

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>		
468001	2012	<i>UG</i> ₁₆₆	13.2	X	271.88985	9.14268	52.62570	37.30486	0.0243956	0.08462611	5.1380674	20	9 25.8	20.5
468002	2012	<i>VH</i> ₂₆	16.7	X	270.80803	247.30960	83.26733	9.70479	0.3615289	0.22473379	2.6793151	20	4 8.1	21.3
468003	2012	<i>VC</i> ₅₁	16.2	X	163.70854	285.30380	53.42771	10.52433	0.1709355	0.17444538	3.1722183	20	2 4.7	21.5
468004	2012	<i>XD</i> ₁₇	19.3	X	231.49606	255.45583	68.29852	19.06343	0.2347010	0.44865457	1.6899012	20	2 26.2	22.1
468005	2012	<i>XD</i> ₁₁₂	21.2	X	278.57734	76.69785	97.81259	3.72204	0.3656763	0.64790405	1.3227027	20	—	—
468006	2012	<i>XL</i> ₁₂₈	16.1	X	201.24621	64.59941	249.56279	15.20851	0.2109478	0.17838093	3.1253868	20	1 29.9	21.7
468007	2013	<i>AR</i>	18.0	X	288.61371	76.99125	44.18458	22.03271	0.1159547	0.37911945	1.8906828	20	—	—
468008	2013	<i>AO</i> ₆	17.6	X	240.38443	200.77052	302.14065	17.58435	0.0751589	0.36532831	1.9379705	20	12 26.7	19.4
468009	2013	<i>AS</i> ₄₀	14.2	X	264.87718	174.50079	263.30451	3.15863	0.0786597	0.08167622	5.2610485	20	9 2.4	21.2
468010	2013	<i>AW</i> ₆₃	17.8	X	230.01059	81.50965	117.88362	23.55907	0.0676204	0.38062606	1.8856903	20	—	—
468011	2013	<i>AO</i> ₁₀₃	13.5	X	242.28266	347.39452	134.32694	27.79548	0.0790261	0.08414124	5.1577875	20	10 5.6	20.7
468012	2013	<i>BP</i> ₁₆	14.6	X	231.90156	279.89554	181.04278	2.27726	0.0551193	0.08209467	5.2431556	20	8 27.6	21.7
468013	2013	<i>BY</i> ₁₇	14.3	X	28.24859	88.03950	234.67816	12.29127	0.0124077	0.08413405	5.1580815	20	9 20.4	21.2
468014	2013	<i>BN</i> ₃₅	13.8	X	266.98391	305.79303	126.52070	7.73832	0.0250532	0.08260178	5.2216743	20	9 9.1	20.7
468015	2013	<i>BB</i> ₅₄	14.3	X	270.11414	345.30439	81.61706	8.65252	0.0914938	0.08183038	5.2544387	20	8 30.3	21.3
468016	2013	<i>BU</i> ₇₅	13.9	X	334.63577	271.43773	105.90662	9.15887	0.0371092	0.08276730	5.2147105	20	9 27.3	20.7
468017	2013	<i>CH</i> ₁	17.9	X	215.71240	112.43284	86.89270	24.76362	0.0384685	0.37224166	1.9139007	20	—	—
468018	2013	<i>CU</i> ₁₂₈	18.6	X	161.17624	134.43145	159.94589	22.59093	0.1019535	0.38322855	1.8771435	20	—	—
468019	2013	<i>CG</i> ₁₈₂	18.0	X	178.39880	78.03647	163.01381	23.64606	0.0270470	0.37172301	1.9156805	20	—	—
468020	2013	<i>CD</i> ₁₈₉	17.9	X	171.51079	112.76631	80.88758	24.91173	0.0972417	0.34955638	1.9958346	20	11 24.8	20.5
468021	2013	<i>DR</i> ₁₃	18.0	X	329.37430	246.04544	163.81509	23.10758	0.1132151	0.36171645	1.9508500	20	—	—
468022	2013	<i>EV</i> ₄	17.9	X	12.27858	259.20325	138.06967	23.94766	0.0960300	0.36298109	1.9463161	20	—	—
468023	2013	<i>LY</i> ₂₀	16.4	X	182.56392	112.60542	249.02496	10.87195	0.3079091	0.24518739	5.2521566	20	3 7.6	21.3
468024	2013	<i>MX</i> ₄	18.5	X	40.21897	103.17267	183.51487	4.09547	0.1609617	0.29654051	2.2271358	20	10 21.8	21.0
468025	2013	<i>MN</i> ₆	17.3	X	347.17184	38.43538	290.73158	11.29674	0.2992494	0.28601819	2.2814290	20	9 26.4	18.7
468026	2013	<i>NR</i> ₇	18.4	X	1.20101	128.34261	205.04391	2.25108	0.1781981	0.29639630	2.2278581	20	10 30.3	20.1
468027	2013	<i>OR</i> ₉	17.8	X	346.30863	49.01135	258.10046	8.44149	0.2453577	0.28250448	2.3003071	20	8 5.7	19.1
468028	2013	<i>PS</i> ₁	17.8	X	73.11240	351.60812	217.62366	6.03034	0.0566898	0.27369813	2.3493885	20	7 25.3	20.8
468029	2013	<i>PS</i> ₅	18.0	X	38.36156	331.42248	280.87169	2.22604	0.1945756	0.27970912	2.3156076	20	8 30.6	20.3
468030	2013	<i>PG</i> ₂₅	17.1	X	282.74257	1.15400	341.52087	6.22975	0.1381406	0.26128980	2.4231915	20	5 29.3	20.3
468031	2013	<i>PA</i> ₃₀	17.9	X	347.13616	327.16877	281.57758	7.91687	0.0601013	0.25479701	2.4641842	20	5 5.6	20.8
468032	2013	<i>PE</i> ₅₅	18.2	X	17.19499	22.73419	216.45870	2.09771	0.1535933	0.26350170	2.4096119	20	6 21.5	20.1
468033	2013	<i>PR</i> ₇₃	16.5	X	121.15677	144.63361	258.11703	11.81827	0.1835283	0.21359035	2.7717132	20	2 27.9	20.9
468034	2013	<i>PH</i> ₇₄	16.1	X	42.17280	93.41770	311.71587	8.50350	0.2333613	0.17562033	3.1580538	20	—	—
468035	2013	<i>QM</i> ₂	18.8	X	26.02859	113.02493	165.38214	6.87576	0.1748145	0.28776874	2.2721673	20	9 18.1	20.8
468036	2013	<i>QN</i> ₃	18.5	X	18.55421	99.61866	189.48903	3.47640	0.1996090	0.28689110	2.2767989	20	9 24.6	20.5
468037	2013	<i>QL</i> ₂₂	17.2	X	79.36896	24.27670	144.18799	8.45816	0.0622209	0.25411850	2.4685686	20	6 8.7	20.5
468038	2013	<i>QD</i> ₂₇	17.4	X	264.25445	207.51385	160.40742	7.92570	0.0903741	0.26213193	2.4179989	20	6 17.5	20.7
468039	2013	<i>QW</i> ₃₁	17.7	X	1.71019	89.16334	175.77838	6.91317	0.1731036	0.26746296	2.3857611	20	6 30.3	19.7
468040	2013	<i>QH</i> ₃₉	18.0	X	322.61446	64.67124	223.27307	3.44223	0.1901295	0.26341431	2.4101448	20	5 6.7	20.3
468041	2013	<i>QP</i> ₅₈	17.9	X	359.12271	298.38500	0.51424	5.16336	0.1819453	0.28003761	2.3137964	20	8 27.5	19.6
468042	2013	<i>QO</i> ₆₇	17.0	X	229.12290	345.24996	328.36623	13.91534	0.0112349	0.22984098	2.6394761	20	2 28.8	20.7
468043	2013	<i>QA</i> ₆₈	18.4	X	8.69234	137.36994	150.12159	4.01774	0.2143703	0.28231684	2.3013263	20	9 3.9	20.0
468044	2013	<i>QU</i> ₇₄	17.9	X	312.88738	143.04805	154.03284	5.20880	0.1955375	0.26443643	2.4039303	20	5 3.7	20.4
468045	2013	<i>QB</i> ₈₅	18.1	X	331.64204	159.74976	182.31597	4.81912	0.2763845	0.28577092	2.2827448	20	8 30.5	18.6
468046	2013	<i>QL</i> ₉₅	17.9	X	340.95920	186.11854	136.49293	4.22749	0.2309575	0.27639293	2.3340927	20	8 22.5	18.9
468047	2013	<i>RT</i> ₁₁	17.8	X	316.60262	30.60604	282.24195	6.42419	0.1100469	0.26638505	2.3921927	20	6 15.7	20.3
468048	2013	<i>RN</i> ₁₈	17.3	X	309.80793	73.07527	255.97171	6.10847	0.1316003	0.26619532	2.3933292	20	6 25.0	19.7
468049	2013	<i>RC</i> ₂₃	17.0	X	144.97654	177.97426	202.85878	9.27366	0.1592957	0.20947862	2.8078652	20	2 26.5	21.5
468050	2013	<i>RW</i> ₃₂	17.2	X	270.20322	329.00275	32.86779	5.82454	0.2623623	0.25975470	2.4327293	20	5 21.3	20.5
468051	2013	<i>RA</i> ₃₆	15.9	X	127.16123	291.06946	126.47689	15.87765	0.1999211	0.21135868	2.7911896	20	4 6.3	20.5
468052	2013	<i>RC</i> ₄₈	18.0	X	1.65832	352.89652	304.45466	0.98758	0.1894368	0.27739440	2.3284715	20	8 29.2	19.5
468053	2013	<i>RT</i> ₅₁	16.5	X	146.61717	195.22789	217.17315	7.86015	0.1324769	0.21988384	2.7185699	20	4 5.0	20.7
468054	2013	<i>RC</i> ₆₃	17.6	X	159.21897	37.39214	0.12444	1.72794	0.0916813	0.22765733	2.6563276	20	3 28.1	21.5
468055	2013	<i>RC</i> ₆₇	17.5	X	126.00255	195.95680	206.93134	3.43483	0.1004781	0.21571826	2.7534558	20	2 27.9	21.5
468056	2013	<i>RX</i> ₇₅	18.3	X	24.30934	59.39691	189.93437	1.97734	0.1675619	0.26945745	2.3739738	20	7 25.2	20.4
468057	2013	<i>RC</i> ₈₅	17.2	X	149.07840	180.54673	225.16475	6.90567	0.0838321	0.22068595	2.7119786	20	3 25.3	21.2
468058	2013	<i>RP</i> ₉₃	18.0	X	344.26014	303.02357	351.02729	4.64087	0.2035419	0.26628521	2.3927906	20	7 7.9	19.7
468059	2013	<i>SN</i> ₁₅	19.0	X	335.95720	334.75919	345.22312	1.10437	0.2036829	0.27286687	2.3541575	20	8 1.5	20.3
468060	2013	<i>SV</i> ₂₂	17.5	X	299.27481	141.86584	197.01934	5.72805	0.1425453	0.26183561	2.4198229	20	6 19.6	20.3
468061	2013	<i>SE</i> ₂₄	17.9	X	330.66835	257.02050	55.75187	4.48065	0.1928345	0.26627289	2.3928644	20	7 5.3	19.7
468062	2013	<i>SP</i> ₂₅	16.3	X	64.56865	73.05340	334.37119	8.61168	0.1245392	0.18478441	3.0527588	20	—	—
468063	2013	<i>SR</i> ₃₀	17.9	X	311.85988	255.37086	73.80998	2.34641	0.2034594	0.26598076	2.3946161	20	6 17.4	20.1
468064	2013	<i>SD</i> ₃₁	18.0	X	281.92452	343.22712	358.60421	0.91962	0.2072498	0.26281464	2.4138096	20	5 16.8	21.1
468065	2013	<i>SP</i> ₃₄	17.6	X	285.12494	182.07542	164.94830	1.50266	0.1951889	0.26085411	2.4258890	20	5 31.2	20.4
468066	2013	<i>SB</i> ₄₁	18.0	X	323.10070	134.83074	206.00962	4.37040	0.1726491	0.27843413	2.3226712	20	8 5.9	19.9
468067	2013	<i>SR</i> ₅₁	17.6	X	236.76514	228.74576	129.72865	4.78594	0.1826993	0.23753206	2.5821882	20	4 24.9	21.7
468068	2013	<i>SK</i> ₅₆	17.8	X	282.62262	25.43801	318.62488	0.44598	0.1934497	0.25649487	2.4532977	20	5 23.4	

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
468081 2013 <i>TO</i> ₅₀	18.0	X	329.38547	291.42623	7.35439	1.06485	0.2371356	0.25852986	2.4404069	20	5 31.2	19.6
468082 2013 <i>TL</i> ₅₁	18.0	X	338.62263	93.72950	212.79385	1.90417	0.2332722	0.26708027	2.3880395	20	7 11.4	19.2
468083 2013 <i>TF</i> ₅₅	16.6	X	234.08623	287.31634	4.51354	14.00799	0.1138885	0.21195674	2.7859366	20	2 10.5	21.1
468084 2013 <i>TN</i> ₆₂	17.2	X	224.53965	306.42798	61.49569	9.94511	0.1815727	0.23945052	2.5683775	20	4 25.8	21.3
468085 2013 <i>TT</i> ₇₃	17.2	X	262.07002	112.49400	223.47864	13.93769	0.1644449	0.23962329	2.5671428	20	4 20.9	21.1
468086 2013 <i>TX</i> ₈₀	18.1	X	354.22276	25.93249	288.06066	2.18473	0.2455867	0.27836600	2.3230502	20	9 15.7	19.5
468087 2013 <i>TQ</i> ₉₅	16.7	X	63.93395	230.59135	183.59001	4.99918	0.1315830	0.18027762	3.1034267	20	1 2.4	20.5
468088 2013 <i>TT</i> ₁₀₁	15.8	X	337.86394	267.92967	242.62866	10.55581	0.0605486	0.18042502	3.1017363	20	—	—
468089 2013 <i>TV</i> ₁₀₃	16.2	X	9.39360	238.53492	215.06828	15.09997	0.0624440	0.17745619	3.1362351	20	—	—
468090 2013 <i>TC</i> ₁₂₂	17.0	X	221.96600	319.66169	41.43539	6.07761	0.2415589	0.23057566	2.6338664	20	4 11.2	21.4
468091 2013 <i>TT</i> ₁₄₃	17.9	X	325.26284	299.29226	30.06118	2.15159	0.2491292	0.26920809	2.3754395	20	7 13.6	19.2
468092 2013 <i>TS</i> ₁₅₅	15.9	X	62.22592	30.48354	47.48009	9.27591	0.0765713	0.18672873	3.0315306	20	1 25.3	20.0
468093 2013 <i>UZ</i> ₉	16.9	X	220.98531	81.14636	191.48916	9.67377	0.0468044	0.19152418	2.9807140	20	1 4.5	21.4
468094 2013 <i>UL</i> ₁₃	17.1	X	295.85805	285.93162	35.12475	14.48390	0.2226051	0.25563332	2.4588068	20	5 3.5	20.0
468095 2013 <i>UW</i> ₁₃	16.0	X	14.26410	214.96308	240.89868	26.37606	0.1669747	0.17293093	3.1907119	20	—	—
468096 2013 <i>VQ</i> ₃	15.7	X	82.64347	321.76439	65.76187	24.00218	0.0238156	0.18010883	3.1053654	20	—	—
468097 2013 <i>VQ</i> ₄	17.2	X	204.85759	231.51137	107.35705	10.55391	0.0921112	0.21573608	3.1053041	20	3 8.3	21.5
468098 2013 <i>VW</i> ₅	17.2	X	219.67854	153.37265	223.89625	31.70762	0.1471642	0.23574346	2.5952325	20	5 2.5	21.1
468099 2013 <i>VF</i> ₁₁	17.5	X	300.04850	217.03292	122.54492	8.85301	0.2845206	0.25957732	2.4338373	20	5 29.5	20.4
468100 2013 <i>VA</i> ₁₈	16.3	X	146.17117	290.71894	116.47671	16.21281	0.1413315	0.21037250	2.7999057	20	4 8.1	20.9
468101 2013 <i>WV</i> ₃	16.6	X	174.81079	282.61553	115.65273	12.26606	0.0799747	0.22278003	2.6949572	20	4 20.7	20.8
468102 2013 <i>WX</i> ₅	15.7	X	82.07512	291.16320	94.18939	16.01301	0.2242988	0.17539413	3.1607684	20	1 7.8	19.7
468103 2013 <i>WM</i> ₆	16.8	X	236.18254	297.74482	50.25730	9.27061	0.1941400	0.23009792	2.6375108	20	4 11.5	21.0
468104 2013 <i>WK</i> ₂₃	16.4	X	31.06578	257.12494	188.17627	9.50852	0.0878499	0.17306695	3.1890399	20	—	—
468105 2013 <i>WT</i> ₂₄	17.8	X	149.60500	244.69404	225.45543	20.24914	0.0646491	0.38193211	1.8813890	20	6 18.3	20.1
468106 2013 <i>WE</i> ₆₃	15.9	X	66.57536	312.47450	113.50344	17.73395	0.2219082	0.17814780	3.1281129	20	2 4.4	19.6
468107 2013 <i>WN</i> ₇₃	16.6	X	127.49061	67.93405	301.52459	4.41637	0.1419053	0.18726266	3.0257654	20	1 29.5	21.1
468108 2013 <i>WO</i> ₉₇	16.0	X	91.37959	319.16653	70.05124	11.15229	0.0983919	0.17565185	3.1576760	20	1 7.4	20.4
468109 2013 <i>WO</i> ₁₀₇	16.2	X	39.59480	18.70444	75.11079	10.22005	0.0863839	0.18137501	3.0908962	20	1 12.4	20.1
468110 2013 <i>XQ</i> ₁₃	15.5	X	107.17434	113.58779	259.34010	13.10875	0.0786595	0.17386517	3.1792718	20	1 3.5	20.0
468111 2013 <i>YH</i> ₃	15.7	X	76.74003	8.34471	57.46822	12.78620	0.1105467	0.18118621	3.0930430	20	2 6.3	20.0
468112 2013 <i>YK</i> ₃₈	16.3	X	304.16944	202.30131	55.84229	14.02969	0.0723626	0.21541875	2.7560074	20	3 26.5	20.2
468113 2013 <i>YC</i> ₅₃	16.2	X	184.82673	51.86087	269.31001	7.98176	0.0821721	0.18405581	3.0608100	20	1 24.7	20.9
468114 2013 <i>YK</i> ₅₄	17.0	X	233.73048	265.51443	78.04109	8.84820	0.3021770	0.22685503	2.6625868	20	3 30.8	21.9
468115 2013 <i>YN</i> ₅₄	15.5	X	52.47997	6.15645	80.71279	22.69565	0.1094967	0.17705084	3.1410201	20	1 26.9	19.7
468116 2013 <i>YL</i> ₁₀₃	16.0	X	112.07279	266.12184	72.26024	26.10374	0.2347568	0.17503191	3.1651276	20	—	—
468117 2014 <i>ED</i>	19.1	X	121.57573	355.06469	74.96473	21.77762	0.6383203	0.51263463	1.5461944	20	5 13.9	21.9
468118 2014 <i>EO</i> ₃₈	13.8	X	270.22517	321.51552	134.02252	13.08764	0.0175836	0.08391482	5.1670610	20	10 12.3	20.8
468119 2014 <i>OY</i> ₂	18.0	X	48.01451	278.51934	118.68531	21.97975	0.1245330	0.38644935	1.8666991	20	—	—
468120 2014 <i>QB</i> ₂₅₄	16.8	X	12.57235	26.02047	62.40658	10.10005	0.2127976	0.21104322	2.7939703	20	—	—
468121 2014 <i>SN</i> ₂₉₈	17.4	X	82.38357	318.77608	238.31528	6.83369	0.0507701	0.29591272	2.2302847	20	7 21.6	20.1
468122 2014 <i>TK</i> ₁₁	17.1	X	59.81330	244.23719	220.49997	11.01175	0.2397107	0.23094864	2.6310298	20	3 3.2	19.9
468123 2014 <i>TC</i> ₄₅	17.2	X	15.40849	152.10013	34.31239	9.93392	0.1512947	0.25313161	2.4749806	20	3 28.4	19.5
468124 2014 <i>TG</i> ₆₅	16.8	X	99.35231	229.30171	206.66385	7.68868	0.1183162	0.23584310	2.5945016	20	3 7.7	20.3
468125 2014 <i>UF</i> ₇	18.4	X	182.20300	12.83418	174.98681	20.29350	0.0577964	0.36591922	1.9358836	20	—	—
468126 2014 <i>UO</i> ₃₂	17.1	X	29.23325	82.40401	75.43445	10.07141	0.1429712	0.23391990	2.6087028	20	3 19.1	19.9
468127 2014 <i>UA</i> ₃₆	17.2	X	98.55799	43.14741	58.55492	6.90446	0.1014348	0.25404671	2.4690336	20	4 10.8	20.4
468128 2014 <i>UW</i> ₆₆	16.5	X	295.76643	104.65105	57.36089	26.60643	0.2833387	0.1972526	3.1097822	20	—	—
468129 2014 <i>UD</i> ₆₇	18.2	X	207.02049	60.35776	11.76032	1.32200	0.1836495	0.29597177	2.2299880	20	6 29.1	21.7
468130 2014 <i>UF</i> ₈₅	17.8	X	166.64529	62.64955	49.32549	7.57420	0.0567089	0.28518220	2.2858853	20	7 14.6	20.9
468131 2014 <i>UW</i> ₈₈	18.8	X	161.41800	270.92978	249.62566	2.10828	0.0369206	0.31680146	2.1311365	20	9 17.4	21.4
468132 2014 <i>UJ</i> ₉₉	18.2	X	273.66202	317.76101	86.23578	3.15165	0.1055759	0.30675929	2.173967	20	8 28.2	20.4
468133 2014 <i>UZ</i> ₁₀₆	18.0	X	211.64202	58.98793	31.81477	4.42854	0.0499649	0.30008660	2.2095558	20	8 14.9	20.7
468134 2014 <i>UD</i> ₁₀₉	17.3	X	34.67522	88.96910	56.99835	13.85553	0.1393683	0.22963598	2.6410468	20	3 15.3	20.4
468135 2014 <i>UY</i> ₁₁₄	18.3	X	127.31823	63.35919	232.89151	22.14949	0.1479546	0.37116558	1.9175981	20	—	—
468136 2014 <i>UZ</i> ₁₁₉	18.2	X	147.26769	223.23902	240.84890	1.18207	0.1389848	0.27218000	2.3581164	20	6 12.3	21.5
468137 2014 <i>UZ</i> ₁₂₁	16.7	X	39.48457	140.71393	5.36090	14.01051	0.1065299	0.24079560	2.5588040	20	3 13.9	19.4
468138 2014 <i>UC</i> ₁₃₃	18.1	X	139.51492	10.46509	99.19637	3.18077	0.1624717	0.27039055	2.3685090	20	6 13.2	21.6
468139 2014 <i>UY</i> ₁₃₄	18.0	X	148.48250	205.60915	335.89310	2.04337	0.0592036	0.31292188	2.1487147	20	9 29.9	20.5
468140 2014 <i>UA</i> ₁₃₉	16.5	X	5.07665	28.17482	23.95527	17.65163	0.1937556	0.18371331	3.0646129	20	—	—
468141 2014 <i>UY</i> ₁₄₀	16.4	X	54.87114	236.12103	230.26519	21.18229	0.0679136	0.23086866	2.6316375	20	1 31.5	20.2
468142 2014 <i>UE</i> ₁₅₂	17.9	X	88.40009	258.34823	194.05151	3.12304	0.1942530	0.23490462	2.6014072	20	3 28.6	21.2
468143 2014 <i>UF</i> ₁₅₇	17.6	X	51.60706	212.22935	39.92864	4.73617	0.1565588	0.29928132	2.2135176	20	9 19.3	20.1
468144 2014 <i>UT</i> ₁₇₀	17.7	X	175.89088	269.91783	165.37363	9.51721	0.1908643	0.27598817	2.3363742	20	6 4.9	21.6
468145 2014 <i>WY</i> ₂₁	17.9	X	37.63508	77.54677	42.78917	13.53209	0.1692011	0.22186598	2.7023540	20	2 14.9	20.9
468146 2014 <i>WF</i> ₂₄	16.0	X	216.27122	309.10503	282.49153	9.21461	0.0450569	0.18738363	3.0244631	20	—	—
468147 2014 <i>WD</i> ₂₈	17.7	X	163.85949	46.89120	59.86727	3.81755	0.1288447	0.27843553	2.3226634	20	7 3.3	21.1
468148 2014 <i>WF</i> ₂₈	17.9	X	177.93816	22.87716	61.39661	7.10811	0.0842096	0.27756559	2.3275140	20	6 17.4	21.2
468149 2014 <i>WD</i> ₅₀	17.9	X	152.84486	265.10576	208.98466	5.79283	0.0489837	0.27714932	2.3298440	20	6 27.5	21.1
468150 2014 <i>WZ</i> ₆₂	17.9	X	117.15015	236.54841	232.57419	3.70695	0.1068967	0.25706560	2.4496652	20	5 12.9	21.1
468151 2014 <i>WV</i> ₆₇	17.8	X	106.77632	323.73875	197.07090	3.23080	0.1506945	0.27031368	2.3689581	20	7 15.3	21.2
468152 2014 <i>WM</i> ₆₈	18.7</											

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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>
468161 2014 WX ₃₅₄	15.9	X	345.23215	310.80391	158.02094	15.27346	0.0789695	0.16943945	3.2343948	20	—	—
468162 2014 WA ₃₅₅	16.5	X	336.44444	47.92865	147.27949	16.33731	0.1542645	0.19984389	2.8974023	20	2 2.2	20.0
468163 2014 WS ₃₈₃	17.9	X	174.98688	283.92712	160.27781	5.21328	0.1825299	0.27733589	2.3287989	20	6 14.7	21.7
468164 2014 WK ₃₉₈	17.3	X	104.32765	293.09835	169.22685	12.86844	0.2620481	0.24560275	2.5253053	20	5 11.9	21.3
468165 2014 WQ ₃₉₈	16.2	X	347.64589	333.76545	96.25566	19.50163	0.1947362	0.18048176	3.1010862	20	—	—
468166 2014 WR ₄₀₂	17.8	X	196.29298	330.50683	85.75553	7.43574	0.0997022	0.27283966	2.3543140	20	5 31.5	21.0
468167 2014 WF ₄₂₆	17.0	X	87.61526	51.84611	28.54824	12.98163	0.1276447	0.21645294	2.7472218	20	3 9.5	20.7
468168 2014 WX ₄₇₃	18.1	X	113.52989	64.19327	100.45869	7.79685	0.0729517	0.28126623	2.3070534	20	7 22.0	21.0
468169 2014 WY ₄₇₈	15.7	X	120.39969	264.78491	134.31852	25.00672	0.2024249	0.21095401	2.7947579	20	3 5.2	20.1
468170 2014 WL ₄₈₁	16.0	X	39.65425	209.21179	233.38067	8.05035	0.0414445	0.18171781	3.0870078	20	—	—
468171 2014 WS ₄₈₁	16.8	X	112.87966	295.05347	157.65733	17.68158	0.1760239	0.22705140	2.6610514	20	4 30.7	21.0
468172 2014 WD ₄₉₉	16.4	X	110.44667	327.41453	240.31017	12.32760	0.1540064	0.24489204	2.5301888	20	5 8.7	20.0
468173 2014 WE ₄₉₉	16.3	X	136.48492	127.84427	265.22740	12.41528	0.1023773	0.23392249	2.6086835	20	2 20.9	20.4
468174 2014 XM ₁₂	17.0	X	37.06842	252.72300	256.02658	3.77496	0.1931064	0.22641799	2.6660120	20	3 17.6	19.6
468175 2014 YY ₂	16.0	X	343.50786	356.29371	116.47692	20.48392	0.2138424	0.17526275	3.1623479	20	—	—
468176 2014 YZ ₉	16.8	X	93.34625	350.56761	91.95993	13.42307	0.1597484	0.22636102	2.6664593	20	3 25.5	20.6
468177 2014 YG ₁₀	16.5	X	352.52148	341.28393	137.34139	8.77961	0.2120324	0.18182657	3.0857767	20	—	—
468178 2014 YG ₁₃	15.7	X	78.18873	268.27032	114.83632	17.26326	0.1032310	0.18006627	3.1058547	20	—	—
468179 2014 YG ₂₈	18.1	X	296.09213	334.50229	43.76424	4.96878	0.1849753	0.30136055	2.2033244	20	8 15.1	19.9
468180 2014 YJ ₃₈	16.8	X	42.20110	80.05850	85.65349	10.28281	0.0431253	0.22945766	2.6424149	20	4 13.6	20.3
468181 2015 AA ₁₂	15.8	X	133.22607	275.37815	51.17974	13.40276	0.0612883	0.17496830	3.1658947	20	—	—
468182 2015 AX ₃₆	16.7	X	85.82779	331.64722	89.19139	2.03221	0.1074676	0.20407160	2.8572462	20	2 4.5	20.3
468183 2015 AD ₃₈	17.2	X	143.22437	327.11272	91.99190	6.07496	0.1012359	0.23234506	2.6204774	20	4 10.8	21.1
468184 2015 AB ₁₁₉	16.8	X	87.58881	293.05311	150.43088	5.01307	0.0401523	0.21096306	2.7946780	20	2 24.6	20.4
468185 2015 AA ₁₄₄	17.2	X	224.59108	295.15957	39.81777	2.32951	0.0577969	0.22642185	2.6659817	20	3 21.8	21.1
468186 2015 AV ₁₆₈	16.7	X	98.09404	294.02055	114.78509	13.02788	0.0607015	0.19820961	2.9133069	20	1 31.0	20.7
468187 2015 AT ₁₇₄	17.0	X	256.06666	235.33745	59.67157	4.86993	0.1746241	0.21552647	2.7550890	20	2 27.8	21.4
468188 2015 AP ₁₈₀	15.8	X	352.36265	7.70095	115.74125	10.35727	0.0309273	0.17772096	3.1331194	20	—	—
468189 2015 AX ₁₈₁	17.3	X	275.19897	308.84002	28.40269	2.78416	0.2045185	0.25465162	2.4651220	20	5 2.6	20.5
468190 2015 AB ₁₉₅	17.4	X	327.34123	169.51460	103.11294	4.07584	0.0281781	0.24110213	2.5566347	20	5 15.9	20.6
468191 2015 AP ₂₄₁	16.3	X	230.10279	221.77150	121.35520	5.72303	0.0782953	0.22116687	2.7080458	20	4 8.3	20.3
468192 2015 AV ₂₄₁	15.9	X	122.79615	276.78289	107.86131	11.91113	0.1076650	0.18897724	3.0074359	20	2 8.9	20.3
468193 2015 AM ₂₄₈	16.9	X	312.28514	178.53939	1.02542	2.29372	0.0230059	0.19275935	2.9679671	20	1 1.7	21.1
468194 2015 AD ₂₅₂	17.2	X	196.03858	281.37605	98.66316	8.13166	0.1605830	0.24293907	2.5437307	20	4 16.9	21.4
468195 2015 AD ₂₅₈	16.5	X	351.18778	40.20012	80.18549	6.40454	0.0958799	0.18000493	3.1065603	20	—	—
468196 2015 AC ₂₆₂	16.3	X	271.74640	174.53561	152.79185	29.66511	0.0859160	0.23642165	2.5902671	20	5 11.1	20.5
468197 2015 AA ₂₇₃	17.4	X	1.06102	185.68490	30.33945	1.73291	0.0196083	0.23754290	2.5821096	20	4 15.8	20.6
468198 2015 AK ₂₇₉	16.0	X	293.41798	104.19940	120.31828	8.52567	0.0390845	0.18878088	3.0095210	20	1 31.8	20.3
468199 2015 BK ₁	16.7	X	187.17424	22.89281	350.70954	5.58084	0.0710394	0.22362288	2.6881814	20	3 26.9	20.6
468200 2015 BC ₁₁	16.9	X	43.32926	65.31197	69.94526	5.88570	0.1163538	0.21449973	2.7638738	20	3 10.8	20.2
468201 2015 BE ₂₇	15.9	X	142.29464	207.50160	147.80584	12.12461	0.0185164	0.17868916	3.1219716	20	1 15.5	20.4
468202 2015 BH ₃₁	16.3	X	36.77041	316.21249	156.20334	16.32349	0.0569877	0.18664970	3.0323863	20	1 27.3	20.4
468203 2015 BK ₃₉	15.8	X	6.50602	348.32947	101.43291	28.91961	0.1299400	0.17632477	3.1496370	20	—	—
468204 2015 BZ ₄₀	16.6	X	326.66337	28.08236	114.68350	5.78011	0.1299484	0.17212476	3.2006669	20	—	—
468205 2015 BJ ₄₁	17.1	X	86.83967	72.42534	7.31150	5.84248	0.0453401	0.21101386	2.7942294	20	2 21.3	20.8
468206 2015 BV ₄₂	17.8	X	106.00268	90.53005	11.15835	5.70303	0.0475958	0.23251323	2.6192137	20	4 14.4	21.2
468207 2015 BG ₅₃	16.5	X	329.05357	356.67976	177.72781	5.23094	0.1127725	0.19208995	2.9748583	20	1 3.9	20.4
468208 2015 BF ₅₈	17.4	X	356.76827	192.39736	105.72337	6.61467	0.2005626	0.26670390	2.3902856	20	8 20.2	19.1
468209 2015 BT ₆₀	16.6	X	201.42381	258.80744	95.36525	3.05392	0.0935525	0.21973735	2.7197781	20	3 20.7	20.8
468210 2015 BX ₆₀	16.9	X	342.46888	84.96973	103.53369	7.55692	0.0645016	0.20134940	2.8829415	20	2 15.9	20.6
468211 2015 BX ₆₃	16.4	X	285.57487	92.14315	112.65292	14.13117	0.0670729	0.17816637	3.1278955	20	—	—
468212 2015 BP ₆₄	16.0	X	193.50773	303.44283	350.41173	11.30369	0.0600044	0.17868625	3.1218256	20	1 5.2	20.8
468213 2015 BX ₇₃	16.5	X	218.70996	152.72993	114.93885	2.87455	0.0459342	0.18078107	3.0976624	20	—	—
468214 2015 BZ ₇₃	16.2	X	261.67858	198.00263	108.24061	5.27067	0.1955136	0.22270054	2.6955985	20	3 15.2	20.4
468215 2015 BC ₈₄	16.3	X	359.26075	132.38857	321.53366	8.15212	0.0780165	0.17380995	3.1799451	20	—	—
468216 2015 BF ₈₅	17.5	X	207.80698	190.46865	164.78634	4.40633	0.1078608	0.22837565	2.6507545	20	3 26.8	21.5
468217 2015 BH ₈₇	16.8	X	277.78944	150.77642	128.92264	7.28860	0.0225297	0.21380202	2.7698835	20	3 22.8	20.6
468218 2015 BP ₉₈	16.6	X	300.73965	134.46083	81.56975	0.93387	0.0693080	0.19391021	2.9562122	20	1 25.2	20.6
468219 2015 BB ₁₀₀	17.1	X	19.64967	207.69150	296.92552	4.57410	0.0328169	0.20187882	2.8778990	20	2 10.7	21.0
468220 2015 BA ₁₀₅	17.3	X	118.13522	306.60903	145.79610	3.15460	0.0737570	0.22931784	2.6434889	20	4 19.7	21.0
468221 2015 BG ₁₀₉	17.3	X	229.04535	296.32058	67.81712	8.41803	0.1583396	0.25295581	2.4761271	20	4 26.2	21.1
468222 2015 BA ₁₂₂	16.7	X	259.00831	173.57326	117.23398	10.03436	0.1359448	0.21258486	2.7804462	20	2 29.8	21.0
468223 2015 BN ₁₂₆	17.0	X	196.97586	337.52161	335.30669	3.91677	0.0643898	0.19419259	2.9533457	20	1 27.9	21.4
468224 2015 BG ₁₃₂	16.8	X	144.91168	311.95448	74.32839	2.96636	0.0565005	0.20723566	2.8280889	20	2 27.5	20.8
468225 2015 BJ ₁₃₃	16.9	X	208.41160	211.78204	88.65970	5.42318	0.0140376	0.19272728	2.9682963	20	1 25.9	21.1
468226 2015 BS ₁₄₃	17.1	X	148.96332	338.14041	55.25552	5.20983	0.0759484	0.21232117	2.7827478	20	3 14.4	21.1
468227 2015 BC ₁₆₂	17.1	X	166.23270	327.78470	59.95078	3.34656	0.1426919	0.22621090	2.6676388	20	3 27.8	21.3
468228 2015 BJ ₁₆₉	17.9	X	268.80543	286.23110	82.89022	3.41961	0.2170951	0.27124720	2.3635196	20	6 5.9	21.0
468229 2015 BR ₁₇₀	16.7	X	320.60076	347.17189	197.03890	0.60774	0.0308110	0.18936958	3.0032805	20	1 16.8	20.8
468230 2015 BV ₁₇₁	17.1	X	158.82809	273.76812	129.77119	6.87688	0.0285771	0.22191725	2.7019377	20	4 3.3	20.9
468231 2015 BH ₁₉₃	16.5	X	70.81032	347.48486	99.48817	6.11154	0.0546056	0.19772767	2.9180389	20	2 11.9	20.3
468232 2015 BU ₂₀₃	17.4	X	151.46633	254.03977	161.43228	4.61739	0.0771962	0.22828685	2.6514419	20	4 11.8	21.2
468233 2015 BV ₂₁₆	17.1	X	8.11584	91.04418	42.41746	5.25904	0.1175666	0.19705428	2.9246830	20	1 9.9	20.6
468234 2015 BG<												

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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>
468241 2015 BX ₂₄₂	16.8	X	352.74193	327.07723	191.99670	5.75053	0.0205830	0.19454629	2.9497650	20	1 25.6	20.9
468242 2015 BP ₂₄₅	16.9	X	197.30027	64.95378	296.59000	5.26554	0.1440880	0.22595737	2.6696339	20	3 20.7	21.3
468243 2015 BK ₂₄₆	17.0	X	293.93768	103.30511	155.68042	2.93234	0.0248740	0.214447051	2.7641249	20	3 14.2	20.6
468244 2015 BX ₂₄₉	16.4	X	213.38620	227.37502	108.16461	4.42128	0.0958803	0.21308730	2.7760738	20	3 10.9	20.7
468245 2015 BV ₂₅₃	16.5	X	183.09781	143.85061	211.89513	3.16007	0.1169516	0.21140265	2.7908025	20	3 2.6	20.8
468246 2015 BE ₂₅₅	15.5	X	317.35370	237.08700	305.32952	7.87139	0.0307157	0.18573937	3.0422862	20	1 11.9	19.8
468247 2015 BG ₂₅₆	17.3	X	247.97201	220.79194	156.77172	6.63987	0.1361748	0.26024273	2.4296869	20	6 4.3	20.8
468248 2015 BD ₂₅₈	16.1	X	53.43809	313.77304	130.90667	11.33688	0.0274411	0.19053006	2.9910732	20	1 14.1	20.1
468249 2015 BT ₂₇₁	16.4	X	87.98629	261.47195	130.64595	11.55243	0.0767042	0.17945463	3.1129079	20	1 2.6	20.6
468250 2015 BO ₂₇₈	16.3	X	252.44855	147.49194	151.19433	4.99276	0.1028304	0.20527607	2.8460586	20	3 5.2	20.4
468251 2015 BT ₂₈₅	16.1	X	38.46456	264.42850	155.44323	16.97578	0.1286176	0.17577669	3.1561807	20	—	—
468252 2015 BF ₂₈₉	16.6	X	33.26678	334.92498	191.11284	9.60898	0.0576322	0.21877750	2.7277273	20	3 27.9	20.0
468253 2015 BQ ₂₉₁	16.5	X	21.92947	335.73478	138.03743	10.03927	0.1006657	0.18120040	3.0928815	20	1 9.9	20.4
468254 2015 BV ₃₀₆	15.6	X	26.94814	347.99449	87.71615	12.02072	0.0811887	0.17143383	3.2092610	20	—	—
468255 2015 BS ₃₁₀	15.6	X	353.91879	57.65501	66.76768	10.41552	0.0482812	0.17939153	3.1136378	20	—	—
468256 2015 BE ₃₂₆	16.6	X	171.36987	284.98729	72.12448	3.19449	0.0785366	0.20475270	2.8509064	20	2 23.1	20.8
468257 2015 BW ₃₄₆	16.5	X	270.05412	202.66387	35.57585	2.41764	0.0113355	0.20348704	2.8627156	20	1 22.1	20.4
468258 2015 BZ ₃₄₇	17.3	X	258.11804	297.25375	101.95462	23.48677	0.2072532	0.28899772	2.2657210	20	7 6.8	20.2
468259 2015 BM ₃₆₁	17.0	X	99.94528	356.83824	71.02929	5.52087	0.0529326	0.21478674	2.7614111	20	2 24.7	20.7
468260 2015 BF ₃₈₃	17.7	X	282.11404	331.04148	346.59467	3.02072	0.1135013	0.24097073	2.5575641	20	4 28.1	21.1
468261 2015 BR ₃₉₆	16.0	X	97.16753	290.58049	104.51712	13.51390	0.0360368	0.18825452	3.0151282	20	1 10.7	20.2
468262 2015 BH ₄₀₆	17.0	X	197.75532	225.01212	142.05725	14.49888	0.1115873	0.22179992	2.7028906	20	4 4.6	21.4
468263 2015 BA ₄₀₈	16.7	X	256.88145	229.90657	71.38759	1.51615	0.0500978	0.21304524	2.7764391	20	3 18.7	20.6
468264 2015 BA ₄₅₅	16.3	X	132.65593	254.77836	111.92423	7.42079	0.1082130	0.18792806	3.0186190	20	1 28.4	20.7
468265 2015 BO ₄₇₁	17.3	X	221.81358	206.47637	145.00708	6.53493	0.0796011	0.23029277	2.6360229	20	4 8.7	21.2
468266 2015 BF ₄₇₄	17.6	X	239.59191	201.05275	163.16547	1.60311	0.2020643	0.25312150	2.4750465	20	5 1.3	21.3
468267 2015 BX ₄₈₀	16.5	X	160.23584	147.13241	249.45151	4.85908	0.0479466	0.21934675	2.7230059	20	3 23.4	20.4
468268 2015 BO ₄₉₇	16.8	X	113.28591	47.97149	335.59312	1.86451	0.0628784	0.18583575	3.0412343	20	1 20.8	21.1
468269 2015 CK ₁	16.4	X	109.17838	286.77866	149.75963	4.76265	0.0981082	0.21185866	2.7867964	20	3 23.8	20.2
468270 2015 CE ₆	17.0	X	44.43072	305.41457	193.85234	2.95368	0.0364895	0.21344301	2.7729887	20	3 7.4	20.6
468271 2015 CJ ₉	15.9	X	299.65053	330.35924	220.48594	4.50126	0.0888559	0.17853278	3.1236143	20	—	—
468272 2015 CS ₁₄	16.5	X	134.03262	313.62361	83.85564	3.65530	0.0371408	0.20290143	2.8682212	20	2 27.0	20.5
468273 2015 CD ₁₅	16.0	X	24.89374	93.96993	3.08313	9.06764	0.0699345	0.17809248	3.1287606	20	—	—
468274 2015 CK ₁₅	16.3	X	222.82034	166.47997	125.96358	13.81355	0.0661819	0.19906836	2.9049225	20	1 29.5	20.7
468275 2015 CE ₂₈	15.9	X	225.94118	283.30372	334.24932	17.81128	0.1670642	0.17075061	3.2178160	20	—	—
468276 2015 CX ₂₈	17.1	X	246.24628	189.71270	135.15241	6.98268	0.0852919	0.22049056	2.7135806	20	4 2.7	21.1
468277 2015 CT ₃₆	16.1	X	139.07024	306.29837	22.72332	9.91889	0.0720767	0.17398501	3.1778117	20	—	—
468278 2015 CZ ₄₂	16.3	X	239.17066	112.07854	157.42883	10.91813	0.0392334	0.17985128	3.1083294	20	1 22.8	20.9
468279 2015 DX ₄	16.5	X	129.61916	282.81710	132.39832	12.35745	0.1765526	0.22399407	2.6852107	20	3 31.9	20.7
468280 2015 DE ₁₂	16.4	X	319.05227	26.88641	133.36303	10.66589	0.0338587	0.17784618	3.1316486	20	—	—
468281 2015 DJ ₁₃	17.3	X	302.56474	1.63355	279.15887	1.69574	0.0964412	0.22982820	2.6395740	20	4 9.9	20.8
468282 2015 DM ₆₅	16.8	X	4.52727	46.72691	66.13289	2.35871	0.1305591	0.17433189	3.1735949	20	—	—
468283 2015 DP ₆₈	17.5	X	280.65000	355.45308	28.64530	2.61067	0.2489240	0.27893766	2.3198751	20	7 9.4	20.2
468284 2015 DQ ₈₀	16.7	X	42.13577	2.28877	92.60791	4.51529	0.0615994	0.17973757	3.1096402	20	1 15.4	20.7
468285 2015 DO ₁₀₀	15.8	X	272.44769	163.61843	74.75263	8.07239	0.1233475	0.18746375	3.0236013	20	1 14.5	20.3
468286 2015 DX ₁₀₈	16.8	X	158.20421	326.12548	76.77442	12.33386	0.0544790	0.22087127	2.7104614	20	4 7.3	20.9
468287 2015 DH ₁₁₁	16.3	X	256.59809	195.22962	43.25932	12.28563	0.0969913	0.17709005	3.1405565	20	1 2.2	21.2
468288 2015 DW ₁₄₀	16.5	X	359.05408	291.85312	186.67654	8.16895	0.1490201	0.18428365	3.0582865	20	—	—
468289 2015 DA ₁₄₇	15.8	X	295.21297	10.04444	251.49724	7.44563	0.1046704	0.21556027	2.7548010	20	3 2.9	19.7
468290 2015 DT ₁₅₉	16.0	X	206.51012	188.06034	120.55190	11.95343	0.0294168	0.18382715	3.0633476	20	2 3.4	20.4
468291 2015 DV ₁₆₁	16.4	X	73.59573	329.59736	106.85414	10.80005	0.0815745	0.18595484	3.0399356	20	2 7.8	20.5
468292 2015 DO ₁₇₂	15.9	X	202.87874	55.38189	222.33903	14.91073	0.0591638	0.17779128	3.1322932	20	—	—
468293 2015 DF ₁₇₃	16.0	X	81.03771	263.30782	204.89823	13.28247	0.0081625	0.21241880	2.7818951	20	3 10.9	20.0
468294 2015 DW ₁₉₃	16.6	X	336.76460	33.64274	97.60954	24.26269	0.2147821	0.17443820	3.1723054	20	—	—
468295 2015 EV ₂	16.3	X	117.87411	56.49613	327.16013	10.67112	0.1257403	0.18797542	3.0181119	20	2 4.2	20.6
468296 2015 EP ₁₃	16.9	X	162.20970	333.22402	48.54066	5.02537	0.0800573	0.21058890	2.7979872	20	3 14.8	21.0
468297 2015 EZ ₁₆	16.4	X	134.16003	15.76521	44.00700	6.56701	0.0650845	0.21520220	2.7578560	20	3 28.9	20.3
468298 2015 EP ₁₇	16.2	X	91.49753	287.43402	103.88121	10.02263	0.0642162	0.17709986	3.1404406	20	1 4.8	20.4
468299 2015 ET ₁₈	16.8	X	177.55725	325.52298	87.32462	13.29222	0.1104324	0.23793205	2.5792934	20	5 10.6	20.9
468300 2015 FH ₃	16.7	X	311.20842	221.23378	116.06508	17.33276	0.2796698	0.26258600	2.4152106	20	6 16.9	19.1
468301 2015 FX ₁₂₅	17.3	X	131.91587	239.69173	198.94133	14.39403	0.1054299	0.22905123	2.6455398	20	4 21.6	21.1
468302 2015 FO ₂₁₁	13.9	X	296.19734	333.43077	81.40623	9.06526	0.0595150	0.08135264	5.2749898	20	9 21.3	20.8
468303 2015 FO ₃₃₉	16.0	X	25.05396	3.94509	267.94703	14.12202	0.0843614	0.24192847	2.5508097	20	8 8.8	19.3
468304 2015 HC ₇	14.0	X	274.78538	352.64506	94.26875	12.14028	0.0568019	0.08555611	5.1007655	20	10 4.5	20.9
468305 2015 YA ₈	16.9	X	351.92925	57.47685	161.48377	15.81027	0.4718543	0.23553121	2.5967915	20	1 30.3	19.3
468306 2016 AK ₇₅	15.5	X	279.49151	218.18558	277.72757	8.30692	0.0671950	0.17438086	3.1730008	20	12 16.1	19.8
468307 2016 AB ₁₀₈	16.2	X	316.18981	6.72347	88.08122	8.95982	0.2425917	0.18502197	3.0501452	20	12 14.5	19.0
468308 2016 AM ₁₂₃	16.8	X	327.38791	44.63403	107.55481	6.26020	0.1133157	0.21118163	2.7927494	20	—	—
468309 2016 AD ₁₂₈	16.6	X	265.59382	204.85410	89.11601	14.87743	0.2390918	0.23058051	2.6338295	20	3 3.1	21.1
468310 2016 AC ₁₈₂	16.5	X	324.63748	260.54941	285.17236	11.85472	0.1766861	0.21990777	2.7183727	20	—	—
468311 2016 BJ ₁₀	17.9	X	51.07336	352.65668	194.22661	4.63620	0.1482649	0.27371809	2.3492742	20	6 5.3	20.3
468312 2016 BW ₃₈	15.9	X	305.27383	50.24678	104.23106	16.09789	0.1238899	0.19643105	2.9308660	20	—	—
468313 2016 BU ₆₂	15.5	X	281.18689	232.81486	273.36971	12.72733	0.1835088	0.17769083	3.1334736	20	12 18.0	19.1
468314 2016 CU ₂₆												

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>
468321 2016 CD ₈₃	18.0 ^m	X	76.18453	77.51573	70.09424	5.74089	0.1671884	0.27877367	2.3207848	20	5 21.4	20.4
468322 2016 CX ₈₄	16.3	X	343.94354	36.66501	116.35152	15.52935	0.1320928	0.22092495	2.7100223	20	—	—
468323 2016 CE ₈₉	16.4	X	304.08797	73.47640	56.69550	10.54909	0.0833305	0.18330195	3.0691962	20	—	—
468324 2016 CR ₁₀₂	15.9	X	185.93082	23.95864	289.57038	16.83767	0.1991386	0.22434581	2.6824033	20	1 17.1	20.4
468325 2016 CM ₁₁₀	15.7	X	250.31931	330.77961	266.59333	8.38105	0.1081216	0.21057266	2.7981311	20	—	—
468326 2016 CW ₁₄₉	15.5	X	231.15304	248.14843	344.19013	11.08059	0.1054329	0.18055764	3.1002173	20	—	—
468327 2016 CT ₁₈₉	16.4	X	284.05110	15.92829	133.47669	11.44896	0.1692250	0.17827424	3.1266335	20	12 28.7	20.2
468328 2016 CH ₂₂₅	15.6	X	126.15174	206.74850	93.89898	11.89287	0.0484611	0.17886991	3.1196882	20	—	—
468329 2016 CU ₂₃₁	16.2	X	121.30626	304.96217	96.27225	15.85949	0.0978133	0.24477752	2.5309779	20	2 22.7	19.9
468330 2016 CP ₂₄₀	17.3	X	342.54386	103.35677	38.53971	13.52130	0.1346020	0.21405681	2.7676851	20	—	—
468331 2016 CC ₂₄₃	17.5	X	12.23825	72.28819	79.33065	14.79070	0.1292075	0.23455445	2.6039957	20	2 4.2	20.5
468332 2016 CJ ₂₄₃	16.5	X	281.59235	176.81984	80.94836	14.73173	0.2219399	0.22752603	2.6573494	20	2 2.1	20.8
468333 2016 DK ₁₆	16.9	X	317.15129	251.42999	332.75954	10.83259	0.1499213	0.23416164	2.6069070	20	2 8.9	20.2
468334 2016 DK ₂₃	16.4	X	311.00554	117.86175	357.39943	9.73331	0.1882827	0.17983336	3.1085358	20	—	—
468335 2016 ET ₄	18.0	X	59.04553	134.72493	181.47910	22.81013	0.0354089	0.35958986	1.9585339	20	12 23.8	20.8
468336 2016 ET ₇	16.6	X	306.72119	293.14732	197.50814	8.32143	0.2026895	0.17347400	3.1840493	20	—	—
468337 2016 EN ₃₆	16.8	X	298.93601	342.50347	295.62179	9.97431	0.1205655	0.24373689	2.5381768	20	3 25.2	20.3
468338 2016 EW ₅₃	16.8	X	291.52294	336.85546	322.58063	7.15836	0.2090537	0.24403119	2.5361357	20	3 29.9	20.4
468339 2016 EC ₆₃	16.2	X	174.44870	15.73541	280.39995	15.39025	0.0407110	0.18612776	3.0380526	20	—	—
468340 2016 EA ₆₅	16.4	X	247.29818	240.78082	346.06834	10.67551	0.0294638	0.18054613	3.1003490	20	—	—
468341 2016 EL ₆₆	16.3	X	295.44444	107.29794	18.75736	13.71672	0.1680900	0.17254862	3.1954232	20	12 14.1	20.4
468342 2016 ER ₇₃	17.8	X	103.83828	120.63276	72.42826	4.80102	0.1071696	0.30881229	2.1677357	20	8 27.7	20.7
468343 2016 ED ₇₇	17.4	X	75.16039	92.94739	8.45844	6.38080	0.2299745	0.25579531	2.4577687	20	3 25.8	19.9
468344 2016 EN ₇₉	17.1	X	339.66647	152.57198	102.06564	7.75518	0.1709539	0.25560100	2.4590141	20	4 26.7	19.5
468345 2016 EJ ₈₀	17.4	X	177.34633	346.71804	56.45365	9.36391	0.1149009	0.27811819	2.3244299	20	4 24.6	20.7
468346 2016 ER ₈₀	16.9	X	310.27187	63.85737	117.96433	10.42716	0.0408699	0.21204250	2.7851853	20	—	—
468347 2016 EN ₈₇	16.7	X	12.02123	34.15865	129.66048	4.38064	0.0245173	0.22086685	2.7104976	20	2 24.0	20.1
468348 2016 ER ₁₀₈	16.4	X	300.84568	61.04762	152.97613	14.84512	0.0436918	0.22847885	2.6499563	20	1 19.7	20.2
468349 2016 ER ₁₁₀	16.4	X	279.79663	172.03923	36.01754	13.47684	0.0531278	0.18773332	3.0207061	20	—	—
468350 2016 EH ₁₁₃	16.7	X	296.51478	240.10941	3.68548	16.83002	0.1786751	0.22793884	2.6541400	20	2 9.9	20.7
468351 2016 EO ₁₂₉	16.5	X	176.76643	150.70634	194.25139	5.76102	0.0447775	0.22007564	2.7169901	20	2 7.2	20.5
468352 2016 EB ₁₃₆	16.1	X	157.74835	145.46832	179.63724	3.83546	0.1455084	0.18366403	3.0651611	20	1 8.2	21.0
468353 2016 EL ₁₃₆	17.2	X	328.12527	285.03419	15.80865	4.72114	0.1522545	0.27700831	2.3303646	20	6 13.4	19.2
468354 2016 EJ ₁₄₁	16.3	X	329.62885	307.37989	174.51174	9.69093	0.0508643	0.17461672	3.1701429	20	—	—
468355 2016 EF ₁₄₄	17.2	X	289.43246	282.93622	348.00755	3.39143	0.1269016	0.23254432	2.6189803	20	3 6.6	20.7
468356 2016 EP ₁₄₅	16.6	X	215.61203	116.03791	167.58889	11.81468	0.2216939	0.18380840	3.0635559	20	1 10.1	22.1
468357 2016 EW ₁₅₄	17.4	X	303.84322	46.14930	196.07793	10.48058	0.0461208	0.23235480	2.6204042	20	2 26.2	21.0
468358 2016 EH ₁₆₁	16.1	X	116.14538	62.58672	25.61709	12.52574	0.1122475	0.24092635	2.5578781	20	4 14.9	19.5
468359 2016 EN ₁₆₁	16.2	X	322.70891	67.33011	84.19130	13.11028	0.0483405	0.21391679	2.7688928	20	—	—
468360 2016 EM ₁₆₂	16.5	X	46.94281	330.44566	128.01616	14.52363	0.1133096	0.23354289	2.6115095	20	1 19.2	19.4
468361 2016 EC ₁₇₁	16.5	X	180.47190	319.36934	11.84471	5.94487	0.0196881	0.21133771	2.7913742	20	1 28.9	20.5
468362 2016 EC ₁₇₉	16.3	X	233.64226	210.67689	7.78404	10.16724	0.0192282	0.16985172	3.2291589	20	—	—
468363 2016 EH ₁₈₁	15.8	X	318.55087	295.12935	205.93733	12.09228	0.1068804	0.17935895	3.1140149	20	—	—
468364 2016 EK ₁₈₇	17.0	X	334.49914	246.94151	237.61598	9.63228	0.0999101	0.19597352	2.9354259	20	—	—
468365 2016 EF ₁₉₆	16.6	X	300.63249	225.58251	27.68417	13.78347	0.2354078	0.22888780	2.6467990	20	2 18.5	20.6
468366 2016 EO ₂₀₂	15.2	X	154.64422	284.94670	8.45042	18.03089	0.0510596	0.17070161	3.2184317	20	—	—
468367 2016 FX ₉	16.6	X	309.27027	12.76177	177.04094	8.20485	0.1753070	0.20312898	2.8660788	20	—	—
468368 2016 FV ₁₅	17.7	X	175.34846	21.39624	42.05277	6.41913	0.0938030	0.27319659	2.3522629	20	5 16.5	21.0
468369 2016 FH ₃₄	16.5	X	86.38883	175.58410	202.11029	9.74362	0.0638229	0.17708680	3.1405950	20	—	—
468370 2016 FG ₃₆	17.2	X	256.40550	87.71333	140.85725	1.45186	0.1645104	0.18319221	3.0704219	20	—	—
468371 2016 FL ₃₆	16.7	X	279.72917	32.92796	182.81238	4.32969	0.1319047	0.19289823	2.9665423	20	—	—
468372 2016 FP ₃₈	16.1	X	245.61907	172.27433	49.66571	21.44486	0.1254857	0.17066325	3.2189140	20	—	—
468373 2016 FG ₄₁	16.8	X	323.75417	138.61717	75.40731	6.80189	0.1428130	0.22298819	2.6932798	20	2 8.6	20.2
468374 2016 FM ₄₃	16.8	X	345.56626	41.13597	238.23239	6.62717	0.1139687	0.27702371	2.3305482	20	6 18.6	19.0
468375 2016 FB ₄₆	16.4	X	101.24247	358.88952	47.13230	2.66690	0.0757905	0.20724359	2.8280167	20	2 1.6	20.1
468376 2016 FK ₅₄	17.1	X	9.46039	205.93680	352.74588	3.37441	0.0911770	0.24386961	2.5372558	20	4 1.7	19.7
468377 2016 FV ₅₄	16.4	X	307.33210	170.02498	100.27639	10.38345	0.0285840	0.24635733	2.5201462	20	4 18.0	19.8
468378 2016 FZ ₅₄	17.2	X	337.06865	183.70139	47.13441	12.96100	0.1531870	0.23466416	2.6031840	20	3 24.7	20.2
468379 2016 FB ₅₆	18.1	X	37.34742	102.13024	119.00986	2.91861	0.1713129	0.27057316	2.3674432	20	7 6.9	20.3
468380 2016 FM ₅₆	15.9	X	223.49157	88.84622	103.54418	6.98398	0.0820403	0.15078688	3.4959108	20	12 8.5	21.0
468381 2016 GH ₁₀	15.7	X	167.55126	293.16496	28.49832	13.83014	0.0504300	0.18893437	3.0078908	20	1 8.0	20.3
468382 2016 GR ₁₂	16.9	X	260.16895	203.59262	87.92740	4.04055	0.0905126	0.22615070	2.6681122	20	3 5.6	20.7
468383 2016 GA ₁₃	17.3	X	249.93484	294.40512	82.48409	4.73399	0.2641539	0.28280316	2.2986872	20	5 21.4	20.7
468384 2016 GP ₁₃	16.8	X	216.95547	260.46487	63.25377	5.79560	0.1693759	0.21406003	2.7676574	20	2 27.8	21.4
468385 2016 GS ₆₅	18.7	X	84.95416	29.65081	132.66410	2.57708	0.1407138	0.27463220	2.3440583	20	6 19.8	21.7
468386 2016 GW ₆₅	17.4	X	197.43525	300.08703	96.30103	3.38634	0.1462663	0.26243407	2.4161427	20	5 5.7	21.1
468387 2016 GT ₁₀₁	18.7	X	7.86584	158.04748	145.25835	3.60633	0.1881619	0.29690924	2.2252915	20	9 28.4	20.4
468388 2016 GL ₁₀₂	16.5	X	154.32720	133.03089	183.20222							

ELEMENTS AND OPPOSITION DATES IN 2020

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
468401 2016 GA ₁₂₇	18.1	X	26.70411	356.51375	282.31719	2.48127	0.1678934	0.29563418	2.2316853	20	9 17.9	20.4
468402 2016 GC ₁₃₀	18.4	X	38.40463	233.07367	356.81570	1.36012	0.1429137	0.27801423	2.3250093	20	7 18.9	20.7
468403 2016 GX ₁₃₂	16.0	X	179.55223	177.20897	141.55228	12.68728	0.0463066	0.19703435	2.9248802	20	1 14.1	20.3
468404 2016 GB ₁₃₃	16.4	X	231.28591	186.87240	97.58127	3.29804	0.0268039	0.20303427	2.8669700	20	1 30.9	20.5
468405 2016 GP ₁₅₄	17.5	X	120.63938	58.34337	111.97031	7.03241	0.0757970	0.29683226	2.2256762	20	8 10.4	20.3
468406 2016 GT ₁₅₄	15.4	X	192.71094	138.94553	136.97497	12.89981	0.0676050	0.18108241	3.0942248	20	—	—
468407 2016 GP ₁₆₅	17.3	X	239.29157	333.26647	39.28191	6.36486	0.0835403	0.26706464	2.3881327	20	5 22.2	20.4
468408 2016 GH ₁₇₄	17.1	X	257.20948	198.26247	94.43675	4.23619	0.0835426	0.21917470	2.7244307	20	3 5.2	21.0
468409 2016 GK ₁₇₅	16.5	X	225.87425	94.91951	171.51490	9.59926	0.0508866	0.18325237	3.0697498	20	1 4.0	21.2
468410 2016 GU ₁₇₆	16.6	X	224.05358	146.30643	161.41280	6.07617	0.2592027	0.19229626	2.9727302	20	2 10.7	22.0
468411 2016 GF ₁₈₀	16.0	X	18.47879	19.21126	70.59731	13.27211	0.2241624	0.18715876	3.0268852	20	—	—
468412 2016 GF ₁₉₁	16.7	X	264.13948	117.71952	137.29772	9.90067	0.0676884	0.18959035	3.0009486	20	1 30.0	21.1
468413 2016 GH ₁₉₁	16.9	X	342.68808	100.55112	135.32488	8.70662	0.0796386	0.23088806	2.6314901	20	4 16.4	20.1
468414 2016 GV ₂₀₄	17.0	X	18.73748	71.84008	124.13464	3.48098	0.1320003	0.24413145	2.5354413	20	4 17.9	19.5
468415 2016 GZ ₂₀₄	17.1	X	96.64895	323.24709	112.11250	4.10941	0.0739293	0.21683433	2.7439994	20	3 2.6	20.7
468416 2016 GO ₂₁₅	17.8	X	30.86132	238.68143	19.15316	3.03438	0.0815507	0.28182013	2.3040295	20	8 9.6	20.1
468417 1995 SB ₆₉	16.7	X	187.71649	172.66959	173.17906	13.78731	0.1563326	0.18033115	3.1028126	20	2 27.6	21.9
468418 1999 CE ₂₃	16.3	X	17.91117	234.83719	323.19001	11.03277	0.2172973	0.23912089	2.5707373	20	4 13.9	18.6
468419 1999 TV ₂₀	16.9	X	249.54259	165.42235	197.06361	9.70250	0.3174924	0.22343817	2.6896626	20	4 29.8	21.6
468420 1999 TS ₁₃₀	17.2	X	269.87730	135.32948	191.68004	13.26820	0.2865901	0.22405167	2.6847505	20	4 5.9	21.4
468421 1999 VP ₄₆	18.3	X	24.01786	12.32815	39.76584	18.60454	0.1631212	0.38733459	1.8638539	20	—	—
468422 2000 FA ₈	7.5	X	347.41183	11.68980	212.72719	0.75143	0.0318332	0.00337276	44.0364264	20	4 20.8	23.8
468423 2000 KZ ₃₉	17.2	X	12.68655	237.38270	49.28506	7.26881	0.1444503	0.25369495	2.4713154	20	8 29.7	19.8
468424 2000 QL ₂₁₆	17.5	X	292.52087	195.52874	142.86659	4.76516	0.2731825	0.23987770	2.5653274	20	5 18.1	20.8
468425 2000 UD ₃₄	16.8	X	147.36835	212.70121	219.84205	11.53915	0.2693651	0.22510641	2.6763576	20	5 10.7	21.5
468426 2000 US ₆₄	17.4	X	280.22947	128.03789	261.72627	3.31299	0.2599648	0.23999054	2.5645232	20	7 11.9	20.5
468427 2000 WB ₁₅₁	16.2	X	139.11092	339.30011	56.33484	26.41853	0.2278340	0.21874792	2.7279732	20	4 1.8	21.2
468428 2001 PL ₃₆	16.8	X	322.27206	171.59984	223.35164	12.47649	0.2878667	0.26119681	2.4237666	20	11 2.5	17.7
468429 2001 RQ ₁₁₂	16.0	X	94.78791	40.58457	354.11326	16.76994	0.2305407	0.17665360	3.1457272	20	2 10.8	20.6
468430 2001 RO ₁₂₅	17.7	X	12.29933	164.32438	141.96470	5.84549	0.2259721	0.26087164	2.4257803	20	10 11.0	20.0
468431 2001 SL ₃₂	18.0	X	349.11437	160.99104	165.08388	2.22289	0.2227981	0.25819341	2.4425265	20	9 15.9	19.7
468432 2001 SN ₃₀₁	16.8	X	164.47622	169.84528	194.96486	4.98912	0.1515330	0.18322092	3.0701011	20	2 28.7	21.8
468433 2001 TZ ₁₄₃	16.3	X	116.78709	355.86977	37.47505	12.33980	0.1124303	0.17796693	3.1302319	20	2 18.6	21.0
468434 2001 UZ ₁₅	16.7	X	322.14969	157.41999	216.12642	12.76856	0.2406406	0.25609148	2.4558733	20	9 16.7	18.7
468435 2001 UK ₁₉₉	17.4	X	326.30486	111.63234	245.66324	11.66598	0.2500317	0.25800331	2.4437261	20	8 27.1	19.4
468436 2001 WO ₄	18.5	X	228.41083	269.62110	243.32409	9.25274	0.2088713	0.36358478	1.9441611	20	11 23.9	20.1
468437 2001 XX ₁₈₇	16.6	X	99.51172	6.26372	108.82721	13.26626	0.0996310	0.23001551	2.6381431	20	5 4.5	20.4
468438 2001 XJ ₂₁₇	16.3	X	121.16317	6.63492	100.23144	23.21936	0.1034393	0.23245566	2.6196462	20	5 22.5	20.4
468439 2002 AX ₁₇	17.5	X	19.73927	325.69765	142.62858	24.22528	0.0872158	0.37670368	1.8987574	20	—	—
468440 2002 AE ₁₉₄	16.8	X	146.24383	122.99742	301.63447	12.46946	0.0649165	0.22933076	2.6433896	20	4 8.1	20.9
468441 2002 ON ₂₄	17.6	X	14.21341	77.12522	301.27341	20.43736	0.3926355	0.28173405	2.3044988	20	—	—
468442 2002 QK ₆₁	16.5	X	173.69151	220.61587	156.99435	18.33874	0.1827939	0.19849604	2.9105037	20	3 26.9	21.4
468443 2002 QE ₁₃₇	18.0	X	328.80641	177.87229	167.42300	4.72119	0.2345939	0.27493241	2.3423516	20	8 25.8	19.2
468444 2002 RZ ₂₁₀	16.8	X	104.59808	249.83313	169.90889	4.01558	0.1892594	0.18947129	3.0022056	20	3 10.6	21.2
468445 2002 SS ₂₈	17.8	X	91.73953	120.44644	252.70907	20.53479	0.2370397	0.34943054	1.9963138	20	—	—
468446 2002 XX ₄	19.7	X	153.15210	287.06576	74.08007	25.60952	0.2836952	0.41167596	1.7896401	20	2 10.9	22.5
468447 2003 EW ₁₅	17.6	X	87.77905	354.67549	131.35653	8.52610	0.2540800	0.24013966	2.5634614	20	5 23.2	21.3
468448 2003 LS ₃	17.8	X	314.03375	175.22193	157.96895	9.57080	0.5280425	0.22889657	2.6467313	20	4 29.9	21.2
468449 2003 MF ₁	18.1	X	57.11043	28.54322	262.82812	5.39293	0.3078272	0.30071011	2.2065005	20	12 8.9	21.7
468450 2003 OW ₁₆	16.8	X	31.88470	106.94425	237.34079	21.24428	0.3757231	0.29841273	2.2178107	20	—	—
468451 2003 QL ₁₁₁	16.0	X	272.70986	201.47320	178.85269	16.84284	0.2331204	0.22081339	2.7109351	20	5 6.4	20.3
468452 2003 SD ₁₇₀	19.1	X	77.92301	356.65515	237.67489	8.22893	0.4687927	0.30198687	2.2002769	20	12 8.5	23.4
468453 2003 SL ₃₆₉	18.4	X	73.17743	35.41686	203.45860	3.35216	0.1294241	0.29015071	2.2597148	20	9 20.4	21.2
468454 2003 UK ₃	16.7	X	244.06860	295.86768	66.09439	9.43824	0.3507098	0.21648009	2.7469921	20	4 24.4	21.6
468455 2003 UW ₁₅₁	18.1	X	29.76656	354.73348	351.86189	6.25933	0.2071489	0.29659394	2.2268683	20	—	—
468456 2003 UQ ₃₆₅	17.9	X	289.17765	175.82132	127.72400	6.26570	0.1935366	0.27480346	2.3430843	20	4 8.1	21.0
468457 2003 WH ₇	17.6	X	84.61865	152.40328	244.99264	20.73272	0.1412709	0.36953705	1.9232278	20	—	—
468458 2003 WH ₁₄	16.5	X	280.62304	86.30175	229.73754	14.29111	0.3104263	0.21613949	2.7498772	20	3 27.2	21.0
468459 2003 WW ₂₄	17.6	X	119.83684	109.94550	266.49741	18.96119	0.0810056	0.37144943	1.9166210	20	—	—
468460 2003 YA	15.2	X	358.17654	22.28025	86.68852	29.81418	0.1840655	0.18203052	3.0834713	20	—	—
468461 2003 YS ₇₆	15.5	X	347.64930	204.24407	283.62322	17.74567	0.1673640	0.18193840	3.0845120	20	—	—
468462 2004 BS ₁₀₂	19.2	X	191.36046	244.78195	126.80472	25.65277	0.3853144	0.44228179	1.7060955	20	3 31.5	22.7
468463 2004 CY ₁₀	16.3	X	333.57186	172.26915	318.80818	14.61056	0.2298303	0.17585899	3.1551959	20	—	—
468464 2004 EL ₁₉	16.9	X	59.55282	192.38044	3.29723	6.00110	0.0648485	0.25688160	2.4508349	20	6 17.5	20.0
468465 2004 FQ ₁₅₃	16.4	X	7.07686	346.69024	149.92789	17.71302	0.1311209	0.17877730	3.1207655	20	1 14.2	20.3
468466 2004 JC ₂₁	16.1	X	310.11538	42.71051	222.20230	17.10201	0.0960493	0.18177617	3.0863470	20	4 1.2	20.3
468467 2004 KK ₁₀	15.9	X	234.93256	232.29587	68.07686	27.92900	0.1753454	0.17185761	3.2039830	20	2 29.2	21.6
468468 2004 KH ₁₇	21.9	X	71.84484	340.70091	79.14725	22.12372	0.4983128	1.64016122	0.7121066	20	—	—
468469 2004 NS ₂₁	16.6	X	274.83612	20.99685	308.31689	13.54865	0.2554369	0.23565377	2.5958910	20	4 8.8	20.9
468470 2004 QB ₂₀	17.1	X	265.64237	130.45982	220.32319	2.06212	0.2378166	0.23456866	2.6038905	20	5 6.3	21.0
468471 2004 RU ₇₉	16.7	X	289.91226	284.54558	37.67810	26.91074	0.3320154	0.23574638	2.5952111	20	4 18.1	20.5
468472 2004 RC ₁₁₀	16.3	X	260.52998	130.38878	227.17452	27.49800	0.2637986	0.23029282	2.6360225	20	5 6.9	20.4
468473 2004 RV ₁₅₃	17.2	X	290.57019	51.35935	274.11367	4.12174	0.3352210	0.23699776	2.5860677	20	4 15.9	21.0
468474 2												

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
468481 2004 TP ₂₀	19.9	X	318.94045	264.88337	213.52187	25.37253	0.3510752	0.63270617	1.3438001	20	—	—
468482 2004 TO ₉₇	17.6	X	339.32599	122.43113	197.46094	13.08160	0.2197343	0.24087691	2.5582281	20	7 30.4	19.9
468483 2004 TV ₁₃₉	17.2	X	199.49026	176.39030	222.75812	13.67311	0.2467801	0.22492305	2.6778119	20	5 8.9	21.9
468484 2004 TM ₂₈₀	16.7	X	271.55946	271.79356	88.07566	14.07499	0.3053999	0.23454316	2.6040793	20	5 19.1	20.8
468485 2004 TX ₃₂₇	16.6	X	256.31171	69.70038	260.89286	11.65046	0.2120653	0.22861345	2.6489161	20	3 30.3	21.1
468486 2004 WZ ₁₁	16.4	X	279.36143	97.41426	247.16940	11.62362	0.2874343	0.23316985	2.6142941	20	5 5.6	20.2
468487 2004 XB ₆₁	15.9	X	286.87941	73.38696	292.49255	27.53218	0.3646632	0.23190819	2.6237674	20	6 2.8	19.9
468488 2004 XS ₁₆₀	16.0	X	307.24003	75.66307	304.51529	12.95290	0.1382076	0.23365600	2.6106667	20	8 28.1	19.1
468489 2005 AC ₂₅	16.3	X	136.83905	211.98590	251.26180	6.44995	0.1028483	0.21348078	2.7726616	20	5 27.9	20.5
468490 2005 FV ₁₄	16.1	X	301.35706	133.86824	76.04725	11.62723	0.1767368	0.18800716	3.0177722	20	1 4.8	20.4
468491 2005 GB ₄₄	17.5	X	119.14705	190.64414	353.32212	8.86387	0.1601358	0.27998309	2.3140968	20	9 1.6	20.9
468492 2005 GB ₄₉	16.7	X	283.77532	65.43944	166.89245	2.40213	0.1510984	0.18481676	3.0524026	20	1 15.4	21.2
468493 2005 GT ₈₉	17.9	X	112.27823	354.25619	187.65611	6.91240	0.0484831	0.27701744	2.3305834	20	8 8.3	21.1
468494 2005 GY ₁₂₈	17.8	X	101.36776	110.55215	89.49663	22.91566	0.3077802	0.27856207	2.3219600	20	9 26.9	22.3
468495 2005 GN ₁₃₂	18.3	X	41.03260	148.37103	106.18186	2.35843	0.1562313	0.27460722	2.3442005	20	9 1.9	20.8
468496 2005 GM ₁₃₈	16.7	X	289.29297	46.64751	160.30356	3.59278	0.2409801	0.18262916	3.0767294	20	—	—
468497 2005 HR ₂	17.9	X	59.97091	0.05951	215.61915	5.16364	0.1727191	0.27132560	2.3630643	20	8 3.8	20.8
468498 2005 JX ₅₀	18.0	X	31.77082	159.99182	95.30416	2.50761	0.1602307	0.27134086	2.3629757	20	8 18.6	20.4
468499 2005 JH ₅₂	17.7	X	9.22744	208.47842	78.68742	10.26111	0.2175031	0.27050938	2.3678153	20	9 9.1	19.9
468500 2005 JX ₁₀₈	16.3	X	304.80764	44.41623	141.06562	28.24913	0.1195227	0.17950380	3.1123394	20	—	—
468501 2005 JY ₁₈₄	17.5	X	307.74786	189.20829	149.12612	6.15611	0.2530043	0.26564385	2.3966404	20	6 15.0	19.8
468502 2005 LQ ₁₇	17.8	X	70.76933	3.52003	247.89127	6.57274	0.0851593	0.27677114	2.3319658	20	9 23.9	20.9
468503 2005 LF ₂₈	16.0	X	270.57707	154.38659	123.47097	13.25899	0.2897031	0.18200552	3.0837537	20	2 12.1	21.0
468504 2005 LC ₃₈	16.3	X	214.34488	104.31886	221.18582	14.37024	0.1910847	0.18147071	3.0898094	20	2 21.9	21.7
468505 2005 LS ₅₂	15.7	X	240.69327	338.58410	286.90872	13.55258	0.2324499	0.17239033	3.1973789	20	1 10.4	21.2
468506 2005 MA ₃₀	16.3	X	226.31414	10.50485	288.71269	16.69101	0.3151692	0.17493354	3.1663141	20	1 31.0	22.2
468507 2005 NB ₆	16.3	X	340.31760	69.78661	285.12502	20.52288	0.3053640	0.26726900	2.3869152	20	10 10.1	18.3
468508 2005 NZ ₄₀	18.3	X	328.52997	52.10904	269.08201	0.88855	0.2430090	0.26204388	2.4185405	20	7 7.3	19.9
468509 2005 NP ₁₂₅	15.8	X	180.72672	71.62312	294.25326	15.68311	0.1573424	0.17407936	3.1766634	20	3 9.3	21.3
468510 2005 QM ₅₁	16.2	X	259.29327	148.48581	151.58677	24.02097	0.2352550	0.17800749	3.1297564	20	3 4.2	21.2
468511 2005 QO ₁₄₂	17.2	X	21.36754	12.15867	273.83970	14.15346	0.2424550	0.26405556	2.4062413	20	9 18.6	20.0
468512 2005 QJ ₁₇₀	16.2	X	229.16879	150.26144	219.76191	10.95016	0.3697156	0.17858244	3.1230352	20	4 20.9	22.1
468513 2005 RW ₁₈	17.9	X	36.17369	106.38676	162.49811	0.96122	0.1750937	0.26225876	2.4172193	20	9 15.6	20.6
468514 2005 RE ₂₁	15.7	X	253.68517	86.51609	229.03323	14.78494	0.2383091	0.17896396	3.1185951	20	3 10.9	21.1
468515 2005 SC ₅₇	17.8	X	2.21190	62.54398	274.53344	1.20458	0.2156642	0.26561161	2.3968343	20	11 3.5	20.0
468516 2005 SE ₁₁₀	17.7	X	344.89132	180.27987	161.79767	2.35953	0.2403317	0.26208249	2.4183030	20	10 6.2	19.2
468517 2005 TV ₂₈	15.6	X	264.69690	90.09975	253.94327	10.65467	0.1332122	0.17994138	3.1072916	20	5 10.1	20.3
468518 2005 TM ₁₂₂	16.0	X	126.22982	160.26803	194.08878	9.48810	0.0848828	0.15439628	3.4412126	20	1 7.5	21.2
468519 2005 TT ₁₇₄	15.7	X	239.34248	95.62513	292.70678	8.98000	0.1862557	0.18223703	3.0811414	20	6 1.6	20.6
468520 2005 UW ₁₀₆	16.5	X	153.32137	327.49348	50.99184	28.40553	0.0503302	0.22655627	2.6649270	20	3 13.0	21.0
468521 2005 UT ₁₅₇	17.4	X	181.69919	10.33069	40.12254	13.42252	0.1367302	0.23914275	2.5705806	20	5 7.0	21.4
468522 2005 UH ₁₉₉	17.4	X	179.57609	213.32397	209.04081	11.33235	0.1086038	0.24088165	2.5581946	20	5 21.9	21.3
468523 2005 UP ₂₁₁	17.0	X	1.75940	9.41591	223.61305	11.26778	0.1325197	0.23757760	2.5818582	20	5 9.1	19.6
468524 2005 UO ₄₁₃	17.4	X	32.21455	284.54815	228.68560	11.63620	0.2061936	0.22657239	2.6648007	20	3 11.8	20.2
468525 2005 WJ ₁₄₃	17.1	X	270.48848	34.50830	254.05621	14.32622	0.1205997	0.22903004	2.6457029	20	2 29.4	21.4
468526 2005 YM ₃₄	16.9	X	256.91552	259.78057	111.55941	14.15195	0.2070837	0.23902215	2.5714452	20	5 30.5	20.9
468527 2005 YA ₆₂	16.7	X	163.94414	328.55758	97.51428	14.71855	0.1809900	0.23131382	2.6282600	20	5 16.5	21.2
468528 2005 YO ₉₃	16.6	X	156.60760	298.53780	97.79430	33.85388	0.2225978	0.22620694	2.6676700	20	4 20.5	21.8
468529 2005 YN ₁₉₂	17.3	X	18.66857	193.54024	313.96067	4.09081	0.1046174	0.21268380	2.7795838	20	2 10.9	20.6
468530 2005 YR ₂₄₅	15.9	X	105.29890	285.90855	290.16616	31.01751	0.1058002	0.24141211	2.5544457	20	8 29.8	20.3
468531 2005 YA ₂₈₈	16.8	X	52.23112	51.83871	72.72545	19.30331	0.2275939	0.21685732	2.7438056	20	4 3.7	20.2
468532 2006 AJ ₈₁	16.5	X	359.40338	202.58407	313.31503	12.34612	0.1202037	0.21136364	2.7911459	20	1 22.2	19.6
468533 2006 BN ₅₀	16.5	X	5.34042	184.34433	320.45667	14.13259	0.0898411	0.20970646	2.8058310	20	1 20.9	20.0
468534 2006 BS ₁₈₀	16.9	X	327.43209	110.21502	311.67936	6.47306	0.0527747	0.21814220	2.7330207	20	4 4.3	20.4
468535 2006 BG ₂₃₃	17.2	X	151.09714	325.85564	105.44119	4.96209	0.0732413	0.22485108	2.6783833	20	5 2.2	21.1
468536 2006 ES ₄₇	17.9	X	186.70614	59.66807	89.91041	3.22057	0.0588380	0.31047960	2.1599681	20	10 5.7	20.5
468537 2006 GN ₁₇	17.2	X	304.92661	265.67369	31.32189	8.34087	0.2766697	0.21140683	2.7907657	20	4 9.7	20.9
468538 2006 HL ₉₃	16.8	X	296.73175	164.40755	121.52443	9.01188	0.2931064	0.20465446	2.8518186	20	3 17.0	21.0
468539 2006 KA ₇₅	15.8	X	229.15222	110.31342	144.58936	19.52197	0.1211066	0.18603653	3.0390457	20	—	—
468540 2006 MD ₁₂	19.4	X	255.45102	174.54989	291.82419	27.27293	0.6052276	1.28342107	0.8386034	20	—	—
468541 2006 QA ₃₁	20.2	X	114.22706	358.58814	95.84801	11.85785	0.4578426	0.75179708	1.1978496	20	5 25.7	20.6
468542 2006 QZ ₅₂	15.9	X	186.41185	187.34389	169.41393	20.84934	0.2835228	0.18043181	3.1016585	20	3 12.8	21.3
468543 2006 RS ₃	17.0	X	15.07852	107.24239	244.02915	7.78931	0.2177303	0.29115068	2.2545378	20	12 22.8	19.6
468544 2006 SO ₂₃	18.0	X	327.50460	317.48905	12.26553	9.78515	0.1877512	0.27744720	2.3281761	20	8 2.9	19.9
468545 2006 SS ₇₁	16.4	X	194.22721	164.35399	151.79727	2.24072	0.1571912	0.17316010	3.1878962	20	1 31.8	21.7
468546 2006 SU ₉₉	16.4	X	239.90466	304.48765	21.76487	11.21734	0.1128682	0.18329311	3.0692949	20	3 27.7	21.1
468547 2006 SA ₁₃₅	18.0	X	12.77651	65.11611	251.59476	5.11469	0.2443405	0.28465109	2.2887278	20	11 2.2	20.2
468548 2006 SH ₁₄₁	16.1	X	176.33962	310.79643	38.39324	17.29019	0.2540898	0.17655299	3.1469221	20	3 5.5	21.9
468549 2006 SK ₂₁₃	16.0	X	197.84340	119.70238	218.45600	15.77585	0.2330129	0.18198310	3.0840069	20	2 23.2	21.6
468550 2006 SE ₃₂₀	15.9	X	192.83195	146.63027	187.63474	21.83095	0.1136924	0.17604303	3.1529966	20	2 16.5	21.2
468551 2006 SB ₃₃₇	17.2	X	226.69515	189.02049	181.42563	16.22558	0.2523392	0.18938463	3.0031215	20	4 28.1	22.5
468552 2006 SW ₃₉₆	16.8	X	190.79330	159.94653	179.12487	0.81331	0.1774359	0.17719094	3.1393643	20	2 23.8	21.9
468553 2006 TN ₁₁	18.1	X	278.46904	158.93550	219.91367	7.60887						

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>
468561 2006 VV ₁₀₀	17.9	X	339.32968	130.21854	216.57693	9.83258	0.2627216	0.27890327	2.3200659	20	10 3.5	19.1
468562 2006 VZ ₁₃₄	16.2	X	228.74891	84.62592	245.47778	9.88425	0.1392041	0.17685974	3.1432823	20	3 13.8	21.3
468563 2006 VZ ₁₄₈	17.8	X	304.73627	339.42182	76.14601	24.01911	0.1038241	0.35196246	1.9867283	20	11 30.5	19.0
468564 2006 WZ ₁₃₄	17.6	X	351.35521	316.21357	79.18439	22.91378	0.0956241	0.36118486	1.9527637	20	—	—
468565 2006 WN ₁₈₃	17.4	X	27.58995	134.36681	255.90954	18.62543	0.0961693	0.36445142	1.9410778	20	—	—
468566 2006 WA ₁₈₅	17.3	X	349.48493	290.34750	78.14980	23.53956	0.1019264	0.35174588	1.9875438	20	12 7.8	18.7
468567 2006 WQ ₂₀₅	18.7	X	129.62246	74.98479	239.88502	18.84761	0.0593543	0.37151392	1.9163992	20	—	—
468568 2006 XD ₃	17.9	X	70.41870	282.78901	93.88346	23.50523	0.1449818	0.36922048	1.9243269	20	—	—
468569 2006 XJ ₁₇	15.6	X	228.64980	88.83376	294.02016	20.50886	0.2747960	0.18251520	3.0780100	20	5 5.6	21.3
468570 2006 YS ₂₅	17.4	X	94.24519	58.96390	86.26334	11.05856	0.0946264	0.24670113	2.5178042	20	6 1.5	20.6
468571 2007 DW ₇₁	17.6	X	11.71427	47.02354	158.85088	14.66388	0.1032120	0.23191865	2.6236885	20	4 22.5	20.7
468572 2007 EB ₅₇	16.8	X	16.19004	70.87023	164.92833	29.52769	0.3372586	0.23258684	2.6186610	20	7 8.7	19.5
468573 2007 ER ₁₄₅	17.6	X	83.83568	343.32940	149.19373	5.70966	0.1374703	0.23450305	2.6043762	20	5 8.9	21.0
468574 2007 EH ₁₅₅	16.7	X	302.94469	97.68524	205.26245	14.00724	0.1396104	0.23262095	2.6184051	20	5 6.0	19.0
468575 2007 EF ₁₉₃	17.2	X	34.73901	196.23207	340.20504	11.00333	0.0367650	0.23458086	2.6038003	20	4 6.1	20.6
468576 2007 FB ₄₀	16.6	X	348.42171	122.49110	136.78705	10.40764	0.2745560	0.23031134	2.6358812	20	5 15.4	18.7
468577 2007 GZ ₃₇	16.8	X	2.96483	159.98335	35.68477	14.87877	0.1563287	0.22403044	2.6849200	20	3 23.9	19.7
468578 2007 HD ₇₉	16.4	X	343.34973	140.67817	70.29831	12.92338	0.1289711	0.22237467	2.6982313	20	3 13.6	19.8
468579 2007 HB ₈₇	17.0	X	278.80959	83.72462	213.58860	15.51503	0.1655047	0.21918556	2.7243407	20	3 20.2	21.2
468580 2007 JJ ₉	16.8	X	304.27575	170.78010	84.55303	10.21543	0.2656409	0.21856109	2.7295275	20	2 19.5	20.8
468581 2007 JW ₃₃	16.8	X	316.60210	235.24666	51.39942	13.57312	0.2085876	0.22444698	2.6815971	20	4 25.5	19.8
468582 2007 JR ₃₈	17.3	X	39.10977	188.22367	333.48366	1.49414	0.1380180	0.22517843	2.6757869	20	4 5.9	20.1
468583 2007 LS ₃	17.9	X	296.04457	168.59445	200.95613	6.37422	0.6818650	0.22301112	2.6930952	20	5 6.3	22.5
468584 2007 LN ₁₁	17.5	X	308.59318	103.66068	218.40423	5.19426	0.2988160	0.22698552	2.6615663	20	5 14.2	20.4
468585 2007 LH ₂₆	16.4	X	350.20532	5.85138	261.12963	10.45760	0.0198231	0.22059490	2.7127248	20	6 9.7	20.0
468586 2007 RR ₄₉	16.7	X	35.76355	292.43908	190.96535	9.76158	0.0530199	0.18623395	3.0368975	20	2 7.2	20.9
468587 2007 RS ₁₃₂	16.5	X	302.52951	12.49091	317.16881	9.00489	0.1742937	0.21669433	2.7451812	20	6 4.3	20.0
468588 2007 RA ₁₈₉	16.8	X	263.11053	129.02968	223.13047	12.59388	0.2204280	0.21218900	2.7839032	20	5 8.2	21.1
468589 2007 RF ₂₇₁	16.2	X	2.32395	301.89373	201.03050	21.61914	0.1219459	0.18176380	3.0864870	20	1 11.1	20.5
468590 2007 RP ₂₉₀	16.6	X	99.80641	191.31427	217.93818	10.56770	0.1362578	0.17791235	3.1308720	20	2 11.6	21.2
468591 2007 RR ₂₉₉	16.7	X	73.22626	261.69429	182.96517	8.34023	0.1015735	0.18377757	3.0638985	20	2 16.9	20.8
468592 2007 TX ₁₉₅	16.8	X	175.18522	144.08427	210.20370	10.01978	0.0677035	0.18555578	3.0442926	20	2 20.4	21.6
468593 2007 TT ₃₀₁	18.1	X	346.07272	156.90804	218.42756	6.91055	0.1836773	0.30658587	2.1782178	20	12 10.3	19.8
468594 2007 TX ₃₆₉	15.9	X	111.11326	354.58055	48.94853	17.89169	0.1467674	0.18254906	3.0776293	20	3 3.2	20.7
468595 2007 TU ₄₀₅	16.8	X	298.66100	105.19218	229.85414	8.06526	0.2558397	0.21172121	2.7880024	20	5 24.4	20.2
468596 2007 UR ₂₂	18.4	X	225.81303	280.59319	168.65363	2.65589	0.1094284	0.29217929	2.2492433	20	8 20.1	21.1
468597 2007 UD ₄₉	16.6	X	161.49212	173.91243	198.97532	9.02273	0.1494881	0.18629878	3.0361930	20	3 5.3	21.5
468598 2007 UG ₁₁₁	16.5	X	288.76079	17.90347	214.54996	6.46607	0.0385303	0.18406495	3.0670862	20	2 2.9	20.9
468599 2007 UF ₁₂₁	16.5	X	230.15215	65.02897	222.12044	4.91686	0.1073362	0.18265557	3.0764329	20	1 29.2	21.4
468600 2007 UF ₁₃₈	15.6	X	66.10940	344.07330	95.44117	17.17040	0.1568942	0.17598130	3.1537338	20	2 14.7	19.8
468601 2007 VX ₁₂₅	16.8	X	106.19060	235.63935	239.13599	22.23741	0.2542233	0.26784903	2.3834680	20	5 25.8	20.3
468602 2007 VQ ₁₃₈	15.5	X	151.41063	262.09873	53.52693	19.08582	0.1014155	0.16852065	3.2461403	20	—	—
468603 2007 VE ₁₆₄	15.9	X	167.05873	267.86014	59.10309	23.61250	0.2252952	0.17804699	3.1292935	20	1 28.7	21.6
468604 2007 VA ₂₅₄	16.2	X	131.71004	234.13120	155.83132	15.31353	0.1735491	0.18298011	3.0727941	20	3 2.3	20.8
468605 2007 VB ₂₆₁	16.5	X	239.81651	24.69136	256.87219	9.80254	0.0837032	0.18238641	3.0794588	20	1 31.9	21.4
468606 2007 VV ₂₆₇	15.7	X	275.49782	125.41950	262.70453	24.41112	0.2766703	0.21224284	2.7834325	20	6 27.8	19.7
468607 2007 VO ₂₉₆	17.0	X	226.13909	329.95880	90.10644	23.59764	0.1815168	0.28505207	2.2865809	20	7 1.3	20.3
468608 2007 WM ₁₂	15.9	X	87.84307	305.83677	110.39291	11.43421	0.0862934	0.17642318	3.1484657	20	2 3.3	20.2
468609 2007 XM ₁	17.2	X	208.39521	332.95882	71.38399	25.98342	0.2072856	0.27881714	2.3205436	20	5 25.1	20.9
468610 2007 YK ₁₃	16.4	X	198.94574	305.72935	78.35633	12.17719	0.1114381	0.18637338	3.0353827	20	4 28.1	21.3
468611 2007 YT ₃₄	18.3	X	14.44703	321.28989	102.32741	24.57125	0.1131458	0.39257924	1.8472166	20	—	—
468612 2007 YZ ₇₀	18.0	X	134.83244	21.03311	120.45693	5.79119	0.0823739	0.27207962	2.3586964	20	7 15.7	21.2
468613 2008 AM ₈₃	17.7	X	227.79793	338.54272	94.32165	7.16684	0.0670784	0.28077418	2.3097480	20	8 6.1	20.7
468614 2008 AB ₈₇	18.1	X	193.11180	356.57335	104.30073	3.76248	0.1012120	0.27977524	2.3152428	20	7 28.4	21.4
468615 2008 BB	18.0	X	88.48891	213.04140	101.76423	21.82680	0.1305751	0.38387129	1.8750476	20	—	—
468616 2008 DL ₄₆	17.8	X	62.22484	144.68202	58.45218	4.40718	0.1200385	0.26296887	2.4128657	20	7 12.9	20.6
468617 2008 EM ₈₆	18.2	X	125.75460	11.20617	127.16363	3.21941	0.1235715	0.26245112	2.4160380	20	7 3.7	21.6
468618 2008 EW ₁₅₁	18.4	X	16.35149	332.34464	276.29145	0.78112	0.1533053	0.25731314	2.4480939	20	7 4.8	20.5
468619 2008 EC ₁₆₅	17.4	X	110.42765	347.25065	205.86525	9.37990	0.1935967	0.26949261	2.3737673	20	9 1.9	21.2
468620 2008 FW ₂₅	17.9	X	106.44362	349.91870	163.38089	5.83517	0.1340169	0.26139729	2.4225272	20	7 2.6	21.3
468621 2008 FB ₄₅	18.0	X	12.21340	103.87994	163.21825	5.00871	0.2012929	0.26047272	2.4282565	20	7 31.6	19.9
468622 2008 FN ₉₇	18.1	X	40.22117	71.65638	147.96921	1.77905	0.1412091	0.25909871	2.4368336	20	7 4.0	20.6
468623 2008 GU ₁₁₁	16.5	X	281.86401	234.75674	53.75218	32.29135	0.3284006	0.23394238	2.6085357	20	3 17.0	21.4
468624 2008 HN ₇	17.2	X	327.50060	185.73851	74.24974	15.75139	0.1095418	0.24503380	2.5292129	20	4 24.4	20.3
468625 2008 HW ₁₈	17.7	X	342.51584	353.56084	295.57275	0.62838	0.1672031	0.25496338	2.4631121	20	6 24.6	19.7
468626 2008 KB ₁₆	17.8	X	329.78345	125.17786	150.90990	8.99481	0.1819982	0.24424015	2.5346890	20	5 8.4	20.5
468627 2008 OD ₁₇	17.3	X	283.53436	36.07080	323.85683	11.02006	0.2018769	0.23737588	2.5833207	20	6 14.6	20.8
468628 2008 OG ₁₈	17.0	X	272.72228	319.29778	335.66715	14.08201	0.1886347	0.22373309	2.6872985	20	3 8.4	21.1
468629 2008 PH ₁₀	17.6	X	352.69979	107.40624	179.37417	8.74151	0.2602166	0.24394305	2.5367466	20	7 14.1	19.4
468630 2008 RZ ₃₂	17.4	X	265.30712	115.65557	202.13291	5.31161	0.0921418	0.22304740	2.6928031	20	4 12.1	21.0
468631 2008 RW ₃₄	17.4	X	7.69065	91.67507	179.21625	11.58515	0.2402331	0.24019126	2.5630943	20	7 27.2	19.7
468632 2008 RC ₈₀	16.5	X	281.53111	357.29056	11.21055	10.65132	0.1648606	0.23342568	2.6123837	20	6 30.7	20.0
468633 2008 SP ₄	17.1	X	256.64635	197.59214	158.79034	5.30367	0.2592621	0.22793077	2.6542026</			

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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>
468641 2008 SZ ₂₉₉	17.1	X	226.09195	140.83426	234.55903	13.23569	0.1888329	0.22406886	2.6846132	20	5 3.4	21.4
468642 2008 TM ₆	16.5	X	264.47917	346.76382	38.23350	12.70224	0.3110011	0.23086273	2.6316825	20	6 7.5	20.7
468643 2008 TU ₄₂	16.4	X	208.65572	92.32659	269.68039	7.43090	0.2561876	0.21628568	2.7486379	20	3 28.7	21.4
468644 2008 TX ₇₈	17.3	X	300.88299	127.51561	177.10993	4.34914	0.2390904	0.22939595	2.6428887	20	4 19.0	20.7
468645 2008 TF ₁₃₆	16.0	X	334.36628	101.98590	26.74668	17.01414	0.2330530	0.17966235	3.1105080	20	—	—
468646 2008 TS ₁₄₆	17.0	X	163.61446	226.36782	170.06833	4.57272	0.0652869	0.21255928	2.7806692	20	3 31.8	21.1
468647 2008 UC ₄	16.3	X	298.63181	267.72138	75.73581	28.39140	0.4196595	0.23398875	2.6081910	20	5 16.1	20.0
468648 2008 UL ₃₁	17.3	X	182.43285	188.54421	205.00648	9.01439	0.1585479	0.21195370	2.7859632	20	4 18.8	21.9
468649 2008 UV ₄₁	16.7	X	176.99426	167.23276	229.38342	8.94346	0.2263286	0.21049479	2.7988211	20	4 17.6	21.6
468650 2008 UH ₇₃	16.6	X	187.45939	217.69409	241.98763	21.16824	0.0498680	0.22441766	2.6818308	20	7 12.8	20.8
468651 2008 UH ₁₆₁	17.2	X	296.55783	92.92695	214.08588	11.18088	0.1981714	0.22788902	2.6545268	20	4 21.6	20.4
468652 2008 UT ₁₇₆	17.1	X	315.80454	261.24143	27.99637	11.22398	0.1456737	0.22306696	2.6926457	20	5 3.5	20.2
468653 2008 UF ₁₈₆	17.0	X	207.01257	164.05118	230.57786	5.39889	0.0514887	0.21326221	2.7745557	20	5 19.4	20.9
468654 2008 UJ ₂₁₄	16.3	X	188.76171	219.70842	225.16746	21.14720	0.0566615	0.22548021	2.6733989	20	6 26.9	20.5
468655 2008 UF ₂₂₆	16.6	X	256.35459	137.85199	249.41228	14.68810	0.1906399	0.22791052	2.6543598	20	6 18.0	20.6
468656 2008 UY ₃₅₅	16.7	X	200.96011	251.83300	65.84811	11.83208	0.1118869	0.19952912	2.9004487	20	2 9.6	21.4
468657 2008 UO ₃₆₁	15.7	X	242.66118	80.46130	259.87498	23.18226	0.2114845	0.21889581	2.7267443	20	3 26.1	20.7
468658 2008 VD ₃₅	17.5	X	255.45890	146.58383	212.90461	8.94810	0.3279835	0.22329142	2.6908409	20	4 29.1	22.1
468659 2008 WO ₂₃	16.0	X	272.15057	109.76483	246.82751	13.71745	0.0972544	0.22365958	2.6878873	20	6 10.5	19.5
468660 2008 WS ₇₈	16.6	X	183.82127	261.74711	113.59746	5.17454	0.1408848	0.20609457	2.8385182	20	3 31.4	21.2
468661 2008 WX ₈₇	17.1	X	130.36664	277.49147	193.12369	3.55336	0.0553002	0.21403460	2.7678766	20	5 26.2	21.0
468662 2008 WP ₁₀₃	16.8	X	287.93142	92.92843	270.87491	6.14587	0.2274653	0.23148210	2.6269861	20	6 22.0	19.9
468663 2008 WG ₁₃₆	16.6	X	2.76012	42.11419	89.56223	15.77326	0.1608450	0.17935583	3.1140510	20	—	—
468664 2008 XU ₁₁	16.4	X	191.69743	35.93876	271.52264	9.91937	0.0706594	0.18978568	2.9988892	20	1 14.9	20.9
468665 2008 XX ₃₀	16.4	X	278.57474	206.15180	41.78335	8.74822	0.0491692	0.19434249	2.9518268	20	2 12.7	20.7
468666 2008 YF ₄₈	16.6	X	120.27773	290.84852	109.88334	10.04784	0.0946210	0.18549617	3.0449448	20	2 25.3	21.1
468667 2008 YD ₆₆	15.7	X	276.10037	241.42381	61.43914	35.31136	0.2685304	0.21646808	2.7470937	20	4 7.9	20.6
468668 2008 YJ ₁₅₂	16.3	X	212.19901	166.53950	131.15631	15.22897	0.0392211	0.17844598	3.1246271	20	1 27.6	20.9
468669 2009 AT ₁₁	15.9	X	173.92333	224.18536	112.88261	16.86719	0.0650191	0.18224697	3.0810294	20	2 3.3	20.5
468670 2009 AL ₃₁	17.0	X	145.33819	246.11473	148.55637	3.73101	0.1107169	0.19133352	2.9826938	20	3 15.2	21.4
468671 2009 AL ₅₀	15.6	X	62.24651	325.40284	113.68035	16.07397	0.1660947	0.17849360	3.1240714	20	2 6.4	19.4
468672 2009 BH ₁₁₈	16.2	X	278.12624	258.11068	306.32830	10.79116	0.0541109	0.17130063	3.2109244	20	—	—
468673 2009 BT ₁₇₅	16.5	X	44.00774	319.62124	138.02175	9.03353	0.0416764	0.17105439	3.2140051	20	1 21.7	21.0
468674 2009 CL ₆₄	16.0	X	134.49952	219.98571	162.71688	11.77937	0.0893510	0.17638959	3.1488652	20	2 16.1	20.7
468675 2009 DB ₃	16.6	X	122.59718	281.10520	128.96522	10.69239	0.1069605	0.18944616	3.0024712	20	3 11.4	21.1
468676 2009 DF ₁₂₆	17.6	X	257.54992	46.41471	354.06313	8.54521	0.0444157	0.29192760	2.2505359	20	8 7.3	20.3
468677 2009 FT ₄₉	16.1	X	68.36958	115.76021	11.31953	9.58192	0.0347445	0.18059106	3.0998348	20	3 28.2	20.3
468678 2009 KF ₁₅	18.1	X	91.32554	120.90955	142.05808	4.03888	0.1690854	0.29439686	2.2379340	20	11 18.1	21.4
468679 2009 KE ₂₈	17.9	X	33.89438	83.71039	200.19521	7.16475	0.1314464	0.28434816	2.2903531	20	9 29.5	20.3
468680 2009 MP ₆	17.8	X	328.10664	212.32075	123.71352	3.41120	0.2180539	0.26855244	2.3793043	20	8 6.9	19.3
468681 2009 MZ ₆	20.5	X	37.25685	151.15837	134.21389	5.93411	0.4507989	0.28027140	2.3125095	20	11 22.7	24.1
468682 2009 OS ₁₅	17.9	X	326.84285	191.41301	158.48973	8.37453	0.2461842	0.26977532	2.3721086	20	8 26.6	19.2
468683 2009 PF ₂₁	17.8	X	2.74266	18.59428	280.41094	1.23542	0.2141852	0.26981362	2.3718841	20	9 5.2	19.6
468684 2009 QY ₃₃	19.7	X	291.25099	285.64731	162.04845	23.01064	0.2829558	0.55120213	1.4732014	20	—	—
468685 2009 QW ₅₈	18.1	X	5.06050	97.47202	192.60859	7.56989	0.2057140	0.26547240	2.3976722	20	8 22.3	20.0
468686 2009 RR ₁₀	18.2	X	24.80770	123.81346	188.33816	6.18928	0.1530716	0.27242689	2.3566915	20	10 29.4	20.7
468687 2009 SL ₁₀₃	17.9	X	4.35680	177.65743	260.44272	14.39324	0.0789069	0.38675516	1.8657150	20	—	—
468688 2009 SC ₁₆₈	17.8	X	285.98487	248.23167	110.34832	2.44455	0.2009013	0.25371721	2.4711708	20	6 16.9	20.8
468689 2009 SA ₂₃₄	17.8	X	17.14041	125.17909	196.30654	9.52197	0.2186462	0.27236090	2.3570721	20	11 11.2	20.3
468690 2009 SG ₂₇₁	16.7	X	26.45506	5.06953	210.53310	29.37635	0.1247395	0.24101845	2.5572265	20	5 29.3	19.9
468691 2009 ST ₃₅₃	16.7	X	19.45218	4.00925	216.00215	14.34908	0.1002493	0.23950811	2.5679658	20	5 22.9	19.5
468692 2009 UC ₆₅	17.8	X	328.16557	155.33879	123.60979	3.98925	0.0779636	0.24458495	2.5323063	20	5 20.9	20.8
468693 2009 UF ₁₀₇	16.3	X	265.23032	207.24533	55.95465	9.34872	0.0616405	0.21789980	2.7350472	20	2 11.2	20.3
468694 2009 UJ ₁₁₄	14.0	X	283.66970	33.89361	21.03064	38.95391	0.0828205	0.08066285	5.3050198	20	9 20.1	21.2
468695 2009 UX ₁₃₄	16.9	X	225.54818	158.33310	229.92431	11.34141	0.1877297	0.24038849	2.5616921	20	5 19.8	21.0
468696 2009 VF ₁₂	17.6	X	346.41245	105.70546	244.18838	4.14292	0.2475195	0.26741515	2.3860454	20	10 24.7	19.2
468697 2009 VZ ₁₁₂	16.7	X	358.68203	317.01426	255.37013	12.26281	0.0432109	0.22288585	2.6941042	20	4 2.4	20.3
468698 2009 WY ₄₂	16.2	X	90.41154	220.66076	231.78164	24.83512	0.1409052	0.21607125	2.7504561	20	3 17.8	20.4
468699 2009 WK ₇₅	16.7	X	307.57403	157.71121	98.67749	4.33982	0.0537396	0.22420320	2.6835407	20	3 25.6	20.2
468700 2009 WK ₉₆	14.3	X	3.00179	150.30217	225.21906	2.51031	0.0746552	0.08443075	5.1459903	20	10 26.7	20.8
468701 2009 WP ₁₁₃	16.5	X	274.22319	224.78219	30.91865	32.90473	0.2394078	0.22952614	2.6418893	20	1 31.5	21.5
468702 2009 WY ₂₁₃	15.7	X	280.64776	52.15601	262.86652	28.58356	0.1851150	0.24136488	2.5547790	20	4 2.6	20.0
468703 2009 YO ₂₅	16.6	X	177.36244	290.32947	118.79256	12.20943	0.1934663	0.22452751	2.6809559	20	5 7.9	21.3
468704 2010 AL ₉	17.3	X	153.15206	279.47811	126.80973	3.52251	0.0699547	0.21291814	2.7775439	20	4 2.6	21.3
468705 2010 BZ ₁₂	16.2	X	207.70435	135.91438	144.37277	27.50921	0.1744239	0.16883917	3.2420565	20	1 4.9	21.9
468706 2010 BP ₃₅	16.1	X	310.88678	88.16584	95.44465	25.08266	0.0785071	0.17663896	3.1459009	20	—	—
468707 2010 BP ₇₈	16.6	X	338.65982	20.69743	128.01745	17.79984	0.0599697	0.17347970	3.1839796	20	—	—
468708 2010 BA ₉₅	16.1	X	232.03649	125.14541	166.89398	26.76839	0.1364472	0.17687224	3.1431343	20	2 4.7	21.4
468709 2010 CB ₂	17.8	X	303.05624	298.76944	139.85472	24.54484	0.1254723	0.35449198	1.9772660	20	—	—
468710 2010 CX ₁₅	16.0	X	355.23971	264.76185	226.09928	24.68519	0.1920893	0.17438937	3.1728975	20	—	—
468711 2010 CW ₁₂₀	16.5	X	83.44546	20.50306	128.74397	11.90455	0.0527841	0.21440115	2.7647210	20	5 20.1	20.4
468712 2010 CM ₂₀₂	16.2	X	231.72932	106.03587	194.07531	24.13219	0.2739250	0.17379133	3.1801722	20	2 4.9	22.2
468713 2010 DD ₆	17.2	X	296.52177	171.85278	21.86214	1.21475	0.3001281	0.18219353	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>		
468721	2010	FT ₈₉	16.6 ^m	X	12.99264	293.16682	194.70763	16.07038	0.1415873	0.18424774	3.0586840	20	1 9.2	20.6
468722	2010	GF ₃₅	17.0	X	289.63412	35.82516	170.12072	10.60813	0.1513563	0.17662642	3.1460498	20	—	—
468723	2010	GG ₄₅	15.3	X	302.08713	303.66792	315.88256	25.88079	0.1488897	0.17887037	3.1196828	20	2 29.3	20.0
468724	2010	GJ ₁₃₅	16.8	X	224.26427	124.25272	193.86499	12.00972	0.1679220	0.18505940	3.0497339	20	2 24.6	21.9
468725	2010	JG ₃	15.9	X	322.93960	78.23969	99.84280	26.62863	0.1711788	0.17992853	3.1074396	20	—	—
468726	2010	JO ₃₈	16.5	X	290.30030	19.72519	201.65471	28.93658	0.1541211	0.18032435	3.1028906	20	1 5.6	21.7
468727	2010	JE ₈₇	20.7	X	160.22032	242.32030	120.50631	16.92217	0.4368632	1.14600093	0.9043698	20	—	—
468728	2010	KA ₁₂₇	16.2	X	243.57412	131.22939	88.13856	11.81928	0.0111802	0.17439132	3.1728739	20	—	—
468729	2010	MT ₂₀	15.5	X	311.54858	80.05490	109.87779	17.92542	0.1000330	0.18108394	3.0942074	20	1 4.7	19.7
468730	2010	MN ₅₁	18.4	X	14.57974	113.91200	139.02109	33.62438	0.2444125	0.48894333	1.5957458	20	9 10.1	19.3
468731	2010	NA ₆₇	16.9	X	255.98955	304.66427	77.67748	23.50621	0.2807178	0.27649316	2.3335286	20	6 2.4	20.3
468732	2010	RT ₆₂	18.1	X	49.06565	10.71791	269.73327	3.92391	0.1369539	0.30226428	2.1989305	20	10 19.7	20.7
468733	2010	RR ₁₀₂	18.3	X	22.59257	127.34915	204.15368	3.20034	0.1812143	0.30468710	2.1872579	20	12 4.2	20.8
468734	2010	SY ₂₆	18.3	X	23.83550	25.97738	282.64403	0.62369	0.1850571	0.29851911	2.2172839	20	11 1.9	20.6
468735	2010	SG ₂₉	18.2	X	62.43522	220.77382	59.91809	4.59716	0.1835023	0.30459721	2.1876882	20	11 13.8	21.2
468736	2010	TV ₁₀	17.9	X	293.01847	270.49272	116.84400	5.34790	0.1332483	0.29148764	2.2527999	20	8 30.0	19.9
468737	2010	TJ ₃₂	17.9	X	81.65764	178.58347	26.94480	4.87144	0.0637128	0.28048921	2.3113122	20	8 7.2	20.8
468738	2010	TN ₅₄	19.3	X	80.10326	35.07744	283.35273	4.72183	0.4450188	0.32180299	2.1089972	20	—	—
468739	2010	UU ₇	18.0	X	78.63837	10.36419	288.40628	5.65901	0.3624357	0.31165297	2.1545432	20	—	—
468740	2010	UM ₉₇	18.1	X	51.90753	191.35189	150.23122	2.29186	0.2065718	0.31018422	2.1613391	20	—	—
468741	2010	VM ₁	20.1	X	98.29592	129.17480	167.53112	5.82541	0.4427334	0.32278495	2.1047178	20	—	—
468742	2010	VW ₅₁	18.6	X	65.11895	100.88703	209.49531	4.34522	0.1981683	0.30642196	2.1789945	20	12 26.0	21.9
468743	2010	VB ₁₉₆	17.6	X	57.14906	358.59921	215.96499	7.49294	0.1087591	0.26474561	2.4020583	20	7 16.8	20.6
468744	2011	AJ ₄	17.2	X	41.96260	8.73908	146.48234	3.97548	0.2316174	0.22928109	2.6437714	20	4 16.0	19.5
468745	2011	AT ₃₈	16.9	X	47.84399	81.11292	104.73441	10.84958	0.0441731	0.24280390	2.5446748	20	5 17.3	20.2
468746	2011	AK ₄₄	17.0	X	9.97021	112.17148	123.33336	15.67653	0.0656306	0.24335065	2.5408618	20	5 31.2	20.2
468747	2011	AC ₄₆	17.1	X	97.18702	314.14362	137.13191	11.68156	0.0840060	0.22852591	2.6495925	20	3 26.7	20.7
468748	2011	AG ₆₉	17.0	X	33.95600	193.45229	317.32190	9.10631	0.1875410	0.22218202	2.6997907	20	3 12.4	19.6
468749	2011	BZ ₈	16.9	X	313.12940	124.11324	90.99718	4.54627	0.1464779	0.21972098	2.7199132	20	1 24.9	20.4
468750	2011	BY ₃₆	17.1	X	352.02860	280.13889	306.07665	12.04999	0.1215502	0.23185549	2.6241650	20	4 3.3	20.3
468751	2011	BP ₇₉	16.6	X	33.63209	33.08145	106.07952	14.46563	0.1964243	0.22319875	2.6915857	20	3 5.1	19.4
468752	2011	CY ₉₄	16.6	X	268.69398	119.59165	151.95099	11.83741	0.1304855	0.21795773	2.7345625	20	2 13.3	20.6
468753	2011	DZ ₁₉	17.0	X	354.54291	136.02096	73.79597	4.43407	0.1859655	0.22292014	2.6938279	20	3 21.1	19.7
468754	2011	FT ₂₁	16.7	X	288.19720	188.44852	109.02658	9.52258	0.0272752	0.22928265	2.6437593	20	4 28.6	20.4
468755	2011	FF ₃₂	16.7	X	44.86220	327.43368	228.20456	4.59773	0.1000163	0.22461983	2.6802213	20	5 30.7	20.0
468756	2011	FF ₃₄	17.5	X	20.42590	44.09623	109.47246	5.59735	0.1399682	0.21232157	2.7827443	20	2 24.2	20.4
468757	2011	FP ₅₅	16.2	X	31.53422	157.44453	47.70928	14.19647	0.1148657	0.22664478	2.6642332	20	5 21.7	19.1
468758	2011	GD ₅₇	16.5	X	42.20820	33.98688	184.99926	14.35421	0.0907313	0.23226406	2.6210866	20	6 26.7	20.0
468759	2011	HZ ₆₇	17.3	X	298.92997	69.44970	196.44120	7.32139	0.1823304	0.21101324	2.7942349	20	3 4.4	21.1
468760	2011	HX ₇₁	15.9	X	144.30758	274.51276	58.36397	14.31239	0.0499298	0.18136637	3.0909944	20	—	—
468761	2011	HP ₉₅	17.6	X	342.76452	60.68859	203.83789	4.06491	0.1432265	0.22643348	2.6658904	20	5 19.2	20.4
468762	2011	KU ₂₉	16.2	X	262.77532	125.28167	78.23246	17.03734	0.2247357	0.18188141	3.0851563	20	—	—
468763	2011	LX ₅	16.1	X	257.74356	130.50683	80.79155	16.22919	0.2299791	0.18052756	3.1005616	20	—	—
468764	2011	MV ₅	17.2	X	160.98822	6.71182	273.75799	17.92757	0.0710129	0.37908695	1.8907909	20	—	—
468765	2011	MN ₁₀	18.1	X	130.50635	213.24093	125.82094	26.26940	0.1101234	0.38285187	1.8783746	20	—	—
468766	2011	MO ₁₀	18.3	X	127.21195	272.78939	114.32652	27.42343	0.1161262	0.39615241	1.8360923	20	1 13.8	19.4
468767	2011	NW ₁	16.7	X	203.16821	34.05728	277.17424	11.61687	0.2324300	0.17296452	3.1902989	20	1 30.9	22.4
468768	2011	OR ₃₈	16.7	X	213.99867	188.38035	101.40075	8.31850	0.1703906	0.17660009	3.1463626	20	1 18.5	21.9
468769	2011	PP ₁₄	16.5	X	290.26903	167.06402	135.19273	9.67546	0.1941334	0.20036687	2.8923584	20	4 13.7	20.6
468770	2011	QV ₃₁	15.9	X	250.68614	43.25463	285.19949	14.32535	0.1638646	0.18936602	3.0033182	20	3 26.6	20.9
468771	2011	SB ₂₂	16.8	X	248.46247	87.34697	215.76005	8.68786	0.0559641	0.18054310	3.1003838	20	3 9.9	21.5
468772	2011	SD ₂₂₆	16.3	X	274.89207	80.89998	216.67466	21.10416	0.1436873	0.17996248	3.1070488	20	3 21.3	21.2
468773	2011	SR ₂₄₉	15.8	X	246.04697	112.66214	250.17267	20.29717	0.3208748	0.18859696	3.0114773	20	4 24.3	21.2
468774	2011	ST ₂₅₄	16.3	X	213.46362	59.85782	257.36791	12.80125	0.2754977	0.17423574	3.1747624	20	2 10.7	22.2
468775	2011	UQ ₈₉	16.0	X	237.50168	110.36949	241.63913	14.86286	0.2372248	0.17743506	3.1364841	20	4 10.7	21.5
468776	2011	UZ ₁₀₄	18.1	X	119.33393	176.63557	218.22000	19.63509	0.1061460	0.38323999	1.8771062	20	1 8.3	20.2
468777	2011	WC ₉₀	16.9	X	108.71731	241.94384	248.70518	22.57905	0.2419738	0.27902275	2.3194035	20	6 15.9	20.5
468778	2011	WY ₁₄₈	14.0	X	296.56249	326.67640	99.36497	15.58882	0.0863212	0.08237655	5.2311879	20	10 4.3	20.9
468779	2011	YK ₃₃	17.6	X	92.99931	103.84219	141.16250	7.26908	0.1410770	0.30427361	2.1892391	20	10 28.8	20.8
468780	2011	YR ₅₈	13.8	X	270.79967	337.47294	121.27821	11.82083	0.0636206	0.08202306	5.2462067	20	10 10.7	20.8
468781	2011	YR ₇₄	12.8	X	341.17173	252.36276	126.80867	30.09490	0.0599774	0.08242996	5.2289278	20	10 11.9	19.8
468782	2012	AY ₂₁	14.0	X	286.82935	284.56386	152.62236	25.51917	0.0910169	0.08172402	5.2589966	20	9 30.4	20.9
468783	2012	BX ₄	17.8	X	56.20837	112.31673	99.17872	3.48637	0.1745901	0.27357640	2.3500853	20	7 26.1	20.4
468784	2012	BQ ₅₂	17.6	X	96.79050	86.16641	128.54593	7.12361	0.0489794	0.29008970	2.2600316	20	9 9.4	20.4
468785	2012	BZ ₅₃	17.9	X	170.57318	332.82436	136.79142	6.91837	0.0511066	0.28217948	2.3020730	20	7 14.4	20.9
468786	2012	BR ₅₈	13.9	X	333.64704	289.59392	106.55139	10.16212	0.0711420	0.08430844	5.1509658	20	10 16.5	20.5
468787	2012	BR ₇₄	17.0	X	181.27052	317.67324	149.64342	24.05183	0.2088820	0.28702785	2.2760756	20	7 20.1	20.9
468788	2012	DU ₅₀	17.8	X	82.79062	58.47461	161.47606	7.67808	0.0568693	0.27910150	2.3189672	20	8 25.7	20.7
468789	2012	DV ₆₉	17.8	X	81.74019	88.84463	155.24007	6.02470	0.0085136	0.29646957	2.2274910	20	9 25.4	20.4
468790	2012	DD ₈₉	18.2	X	133.36608	343.09								

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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>
468801 2012 HT ₁₆	16.3	X	258.95866	255.97445	67.36086	26.91544	0.3065002	0.23194959	2.6234551	20	4 5.7	21.2
468802 2012 HZ ₂₁	16.9	X	294.41519	146.73137	152.59963	12.92836	0.2310528	0.24254989	2.5464510	20	4 6.4	20.4
468803 2012 HJ ₂₄	17.4	X	16.33505	155.63909	100.77407	8.25006	0.0822623	0.26158291	2.4213811	20	7 10.0	19.7
468804 2012 HF ₅₂	17.3	X	292.86646	124.66133	195.37410	17.27148	0.3681228	0.24154608	2.5535011	20	4 8.9	21.1
468805 2012 HG ₆₉	17.5	X	64.14288	107.44631	118.58217	13.90682	0.2163167	0.26799523	2.3826011	20	9 5.9	20.8
468806 2012 KA ₁₈	17.5	X	145.02779	315.48695	169.54172	7.32275	0.1548457	0.26972876	2.3723816	20	7 7.9	21.3
468807 2012 KA ₁₉	16.4	X	182.56555	241.77264	125.79807	27.18877	0.1010490	0.22597721	2.6694777	20	3 23.6	21.0
468808 2012 KU ₂₅	17.6	X	329.76875	200.87072	108.94023	3.21386	0.2119494	0.25526590	2.4611657	20	6 24.2	19.4
468809 2012 LE	16.7	X	310.16282	165.83711	97.41254	34.41547	0.2246182	0.23255341	2.6189120	20	3 26.5	20.9
468810 2012 LB ₄	16.2	X	301.75373	72.74071	237.04667	29.17441	0.2921556	0.23515336	2.5995724	20	4 13.9	19.9
468811 2012 MC ₆	16.3	X	43.09366	341.99932	220.38120	9.45605	0.1097097	0.24588366	2.5233816	20	6 8.0	19.2
468812 2012 MT ₇	16.7	X	250.60130	258.95967	86.81080	15.35587	0.2092454	0.23302663	2.6153652	20	4 25.1	21.0
468813 2012 OT ₅	21.7	X	327.79324	147.80661	129.16393	5.75396	0.2597974	0.48584558	1.6025216	20	3 24.4	21.9
468814 2012 PQ ₃₉	17.8	X	338.58146	84.10180	172.15651	6.01837	0.3024418	0.23174314	2.6250130	20	4 5.3	19.9
468815 2012 QW ₅₀	16.7	X	310.31066	211.77923	120.15074	19.11377	0.2319973	0.23631402	2.5910535	20	6 15.7	19.7
468816 2012 QX ₅₀	16.9	X	287.58550	320.65844	2.50120	9.22992	0.3303405	0.22546497	2.6735193	20	4 10.9	21.0
468817 2012 SL ₁₄	16.0	X	113.39928	170.56802	221.28830	14.88079	0.0573001	0.17320303	3.1873694	20	1 26.9	20.8
468818 2012 SM ₁₆	17.5	X	305.50817	102.81437	232.15689	5.50841	0.2598876	0.22889022	2.6467803	20	6 3.4	20.3
468819 2012 SP ₁₈	16.5	X	200.84825	124.80998	213.77241	15.00216	0.0912128	0.18697183	3.0289023	20	2 26.9	21.5
468820 2012 SY ₄₈	16.9	X	261.11336	197.56765	176.80569	6.56763	0.0496571	0.22406832	2.6846175	20	6 27.2	20.6
468821 2012 TC ₁₅	16.6	X	296.49462	335.46706	46.97384	8.55825	0.3615135	0.23492826	2.6012327	20	7 9.6	19.7
468822 2012 TJ ₂₃	16.9	X	265.38715	98.09396	234.92213	5.65622	0.0870667	0.21097881	2.7945389	20	5 2.8	20.7
468823 2012 TG ₂₇	16.1	X	30.10779	358.36699	226.77500	8.45126	0.0804753	0.21697787	2.7427891	20	6 14.8	19.5
468824 2012 TL ₄₂	16.7	X	267.05750	348.33576	328.37545	7.20921	0.2685313	0.21231897	2.7827671	20	3 21.6	21.4
468825 2012 TL ₆₀	16.5	X	257.91931	204.41011	116.36379	10.55518	0.2784153	0.21166099	2.7885312	20	3 22.1	21.3
468826 2012 TL ₇₈	16.5	X	318.55017	72.63859	270.61300	16.20767	0.3804305	0.23444219	2.6048269	20	6 18.9	18.7
468827 2012 TP ₉₃	16.9	X	224.16021	206.20288	171.37616	8.77150	0.1002042	0.20973810	2.8055489	20	5 13.6	21.2
468828 2012 TS ₁₁₈	16.4	X	200.53303	89.43992	241.17360	8.79552	0.0922145	0.18556089	3.0442367	20	2 18.0	21.3
468829 2012 TK ₁₂₁	17.3	X	311.51334	337.22108	339.49716	4.54955	0.1042405	0.22135309	2.7065268	20	6 12.0	20.5
468830 2012 TR ₁₄₃	16.7	X	58.58347	338.89775	206.73827	8.81152	0.0961869	0.21001042	2.8031230	20	6 6.6	20.4
468831 2012 TR ₂₁₀	16.6	X	271.55478	242.58600	139.36846	6.85802	0.1640479	0.22836371	2.6508470	20	7 4.1	20.1
468832 2012 TO ₂₁₇	16.2	X	182.48238	208.34471	148.20869	10.41013	0.1041722	0.18875644	3.0097807	20	3 6.9	20.9
468833 2012 TM ₂₇₁	16.3	X	215.55850	199.46930	120.28230	3.67940	0.0999834	0.18638191	3.0352901	20	2 24.4	20.9
468834 2012 TH ₃₂₂	16.0	X	341.68499	33.69129	297.29954	24.84820	0.2212205	0.23916445	2.5704252	20	8 16.7	18.5
468835 2012 UD ₁	16.3	X	282.06873	245.41193	144.75110	28.68368	0.3410278	0.22927594	2.6438109	20	7 4.2	20.3
468836 2012 UR ₈	16.5	X	150.12506	212.33773	171.23163	5.86560	0.1769153	0.18284604	3.0742960	20	3 11.6	21.5
468837 2012 UP ₂₇	21.0	X	283.61389	130.85839	193.55995	6.27515	0.2652866	0.47459206	1.6277551	20	4 4.2	22.2
468838 2012 UM ₃₁	17.1	X	313.31439	113.78098	226.26759	11.92267	0.2910595	0.22737971	2.6584893	20	6 10.6	19.8
468839 2012 UA ₃₇	16.7	X	303.12976	74.78556	240.35515	13.00051	0.2039210	0.21744089	2.7388941	20	5 11.5	19.9
468840 2012 UZ ₅₈	16.3	X	202.98745	67.71731	247.75715	5.85220	0.1221593	0.17631203	3.1497887	20	2 5.3	21.4
468841 2012 UQ ₈₅	16.2	X	279.84653	67.11218	235.47150	10.05205	0.1171106	0.19826771	2.9127378	20	4 5.7	20.4
468842 2012 UZ ₁₀₁	16.5	X	163.01457	211.92002	154.03732	1.33569	0.1808995	0.17982583	3.1086226	20	3 2.9	21.4
468843 2012 VX ₆	17.5	X	284.27695	21.66173	53.58382	22.17617	0.0963241	0.37746046	1.8962186	20	11 25.5	18.6
468844 2012 VZ ₇	16.6	X	244.30052	70.37346	206.06907	10.61622	0.0982603	0.17979167	3.1090163	20	1 30.0	21.6
468845 2012 VG ₁₄	16.9	X	219.94609	214.46590	92.92822	2.48223	0.1296967	0.18327606	3.0694852	20	2 13.3	21.7
468846 2012 VK ₁₁₁	15.7	X	273.71638	200.80225	61.92068	13.98006	0.0388173	0.17469827	3.1691562	20	3 2.1	20.5
468847 2012 WT ₅	16.3	X	202.32862	68.91341	247.88783	5.52185	0.2651310	0.17763482	3.1341322	20	2 5.8	22.0
468848 2012 XM ₉₃	18.0	X	168.02074	169.24221	95.97135	24.00969	0.0188545	0.38685577	1.8653915	20	—	—
468849 2012 XA ₁₁₁	15.7	X	47.71682	252.66628	259.44258	12.83575	0.1694446	0.17264721	3.1942067	20	4 12.2	19.8
468850 2012 XZ ₁₃₄	17.9	X	192.72741	163.29058	55.90568	22.62715	0.0320150	0.37711006	1.8973930	20	—	—
468851 2013 AM ₂₈	16.1	X	241.31918	86.93980	315.00165	12.58616	0.1544412	0.19395579	2.9557490	20	6 25.8	20.7
468852 2013 AJ ₉₂	13.2	X	226.96180	180.65745	304.90681	13.98977	0.0476054	0.08279089	5.2137199	20	9 13.9	20.4
468853 2013 AT ₁₃₁	14.0	X	253.76875	323.58484	146.18647	24.03445	0.0641335	0.08432540	5.1502751	20	10 4.2	21.1
468854 2013 AA ₁₃₃	14.5	X	220.33425	346.98668	151.76902	3.95460	0.0633657	0.08387502	5.1686954	20	9 27.6	21.6
468855 2013 AK ₁₃₃	13.5	X	320.98010	253.53451	144.97724	34.11028	0.0170339	0.08198870	5.2476723	20	10 7.2	20.6
468856 2013 CK ₅₉	13.6	X	196.45641	238.59411	284.80682	8.62386	0.0135870	0.08231938	5.2336094	20	9 28.2	20.6
468857 2013 DD	18.2	X	355.55766	283.55251	159.27860	23.70877	0.0789784	0.38325676	1.8770514	20	—	—
468858 2013 EG ₂₀	18.4	X	238.29208	94.63150	94.94355	23.23334	0.0579713	0.37083100	1.9187513	20	—	—
468859 2013 GY ₁₇	18.1	X	71.41693	173.61162	194.05270	22.57141	0.0710947	0.36864895	1.9263153	20	—	—
468860 2013 HW ₁₀	17.9	X	255.27451	66.77485	77.42317	23.19510	0.1158201	0.35832748	1.9631311	20	—	—
468861 2013 LU ₂₈	8.1	X	359.42891	153.00137	275.96655	125.35044	0.9532959	0.00038530	187.0422906	20	4 27.3	19.2
468862 2013 NG ₂₁	18.7	X	38.72596	228.34936	94.04493	3.67873	0.2033029	0.30823055	2.1704624	20	12 15.7	21.6
468863 2013 PW ₄	18.3	X	41.86860	323.77957	309.01310	3.45068	0.1114605	0.29480694	2.2358581	20	9 22.8	20.8
468864 2013 PM ₅	18.4	X	57.74003	29.34425	227.83813	2.20630	0.2613800	0.29281079	2.2460082	20	10 15.3	21.5
468865 2013 PM ₃₇	16.9	X	322.68128	34.99314	263.29407	12.48920	0.1990969	0.26123405	2.4235363	20	5 20.8	19.4
468866 2013 PB ₅₁	18.0	X	18.24311	71.96463	252.48374	9.24385	0.1475345	0.29841371	2.2178059	20	11 8.9	20.3
468867 2013 PB ₆₃	18.9	X	69.94694	50.13851	208.05308	3.88503	0.1496162	0.29887733	2.2155118	20	10 17.8	21.9
468868 2013 PO ₇₃	17.7	X	339.66609	350.23999	332.51698	7.23055	0.1369981	0.27835126	2.3231322	20	8 18.2	19.6
468869 2013 QJ ₄₉	17.9	X	90.10816	302.35351	231.47663	6.81810	0.0585809	0.26303865	2.4124390	20	6 29.3	21.1
468870 2013 QF ₆₆	18.1	X	349.60117	162.70468	171.16403	6.33872	0.1976138	0.28725531	2.2748740	20	10 7.7	19.7
468871 2013 QR ₇₅	18.2	X	346.64443	153.44679	156.38885	6.91740	0.1347799	0.27874724	2.3209315	20	8 10.4	20.0
468872 2013 QW ₈₁	18.3	X	22.46653	310.40594	354.96831	2.41895	0.1960938	0.29212248	2.2495349	20	10 25.9	20.7
468873 2013 QH ₈₄	17.7	X	307.61385	173.93156	175.22330	7.24008	0.2227377	0.27268566	2.3552003			

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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>
468881 2013 <i>TB</i> ₄₉	18.3	X	81.00098	152.02031	167.97117	2.15892	0.1874409	0.31199293	2.1529778	20	—	—
468882 2013 <i>TO</i> ₇₄	17.7	X	55.72432	247.77908	42.60711	7.69175	0.1124598	0.28585126	2.2823171	20	11 5.9	20.6
468883 2013 <i>TZ</i> ₁₃₂	17.9	X	13.78524	59.96032	238.78257	2.94902	0.1634365	0.28059828	2.3107132	20	9 21.6	20.0
468884 2013 <i>UV</i> ₉	17.2	X	229.82997	181.54413	200.98875	13.39530	0.1223840	0.23840314	2.5758945	20	5 22.9	21.1
468885 2013 <i>UP</i> ₁₁	16.7	X	297.54556	140.66719	264.82189	18.16622	0.1009815	0.27625255	2.3348834	20	9 24.3	19.8
468886 2013 <i>VC</i> ₇	16.6	X	163.34642	233.90806	142.50826	9.90024	0.1766213	0.21021112	2.8013385	20	3 14.9	21.2
468887 2013 <i>WC</i> ₃₅	16.2	X	359.00233	281.58437	244.42139	8.39935	0.0314811	0.19160785	2.9798463	20	2 8.8	20.4
468888 2013 <i>WQ</i> ₆₇	17.2	X	241.62567	228.43120	137.82490	13.43847	0.3447733	0.23637086	2.5906382	20	4 29.9	22.1
468889 2013 <i>WJ</i> ₈₇	15.4	X	105.30631	100.05222	267.28705	21.56280	0.0838692	0.17361540	3.1823202	20	—	—
468890 2013 <i>WJ</i> ₉₇	15.8	X	54.25080	18.86643	60.31388	10.76661	0.0891944	0.17717335	3.1395721	20	1 17.5	19.9
468891 2013 <i>XR</i> ₉	15.9	X	200.82648	114.96508	309.13249	21.47731	0.0381915	0.22633931	2.6666298	20	6 21.1	19.9
468892 2013 <i>XN</i> ₁₄	16.3	X	127.58991	291.67438	78.24076	11.44988	0.1211388	0.18258778	3.0771943	20	1 30.7	21.0
468893 2013 <i>YK</i> ₂₄	16.4	X	213.94713	79.97033	252.08188	15.45297	0.2201007	0.21326706	2.7745137	20	2 23.9	21.5
468894 2013 <i>YR</i> ₂₉	17.3	X	265.76869	273.25001	84.75654	4.41649	0.1870960	0.24122808	2.5557447	20	5 22.8	20.8
468895 2013 <i>YY</i> ₃₀	15.7	X	308.47721	130.73048	67.38337	13.08090	0.0649545	0.17891019	3.1192199	20	1 17.2	20.2
468896 2013 <i>YC</i> ₇₆	16.1	X	199.43969	202.68779	140.17172	10.72202	0.1166425	0.18653764	3.0336005	20	3 7.8	20.9
468897 2013 <i>YN</i> ₉₂	16.5	X	96.57342	302.39041	126.31754	10.39352	0.1218187	0.19071923	2.9890950	20	2 18.8	20.7
468898 2013 <i>YV</i> ₁₀₉	17.1	X	194.01412	173.59170	253.24748	3.45927	0.0734345	0.22005643	2.7171483	20	6 12.1	20.9
468899 2013 <i>YW</i> ₁₀₉	15.5	X	193.32469	205.18524	114.38816	27.20955	0.0681569	0.17259285	3.1948773	20	2 3.8	20.4
468900 2013 <i>YD</i> ₁₁₃	16.2	X	151.14819	259.84078	109.22605	18.30641	0.1280996	0.17941947	3.1133145	20	2 25.5	21.2
468901 2013 <i>YK</i> ₁₁₃	16.1	X	247.53064	137.21667	237.01054	24.84238	0.2239661	0.23985639	2.5654794	20	5 19.5	20.2
468902 2014 <i>AH</i> ₆	16.1	X	154.18789	254.14036	107.36047	19.74939	0.0898661	0.17548050	3.1597312	20	2 16.0	21.1
468903 2014 <i>AE</i> ₃₁	16.3	X	282.25830	149.76389	211.58921	7.15149	0.1611914	0.24269387	2.5454438	20	5 28.7	19.9
468904 2014 <i>AK</i> ₃₉	17.2	X	210.74266	192.45137	263.05761	6.01670	0.1181477	0.23974673	2.5662616	20	8 3.6	21.0
468905 2014 <i>AH</i> ₄₂	15.4	X	255.12602	347.05395	295.15334	15.15206	0.0350670	0.16916717	3.2378645	20	2 21.7	20.2
468906 2014 <i>AB</i> ₅₀	16.0	X	260.05784	40.94277	281.29070	10.94197	0.1426288	0.18955590	3.0013123	20	4 1.9	20.7
468907 2014 <i>BC</i> ₄₃	15.8	X	93.99360	308.94065	107.02676	15.42317	0.2798862	0.17536500	3.1611184	20	3 13.5	20.6
468908 2014 <i>BS</i> ₆₁	15.7	X	180.33142	24.28371	337.40822	10.88080	0.0826872	0.17583533	3.1554790	20	3 8.7	20.6
468909 2014 <i>KZ</i> ₄₄	20.4	X	232.30887	190.43951	225.12275	39.46278	0.3463571	0.10593274	0.9800000	20	6 20.8	21.7
468910 2014 <i>KQ</i> ₇₆	21.5	X	112.33518	324.85675	127.87843	4.77403	0.4234203	0.97535891	1.0069929	20	5 9.0	19.0
468911 2014 <i>RV</i> ₁₁	17.9	X	234.26250	324.85708	178.31790	24.53592	0.0539376	0.35925991	1.9597329	20	12 16.3	20.6
468912 2014 <i>SP</i> ₂₆₁	18.1	X	4.99958	192.17202	212.90771	22.57993	0.0612132	0.36870080	1.9261347	20	—	—
468913 2014 <i>TB</i> ₃₅	18.2	X	318.35372	285.90762	192.71044	25.57731	0.0416804	0.37339193	1.9099680	20	—	—
468914 2014 <i>TN</i> ₅₇	16.7	X	34.17576	322.11861	209.75895	12.98315	0.2269952	0.23831240	2.5765483	20	4 20.8	18.9
468915 2014 <i>UC</i> ₅₁	16.2	X	349.52198	105.41746	56.93791	18.33721	0.0985339	0.21806810	2.7336398	20	1 17.1	19.9
468916 2014 <i>VC</i> ₁	17.3	X	207.13611	299.76801	294.19018	22.41675	0.0892071	0.37575484	1.9019525	20	—	—
468917 2014 <i>VS</i> ₁	16.9	X	72.96661	287.58939	172.13445	28.71725	0.3794944	0.23044088	2.6348933	20	4 20.2	20.5
468918 2014 <i>WK</i> ₂₁	16.0	X	334.08341	305.70195	231.54789	11.58310	0.1588899	0.21399798	2.7681924	20	1 2.2	19.6
468919 2014 <i>WH</i>	18.4	X	57.76595	205.13851	198.12422	22.89737	0.1095654	0.37949402	1.8894385	20	—	—
468920 2014 <i>WY</i> ₅	18.4	X	137.62796	81.40058	226.24257	20.54360	0.0595193	0.37389608	1.9082508	20	—	—
468921 2014 <i>WF</i> ₁₂₃	15.9	X	17.26964	348.76994	53.90980	28.88180	0.1445438	0.17945166	3.1129422	20	—	—
468922 2014 <i>WE</i> ₁₈₆	16.3	X	294.87409	224.52433	308.60239	12.86671	0.2327265	0.17511853	3.1640838	20	—	—
468923 2014 <i>WK</i> ₃₆₃	17.8	X	34.18583	316.30151	145.25216	28.42906	0.0298434	0.38603418	1.8680373	20	—	—
468924 2014 <i>WT</i> ₃₈₉	16.7	X	57.57680	326.40479	168.24544	9.80551	0.1104473	0.21582722	2.7525290	20	3 30.4	20.0
468925 2014 <i>WD</i> ₄₂₇	16.3	X	89.67280	345.90507	111.81571	7.68617	0.0217644	0.21389399	2.7690895	20	3 16.9	20.1
468926 2014 <i>WQ</i> ₄₂₈	15.6	X	310.92766	26.34889	130.87849	18.74872	0.0756307	0.15772770	3.3925850	20	—	—
468927 2014 <i>WZ</i> ₄₆₇	15.2	X	242.14571	92.72847	124.91952	22.62123	0.0498407	0.15644827	3.4110562	20	—	—
468928 2014 <i>WA</i> ₄₈₁	15.9	X	307.28226	39.55769	145.11071	28.39284	0.1402610	0.17843388	3.1247684	20	—	—
468929 2014 <i>YG</i> ₅	15.2	X	279.45394	72.31141	114.80151	32.65147	0.1286066	0.17187052	3.2038226	20	—	—
468930 2014 <i>YB</i> ₂₄	16.3	X	327.08040	202.38777	279.74425	16.58889	0.2072581	0.17924169	3.1153728	20	—	—
468931 2014 <i>YM</i> ₃₈	17.2	X	18.65041	105.41333	85.79133	9.63408	0.1041026	0.22628371	2.6670666	20	4 14.9	20.3
468932 2015 <i>AG</i> ₁	16.8	X	37.53630	23.27363	130.47902	13.73249	0.1268553	0.23746323	2.5826872	20	3 26.4	19.8
468933 2015 <i>AO</i> ₂	15.7	X	283.01799	148.00369	65.27088	17.31339	0.1354896	0.17835618	3.1256759	20	—	—
468934 2015 <i>AH</i> ₃	16.6	X	28.67224	262.43310	130.62449	14.56314	0.3096278	0.18653306	3.0336502	20	—	—
468935 2015 <i>AR</i> ₃	16.3	X	355.88373	185.52126	287.05924	13.79450	0.1268696	0.18125595	3.0922495	20	—	—
468936 2015 <i>AW</i> ₇	16.7	X	319.14886	229.56131	27.56607	14.07361	0.0330786	0.23827293	2.5768328	20	4 12.0	19.8
468937 2015 <i>AE</i> ₉	15.7	X	271.96781	210.14957	351.05755	15.40621	0.0489680	0.18094144	3.0958318	20	—	—
468938 2015 <i>AJ</i> ₉	15.7	X	204.72796	271.01986	350.30789	15.09533	0.0510471	0.17802494	3.1295518	20	—	—
468939 2015 <i>AO</i> ₁₀	16.1	X	160.64351	299.66004	353.49770	14.70732	0.0691825	0.17276205	3.1927910	20	—	—
468940 2015 <i>AF</i> ₁₂	16.4	X	19.91632	53.23038	18.61321	10.34155	0.1161323	0.17430850	3.1738788	20	—	—
468941 2015 <i>AD</i> ₁₃	16.3	X	278.78829	196.16831	13.59004	15.34510	0.0482495	0.18536990	3.0463274	20	—	—
468942 2015 <i>AL</i> ₁₅	16.5	X	19.39448	196.35749	14.65989	15.51613	0.0739929	0.23445273	2.6047489	20	5 2.5	19.7
468943 2015 <i>AR</i> ₁₅	16.0	X	51.81356	356.38341	51.88148	18.04489	0.0251904	0.17172553	3.2056256	20	—	—
468944 2015 <i>AS</i> ₁₅	16.2	X	137.34680	7.92303	61.62885	16.46585	0.0910608	0.22924589	2.6440419	20	4 19.9	20.2
468945 2015 <i>AK</i> ₁₆	15.6	X	4.35659	14.47986	73.99392	20.01593	0.1268301	0.17066261	3.2189221	20	—	—
468946 2015 <i>AD</i> ₁₈	17.3	X	245.92939	293.36586	127.14259	4.14998	0.0278116	0.28285416	2.2984109	20	8 19.2	19.8
468947 2015 <i>AE</i> ₁₈	16.6	X	188.65080	238.99515	119.85210	7.18378	0.0445035	0.22282003	2.6946347	20	3 13.3	20.5
468948 2015 <i>AW</i> ₁₉	17.7	X	263.28210	249.52234	119.05266	6.85448	0.2016553	0.28975074	2.2617938	20	6 1.8	20.7
468949 2015 <i>AL</i> ₂₀	16.8	X	232.31286	248.37516	104.99545	12.78906	0.2280459	0.26797202	2.3827387	20	4 14.6	21.0
468950 2015 <i>AU</i> ₂₅	17.1	X	151.05338	248.59570	181.50232	21.85843	0.0634919	0.23364243	2.6107678	20	4 30.5	21.1
468951 2015 <i>AJ</i> ₂₆	16.1	X	349.37944	84.77353	50.91562	17.94192	0.0853425	0.17883340	3.1201128	20	—	—
468952 2015 <i>AT</i> ₂₇	16.7	X	77.96864	318.74909	81.21208	3.05						

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>
468961 2015 AR ₄₂	16.6	X	118.64832	147.87331	182.25689	11.45010	0.0494894	0.18676847	3.0311006	20	—	—
468962 2015 AY ₄₂	15.9	X	45.05662	292.32636	113.02317	13.88900	0.1578971	0.17862873	3.1224957	20	—	—
468963 2015 AN ₄₃	16.6	X	196.86376	215.96729	79.80766	5.35087	0.0224737	0.19100430	2.9861202	20	1 6.7	20.8
468964 2015 AO ₄₆	17.1	X	100.51173	181.44346	283.05895	4.60630	0.1991528	0.23082627	2.6319596	20	4 28.2	20.9
468965 2015 AS ₄₆	16.3	X	338.26959	35.50832	119.11008	13.90773	0.1554152	0.18521725	3.0480009	20	—	—
468966 2015 AO ₄₇	17.4	X	354.28806	161.36758	120.60092	23.02586	0.1385477	0.28913899	2.2649830	20	7 13.5	19.2
468967 2015 AC ₄₉	17.3	X	215.10371	226.77510	150.03065	14.69659	0.1688188	0.26773749	2.3841299	20	4 30.4	21.3
468968 2015 AH ₅₂	17.0	X	278.53261	219.45081	130.96503	7.29118	0.2308997	0.27766952	2.3269332	20	5 23.0	20.0
468969 2015 AV ₅₄	17.7	X	148.08185	80.10938	103.67769	8.39042	0.0723127	0.29307452	2.2446605	20	10 4.9	20.8
468970 2015 AM ₆₇	16.1	X	255.62192	321.89958	281.06882	9.44902	0.0808918	0.19220593	2.9736614	20	1 5.1	20.4
468971 2015 AK ₇₇	16.9	X	2.47538	343.50105	126.91673	9.66023	0.1329895	0.18235561	3.0798055	20	—	—
468972 2015 AQ ₈₃	17.8	X	132.26039	58.31546	81.54835	2.27957	0.1309102	0.26027670	2.4294755	20	7 13.7	21.3
468973 2015 AQ ₈₇	16.5	X	256.63843	338.37485	292.56606	4.60793	0.0293012	0.21248419	2.7813243	20	2 10.2	20.5
468974 2015 AH ₉₂	16.2	X	81.35367	253.92532	129.58865	10.35333	0.1982442	0.18866831	3.0107180	20	—	—
468975 2015 AZ ₉₄	17.0	X	337.02282	316.03549	157.27867	10.84784	0.1725620	0.17787527	3.1313072	20	—	—
468976 2015 AJ ₉₉	17.2	X	27.79371	189.49221	93.31230	4.00706	0.1620932	0.28000765	2.3139614	20	9 25.9	19.6
468977 2015 AP ₁₀₁	16.8	X	93.44428	357.66678	113.39507	7.31940	0.0661600	0.22846181	2.6500881	20	4 14.0	20.4
468978 2015 AC ₁₁₀	16.3	X	277.85533	61.97889	125.92931	10.16234	0.0451352	0.17443532	3.1723403	20	—	—
468979 2015 AV ₁₁₁	16.2	X	23.07814	326.63890	124.48850	11.10373	0.0968343	0.18353472	3.0666007	20	—	—
468980 2015 AZ ₁₂₄	17.1	X	9.58576	245.13298	274.56837	1.71931	0.0334805	0.20667269	2.8332223	20	2 15.7	20.8
468981 2015 AU ₁₂₅	16.7	X	38.45579	318.49172	297.18958	7.47907	0.2052092	0.26187425	2.4195848	20	9 1.6	19.5
468982 2015 AU ₁₂₈	18.7	X	163.73194	15.55307	143.39847	1.35823	0.1126189	0.28249028	2.3003842	20	9 12.4	21.9
468983 2015 AR ₁₃₃	16.1	X	77.12554	271.70856	116.10344	9.79289	0.1761749	0.18498850	3.0505131	20	—	—
468984 2015 AG ₁₃₇	17.5	X	108.37440	73.31057	24.19957	0.67703	0.0381652	0.22871338	2.6481444	20	4 7.7	21.0
468985 2015 AU ₁₃₇	16.8	X	77.15613	335.75974	103.52272	3.23176	0.0376649	0.20389552	2.8588909	20	2 6.9	20.6
468986 2015 AM ₁₅₁	17.2	X	11.52712	28.04175	70.96965	1.86771	0.1343335	0.18039558	3.1020738	20	—	—
468987 2015 AP ₁₅₂	16.2	X	197.41985	302.27514	330.51897	4.55060	0.0919797	0.17404414	3.1770919	20	—	—
468988 2015 AC ₁₅₅	16.6	X	288.43330	224.24924	0.97487	1.54179	0.0294400	0.19712987	2.9239353	20	1 26.7	20.6
468989 2015 AL ₁₅₆	17.4	X	46.31449	77.36158	120.59336	13.54215	0.2013229	0.23486409	2.6017065	20	6 22.3	20.3
468990 2015 AO ₁₅₉	16.5	X	111.41783	299.54742	118.25801	7.96636	0.0647116	0.21018353	2.8015837	20	2 28.3	20.4
468991 2015 AQ ₁₆₂	17.9	X	74.01362	9.73622	146.81818	1.42752	0.0903580	0.23504676	2.6003584	20	5 18.9	21.2
468992 2015 AT ₁₆₅	17.5	X	358.88673	174.81767	122.90636	10.44123	0.1264197	0.26961813	2.3730305	20	8 17.2	19.7
468993 2015 AS ₁₆₇	16.4	X	8.37020	355.72055	117.17350	12.34836	0.1101035	0.18302888	3.0722482	20	—	—
468994 2015 AM ₁₆₉	16.7	X	46.21808	19.91427	111.33182	8.04559	0.0495506	0.21021922	2.8012665	20	3 4.6	20.3
468995 2015 AX ₁₇₂	17.2	X	100.12884	359.74918	59.90763	3.37236	0.0457014	0.20424169	2.8556597	20	2 13.8	21.0
468996 2015 AX ₁₇₄	15.7	X	210.89193	164.69508	109.18131	10.10674	0.0320423	0.18213315	3.0823129	20	—	—
468997 2015 AO ₁₇₇	16.8	X	46.29160	145.92334	351.25775	4.79991	0.1056551	0.21215397	2.7842097	20	3 13.9	19.9
468998 2015 AZ ₁₇₇	16.8	X	245.62494	275.03761	109.55313	8.40148	0.0747972	0.26193985	2.4191808	20	6 18.6	20.1
468999 2015 AL ₁₇₉	18.0	X	235.01721	336.84277	97.90236	6.89929	0.0772665	0.28135090	2.3065906	20	8 17.8	21.0
469000 2015 AD ₁₈₁	17.0	X	173.85459	298.64626	56.52409	3.14213	0.0907245	0.20931301	2.8093461	20	2 23.5	21.2
469001 2015 AG ₁₉₃	16.0	X	305.70720	64.49578	125.46116	10.89714	0.0543270	0.18641954	3.0348816	20	1 2.9	20.2
469002 2015 AJ ₂₀₃	16.2	X	106.68284	338.17628	84.91323	19.08286	0.1787003	0.21092197	2.7950409	20	3 24.5	20.7
469003 2015 AN ₂₀₃	16.1	X	64.89144	313.43168	84.13195	18.37218	0.2432614	0.17658268	3.1465694	20	—	—
469004 2015 AR ₂₀₃	16.5	X	94.98149	139.34887	305.39301	13.45316	0.1673937	0.17123283	2.7406426	20	3 17.5	20.5
469005 2015 AG ₂₀₆	17.4	X	204.05506	303.27119	93.28730	5.90618	0.1637580	0.25639285	2.4539485	20	5 12.4	21.2
469006 2015 AE ₂₀₉	16.5	X	42.44424	5.58562	107.93803	15.29023	0.1499929	0.21853206	2.7297693	20	2 9.2	19.5
469007 2015 AC ₂₁₉	15.9	X	330.40221	73.89765	111.32422	16.32571	0.0959156	0.19197013	2.9760960	20	1 22.2	19.7
469008 2015 AW ₂₂₁	16.8	X	258.99841	120.20451	210.86930	10.96504	0.1129769	0.25683885	2.4511068	20	4 17.2	20.2
469009 2015 AO ₂₂₂	16.1	X	77.22844	244.21632	278.23648	13.75827	0.0330290	0.23918353	2.5702885	20	5 20.8	19.7
469010 2015 AP ₂₂₂	16.3	X	8.44291	340.12508	273.88837	12.09167	0.2255911	0.23956534	2.5675568	20	6 30.9	18.0
469011 2015 AL ₂₂₃	16.4	X	341.95777	294.05085	223.48826	8.50453	0.0963737	0.18633227	3.0358291	20	1 3.5	20.4
469012 2015 AD ₂₂₆	16.3	X	69.81968	212.79749	185.27882	8.61592	0.0867528	0.17628323	3.1501317	20	—	—
469013 2015 AD ₂₂₇	16.2	X	89.63492	141.57307	270.48731	8.94054	0.0628866	0.18817907	3.0159340	20	1 16.8	20.4
469014 2015 AN ₂₂₇	17.1	X	31.67100	225.84203	243.39249	6.51676	0.1543286	0.19138130	2.9821974	20	1 17.1	20.5
469015 2015 AC ₂₂₈	16.5	X	144.23199	223.08486	176.62754	12.38122	0.0987642	0.21598995	2.7511463	20	3 16.2	20.5
469016 2015 AK ₂₃₁	17.6	X	236.95378	179.85503	269.68888	5.78318	0.1619508	0.28880106	2.2667495	20	8 24.5	20.7
469017 2015 AQ ₂₃₃	16.4	X	16.64527	339.41117	155.52703	11.91061	0.0403856	0.19005064	2.9961013	20	1 27.1	20.5
469018 2015 AJ ₂₃₆	17.4	X	201.21019	222.33435	272.38492	8.56273	0.1280150	0.28743634	2.2739187	20	9 15.2	20.8
469019 2015 AU ₂₃₈	16.3	X	291.81745	210.97918	35.24254	3.45799	0.1013395	0.19653928	2.9297899	20	2 16.7	20.4
469020 2015 AS ₂₃₉	16.3	X	337.55762	62.99230	116.93307	10.04929	0.0727785	0.18913873	3.0057238	20	1 28.9	20.3
469021 2015 AY ₂₄₀	18.2	X	184.44337	343.97340	187.97523	6.29389	0.1404685	0.29403919	2.2397484	20	10 22.4	21.3
469022 2015 AC ₂₄₃	15.9	X	203.56199	264.83810	52.98429	11.83157	0.1284226	0.18798984	3.0179576	20	2 14.3	20.9
469023 2015 AK ₂₄₃	16.5	X	23.87228	21.26294	99.26764	11.74659	0.0847500	0.18324400	3.0698433	20	1 22.0	20.3
469024 2015 AG ₂₄₄	16.2	X	84.60051	309.79415	99.51229	15.49805	0.1062464	0.17918271	3.1160564	20	1 23.8	20.4
469025 2015 AU ₂₄₄	16.5	X	334.26661	255.72403	46.78559	17.60971	0.2570537	0.23792026	2.5793786	20	6 12.9	18.7
469026 2015 AY ₂₄₄	16.4	X	323.29368	193.83372	98.94118	12.80173	0.1063133	0.23499925	2.6007088	20	5 30.8	19.5
469027 2015 AZ ₂₄₄	15.7	X	166.30186	219.64544	114.57235	18.95234	0.1018781	0.17608309	3.1525183	20	1 25.5	20.5
469028 2015 AR ₂₄₅	17.0	X	282.94953	243.61470	126.21998	7.25969	0.1446638	0.26445558	2.4038142	20	7 8.7	19.9
469029 2015 AN ₂₄₇	17.1	X	146.51348	272.84151	93.40341	9.52928	0.3054738	0.22375863	2.6870940	20	2 26.9	21.8
469030 2015 AP ₂₄₈	16.6	X	39.48874	340.92948	100.78748	11.14103	0.0380903	0.18942716	3.0026719	20	—	—
469031 2015 AR ₂₄₈	15.7	X	23.25811	330.78143	102.02003	15.87338	0.0571302	0.17744574	3.1363583	20	—	—
469032 2015 AT ₂₄₈	18.1	X	162.84880	79.31623	35.66129	1.79002	0.1424551	0.26729065	2.3867863	20	7 13.2	21.7
469033 2015 AS ₂₄₈	16.7	X	22.81451	64.02596	10.72130	2.43787	0.0685846	0.17849680	3.1240340	20	—	—
469034 2015 AZ ₂₄₈	17.8											

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
469041 2015 AM ₂₅₃	16.4	X	138.23603	248.38419	103.80461	10.28880	0.0028163	0.18556242	3.0442200	20	1 4.6	20.6
469042 2015 AB ₂₅₆	16.0	X	323.93003	57.09924	125.95154	11.24451	0.0793581	0.18574668	3.0422064	20	1 13.8	20.0
469043 2015 AC ₂₅₆	17.3	X	116.95571	356.05971	119.03309	6.08208	0.1902957	0.23691376	2.5866789	20	5 31.6	21.2
469044 2015 AB ₂₅₈	16.5	X	316.38602	318.49690	313.59899	13.26493	0.1550364	0.23620480	2.5918522	20	4 1.8	19.9
469045 2015 AW ₂₅₈	16.4	X	294.37559	173.00134	34.16986	5.00398	0.1594502	0.18668310	3.0320245	20	—	—
469046 2015 AB ₂₆₀	16.9	X	233.43518	280.24341	139.68795	20.82224	0.3175129	0.27839580	2.3228844	20	6 28.0	21.1
469047 2015 AD ₂₆₀	16.8	X	216.13179	345.03677	14.59953	5.99745	0.0329893	0.23358153	2.6112215	20	4 12.2	20.2
469048 2015 AN ₂₆₁	18.2	X	221.56917	205.48613	224.96494	4.98866	0.2456682	0.27820931	2.3239223	20	7 4.9	21.9
469049 2015 AL ₂₆₃	16.0	X	57.25972	301.97227	139.52449	11.60153	0.0657844	0.18437681	3.0572563	20	1 19.1	20.1
469050 2015 AN ₂₆₃	16.6	X	41.89164	101.14077	67.69179	8.73291	0.1341991	0.21471431	2.7620321	20	4 25.1	19.7
469051 2015 AR ₂₆₃	16.5	X	93.78426	118.18115	12.73844	12.80062	0.0931945	0.22698139	2.6615985	20	5 7.4	20.2
469052 2015 AV ₂₆₄	16.1	X	209.94484	193.23277	91.41559	15.40989	0.0300273	0.18224524	3.0810489	20	1 9.5	20.6
469053 2015 AH ₂₆₅	16.0	X	115.88769	243.59402	134.83692	6.61340	0.0645889	0.21397615	2.7683806	20	1 12.7	19.7
469054 2015 AV ₂₇₃	16.8	X	253.28828	314.01030	341.04277	7.83189	0.1671535	0.21335871	2.7737191	20	2 24.2	21.1
469055 2015 AP ₂₇₄	16.8	X	220.18575	276.84252	42.23833	4.98456	0.0612242	0.21129860	2.7917185	20	2 28.8	20.9
469056 2015 AE ₂₇₆	16.9	X	327.01496	176.61787	79.51881	7.66217	0.1490729	0.23112568	2.6296861	20	4 10.4	20.0
469057 2015 AE ₂₇₇	16.4	X	129.62568	114.46847	231.64738	9.42461	0.0603091	0.17747024	3.1360696	20	—	—
469058 2015 AA ₂₇₉	16.8	X	1.70194	171.22715	95.08799	5.43151	0.2378507	0.23459420	2.6037016	20	7 4.4	18.5
469059 2015 AH ₂₇₉	17.0	X	130.06189	328.54071	122.92671	10.15275	0.1016447	0.22918778	2.6444889	20	5 8.8	21.0
469060 2015 AO ₂₇₉	17.5	X	228.58225	286.29415	128.14923	7.87144	0.1088176	0.26166760	2.4208585	20	7 3.8	20.9
469061 2015 AP ₂₇₉	16.1	X	359.60591	149.57198	334.79704	9.88112	0.1850630	0.17680749	3.1439016	20	—	—
469062 2015 AX ₂₇₉	18.0	X	118.80804	190.99682	37.81158	7.16991	0.0819199	0.28899595	2.2657303	20	10 26.8	21.1
469063 2015 BJ ₅	17.2	X	64.17202	341.87335	142.16937	8.84524	0.1718925	0.21436201	2.7650575	20	4 6.4	20.5
469064 2015 BB ₆	16.2	X	347.26281	106.70481	50.06370	3.83915	0.0716990	0.18888572	3.0084073	20	1 13.9	20.1
469065 2015 BD ₁₅	17.2	X	255.00095	218.49318	125.06614	5.28693	0.1319704	0.24378628	2.5378340	20	4 29.9	20.9
469066 2015 BX ₂₁	16.5	X	349.63660	331.74174	161.25709	10.93620	0.1016672	0.17460768	3.1702523	20	—	—
469067 2015 BU ₂₅	16.5	X	289.64205	82.41473	151.21005	10.75968	0.0792395	0.18790582	3.0188572	20	1 31.7	20.9
469068 2015 BL ₂₇	17.6	X	145.48455	288.13955	150.33849	6.20346	0.2755380	0.23829141	2.5766996	20	5 18.0	22.1
469069 2015 BG ₅₉	16.9	X	210.40552	256.94039	121.33523	15.40664	0.1474745	0.24244213	2.5472055	20	5 1.3	21.2
469070 2015 BW ₆₄	16.5	X	91.19965	80.09269	340.44209	9.75591	0.0835268	0.19759755	2.9193198	20	2 10.1	20.5
469071 2015 BD ₆₅	16.4	X	265.88373	139.11254	104.76911	11.61885	0.0472445	0.18862619	3.0111661	20	1 21.9	20.8
469072 2015 BH ₆₉	17.2	X	40.96321	37.75027	239.23216	6.43565	0.2273383	0.27192115	2.3596127	20	10 12.3	20.1
469073 2015 BO ₇₀	17.9	X	351.90114	182.29969	172.73095	6.39133	0.1520182	0.30172986	2.2015262	20	11 14.5	19.8
469074 2015 BN ₈₅	17.4	X	85.27175	15.59062	247.13863	6.67033	0.0984882	0.29545845	2.2325701	20	11 3.5	20.4
469075 2015 BY ₈₇	16.8	X	21.65725	16.89966	151.23277	4.39361	0.0326195	0.20954777	2.8072474	20	3 15.1	20.3
469076 2015 BP ₁₂₅	17.4	X	26.33002	58.21939	129.36386	8.23022	0.0272749	0.22599948	2.6693022	20	4 17.9	20.9
469077 2015 BV ₁₃₂	16.6	X	243.60940	282.42377	323.87908	11.86282	0.1905886	0.17133463	3.2104995	20	—	—
469078 2015 BR ₁₅₆	15.6	X	2.00881	29.96234	118.47062	10.30424	0.0903240	0.18607690	3.0386061	20	1 23.1	19.2
469079 2015 BR ₁₅₉	16.5	X	279.14964	144.21045	165.78326	6.70360	0.0811965	0.22955993	2.6416301	20	4 22.6	20.0
469080 2015 BR ₁₈₅	17.3	X	339.54106	203.36346	103.84832	8.95856	0.2008440	0.25960507	2.4336639	20	7 17.3	19.0
469081 2015 BT ₂₄₂	17.8	X	60.80599	47.23163	219.25608	3.84731	0.1187714	0.28058485	2.3107869	20	10 10.0	20.6
469082 2015 BB ₂₇₈	17.2	X	135.08266	286.17002	148.06734	6.12828	0.0335868	0.22131666	2.7068238	20	4 13.5	20.9
469083 2015 BA ₂₈₅	16.5	X	341.48300	99.45381	161.44889	13.68341	0.1491944	0.23657569	2.5891426	20	5 13.9	19.4
469084 2015 BH ₂₉₀	16.8	X	284.71821	100.38617	155.60077	15.43469	0.2353182	0.20306530	2.8666779	20	1 31.4	21.4
469085 2015 BN ₃₀₉	16.6	X	308.36248	63.00815	115.05510	27.12754	0.1858185	0.17392405	3.1785542	20	—	—
469086 2015 BA ₃₁₀	16.2	X	353.84029	26.15031	126.64582	10.78983	0.0476538	0.19032451	2.9932264	20	1 19.1	20.2
469087 2015 BO ₃₁₉	16.3	X	280.34927	172.92779	100.17704	6.12926	0.0731364	0.21322140	2.7749097	20	3 10.6	20.2
469088 2015 BM ₃₄₆	16.4	X	277.04532	200.91221	91.19100	6.16820	0.0852802	0.22002222	2.7174299	20	3 28.9	20.2
469089 2015 BZ ₄₁₉	16.1	X	230.06410	135.41762	140.92730	19.21588	0.1264690	0.17963527	3.1108207	20	1 17.3	21.2
469090 2015 BO ₄₃₀	16.5	X	308.18199	114.63295	120.49461	10.40203	0.0589388	0.20128673	2.8835398	20	3 1.1	20.5
469091 2015 BC ₄₅₄	16.2	X	29.43822	117.53916	324.09044	8.76626	0.0796899	0.17195002	3.2028350	20	—	—
469092 2015 BU ₄₅₅	17.0	X	37.31617	13.50396	131.10937	14.19777	0.0993749	0.20509007	2.8477790	20	3 14.1	20.6
469093 2015 BJ ₄₅₆	16.7	X	288.32767	82.26657	135.93474	10.05458	0.0599028	0.18280283	3.0747804	20	1 15.5	21.1
469094 2015 BN ₄₈₉	16.6	X	143.84882	128.24897	292.69819	6.18135	0.0100950	0.22037715	2.7145114	20	3 29.8	20.5
469095 2015 CC ₄	18.0	X	305.46596	254.14068	143.21980	6.56251	0.1762410	0.29980557	2.2109364	20	10 11.7	19.5
469096 2015 CR ₄	16.8	X	335.18424	219.90408	106.52273	8.16050	0.1277863	0.26915107	2.3757750	20	8 14.5	18.9
469097 2015 CT ₃₀	17.1	X	142.66669	335.59598	105.72205	5.98901	0.2047678	0.23786762	2.5797592	20	5 15.0	21.3
469098 2015 CJ ₃₃	16.3	X	326.60426	30.78164	127.31286	5.97818	0.1411031	0.17378514	3.1802478	20	—	—
469099 2015 CJ ₄₀	16.6	X	230.92300	136.95922	212.28071	1.75120	0.1033822	0.22371117	2.6874740	20	4 11.9	20.4
469100 2015 CO ₄₂	16.2	X	346.97567	5.72353	173.80941	10.57896	0.0551039	0.18948205	3.0020920	20	2 9.8	20.3
469101 2015 CT ₄₈	17.4	X	30.49998	173.41439	112.51759	3.46703	0.1598275	0.25737777	2.4476841	20	9 29.7	20.1
469102 2015 CV ₄₈	15.8	X	226.07375	162.18737	144.20700	9.83679	0.0487412	0.18845697	3.0129684	20	2 21.0	20.1
469103 2015 CW ₅₃	15.7	X	87.78226	252.71793	170.44106	10.12480	0.1014464	0.17803343	3.1294524	20	2 10.9	20.1
469104 2015 CJ ₆₀	16.0	X	322.12699	92.84958	87.86575	10.27349	0.1346217	0.18729880	3.0253762	20	—	—
469105 2015 DH ₁₀	16.0	X	222.03350	299.22920	326.47265	15.34640	0.1833778	0.17760410	3.1344936	20	—	—
469106 2015 DV ₁₆	16.5	X	119.38367	290.32981	131.11177	9.79854	0.0176983	0.20055070	2.8905906	20	3 8.4	20.5
469107 2015 DW ₂₄	16.5	X	255.34341	358.72931	354.91113	8.72179	0.2063209	0.23615759	2.5921976	20	4 28.7	20.7
469108 2015 DY ₂₅	17.1	X	167.10898	305.63224	120.43790	7.27389	0.1320812	0.23347324	2.6120289	20	5 15.8	21.2
469109 2015 DB ₄₃	16.3	X	108.25229	309.14824	108.70319	10.80467	0.0856338	0.19198694	2.9759223	20	3 1.9	20.6
469110 2015 DF ₄₃	17.2	X	114.03105	132.15063	56.81576	8.25951	0.0580272	0.25789455	2.4444131	20	8 26.1	20.6
469111 2015 DG ₄₈	17.0	X	170.04207	259.90980	133.90470	6.36088	0.0361732	0.21213058	2.7844144	20	4 5.3	21.0
469112 2015 DU ₈₂	16.2	X	252.55576	219.82787	67.67523	2.97051	0.0479395	0.19657029	2.9294817	20	2 28.1	20.4
469113 2015 DZ ₁₀₀	15.7	X	226.45639	167.89984	93.36265	12.62479	0.0358262	0.18039003	3.1021374			

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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>
469121 2015 <i>DM</i> ₁₈₆	16.3	X	276.63299	150.40980	81.46280	11.82145	0.0305176	0.17958863	3.1113593	20	1 24.3	20.8
469122 2015 <i>DU</i> ₂₀₆	16.0	X	352.47084	39.33431	160.14254	9.06353	0.0584522	0.18399193	3.0615183	20	3 16.7	19.9
469123 2015 <i>DT</i> ₂₁₁	15.7	X	23.60339	1.53131	160.28927	10.30537	0.0425735	0.17893948	3.1188796	20	3 13.3	19.7
469124 2015 <i>DM</i> ₂₂₀	16.0	X	166.76468	192.41565	203.63492	10.35339	0.1310535	0.20127127	2.8836875	20	4 6.4	20.6
469125 2015 <i>EG</i> ₂	16.3	X	217.06835	220.74736	132.83647	6.83030	0.0659019	0.21333370	2.7739358	20	4 8.4	20.4
469126 2015 <i>EB</i> ₁₆	16.8	X	286.77641	198.91219	85.52860	6.05984	0.0795152	0.21648541	2.7469471	20	4 1.3	20.6
469127 2015 <i>EE</i> ₁₇	17.0	X	23.81256	93.13332	77.05729	6.56213	0.0156757	0.21075645	2.7965041	20	3 23.1	20.8
469128 2015 <i>EL</i> ₁₇	16.6	X	114.25598	346.50133	90.18087	6.65284	0.0898604	0.21390552	2.7689900	20	3 31.2	20.6
469129 2015 <i>ET</i> ₁₇	17.3	X	308.76534	232.28426	140.8620	24.07127	0.2376615	0.28670866	2.2777646	20	8 23.2	18.6
469130 2015 <i>EM</i> ₁₈	16.3	X	213.29812	311.38036	344.89416	12.73342	0.0855269	0.18738802	3.0244158	20	1 28.5	21.1
469131 2015 <i>EU</i> ₂₃	16.1	X	130.15938	252.66824	144.44796	12.81085	0.0769617	0.19861370	2.9093540	20	2 26.6	20.3
469132 2015 <i>EQ</i> ₃₀	16.2	X	245.92204	206.09515	118.29739	5.64136	0.0662498	0.21329838	2.7742420	20	4 4.2	20.2
469133 2015 <i>EK</i> ₅₉	16.6	X	311.81142	161.27915	120.67384	13.00840	0.1718728	0.22543793	2.6737331	20	4 21.1	20.1
469134 2015 <i>EJ</i> ₆₂	15.4	X	281.95901	272.13055	345.51639	10.64915	0.0900252	0.18415959	3.0596599	20	2 21.9	19.7
469135 2015 <i>EE</i> ₆₅	15.5	X	277.20549	93.98193	204.54666	11.95784	0.1100519	0.19226275	2.9730756	20	3 31.4	19.9
469136 2015 <i>FO</i> ₄₅	15.8	X	195.66157	320.74029	57.74304	13.98660	0.1552185	0.18854180	3.0120647	20	4 17.6	20.8
469137 2015 <i>FF</i> ₇₆	16.1	X	126.12771	12.48417	42.41440	10.23845	0.0956123	0.17526683	3.1622987	20	3 22.3	20.9
469138 2015 <i>FL</i> ₉₆	16.3	X	273.97001	319.09646	320.85043	9.41573	0.0917327	0.18853254	3.0121633	20	3 6.0	20.7
469139 2015 <i>FC</i> ₉₇	16.8	X	45.07384	319.35216	226.92456	6.87479	0.1512453	0.21487389	2.7606644	20	5 25.1	19.9
469140 2015 <i>FA</i> ₁₂₁	15.9	X	233.05688	156.02990	147.29851	12.43800	0.0120729	0.19113611	2.9847472	20	2 27.9	20.1
469141 2015 <i>FS</i> ₁₂₁	16.9	X	47.78044	31.26275	148.01717	7.04555	0.1129009	0.21443956	2.7643909	20	5 16.4	20.3
469142 2015 <i>FB</i> ₁₂₈	16.4	X	286.11266	343.52163	233.08072	9.61738	0.1568553	0.17756709	3.1349292	20	—	—
469143 2015 <i>FA</i> ₁₆₅	16.4	X	51.06945	110.38001	35.92495	11.75610	0.0793172	0.19291308	2.9663901	20	4 4.8	20.2
469144 2015 <i>FO</i> ₂₂₀	15.6	X	197.67366	153.47464	171.19215	27.13999	0.1759963	0.17419139	3.1753012	20	2 11.7	21.1
469145 2015 <i>FK</i> ₂₇₆	16.2	X	192.43021	256.95647	140.79423	13.81008	0.1591442	0.22467773	2.6797608	20	5 7.3	20.8
469146 2015 <i>FG</i> ₂₉₃	16.8	X	281.32584	145.72343	190.19723	8.11568	0.0410884	0.21797083	2.7344530	20	6 4.7	20.5
469147 2015 <i>FK</i> ₃₀₁	16.0	X	346.32816	157.41503	67.07063	11.23929	0.0410766	0.18965887	3.0002258	20	4 13.5	20.1
469148 2015 <i>FJ</i> ₃₁₁	16.3	X	3.11163	93.51774	145.00734	9.09620	0.1654514	0.21002605	2.8029839	20	5 23.6	19.3
469149 2015 <i>FL</i> ₃₂₅	15.8	X	293.75783	167.73977	78.65789	11.77401	0.0496224	0.17912274	3.1167519	20	3 3.8	20.4
469150 2015 <i>FD</i> ₃₄₃	15.6	X	225.91580	271.19005	45.71353	10.31593	0.0699107	0.17821948	3.1272740	20	3 8.8	20.4
469151 2015 <i>GN</i> ₃	16.6	X	331.14916	8.75470	203.75389	5.08532	0.0861048	0.18384435	3.0631565	20	2 26.8	20.7
469152 2015 <i>GT</i> ₁₉	16.8	X	213.43260	339.61350	30.70622	9.62215	0.0705168	0.20662792	2.8336316	20	4 22.4	20.8
469153 2015 <i>GP</i> ₂₁	17.8	X	89.22347	98.80688	154.39157	2.49548	0.1749220	0.26193623	2.4192031	20	10 29.7	21.3
469154 2015 <i>GQ</i> ₂₇	16.3	X	273.22081	92.72007	191.40110	11.95886	0.1026225	0.18048499	3.1010492	20	3 10.5	21.0
469155 2015 <i>GK</i> ₂₈	16.2	X	278.66618	74.10840	198.12752	11.40914	0.1615071	0.17943019	3.1131906	20	2 22.9	20.9
469156 2015 <i>GD</i> ₄₀	16.3	X	269.93116	93.72402	184.34846	15.60891	0.1947150	0.17447020	3.1719175	20	2 17.9	21.4
469157 2015 <i>GU</i> ₄₁	16.7	X	203.30894	300.29613	122.96362	11.99608	0.0905975	0.22985530	2.6393665	20	6 18.2	20.8
469158 2015 <i>HZ</i> ₆	16.3	X	270.23441	14.77512	276.76925	8.69047	0.1598896	0.18692828	3.0293728	20	3 2.1	21.1
469159 2015 <i>HC</i> ₈	16.9	X	2.07881	182.55116	130.89653	9.78768	0.2004241	0.25187986	2.4831736	20	9 26.2	19.2
469160 2015 <i>HM</i> ₅₉	16.0	X	16.08085	281.11856	268.47348	7.52522	0.1030220	0.18259838	3.0770751	20	4 3.1	19.9
469161 2015 <i>HZ</i> ₅₉	16.2	X	236.69071	95.06839	261.44781	8.17885	0.1055036	0.18996458	2.9970061	20	4 26.5	20.8
469162 2015 <i>HO</i> ₉₉	16.0	X	283.59164	47.24367	203.83301	16.09797	0.0523053	0.16838571	3.2478744	20	2 17.1	20.9
469163 2015 <i>HD</i> ₁₄₀	14.5	X	247.09955	286.44897	193.79839	7.16811	0.0225532	0.08219542	5.2388703	20	10 8.8	21.3
469164 2015 <i>KG</i> ₈	16.4	X	104.00565	318.05463	161.42345	15.51924	0.0976528	0.20589706	2.8403331	20	5 14.5	20.7
469165 2015 <i>KW</i> ₃₉	15.9	X	341.93709	355.12439	235.17816	11.96455	0.0258758	0.18034744	3.1026258	20	4 8.9	20.3
469166 2015 <i>KP</i> ₆₇	15.9	X	232.91604	229.46929	84.44754	13.21600	0.0575166	0.16863803	3.2446339	20	3 16.1	20.9
469167 2015 <i>LF</i> ₃	15.7	X	153.90841	92.78495	314.75340	8.80916	0.1060482	0.18349204	3.0670761	20	4 3.4	20.5
469168 2015 <i>MZ</i> ₂₄	15.9	X	48.03079	221.36744	245.29683	8.53371	0.0354251	0.15472300	3.4363664	20	2 5.9	20.8
469169 2015 <i>MO</i> ₃₄	16.1	X	209.18391	170.74226	192.27057	11.83741	0.0772140	0.17864650	3.1222885	20	4 10.6	20.9
469170 2015 <i>NS</i> ₂₃	14.8	X	230.75927	355.49836	285.91001	8.90717	0.2311328	0.12391816	3.9845513	20	1 24.1	21.3
469171 2016 <i>AX</i> ₁	17.2	X	100.80458	14.74953	42.11767	7.08037	0.1145456	0.25505105	2.4625476	20	2 16.0	20.3
469172 2016 <i>AX</i> ₁₂₉	16.9	X	297.57757	54.04713	102.19240	18.40396	0.1850771	0.18162291	3.0880830	20	—	—
469173 2016 <i>CU</i> ₇₅	16.1	X	25.47236	329.30019	66.74699	11.45515	0.0071685	0.17992065	3.1075303	20	—	—
469174 2016 <i>NS</i> ₂₅₉	17.5	X	15.26787	295.41497	225.81247	11.98347	0.2178867	0.22752662	2.6573447	20	2 11.6	20.1
469175 2016 <i>CS</i> ₂₅₉	16.7	X	88.43809	256.91027	211.80503	21.58450	0.0928572	0.23743029	2.5829260	20	4 1.5	20.1
469176 2016 <i>CL</i> ₂₆₁	16.9	X	348.02282	28.03806	197.96553	2.67139	0.1479750	0.23425654	2.6062030	20	3 31.3	19.7
469177 2016 <i>EP</i> ₃₇	16.1	X	227.38164	185.71855	104.45666	12.04853	0.1874198	0.18503439	3.0500088	20	1 28.9	21.2
469178 2016 <i>EF</i> ₇₉	18.5	X	146.59251	113.48715	107.70250	7.42479	0.1113562	0.34237941	2.0236293	20	11 27.4	21.1
469179 2016 <i>EW</i> ₁₅₁	18.0	X	60.26943	85.78474	147.91145	4.50114	0.1527811	0.29591924	2.2302519	20	9 1.6	20.5
469180 2016 <i>EQ</i> ₁₉₆	16.6	X	263.11311	71.25116	144.62421	14.06188	0.2735876	0.18311315	3.0713055	20	—	—
469181 2016 <i>ER</i> ₂₀₁	16.3	X	43.20844	198.77085	307.75429	13.55415	0.1980354	0.23958453	2.5674197	20	3 19.7	19.1
469182 2016 <i>ES</i> ₂₀₁	16.9	X	255.96879	105.17662	112.24050	24.46663	0.3825432	0.17725802	3.1385721	20	—	—
469183 2016 <i>FP</i> ₇	17.1	X	22.94260	122.78329	106.98108	5.83760	0.2544519	0.26454348	2.4032816	20	7 4.0	18.6
469184 2016 <i>FF</i> ₁₀	17.3	X	170.64387	282.52795	54.91336	2.53878	0.0329160	0.22022393	2.7157704	20	1 23.4	21.0
469185 2016 <i>FB</i> ₃₉	17.3	X	27.68258	357.65115	167.25028	14.34249	0.1927439	0.22991659	2.6388974	20	3 24.9	19.6
469186 2016 <i>FC</i> ₃₉	16.1	X	16.55393	317.69572	161.91737	15.86504	0.0766760	0.18350414	3.0669414	20	1 8.7	20.3
469187 2016 <i>FD</i> ₄₁	16.9	X	326.17498	156.37884	75.73744	8.58903	0.1428823	0.23537090	2.5979704	20	3 7.9	20.1
469188 2016 <i>GK</i> ₁₁₆	17.9	X	12.64236	79.66484	194.32220	2.58691	0.1892379	0.28282733	2.2985562	20	8 15.0	19.7
469189 2016 <i>GB</i> ₁₂₄	17.0	X	52.68224	2.60638	153.98782	15.76025	0.1756311	0.23977923	2.5660297	20	5 3.6	20.1
469190 2016 <i>GA</i> ₁₃₂	16.7	X	260.62114	226.59246	69.56626	9.92109	0.1028760	0.23216418	2.6218383	20	3 13.6	20.6
469191 2016 <i>GU</i> ₁₃₄	17.8	X	152.44980	275.19636	185.53420	19.71159	0.2810388					

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>
469201 2016 GN ₁₉₁	17.2	X	1.52996	70.29292	199.50162	9.52142	0.1042520	0.26146040	2.4221374	20	7 3.3	19.8
469202 2016 GJ ₁₉₂	16.1	X	351.35579	323.49840	184.31425	11.71863	0.0636095	0.17680676	3.1439102	20	1 9.5	20.5
469203 2016 GF ₁₉₃	16.9	X	313.89720	84.43229	182.84453	14.16905	0.0834662	0.22921220	2.6443010	20	4 12.6	20.2
469204 2016 GK ₁₉₃	16.8	X	316.37310	113.24895	182.37077	13.00698	0.2825183	0.23472803	2.6027118	20	4 24.0	19.7
469205 2016 GA ₂₁₅	16.1	X	221.10036	165.71046	164.81888	21.35455	0.1254531	0.21110823	2.7933966	20	3 10.0	20.5
469206 2016 GO ₂₁₈	16.9	X	46.43660	44.91583	117.26476	18.09330	0.1948241	0.24208655	2.5496992	20	5 6.7	20.0
469207 2016 GD ₂₃₃	18.0	X	125.76547	48.27608	121.27715	6.86388	0.1099478	0.29224300	2.2489164	20	8 17.7	21.1
469208 2016 GX ₂₃₃	16.7	X	248.33771	73.86356	200.69806	12.96796	0.1356846	0.18757034	3.0224557	20	1 27.8	21.7
469209 2016 GO ₂₃₉	16.1	X	294.65478	334.02957	199.89370	26.58701	0.1442724	0.17488597	3.1668883	20	—	—
469210 2016 GB ₂₄₀	15.8	X	264.38958	83.51608	142.72644	19.15146	0.1262316	0.17789735	3.1310480	20	—	—
469211 2016 GJ ₂₄₀	16.6	X	318.90546	54.33539	103.37288	22.55761	0.2318068	0.18474364	3.0532079	20	—	—
469212 2016 GL ₂₄₀	15.8	X	190.32207	197.68028	142.53166	24.34481	0.2079961	0.19075285	2.9887438	20	2 25.3	20.9
469213 2016 GP ₂₄₁	16.9	X	318.68912	213.81739	48.73340	14.47514	0.2343653	0.23127768	2.6285338	20	3 26.4	20.2
469214 2016 GZ ₂₄₁	17.7	X	359.09171	97.46559	174.94860	4.01793	0.1890657	0.26030804	2.4292805	20	7 6.9	19.6
469215 2016 GN ₂₅₁	16.1	X	353.76974	294.71094	215.38144	15.36144	0.0262955	0.18388038	3.0627564	20	1 14.9	20.6
469216 2016 HU	17.5	X	43.63967	146.17120	53.76232	5.92664	0.1728631	0.26160481	2.4212459	20	6 14.9	19.9
469217 2016 HD ₂	16.5	X	14.84221	115.57224	84.63785	5.84536	0.0944209	0.23936459	2.5689922	20	4 17.5	19.3
469218 2016 HE ₂	16.1	X	329.95060	120.88665	49.95185	14.06398	0.1086572	0.19272845	2.9682843	20	1 1.7	20.2
469219 2016 HO ₃	24.3	X	236.29311	306.18786	66.15568	7.78531	0.1033011	0.98376555	1.0012480	20	4 8.6	22.3
469220 2016 HZ ₅	15.5	X	185.31855	275.61452	36.76932	23.66529	0.2867126	0.16961891	3.2321130	20	1 31.0	21.7
469221 2016 HJ ₇	17.2	X	307.47110	121.12681	158.01155	4.79460	0.0922217	0.23887007	2.5725366	20	4 17.4	20.4
469222 2016 HO ₇	16.0	X	153.54641	166.49249	197.67944	10.11056	0.1282689	0.19505251	2.9446591	20	2 13.7	20.7
469223 2016 HT ₇	16.8	X	114.30993	328.22342	133.92800	5.28484	0.0207374	0.23874429	2.5734400	20	4 20.9	20.3
469224 2016 HX ₇	17.0	X	229.29087	190.35026	140.06461	5.21439	0.1181728	0.21918776	2.7243225	20	3 18.7	21.2
469225 2016 HR ₉	17.6	X	73.73608	13.60364	207.75623	21.17281	0.1357306	0.29164791	2.2519745	20	8 22.7	21.0
469226 2016 HU ₉	16.5	X	350.43170	81.67220	70.30213	12.05227	0.0422896	0.19448891	2.9503452	20	1 14.4	20.5
469227 2016 HV ₁₀	16.3	X	292.03134	118.11237	64.12179	20.56742	0.1674372	0.17842394	3.1248845	20	—	—
469228 2016 HD ₁₅	15.8	X	269.23194	197.26309	38.58446	23.38711	0.1662174	0.19048090	2.9915879	20	1 2.8	20.9
469229 2016 HZ ₁₆	18.2	X	41.65994	132.31194	123.64296	3.80660	0.1842256	0.28542563	2.2845854	20	9 12.1	20.6
469230 2016 HT ₂₃	16.3	X	247.09711	60.06654	212.28294	10.88510	0.0766721	0.19696961	2.9252508	20	1 27.4	20.9
469231 2016 JU	16.5	X	0.26280	191.67695	37.11429	14.79853	0.2261057	0.24131197	2.5551524	20	4 25.6	18.3
469232 2016 JD ₄	17.5	X	78.25442	155.02465	121.82384	3.69439	0.1105910	0.32150034	2.1103205	20	11 22.6	20.2
469233 2016 JF ₄	16.7	X	348.89898	167.20141	73.72420	6.69113	0.2139646	0.24064005	2.5599066	20	4 20.4	18.9
469234 2016 JG ₅	17.6	X	5.58424	204.87409	111.17373	10.73728	0.2858952	0.28923240	2.2644953	20	11 4.1	19.8
469235 2016 JD ₇	16.5	X	64.01349	28.40801	92.80601	13.90138	0.1227149	0.22495075	2.6775921	20	3 29.7	20.0
469236 2016 JT ₇	17.5	X	45.69912	83.74941	111.44198	7.18720	0.0936957	0.26236989	2.4165366	20	5 31.6	20.1
469237 2016 JQ ₈	15.6	X	274.63048	124.68456	76.68729	27.73034	0.2143402	0.17477004	3.1682886	20	—	—
469238 2016 JH ₈	16.5	X	25.24636	54.98341	114.13223	13.99320	0.1968157	0.22978384	2.6399137	20	4 1.4	19.3
469239 2016 JD ₁₀	16.8	X	252.37896	208.22790	91.40765	1.30391	0.0423697	0.21537411	2.7563882	20	3 11.8	20.8
469240 2016 JH ₁₀	16.5	X	7.34816	333.87056	161.71694	6.93253	0.1662304	0.19701697	2.9250523	20	1 6.4	19.8
469241 2016 JO ₁₀	15.5	X	176.82298	235.66869	93.29717	11.36899	0.0193599	0.18364057	3.0654222	20	1 25.2	19.9
469242 2016 JW ₁₁	16.7	X	58.72414	337.85038	248.37748	25.73139	0.2193633	0.28559393	2.2836878	20	8 14.1	20.3
469243 2016 JC ₁₃	18.1	X	54.37482	164.74060	126.19115	4.43522	0.1653056	0.31022434	2.1611528	20	11 18.5	20.9
469244 2016 JY ₁₈	15.7	X	18.01575	32.15787	80.43976	15.05191	0.0777373	0.18650535	3.0339507	20	1 1.9	19.7
469245 2016 JG ₁₉	15.7	X	201.24589	163.93091	150.10527	14.50248	0.1805460	0.17643187	3.1483622	20	2 3.4	21.0
469246 2016 JQ ₁₉	16.2	X	228.95137	117.30787	210.85509	13.99129	0.2126420	0.20669955	2.8329768	20	3 6.5	21.2
469247 2016 JW ₁₉	15.8	X	186.59628	250.06494	69.34342	10.50972	0.1161777	0.18008551	3.1056335	20	1 29.8	20.8
469248 2016 JA ₂₁	17.7	X	36.42696	29.99861	225.32924	5.76550	0.0794144	0.28304274	2.2973899	20	8 10.7	20.3
469249 2016 JH ₂₁	16.5	X	343.44682	190.05439	49.34599	14.49906	0.0288055	0.24100002	2.5573568	20	4 24.6	19.7
469250 2016 JO ₂₃	16.2	X	310.24148	233.71349	37.78260	32.24802	0.2378980	0.23276857	2.6172979	20	4 3.5	19.9
469251 2016 JY ₂₃	16.5	X	237.83219	253.13420	77.03249	13.87966	0.2062347	0.21688975	2.7435320	20	3 27.1	21.3
469252 2016 JD ₂₄	16.7	X	57.26515	12.73392	117.22785	6.59401	0.0307213	0.22085860	2.7105651	20	3 15.2	20.2
469253 2016 JA ₂₅	17.2	X	43.22035	134.98637	55.93313	6.85004	0.0718672	0.25150061	2.4856693	20	5 16.9	20.0
469254 2016 JY ₂₆	17.7	X	17.49308	67.86043	209.66929	4.74712	0.1483309	0.27913830	2.3187634	20	8 22.7	19.9
469255 2016 JX ₂₆	16.8	X	334.80409	29.00630	203.55352	7.58850	0.1759106	0.22768051	2.6561472	20	3 11.8	19.9
469256 2016 JE ₂₇	17.2	X	24.12788	180.69217	92.99619	6.29276	0.0892397	0.28529114	2.2853034	20	8 25.8	19.6
469257 2016 JN ₂₉	17.4	X	71.97204	257.70134	299.18089	8.04554	0.2075074	0.28177754	2.3042617	20	8 1.1	20.2
469258 2016 JQ ₂₉	15.5	X	274.45144	330.55156	235.56326	21.39275	0.0571666	0.17856643	3.1232219	20	—	—
469259 2016 JA ₃₀	16.3	X	269.47614	187.92539	95.12431	7.59527	0.1677603	0.21196795	2.7858384	20	2 28.2	20.6
469260 2016 JB ₃₀	17.4	X	351.84401	208.09630	78.41843	4.65048	0.2177301	0.26551262	2.3974300	20	7 15.4	18.8
469261 2016 JF ₃₀	17.6	X	31.17595	256.27298	16.07095	2.69844	0.1514490	0.28764335	2.2728276	20	9 13.6	19.8
469262 2016 JH ₃₀	16.1	X	320.49593	11.96112	244.68618	13.52457	0.2195358	0.22918646	2.6444990	20	3 9.3	19.7
469263 2016 JP ₃₀	16.7	X	281.90613	189.71315	118.75376	8.93110	0.2553874	0.22688605	2.6623441	20	4 2.0	20.7
469264 2016 JR ₃₀	15.7	X	309.59555	102.19025	87.13971	11.67296	0.0519510	0.18588855	3.0406583	20	1 7.4	19.9
469265 2016 JT ₃₀	16.4	X	1.51683	114.24388	78.82854	13.53198	0.1245640	0.22585982	2.6704025	20	3 20.9	19.6
469266 2016 JY ₃₀	17.0	X	347.02516	27.14872	207.10004	13.43862	0.1113743	0.23673285	2.5879966	20	4 13.7	19.7
469267 2016 JX ₃₁	17.9	X	78.71011	103.51637	103.25153	7.74394	0.1063002	0.28494886	2.2871331	20	8 11.5	20.7
469268 2016 JA ₃₂	15.9	X	320.37574	291.97498	230.62043	25.95934	0.1911449	0.17984738	3.1083743	20	—	—
469269 2016 JE ₃₂	16.9	X	5.84863	85.23766	133.32716	9.48781	0.1102222	0.23794121	2.5792272	20	4 29.8	19.8
469270 2016 JH ₃₂	17.8	X	98.85177	35.39421	196.29066	6.17796	0.1513903	0.30675207	2.1774309	20	10 15.6	20.9
469271 2016 JL ₃₂	16.7	X	301.16411	104.70934	216.67683	8.31372	0.1886137	0.24354397	2.5395170	20	5 20.4	19.8
469272 2016 JO ₃₂	16.3	X	308.85231	234.45825	73.38464	13.10584	0.1796520	0.24070437	2.5594505	20	5 16.5	19.2
469273 2016 JQ ₃₄	16.1	X	303.30525	195.03652	72.86025	14.91354	0.2116392	0.22904099	2.6456187	20	3 16.8	19.9

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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>
469281 1995 <i>TJ</i> ₃	16.7	X	141.74759	174.03978	174.85318	0.67339	0.1765405	0.17399681	3.1776680	20	1 24.9	21.6
469282 1995 <i>UK</i> ₁₁	16.1	X	131.87887	340.52840	357.10254	4.96041	0.1589517	0.17242398	3.1969630	20	1 1.6	21.0
469283 1995 <i>UN</i> ₂₀	16.5	X	279.48700	16.08418	10.27044	4.00103	0.1307254	0.19081506	2.9880942	20	7 25.4	20.5
469284 1995 <i>UL</i> ₂₃	16.6	X	223.92198	130.33275	231.60988	8.01327	0.1430581	0.18269419	3.0759992	20	4 18.6	21.6
469285 1995 <i>UV</i> ₄₁	16.4	X	113.19147	44.90260	65.41144	10.37655	0.0361662	0.17950367	3.1123409	20	5 4.5	20.8
469286 1995 <i>UY</i> ₄₃	18.0	X	330.76846	233.79777	149.64935	2.63611	0.1861473	0.27573767	2.3377890	20	11 9.2	19.6
469287 1995 <i>UV</i> ₅₅	16.9	X	193.81414	190.30335	207.97095	3.96091	0.1448714	0.18387048	3.0628663	20	5 5.9	21.8
469288 1995 <i>VW</i> ₁₁	16.2	X	312.31997	264.11514	64.75431	10.57759	0.1817967	0.18972623	2.9995156	20	6 18.2	19.8
469289 1995 <i>VZ</i> ₁₇	16.8	X	199.32425	330.19582	41.07470	1.21335	0.1752893	0.17971362	3.1099164	20	4 8.1	22.0
469290 1996 <i>TS</i> ₃₆	17.7	X	41.58840	270.83340	102.69882	3.53488	0.1757207	0.25448193	2.4662178	20	—	—
469291 1996 <i>VE</i> ₁₁	18.0	X	39.71212	39.41565	1.02200	8.18871	0.1173924	0.29790891	2.2203105	20	—	—
469292 1996 <i>VU</i> ₂₈	16.6	X	356.34118	135.01092	55.74134	10.19306	0.0165057	0.18333731	3.0688016	20	3 17.6	20.9
469293 1996 <i>XW</i> ₄	18.0	X	263.79422	65.13767	352.73154	4.82662	0.2259168	0.24006904	2.5639641	20	8 4.9	21.4
469294 1996 <i>XW</i> ₉	18.3	X	24.76713	28.08543	343.20750	3.99242	0.2103088	0.29281187	2.2460027	20	—	—
469295 1996 <i>XL</i> ₂₄	17.2	X	322.11287	112.34617	265.04624	11.86803	0.2478610	0.24425938	2.5345559	20	9 14.9	19.5
469296 1996 <i>XB</i> ₃₆	16.7	X	190.96800	208.10682	190.24310	8.69773	0.0970495	0.18791927	3.0187131	20	5 4.8	21.4
469297 1997 <i>BN</i> ₆	17.4	X	86.17243	28.55197	154.53499	3.57552	0.0386932	0.22614049	2.6681925	20	7 2.6	20.9
469298 1997 <i>EN</i> ₁₆	18.3	X	54.49831	210.24247	332.58081	0.55439	0.1252083	0.26163291	2.4210725	20	5 31.4	20.7
469299 1997 <i>KZ</i> ₁	17.1	X	101.23169	342.09659	120.90788	15.22650	0.0609717	0.25280179	2.4771328	20	4 14.9	20.6
469300 1997 <i>LQ</i> ₄	18.2	X	120.52677	66.87079	198.16278	4.20941	0.2294937	0.27290788	2.3539216	20	12 13.3	22.2
469301 1997 <i>SK</i> ₁₂	17.3	X	47.97698	13.96709	352.71038	5.84402	0.0630526	0.22188202	2.7022238	20	—	—
469302 1998 <i>SJ</i> ₅₁	17.6	X	285.18893	339.34496	16.79013	1.88138	0.2357636	0.21594588	2.7515206	20	6 5.7	21.3
469303 1998 <i>TH</i> ₂₀	16.3	X	23.62003	209.09399	30.41502	14.83470	0.0728923	0.21187448	2.7866576	20	6 22.9	20.0
469304 1998 <i>UV</i> ₁	16.7	X	298.92896	14.67994	355.67615	7.95918	0.3615817	0.21900406	2.7258457	20	6 24.7	20.0
469305 1998 <i>YM</i> ₁₉	18.1	X	333.64704	297.33718	90.75118	2.95130	0.2503177	0.26572643	2.3961438	20	11 26.1	19.6
469306 1999 <i>CD</i> ₁₅₈	5.0	X	251.23265	145.98408	119.08785	25.55413	0.1476275	0.00343690	43.4868867	20	2 11.8	21.7
469307 1999 <i>RD</i> ₃₆	17.7	X	300.60881	193.79734	179.96923	7.21948	0.3662391	0.23139463	2.6276480	20	7 1.1	21.6
469308 1999 <i>RU</i> ₁₀₃	17.6	X	293.11496	76.03362	292.98978	4.60696	0.3937641	0.22990025	2.6390224	20	6 8.7	21.2
469309 1999 <i>RZ</i> ₁₈₉	16.8	X	295.93582	344.49043	6.21723	13.26445	0.2974484	0.22956752	2.6415718	20	5 31.2	20.3
469310 1999 <i>RE</i> ₂₁₂	16.9	X	308.92569	182.66419	200.79681	17.33015	0.3340973	0.23227239	2.6210240	20	8 4.3	19.7
469311 1999 <i>RZ</i> ₂₃₉	17.2	X	297.06522	346.14019	6.13043	13.29922	0.2964000	0.22937642	2.6430388	20	6 4.9	20.7
469312 1999 <i>SK</i> ₂₅	18.4	X	10.40221	345.13196	4.86375	3.09384	0.2340049	0.28619333	2.2804981	20	12 15.8	20.9
469313 1999 <i>TH</i> ₄₆	16.4	X	245.64295	72.93815	19.34332	10.52817	0.0305995	0.18616535	3.0376436	20	9 20.4	20.6
469314 1999 <i>TA</i> ₆₂	16.7	X	270.51281	11.88094	31.05127	14.10645	0.2331115	0.22749242	2.6576111	20	7 25.2	20.6
469315 1999 <i>TD</i> ₁₃₈	17.6	X	326.43604	180.57702	203.34239	14.16805	0.2656912	0.23433826	2.6055970	20	10 13.8	19.2
469316 1999 <i>TG</i> ₁₈₅	17.0	X	285.04635	29.06760	356.74629	12.32832	0.2979801	0.22880315	2.6474518	20	7 9.4	20.7
469317 1999 <i>TS</i> ₂₁₂	18.1	X	340.45411	326.93811	3.84853	5.17941	0.2479131	0.27982994	2.3149410	20	9 8.8	18.9
469318 1999 <i>TP</i> ₂₂₄	16.6	X	315.25490	163.24740	208.92133	13.31695	0.1429954	0.18355822	3.0663390	20	8 22.9	20.5
469319 1999 <i>TR</i> ₂₅₄	17.2	X	285.51671	225.85746	160.72830	13.38556	0.3441647	0.22856723	2.6492731	20	6 30.6	20.9
469320 1999 <i>TD</i> ₂₆₇	16.8	X	292.91346	19.92694	344.69010	12.50403	0.3002488	0.22915331	2.6447541	20	6 18.2	20.4
469321 1999 <i>TN</i> ₃₀₆	17.6	X	324.29832	327.63799	352.31183	12.37601	0.1647126	0.23017890	2.6368922	20	7 5.2	20.6
469322 1999 <i>TG</i> ₃₁₆	17.9	X	231.06358	27.69364	36.13273	2.44752	0.1960426	0.22386332	2.6862562	20	7 8.9	22.2
469323 1999 <i>UB</i> ₂₂	16.7	X	317.08493	171.54802	211.51447	10.73081	0.1025306	0.18441883	3.0567919	20	9 15.0	20.7
469324 1999 <i>UZ</i> ₃₁	17.3	X	115.98958	24.09825	40.95213	3.40908	0.0836829	0.21063468	2.7975818	20	3 15.7	21.1
469325 1999 <i>VC</i> ₁₀₆	18.2	X	337.22973	158.21700	231.62430	5.26929	0.2181228	0.28269308	2.2992839	20	12 10.8	19.8
469326 1999 <i>VH</i> ₁₉₁	17.9	X	3.44438	315.58710	41.28482	2.62344	0.2301643	0.28428077	2.2907150	20	12 13.6	20.2
469327 1999 <i>VS</i> ₂₀₆	17.1	X	301.35884	301.70335	37.22254	6.82860	0.3067825	0.22719908	2.6598981	20	5 23.6	20.2
469328 1999 <i>WR</i> ₂₂	18.8	X	143.11875	87.07693	232.08292	2.81552	0.2037875	0.29724333	2.2236238	20	—	—
469329 1999 <i>YJ</i> ₅	16.9	X	310.88785	108.49308	314.72057	22.90639	0.3511605	0.28191799	2.3034963	20	11 24.4	18.4
469330 2000 <i>GJ</i> ₆₃	17.5	X	133.23156	151.97672	30.21679	5.44976	0.1460918	0.26048752	2.4281645	20	9 11.5	21.2
469331 2000 <i>GM</i> ₁₄₄	18.0	X	68.51254	209.43623	21.73329	2.59648	0.1495059	0.25639661	2.4539245	20	9 4.1	21.2
469332 2000 <i>KE</i> ₃₇	17.6	X	269.60414	254.53674	38.62051	4.31569	0.3159531	0.19051158	2.9912667	20	2 26.5	22.6
469333 2000 <i>PE</i> ₃₀	5.9	X	30.848691	148.30026	127.27331	18.36872	0.3483179	0.00242167	54.9194554	20	9 1.5	22.1
469334 2000 <i>QG</i> ₂₅₂	17.4	X	275.84585	213.92222	138.49104	3.98979	0.2582931	0.23828844	2.5767210	20	5 18.1	21.1
469335 2000 <i>SH</i> ₅₀	17.5	X	310.95127	150.30434	209.85656	4.68854	0.2849847	0.24350958	2.5397561	20	7 17.8	19.8
469336 2000 <i>SG</i> ₅₁	16.1	X	241.44528	31.87839	329.56481	20.08862	0.2536386	0.18447462	3.0561756	20	4 16.6	21.6
469337 2000 <i>SE</i> ₆₀	17.3	X	315.42836	134.26436	188.12460	7.08913	0.2595686	0.24095849	2.5576507	20	6 4.1	19.8
469338 2000 <i>SF</i> ₁₃₇	17.6	X	292.58480	47.50217	296.11020	6.09890	0.3753819	0.23977874	2.5660332	20	5 5.8	21.3
469339 2000 <i>SG</i> ₁₉₆	17.6	X	315.53025	359.82570	354.07171	2.94527	0.2443760	0.24379838	2.5377500	20	7 28.5	19.7
469340 2000 <i>SK</i> ₂₄₉	16.3	X	199.43546	205.52349	172.10265	17.82167	0.2425687	0.17914245	3.1165233	20	4 17.2	21.9
469341 2000 <i>SD</i> ₂₉₁	18.4	X	107.22397	93.11691	231.79735	2.99896	0.2445974	0.31174597	2.1541146	20	—	—
469342 2000 <i>SM</i> ₃₀₀	16.0	X	241.54706	348.97800	2.75319	18.99430	0.2222897	0.18219036	3.0816676	20	4 12.8	21.2
469343 2000 <i>SF</i> ₃₁₀	16.1	X	191.66588	132.51163	263.47211	16.72922	0.2351784	0.17888735	3.1194854	20	4 26.8	21.8
469344 2000 <i>TF</i> ₈	17.8	X	269.68855	21.15823	18.65988	4.54337	0.2280387	0.24009603	2.5637720	20	7 18.2	21.3
469345 2000 <i>TP</i> ₅₃	16.4	X	225.66434	337.40098	30.25453	4.70141	0.2774782	0.18090968	3.0961941	20	4 20.6	21.9
469346 2000 <i>TN</i> ₆₄	18.6	X	88.42478	302.97120	336.93627	4.65852	0.3689137	0.30618553	2.1801161	20	12 16.2	22.8
469347 2000 <i>TG</i> ₆₇	16.0	X	207.18196	297.64324	36.55369	14.28304	0.2928336	0.17611310	3.1521602	20	3 7.5	21.9
469348 2000 <i>UZ</i> ₁₈	16.6	X	294.10909	115.26236	252.96056	14.13916	0.1794161	0.23873301	2.5735211	20	7 13.6	19.7
469349 2000 <i>UF</i> ₇₃	17.2	X	280.82009	13.37567	15.27409	6.36461	0.2566356	0.23912582	2.5707020	20	7 13.6	20.5
469350 2000 <i>WL</i> ₄₄	17.0	X	287.19661	280.38313	64.68992	6.65496	0.3456121	0.23736723	2.5833835	20	5 8.9	20.7
469351 2000 <i>WE</i> ₇₄	17.3	X	297.26219	117.91968	275.92577	5.65493	0.2310400	0.24153037	2.5536			

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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>
469361 2001 HY ₆₅	6.2	X	56.40291	316.04445	188.18920	17.14378	0.1179064	0.00346635	43.2402179	20	4 24.2	22.3
469362 2001 KB ₇₇	7.4	X	354.09251	52.96362	222.98044	17.50166	0.2900918	0.00389855	39.9822412	20	6 14.9	22.0
469363 2001 KZ ₇₇	17.5	X	354.02697	320.12376	63.63418	3.62520	0.2146781	0.26456589	2.4031460	20	12 27.1	19.7
469364 2001 NO ₁₃	17.9	X	21.56083	341.70450	329.56479	4.83096	0.2002999	0.26559012	2.3969636	20	10 25.9	20.6
469365 2001 OX ₃₇	18.2	X	15.81784	217.64187	80.76512	6.69028	0.2209695	0.26254776	2.4154451	20	10 6.7	20.6
469366 2001 PH ₁₃	18.1	X	256.43284	220.51184	148.77488	11.11428	0.5445514	0.19646228	2.9305554	20	4 29.3	23.9
469367 2001 PG ₅₄	17.8	X	356.30932	347.59501	334.19323	1.78013	0.2001112	0.26183241	2.4198426	20	9 24.1	19.7
469368 2001 QB ₁₄₆	18.3	X	12.69281	146.60912	201.30084	1.32385	0.1920987	0.26493063	2.4009398	20	12 3.6	20.9
469369 2001 QO ₁₄₆	18.1	X	26.05923	133.86796	142.05387	5.58198	0.3119276	0.26234593	2.4166838	20	10 6.1	20.7
469370 2001 QH ₂₀₈	17.6	X	347.25799	286.14922	54.47545	2.22258	0.2021504	0.26162491	2.4211219	20	10 5.6	19.4
469371 2001 QM ₂₃₁	17.5	X	331.15740	61.38584	313.23101	13.68702	0.2263069	0.26184936	2.4197381	20	10 11.9	19.6
469372 2001 QF ₂₉₈	5.1	X	157.43427	44.13136	164.12658	22.31294	0.1096096	0.00397335	39.4789023	20	10 5.9	21.5
469373 2001 RQ ₃	19.1	X	16.23453	127.28476	188.22991	15.64613	0.4741562	0.26488379	2.4012228	20	12 10.2	22.6
469374 2001 RU ₂₅	18.0	X	3.63015	330.55479	4.54499	1.67519	0.2502329	0.26303847	2.4124401	20	11 8.5	20.0
469375 2001 RN ₁₃₅	17.5	X	5.15848	210.28451	121.34171	3.81097	0.2461003	0.26205706	2.4184595	20	11 7.5	19.7
469376 2001 RW ₁₄₁	17.6	X	327.93937	129.75513	239.62535	7.87545	0.3122105	0.26071602	2.4267455	20	9 28.8	18.5
469377 2001 SM ₉₉	16.1	X	221.70109	158.01899	185.12061	10.45269	0.0059968	0.18841859	3.0133776	20	4 3.8	20.2
469378 2001 SL ₁₀₃	16.5	X	172.91402	227.18954	190.12738	9.56895	0.1886064	0.18922230	3.0048387	20	5 11.6	21.6
469379 2001 SW ₁₅₇	16.9	X	239.51312	137.07996	194.10412	16.50455	0.2695658	0.19113389	2.9847703	20	3 18.3	22.2
469380 2001 SX ₁₈₂	17.8	X	327.90287	162.77972	189.36861	1.02810	0.1913201	0.25950176	2.4343098	20	9 3.2	19.5
469381 2001 SD ₁₈₅	18.0	X	349.26310	342.86364	355.83751	4.41318	0.2083573	0.26119307	2.4237898	20	10 5.8	19.9
469382 2001 SM ₁₉₃	18.1	X	2.14233	156.35445	174.14352	0.59691	0.1991075	0.26165300	2.4209486	20	10 21.1	20.1
469383 2001 ST ₁₉₅	17.6	X	345.90194	196.32590	146.66628	1.04204	0.2430125	0.26050072	2.4280824	20	10 10.1	18.9
469384 2001 SA ₂₀₉	16.4	X	180.10711	39.85871	13.66584	10.77085	0.1041958	0.19097657	2.9864093	20	5 8.1	21.2
469385 2001 SD ₂₀₉	16.8	X	235.17534	286.54117	59.93569	2.37547	0.2359600	0.19205280	2.9752420	20	4 5.9	21.8
469386 2001 SY ₂₃₁	17.1	X	24.97478	358.09593	20.50137	5.00745	0.1668184	0.21489264	2.7605038	20	—	—
469387 2001 SE ₂₆₀	18.1	X	358.04219	302.56053	39.61558	0.37080	0.2268670	0.26139270	2.4225556	20	11 4.0	20.2
469388 2001 SV ₃₁₈	16.8	X	213.72854	343.65681	26.83351	5.23743	0.2416128	0.19096975	2.9864804	20	4 16.3	22.0
469389 2001 SF ₃₂₀	17.4	X	335.74052	225.97211	111.92234	2.23158	0.1714982	0.25667588	2.4521442	20	8 30.7	19.2
469390 2001 SS ₃₃₃	18.0	X	335.37505	36.38209	7.68943	2.25279	0.2106713	0.26361296	2.4089339	20	12 19.3	19.8
469391 2001 SV ₃₃₃	16.4	X	225.89943	350.79740	355.65905	4.85601	0.0895550	0.18873618	3.0099962	20	4 5.2	20.9
469392 2001 TY ₂₃	17.6	X	305.92646	165.46803	218.14257	5.61508	0.2111472	0.25614380	2.4555389	20	8 27.5	19.9
469393 2001 TZ ₉₀	17.2	X	291.13577	88.94867	211.73321	12.83574	0.4866413	0.19835470	2.9118861	20	2 29.6	22.4
469394 2001 TH ₁₂₄	17.4	X	343.92015	28.73340	334.82764	8.26074	0.2165506	0.26085653	2.4258740	20	10 30.9	19.4
469395 2001 TW ₁₅₈	17.8	X	318.27970	191.69611	198.25503	0.72175	0.1883798	0.25963852	2.4334549	20	10 13.3	19.6
469396 2001 TG ₁₆₃	17.6	X	342.31298	333.64251	6.12454	5.34030	0.1771445	0.25796025	2.4439981	20	9 18.8	19.3
469397 2001 TJ ₂₁₅	16.5	X	272.75066	350.16268	353.16159	11.21390	0.3468461	0.19608050	2.9343581	20	4 18.9	21.4
469398 2001 TQ ₂₄₇	17.6	X	273.56787	270.01786	139.92464	2.03795	0.1784286	0.25542253	2.4601594	20	8 15.6	20.5
469399 2001 UQ ₁₅	15.7	X	154.27457	358.91405	23.56647	17.52029	0.1921486	0.18094770	3.0957604	20	3 20.4	20.9
469400 2001 UO ₆₃	18.0	X	140.29408	96.76343	309.43395	2.20867	0.2815206	0.23381388	2.6094913	20	4 2.4	22.3
469401 2001 UN ₇₆	17.7	X	334.22424	219.81984	153.33422	2.98535	0.2080437	0.25910852	2.4367721	20	10 27.3	19.5
469402 2001 UN ₈₈	16.6	X	210.98349	179.98067	217.86925	15.32452	0.2433997	0.18992263	2.9974474	20	5 17.1	21.8
469403 2001 UG ₉₁	17.7	X	332.81618	308.87637	57.62846	3.16014	0.2075683	0.25827990	2.4419811	20	10 12.1	19.3
469404 2001 UJ ₁₃₇	17.7	X	338.78247	275.58566	65.97794	2.18006	0.2095000	0.25720813	2.4487602	20	9 14.9	19.4
469405 2001 UA ₁₉₉	17.3	X	217.65841	143.20510	246.55176	1.40208	0.2446292	0.19160924	2.9798318	20	5 11.8	22.3
469406 2001 UF ₂₁₀	17.6	X	131.73002	356.27959	15.12583	13.78072	0.1691821	0.23065467	2.6332649	20	2 8.9	21.7
469407 2001 UE ₂₁₄	17.7	X	336.19051	59.25883	36.43372	1.66892	0.1560161	0.26862822	2.3788567	20	—	—
469408 2001 UY ₂₁₅	16.0	X	163.24492	222.13080	220.77058	19.33523	0.1618193	0.18614897	3.0378217	20	6 1.0	21.1
469409 2001 UZ ₂₂₅	16.5	X	247.65550	156.96717	157.05412	9.13458	0.1146828	0.18770192	3.0210430	20	3 20.0	21.1
469410 2001 VW ₅₀	16.6	X	325.95406	144.36749	239.21011	22.33033	0.2596594	0.25859479	2.4399983	20	10 17.9	18.6
469411 2001 VQ ₇₂	18.2	X	279.28959	189.36728	225.54298	5.61042	0.1799806	0.25566718	2.4585897	20	8 28.9	21.2
469412 2001 WX ₆	16.8	X	197.35440	6.67312	76.32343	6.30699	0.2882245	0.18988159	2.9999862	20	6 27.6	22.2
469413 2001 WC ₃₅	17.3	X	305.11575	264.90531	120.74327	2.66925	0.1788447	0.25405335	2.4689905	20	9 6.4	19.6
469414 2001 WG ₅₁	17.8	X	319.76581	338.95450	31.65558	3.08657	0.2076231	0.25661577	2.4525271	20	9 14.0	19.5
469415 2001 XK ₈₂	16.7	X	219.99439	291.33425	89.99745	13.34654	0.3431316	0.18880602	3.0092538	20	5 4.1	22.4
469416 2001 XH ₁₂₄	17.0	X	150.85619	6.10988	88.30258	6.12145	0.2676392	0.18414476	3.0598241	20	6 8.5	22.4
469417 2001 XN ₂₂₇	17.3	X	294.17537	314.22149	73.17664	5.26134	0.2500450	0.25255687	2.4787340	20	8 5.8	19.8
469418 2001 XJ ₂₄₄	16.1	X	148.49618	182.73437	253.38411	14.72399	0.1608490	0.18334699	3.0686936	20	5 9.2	21.2
469419 2001 XA ₂₄₉	15.6	X	69.07163	310.91876	290.27681	12.74420	0.0441344	0.18982319	2.9984942	20	8 19.8	19.9
469420 2001 XP ₂₅₄	7.4	X	7.08949	181.25556	304.97941	2.61814	0.2123200	0.00362905	41.9380014	20	2 6.2	22.6
469421 2001 XD ₂₅₅	5.6	X	285.20397	112.82905	106.74716	18.14670	0.1104758	0.00401547	39.2023436	20	2 2.5	21.5
469422 2001 XY ₂₆₀	16.2	X	252.88542	264.64881	269.41551	13.47902	0.1225663	0.20653365	2.8344937	20	12 28.5	19.7
469423 2001 YQ ₇	15.9	X	151.35282	134.74094	246.29551	8.26506	0.2492881	0.17753379	3.1353211	20	3 10.8	21.4
469424 2001 YM ₈₃	15.8	X	139.96735	182.22038	288.26256	18.01117	0.1651475	0.18095717	3.0956524	20	6 14.5	20.9
469425 2001 YK ₁₂₃	15.6	X	93.87033	190.03358	277.82140	16.26788	0.1835455	0.17682612	3.1436808	20	4 20.9	20.5
469426 2002 AO ₁₀₅	16.2	X	198.36300	291.50865	116.18553	20.02278	0.2593662	0.18356006	3.0663185	20	5 24.2	21.9
469427 2002 AE ₁₂₉	18.6	X	61.11350	135.93414	296.38849	18.50780	0.1005699	0.37946601	1.8895315	20	—	—
469428 2002 AV ₁₄₂	17.5	X	221.44039	157.30032	286.12186	13.09573	0.2272485	0.24452530	2.5327180	20	7 21.3	21.5
469429 2002 BY ₃₀	15.7	X	168.36244	324.88192	100.06205	29.45716	0.2150924	0.18069355	3.0986625	20	5 25.4	21.3
469430 2002 CK ₁₀	18.2	X	73.35723	97.35968	345.50890	19.28708	0.1529292	0.38119732	1.8838059	20	1 19.9	19.6
469431 2002 CN ₁₁₃	15.9	X	189.76063	76.66655	328.00661	19.75735	0.3086607	0.18215540	3.0820618	20	4 29.6	22.0
469432 2002 CU ₂₂₅	17.7	X	7.10733	145.78390	319.15288	18.45193	0.0915130	0.37511933	1.9041000	20	—	—
469433 2002 CO ₂₇₉	15.9	X	273.44450	122.47589								

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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>
469441 2002 GP ₁₂₆	18.2	X	316.63230	259.94411	10.41085	6.04930	0.4676325	0.21442943	2.7644779	20	2 22.4	22.0
469442 2002 GG ₁₆₆	7.9	X	344.70054	274.82749	32.99782	7.70746	0.5948998	0.00477667	34.9182813	20	5 24.1	20.4
469443 2002 KT ₃	17.3	X	34.70046	152.60589	112.98126	24.73512	0.2308110	0.28022035	2.3127903	20	10 3.6	20.6
469444 2002 KY ₃	17.3	X	49.26513	124.46784	128.20511	23.78926	0.2179310	0.28186919	2.3037622	20	9 30.1	20.7
469445 2002 LT ₂₄	22.1	X	316.06715	282.64791	166.14049	0.76343	0.4958231	1.61300952	0.7200756	20	—	—
469446 2002 NL ₈	17.8	X	38.55048	49.20409	279.36671	7.01111	0.3325606	0.28352182	2.2948011	20	—	—
469447 2002 NO ₅₈	17.0	X	319.91472	28.64778	253.94212	8.04816	0.1483553	0.21236237	2.7823879	20	5 1.3	20.3
469448 2002 NE ₇₂	18.3	X	18.34870	165.16830	163.20968	1.94674	0.1683874	0.28192073	2.3034814	20	11 15.9	20.8
469449 2002 OW ₁₉	17.0	X	354.66639	100.19492	303.02151	19.47222	0.3822531	0.28190359	2.3035748	20	—	—
469450 2002 PR ₂	17.3	X	30.23274	87.10774	265.09508	11.87108	0.0839875	0.28534577	2.2850117	20	12 22.1	20.0
469451 2002 PQ ₆₅	17.4	X	284.83954	170.35352	191.02935	6.97320	0.3196385	0.21394472	2.7686518	20	5 31.6	21.3
469452 2002 PE ₇₄	16.8	X	280.55745	92.50113	258.08759	8.68228	0.2345059	0.21182629	2.7870802	20	5 23.4	20.6
469453 2002 PJ ₇₄	17.3	X	276.77912	160.48034	186.82482	9.86673	0.3383234	0.21067713	2.7972060	20	5 3.5	21.6
469454 2002 PT ₁₆₄	18.2	X	286.53223	181.47964	115.36527	2.60039	0.3624493	0.20943881	2.8082210	20	3 9.0	22.7
469455 2002 QR ₁₄	17.2	X	313.61308	76.45502	296.64611	6.64715	0.3113053	0.21780727	2.7358218	20	8 6.1	19.5
469456 2002 QZ ₃₈	17.2	X	290.45034	298.20607	79.60690	0.68360	0.0855101	0.21434322	2.7652191	20	8 6.7	20.7
469457 2002 QE ₄₄	18.0	X	32.46197	244.44297	101.82316	5.14969	0.2782793	0.28398646	2.2922974	20	—	—
469458 2002 QE ₅₄	18.1	X	0.36808	60.80941	305.76634	2.93755	0.2202791	0.28081701	2.3095131	20	12 19.8	20.3
469459 2002 QU ₆₄	17.8	X	351.40857	42.18926	340.21283	5.58004	0.1897244	0.28162610	2.3050877	20	12 22.6	20.0
469460 2002 QP ₇₄	18.0	X	38.74075	196.95097	97.45998	4.73840	0.1814849	0.27915260	2.3186842	20	10 31.6	20.8
469461 2002 QK ₉₂	18.8	X	116.10725	287.20028	41.14867	2.49551	0.2348895	0.29552628	2.2322285	20	—	—
469462 2002 QF ₁₀₆	17.8	X	37.20980	279.28480	73.42961	5.47365	0.1829363	0.28505763	2.2865512	20	—	—
469463 2002 QT ₁₁₅	17.4	X	267.12151	182.15268	177.15938	7.14508	0.1322264	0.21127199	2.7919530	20	6 3.5	21.4
469464 2002 QJ ₁₃₇	18.6	X	21.20658	40.73246	299.89517	1.70517	0.2094284	0.28236372	2.3010715	20	12 13.1	21.3
469465 2002 RT ₃₉	16.9	X	281.46000	31.94681	321.60127	8.80449	0.2357281	0.21179646	2.7873420	20	5 25.4	20.9
469466 2002 RR ₆₀	17.9	X	46.98735	8.38409	304.52099	5.31641	0.2298567	0.28190839	2.3035486	20	12 9.6	21.1
469467 2002 RQ ₁₁₅	17.5	X	33.29677	337.16125	35.91023	1.92692	0.1983931	0.28615673	2.2806925	20	—	—
469468 2002 RG ₁₂₄	16.7	X	212.09841	327.95617	80.71144	9.74876	0.3275391	0.20496664	2.8489222	20	5 27.5	22.0
469469 2002 RE ₁₃₁	16.6	X	268.37597	39.32432	347.36963	12.67891	0.1512887	0.21212667	2.7844486	20	7 10.6	20.6
469470 2002 RC ₁₈₉	17.5	X	140.74752	313.88720	339.35443	17.35389	0.0713426	0.34790943	2.0021284	20	—	—
469471 2002 RE ₁₈₉	16.8	X	263.09838	241.69822	182.07903	12.17114	0.3322597	0.21317676	2.7752971	20	7 22.4	21.2
469472 2002 RH ₂₂₃	16.7	X	279.61361	194.34184	159.24334	13.20848	0.2381122	0.21033170	2.8002678	20	5 28.8	20.9
469473 2002 RY ₂₂₄	18.1	X	8.72442	256.18968	103.01749	7.27671	0.2590765	0.28088711	2.3091289	20	12 28.9	20.5
469474 2002 RW ₂₃₈	17.9	X	141.81275	322.20151	336.98581	17.32065	0.1344097	0.35020614	1.9933652	20	—	—
469475 2002 RR ₂₅₇	16.9	X	299.66814	209.18513	151.39764	15.33084	0.1261777	0.21558312	2.7546064	20	7 20.9	20.4
469476 2002 RL ₂₆₆	18.9	X	39.29828	63.66125	271.48601	0.79470	0.2353871	0.28430474	2.2905863	20	12 31.4	22.0
469477 2002 SM ₁₂	17.9	X	350.42536	214.48048	168.05236	5.30888	0.2392804	0.27848326	2.3223980	20	12 28.1	20.0
469478 2002 TU ₂	17.8	X	20.76719	312.18921	10.19545	4.69240	0.2859297	0.27779868	2.3262119	20	11 27.7	20.5
469479 2002 TW ₇₀	17.9	X	341.13227	131.31401	261.07821	4.40697	0.2375786	0.27782642	2.3260570	20	12 24.3	19.7
469480 2002 TP ₇₆	18.3	X	12.92298	10.89179	324.84411	3.16208	0.2796489	0.27772012	2.3266505	20	12 4.7	20.9
469481 2002 TP ₉₁	17.9	X	36.43475	97.57906	245.17377	3.48457	0.2537779	0.28134375	2.3066297	20	—	—
469482 2002 TW ₁₂₄	16.4	X	304.95667	37.31780	284.42826	8.42595	0.2201596	0.21046480	2.7990871	20	5 20.1	20.0
469483 2002 TP ₁₅₃	18.5	X	29.10631	302.47567	8.18429	5.47732	0.3038466	0.27824481	2.3237247	20	11 25.0	21.6
469484 2002 TJ ₁₆₅	16.4	X	222.58705	294.77568	111.10936	8.29221	0.3089243	0.20442263	2.8539744	20	6 1.7	21.5
469485 2002 TK ₂₀₂	16.6	X	280.46662	328.42297	43.83128	8.53801	0.2284669	0.21166617	2.7884857	20	6 21.9	20.4
469486 2002 TU ₂₇₅	17.6	X	344.90939	178.46883	223.75675	6.46843	0.2383656	0.27817617	2.3210692	20	—	—
469487 2002 TF ₂₉₉	17.6	X	56.70190	62.08624	263.27567	1.59204	0.1867964	0.28117099	2.3075744	20	12 30.7	20.8
469488 2002 TZ ₃₀₆	16.9	X	263.00569	309.85843	98.79076	5.99383	0.1539076	0.21141118	2.7907274	20	7 30.4	20.6
469489 2002 TM ₃₅₆	18.2	X	32.66339	88.81170	239.48509	1.49783	0.2482131	0.28097337	2.3086563	20	12 16.3	21.3
469490 2002 TQ ₃₆₃	18.9	X	41.60494	199.13452	112.09353	2.82568	0.2208164	0.27922590	2.3182784	20	11 30.7	21.9
469491 2002 VL ₆₃	16.0	X	294.06320	107.60952	259.44636	11.70414	0.2401127	0.20960006	2.8067805	20	7 1.9	19.4
469492 2002 VV ₁₄₃	18.1	X	340.06772	333.15743	62.53647	3.74738	0.2238073	0.27644654	2.3337909	20	12 24.2	19.9
469493 2002 XG ₁₀	18.1	X	6.19782	302.17078	72.96582	8.97335	0.2943899	0.27853656	2.3221018	20	—	—
469494 2002 XS ₄₀	20.1	X	129.52287	83.70418	97.66682	11.62860	0.3380494	0.53805118	1.4971098	20	10 10.5	22.4
469495 2002 XE ₅₁	17.8	X	292.12614	189.87393	240.82799	1.86533	0.2072934	0.27071633	2.3666085	20	10 18.8	19.4
469496 2002 XU ₅₈	17.5	X	271.40597	30.08234	51.77283	3.53557	0.2117569	0.26826964	2.3809761	20	9 25.9	20.0
469497 2002 XO ₆₁	16.7	X	202.68456	291.04041	123.96582	2.38638	0.3078456	0.19945456	2.9011715	20	5 29.0	22.1
469498 2002 YS ₁₁	17.4	X	354.10824	285.80785	109.85694	6.50798	0.2411524	0.27507864	2.3415214	20	—	—
469499 2002 YJ ₁₅	17.2	X	39.89026	87.02665	101.88294	3.64384	0.1986725	0.24148656	2.5539207	20	5 26.7	19.6
469500 2003 AV ₉₄	15.9	X	324.28187	105.78981	117.93699	13.82411	0.1101463	0.17889335	3.1194156	20	3 5.4	20.1
469501 2003 BJ ₁₄	16.8	X	35.10154	301.20570	124.43438	14.19844	0.1647836	0.22599434	2.6693427	20	—	—
469502 2003 BZ ₂₀	19.0	X	120.94159	117.07519	126.66767	29.31224	0.0529268	0.54826944	1.4784502	20	—	—
469503 2003 DY ₉	17.2	X	254.70201	110.17903	10.27307	22.39912	0.3110767	0.26742617	2.3859799	20	10 5.7	20.2
469504 2003 FO	17.3	X	40.34900	58.28998	151.56139	30.52380	0.3359817	0.23710472	2.5852899	20	7 23.7	20.5
469505 2003 FE ₁₂₈	6.3	X	10.60613	54.76687	169.24707	3.38426	0.2570715	0.00293575	48.3048145	20	5 24.0	21.9
469506 2003 FF ₁₂₈	6.7	X	352.06923	170.55993	91.74202	1.91063	0.2215082	0.00391938	39.8404568	20	5 30.9	21.6
469507 2003 HK ₈	15.7	X	279.16624	267.03058	6.77184	7.75537	0.2052582	0.17040918	3.2221127	20	2 26.0	20.6
469508 2003 HM ₅₀	16.5	X	325.34157	74.22512	215.99029	17.02440	0.2890700	0.23154035	2.6265455	20	4 29.9	19.1
469509 2003 HC ₅₇	5.8	X	307.85256	44.48653	234.03984	1.03478	0.0714781	0.00335452	44.1959794	20	4 29.5	22.1
469510 2003 MJ ₉	16.5	X	293.92772	101.70872	242.69384	11.92175	0.3892494	0.22430095	2.6827610	20	5 8.2	20.3
469511 2003 OX ₁₃	15.8	X	348.08258	358.60652	311.91594	35.44630	0.2696327	0.23305478	2.6151546	20	8 8.2	17.6
469512 2003 QC ₇	17.2	X	307.44164	181.72315	156.73638	2.09359	0.2157153	0.22674694	2.6634329	20	6 19.7	20.2
469513 2003 QR ₇₉	20.9	X	149.39055	103.17668	333.03743	17.16338	0.3056154	0.68171850	1.2785940	20	4 29.9	22.3
469514 2003 QA ₉₁	5.6	X										

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
469521 2003 SM ₄₂	16.6 ^m	X	276.65948	94.63690	289.03491	11.21955	0.2719475	0.22622238	2.6675486	20	6 27.1	20.3
469522 2003 SG ₄₅	16.6	X	325.95932	162.75433	172.76314	12.18213	0.1960849	0.22766175	2.6562932	20	7 24.5	19.3
469523 2003 SX ₆₈	16.8	X	323.70331	171.84735	183.74570	12.35812	0.1890509	0.23025945	2.6362772	20	8 20.7	19.4
469524 2003 SU ₇₈	17.1	X	242.80699	196.76826	189.91873	12.37389	0.1109262	0.21870692	2.7283141	20	6 12.5	21.3
469525 2003 SF ₁₀₄	18.3	X	46.04516	339.12303	11.71510	3.73988	0.2164792	0.30136152	2.2033197	20	—	—
469526 2003 SD ₁₀₅	16.3	X	297.18190	103.47073	288.92540	10.37450	0.1966519	0.22916277	2.6446812	20	8 19.1	19.2
469527 2003 ST ₁₅₆	18.3	X	32.85371	345.96968	13.57715	2.97434	0.2315008	0.30015292	2.2092304	20	—	—
469528 2003 SS ₁₆₃	18.2	X	48.95188	190.75063	151.04518	4.42451	0.1975252	0.30169772	2.2016825	20	—	—
469529 2003 SU ₁₉₀	18.1	X	29.59413	336.22040	2.40656	5.03219	0.1861819	0.29730322	2.2233251	20	12 21.6	20.9
469530 2003 SN ₂₀₉	17.7	X	266.95858	89.59877	302.20162	4.00335	0.2662800	0.22351933	2.6890115	20	6 26.7	21.6
469531 2003 SK ₂₅₃	17.8	X	272.80848	196.02844	169.20065	1.76541	0.2569234	0.22278863	2.6948878	20	5 30.9	21.8
469532 2003 SD ₂₇₆	17.4	X	309.55169	19.54313	320.29634	2.85381	0.2222142	0.22408955	2.6844479	20	6 24.5	20.2
469533 2003 SK ₂₇₆	16.7	X	303.83442	329.65566	15.66628	14.26071	0.1548697	0.22281431	2.6946808	20	7 5.1	20.2
469534 2003 SK ₂₈₇	17.8	X	311.93647	111.28283	189.05448	11.45987	0.2280138	0.22160505	2.7044748	20	5 3.2	21.0
469535 2003 SB ₂₉₄	16.2	X	278.91815	0.08806	40.87137	15.74184	0.1518736	0.22416092	2.6838781	20	8 20.5	19.9
469536 2003 SZ ₂₉₄	16.5	X	271.54378	182.85630	198.75698	16.18296	0.3499060	0.22073282	2.7115947	20	6 7.7	20.9
469537 2003 ST ₂₉₈	16.8	X	334.41541	171.27644	250.98865	11.62848	0.3010478	0.22810939	2.6528169	20	7 12.3	18.6
469538 2003 SF ₃₀₃	16.7	X	288.48485	11.31119	334.86935	12.03943	0.1298831	0.22098159	2.7095593	20	6 13.8	20.4
469539 2003 SD ₃₂₃	17.5	X	278.32493	94.09563	298.33405	2.85565	0.2190841	0.22631943	2.6667860	20	7 19.2	21.0
469540 2003 SK ₃₂₃	17.4	X	314.30043	113.69852	264.00536	1.86763	0.1331803	0.23134109	2.6280534	20	9 10.9	20.1
469541 2003 SD ₃₃₁	18.2	X	52.44111	235.22168	86.34640	6.45975	0.2131950	0.29831441	2.2182980	20	12 27.9	21.2
469542 2003 SZ ₃₃₁	17.6	X	308.46777	133.53478	186.09981	8.11375	0.1791598	0.22252250	2.6970361	20	6 1.2	20.8
469543 2003 SP ₃₃₃	16.4	X	128.13754	211.62682	182.06767	3.37448	0.0695474	0.14354374	3.6125445	20	2 24.6	21.6
469544 2003 SA ₃₄₄	17.4	X	269.41542	47.92727	311.40335	4.54024	0.1389352	0.22209054	2.7005321	20	6 3.9	21.1
469545 2003 SZ ₄₂₇	17.5	X	287.34355	46.54700	340.80350	6.87820	0.2351239	0.22704609	2.6610929	20	7 24.7	20.7
469546 2003 SX ₄₃₂	17.5	X	263.47831	168.89069	204.33814	4.34022	0.1239517	0.22101874	2.7092556	20	6 17.7	21.3
469547 2003 SH ₄₃₃	17.6	X	160.68380	177.10177	21.81526	8.01860	0.0846841	0.29250773	2.2475593	20	11 2.3	20.7
469548 2003 TD ₂₀	17.7	X	293.53743	108.55791	253.85331	6.47078	0.3358756	0.22540403	2.6740012	20	6 9.9	21.2
469549 2003 UW ₁₀	16.4	X	265.84377	353.34800	47.74610	14.86406	0.2455784	0.22248718	2.6973216	20	7 11.8	20.5
469550 2003 UZ ₅₈	16.5	X	213.80050	125.00103	292.97177	8.23340	0.2567331	0.21556620	2.7547505	20	6 11.2	21.2
469551 2003 UW ₇₇	16.8	X	233.05804	162.23001	236.31156	8.85499	0.1979655	0.21725838	2.7404278	20	6 8.0	21.2
469552 2003 UR ₈₃	17.5	X	10.61413	137.51951	261.36577	4.75081	0.2094393	0.29920825	2.2138780	20	—	—
469553 2003 UB ₈₆	16.6	X	243.00731	129.32477	279.97446	6.98647	0.2412347	0.21828402	2.7318368	20	6 27.1	20.9
469554 2003 UN ₉₃	17.0	X	292.22134	145.63219	223.67025	10.89856	0.1972278	0.22384689	2.6863876	20	7 8.9	20.5
469555 2003 UC ₁₀₂	18.0	X	17.65617	276.39089	109.70093	6.49198	0.1992509	0.29902571	2.2147788	20	—	—
469556 2003 UE ₁₀₈	17.0	X	282.46716	332.84554	34.80149	13.14216	0.1190169	0.22045056	2.7139087	20	7 8.2	20.8
469557 2003 UZ ₁₃₀	17.1	X	259.48115	97.06423	292.44459	9.82348	0.1452550	0.22017625	2.7161624	20	7 1.8	20.8
469558 2003 UY ₁₃₂	16.6	X	249.59402	182.43486	247.72406	9.03590	0.2594582	0.22103609	2.7091139	20	7 25.1	20.9
469559 2003 UA ₁₈₃	17.3	X	275.16053	181.65797	179.26206	0.49094	0.2215969	0.22048625	2.7136159	20	6 1.7	20.9
469560 2003 UE ₁₈₉	16.4	X	324.16409	81.17317	230.03158	11.17776	0.3043837	0.22354887	2.6887746	20	5 27.5	18.8
469561 2003 UB ₂₅₂	16.8	X	297.11933	225.91640	210.22882	13.56261	0.2276961	0.23188738	2.6239243	20	10 23.8	19.1
469562 2003 UH ₂₉₅	17.4	X	226.97483	18.84377	6.03443	6.13940	0.0689722	0.21555380	2.7548562	20	5 25.1	21.4
469563 2003 UZ ₃₃₇	15.6	X	235.84945	283.34482	15.60503	18.03034	0.0628380	0.14713680	3.5534906	20	3 3.6	21.0
469564 2003 UK ₃₇₈	18.1	X	273.47323	59.09007	21.12377	5.88454	0.3279770	0.22936934	2.6430931	20	9 1.0	21.4
469565 2003 VC ₃	15.5	X	280.84921	95.81968	264.18960	26.85812	0.4675042	0.21831084	2.7316130	20	5 3.7	20.3
469566 2003 VE ₃	16.8	X	221.20687	152.60513	241.30837	5.13102	0.1217519	0.21297614	2.7770396	20	5 27.5	21.1
469567 2003 VG ₁₀	16.4	X	254.87961	68.54080	296.46524	10.56756	0.1898050	0.21557900	2.7546415	20	5 16.9	20.8
469568 2003 WL ₆	16.9	X	239.00834	137.38858	248.86937	13.39448	0.2108340	0.21557127	2.7547073	20	5 27.9	21.3
469569 2003 WU ₂₄	17.3	X	67.81620	134.88317	271.97061	19.50336	0.0649223	0.36662568	1.9333959	20	—	—
469570 2003 WO ₂₉	17.0	X	187.41504	46.17535	26.99292	8.31096	0.1770658	0.21168546	2.7883162	20	6 9.8	21.8
469571 2003 WU ₄₄	16.6	X	191.58844	308.22223	133.91972	8.94402	0.2959112	0.21236140	2.7823964	20	6 23.1	21.7
469572 2003 WU ₅₆	17.4	X	301.80580	218.30700	246.44691	18.94717	0.0662390	0.35371602	1.9801567	20	—	—
469573 2003 WD ₉₃	16.9	X	227.00180	177.29824	252.21746	8.42656	0.2092944	0.21699920	2.7426650	20	7 9.2	21.4
469574 2003 WU ₁₀₀	16.6	X	271.84817	52.20746	319.11681	12.71814	0.2484848	0.22039791	2.7143410	20	6 6.8	20.8
469575 2003 WE ₁₀₆	17.5	X	237.42053	261.02819	134.11082	4.91364	0.1092965	0.21510924	2.7586504	20	6 17.3	21.6
469576 2003 WE ₁₁₁	16.7	X	251.81392	11.95662	35.71007	9.31294	0.1764014	0.21890418	2.7266748	20	7 13.5	20.8
469577 2003 WN ₁₁₉	16.8	X	252.73232	149.64540	266.20481	8.64135	0.2362110	0.21890264	2.7266876	20	7 14.7	20.9
469578 2003 WN ₁₆₅	17.4	X	267.17089	108.87104	243.07242	6.34029	0.2391033	0.21519880	2.7578850	20	5 9.2	21.6
469579 2003 YV	17.3	X	134.75230	68.68816	280.41285	18.18764	0.0972475	0.36873905	1.9260015	20	—	—
469580 2003 YZ ₉	16.7	X	244.44608	124.20760	296.87334	6.60930	0.3146644	0.21837140	2.7311080	20	7 6.2	21.2
469581 2003 YU ₃₅	16.1	X	302.58191	115.43362	267.97277	7.37502	0.3726736	0.22441706	2.6818355	20	7 16.7	18.9
469582 2003 YA ₁₁₈	17.0	X	249.55592	12.05984	99.98568	24.92601	0.1997551	0.28302700	2.2974750	20	10 24.2	20.4
469583 2003 YZ ₁₅₃	16.4	X	274.86675	343.34031	59.50837	12.42024	0.3746619	0.21951109	2.7216466	20	7 5.0	20.5
469584 2003 YW ₁₇₉	6.8	X	19.08638	18.40503	97.21578	2.38720	0.1485183	0.00363082	41.9243264	20	2 10.9	22.4
469585 2003 AE ₁₀	17.7	X	191.52122	310.31580	297.93176	18.21429	0.0372806	0.35433032	1.9778674	20	—	—
469586 2004 BL ₁₀	16.0	X	24.94214	263.91975	274.99541	9.80528	0.0613584	0.19368669	2.9584861	20	3 30.0	20.1
469587 2004 BV ₂₆	17.7	X	108.68098	58.66058	308.50153	21.60934	0.1059632	0.36098920	1.9534693	20	—	—
469588 2004 CQ ₈	16.2	X	279.91901	236.34947	123.26854	10.05118	0.0911222	0.20660711	2.8338218	20	6 26.3	20.1
469589 2004 CX ₃₁	16.0	X	116.85481	278.37408	137.19721	13.30165	0.0642633	0.18951616	3.0017317	20	3 5.3	20.3
469590 2004 DG ₂₀	17.5	X	151.74236	216.04329	311.41688	12.36400	0.1214565	0.26930066	2.3748952	20	9 4.6	21.2
469591 2004 DU ₂₁	17.1	X	301.31356	338.32295	179.50980	20.20875	0.3675431	0.17131567	3.2107365	20	—	—
469592 2004 DO ₅₇	16.7	X	328.85820	66.31337	146.98085	18.53804	0.2611729	0.18274813	3.0753939	20	1 31.8	20.7
469593 2004 DH ₆₅	17.7	X	275.56660	193.08716	338.86819	18.05050	0.0376876	0.35143744	1.9887065	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>		
469601	2004	FB ₇₈	15.8 ^m	X	337.22223	58.49289	155.74009	6.87138	0.0580408	0.18444296	3.0565253	20	3 13.9	19.7
469602	2004	FU ₁₄₆	16.7	X	38.11567	164.95520	32.08265	17.58887	0.1515596	0.18841832	3.0133805	20	5 23.7	20.5
469603	2004	GC ₁₀	17.1	X	98.40059	184.99682	27.45931	9.82578	0.1496089	0.26179273	2.4200871	20	9 17.3	20.7
469604	2004	GK ₁₃	17.6	X	44.62682	259.62809	341.25267	9.25839	0.2435870	0.25525977	2.4612051	20	8 30.4	20.3
469605	2004	GM ₁₉	16.4	X	318.16057	56.62020	149.09789	28.14731	0.2843061	0.17534232	3.1613910	20	1 8.0	21.1
469606	2004	GO ₄₀	16.1	X	13.44976	352.33020	196.71436	11.03884	0.0670114	0.18331594	3.0690401	20	4 1.1	19.8
469607	2004	GX ₅₃	18.0	X	45.71543	78.73991	202.51460	13.97556	0.1566269	0.26255197	2.4154193	20	10 13.6	21.0
469608	2004	HV ₂₃	17.8	X	39.92692	33.22424	226.35864	8.45122	0.1840965	0.25732547	2.4480157	20	9 4.6	20.8
469609	2004	HS ₇₈	15.9	X	227.89807	203.49755	122.19179	28.67785	0.1199361	0.17977038	3.1092618	20	3 20.6	21.2
469610	2004	HF ₇₉	6.3	X	337.98145	195.28267	76.63899	1.48624	0.0342775	0.00342825	43.5599985	20	5 29.6	22.6
469611	2004	JN ₂₉	17.6	X	15.85502	203.63826	82.06320	4.60605	0.2604830	0.25370448	2.4712535	20	9 21.4	19.8
469612	2004	KP ₁₇	17.1	X	280.30410	69.78915	192.37232	23.67489	0.3801867	0.17292051	3.1908402	20	1 21.3	23.0
469613	2004	LB ₁₄	17.9	X	322.96343	149.13546	142.88923	11.21340	0.2495723	0.24415829	2.5352555	20	5 8.9	20.6
469614	2004	NG ₃₀	17.0	X	331.79281	277.56984	78.20217	14.93855	0.1771560	0.25091762	2.4895180	20	9 28.5	19.6
469615	2004	PT ₁₀₇	5.8	X	0.74003	17.71109	320.87905	26.05123	0.0633047	0.00378247	40.7961096	20	8 27.9	21.7
469616	2004	QY ₉	17.3	X	329.05619	271.53583	67.45014	5.50275	0.2632560	0.24500136	2.5294361	20	8 8.4	19.0
469617	2004	QO ₁₅	17.7	X	317.67027	42.68947	301.61535	6.09009	0.2172973	0.24472639	2.5133305	20	7 21.3	19.6
469618	2004	QM ₂₈	17.8	X	350.52149	55.05971	232.50427	4.92311	0.1076806	0.24044437	2.5612952	20	7 8.8	20.6
469619	2004	RR ₄₂	17.4	X	310.49367	52.03916	295.09904	1.21391	0.1939087	0.24109528	2.5566831	20	7 13.4	19.8
469620	2004	RW ₇₁	17.3	X	267.63260	206.56131	135.62600	5.47233	0.2770884	0.23364093	2.6107789	20	4 25.2	21.4
469621	2004	RV ₉₃	17.7	X	312.61302	69.99969	293.39515	5.87212	0.2797810	0.24414968	2.5353151	20	7 29.2	19.8
469622	2004	RT ₁₅₈	18.3	X	317.82215	26.69137	341.11165	6.41755	0.2724127	0.24462941	2.5319994	20	8 23.4	19.9
469623	2004	RC ₁₆₃	17.9	X	331.23175	350.44763	352.70903	2.72714	0.1886832	0.24511943	2.5286238	20	8 25.2	19.9
469624	2004	RA ₁₆₇	18.1	X	349.26282	35.23981	287.79457	1.45910	0.1569833	0.24607870	2.5220481	20	9 1.9	20.3
469625	2004	RH ₁₉₈	17.1	X	331.16228	102.42930	206.86862	11.32787	0.2604055	0.24011822	2.5636140	20	6 25.4	19.6
469626	2004	RZ ₂₃₀	17.3	X	275.20678	113.29401	199.50347	5.22920	0.1988354	0.22887542	2.6468944	20	4 2.7	21.0
469627	2004	RB ₂₅₃	16.1	X	272.69167	117.14599	251.96757	29.40088	0.3129253	0.23430382	2.6058524	20	5 28.4	20.1
469628	2004	RH ₂₇₃	17.5	X	264.42472	358.14303	28.76359	2.21677	0.1265557	0.23907570	2.5710613	20	7 8.3	21.0
469629	2004	RB ₃₀₁	18.0	X	304.10894	191.05192	159.35180	5.12772	0.1831914	0.24047410	2.5610841	20	7 7.2	20.8
469630	2004	RV ₃₀₅	17.3	X	341.53211	261.01554	60.74373	4.16475	0.3070100	0.24407454	2.5358354	20	8 17.1	18.4
469631	2004	RR ₃₃₆	18.2	X	336.59781	115.53039	223.08038	2.35304	0.2344603	0.24334370	2.5409102	20	8 28.0	20.0
469632	2004	RL ₃₃₈	17.5	X	332.44958	267.85558	27.12028	4.57901	0.2060669	0.23642333	2.5902549	20	6 5.2	19.8
469633	2004	RE ₃₄₀	16.9	X	338.16848	135.71767	186.04673	17.31431	0.2049424	0.18066642	3.0989728	20	7 23.3	20.5
469634	2004	SZ ₁₉	19.2	X	200.85140	171.33486	170.25821	26.22608	0.3026847	0.40932244	1.7964936	20	2 17.6	22.3
469635	2004	SD ₂₃	17.7	X	137.37416	342.75113	5.55904	7.19062	0.1715429	0.27184209	2.3600702	20	1 6.9	21.0
469636	2004	SE ₅₄	17.0	X	254.66240	190.57740	176.49961	13.34504	0.2580356	0.23281733	2.6169324	20	5 16.5	21.3
469637	2004	TX ₄	15.9	X	348.53283	331.81306	31.75316	13.11692	0.1261895	0.18324268	3.0698580	20	10 15.8	19.5
469638	2004	TK ₇	17.8	X	312.98126	286.26101	95.33227	6.81590	0.3180070	0.24421826	2.5348404	20	8 28.4	19.5
469639	2004	TS ₁₃	16.5	X	116.15311	299.69239	79.16507	11.10911	0.0950033	0.20932917	2.8092015	20	1 20.1	20.5
469640	2004	TC ₁₉	17.8	X	324.28822	77.14029	281.81868	14.82024	0.3560991	0.24418886	2.3550439	20	8 6.2	19.3
469641	2004	TH ₃₄	16.0	X	341.65735	349.19148	17.72712	15.15480	0.0524892	0.18339936	3.0681094	20	10 6.6	20.1
469642	2004	TH ₅₆	17.0	X	265.07727	298.46369	5.59074	12.87831	0.2687784	0.22756559	2.6570414	20	3 8.8	21.4
469643	2004	TM ₆₂	17.9	X	45.55016	126.59687	245.17681	2.63869	0.2185053	0.25880260	2.4386921	20	—	—
469644	2004	TP ₈₂	17.6	X	126.43101	56.36330	359.32034	4.40220	0.1544277	0.21661011	2.7458928	20	3 22.6	21.5
469645	2004	TD ₈₈	16.3	X	134.24379	134.05516	20.91802	13.31572	0.1093974	0.23547888	2.5971761	20	8 7.7	20.4
469646	2004	TN ₈₈	16.8	X	186.65401	78.48729	151.58136	2.51160	0.0159274	0.19661080	2.9290793	20	12 28.4	20.8
469647	2004	TC ₉₄	17.4	X	159.45682	13.88201	21.22716	7.77700	0.1818785	0.21860503	2.7291618	20	4 1.4	21.7
469648	2004	TO ₁₀₁	17.0	X	345.26061	336.07883	20.40350	10.05788	0.2461507	0.24583235	2.5237327	20	10 24.0	18.8
469649	2004	TK ₁₀₄	16.8	X	279.76426	67.27877	14.45149	10.06620	0.1201936	0.18393406	3.0621605	20	10 5.8	20.8
469650	2004	TD ₁₄₁	16.6	X	212.72472	236.01404	192.94382	21.63977	0.0830233	0.23467131	2.6031312	20	7 3.7	20.9
469651	2004	TU ₁₄₄	16.8	X	304.92692	27.89154	17.32031	5.57415	0.2778465	0.18003066	3.1062643	20	9 6.0	20.2
469652	2004	TK ₁₄₉	16.9	X	299.84008	187.57370	229.22523	3.23522	0.1550697	0.18346027	3.0674302	20	9 27.8	20.7
469653	2004	TP ₁₄₉	17.9	X	326.64989	114.84502	217.83787	3.11040	0.2426542	0.24109724	2.5566693	20	7 19.1	20.0
469654	2004	TF ₁₅₅	16.3	X	241.74974	81.58625	24.96003	11.75698	0.0937258	0.18231062	3.0803122	20	9 24.7	20.8
469655	2004	TK ₁₅₆	17.9	X	323.23318	322.12065	24.31429	6.81209	0.2077238	0.24180834	2.5516544	20	8 11.7	20.1
469656	2004	TS ₁₅₉	17.7	X	282.32042	349.14510	15.11312	3.52897	0.1804161	0.23481249	2.6020877	20	6 22.4	20.9
469657	2004	TU ₁₈₃	17.3	X	284.96656	133.78509	208.30425	12.86046	0.2020390	0.23474966	2.6025519	20	5 23.8	20.8
469658	2004	TQ ₁₉₆	17.7	X	85.82984	165.31104	204.13669	5.20600	0.2329337	0.26545860	2.3977552	20	—	—
469659	2004	TL ₂₀₀	17.4	X	85.98025	160.55695	186.86278	4.18611	0.1603083	0.26220894	2.4175255	20	—	—
469660	2004	TN ₂₃₃	16.1	X	285.47006	123.56952	250.15643	14.05603	0.1594908	0.23607279	2.5928184	20	7 11.1	19.4
469661	2004	TB ₂₉₁	17.1	X	9.68345	230.75516	204.19451	6.58732	0.1151717	0.19870930	2.9084209	20	—	—
469662	2004	TC ₂₉₁	17.1	X	353.79425	79.74928	243.08974	11.64868	0.2765799	0.24476632	2.5310552	20	9 18.8	19.1
469663	2004	TT ₂₉₉	17.7	X	263.73980	31.80218	4.05801	5.22296	0.1313605	0.23587939	2.5942355	20	7 19.9	21.3
469664	2004	TM ₃₁₈	17.5	X	125.95597	291.20248	342.57546	2.11061	0.1623796	0.25694133	2.4504550	20	12 25.1	21.5
469665	2004	TS ₃₄₅	17.7	X	319.76377	36.76001	307.44218	4.36671	0.3052810	0.24099849	2.5573676	20	7 10.9	19.3
469666	2004	TV ₃₄₈	18.0	X	293.92719	317.22846	54.07299	5.62355	0.2422019	0.23735221	2.5834924	20	7 10.8	20.9
469667	2004	TT ₃₆₁	17.3	X	310.73240	345.36679	22.52134	10.40038	0.1717947	0.24034561	2.5619968	20	8 23.9	20.0
469668	2004	TF ₃₆₇	18.0	X	288.63712	350.38717	2.74001	4.66396	0.2304985	0.29845026	2.2176248	20	6 7.7	20.5
469669	2004	VP ₈	17.7	X	278.79622	335.05137	69.16022	7.18464	0.3377466	0.23800966	2.5787327	20	7 18.7	21.

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
469681 2004 XZ ₉₈	17.7	X	199.78525	20.12069	91.77774	11.59361	0.0516976	0.29264020	2.2468809	20	8 31.6	20.7
469682 2004 XL ₁₀₃	17.2	X	242.35046	9.22380	50.55937	6.87814	0.2257173	0.23195624	2.6234050	20	7 12.9	21.2
469683 2004 XE ₁₃₀	17.4	X	275.44331	114.82824	268.95344	11.26610	0.2591396	0.23386038	2.6091454	20	6 27.1	20.9
469684 2004 XY ₁₆₉	16.1	X	244.69123	340.10853	95.26486	10.03041	0.2613349	0.17134069	3.2104239	20	7 28.0	21.3
469685 2004 XQ ₁₇₀	16.8	X	239.23028	124.74933	290.33419	10.86334	0.2873833	0.22870858	2.6481815	20	6 27.1	21.2
469686 2004 XV ₁₇₇	17.0	X	181.99225	165.17738	236.76125	11.23961	0.1296023	0.22186159	2.7023896	20	4 26.7	21.3
469687 2004 YF ₉	16.2	X	315.18870	66.38637	245.56636	29.52271	0.2741105	0.23186387	2.6241017	20	5 15.2	19.1
469688 2005 AL ₅	16.9	X	298.97781	325.52867	69.67643	7.32082	0.2946519	0.23652810	2.5894899	20	8 18.6	19.5
469689 2005 AX ₁₆	16.9	X	93.18657	269.26737	109.53017	10.34892	0.2373265	0.26138406	2.4226089	20	—	—
469690 2005 AJ ₂₇	18.2	X	42.67718	351.62553	119.41973	25.92588	0.0711336	0.39173595	1.8498667	20	—	—
469691 2005 AO ₄₄	16.7	X	147.46205	185.02508	304.93919	11.73491	0.0887083	0.21933592	2.7230955	20	7 13.6	20.7
469692 2005 AY ₄₄	17.0	X	263.09236	335.13020	92.98577	5.00833	0.2965064	0.23311592	2.6146974	20	8 6.6	20.7
469693 2005 BY ₁₃	16.2	X	172.11292	168.29118	305.87788	12.94600	0.1423684	0.22035789	2.7146696	20	7 19.6	20.6
469694 2005 BH ₂₄	16.8	X	220.48217	137.32272	307.80064	7.78423	0.3135998	0.22631092	2.6668528	20	7 17.2	21.5
469695 2005 CN ₁₂	16.6	X	53.93713	46.74986	142.80731	15.50650	0.0813172	0.21124394	2.7922001	20	6 5.6	20.5
469696 2005 CO ₆₂	16.1	X	284.26541	70.43515	325.63160	27.88036	0.3751951	0.23357406	2.6112772	20	7 16.2	19.9
469697 2005 CR ₆₂	17.2	X	121.44329	90.30897	139.17234	22.60341	0.1971101	0.29033544	2.2587561	20	11 10.3	21.4
469698 2005 EH ₃₃	17.7	X	316.43108	175.09770	345.02854	20.55018	0.0423442	0.37914090	1.8906115	20	—	—
469699 2005 EP ₆₈	16.6	X	249.70719	276.44994	178.09251	27.07482	0.4160101	0.23255511	2.6188992	20	8 8.8	21.4
469700 2005 EE ₁₉₅	16.8	X	295.51965	12.31371	293.96121	0.97090	0.0500103	0.20449379	2.8533122	20	5 13.0	20.5
469701 2005 EL ₂₀₆	17.8	X	345.25509	150.31308	359.00844	20.78485	0.0468887	0.38026745	1.8868757	20	—	—
469702 2005 EO ₂₄₆	16.8	X	225.14587	283.48535	370.23831	9.44745	0.2631402	0.22464435	2.6800263	20	8 2.2	21.3
469703 2005 EN ₂₅₃	17.9	X	119.32841	48.90703	157.09934	5.60362	0.1509835	0.28469687	2.2884824	20	9 30.8	21.2
469704 2005 EZ ₂₉₆	6.7	X	339.93670	213.01254	24.43014	1.77807	0.1536153	0.00396165	39.5565899	20	4 19.7	22.0
469705 2005 EF ₂₉₈	5.9	X	339.02656	78.61912	118.80617	2.86911	0.0887711	0.00338814	43.9031012	20	3 12.7	21.9
469706 2005 GR ₉₆	18.6	X	53.91228	228.89859	47.12072	3.90893	0.2044676	0.27942340	2.3171858	20	10 27.5	21.7
469707 2005 GB ₁₈₇	7.0	X	24.20659	350.47160	217.06882	14.67374	0.2390244	0.00394052	39.6978641	20	5 28.5	22.0
469708 2005 GE ₁₈₇	7.3	X	343.55161	85.55829	205.40043	18.24320	0.3316077	0.00393178	39.7566736	20	6 7.8	21.8
469709 2005 JY ₉	17.1	X	223.16105	167.99772	197.52990	1.31973	0.0714970	0.19881833	2.9073575	20	4 27.8	21.4
469710 2005 JM ₄₅	17.5	X	93.77300	111.49819	197.67855	24.08920	0.27727296	0.27727060	2.3291645	20	9 30.1	21.9
469711 2005 JJ ₅₁	17.8	X	351.46244	119.10001	92.66496	3.65082	0.1405911	0.25844677	2.4409299	20	3 16.9	20.1
469712 2005 JN ₅₃	16.9	X	287.10923	93.80968	201.52391	1.38872	0.0627543	0.19497355	2.9454541	20	4 16.4	20.9
469713 2005 JK ₅₆	16.5	X	294.52332	90.74319	147.12287	12.51861	0.0902362	0.18425769	3.0585739	20	2 11.1	20.6
469714 2005 JQ ₁₂₂	16.7	X	302.81772	105.78550	72.67987	11.17203	0.1886163	0.17960235	3.1112008	20	—	—
469715 2005 JB ₁₃₂	17.5	X	273.26527	120.86268	117.23926	10.12051	0.2402680	0.18009901	3.1054782	20	1 3.8	22.5
469716 2005 JP ₁₅₀	16.3	X	74.00517	25.12671	197.23537	13.41183	0.1426047	0.20982476	2.8047763	20	8 19.3	20.4
469717 2005 LR ₄	18.1	X	47.41910	186.68242	84.49906	12.01063	0.2250680	0.27493956	2.3423110	20	10 21.1	21.4
469718 2005 LK ₁₀	19.0	X	72.26419	129.76387	115.06073	7.96843	0.2504650	0.27592249	2.3367449	20	10 14.9	22.6
469719 2005 LE ₁₃	17.8	X	8.09082	158.28786	133.67408	4.14120	0.1531558	0.27078688	2.3661974	20	8 29.5	19.7
469720 2005 LK ₂₂	18.2	X	32.60357	149.48123	140.46091	3.05282	0.2275170	0.27441532	2.3452932	20	10 22.8	20.9
469721 2005 LX ₃₇	18.3	X	73.56011	183.28193	109.46647	7.47130	0.2047747	0.28237569	2.3010065	20	12 8.9	21.8
469722 2005 LP ₄₀	19.5	X	135.44962	186.70992	148.64063	23.62226	0.5475048	0.35821899	1.9635275	20	1 18.6	22.9
469723 2005 MS ₂₃	17.6	X	55.20643	35.35200	256.19827	5.47812	0.1137768	0.27877308	2.3207881	20	11 4.6	20.6
469724 2005 MC ₄₄	16.0	X	287.19870	144.81371	115.18618	29.70034	0.2048315	0.18081177	3.0973117	20	2 17.3	20.8
469725 2005 MM ₅₃	18.3	X	13.37822	41.93102	262.28383	1.22818	0.2235662	0.26686178	2.3893428	20	10 7.5	20.6
469726 2005 MG ₅₄	16.4	X	253.36132	135.52082	161.61007	17.25525	0.2118562	0.17882190	3.1202465	20	2 25.0	21.5
469727 2005 NK ₁	17.2	X	250.39413	10.10179	113.71567	33.59417	0.7273640	0.48522482	1.6038880	20	9 6.8	19.8
469728 2005 NM ₈	16.4	X	252.13718	13.97975	297.35635	16.23927	0.1484189	0.17960247	3.1111994	20	3 9.1	21.6
469729 2005 NY ₈	16.9	X	309.89464	125.76216	132.15289	17.45733	0.2186987	0.18365292	3.0652848	20	3 11.8	21.1
469730 2005 ND ₉	17.1	X	13.62867	33.43914	287.44071	6.29425	0.1327927	0.26945525	2.3739867	20	10 15.2	19.8
469731 2005 NO ₁₇	18.1	X	340.18244	151.76753	206.14620	0.43351	0.2027454	0.26807673	2.3821182	20	10 18.6	19.4
469732 2005 NV ₂₁	18.3	X	19.73381	183.38141	133.14853	7.21601	0.2261345	0.27027649	2.3691753	20	11 10.4	21.0
469733 2005 NE ₂₄	17.8	X	14.44435	189.62530	130.93364	13.67391	0.2786062	0.26977050	2.3721369	20	11 18.9	20.7
469734 2005 NC ₃₀	16.1	X	315.77724	307.17611	294.10648	9.76589	0.0675036	0.18104362	3.0946668	20	3 12.0	20.4
469735 2005 NO ₃₅	17.3	X	249.89175	231.69464	113.92483	5.87323	0.1948193	0.18420401	3.0591680	20	4 23.0	22.1
469736 2005 NB ₄₂	16.6	X	246.09079	124.98953	140.79395	9.02791	0.1859584	0.17344506	3.1844035	20	1 16.7	21.8
469737 2005 NW ₄₄	20.4	X	52.25682	0.89145	114.31678	6.07332	0.4833267	1.43268592	0.7792953	20	—	—
469738 2005 NH ₅₅	18.6	X	37.50747	52.77055	232.81727	7.24566	0.1768859	0.26983619	2.3717519	20	10 12.2	21.3
469739 2005 NK ₇₂	16.8	X	234.45237	181.12371	155.86130	6.70887	0.2215472	0.17940211	3.1135154	20	3 27.4	22.0
469740 2005 NO ₇₃	16.5	X	261.09730	215.05964	123.07979	11.10272	0.0933008	0.18676795	3.0311062	20	5 8.8	21.1
469741 2005 NV ₁₀₁	18.0	X	329.40649	197.79103	113.08161	2.56380	0.1821168	0.25964899	2.4333894	20	6 29.1	20.1
469742 2005 NV ₁₀₅	17.1	X	239.89398	31.34474	291.94870	3.98479	0.1332303	0.18116021	3.0933389	20	3 18.8	22.0
469743 2005 NM ₁₁₆	16.4	X	196.12716	89.19926	289.50211	8.49040	0.0840171	0.18194189	3.0844725	20	4 10.9	21.4
469744 2005 NC ₁₁₇	17.2	X	234.53103	153.30357	213.57930	1.10824	0.1082389	0.18636259	3.0354999	20	5 9.1	21.9
469745 2005 OQ ₂	15.5	X	207.94642	99.45464	266.58759	24.01558	0.2978863	0.17638386	3.1489334	20	3 27.2	21.6
469746 2005 OX ₄	16.2	X	254.75265	19.35178	297.36476	9.09914	0.1734170	0.18058528	3.0999010	20	3 19.2	21.3
469747 2005 PE ₄	15.6	X	222.12691	259.44556	97.13866	26.12031	0.3487971	0.17604324	3.1529941	20	4 16.0	21.8
469748 2005 PO ₅	17.5	X	335.30326	233.70303	128.01028	0.34314	0.2293995	0.26590848	2.3950500	20	10 13.5	18.9
469749 2005 PD ₆	18.3	X	358.18635	199.41924	133.15181	2.07632	0.2054466	0.26741071	2.3860719	20	10 19.9	20.2
469750 2005 PU ₂₁	6.2	X	356.89565	227.55756	192.47779	6.17681	0.8334030	0.00042211	176.0017793	20	9 29.9	21.7
469751 2005 QC ₄	16.6	X	228.91080	206.16457	163.54759	2.59070	0.2263488	0.17913919	3.1165611	20	4 29.2	21.9
469752 2005 QF ₁₀	18.0	X	39.42086	4.41924	322.09706	0.74370	0.2045907	0.27333280	2.3514814	20	12 14.1	21.2
469753 2005 QQ ₁₃	16.4	X	195.62178	40.32765	341.36897	3.80113	0.2104480	0.17495				

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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>
469761 2005 QJ ₄₂	16.2	X	248.24646	359.89349	338.86244	13.64979	0.2443239	0.17969392	3.1101437	20	4 1.7	21.4
469762 2005 QK ₄₄	18.0	X	341.02253	5.19565	348.35989	4.04900	0.2618261	0.26515189	2.3996039	20	10 16.6	19.4
469763 2005 QH ₄₅	17.9	X	344.96950	199.94282	140.24232	7.24729	0.1241548	0.26401360	2.4064962	20	9 25.5	20.2
469764 2005 QZ ₄₅	18.2	X	31.67453	165.26776	136.15514	4.44129	0.2536080	0.26859671	2.3790428	20	11 9.5	21.1
469765 2005 QD ₄₆	17.8	X	332.32717	17.42144	6.93208	7.20740	0.1117689	0.26818739	2.3814628	20	11 2.7	20.2
469766 2005 QE ₄₆	17.8	X	340.62089	316.66901	45.88978	2.19756	0.1937691	0.26594897	2.3948069	20	10 25.6	19.6
469767 2005 QM ₄₇	17.5	X	332.94386	20.76765	12.57922	6.79778	0.2366488	0.26794719	2.3828859	20	11 30.1	19.2
469768 2005 QR ₄₇	15.8	X	190.73765	276.70135	158.33987	25.77045	0.2616742	0.17911510	3.1168406	20	6 16.8	21.8
469769 2005 QL ₅₃	17.4	X	339.27260	55.45732	341.38981	6.21641	0.2576692	0.26997877	2.3709168	20	12 27.8	19.3
469770 2005 QE ₅₇	16.7	X	222.31020	224.95039	173.38883	2.61315	0.4171580	0.17851040	3.1238754	20	5 18.2	22.7
469771 2005 QD ₆₈	18.3	X	350.90961	219.59353	117.30372	3.41113	0.2428884	0.26592450	2.3949539	20	10 17.4	19.9
469772 2005 QY ₆₉	16.3	X	220.76692	47.89612	341.94753	14.85059	0.2673795	0.18083551	3.0970406	20	5 7.8	22.0
469773 2005 QB ₇₆	17.9	X	3.63157	16.36951	292.08081	4.86939	0.1890018	0.26254322	2.4154729	20	9 14.9	20.1
469774 2005 QB ₈₁	16.8	X	159.63280	234.65595	170.01474	16.16165	0.1147407	0.17333801	3.1857144	20	4 13.8	21.9
469775 2005 QD ₈₂	17.5	X	355.47098	350.26594	354.67012	5.75911	0.2153802	0.26742339	2.3859965	20	10 31.6	19.5
469776 2005 QR ₉₀	16.4	X	214.38143	156.95510	196.85226	0.16181	0.1947438	0.17435780	3.1732805	20	3 30.6	21.8
469777 2005 QJ ₁₂₈	17.6	X	33.45174	241.89801	70.06851	2.15676	0.1942547	0.26956483	2.3733433	20	11 15.6	20.5
469778 2005 QZ ₁₃₀	18.1	X	19.82129	218.21203	77.05971	3.43862	0.1969506	0.26455011	2.4032415	20	10 3.4	20.5
469779 2005 QJ ₁₃₄	16.6	X	233.72690	194.63730	147.32053	1.52483	0.1504097	0.17577579	3.1561915	20	4 5.5	21.5
469780 2005 QO ₁₃₄	16.7	X	244.47120	133.88684	168.99066	13.58636	0.2803118	0.17452756	3.1712225	20	2 19.5	22.3
469781 2005 QX ₁₃₅	18.1	X	5.04195	205.13120	145.71420	2.04578	0.1999370	0.26829632	2.3808182	20	11 28.0	20.4
469782 2005 QV ₁₃₆	18.1	X	286.62180	354.70534	44.79312	2.10932	0.1814721	0.25974812	2.4327703	20	8 23.1	20.5
469783 2005 QW ₁₆₂	16.0	X	229.28165	335.75146	351.68421	16.26556	0.1659408	0.17569686	3.1571367	20	3 13.6	21.0
469784 2005 QK ₁₆₃	17.8	X	349.09561	270.56231	66.50382	2.99855	0.2307967	0.26387265	2.4073531	20	10 9.1	19.3
469785 2005 QF ₁₆₈	16.1	X	244.04688	22.71010	299.84654	12.05267	0.1569709	0.17711545	3.1402562	20	3 16.2	21.3
469786 2005 QK ₁₇₆	17.6	X	26.15998	144.69538	192.96629	1.83843	0.2265880	0.27046810	2.3680563	20	12 15.3	20.6
469787 2005 QF ₁₈₁	16.0	X	228.75326	219.86539	160.44547	10.85372	0.2404541	0.17935037	3.1141142	20	5 12.7	21.4
469788 2005 QG ₁₈₁	18.0	X	340.91956	255.22947	104.32242	2.30291	0.1862965	0.26512596	2.3997604	20	10 21.4	19.7
469789 2005 RH ₁	17.4	X	331.39018	13.76969	348.04807	5.49579	0.2343599	0.26606662	2.3941009	20	9 30.5	18.7
469790 2005 RH ₅	18.2	X	131.86669	109.41701	215.05566	21.46221	0.0775356	0.35579827	1.9724235	20	—	—
469791 2005 RC ₆	16.2	X	206.73333	40.90441	355.47772	13.84921	0.2873007	0.17689545	3.1428594	20	5 5.3	22.0
469792 2005 RP ₁₀	17.3	X	329.63941	170.78441	172.48746	15.44775	0.3060397	0.26140756	2.4224637	20	8 12.1	18.5
469793 2005 RA ₁₇	17.8	X	331.47210	227.11862	135.43251	5.51682	0.1180871	0.26453546	2.4033303	20	10 3.2	20.1
469794 2005 RQ ₂₉	15.8	X	251.45936	81.29363	278.95294	18.86960	0.3015631	0.18229799	3.0804545	20	4 24.4	21.3
469795 2005 RC ₄₇	17.6	X	6.62022	192.49902	134.45424	9.93502	0.2142501	0.26296333	2.4128996	20	10 31.9	20.1
469796 2005 SD	16.1	X	223.72770	91.16108	313.74197	21.10929	0.4944027	0.17723127	3.1388880	20	5 18.6	22.6
469797 2005 SX ₆	18.1	X	313.78279	115.70444	269.50291	1.15616	0.1859365	0.26061368	2.4273808	20	9 24.1	20.0
469798 2005 SL ₁₂	17.4	X	346.94174	43.79016	306.88250	3.96476	0.2181923	0.26409240	2.4060175	20	10 20.6	19.2
469799 2005 SH ₁₆	18.1	X	338.51439	69.69675	334.49785	2.15276	0.2174029	0.26904581	2.3763946	20	12 30.0	19.9
469800 2005 SZ ₂₃	16.2	X	247.17742	339.27077	32.69748	10.99310	0.2375743	0.18074382	3.0980880	20	5 14.1	21.2
469801 2005 SO ₃₈	18.1	X	13.36878	112.30779	194.48316	4.07957	0.1827551	0.26264525	2.4148473	20	10 3.9	20.4
469802 2005 SL ₄₁	16.1	X	275.44043	344.61618	359.98015	11.94811	0.0559636	0.18013324	3.1050849	20	6 2.6	20.6
469803 2005 SD ₅₆	17.4	X	292.57638	41.11614	21.10308	11.31451	0.2262398	0.26135608	2.4227818	20	10 2.9	19.4
469804 2005 SU ₆₅	16.4	X	246.89619	36.62686	310.03068	4.41035	0.2509800	0.17817429	3.1278027	20	4 12.3	21.6
469805 2005 SB ₇₇	17.9	X	295.74688	238.58789	170.90348	3.04676	0.2000337	0.26191223	2.4193500	20	9 22.1	19.9
469806 2005 SX ₇₈	16.6	X	232.71740	173.84866	148.16453	3.45923	0.1969620	0.17190228	3.2034286	20	3 11.4	21.9
469807 2005 SV ₈₀	17.8	X	336.52476	335.62314	53.38824	1.24841	0.2147943	0.26695487	2.3887873	20	11 30.2	19.4
469808 2005 SP ₈₃	17.6	X	14.07643	332.07132	355.17749	2.39566	0.2078878	0.26611588	2.3938055	20	11 8.6	20.0
469809 2005 ST ₈₆	17.5	X	28.05994	292.25984	14.42501	10.17800	0.0869061	0.26364670	2.4087283	20	10 12.2	20.2
469810 2005 SO ₉₄	16.1	X	233.21235	92.90517	271.13114	14.70756	0.2384423	0.17906602	3.1174100	20	4 19.9	21.7
469811 2005 SA ₁₁₆	17.7	X	325.75599	38.66593	1.51868	2.22686	0.2033746	0.26586662	2.3953014	20	11 19.9	19.3
469812 2005 SD ₁₁₈	18.1	X	4.65366	272.73579	70.50936	4.23447	0.2330007	0.26698053	2.3886343	20	11 21.5	20.3
469813 2005 SP ₁₂₁	17.7	X	295.86965	134.24901	276.04675	2.75402	0.2158806	0.26185380	2.4197108	20	9 18.9	19.7
469814 2005 SZ ₁₃₉	17.0	X	289.79620	199.24103	116.39359	1.99234	0.1532476	0.18071452	3.0984229	20	5 3.8	21.2
469815 2005 SR ₁₄₀	16.2	X	242.00935	324.60441	16.53451	25.96127	0.1505431	0.17542851	3.1603555	20	4 10.1	21.3
469816 2005 SZ ₁₄₄	16.9	X	193.45695	9.37495	39.01341	4.96103	0.1574342	0.17547128	3.1598419	20	5 16.8	22.1
469817 2005 SR ₁₄₅	18.4	X	316.44697	334.72416	67.76480	2.31005	0.1822033	0.26486376	2.4013439	20	11 1.1	20.1
469818 2005 SF ₁₅₈	18.2	X	9.80298	5.47124	320.12729	1.82267	0.2165283	0.26576214	2.3959292	20	10 31.3	20.5
469819 2005 SZ ₁₆₀	16.2	X	298.67410	320.52222	1.33166	5.95959	0.0817144	0.18257088	3.0773842	20	5 31.8	20.5
469820 2005 SB ₁₆₃	18.1	X	340.08419	355.71369	19.90540	5.20853	0.1597166	0.26534485	2.3984404	20	11 8.8	20.1
469821 2005 SN ₁₇₃	18.0	X	334.53415	83.76667	273.80948	2.15123	0.1974425	0.26267922	2.4146391	20	9 29.4	19.6
469822 2005 SU ₁₈₉	18.2	X	356.07963	150.72191	165.96685	1.00976	0.1921101	0.25969193	2.4331212	20	9 14.3	20.1
469823 2005 SR ₁₉₁	17.9	X	335.58128	21.72229	31.80714	2.88859	0.2368459	0.26816691	2.3815841	20	—	—
469824 2005 SN ₁₉₅	16.5	X	172.10448	200.89459	186.93739	9.85970	0.0652563	0.16994383	3.2279920	20	4 1.9	21.2
469825 2005 SG ₂₀₉	16.9	X	282.65441	92.92082	348.48976	24.97945	0.2618302	0.26320607	2.4114159	20	9 25.8	19.5
469826 2005 SG ₂₁₁	17.6	X	307.54106	72.75069	311.36970	0.68896	0.1885275	0.26016377	2.4301785	20	9 7.9	19.8
469827 2005 SU ₂₁₉	16.2	X	177.13727	74.22502	0.41068	15.37361	0.2297648	0.17522915	3.1627521	20	5 31.3	21.9
469828 2005 SB ₂₂₈	16.5	X	218.28019	335.54917	44.14361	1.68252	0.1932413	0.17609227	3.1524087	20	5 3.3	21.6
469829 2005 SN ₂₃₂	18.0	X	318.53084	342.72338	25.17726	3.12141	0.1497146	0.25821936	2.4423628	20	9 11.1	20.0
469830 2005 SM ₂₃₅	17.7	X	355.71880	178.29313	197.21805	1.95493	0.2080476	0.26737033	2.3863121	20	12 18.1	19.9
469831 2005 SH ₂₃₇	15.8	X	290.38533	335.67093	20.80034	11.00841	0.0866627	0.18311205	3.0713179	20	7 7.6	20.1
469832 2005 SD ₂₃₉	18.3	X	316.22006	224.14168	152.97080	2.14503	0.1886098	0.26161619	2.4211757	20	9 17.9	20.3
469833 2005 SN ₂₄₁	16.2	X	290.89831	312.70163	359.							

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>		
469841	2005	TZ ₃₉	16.4	X	43.22729	276.36545	193.17255	12.61055	0.0813897	0.22329244	2.6908327	20	1 25.7	19.9
469842	2005	TC ₄₃	17.4	X	340.83052	325.32585	27.37011	1.51851	0.2082477	0.26465163	2.4026269	20	10 10.5	18.9
469843	2005	TR ₄₃	17.9	X	345.52904	310.80731	29.31012	4.37928	0.2401159	0.26245874	2.4159913	20	10 4.9	19.4
469844	2005	TK ₆₆	16.5	X	243.63638	326.27594	352.14422	8.03323	0.0726974	0.17200080	3.2022045	20	3 23.7	21.2
469845	2005	TF ₇₁	16.6	X	129.06637	317.38114	120.12589	15.38562	0.1863692	0.22253629	2.6969247	20	5 1.3	21.1
469846	2005	TB ₈₈	17.9	X	347.94116	153.98850	187.37267	6.75162	0.1059867	0.26202025	2.4186859	20	9 28.3	20.0
469847	2005	TJ ₁₀₈	17.9	X	258.93642	114.72050	309.34157	3.91149	0.0947712	0.25845186	2.4408979	20	8 27.4	21.0
469848	2005	TN ₁₁₆	17.9	X	28.47357	294.15638	358.50729	6.96725	0.1488995	0.26248828	2.4158100	20	10 2.3	20.5
469849	2005	TK ₁₂₄	18.1	X	319.30878	40.44054	356.62629	1.83188	0.1178601	0.26389837	2.4071967	20	10 28.7	20.2
469850	2005	TL ₁₂₆	18.4	X	12.72442	277.75016	41.20782	2.12684	0.1516712	0.26226628	2.4171731	20	10 16.2	20.9
469851	2005	TS ₁₂₆	16.7	X	230.14284	318.31327	36.82094	1.08936	0.1727670	0.17397906	3.1778842	20	4 15.9	21.8
469852	2005	TX ₁₃₃	16.1	X	228.02527	23.66173	358.73075	14.96559	0.0982210	0.17741646	3.1367033	20	5 17.3	21.1
469853	2005	TE ₁₉₁	17.5	X	334.31832	282.30242	76.02229	3.94176	0.2240090	0.26195748	2.4190723	20	10 5.4	19.0
469854	2005	TK ₁₉₁	18.2	X	5.24598	126.60814	202.17731	1.87002	0.1085325	0.26056930	2.4276564	20	10 10.5	20.6
469855	2005	UU ₉	17.7	X	304.52556	25.68934	33.57254	5.67400	0.2154843	0.26331285	2.4107639	20	10 27.1	19.5
469856	2005	UN ₁₅	18.0	X	235.01016	25.55893	61.57604	2.06550	0.1515679	0.25364738	2.4716243	20	8 20.6	21.3
469857	2005	UE ₁₆	15.6	X	180.89962	217.16011	214.33830	26.76138	0.1896771	0.17271123	3.1934172	20	6 1.9	21.2
469858	2005	UH ₁₇	15.8	X	214.21743	24.57260	24.35415	11.71026	0.1524642	0.17573880	3.1566344	20	6 3.9	21.0
469859	2005	UD ₁₈	17.6	X	351.50049	147.29070	221.54548	4.13444	0.1632376	0.26569086	2.3963577	20	11 23.2	19.8
469860	2005	UE ₂₁	16.1	X	181.27701	239.11882	229.45303	8.06080	0.0657939	0.18070694	3.0985095	20	7 18.2	20.9
469861	2005	UW ₂₃	17.9	X	343.74320	127.64071	229.79172	3.11414	0.2387156	0.26255926	2.4153746	20	10 28.2	19.3
469862	2005	UB ₂₄	17.8	X	292.03343	33.90837	19.12379	2.69334	0.1816152	0.25945576	2.4345975	20	9 22.6	20.0
469863	2005	UA ₂₅	16.2	X	245.81460	330.51201	28.23963	8.33749	0.0803542	0.17456102	3.1708172	20	5 13.0	20.8
469864	2005	UH ₄₁	17.0	X	209.73701	302.18574	116.83159	0.28016	0.1556381	0.17566124	3.1575635	20	6 13.9	22.0
469865	2005	UO ₄₃	17.6	X	327.04144	40.27899	345.98395	3.65745	0.2191129	0.26231173	2.4168938	20	10 29.1	19.1
469866	2005	UF ₄₄	16.2	X	242.25807	291.25315	51.14347	18.14519	0.0716887	0.17054527	3.2203984	20	4 25.0	21.0
469867	2005	UC ₄₅	18.1	X	318.37823	213.84876	167.25946	3.40176	0.2116346	0.25993490	2.4316048	20	9 28.3	19.5
469868	2005	UB ₄₉	16.3	X	226.31227	144.40653	221.46538	16.57391	0.2280387	0.17429040	3.1740986	20	4 21.1	21.6
469869	2005	UO ₅₂	17.3	X	303.43217	307.16907	104.86922	3.53901	0.1861006	0.26183306	2.4198835	20	10 17.2	19.3
469870	2005	UO ₆₁	17.8	X	0.10775	110.21883	200.38194	1.62663	0.1994884	0.25606870	2.4560190	20	9 13.1	19.8
469871	2005	UU ₇₅	15.6	X	170.79275	142.04544	278.57310	15.87541	0.0938137	0.17144501	3.2091215	20	5 7.5	20.8
469872	2005	UA ₇₈	16.6	X	232.61973	10.86853	16.33959	10.12193	0.0713777	0.18002223	3.1063613	20	6 3.0	21.3
469873	2005	UL ₉₄	16.5	X	291.07060	317.73692	28.03622	12.96488	0.1899372	0.18185880	3.0854121	20	6 4.6	20.8
469874	2005	UF ₁₀₀	16.6	X	241.73956	262.94874	109.24363	4.76793	0.1875551	0.17605741	3.1528248	20	5 16.9	21.6
469875	2005	UU ₁₄₈	17.8	X	134.48978	124.74011	337.32357	1.13405	0.0342873	0.23842750	2.5757190	20	5 16.4	21.2
469876	2005	UX ₁₇₇	15.7	X	11.33467	19.67942	241.90166	10.73317	0.0623328	0.17747982	3.1359567	20	7 1.4	19.8
469877	2005	UQ ₁₈₂	16.1	X	321.75806	294.83233	55.83518	11.44559	0.1047177	0.18498817	3.0505168	20	8 18.6	20.1
469878	2005	UQ ₂₀₆	18.0	X	332.64762	339.07583	37.10686	5.76699	0.1501825	0.26371690	2.4083009	20	10 25.4	20.1
469879	2005	UQ ₂₀₇	17.8	X	332.07166	315.17955	47.05943	7.38280	0.1843759	0.26038702	2.4287892	20	10 5.0	19.7
469880	2005	UU ₂₂₆	17.7	X	1.38271	157.34752	211.15463	1.87169	0.1909894	0.26617313	2.3934622	20	12 14.5	20.2
469881	2005	UJ ₂₅₀	17.9	X	352.99322	3.00643	22.23951	2.29992	0.2557528	0.26732714	2.3865691	20	—	—
469882	2005	UW ₂₈₇	16.6	X	285.85901	136.33369	192.75088	9.71917	0.0256903	0.17672856	3.1448377	20	6 3.9	21.1
469883	2005	UJ ₃₂₃	17.7	X	336.31727	293.47310	71.70269	2.84220	0.1723930	0.26230634	2.4169270	20	10 17.9	19.7
469884	2005	UP ₄₅₅	16.0	X	252.67817	108.79232	246.30366	15.04363	0.2502727	0.17880973	3.1203881	20	4 27.5	21.2
469885	2005	UC ₄₇₆	15.7	X	217.30303	149.70025	244.51598	15.81404	0.2108088	0.17837414	3.1254661	20	5 18.6	21.0
469886	2005	UD ₄₈₈	17.3	X	345.20850	62.93141	324.37673	10.57199	0.2574576	0.26727609	2.3868730	20	12 25.0	19.5
469887	2005	UV ₄₈₉	17.1	X	266.85194	116.32250	297.16467	6.56631	0.1660085	0.25474336	2.4645302	20	8 11.2	20.1
469888	2005	UE ₅₀₇	17.6	X	317.93299	278.81318	94.38781	2.57193	0.1919469	0.26069788	2.4268581	20	9 16.3	19.5
469889	2005	UF ₅₁₈	16.3	X	257.52307	179.18711	164.51927	13.32975	0.1264935	0.17527888	3.1621538	20	5 6.9	21.2
469890	2005	UO ₅₂₂	17.9	X	28.40965	237.37644	48.91144	2.96768	0.1962638	0.26277077	2.4140783	20	10 3.3	20.5
469891	2005	VG ₁₁₈	15.5	X	228.61876	73.22391	294.79271	22.78312	0.2359259	0.17500908	3.1654029	20	4 15.8	21.3
469892	2005	VI ₁₁₈	15.9	X	207.01702	81.24084	318.71397	23.71834	0.3534252	0.17454687	3.1709885	20	5 4.1	22.2
469893	2005	VS ₁₁₉	16.7	X	69.76373	21.96866	103.72457	15.62675	0.1358404	0.22047247	2.7137290	20	4 16.4	20.4
469894	2005	VM ₁₂₄	17.1	X	356.72833	263.26836	72.70452	10.32680	0.2591362	0.25808298	2.4432232	20	10 30.1	19.1
469895	2005	VF ₁₂₈	18.0	X	32.25136	132.74899	161.17528	5.11536	0.2405531	0.26496476	2.4007336	20	10 28.4	20.9
469896	2005	WC ₁	20.7	X	230.98847	256.72723	265.01317	19.98484	0.4865936	0.59472329	1.4004236	20	—	—
469897	2005	WF ₄₀	16.9	X	16.92147	94.51922	74.14377	12.29520	0.1248906	0.22212057	2.7002887	20	3 14.0	20.1
469898	2005	WB ₄₁	16.7	X	357.33987	126.14418	243.31357	21.19960	0.2390313	0.26495233	2.4008087	20	12 15.2	19.1
469899	2005	WY ₅₄	17.9	X	359.57679	320.66282	35.70572	5.45878	0.2443994	0.26687732	2.3892500	20	12 2.3	20.1
469900	2005	WE ₇₉	16.5	X	56.68795	239.82196	261.05951	12.02716	0.1510548	0.22371415	2.6874501	20	4 4.2	19.8
469901	2005	WA ₈₉	17.5	X	316.08993	25.70538	19.54075	5.38498	0.2164036	0.26233213	2.4167685	20	11 1.4	19.0
469902	2005	WF ₉₉	17.6	X	313.15359	310.51523	80.44362	7.71745	0.1733713	0.25734538	2.4478894	20	10 8.1	19.8
469903	2005	WL ₁₆₃	16.1	X	245.23032	149.78032	212.81638	12.00371	0.1535814	0.17762213	3.1342815	20	5 11.4	20.9
469904	2005	WZ ₁₆₃	17.7	X	320.15274	134.45498	264.08917	8.61468	0.1561457	0.25927226	2.4357461	20	10 28.9	19.9
469905	2005	WF ₁₇₆	16.4	X	344.20492	317.34343	79.79513	10.64526	0.0614959	0.19195227	2.9762806	20	11 20.4	20.2
469906	2005	WL ₁₉₁	17.3	X	311.60251	293.99285	116.95158	5.36900	0.1822306	0.26268537	2.4146015	20	11 4.7	19.3
469907	2005	XO ₁₁	17.0	X	283.52279	239.45195	97.88441	8.77151	0.1310045	0.24190394	2.5509822	20	5 27.2	20.3
469908	2005	XV ₂₂	17.8	X	270.38105	346.95217	76.40845	3.79034	0.1460584	0.25387975	2.4701159	20	9 6.6	20.8
469909	2005	YR ₄₂	16.9	X	80.83985	259.74550	282.29813	11.74300	0.1403195					

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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>		
469921	2005	YZ ₁₆₉	16.7	X	29.16203	150.09563	123.72048	11.61525	0.1060214	0.24170051	2.5524134	20	8 30.5	19.7
469922	2005	YN ₁₇₇	17.4	X	14.45959	256.06883	300.59437	15.06356	0.3517081	0.21657129	2.7462209	20	4 4.5	19.3
469923	2005	YZ ₁₉₁	17.5	X	84.62653	141.35257	43.93561	1.51261	0.0414626	0.23227660	2.6209923	20	7 4.6	20.9
469924	2005	YV ₂₀₇	17.2	X	104.93210	33.35554	113.86205	9.99951	0.1291508	0.22911131	2.6450772	20	6 21.7	21.0
469925	2005	YO ₂₀₉	17.3	X	25.30633	190.57410	262.18647	16.76794	0.0878721	0.35015600	1.9935555	20	—	—
469926	2005	YR ₂₂₈	17.6	X	1.75875	84.52254	89.62649	6.86555	0.1760644	0.21427176	2.7658338	20	2 15.7	20.5
469927	2005	YU ₂₆₉	17.5	X	345.44809	85.14490	109.32923	9.19541	0.2162565	0.21309576	2.7760003	20	2 7.0	20.5
469928	2005	YS ₂₇₁	16.5	X	178.75087	326.71466	139.55734	22.22958	0.0195309	0.23266685	2.6180607	20	7 18.2	20.3
469929	2006	AK ₈	21.0	X	142.11693	72.07110	118.57195	28.94946	0.1224304	0.79195378	1.1570075	20	—	—
469930	2006	AO ₁₁	18.1	X	294.65210	249.63782	173.74115	2.53762	0.1868675	0.25549814	2.4596740	20	10 12.3	20.2
469931	2006	AH ₄₃	16.9	X	183.69505	170.17616	293.46420	12.37366	0.1112268	0.23721394	2.5844963	20	7 18.1	20.9
469932	2006	AL ₄₆	17.7	X	275.04095	224.70750	162.74462	2.44891	0.0977381	0.24274070	2.5451164	20	7 28.2	20.9
469933	2006	AV ₄₈	17.3	X	213.22829	2.07637	91.45042	5.26116	0.0872738	0.24461144	2.5321235	20	8 10.6	20.8
469934	2006	AZ ₅₉	15.7	X	189.33920	65.65201	292.07533	14.02673	0.1310739	0.15350099	3.4545800	20	3 9.4	21.5
469935	2006	AO ₆₁	17.5	X	250.68776	184.93945	226.63892	2.27565	0.1494137	0.24289135	2.5440639	20	7 20.2	20.9
469936	2006	AN ₇₅	17.7	X	261.19552	315.90225	112.55089	6.40736	0.0456633	0.24666698	2.5180366	20	9 16.2	20.9
469937	2006	BF ₁₆	17.6	X	201.24392	317.63443	120.55723	15.42632	0.0524366	0.23667802	2.5883962	20	7 7.2	21.3
469938	2006	BK ₂₇	16.5	X	344.36439	334.46567	335.25459	13.47947	0.1067863	0.23188766	2.6239222	20	8 3.3	19.4
469939	2006	BX ₄₀	17.3	X	291.20138	250.14753	138.09831	15.50168	0.1659547	0.24440972	2.5335165	20	8 13.9	20.0
469940	2006	BF ₆₁	16.7	X	152.53393	92.70722	62.99792	13.88545	0.1061732	0.23947428	2.5682076	20	8 29.8	20.9
469941	2006	BN ₆₂	16.3	X	53.94576	353.87932	137.26079	23.72562	0.1253580	0.21626155	2.7488424	20	3 26.5	19.9
469942	2006	BB ₆₈	17.0	X	251.18347	213.96092	115.91628	6.70574	0.0272796	0.22378709	2.6868661	20	4 22.1	20.7
469943	2006	BS ₇₃	16.5	X	211.00200	258.88078	104.16414	6.78293	0.0553698	0.22206745	2.7007193	20	4 14.0	20.5
469944	2006	BX ₈₈	16.5	X	13.58934	156.33994	132.15656	14.73757	0.1763800	0.23544573	2.5974200	20	9 2.9	19.2
469945	2006	BY ₉₂	17.0	X	66.12641	308.23440	326.83080	6.20718	0.11780630	0.23965848	2.5668915	20	10 26.6	20.9
469946	2006	BG ₁₀₃	17.8	X	83.62449	244.56805	284.14449	2.52244	0.2424772	0.22541794	2.6738912	20	7 9.8	21.7
469947	2006	BR ₁₁₀	17.6	X	286.33121	10.73434	32.01984	2.53003	0.1983433	0.24728747	2.5138227	20	8 22.8	20.2
469948	2006	BT ₁₁₁	17.9	X	168.66202	55.97541	62.82521	1.10316	0.1174750	0.23550551	2.5969804	20	7 22.4	21.7
469949	2006	BR ₁₁₂	17.3	X	15.54456	132.10234	117.89570	4.74643	0.1035651	0.22819465	2.6521561	20	6 28.7	20.3
469950	2006	BF ₁₄₂	17.7	X	4.75038	206.33233	116.21919	2.30161	0.1174093	0.24318753	2.5419979	20	9 29.2	20.3
469951	2006	BY ₁₄₄	16.2	X	34.77398	57.58180	141.75646	13.18831	0.1444169	0.22337558	2.6901650	20	5 27.9	19.5
469952	2006	BN ₁₅₅	16.7	X	186.07109	250.95482	119.27252	6.12036	0.0526569	0.21548414	2.7554731	20	3 24.9	20.6
469953	2006	BB ₁₇₁	17.3	X	116.96102	23.36733	133.66408	15.75717	0.0543004	0.23295526	2.6158994	20	7 10.2	21.0
469954	2006	BY ₁₇₅	16.9	X	74.82430	132.14955	346.16487	8.20829	0.0574207	0.21748812	2.7384976	20	3 23.3	20.4
469955	2006	BH ₂₀₀	17.0	X	105.03108	109.21682	84.35943	5.11687	0.0231565	0.24031339	2.5622258	20	8 12.2	20.4
469956	2006	BB ₂₁₁	17.6	X	53.27084	80.37738	129.57855	4.13757	0.0517210	0.22600506	2.6692583	20	6 25.7	21.0
469957	2006	BF ₂₂₁	17.1	X	26.31147	258.71791	324.68493	11.47284	0.2188722	0.22296193	2.6934913	20	6 23.9	19.9
469958	2006	CC ₉	16.3	X	86.06767	92.47791	97.46725	15.68204	0.0597522	0.22852646	2.6495882	20	7 15.7	19.9
469959	2006	CF ₆₄	17.3	X	15.84171	341.64284	267.93818	5.29040	0.1463146	0.23829324	2.5766864	20	7 2.9	19.7
469960	2006	DG ₅	16.5	X	56.72428	254.56084	331.17455	29.51644	0.0978436	0.23065106	2.6332878	20	8 7.6	20.1
469961	2006	DD ₂₉	16.5	X	0.23897	255.57944	358.58299	22.04167	0.2046720	0.21864503	2.7288289	20	5 31.8	19.6
469962	2006	DF ₄₃	17.7	X	120.92845	135.81409	357.39865	2.85383	0.0457970	0.22604869	2.6689149	20	6 11.5	21.3
469963	2006	DZ ₅₆	16.3	X	46.53665	296.27839	284.53143	11.63955	0.2144332	0.22297853	2.6933576	20	7 24.8	19.5
469964	2006	DF ₇₉	16.9	X	56.97094	199.42722	340.29495	9.08218	0.1216974	0.22031340	2.7150351	20	5 28.2	20.4
469965	2006	DR ₈₈	16.6	X	325.84516	164.99045	170.55477	13.73445	0.2000385	0.23061882	2.6335378	20	7 24.2	19.3
469966	2006	DF ₉₃	17.5	X	31.72781	242.60259	341.67066	1.96509	0.0278901	0.22223354	2.6993735	20	6 10.8	20.8
469967	2006	DJ ₉₃	17.0	X	152.91770	296.94465	176.87366	9.42623	0.0487400	0.22558268	2.6725893	20	6 25.6	21.0
469968	2006	DK ₉₉	16.4	X	283.85766	258.73955	159.02387	16.93820	0.2430383	0.17928890	3.1148260	20	8 21.1	20.4
469969	2006	DO ₁₂₀	16.7	X	106.08013	29.16666	116.03274	14.81779	0.1956227	0.22519060	2.6756905	20	6 28.1	20.9
469970	2006	DK ₁₅₁	16.7	X	39.98553	89.74647	181.26519	12.20685	0.1589106	0.23007269	2.6377036	20	9 15.6	20.0
469971	2006	DM ₁₅₆	17.8	X	334.31873	108.13109	156.24436	6.58494	0.2761258	0.21488316	2.7605850	20	4 16.0	20.4
469972	2006	DZ ₁₉₄	17.8	X	256.14230	74.74616	322.48322	5.66242	0.1017883	0.23553657	2.5967520	20	7 15.5	21.3
469973	2006	DK ₁₉₅	16.9	X	55.30529	46.13516	153.49082	17.88431	0.1862451	0.22296530	2.6934642	20	7 5.5	20.5
469974	2006	DZ ₂₀₈	16.8	X	296.82691	350.48891	1.68176	13.82403	0.1808912	0.23005231	2.6378594	20	6 28.7	20.3
469975	2006	DD ₂₁₆	17.4	X	111.18858	144.64559	4.37169	4.86779	0.1201212	0.22423326	2.6833008	20	6 30.2	21.3
469976	2006	EE ₉	17.2	X	218.23610	87.99043	355.32861	21.99367	0.0349531	0.23307324	2.6150165	20	8 15.8	21.1
469977	2006	EF ₅₅	16.9	X	220.37689	133.05780	339.78862	21.97268	0.0918539	0.24129837	2.5552484	20	9 9.1	20.4
469978	2006	FC ₄₉	16.9	X	338.07367	9.81498	324.08615	11.95458	0.1018149	0.23856469	2.5747314	20	8 24.1	19.6
469979	2006	FF ₄₉	16.7	X	61.72348	74.15746	109.61060	10.01635	0.2727862	0.21980828	2.7191929	20	7 7.1	20.2
469980	2006	GT ₁	18.6	X	112.91595	200.51558	56.51814	4.35730	0.1522445	0.30989625	2.1626779	20	12 1.5	21.7
469981	2006	HO ₈	17.1	X	194.26555	94.68274	9.60149	15.59492	0.1639673	0.23334183	2.6130095	20	8 2.7	21.5
469982	2006	HE ₂₂	17.3	X	112.52718	61.46363	91.50207	4.04510	0.1110899	0.22131568	2.7068317	20	7 5.5	21.2
469983	2006	HR ₄₀	17.1	X	9.80855	139.21491	96.30276	11.33140	0.2475612	0.21249823	2.7812018	20	6 5.6	19.4
469984	2006	HM ₄₁	16.5	X	332.24197	165.52250	106.97010	10.37313	0.1969088	0.21034173	2.8001787	20	5 8.4	19.6
469985	2006	HV ₁₀₀	17.1	X	281.50203	263.63899	80.04108	7.54965	0.1066987	0.21452699	2.7636397	20	6 4.6	20.7
469986	2006	HV ₁₀₃	16.9	X	51.81604	62.29288	118.61193	13.47803	0.1343765	0.21198876	2.7856561	20	5 29.4	20.5
469987	2006	HJ ₁₂₃	5.9	X	316.16108	101.28678	222.54323	12.43379	0.3068676	0.00392784	39.7832210	20	5 29.8	21.2
469988	2006	HN ₁₄₀	17.4	X	304.79176	249.80123	58.36874	3.66739	0.0687637	0.21246245	2.7815141	20	5 26.0	20.9
469989	2006	JT ₁₄	17.0	X	277.17914	188.37969	147.01371	6.83386	0.0421684	0.21348342	2.7726387	20	5 29.9	

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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>		
470001	2006	<i>KW</i> ₁₁₉	16.3	X	57.54514	68.88527	108.82490	14.08142	0.1130538	0.21122524	2.7923649	20	5 30.4	20.0
470002	2006	<i>KW</i> ₁₃₇	16.7	X	289.51302	316.34291	60.85244	10.21363	0.2241866	0.21861069	2.7291147	20	7 14.4	20.1
470003	2006	<i>LK</i> ₃	17.0	X	305.67735	120.27111	209.73372	12.45331	0.2291616	0.21203410	2.7852590	20	6 2.3	20.4
470004	2006	<i>MJ</i> ₁₀	18.6	X	124.58309	272.56174	106.07227	39.29232	0.5856739	0.38360280	1.8759224	20	3 19.6	22.7
470005	2006	<i>OD</i> ₂₁	16.4	X	261.35121	322.26212	0.45185	12.04777	0.2397652	0.19012530	2.9953169	20	3 28.9	21.3
470006	2006	<i>OG</i> ₂₁	18.4	X	23.26426	355.56991	338.94625	3.59446	0.1920853	0.28872616	2.2671415	20	12 5.9	21.1
470007	2006	<i>OQ</i> ₂₁	17.8	X	32.16732	5.95818	352.12488	7.45464	0.2942600	0.29162947	2.2520694	20	—	—
470008	2006	<i>QP</i> ₇₀	16.9	X	267.40071	190.16393	141.68558	4.33373	0.2064808	0.19580679	2.9370920	20	4 21.1	21.3
470009	2006	<i>QS</i> ₁₁₀	16.5	X	138.26074	225.37039	161.66025	10.68863	0.1945381	0.17833968	3.1258686	20	3 7.1	21.5
470010	2006	<i>QV</i> ₁₃₀	18.6	X	40.64789	240.54835	93.49477	7.18520	0.2814324	0.29456263	2.2370943	20	—	—
470011	2006	<i>QT</i> ₁₄₁	18.1	X	83.70144	258.07774	32.66017	1.34683	0.1741003	0.29633448	2.2281679	20	12 15.3	21.5
470012	2006	<i>QD</i> ₁₄₄	16.5	X	207.07110	130.81116	192.78679	12.12118	0.1022010	0.18169889	3.0872220	20	2 17.5	21.5
470013	2006	<i>QU</i> ₁₅₈	18.3	X	336.90207	166.60531	181.98476	3.81043	0.1856736	0.28270787	2.2992037	20	9 27.3	19.9
470014	2006	<i>QB</i> ₁₈₃	16.7	X	224.36001	29.05939	324.89734	4.71620	0.1549035	0.18974903	2.9992754	20	4 7.6	21.6
470015	2006	<i>RO</i> ₇	16.7	X	199.02208	167.96967	186.05049	15.94154	0.3084927	0.18460285	3.0547602	20	3 16.5	22.3
470016	2006	<i>RQ</i> ₇	18.2	X	24.94941	119.48792	244.83433	1.81114	0.1901257	0.29450823	2.2373697	20	—	—
470017	2006	<i>RD</i> ₄₆	16.4	X	270.35519	297.61036	21.20983	10.79662	0.0752233	0.18880630	3.0092508	20	4 22.4	20.6
470018	2006	<i>RK</i> ₄₆	16.6	X	174.58970	19.18790	17.35315	10.04420	0.0378011	0.18377534	3.0639233	20	4 12.5	20.9
470019	2006	<i>RS</i> ₅₂	16.5	X	230.26084	315.75818	20.62527	15.42475	0.0750312	0.18288966	3.0738072	20	4 1.7	21.0
470020	2006	<i>RE</i> ₆₂	18.1	X	37.36719	131.18391	199.38932	5.97370	0.2013548	0.29190456	2.2505643	20	12 20.8	21.1
470021	2006	<i>RL</i> ₆₃	16.2	X	135.37652	243.75087	156.81443	14.12918	0.3009605	0.17574208	3.1565951	20	3 30.8	21.7
470022	2006	<i>RR</i> ₇₂	17.8	X	16.66398	8.60619	359.94545	8.12604	0.1008901	0.29221500	2.2490600	20	12 31.8	20.5
470023	2006	<i>RM</i> ₇₃	16.7	X	226.04673	12.94832	1.29372	2.99782	0.2133948	0.19054446	2.9909226	20	5 1.1	21.6
470024	2006	<i>RK</i> ₈₀	17.4	X	257.20061	182.84724	160.93071	4.80432	0.2506352	0.19338187	2.9615942	20	4 20.8	22.3
470025	2006	<i>RQ</i> ₈₀	17.3	X	189.15634	225.26230	162.30972	2.37180	0.0972470	0.18602978	3.0391192	20	4 19.2	22.1
470026	2006	<i>RD</i> ₁₀₂	16.3	X	198.17490	181.41037	196.38364	8.93279	0.1448105	0.18483343	3.0522191	20	4 15.4	21.2
470027	2006	<i>RC</i> ₁₀₃	5.9	X	335.54954	84.58190	310.20506	17.13983	0.1432319	0.00361136	42.0748471	20	9 18.3	21.6
470028	2006	<i>SB</i> ₄	16.6	X	232.90509	128.68409	242.73978	8.95852	0.2133692	0.19243158	2.9713364	20	5 3.5	21.5
470029	2006	<i>SG</i> ₄	17.7	X	326.43337	149.12238	148.14852	4.29910	0.1712178	0.28624934	2.2802006	20	11 23.4	19.3
470030	2006	<i>SJ</i> ₇	18.4	X	42.55918	162.20976	286.97121	1.91371	0.2010629	0.29426934	2.2385805	20	—	—
470031	2006	<i>SX</i> ₁₀	16.7	X	252.34654	68.72247	290.92095	10.76627	0.1726458	0.19670456	2.9281485	20	5 9.2	21.4
470032	2006	<i>ST</i> ₁₃	17.3	X	5.10543	351.18966	17.50611	7.96064	0.1670806	0.28883628	2.2665652	20	12 23.9	19.9
470033	2006	<i>SB</i> ₁₆	16.5	X	227.42744	8.38678	354.81387	13.99159	0.1449116	0.18892029	3.0080403	20	4 19.2	21.5
470034	2006	<i>SL</i> ₁₇	16.3	X	197.84799	188.01144	205.08028	13.41642	0.1387439	0.18642427	3.0348303	20	5 3.9	21.1
470035	2006	<i>SA</i> ₃₃	16.7	X	166.58716	185.07044	184.79182	11.61803	0.2545584	0.17829294	3.1264150	20	3 12.3	22.1
470036	2006	<i>SB</i> ₃₆	18.0	X	26.86697	234.30229	126.24523	5.62688	0.2132312	0.29355976	2.2421863	20	—	—
470037	2006	<i>SB</i> ₅₈	16.8	X	201.76538	116.06714	225.94702	9.94980	0.1454149	0.18494167	3.0510281	20	3 3.2	21.9
470038	2006	<i>SF</i> ₆₂	17.7	X	75.52197	255.90667	95.25227	5.67735	0.1761143	0.29603788	2.2296560	20	—	—
470039	2006	<i>SG</i> ₇₉	16.7	X	254.41836	135.04052	203.99387	2.47948	0.1161985	0.19064835	2.9898358	20	4 25.2	21.1
470040	2006	<i>SG</i> ₉₅	16.7	X	220.70866	163.56207	198.34337	9.62982	0.1089746	0.18494779	3.0509607	20	4 19.2	21.5
470041	2006	<i>SC</i> ₉₇	18.2	X	43.39407	310.24935	20.16375	5.88217	0.1799743	0.29032700	2.2587999	20	12 24.4	21.3
470042	2006	<i>SJ</i> ₁₀₆	16.7	X	222.00944	331.60934	14.30990	11.61921	0.0209706	0.18328493	3.0693863	20	4 5.9	21.1
470043	2006	<i>SC</i> ₁₁₁	18.3	X	31.04023	250.97836	94.88931	6.62339	0.2379393	0.29147671	2.2528562	20	—	—
470044	2006	<i>SP</i> ₁₂₈	16.2	X	228.42826	44.74349	326.33808	5.64394	0.1308742	0.18972487	2.9995300	20	5 3.6	20.9
470045	2006	<i>SX</i> ₁₃₀	16.7	X	173.98743	174.39832	220.68117	4.76316	0.1556180	0.18244419	3.0788086	20	4 13.5	21.6
470046	2006	<i>SL</i> ₁₃₂	18.3	X	29.23008	48.31667	309.75968	5.31025	0.2215666	0.29277402	2.2461962	20	—	—
470047	2006	<i>SR</i> ₁₆₅	18.2	X	62.12773	343.54474	336.54853	5.24635	0.1951454	0.29483776	2.2357023	20	—	—
470048	2006	<i>SN</i> ₁₆₉	18.3	X	29.44691	149.64166	250.15789	2.22382	0.1975857	0.29917663	2.2140339	20	—	—
470049	2006	<i>SZ</i> ₁₆₉	17.1	X	268.68899	104.66858	199.94545	9.98643	0.0977100	0.18788350	3.0190962	20	3 31.4	21.6
470050	2006	<i>SY</i> ₁₈₁	17.9	X	20.31285	284.99797	82.11880	4.83178	0.2367766	0.29201716	2.2500757	20	—	—
470051	2006	<i>SS</i> ₁₈₃	16.7	X	77.36745	285.80440	193.49851	9.39617	0.1279854	0.17727972	3.1383160	20	4 12.7	20.8
470052	2006	<i>SH</i> ₁₈₆	16.7	X	120.55800	242.04945	214.89492	8.79380	0.0596365	0.18118822	3.0930201	20	4 27.7	21.2
470053	2006	<i>SP</i> ₁₉₅	16.8	X	264.26034	310.33730	0.47255	6.35201	0.1647744	0.18773184	3.0207220	20	3 26.3	21.3
470054	2006	<i>SY</i> ₂₀₃	17.2	X	273.54611	208.09863	138.30581	2.91304	0.0981461	0.19461051	2.9491160	20	5 30.2	21.4
470055	2006	<i>SJ</i> ₂₀₇	18.1	X	139.84074	203.05238	351.06924	6.42036	0.0449439	0.27874628	2.3209369	20	9 30.7	21.1
470056	2006	<i>SG</i> ₂₀₉	17.9	X	4.60311	214.67416	160.17697	5.72725	0.2334742	0.28924897	2.2644088	20	—	—
470057	2006	<i>SD</i> ₂₁₄	17.0	X	224.20932	42.41394	354.11348	10.07425	0.0739052	0.19467689	2.9484456	20	6 5.4	21.5
470058	2006	<i>SH</i> ₂₁₄	18.0	X	37.73754	42.73640	339.57524	4.60333	0.1659156	0.29742392	2.2227236	20	—	—
470059	2006	<i>SP</i> ₂₁₇	18.2	X	257.93924	54.73388	186.85669	27.03227	0.0691245	0.38680698	1.8655484	20	—	—
470060	2006	<i>SL</i> ₂₂₃	16.5	X	291.44552	264.97886	19.29227	10.08414	0.0709146	0.18509394	3.0493545	20	4 7.5	20.7
470061	2006	<i>SX</i> ₂₂₈	18.0	X	95.91564	286.41703	328.55722	5.13019	0.1056830	0.28727115	2.2747903	20	11 3.3	21.3
470062	2006	<i>SK</i> ₂₃₉	18.6	X	38.38341	150.90807	164.30204	2.51334	0.2165775	0.28910927	2.2651382	20	12 3.7	21.5
470063	2006	<i>SH</i> ₂₄₀	17.7	X	122.23303	51.36289	173.81558	6.36107	0.0444491	0.28469799	2.2884765	20	10 25.1	20.7
470064	2006	<i>ST</i> ₂₄₁	16.8	X	204.45536	22.56174	7.67373	8.68759	0.1059673	0.19014265	2.9951347	20	5 4.3	21.5
470065	2006	<i>SO</i> ₂₅₄	16.8	X	237.97615	342.68144	17.14789	10.42293	0.1253230	0.18976880	2.9990671	20	4 30.0	21.5
470066	2006	<i>SB</i> ₂₅₇	16.1	X	138.31079	203.40522	201.58992	27.26398	0.1665236	0.17569492	3.1571599	20	3 23.8	21.2
470067	2006	<i>SH</i> ₂₆₁	16.7	X	149.59594	63.96443	10.39854	11.03835	0.1278327	0.18327735	3.0694709	20	5 4.3	21.6
470068	2006	<i>SQ</i> ₂₇₃	17.8	X	14.94643	5.70455	36.97134	5.94885	0.2711497	0.29266100	2.2467745	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>		
470081	2006	SM ₃₅₅	17.8	X	21.45224	178.54096	154.18394	4.70240	0.1974364	0.28654080	2.2786541	20	12 2.9	20.4
470082	2006	SY ₃₅₉	16.8	X	250.16691	301.36556	52.36071	12.60145	0.3380999	0.19059739	2.9903688	20	4 20.9	22.1
470083	2006	SG ₃₆₉	7.5	X	14.78264	289.55641	101.29328	13.61418	0.3681296	0.00299726	47.6416436	20	11 29.5	22.5
470084	2006	SH ₃₈₀	16.6	X	150.43292	290.28871	132.07343	12.11685	0.0750167	0.17989574	3.1078171	20	4 25.1	21.5
470085	2006	SL ₃₈₀	16.3	X	290.23276	147.81046	131.09083	12.47806	0.0724758	0.18153071	3.0891285	20	4 4.1	20.8
470086	2006	SH ₃₈₃	16.7	X	47.13052	6.75306	165.99867	10.52546	0.0410183	0.18528983	3.0472050	20	4 29.8	20.9
470087	2006	SN ₃₈₈	16.7	X	48.42671	45.70384	101.52356	11.95885	0.0583887	0.17633436	3.1495228	20	4 4.8	21.1
470088	2006	SZ ₃₈₈	17.0	X	205.04670	234.12791	153.44261	13.03444	0.1702752	0.18517489	3.0484657	20	5 5.9	22.2
470089	2006	SU ₃₉₇	17.1	X	180.17627	269.94993	142.43943	1.39015	0.1620611	0.18378949	3.0637660	20	5 10.7	22.2
470090	2006	SN ₄₀₂	16.0	X	218.70047	95.16149	215.45991	17.51307	0.2152101	0.17556398	3.1587295	20	2 7.9	21.7
470091	2006	SC ₄₀₃	16.9	X	256.26862	318.26590	21.94393	3.36170	0.1090257	0.18776358	3.0203816	20	4 29.1	21.4
470092	2006	SM ₄₀₆	18.4	X	50.88833	192.74514	121.71303	1.19911	0.2849640	0.29183245	2.2510250	20	12 23.3	21.8
470093	2006	SR ₄₀₆	18.6	X	5.44575	25.32020	336.51436	2.42050	0.2309690	0.28817668	2.2700225	20	12 25.4	21.0
470094	2006	TY ₁₅	16.5	X	234.32050	129.66131	208.30861	9.63235	0.1269159	0.18528873	3.0472170	20	3 31.9	21.4
470095	2006	TU ₁₆	16.5	X	173.09096	308.42831	45.03308	1.87649	0.1751647	0.17477975	3.1681711	20	2 26.8	21.7
470096	2006	TR ₁₉	16.8	X	234.07044	144.04367	217.94440	8.32046	0.2386482	0.18782522	3.0197207	20	4 22.2	21.7
470097	2006	SM ₂₅	16.2	X	307.10607	232.89939	29.91055	10.92362	0.0458321	0.18084978	3.0968778	20	4 6.2	20.4
470098	2006	TL ₃₀	16.9	X	217.80014	190.36230	167.93908	0.92611	0.2050587	0.18425101	3.0586478	20	4 7.1	22.0
470099	2006	TT ₃₃	16.5	X	188.71703	206.57914	209.39245	16.02624	0.1325248	0.18609535	3.0384052	20	5 23.2	21.5
470100	2006	TU ₃₆	16.1	X	126.78923	221.57174	226.31942	9.48202	0.0960403	0.17803846	3.1239304	20	4 27.2	20.8
470101	2006	TS ₅₂	18.3	X	37.18819	312.96768	50.32177	7.29498	0.1572380	0.29126684	2.2539383	20	—	—
470102	2006	TO ₅₃	16.0	X	227.65186	75.14577	220.01324	17.85799	0.1123622	0.17033500	3.2230481	20	2 1.9	21.4
470103	2006	TH ₅₆	17.9	X	65.56465	113.52443	207.91155	2.64715	0.2297080	0.29193312	2.2505075	20	—	—
470104	2006	TM ₅₆	18.3	X	112.20705	189.29140	215.65758	20.45974	0.0880809	0.38633917	1.8670540	20	1 8.0	20.4
470105	2006	TY ₅₉	17.5	X	182.97598	256.46945	251.94336	5.73219	0.056012	0.27465852	2.3439086	20	9 19.8	20.6
470106	2006	TD ₆₈	17.6	X	98.05170	37.88447	286.24307	4.60747	0.2257570	0.30140280	2.2031185	20	—	—
470107	2006	TG ₈₁	16.8	X	241.36461	15.10039	354.69611	6.30818	0.1761572	0.18939315	3.0030314	20	5 11.2	21.5
470108	2006	TR ₈₂	16.4	X	177.89792	163.75984	240.69531	8.03385	0.2113836	0.18190419	3.0848987	20	4 28.4	21.7
470109	2006	TE ₈₅	16.6	X	228.53130	56.22833	281.64439	4.30560	0.1529955	0.18150640	3.0894044	20	3 23.7	21.6
470110	2006	TQ ₈₆	17.7	X	42.85329	11.11683	358.23458	3.68100	0.1150553	0.29361950	2.2418822	20	—	—
470111	2006	TQ ₉₀	16.4	X	188.35534	177.70127	235.96757	10.16837	0.1883752	0.18369592	3.0648064	20	5 18.7	21.6
470112	2006	TF ₁₀₃	17.9	X	65.81608	66.39215	229.86573	4.61689	0.1853204	0.28770323	2.2725122	20	12 4.5	21.2
470113	2006	TT ₁₀₃	18.4	X	35.85381	147.51010	210.01058	3.91420	0.1817524	0.29161256	2.2521565	20	—	—
470114	2006	TM ₁₀₉	16.5	X	214.67744	6.58346	9.65454	8.43398	0.2580430	0.18541175	3.0458690	20	4 21.6	21.8
470115	2006	TH ₁₁₇	17.0	X	106.51824	2.83686	117.89529	9.26136	0.0532520	0.18295300	3.0730976	20	5 12.9	21.5
470116	2006	TM ₁₁₉	16.6	X	160.54669	271.14888	162.04160	10.31686	0.1775723	0.18326188	3.0696436	20	5 20.8	21.8
470117	2006	TW ₁₂₂	16.9	X	179.24947	358.78288	54.93309	4.27543	0.1108879	0.18235177	3.0798488	20	5 10.7	21.8
470118	2006	TK ₁₂₅	16.3	X	181.97296	152.59421	219.94699	9.95989	0.0603992	0.17496215	3.1659689	20	3 21.7	21.2
470119	2006	TY ₁₂₅	16.1	X	70.21363	124.44082	41.29639	10.37098	0.0554674	0.18157583	3.0886168	20	5 19.7	20.4
470120	2006	TB ₁₂₆	16.0	X	106.27151	69.39824	28.82430	9.38966	0.0695689	0.17464843	3.1697591	20	4 14.2	20.4
470121	2006	TL ₁₂₉	16.7	X	206.68555	161.41604	228.27125	12.21880	0.1090814	0.18496620	3.0507583	20	5 8.3	21.5
470122	2006	TV ₁₂₉	16.6	X	238.89964	96.02487	225.97799	14.59086	0.1270923	0.18068784	3.0987279	20	3 14.3	21.6
470123	2006	UR ₂	18.8	X	353.11820	254.82522	196.84452	20.91545	0.0668994	0.37392998	1.9081354	20	—	—
470124	2006	UB ₇	16.3	X	232.79828	294.12334	51.89256	9.96428	0.1793067	0.18447310	3.0561923	20	4 9.7	21.3
470125	2006	UW ₁₅	16.4	X	240.26921	278.99835	57.27119	14.83200	0.3450562	0.18625337	3.0366865	20	3 29.0	22.1
470126	2006	UQ ₁₆	17.8	X	349.56901	292.48892	80.48047	5.17801	0.1858354	0.28335133	2.2957215	20	12 5.1	19.8
470127	2006	UW ₂₁	18.2	X	352.74804	352.92750	18.05554	6.11542	0.1225854	0.28549891	2.2841945	20	11 27.2	20.4
470128	2006	UE ₂₄	18.2	X	33.60936	339.11941	4.35813	3.44792	0.1775375	0.28986965	2.2611752	20	12 30.1	21.1
470129	2006	UA ₂₇	17.5	X	191.13743	177.71065	228.48611	0.87213	0.1874221	0.18498519	3.0505495	20	5 12.1	22.5
470130	2006	UN ₂₈	16.9	X	303.34329	323.29294	6.96528	1.50663	0.1062564	0.19570492	2.9381111	20	6 17.5	20.7
470131	2006	UW ₃₁	16.8	X	214.86087	146.26380	205.92102	2.34530	0.0947905	0.18092199	3.0960536	20	4 1.6	21.4
470132	2006	UV ₃₃	18.3	X	300.77844	28.41111	37.34975	6.93126	0.1302997	0.28290391	2.2981414	20	11 10.6	20.2
470133	2006	UX ₃₅	16.3	X	216.88931	167.28743	221.33662	14.98422	0.0813807	0.18673333	3.0314807	20	5 19.8	20.9
470134	2006	UH ₄₃	17.7	X	231.67140	140.02712	208.38340	3.93081	0.2404134	0.18503037	3.0505292	20	4 4.2	22.8
470135	2006	UU ₄₄	17.1	X	192.43003	329.35368	62.81592	1.96989	0.1625354	0.18149724	3.0895083	20	4 27.2	22.2
470136	2006	UB ₄₆	17.4	X	266.34174	11.98447	60.10209	8.79319	0.0713381	0.27550604	2.3390992	20	10 1.5	20.2
470137	2006	UF ₅₁	18.5	X	42.31009	267.78503	39.12505	5.82938	0.1575307	0.28540814	2.2846788	20	11 17.2	21.2
470138	2006	UD ₅₃	16.9	X	183.73859	314.02375	94.10687	2.40214	0.1487071	0.18231172	3.0802998	20	5 8.9	21.9
470139	2006	UH ₅₇	16.7	X	209.00609	116.18560	280.99021	8.07146	0.0939657	0.19228444	2.9728520	20	5 19.5	21.4
470140	2006	UP ₅₇	18.4	X	37.84875	299.73100	45.44448	7.04691	0.1805104	0.29037455	2.2585533	20	—	—
470141	2006	UT ₆₀	16.3	X	250.18438	40.83250	315.29971	6.12737	0.3607461	0.19086128	2.9876118	20	4 16.5	21.7
470142	2006	UT ₆₉	18.1	X	321.05649	294.71837	105.21088	3.33450	0.1767835	0.28321780	2.2964431	20	11 15.6	19.7
470143	2006	UJ ₇₁	16.5	X	205.01278	144.93654	211.41746	8.89091	0.0996953	0.17756838	3.1349140	20	3 26.6	21.4
470144	2006	UW ₇₂	16.5	X	149.19948	151.54208	260.69919	6.85520	0.0651907	0.17893761	3.1189013	20	4 2.7	21.2
470145	2006	UE ₇₃	16.5	X	158.17405	50.28580	0.49426	8.77121	0.0950754	0.18005564	3.1059769	20	4 13.4	21.3
470146	2006	UG ₇₄	16.8	X	269.30449	322.50375	2.46363	8.56337	0.1368611	0.18885303	3.0087544	20	4 19.5	21.3
470147	2006	UN ₇₈	17.0	X	224.56072	1.68692	10.11435	8.05424	0.1392746	0.18705017	3.0280566	20	4 30.4	21.9
470148	2006	UK ₈₆	16.4	X	168.86483	191.30590	233.34656	9.12249	0.1664995	0.18114121	3.0935552	20	5 15.2	21.4
470149	2006	UN ₈₈	16.0	X	102.75019	78.43265	33.26175	10.41483	0.0435911	0.17754730	3.1351621	20	4 22.6	20.3
470150	2006	UP ₈₉												

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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>		
470161	2006	UR ₁₃₁	18.8	X	345.46677	90.80656	227.08288	4.68657	0.2354660	0.27649945	2.3334932	20	8 24.1	20.1
470162	2006	UU ₁₄₂	16.5	X	231.77601	306.43592	24.03149	10.37976	0.1089507	0.17903658	3.1177517	20	3 25.5	21.3
470163	2006	UP ₁₄₉	16.1	X	150.78807	169.63418	203.76738	17.54574	0.1400626	0.17343497	3.1845270	20	2 23.3	21.3
470164	2006	UQ ₁₅₁	17.6	X	40.37828	31.60599	281.04613	2.27809	0.2529880	0.28544558	2.2844790	20	12 6.0	20.8
470165	2006	UE ₁₅₂	16.2	X	226.70587	110.09806	241.94764	17.15579	0.1263192	0.18069316	3.0986670	20	4 7.7	21.3
470166	2006	UH ₁₅₃	16.6	X	207.96713	178.65629	197.35602	9.61119	0.1369854	0.18966661	3.0001442	20	4 22.6	21.3
470167	2006	UP ₁₇₉	17.9	X	20.45347	270.36186	94.16048	4.63978	0.2456010	0.29018338	2.2595451	20	—	—
470168	2006	UO ₁₉₄	16.4	X	96.26005	87.66054	35.02506	9.05463	0.0488049	0.18083664	3.0970277	20	4 28.5	20.8
470169	2006	UK ₁₉₆	17.2	X	182.25291	163.03592	226.80638	2.36259	0.1331219	0.17995323	3.1071553	20	4 14.6	22.1
470170	2006	UO ₁₉₇	16.9	X	224.72706	160.02026	221.84471	9.10461	0.1850725	0.18703184	3.0282543	20	5 12.1	21.7
470171	2006	UG ₂₀₁	17.2	X	232.46376	119.02313	233.56991	2.12977	0.2300996	0.18444659	3.0564851	20	4 10.2	22.4
470172	2006	UP ₂₁₉	17.9	X	346.28410	238.93770	131.02170	5.60647	0.1714213	0.28503046	2.2866965	20	11 24.0	19.9
470173	2006	UM ₂₃₇	16.9	X	181.51272	191.55274	203.00305	11.02806	0.1313105	0.18169972	3.0872126	20	4 20.3	21.9
470174	2006	UH ₂₃₉	17.9	X	258.41626	36.77640	219.04244	20.75142	0.0754312	0.38742687	1.8635579	20	—	—
470175	2006	UT ₂₄₁	16.9	X	212.64239	166.53919	202.77078	8.87131	0.1380747	0.18972627	2.9995152	20	4 18.3	21.7
470176	2006	UR ₂₅₈	16.5	X	108.32965	240.60151	214.20795	15.08010	0.0511303	0.17849559	3.1240482	20	4 7.9	21.0
470177	2006	UP ₂₇₇	16.1	X	327.62590	36.11004	230.90438	10.36307	0.0134099	0.18501642	3.0502062	20	5 10.4	20.4
470178	2006	UC ₂₈₂	16.7	X	245.13119	333.34427	56.80495	9.84538	0.1142050	0.19095897	2.9865928	20	6 17.7	21.2
470179	2006	UA ₂₈₄	16.7	X	172.94698	10.77440	40.26216	9.61955	0.0839496	0.18130317	3.0917126	20	4 30.5	21.5
470180	2006	UH ₃₃₂	17.0	X	188.90890	251.46007	148.55851	6.43675	0.2348906	0.18479159	3.0526798	20	5 4.7	22.4
470181	2006	UX ₃₃₅	16.8	X	279.45299	146.52729	201.45488	1.53653	0.1831999	0.19148646	2.9811054	20	5 26.9	21.0
470182	2006	UC ₃₅₀	17.2	X	193.71691	359.03608	35.75786	3.69949	0.1827030	0.18298890	3.0726957	20	4 30.6	22.4
470183	2006	UA ₃₅₉	16.7	X	230.83413	298.89235	28.48679	1.28946	0.0785982	0.17884106	3.1200237	20	3 21.1	21.5
470184	2006	UT ₃₅₉	18.3	X	325.20281	133.48725	269.98380	2.33366	0.1250675	0.28269360	2.2992811	20	11 25.7	20.4
470185	2006	VT ₇	18.3	X	339.51696	144.24953	232.74831	6.54809	0.236485	0.28059860	2.3107115	20	11 12.2	20.3
470186	2006	VJ ₁₂	18.1	X	336.33804	208.13640	198.13173	2.36966	0.1956618	0.28467785	2.2885844	20	12 31.7	19.9
470187	2006	VY ₁₂	18.1	X	94.87988	296.44508	64.29140	25.47399	0.1691008	0.37559302	1.9024987	20	—	—
470188	2006	VF ₁₅	18.3	X	16.49449	338.07487	3.78655	2.67241	0.1868192	0.28410378	2.2916663	20	12 4.7	20.9
470189	2006	VM ₁₆	16.4	X	236.93255	285.69720	47.36747	11.50781	0.1149893	0.18001722	3.1064189	20	4 4.1	21.2
470190	2006	VJ ₂₃	16.9	X	261.81119	110.37749	230.53489	12.64714	0.1892046	0.18742682	3.0239984	20	4 26.1	21.5
470191	2006	VB ₂₈	18.0	X	6.37354	335.47707	38.24640	6.51711	0.1837742	0.28591451	2.2819804	20	—	—
470192	2006	VP ₃₂	18.2	X	284.15243	49.27757	31.19152	5.38944	0.1890184	0.28037685	2.3119297	20	10 23.5	20.0
470193	2006	VF ₃₅	16.3	X	334.57076	182.03259	52.09840	12.14687	0.0053693	0.17685465	3.1433427	20	4 12.7	20.7
470194	2006	VH ₄₂	16.8	X	241.33885	225.95449	124.66870	2.45667	0.1710569	0.18563600	3.0434155	20	4 21.5	21.5
470195	2006	VB ₄₄	16.1	X	154.59195	195.74138	225.42839	9.84053	0.1771891	0.17781304	3.1320377	20	4 28.6	21.3
470196	2006	VV ₄₄	18.0	X	71.03385	191.54933	235.21066	20.32751	0.0819781	0.38140714	1.8831150	20	—	—
470197	2006	VT ₄₈	15.6	X	182.23009	169.30478	252.74472	12.08753	0.1446570	0.18194312	3.0844587	20	5 23.5	20.5
470198	2006	VB ₅₁	15.6	X	219.01710	137.28344	257.27108	21.13678	0.0632465	0.18275288	3.0753407	20	5 30.5	20.3
470199	2006	VZ ₅₄	16.7	X	184.46737	126.35281	228.50186	9.18695	0.2671894	0.17542848	3.1603558	20	3 5.8	22.4
470200	2006	VP ₅₅	16.5	X	230.61461	290.62765	74.17223	3.07057	0.1960499	0.18480573	3.0525240	20	4 26.6	21.5
470201	2006	VF ₅₇	17.9	X	26.56715	118.57108	217.38139	2.80944	0.1924892	0.28404497	2.2919826	20	12 11.9	20.6
470202	2006	VD ₆₀	16.3	X	209.99522	120.14895	225.83881	12.88881	0.1183465	0.17624104	3.1506344	20	3 16.3	21.5
470203	2006	VF ₇₂	15.4	X	243.10186	85.61402	240.19043	14.10134	0.1021452	0.17763494	3.1341308	20	3 25.1	20.4
470204	2006	VY ₇₈	17.2	X	247.77763	115.70434	224.25328	12.86658	0.1963064	0.18434560	3.0576014	20	4 9.8	22.3
470205	2006	VZ ₁₁₀	17.6	X	356.79405	68.77730	302.89203	2.85910	0.2445301	0.28419214	2.2911912	20	12 26.8	19.9
470206	2006	VQ ₁₁₂	17.6	X	44.92917	7.03718	338.53334	3.90789	0.2529000	0.28997696	2.2606174	20	—	—
470207	2006	VK ₁₁₉	17.9	X	39.80363	104.68210	257.09001	3.93975	0.1579643	0.29215771	2.2493540	20	—	—
470208	2006	VJ ₁₃₉	16.6	X	222.40775	143.72493	246.91466	4.76239	0.2146084	0.18584957	3.0410835	20	5 18.3	21.7
470209	2006	VG ₁₄₃	17.9	X	9.19019	256.78784	122.37596	4.77801	0.2639655	0.28769649	2.2725477	20	—	—
470210	2006	VW ₁₇₀	16.1	X	188.75728	322.38597	109.71794	28.58555	0.1571216	0.17780051	3.1321848	20	6 15.1	21.4
470211	2006	VE ₁₇₃	16.1	X	219.11014	310.17478	68.36800	9.26899	0.0789214	0.18314487	3.0709510	20	5 10.7	20.8
470212	2006	WM ₁₉	16.4	X	257.46958	347.73025	316.42195	3.79350	0.0945689	0.17997500	3.1069046	20	3 18.4	21.1
470213	2006	WH ₂₃	17.6	X	314.00441	356.43311	91.08013	7.37757	0.1659113	0.28484300	2.2876997	20	—	—
470214	2006	WF ₂₉	16.7	X	153.13593	59.29595	17.36397	10.31589	0.2344919	0.17771772	3.1331575	20	5 16.2	22.2
470215	2006	WP ₂₉	17.2	X	319.44031	295.84036	126.41671	22.77310	0.3785967	0.28442558	2.2899374	20	—	—
470216	2006	WL ₃₀	16.0	X	75.29723	94.78083	45.83722	12.82576	0.0830278	0.17549052	3.1596109	20	4 30.6	20.4
470217	2006	WS ₃₁	16.6	X	166.43658	269.84711	134.58289	4.20277	0.1009362	0.17744040	3.1364212	20	4 18.4	21.5
470218	2006	WJ ₃₂	15.9	X	239.42397	255.20951	79.67994	11.41002	0.0583340	0.17884246	3.1200074	20	4 15.3	20.6
470219	2006	WZ ₃₉	18.1	X	351.79116	173.57284	198.90771	6.22379	0.1164458	0.28138566	2.3064006	20	11 27.9	20.4
470220	2006	WD ₄₉	15.6	X	228.57668	124.09970	230.50505	9.93095	0.1156535	0.17987533	3.1080523	20	4 15.9	20.5
470221	2006	WD ₈₅	17.1	X	204.13056	259.38493	136.81297	3.03251	0.2362951	0.18272305	3.0756753	20	5 10.6	22.5
470222	2006	WG ₈₈	16.7	X	202.40886	158.59827	200.24477	7.03993	0.1662072	0.17686837	3.1431801	20	3 26.6	21.9
470223	2006	WV ₉₇	16.5	X	140.09466	356.42510	64.47935	9.67380	0.0601954	0.17316963	3.1877792	20	4 10.1	21.3
470224	2006	WA ₉₈	15.8	X	336.10132	18.52289	245.25731	9.42446	0.0506838	0.18124105	3.0924190	20	5 14.4	19.8
470225	2006	WM ₉₈	16.2	X	260.08562	102.98398	240.02319	12.52224	0.0742750	0.18335765	3.0685747	20	5 11.7	20.5
470226	2006	WO ₁₀₀	16.3	X	140.24014	210.97559	213.84150	4.99368	0.1922297	0.17488036	3.1669559	20	4 21.7	21.3
470227	2006	WR ₁₀₀	16.4	X	285.14558	251.07255	255.16911	14.39910	0.1144993	0.21936969	2.7228161	20	—	—
470228	2006	WN ₁₀₅	16.8	X	147.08282	192.14772	235.41140	4.61214	0.1272868	0.17526008	3.1623799	20	4 26.3	21.7
470229	2006	WY ₁₀₈	16.5	X	139.12567	159.77052	249.20640	5.31380	0.1092260	0.16996528	3.2277203	20	3 24.2	21.4
470230	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>
470241 2006 XS ₅	17.6	X	350.09371	288.33681	83.70237	5.00307	0.2314998	0.28344306	2.2952262	20	12 12.4	19.4
470242 2006 XD ₂₆	17.8	X	357.82084	248.53546	153.76764	3.42007	0.2070388	0.28774154	2.2723105	20	—	—
470243 2006 XM ₃₇	16.1	X	242.98969	265.23864	104.09037	27.29726	0.2090055	0.18182212	3.0858270	20	5 21.2	21.4
470244 2006 XQ ₄₄	16.2	X	237.57847	95.81960	272.75769	16.83760	0.1565316	0.18255816	3.0775270	20	5 7.2	21.3
470245 2006 XZ ₆₂	17.7	X	284.10287	161.27453	286.53237	6.31422	0.2395120	0.27421045	2.3464612	20	10 21.1	19.7
470246 2006 XE ₆₃	15.7	X	229.68752	61.61026	255.47506	10.56656	0.0674758	0.17006784	3.2264226	20	3 3.6	20.7
470247 2006 XA ₇₁	16.8	X	186.25440	227.75000	163.05747	1.65581	0.2073628	0.17335124	3.1855524	20	4 20.7	22.3
470248 2006 XP ₇₁	15.8	X	180.92920	106.73796	295.57012	12.32383	0.1785623	0.17224659	3.1991576	20	4 24.4	21.3
470249 2006 XX ₇₁	18.0	X	8.31915	316.53150	50.11708	3.57372	0.2168308	0.28304946	2.2973535	20	—	—
470250 2006 XP ₇₂	17.7	X	295.53076	122.77073	329.78594	5.01837	0.1386899	0.27917588	2.3185553	20	12 10.0	19.7
470251 2006 YQ	18.3	X	319.93600	129.58240	269.16789	4.71109	0.1568824	0.27806413	2.3247311	20	11 5.7	20.3
470252 2006 YJ ₇	16.4	X	223.72302	315.77506	84.33713	14.64581	0.2240205	0.18674225	3.0313843	20	5 31.6	21.4
470253 2006 YW ₃₀	18.3	X	329.19269	29.28955	13.15689	1.75972	0.2316306	0.27922454	2.3182859	20	12 12.2	19.7
470254 2006 YW ₃₅	18.1	X	293.75409	18.98438	54.67625	3.86274	0.1172265	0.27447186	2.3449711	20	11 8.3	20.1
470255 2006 YN ₃₇	16.5	X	212.78578	299.74163	98.41930	10.36846	0.3104322	0.18065336	3.0991221	20	5 18.1	22.2
470256 2006 YP ₄₂	16.5	X	211.88823	183.64113	295.51058	22.87830	0.0707180	0.26640367	2.3920812	20	9 1.9	20.3
470257 2006 YQ ₅₄	18.2	X	56.93364	295.55184	108.73896	24.11014	0.0926267	0.36676942	1.9328907	20	—	—
470258 2006 YV ₅₅	17.7	X	340.58767	4.95018	39.11929	6.26011	0.2887410	0.28217882	2.3020766	20	—	—
470259 2007 AF ₇	17.9	X	177.12351	16.01722	288.45911	18.67192	0.0218484	0.37027241	1.9206806	20	—	—
470260 2007 AX ₁₀	17.2	X	81.81626	24.79862	119.79333	15.02676	0.1888325	0.24131618	2.5551227	20	6 1.3	20.8
470261 2007 AP ₁₆	17.6	X	70.17189	119.65772	307.44824	19.82555	0.0769567	0.37145773	1.9165925	20	—	—
470262 2007 AV ₃₀	15.8	X	180.56902	110.86750	292.05668	24.87714	0.1707701	0.17372874	3.1809361	20	4 20.2	21.6
470263 2007 BJ ₃	18.0	X	17.81183	150.36904	294.93023	16.72267	0.0867543	0.36620254	1.9348849	20	—	—
470264 2007 BL ₄	16.0	X	170.89719	98.46337	307.75475	24.53039	0.2903241	0.17282014	3.1920754	20	4 15.9	22.2
470265 2007 BX ₇	17.4	X	166.40088	291.90724	332.99502	17.93877	0.0590049	0.35760232	1.9657842	20	—	—
470266 2007 BM ₂₃	17.3	X	344.25853	55.10888	312.37863	4.37572	0.1949054	0.27270524	2.3550876	20	11 11.1	19.2
470267 2007 BJ ₃₈	16.1	X	218.43730	94.85496	306.15540	24.96266	0.2706234	0.18073701	3.0981658	20	5 21.6	21.9
470268 2007 BR ₅₃	18.4	X	262.27206	101.97442	123.94381	24.14250	0.0650973	0.36760994	1.9299433	20	—	—
470269 2007 BP ₅₆	17.1	X	208.03631	326.46009	94.40673	7.74093	0.1205338	0.25406130	2.4689391	20	6 18.0	20.8
470270 2007 BL ₅₉	15.4	X	153.24308	304.68197	130.10665	29.13776	0.3137247	0.17373292	3.1808850	20	5 28.4	21.6
470271 2007 BH ₆₁	17.8	X	99.71808	206.89610	115.70245	24.17171	0.0526426	0.35836869	1.9629806	20	—	—
470272 2007 BX ₇₅	16.7	X	222.13893	88.80722	316.72456	13.14733	0.3145221	0.18115248	3.0934269	20	5 28.7	22.5
470273 2007 BP ₇₆	17.5	X	304.36256	84.61191	321.11979	3.45731	0.1072852	0.26988555	2.3714627	20	10 14.2	19.9
470274 2007 CL ₃₈	16.7	X	97.11817	188.89592	306.45840	3.88442	0.0535432	0.16817157	3.2506310	20	5 15.8	21.3
470275 2007 CS ₄₈	15.9	X	149.69551	315.46310	146.41541	24.30591	0.2447350	0.17359756	3.1825383	20	6 18.5	21.8
470276 2007 CS ₅₂	17.9	X	329.15427	177.32001	348.05601	20.77241	0.0834473	0.36719101	1.9314110	20	—	—
470277 2007 CU ₅₃	17.3	X	278.94773	196.80940	341.51535	18.20777	0.0556682	0.35972005	1.9580613	20	—	—
470278 2007 DO ₅	17.3	X	129.17077	61.18125	115.66255	7.21565	0.0323462	0.25837075	2.4418100	20	8 24.0	20.5
470279 2007 DX ₁₁	18.7	X	55.53934	123.33248	319.19902	18.47402	0.1121698	0.37321451	1.9105733	20	—	—
470280 2007 DF ₁₄	17.3	X	11.62521	112.68661	114.38018	6.87219	0.0446193	0.24039268	2.5616624	20	5 18.9	20.5
470281 2007 DB ₄₅	17.8	X	296.30884	62.88185	323.12819	6.06670	0.1349721	0.26127538	2.4232807	20	8 26.1	20.3
470282 2007 DN ₄₉	16.0	X	183.43188	268.58146	125.57247	26.46309	0.2441953	0.17260872	3.1946815	20	5 2.4	22.1
470283 2007 DJ ₈₆	17.9	X	329.28619	100.12101	353.39145	21.80069	0.3006557	0.28293396	2.2979787	20	—	—
470284 2007 ED ₈₂	17.0	X	268.72311	94.77281	14.45359	22.26721	0.2457734	0.27064541	2.3670219	20	10 19.7	19.4
470285 2007 EB ₈₅	16.2	X	313.64332	217.04054	23.14566	14.22683	0.1561718	0.22390515	2.6859216	20	3 1.7	19.8
470286 2007 EQ ₈₇	17.2	X	311.18307	87.17968	201.42960	12.15201	0.2620090	0.22394073	2.6856371	20	4 7.5	20.5
470287 2007 EY ₉₁	17.8	X	45.17667	34.24589	176.17164	4.79876	0.1945879	0.24021539	2.5629226	20	7 6.3	20.7
470288 2007 EW ₁₃₄	17.4	X	246.76459	107.01967	7.41997	11.53375	0.1959333	0.26774894	2.3840620	20	10 5.3	20.4
470289 2007 EM ₁₃₅	17.2	X	37.24455	12.18806	177.76661	6.75271	0.1720009	0.23347398	2.6120234	20	5 20.1	19.9
470290 2007 EF ₁₃₈	17.2	X	38.65861	338.48087	311.49826	6.88726	0.0847220	0.25903519	2.4372320	20	9 29.9	20.2
470291 2007 EX ₁₅₁	18.3	X	15.79679	85.13635	160.55010	12.73536	0.2368657	0.23657884	2.5891196	20	7 6.7	20.7
470292 2007 EZ ₁₅₁	17.6	X	343.79394	312.74190	84.31923	3.63518	0.1819034	0.26994088	2.3711386	20	12 24.4	19.8
470293 2007 EF ₂₂₄	17.0	X	304.32976	162.09173	199.57333	14.23512	0.1191868	0.24595502	2.5228935	20	7 31.1	20.1
470294 2007 FA ₃₈	16.7	X	11.72155	43.97849	173.97744	13.24534	0.1952470	0.22958714	2.6414213	20	5 11.8	19.3
470295 2007 GK	17.0	X	15.56514	354.87223	204.58376	12.83171	0.1801333	0.22782660	2.6550117	20	4 17.9	19.4
470296 2007 GT ₉	16.5	X	17.33797	97.37252	116.21392	13.77836	0.0807629	0.23204807	2.6227129	20	5 13.9	19.8
470297 2007 GW ₁₈	17.5	X	49.46536	358.90731	217.61328	5.99251	0.1292854	0.23533775	2.5982144	20	7 10.4	20.6
470298 2007 GU ₃₇	17.1	X	346.13700	251.73653	40.31855	14.91570	0.1213252	0.23659929	2.5889705	20	7 9.2	20.2
470299 2007 GH ₄₆	17.9	X	49.36180	205.85105	47.42867	10.14468	0.0803700	0.24161550	2.5530120	20	8 31.4	21.3
470300 2007 GB ₄₉	16.9	X	184.76023	252.34244	215.88291	15.13136	0.1229431	0.24249301	2.5468492	20	7 20.9	21.1
470301 2007 GU ₅₅	17.1	X	344.67426	201.82485	83.64932	7.01585	0.1458781	0.23429890	2.6058888	20	6 23.4	19.5
470302 2007 HR ₃₇	17.5	X	52.07696	82.08260	134.56696	3.86832	0.1617678	0.23795591	2.5791210	20	7 21.4	20.4
470303 2007 HX ₄₆	16.9	X	275.63070	208.85836	70.56049	6.18854	0.1332757	0.21788249	2.7351921	20	3 4.9	20.9
470304 2007 HW ₈₇	16.4	X	22.58727	199.31104	74.04675	10.37467	0.1015833	0.23900008	2.5716036	20	8 19.9	19.6
470305 2007 JK	17.1	X	343.05749	187.11032	103.19664	16.59226	0.1659033	0.23077367	2.6323596	20	6 26.8	19.6
470306 2007 JE ₁₇	17.5	X	325.79271	70.47305	221.11214	7.35736	0.2675531	0.22646755	2.6656230	20	5 7.2	20.0
470307 2007 JB ₃₇	17.3	X	9.54394	51.38055	176.68949	12.07834	0.2296659	0.22782983	2.6549866	20	5 23.6	19.7
470308 2007 JH ₄₃	4.5	X	194.71148	353.20241	64.58627	18.12214	0.0231279	0.00394485	39.6687787	20	6 1.5	20.6
470309 2007 JK ₄₃	7.0	X	9.39199	10.83143	233.56463	44.85127	0.4954963	0.00308301	46.7540708	20	6 17.9	21.0
470310 2007 LB ₁₅	19.4	X	193.38581	237.34484	262.79823	25.19286	0.3952972	1.08411450	0.9684676	20	—	—
470311 2007 LF ₂₁	16.4	X	353.57492	185.76105	86.29873	15.85902	0.2183797	0.22976399	2.6400658	20	6 20.3	18.2
470312 2007 LL ₃₁	17.3	X	333.13859	149.79634	116.94449	17.93060	0.2451054	0.22405999	2.6846840	20	4 28.8	20.4
470313 2007 MA ₁₅	16.7	X	320.33377	201.28772	117.87180	7.51998	0.1681805	0.22473055	2.6793409	20	6 23.0	19.5
470314 2007 MU ₁₆	17.3	X	323.05769									

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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>
470321 2007 <i>PL</i> ₄₇	17.2	X	273.45615	336.34585	346.24652	3.95625	0.0662081	0.20889588	2.8130847	20	5 1.4	21.0
470322 2007 <i>PC</i> ₅₀	17.5	X	294.69609	343.98984	337.24987	5.36357	0.1271649	0.21485757	2.7608043	20	5 18.6	21.2
470323 2007 <i>PN</i> ₅₀	17.3	X	262.54394	195.77414	160.79278	6.23625	0.1236119	0.21282947	2.7783154	20	5 26.8	21.3
470324 2007 <i>QX</i> ₃	16.6	X	301.23113	351.62607	340.92984	14.16447	0.0528983	0.21747565	2.7386022	20	6 27.5	20.4
470325 2007 <i>QK</i> ₇	16.4	X	1.15523	318.79146	338.39706	11.54288	0.1751564	0.22553671	2.6729524	20	8 18.6	19.0
470326 2007 <i>RB</i> ₅	16.6	X	275.04115	295.38515	63.74130	7.67779	0.2839549	0.21620934	2.7492849	20	5 21.7	20.4
470327 2007 <i>RQ</i> ₇	16.8	X	280.68122	154.63131	216.83353	3.41483	0.2713606	0.21912834	2.7248149	20	6 15.2	20.5
470328 2007 <i>RP</i> ₁₁	16.6	X	277.20991	181.38005	190.10561	8.24531	0.1599549	0.21788754	2.7351498	20	6 27.4	20.4
470329 2007 <i>RB</i> ₁₃	17.1	X	304.41439	155.45390	175.84762	19.05702	0.3113267	0.21802485	2.7340013	20	5 21.3	20.8
470330 2007 <i>RC</i> ₂₉	17.0	X	254.37462	206.61348	171.09432	6.00269	0.0657942	0.21357935	2.7718084	20	6 20.4	20.9
470331 2007 <i>RD</i> ₃₁	16.3	X	277.56951	236.22440	174.69664	25.30538	0.3129663	0.22307245	2.6926015	20	7 25.6	20.4
470332 2007 <i>RD</i> ₃₃	16.5	X	323.84008	61.27676	282.32973	9.71509	0.2286994	0.22327266	2.6909917	20	7 28.3	19.0
470333 2007 <i>RP</i> ₃₄	16.9	X	252.67220	200.33023	169.72848	8.49124	0.2312237	0.21300773	2.7767651	20	5 20.7	21.4
470334 2007 <i>RS</i> ₃₅	17.3	X	317.70035	133.42666	183.80538	11.05653	0.3288372	0.22124642	2.7073966	20	5 19.9	20.3
470335 2007 <i>RV</i> ₄₉	17.8	X	267.90257	358.16439	346.17983	2.12035	0.1954912	0.20985624	2.8044957	20	5 5.6	21.9
470336 2007 <i>RM</i> ₅₀	17.0	X	270.65939	102.87851	239.45953	6.80999	0.0806644	0.20989974	2.8041083	20	5 23.2	20.7
470337 2007 <i>RQ</i> ₅₁	17.1	X	262.16737	121.20519	246.10328	5.74225	0.0857605	0.21230528	2.7828867	20	6 13.6	20.9
470338 2007 <i>RN</i> ₈₁	17.2	X	295.86517	198.36831	186.64898	2.54427	0.2011489	0.22432854	2.6825410	20	8 7.8	20.3
470339 2007 <i>RY</i> ₉₇	16.2	X	244.58209	21.28143	23.18141	14.08526	0.1976779	0.21249460	2.7812335	20	6 26.9	20.7
470340 2007 <i>RP</i> ₁₁₂	17.0	X	318.08596	340.93863	9.12084	6.24235	0.0871175	0.22095571	2.7097708	20	8 14.5	20.2
470341 2007 <i>RB</i> ₁₁₉	16.8	X	291.36816	190.84038	165.05914	5.15397	0.2408735	0.21777122	2.7361237	20	6 13.9	20.3
470342 2007 <i>RM</i> ₁₄₀	17.4	X	279.89043	30.92007	333.01776	2.73311	0.2601370	0.21643630	2.7473626	20	6 5.4	21.2
470343 2007 <i>RA</i> ₁₄₇	17.0	X	282.40043	199.18263	163.17034	10.13017	0.2617105	0.21675817	2.7446422	20	6 10.8	20.9
470344 2007 <i>RV</i> ₁₆₂	16.7	X	176.18467	106.05348	340.67918	9.65009	0.1393304	0.21068431	2.7971425	20	6 17.7	21.4
470345 2007 <i>RA</i> ₁₆₅	17.0	X	284.17910	18.86988	295.99436	3.61738	0.1063631	0.21033230	2.8002625	20	4 29.1	20.9
470346 2007 <i>RA</i> ₁₆₆	16.7	X	348.09734	108.58119	175.08867	24.69645	0.1504548	0.21885711	2.7270657	20	6 26.8	20.3
470347 2007 <i>RM</i> ₁₆₉	17.0	X	268.74833	121.61780	158.69107	11.10939	0.1119927	0.19973098	2.8984941	20	2 28.6	21.3
470348 2007 <i>RG</i> ₁₈₀	16.2	X	248.85232	69.28579	10.33900	21.20610	0.1456865	0.22017932	2.7161372	20	9 2.3	20.2
470349 2007 <i>RA</i> ₁₈₈	17.1	X	275.74119	103.11536	253.29441	3.78016	0.1699403	0.21544617	2.7557736	20	6 3.9	20.8
470350 2007 <i>RP</i> ₂₂₃	16.8	X	284.10694	331.93992	17.16227	9.74347	0.2311179	0.21198214	2.7857140	20	5 23.8	20.7
470351 2007 <i>RX</i> ₂₂₆	17.2	X	232.89860	246.38911	151.54528	3.75862	0.0875887	0.21167171	2.7884370	20	6 17.9	21.3
470352 2007 <i>RM</i> ₂₆₅	17.2	X	235.43282	215.16243	178.80171	9.80274	0.2208649	0.21134791	2.7912843	20	6 3.6	21.9
470353 2007 <i>RA</i> ₂₇₂	16.6	X	315.28397	357.46834	334.49600	5.80458	0.0478073	0.21535328	2.7565659	20	7 17.5	20.2
470354 2007 <i>RF</i> ₂₈₉	17.3	X	276.92803	163.67691	175.00395	1.29533	0.2584841	0.21286010	2.7780488	20	5 1.3	21.2
470355 2007 <i>RV</i> ₂₉₉	17.0	X	290.04146	337.05347	347.24920	4.28645	0.1281653	0.21569756	2.7536319	20	5 16.2	20.7
470356 2007 <i>RU</i> ₃₁₁	16.9	X	279.09608	292.82541	67.08663	4.42964	0.2112080	0.21690447	2.7434078	20	6 6.6	20.7
470357 2007 <i>RW</i> ₃₁₃	16.9	X	290.12776	266.47317	108.04155	10.27649	0.2255926	0.21699517	2.7426433	20	7 10.1	19.9
470358 2007 <i>RA</i> ₃₂₆	16.3	X	68.31049	22.13114	44.08197	11.70531	0.1125294	0.17280526	3.1922586	20	1 26.7	20.6
470359 2007 <i>SG</i> ₄	16.8	X	290.01208	180.51161	183.43788	15.84591	0.2089177	0.22024982	2.7155576	20	6 27.3	20.6
470360 2007 <i>SL</i> ₁₁	16.0	X	288.38942	22.53481	19.18836	15.06940	0.3731238	0.21803381	2.7339264	20	7 25.5	19.7
470361 2007 <i>SV</i> ₂₁	16.6	X	222.53069	39.46256	20.82155	12.71334	0.1575461	0.21181542	2.7871756	20	6 28.9	21.2
470362 2007 <i>SL</i> ₂₂	16.8	X	300.38146	262.19232	55.92902	13.11822	0.3962158	0.21448429	2.7640065	20	4 16.3	20.7
470363 2007 <i>SR</i> ₂₃	15.8	X	215.18473	66.03831	255.88225	10.02822	0.0690226	0.18945554	3.0023721	20	2 21.7	20.5
470364 2007 <i>TF</i> ₁₁	17.0	X	263.07317	180.68878	204.61431	7.44442	0.3201622	0.21298145	2.7769935	20	6 7.7	21.5
470365 2007 <i>TM</i> ₅₃	17.7	X	289.36930	284.58706	49.89903	1.79658	0.1760936	0.21021255	2.8013258	20	5 22.8	21.2
470366 2007 <i>TB</i> ₅₇	16.2	X	113.56347	14.88747	31.67074	10.96860	0.1109140	0.18257512	3.0773365	20	2 29.3	20.8
470367 2007 <i>TQ</i> ₆₈	17.1	X	194.00416	238.82127	215.76471	21.01669	0.3064583	0.28640429	2.2793781	20	7 6.8	21.7
470368 2007 <i>TC</i> ₆₉	16.8	X	166.00180	191.58461	186.96329	5.60942	0.1544311	0.18985113	2.9982000	20	3 17.6	21.6
470369 2007 <i>TN</i> ₈₈	16.8	X	238.07141	236.05260	172.58778	5.11010	0.1574171	0.20904753	2.8117240	20	6 29.4	21.2
470370 2007 <i>TD</i> ₁₁₁	16.6	X	255.67231	154.41927	229.30036	9.21226	0.2450670	0.21246994	2.7814487	20	6 6.7	21.0
470371 2007 <i>TV</i> ₁₁₆	16.6	X	262.28969	174.12813	263.06012	12.52098	0.2053940	0.22111184	2.7084951	20	8 22.3	20.6
470372 2007 <i>TO</i> ₁₂₅	16.5	X	271.07206	95.92153	192.47585	10.54923	0.1972147	0.19719804	2.9232614	20	2 29.3	21.2
470373 2007 <i>TO</i> ₁₃₃	16.6	X	253.19959	5.67954	51.75745	4.75054	0.0923806	0.21391274	2.7689277	20	8 8.9	20.5
470374 2007 <i>TL</i> ₁₄₅	17.1	X	270.26855	353.55099	21.41231	8.46121	0.2356699	0.21286786	2.7779813	20	6 11.2	21.2
470375 2007 <i>TS</i> ₁₆₆	16.9	X	235.12470	86.24314	339.90411	6.87628	0.2146229	0.21362815	2.7713863	20	7 14.6	21.3
470376 2007 <i>TG</i> ₁₇₆	16.5	X	219.42465	121.16393	217.14167	15.16662	0.1178276	0.19464124	2.9488055	20	3 15.1	21.3
470377 2007 <i>TR</i> ₁₇₈	17.2	X	217.74154	44.18666	6.52572	12.24205	0.1258541	0.20996950	2.8034871	20	6 12.5	21.7
470378 2007 <i>TX</i> ₂₂₅	17.2	X	294.88301	165.20190	196.91280	0.98141	0.1697913	0.21543136	2.7558999	20	7 9.3	20.6
470379 2007 <i>TJ</i> ₂₃₈	17.2	X	231.34138	353.00180	45.68092	8.78306	0.2120970	0.20572430	2.8419231	20	6 4.2	21.8
470380 2007 <i>TU</i> ₂₅₈	16.9	X	245.81711	2.71841	9.21521	10.17581	0.1845176	0.20828152	2.8186137	20	5 16.3	21.4
470381 2007 <i>TA</i> ₂₉₀	16.9	X	292.19531	280.38119	52.51335	6.38677	0.2665774	0.21339281	2.7734236	20	5 10.5	20.7
470382 2007 <i>TO</i> ₃₀₀	16.8	X	177.49106	36.17883	21.69648	6.59827	0.0504228	0.19889797	2.9065814	20	5 11.5	21.0
470383 2007 <i>TM</i> ₃₁₃	17.4	X	281.66399	237.39884	107.75769	3.38081	0.1096251	0.20965410	2.8062981	20	6 6.4	21.2
470384 2007 <i>TF</i> ₃₁₈	16.9	X	265.94971	183.85304	175.26461	1.81786	0.1079056	0.20548812	2.8441003	20	6 4.5	20.8
470385 2007 <i>TW</i> ₃₂₂	17.3	X	270.14511	298.73064	58.74374	7.11748	0.0819796	0.20882537	2.8137178	20	6 10.9	21.0
470386 2007 <i>TD</i> ₃₂₈	16.9	X	304.01048	20.91038	253.46477	7.48321	0.2845988	0.20219197	2.8749267	20	3 5.3	21.0
470387 2007 <i>TO</i> ₃₃₂	16.9	X	333.85769	80.74739	243.68716	4.18375	0.0435469	0.21281044	2.7784810	20	8 1.4	20.4
470388 2007 <i>TP</i> ₃₃₃	17.1	X	214.24819	173.45376	224.32725	10.20915	0.1466963	0.20192101	2.8774981	20	5 24.1	21.6
470389 2007 <i>TU</i> ₃₄₆	16.5	X	166.05269	296.64774	62.43507	11.72840	0.1664955	0.18674911	3.0313101	20	3 1.9	21.6
470390 2007 <i>TX</i> ₃₇₇	15.5	X	169.00668	276.16212	40.28955	14.29235	0.0951086	0.18061279	3.0995862	20	1 7.4	20.5
470391 2007 <i>TW</i> ₃₈₀	17.2</											

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Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
470401 2007 UD ₄₁	16.8	X	154.70138	80.99518	31.51292	10.91712	0.0809242	0.20424185	2.8556582	20	6 27.1	21.3
470402 2007 UJ ₄₇	16.6	X	246.86672	288.61742	95.37020	11.21927	0.0998447	0.20429873	2.8551281	20	6 14.9	20.7
470403 2007 UV ₇₁	17.0	X	231.75866	355.83221	39.88790	2.48011	0.0858709	0.20450241	2.8532320	20	6 13.4	21.1
470404 2007 UD ₇₉	17.0	X	240.48525	128.94085	206.55649	1.37553	0.0779154	0.19532717	2.9418980	20	4 8.9	21.4
470405 2007 UT ₈₁	18.4	X	6.31679	196.15437	136.63560	2.48115	0.1642634	0.30572452	2.1823071	20	11 8.9	20.3
470406 2007 UN ₉₁	17.3	X	253.19561	303.25141	51.59508	6.34391	0.1245710	0.20212037	2.8756056	20	5 12.2	21.3
470407 2007 UZ ₉₆	17.3	X	226.10051	318.70127	42.72363	2.73108	0.0813224	0.19649178	2.9302620	20	4 25.2	21.6
470408 2007 UH ₁₀₁	18.4	X	350.70387	113.09197	225.26966	2.78077	0.1242665	0.29800924	2.2198122	20	10 8.7	20.1
470409 2007 UK ₁₀₁	16.4	X	174.69736	124.94036	235.76982	16.79109	0.1776359	0.18622424	3.0370031	20	2 28.2	21.8
470410 2007 UT ₁₂₇	16.4	X	284.54889	276.94309	58.30672	18.23987	0.3311381	0.21187752	2.7866310	20	4 29.5	20.7
470411 2007 UH ₁₃₃	17.1	X	211.01938	198.10475	205.13882	1.51251	0.0696829	0.20301284	2.8671718	20	6 1.1	21.2
470412 2007 UR ₁₃₇	16.1	X	309.04904	326.78724	231.07045	9.02745	0.0168752	0.17679673	3.1440292	20	1 20.6	20.7
470413 2007 VG ₂₄	16.5	X	110.66559	170.07560	208.21005	15.64183	0.0621010	0.17624076	3.1506378	20	1 9.6	21.3
470414 2007 VS ₃₂	17.3	X	266.15776	70.21483	268.08248	5.23045	0.1051974	0.20342834	2.8632663	20	5 7.6	21.4
470415 2007 VJ ₅₄	17.7	X	117.57619	197.87324	96.34453	4.76953	0.1227683	0.31613363	2.1341368	20	—	—
470416 2007 VA ₉₁	17.2	X	256.10808	198.88052	235.15409	22.36242	0.1743667	0.29477410	2.2360242	20	8 18.7	20.7
470417 2007 VM ₉₂	16.6	X	297.84391	103.67819	257.32350	13.98610	0.2886062	0.21529685	2.7570476	20	6 21.7	19.8
470418 2007 VK ₉₅	17.0	X	248.41413	28.14540	24.57222	9.25846	0.2848048	0.20981242	2.8048862	20	7 2.4	21.6
470419 2007 VJ ₁₅₂	16.5	X	192.41625	14.29468	35.58762	7.28952	0.0499501	0.19717709	2.9234685	20	5 18.9	20.9
470420 2007 VO ₁₆₂	16.5	X	309.04255	349.35679	261.61992	3.58754	0.0952839	0.18796490	3.0182245	20	3 13.8	20.5
470421 2007 VK ₁₆₉	17.7	X	212.66248	358.18281	75.68440	7.77534	0.0686768	0.28225389	2.3016684	20	7 17.7	20.8
470422 2007 VP ₁₇₃	17.5	X	239.04878	59.26620	0.58976	7.94849	0.2881013	0.20982006	2.8048181	20	7 2.8	22.2
470423 2007 VM ₁₈₅	17.3	X	242.20991	151.94928	239.91116	1.07146	0.0786580	0.20650833	2.8347255	20	6 21.9	21.2
470424 2007 VN ₂₁₂	16.1	X	86.05955	268.89426	219.69054	11.40933	0.0839136	0.18929052	3.0041168	20	4 28.0	20.2
470425 2007 VX ₂₄₀	16.6	X	295.62554	201.65064	159.62277	8.63800	0.2354434	0.21702264	2.7424119	20	6 28.3	20.1
470426 2007 VN ₂₄₂	16.5	X	323.30415	6.58024	358.41813	14.86065	0.2097659	0.22177183	2.7031188	20	9 6.7	19.0
470427 2007 VP ₂₄₂	16.4	X	263.07235	139.48094	256.79870	17.79148	0.2162637	0.21303097	2.7765631	20	6 26.9	20.6
470428 2007 VW ₂₅₈	16.6	X	144.75337	176.96073	184.27851	9.33746	0.0643120	0.19815419	2.9138501	20	6 1.5	21.0
470429 2007 VU ₂₇₂	16.4	X	30.53818	247.83328	231.01082	10.64759	0.0280608	0.17721564	3.1390726	20	1 25.4	20.9
470430 2007 VH ₂₉₅	16.6	X	151.51473	215.27240	234.26019	9.57778	0.0973088	0.19731072	2.9221484	20	5 26.3	21.0
470431 2007 VY ₃₂₀	16.3	X	207.90966	335.26773	87.82505	16.16848	0.1178397	0.20343276	2.8632248	20	6 19.8	20.8
470432 2007 VC ₃₂₂	15.8	X	81.88324	325.39336	92.08873	13.25940	0.0834615	0.17527559	3.1621934	20	1 28.5	20.2
470433 2007 VY ₃₂₄	15.8	X	128.76998	299.02188	80.71545	17.55257	0.2317002	0.17809167	3.1287700	20	2 29.5	21.1
470434 2007 VT ₃₂₉	16.5	X	196.81277	27.16024	331.26201	6.37958	0.3061127	0.19289135	2.9666129	20	3 18.9	22.0
470435 2007 VV ₃₃₂	15.9	X	195.50967	264.50146	109.91353	20.09918	0.1100857	0.18221535	3.0813858	20	4 18.6	21.1
470436 2007 VU ₃₃₃	16.0	X	180.67240	119.40441	272.85566	9.13513	0.0942883	0.18301798	3.0723702	20	4 11.9	20.9
470437 2007 WG ₁₃	16.7	X	255.69155	252.32674	86.25737	12.23452	0.1074030	0.19872507	2.9082671	20	5 1.3	21.1
470438 2007 WA ₂₂	16.6	X	309.71110	351.08457	2.27232	6.81403	0.0733863	0.21419755	2.7664727	20	8 6.2	20.1
470439 2007 WF ₂₉	16.3	X	96.85971	257.02944	273.42943	9.50820	0.0532599	0.20037922	2.8922395	20	6 30.8	20.2
470440 2007 WY ₄₅	16.2	X	172.03964	38.07219	34.61954	11.36806	0.0907292	0.19758685	2.9194252	20	5 24.3	20.7
470441 2007 XE ₂₉	17.2	X	210.52954	345.71108	45.71560	1.24489	0.0868200	0.19994209	2.8964535	20	5 15.2	21.5
470442 2007 XJ ₄₄	16.8	X	221.83041	257.38821	109.22239	3.11750	0.1046485	0.19305555	2.9649305	20	4 26.7	21.3
470443 2007 XV ₅₀	4.4	X	107.65924	271.09234	53.61457	22.90481	0.0702333	0.00318386	45.7615272	20	12 9.5	21.1
470444 2007 YD ₁₁	18.0	X	262.83223	13.27532	76.28032	4.99019	0.2042950	0.28969515	2.2620832	20	9 30.0	20.3
470445 2007 YF ₁₆	16.3	X	180.30256	132.19290	277.82033	8.35172	0.0827010	0.19119322	2.9841528	20	5 4.5	20.9
470446 2007 YA ₂₁	18.0	X	309.90151	10.89020	52.02114	7.47690	0.0641760	0.29856986	2.2170326	20	11 29.5	20.0
470447 2007 YP ₂₁	17.1	X	231.25436	287.99669	106.24127	4.87012	0.2025494	0.19868698	2.9086387	20	6 1.0	21.7
470448 2007 YA ₂₅	15.8	X	175.60827	136.55285	286.07303	13.00289	0.2139180	0.19638137	2.9313603	20	5 17.0	21.0
470449 2007 YY ₃₂	16.7	X	147.99430	21.01988	44.99002	4.99410	0.0954089	0.18812158	3.0165485	20	4 23.7	21.2
470450 2007 YM ₃₆	15.9	X	207.55000	284.41212	99.61911	12.88022	0.0574173	0.18742001	3.0240717	20	5 9.2	20.6
470451 2007 YQ ₃₆	16.4	X	227.92325	60.97225	303.42763	8.64740	0.1009472	0.18885592	3.0087237	20	4 25.8	21.2
470452 2007 YP ₃₈	16.3	X	42.39482	215.08480	303.48593	9.60902	0.0609959	0.17850495	3.1239390	20	3 30.2	20.7
470453 2007 YA ₃₉	16.0	X	258.22496	192.00809	90.42539	11.26586	0.0471941	0.17468618	3.1693024	20	3 5.4	20.7
470454 2007 YX ₄₇	16.4	X	223.19168	344.44010	60.13809	8.17477	0.1176662	0.20098001	2.8864728	20	6 11.8	20.7
470455 2007 YE ₅₈	16.2	X	21.89096	237.32738	315.00621	7.02665	0.0417093	0.17961654	3.1110369	20	4 13.9	20.5
470456 2007 YA ₆₃	16.8	X	170.52352	320.27068	122.22458	10.19176	0.1188799	0.18849222	3.0125928	20	6 7.9	21.7
470457 2007 YH ₆₇	16.5	X	141.27949	4.24798	74.83707	11.55808	0.0817950	0.18476762	3.0529438	20	5 4.2	21.1
470458 2007 YV ₆₈	16.7	X	7.89306	210.98138	328.19277	7.84997	0.1278341	0.17431054	3.1738541	20	3 9.7	20.6
470459 2007 YU ₇₄	16.1	X	146.75525	117.35605	300.14795	9.33721	0.0536006	0.17629409	3.1500024	20	4 3.7	20.9
470460 2008 AJ ₃	15.5	X	358.02101	269.05615	274.63304	21.21001	0.1492599	0.17347644	3.1840195	20	2 17.4	19.8
470461 2008 AN ₁₅	15.9	X	335.61570	292.13727	298.17027	12.86749	0.0569199	0.17542868	3.1603535	20	3 24.7	20.4
470462 2008 AT ₂₆	17.6	X	133.40507	250.51571	310.19977	5.10690	0.2177061	0.27895070	2.3198029	20	10 4.2	21.6
470463 2008 AZ ₂₆	15.7	X	158.24450	81.97183	320.12507	25.34386	0.1053587	0.17571492	3.1569203	20	3 22.7	21.0
470464 2008 AZ ₃₅	15.6	X	205.31010	56.89842	303.96280	25.81493	0.1608793	0.18130168	3.0917296	20	3 16.7	21.2
470465 2008 AV ₄₈	16.4	X	169.85902	345.20762	106.59038	12.54982	0.1089005	0.19278811	2.9676719	20	6 17.9	21.1
470466 2008 AL ₅₆	16.4	X	217.29983	70.84418	288.77705	6.25731	0.0261002	0.18152459	3.0891980	20	4 14.4	20.9
470467 2008 AE ₆₇	17.5	X	43.98734	2.57344	299.54639	5.40466	0.1325240	0.28684149	2.2770614	20	11 8.1	20.3
470468 2008 AN ₆₈	16.0	X	43.59389	240.88177	325.39777	15.43372	0.0088383	0.18446006	3.0563364	20	5 29.6	20.6
470469 2008 AJ ₇₂	16.8	X	135.72106	97.24758	358.86866	3.58031	0.1567974	0.18597259	3.0397423	20	5 21.6	21.5
470470 2008 AC ₇₃	16.2	X	155.39243	107.24627	305.64211	8.87566	0.0905292	0.17974163	3.1095934	20	4 10.5	21.2
470471 2008 AP ₇₉	15.2	X	103.37095	228.93220	139.24463	12.38605	0.0318565	0.15471222	3.4365261	20	—	—
470472 2008 AY ₈₈	18.0	X	353.90439	105.42970	294.52916	6.89120	0.0453959	0.30158977	2.2022079	20	—	—
470473 2008 AB ₉₇	16.2	X	160.24968	72.40205	341.15557	9.93729						

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>
470481 2008 <i>BN</i> ₄	16.2	X	202.91661	41.76744	329.24369	9.96862	0.0563558	0.18070458	3.0985365	20	4 9.1	21.0
470482 2008 <i>BZ</i> ₇	16.2	X	117.37788	7.67914	112.83410	12.64099	0.1438371	0.18251276	3.0780374	20	6 4.1	21.0
470483 2008 <i>BE</i> ₁₃	18.2	X	185.86352	133.21120	25.07889	6.52382	0.1341821	0.28628507	2.2800109	20	10 5.2	21.5
470484 2008 <i>BM</i> ₁₉	16.3	X	208.75406	87.72525	304.41706	10.78243	0.0903444	0.19008461	2.9957443	20	5 11.1	21.0
470485 2008 <i>BA</i> ₂₁	18.1	X	167.08974	210.71598	321.52178	5.30968	0.0959802	0.28175885	2.3043636	20	10 1.7	21.4
470486 2008 <i>BV</i> ₂₆	18.2	X	133.66148	231.26791	304.96276	6.93757	0.1382060	0.27791660	2.3255538	20	8 31.9	21.7
470487 2008 <i>BG</i> ₂₇	17.6	X	149.29602	247.77512	303.61266	6.82186	0.0401383	0.28633888	2.2797252	20	10 7.5	20.8
470488 2008 <i>BC</i> ₄₄	16.4	X	162.68817	17.16489	62.64355	7.18070	0.2247475	0.18934105	3.0035823	20	5 29.4	21.6
470489 2008 <i>BD</i> ₄₅	16.0	X	72.01221	145.78392	356.65263	13.33235	0.1497412	0.17701070	3.1414950	20	5 2.3	20.4
470490 2008 <i>BE</i> ₅₀	16.4	X	99.02951	11.36251	117.62340	5.63232	0.1213062	0.18226133	3.0808675	20	5 21.8	20.8
470491 2008 <i>BG</i> ₅₀	16.4	X	8.29308	107.15119	101.21839	2.61910	0.0937512	0.17477375	3.1682437	20	4 20.8	20.4
470492 2008 <i>BZ</i> ₅₂	16.6	X	180.37002	109.60305	326.48736	13.10070	0.2496630	0.19265557	2.9690329	20	6 6.9	22.1
470493 2008 <i>BJ</i> ₅₃	17.4	X	97.35322	118.03648	108.22518	7.83361	0.1825591	0.26849778	2.3796272	20	10 8.2	21.2
470494 2008 <i>CC</i> ₂₆	17.4	X	203.93918	100.03485	311.83884	7.05816	0.1486614	0.19472434	2.9479666	20	5 30.2	22.3
470495 2008 <i>CF</i> ₃₃	16.0	X	257.24991	327.97290	336.16460	13.29482	0.0945455	0.17143412	3.2092573	20	3 21.4	20.8
470496 2008 <i>CS</i> ₃₄	16.7	X	192.13562	256.43160	144.82058	10.35362	0.0097372	0.17939875	3.1135543	20	5 13.3	21.3
470497 2008 <i>CS</i> ₃₇	17.8	X	31.09500	3.98534	294.41591	5.65620	0.0599357	0.27939710	2.3173313	20	9 30.8	20.5
470498 2008 <i>CS</i> ₅₅	18.3	X	169.93699	152.14824	25.24725	3.66552	0.1006826	0.28323705	2.2963390	20	10 14.3	21.5
470499 2008 <i>CV</i> ₅₈	16.1	X	79.46762	338.29573	151.77069	10.12242	0.0336853	0.17520912	3.1629931	20	4 18.3	20.6
470500 2008 <i>CF</i> ₆₁	16.6	X	128.15413	86.16321	358.99108	9.46071	0.0832033	0.17466986	3.1694998	20	4 21.7	21.3
470501 2008 <i>CS</i> ₆₄	16.3	X	198.29695	225.74495	153.09698	16.00522	0.1559876	0.18053546	3.1004712	20	4 20.7	21.6
470502 2008 <i>CV</i> ₆₈	15.6	X	20.02802	215.88893	329.50200	26.35910	0.0956387	0.17466610	3.1695453	20	3 24.3	20.0
470503 2008 <i>CX</i> ₇₁	15.5	X	103.84014	313.14394	150.50439	28.19831	0.1821871	0.17833256	3.1259519	20	5 9.6	20.7
470504 2008 <i>CZ</i> ₈₉	16.5	X	193.51150	272.09904	105.75807	11.08196	0.1106500	0.18505991	3.0497283	20	4 16.3	21.5
470505 2008 <i>CL</i> ₉₀	15.7	X	40.66488	28.15788	133.08033	28.51122	0.1357381	0.17475692	3.1684471	20	4 23.9	20.3
470506 2008 <i>CS</i> ₉₄	17.8	X	196.54564	110.81245	34.11224	4.34516	0.1902036	0.28296219	2.2978258	20	9 24.2	21.2
470507 2008 <i>CV</i> ₉₄	18.1	X	83.42103	197.82415	27.96700	5.34685	0.1807647	0.27032805	2.3688741	20	9 20.9	21.4
470508 2008 <i>CE</i> ₉₉	15.4	X	11.40821	252.26051	328.40148	22.42642	0.0811776	0.17704533	3.1410854	20	4 28.8	20.0
470509 2008 <i>CL</i> ₁₀₁	18.0	X	83.14480	315.75199	295.32402	3.78589	0.1491417	0.27767684	3.2368923	20	10 17.8	21.5
470510 2008 <i>CJ</i> ₁₁₆	19.1	X	203.03536	44.63044	335.19370	13.31668	0.3392532	0.42646649	1.7480188	20	4 4.1	22.2
470511 2008 <i>CJ</i> ₁₂₅	17.8	X	216.81104	317.03279	106.86384	7.00951	0.1130269	0.27862208	2.3216265	20	7 3.2	20.9
470512 2008 <i>CS</i> ₁₂₈	18.1	X	114.50867	288.21226	277.19498	2.13498	0.0832402	0.27719831	2.3295695	20	9 17.0	21.4
470513 2008 <i>CV</i> ₁₂₉	16.2	X	149.76081	234.38267	169.79362	5.50861	0.0757830	0.17190713	3.2033677	20	3 29.7	21.0
470514 2008 <i>CK</i> ₁₃₂	16.6	X	172.20098	83.70631	325.96097	8.49913	0.0309603	0.17658357	3.1465588	20	4 22.8	21.3
470515 2008 <i>CK</i> ₁₃₄	16.6	X	113.12360	317.02515	152.32687	11.90465	0.0667714	0.17874754	3.1211118	20	5 8.9	21.3
470516 2008 <i>CQ</i> ₁₃₈	18.1	X	213.54368	6.37548	136.88544	4.83920	0.0927447	0.28592986	2.2818988	20	10 23.3	21.0
470517 2008 <i>CE</i> ₁₄₆	18.2	X	81.80932	276.48939	311.11186	0.98325	0.1113326	0.27259065	2.3557475	20	9 11.2	21.8
470518 2008 <i>CR</i> ₁₄₈	16.0	X	236.94067	25.92657	300.38421	8.12711	0.0755647	0.17459782	3.1703716	20	3 22.4	20.8
470519 2008 <i>CU</i> ₁₅₁	16.1	X	143.84401	132.12631	310.03888	8.83936	0.0834806	0.17755541	3.1350667	20	5 4.8	21.0
470520 2008 <i>CM</i> ₁₅₄	16.6	X	169.02527	336.73755	94.71543	6.42425	0.1247733	0.18281829	3.0746070	20	5 23.6	21.4
470521 2008 <i>CM</i> ₁₆₁	17.9	X	88.32650	251.81259	322.76330	4.85701	0.1896789	0.26824339	2.3811314	20	9 9.1	21.3
470522 2008 <i>CM</i> ₁₈₇	15.8	X	114.87439	189.00011	267.55879	9.81447	0.1090229	0.17776099	3.1326490	20	4 23.7	20.5
470523 2008 <i>CS</i> ₁₉₀	6.0	X	37.33015	150.73016	326.70880	15.96195	0.1561436	0.00360136	42.1526788	20	3 4.5	21.7
470524 2008 <i>CV</i> ₁₉₃	18.2	X	94.75433	96.80997	131.05582	6.23928	0.2218645	0.27053102	2.3676891	20	10 9.8	22.0
470525 2008 <i>CQ</i> ₁₉₈	16.3	X	131.70201	91.37783	341.37734	16.50225	0.1029561	0.17343829	3.1844864	20	4 8.4	21.4
470526 2008 <i>CN</i> ₂₀₅	16.6	X	22.32540	22.18548	169.63046	14.05610	0.1033617	0.22098756	2.7095105	20	—	—
470527 2008 <i>CT</i> ₂₁₀	16.6	X	205.24888	248.35843	149.74794	16.31974	0.2063316	0.18304214	3.0720998	20	5 17.9	22.1
470528 2008 <i>CQ</i> ₂₁₂	18.2	X	66.59322	117.27263	158.99150	7.99576	0.1128517	0.28265832	2.2994724	20	11 2.6	21.3
470529 2008 <i>CQ</i> ₂₁₅	17.9	X	45.57290	265.84638	309.14778	0.48074	0.1427828	0.25890264	2.4380638	20	7 6.8	20.5
470530 2008 <i>DC</i> ₇	15.6	X	319.46300	272.51988	327.98772	15.46544	0.0937483	0.17185591	3.2040042	20	3 13.5	20.0
470531 2008 <i>DE</i> ₇	16.4	X	58.19101	197.58114	318.08531	9.22087	0.1057939	0.17585328	3.1552642	20	4 24.3	20.7
470532 2008 <i>DU</i> ₂₀	15.8	X	141.77442	178.11881	297.33240	17.83569	0.0806431	0.18527199	3.0474005	20	6 17.3	20.6
470533 2008 <i>DF</i> ₂₃	18.8	X	105.66331	117.40640	327.90790	20.15402	0.1596806	0.41427468	1.7821481	20	3 10.4	20.3
470534 2008 <i>DV</i> ₂₇	16.3	X	12.90783	42.15479	143.27360	29.59949	0.0428716	0.17319114	3.1781512	20	4 3.3	21.0
470535 2008 <i>DY</i> ₃₀	15.7	X	121.01534	153.97430	318.38382	15.75154	0.0929092	0.18297076	3.0728988	20	5 16.9	20.6
470536 2008 <i>DM</i> ₃₄	17.7	X	160.26206	196.25930	352.85951	25.27609	0.1456537	0.27978937	2.3151648	20	10 7.2	21.6
470537 2008 <i>DO</i> ₃₉	17.5	X	43.66976	101.58136	180.21525	9.80346	0.2823069	0.26712276	2.3877863	20	11 2.4	20.8
470538 2008 <i>DT</i> ₄₈	15.7	X	117.01017	17.69030	98.21053	19.69677	0.1362503	0.18012141	3.1052209	20	5 29.9	20.6
470539 2008 <i>DP</i> ₅₄	15.4	X	15.98764	228.13244	357.89988	26.85546	0.1216213	0.17772574	3.1330632	20	5 14.0	19.8
470540 2008 <i>DH</i> ₅₅	15.7	X	54.98648	189.07181	341.99284	14.81078	0.0218859	0.17396230	3.1780883	20	4 26.7	20.4
470541 2008 <i>EP</i> ₁₀	17.5	X	309.04483	297.91949	126.07976	6.86047	0.1089039	0.28970433	2.2620354	20	11 29.7	19.6
470542 2008 <i>EZ</i> ₁₆	18.0	X	69.74321	93.57331	173.87082	1.37170	0.1724167	0.27156484	2.3616762	20	10 28.6	21.1
470543 2008 <i>EG</i> ₄₀	17.4	X	77.04617	339.62653	305.65913	4.66856	0.1149538	0.27966827	2.3158331	20	11 22.5	20.7
470544 2008 <i>EU</i> ₄₁	16.3	X	142.74327	87.53161	12.55327	23.49999	0.1599286	0.17743490	3.1364859	20	5 26.9	21.7
470545 2008 <i>EW</i> ₇₅	16.2	X	137.86773	268.75048	174.88285	25.29834	0.2313204	0.17543487	3.1602791	20	5 17.9	21.9
470546 2008 <i>EY</i> ₇₇	17.9	X	120.03057	179.25715	19.60937	5.12592	0.1726215	0.27156206	2.3616923	20	9 21.5	21.5
470547 2008 <i>EG</i> ₈₄	18.3	X	215.05170	61.43033	83.67381	4.89759	0.1189936	0.28518332	2.2858793	20	10 23.3	21.2
470548 2008 <i>EC</i> ₈₇	16.7	X	215.06676	339.31253	134.65247	24.51448	0.1953534	0.28184611	2.3038879	20	9 2.6	20.2
470549 2008 <i>EW</i> ₁₀₈	18.3	X	122.56399	238.55326	328.19821	2.09345	0.1713195	0.27790000	2.3256464	20	10 2.7	21.9
470550 2008 <i>EV</i> ₁₀₉	15.9	X	211.40720	10.33637	334.05007	21.81679	0.0952119	0.17015201	3.2253586	20	3 14.3	21.0
470551 2008 <i>EZ</i> ₁₃₉	18.0	X	126.57788	42.47380								

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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>
470561 2008 FT ₁₀₅	15.5	X	124.07863	92.27590	25.96975	25.54851	0.2263257	0.17735800	3.1373926	20	6 7.0	21.0
470562 2008 FH ₁₀₆	17.9	X	183.79299	77.17272	82.58130	4.58482	0.1521342	0.27805135	2.3248024	20	10 4.1	21.4
470563 2008 FR ₁₃₀	17.7	X	8.45693	215.26598	80.78155	8.37853	0.2354791	0.25825459	2.4421407	20	9 21.2	20.0
470564 2008 GC ₈	18.3	X	120.72255	141.80066	68.39619	2.29676	0.1334320	0.27122883	2.3636263	20	10 4.8	21.8
470565 2008 GX ₁₆	17.8	X	74.78966	108.43522	115.74376	5.37048	0.1477028	0.26205726	2.4184582	20	9 3.8	21.0
470566 2008 GZ ₆₁	17.6	X	39.83883	245.26880	50.81620	15.06276	0.2379410	0.26744882	2.3858452	20	11 9.0	20.5
470567 2008 GQ ₆₇	18.3	X	113.33075	146.54492	86.81030	2.70060	0.1333953	0.27296146	2.3536136	20	10 27.3	21.9
470568 2008 GC ₉₆	16.4	X	81.04451	95.10114	46.45339	17.02084	0.0636201	0.16795899	3.2533732	20	5 6.1	20.9
470569 2008 GF ₁₀₃	18.1	X	143.48565	92.19275	97.41070	4.98059	0.1712789	0.27649393	2.3335242	20	10 3.5	21.8
470570 2008 GB ₁₁₉	17.6	X	87.93223	21.47203	201.91410	6.51471	0.0523803	0.26442916	2.4039743	20	9 2.4	20.8
470571 2008 GM ₁₂₈	17.3	X	32.36311	147.57317	113.36876	14.93338	0.1679406	0.25954858	2.4340170	20	8 31.4	20.2
470572 2008 GR ₁₂₈	18.1	X	246.26531	32.21640	167.17565	24.96416	0.0866781	0.37930365	1.8900706	20	—	—
470573 2008 GU ₁₃₀	17.2	X	11.81810	238.34728	90.97074	7.31183	0.1312848	0.26796230	2.3827963	20	10 30.8	19.8
470574 2008 GD ₁₄₆	17.5	X	63.11741	74.64763	115.57027	10.79208	0.1033258	0.25174539	2.4840578	20	6 21.9	20.5
470575 2008 GH ₁₄₆	16.9	X	99.06853	59.72435	149.47360	7.28770	0.0941929	0.26584009	2.3954608	20	9 5.4	20.2
470576 2008 HM ₅	17.8	X	39.99674	260.48147	19.90014	5.02094	0.1961146	0.26548699	2.3975843	20	10 11.6	20.6
470577 2008 HW ₁₇	17.5	X	23.93941	189.55981	92.42500	9.76487	0.1214360	0.25949016	2.4343823	20	9 26.5	20.2
470578 2008 HD ₂₈	18.6	X	87.12911	299.95575	275.16521	1.43040	0.1475808	0.26521809	2.3992046	20	9 3.9	21.9
470579 2008 HF ₃₃	18.5	X	59.11657	183.40207	74.94629	3.55343	0.1387218	0.26368575	2.4084905	20	9 29.6	21.5
470580 2008 HZ ₃₄	16.9	X	35.48297	199.52444	88.65606	18.05470	0.2239564	0.26070049	2.4268419	20	10 28.9	20.3
470581 2008 HC ₅₅	18.6	X	38.21755	80.31758	182.25748	1.89095	0.1913501	0.25850642	2.4405544	20	9 11.5	21.3
470582 2008 JP ₃	17.3	X	214.25266	359.39843	123.51051	7.75111	0.0612042	0.27310904	2.3527656	20	9 29.8	20.4
470583 2008 JJ ₁₁	17.9	X	5.05042	163.82500	154.45361	7.11998	0.1884393	0.26164026	2.4210272	20	10 8.8	20.1
470584 2008 JG ₁₃	15.8	X	189.74325	226.73515	181.48000	27.13623	0.1844824	0.17853502	3.1235882	20	5 15.9	21.4
470585 2008 JQ ₁₄	19.0	X	39.64013	22.26216	203.95444	14.51538	0.5184352	0.25521775	2.4614752	20	9 12.5	22.5
470586 2008 JP ₂₃	17.7	X	78.56651	18.44163	210.85506	6.87136	0.0682174	0.26187633	2.4195720	20	8 30.6	20.9
470587 2008 JJ ₂₅	18.2	X	62.75866	344.86210	251.93309	1.37945	0.1903071	0.26002812	2.4310236	20	9 9.2	21.3
470588 2008 JH ₃₃	17.3	X	76.06359	122.37476	86.64473	11.96397	0.1652307	0.25918796	2.4362742	20	8 20.1	20.8
470589 2008 JO ₃₆	17.7	X	204.49398	19.14182	119.20953	13.12883	0.0991079	0.27244417	2.3565918	20	10 6.6	21.2
470590 2008 KC ₈	18.0	X	65.37980	54.65178	167.53726	2.70017	0.1529252	0.25808622	2.4432028	20	8 17.8	21.2
470591 2008 KW ₂₆	17.7	X	75.97454	117.75723	128.98561	7.78968	0.0504332	0.26381150	2.4077251	20	9 23.9	20.8
470592 2008 KN ₃₇	17.6	X	42.53146	219.98760	45.17581	6.47337	0.1267032	0.26118144	2.4238618	20	9 15.1	20.5
470593 2008 JL ₁₇	6.2	X	2.67495	164.89198	72.47797	14.08752	0.6724033	0.00113212	91.1748373	20	6 5.9	21.0
470594 2008 MN ₁	20.2	X	98.82932	244.05554	106.11689	37.22663	0.2476123	0.61028759	1.3765110	20	—	—
470595 2008 NM ₃	17.5	X	0.13633	96.17548	137.14620	8.36360	0.1472575	0.23840356	2.5758915	20	5 9.3	20.2
470596 2008 NW ₄	5.4	X	1.05476	41.41394	285.00620	23.09841	0.1969470	0.00320882	45.5239038	20	8 13.2	21.1
470597 2008 OW ₂	17.8	X	151.93893	63.81143	289.24381	20.24782	0.1103856	0.37698754	1.8978041	20	1 3.2	19.5
470598 2008 OR ₁₃	17.2	X	11.43115	44.32214	275.34728	12.88064	0.1171759	0.25355830	2.4722032	20	9 29.5	20.3
470599 2008 OG ₁₉	4.7	X	4.22779	140.75946	164.12338	13.12796	0.4294542	0.00177218	67.6287006	20	8 8.0	20.6
470600 2008 PA ₇	17.2	X	292.54648	161.69650	159.32817	5.74633	0.2070708	0.23462958	2.6034398	20	5 5.6	20.6
470601 2008 QB ₁₅	17.3	X	328.68832	186.82361	175.93156	18.54357	0.1631452	0.24560274	2.5253054	20	9 20.5	19.3
470602 2008 QM ₁₆	17.4	X	326.94562	308.01315	2.78320	9.09877	0.2239023	0.23950815	2.5679655	20	6 15.7	19.9
470603 2008 QF ₂₃	16.6	X	241.61906	184.60873	188.81334	16.98149	0.1733526	0.22848302	2.6499241	20	5 19.7	20.9
470604 2008 QB ₃₈	17.1	X	249.47269	60.51065	358.44043	14.61351	0.0899188	0.23843787	2.5756444	20	8 12.6	20.7
470605 2008 QJ ₄₃	17.9	X	335.75748	340.02184	347.68420	2.82512	0.2537109	0.24407929	2.5358025	20	8 7.6	19.5
470606 2008 QU ₄₅	16.9	X	296.16766	91.91538	176.47740	10.82552	0.2559298	0.22529685	2.6748492	20	2 21.8	20.7
470607 2008 RG ₈	17.5	X	239.34043	152.17408	271.77363	2.88532	0.1700671	0.23552089	2.5968673	20	7 20.4	21.1
470608 2008 RB ₂₈	18.0	X	116.45450	17.56112	334.67566	19.85730	0.0566750	0.36672329	1.9330528	20	—	—
470609 2008 RO ₄₇	17.7	X	329.11232	270.40777	81.76937	0.87761	0.1818376	0.24710991	2.5150267	20	9 4.6	19.7
470610 2008 RQ ₅₂	18.2	X	298.11103	175.65897	207.74702	5.05225	0.2970734	0.24241918	2.5473663	20	7 24.3	20.8
470611 2008 RL ₆₄	17.0	X	323.90155	159.80163	164.90561	16.34462	0.1959543	0.23896682	2.5718422	20	7 5.3	19.8
470612 2008 RQ ₉₉	18.0	X	318.78753	329.06347	4.15731	3.05440	0.2133595	0.23856553	2.5747254	20	7 6.2	20.4
470613 2008 RH ₁₀₀	17.6	X	309.20217	155.21588	179.79326	4.74301	0.1689195	0.23562834	2.5960778	20	6 25.7	20.0
470614 2008 RW ₁₀₇	17.4	X	306.56128	87.93273	277.31737	15.34286	0.2201332	0.24190072	2.5510048	20	7 25.4	20.5
470615 2008 RW ₁₀₉	17.5	X	260.21622	202.72028	183.71392	14.57412	0.0648114	0.23556084	2.5965737	20	7 9.1	21.3
470616 2008 RT ₁₁₅	17.6	X	344.50944	297.83117	356.04786	14.21556	0.1186729	0.23735448	2.5834760	20	7 11.2	20.6
470617 2008 RJ ₁₁₈	16.9	X	59.65808	208.29919	9.82914	8.94822	0.0650858	0.22957415	2.6415209	20	7 21.4	20.4
470618 2008 RJ ₁₂₀	16.9	X	250.10451	87.37640	314.08152	14.10986	0.1996552	0.23108080	2.6300266	20	7 1.1	20.9
470619 2008 RE ₁₂₈	17.6	X	254.87083	234.14278	177.58885	8.76280	0.1200125	0.23903236	2.5713720	20	7 28.5	21.3
470620 2008 RW ₁₂₉	18.1	X	314.22078	320.43509	40.14563	3.18869	0.2147283	0.23775536	2.5805712	20	8 9.8	20.3
470621 2008 RK ₁₃₀	16.9	X	341.28616	110.66516	214.62724	12.10990	0.1874684	0.23488024	2.6015872	20	8 12.1	19.5
470622 2008 RC ₁₃₂	16.9	X	209.88616	225.03661	159.89480	14.33147	0.2198863	0.22140477	2.7061056	20	5 4.2	21.7
470623 2008 RT ₁₄₅	17.1	X	138.69418	112.57404	7.88248	4.64610	0.0468699	0.22405309	2.6847391	20	6 16.9	20.9
470624 2008 SF ₂₇	18.9	X	314.62884	28.45829	343.60773	2.46775	0.2625951	0.24319091	2.5419743	20	8 22.4	20.6
470625 2008 SL ₂₉	17.7	X	307.80697	104.78971	209.73060	4.36758	0.3062480	0.23426879	2.6061121	20	4 30.6	20.9
470626 2008 SP ₃₀	17.1	X	301.07178	18.09355	307.63091	7.08245	0.1031011	0.23092276	2.6312264	20	6 8.5	20.5
470627 2008 SD ₃₂	17.4	X	227.32384	175.94908	263.50916	5.00188	0.2350955	0.23256136	2.6188524	20	7 20.8	21.5
470628 2008 SH ₃₂	17.4	X	245.63450	143.30449	278.98982	4.47007	0.2139030	0.23422830	2.6064124	20	7 19.7	21.4
470629 2008 SH ₃₉	17.3	X	323.17466	138.80447	179.21214	9.02189	0.2763619	0.23718308	2.5847205	20	6 11.1	19.7
470630 2008 SM ₄₂	18.2	X	311.29035	351.75316	359.56425	2.29055	0.2515703	0.23844659	2.5755815	20	7 11.9	20.4
470631 2008 SZ ₄₆	18.3	X	334.69207	310.23226	26.67472	5.48985	0.2652371	0.24173277	2.5521862	20	8 22.7	19.8
470632 2008 SS ₄₇	17.2	X	218.76617	94.64070	355.57535	12.57110	0.2325234	0.23421975	2.6064759	20	7 31.9	21.6
470633 2008 SH ₅₅	17.9	X	316.07551	346.16926	359.27016	2.22486	0.1903802	0.23843863	2.5756389	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>
470641 2008 <i>SP</i> ₁₀₂	17.7	X	330.64243	138.62950	204.02763	11.59123	0.2495396	0.23978630	2.5659792	20	8 12.1	19.8
470642 2008 <i>SK</i> ₁₀₃	16.9	X	292.95953	354.62733	33.06393	7.00294	0.2835976	0.23738248	2.5832728	20	7 27.6	19.8
470643 2008 <i>SC</i> ₁₀₉	17.6	X	249.77692	113.33364	313.18316	2.99306	0.2024375	0.23913567	2.5706314	20	8 1.3	21.1
470644 2008 <i>SJ</i> ₁₁₀	17.4	X	280.92829	199.05464	182.68555	13.06150	0.1293330	0.23584853	2.5944617	20	7 21.1	20.9
470645 2008 <i>SZ</i> ₁₁₄	17.3	X	320.21337	284.34595	65.97892	4.94532	0.0961337	0.23888130	2.5724560	20	8 20.2	20.1
470646 2008 <i>SB</i> ₁₁₇	18.3	X	316.31974	113.43621	223.75105	2.18161	0.1895023	0.23617917	2.5920397	20	7 9.6	21.0
470647 2008 <i>SY</i> ₁₁₇	17.5	X	233.55938	74.01328	351.04279	0.61067	0.1970610	0.23013778	2.6372063	20	7 12.9	21.4
470648 2008 <i>SC</i> ₁₁₈	17.4	X	286.82506	189.28828	197.11960	4.63002	0.2512341	0.23672442	2.5880581	20	7 17.6	20.6
470649 2008 <i>SS</i> ₁₁₈	17.6	X	316.06575	358.10204	327.78058	0.32408	0.0944517	0.23146729	2.6270982	20	7 4.9	20.6
470650 2008 <i>SM</i> ₁₂₄	17.6	X	241.38953	213.42850	204.21816	13.22614	0.2318592	0.23039000	2.6352812	20	7 5.4	22.0
470651 2008 <i>SD</i> ₁₂₈	17.3	X	261.76346	113.31725	275.59788	2.77925	0.1045824	0.23050044	2.6344394	20	7 9.9	20.9
470652 2008 <i>SU</i> ₁₂₉	17.5	X	311.29847	302.68902	4.10208	6.11909	0.1711154	0.22717016	2.6601239	20	5 16.7	20.7
470653 2008 <i>SM</i> ₁₃₀	17.3	X	227.58105	140.88205	252.93309	2.77553	0.0853810	0.22370199	2.6875475	20	6 6.5	21.2
470654 2008 <i>SD</i> ₁₃₁	17.6	X	298.65840	118.11794	230.57177	4.29394	0.0809556	0.23114967	2.6295042	20	7 10.4	20.8
470655 2008 <i>SQ</i> ₁₃₉	17.1	X	251.58241	189.80114	143.41718	7.95273	0.1633408	0.22649336	2.6654205	20	4 10.9	21.3
470656 2008 <i>SV</i> ₁₄₀	17.0	X	298.18717	41.44157	310.12893	9.36269	0.1375338	0.23563827	2.5960048	20	7 7.4	20.1
470657 2008 <i>SC</i> ₁₅₀	17.5	X	311.55351	334.16959	29.92606	1.95603	0.2850179	0.23999053	2.5645233	20	7 27.6	19.6
470658 2008 <i>SJ</i> ₁₆₀	16.8	X	212.74706	180.77168	197.29603	14.28388	0.1944841	0.21881708	2.7273984	20	4 26.6	21.3
470659 2008 <i>SM</i> ₁₆₅	17.4	X	316.98543	122.75291	182.45887	12.69018	0.2759803	0.23485561	2.6017691	20	5 10.7	20.3
470660 2008 <i>SR</i> ₁₆₇	16.9	X	258.12967	352.23483	42.67705	8.48097	0.1780056	0.23086926	2.6316329	20	7 3.2	20.7
470661 2008 <i>SD</i> ₁₇₃	17.6	X	255.24763	195.75358	201.54706	4.52880	0.1465903	0.23068164	2.6330597	20	7 6.1	21.3
470662 2008 <i>SD</i> ₁₇₅	17.4	X	283.15211	76.65120	237.19796	5.46321	0.1738609	0.22640186	2.6661386	20	4 15.9	21.1
470663 2008 <i>SY</i> ₁₇₅	17.3	X	324.51076	108.03645	270.17757	3.37127	0.1593638	0.24534625	2.5270651	20	10 3.2	19.6
470664 2008 <i>SW</i> ₁₈₁	17.5	X	219.98678	9.63147	47.44228	7.34003	0.0180009	0.22617108	2.6679519	20	7 5.4	21.2
470665 2008 <i>SH</i> ₁₉₀	17.8	X	334.64729	343.06579	347.74457	2.40208	0.1454026	0.23870570	2.5737174	20	8 13.6	20.2
470666 2008 <i>SG</i> ₁₉₂	17.8	X	305.65001	307.34972	61.94087	5.59502	0.1325512	0.23796252	2.5790733	20	8 18.5	20.7
470667 2008 <i>SW</i> ₁₉₄	17.2	X	263.14024	357.01957	28.60497	6.98668	0.1868961	0.23026542	2.6362316	20	6 25.1	21.0
470668 2008 <i>SB</i> ₁₉₅	17.8	X	344.30877	286.62714	35.64558	2.10597	0.1998990	0.23884825	2.5726933	20	8 22.4	19.7
470669 2008 <i>SL</i> ₁₉₉	17.7	X	270.75769	231.56331	181.84514	17.10761	0.3106290	0.23655789	2.5892725	20	7 21.3	21.6
470670 2008 <i>ST</i> ₂₀₀	17.8	X	265.63141	87.17361	279.89678	2.57969	0.1012206	0.22723041	2.6596537	20	6 15.7	21.4
470671 2008 <i>SL</i> ₂₀₃	17.7	X	263.75744	237.93511	134.53445	3.42189	0.0991696	0.22729616	2.6591407	20	6 20.9	21.2
470672 2008 <i>SX</i> ₂₀₅	17.2	X	212.50949	335.42833	72.00508	7.13437	0.0633489	0.22190246	2.7020579	20	6 8.5	21.1
470673 2008 <i>SM</i> ₂₀₉	17.1	X	125.92399	176.43124	6.02444	14.55007	0.0653954	0.24002155	2.5643023	20	8 31.4	20.8
470674 2008 <i>SV</i> ₂₂₀	17.7	X	240.99227	203.37158	208.70609	4.71646	0.0989474	0.23179157	2.6246473	20	7 14.6	21.4
470675 2008 <i>SB</i> ₂₃₄	17.5	X	289.67972	242.85231	128.94844	2.97723	0.1215078	0.23724059	2.5843027	20	7 24.4	20.5
470676 2008 <i>SQ</i> ₂₃₅	17.3	X	301.37634	48.36888	320.74183	4.48776	0.2555244	0.23971719	2.5664724	20	7 18.8	20.0
470677 2008 <i>SD</i> ₂₄₆	16.5	X	232.40206	96.46424	325.26623	12.57150	0.1836888	0.22956651	2.6415796	20	7 10.9	20.6
470678 2008 <i>SS</i> ₂₅₁	21.1	X	330.44249	197.06296	164.97857	4.09516	0.5112050	0.24538725	2.5267836	20	8 26.8	19.6
470679 2008 <i>SE</i> ₂₆₇	17.4	X	320.32233	286.71991	54.19032	6.14984	0.2882221	0.23602170	2.5931925	20	7 9.9	19.6
470680 2008 <i>SE</i> ₂₆₈	16.6	X	205.81902	335.09583	81.68399	6.28535	0.0352621	0.22275650	2.6951470	20	6 14.9	20.3
470681 2008 <i>SQ</i> ₂₇₀	16.7	X	338.14355	64.95287	230.53015	10.41490	0.1748295	0.23145798	2.6271686	20	6 22.3	19.3
470682 2008 <i>ST</i> ₂₇₆	16.6	X	74.78203	162.14218	15.12247	13.21465	0.0907979	0.22346775	2.6894253	20	6 15.9	20.4
470683 2008 <i>SK</i> ₂₈₄	16.8	X	88.53283	255.46286	249.27608	7.87163	0.0996088	0.21379390	2.7699537	20	5 24.1	20.5
470684 2008 <i>SD</i> ₂₈₆	16.9	X	223.62579	179.47452	175.56560	4.71960	0.1328449	0.21716138	2.7412438	20	4 11.0	21.1
470685 2008 <i>ST</i> ₂₈₇	17.3	X	267.63181	67.08219	258.40683	3.63539	0.1619546	0.22144612	2.7057686	20	4 14.4	21.2
470686 2008 <i>SA</i> ₂₈₈	17.9	X	320.75367	322.62867	8.51618	5.96485	0.3201529	0.23754911	2.5820647	20	6 16.9	20.1
470687 2008 <i>SA</i> ₂₉₀	16.9	X	73.88584	102.60100	358.97209	5.59101	0.0710620	0.20116364	2.8847159	20	2 28.8	20.9
470688 2008 <i>ST</i> ₂₉₇	16.8	X	241.33915	106.35951	307.51535	10.88074	0.1760971	0.23309535	2.6148511	20	7 9.9	20.8
470689 2008 <i>TS</i> ₁₇	17.5	X	314.02345	350.47959	20.18777	5.87495	0.2742657	0.24011258	2.5636541	20	8 18.6	19.5
470690 2008 <i>TW</i> ₁₈	17.7	X	286.54907	29.45641	4.69424	1.31970	0.1409582	0.23612076	2.5924671	20	8 17.9	20.8
470691 2008 <i>TC</i> ₂₇	17.0	X	162.00357	215.20076	311.47719	41.56727	0.3843089	0.29731290	2.2232768	20	8 25.5	21.9
470692 2008 <i>TC</i> ₃₂	17.2	X	287.16250	172.04658	199.77261	19.24456	0.1453027	0.23413817	2.6070813	20	7 12.3	20.9
470693 2008 <i>TE</i> ₄₀	17.2	X	287.32662	44.00871	243.03852	10.22258	0.1875550	0.22030489	2.7151049	20	3 12.5	21.2
470694 2008 <i>TN</i> ₄₆	17.5	X	277.86447	221.76653	136.87054	3.24199	0.1129209	0.22783399	2.6549542	20	6 18.9	21.0
470695 2008 <i>TR</i> ₅₅	17.6	X	288.11324	156.22559	202.15825	8.61407	0.1019757	0.23228568	2.6209240	20	7 4.3	21.0
470696 2008 <i>TY</i> ₅₇	17.2	X	247.04886	135.49256	185.66019	4.75363	0.0386139	0.21417825	2.7666388	20	4 1.8	20.9
470697 2008 <i>TS</i> ₆₁	17.9	X	298.77597	357.27660	355.18094	2.38163	0.0720212	0.23297247	2.6157706	20	7 18.8	21.2
470698 2008 <i>TZ</i> ₆₁	17.0	X	273.92856	237.93628	148.60436	10.22953	0.2845028	0.23528690	2.5985888	20	6 25.7	20.8
470699 2008 <i>TZ</i> ₆₂	16.8	X	30.61489	359.53602	207.81808	8.67655	0.0838279	0.21917565	2.7244229	20	5 22.9	20.0
470700 2008 <i>TZ</i> ₆₄	17.6	X	299.05847	85.49343	315.12136	4.62834	0.2184633	0.24310866	2.5425476	20	9 5.9	20.1
470701 2008 <i>TM</i> ₆₅	17.2	X	328.57302	20.62983	288.77040	3.55630	0.2753859	0.23746133	2.5827009	20	6 9.5	19.3
470702 2008 <i>TN</i> ₇₉	17.5	X	243.50257	205.73625	208.68988	6.82961	0.1326935	0.22953670	2.6418083	20	7 15.7	21.4
470703 2008 <i>TC</i> ₉₂	17.5	X	91.40882	211.14549	223.70387	20.80465	0.0863083	0.37039081	1.9202712	20	1 20.5	19.8
470704 2008 <i>TG</i> ₁₁₂	17.5	X	309.90176	77.27286	330.94767	3.43258	0.2380031	0.24569382	2.5246813	20	10 11.9	19.3
470705 2008 <i>TK</i> ₁₂₄	16.9	X	180.60261	89.27372	262.14474	4.30902	0.0555550	0.20660593	2.8338326	20	2 21.3	21.0
470706 2008 <i>TO</i> ₁₃₇	17.0	X	243.27046	223.52889	214.02423	10.82397	0.1728150	0.23419092	2.6066898	20	8 7.9	21.1
470707 2008 <i>TU</i> ₁₃₈	17.2	X	343.57202	281.08500	14.26741	12.84207	0.1934571	0.23351542	2.6117144	20	7 7.0	19.8
470708 2008 <i>TM</i> ₁₅₇	16.8	X	181.62562	276.43721	118.92979	4.39127	0.0993526	0.21494590	2.7600478	20	4 21.2	21.0
470709 2008 <i>TU</i> ₁₆₄	16.8	X	22.53573	353.00960	269.17987	8.29035	0.1397436	0.23508105	2.6001055	20	7 31.6	19.6
470710 2008 <i>TQ</i> ₁₇₀	17.1	X	274.57735	270.78384	118.17939	13.34669	0.2944416	0.23362486	2.6108987	20	6 28.4	20.9
470711 2008 <i>TJ</i> ₁₇₃	17.											

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>
470721 2008 UT ₃₆	17.3	X	236.23948	161.93974	243.46657	5.18846	0.0863404	0.22537584	2.6742241	20	7 1.7	21.0
470722 2008 UK ₃₇	16.8	X	192.94397	225.47617	230.80834	12.36417	0.2225691	0.22272993	2.6953613	20	7 10.8	21.6
470723 2008 UD ₃₉	16.8	X	245.25330	283.55130	38.93464	9.47188	0.1482032	0.21147938	2.7901274	20	3 25.2	21.1
470724 2008 UF ₃₉	17.5	X	319.17046	288.26654	23.29766	4.33704	0.2163381	0.22826316	2.6516253	20	5 31.8	20.1
470725 2008 UB ₄₃	17.2	X	296.82044	308.44429	49.76617	14.02393	0.2086351	0.23294644	2.6159654	20	7 1.4	20.4
470726 2008 UK ₄₇	17.8	X	135.69008	118.79532	228.61009	20.61465	0.1430519	0.36117959	1.9527827	20	—	—
470727 2008 UQ ₅₅	17.8	X	4.85866	87.39346	211.32171	10.42631	0.2796950	0.24388686	2.5371362	20	9 11.1	19.9
470728 2008 UR ₆₅	17.1	X	283.26806	110.87741	246.41857	10.92722	0.1625233	0.22806891	2.6531308	20	6 16.5	20.5
470729 2008 UM ₆₆	17.6	X	313.68516	89.76462	279.30787	3.34475	0.2708503	0.23867707	2.5739232	20	8 10.8	19.5
470730 2008 UC ₆₇	17.1	X	325.21942	329.50549	1.49857	3.85945	0.2204737	0.23436394	2.6054067	20	7 16.8	19.4
470731 2008 UN ₇₀	17.4	X	274.24213	48.26515	341.95019	5.54073	0.2009352	0.23151638	2.6267268	20	7 14.8	20.8
470732 2008 UK ₇₃	16.8	X	233.54042	150.04463	247.81705	12.69218	0.1464884	0.22278539	2.6949140	20	6 12.2	20.8
470733 2008 UU ₇₆	17.8	X	279.29364	356.07364	31.98990	5.54888	0.2259761	0.23206239	2.6226050	20	7 14.9	21.2
470734 2008 UR ₇₈	17.3	X	289.47413	95.65136	256.03831	4.64047	0.2047212	0.22770228	2.6559780	20	6 11.1	20.4
470735 2008 UA ₇₉	17.6	X	283.11066	106.36926	301.11123	2.33770	0.2425955	0.24014250	2.5634412	20	8 13.7	20.5
470736 2008 UA ₉₃	17.2	X	288.85697	255.68728	112.36901	6.55243	0.2785865	0.23444996	2.6047693	20	6 21.0	20.3
470737 2008 UK ₉₈	16.7	X	279.32089	209.70574	202.69360	13.08461	0.1845206	0.23701257	2.5859599	20	8 20.4	20.0
470738 2008 UV ₁₀₈	17.0	X	321.07763	332.67276	40.61291	15.03194	0.2080624	0.23956067	2.5675902	20	9 24.8	19.4
470739 2008 UC ₁₀₉	17.2	X	241.40710	348.53092	56.09826	8.88158	0.1980357	0.22470071	2.6795781	20	6 23.8	21.3
470740 2008 UL ₁₁₀	17.3	X	196.99277	118.47627	304.42580	3.88904	0.1200375	0.22068136	2.7120162	20	6 8.3	21.6
470741 2008 UP ₁₁₃	17.7	X	316.05328	333.22405	20.04144	6.34615	0.2856720	0.23846888	2.5754210	20	7 22.0	19.8
470742 2008 UJ ₁₁₇	17.0	X	251.52005	79.08672	296.62201	4.51939	0.0400392	0.22326256	2.6910728	20	6 17.9	20.7
470743 2008 UK ₁₂₀	17.2	X	352.26805	29.07157	290.16578	7.06993	0.0610755	0.23383401	2.6093415	20	8 23.9	20.4
470744 2008 UN ₁₂₀	16.9	X	277.62592	68.34124	196.83316	5.10583	0.2937520	0.23280327	2.6170378	20	6 27.1	20.5
470745 2008 UB ₁₂₄	16.1	X	287.07675	136.65413	314.25853	26.90417	0.1209122	0.17823704	3.1270686	20	—	—
470746 2008 UH ₁₂₇	17.2	X	286.25482	314.63427	58.59558	5.33561	0.1798647	0.22985893	2.6393387	20	7 11.5	20.4
470747 2008 UW ₁₂₈	17.2	X	150.36191	240.06726	230.89663	1.69040	0.1127562	0.22351733	2.6890276	20	6 22.3	21.2
470748 2008 UM ₁₂₉	17.3	X	331.08754	82.80921	222.97628	12.42119	0.1311429	0.23012213	2.6373258	20	6 26.5	20.4
470749 2008 UP ₁₃₁	18.0	X	331.77781	273.96481	32.73887	4.92301	0.2250005	0.23197023	2.6232995	20	6 20.8	20.2
470750 2008 UJ ₁₃₁	17.4	X	323.02405	119.32458	232.13140	5.43761	0.2115859	0.23830767	2.5765824	20	8 11.8	19.6
470751 2008 UB ₁₄₀	16.5	X	207.29324	161.64986	224.22627	7.24474	0.2352340	0.21649409	2.7468737	20	4 28.8	21.3
470752 2008 UK ₁₄₁	17.7	X	262.74621	342.98625	53.43833	3.12096	0.2188629	0.23036181	2.6354962	20	7 4.8	21.4
470753 2008 UN ₁₄₃	17.6	X	273.94513	189.23493	203.94971	3.56930	0.2069231	0.23272259	2.6176426	20	7 15.6	21.0
470754 2008 UK ₁₄₇	17.3	X	312.39025	354.09111	35.23326	3.97504	0.1731245	0.24057699	2.5603538	20	9 25.8	19.7
470755 2008 UF ₁₅₂	16.7	X	119.42121	127.66923	39.69161	14.76655	0.0303338	0.22875756	2.6478034	20	7 29.4	20.7
470756 2008 UZ ₁₅₇	17.0	X	312.23537	111.69930	222.75754	11.75387	0.2693783	0.23251498	2.6192006	20	6 13.1	19.7
470757 2008 UD ₁₆₄	17.2	X	233.39117	145.21877	247.67065	5.34849	0.0423834	0.22413830	2.6840587	20	6 18.5	21.0
470758 2008 UK ₁₆₈	17.1	X	252.21231	310.07943	68.32554	4.50644	0.1250235	0.22535195	2.6744132	20	6 10.4	20.7
470759 2008 UE ₁₆₉	17.1	X	299.88687	191.03902	204.65299	7.36426	0.1772493	0.23971730	2.5664716	20	9 4.8	19.9
470760 2008 UL ₁₆₉	17.8	X	276.39260	163.55954	191.37333	5.14712	0.1070185	0.22579578	2.6709074	20	6 13.0	21.3
470761 2008 UJ ₁₉₅	16.3	X	302.34996	128.22165	226.00098	30.74579	0.2631105	0.23193134	2.6235928	20	6 19.5	19.9
470762 2008 US ₁₉₈	16.9	X	284.70385	346.72094	52.32111	13.83610	0.1845247	0.23673501	2.5879808	20	8 21.9	20.2
470763 2008 UZ ₂₀₂	17.5	X	299.17021	132.89977	237.55526	10.97548	0.2164852	0.23716513	2.5848508	20	7 19.3	20.6
470764 2008 UM ₂₀₃	17.0	X	317.32330	41.90120	306.55388	3.99513	0.3331758	0.23923488	2.5699207	20	7 5.6	18.9
470765 2008 UP ₂₀₃	17.2	X	313.22168	74.40597	274.65931	3.84516	0.3479408	0.23870732	2.5737057	20	6 22.9	19.2
470766 2008 UG ₂₀₉	17.4	X	285.42082	111.22514	233.77309	4.79317	0.1295936	0.22688913	2.6623200	20	6 8.3	20.9
470767 2008 US ₂₂₁	17.3	X	240.90536	165.04027	243.18911	14.02044	0.1562047	0.22677249	2.6632328	20	7 1.1	21.4
470768 2008 UU ₂₃₁	17.1	X	251.68861	168.09516	230.33233	11.24972	0.1730987	0.22938136	2.6430009	20	6 29.0	21.1
470769 2008 UK ₂₄₀	17.2	X	317.55685	16.09807	328.75964	4.68267	0.2112278	0.23500719	2.6006503	20	7 22.5	19.5
470770 2008 UR ₂₄₄	16.5	X	307.53193	131.25650	261.27607	15.84702	0.1411495	0.24140749	2.5544784	20	9 12.4	19.7
470771 2008 UV ₂₄₄	16.9	X	272.23507	79.75346	297.89471	11.12115	0.2887502	0.23141492	2.6274945	20	6 10.9	20.7
470772 2008 UZ ₂₄₈	17.6	X	41.54652	222.07226	208.77998	20.81063	0.1073140	0.35929275	1.9596134	20	—	—
470773 2008 UV ₂₅₀	17.4	X	265.31858	8.41684	35.00237	5.65523	0.0906297	0.23265521	2.6181480	20	8 8.8	20.9
470774 2008 UJ ₂₅₅	17.0	X	318.00411	333.65562	46.46742	14.83854	0.1794891	0.24081669	2.5586546	20	9 30.4	19.6
470775 2008 UJ ₂₅₇	16.7	X	292.35218	300.08080	42.64957	12.69424	0.2346710	0.22895359	2.6462919	20	5 26.8	20.1
470776 2008 UU ₂₅₈	17.7	X	327.43187	84.44535	247.49972	1.41272	0.2238780	0.23408832	2.6074514	20	7 21.9	19.7
470777 2008 UA ₂₆₂	16.8	X	285.57164	128.19065	269.61377	11.08112	0.1675641	0.23424642	2.6062781	20	8 11.5	20.0
470778 2008 UU ₂₆₃	17.1	X	268.43739	319.03413	87.29082	15.52430	0.0793594	0.23093067	2.6311664	20	8 21.9	20.8
470779 2008 UO ₂₆₆	17.5	X	293.91980	31.38267	4.81963	3.36496	0.2502931	0.23867751	2.5739200	20	8 16.2	20.1
470780 2008 UC ₂₇₃	17.0	X	195.52919	40.08560	29.22791	5.56941	0.1022155	0.21987680	2.7186279	20	6 15.5	21.2
470781 2008 UT ₂₇₆	17.8	X	283.03865	196.68602	216.48594	3.39715	0.2840644	0.23851178	2.5751122	20	8 13.1	20.8
470782 2008 UE ₂₈₇	16.5	X	113.01121	74.74696	64.46583	8.89393	0.0682013	0.21807567	2.7335765	20	6 12.0	20.3
470783 2008 UD ₂₈₉	17.4	X	254.32133	302.27416	88.31332	4.07199	0.1596567	0.22519822	2.6756301	20	6 24.7	21.2
470784 2008 UX ₂₉₇	17.0	X	356.93448	47.51714	248.98717	11.47448	0.1243840	0.23122837	2.6289075	20	7 30.4	20.0
470785 2008 UX ₂₉₉	17.4	X	237.73929	86.94995	305.73026	3.21575	0.1000630	0.22327641	2.6909616	20	6 15.3	21.3
470786 2008 UN ₃₀₁	17.3	X	309.58418	59.61668	304.93154	3.91014	0.2374670	0.23611713	2.5924938	20	7 30.9	19.4
470787 2008 US ₃₀₂	17.4	X	283.13875	15.03604	17.98112	3.03272	0.2140325	0.23337126	2.6127898	20	7 29.7	20.6
470788 2008 UR ₃₁₃	17.8	X	154.30433	106.07549	233.27650	19.36183	0.1123567	0.36506366	1.9389070	20	—	—
470789 2008 UT ₃₁₅	17.1	X	280.32428	164.78572	214.22820	1.21564	0.2213338	0.23013150	2.6372543	20	7 3.1	20.4
470790 2008 UO ₃₂₂	16.8	X	209.45963	73.64228	10.35099	12.78207	0.2453977	0.22665990	2.6641147	20	7 13.6	21.6
470791 2008 UP ₃₂₄	17.0	X	265.39769	100.30999	247.14910	11.28723	0.2885990	0.22310378	2.6923495	20	4 24.5	21.4
470792 2008 UD ₃₄₃	16.7	X	285.17258	77.73450	267.89902	8.82028	0.0641020	0.22261602	2.6962807	20	6 19.0	20.3
470793 2008 UE ₃₄₃	16.7	X	50.17924	319.56193								

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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>
470801 2008 VG ₁	15.1	X	277.46460	146.54878	252.43288	31.68785	0.1772735	0.23079499	2.6321975	20	7 20.4	19.1
470802 2008 VS ₁	17.0	X	228.12340	56.53918	29.82983	13.85421	0.1659419	0.23054492	2.6341005	20	8 13.6	21.2
470803 2008 VA ₂	17.3	X	250.89380	99.39914	261.71943	5.63702	0.2837029	0.22347469	2.6893696	20	4 29.5	21.9
470804 2008 VJ ₂	16.3	X	287.77866	123.13260	243.52432	13.07379	0.1824427	0.23067746	2.6330914	20	7 1.6	19.6
470805 2008 VY ₂	17.0	X	298.92029	83.45863	281.27786	4.61701	0.2635036	0.23415859	2.6069297	20	7 4.9	19.8
470806 2008 VZ ₂	16.5	X	287.66460	133.49380	256.41176	10.34308	0.1499667	0.23387098	2.6090666	20	8 6.8	19.9
470807 2008 VC ₅	17.5	X	42.74878	191.77135	260.62529	18.49789	0.0751888	0.36012246	1.9566024	20	—	—
470808 2008 VF ₁₄	16.4	X	296.96102	341.70948	15.66048	18.36544	0.2634607	0.23298977	2.6156410	20	6 19.2	20.0
470809 2008 VE ₁₆	17.1	X	47.93969	345.53202	217.74187	10.75837	0.0663912	0.21885052	2.7271205	20	6 10.4	20.6
470810 2008 VR ₁₈	17.0	X	49.50251	193.33688	51.44732	16.12416	0.0456718	0.22978149	2.6399317	20	8 14.7	20.8
470811 2008 VE ₃₈	17.6	X	136.42037	115.99133	216.14780	20.25402	0.0879640	0.35713030	1.9675159	20	—	—
470812 2008 VK ₄₅	17.5	X	320.98408	161.07149	139.40326	6.74137	0.0512907	0.22085083	2.7106286	20	6 11.7	20.9
470813 2008 VW ₄₉	17.5	X	323.87711	133.69439	239.20269	7.63316	0.2573652	0.24358396	2.5392391	20	9 15.5	19.4
470814 2008 VV ₆₄	17.3	X	315.03184	267.87236	114.72554	5.60234	0.2647835	0.24072329	2.5593163	20	9 12.6	19.1
470815 2008 VM ₆₇	17.5	X	262.70898	227.57720	139.74872	5.24273	0.1101128	0.22087496	2.7104312	20	6 11.4	21.2
470816 2008 VF ₇₃	16.4	X	244.66616	224.38706	89.90699	11.14141	0.1556107	0.20641737	2.8355581	20	3 16.6	21.0
470817 2008 WD ₇	17.8	X	236.79637	46.66065	353.72186	0.92758	0.0817022	0.22541526	2.6739124	20	6 26.8	21.6
470818 2008 WV ₁₂	17.4	X	276.82592	336.89618	69.34672	6.61653	0.2577113	0.23439113	2.6052052	20	8 1.5	20.7
470819 2008 WN ₂₃	17.5	X	254.51698	349.84352	45.79088	2.84252	0.2149751	0.22896512	2.6462031	20	6 24.5	21.4
470820 2008 WJ ₃₄	17.6	X	175.59977	84.79265	23.94246	4.39535	0.0727457	0.22497230	2.6774211	20	7 17.4	21.6
470821 2008 WT ₄₄	16.8	X	284.98218	91.78782	244.45225	7.97765	0.0607535	0.21913306	2.7247759	20	6 6.4	20.4
470822 2008 WP ₅₉	17.1	X	250.88987	181.55823	228.91667	12.42023	0.2740941	0.22871477	2.6481337	20	7 1.2	21.4
470823 2008 WQ ₅₉	16.8	X	311.27633	180.21206	182.61280	4.16971	0.2893332	0.23696051	2.5863387	20	7 21.6	19.0
470824 2008 WB ₆₄	17.5	X	293.32669	336.84875	43.76124	3.98117	0.2577673	0.23503596	2.6004380	20	7 20.9	20.3
470825 2008 WF ₆₅	17.3	X	329.08298	248.23250	61.54050	4.32625	0.1239413	0.22982303	2.6396136	20	7 1.1	20.0
470826 2008 WA ₆₈	16.1	X	322.56168	51.63502	246.79525	24.60419	0.0875877	0.21807873	2.7335510	20	6 5.9	19.4
470827 2008 WC ₆₉	16.4	X	359.46820	249.48017	245.12245	25.33725	0.1908340	0.18155681	3.0888325	20	—	—
470828 2008 WO ₆₉	16.7	X	198.32024	145.90595	257.44820	6.79736	0.0267169	0.21152951	2.7896865	20	5 18.6	20.7
470829 2008 WY ₇₄	16.9	X	32.93538	185.16702	60.61745	5.49002	0.0658162	0.22749511	2.6575901	20	7 18.5	20.2
470830 2008 WB ₈₃	16.7	X	290.21683	241.78712	89.91705	13.79743	0.1338688	0.22033877	2.7148267	20	5 29.1	20.3
470831 2008 WO ₉₄	17.4	X	274.31744	241.66219	113.40230	4.32182	0.1086693	0.22360295	2.6883411	20	6 10.2	20.9
470832 2008 WW ₁₀₇	16.8	X	298.89275	217.28168	99.10892	10.72418	0.0650214	0.21647607	2.7470261	20	5 31.0	20.4
470833 2008 WO ₁₀₈	18.1	X	285.34431	2.55522	18.18714	4.82182	0.3031398	0.23380052	2.6095907	20	6 29.8	21.6
470834 2008 WR ₁₀₉	17.4	X	307.74640	68.43368	256.26552	9.99831	0.1419337	0.22358646	2.6884732	20	6 12.1	20.4
470835 2008 WA ₁₁₅	17.3	X	257.70306	330.58189	67.86208	6.81684	0.0492493	0.22478541	2.6789049	20	7 27.5	21.0
470836 2008 WT ₁₁₅	17.3	X	299.39789	321.62756	65.37217	4.10587	0.1152614	0.23339231	2.6126327	20	9 3.5	20.2
470837 2008 WF ₁₃₆	16.8	X	267.12091	135.42504	261.28045	11.25324	0.2008554	0.22668043	2.6639539	20	7 11.1	20.5
470838 2008 XN ₁	16.2	X	318.69131	104.96949	263.70634	13.46707	0.1611261	0.23487012	2.6016620	20	8 27.9	19.3
470839 2008 XV ₅	16.4	X	239.62052	144.06565	290.02405	11.66868	0.1914304	0.22827764	2.6515133	20	7 29.7	20.5
470840 2008 XA ₁₁	16.8	X	294.70856	228.36828	136.83021	5.31845	0.2816795	0.23197863	2.6232362	20	6 25.1	19.9
470841 2008 XJ ₁₃	17.8	X	274.50624	44.12026	352.56109	3.96703	0.2460330	0.23253613	2.6190418	20	7 16.7	21.3
470842 2008 XM ₂₁	16.8	X	212.54582	351.67449	99.35569	12.47654	0.0782524	0.22121592	2.7076454	20	8 5.9	20.8
470843 2008 XD ₃₃	17.2	X	271.14301	66.98278	281.39826	4.25507	0.1336957	0.22027851	2.7153217	20	5 23.2	20.9
470844 2008 XZ ₅₁	16.1	X	310.45178	80.79682	317.14640	8.95644	0.1379120	0.24053682	2.5606389	20	10 1.1	18.9
470845 2008 XE ₅₄	16.3	X	177.84312	190.96482	262.04715	19.32965	0.2200277	0.21444589	2.7642238	20	6 25.8	21.1
470846 2008 XB ₅₅	17.7	X	286.59781	97.82134	310.31557	2.78003	0.3343040	0.23509529	2.6000005	20	8 3.7	20.6
470847 2008 YY ₉	15.6	X	257.43431	330.03597	283.29586	9.43327	0.0385185	0.18209809	3.0827084	20	1 23.7	20.0
470848 2008 YH ₁₂	16.6	X	72.52839	294.39845	259.57777	12.15389	0.1277014	0.21371845	2.7706055	20	7 10.5	20.7
470849 2008 YS ₁₈	16.2	X	37.32957	218.13234	300.66830	10.35474	0.1190458	0.18937748	3.0031970	20	3 26.2	20.0
470850 2008 YH ₄₀	16.7	X	214.28880	327.33994	111.35772	14.35835	0.0620132	0.21656150	2.7463036	20	7 22.3	20.5
470851 2008 YO ₄₂	16.2	X	31.29345	315.20167	267.07501	10.30675	0.1604868	0.21156323	2.7893901	20	6 22.2	19.1
470852 2008 YY ₄₇	15.8	X	355.04423	32.98324	101.35162	12.83743	0.1414141	0.17566804	3.1574820	20	—	—
470853 2008 YX ₄₉	16.7	X	313.23014	54.64477	113.85309	12.47126	0.1960421	0.22559632	2.6724815	20	8 17.2	19.4
470854 2008 YX ₅₂	16.0	X	125.35607	275.34601	313.28805	17.40732	0.1101714	0.18313352	3.0710779	20	2 18.6	20.6
470855 2008 YW ₅₃	16.9	X	165.32871	8.11293	94.21426	7.14785	0.1054861	0.20810683	2.8201908	20	6 26.3	21.2
470856 2008 YX ₅₃	17.3	X	292.04275	74.59425	332.46651	5.72857	0.3041723	0.23236643	2.6203168	20	8 17.2	20.1
470857 2008 YM ₇₃	17.6	X	279.35730	19.80972	353.11463	2.40544	0.1457935	0.22138559	2.7062619	20	7 5.7	21.1
470858 2008 YE ₉₆	17.6	X	297.74179	110.56931	303.06505	4.11388	0.3219068	0.23642586	2.5902363	20	9 2.9	19.9
470859 2008 YV ₁₀₆	16.8	X	208.30824	113.51892	306.42249	14.95928	0.2510243	0.21331114	2.7741314	20	6 9.7	21.9
470860 2008 YT ₁₀₇	17.2	X	197.34974	304.36287	119.20844	5.11493	0.0944491	0.20828206	2.8186088	20	6 11.0	21.4
470861 2008 YH ₁₁₄	16.9	X	358.33091	93.81987	104.41069	10.18228	0.2399211	0.18725657	3.0258310	20	3 16.1	20.0
470862 2008 YW ₁₄₂	16.6	X	204.35682	243.91132	111.97232	10.35736	0.1585256	0.19779252	2.9174011	20	3 29.2	21.5
470863 2008 YX ₁₄₄	16.5	X	295.78633	1.23722	285.25646	10.23664	0.0727360	0.19666543	2.9285369	20	4 9.6	20.8
470864 2008 YV ₁₄₈	20.5	X	170.34166	102.97476	101.51995	12.60142	0.1725472	0.57701072	1.4289383	20	—	—
470865 2008 YK ₁₅₆	17.2	X	312.20467	78.23523	317.75621	4.64127	0.1719955	0.23083918	2.6318615	20	9 29.2	19.7
470866 2008 YK ₁₅₈	17.0	X	195.57596	312.16069	128.20937	9.73245	0.2682312	0.21196302	2.7858816	20	6 24.5	22.0
470867 2008 YU ₁₅₈	16.8	X	338.76770	65.73884	136.46633	26.97492	0.3334304	0.17571455	3.1569248	20	1 24.2	20.4
470868 2008 YX ₁₆₆	17.2	X	291.18295	43.53132	353.86083	4.82246	0.3504825	0.23324700	2.6137177	20	7 24.9	20.2
470869 2009 AT ₁₃	17.3	X	293.42860	218.35050	132.02817	6.31609	0.0512925	0.21524642	2.7574783	20	7 8.8	21.0
470870 2009 AG ₂₄	17.9	X	242.29566	175.15677	229.10027	2.63015	0.2451183	0.21904493	2.7255066	20	6 19.6	22.4
470871 2009 AO ₂₇	15.7	X	298.89302	290.03823	304.83109	18.49648	0.1619430	0.18061576	3.0995522	20	2 2.1	20.0
470872 2009 AY ₃₂	16.5	X	321.55200	246.23703	312.62433	12.31543	0.2335693	0.17458524	3.1705239	20	1 11.7	20.8
470873 2009 AR ₄₃	16.8	X	350.11978	114.87000	117.06990	13.42849	0.22089					

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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>
470881 2009 BG ₄₅	16.6	X	339.84157	262.66770	327.95866	8.76261	0.0389347	0.18816813	3.0160510	20	4 3.7	20.7
470882 2009 BE ₄₆	16.3	X	353.44673	50.95993	146.31356	21.18191	0.1957912	0.18111282	3.0938785	20	3 6.4	19.7
470883 2009 BT ₅₀	16.6	X	234.45118	271.26628	123.44811	14.88577	0.1178167	0.20985179	2.8045354	20	6 13.9	21.0
470884 2009 BC ₅₅	16.6	X	121.85500	126.17260	325.33359	9.64866	0.0241150	0.19348171	2.9605752	20	4 12.5	20.9
470885 2009 BR ₅₇	16.0	X	6.95704	351.70799	125.25150	18.84321	0.1631539	0.17297191	3.1902079	20	—	—
470886 2009 BS ₆₈	16.8	X	278.84561	102.55162	307.89408	11.95766	0.2709505	0.22857097	2.6492443	20	8 4.9	20.1
470887 2009 BS ₈₉	16.6	X	306.34826	82.24391	133.61146	15.01523	0.2521602	0.17347313	3.1840600	20	1 9.5	21.3
470888 2009 BV ₁₂₀	15.9	X	342.02743	15.39430	152.40212	13.66657	0.0435754	0.17526451	3.1623266	20	1 23.9	20.3
470889 2009 BN ₁₃₈	16.9	X	154.88320	145.99271	300.78392	5.22395	0.0220837	0.20057731	2.8903350	20	5 20.7	21.1
470890 2009 BE ₁₄₃	16.8	X	274.58638	195.10298	127.66535	12.95826	0.0510188	0.19719678	2.9232738	20	5 12.1	21.1
470891 2009 BX ₁₆₅	16.8	X	344.98406	263.72682	314.32348	4.20246	0.0810359	0.18607578	3.0386183	20	3 24.8	20.7
470892 2009 BH ₁₆₆	16.4	X	258.25284	147.60252	156.24063	9.44334	0.0396861	0.18694343	3.0292091	20	3 28.3	20.7
470893 2009 BQ ₁₇₅	16.6	X	263.15767	301.88565	125.29711	15.15240	0.1839498	0.22354247	2.6888529	20	8 22.1	20.2
470894 2009 BT ₁₈₇	15.9	X	4.01312	195.60313	336.73350	9.94364	0.0543877	0.17694499	3.1422726	20	2 27.7	20.1
470895 2009 BL ₁₈₉	16.7	X	241.59491	295.40017	133.63902	12.13761	0.2354371	0.22437298	2.6821867	20	8 2.6	20.8
470896 2009 CR ₁₁	16.9	X	20.35857	25.24889	179.44510	5.39200	0.1211103	0.19053324	2.9910400	20	5 6.0	20.4
470897 2009 CO ₁₆	17.6	X	262.32104	224.14820	162.42340	10.38363	0.2813614	0.21786795	2.7353138	20	6 13.6	21.9
470898 2009 CM ₂₃	17.0	X	244.57202	253.14337	151.21037	7.97740	0.2217265	0.21633827	2.7481925	20	6 24.4	21.4
470899 2009 CH ₃₆	16.3	X	154.57360	258.71024	120.22714	12.12343	0.0500402	0.18592175	3.0402963	20	3 3.8	20.8
470900 2009 CA ₄₂	16.1	X	34.71136	332.71550	142.78089	10.53271	0.0633674	0.17840152	3.1251463	20	1 30.6	20.3
470901 2009 CF ₄₇	17.2	X	277.43435	38.98955	325.82392	3.88166	0.0818688	0.21267866	2.7796286	20	7 1.6	20.8
470902 2009 CD ₄₉	17.2	X	272.47905	238.88870	132.85194	4.99405	0.0880767	0.21389275	2.7691002	20	7 2.7	20.8
470903 2009 CH ₄₉	16.3	X	290.13801	81.36669	131.50145	20.39185	0.1327608	0.17407777	3.1766828	20	1 4.3	21.1
470904 2009 CV ₅₂	16.6	X	345.09353	54.87469	131.77255	3.40237	0.1625648	0.17707599	3.1407227	20	2 9.0	20.4
470905 2009 CS ₅₇	16.9	X	304.31351	266.75211	324.21693	15.36995	0.1749224	0.17816216	3.1279447	20	2 5.3	21.2
470906 2009 CQ ₅₈	16.5	X	295.73909	9.76521	339.39302	5.36412	0.0800417	0.20674454	2.8325659	20	7 7.0	20.2
470907 2009 CQ ₆₀	16.5	X	93.77441	304.16297	127.67141	16.40095	0.1248964	0.18670815	3.0317533	20	3 7.6	20.8
470908 2009 DB ₄₄	17.3	X	189.73132	214.70087	234.05458	1.14598	0.0221405	0.20571566	2.8420027	20	7 7.2	21.3
470909 2009 DK ₄₆	18.2	X	269.07710	262.28244	173.35891	26.27931	0.5119198	0.23118488	2.6292372	20	7 22.5	22.9
470910 2009 DH ₄₈	16.5	X	42.83288	150.11112	10.89041	10.53523	0.1486140	0.18600515	3.0393874	20	4 14.9	20.1
470911 2009 DF ₅₂	17.0	X	27.73651	222.81962	47.56792	4.60930	0.0247832	0.21304347	2.7764545	20	8 8.8	20.7
470912 2009 DH ₇₂	16.8	X	292.17004	281.98708	339.61456	15.04537	0.1898175	0.17740897	3.1367916	20	2 25.2	21.3
470913 2009 DK ₇₈	16.6	X	27.99354	60.19324	128.14273	11.05216	0.1313805	0.18827037	3.0149589	20	5 1.3	20.4
470914 2009 DN ₈₀	15.5	X	331.69361	228.29155	350.87496	12.37364	0.1842367	0.17685672	3.1433182	20	2 27.8	19.3
470915 2009 DT ₈₈	16.4	X	291.16026	237.04860	42.52847	6.43157	0.1483970	0.18141903	3.0903962	20	3 23.8	20.7
470916 2009 DE ₉₂	16.1	X	228.48406	1.05407	340.45062	21.88990	0.0129624	0.18498710	3.0505286	20	3 30.5	20.8
470917 2009 DN ₉₇	16.4	X	280.84666	136.47099	150.47760	12.67375	0.1550532	0.18160817	3.0882500	20	3 19.6	20.9
470918 2009 DA ₁₀₁	16.5	X	291.21640	266.29042	21.15417	12.29321	0.0817868	0.18472598	3.0534026	20	4 9.7	20.8
470919 2009 DD ₁₀₂	16.4	X	320.41965	119.86330	134.00126	10.39776	0.0302287	0.18398151	3.0616340	20	4 16.8	20.7
470920 2009 DG ₁₀₅	16.5	X	349.26568	239.84188	352.62365	9.26392	0.0451115	0.18499024	3.0504940	20	4 19.6	20.7
470921 2009 DG ₁₃₀	16.0	X	306.92399	275.65933	348.37925	12.55107	0.0619390	0.18271313	3.0757866	20	3 30.9	20.4
470922 2009 DQ ₁₃₂	16.6	X	114.92727	109.10621	327.41276	9.72611	0.0628046	0.18406347	3.0607250	20	3 23.1	21.0
470923 2009 EE ₅	16.3	X	68.99669	319.31268	126.96123	11.73514	0.0676651	0.17784313	3.1316844	20	2 12.5	20.4
470924 2009 EY ₂₄	16.6	X	325.50124	206.33781	354.50682	4.03478	0.1781187	0.17308644	3.1888005	20	1 27.5	20.7
470925 2009 EO ₂₈	16.3	X	318.56097	196.62881	28.45144	17.56943	0.1593027	0.16935951	3.2354124	20	2 27.6	20.8
470926 2009 EF ₃₁	16.5	X	339.22346	126.94460	84.15542	9.29500	0.2603415	0.17629018	3.1500490	20	2 21.1	20.1
470927 2009 FZ	15.6	X	347.09606	218.24836	2.22045	23.38597	0.1370652	0.18080335	3.0974078	20	3 27.1	19.3
470928 2009 FM ₂	16.1	X	322.29109	83.90794	130.30761	23.93278	0.2811871	0.17307166	3.1889821	20	1 22.9	20.2
470929 2009 FR ₁₃	17.8	X	215.21726	121.08841	344.13915	6.08373	0.0436473	0.30049783	2.2075395	20	9 8.6	20.1
470930 2009 FP ₂₆	16.3	X	267.46524	111.74249	171.84704	25.03648	0.2209598	0.17296467	3.1902969	20	2 20.5	21.6
470931 2009 FZ ₄₁	16.5	X	317.75842	118.28943	145.37689	7.59045	0.0971830	0.18163138	3.0879869	20	4 16.1	20.6
470932 2009 FN ₅₀	16.4	X	199.46498	350.51210	75.71951	5.86920	0.0398952	0.19698292	2.9253893	20	6 15.9	20.9
470933 2009 FY ₆₇	16.5	X	323.79308	165.30222	54.65172	5.47549	0.1460161	0.17268925	3.1936882	20	2 23.7	20.6
470934 2009 HS ₄	16.0	X	1.03622	355.03573	186.63373	17.24690	0.1495244	0.17445180	3.1721405	20	2 28.6	19.9
470935 2009 HA ₇	16.8	X	296.68884	187.83881	116.37790	5.05865	0.1188449	0.18166737	3.0875792	20	5 4.7	21.0
470936 2009 HJ ₁₂	16.2	X	278.36935	141.46835	158.33840	13.12978	0.0973877	0.17673024	3.1448176	20	4 10.6	20.8
470937 2009 HY ₃₇	16.5	X	305.38659	75.34688	151.79196	6.02760	0.0558555	0.17103220	3.2142832	20	2 18.1	21.0
470938 2009 HH ₆₃	18.8	X	27.31034	122.56186	164.80275	1.29950	0.2014912	0.28574667	2.2828739	20	10 7.9	21.2
470939 2009 HA ₆₄	16.6	X	272.45181	306.17614	42.51282	7.28326	0.1280673	0.18607621	3.0386136	20	5 26.0	20.9
470940 2009 HE ₇₁	16.1	X	266.06414	268.37043	41.79052	15.40995	0.0810692	0.17556205	3.1587527	20	4 11.6	20.7
470941 2009 HO ₉₂	18.4	X	127.73732	183.62669	67.82631	5.45925	0.1495900	0.30337098	2.1935794	20	12 7.4	21.4
470942 2009 HV ₉₈	17.9	X	105.97041	144.58479	86.52388	7.18347	0.1226435	0.29324325	2.2437994	20	10 21.6	21.1
470943 2009 HY ₁₀₀	16.0	X	356.28549	145.92584	59.59708	22.37753	0.0810896	0.17251995	3.1957772	20	4 9.6	20.4
470944 2009 HA ₁₀₃	16.2	X	335.19946	136.79949	118.80647	11.60442	0.0404257	0.17871181	3.1215279	20	5 8.5	20.6
470945 2009 HN ₁₀₆	18.3	X	94.44282	334.06970	256.72608	3.22154	0.2557378	0.29142179	2.2531393	20	10 13.9	22.0
470946 2009 HS ₁₀₆	18.2	X	126.20760	157.67968	85.31225	4.76884	0.1138075	0.30215228	2.1994738	20	11 25.7	21.4
470947 2009 KE ₁₂	18.1	X	83.77422	104.60697	67.25749	6.39073	0.1579138	0.27717574	2.3296959	20	7 4.9	21.0
470948 2009 KW ₁₂	16.1	X	209.95655	311.52781	69.22186	12.24676	0.0718795	0.17682381	3.1437082	20	5 5.4	20.9
470949 2009 KD ₃₀	16.3	X	85.17568	339.77739	136.61539	10.57215	0.0324174	0.17243653	3.1968078	20	4 9.3	20.9
470950 2009 KO ₃₇	17.8	X	100.85984	182.58505	92.41209	6.61642	0.1718819	0.30180834	2.2011445	20	12 12.5	21.1
470951 2009 LS	18.0	X	105.79325	176.29143	252.74931	45.00020	0.2912796	0.69460959	1.2627252	20	—	—
470952 2009 OM ₁₀	17.6	X	60.96597	336.91317	320.61628	9.52295	0.2626604	0.28736939	2.2742719	20	12 7.7	21.2
470953 2009 OT ₁₀	15.1	X	127.49363	5.96536	317.48470	11.75899	0.2649627					

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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>
470961 2009 QG ₁₅	17.8	X	1.08154	178.27310	169.00248	7.60264	0.2387282	0.27500991	2.3419115	20	11 26.1	20.1
470962 2009 QZ ₂₄	18.4	X	28.94379	88.01714	281.38003	2.19673	0.2663635	0.28678115	2.2773808	20	—	—
470963 2009 QB ₂₅	17.9	X	3.60497	164.70203	205.16991	2.22064	0.2571942	0.28325626	2.2962352	20	—	—
470964 2009 QU ₃₃	18.3	X	347.42848	48.66800	337.79779	1.74349	0.2097957	0.28039912	2.3118072	20	12 24.2	20.3
470965 2009 QL ₄₀	17.8	X	353.43166	202.93216	147.30678	2.85259	0.2292170	0.27457270	2.3443970	20	11 12.9	19.6
470966 2009 QQ ₄₉	16.8	X	180.96250	162.89836	51.81632	2.94286	0.0153718	0.19790344	2.9163109	20	12 3.3	20.9
470967 2009 RF ₁₆	18.5	X	338.17583	3.95421	31.30712	2.96050	0.1922286	0.27519503	2.3408612	20	12 13.9	20.4
470968 2009 RE ₂₉	18.1	X	32.71036	353.27901	326.08546	4.78557	0.1205126	0.27505342	2.3416645	20	11 12.2	21.0
470969 2009 RE ₃₃	17.9	X	338.82975	20.36563	355.56537	2.27886	0.2144466	0.27066125	2.3669295	20	11 15.2	19.7
470970 2009 RE ₃₅	17.5	X	336.33041	186.18845	196.19418	6.48056	0.2309346	0.27126860	2.3633953	20	11 24.3	19.1
470971 2009 RR ₄₁	17.6	X	104.38854	17.20992	255.64245	4.41577	0.1443003	0.28324691	2.2962858	20	12 8.6	20.9
470972 2009 RJ ₄₈	18.2	X	23.14600	290.46583	9.78265	1.13635	0.1885129	0.26905534	2.3763385	20	10 13.7	20.7
470973 2009 RL ₄₈	17.9	X	359.25026	133.27129	190.96679	5.78780	0.0965951	0.26592585	2.3949458	20	9 22.5	20.3
470974 2009 RS ₆₅	18.4	X	37.05618	275.16559	10.19191	3.78391	0.1495611	0.27032005	2.3689208	20	10 7.4	21.2
470975 2009 SC ₁₅	21.4	X	35.94214	333.81554	178.64201	6.84401	0.1793427	0.69216276	1.2656994	20	—	—
470976 2009 SU ₁₇	18.1	X	322.09155	83.24143	317.51061	5.20015	0.3898559	0.26968005	2.3726673	20	11 29.4	18.2
470977 2009 SJ ₂₂	18.0	X	260.16661	282.22650	171.40645	22.48214	0.1170034	0.36899076	1.9251255	20	11 9.6	20.0
470978 2009 SD ₂₉	17.6	X	310.48941	20.80332	9.01085	2.74141	0.2275894	0.26706769	2.3881145	20	9 22.5	19.0
470979 2009 SG ₅₆	17.9	X	305.15703	160.13214	216.29929	14.04069	0.0161909	0.26261925	2.4150067	20	9 4.8	21.2
470980 2009 SN ₅₆	17.7	X	25.06890	87.91205	250.93650	5.40315	0.1375196	0.27604334	2.3360629	20	12 3.0	20.4
470981 2009 SM ₅₇	18.2	X	8.41456	44.95673	328.96094	4.99726	0.2608659	0.27888424	2.3201714	20	—	—
470982 2009 SS ₅₇	17.6	X	324.37268	34.42805	234.53726	7.94535	0.1374192	0.24321740	2.5417898	20	4 19.4	20.6
470983 2009 ST ₅₈	17.2	X	356.86141	12.00999	343.23936	6.05244	0.1337021	0.27153068	2.3618743	20	11 7.4	19.6
470984 2009 SV ₅₈	17.7	X	256.29408	179.00235	281.70822	3.63538	0.2086461	0.26536051	2.3983461	20	9 25.5	20.7
470985 2009 SL ₅₉	17.5	X	336.45926	45.89040	337.62942	6.73248	0.1377958	0.27254218	2.3560268	20	11 12.1	19.8
470986 2009 SS ₇₁	18.5	X	318.81964	137.53781	261.81889	1.02660	0.1722756	0.27308781	2.3528875	20	11 3.7	20.3
470987 2009 SW ₈₂	18.3	X	349.43855	102.38469	207.01088	4.33840	0.2316088	0.26435810	2.4044051	20	8 17.6	19.9
470988 2009 SG ₉₉	18.0	X	345.01464	200.51735	188.45525	2.21384	0.2125404	0.27671609	2.3322751	20	12 22.2	19.9
470989 2009 SW ₁₀₃	17.7	X	66.22718	341.90676	334.48489	8.24593	0.1616790	0.28769161	2.2725734	20	12 28.8	21.1
470990 2009 SU ₁₀₈	17.3	X	10.13421	13.82613	316.85195	9.38327	0.1678656	0.27397904	2.3477823	20	12 7.1	20.1
470991 2009 SH ₁₂₆	18.1	X	28.15960	347.26571	308.89151	3.01328	0.1697777	0.26915082	2.3757765	20	10 10.9	20.7
470992 2009 SB ₁₂₈	15.2	X	171.07663	334.07874	348.67601	5.20629	0.1164502	0.12406517	3.9814030	20	1 24.8	21.3
470993 2009 SE ₁₂₉	17.6	X	30.17959	162.00769	145.46537	1.76419	0.2479280	0.27366269	2.3495913	20	11 14.8	20.5
470994 2009 SY ₁₂₉	18.4	X	27.70193	145.29272	176.95137	6.08479	0.1419943	0.27339125	2.3511462	20	11 15.6	21.2
470995 2009 SK ₁₃₀	17.6	X	285.58744	240.77060	168.43924	4.87933	0.2210105	0.26311924	2.4119464	20	8 27.7	20.1
470996 2009 SW ₁₃₇	17.1	X	270.43049	82.15606	19.88681	9.09431	0.1592733	0.27046714	2.3680618	20	10 30.2	19.4
470997 2009 SK ₁₃₉	17.9	X	11.37000	127.14243	184.35429	6.23577	0.1825731	0.27013584	2.3699976	20	10 9.9	20.0
470998 2009 SX ₁₄₂	17.9	X	5.61051	317.38806	8.05993	1.18815	0.1899884	0.26994131	2.3711361	20	10 20.5	19.9
470999 2009 SU ₁₄₇	16.9	X	80.23752	304.49440	266.85699	4.68367	0.1566344	0.25933829	2.4353326	20	8 20.7	20.2
471000 2009 SE ₁₆₄	17.8	X	308.30880	7.84978	36.63801	5.41107	0.2067459	0.26723137	2.3871393	20	10 15.1	19.5
471001 2009 SZ ₁₆₉	17.9	X	114.63914	85.64881	248.08865	20.06996	0.0771397	0.38795337	1.8618715	20	—	—
471002 2009 SN ₁₇₀	17.5	X	268.48410	110.21488	306.56492	7.47284	0.1069776	0.26405034	2.4062730	20	8 28.4	20.5
471003 2009 SY ₂₂₃	18.2	X	45.92938	90.69552	205.63702	1.15413	0.1862486	0.27599638	2.3363279	20	11 10.5	21.1
471004 2009 SY ₂₂₇	15.3	X	204.53370	288.41408	347.44595	2.53854	0.1107405	0.12498575	3.9618288	20	1 1.9	21.5
471005 2009 SY ₂₃₀	17.2	X	340.23788	320.21968	35.07390	7.90621	0.2346690	0.26823591	2.3811757	20	10 18.4	18.5
471006 2009 SK ₂₃₅	17.6	X	15.14148	340.89797	15.86226	7.50222	0.3415780	0.27750230	2.3278679	20	—	—
471007 2009 SZ ₂₄₃	16.9	X	303.81059	194.19054	228.33160	22.80658	0.2394871	0.27197708	2.3592892	20	10 31.1	18.3
471008 2009 SK ₂₅₄	14.3	X	269.66837	237.45429	213.16165	8.90112	0.0455418	0.08408141	5.1602339	20	9 26.5	21.2
471009 2009 SC ₂₆₀	16.3	X	313.47450	220.49026	165.31951	11.41113	0.1650192	0.17713319	3.1400466	20	9 8.7	19.7
471010 2009 SV ₂₆₀	18.9	X	25.79476	312.35450	18.05689	6.52372	0.1977269	0.27829044	2.3234707	20	12 1.3	21.7
471011 2009 SD ₂₆₁	16.0	X	309.13086	84.62023	282.31085	9.03653	0.1878016	0.17120236	3.2121530	20	7 31.5	19.8
471012 2009 SF ₂₆₅	17.8	X	2.42985	110.38111	225.02539	5.48471	0.1276389	0.26775123	2.3840484	20	10 18.8	20.1
471013 2009 SC ₂₇₅	17.9	X	348.45460	220.61929	135.30308	1.84303	0.2003773	0.27159747	2.3614871	20	11 5.2	19.8
471014 2009 SG ₂₇₅	16.1	X	279.80015	279.68401	184.35712	17.22655	0.2224466	0.18129759	3.0917760	20	10 20.5	20.0
471015 2009 SG ₂₇₆	18.0	X	246.21206	47.22030	37.51177	3.61184	0.1623374	0.26272981	2.4143292	20	8 31.5	21.1
471016 2009 SV ₂₈₂	18.0	X	2.28806	272.89497	96.37289	3.24805	0.1588057	0.27695776	2.3309182	20	12 15.2	20.5
471017 2009 SZ ₂₈₂	17.6	X	10.69596	199.94410	133.37470	4.04695	0.2416436	0.27367529	2.3495191	20	11 21.9	20.0
471018 2009 SR ₂₈₃	18.3	X	25.77748	193.07325	104.03596	3.80909	0.0919523	0.26618686	2.3933799	20	9 29.2	21.0
471019 2009 SR ₂₈₈	17.3	X	321.57285	339.65927	34.20628	5.83499	0.1052740	0.26772727	2.3841906	20	10 1.5	19.5
471020 2009 SJ ₂₈₉	17.6	X	24.39039	257.83903	68.20428	3.39825	0.2028116	0.27418895	2.3465839	20	11 24.7	20.3
471021 2009 SB ₂₉₀	18.1	X	22.10975	249.78399	77.73232	3.10783	0.2285833	0.27416552	2.3467176	20	11 27.7	20.6
471022 2009 SZ ₂₉₀	17.8	X	286.28329	1.37116	71.95683	5.02931	0.2090997	0.26742397	2.3859930	20	10 12.3	19.9
471023 2009 SY ₂₉₃	17.4	X	132.30852	333.46269	184.63390	8.34967	0.0728271	0.25657986	2.4527559	20	7 31.9	20.9
471024 2009 SO ₂₉₈	17.4	X	354.28024	105.85539	252.49453	5.65229	0.1475128	0.27238855	2.3569126	20	11 11.5	19.6
471025 2009 SN ₃₀₀	17.0	X	77.66994	328.86608	188.73557	25.71650	0.1755811	0.24193989	2.5507294	20	6 8.3	20.9
471026 2009 SH ₃₀₆	17.8	X	308.03712	241.07004	164.76740	4.99563	0.2222476	0.26953971	2.3734908	20	10 17.0	19.4
471027 2009 SH ₃₁₆	17.8	X	329.04989	211.72250	164.67160	3.00791	0.1882628	0.26882085	2.3777202	20	10 21.9	19.4
471028 2009 SO ₃₂₉	17.3	X	19.56775	53.93418	297.57778	6.08367	0.1525170	0.27702104	2.3305632	20	12 15.3	20.1
471029 2009 SR ₃₃₂	17.6	X	337.75624	85.79045	287.87202	2.20224	0.2014075	0.27187529	2.3598780	20	11 7.7	19.2
471030 2009 SF ₃₃₃	17.4	X	355.50575	151.37945	218.35430	8.06368	0.1804086	0.27772190	2.3266406	20	12 8.5	19.6
471031 2009 SD ₃₃₉	17.8	X	342.31064	131.01647	222.90499	2.48689	0.2228307	0.26669451	2.3903418	20	10 17.9	19.5
471032 2009 SP ₃₅₈	17.9	X	22.33887	17.61545	346.56700	6.40414	0.1694865	0.28177667	2.3042665	20	—	—
471033 2009 TJ ₅	17.8	X	354.69909	159.22403	217.06964	4.42868	0.1819811	0.27626530</				

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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>
471041 2009 TV ₃₃	18.0	X	323.49197	117.29949	298.84053	5.75277	0.2727625	0.27437514	2.3455222	20	12 23.7	19.2
471042 2009 UN ₁₆	17.4	X	21.34433	96.61081	236.30819	11.13444	0.2162465	0.27537358	2.3398492	20	12 2.4	20.1
471043 2009 UX ₂₅	17.7	X	359.33263	291.40096	56.34913	3.34917	0.2521013	0.27134400	2.3629574	20	11 22.8	19.7
471044 2009 UH ₃₉	17.7	X	357.89609	156.57265	198.39577	2.76034	0.1894475	0.26921644	2.3753904	20	11 19.9	19.8
471045 2009 UB ₄₇	17.9	X	356.70530	328.31718	44.88525	2.10071	0.2002075	0.27252551	2.3561229	20	12 16.8	20.3
471046 2009 UG ₄₇	18.0	X	310.10831	356.49963	49.95741	3.28282	0.1889900	0.26613397	2.3936970	20	10 23.6	19.7
471047 2009 UV ₅₀	17.3	X	352.37056	339.46251	33.18188	6.95451	0.1569514	0.27282115	2.3544205	20	11 30.2	19.6
471048 2009 UK ₇₂	17.7	X	337.79272	241.42033	143.43476	1.82447	0.1889869	0.27041422	2.3683708	20	11 25.2	19.6
471049 2009 UJ ₈₃	17.5	X	199.68410	167.31230	224.24139	11.02634	0.0771435	0.23349597	2.6118593	20	5 3.1	21.2
471050 2009 UP ₉₂	17.8	X	332.73391	280.85884	99.26063	2.61786	0.2058204	0.26812690	2.3818210	20	11 7.1	19.3
471051 2009 UH ₉₄	17.6	X	334.50694	308.20988	66.96584	2.47301	0.2004388	0.26926940	2.3750789	20	11 2.8	19.2
471052 2009 UR ₁₀₁	16.8	X	151.26355	353.86285	59.32269	9.89122	0.1138364	0.22692654	2.6620274	20	4 13.8	20.8
471053 2009 UP ₁₀₆	17.8	X	347.46629	310.93445	64.49374	8.23284	0.2115392	0.27357995	2.3500650	20	12 4.7	19.8
471054 2009 UN ₁₀₉	18.4	X	2.52743	67.97467	274.32570	0.65482	0.2033410	0.26768156	2.3844621	20	11 10.8	20.5
471055 2009 UB ₁₁₁	17.8	X	321.43551	340.54141	52.58487	4.99516	0.1575487	0.26600733	2.3945566	20	10 29.3	19.6
471056 2009 UK ₁₂₇	16.4	X	75.73337	6.08861	81.27190	11.31675	0.2356503	0.21155957	2.7894223	20	3 19.7	20.0
471057 2009 UM ₁₃₄	18.0	X	350.87707	208.69952	189.69927	1.17750	0.1766501	0.27578199	2.3375385	20	—	—
471058 2009 UA ₁₃₈	18.2	X	319.95355	251.99438	233.44174	21.50983	0.0479795	0.38087430	1.8848709	20	—	—
471059 2009 UL ₁₄₃	13.6	X	320.85847	185.91868	231.75208	20.04217	0.0685087	0.08352327	5.1831973	20	10 17.4	20.4
471060 2009 VF ₁₁	17.4	X	280.44321	351.64063	51.46028	8.65440	0.1121300	0.25919986	2.4361996	20	9 2.6	20.3
471061 2009 VD ₂₆	17.7	X	269.48671	48.82462	46.44190	2.74395	0.1551729	0.26734104	2.3864864	20	10 20.8	20.0
471062 2009 VY ₃₂	17.8	X	92.31019	106.40246	246.23730	18.97344	0.0527390	0.38188659	1.8815385	20	—	—
471063 2009 VZ ₃₇	16.4	X	215.00117	153.83440	231.79821	21.34246	0.0092591	0.23504047	2.6004047	20	5 17.8	19.8
471064 2009 VQ ₅₁	17.9	X	2.73939	232.03646	244.17111	19.56805	0.0795779	0.38746422	1.8634381	20	—	—
471065 2009 VJ ₅₉	18.0	X	313.51181	302.35378	94.35147	3.36319	0.1970118	0.26631945	2.3925855	20	10 16.8	19.8
471066 2009 VK ₆₂	18.2	X	322.74790	356.77676	51.16472	2.40788	0.1789224	0.26881248	2.3777696	20	11 25.6	20.1
471067 2009 VN ₆₃	17.8	X	298.98083	351.22567	71.97592	3.77375	0.1500798	0.26463919	2.4027022	20	10 28.7	19.8
471068 2009 VO ₉₂	17.5	X	312.34622	15.56787	78.26133	6.99193	0.1858181	0.27621781	2.3350791	20	—	—
471069 2009 VU ₉₂	17.8	X	309.87142	138.00724	278.04170	8.74169	0.2937245	0.26867784	2.3785639	20	10 28.4	19.0
471070 2009 VX ₉₃	17.6	X	7.75556	128.87858	211.24065	5.26599	0.2299842	0.26933832	2.3746738	20	11 22.8	19.9
471071 2009 VO ₁₀₇	18.2	X	327.66819	141.83384	239.16699	1.53730	0.2205044	0.26773905	2.3841207	20	10 25.4	19.7
471072 2009 WU	17.6	X	305.41645	152.28298	299.02728	6.06151	0.1781872	0.27354237	2.3502802	20	12 27.5	19.2
471073 2009 WD ₂₉	17.8	X	276.46785	331.65932	69.52294	7.40420	0.1238969	0.25438959	2.4668145	20	8 20.2	20.8
471074 2009 WN ₄₄	17.6	X	39.88095	318.81018	9.36461	5.63465	0.2339933	0.27629761	2.3346294	20	12 21.1	20.9
471075 2009 WW ₅₄	17.2	X	150.50319	236.24959	220.02694	21.63122	0.0659833	0.23820181	2.5773457	20	5 31.4	21.1
471076 2009 WO ₈₈	17.6	X	303.23658	308.96279	94.23163	3.97411	0.1819130	0.26191369	2.4193419	20	10 3.5	19.6
471077 2009 WE ₉₄	18.0	X	229.87401	68.52094	48.59727	5.45948	0.1526616	0.25846322	2.4408263	20	9 25.7	21.4
471078 2009 WG ₁₅₂	13.4	X	134.82112	345.69126	251.83881	29.19448	0.0064976	0.08208361	5.2436265	20	10 11.5	20.7
471079 2009 WN ₁₈₀	17.3	X	59.67885	128.29209	88.14221	9.80716	0.1065995	0.23849072	2.5752638	20	7 24.8	20.5
471080 2009 WM ₁₈₃	17.4	X	228.19150	281.68709	97.79458	8.14570	0.1286822	0.23488598	2.6015449	20	5 17.5	21.4
471081 2009 WL ₁₉₈	16.6	X	259.49265	201.69202	141.12535	6.53349	0.1648117	0.23804794	2.5784562	20	4 30.6	20.5
471082 2009 WT ₂₆₃	16.3	X	103.47367	223.50676	315.04206	10.07627	0.1510533	0.22642943	2.6659222	20	8 2.8	20.2
471083 2009 XF ₂	19.9	X	327.51333	113.38853	88.49516	14.01399	0.2678780	0.67620929	1.2855292	20	—	—
471084 2009 XY ₆	18.3	X	332.01650	113.81942	265.66287	3.65466	0.1979563	0.26652321	2.3913659	20	10 31.4	20.0
471085 2009 XW ₂₂	16.9	X	285.65391	69.63170	291.02301	11.36312	0.0536777	0.23547235	2.5972242	20	7 12.9	20.0
471086 2009 YT ₅	16.3	X	11.16152	169.55009	107.47956	15.94945	0.0874891	0.23410552	2.6073237	20	7 30.9	19.3
471087 2009 YJ ₂₄	17.0	X	76.64640	241.45541	303.70503	10.45520	0.1259201	0.22468032	2.6797402	20	7 7.2	20.6
471088 2010 AZ ₁₄	16.9	X	200.52342	293.30100	93.14551	15.95321	0.0743292	0.22371907	2.6874107	20	5 4.5	21.1
471089 2010 AA ₂₁	17.4	X	215.57852	170.19830	283.46434	0.94226	0.1313054	0.24535426	2.5270101	20	8 7.5	21.2
471090 2010 AX ₂₃	16.7	X	52.34275	61.05826	112.22486	8.73644	0.1577773	0.21297442	2.7770546	20	5 22.2	20.1
471091 2010 AT ₂₇	17.1	X	139.31577	358.92166	134.60251	8.47526	0.2649941	0.22719913	2.6598977	20	7 16.6	21.7
471092 2010 AA ₃₈	17.2	X	231.46723	321.67051	117.53945	13.72962	0.2601775	0.24291781	2.5438792	20	7 23.5	21.2
471093 2010 AC ₅₂	16.8	X	71.60253	45.50463	137.82061	6.83860	0.0992880	0.22370638	2.6875123	20	6 22.9	20.4
471094 2010 AV ₅₅	17.2	X	141.87253	149.14587	336.72220	4.21892	0.0484757	0.22481962	2.6786332	20	6 28.8	21.1
471095 2010 AE ₅₉	16.8	X	142.07875	352.49220	132.24039	14.48550	0.1879202	0.22888739	2.6468021	20	7 5.7	21.2
471096 2010 AR ₆₄	18.1	X	301.27625	48.39323	119.13432	25.67359	0.0880194	0.37397789	1.9079724	20	—	—
471097 2010 AQ ₆₈	16.9	X	223.87034	340.15297	85.08528	8.48309	0.1630020	0.23837799	2.5760756	20	7 6.8	20.9
471098 2010 AN ₈₁	16.2	X	304.98955	85.90106	111.74250	9.68615	0.2034459	0.18233753	3.0800091	20	—	—
471099 2010 AT ₉₉	15.8	X	327.99597	65.14568	106.75517	27.46810	0.1635450	0.18038142	3.1022361	20	—	—
471100 2010 AV ₉₉	16.0	X	215.01329	213.17678	94.17029	23.27719	0.0301338	0.18464886	3.0542527	20	2 15.4	20.8
471101 2010 AE ₁₀₆	16.8	X	226.29462	150.20763	268.90299	9.13719	0.0898419	0.22013442	2.7165065	20	7 7.2	20.8
471102 2010 BO ₂	16.9	X	202.50945	330.11643	108.95767	6.36182	0.0676809	0.23377998	2.6097435	20	7 8.9	20.7
471103 2010 BR ₁₄	16.7	X	326.32475	103.61124	145.06409	11.55023	0.1012511	0.19569876	2.9381728	20	4 8.7	20.6
471104 2010 BT ₄₀	16.4	X	273.05229	224.03313	106.21951	18.74652	0.1448992	0.20190068	2.8776912	20	5 9.2	20.9
471105 2010 BN ₅₅	15.7	X	186.47535	218.48951	102.94132	28.02096	0.0936075	0.17690518	3.1427440	20	1 30.2	20.7
471106 2010 BY ₇₀	15.9	X	191.33147	259.04244	60.63560	25.22601	0.1736535	0.17547369	3.1598130	20	2 10.5	21.6
471107 2010 BX ₉₃	15.9	X	201.20339	251.94666	84.54220	27.45280	0.1945805	0.18174555	3.0866936	20	3 12.3	21.6
471108 2010 CL ₁	19.4	X	142.79587	268.06213	149.52534	19.99013	0.3539527	0.40914674	1.7970079	20	4 24.8	22.6
471109 Vladobahyl	17.3	X	222.09360	57.37444	35.89020	4.75011	0.1603050	0.24071166	2.5593988	20	8 13.1	21.1
471110 2010 CT ₁₉	17.1	X	144.92510	29.27278	114.94484	12.84473	0.1276045	0.23156832	2.6263340	20	7 31.4	21.1
471111 2010 CJ ₂₀	16.5	X	196.46300	300.66048	143.95073	22.47915	0.0412075	0.22764033	2.6564598	20	7 10.8	20.5
471112 2010 CO ₃₃	17.1	X	133.59607	32.67968	83.76604	4.91940	0.0622938	0.22025878	2.7154839	20	6 7.0	21.0
471113 2010 CK ₄₁	15.6	X	288.50674	188.75878	329.24565	27.36067	0.1169256	0.17764621	3.1339983	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>
471121 2010 CQ ₁₆₀	16.9	X	218.09809	67.0631	318.72541	5.13806	0.0354768	0.21903331	2.7256030	20	5 19.7	20.9
471122 2010 CJ ₁₈₄	16.2	X	149.36520	28.42856	138.84569	33.75819	0.1883765	0.22986788	2.6392702	20	9 5.7	20.8
471123 2010 CO ₂₁₃	17.1	X	340.51149	301.62685	269.13092	20.67376	0.2485759	0.18791190	3.0187920	20	2 8.7	21.0
471124 2010 CU ₂₂₅	16.0	X	143.30917	142.40112	239.32900	14.57347	0.0960669	0.17869698	3.1217005	20	2 19.4	21.0
471125 2010 CG ₂₄₈	17.0	X	232.64767	100.75949	318.36283	21.65316	0.0484639	0.23441319	2.6050417	20	7 25.4	20.6
471126 2010 DL ₅	16.3	X	334.71677	262.20514	325.02376	9.18345	0.2037413	0.20197717	2.8769647	20	3 3.8	19.5
471127 2010 DS ₁₁	17.5	X	191.13589	74.33642	1.42898	1.69933	0.0379686	0.22249045	2.6972951	20	6 21.8	21.2
471128 2010 DN ₁₃	15.9	X	275.51785	102.86224	282.40322	30.34779	0.0915057	0.21473088	2.7618900	20	7 19.3	19.8
471129 2010 DQ ₄₀	16.5	X	86.20309	163.52133	16.58596	9.91285	0.1631173	0.21593426	2.7516193	20	7 19.4	20.6
471130 2010 DO ₄₁	16.6	X	309.39214	68.07657	146.81011	10.75790	0.0475473	0.19337602	2.9616539	20	2 5.9	20.7
471131 2010 DZ ₅₀	16.9	X	287.20144	134.25086	146.23023	15.81874	0.2203580	0.18398033	3.0616471	20	3 10.0	21.5
471132 2010 DD ₇₉	16.6	X	266.20421	14.14130	19.78590	14.88170	0.1525454	0.22749382	2.6576002	20	7 19.6	20.5
471133 2010 EC ₉	15.9	X	266.07985	192.84243	110.06521	29.21710	0.0877840	0.18492353	3.0512275	20	4 11.4	21.0
471134 2010 ET ₂₁	17.8	X	294.38333	220.39140	354.25247	20.52999	0.1218531	0.37685463	1.8982503	20	—	—
471135 2010 ER ₂₅	16.6	X	269.71239	106.39772	196.51773	5.42832	0.0941352	0.18369932	3.0647685	20	3 31.6	21.1
471136 2010 EO ₆₅	9.5	X	13.68974	271.39201	315.66222	11.35048	0.4461243	0.00773561	25.3205342	20	6 16.8	21.3
471137 2010 EF ₆₅	5.1	X	4.69243	354.62398	189.58600	30.62223	0.3627821	0.00200904	62.2027616	20	4 4.7	21.1
471138 2010 EY ₆₉	16.4	X	218.51250	210.26077	253.64636	12.43051	0.2253109	0.23935630	2.5690515	20	8 9.5	20.7
471139 2010 EK ₁₀₀	18.3	X	294.80348	187.52541	3.63885	19.23739	0.0492290	0.37165930	1.9158994	20	—	—
471140 2010 EX ₁₀₄	16.3	X	76.46071	250.05101	275.51706	14.76422	0.1972638	0.21207657	2.7848871	20	6 20.3	20.0
471141 2010 ED ₁₁₁	16.3	X	271.16749	46.83061	26.29773	11.87365	0.1151403	0.23572303	2.5953825	20	9 25.3	19.5
471142 2010 ET ₁₂₃	17.0	X	154.25127	28.96824	119.67136	7.80456	0.1783006	0.22833875	2.6510401	20	8 16.5	21.4
471143 Dziejanna	3.9	X	348.76531	284.54263	346.27582	29.47773	0.5379473	0.00167131	70.3229911	20	4 25.8	19.5
471144 2010 FY	17.2	X	314.23631	238.54450	69.06165	1.56486	0.0559235	0.21474095	2.7618037	20	6 10.0	20.4
471145 2010 FD ₁	16.4	X	195.54365	322.26640	152.84080	32.23787	0.1574317	0.23296714	2.6158105	20	8 11.4	20.6
471146 2010 FY ₂	16.5	X	286.07738	150.63062	139.44996	9.19540	0.1957595	0.19964915	2.8992861	20	3 22.9	20.7
471147 2010 FA ₁₂	17.6	X	153.65095	123.43997	19.87212	5.50947	0.1131344	0.22679183	2.6630814	20	8 8.9	21.8
471148 2010 FL ₂₆	16.5	X	250.97679	90.26224	170.26428	21.38890	0.3365305	0.17516432	3.1635324	20	1 5.7	22.5
471149 2010 FB ₄₉	7.3	X	220.31180	170.58800	184.89479	24.39998	0.1950817	0.00920504	22.5485608	20	4 14.6	21.5
471150 2010 FC ₄₉	5.7	X	259.43993	299.27820	1.78891	39.78960	0.0543849	0.00404848	38.9889041	20	3 28.5	21.7
471151 2010 FD ₄₉	6.2	X	3.76156	142.59020	66.37610	10.71459	0.4258341	0.00237518	55.6337834	20	5 1.3	21.2
471152 2010 FE ₄₉	6.5	X	14.00900	131.93427	57.98219	11.68806	0.3758932	0.00248579	53.9708718	20	5 3.7	21.9
471153 2010 FV ₅₆	16.6	X	113.13826	140.64129	17.60921	11.97391	0.1829239	0.21600630	2.7510075	20	7 23.6	21.1
471154 2010 FQ ₈₈	17.0	X	88.33603	317.59862	191.49742	17.57280	0.0695131	0.20628691	2.8367535	20	5 26.8	21.2
471155 2010 GF ₆₅	7.1	X	344.77692	284.70213	0.54420	12.41773	0.3435036	0.00505242	33.6358880	20	6 1.2	20.7
471156 2010 GZ ₇₃	15.5	X	243.71392	22.79424	307.07905	28.10480	0.2340844	0.17429098	3.1740915	20	3 8.9	21.3
471157 2010 GS ₉₇	17.0	X	233.57276	36.31467	26.69679	11.51016	0.1653874	0.22154496	2.7049639	20	7 15.5	21.3
471158 2010 GO ₁₁₀	16.6	X	304.22591	19.00146	192.06363	16.74381	0.1003820	0.18395390	3.0619402	20	1 17.5	21.2
471159 2010 GK ₁₅₃	15.6	X	251.88897	75.20945	271.11491	24.25003	0.3096212	0.17688146	3.1430251	20	4 4.0	21.4
471160 2010 GK ₁₇₃	16.9	X	174.75198	346.96923	139.80937	7.82106	0.2079113	0.22892674	2.6464988	20	8 5.5	21.4
471161 2010 HM ₁₃	15.5	X	314.93751	309.01347	286.10698	25.06013	0.325180	0.17826915	3.1266931	20	1 27.5	20.0
471162 2010 HO ₃₇	17.0	X	293.15203	86.38579	83.62568	25.46492	0.3609303	0.17757427	3.1348447	20	—	—
471163 2010 HD ₅₇	15.7	X	328.95287	270.32875	291.33673	19.59381	0.1665177	0.16912511	3.2384013	20	1 30.8	20.0
471164 2010 HZ ₅₇	15.1	X	357.61831	326.13144	259.28026	20.88416	0.0365860	0.17887389	3.1196419	20	4 21.8	19.6
471165 2010 HE ₇₉	5.1	X	65.75962	283.88210	238.68810	15.68734	0.1790264	0.00402258	39.1560874	20	5 29.8	20.8
471166 2010 HK ₁₀₇	16.4	X	288.64263	132.01202	140.60335	12.68248	0.0916828	0.18535709	3.0464677	20	3 20.6	20.8
471167 2010 HF ₁₀₉	16.4	X	264.75559	113.44567	160.87595	16.42769	0.2129201	0.17625330	3.1504883	20	2 8.2	21.6
471168 2010 JU ₃	15.6	X	260.51021	7.06836	134.94141	27.70213	0.1751143	0.17548115	3.1597235	20	3 19.4	21.0
471169 2010 JZ ₂₂	15.5	X	276.50862	146.83668	313.72585	27.63176	0.1606120	0.17139582	3.2097354	20	3 8.8	20.5
471170 2010 JE ₄₅	17.0	X	299.00694	78.55558	185.18127	15.13860	0.1373178	0.18582231	3.0413808	20	3 11.4	21.4
471171 2010 JT ₄₇	16.2	X	306.90979	148.98934	101.42939	15.42920	0.2181444	0.18462139	3.0545557	20	2 28.8	20.6
471172 2010 JC ₈₀	5.9	X	353.17667	217.03121	50.90950	3.12583	0.4375273	0.00235459	55.9576504	20	5 29.8	21.0
471173 2010 JR ₈₄	16.1	X	286.34984	204.42273	53.48968	14.14555	0.1522445	0.18477103	3.0529062	20	2 27.0	20.7
471174 2010 JY ₁₁₃	15.8	X	258.77698	94.94525	170.83350	22.86176	0.0992132	0.17775568	3.1327114	20	2 2.4	20.8
471175 2010 JY ₁₃₁	16.1	X	230.25673	66.80526	287.85192	14.87832	0.1381888	0.17185898	3.2039660	20	4 10.9	21.5
471176 2010 JW ₁₅₁	16.1	X	259.00515	33.78484	220.93265	16.86071	0.0941771	0.17498974	3.1656362	20	1 19.2	21.2
471177 2010 JP ₁₅₅	17.3	X	356.13618	171.67283	63.62616	7.57204	0.1568711	0.19694495	2.9257653	20	5 3.8	20.3
471178 2010 JW ₁₅₇	16.4	X	228.67182	119.40557	217.36201	9.68656	0.0954136	0.18587134	3.0408461	20	3 26.0	21.1
471179 2010 KW ₂₀	16.7	X	185.71965	218.29326	152.24565	15.91561	0.3692041	0.15787831	3.3904270	20	4 1.2	23.1
471180 2010 KF ₂₃	15.6	X	278.42652	48.48298	282.39438	8.97585	0.2963509	0.17852829	3.1236667	20	4 15.6	20.6
471181 2010 KM ₃₅	16.3	X	293.69991	97.52184	158.48263	25.65296	0.2439588	0.17103253	3.2142790	20	2 12.3	21.1
471182 2010 LD ₃₃	16.2	X	189.08944	88.39235	303.24661	12.65124	0.3401392	0.16039812	3.3548250	20	4 17.7	22.6
471183 2010 LE ₆₁	16.7	X	295.29618	198.62095	75.46374	13.47776	0.2598798	0.18459129	3.0548877	20	3 10.9	21.4
471184 2010 LT ₆₂	16.8	X	279.63994	179.76092	113.14192	23.38785	0.2054458	0.18453858	3.0554694	20	3 25.7	21.8
471185 2010 LH ₆₈	17.0	X	272.88125	112.02275	87.09057	23.82022	0.0681430	0.35694341	1.9682026	20	—	—
471186 2010 MH ₈₀	16.7	X	305.41038	276.38465	51.74772	5.43131	0.1227680	0.21256221	2.7806437	20	6 15.5	20.1
471187 2010 ND ₅	16.3	X	289.07961	229.21868	59.21362	1.32341	0.1667874	0.17822581	3.1271999	20	3 27.9	20.7
471188 2010 NT ₁₃	16.1	X	287.66867	336.81338	347.91914	13.71118	0.2038286	0.17455322	3.1709117	20	4 28.8	20.9
471189 2010 NZ ₁₃	15.8	X	346.21467	267.20824	4.76449	26.91693	0.1837190	0.19025499	3.1178806	20	5 22.6	19.8
471190 2010 NQ ₅₆	15.3	X	138.57205	302.44165	96.77780	11.19852	0.0935411	0.14714796	3.5533110	20	3 20.1	20.8
471191 2010 NJ ₈₃	15.4	X	159.05209	52.33576	351.82028	9.86214	0.0911877	0.15548514	3.4251279	20	4 6.8	20.7
471192 2010 ND ₁₁₈	15.7	X	224.15992	184.66957	107.78378	19.42672	0.1963412	0.17233501	3.1980632	20	1 29.9	21.1
471193 2010 OC ₇₄	16.3	X	335.65864	336.09055	181.50609	13.04169	0.3319139	0.172				

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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>
471201 2010 <i>TF</i> ₇	16.3	X	252.33921	5.87002	13.14657	8.79792	0.0992595	0.17477774	3.1681955	20	6 13.3	21.0
471202 2010 <i>TS</i> ₁₃	16.8	X	20.62024	314.22178	349.83591	9.68144	0.0898849	0.19313351	2.9641326	20	9 15.2	20.6
471203 2010 <i>TJ</i> ₇₅	18.3	X	56.22454	85.81432	190.32838	7.00309	0.0887266	0.29676845	2.2259952	20	10 17.4	21.0
471204 2010 <i>TN</i> ₁₄₄	18.5	X	35.17087	11.81205	1.01117	5.29577	0.1486814	0.31357017	2.1457522	20	—	—
471205 2010 <i>TX</i> ₁₆₁	18.2	X	347.90330	322.85744	73.42624	1.76087	0.1448575	0.30554250	2.1831737	20	—	—
471206 2010 <i>UT</i> ₉	18.3	X	4.79837	92.54267	225.17589	3.39287	0.1625621	0.29193169	2.2505149	20	10 7.3	20.3
471207 2010 <i>UP</i> ₂₆	17.9	X	268.73723	239.87637	239.59007	5.31683	0.1322500	0.29920406	2.2138986	20	12 7.4	19.6
471208 2010 <i>UU</i> ₅₆	18.7	X	46.50932	103.59383	270.42805	1.60310	0.1797235	0.31438705	2.1420336	20	—	—
471209 2010 <i>UK</i> ₁₀₆	17.1	X	201.86547	354.75898	57.95219	25.40175	0.2230578	0.26591914	2.3949860	20	5 25.7	21.1
471210 2010 <i>VW</i> ₁₁	5.3	X	5.30760	259.09790	157.92044	27.80675	0.2747067	0.00275509	50.3939538	20	12 3.7	21.0
471211 2010 <i>VE</i> ₁₃	16.8	X	290.21902	298.31827	55.99842	6.14275	0.2290403	0.17361107	3.1823731	20	6 10.5	21.0
471212 2010 <i>VE</i> ₃₇	18.2	X	0.84335	222.87810	166.24533	6.38101	0.2000268	0.30443282	2.1884757	20	—	—
471213 2010 <i>VQ</i> ₈₈	18.5	X	345.30128	25.08232	29.11238	4.57511	0.0941644	0.30473848	2.1870121	20	—	—
471214 2010 <i>VK</i> ₁₁₂	13.7	X	277.86157	210.19314	226.08601	15.30921	0.1384993	0.08327294	5.1935794	20	9 4.1	20.7
471215 2010 <i>VM</i> ₁₁₅	14.2	X	338.82043	321.30870	51.60508	10.50834	0.0905893	0.08196738	5.2485824	20	9 26.1	20.8
471216 2010 <i>VT</i> ₁₆₂	19.0	X	57.11136	88.73773	260.87769	2.95471	0.2560529	0.31443149	2.1418318	20	—	—
471217 2010 <i>VP</i> ₇₈	18.5	X	89.60733	250.18925	50.81186	3.43307	0.1579863	0.30801871	2.1714574	20	—	—
471218 2010 <i>VX</i> ₂₀₅	18.0	X	2.83283	153.25846	216.21473	5.80512	0.1261631	0.30134173	2.2034162	20	12 18.5	20.2
471219 2010 <i>WS</i> ₉	17.8	X	311.72462	29.84373	27.59431	7.52674	0.0256835	0.29657446	2.2269658	20	11 22.4	20.3
471220 2010 <i>WX</i> ₂₇	18.4	X	78.93673	12.97677	291.04746	3.39390	0.1939162	0.30401702	2.1904707	20	12 30.3	21.6
471221 2010 <i>WH</i> ₂₉	17.5	X	90.81448	344.53100	266.72925	6.35213	0.0683212	0.28691422	2.2766765	20	10 19.5	20.5
471222 2010 <i>XN</i> ₄₄	16.9	X	201.29177	28.90422	109.80947	10.03965	0.1881343	0.27944029	2.3170925	20	9 23.9	20.5
471223 2010 <i>XJ</i> ₄₆	16.6	X	168.72940	212.79901	305.91849	23.45777	0.2387852	0.27151609	2.3619589	20	9 1.0	21.0
471224 2010 <i>XO</i> ₆₄	17.7	X	263.93836	294.92262	88.39126	6.01358	0.1374518	0.27340640	2.3510594	20	7 2.1	20.5
471225 2011 <i>AZ</i> ₈	17.8	X	226.68924	289.50124	107.65569	10.77134	0.0553836	0.25647465	2.4534267	20	6 14.3	21.1
471226 2011 <i>AT</i> ₁₂	17.3	X	18.25465	61.07004	120.25445	10.47224	0.1497906	0.23142288	2.6274342	20	3 31.5	20.1
471227 2011 <i>AE</i> ₁₄	17.3	X	51.73526	189.31985	44.11846	3.28017	0.1401418	0.25436463	2.4669759	20	8 13.8	20.2
471228 2011 <i>AG</i> ₁₆	15.9	X	257.06434	321.51320	133.88202	28.65660	0.2312374	0.17633001	3.1495746	20	9 9.7	20.8
471229 2011 <i>AX</i> ₂₄	17.2	X	171.92522	223.95173	296.98785	6.70099	0.0495140	0.27415356	2.3467858	20	9 22.1	20.4
471230 2011 <i>AK</i> ₃₁	17.2	X	63.25896	344.81408	305.37425	6.13614	0.1166323	0.27743222	2.3282598	20	11 11.8	20.4
471231 2011 <i>AV</i> ₃₆	16.6	X	354.77273	301.40533	297.01565	12.04045	0.0627449	0.23908479	2.5709961	20	5 1.1	19.9
471232 2011 <i>AS</i> ₄₄	17.9	X	297.63581	139.18690	308.32808	6.72292	0.1551309	0.28942309	2.2635005	20	12 10.3	19.7
471233 2011 <i>AF</i> ₅₂	15.8	X	272.25988	279.50912	147.38746	26.70957	0.2463051	0.17469265	3.1692242	20	8 16.9	20.3
471234 2011 <i>AO</i> ₅₆	16.6	X	303.68005	270.76738	308.70352	14.12054	0.2402467	0.21264745	2.7799006	20	1 8.1	20.7
471235 2011 <i>AQ</i> ₅₆	18.0	X	353.96530	283.10027	122.88744	6.23810	0.1707004	0.29600391	2.2298266	20	—	—
471236 2011 <i>AV</i> ₇₀	17.5	X	32.05180	54.65193	100.06584	5.11669	0.1693656	0.22781041	2.6551375	20	3 19.2	20.1
471237 2011 <i>AC</i> ₇₂	10.8	X	19.37083	23.39329	119.41872	13.80525	0.5639292	0.00752927	25.7810591	20	4 26.7	22.4
471238 2011 <i>BF</i>	17.9	X	16.79805	227.76053	115.87129	5.52477	0.1468563	0.28595304	2.2817754	20	12 2.9	20.4
471239 2011 <i>BN</i> ₁₅	16.1	X	34.69990	245.33124	331.98264	28.56529	0.3362750	0.23149068	2.6269212	20	8 2.8	19.1
471240 2011 <i>BT</i> ₁₅	21.7	X	154.55241	308.81032	105.36588	1.66142	0.3024646	0.67042815	1.2929088	20	4 8.6	21.8
471241 2011 <i>BX</i> ₁₈	18.2	X	290.21936	303.94613	310.90525	14.55212	0.7294868	0.20186889	2.8779933	20	—	—
471242 2011 <i>BT</i> ₂₃	18.3	X	25.95405	250.26814	145.79375	2.82892	0.2424668	0.30392842	2.1908964	20	—	—
471243 2011 <i>BU</i> ₂₇	17.9	X	266.62701	295.19883	146.76621	6.08114	0.1668599	0.27525734	2.3405079	20	9 27.7	20.5
471244 2011 <i>BU</i> ₃₈	17.2	X	78.64628	339.00177	157.83630	13.74910	0.1248389	0.23002501	2.6380682	20	5 7.9	20.8
471245 2011 <i>BO</i> ₆₀	17.3	X	126.23975	110.99812	57.31857	5.82411	0.1599757	0.25535655	2.4605832	20	8 18.3	21.2
471246 2011 <i>BC</i> ₆₁	17.4	X	156.49653	220.97176	305.57131	8.44513	0.0783272	0.26641062	2.3920396	20	9 9.2	20.8
471247 2011 <i>BT</i> ₇₄	17.7	X	316.10432	218.70202	184.88724	5.42764	0.1557186	0.28010819	2.3134077	20	11 8.7	19.4
471248 2011 <i>BG</i> ₈₉	17.7	X	352.60220	82.16341	305.03129	6.35254	0.1355538	0.28678443	2.2773634	20	12 24.8	20.0
471249 2011 <i>BN</i> ₉₀	18.1	X	270.32742	296.69365	144.43362	7.56554	0.0869583	0.27795196	2.3253566	20	10 17.5	20.8
471250 2011 <i>BG</i> ₉₃	17.9	X	113.83066	26.28416	168.52333	2.25687	0.1569675	0.25681502	2.4512584	20	9 6.5	21.7
471251 2011 <i>BG</i> ₉₄	18.2	X	304.68475	105.06788	321.81438	3.77625	0.1260630	0.28787997	2.2715820	20	11 21.7	20.1
471252 2011 <i>BD</i> ₁₃₈	17.9	X	78.89934	290.45709	340.10849	6.03063	0.1019523	0.27516707	2.3410198	20	11 1.7	21.2
471253 2011 <i>BB</i> ₁₄₉	18.6	X	51.03428	234.87315	44.04753	5.80190	0.0897319	0.26879173	2.3778919	20	10 10.2	21.4
471254 2011 <i>CM</i>	17.4	X	142.75306	159.87179	38.69532	9.05044	0.0606814	0.26982831	2.3717981	20	10 12.4	20.6
471255 2011 <i>CZ</i> ₁₀	17.2	X	258.20679	102.49179	274.80139	1.68787	0.0931898	0.25515395	2.4618855	20	6 21.9	20.2
471256 2011 <i>CU</i> ₁₆	17.6	X	234.14462	319.83178	144.80668	6.86820	0.1665201	0.27279418	2.3545756	20	9 12.9	20.7
471257 2011 <i>CW</i> ₄₉	17.2	X	184.71513	188.27935	246.82819	5.59716	0.0869173	0.25145504	2.4859696	20	6 12.6	20.7
471258 2011 <i>CE</i> ₆₃	18.3	X	232.16758	355.11052	114.37277	6.11417	0.1417542	0.27452817	2.3446504	20	9 22.5	21.4
471259 2011 <i>CX</i> ₆₆	17.8	X	130.91508	16.79832	159.62024	2.71853	0.1373656	0.26006440	2.4307975	20	8 29.9	21.3
471260 2011 <i>CR</i> ₆₇	16.7	X	33.66504	44.48846	142.51448	11.38320	0.0914254	0.23537780	2.5979197	20	5 2.9	19.9
471261 2011 <i>CV</i> ₈₆	17.4	X	162.92530	339.14153	158.84485	9.30654	0.0439119	0.25762102	2.4461431	20	8 11.1	20.7
471262 2011 <i>DT</i> ₅	18.3	X	222.70254	114.92254	354.07685	1.08619	0.1336504	0.26668106	2.3904221	20	9 7.3	21.7
471263 2011 <i>DB</i> ₁₄	18.1	X	49.03696	137.35230	152.56739	5.24911	0.1017597	0.26739194	2.3861835	20	10 24.5	21.1
471264 2011 <i>DY</i> ₃₉	17.4	X	15.77545	293.20186	335.12814	17.15081	0.2945940	0.23923346	2.5699308	20	8 25.6	19.4
471265 2011 <i>DN</i> ₄₂	16.9	X	359.97784	239.25451	10.05848	14.02324	0.1662383	0.22631230	2.6668420	20	5 25.6	19.8
471266 2011 <i>EV</i> ₃₈	17.7	X	40.55711	120.46361	102.57785	2.93299	0.1513863	0.23388181	2.6089860	20	7 9.9	20.7
471267 2011 <i>EO</i> ₄₃	17.7	X	30.53397	73.14379	142.11327	4.92336	0.1965949	0.23215480	2.6219090	20	6 16.6	20.3
471268 2011 <i>EP</i> ₇₁	17.3	X	281.97986	306.69451	62.70779	6.67006	0.0184349	0.24292920	2.5437996	20	7 27.6	20.6
471269 2011 <i>EG</i> ₈₆	17.4	X	25.11714	126.08385	92.58457	15.31846	0.2088188	0.22874500	2.6479004	20	6 12.4	19.8
471270 2011 <i>FU</i> ₃	16.9	X	100.22276	317.90571	156.97650	11.54408	0.1279582	0.22858776	2.6491146	20	5 7.0	20.7
471271 2011 <i>FZ</i> ₆	16.6	X	287.53118	131.74635	165.10252	7.91248	0.0441463	0.22860802	2.6489580	20	4 22.2	20.1
471272 2011 <i>F</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>
471281 2011 FT ₉₇	16.2	X	248.07388	178.55393	191.96853	13.39897	0.2758702	0.23951110	2.5679444	20	5 12.3	20.5
471282 2011 FG ₉₈	17.4	X	24.77394	250.17137	344.46214	5.44637	0.1570813	0.23237638	2.6202419	20	6 29.5	20.2
471283 2011 FH ₁₀₅	17.4	X	282.94848	42.46222	34.29003	4.64540	0.1781122	0.27610798	2.3356983	20	10 16.2	19.5
471284 2011 GX ₂	17.0	X	16.82718	105.29903	140.87601	12.10185	0.2631328	0.22830300	2.6513169	20	7 13.5	19.2
471285 2011 GW ₄	17.0	X	17.88417	108.24727	166.03735	28.88057	0.3172140	0.23454332	2.6040781	20	9 11.8	19.2
471286 2011 GU ₇	17.7	X	37.97894	341.95676	247.13935	6.01826	0.0967980	0.23510212	2.5999501	20	7 5.5	20.8
471287 2011 GA ₂₆	17.5	X	350.01517	83.36656	220.87945	6.95574	0.0994290	0.24000471	2.5644223	20	7 31.1	20.4
471288 2011 GM ₂₇	5.1	X	90.35229	201.29052	257.32002	13.02035	0.0253275	0.00341959	43.6334830	20	3 27.5	21.5
471289 2011 GJ ₃₄	16.6	X	22.50356	210.33498	14.24514	13.27086	0.1886666	0.22734963	2.6587238	20	6 9.8	19.5
471290 2011 GX ₃₄	16.8	X	243.19383	46.56936	3.71084	7.52967	0.0369927	0.24468009	2.5316498	20	7 28.5	20.2
471291 2011 GV ₆₀	17.3	X	18.91668	62.33526	168.33473	13.07961	0.1910008	0.22683207	2.6627664	20	6 15.3	20.2
471292 2011 GJ ₆₄	16.2	X	331.92000	214.37073	73.31634	15.72952	0.1055819	0.22813046	2.6526536	20	6 4.9	19.1
471293 2011 GW ₆₄	17.4	X	23.29995	158.49979	85.21315	10.43710	0.1911032	0.23038794	2.6352969	20	7 15.1	20.0
471294 2011 GK ₇₀	16.9	X	343.76822	232.52792	44.24293	17.25058	0.2031245	0.22401751	2.6850234	20	5 30.9	19.6
471295 2011 GK ₇₄	16.8	X	298.19990	176.24738	82.34031	5.21794	0.0552044	0.20925718	2.8098456	20	3 17.7	20.6
471296 2011 GP ₈₃	17.4	X	352.50349	125.19733	154.56351	7.77470	0.1367753	0.23122639	2.6289225	20	6 30.7	20.1
471297 2011 GM ₈₅	17.4	X	45.30547	245.00919	13.75010	4.99937	0.1005605	0.24157989	2.5532629	20	9 1.3	20.5
471298 2011 HD ₃	17.5	X	354.38850	101.89609	150.39723	11.97928	0.2335663	0.22266874	2.6958551	20	5 23.7	20.0
471299 2011 HM ₁₁	17.5	X	97.27637	140.74044	77.46049	13.11901	0.1031767	0.24486952	2.5303440	20	9 20.8	21.4
471300 2011 HZ ₁₂	16.5	X	82.32119	116.71198	96.46314	15.80147	0.0816473	0.23753057	2.5821990	20	8 19.5	20.2
471301 2011 HS ₂₀	17.5	X	342.63064	95.12070	157.59140	8.68712	0.1695873	0.21856192	2.7295207	20	5 1.7	20.4
471302 2011 HS ₃₀	17.4	X	46.77676	110.82563	96.31384	8.73300	0.2424011	0.22851094	2.6497082	20	7 12.8	20.3
471303 2011 HS ₃₆	18.0	X	9.42939	140.33266	129.41773	5.25891	0.2066000	0.23024406	2.6363947	20	7 26.7	20.3
471304 2011 HZ ₅₃	17.0	X	91.58540	24.43699	152.63657	12.98585	0.1447869	0.23725456	2.5842013	20	7 16.8	20.8
471305 2011 HL ₅₆	17.7	X	66.76585	48.11102	143.03865	6.61566	0.1733575	0.22945695	2.6424203	20	7 8.3	21.2
471306 2011 HE ₆₇	17.7	X	352.39741	107.36560	157.84346	12.62833	0.1734688	0.22264756	2.6960261	20	6 9.2	20.6
471307 2011 HM ₇₂	17.2	X	314.83865	164.27077	146.07491	11.04855	0.1937361	0.22115319	2.7081575	20	5 29.2	20.5
471308 2011 HK ₇₃	17.0	X	4.21121	180.10460	61.61679	9.56105	0.1639774	0.22701530	2.6613335	20	6 28.0	19.6
471309 2011 HO ₇₉	16.9	X	264.71394	33.64406	15.61472	8.65150	0.0324732	0.25054735	2.4919702	20	8 28.6	20.1
471310 2011 HZ ₈₂	16.4	X	23.64583	206.70481	43.76246	15.14054	0.1663325	0.23238436	2.6201820	20	7 27.0	19.5
471311 2011 HA ₈₅	16.6	X	322.58362	113.08220	155.56956	14.20801	0.1485390	0.21407493	2.7675290	20	4 22.5	20.1
471312 2011 HA ₈₈	17.2	X	202.35059	310.50651	126.89977	11.71906	0.0241762	0.23322749	2.6138634	20	7 9.5	20.9
471313 2011 HU ₈₈	17.7	X	43.52767	94.18128	127.61887	8.55364	0.1056651	0.23063200	2.6334375	20	7 5.6	20.9
471314 2011 HR ₉₀	17.6	X	37.09847	150.27589	102.64691	8.72955	0.0389620	0.23958344	2.5674274	20	8 1.5	20.7
471315 2011 JL ₉	16.8	X	233.15124	198.55154	119.86047	7.96774	0.0987604	0.20225428	2.8743362	20	3 11.9	21.3
471316 2011 JQ ₂₀	17.1	X	66.56015	346.02308	225.07881	4.78645	0.0564590	0.23311792	2.6146824	20	7 16.4	20.6
471317 2011 JJ ₂₈	16.9	X	330.05156	206.35439	72.23184	10.56594	0.1500181	0.21811524	2.7332459	20	5 16.1	19.9
471318 2011 JF ₃₁	5.2	X	92.86643	253.20767	236.80880	27.67167	0.1296539	0.00367482	41.5890386	20	5 18.2	21.5
471319 2011 KS ₁	16.6	X	341.84265	106.82511	135.52155	13.73784	0.1702482	0.21295542	2.7772198	20	4 18.5	19.9
471320 2011 KQ ₂	16.7	X	288.17795	148.84083	67.43394	13.02750	0.0953172	0.19035019	2.9929572	20	1 7.9	21.1
471321 2011 KG ₆	16.7	X	304.17420	344.21418	231.69066	14.11830	0.1531792	0.19765302	2.9187736	20	2 13.3	21.0
471322 2011 KU ₆	16.8	X	321.55353	230.46594	55.83517	16.60304	0.1243382	0.21958250	2.7210565	20	5 14.4	19.9
471323 2011 KW ₁₅	19.4	X	336.91727	97.48743	283.37689	23.65844	0.4936772	0.77892695	1.1698717	20	—	—
471324 2011 KE ₁₆	17.3	X	311.10342	198.94336	120.97996	14.51986	0.1579254	0.22234163	2.6984986	20	6 10.8	20.6
471325 2011 KT ₁₉	7.2	X	35.64962	322.93356	243.77367	110.13285	0.3300959	0.00463169	35.6431919	20	5 20.2	21.8
471326 2011 KJ ₂₁	17.1	X	271.95366	306.24368	80.98451	15.04077	0.1226972	0.23667888	2.5883900	20	7 20.5	20.6
471327 2011 KJ ₂₃	17.1	X	60.43816	144.34033	91.45438	13.75331	0.1091971	0.23543397	2.5975064	20	8 26.1	20.7
471328 2011 KH ₃₄	17.3	X	294.95300	50.29672	200.53772	6.23534	0.1898912	0.20051617	2.8909225	20	2 10.0	21.6
471329 2011 KG ₃₆	16.9	X	120.00999	63.66418	128.72038	13.67973	0.1092094	0.24175778	2.5520102	20	9 8.1	20.8
471330 2011 KH ₄₅	16.6	X	298.51790	325.97984	66.93007	17.66285	0.1520763	0.24273106	2.5451838	20	9 17.1	19.8
471331 2011 LR ₇	16.9	X	348.56022	175.98022	83.35169	13.51131	0.1441261	0.21977197	2.7194924	20	5 24.5	19.7
471332 2011 LD ₁₀	16.4	X	8.65710	82.43279	149.89012	15.04301	0.0909236	0.21884461	2.7271696	20	5 31.7	19.9
471333 2011 LJ ₁₅	17.4	X	303.65462	315.49930	352.58753	3.15214	0.1860113	0.21696588	2.7428902	20	5 4.9	20.8
471334 2011 LE ₂₇	18.1	X	92.82359	294.29799	107.47514	24.19407	0.0059823	0.39188788	1.8493885	20	—	—
471335 2011 OD ₁₆	8.6	X	352.10771	200.82607	166.06864	6.29397	0.1843314	0.00841112	23.9460209	20	9 19.9	21.4
471336 2011 OZ ₁₈	18.1	X	180.65417	207.58648	101.84407	21.12248	0.0815433	0.38964778	1.8564699	20	—	—
471337 2011 OQ ₂₁	16.7	X	278.45744	160.71562	173.16464	7.27321	0.0717321	0.20518985	2.8468558	20	5 25.1	20.6
471338 2011 OY ₃₃	16.4	X	301.58501	200.66070	115.71392	18.56345	0.0820928	0.20917282	2.8106012	20	6 4.0	20.3
471339 2011 ON ₄₅	11.3	X	10.35022	76.99587	330.26186	8.19640	0.1571587	0.02483210	11.6357334	20	11 28.5	21.2
471340 2011 OK ₄₈	16.7	X	290.78222	348.14523	300.02398	10.15479	0.1260642	0.19500522	2.9451351	20	3 28.0	21.0
471341 2011 PO ₁₅	16.4	X	236.58014	99.39966	235.40745	11.33211	0.2175656	0.18489625	3.0515276	20	3 21.3	21.7
471342 2011 PQ ₂₂	16.8	X	219.45488	173.74105	188.91893	9.93917	0.1456911	0.18811408	3.0166286	20	4 17.1	21.6
471343 2011 QD ₁₀	17.2	X	263.01493	138.75104	187.45305	9.68104	0.0968104	0.19112827	2.9848288	20	4 22.6	21.5
471344 2011 QE ₂₂	16.2	X	116.89907	290.12525	166.01267	8.87772	0.0869720	0.18591731	3.0403448	20	4 27.9	20.7
471345 2011 QG ₂₄	16.6	X	273.07578	88.79951	220.03156	5.50932	0.0663640	0.18897107	3.0075014	20	4 15.1	20.8
471346 2011 QP ₄₄	16.5	X	271.11100	320.50027	322.18025	14.47915	0.2558448	0.18717693	3.0266893	20	2 18.5	21.4
471347 2011 QU ₄₇	17.6	X	220.21175	343.95237	281.24574	19.41026	0.0559170	0.38478828	1.8720674	20	—	—
471348 2011 QU ₅₄	16.6	X	283.30177	124.87446	189.59924	15.38317	0.2028334	0.19538809	2.9412865	20	4 17.1	20.8
471349 2011 QO ₅₇	15.7	X	178.85201	259.15503	141.02307	17.42418	0.2639832	0.17818998	3.1276192	20	5 1.5	21.5
471350 2011 QY ₆₃	16.5	X	61.56707	233.61326	184.48948	14.80223	0.1062623	0.15389632	3.4486614	20	1 5.6	21.3
471351 2011 QB ₆₅	17.2	X	224.38136	209.26684	163.27131	7.79135	0.3289220	0.18710339	3.0274823	20	4 24.9	22.7
471352 2011 QH ₇₈	16.8	X	215.18422	44.08074	354.32300	17.73605	0.2060176	0.19033085	2.9931600	20	5 15.9	22.1
471353 2011 QE ₇₉	18.1	X	25.47689	244.82784	155.59756	23.83083	0.1102586	0.36164825				

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>
471361 2011 <i>SL</i> ₃₂	16.6	X	206.91721	55.68065	356.41679	9.29268	0.1476525	0.18693654	3.0292835	20	6 1.6	21.6
471362 2011 <i>SD</i> ₃₅	16.7	X	267.77145	306.42787	25.03064	9.07600	0.1452917	0.18721565	3.0262720	20	4 26.2	21.1
471363 2011 <i>SQ</i> ₃₈	16.2	X	204.16507	18.91633	342.23512	8.86722	0.0805674	0.17802739	3.1295231	20	3 30.8	21.1
471364 2011 <i>ST</i> ₄₁	16.4	X	274.60100	287.82975	335.29984	9.47954	0.1863842	0.17813075	3.1283124	20	2 9.5	21.3
471365 2011 <i>SC</i> ₄₂	16.4	X	263.35206	316.61463	336.54269	9.93745	0.0620419	0.17931009	3.1145805	20	3 14.9	20.9
471366 2011 <i>SX</i> ₄₄	16.4	X	117.35926	252.94212	190.14475	12.46304	0.1232268	0.17339042	3.1850725	20	4 15.9	21.1
471367 2011 <i>SD</i> ₆₀	16.1	X	225.26647	46.93827	292.86528	11.81055	0.1834382	0.18165158	3.0877580	20	3 17.5	21.4
471368 2011 <i>SE</i> ₆₂	16.3	X	264.79918	56.35264	263.59253	6.25560	0.1981391	0.18687883	3.0299071	20	3 31.7	21.2
471369 2011 <i>SE</i> ₆₂	16.8	X	150.17523	94.18302	301.67931	9.66632	0.0859624	0.17476485	3.1683512	20	3 15.4	21.7
471370 2011 <i>SK</i> ₆₇	18.3	X	179.94458	129.77934	196.49942	20.33751	0.1002681	0.38620938	1.8674723	20	—	—
471371 2011 <i>ST</i> ₇₂	16.9	X	216.03752	160.85587	194.46484	9.22669	0.0764822	0.18044964	3.1014542	20	4 8.1	21.6
471372 2011 <i>SH</i> ₇₄	16.0	X	193.23159	47.14275	346.22694	15.95416	0.1188654	0.18292529	3.0734080	20	4 22.5	21.1
471373 2011 <i>SF</i> ₇₅	16.3	X	126.13740	114.72181	344.24210	16.71046	0.1629084	0.17630000	3.1499320	20	5 10.8	21.6
471374 2011 <i>SN</i> ₈₄	15.7	X	192.94329	339.58471	38.27666	19.04213	0.1686734	0.17211242	3.2008199	20	4 14.2	21.0
471375 2011 <i>SP</i> ₈₇	16.5	X	185.82238	65.13375	342.41455	6.10845	0.2061696	0.17830042	3.1263275	20	5 7.2	21.9
471376 2011 <i>SR</i> ₈₉	16.3	X	199.32616	25.52763	6.43692	11.54758	0.0605209	0.18008206	3.1056731	20	5 1.8	21.0
471377 2011 <i>SR</i> ₉₉	15.8	X	185.30290	26.68735	9.60254	13.52047	0.1719563	0.17971016	3.1099564	20	4 22.0	20.5
471378 2011 <i>SU</i> ₉₉	16.3	X	196.91135	36.66965	16.03671	11.66070	0.1602294	0.18427429	3.0583901	20	5 22.5	21.4
471379 2011 <i>SM</i> ₁₀₄	16.6	X	335.76603	302.91826	351.23782	11.05905	0.0490200	0.19176632	2.9782044	20	6 24.4	20.7
471380 2011 <i>SG</i> ₁₀₉	16.4	X	232.73113	125.85383	177.40149	10.06890	0.2176836	0.17630727	3.1498454	20	2 13.9	21.8
471381 2011 <i>SC</i> ₁₁₆	16.1	X	211.09726	183.41610	185.31241	17.65003	0.2215686	0.18194370	3.0844521	20	4 14.8	21.4
471382 2011 <i>SW</i> ₁₂₀	17.1	X	265.13938	291.37294	86.15401	3.10250	0.0841860	0.20076025	2.8885789	20	6 30.9	20.9
471383 2011 <i>SX</i> ₁₂₁	16.5	X	210.25029	342.72414	19.70492	8.65409	0.1716529	0.17751215	3.1355760	20	4 7.2	21.7
471384 2011 <i>SC</i> ₁₂₂	16.3	X	206.68095	172.84134	193.87740	10.55767	0.2313248	0.17715750	3.1397593	20	4 7.7	21.7
471385 2011 <i>SR</i> ₁₂₂	16.6	X	232.03872	270.37112	85.44779	2.20201	0.1947793	0.18109433	3.0940891	20	4 17.4	21.7
471386 2011 <i>SG</i> ₁₂₅	16.7	X	178.46418	330.29758	59.41361	2.14752	0.2100429	0.17270392	3.1935073	20	4 13.5	22.0
471387 2011 <i>SG</i> ₁₂₆	16.3	X	227.60008	314.29274	27.59979	11.05685	0.1609386	0.17746398	3.1361433	20	3 31.6	21.4
471388 2011 <i>SQ</i> ₁₂₆	16.5	X	200.65593	274.06598	104.77693	2.51090	0.1942787	0.17727714	3.1383465	20	4 18.7	21.8
471389 2011 <i>SQ</i> ₁₂₈	16.6	X	184.62177	15.55633	43.91147	5.81077	0.1343125	0.17904552	3.1176480	20	5 22.3	21.5
471390 2011 <i>ST</i> ₁₂₉	16.5	X	178.56870	232.91842	154.00593	3.39717	0.1160173	0.17126691	3.2113458	20	4 9.3	21.6
471391 2011 <i>SV</i> ₁₃₃	15.3	X	123.33707	88.66830	33.36143	26.03924	0.1814678	0.17542152	3.1604394	20	6 7.1	20.7
471392 2011 <i>SQ</i> ₁₃₄	16.5	X	204.98476	26.30466	344.54186	9.94633	0.2373761	0.17752914	3.1353759	20	4 7.5	22.1
471393 2011 <i>SP</i> ₁₄₃	16.9	X	278.84071	297.47928	24.67788	0.69402	0.1487936	0.18851266	3.0123750	20	4 27.9	21.2
471394 2011 <i>SJ</i> ₁₄₅	15.9	X	119.11197	120.45143	341.80732	9.67758	0.0284209	0.18176939	3.0864237	20	4 24.4	20.4
471395 2011 <i>SD</i> ₁₆₅	16.7	X	233.05348	348.88176	38.73998	5.49458	0.2468841	0.18845515	3.0129878	20	5 20.9	21.9
471396 2011 <i>SN</i> ₁₆₅	16.4	X	245.39028	37.97575	315.65101	11.46836	0.2123180	0.18843938	3.0131559	20	4 18.7	21.6
471397 2011 <i>SR</i> ₁₆₅	16.0	X	269.09797	350.78176	337.15533	10.20433	0.1423415	0.18751914	3.0230058	20	4 20.1	20.7
471398 2011 <i>SA</i> ₁₆₆	15.6	X	280.04594	277.22489	356.36703	12.61351	0.1073833	0.17430123	3.1739670	20	3 8.5	20.2
471399 2011 <i>SN</i> ₁₆₆	16.4	X	212.09177	8.91353	344.83381	9.31899	0.0894466	0.17771627	3.1331746	20	3 29.9	21.3
471400 2011 <i>SG</i> ₁₆₉	16.0	X	236.74354	135.01801	198.50009	10.13214	0.1508519	0.17765074	3.1339450	20	3 27.9	21.0
471401 2011 <i>SV</i> ₁₇₁	16.0	X	217.74371	342.98977	21.46761	10.82525	0.2083195	0.17537866	3.1609542	20	4 18.3	21.0
471402 2011 <i>SZ</i> ₁₇₂	17.0	X	237.48094	151.81637	215.35458	1.82846	0.2678435	0.18479253	3.0526694	20	4 29.5	22.3
471403 2011 <i>SP</i> ₁₈₁	16.3	X	244.28380	123.94506	217.79124	14.64957	0.1274018	0.17968643	3.1102302	20	4 15.9	21.1
471404 2011 <i>SO</i> ₁₈₈	16.6	X	188.39928	135.87561	241.84536	4.91059	0.1468658	0.17434076	3.1734872	20	4 4.9	21.8
471405 2011 <i>SP</i> ₁₈₈	16.2	X	113.62558	190.28359	336.51612	6.37936	0.0591749	0.19648190	2.9303602	20	7 18.9	20.5
471406 2011 <i>SU</i> ₁₉₀	18.2	X	144.07478	116.78185	219.62474	19.24325	0.0998572	0.37202627	1.9146393	20	—	—
471407 2011 <i>SS</i> ₂₁₇	16.6	X	242.92618	256.85338	65.84635	1.76162	0.2274568	0.18269133	3.0760313	20	3 16.6	21.7
471408 2011 <i>SN</i> ₂₂₂	16.1	X	330.92569	245.42843	0.17048	15.86778	0.0950425	0.17560933	3.1581856	20	4 6.2	20.3
471409 2011 <i>SM</i> ₂₂₃	17.0	X	210.64114	204.91707	164.96633	0.81997	0.1992947	0.17985989	3.1082301	20	4 15.2	22.2
471410 2011 <i>SH</i> ₂₂₆	17.0	X	354.07638	154.77005	248.74314	7.03232	0.1235237	0.23185481	2.6241701	20	12 28.7	20.0
471411 2011 <i>SN</i> ₂₅₉	16.7	X	232.66963	128.51847	231.30086	18.06136	0.1775067	0.17706573	3.1408441	20	4 21.8	21.8
471412 2011 <i>SR</i> ₂₇₃	16.7	X	243.02698	184.56908	151.76281	6.80698	0.2452961	0.18568276	3.0429046	20	4 1.1	21.8
471413 2011 <i>SB</i> ₂₇₄	15.8	X	202.18588	21.63175	342.50229	15.32297	0.1603866	0.17251131	3.1958839	20	3 28.8	21.2
471414 2011 <i>SG</i> ₂₇₅	15.9	X	252.71894	320.47070	3.03124	16.64472	0.0685244	0.18149693	3.0895118	20	4 6.7	20.5
471415 2011 <i>SB</i> ₂₇₆	16.3	X	239.68687	303.16976	28.29009	9.64202	0.1037782	0.17802240	3.1295816	20	4 3.5	21.0
471416 2011 <i>TL</i> ₂	16.3	X	291.48093	82.35091	192.80964	4.64485	0.1026516	0.17978070	3.1091428	20	3 22.5	20.5
471417 2011 <i>TV</i> ₁₅	16.3	X	208.06530	39.41662	332.62980	10.43186	0.1045031	0.18180829	3.0859834	20	4 13.9	21.2
471418 2011 <i>TO</i> ₁₆	16.7	X	202.56576	94.69692	295.47822	7.76597	0.0984355	0.18912880	3.0058290	20	5 2.4	21.4
471419 2011 <i>TJ</i> ₁₇	15.2	X	180.24105	345.09667	36.86090	21.83462	0.0356839	0.17374847	3.1806952	20	4 8.3	20.0
471420 2011 <i>UL</i> ₇	16.5	X	256.96848	105.11503	219.93931	9.67784	0.1548260	0.17651974	3.1473173	20	4 5.5	21.4
471421 2011 <i>UH</i> ₈	16.3	X	256.82670	311.90172	47.64082	5.22016	0.2283404	0.18664481	3.0324392	20	5 10.4	21.2
471422 2011 <i>UP</i> ₉	17.1	X	217.05673	183.06197	185.46001	0.45182	0.2003476	0.17568858	3.1572359	20	4 18.8	22.4
471423 2011 <i>UY</i> ₂₈	16.0	X	211.58727	52.40405	306.43972	4.24740	0.0673760	0.16881952	3.2423080	20	4 6.4	20.9
471424 2011 <i>UZ</i> ₃₁	15.7	X	159.96899	124.16444	303.47114	9.97562	0.0062887	0.17833944	3.1258715	20	4 29.1	20.4
471425 2011 <i>UC</i> ₃₉	15.8	X	262.76485	55.70140	206.05129	12.13264	0.1488094	0.17298556	3.1900402	20	2 29.2	21.0
471426 2011 <i>UY</i> ₄₄	17.3	X	157.97262	63.02884	12.24660	4.59393	0.2594140	0.17342350	3.1846674	20	5 20.7	23.0
471427 2011 <i>UU</i> ₄₅	17.1	X	242.19907	13.86089	347.94980	1.00794	0.2474667	0.18616339	3.0376649	20	4 28.0	22.2
471428 2011 <i>UD</i> ₄₈	16.3	X	241.72776	346.68010	32.64523	9.29915	0.1112985	0.18554943	3.0443620	20	5 30.5	21.0
471429 2011 <i>UL</i> ₅₉	16.1	X	247.72760	136.92884	232.75046	13.90915	0.2610769	0.18615247	3.0377837	20	5 11.3	20.9
471430 2011 <i>UO</i> ₆₃	18.0	X	122.08988	294.66237	73.88788	20.97225	0.2451294	0.37741192	1.8963812	20	1 2.9	19.6
471431 2011 <i>UY</i> ₆₄	18.4	X	225.48776	52.02959								

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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>
471441 2011 UF ₁₁₆	17.0	X	198.13367	349.88790	65.25490	10.31142	0.2816142	0.18348265	3.0671808	20	5 26.4	22.5
471442 2011 US ₁₁₆	16.2	X	249.36122	117.60804	221.03661	17.75113	0.0582706	0.17883171	3.1201324	20	4 25.7	20.7
471443 2011 UY ₁₁₇	16.5	X	243.75303	121.09915	220.08638	16.37198	0.2825307	0.18310658	3.0713790	20	3 31.5	22.0
471444 2011 UH ₁₁₈	15.9	X	197.69072	63.20846	307.26872	19.56868	0.2130589	0.17440247	3.1727386	20	3 25.7	21.7
471445 2011 UN ₁₃₃	16.5	X	238.34004	338.47646	358.16694	12.38220	0.1152131	0.18302999	3.0722358	20	4 3.2	21.2
471446 2011 UH ₁₄₅	16.6	X	229.35144	49.30213	9.52765	11.76524	0.2304433	0.19068188	2.9894854	20	6 27.1	21.7
471447 2011 UT ₁₄₅	16.0	X	284.26483	293.57168	26.18589	5.88655	0.1644684	0.17903526	3.1177671	20	4 29.0	20.5
471448 2011 UZ ₁₄₅	17.7	X	55.47486	180.27388	233.32168	19.57885	0.0737612	0.36267204	1.9474217	20	—	—
471449 2011 UX ₁₅₃	15.7	X	233.95614	64.88738	248.42767	24.34051	0.3149210	0.17521845	3.1628809	20	2 12.9	21.8
471450 2011 UG ₁₅₉	17.8	X	92.03114	195.05995	240.76571	17.82181	0.0806435	0.38199894	1.8811696	20	1 20.5	19.7
471451 2011 UD ₁₆₃	17.8	X	257.59787	341.28493	222.31496	20.10197	0.0465749	0.35949080	1.9588937	20	—	—
471452 2011 UJ ₁₆₃	15.8	X	179.06485	188.66827	243.79677	17.56052	0.2005373	0.17575335	3.1564602	20	6 2.4	21.1
471453 2011 UK ₁₆₈	17.4	X	264.05654	107.26096	191.66079	11.08505	0.1988535	0.18424179	3.0587498	20	3 7.2	22.3
471454 2011 UH ₁₇₂	16.3	X	209.55383	308.19502	40.82483	2.78687	0.1503181	0.17540095	3.1606865	20	3 23.4	21.3
471455 2011 UY ₁₈₄	16.0	X	315.15969	211.04941	86.11726	10.48836	0.1135262	0.18633793	3.0357677	20	5 22.6	19.8
471456 2011 UZ ₁₉₃	16.7	X	257.69189	280.62325	93.85993	10.91954	0.2751156	0.19129633	2.9830804	20	5 26.4	21.5
471457 2011 UJ ₁₉₄	16.2	X	207.17868	103.13242	265.24909	8.81386	0.1121205	0.17318630	3.1875747	20	4 9.9	21.4
471458 2011 UU ₁₉₆	15.9	X	216.95456	135.09000	255.46933	8.37752	0.1022790	0.17953301	3.1120018	20	5 19.9	20.8
471459 2011 UA ₂₀₆	15.9	X	183.47921	303.45568	48.48985	10.82181	0.0831817	0.15671125	3.4072390	20	3 8.8	21.2
471460 2011 UH ₂₀₇	16.3	X	274.08357	44.30225	228.57973	13.72938	0.2303863	0.17216778	3.2001338	20	2 9.9	21.7
471461 2011 UZ ₂₁₃	16.0	X	235.36048	128.38139	220.21313	16.22579	0.2443523	0.18170844	3.0871138	20	4 5.6	21.3
471462 2011 UH ₂₃₅	16.6	X	253.11230	97.16156	233.64476	15.00539	0.2413304	0.18020425	3.1042691	20	3 28.9	21.9
471463 2011 UK ₂₄₅	16.5	X	168.10291	27.78727	40.01051	9.39831	0.1181623	0.17451499	3.1713747	20	5 16.1	21.5
471464 2011 UX ₂₆₈	16.1	X	259.71817	31.96669	320.39257	12.99351	0.2114648	0.18953647	3.0015173	20	4 30.9	21.1
471465 2011 UH ₂₈₅	16.6	X	258.74650	281.07018	39.67311	14.01047	0.0815129	0.17214764	3.2003833	20	4 14.9	21.2
471466 2011 UJ ₃₀₆	16.8	X	278.47388	161.95800	179.53871	10.01804	0.0804320	0.18983133	2.9984084	20	6 2.6	21.1
471467 2011 UH ₃₀₉	16.5	X	199.05996	292.25352	92.83694	11.11384	0.2333038	0.17642664	3.1484244	20	4 27.4	22.1
471468 2011 UG ₃₂₃	16.6	X	225.76879	324.24317	39.86776	8.31741	0.2019810	0.17991145	3.1076362	20	4 21.3	21.6
471469 2011 UW ₃₂₄	16.4	X	246.38466	283.71129	46.08084	10.50358	0.0714726	0.17860052	3.1228244	20	4 12.9	21.0
471470 2011 UJ ₃₂₉	15.8	X	211.16633	321.56847	56.22042	9.95182	0.1038593	0.17427586	3.1742751	20	4 30.4	20.8
471471 2011 UW ₃₃₅	16.7	X	196.80116	41.03386	29.54734	8.06972	0.2664576	0.18412412	3.0600529	20	6 12.2	22.2
471472 2011 UH ₃₃₆	17.8	X	84.75505	205.90974	221.34844	19.64624	0.0996096	0.37913021	1.8906470	20	—	—
471473 2011 US ₃₄₁	16.7	X	205.98799	359.30755	18.17720	8.77932	0.0954532	0.18005338	3.1060030	20	4 22.2	21.4
471474 2011 UT ₃₄₁	16.7	X	184.97617	6.15402	18.30205	9.21751	0.0979740	0.17516332	3.1635445	20	4 10.8	21.7
471475 2011 UR ₃₄₄	15.9	X	141.36711	70.04026	349.80228	9.15216	0.0518284	0.17750138	3.1357028	20	4 2.8	20.5
471476 2011 UF ₃₄₅	16.1	X	146.35283	78.26156	17.27207	9.28370	0.2049659	0.17234005	3.1980009	20	6 1.7	21.5
471477 2011 UO ₃₄₅	16.7	X	225.71696	88.42993	261.70235	10.54796	0.1200176	0.18062718	3.0994215	20	4 4.6	21.7
471478 2011 UX ₃₅₅	16.5	X	244.29163	280.57903	42.68508	11.49622	0.1071501	0.17508277	3.1645146	20	3 31.7	21.4
471479 2011 UN ₃₆₉	15.6	X	268.89437	75.79585	258.36549	10.55302	0.0945227	0.18053189	3.1005121	20	5 7.4	20.1
471480 2011 UH ₃₈₄	16.3	X	221.51216	100.19146	267.93732	8.09015	0.1035176	0.17481200	3.1677815	20	4 25.3	21.3
471481 2011 UP ₃₈₆	16.9	X	253.82874	225.03764	121.95173	7.67755	0.2511714	0.18525599	3.0475760	20	4 23.7	21.9
471482 2011 UG ₃₉₆	16.1	X	197.82124	308.72688	76.38055	17.78598	0.2326401	0.17599592	3.1535592	20	4 28.6	21.7
471483 2011 UB ₃₉₈	15.8	X	213.62158	153.06225	244.80484	7.81689	0.1577432	0.18173432	3.0868208	20	5 22.6	20.6
471484 2011 UW ₄₀₃	16.6	X	212.41154	202.03970	191.58078	0.49223	0.0813586	0.18094092	3.0958377	20	5 20.8	21.4
471485 2011 UH ₄₀₄	15.9	X	190.58188	118.44823	288.33584	9.65535	0.1257273	0.17693310	3.1424134	20	5 10.9	21.1
471486 2011 UM ₄₀₆	15.6	X	274.44651	21.37739	292.42971	10.45414	0.1068258	0.18033956	3.1027161	20	4 13.3	20.3
471487 2011 VS ₅	19.6	X	355.14337	172.79686	356.12471	9.11094	0.4220969	0.71465373	1.2390028	20	—	—
471488 2011 VL ₈	17.5	X	147.55959	61.18642	262.64013	18.33614	0.0713643	0.36709327	1.9317538	20	—	—
471489 2011 WM ₁₄	15.6	X	212.16712	139.91775	261.86692	18.04237	0.2630855	0.18162138	3.0881003	20	5 20.7	21.2
471490 2011 WM ₁₀	16.6	X	284.62780	253.18224	75.52057	2.06063	0.1259288	0.18279438	3.0748751	20	5 17.3	20.8
471491 2011 WZ ₂₉	15.7	X	199.47318	146.81622	275.88802	16.05721	0.1804859	0.18040675	3.1019457	20	6 8.4	21.0
471492 2011 WM ₄₁	15.7	X	248.30490	141.07665	224.78912	14.35621	0.0765832	0.18032241	3.1029129	20	5 27.1	20.3
471493 2011 WN ₄₈	16.0	X	246.61000	89.18822	270.34289	12.69002	0.2274405	0.18306930	3.0717960	20	4 28.0	21.2
471494 2011 WW ₁₁₁	15.6	X	196.40596	167.41288	265.36389	16.85329	0.1893247	0.18107411	3.0943194	20	6 17.4	20.8
471495 2011 WB ₁₁₂	16.5	X	312.12919	41.97108	65.24394	22.86582	0.0565225	0.22710657	2.6606204	20	—	—
471496 2011 WN ₁₁₂	14.9	X	278.79222	16.86384	259.66599	20.41392	0.0468829	0.15737745	3.3976167	20	3 8.8	20.2
471497 2011 WM ₁₂₄	16.9	X	233.29812	271.52189	77.01819	10.64502	0.2402033	0.17770869	3.1332637	20	4 11.2	22.3
471498 2011 WB ₁₃₈	15.5	X	297.24881	75.41771	239.39534	20.82735	0.1243589	0.18452565	3.0556121	20	5 16.2	19.6
471499 2011 WO ₁₄₀	16.3	X	209.84276	18.95032	10.98224	10.60709	0.2371178	0.17715563	3.1397814	20	5 3.8	21.8
471500 2011 WL ₁₅₃	18.1	X	110.84858	54.30060	323.03207	18.89321	0.0870263	0.36504270	1.9389812	20	—	—
471501 2011 YH ₃	17.3	X	141.19602	96.10885	290.47431	18.53136	0.1581974	0.37663311	1.8989946	20	2 7.3	19.5
471502 2011 YO ₁₇	14.9	X	13.75603	165.87140	302.91129	18.24975	0.1841503	0.11855366	4.1038620	20	1 6.3	19.7
471503 2011 YJ ₇₁	13.8	X	274.89684	335.52714	115.39647	26.04703	0.0563284	0.08158232	5.2650843	20	10 13.1	21.0
471504 2012 AL ₁₁	16.3	X	43.76117	32.08485	287.11863	6.96962	0.1402313	0.19924837	2.9031727	20	11 12.9	20.3
471505 2012 BB ₁₁	18.0	X	115.24853	45.39601	338.37565	21.05249	0.0614712	0.36280250	1.9469548	20	—	—
471506 2012 BF ₁₃	17.5	X	16.75527	313.59454	122.51937	26.96966	0.1158541	0.34599669	2.0095004	20	—	—
471507 2012 BQ ₂₄	18.0	X	22.81746	316.89952	129.86089	25.75875	0.1056496	0.34850921	1.9998306	20	—	—
471508 2012 BT ₄₇	18.5	X	81.41855	19.92833	173.50119	3.07695	0.1310773	0.27647521	2.3336296	20	7 27.5	21.5
471509 2012 BR ₅₆	17.9	X	52.08247	299.43090	122.66555	25.52955	0.0989619	0.35454591	1.9770655	20	—	—
471510 2012 BB ₁₀₅	17.0	X	347.16619	63.91324	3.66999	7.09595	0.1623463	0.21728945	2.7401665	20	—	—
471511 2012 BC ₁₃₁	18.1	X	124.39153	63.68513	299.69356	16.74351	0.0832814	0.35175132	1.9875233	20	—	—
471512 2012 CG	8.7	X	44.44886	292.98943	128.84772	14.62040	0.4974293	0.00640271	28.7227917	20	3 6.5	22.5
471513 2012 CE ₁₇	8.8	X	9.18399	357.68902	174.50166	5.90946	0.1161592	0.00990709	21.47			

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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>		
471521	2012	FT ₇₂	17.2	X	33.51185	339.11539	256.65168	6.26152	0.2667209	0.26159209	2.4213244	20	8 6.0	19.6
471522	2012	GR ₁₈	18.0	X	91.55144	72.38095	156.87409	4.23506	0.1685637	0.27862267	2.3216233	20	10 3.3	21.3
471523	2012	GV ₁₉	17.9	X	73.00104	257.45144	49.08877	7.31098	0.1378453	0.29594963	2.2300992	20	12 21.8	21.1
471524	2012	GV ₂₆	18.9	X	134.70283	172.36767	30.67648	2.57827	0.1837022	0.28652921	2.2787155	20	10 11.5	22.4
471525	2012	GR ₃₄	18.4	X	144.29413	239.13809	319.12531	2.36502	0.1446779	0.28896191	2.2659082	20	10 13.1	21.8
471526	2012	GU ₃₉	17.8	X	85.80347	143.03954	74.43933	3.58273	0.1688856	0.27362119	2.3498289	20	9 11.8	21.1
471527	2012	HS ₄	17.9	X	46.94713	63.21587	154.43084	8.32435	0.1657870	0.26168188	2.4207705	20	7 16.4	20.6
471528	2012	HH ₉	17.5	X	89.00013	103.27501	89.13044	9.71433	0.2187183	0.26813255	2.3817876	20	8 19.1	21.1
471529	2012	HW ₉	17.5	X	53.52186	190.02077	106.38348	7.28369	0.2476986	0.27679955	2.3318040	20	11 28.1	20.9
471530	2012	HW ₂₂	17.1	X	6.25444	224.71056	83.62096	13.34267	0.2514934	0.26366027	2.4086457	20	10 13.4	19.5
471531	2012	HM ₂₇	18.1	X	113.14395	179.51906	57.35261	7.25421	0.2040060	0.28521990	2.2856839	20	11 5.1	21.8
471532	2012	HS ₅₇	17.8	X	87.45204	4.41670	214.24050	5.48865	0.2411299	0.27248722	2.3563436	20	9 18.7	21.4
471533	2012	HB ₅₈	17.7	X	34.59128	200.96847	85.90707	14.25616	0.2078449	0.26824077	2.3811469	20	10 23.1	20.8
471534	2012	HN ₆₃	18.0	X	155.93851	128.88014	68.85691	4.99080	0.1242870	0.28935106	2.2638762	20	10 27.2	21.4
471535	2012	HT ₇₂	17.6	X	70.84995	184.64971	110.42136	7.48290	0.1578503	0.28807764	2.2705427	20	12 6.3	20.9
471536	2012	JS ₉	18.1	X	20.93554	245.83837	50.35517	3.09417	0.1940051	0.26725519	2.3869974	20	10 5.9	20.5
471537	2012	JS ₁₂	18.0	X	43.01481	45.82275	226.34216	5.55422	0.1162748	0.26968677	2.3726279	20	9 19.6	20.8
471538	2012	JZ ₂₂	17.7	X	165.31180	102.28223	77.09953	9.94640	0.1226374	0.28950724	2.2630619	20	10 16.5	21.1
471539	2012	JV ₂₄	17.7	X	55.21463	189.99101	63.44987	6.24892	0.1915560	0.26998163	2.3709000	20	9 28.2	20.8
471540	2012	JE ₃₄	17.8	X	4.47469	75.28876	252.70748	5.06896	0.1315707	0.27408394	2.3471832	20	10 12.1	20.2
471541	2012	JS ₅₀	17.6	X	326.18647	142.44741	217.38470	23.56348	0.1859044	0.27578992	2.3374937	20	9 8.4	20.0
471542	2012	JD ₅₈	18.3	X	105.52250	142.34795	127.28197	6.77426	0.0699274	0.29509856	2.2343849	20	12 6.1	21.4
471543	2012	JE ₅₉	18.7	X	62.90977	242.23170	59.27227	5.05574	0.1471492	0.28821008	2.2698471	20	12 3.8	21.8
471544	2012	JB ₆₅	17.8	X	3.23339	217.82378	85.62364	5.57846	0.2334944	0.26055277	2.4277591	20	9 19.5	19.8
471545	2012	KC ₁₃	17.9	X	33.43847	217.18451	85.44985	3.34036	0.3012263	0.27146633	2.3622475	20	11 19.7	20.9
471546	2012	KG ₃₁	17.9	X	65.54211	193.80156	78.44935	3.30186	0.2127017	0.27740688	2.3284016	20	11 5.3	21.3
471547	2012	KY ₄₉	16.3	X	187.87076	310.43260	81.19067	22.73449	0.0431335	0.23594925	2.5937234	20	4 30.5	20.3
471548	2012	KJ ₅₀	18.2	X	47.03237	64.21254	231.34419	2.04221	0.1870872	0.27409066	2.3471449	20	11 10.4	21.2
471549	2012	KP ₅₀	17.0	X	312.81963	180.67711	105.25932	15.87859	0.2841478	0.23714549	2.5849936	20	4 10.9	20.5
471550	2012	LP ₄	17.5	X	54.05158	22.57095	249.25973	11.78265	0.2837479	0.26883741	2.3776226	20	10 27.8	21.1
471551	2012	LY ₁₆	18.3	X	76.73648	20.03190	228.68918	1.87900	0.1781230	0.27358885	2.3500140	20	10 11.8	21.6
471552	2012	LT ₂₅	17.0	X	338.34425	107.81751	289.88583	20.73735	0.2857964	0.26402208	2.4064447	20	12 30.3	18.7
471553	2012	NM	17.8	X	293.58889	111.68400	225.07338	11.26267	0.2993337	0.23315942	2.6143721	20	5 12.0	21.0
471554	2012	NG ₁	17.2	X	23.58967	5.03889	314.12752	6.03687	0.0702083	0.26065064	2.4271513	20	10 17.1	20.3
471555	2012	OF ₁	17.0	X	332.89948	15.82052	275.22925	13.60499	0.2465847	0.23491077	2.6013618	20	5 24.8	19.4
471556	2012	PJ ₁₃	17.1	X	321.32232	10.30325	306.06166	5.77948	0.0945064	0.23176274	2.6248650	20	6 30.3	20.0
471557	2012	PH ₁₄	16.9	X	239.74056	68.31578	329.90529	12.86988	0.1958683	0.22359314	2.6884196	20	6 14.3	21.3
471558	2012	PA ₁₈	16.8	X	340.37523	344.32986	333.17933	13.40672	0.1319391	0.24015507	2.5633518	20	8 7.6	19.4
471559	2012	PZ ₂₃	17.2	X	316.90310	90.55837	247.49626	6.37331	0.1174191	0.23977713	2.5660447	20	7 20.6	20.0
471560	2012	PZ ₂₆	17.5	X	22.80099	285.20492	329.50903	5.35219	0.0661831	0.23754692	2.5820805	20	7 15.9	20.5
471561	2012	PO ₃₀	16.6	X	252.98053	38.33046	294.41078	12.75610	0.2163308	0.21801375	2.7340941	20	3 28.2	21.3
471562	2012	PH ₃₈	17.6	X	262.64456	110.21103	276.70756	4.14511	0.1990793	0.23389665	2.6088756	20	6 24.6	21.2
471563	2012	PO ₃₉	15.9	X	80.82943	145.09718	290.92643	7.72143	0.0818763	0.19009386	2.9956471	20	2 12.6	19.9
471564	2012	QZ ₂	17.8	X	292.47911	302.23301	112.02543	2.08130	0.1373941	0.25513173	2.4620284	20	10 1.4	20.2
471565	2012	QN ₂₂	16.9	X	5.05893	288.24034	332.85921	13.75455	0.1706050	0.23235576	2.6203970	20	7 2.5	19.6
471566	2012	QV ₂₄	17.0	X	266.95400	55.53293	336.42184	12.35220	0.2630281	0.22983753	2.6395025	20	6 28.9	21.0
471567	2012	QO ₂₅	17.2	X	264.28547	22.80931	332.67111	5.11052	0.0730897	0.22143740	2.7058397	20	6 1.5	20.9
471568	2012	QV ₂₅	16.4	X	175.37291	103.10332	341.42891	11.50020	0.1859062	0.21329987	2.7742291	20	6 13.9	21.2
471569	2012	QQ ₂₆	16.5	X	179.23294	271.55568	179.04628	11.22172	0.0412547	0.22285687	2.6943377	20	6 26.5	20.6
471570	2012	QN ₂₇	17.1	X	326.21105	24.64662	341.21105	12.07929	0.1327249	0.24654580	2.5188616	20	9 18.1	19.5
471571	2012	QE ₃₃	17.4	X	350.67483	38.67798	310.89519	6.87378	0.1886418	0.25090480	2.4896028	20	10 17.5	19.9
471572	2012	QO ₄₁	16.8	X	286.84488	65.35042	300.76928	11.50764	0.2841378	0.23164432	2.6257595	20	6 14.6	20.3
471573	2012	QZ ₄₅	16.9	X	290.29726	17.65654	307.56333	9.58493	0.0540102	0.22823273	2.6518610	20	5 29.5	20.6
471574	2012	QO ₄₉	17.4	X	22.03159	81.74554	162.61479	15.27051	0.1063020	0.23506279	2.6002401	20	7 2.2	20.6
471575	2012	QO ₅₁	16.9	X	288.74817	200.44313	181.22574	7.43646	0.3141774	0.23242984	2.6198401	20	7 2.9	20.2
471576	2012	RD ₁	17.4	X	7.11771	160.45997	179.69039	7.30601	0.1238023	0.25707875	2.4495817	20	11 2.3	20.1
471577	2012	RV ₂	16.7	X	242.06902	96.66230	331.24426	12.74250	0.1758607	0.23598951	2.5934284	20	7 31.1	20.5
471578	2012	RW ₂	16.8	X	249.87309	249.81378	168.93913	24.34948	0.2763278	0.23234479	2.6204795	20	7 11.6	21.3
471579	2012	RR ₃	17.8	X	333.57127	355.26927	320.81969	3.35877	0.2043915	0.239371144	2.5689432	20	7 14.5	19.8
471580	2012	RX ₃	17.3	X	271.98111	225.22903	167.72958	4.79854	0.2061345	0.23322578	2.6138762	20	7 12.9	20.7
471581	2012	RT ₆	16.7	X	284.12185	40.71284	341.87758	13.32272	0.2774476	0.23285214	2.6166717	20	7 7.3	20.3
471582	2012	RE ₉	17.3	X	11.58479	16.46272	316.36469	11.64823	0.2475865	0.25438387	2.4668515	20	11 12.5	20.2
471583	2012	RK ₁₃	16.4	X	316.02117	161.10020	196.17484	33.71913	0.2172052	0.23678902	2.5875873	20	7 30.3	19.8
471584	2012	RJ ₁₆	17.9	X	271.98863	235.03456	154.98953	4.60753	0.2465441	0.23099194	2.6307011	20	7 2.9	21.5
471585	2012	RM ₁₉	16.0	X	317.91079	6.12918	343.06734	11.95486	0.1969436	0.23418829	2.6067093	20	8 4.2	18.5
471586	2012	RH ₂₀	16.5	X	295.25278	32.07592	317.78153	12.76474	0.2676802	0.22866314	2.6485323	20	6 5.5	20.0
471587	2012	RU ₂₀	16.8	X	237.40006	82.73003	315.92071	10.25013	0.2024198	0.22399207	2.6852267	20	6 11.8	21.1
471588	2012	RR ₂₁	16.7	X	252.26136	351.22967	335.38806	4.93467	0.2420830	0.21089041	2.7953197	20	3 24.0	21.2
471589	2012	RK ₂₉	16.9	X	281.88661	22.60272	347.97963	8.61752	0.2153223	0.23249975	2.6193150	20	6 25.4	20.4
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ELEMENTS AND OPPOSITION DATES IN 2020

ECLIPTIC AND EQUINOX 2000.0, EPOCH 2020 MAY 31.0 TT

Planet	<i>H</i>	<i>G</i>	<i>M</i>	ω	Ω	<i>i</i>	<i>e</i>	μ	<i>a</i>	TE	Oppos.	<i>V</i>
471601 2012 <i>SM</i> ₆	17.5	X	288.24717	290.11547	111.58067	4.73626	0.3083507	0.23447670	2.6045713	20	8 2.2	20.3
471602 2012 <i>SN</i> ₁₁	17.2	X	275.44621	12.89626	341.51850	3.87534	0.1514085	0.22465446	2.6799459	20	6 3.1	20.8
471603 2012 <i>SJ</i> ₁₆	17.0	X	262.70469	77.12921	270.16240	4.63113	0.0255047	0.21163626	2.7887484	20	5 27.1	20.8
471604 2012 <i>SV</i> ₁₆	17.7	X	315.47100	323.24524	341.28155	6.42771	0.3522572	0.22819857	2.6521257	20	4 17.7	20.9
471605 2012 <i>ST</i> ₂₃	17.9	X	313.62133	126.87095	199.09832	1.68771	0.2149527	0.23073694	2.6326389	20	6 12.9	20.5
471606 2012 <i>SR</i> ₂₇	17.2	X	353.37633	4.94528	1.97357	6.75178	0.1050813	0.25500317	2.4628559	20	11 10.2	19.9
471607 2012 <i>SG</i> ₃₀	17.2	X	292.98754	26.66580	354.30837	13.05591	0.0615150	0.23884181	2.5727395	20	8 24.8	20.4
471608 2012 <i>SP</i> ₃₀	17.4	X	328.96582	71.09406	271.71961	5.75404	0.2352388	0.24037821	2.5617652	20	8 11.3	19.3
471609 2012 <i>SS</i> ₃₃	17.7	X	282.93903	196.21225	189.69582	12.29820	0.1974385	0.23634322	2.5908402	20	7 18.6	21.2
471610 2012 <i>SH</i> ₃₉	16.7	X	131.04227	154.22167	356.70619	16.51807	0.1179935	0.22493903	2.6776851	20	7 30.2	21.0
471611 2012 <i>SL</i> ₃₉	18.0	X	349.69441	100.10147	211.20317	2.49961	0.2423706	0.24170701	2.5523676	20	8 18.1	19.8
471612 2012 <i>SR</i> ₄₅	17.9	X	274.51725	87.28308	351.02127	27.06766	0.4194244	0.23608053	2.5927617	20	8 24.2	21.6
471613 2012 <i>SQ</i> ₅₈	16.4	X	300.83644	47.00969	309.27371	14.87704	0.1881356	0.23198459	2.6231913	20	7 11.2	19.3
471614 2012 <i>SF</i> ₅₉	17.5	X	321.59720	42.90023	275.75202	6.54243	0.2002890	0.23341135	2.6124906	20	6 20.4	19.8
471615 2012 <i>SK</i> ₅₉	16.9	X	301.25183	6.80774	331.63773	5.12245	0.2253345	0.22790655	2.6543907	20	6 6.5	20.1
471616 2012 <i>TZ</i> ₁	16.8	X	246.83438	176.92466	190.82981	13.80586	0.1026391	0.21554590	2.7549234	20	5 25.6	21.0
471617 2012 <i>TQ</i> ₃	17.6	X	351.02088	25.15976	256.44696	6.97676	0.1521489	0.23536819	2.5979904	20	6 30.4	19.9
471618 2012 <i>TY</i> ₅	16.1	X	192.98700	156.99852	190.38404	10.77395	0.1129074	0.18910554	3.0060755	20	3 3.2	20.8
471619 2012 <i>TB</i> ₁₃	16.5	X	290.48085	190.99758	180.22185	13.57752	0.1638941	0.22960875	2.6412556	20	7 15.2	20.0
471620 2012 <i>TK</i> ₁₆	16.9	X	8.34697	77.92261	192.85386	12.48710	0.2617890	0.23301412	2.6154589	20	7 29.5	19.3
471621 2012 <i>TM</i> ₁₆	16.3	X	134.29726	82.19700	31.95452	4.00705	0.0477234	0.20898288	2.8123039	20	6 2.7	20.2
471622 2012 <i>TP</i> ₁₇	17.1	X	245.02676	170.58452	185.83097	5.42676	0.1023452	0.21104163	2.7939843	20	5 8.5	21.2
471623 2012 <i>TF</i> ₂₁	17.0	X	308.55280	329.35849	13.85084	9.50714	0.1501774	0.22884438	2.6471338	20	7 11.7	20.1
471624 2012 <i>TZ</i> ₂₄	17.5	X	283.93526	73.83952	273.51092	1.34560	0.1059818	0.22274913	2.6952065	20	6 12.9	20.9
471625 2012 <i>TB</i> ₂₅	16.3	X	287.41938	10.23331	206.44414	10.24977	0.0660723	0.17662484	3.1460686	20	1 11.3	21.1
471626 2012 <i>TS</i> ₂₆	16.6	X	39.11297	20.74555	196.24579	8.96211	0.0744062	0.21344706	2.7729535	20	6 16.9	20.2
471627 2012 <i>TD</i> ₂₇	16.9	X	335.71256	170.73907	155.50641	14.02772	0.2134232	0.234702050	2.6029005	20	8 2.8	19.1
471628 2012 <i>TS</i> ₂₈	16.9	X	311.74097	300.74606	17.92977	13.54710	0.2819477	0.23015557	2.6370704	20	5 12.9	19.9
471629 2012 <i>TX</i> ₃₂	16.8	X	298.24342	149.25567	200.10767	12.53668	0.1145870	0.22863249	2.6487690	20	7 4.4	20.3
471630 2012 <i>TE</i> ₃₅	16.5	X	275.10496	324.71637	62.36014	14.87032	0.2629911	0.22935085	2.6432353	20	6 30.2	20.2
471631 2012 <i>TJ</i> ₄₉	17.4	X	327.19071	79.15020	203.67624	8.54768	0.1392872	0.21819887	2.7325475	20	5 17.9	20.5
471632 2012 <i>TT</i> ₅₀	16.8	X	25.04361	218.37896	16.12877	13.85870	0.1457168	0.21869780	2.7283899	20	6 27.5	20.1
471633 2012 <i>TC</i> ₅₄	17.2	X	308.73819	111.38406	247.50673	11.43277	0.2025998	0.23401708	2.6079805	20	7 22.0	20.0
471634 2012 <i>TV</i> ₅₅	18.1	X	316.09056	320.82197	32.55419	3.59109	0.2453897	0.23569835	2.5955637	20	7 28.2	20.4
471635 2012 <i>TD</i> ₅₇	16.6	X	224.71954	19.29847	32.31741	4.46143	0.1966858	0.21154486	2.7895516	20	6 16.3	21.1
471636 2012 <i>TX</i> ₅₈	17.4	X	238.37300	73.10992	309.77594	5.33561	0.0399865	0.21690882	2.7433712	20	6 10.0	21.2
471637 2012 <i>TD</i> ₅₉	17.1	X	259.34233	37.81202	311.72736	3.88964	0.0908523	0.21338109	2.7735251	20	5 15.6	21.0
471638 2012 <i>TJ</i> ₆₀	17.1	X	323.41444	166.39566	177.15922	4.97065	0.2575863	0.23777026	2.5804634	20	7 26.0	19.1
471639 2012 <i>TN</i> ₆₇	17.9	X	307.90598	98.91745	234.47199	5.48983	0.2438763	0.22682795	2.6627987	20	6 8.1	20.9
471640 2012 <i>TP</i> ₆₇	17.3	X	268.38203	116.62623	251.66132	4.75445	0.0495254	0.21762060	2.7373860	20	6 28.6	21.0
471641 2012 <i>TD</i> ₈₂	16.7	X	142.18200	234.09876	114.33041	2.29070	0.0527371	0.17265878	3.1940639	20	1 12.8	21.2
471642 2012 <i>TB</i> ₈₄	16.8	X	162.14344	81.93081	9.96277	4.67068	0.0784812	0.20871161	2.8147402	20	6 8.2	21.1
471643 2012 <i>TT</i> ₈₈	17.2	X	285.38975	145.74994	199.04946	4.34818	0.1600894	0.22112419	2.7083942	20	6 3.4	20.7
471644 2012 <i>TG</i> ₈₉	17.1	X	253.91013	127.53229	301.84408	11.71731	0.3157857	0.23142916	2.6273867	20	7 25.5	21.1
471645 2012 <i>TU</i> ₈₉	17.1	X	334.98986	230.91324	55.75375	5.57123	0.1381950	0.22408176	2.6845101	20	6 5.6	19.9
471646 2012 <i>TS</i> ₉₇	17.3	X	290.68470	155.77690	209.27213	13.87276	0.2116428	0.22831634	2.6512136	20	6 28.8	20.9
471647 2012 <i>TR</i> ₉₈	17.7	X	230.22318	44.19812	5.27179	3.14262	0.1941377	0.21632623	2.7482945	20	6 19.3	22.2
471648 2012 <i>TP</i> ₉₉	15.6	X	20.60611	250.32070	257.95299	8.52455	0.1840094	0.17674293	3.1446672	20	2 17.7	19.2
471649 2012 <i>TN</i> ₁₀₁	16.6	X	96.86506	337.34444	210.81533	12.95874	0.0480184	0.22258064	2.6965664	20	7 21.5	20.6
471650 2012 <i>TR</i> ₁₀₇	16.4	X	132.76682	264.04801	261.27296	11.46463	0.1258999	0.22451196	2.6810797	20	8 9.2	20.7
471651 2012 <i>TW</i> ₁₀₇	17.3	X	281.05410	15.03960	330.43910	7.63307	0.0602372	0.21797954	2.7343801	20	6 13.2	21.0
471652 2012 <i>TE</i> ₁₁₄	16.6	X	3.33306	41.90623	224.66263	13.80933	0.0451612	0.22011301	2.7166826	20	6 26.9	20.2
471653 2012 <i>TL</i> ₁₁₅	17.0	X	217.05523	135.33800	276.39532	5.80062	0.0101436	0.21752508	2.7381874	20	6 24.8	20.7
471654 2012 <i>TQ</i> ₁₁₈	17.3	X	323.78123	109.90987	227.82894	12.57753	0.2038695	0.23451923	2.6042564	20	7 20.7	20.0
471655 2012 <i>TQ</i> ₁₂₅	16.5	X	271.24712	9.61050	12.25047	14.28152	0.1809490	0.22534067	2.6745024	20	7 2.5	20.4
471656 2012 <i>TE</i> ₁₂₆	16.6	X	284.38967	5.99130	4.76195	13.65173	0.1832155	0.22640072	2.6661475	20	7 6.1	20.3
471657 2012 <i>TA</i> ₁₃₁	17.3	X	313.66951	224.59626	125.78896	5.53592	0.2067772	0.23496477	2.6009633	20	7 22.3	19.6
471658 2012 <i>TK</i> ₁₃₄	17.2	X	271.12767	350.30695	3.50448	4.89358	0.1230032	0.22046002	2.7138311	20	5 31.6	20.9
471659 2012 <i>TV</i> ₁₃₆	16.7	X	11.83335	300.25035	301.81422	5.02340	0.0060989	0.21441512	2.7646009	20	6 5.4	20.4
471660 2012 <i>TG</i> ₁₃₇	16.9	X	288.61016	318.42600	27.07149	12.30567	0.1636114	0.22388231	2.6861042	20	6 5.5	20.5
471661 2012 <i>TO</i> ₁₃₇	17.3	X	343.76315	207.86173	90.00542	6.73328	0.2112900	0.23449587	2.6044294	20	7 8.8	19.4
471662 2012 <i>TH</i> ₁₄₅	17.5	X	275.07628	57.06015	356.99155	14.93963	0.1223773	0.24187285	2.5512007	20	9 3.9	20.6
471663 2012 <i>TR</i> ₁₄₈	16.2	X	42.75296	296.51674	338.60372	12.94799	0.1571633	0.24256770	2.5463264	20	9 23.8	19.5
471664 2012 <i>TS</i> ₁₄₉	17.0	X	234.97069	223.05732	233.13538	3.30750	0.1669674	0.23043286	2.6349544	20	8 25.7	20.9
471665 2012 <i>TZ</i> ₁₅₀	17.3	X	280.42045	149.60172	210.06095	9.38526	0.2210666	0.22087009	2.7104711	20	6 7.1	21.1
471666 2012 <i>TD</i> ₁₅₁	16.8	X	275.25893	305.92953	28.65926	11.02240	0.1334693	0.21021505	2.8013036	20	5 9.0	20.8
471667 2012 <i>TQ</i> ₁₆₀	17.6	X	343.37690	187.58762	127.38724	3.00388	0.1037323	0.23263459	2.6183027	20	8 6.1	20.4
471668 2012 <i>TR</i> ₁₆₅	17.2	X	232.07624	336.56414	45.38906	4.96217	0.0817922	0.21296239	2.7771592	20	5 27.1	21.3
471669 2012 <i>TL</i> ₁₆₆	17.3	X	271.41677	298.63925	85.48077	5.58296	0.2532977	0.22569554	2.6716982	20	6 23.4	20.9
471670 2012 <i>TW</i> ₁₆₆	16.7	X	257.94351	352.48710	54.22723	7.84495	0.1067977	0.22663995	2.6642710	20	7 31.2	20.4
471671 2012 <i>TY</i> ₁₆₇	16.9	X	264.56609	298.73019	63.74435							

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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>
471681 2012 <i>TM</i> ₁₉₂	17.6	X	325.22834	87.10311	245.06266	10.44413	0.2890704	0.23624054	2.5915908	20	7 5.4	19.6
471682 2012 <i>TA</i> ₁₉₄	15.9	X	134.53963	185.84165	205.02765	12.70575	0.1618192	0.17662164	3.1461067	20	3 1.8	21.0
471683 2012 <i>TR</i> ₁₉₇	16.5	X	338.13920	348.00659	346.96627	12.41194	0.2403460	0.23720575	2.5845557	20	8 28.4	18.3
471684 2012 <i>TE</i> ₁₉₈	16.5	X	221.52190	64.73959	257.81147	4.26676	0.1119201	0.19109789	2.9851452	20	2 29.6	21.3
471685 2012 <i>TX</i> ₂₁₀	16.8	X	107.63901	285.51883	220.98974	9.34108	0.0040582	0.21277302	2.7788067	20	6 6.8	20.6
471686 2012 <i>TH</i> ₂₁₁	16.3	X	125.66917	351.61705	36.38158	9.96878	0.1146350	0.17923905	3.1154034	20	2 20.9	21.1
471687 2012 <i>TR</i> ₂₁₁	17.0	X	256.88662	60.22232	295.92495	3.26540	0.0819945	0.21280821	2.7785004	20	5 22.9	20.8
471688 2012 <i>TU</i> ₂₂₁	17.2	X	261.33565	151.80148	191.27448	6.15757	0.0749490	0.21319197	2.7751651	20	5 14.1	21.0
471689 2012 <i>TR</i> ₂₂₅	17.7	X	168.53868	294.06104	183.96531	3.50062	0.0269540	0.22277489	2.6949987	20	7 19.5	21.6
471690 2012 <i>TS</i> ₂₂₅	17.3	X	63.81841	34.04722	181.05098	3.37563	0.0189227	0.22137785	2.7063249	20	7 12.0	20.8
471691 2012 <i>TX</i> ₂₂₉	16.9	X	301.51775	330.04963	335.41698	7.48077	0.1334468	0.21552025	2.7551420	20	5 4.5	20.5
471692 2012 <i>TZ</i> ₂₃₂	18.1	X	301.96352	228.79149	200.92284	3.70955	0.2155194	0.25180306	2.4836785	20	11 3.1	20.0
471693 2012 <i>TE</i> ₂₃₄	17.3	X	268.07905	250.64959	92.71796	3.71159	0.1057052	0.21629495	2.7485594	20	5 18.1	21.1
471694 2012 <i>TL</i> ₂₃₄	17.5	X	346.55904	177.93908	133.40443	5.18596	0.1917744	0.23738129	2.5832814	20	8 8.3	19.7
471695 2012 <i>TL</i> ₂₄₀	17.1	X	249.59562	214.26454	153.77444	3.98284	0.1095002	0.21417113	2.7667002	20	5 27.7	21.1
471696 2012 <i>TH</i> ₂₄₂	16.7	X	247.34420	188.41988	183.16226	5.43355	0.1087137	0.21415341	2.7668527	20	5 29.7	20.8
471697 2012 <i>TN</i> ₂₄₂	16.5	X	167.43764	179.28361	188.85309	9.58754	0.0805632	0.18406614	3.0606954	20	3 2.2	21.1
471698 2012 <i>TM</i> ₂₄₃	17.5	X	339.00586	217.19442	95.33610	3.27634	0.1032532	0.22916109	2.6446942	20	7 25.3	20.3
471699 2012 <i>TZ</i> ₂₄₆	16.8	X	237.22890	71.82589	298.17381	4.58249	0.0780762	0.20884567	2.8135355	20	5 17.4	21.0
471700 2012 <i>TP</i> ₂₅₅	17.2	X	307.90284	232.74694	125.97396	4.44885	0.2633683	0.23107232	2.6300910	20	7 12.8	19.6
471701 2012 <i>TK</i> ₂₅₆	17.3	X	244.90021	196.17965	199.37984	3.90826	0.2051414	0.21907803	2.7252321	20	6 15.3	21.5
471702 2012 <i>TP</i> ₂₅₈	16.4	X	7.70642	140.78010	81.66083	16.10437	0.0919684	0.20278884	2.8692828	20	5 10.9	20.0
471703 2012 <i>TF</i> ₂₆₁	17.3	X	211.56138	287.00641	135.43927	5.57641	0.1005502	0.21692862	2.7432043	20	6 24.4	21.4
471704 2012 <i>TH</i> ₂₆₃	17.4	X	340.76543	334.11466	338.49974	12.53206	0.1764224	0.23559743	2.5963048	20	7 31.0	19.8
471705 2012 <i>TD</i> ₂₈₂	16.5	X	322.66998	36.31296	282.68981	11.80326	0.0561341	0.22244910	2.6976294	20	7 8.8	19.9
471706 2012 <i>TU</i> ₂₈₈	16.6	X	166.05090	171.76296	301.18642	8.25394	0.1088946	0.21509288	2.7587904	20	7 11.4	20.7
471707 2012 <i>TS</i> ₂₉₀	16.6	X	285.77412	81.34394	311.73278	13.58831	0.1083400	0.23497770	2.6008678	20	8 17.4	19.8
471708 2012 <i>TZ</i> ₂₉₃	17.5	X	304.38210	334.72116	359.23431	5.41545	0.1326665	0.21938565	2.7226840	20	6 21.1	20.8
471709 2012 <i>TN</i> ₂₉₄	17.0	X	308.05400	252.20480	116.56644	6.49880	0.2867058	0.23374780	2.6099831	20	7 25.2	19.3
471710 2012 <i>TM</i> ₂₉₈	16.0	X	225.01063	81.94336	202.41914	8.94613	0.0640803	0.17536595	3.1611070	20	1 23.1	20.9
471711 2012 <i>TG</i> ₃₀₀	16.7	X	147.93516	11.81574	53.40427	5.85940	0.1181015	0.18605823	3.0388093	20	4 24.8	21.3
471712 2012 <i>TP</i> ₃₀₅	17.1	X	243.87734	57.01960	328.11382	4.32889	0.1753903	0.21947508	2.7219443	20	6 3.3	21.3
471713 2012 <i>TI</i> ₃₀₅	17.4	X	275.24362	179.98983	207.78577	13.94255	0.0985735	0.23053427	2.6341817	20	7 24.1	21.1
471714 2012 <i>TN</i> ₃₀₆	17.4	X	297.51521	235.92806	144.70195	13.71147	0.2731645	0.23579102	2.5948835	20	7 23.7	20.2
471715 2012 <i>TV</i> ₃₀₆	17.5	X	312.15124	301.36946	69.21091	5.63081	0.3010093	0.23710998	2.5852517	20	8 7.1	19.6
471716 2012 <i>TW</i> ₃₁₄	16.6	X	329.84440	56.95910	287.33946	14.16562	0.2263148	0.23910702	2.5708368	20	8 13.1	18.8
471717 2012 <i>TK</i> ₃₁₆	16.5	X	283.48248	309.92385	62.22506	11.36772	0.2531747	0.22796648	2.6539254	20	6 22.3	20.0
471718 2012 <i>TQ</i> ₃₁₈	16.4	X	243.15051	65.24091	15.15006	13.31822	0.0985368	0.22697035	2.6616848	20	8 30.9	20.2
471719 2012 <i>TA</i> ₃₁₉	16.7	X	312.92355	60.02116	296.45532	11.24912	0.2893461	0.23390403	2.6088208	20	7 16.2	18.9
471720 2012 <i>TB</i> ₃₁₉	16.9	X	266.54359	311.85620	74.57402	14.80722	0.2733449	0.22452989	2.6809370	20	6 17.5	20.9
471721 2012 <i>UB</i>	16.9	X	343.47740	101.47135	222.12098	15.57821	0.2766889	0.23851415	2.5750952	20	8 13.9	19.1
471722 2012 <i>UG</i> ₃	17.4	X	314.85849	175.95298	127.70322	4.23087	0.1757625	0.22080937	2.7109680	20	5 20.9	20.6
471723 2012 <i>UK</i> ₁₃	16.5	X	225.77978	234.47586	42.12730	11.11697	0.0668507	0.17528415	3.1620904	20	1 19.3	21.4
471724 2012 <i>UW</i> ₁₅	17.0	X	143.82342	359.92391	122.34937	4.60149	0.0412215	0.21424884	2.7660311	20	6 25.2	20.9
471725 2012 <i>UA</i> ₁₇	17.1	X	323.44662	236.14562	55.20619	4.89217	0.0397150	0.21319606	2.7751296	20	6 2.7	20.6
471726 2012 <i>UL</i> ₁₇	16.9	X	266.41354	301.94202	56.30431	6.51941	0.0337724	0.21584003	2.7524201	20	6 14.5	20.6
471727 2012 <i>US</i> ₂₃	16.6	X	336.63723	274.75456	346.06746	11.55831	0.1113656	0.20881193	2.8138386	20	4 30.2	20.2
471728 2012 <i>UP</i> ₂₄	16.5	X	46.01467	208.11292	310.65472	9.77509	0.0431925	0.19077909	2.9884698	20	4 1.9	20.6
471729 2012 <i>UJ</i> ₃₀	17.1	X	296.77276	151.06946	261.42954	5.20904	0.1693112	0.24697793	2.5159226	20	9 26.2	19.8
471730 2012 <i>UJ</i> ₃₃	17.1	X	216.24168	6.19807	56.07280	8.07003	0.1170079	0.21422022	2.7662775	20	6 27.9	21.4
471731 2012 <i>UJ</i> ₃₃	16.8	X	244.82779	314.02686	65.99373	7.14207	0.0208137	0.21128108	2.7918729	20	6 17.0	20.7
471732 2012 <i>UO</i> ₃₃	16.7	X	260.34124	319.82343	54.62511	8.74952	0.2233265	0.21793099	2.7347862	20	6 1.4	20.7
471733 2012 <i>UH</i> ₃₄	16.7	X	254.35860	244.57224	185.62668	17.33091	0.2850901	0.22615328	2.6680919	20	7 27.3	21.1
471734 2012 <i>UT</i> ₃₄	16.5	X	221.84819	21.74961	29.18863	5.61173	0.1170582	0.21383554	2.7695941	20	6 19.1	20.8
471735 2012 <i>UN</i> ₃₈	16.5	X	276.04712	54.57024	261.59823	5.08757	0.0483176	0.20171587	2.8794487	20	4 29.5	20.6
471736 2012 <i>UH</i> ₄₁	17.3	X	337.49924	253.93721	52.63638	4.56706	0.1599841	0.22730168	2.6590976	20	7 10.6	19.8
471737 2012 <i>UJ</i> ₄₃	17.1	X	233.35248	7.85007	44.55039	6.88493	0.0430979	0.22059420	2.7127305	20	7 14.4	20.9
471738 2012 <i>UJ</i> ₄₃	17.3	X	275.57219	315.48475	42.73488	6.14443	0.0832220	0.21857031	2.7294508	20	6 19.4	21.1
471739 2012 <i>UJ</i> ₄₄	17.8	X	274.01681	346.87809	356.72413	4.73595	0.1692656	0.21916118	2.7245428	20	5 14.4	21.6
471740 2012 <i>UF</i> ₄₄	16.6	X	350.17039	16.63243	290.91101	11.53393	0.1284458	0.23161308	2.6259956	20	8 5.2	19.4
471741 2012 <i>UR</i> ₄₇	17.5	X	247.81151	264.13245	173.03523	4.39524	0.1454846	0.23055101	2.6340541	20	8 19.5	21.0
471742 2012 <i>UN</i> ₄₈	17.4	X	216.27399	267.30148	132.19806	1.09779	0.0745354	0.20905103	2.8116927	20	6 1.9	21.0
471743 2012 <i>UX</i> ₅₁	17.9	X	269.33544	179.99673	191.59437	1.68366	0.2265178	0.21965832	2.7204304	20	6 8.2	21.9
471744 2012 <i>UW</i> ₅₃	16.6	X	340.45277	273.30984	11.70873	6.36069	0.0691080	0.21422229	2.7662596	20	6 17.7	20.1
471745 2012 <i>UN</i> ₅₄	16.7	X	287.37809	80.73175	243.02244	8.68272	0.1277470	0.21192805	2.7861880	20	5 12.9	20.3
471746 2012 <i>UL</i> ₅₈	17.7	X	344.66820	309.56016	33.63157	9.31774	0.1785716	0.23843819	2.5756420	20	9 27.7	20.1
471747 2012 <i>UY</i> ₆₀	16.0	X	198.37664	309.43697	97.78306	9.97803	0.1401434	0.18740535	3.0242294	20	5 22.7	20.9
471748 2012 <i>UY</i> ₇₂	17.7	X	281.95119	311.24250	32.74937	6.57059	0.1437132	0.21848651	2.7301487	20	5 29.5	21.5
471749 2012 <i>US</i> ₈₃	17.1	X	295.23117	313.07309	73.61206	14.74066	0.1710493	0.23331982	2.6131738	20	8 23.2	20.3
471750 2012 <i>UV</i> ₈₉	17.7	X	279.20918	298.34412	62.30088	4.34517	0.2077908	0.21800537	2.7341642	20	6 8.2	21.5
471751 2012 <i>UW</i> ₉₀	17.6	X	272.13									

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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>		
471761	2012	UR ₁₁₂	17.0	X	301.86602	212.69711	169.36653	13.12625	0.2015027	0.23719051	2.5846665	20	8 15.3	19.8
471762	2012	UP ₁₁₃	17.2	X	298.78321	306.76237	7.53818	4.04489	0.2082014	0.21869659	2.7284000	20	5 2.5	20.6
471763	2012	UP ₁₁₄	17.3	X	284.52510	354.47814	353.77536	4.09252	0.0954794	0.21990455	2.7183992	20	6 16.5	20.9
471764	2012	UN ₁₁₇	17.4	X	273.81854	338.64656	17.19214	6.49382	0.0767303	0.21709038	2.7418414	20	6 14.5	21.1
471765	2012	UD ₁₂₃	16.4	X	214.29232	124.73141	242.09052	10.79237	0.0734026	0.19362509	2.9591135	20	4 17.3	21.0
471766	2012	UT ₁₂₄	17.2	X	311.30314	67.16604	268.00437	5.75781	0.1997241	0.22241419	2.6979117	20	6 24.4	20.0
471767	2012	UP ₁₃₀	17.4	X	264.73326	103.08512	272.51955	7.62858	0.1814877	0.21809561	2.7334100	20	6 14.1	21.2
471768	2012	UZ ₁₃₂	16.8	X	255.03666	162.94656	208.81051	8.25717	0.2190723	0.21250597	2.7811343	20	5 25.4	21.1
471769	2012	UQ ₁₃₃	17.5	X	293.40992	152.60613	209.81127	13.65381	0.2376713	0.22795268	2.6540325	20	6 24.3	21.0
471770	2012	UF ₁₃₄	16.7	X	250.36204	32.16505	334.89511	7.29348	0.2399207	0.21291177	2.7775994	20	5 9.3	21.3
471771	2012	UY ₁₃₈	16.8	X	343.82015	25.85651	282.51478	11.14666	0.1751172	0.23209494	2.6223598	20	7 24.9	19.2
471772	2012	UY ₁₃₉	17.1	X	242.74958	88.65169	304.85024	8.30762	0.0778759	0.21828839	2.7318003	20	6 25.7	21.0
471773	2012	UA ₁₄₁	16.7	X	194.97852	140.11043	206.21041	9.31507	0.1422089	0.18697369	3.0288822	20	3 3.3	21.7
471774	2012	UL ₁₄₄	17.0	X	217.00227	261.42648	141.06837	4.81906	0.1077942	0.20922506	2.8101333	20	6 4.7	21.3
471775	2012	UL ₁₄₆	17.2	X	233.36314	134.35958	267.46702	11.73656	0.0924746	0.21615166	2.7497740	20	6 22.8	21.1
471776	2012	US ₁₄₈	17.1	X	228.05330	351.65671	42.42191	5.29622	0.1160347	0.21209106	2.7847603	20	6 3.8	21.3
471777	2012	UE ₁₅₁	16.2	X	38.39420	114.97299	62.65730	11.02384	0.0216301	0.18764740	3.0216282	20	4 22.6	20.3
471778	2012	UH ₁₆₉	17.2	X	245.59888	243.53077	171.80806	12.90270	0.2604206	0.22206635	2.7007282	20	7 4.5	21.7
471779	2012	UO ₁₆₉	16.9	X	244.63740	141.61106	255.80654	15.33572	0.3159418	0.21710358	2.7417303	20	6 6.6	21.5
471780	2012	UQ ₁₇₁	17.6	X	341.19642	76.33358	225.36323	7.12688	0.2253466	0.22985742	2.6393503	20	7 5.6	19.8
471781	2012	UX ₁₇₁	17.7	X	304.82955	321.24637	15.54365	8.88801	0.2306548	0.22348625	2.6892768	20	6 8.3	21.0
471782	2012	UV ₁₀	16.0	X	183.22318	111.95514	235.79187	25.56478	0.1061881	0.17791508	3.1308400	20	2 15.9	21.5
471783	2012	VU ₁₀	17.0	X	264.43214	307.87712	44.70243	13.53072	0.2058792	0.21112073	2.7932864	20	5 10.9	21.3
471784	2012	VX ₁₃	17.2	X	192.63664	239.53529	169.24534	2.19672	0.0669931	0.20367401	2.8609634	20	5 18.9	21.5
471785	2012	VM ₂₀	17.5	X	310.06681	286.75425	39.39822	2.29928	0.2168974	0.22556518	2.6727275	20	6 5.7	20.4
471786	2012	VE ₂₄	15.6	X	171.63285	135.53345	262.78051	9.86981	0.0359550	0.18240812	3.0792145	20	4 7.9	20.3
471787	2012	VA ₂₈	16.7	X	194.79005	85.12812	1.46273	7.05070	0.0399442	0.21807896	2.7335491	20	7 12.1	20.6
471788	2012	VB ₂₈	17.2	X	58.50411	263.19108	319.38316	4.13570	0.0210604	0.21947742	2.7219249	20	7 16.2	20.8
471789	2012	VC ₃₁	16.7	X	262.06708	302.35503	77.29667	12.33450	0.1508798	0.21737773	2.7394246	20	6 20.1	20.4
471790	2012	VF ₃₂	17.7	X	332.04237	102.93695	216.96431	3.95734	0.3163994	0.23140486	2.6275706	20	6 30.5	19.2
471791	2012	VR ₃₄	15.8	X	84.51878	254.47546	225.35377	17.34199	0.0924296	0.18390493	3.0624838	20	4 14.7	20.1
471792	2012	VH ₄₁	17.1	X	194.50978	85.14711	45.31220	7.09646	0.0435641	0.23282521	2.6168734	20	9 11.4	20.8
471793	2012	VX ₄₇	17.2	X	339.28083	123.60180	208.97582	11.54819	0.2290883	0.23779888	2.5802563	20	8 19.9	19.4
471794	2012	VT ₅₁	15.9	X	204.89721	297.05941	85.56036	10.99597	0.0949782	0.19070566	2.9892369	20	5 2.1	20.6
471795	2012	VE ₅₅	16.5	X	170.52772	117.76566	224.19888	7.76882	0.1667130	0.17423625	3.1747562	20	2 7.8	21.8
471796	2012	VC ₆₃	17.2	X	262.15423	307.20385	65.40799	8.84744	0.2228187	0.21767244	2.7369514	20	6 1.5	21.1
471797	2012	VX ₇₈	16.8	X	207.32521	313.15172	85.66846	3.23086	0.0689376	0.19983426	2.8974954	20	5 22.5	21.0
471798	2012	VH ₈₄	16.4	X	125.74528	154.29494	291.95963	2.25942	0.1152845	0.18444179	3.0565382	20	4 25.4	21.0
471799	2012	VJ ₈₆	17.9	X	274.95159	152.59485	235.62171	7.55564	0.3110386	0.22440732	2.6819131	20	6 24.3	21.7
471800	2012	VX ₈₈	17.1	X	229.10544	285.29281	84.82601	3.26767	0.0862452	0.19949330	2.9007959	20	5 9.5	21.5
471801	2012	VU ₉₀	15.8	X	290.33525	206.62667	69.00641	18.16197	0.0554847	0.18432199	3.0578624	20	4 7.3	20.4
471802	2012	VL ₉₂	17.1	X	165.09680	12.30177	83.10473	6.86481	0.0901650	0.20054214	2.8906729	20	6 16.7	21.5
471803	2012	VU ₉₇	17.1	X	298.36800	177.05478	206.92118	11.55188	0.1803449	0.23287540	2.6164974	20	8 11.8	20.2
471804	2012	VS ₉₉	17.4	X	253.81703	256.77506	203.93455	4.04764	0.2766734	0.23402560	2.6079172	20	9 8.3	20.9
471805	2012	VX ₉₉	16.7	X	303.73820	120.69141	257.64367	11.32116	0.1888977	0.23266400	2.6180821	20	8 10.9	19.7
471806	2012	VA ₁₀₄	17.2	X	271.19115	262.85397	92.72967	4.42642	0.1051647	0.21308886	2.7760602	20	6 6.9	21.0
471807	2012	VB ₁₀₄	16.7	X	296.32512	243.84625	69.05569	13.05528	0.1111688	0.20545157	2.8444376	20	5 15.7	20.4
471808	2012	VJ ₁₀₅	17.2	X	0.86814	265.90828	50.74833	7.76049	0.1055038	0.22982132	2.6396266	20	9 13.4	20.2
471809	2012	VN ₁₁₁	16.6	X	165.07799	264.40106	98.94614	2.21961	0.1626774	0.17690712	3.1427211	20	3 1.8	21.8
471810	2012	VV ₁₁₂	16.8	X	234.45181	280.69206	131.39427	9.71609	0.3016358	0.21472915	2.7619048	20	6 18.2	21.7
471811	2012	WB ₇	16.1	X	238.44580	80.06134	241.26726	9.54243	0.0560030	0.18529220	3.0471789	20	3 19.2	20.8
471812	2012	WK ₁₁	16.8	X	135.94734	132.2507	81.00012	2.34301	0.1043196	0.19086962	2.9875247	20	5 15.2	21.3
471813	2012	WX ₁₁	16.5	X	265.75030	104.99045	233.02146	10.90604	0.0606205	0.19964416	2.8993344	20	5 14.3	20.4
471814	2012	WF ₁₂	17.1	X	235.83158	180.63078	187.05076	1.63503	0.0772351	0.19944607	2.9012538	20	5 14.5	21.3
471815	2012	WH ₁₂	16.8	X	160.69833	202.20140	234.16771	9.41093	0.1752728	0.19290983	2.9664234	20	5 22.4	21.6
471816	2012	WD ₁₅	16.5	X	88.35464	27.49954	82.27486	12.24292	0.0746323	0.17739661	3.1369373	20	4 12.8	21.1
471817	2012	WM ₁₆	16.0	X	171.10127	12.32250	47.32517	11.95258	0.1432360	0.19130806	2.9829585	20	5 10.1	20.9
471818	2012	WW ₁₆	16.6	X	320.05857	339.37398	68.10894	10.50525	0.1382672	0.24120961	2.5558752	20	11 10.5	19.1
471819	2012	WQ ₂₉	17.3	X	254.71375	318.89941	79.23250	5.37441	0.2091292	0.21461485	2.7628854	20	6 28.3	21.5
471820	2012	WO ₃₄	16.2	X	156.95605	357.80073	81.70268	11.58776	0.0469252	0.18999515	2.9966846	20	5 18.7	20.6
471821	2012	XD ₁	16.6	X	311.77167	130.70606	251.78401	10.94616	0.1814076	0.23589807	2.5940985	20	9 3.4	19.5
471822	2012	XZ ₅	16.6	X	220.37655	229.57380	145.88885	6.70170	0.0986800	0.19595824	2.9355785	20	5 7.5	21.1
471823	2012	XS ₁₀	16.8	X	353.25430	123.93836	234.50393	3.30263	0.2209154	0.24319527	2.5419439	20	11 11.6	19.0
471824	2012	XU ₃₅	16.0	X	228.41642	235.65270	79.03035	10.63990	0.0593404	0.17404720	3.1770547	20	3 10.2	20.9
471825	2012	XF ₃₇	16.6	X	278.73178	282.30036	83.45515	11.44885	0.2646985	0.21719070	2.7409970	20	6 6.5	20.4
471826	2012	XR ₃₉	16.7	X	293.83234	255.66714	82.94901	8.75899	0.1548590	0.21084161	2.7957511	20	6 7.6	20.3
471827	2012	XQ ₄₃	17.0	X	281.65001	319.82560	69.23226	6.16252	0.1257249	0.22036767	2.7145892	20	8 5.3	20.5
471828	2012	XG ₄₆	17.0	X	243.41150	274.63947	96.64878	3.23306	0.1114867	0.20652136	2.8346061	20	5 24.1	21.1
471829	2012	XT ₅₆	16.9	X	291.63551	212.93841	94.63163	3.39854	0.0363915	0.19755454	2.919743			

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>
471841 2012 XB ₉₄	17.2	X	280.86497	207.83775	158.75128	3.97142	0.2071675	0.21726595	2.7403641	20	6 18.9	21.0
471842 2012 XH ₁₀₅	15.9	X	192.24700	85.50454	291.05383	17.80520	0.1941502	0.17706118	3.1408978	20	3 29.9	21.6
471843 2012 XH ₁₀₆	16.2	X	148.04338	151.87926	301.07166	9.80663	0.2084773	0.18263638	3.0766483	20	6 1.1	21.4
471844 2012 XX ₁₁₆	16.5	X	282.08159	329.71282	69.65528	11.90991	0.1705537	0.22644556	2.6657956	20	8 16.7	20.0
471845 2012 XX ₁₃₃	16.3	X	245.07240	139.47363	264.41634	17.94148	0.2825065	0.21335911	2.7737156	20	6 17.8	20.9
471846 2012 XJ ₁₃₅	16.5	X	285.42439	250.09347	84.73339	14.15339	0.2251419	0.21089780	2.7952545	20	5 14.3	20.4
471847 2012 XO ₁₃₉	16.5	X	350.77162	29.96774	335.62788	6.82924	0.1469519	0.24142391	2.5543625	20	11 3.8	19.3
471848 2012 XQ ₁₄₀	16.9	X	310.17891	91.17690	234.02681	12.17255	0.2227233	0.21753553	2.7380997	20	6 3.9	19.9
471849 2012 XQ ₁₄₃	16.3	X	203.85337	90.92485	241.89845	15.04982	0.2512478	0.18203270	3.0834467	20	2 20.0	22.1
471850 2012 XV ₁₄₄	16.1	X	177.30257	142.91438	289.09612	13.63792	0.1802987	0.18827347	3.0149258	20	5 30.8	21.3
471851 2012 XK ₁₄₇	16.5	X	105.84384	48.12807	84.60103	12.00603	0.0609337	0.18872712	3.0100925	20	5 26.6	20.8
471852 2012 XX ₁₅₂	17.6	X	259.46869	195.95579	185.88064	3.66078	0.2470584	0.21530162	2.7570069	20	6 8.1	21.9
471853 2012 XD ₁₅₄	15.8	X	170.59164	145.19829	266.93229	16.68827	0.1169605	0.17718139	3.1394771	20	4 26.8	21.0
471854 2012 YQ ₂	16.3	X	144.99768	3.13869	84.28658	14.64704	0.1391125	0.18920840	3.0049860	20	5 21.9	21.1
471855 2013 AV ₃	16.2	X	167.93353	352.98721	106.77044	18.68460	0.1659022	0.18861285	3.0113082	20	6 26.5	21.2
471856 2013 AL ₄	15.8	X	109.35700	221.37264	276.52096	10.45464	0.0841282	0.18256045	3.0775014	20	6 7.9	20.3
471857 2013 AS ₅	17.2	X	278.85381	99.58103	279.92007	5.10688	0.2085727	0.21890901	2.7266347	20	7 3.4	20.7
471858 2013 AS ₇	15.6	X	178.82659	94.73622	308.52453	17.01600	0.0934415	0.17205486	3.2015338	20	4 19.5	21.0
471859 2013 AY ₈	15.8	X	161.49078	95.16663	314.63880	14.52023	0.0546450	0.17188488	3.2036442	20	4 8.3	20.9
471860 2013 AM ₉	15.6	X	227.93126	238.21670	84.79679	17.68166	0.2002158	0.17904995	3.1175965	20	3 14.3	21.1
471861 2013 AP ₁₁	16.0	X	106.33801	55.50260	82.48805	12.66184	0.0370811	0.18346667	3.0673589	20	5 30.3	20.4
471862 2013 AU ₁₁	17.2	X	208.70093	129.11215	270.44521	4.49314	0.1987275	0.19170262	2.9788641	20	5 17.8	22.2
471863 2013 AH ₁₇	15.8	X	225.62836	58.87448	283.78258	14.84250	0.1795342	0.17514137	3.1638087	20	3 19.9	21.3
471864 2013 AY ₂₈	16.2	X	208.46985	304.91030	87.13893	14.38022	0.1448929	0.18499029	3.0504934	20	5 15.1	21.2
471865 2013 AH ₂₉	16.5	X	235.04836	249.25108	104.79711	9.04756	0.1143901	0.19444797	2.9507592	20	4 26.8	21.1
471866 2013 AO ₃₀	17.9	X	114.51192	207.55950	132.17310	23.01288	0.0005237	0.38695353	1.8650773	20	—	—
471867 2013 AF ₃₂	16.0	X	149.49614	30.19722	53.90658	11.48931	0.1275526	0.18326047	3.0696593	20	5 18.8	20.9
471868 2013 AA ₃₆	16.2	X	162.45794	109.12526	303.33279	24.32713	0.1865996	0.17697052	3.1419705	20	4 13.8	21.9
471869 2013 AD ₃₈	16.2	X	177.42660	275.04924	119.44661	4.60738	0.1145707	0.17185744	3.2039851	20	4 18.1	21.3
471870 2013 AN ₃₈	16.7	X	150.54064	117.59288	309.28777	6.06129	0.1497940	0.173488729	3.1838867	20	4 28.3	21.9
471871 2013 AP ₄₁	16.2	X	177.31343	280.41195	121.65556	10.22541	0.1057591	0.17489018	3.1668374	20	4 29.0	21.3
471872 2013 AR ₅₀	17.4	X	296.67706	84.19498	104.37290	30.65514	0.0962154	0.39059492	1.8534676	20	—	—
471873 2013 AQ ₅₂	16.7	X	199.79987	53.97092	358.69315	9.97848	0.1190859	0.18745501	3.0236952	20	5 26.9	21.6
471874 2013 AZ ₅₃	15.7	X	326.46008	18.12661	279.80303	11.21773	0.0881446	0.19261977	2.9694007	20	6 11.7	19.4
471875 2013 AV ₅₈	16.4	X	195.84277	292.82136	138.15929	9.74334	0.1053409	0.18805275	3.0172844	20	6 18.4	21.2
471876 2013 AF ₅₉	16.3	X	241.86591	274.03094	143.24165	11.33007	0.1359086	0.20174239	2.8791963	20	7 16.6	20.7
471877 2013 AF ₇₃	16.5	X	177.55309	51.87439	9.91624	10.38238	0.1462398	0.18457740	3.0550409	20	5 16.2	21.6
471878 2013 AF ₉₁	17.0	X	224.95333	9.65660	105.14454	6.94377	0.2753711	0.21970211	2.7200688	20	8 30.8	21.5
471879 2013 AE ₉₆	16.0	X	234.16787	31.21898	324.48730	9.54528	0.0347172	0.17801884	3.1296234	20	4 27.8	20.7
471880 2013 AO ₉₇	15.9	X	107.32531	137.91214	293.38066	8.77136	0.0313909	0.15773310	3.3925076	20	3 5.6	20.8
471881 2013 AZ ₉₈	16.5	X	184.61579	65.22095	325.02315	9.26125	0.1125802	0.17784311	3.1316846	20	4 13.3	21.6
471882 2013 AG ₁₀₂	16.7	X	176.33707	278.93258	130.62831	14.07245	0.2614722	0.18210757	3.0826015	20	5 9.6	22.4
471883 2013 AS ₁₁₁	16.8	X	153.09401	242.45222	183.46313	0.25876	0.2052477	0.17493963	3.1662406	20	5 4.8	22.0
471884 2013 AF ₁₁₂	14.0	X	232.94192	354.81943	128.82346	24.33889	0.1278875	0.08365052	5.1779391	20	9 21.9	21.4
471885 2013 AD ₁₁₅	16.3	X	154.41131	306.28778	134.31583	9.00595	0.1369040	0.18147150	3.0898004	20	5 22.6	21.3
471886 2013 AO ₁₁₆	15.9	X	143.74939	336.10764	118.04751	15.29893	0.1054427	0.17549485	3.1595589	20	5 28.2	21.0
471887 2013 AO ₁₁₉	16.1	X	143.41287	133.41785	297.29536	8.06753	0.0793037	0.17435787	3.1732797	20	4 19.7	21.1
471888 2013 AZ ₁₂₂	16.1	X	174.21255	111.22881	312.97650	9.51778	0.1284865	0.18092919	3.0959715	20	5 16.2	21.2
471889 2013 AC ₁₂₆	15.7	X	170.12343	145.89542	266.09312	15.84226	0.1934818	0.17902845	3.1178461	20	4 28.6	21.6
471890 2013 AR ₁₃₀	16.0	X	138.20470	355.64188	102.27771	14.96424	0.0465908	0.17380489	3.1800068	20	5 22.2	20.8
471891 2013 AU ₁₆₁	17.2	X	275.32781	195.48953	191.23398	9.05028	0.2487398	0.21183558	2.7869987	20	7 1.1	21.2
471892 2013 AY ₁₆₂	16.4	X	227.18656	211.83088	160.34610	15.82440	0.0950424	0.18257192	3.0773725	20	5 12.9	21.3
471893 2013 AK ₁₇₀	16.8	X	228.54553	227.40389	178.85537	9.86654	0.0538145	0.19252568	2.9703681	20	6 26.3	21.3
471894 2013 AZ ₁₇₀	16.2	X	351.10326	77.63386	184.43525	11.56548	0.0260904	0.18168890	3.0873352	20	6 4.9	20.6
471895 2013 AP ₁₇₃	16.4	X	174.60397	230.92718	164.37065	14.69093	0.1368346	0.17233909	3.1980127	20	4 18.1	21.7
471896 2013 AO ₁₇₄	16.0	X	213.56838	232.68754	154.43148	19.40703	0.1349237	0.18494764	3.0509624	20	5 15.7	21.2
471897 2013 BC ₈	16.3	X	154.35416	97.36907	320.78338	14.15175	0.1153531	0.17433238	3.1735889	20	4 14.9	21.5
471898 2013 BJ ₂₅	15.7	X	4.79185	236.72006	305.03560	8.70789	0.0352116	0.15501297	3.4320797	20	3 10.6	20.6
471899 2013 BL ₃₁	16.1	X	257.19604	29.83488	326.95472	11.63091	0.1159800	0.18705997	3.0279508	20	5 17.1	20.8
471900 2013 BY ₃₄	16.0	X	222.73646	103.22366	289.13012	8.88965	0.1029243	0.18882834	3.0090167	20	5 27.7	20.7
471901 2013 BR ₃₈	16.3	X	259.40311	40.77602	318.94272	10.01723	0.1473741	0.19178449	2.9780162	20	5 20.3	21.0
471902 2013 BL ₆₂	16.4	X	138.27198	316.09149	134.06027	9.52432	0.1767260	0.17180626	3.2046213	20	5 21.8	21.7
471903 2013 BC ₇₂	16.1	X	132.22878	318.59093	133.38445	17.63454	0.1936726	0.17561672	3.1580971	20	5 22.3	21.5
471904 2013 CF ₁₁	14.2	X	219.23033	23.19703	127.18177	19.59469	0.0751827	0.08493987	5.1254065	20	10 14.4	21.5
471905 2013 CX ₃₁	17.8	X	123.61385	309.63353	115.02639	7.13338	0.1633470	0.29739070	2.2228891	20	3 30.0	20.8
471906 2013 CJ ₅₁	15.8	X	176.75519	87.68707	321.44152	12.64400	0.1686691	0.17296270	3.1903212	20	4 28.3	21.3
471907 2013 CS ₆₁	13.8	X	253.41353	151.91758	314.37368	9.38554	0.0648839	0.08338368	5.1889802	20	9 21.3	20.8
471908 2013 CD ₈₇	16.1	X	136.45114	114.08152	346.96563	26.82381	0.2994282	0.17371232	3.1811365	20	6 2.4	22.1
471909 2013 CR ₁₀₉	17.0	X	219.92267	81.11193	355.10571	7.16817	0.1928917	0.19829862	2.9124351	20	7 14.2	21.8
471910 2013 CA ₁₁₆	16.4	X	161.44564	96.21874	339.96120	24.32844	0.2273949	0.17581545	3.1557168	20	5 16.0	22.3
471911 2013 CK ₁₉₂	16.0	X	181.31649	286.87782	134.86388	18.64995	0.1547131	0.18035060	3.1025896	20	5 27.5	21.4
471912 2013 CW ₁₉₃	15.8	X	276.03965	329.95259	4.27203	9.58357	0.1311237	0.1749260	3.1358062	20	5 9.6	20.5
471913 2013 CM ₂₀₀	16.8	X	154.46045	60.554								

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>
471921 2013 FC ₂₈	5.2 ^m	X	255.71639	99.58304	193.16079	16.30907	0.0838076	0.00317422	45.8541011	20	3 18.5	21.9
471922 2013 GO ₈₀	17.7	X	153.89984	177.99676	143.21155	24.42653	0.0630994	0.37901242	1.8910387	20	—	—
471923 2013 GW ₁₃₁	17.9	X	277.85449	76.82878	119.15679	25.23937	0.0374781	0.38073147	1.8853422	20	—	—
471924 2013 HU ₁₀	17.4	X	13.66638	278.17953	128.67544	24.18290	0.0957989	0.35500904	1.9753457	20	—	—
471925 2013 JB ₃₄	17.7	X	213.72163	193.26509	83.28722	23.38977	0.0190247	0.38007721	1.8875052	20	—	—
471926 Jörmungandr	18.6	X	14.38065	232.43664	229.52240	23.57417	0.8509652	0.55547858	1.4656305	20	—	—
471927 2013 KY ₁₃	18.3	X	270.42606	332.02039	230.90307	19.68589	0.0836650	0.37710398	1.8974134	20	—	—
471928 2013 LG ₉	18.0	X	160.95682	203.55428	122.50859	25.28224	0.1099801	0.37181039	1.9153804	20	—	—
471929 2013 PT ₁	18.9	X	95.01809	77.90388	204.96180	5.86010	0.0983210	0.31347581	2.1461827	20	12 16.1	21.9
471930 2013 PA ₃₃	18.0	X	186.97768	224.33906	309.39733	6.99053	0.0422394	0.29888193	2.2154890	20	11 3.8	20.9
471931 2013 PH ₄₄	9.1	X	21.17993	178.30969	160.83085	33.48273	0.2120169	0.01126300	19.7106059	20	10 10.2	21.2
471932 2013 PY ₄₅	18.6	X	101.95790	74.24744	210.48134	4.24708	0.0642185	0.31818288	2.1249637	20	12 25.9	21.4
471933 2013 QC ₈	18.2	X	198.77603	238.75112	286.96933	7.87594	0.0386845	0.30386286	2.1912115	20	11 10.8	20.9
471934 2013 RG ₁₃	15.8	X	166.87675	142.63745	95.30351	11.49392	0.0713311	0.17942981	3.1131950	20	12 9.2	20.5
471935 2013 QB ₂₉	18.9	X	79.62898	339.20660	339.37122	3.43943	0.1922163	0.31792000	2.1261349	20	—	—
471936 2013 QL ₆₃	18.1	X	53.94820	299.45108	336.69847	4.33094	0.1515672	0.29776597	2.2210210	20	10 21.2	20.9
471937 2013 QQ ₈₄	17.7	X	17.28018	164.28689	168.81445	4.30490	0.2620491	0.29604819	2.2296042	20	12 4.5	20.2
471938 2013 RM ₄	17.4	X	253.00564	208.30802	174.46881	5.77117	0.2302915	0.25602806	2.4562789	20	6 5.3	21.1
471939 2013 RX ₂₃	18.0	X	317.62870	154.43513	265.57702	1.19468	0.1483105	0.29581120	2.2307949	20	12 13.0	19.6
471940 2013 RY ₂₇	17.8	X	356.11066	149.95025	174.63287	12.13510	0.1922163	0.27984581	2.3148535	20	10 4.5	19.5
471941 2013 RJ ₂₈	18.0	X	316.06332	180.58775	150.59041	2.65454	0.2099498	0.26604092	2.3942551	20	6 28.6	20.1
471942 2013 RT ₂₈	18.4	X	53.93307	342.67313	13.67793	3.70641	0.1153915	0.31218592	2.1520904	20	—	—
471943 2013 RO ₃₃	18.2	X	99.30651	33.63393	238.41982	2.23069	0.1711267	0.30969385	2.1636200	20	12 8.6	21.3
471944 2013 RV ₃₄	17.9	X	302.01049	155.37319	195.72670	6.26761	0.1545115	0.26805993	2.3822177	20	7 10.4	20.4
471945 2013 RK ₄₉	18.3	X	269.80428	149.71606	332.48380	3.82809	0.0288415	0.30804677	2.1713256	20	12 27.0	20.5
471946 2013 RO ₅₁	18.1	X	331.76531	178.03023	235.88187	4.26438	0.2241390	0.29176518	2.2513710	20	—	—
471947 2013 RE ₅₃	17.3	X	298.66256	19.00746	24.88303	7.73013	0.1033250	0.27495113	2.3422453	20	10 5.7	19.6
471948 2013 RC ₆₅	17.2	X	275.40912	263.00756	121.06516	7.37971	0.1141118	0.26819111	2.3814409	20	7 23.8	19.9
471949 2013 RH ₇₂	18.0	X	125.54197	295.52116	303.60073	3.62304	0.0881518	0.30183358	2.2010218	20	11 18.2	20.9
471950 2013 RV ₈₄	18.8	X	6.55964	114.57605	278.14630	3.88957	0.1545458	0.30497949	2.1858597	20	—	—
471951 2013 RJ ₉₂	18.4	X	4.72840	170.34178	207.77213	3.87843	0.1509741	0.29922638	2.2137885	20	—	—
471952 2013 RF ₉₄	16.1	X	336.31724	26.99217	195.89118	13.22570	0.1167247	0.22662538	2.6643853	20	3 8.9	19.4
471953 2013 RR ₉₇	17.9	X	357.30184	93.55109	287.97378	7.20702	0.1277225	0.30220176	2.1992337	20	12 28.1	19.9
471954 2013 RM ₉₈	5.4	X	100.67015	254.64634	352.41072	28.03211	0.1326707	0.00343432	43.5086338	20	9 22.1	22.0
471955 2013 SR ₁₅	18.5	X	78.40983	267.59211	18.65605	1.80925	0.2215917	0.30494345	2.1860320	20	12 9.3	21.8
471956 2013 SC ₂₅	19.2	X	51.46737	237.89918	273.07325	10.17204	0.6481290	0.48487332	1.6046631	20	7 15.8	20.8
471957 2013 SB ₄₅	18.4	X	113.89805	59.82737	181.47154	3.10758	0.1206094	0.29852969	2.2172315	20	11 10.4	21.5
471958 2013 SH ₄₉	17.5	X	212.36176	211.75550	190.10146	14.63515	0.1594349	0.23984361	2.5655705	20	5 27.6	21.8
471959 2013 SR ₅₄	18.8	X	60.28663	341.82785	348.53360	5.16885	0.2082360	0.31026820	2.1609491	20	—	—
471960 2013 SQ ₆₅	18.3	X	94.95799	73.09993	178.83249	4.05066	0.1296241	0.29283416	2.2458887	20	11 4.3	21.5
471961 2013 TQ ₉	15.9	X	174.68543	214.95332	228.00772	32.34029	0.2467268	0.23377383	2.6097893	20	6 8.9	20.8
471962 2013 TV ₁₁	18.3	X	58.92823	33.16100	293.24023	2.30310	0.1819414	0.30896323	2.1670297	20	—	—
471963 2013 TC ₁₈	18.1	X	280.43921	81.41541	352.76738	5.02598	0.1098145	0.28084584	2.3093551	20	10 16.4	20.5
471964 2013 TR ₃₄	18.1	X	344.85464	327.95847	62.14247	5.60201	0.1959573	0.29104146	2.2551018	20	12 26.6	20.1
471965 2013 TU ₃₄	18.5	X	33.06911	287.03409	50.44091	2.64740	0.1957783	0.30087927	2.2056734	20	12 26.5	21.4
471966 2013 TD ₄₇	18.2	X	352.13769	50.44792	9.67967	3.17698	0.1376336	0.30560611	2.1828708	20	—	—
471967 2013 TO ₅₇	18.1	X	36.04249	20.55434	309.05956	4.39451	0.1659699	0.29631351	2.2282731	20	12 14.2	20.9
471968 2013 TF ₆₂	18.5	X	31.41125	23.22094	329.77526	1.99542	0.1952835	0.30112464	2.2044750	20	—	—
471969 2013 TW ₆₃	18.2	X	283.65777	221.14696	206.10301	7.64284	0.0852066	0.28173872	2.3044733	20	10 16.6	20.6
471970 2013 TW ₆₉	18.2	X	247.92192	83.12698	13.68623	5.63629	0.1792109	0.27698354	2.3307735	20	9 18.4	20.9
471971 2013 TW ₇₂	18.3	X	54.52535	314.45835	35.41385	4.19256	0.2087050	0.31012621	2.1616087	20	—	—
471972 2013 TF ₈₆	18.5	X	72.16091	122.87646	175.72641	4.74344	0.2057774	0.30420491	2.1895687	20	12 18.3	21.8
471973 2013 TJ ₉₉	17.1	X	97.49577	326.67592	281.67817	6.14496	0.0833274	0.27824801	2.3237069	20	10 23.4	20.4
471974 2013 TF ₁₀₀	18.1	X	345.63787	260.78648	136.63155	7.80463	0.1678668	0.29492981	2.2352371	20	—	—
471975 2013 TZ ₁₀₃	18.4	X	308.93185	110.30375	314.53831	1.91451	0.1809038	0.28765024	2.2727913	20	11 28.1	19.7
471976 2013 TW ₁₁₀	17.3	X	300.43326	32.77245	8.31610	7.19317	0.1117564	0.27460971	2.3441863	20	10 2.4	19.4
471977 2013 TP ₁₁₁	18.2	X	26.37730	91.71930	256.74594	2.26728	0.2132688	0.29614815	2.2291024	20	—	—
471978 2013 TU ₁₁₁	17.9	X	313.99042	65.08765	281.12656	1.41728	0.2057721	0.26438655	2.4042326	20	7 19.7	20.0
471979 2013 TC ₁₁₃	17.8	X	58.47288	203.09073	60.91849	3.11385	0.1851473	0.27757534	2.3274595	20	10 14.6	20.8
471980 2013 TP ₁₁₅	18.3	X	42.16713	107.02093	210.87829	4.65856	0.1874376	0.29532842	2.2332254	20	12 8.9	21.1
471981 2013 TD ₁₁₆	17.9	X	321.99915	17.62262	318.85897	4.79807	0.2031455	0.26720785	2.3872793	20	7 24.0	19.6
471982 2013 TZ ₁₄₁	18.7	X	26.43358	338.13085	48.34296	2.69003	0.1058348	0.31075977	2.1586697	20	—	—
471983 2013 TG ₁₄₃	18.3	X	7.67360	333.66740	40.59816	7.53132	0.1224572	0.29162658	2.2520843	20	12 29.3	20.8
471984 2013 UE ₃	22.8	X	13.65805	117.42230	49.71438	3.35680	0.2256573	0.94787726	1.0263638	20	—	—
471985 2013 UJ ₇	18.2	X	298.95769	260.58883	156.77419	4.33723	0.2114857	0.27939362	2.3173505	20	10 17.9	19.8
471986 2013 UA ₁₀	17.6	X	304.06973	276.81319	132.11478	9.62438	0.1735026	0.28014093	2.3132274	20	10 23.9	19.6
471987 2013 VK ₃	18.2	X	74.94056	83.32825	228.26356	5.13702	0.2195076	0.30508167	2.1853717	20	—	—
471988 2013 VL ₈	17.7	X	234.96268	33.45127	60.79778	6.85350	0.					