.37749	137.65548	7.19174	0.0701887	0.22374396	2.6872114	20	11 19.2	21.0
515579 2014 HK ₁₇₃	17.5	X	213.01635	77.64991	72.15982	13.92402	0.2046283	0.23530958	2.5984217	20	10 14.8	21.7
515580 2014 HU ₁₉₀	17.4	X	151.06625	61.91694	168.19949	12.20163	0.2484073	0.22977559	2.6399769	20	11 21.3	22.2
515581 2014 HH ₂₀₂	17.3	X	135.18299	116.44587	132.02573	14.52350	0.1307209	0.23413635	2.6070948	20	12 2.0	21.7
515582 2014 HA ₂₀₃	17.5	X	98.02036	220.41943	90.46957	6.49800	0.1488881	0.24003542	2.5642036	20	—	—
515583 2014 JV	16.6	X	93.97392	34.50575	265.37713	7.94512	0.2269675	0.22915057	2.6447752	20	12 26.3	21.1
515584 2014 JC ₁₂	17.7	X	87.98253	185.45954	100.75100	3.57309	0.1795792	0.22054836	2.7131064	20	12 1.1	21.9
515585 2014 JM ₁₂	17.0	X	167.59841	139.66522	63.93068	13.20471	0.1174789	0.22931590	2.6435038	20	11 7.2	21.1
515586 2014 JN ₁₂	17.5	X	91.66221	139.00278	104.15362	4.55198	0.0423202	0.20965906	2.8062539	20	9 29.4	21.4
515587 2014 JG ₁₃	17.1	X	57.11770	217.55237	82.02809	10.47963	0.1701683	0.21173693	2.7878644	20	11 15.3	21.2
515588 2014 JF ₁₄	17.2	X	261.95290	46.37539	73.69282	13.09914	0.1250926	0.23815028	2.5777175	20	11 12.6	20.4
515589 2014 JN ₁₆	16.8	X	119.68373	105.04214	204.53198	28.00821	0.3188326	0.23601858	2.5932154	20	—	—
515590 2014 JS ₂₂	17.3	X	127.16090	25.98128	210.27628	8.52563	0.1805723	0.21923772	2.7239086	20	11 6.3	21.9
515591 2014 JB ₂₇	17.1	X	94.50648	163.81257	127.65571	11.38389	0.1795818	0.22706166	2.6609713	20	12 15.1	21.5
515592 2014 JN ₃₁	17.4	X	87.04199	136.41620	148.49822	8.58255	0.1783718	0.21726940	2.7403351	20	11 29.5	21.8
515593 2014 JJ ₃₃	17.6	X	117.05250	118.41699	104.06579	4.40756	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>
515601 2014 <i>JL</i> ₆₄	17.1	X	249.12366	77.18853	63.24404	5.99779	0.0781852	0.23937236	2.5689365	20	11 25.9	20.4
515602 2014 <i>JD</i> ₆₅	17.0	X	77.02267	146.41859	123.14300	4.27131	0.0531123	0.21396356	2.7684892	20	10 16.8	20.9
515603 2014 <i>JN</i> ₆₅	17.4	X	178.66501	54.17888	154.96007	4.45781	0.0635684	0.23572118	2.5953961	20	11 28.9	21.1
515604 2014 <i>JT</i> ₇₃	17.2	X	147.46897	339.29279	227.98412	11.46274	0.1344825	0.21990806	2.7183703	20	10 17.8	21.7
515605 2014 <i>JK</i> ₈₄	17.1	X	267.16766	1.73916	109.08141	16.30044	0.0680016	0.23135641	2.6279375	20	11 17.6	20.7
515606 2014 <i>JA</i> ₈₅	17.4	X	209.35189	1.42684	174.57316	7.63727	0.1279039	0.23553972	2.5967289	20	11 15.9	21.3
515607 2014 <i>JC</i> ₈₅	17.2	X	203.13610	93.34911	69.22928	11.88140	0.0287354	0.22572524	2.6714639	20	11 2.9	20.9
515608 2014 <i>JG</i> ₈₅	17.2	X	357.14212	250.49453	121.22650	5.80974	0.0054876	0.22489387	2.6780436	20	11 9.8	20.8
515609 2014 <i>KM</i> ₁	17.2	X	129.73826	146.29326	104.73575	9.03029	0.2959804	0.22720148	2.6598794	20	11 29.4	22.1
515610 2014 <i>KA</i> ₁₇	17.4	X	92.68997	157.25207	133.91280	3.77823	0.1640042	0.22292946	2.6937528	20	12 10.6	21.6
515611 2014 <i>KF</i> ₁₉	17.1	X	162.26571	63.86576	88.91013	3.24378	0.0129745	0.20199382	2.8768066	20	8 27.0	21.1
515612 2014 <i>KC</i> ₃₆	16.8	X	172.04286	16.91631	165.61793	13.26268	0.1050459	0.22523721	2.6753213	20	10 17.2	21.0
515613 2014 <i>KM</i> ₄₁	17.6	X	120.30629	227.49864	24.94720	2.40242	0.1614249	0.22253152	2.6969633	20	11 18.5	21.8
515614 2014 <i>KF</i> ₄₅	16.8	X	115.15419	282.87149	36.70715	28.00427	0.3948516	0.23494990	2.6010730	20	—	—
515615 2014 <i>KZ</i> ₅₂	17.2	X	167.65814	75.87727	145.90062	4.25126	0.1866898	0.23298451	2.6156804	20	11 25.3	21.6
515616 2014 <i>KN</i> ₆₇	17.0	X	135.82410	126.69226	106.27425	7.30699	0.0187946	0.22123248	2.7075103	20	11 9.3	20.8
515617 2014 <i>KR</i> ₈₇	17.0	X	134.00951	129.96899	87.62506	15.08220	0.1005803	0.22051687	2.7133647	20	10 25.6	21.4
515618 2014 <i>KY</i> ₉₁	17.0	X	162.53591	103.04840	136.35769	13.87413	0.2336010	0.23593774	2.5938076	20	12 11.3	21.7
515619 2014 <i>KU</i> ₉₄	17.1	X	95.52710	134.78840	134.90699	9.61987	0.0743864	0.21610932	2.7501331	20	11 11.9	21.2
515620 2014 <i>KK</i> ₉₈	16.2	X	359.80993	219.55508	89.52708	9.59693	0.0821794	0.18652676	3.0337185	20	8 22.9	20.1
515621 2014 <i>KB</i> ₁₀₄	16.5	X	64.78157	247.57737	64.78582	17.78519	0.1228755	0.21836726	2.7311426	20	12 1.9	20.4
515622 2014 <i>KC</i> ₁₀₄	16.7	X	99.81614	256.18182	37.73635	11.82989	0.2039083	0.21521331	2.7577610	20	12 19.8	21.4
515623 2014 <i>KG</i> ₁₀₄	17.4	X	185.03208	353.66706	190.53996	11.70562	0.1263852	0.22640919	2.6660810	20	10 29.9	21.5
515624 2014 <i>KE</i> ₁₀₅	17.2	X	162.24852	41.28284	167.43973	9.57145	0.1743097	0.22372802	2.6873390	20	11 5.8	21.7
515625 2014 <i>KM</i> ₁₀₅	17.3	X	118.11154	200.25800	66.69469	3.12857	0.0127439	0.22668177	2.6639433	20	11 28.9	20.8
515626 2014 <i>LP</i>	16.6	X	155.62297	335.39531	254.32932	12.71371	0.1247712	0.22861284	2.6489208	20	11 24.3	20.8
515627 2014 <i>LW</i> ₃	17.0	X	26.41145	242.35254	95.57564	7.23281	0.0453007	0.21778586	2.7360010	20	11 8.3	20.6
515628 2014 <i>LA</i> ₆	17.1	X	257.42790	357.10588	99.29482	5.50125	0.0336882	0.21584027	2.7524181	20	10 15.1	20.8
515629 2014 <i>LL</i> ₁₂	17.4	X	137.26266	201.24203	55.80331	3.71496	0.1414021	0.22894759	2.6463381	20	12 9.9	21.5
515630 2014 <i>LJ</i> ₂₃	17.2	X	90.00444	171.77684	115.11925	9.76962	0.2528982	0.21502804	2.7593449	20	12 8.8	21.9
515631 2014 <i>LM</i> ₂₇	17.7	X	164.92947	52.21994	161.95203	12.56051	0.2415904	0.23102417	2.6304564	20	11 13.9	22.5
515632 2014 <i>LG</i> ₂₉	16.2	X	34.88548	148.61353	155.56156	11.84692	0.1638347	0.18096103	3.0956083	20	10 18.3	20.4
515633 2014 <i>LU</i> ₂₉	16.1	X	77.18088	37.40250	223.75691	9.69971	0.0597043	0.18462093	3.0545607	20	9 27.9	20.6
515634 2014 <i>MR</i> ₃	16.4	X	30.39803	66.13229	235.47870	12.32659	0.0884220	0.20190458	2.8776542	20	9 23.3	20.4
515635 2014 <i>MW</i> ₆	17.4	X	109.80676	102.63458	185.38171	12.45001	0.1812735	0.22580540	2.6708315	20	12 22.7	22.0
515636 2014 <i>MX</i> ₉	17.1	X	140.94782	176.24872	124.67337	7.76388	0.2093119	0.24285988	2.5442837	20	—	—
515637 2014 <i>MC</i> ₁₄	16.9	X	126.66715	145.35286	128.01256	14.75887	0.2524573	0.23228045	2.6209633	20	12 22.5	21.7
515638 2014 <i>MO</i> ₂₁	16.9	X	105.22889	4.51993	254.49952	8.10494	0.1063362	0.21576662	2.7563668	20	11 7.2	21.0
515639 2014 <i>MK</i> ₂₇	21.5	X	110.71200	349.45688	69.54550	8.48049	0.3391827	0.93023628	1.0392991	20	—	—
515640 2014 <i>MZ</i> ₃₂	16.5	X	34.75159	28.40973	263.89191	11.56269	0.0798244	0.19726912	2.9225591	20	9 13.5	20.6
515641 2014 <i>ML</i> ₃₅	17.1	X	89.77511	193.13065	79.10574	9.57367	0.2010623	0.21037091	2.7999198	20	11 17.5	21.6
515642 2014 <i>MF</i> ₅₇	16.4	X	39.42202	315.61750	316.82670	15.74388	0.2069471	0.17545489	3.1600387	20	9 9.9	20.6
515643 2014 <i>MH</i> ₆₄	16.8	X	84.61869	9.36823	270.23615	7.23332	0.2221493	0.19824316	2.9129783	20	11 19.1	21.5
515644 2014 <i>ME</i> ₇₂	16.6	X	10.42471	331.63585	351.95322	7.51714	0.0629540	0.18127754	3.0920040	20	9 20.8	20.5
515645 2014 <i>NZ</i> ₂₇	16.5	X	325.09796	211.65038	149.58059	11.27007	0.0981119	0.17471137	3.1689978	20	9 1.4	20.3
515646 2014 <i>NB</i> ₃₆	16.3	X	22.70239	274.69023	50.31511	13.87699	0.1915499	0.18023556	3.1039096	20	10 29.5	20.1
515647 2014 <i>NP</i> ₆₀	16.5	X	32.39713	344.18043	318.44843	9.80585	0.0737318	0.17701213	3.1414780	20	9 21.7	20.8
515648 2014 <i>OA</i> ₁₉	16.6	X	40.93794	2.36509	280.21923	6.36309	0.0609617	0.17894464	3.1188196	20	9 7.4	21.0
515649 2014 <i>OU</i> ₃₀	17.1	X	75.54647	186.99301	101.62078	3.08162	0.0849619	0.19788348	2.9165070	20	11 8.1	21.2
515650 2014 <i>OZ</i> ₃₇	17.1	X	68.91497	137.10189	130.41899	3.48533	0.0879788	0.18472851	3.0533747	20	10 3.9	21.4
515651 2014 <i>OT</i> ₄₁	17.0	X	107.98690	135.82130	96.55699	5.57386	0.1728190	0.19256082	2.9700067	20	10 14.3	21.8
515652 2014 <i>OA</i> ₄₆	16.2	X	78.21490	285.34478	310.57543	8.10089	0.0452440	0.17557478	3.1586000	20	8 26.2	20.7
515653 2014 <i>OY</i> ₇₇	16.2	X	0.06737	222.75813	86.02031	11.23957	0.0729898	0.17324645	3.1868368	20	8 21.4	20.5
515654 2014 <i>OL</i> ₇₉	16.4	X	312.31318	332.47513	48.60629	5.18933	0.1096680	0.17895586	3.1186893	20	9 9.0	20.3
515655 2014 <i>OP</i> ₈₄	16.4	X	181.78691	25.21473	103.63883	10.24453	0.0410123	0.17600317	3.1534726	20	8 17.9	21.1
515656 2014 <i>OX</i> ₈₇	16.8	X	217.24135	273.53041	203.73725	5.71132	0.0051005	0.18345260	3.0675158	20	9 15.3	21.2
515657 2014 <i>OB</i> ₁₀₅	16.9	X	108.01825	146.82596	134.58934	14.42350	0.1687109	0.22790063	2.6544366	20	12 15.2	21.4
515658 2014 <i>OH</i> ₁₃₁	16.7	X	125.21506	87.61808	182.97058	14.63394	0.0831182	0.22858733	2.6491179	20	12 14.7	21.0
515659 2014 <i>OW</i> ₁₃₃	15.9	X	188.29554	17.81560	113.17560	17.31473	0.1008872	0.17778237	3.1323979	20	8 26.6	20.9
515660 2014 <i>OA</i> ₁₈₃	16.5	X	58.59416	294.67503	340.72603	14.22978	0.1672712	0.18040434	3.1019733	20	10 4.8	21.1
515661 2014 <i>OZ</i> ₁₉₀	16.0	X	66.99090	306.67637	348.37046	17.18524	0.3025597	0.18548534	3.0450633	20	11 23.3	21.2
515662 2014 <i>OE</i> ₂₀₁	16.3	X	23.55706	161.68662	131.63060	18.54622	0.1224942	0.17414020	3.1759234	20	9 10.7	20.5
515663 2014 <i>OM</i> ₂₂₆	16.2	X	32.54752	212.88000	74.57838	6.81909	0.1609427	0.17212917	3.2006122	20	9 21.8	20.3
515664 2014 <i>OV</i> ₂₄₅	16.4	X	78.79717	267.58312	351.66059	9.46123	0.0723085	0.18834122	3.0142027	20	9 30.6	20.7
515665 2014 <i>OH</i> ₂₅₉	16.2	X	344.09021	359.25819	341.16946	9.30414	0.0386083	0.17460167	3.1703250	20	9 3.6	20.4
515666 2014 <i>OY</i> ₂₈₅	16.4	X	18.96384	225.94064	98.88059	12.28175	0.1149800	0.17874699	3.1211182	20	10 17.1	20.6
515667 2014 <i>OE</i> ₂₉₀	15.7	X	35.41319	170.71480	123.58826	19.83883	0.1479516	0.17648351	3.1477481	20	10 7.9	20.2
515668 2014 <i>OP</i> ₃₀₆	16.8	X	326.55347	253.95527	120.42562	5.97175	0.0180321	0.18213259	3.0823191	20	9 27.3	21.1
515669 2014 <i>OH</i> ₃₁₇	16.3	X	104.31669	86.98555	152.86608	16.46953	0.0888958	0.17394010	3.1783586	20	10 11.5	21.2
515670 2014 <i>OG</i> ₃₂₂	16.6	X	349.55189	213.87479	123.00602	12.55013	0.0268573	0.17836255	3.1256014	20	9 10.6	20.9
515671 2014 <i>OK</i> ₃₂₈	16.8	X	32.31846	160.32816	134.83962							

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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>		
515681	2014	OA ₄₀₁	17.1	X	193.01165	65.62432	87.19529	2.45176	0.0134953	0.18108654	3.0941778	20	10 1.3	21.4
515682	2014	OV ₄₀₁	16.4	X	53.28943	144.98465	135.20881	8.20447	0.1272557	0.18157483	3.0886281	20	10 7.2	20.7
515683	2014	OG ₄₀₂	16.1	X	143.87474	139.41561	18.29134	5.99863	0.0511949	0.15554377	3.4242672	20	8 9.1	21.2
515684	2014	PA ₁	16.3	X	65.88179	146.56033	125.13859	3.55466	0.0911075	0.18444477	3.0565053	20	10 6.0	20.6
515685	2014	PL ₂	15.9	X	208.18409	271.21612	115.85710	4.08068	0.2140278	0.12400141	3.9827676	20	5 5.3	22.4
515686	2014	PG ₁₀	17.0	X	56.48569	159.46549	121.66342	5.70067	0.1165754	0.18049069	3.1009839	20	10 10.2	21.3
515687	2014	PB ₂₃	17.0	X	119.63724	134.83242	146.81610	21.39795	0.2458745	0.21378648	2.7700178	20	12 24.8	22.2
515688	2014	PC ₃₄	17.1	X	215.11038	339.15004	2.23175	6.87276	0.1458238	0.27589794	2.3368836	20	3 12.3	20.5
515689	2014	PX ₆₁	16.6	X	16.59637	334.43051	321.74325	10.04040	0.2297034	0.17662964	3.1460116	20	9 10.1	20.1
515690	2014	PN ₇₂	16.5	X	105.45683	95.29895	136.70859	6.28044	0.1240622	0.17465977	3.1696219	20	10 4.9	21.4
515691	2014	QY ₄₂	15.9	X	306.22555	207.93952	129.74519	28.95933	0.1798200	0.17481682	3.1677233	20	6 24.8	20.3
515692	2014	QD ₄₉	16.4	X	94.74811	4.78416	239.19798	5.08443	0.1045177	0.18749639	3.0232503	20	10 3.8	21.0
515693	2014	QF ₅₄	16.5	X	90.67242	7.68393	226.65386	4.06554	0.1073807	0.18064379	3.0992316	20	9 17.1	21.2
515694	2014	QI ₆₀	16.6	X	61.02676	331.46757	294.83582	3.81386	0.2145704	0.18340595	3.0680359	20	10 6.8	21.1
515695	2014	QM ₉₁	16.5	X	38.00550	109.95489	195.36566	11.53933	0.1329837	0.17321087	3.1872731	20	9 19.4	20.5
515696	2014	QS ₁₀₈	16.3	X	15.05308	84.36357	237.45898	7.49257	0.0624781	0.17768060	3.1335939	20	9 21.9	20.5
515697	2014	QU ₁₁₉	17.1	X	62.15630	126.98023	152.12128	1.27930	0.1269892	0.17717060	3.1396045	20	10 13.3	21.5
515698	2014	QV ₁₂₂	16.6	X	101.42898	261.89303	344.47502	7.80337	0.1263817	0.18071960	3.0983648	20	10 13.9	21.4
515699	2014	QL ₁₇₃	17.1	X	66.85746	116.16857	166.36725	6.10546	0.1488698	0.18034208	3.1026872	20	10 27.6	21.7
515700	2014	QF ₁₈₉	16.2	X	139.11624	311.19707	240.57490	3.53499	0.0637848	0.17322615	3.1870857	20	9 12.9	21.0
515701	2014	QD ₂₀₁	16.1	X	134.41895	266.86228	287.26462	4.49078	0.1282016	0.17189878	3.2034714	20	9 13.4	21.2
515702	2014	QU ₃₃₉	16.7	X	63.91582	136.03383	149.75613	14.07871	0.0514027	0.18461993	3.0545718	20	10 18.2	21.2
515703	2014	QB ₃₄₀	16.6	X	39.18392	123.74173	152.29024	14.57976	0.2712775	0.17575430	3.1564488	20	10 4.1	20.8
515704	2014	QD ₃₆₆	15.4	X	35.19593	308.73179	358.98320	18.81689	0.1449156	0.17246068	3.1965094	20	10 10.3	19.7
515705	2014	QS ₃₇₅	16.6	X	63.09070	98.34864	194.25597	8.98589	0.0711168	0.17525146	3.1624837	20	10 23.2	21.0
515706	2014	QT ₃₈₀	16.2	X	83.35231	280.40493	344.05479	11.75573	0.2392324	0.17862067	3.1225895	20	10 26.3	21.4
515707	2014	QZ ₃₈₃	16.1	X	75.71634	320.25585	330.60479	16.17711	0.2488356	0.19088667	2.9873468	20	11 22.5	21.2
515708	2014	QL ₄₄₇	15.9	X	54.41223	206.10248	132.59559	10.71817	0.1345643	0.18498053	3.0506007	20	12 17.9	20.4
515709	2014	QZ ₄₄₉	16.6	X	76.21647	220.72339	53.10527	6.85343	0.2411210	0.17650519	3.1474902	20	11 4.9	21.6
515710	2014	QZ ₄₅₀	16.5	X	42.57959	229.10390	59.80768	6.02192	0.1970545	0.17333031	3.1858088	20	10 12.0	20.7
515711	2014	RT ₇	16.9	X	94.95785	95.96036	160.31133	10.91362	0.0843857	0.17947694	3.1126499	20	10 20.3	21.6
515712	2014	SF ₆₀	16.1	X	40.11936	152.29251	146.80997	13.39373	0.2347399	0.17695803	3.1421183	20	10 30.0	20.5
515713	2014	SM ₂₂₃	16.7	X	101.72900	240.30017	53.44117	7.74866	0.3079620	0.20560446	2.8430273	20	12 25.2	21.9
515714	2014	TT ₃	16.1	X	13.40320	339.76543	35.31110	4.40854	0.0417374	0.17614537	3.1517752	20	11 24.9	20.5
515715	2014	TR ₆₁	15.6	X	85.34899	67.28043	230.09648	9.73319	0.1154781	0.17830112	3.1263193	20	11 28.3	20.2
515716	2014	UD ₆₄	15.7	X	53.93522	312.77752	20.57279	9.55637	0.0648697	0.17948645	3.1125400	20	11 27.6	20.1
515717	2014	UX ₁₈₂	14.0	X	122.41117	20.09764	87.05684	8.54918	0.0769234	0.08404612	5.1616785	20	5 17.7	21.1
515718	2014	UQ ₁₉₄	14.1	X	146.44224	41.37674	46.01962	20.60368	0.2206711	0.09002506	4.9305320	20	5 23.2	21.6
515719	2014	VJ ₂	18.3	X	297.02602	325.14941	217.63980	20.03537	0.0826595	0.38869908	1.8594894	20	—	—
515720	2014	VL ₂	17.7	X	3.71657	260.15287	180.86418	21.84065	0.1143474	0.36818577	1.9279305	20	—	—
515721	2014	WM ₂₂₀	14.2	X	160.25432	34.27497	34.28516	8.81188	0.0969046	0.08443513	5.1458123	20	5 10.3	21.5
515722	2014	WE ₂₄₂	15.5	X	129.73708	304.44439	261.64415	14.28526	0.2113440	0.17844310	3.1246607	20	9 23.3	21.1
515723	2014	WR ₂₄₆	15.8	X	76.82732	227.62880	50.25850	12.07220	0.1735181	0.17729368	3.1381513	20	11 3.6	20.5
515724	2014	WZ ₃₆₄	18.6	X	303.77556	312.45112	206.27490	20.70177	0.0658494	0.37627883	1.9001863	20	—	—
515725	2014	WT ₃₆₆	17.5	X	110.61109	30.45940	311.07780	17.09381	0.0791790	0.36702589	1.9319902	20	—	—
515726	2014	WD ₃₈₇	13.8	X	232.12255	272.07043	86.12748	29.19552	0.056270	0.08160423	5.2641420	20	5 17.4	21.0
515727	2014	WF ₄₀₃	13.9	X	173.72637	330.75671	79.42267	6.99438	0.0515782	0.08217716	5.2396464	20	5 4.3	21.0
515728	2014	WS ₄₉₀	13.6	X	246.13671	243.75497	108.32520	31.07040	0.0534916	0.08225301	5.2364245	20	5 22.8	21.0
515729	2014	WV ₅₀₀	16.8	X	114.48163	244.55398	78.01308	12.00895	0.3403920	0.21185665	2.7868140	20	—	—
515730	2014	WT ₅₁₀	14.1	X	347.21880	104.15445	144.01529	18.69889	0.0969410	0.08211084	5.2424672	20	5 16.4	20.8
515731	2014	WS ₅₁₁	17.8	X	200.51028	175.04371	88.09321	24.07544	0.0584267	0.35729308	1.9669183	20	—	—
515732	2014	XW ₃₁	18.1	X	291.15717	216.73006	31.575871	17.99466	0.0968201	0.36791210	1.9288865	20	—	—
515733	2014	YX ₄₃	18.5	X	140.54635	5.96760	332.07777	17.96833	0.0677643	0.37542453	1.9030679	20	—	—
515734	2014	YX ₅₀	17.8	X	319.03766	357.96158	182.83855	23.68374	0.0461263	0.36772053	1.9295563	20	—	—
515735	2014	YX ₅₀	18.5	X	101.30031	16.09517	338.16765	18.93966	0.0723199	0.35887684	1.9611272	20	—	—
515736	2014	YA ₅₂	18.6	X	241.26481	286.10931	303.45747	17.15905	0.0506435	0.36303018	1.9461407	20	—	—
515737	2015	AL ₂₆	18.4	X	353.02030	120.04533	4.59355	19.61616	0.0896828	0.36201633	1.9497725	20	—	—
515738	2015	AW ₉₅	13.7	X	48.45484	18.50386	190.20382	20.41002	0.0491090	0.08309419	5.2010250	20	6 13.6	20.7
515739	2015	BV ₁₀₁	16.5	X	357.91618	209.00572	329.38360	0.47572	0.1716012	0.19102296	2.9859258	20	2 16.8	19.8
515740	2015	BO ₂₉₈	17.6	X	158.22978	47.74811	93.26457	3.28079	0.1458061	0.25934772	2.4352736	20	8 12.2	21.3
515741	2015	BO ₅₁₂	18.0	X	356.70711	172.70516	295.18834	19.63605	0.0395273	0.36193609	1.9500607	20	—	—
515742	2015	CU	20.8	X	331.63659	197.80929	154.06874	35.37583	0.2038629	1.02958799	0.9713157	20	—	—
515743	2015	CY ₂₄	18.7	X	292.89461	184.68779	336.21368	18.22465	0.1132062	0.33902991	2.0369360	20	—	—
515744	2015	CX ₆₁	17.6	X	238.26006	61.73790	177.63870	23.67902	0.0678865	0.34648775	2.0076012	20	—	—
515745	2015	DT ₂₃₀	17.9	X	112.90926	229.41646	47.47753	9.56347	0.0444926	0.28764022	2.2728441	20	12 20.2	20.9
515746	2015	EB ₃₉	17.9	X	121.56379	307.61368	350.43559	4.57229	0.2168213	0.31279260	2.1493067	20	—	—
515747	2015	FH ₁	16.9	X	80.23520	109.18153	10.58660	13.59443	0.1529172	0.22109582	2.7086259	20	4 15.0	20.4
515748	2015	FQ ₆	18.3	X	154.90415	166.51090	145.60247	24.34371	0.0791521	0.35835005	1.9630487	20	—	—
515749	2015	FN ₄₀	18.4	X	197.13712	14.51424	208.10614	6.67739	0.1063969	0.30367430	2.1921185	20	—	—
515750	2015	FD ₇₆	16.9	X	172.38176	52.28446	35							

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>
515761 2015 GH ₃₄	18.3	X	160.50041	136.28604	124.70642	7.94726	0.1738160	0.29697660	2.2249550	20	—	—
515762 2015 HT ₁₅	17.9	X	188.77717	195.01477	46.13784	4.64052	0.1251128	0.30659764	2.1781620	20	—	—
515763 2015 HJ ₃₆	17.7	X	126.65123	183.54354	108.74400	7.31195	0.1388275	0.29541449	2.2327916	20	—	—
515764 2015 HC ₈₄	18.1	X	168.72606	178.44040	97.89098	2.67838	0.1349336	0.30939124	2.1650306	20	—	—
515765 2015 HC ₉₂	17.9	X	75.79843	132.71549	168.92482	2.83993	0.1808492	0.26653215	2.3913124	20	12 16.5	21.6
515766 2015 HH ₁₈₆	18.2	X	133.39526	102.69470	178.72648	4.56079	0.0500955	0.29478863	2.2359507	20	—	—
515767 2015 JA ₂	21.1	X	174.05319	246.21343	126.61883	16.42134	0.3492133	0.93716573	1.0341696	20	—	—
515768 2015 JR ₃	17.8	X	102.33199	304.78155	352.96793	6.66333	0.1818155	0.27883314	2.3204548	20	—	—
515769 2015 KK ₁₀	16.9	X	350.59014	235.67199	120.11359	14.39488	0.2163408	0.24162134	2.5529708	20	11 7.9	19.6
515770 2015 KW ₂₅	17.9	X	244.49260	235.08502	271.04131	2.14505	0.1079890	0.28867837	2.2673917	20	12 5.4	20.4
515771 2015 KB ₂₉	18.0	X	143.86392	17.93894	277.30337	4.84420	0.1563000	0.30092676	2.2054413	20	—	—
515772 2015 KX ₃₆	18.1	X	116.09561	196.56075	116.59791	3.93141	0.2461839	0.27317856	2.3523664	20	—	—
515773 2015 KS ₃₈	18.3	X	132.43991	176.88287	211.62050	5.27147	0.2048023	0.29298967	2.2450939	20	—	—
515774 2015 KX ₃₈	16.0	X	73.34164	262.86699	134.49222	12.95066	0.1682477	0.17581433	3.1557302	20	4 9.1	20.3
515775 2015 KX ₄₉	18.5	X	161.95167	200.02924	71.51151	5.85434	0.1611472	0.29474002	2.2361966	20	—	—
515776 2015 KZ ₅₁	16.1	X	41.86968	247.60355	72.22064	7.11218	0.2531417	0.24380407	2.5377105	20	12 8.2	19.5
515777 2015 KX ₅₂	18.3	X	190.34032	8.58449	221.88803	5.15359	0.1667114	0.29383157	2.2408034	20	—	—
515778 2015 KW ₅₅	18.0	X	109.62277	212.94634	88.54690	4.54250	0.2480102	0.27438120	2.3454876	20	—	—
515779 2015 KN ₇₄	17.4	X	24.85333	233.92130	117.05043	7.45138	0.1899416	0.26155206	2.4215715	20	12 23.5	20.5
515780 2015 KC ₈₈	18.4	X	126.53294	120.51640	139.15846	4.95917	0.1081916	0.27641638	2.3339607	20	12 12.4	21.8
515781 2015 KF ₁₃₇	18.4	X	161.62351	190.21743	50.43017	6.09904	0.1235828	0.28580376	2.2825699	20	12 24.9	21.7
515782 2015 KV ₁₄₆	17.5	X	28.94608	170.96686	143.98478	12.60427	0.0726233	0.24163263	2.5528913	20	10 23.8	20.9
515783 2015 KY ₁₄₇	16.7	X	59.92528	227.59342	67.07390	10.56253	0.1999257	0.23835531	2.5762391	20	11 19.5	20.3
515784 2015 KD ₁₅₁	17.6	X	121.91334	165.33503	97.23575	10.70782	0.1255587	0.27595007	2.3365893	20	12 11.6	21.1
515785 2015 KC ₁₅₄	17.8	X	87.53303	197.33749	88.01809	3.22771	0.1874695	0.25919962	2.4362011	20	12 6.6	21.7
515786 2015 KD ₁₆₁	17.9	X	167.85594	199.54051	72.02632	6.62553	0.1387101	0.29975135	2.2112030	20	—	—
515787 2015 KO ₁₆₅	16.3	X	291.86213	223.17416	149.86899	16.83216	0.1175239	0.18394468	3.0620426	20	7 24.7	20.5
515788 2015 KY ₁₆₅	18.4	X	101.39992	138.52656	142.33162	1.55248	0.1310190	0.26540487	2.3980789	20	12 11.9	22.0
515789 2015 LD ₁₅	17.0	X	26.35398	76.67731	252.16175	13.81695	0.1516187	0.24225580	2.5485115	20	11 14.2	20.2
515790 2015 LK ₂₀	16.6	X	62.10695	58.08914	237.18600	13.90674	0.0906051	0.23216026	2.6218678	20	11 5.9	20.3
515791 2015 LT ₂₁	17.2	X	96.83145	35.79970	257.12329	8.32404	0.2161173	0.26759634	2.3849683	20	12 26.2	21.2
515792 2015 LC ₂₂	16.6	X	358.37574	222.35362	104.51404	11.27759	0.3183925	0.21927928	2.7235644	20	10 20.5	19.1
515793 2015 LB ₂₃	17.7	X	77.46072	209.75281	111.97723	3.39809	0.2007155	0.26629460	2.3927343	20	—	—
515794 2015 LR ₂₇	18.2	X	137.04892	55.74172	203.50600	4.43190	0.1747027	0.27685864	2.3314744	20	12 20.6	21.9
515795 2015 LA ₃₆	16.5	X	80.12927	51.46037	232.15487	14.33093	0.1284932	0.23910053	2.5708833	20	11 18.6	20.1
515796 2015 LS ₃₈	16.5	X	17.99577	328.86922	281.18319	10.86655	0.0826400	0.18805570	3.0172529	20	6 29.4	20.3
515797 2015 LR ₃₉	17.0	X	74.33894	64.88809	235.78806	10.51297	0.1709748	0.24241167	2.5474189	20	12 8.4	20.8
515798 2015 LG ₄₂	16.8	X	43.66049	21.48433	291.31638	10.77594	0.0700519	0.23598783	2.5934407	20	10 30.5	20.4
515799 2015 LK ₄₂	16.7	X	29.25115	199.75680	111.49109	14.05799	0.0951510	0.22520484	2.6755777	20	10 21.7	20.4
515800 2015 LL ₄₂	17.0	X	334.55472	226.73390	131.85440	5.76070	0.0732325	0.21825560	2.7320739	20	9 22.6	20.2
515801 2015 MK ₆	17.5	X	65.51438	168.86153	141.30902	3.43686	0.1104082	0.24567471	2.5248122	20	12 5.5	21.1
515802 2015 MR ₇	17.2	X	85.10926	144.85566	116.72823	15.93102	0.0602993	0.23104768	2.6302779	20	10 25.9	21.2
515803 2015 MK ₉	17.0	X	350.02696	184.61016	140.98827	13.01513	0.0845025	0.21111128	2.7933697	20	8 31.1	20.3
515804 2015 MO ₉	18.1	X	169.70790	48.64769	210.67648	2.43111	0.0970573	0.28057855	2.3108216	20	—	—
515805 2015 ME ₁₂	17.9	X	137.94842	282.85979	350.54911	3.99496	0.1489254	0.27290442	2.3539415	20	—	—
515806 2015 MC ₂₆	18.3	X	104.00011	21.85370	266.98266	6.08928	0.1114320	0.27620701	2.3514002	20	12 25.6	21.8
515807 2015 MT ₄₆	17.9	X	171.10303	187.87518	64.52796	5.11055	0.1782669	0.27458435	2.3443306	20	—	—
515808 2015 MY ₄₇	17.6	X	156.84227	222.60102	82.75119	7.12931	0.1338262	0.28646864	2.2790367	20	—	—
515809 2015 MP ₄₉	17.3	X	97.50806	289.74354	23.37885	8.42880	0.1738819	0.25523106	2.4613896	20	—	—
515810 2015 MU ₅₀	17.0	X	92.82941	286.13840	344.77376	14.51657	0.1032715	0.23115193	2.6294870	20	11 6.3	21.2
515811 2015 MW ₅₀	16.9	X	2.99614	266.77915	78.38087	10.88663	0.1724913	0.21715347	2.7413103	20	10 31.9	20.0
515812 2015 ME ₅₂	17.7	X	122.69898	198.03901	115.51430	7.53510	0.1343901	0.27592168	2.7336749	20	—	—
515813 2015 MJ ₅₄	16.8	X	168.74758	8.35067	217.28268	25.34891	0.2099994	0.27807218	2.3246863	20	12 4.7	20.8
515814 2015 MS ₅₆	18.0	X	155.53496	162.67152	107.34287	6.54449	0.1566448	0.27928552	2.3179484	20	—	—
515815 2015 MF ₅₇	16.8	X	24.60929	52.55016	286.03191	13.39296	0.0203982	0.23867113	2.5739659	20	10 31.7	20.4
515816 2015 MC ₅₈	17.8	X	105.03129	224.26687	72.79568	2.19882	0.1872918	0.26146874	2.4220858	20	—	—
515817 2015 MZ ₇₄	18.0	X	142.03933	108.46045	143.34816	3.82380	0.0921065	0.26089479	2.4256368	20	12 15.4	21.6
515818 2015 MO ₇₉	17.7	X	161.53457	322.72484	263.61732	6.54191	0.0890438	0.25749877	2.4469172	20	12 3.1	21.2
515819 2015 ME ₈₅	18.6	X	177.53030	93.64504	151.88218	1.58121	0.1586578	0.27832854	2.3232586	20	—	—
515820 2015 MX ₉₀	15.8	X	250.64436	240.07038	178.87710	27.09432	0.2446161	0.17036192	3.2227086	20	7 12.6	21.3
515821 2015 MU ₁₀₆	17.6	X	96.62732	150.04440	152.36425	3.22703	0.1570440	0.25811220	2.4430388	20	—	—
515822 2015 MS ₁₁₁	17.9	X	200.57504	253.88311	330.04648	3.14451	0.1389535	0.28041202	2.3117363	20	—	—
515823 2015 MM ₁₁₄	16.0	X	251.86711	181.84958	219.90339	11.67484	0.0930901	0.18871571	3.0102138	20	7 11.4	20.5
515824 2015 MD ₁₁₅	17.0	X	73.37122	151.28269	148.46192	14.82260	0.1072145	0.24158564	2.5532224	20	12 2.6	21.0
515825 2015 ML ₁₁₇	18.2	X	175.11478	249.35533	16.52684	2.93782	0.2088604	0.28745530	2.2738187	20	—	—
515826 2015 ML ₁₂₁	17.2	X	34.76131	143.92264	161.72057	10.40072	0.2325964	0.21746630	2.7386807	20	11 6.5	20.9
515827 2015 MG ₁₂₆	17.8	X	83.80408	256.77762	36.86020	0.86780	0.2232238	0.24652214	2.5190228	20	12 13.4	21.9
515828 2015 MV ₁₃₄	16.9	X	316.66324	204.08863	128.95766	2.04514	0.1790195	0.18216041	3.0820054	20	7 2.3	20.3
515829 2015 MF ₁₃₅	16.6	X	60.14394	157.10002	145.15895	10.61505	0.1964556	0.21991384	2.7183227	20	11 27.0	20.8
515830 2015 MJ ₁₃₅	17.6	X	55.66249	284.85424	20.06212	3.02030	0.1579809	0.23439915	2.6051458	20	11 20.2	21.2
515831 2015 MF ₁₃₆	16.9	X	45.28606	168.23043	120.88576	7.03134	0.1148032	0.22176232	2.7031960	20	10 13.4	20.5
515832 2015 MV ₁₃₆	17.4	X	39.58584	108.66192	223.16530	1.39038	0.0881471	0.22914973	2.6447816	20	11 24.3	20.9
515833 2015 MK ₁₃₇	17.7	X	174.72156	198.70412	27.90491	2.95910	0.1185511	0.25872595	2.4391737	20	12 15.5	21.3
515834 2015 NP ₄	17.6	X	110.49001	111.96054	182.09166	5.43990	0.1453103</					

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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>
515841 2015 OB ₂	17.9	X	112.06296	124.68184	175.09966	4.66012	0.2134045	0.26364111	2.4087624	20	—	—
515842 2015 OO ₁₀	17.9	X	199.78425	171.33698	43.37700	2.30056	0.1424855	0.27371004	2.3493203	20	12 28.9	20.9
515843 2015 OY ₁₅	17.4	X	60.27541	338.53986	332.68787	10.29245	0.1282961	0.23720058	2.5845933	20	11 28.6	21.2
515844 2015 OX ₁₇	17.2	X	354.18477	340.85663	355.89237	3.57675	0.1044200	0.21265834	2.7798057	20	9 22.3	20.3
515845 2015 OY ₂₇	16.6	X	295.15209	217.42655	139.80081	11.33513	0.2190199	0.17472933	3.1687807	20	6 23.8	20.8
515846 2015 OK ₃₁	16.7	X	307.05512	2.94458	348.46692	11.68722	0.2057851	0.18186649	3.0853251	20	7 9.4	20.6
515847 2015 OL ₃₂	17.5	X	156.19976	201.65580	96.49957	8.07538	0.1255837	0.27739785	2.3284522	20	—	—
515848 2015 OH ₃₆	18.1	X	168.83068	126.46380	154.87043	3.76487	0.2350533	0.28410679	2.2916501	20	—	—
515849 2015 OU ₃₆	17.0	X	7.66629	227.42596	149.28091	15.45442	0.0943050	0.23543595	2.5974919	20	12 13.5	20.5
515850 2015 OE ₃₇	16.6	X	269.43634	304.43706	155.75791	22.09346	0.0396119	0.22840870	2.6504988	20	11 9.9	20.5
515851 2015 OH ₅₃	16.4	X	258.16265	324.73680	72.63290	9.72646	0.0909721	0.18354896	3.0664420	20	7 17.0	20.8
515852 2015 OD ₅₅	17.0	X	167.51802	167.91480	82.60583	13.94351	0.1458290	0.26890891	2.3772011	20	—	—
515853 2015 OP ₆₈	17.4	X	13.38566	72.29940	255.38610	3.75342	0.1123361	0.22023707	2.7156623	20	10 12.3	20.6
515854 2015 OW ₇₁	17.6	X	5.57906	78.33972	283.60012	1.63402	0.0990638	0.23268406	2.6179316	20	11 18.0	20.5
515855 2015 OA ₇₃	17.2	X	42.14480	176.11995	139.41295	10.11629	0.0882911	0.23027072	2.6361912	20	11 10.6	20.8
515856 2015 OJ ₇₆	17.5	X	73.12127	149.50944	169.93987	5.58437	0.2378101	0.23787167	2.5797299	20	—	—
515857 2015 OJ ₇₇	15.9	X	312.41787	6.88435	346.41986	9.82579	0.0972385	0.17760624	3.1344684	20	8 4.4	19.9
515858 2015 OX ₈₂	17.2	X	262.64275	358.87062	67.10831	3.03644	0.0412493	0.20045830	2.8914789	20	9 7.7	21.2
515859 2015 ON ₈₄	17.0	X	44.00403	159.24132	162.39863	13.18050	0.1623522	0.21649804	2.7468402	20	11 27.6	21.0
515860 2015 OD ₈₅	16.2	X	303.70534	306.46176	75.97573	10.56466	0.1081271	0.18816721	3.0160608	20	9 1.4	20.2
515861 2015 OH ₈₅	17.1	X	110.53012	298.59783	337.27226	2.85162	0.0675106	0.22769236	2.6560551	20	12 3.8	21.0
515862 2015 OD ₈₆	17.4	X	87.30687	283.15953	55.08735	7.61007	0.1317871	0.26778988	2.3838190	20	—	—
515863 2015 OG ₈₆	17.5	X	6.65649	254.71601	63.55809	3.00872	0.0677868	0.20155112	2.8810176	20	9 14.2	21.1
515864 2015 OF ₈₇	17.7	X	120.78733	171.09351	98.09340	2.29192	0.0143917	0.23827268	2.5768346	20	12 7.9	21.0
515865 2015 OF ₈₇	17.9	X	98.18360	240.07381	75.97382	2.44848	0.1123223	0.23609016	2.5926912	20	11 28.1	21.6
515866 2015 OQ ₈₇	17.5	X	92.45975	138.40400	164.83785	11.57996	0.0682247	0.24582117	2.5238092	20	12 22.6	21.3
515867 2015 OE ₈₈	16.9	X	329.42572	181.98625	181.24121	9.17804	0.1031537	0.19159769	2.9799516	20	9 12.1	20.4
515868 2015 OM ₈₈	16.6	X	5.67569	348.04021	313.09543	9.22421	0.1161663	0.18846936	3.0128364	20	8 19.2	20.1
515869 2015 OS ₈₈	17.1	X	359.59685	231.72545	121.06729	6.64564	0.0522960	0.21738943	2.7393263	20	10 22.9	20.6
515870 2015 OU ₈₈	16.6	X	114.38708	280.63143	296.13512	7.80247	0.0420507	0.19898393	2.9057442	20	9 15.3	20.9
515871 2015 PO ₁	17.3	X	37.63180	181.47118	165.15448	8.03729	0.1734467	0.23837058	2.5761291	20	12 25.1	21.0
515872 2015 PV ₂	17.1	X	41.02485	164.61253	172.84730	14.59708	0.2734490	0.23219467	2.6216088	20	12 28.8	21.2
515873 2015 PE ₃	17.6	X	112.65102	67.61587	226.50826	3.04936	0.1895030	0.25661324	2.4525433	20	—	—
515874 2015 PK ₃	16.2	X	315.59547	225.99122	119.42820	12.28472	0.1770824	0.18614912	3.0378201	20	7 18.2	19.8
515875 2015 PB ₄	17.5	X	122.39554	285.99559	4.38510	8.74501	0.2236510	0.26133026	2.4229414	20	—	—
515876 2015 PC ₄	17.3	X	74.67473	264.03250	54.72452	6.14344	0.2393120	0.24368660	2.5385260	20	—	—
515877 2015 PA ₆	16.5	X	34.64296	59.36310	295.58201	7.52134	0.0544859	0.24668132	2.5179390	20	12 17.0	19.7
515878 2015 PT ₉	18.2	X	111.26394	108.26715	192.62226	0.71572	0.1753596	0.26337061	2.4104114	20	—	—
515879 2015 PY ₁₂	17.1	X	108.11953	132.42237	171.93809	15.90260	0.1144453	0.25916226	2.4364353	20	—	—
515880 2015 PY ₂₆	17.2	X	54.91699	289.56243	75.64137	3.72463	0.1914704	0.25690511	2.4506853	20	—	—
515881 2015 PL ₂₆	16.9	X	336.42155	28.85633	345.63144	7.73674	0.2198663	0.21493073	2.7601777	20	10 14.8	19.4
515882 2015 PO ₂₆	17.5	X	48.17751	316.52051	329.82929	13.25121	0.1061752	0.22023965	2.7156411	20	10 2.3	21.3
515883 2015 PB ₃₀	17.3	X	129.47171	55.32096	205.69862	4.05937	0.0861129	0.24593564	2.5230261	20	12 10.7	21.0
515884 2015 PB ₃₁	17.4	X	103.00632	110.91428	196.01759	5.49083	0.1052758	0.25285147	2.4768083	20	—	—
515885 2015 PP ₃₅	17.7	X	132.82140	209.74395	40.06166	5.09101	0.0616664	0.24358743	2.5392150	20	11 28.8	21.2
515886 2015 PR ₃₆	16.9	X	45.49641	240.88997	47.21493	6.26660	0.0873780	0.21397765	2.7683677	20	10 5.5	20.6
515887 2015 PE ₃₇	17.0	X	348.41162	318.85343	35.73463	5.56141	0.0546942	0.21421502	2.7663222	20	10 6.5	20.5
515888 2015 PH ₃₈	17.7	X	167.21213	169.44359	69.15661	3.62766	0.1271235	0.26054246	2.4278231	20	12 22.6	21.3
515889 2015 PY ₃₈	17.2	X	81.13784	141.94284	131.13002	13.57326	0.1492728	0.22920277	2.6443390	20	11 11.8	21.4
515890 2015 PH ₄₀	17.0	X	23.76719	166.49194	120.73081	12.17928	0.0859670	0.19940820	2.9016212	20	9 1.4	20.7
515891 2015 PC ₄₂	17.1	X	355.71660	310.96713	55.34810	7.27147	0.0664862	0.22365800	2.6878999	20	11 4.4	20.4
515892 2015 PK ₄₃	17.0	X	270.61084	53.87180	52.88776	8.97618	0.0826954	0.23039124	2.6352718	20	11 9.1	20.1
515893 2015 PY ₄₄	17.2	X	175.14387	161.77043	83.65456	8.01099	0.1515879	0.26742018	2.3860155	20	—	—
515894 2015 PR ₄₅	16.9	X	317.58836	336.76482	60.07436	7.44498	0.0478448	0.21558697	2.7545735	20	10 18.7	20.4
515895 2015 PD ₄₆	17.2	X	34.88926	227.74519	84.82722	6.14637	0.1192686	0.21786500	2.7353384	20	10 28.7	20.7
515896 2015 PG ₄₈	17.6	X	88.28815	285.31989	349.92387	9.35529	0.0971379	0.23346869	2.6120628	20	11 9.3	21.5
515897 2015 PV ₆₂	17.3	X	62.57683	101.00380	214.96637	2.16748	0.0718992	0.24557983	2.5254625	20	12 4.3	20.7
515898 2015 PM ₆₈	17.3	X	95.00331	309.20715	326.63048	5.80495	0.1152582	0.24442949	2.5333799	20	11 22.7	21.2
515899 2015 PH ₇₄	18.1	X	164.91199	123.77979	140.22850	2.39744	0.1921740	0.28061742	2.3106081	20	—	—
515900 2015 PE ₈₀	17.5	X	163.28574	349.52943	260.91649	0.74611	0.1424237	0.27076192	2.3663428	20	—	—
515901 2015 PQ ₉₄	17.1	X	284.83001	259.79720	132.21194	2.97624	0.0731125	0.20279195	2.8692534	20	8 18.4	20.9
515902 2015 PE ₉₈	17.4	X	142.02815	158.91352	130.81159	7.26244	0.1129219	0.27455189	2.3445154	20	—	—
515903 2015 PC ₁₂₅	18.0	X	188.49276	160.16987	67.34539	2.94564	0.1193095	0.26925193	2.3751817	20	—	—
515904 2015 PX ₁₂₆	18.0	X	135.82132	296.94579	332.64385	1.77564	0.1776118	0.26370091	2.4083982	20	12 29.7	21.8
515905 2015 PB ₁₃₃	17.7	X	130.17178	179.78904	128.06941	7.31689	0.1358918	0.27496807	2.3421491	20	—	—
515906 2015 PD ₁₆₉	18.1	X	126.34869	247.59727	49.96368	3.83676	0.2208845	0.27008793	2.3702779	20	—	—
515907 2015 PA ₁₇₀	18.0	X	122.13964	250.30624	47.34787	2.88394	0.1761623	0.26611830	2.3937910	20	—	—
515908 2015 PW ₁₈₀	17.0	X	298.61523	24.97063	342.20151	9.38545	0.1179125	0.18982485	2.9984766	20	7 30.9	20.8
515909 2015 PM ₁₉₀	17.7	X	109.21093	246.54749	11.29125	8.38704	0.0571924	0.23214935	2.6219499	20	11 8.3	21.4
515910 2015 PT ₂₅₇	17.6	X	91.68711	174.44145	146.69257	2.86301	0.2108465	0.26104849	2.4246846	20	—	—
515911 2015 PB ₂₉₀	16.4	X	327.38888	269.63772	86.29873	13.09323	0.0793963	0.19532823	2.9418874	20	9 8.1	20.3
515912 2015 PE ₂₉₃	17.0	X	92.66245	332.76547	313.99272	9.41256	0.1879554	0.23793937	2.5792065	20	12 8.6	21.2
515913 2015 PQ ₂₉₄	17.5	X	83.30848	173.29163	166.19506	3.15340	0.2026180	0.25451463	2.4660005	20	—	—
515914 2015 PU ₂₉₉	16.9	X	61.20012	336.72671	344.98076	16.32494	0.1829793	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>
515921 2015 PC ₃₁₅	17.1	X	331.30705	39.35709	359.48019	12.89965	0.1514949	0.22935940	2.6431695	20	11 8.9	20.0
515922 2015 PM ₃₁₅	16.9	X	83.22174	259.10736	319.13852	10.84462	0.0334984	0.18954339	3.0014443	20	8 11.5	21.0
515923 2015 QA ₃	17.5	X	109.34130	119.28341	180.75243	1.99338	0.2124104	0.25768865	2.4457151	20	—	—
515924 2015 QV ₄	16.4	X	286.60468	220.89105	178.17076	2.02782	0.0669417	0.19887275	2.9068271	20	8 30.1	20.0
515925 2015 QX ₁₀	16.6	X	88.54580	209.05748	102.48209	12.28163	0.2109249	0.25243753	2.4795152	20	—	—
515926 2015 QS ₁₂	17.1	X	134.13324	261.06082	345.73642	4.87836	0.1395202	0.23452363	2.6042238	20	11 24.7	21.3
515927 2015 QZ ₁₂	16.8	X	27.95438	248.92697	63.82735	11.42840	0.0690081	0.18970394	2.9997506	20	10 9.8	20.9
515928 2015 QE ₁₃	17.0	X	354.90640	135.80373	209.34697	8.12014	0.0623516	0.20324404	2.8649970	20	9 29.1	20.6
515929 2015 QJ ₁₃	16.7	X	267.53570	296.43846	134.14091	10.49531	0.0159531	0.18400556	3.0613671	20	9 23.0	21.0
515930 2015 QR ₁₃	15.4	X	143.90887	83.49915	95.77048	13.07525	0.0889190	0.17125366	3.2115115	20	9 10.9	20.5
515931 2015 QW ₁₃	16.7	X	322.61938	190.94420	189.99978	6.34634	0.1050910	0.20172316	2.8793792	20	9 27.1	20.2
515932 2015 RG ₁	16.2	X	64.96262	53.15886	260.65324	8.34576	0.0238123	0.22120019	2.7077738	20	11 21.8	19.9
515933 2015 RC ₃	16.8	X	24.30013	154.83474	149.21356	21.70481	0.1520928	0.21229680	2.7829608	20	10 8.6	20.5
515934 2015 RE ₁₄	16.5	X	309.40550	3.83942	332.38790	7.80610	0.1961660	0.18133499	3.0913510	20	6 21.8	20.3
515935 2015 RB ₁₅	18.3	X	146.52193	349.16482	291.35741	2.31014	0.2112058	0.27342654	2.3509439	20	—	—
515936 2015 RA ₂₃	17.2	X	108.29414	77.31730	196.08030	3.12344	0.1134752	0.23710602	2.5852805	20	12 3.6	21.1
515937 2015 RF ₂₄	16.2	X	261.50087	250.02826	172.33398	19.73927	0.1990306	0.18370613	3.0649628	20	8 3.5	20.9
515938 2015 RV ₂₅	17.0	X	19.29939	42.93902	296.49357	4.41990	0.0878528	0.21584983	2.7523368	20	11 1.5	20.5
515939 2015 RY ₂₆	16.0	X	327.32978	339.18537	17.63633	16.54487	0.1952457	0.18413260	3.0599589	20	9 1.9	19.5
515940 2015 RJ ₂₇	16.8	X	352.84690	320.83367	17.31834	4.07657	0.1837922	0.19266110	2.9689761	20	9 23.8	19.8
515941 2015 RW ₂₉	15.8	X	284.92341	13.55889	13.04945	13.63264	0.1513256	0.17043210	3.2218238	20	8 1.6	20.3
515942 2015 RX ₂₉	15.6	X	271.03068	40.77559	6.96210	26.51275	0.1580579	0.17512825	3.1639668	20	8 18.1	20.4
515943 2015 RD ₃₀	16.5	X	141.88735	255.79024	6.29007	38.02390	0.1411369	0.24116516	2.5561892	20	12 19.8	21.4
515944 2015 RD ₃₀	17.5	X	99.74173	349.39390	329.41395	1.12392	0.2623481	0.25427772	2.4675380	20	—	—
515945 2015 RJ ₃₄	17.1	X	85.81198	300.81980	345.62338	11.10856	0.1486165	0.22750347	2.6575250	20	11 24.7	21.4
515946 2015 RG ₄₃	18.1	X	150.37609	81.16251	200.09082	0.73970	0.1723503	0.26409453	2.4060046	20	—	—
515947 2015 RX ₄₇	16.6	X	275.35585	593.09666	191.34430	9.10561	0.0410281	0.20681988	2.8318779	20	10 18.8	20.2
515948 2015 RO ₅₆	16.2	X	202.40713	271.59796	200.33439	4.30294	0.0928961	0.17432732	3.1736504	20	8 13.0	21.1
515949 2015 RG ₅₈	16.9	X	280.00284	99.55163	332.30382	1.66271	0.0423949	0.20104717	2.8858300	20	10 6.2	20.8
515950 2015 RN ₆₀	17.1	X	359.48221	168.38754	176.62001	2.04439	0.1015861	0.20214694	2.8753536	20	10 10.5	20.4
515951 2015 RY ₆₄	16.8	X	326.65650	324.19077	5.44053	9.31701	0.1300787	0.17512998	3.1639459	20	7 23.4	20.7
515952 2015 RL ₆₅	16.7	X	7.69428	279.50292	50.91779	2.66695	0.0684364	0.19834180	2.9120124	20	9 30.8	20.3
515953 2015 RB ₇₃	16.5	X	174.69190	22.17221	159.63393	2.46037	0.0250987	0.20367190	2.8609832	20	10 17.7	20.6
515954 2015 RO ₇₄	17.1	X	9.68602	91.72779	250.35175	1.07792	0.0734773	0.20372455	2.8604903	20	10 19.1	20.5
515955 2015 RP ₇₇	17.0	X	50.32304	72.85705	214.43161	5.15856	0.0286817	0.19949442	2.9007851	20	9 26.3	21.1
515956 2015 RT ₇₇	16.5	X	200.49716	117.80996	347.79777	18.52834	0.1061910	0.17136037	3.2101781	20	8 9.6	21.6
515957 2015 RJ ₇₈	17.0	X	159.30888	10.37789	195.04379	8.99385	0.1139939	0.21521771	2.7577235	20	10 28.9	21.2
515958 2015 RB ₇₉	17.0	X	274.73724	243.95755	173.46887	2.24932	0.1065906	0.18751450	3.0230556	20	8 30.4	20.9
515959 2015 RK ₈₅	16.9	X	120.42662	26.96794	255.32584	7.34001	0.0740889	0.24382975	2.5375323	20	12 26.3	20.7
515960 2015 RL ₉₀	16.4	X	300.89447	356.85221	10.98247	5.17327	0.2130175	0.17294493	3.1905398	20	7 18.5	20.4
515961 2015 RO ₉₃	17.9	X	133.81964	259.74471	46.37227	1.80324	0.2041518	0.27137127	2.3627992	20	—	—
515962 2015 RR ₉₃	17.8	X	138.20205	130.00671	155.82523	5.28959	0.2031495	0.26581588	2.3956062	20	—	—
515963 2015 RG ₉₉	17.9	X	154.80981	64.16066	213.30892	3.47895	0.2648032	0.27067227	2.3668653	20	—	—
515964 2015 RF ₁₀₁	15.8	X	279.25382	32.73849	345.99343	22.03793	0.0489836	0.17401912	3.1773965	20	8 2.0	20.5
515965 2015 RG ₁₀₁	15.4	X	253.24820	237.03031	173.73014	16.68819	0.0874009	0.17469389	3.1692091	20	7 24.8	20.2
515966 2015 RG ₁₀₄	16.8	X	1.81382	175.85650	173.33915	15.12931	0.1078292	0.21055470	2.7982902	20	10 25.1	20.3
515967 2015 RH ₁₀₆	16.0	X	322.07988	337.47175	359.74425	9.74980	0.1029248	0.17866029	3.1221279	20	7 29.2	20.0
515968 2015 RZ ₁₀₆	15.9	X	203.73932	203.47664	180.33437	1.64497	0.3078744	0.12650322	3.9300824	20	4 24.9	22.6
515969 2015 RD ₁₀₇	16.8	X	354.99963	194.99165	163.41251	7.61910	0.1624114	0.20667633	2.8331891	20	10 29.9	19.9
515970 2015 RA ₁₀₉	15.9	X	294.47228	10.13684	17.55297	11.40216	0.1410921	0.17617481	3.1514240	20	8 18.9	20.1
515971 2015 RU ₁₁₄	16.6	X	330.09777	10.49794	12.59101	15.40606	0.1400651	0.20351392	2.8624635	20	10 11.6	19.7
515972 2015 RM ₁₁₈	16.0	X	274.43718	5.62187	9.90788	9.09366	0.2101244	0.17176941	3.2050797	20	6 20.4	20.7
515973 2015 RE ₁₁₉	16.2	X	307.28239	140.10963	203.46443	11.00668	0.0824512	0.17531284	3.1617454	20	7 11.4	20.5
515974 2015 RT ₁₃₈	16.6	X	251.85300	289.03591	156.05405	4.64373	0.1097833	0.19291713	2.9663486	20	9 5.9	20.8
515975 2015 RY ₁₄₁	16.8	X	261.12030	34.96429	3.90184	2.75934	0.0918616	0.17229598	3.1985462	20	7 21.6	21.2
515976 2015 RF ₁₄₆	17.0	X	89.50173	296.47839	5.06279	12.75611	0.1548446	0.23853856	2.5749195	20	12 21.7	21.3
515977 2015 RT ₁₈₂	16.9	X	320.24191	6.42704	353.84638	11.02671	0.0417788	0.19189481	2.9768747	20	8 31.2	20.8
515978 2015 RJ ₁₈₅	16.9	X	54.38024	133.28666	193.41005	9.69248	0.0864991	0.21634910	2.7481007	20	12 4.0	20.8
515979 2015 RN ₁₈₅	17.3	X	336.77454	226.66846	149.24962	2.51864	0.1078225	0.19582026	2.9369573	20	10 14.2	20.7
515980 2015 RE ₁₈₆	16.6	X	26.09096	103.52147	188.03724	8.89078	0.0725336	0.17904248	3.1176833	20	9 1.3	20.7
515981 2015 RV ₁₉₁	16.9	X	25.25959	194.18257	149.29929	4.73504	0.1084041	0.21396548	2.7684727	20	11 20.8	20.4
515982 2015 RG ₁₉₂	17.0	X	119.53158	243.00495	13.38472	14.02120	0.1280793	0.22265073	2.6960005	20	11 17.6	21.4
515983 2015 RT ₁₉₅	17.1	X	120.53658	240.94529	71.43678	3.21716	0.2278287	0.26006261	2.4308086	20	—	—
515984 2015 RR ₁₉₈	16.7	X	347.93953	229.69753	141.42369	6.35847	0.0781423	0.20345841	2.8629842	20	10 28.0	20.3
515985 2015 RH ₁₉₉	16.5	X	335.06093	178.28361	176.18600	11.57048	0.1009396	0.18713721	3.0271176	20	9 8.9	20.0
515986 2015 RJ ₁₉₉	16.7	X	313.49166	244.65428	109.53059	3.17656	0.0929340	0.17384440	3.1795250	20	8 4.9	20.7
515987 2015 RH ₂₀₀	16.5	X	208.31569	76.67866	32.15246	11.31882	0.0730834	0.17299086	3.1899750	20	8 23.8	21.4
515988 2015 RN ₂₀₅	17.3	X	66.80079	217.29386	99.85720	3.57900	0.0882352	0.22033507	2.7148570	20	12 7.2	21.0
515989 2015 RW ₂₀₇	15.9	X	239.00434	61.38908	23.73690	15.40641	0.0691756	0.17484229	3.1674157	20	9 1.1	20.7
515990 2015 RC ₂₀₈	16.4	X	16.41628	317.24619	17.80960	15.36414	0.1525647	0.20290003	2.8682344	20	10 27.1	20.0
515991 2015 RC ₂₀₉	16.1	X	193.89882	103.37452	32.14583	10.49237	0.0446158	0.17993693	3.1073428	20	9 11.8	20.7
515992 2015 RE ₂₁₀	16.2	X	307.33461	208.11214	177.62033	10.49665	0.0589986	0.18479807	3.0526084	20	9 9.8	20.1
515993 2015 RX ₂₁₈	16.9	X	15.65321	291.03609	10.17933	5.08072	0.1270359	0.18645578	3.0344884	20</		